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Prepared for Murrumbidgee Irrigation and Partnear

Minor Works Review of Environmental Factors

Murrumbidgee Irrigation UCP – Environmental Planning Area 9 – Leeton Lateral 63

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Acronyms and abbreviations

ADDA	Aboriginal Due Diligence Assessment
AHIMS	Aboriginal Heritage Information Management System
AoS	Assessment of Significance
BA	Biodiversity Assessment
BC Act	*Biodiversity Conservation Act 2016* (NSW)
Biosecurity Act	*Biosecurity Act 2015* (NSW)
CE	Critically endangered
CLM Act	*NSW Contaminated Land Management Act 1997*
CNET	Construction Noise Estimator Tool
DCCEEW	Department of Climate Change, Energy, the Environment and Water (Cth) (formerly DAWE)
DCCEEW	Department of Climate Change, Energy, the Environment and Water (NSW) (formerly DPE)
DPHI	Department of Planning, Housing and Infrastructure (NSW) (formerly DPE)
E	Endangered
EA	Environmental Areas
EEC	Endangered ecological community – as defined under relevant law applying to the proposal
EIA	Environmental impact assessment
EPA	Environment Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
EPL	Environment Protection License
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
FM Act	*Fisheries Management Act 1994* (NSW)

GCC	Griffith City Council
GL	Gigalitres
ha	hectares
HBT	Hollow-bearing tree
Heritage Act	*Heritage Act 1977* (NSW)
HDD	Horizontal Directional Drilling
ISEPP	State Environmental Planning Policy (Infrastructure) 2007 (NSW)
km	kilometres
LEP	Local Environmental Plan
LGA	Local government area
LSC	Leeton Shire Council
m	metres
Mm	millimetres
MI	Murrumbidgee Irrigation
MNES	Matters of national environmental significance
MWREF	Minor Works Review of Environmental Factors
NCA	Noise Catchment Area
NES	Matters of National Environmental Significance under the EPBC Act (*c.f.*)
NML	Noise Management Level
NPW Act	*National Parks and Wildlife Act 1974* (NSW)
NSW	New South Wales
PCT	Plant Community Type
PMST	Protected matters search tool
POEO Act	*NSW Protection of the Environment Operations Act 1997*

REF	Review of Environmental Factors
RRWIP	Resilient Rivers Water Infrastructure Program
TEC	Threatened ecological community
TfNSW	Transport for New South Wales
TISEPP	State Environmental Planning Policy (Transport and Infrastructure) 2021
ToS	Test of Significance
UCP	Urban Channels Pipeline
WM Act	*NSW Water Management Act 2000*

1. Introduction

The purpose of the Minor Works Review of Environmental Factors (MWREF) is to outline the proposed works, document its potential environmental impacts, detail the mitigation measures to be implemented, and determine whether the proposed works can proceed. For this work, Murrumbidgee Irrigation (MI) acts as the proponent and determining authority under Division 5.1 of the Environmental Planning and Assessment Act 1979 (EP&A Act) and under Schedule 1 of the *NSW Water Management Act 2000* (WM Act).

The description of the proposed works and the assessment of associated environmental impacts are conducted in accordance with section 171 of the Environmental Planning and Assessment Regulation 2021, the Guidelines for Division 5.1 Assessments (DPE, 2022), the Biodiversity Conservation Act 2016 (BC Act), the National Parks and Wildlife Act 1974 (NPW Act) and the Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth) (EPBC Act).

The MWREF helps fulfill the requirements of section 5.5 of the EP&A Act, ensuring that the proponent examines and considers all matters affecting or likely to affect the environment due to the activity.

The findings of the MWREF are considered when assessing:

- Whether the proposal is likely to have a significant impact on the environment, necessitating the preparation of an environmental impact statement and seeking approval from the Minister for Planning and Public Spaces under Division 5.2 of the EP&A Act.
- The significance of any impact on threatened species as defined by the BC Act, in section 1.7 of the EP&A Act, and the requirement for a Species Impact Statement or a Biodiversity Development Assessment Report.
- The potential for the proposal to significantly impact a matter of national environmental significance, including nationally listed threatened biodiversity matters or the environment of Commonwealth land. If a significant impact is likely on nationally listed biodiversity matters, the proposal must either be reconsidered, or a project Review of Environmental Factors (REF) must be prepared.

2. The proposed works

2.1. Description

Murrumbidgee Irrigation (MI) is proposing $62 million of piping and rationalisation of urban channels, funded as eligible activities under the Resilient Rivers Water Infrastructure Program (RRWIP). The Program is an $494 million initiative aimed at improving water delivery infrastructure and recovering up to 450 gigalitres (GL) of water annually for environmental purposes within the Murray-Darling Basin (DCCEEW, 2025).

The proposed works involve replacing approximately 50 kilometres (km) of aging concrete and earthen urban supply channels in and adjacent to existing channels, as well as 1.4km of leaking pipeline, with new pipelines. The proposed works also involves rationalisation of 33 escapes, removing and replacing approximately 500 customer outlets, 2 new pump stations, road and rail crossings and a reconfiguration of the network creating greater water delivery efficiency.

2.1.1. Proposed works location

The proposed works would be delivered in urban areas within the Griffith and Leeton Local Government Areas (LGAs). The scheduled channels intersect land owned and managed by a variety of stakeholders including MI, Griffith City Council (GCC), Leeton Shire Council (LSC), New South Wales (NSW) Crown Lands, Transport for NSW (TfNSW) and private landholders.

The proposed works would be divided into twelve smaller discrete work locations across the two LGAs, determined by their location and sizes. These have been designated Environmental Areas (EAs), and are as follows:

- Griffith Lateral 92 – EA1
- Griffith Laterals Other – EA2
- Griffith West – EA3
- Griffith Lake Wyangan – EA4
- Griffith Beelbangera – EA5
- Griffith Bilbul – EA6
- Griffith Yenda – EA7
- Griffith Lateral 253 – EA8
- Leeton Lateral 63 – EA9
- Leeton Laterals 5, 99 & 21 – EA10
- Leeton Laterals Other – EA11
- Leeton Corbie Hill Laterals 7, 22, 23, 24 – EA12
- Leeton Wamoon Lateral 73 – EA13

This MWREF focuses on the potential environmental impacts and proposed mitigation measures to be implemented relevant to **Leeton Lateral 63 – EA9.**

It should be noted that EA8 will be progressed separately by MI due to a confirmation of scope.

The proposed works location for EA9 is shown in Figure 2-1 below.

Figure 2-1 Proposed works locality

2.1.2. Proposed works description

The following construction methodology is proposed:

1. Site establishment, including environmental and cultural heritage protection measures, site amenities, and laydown/stockpile areas, if required
2. Work Health and Safety (WH&S) and traffic control
3. Construction of pipelines using a range of construction methods, including but not limited to:
    - Under boring / horizontal directional drilling (HDD)
    - Trenching within the existing channel profile
    - Trenching to install pipeline next to the existing channel and backfilling the channel following completion
    - New pipelines would be installed at a maximum depth of 2000 millimetres (mm) below the natural surface level
4. Removal and replacement of outlets/customer connection points
5. Removal of redundant channel infrastructure
6. Removal of rationalised supply escape structures
7. Making good to a finished standard, which may include backfilling with topsoil and seeding in specific amenity areas.

For the proposed works across the thirteen areas, the construction approaches to be used include:

- New pipeline - to be constructed within the specified new alignment.
- Convert existing channels to new pipeline - new pipeline to be constructed beside the existing channel (up to 2000mm)
- Remove and/or decommission existing channel - remove concrete channel and backfill channel to natural ground level.
- Install new drainage channel - construct new channel at a single location - Yenda.
- Infrastructure may also be retained as-is
- Underboring of an outlet on the southern end of Lateral 63
- Underboring would be utilised in sensitive areas where surface access is unavailable.

For all construction approaches, excavators of varying sizes will be used depending on the proposed works. High Density Poly Ethelene welding machines would be employed for different welding sizes. The pipes would be strung and welded and then lowered into the excavated trenches. Before laying the pipes at the bottom of the pit, bedding material would be placed.

Where outlets and other fittings are involved, they would be welded onto the pipes according to design specifications. All pipelines to be constructed would run across different roads and will be sleeved into existing MI culverts if the design permits. If the design does not allow the use of existing culvert infrastructure, new envelopers or other sleeving materials will be constructed. Refer to Appendix B for concept plans detailing the construction approaches.

For the purposes of this MWREF, a 10m buffer has been applied to either side of the existing channel/pipeline infrastructure to determine the work area and identify the worst-case scenario impacts. The final development impact areas are likely to be reduced in nature.

The planned works for EA9 include 480m of new pipeline and 30m of existing pipeline requiring modification.

Please refer to Figure 2-2 below for the extent of area assessed for EA9.

Figure 2-2 Proposed works

2.1.3. Proposed works objectives

The proposed works objectives and anticipated benefits are as follows:

- Significantly increasing customer service levels and system capacity
- Increasing regional productivity through water use efficiency
- Providing further security of water supply to towns and industry
- Investing in regional communities through local contractors
- Enhancing socio-economic outcomes by supplying water for urban green spaces, as well as providing the opportunity for local councils to deliver improved infrastructure
- A reduction in mosquito borne diseases
- Enhanced road safety.

The proposed works objectives align with the RRWIP objectives of:

- Provide water recovery for the Murray Darling Basin through improved water use
- Investment in infrastructure that provides:
    - longer-term outcomes
    - multiple benefits
    - water recovery for the environment
- Underpin long-term, climate change resilient primary production (DCCEEW, 2025).

2.1.4. Ancillary features

Table 2-1 Ancillary facilities

Ancillary facilities		
Will the proposal require the use or installation of a compound site? The 10m buffer either side of the proposed new pipeline has been assessed to be utilised for potential laydown/compound areas for construction plant parking, stockpiling construction materials, and temporary amenities. Additionally, EA9 could utilise the following areas, if required: • West off Toorak Rd – 0.45ha It should be noted that the total area of the compound/laydown may not be required to be utilised. The compound/laydown area would be used for plant parking and storing construction machinery while not in use, stockpiling construction materials and temporary amenities. An example of the laydown area similar to the one to be utilised for EA9 is shown in Figure 2-3 and Figure 2-4.	Yes ☒	No ☐
Will the proposal require the use or installation of a stockpile site? As above.	Yes ☒	No ☐

Are any other ancillary facilities required (e.g. temporary plants, parking areas, access tracks)? As above.	Yes ☒	No ☐

Figure 2-3 Example of one of the proposed compound/laydown areas (off Toorak Road facing west)

Figure 2-4 Example of one of the proposed compound/laydown areas (off the eastern section of Toorak Road facing west)

2.1.5. Proposed date of commencement

Proposed works for EA9 are expected to commence construction in July/August 2025. The commencement date is indicative and may change.

2.1.6. Estimated length of construction period

The proposed works would be expected to take approximately 6 – 12 weeks, weather permitting. Works would be carried out during the following work hours:

- **Monday to Friday**: 7:00am to 6:00pm
- **Saturday**: 8:00am to 1:00pm
- **Sunday and Public Holidays**: No construction work is permitted

It should be noted that a diesel pump may be required to operate outside the standard working hours (worst-case over a 24hr period), to dewater the existing channels or supply water. The potential impacts have been discussed in Section 3.6 below.

2.2. Needs and options

The scale and scoping restriction of the proposed works meant there are limited feasible choices of location and construction approaches. It should be noted that the choice of undertaking the works either within or adjacent to the existing channel, and the selection of compound/laydown areas were based off desktop assessment and, where applicable, biodiversity and Aboriginal heritage site surveys within the proposed works locations.

2.2.1. Options / alternatives considered

Options considered

The options considered for the proposed works included:

Option 1 – 'Do nothing' option

This option involves leaving the existing channels/pipelines as is, which would result in the status quo of water supply efficiency. This option would not enable any works to occur, and while no immediate or visible impact to the environment would occur as a result, this would not align with the objectives of MI and the RRWIP Program improving water delivery infrastructure within the Griffith and Leeton LGAs.

Option 2 – Undertaking the proposed works

This option involves undertaking the proposed works as described in this section. As detailed in Section 3 below, the proposed works have avoided impacts to key environmental constraints. Where impacts could not be avoided, appropriate safeguards and mitigation measures have been recommended to minimise any potential impacts.

Preferred option

The preferred option is:

Option 2 – Undertaking the proposed works. This option suits the objectives of the proposed works without leading to significant impacts to environmental factors while supplying irrigation water to customers in a more efficient manner

2.2.2. Justification for the proposed works

The proposed works are required to significantly enhance customer service and system capacity through precise water control and delivery, therefore boosting regional productivity via efficient water use.

It would ensure water supply security for stakeholders by enabling connections to a raw water pipeline. The proposed works invests heavily in regional communities.

Socio-economic outcomes would be improved by supplying water for urban green spaces and enabling Leeton Shire Council (LSC) to enhance infrastructure like pedestrian paths. Additionally, it reduces mosquito-borne diseases by eliminating open water sources, enhances road safety through better drainage, and decreases road maintenance needs.

While the proposed works has the potential to impact on the environment, these impacts have been avoided or minimised where possible. Mitigation measures would be implemented to minimise and manage any remaining potential environmental impacts.

2.3. Statutory and planning framework

NSW Water Management Act 2000 (WM Act)

The WM Act governs the sustainable and integrated management of NSW's water resources. The main objects of the Act are to provide the sustainable and equitable use of water resources through water management principles, water sharing plans, access licences, environmental water protection, and compliance (NSW Government, 2000).

Under Chapter 4 Part 1, MI is an irrigation corporation by way of inclusion in Schedule 1 of the Act. Under section 122 of the WM Act, the operating licence for an irrigation corporation authorises the corporation to carry on the business of supplying water provided to it by the Water Administration Ministerial Corporation (the Ministerial Corporation) and to exercise its functions under this Part.

MI would exercise its powers on behalf of the Ministerial Corporation in accordance with its operating licence, and as such, would act as both proponent and determining authority for the MWREF.

Environmental Planning and Assessment Act 1979 (EP&A Act)

Under section 5.5 of the EP&A Act, a public authority is compelled to assess and consider the impact of an activity (NSW Government, 1979). Section 5.5 states:

Duty to consider environmental impact *(cf previous s 111)*

> *For the purpose of attaining the objects of this Act relating to the protection and enhancement of the environment, a determining authority in its consideration of an activity shall, notwithstanding any other provisions of this Act or the provisions of any other Act or of any instrument made under this or any other Act, examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity.*

As such MI is compelled to prepare an environmental assessment for the proposal and consider the same before proceeding with the activity.

The environmental assessment would be completed in the form of a Minor Works Review of Environmental Factors (MWREF). The MWREF will be completed in accordance with Division 5.1 of the EP&A Act, taking into account the requirements of Section 171(2) of the EP&A Reg (previously Clause 228 Factors of the EP&A Regulation 2000).

The MWREF will describe the approval requirements for the proposal, detail MI's delegation to be the "Determining Authority" and address the requirements of other relevant New South Wales and Commonwealth legislation including the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

State Environmental Planning Policy (Transport and Infrastructure) 2021

The State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP) aims to facilitate the effective delivery of infrastructure across the state. This includes roads and road infrastructure facilities, and port, wharf or boating facilities.

The TISEPP provides a streamlined framework for developments in NSW (NSW Government, 2021). The TISEPP takes precedence over the Local Environmental Plan (LEP) when there is conflicting permissibility for development within the same zoning. If a development is not permissible under the LEP, but is under the TISEPP within the same zoning, the provisions of the TISEPP prevail. Division 24 of the TISEPP relates to water supply infrastructure.

EA9 is not identified as “coastal wetlands” or “littoral rainforest” on the Coastal Wetlands and Littoral Rainforests Area Map and therefore the provisions of section 2.159A of the TISEPP do not apply.

Under section 2.159(1), development for the purpose of water reticulation systems may be carried out by or on behalf of a public authority without consent on any land. MI would exercise its powers on behalf of the Ministerial Corporation in accordance with its operating licence.

It is also noted under section 2.161; water reticulation systems may be carried out by any person with development consent on any land.

Leeton Local Environmental Plan 2014

Permissibility under the LEP in NSW outlines the legislation that determines what types of developments are permitted within particular zones within an LGA. The key aspects are:

- Zoning
- Permissible development
- Without consent
- With consent
- Prohibited development
- Development standards
- Assessment criteria.

EA9 falls on land zoned R2 Low Density Residential under the provisions of the Leeton Local Environmental Plan 2014 (Leeton LEP) (NSW Government, 2014)

The proposed works have been defined as a water reticulation system. Under the Leeton LEP, water reticulation systems are permitted without consent on land zoned R2.

2.3.1. Other relevant legislation and environmental planning instruments

Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) regulates the assessment and approval of activities that would have or is likely to have a significant impact on Matters of National Environmental Significance (MNES), activities by Commonwealth government agencies and activities by any person on Commonwealth land.

Currently MNES include:

- World Heritage properties
- National Heritage places
- Wetlands of international importance (listed under the Ramsar Convention)
- Nationally listed threatened species and ecological communities

- Migratory species (protected under international agreements)
- Commonwealth marine areas
- Great Barrier Reef Marine Park
- Nuclear actions (including uranium mines)
- A water resource, in relation to coal seam gas development and large coal mining development.

An EPBC Act protected matters search was undertaken on March 5, 2025. An assessment of the impacts of the proposal determined that the proposal does not constitute an activity which may have a significant adverse impact on any MNES (Appendix C). MNES relevant to the study area include:

- Nationally listed threatened species and ecological communities
- Migratory species (protected under international agreements)
- Commonwealth Marine Area

A referral is not required for proposed activities that may affect nationally listed threatened species, endangered ecological communities and migratory species. This is because requirements for considering impacts to these biodiversity matters are the subject of a strategic assessment approval granted under the EPBC Act by the Australian Government in September 2015.

Potential impacts to these biodiversity matters are also considered as part of Section 3.1 of this MWREF.

Native Title Act 1993 (Commonwealth)

The *Native Title Act 1993* provides a legislative framework for the recognition and protection of common law native title rights. Native title is the recognition by Australian law that Indigenous people had a system of law and ownership of their lands before European settlement. Where that traditional connection to land and waters has been maintained and where government acts have not removed it, the law recognises the persistence of native title.

A search of the National Native Title Tribunal Registers on 18 June 2025 found no native title holders for the proposal site within the Leeton Local Government Area.

Environmental Planning and Assessment Regulation 2021 (EP&A Regulation)

The EP&A Regulation sets out the requirements and form for an REF and the consideration of matters to be addressed.

Section 170 refers to the REF Guidelines to be followed.

Section 171(2) refers to the environmental factors to be taken into account in an REF.

Section 171(4) requires publication of an REF for any activity with:

- A capital investment value of more than $5 million
- An approval or permit for activity that requires approval under:
    - *Fisheries Management Act 1994* (NSW) sections 144, 201, 205 or 219
    - *Heritage Act 1977* (NSW) section 57
    - *National Parks and Wildlife Act 1974* (NSW) section 90
    - *Protection of the Environment Operations act 1997* (NSW) sections 47-49 or 122
- If the determining authority considers it to be in the public interest.

This applies to the proposal unless, as noted under section 171(6), it:

a) Belongs to a class specified by the Planning Secretary in a notice published on the Department's website for the purposes of this section, or
b) An approved code under Division 6 applies.

Publishing of the REF must be undertaken either:

a) Before the activity commences, or
b) As soon as practicable, no later than one month after the activity commences.

The proposed works is likely to have a capital investment value greater than $5 million, therefore the MWREF would require publication as per Section 171(4) of the Regulation.

Publication of the MWREF would be on the MI webpage.

National Parks and Wildlife Act 1979 (NSW)

The objectives of the NPW Act are to conserve and preserve nature; conserve objects, places, or features (including biological diversity) of cultural value within the landscape; foster public appreciation, understanding and enjoyment of nature and cultural heritage and their conservation; and provide for the management of land reserved under this Act.

Section 3.2 assesses the potential for the proposal to impact on Aboriginal heritage.

Biodiversity Conservation Act 2016 (NSW)

The purpose of the NSW BC Act is to maintain a healthy, productive, and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development.

Section 1.7 of the EP&A Act requires consideration of the significance of any impact on threatened species, defined by section 7.3 of the BC Act, in order to determine the requirement for a Species Impact Statement or a Biodiversity Development Assessment Report.

An assessment of the potential impacts of the proposed activity on threatened species, populations, ecological communities and critical habitat listed in the BC Act must be undertaken. This includes an assessment of the potential for a significant impact under section 7.3 (5-part test) and whether an impact is likely on an area of Outstanding Biodiversity Value.

A Biodiversity Assessment was conducted including a search of the Office of the Environment and Heritage (OEH) BioNet database which was undertaken on March 5, 2025 (refer to Appendix C). The potential for the proposal to impact threatened species, populations and endangered ecological communities is assessed in Section 3.1. Tests of Significance are provided in G.1.

Heritage Act 1977 (NSW)

The *Heritage Act 1977* (NSW) (Heritage Act) is a statutory tool developed to conserve the cultural heritage of NSW. It is used to regulate development impacts on the State's heritage assets. Administered by the NSW Heritage Office, the Act details the statutory requirements for protecting historic buildings and places and

includes *any place, building, work, relic, movable object or precinct, which may be of historic, scientific, cultural, social, archaeological, natural or aesthetic value*.

Under the Heritage Act, a person must not disturb or excavate land if they know or have reasonable cause to suspect that they might discover, expose, move or damage a relic unless they have an excavation permit.

Items considered to be significant to the State can be listed on the State Heritage Register (SHR) and cannot be demolished, altered, moved or damaged, or their significance altered, without approval from the Heritage Council of NSW. Other items may be listed on the National and Commonwealth Heritage Lists, State Heritage Inventory (SHI) or by local Councils in LEPs. Additionally, under Section 170 of the Heritage Act, all government agencies are required to identify, conserve and manage heritage items in their ownership or control. Items are typically listed in a Heritage and Conservation Register and may also be included on the SHI.

There are no items of non-Aboriginal heritage within or adjacent to the proposal area.

Section 3.3 addresses potential impacts associated with non-Aboriginal heritage items and places.

Contaminated Land Management Act 1997 (NSW)

The objectives of the *Contaminated Land Management Act 1997* (NSW) (CLM Act) are:

- To set out accountabilities for managing contamination if the EPA considers the contamination is significant enough to require regulation under Division 2 of Part 3
- To set out the role of the Environmental Protection Authority (EPA) in the assessment of contamination and the supervision of the investigation and management of contaminated sites
- To provide for the accreditation of site auditors of contaminated land to ensure appropriate standards of auditing in the management of contaminated land
- to ensure that contaminated land is managed appropriately with regard to the principles of ecologically sustainable development.

Section 3.11 discusses potential impacts associated with contamination.

Biosecurity Act 2015 (NSW)

The primary objective of the *Biosecurity Act 2015* (NSW) is to provide a framework for the prevention, elimination and minimisation of biosecurity risks posed by biosecurity matter, dealing with biosecurity matter, carriers and potential carriers, and other activities that involve biosecurity matter, carriers or potential carriers. The biosecurity framework and tools safeguard our economy, environment and community and any land managers and users of land have a responsibility for managing weed biosecurity risks that they know about or could reasonably be expected to know about.

The *Biosecurity Act 2015* repealed the *Noxious Weeds Act 1993* and provides a framework for the prevention, elimination and minimisation of biosecurity risks. The Act and supporting Biosecurity Regulation 2017 provide for the establishment and functions of Local Control Authorities for weeds (LGA or County Councils) and weed control obligations on public and private land.

A search of the Department of Primary Industries WeedWise database for regional priority weeds for the Leeton region was undertaken on 12 June 2025 (Appendix C).

Section 3.1 addresses impacts relating to priority weeds.

Protection of the Environment Operations Act 1997 (NSW)

The *Protection of the Environment Operations Act 1997* (NSW) (POEO Act) is the primary legislation regulating pollution control and waste disposal in NSW. It establishes a structure for regulating polluting activities through Environment Protection Licences (EPLs). Activities listed under Schedule 1 of the POEO Act are scheduled activities which require an EPL.

Section 120 of this Act provides that it an offence to pollute waters. The relevant consent authority, in this case, MI, must ensure that all stages of proposals are managed to prevent pollution, including pollution of waters.

Section 148 of this Act requires notification of pollution incidents. MI are obliged to notify the relevant authorities (e.g., EPA) when a 'pollution incident' occurs that causes or threatens 'material harm' to the environment.

Schedule 1 of the POEO Act describes activities for which an EPL is required. The proposed works do not conform with the definition of a scheduled activity under this Act; therefore, a new EPL would not be required.

Roads Act 1993 (NSW)

The objectives of the *Roads Act 1993* (NSW) (Roads Act) are to:

- Set out the rights of members of the public to pass along public roads
- Set out the rights of persons who own land adjoining a public road to have access to the public road
- Establish the procedures for the opening and closing of a public road
- Provide for the classification of roads
- Provide for the declaration of TfNSW and other public authorities as roads authorities for both classified and unclassified roads
- Confer certain functions (in particular, the function of carrying out road work) on TfNSW and on other roads authorities
- Provide for the distribution of the functions conferred by this Act between TfNSW and other roads authorities
- Regulate the carrying out of various activities on public roads.

Under Section 138 of the Roads Act, a person must not erect a structure or carry out a work in, on or over a public road, or dig up or disturb the surface of a public road, otherwise than with the consent of the appropriate road's authority.

The proposal would only affect local roads managed by Council. A such, consultation with LSC would be undertaken as part of this MWREF process.

2.4. Community engagement and agency consultation

2.4.1. SEPP (Transport and Infrastructure) consultation

Table 2-2 Consultation required with Council

Is consultation with Council required under sections 2.10 - 2.12 and 2.14 of the SEPP (Transport and Infrastructure)?		
Are the works likely to have a substantial impact on the stormwater management services which are provided by council?	Yes ☐	No ☒
Are the works likely to generate traffic to an extent that will strain the capacity of the existing road system in a local government area?	Yes ☐	No ☒
Will the works involve connection to a council owned sewerage system? If so, will this connection have a substantial impact on the capacity of the system?	Yes ☐	No ☒
Will the works involve connection to a council owned water supply system? If so, will this require the use of a substantial volume of water?	Yes ☐	No ☒
Will the works involve the installation of a temporary structure on, or the enclosing of, a public place which is under local council management or control? If so, will this cause more than a minor or inconsequential disruption to pedestrian or vehicular flow?	Yes ☐	No ☒
Will the works involve more than a minor or inconsequential excavation of a road or adjacent footpath for which council is the roads authority and responsible for maintenance? Consultation with LSC has been summarised in Section 2.4.2 below and appended as Appendix F.	Yes ☒	No ☐
Is there a local heritage item (that is not also a state heritage item) or a heritage conservation area in the study area for the works? If yes, does a heritage assessment indicate that the potential impacts to the heritage significance of the item/area are more than minor or inconsequential?	Yes ☐	No ☒
Is the proposal within the coastal vulnerability area and inconsistent with a certified coastal management program applying to that land?	Yes ☐	No ☒
Are the works located on flood liable land? If so, will the works change flooding patterns to more than a minor extent? The proposed works at EA9 have potential to be located within “Low Hazard” flood liable land under 1% AEP (1-in-100 year) Flood Conditions as part of the Leeton Shire Council Flood Mapping. As such the proposed works at EA9 will not impact flooding patterns in more than a minor extent.	Yes ☒	No ☐

Table 2-3 Consultation required with other public authorities

Is consultation with a public authority (other than Council) required under sections 2.13, 2.15 and 2.16 of the SEPP (Transport and Infrastructure)?		
Are the works located on flood liable land? (to any extent) **If so, do the works comprise more than minor alterations or additions to, or the demolition of, a building, emergency works or routine maintenance?** As above.	Yes ☒	No ☐
Are the works adjacent to a national park, nature reserve or other area reserved under the *National Parks and Wildlife Act 1974*, or on land acquired under that Act?	Yes ☐	No ☒
Are the works on land in Zone C1 National Parks and Nature Reserves or in a land use zone equivalent to that zone?	Yes ☐	No ☒
Do the works include a fixed or floating structure in or over navigable waters?	Yes ☐	No ☒
Are the works for the purpose of residential development, an educational establishment, a health services facility, a correctional facility or group home in bush fire prone land?	Yes ☐	No ☒
Would the works increase the amount of artificial light in the night sky and that is on land within the dark sky region as identified on the dark sky region map? (Note: the dark sky region is within 200 kilometres of the Siding Spring Observatory)	Yes ☐	No ☒
Are the works on buffer land around the defence communications facility near Morundah? (Note: refer to Defence Communications Facility Buffer Map referred to in clause 5.15 of Lockhart LEP 2012, Narrandera LEP 2013 and Urana LEP 2011).	Yes ☐	No ☒
Are the works on land in a mine subsidence district within the meaning of the *Mine Subsidence Compensation Act 1961*?	Yes ☐	No ☒
Are the works on, or reasonably likely to have an impact on, a part of the Willandra Lakes Region Work Heritage Property?	Yes ☐	No ☒
Are the works within a Western City operational area specified in Schedule 2 of the *Western Parkland City Authority Act 2018* with a capital value of $30 million or more?	Yes ☐	No ☒

Table 2-4 Notification of council and occupiers of adjoining land

Do Council and occupiers of adjoining land need to be notified under section 2.111 of the SEPP (Transport and Infrastructure)?		
Does the proposal include a car park intended for the use by commuters using regular bus services?	Yes ☐	No ☒
Does the proposal include a bus depot?	Yes ☐	No ☒
Does the proposal include a permanent road maintenance depot or associated infrastructure, such as garages, sheds, tool houses, storage yards, training facilities and workers amenities?	Yes ☐	No ☒

2.4.2. Other agency and community engagement

Table 2-5 Consultation with Leeton Shire Council (LSC) assessing potential impacts due to proposed works

TI SEPP Consultation Requirements	Impacts	Consultation Details	Consultation Responses/Outcomes
Leeton Shire Council (LSC)	Development with impacts on council-related infrastructure or services	Murrumbidgee Irrigation Project Managers and Communications team discussed the UCP Project on multiple occasions with Leeton Shire Council (LSC) Officers between March and June 2025. Specifically, a meeting was held on 13 June 2025 and presented the UCP impacts on Leeton Shire Council managed land. Items discussed included: • Outlining key environmental concerns in letter provided to MI at the meeting which including biodiversity dependent on the irrigation channels.	• MI noted environmental concerns that are covered in the REF process, which would be approved by MI under the TISEPP approval pathway. • LSC and MI noted that some groups may not be supportive of removing the channels that support biodiversity, however no concerns have been received to date. • MI agreed to review the difference between flood prone land versus flood liable land and report back to LSC. • MI agreed to provide the results of silt testing at each environmental area to LSC and if not contaminated will

TI SEPP Consultation Requirements	Impacts	Consultation Details	Consultation Responses/Outcomes
		• Flood prone land • Silt management, placement, contamination and odour. • Channel banks, flood mitigation and finished levels • Post construction remediation • Official structures across pipelines • Use of channel water for emergency responses • Exposed LSC asset remaining exposed above ground, requiring bollard or similar protection once the pipeline installed. A formal letter was also provided to LSC, refer Appendix F.	allow MI to leave silt on LSC land. LSC would like to see the list of analytes before testing. Also indicated that the channels would be dewatered to reduce decaying organic matter and the odour. • MI proposed the finish pipeline level would be 100+mm than the highest point in road, to provide flood protection and discussed liability of impacts. • MI and LSC will work together to confirm final surface levels near roads. • MI indicated that remediation would be undertaken according to standards and guidelines such as fence reinstatement • As per the LSC guidelines - MI agreed fill used in Leeton from Roaches would not require VENM/ENM testing and a level 3 arborist clearance certificate was required for contractors impacting trees. • UCP Design plans would be submitted to Council.

Consultation with LSC by Murrumbidgee Irrigation (MI) was undertaken to further assess and inform potential associated risks and impacts to council managed reserve as a result of proposed construction works at EA9.

At this stage, consultation with private stakeholders was not required as the proposed works are located within MI or LSC managed land. Consultation and notification in relation to traffic and noise would be undertaken prior to commencement of works.

3. Environmental assessment

This Section provides a detailed description of the potential environmental impacts associated with the proposed works. All aspects of the environment potentially impacted upon by the proposed works are considered. This includes consideration of the factors specified in s171 of the Environmental Planning and Assessment Regulation 2021.

The matters of national environmental significance under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) are also considered in Section 3.1 below. Site-specific safeguards and mitigation measures are provided to ameliorate the identified potential impacts.

3.1. Biodiversity

Table 3-1 Biodiversity

<table>
<tr><th colspan="3">Description of existing environmental and potential impacts</th></tr>
<tr><td>Have relevant database searches been carried out?
BioNet threatened species records within the locality
Regional vegetation mapping and BioNet Vegetation Classification database
NSW Seed portal for Plant Community Type (PCT) mapping
BioNet Vegetation Classification database
NSW WeedWise (DPI) website.
Commonwealth EPBC Act Protected Matters Search Tool (PMST)
NSW DPI Fisheries Spatial Data Portal.
Biodiversity Values Mapping showing areas of outstanding biodiversity value</td><td>Yes ☒</td><td>No ☐</td></tr>
<tr><td>Did the database searches identify any endangered ecological communities, threatened flora and/or threatened or protected fauna, or migratory species in or within the vicinity of the proposed works? Both Commonwealth and State listed matters must be considered.
<table>
<tr><th>Scientific and common name</th><th>Status *</th><th>Type of listing (BC Act or EPBC Act)</th><th>Distance from works</th><th>Potential impacts</th></tr>
<tr><td>Southern Bell Frog (Litoria</td><td>E under NSW BC Act
V under</td><td>BC Act
EPBC Act</td><td>Approx. 40km south at Murrumbidgee</td><td>Southern Bell Frog could potentially use the channel for habitat, and adjacent areas to the channel, as foraging habitat. The impacts to this</td></tr>
</table></td><td>Yes ☒</td><td>No ☐</td></tr>
</table>

Description of existing environmental and potential impacts						
raniformis)	Commonwealth EPBC Act		River	species without avoidance of works to the existing channel would potentially increase the impact. If the new pipeline is constructed adjacent to the existing channel, in conjunction with conducting these works outside of the *L. raniformis'* breeding period (September-April) the potential impact can be significantly may be reduced.		
**V= vulnerable, E = endangered*						
Does the proposal involve pruning, trimming or removal of any tree/s? It is possible pruning, trimming or removal of trees would be required for the installation of new pipelines.					Yes ☒	No ☐
Is the proposal likely to impact nationally listed threatened species, ecological communities or migratory species? Southern Bell Frog listed under EPBC Act					Yes ☒	No ☐
Would the proposal require the removal of any other vegetation? Discrete patches of exotic grassland within proposed works / laydown areas. The state vegetation mapping within the proposed works area is shown in Figure 3-1.					Yes ☒	No ☐
Would the proposal require the removal of any tree hollows?					Yes ☐	No ☒
Are there any known areas of outstanding biodiversity value or areas mapped as 'littoral rainforest' or 'coastal wetland' under chapter 2 of SEPP (Resilience and Hazards) in or within the vicinity of the proposed work?					Yes ☐	No ☒
Would the proposal provide any additional barriers to the movement of wildlife? Impacts would be minor and temporary. Dewatering of the existing channels would potentially impact the Southern Bell Frog by limiting or preventing movement across the channels following dewatering. An allowable time of two weeks following dewatering of existing earthen channels or 1-2 days for existing concrete channels would encourage the Southern Bell Frog offsite.					Yes ☒	No ☐
Would the proposal disturb any natural waterways or aquatic habitat? The existing channels could potentially use the channels for habitat, and adjacent areas to the channel, as foraging habitat. The impacts are considered to be minimal and discrete					Yes ☒	No ☐

Description of existing environmental and potential impacts		
disturbances.		
Would the proposal impact (directly or indirectly) any potential microbat roosting or breeding habitat such as on bridges and culverts?	Yes ☐	No ☒

3.1.1. Biodiversity detailed assessment

A Biodiversity Assessment (BA) (as summarised below) was undertaken for the proposed works at EA9. This BA included a search of all the relevant searches as detailed above, as well as a singular Test of Significance (ToS) and Assessment of Significance (AoS) for the Southern Bell Frog. These are attached as Appendix G.1 and Appendix G.2

Potential impacts

There are no hollow-bearing trees (HBTs), visible logs or fallen timber, rocky outcrops, or natural waterways that would provide valuable habitat to threatened species. No direct impacts to any threatened species are expected, with the exception of threatened birds, such as Grey Falcon, Australasian Bittern and Southern Whiteface, that would use the channel for foraging habitat. However, as birds are more mobile than most species, these impacts are considered negligible.

Southern Bell Frog (*Litoria raniformis*) could potentially use the channel for habitat, and adjacent areas to the channel, as foraging habitat. There would potentially be impacts to the species if the proposed works are to be conducted within the existing channels, if required.

If the new pipeline is constructed within the existing channel, it is assumed that the channel will be drained prior to works commencing. The potential impacts to the species could be reduced by conducting these works outside of the *L. raniformis'* breeding period, as well as implementing the safeguards and mitigation measures relating to dewatering as detailed in Section 3.1.2 below.

The breeding period can be shorter if conditions are not ideal. As a water channel is not a permanent source of water, this would be considered not ideal habitat, and therefore the frogs use of the channel as breeding habitat would be dependent on if the channel held water for long enough within September-April to facilitate breeding.

Test of Significance

A Test of Significance (ToS) was complete for all threatened flora and fauna species and threatened ecological communities (TEC) listed under the NSW *BC Act* and found to have a potential likelihood of impact from the proposed development. The following were assessed:

- Southern Bell Frog (*Litoria raniformis*) – Endangered.

The ToS found that the proposed development is not likely to have a significant impact on the Southern Bell Frog due to the lack of records within and near the proposed development and the limited habitat suitability that irrigation channels provide for the species. These areas would provide unsuitable breeding habitat due to the length of time that the irrigation channels hold water is not sufficient to allow growth of tadpoles to adulthood. The irrigation channels would provide limited foraging habitat due to the lack of aquatic vegetation

and the dominance of exotic vegetation, agricultural disturbed land and residential areas surrounding the proposed development.

Assessment of Significance

An Assessment of Significance (AoS) was complete for all threatened flora and fauna species and threatened ecological communities (TEC) listed under the commonwealth *EPBC Act* and found to have a potential likelihood of impact from the proposed development. The following were assessed:

- Southern Bell Frog (*Litoria raniformis*) – Vulnerable.

The Southern Bell Frog would have impacts to approximately 1.09ha of potentially suitable habitat within the proposed works area. Due to the following:

- the proposed works area is not considered to contain critical habitat
- the proposed works area is not considered to have an important population
- there is a lack of records indicating a lower likelihood of occupation.
- the irrigation channels are shallow, with flowing water
- the irrigation channels' vegetation is restricted to fringing terrestrial habitat which provides limited breeding habitat for the Southern Bell Frog.

The proposed works impacts to this species are not considered to be significant.

Figure 3-1 Plant Community Type (PCT) mapping for the proposed works at EA9

3.1.2. Safeguards and mitigation measures

To reduce impacts of the proposed works during construction, the following mitigation measures are recommended:

Vegetation

- Establishing a Tree Protection Zone (TPZ) around trees that will be retained but are adjacent to construction works
- All fallen timber and deadwood within the proposed works area should be retained or relocated to an adjacent area with the area.

Threatened species and migratory species

- Avoiding undergoing works (as far as practical) in Spring or Summer, which is when Southern Bell Frog are most active and the most likely to utilise the irrigation channels. As reasonable, undergo as much works in Autumn and Winter.
- If works are to be completed in Spring and Summer;
    a. a fauna spotter catcher can be on site to confirm if Southern Bell Frog is present, only if a recent, significant rise in water has occurred (a significant flooding event). Or;
    b. If rain events are not significant enough to create a rise in water that would retain water for at least a four-month period (a significant flooding event), no additional mitigation is required
- An allowable time of two weeks following dewatering of existing earthen channels or 1-2 days for existing concrete channels would encourage the Southern Bell Frog offsite.
- The Construction Environment Management Plan (CEMP) should include measures to make field staff aware of potential threatened fauna during works and understand the procedures if threatened fauna are detected.

Water quality

- Install appropriate sediment controls if there are areas of predicted sediment runoff.
- Soil stockpiles to be kept away from concentrated waterflow and covered if left for extended periods of time.
- Incorporate best management erosion and sediment control practices for the duration of the development.

Weeds and pest animals

- Ensure appropriate weed and pest controls are included in the CEMP.
- Ensure appropriate vehicle and footwear hygiene protocol is included in the CEMP.

Ensuring the vehicle and footwear hygiene is included in site inductions and toolbox talks.

3.2. Aboriginal cultural heritage

Table 3-2 Aboriginal cultural heritage

Description of existing environmental and potential impacts		
Would the proposal involve disturbance in any area that has not been subject to previous ground disturbances? The proposed works would comprise of excavation and pipeline works on land that has been subject to previous ground disturbance.	Yes ☐	No ☒
Has an online Aboriginal Heritage Information Management System (AHIMS) search been completed? On 18 March 2025, a search of the AHIMS database was undertaken over an area of approximately 1,400 km^2 centred on the proposed works area. The AHIMS Client Service ID was 986269. There were 106 Aboriginal sites, and no declared Aboriginal Places recorded within the search area. Sites located in the area included artefact scatters, modified trees, hearths, Aboriginal ceremony and dreaming, burials, PAD, shell and stone arrangements. There are no Aboriginal sites recorded within or in close proximity to the proposed works area (refer to Appendix H). The closest recorded sites are 700m to the south of the proposed works area These three sites are modified trees located next to what appears to be a water holding facility but may have been a natural waterbody prior to its current use.	Yes ☒	No ☐
Is there potential for the proposal to impact on any items of Aboriginal cultural heritage?	Yes ☐	No ☒
Would the proposal involve the removal of mature native trees? It is noted that pruning or removal of mature native trees may occur along the western boundary as part of the proposed works for EA9.	Yes ☒	No ☐

3.2.1. Detailed Aboriginal cultural heritage assessment

An Aboriginal Due Diligence Assessment (ADDA) was prepared for EA9 and is attached as Appendix H, in accordance with the sequence of steps identified in the NSW Office of Environment and Heritage's *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (OEH 2010). The Code of Practice provides a stepped approach to determine if an activity is likely to cause harm to an Aboriginal object, as defined by the *NSW National Parks and Wildlife Act 1974.*

The following table outlines the summary of assessment for each section of the proposed works in relation to the potential for Aboriginal heritage items to occur.

Table 3-3 Summary of assessment for the proposed works in EA9

Location	Description	Conclusion
Approximately 530m along the northern end of Toorak Road	An existing channel is located on the western side of the road that is approximately 8m wide and is located 5 to 80m from the road edge.	Very low potential for Aboriginal heritage to occur between the road and channel on the western side of Toorak Road.
Laydown Area 50m x 100m	The Gogeldrie Branch Canal runs adjacent to the alignment for the first 230m and is approximately 24m from the road edge. Other site uses in proximity to the proposed works area are medium density residential and a vineyard is located at the southern end. The laydown area is located within a cleared section of private property with channels on the western and eastern sides. The area is bordered by residential properties to the north and south. There is one native tree on the southeastern corner of the laydown area.	Low potential for Aboriginal heritage to occur within the laydown area.

In accordance with the process outlined in the Code of Practice this assessment has found that the potential for the proposed work activities in EA9 to disturb Aboriginal heritage objects or sensitive landscape features is low although, it cannot be entirely discounted in those portions of adjacent land that have far less disturbances. There are no previously recorded AHIMS sites within or in close proximity to the proposed works areas. Although it has been shown in the region that the landform on which the proposed works area is located has some potential to contain Aboriginal objects, the level of disturbance reduces the degree of potential of any in situ cultural material or deposits being present.

Due to previous disturbance from the current channel, roads and other infrastructure as well as house construction it is unlikely that Aboriginal objects will be located within the proposed works area of EA9.

3.2.2. Safeguards and mitigation measures

The proposed work can proceed with caution with the following recommendations:

- One old growth native tree could only be assessed from the road as it is located on private property. This tree will require a thorough visual inspection prior to any proposed impacts.
- The laydown area originally marked within EA9 was not assessed as it was removed from the scope of works for the visual inspection. If this laydown area is still required, it will require a visual inspection prior to impacts.
- All other works must be constrained to the assessed areas. Any activity proposed outside of the current assessment areas should be subject to assessment.
- Wherever possible, all works should be confined to those areas between the road and the channel on the western side of Toorak Road.
- If any items suspected of being Aboriginal in origin are discovered during the work, all work in the immediate vicinity must stop. The find will need to be assessed and if found to be an Aboriginal object must be reported to Heritage NSW.

MI is reminded that it is an offence under the *NSW National Parks and Wildlife Act 1974* to disturb, damage or destroy and Aboriginal object without a valid approval to do so.

3.3. Non-Aboriginal heritage

Table 3-4 Non-Aboriginal heritage

Description of existing environmental and potential impacts		
Have online heritage database searches been completed? • NSW Heritage database • Commonwealth Heritage List, established under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) • Australian Heritage Places Inventory • Local Environmental Plan(s) heritage items. Searches of the relevant heritage databases were carried out on 18 June 2025. There are no listed non-Aboriginal heritage items in proximity or within the proposed works area.	Yes ☒	No ☐
Are there any items of non-Aboriginal heritage or heritage conservation areas listed on relevant heritage databases/registers that are located within the vicinity of the proposal? The nearest non-Aboriginal heritage listed items are the LEP listed Cannery Office and Gardens – I48 and the Leeton Railway Station and Yard Group – I81, located approximately 1.2km east of the proposed works.	Yes ☐	No ☒
Is the proposal likely to impact trees that form part of a heritage listing or have other heritage value? While some tree pruning or removal may occur along Toorak Road, no trees consisting of any identified or listed local heritage item are likely to be impacted by the proposed works.	Yes ☐	No ☒
Is the proposal likely to occur in or near features that indicate potential archaeological remains? The proposed works are not likely to occur in or near features that indicate potential archaeological remains. The work would predominantly be carried out within the MI managed land or the operational road corridor, which would have undergone disturbance during construction of the original road. The compound/laydown locations are also proposed within existing highly disturbed agricultural areas. Therefore, it is also unlikely for the compound/laydown locations to occur in or near features that indicate potential archaeological remains. The safeguards as provided below and in Section 4 would be used to manage any potential impacts.	Yes ☐	No ☒

3.3.1. Safeguards and mitigation measures

In the event that any unexpected substantial intact historic archaeological relics of State or local significance are unexpectedly discovered during the proposed works, the following management protocols will be implemented:

- Any works at the identified heritage location will cease with an appropriate buffer zone of at least 20m to allow for the assessment and management of the find. All site personnel will be informed about the buffer zone with no further works to occur within the buffer zone.
- A heritage specialist shall be engaged to inspect and assess the item.
- For items determined to be historic relics, work must remain ceased in the affected area and the Heritage Council must be notified in writing. This is in accordance with Section 146 of the *Heritage Act 1977* (NSW).
- Depending on the nature of the discovery, additional assessment may be required prior to the recommencement of work in the area. At a minimum, any find should be recorded by an archaeologist. In the event of discovery of human remain, contact the local police immediately.

3.4. Soil

Table 3-5 Soil

Description of existing environmental and potential impacts		
Are there any known occurrences of salinity or acid sulfate soils in the area? Available NSW data sources do not indicate the presence of saline or acid sulfate soils in the area.	Yes ☐	No ☒
Does the proposal involve the disturbance of large areas (e.g., >2ha) for earthworks? The proposed works (as a worst-case) could require approximately 1ha of earthworks if the entirety of the pipeline would be new pipeline constructed adjacent to the existing channel. The final area of disturbance is likely to be significantly less. Disturbed soil would be replaced with backfilling of topsoil likely occur on completion of works.	Yes ☐	No ☒
Does the site have constraints for erosion and sedimentation controls such as steep gradients or narrow corridors? No, the proposed works and compound/laydown areas are located on relatively flat landscapes.	Yes ☐	No ☒
Are there any sensitive receiving environments that are located in or nearby the likely proposal area or that would likely receive stormwater discharge from the proposal? Sensitive receiving environments include (but are not limited to) wetlands, state forests, national parks, nature reserves, rainforests, drinking water catchments). The nearest mapped waterways are a 2nd order stream (named Guises Creek), and an unnamed 3rd order stream (of the Strahler stream order) located approximately 10km south and northeast respectively. There are no wetlands, state forests, national parks, nature reserves, rainforests or drinking water catchments within receiving distance of the proposed works.	Yes ☐	No ☒
Is there any evidence within or nearby the likely footprint of potential contamination? There was one contaminated site as listed on the EPA's Section 58 register, as of 18 June 2025. There are five contaminated sites listed on the EPA's Section 60 register for the town of Leeton, with the closest sites include Yenda Producers (formerly Incitec) on Canal Street and a former Fuel Depot, both located across the manmade channel and approximately 250m from the proposed works. The proposed works are unlikely to impact or disturb any contaminated soil from this site.	Yes ☐	No ☒

Description of existing environmental and potential impacts		
Is the likely proposal footprint in or nearby highly sloping landform? No, the proposed works and compound/laydown areas are located on relatively flat landscapes. Any risk of erosion or sedimentation would be minimal and mitigated with the below safeguards.	Yes ☐	No ☒
Is the proposal likely to result in more than 2.5ha (area) of exposed soil? The proposed works could require approximately 1ha of earthworks if the entirety of the pipeline would be new pipeline constructed adjacent to the existing channel. The final area of disturbance is likely to be significantly less. Exposed soil would be limited and temporary during the construction phase, with backfilling to occur on completion of the proposed works.	Yes ☐	No ☒
Potential impacts Excavated soils will be replaced on completion of the works, assuming no contamination is identified. Any erosion risks during excavation would be mitigated with the below safeguards.		

3.4.1. Safeguards and mitigation measures

- Site management will incorporate best management erosion and sediment control practices such as those found in the Department of Housing's "Blue Book" (4th Edition) (OEH, 2004) on erosion and sediment control including:
    - At the commencement of the works, and progressively during the work install the required erosion control and sediment measures
    - Regularly inspect erosion and sediment controls, particularly following rainfall.
    - Maintain a register of inspection and maintenance of erosion control and sediment capture measures, where the duration of works at a single location is more than one shift.
    - Ensure that machinery leaves the site in a clean condition to avoid tracking sediment onto public roads.
    - In all excavation activities, separate subsoils and topsoils to ensure that they are replaced in their natural configuration to assist revegetation
    - Manage works in consideration of heavy rainfall events
    - Areas of disturbed soil would be rehabilitated promptly and progressively during investigation works.
    - Ensure a spill procedure is in place
- If contaminated areas are encountered during construction, appropriate control measures will be implemented to manage the immediate risks of contamination. All other works that may impact on the contaminated area will cease until the nature and extent of the contamination has been confirmed and any necessary site-specific controls or further actions identified in consultation with relevant government agencies
- Classify all excavated material in accordance with the EPA Waste Classification Guidelines (EPA, 2014). Dispose of or reuse material in accordance with its waste classification

3.5. Waterways and water quality

Table 3-6 Waterways and water quality

Description of existing environmental and potential impacts		
Is the proposal located within, adjacent to or near a waterway? The nearest mapped waterways are a 2nd order stream (named Guises Creek), and an unnamed 3rd order stream (of the Strahler stream order) located approximately within 10km south and northeast respectively of the proposed works.	Yes ☐	No ☒
Is the location known to flood or be prone to water logging? The proposed works at EA9 have potential to be located within "Low Hazard" flood liable land under 1% AEP (1-in-100 year) Flood Conditions as part of the Leeton Shire Council Flood Mapping (Leeton Shire Council, 2019) As such the proposed works at EA9 will not impact flooding patterns in more than a minor extent.	Yes ☒	No ☐
Is the proposal located within a regulated catchments covered by chapter 6 of State Environmental Planning Policy (Biodiversity and Conservation) 2021 (SEPP (Biodiversity and Conservation))?	Yes ☐	No ☒
Would the proposal be undertaken on a bridge or ferry?	Yes ☐	No ☒
Is the proposal likely to require the extraction of water from a local water course (not mains)?	Yes ☐	No ☒
The proposed works involve the disturbance of soils by way excavation for the new pipelines. These works would pose minimal risk to any nearby waterways, and any impacts would be mitigated by following the below safeguards.		

3.5.1. Safeguards and mitigation measures

- No dirty water may be released into drainage lines and/or waterways
- Water quality control measures are to be used where relevant to prevent any materials (e.g., concrete, grout, sediment) entering drain inlets or waterways.
- Store any fuels, chemical and hazardous materials in secure, bunded areas and at least 40m from all waterways
- An emergency spill kit will be kept on site at all times. All staff are to be made aware of the location of the spill kit and trained in its use.

3.6. Noise and vibration

A distance-based assessment using the three noisiest plant was undertaken using TFNSW's Construction Noise Estimator Tool (CNET) to determine the extent of noise impacts on the locality. Due to the proximity to road corridors and nearby privately owned premises, the existing noise area is categorised as R2 noise category area.

Table 3-7 Noise and vibration

Description of existing environmental and potential impacts		

Are there any residential properties or other noise sensitive areas near the location of the proposal that may be affected by the work (i.e., church, school, hospital)?
 	
Noise modelling was undertaken for both daytime standard construction hours and nightworks, and illustrated in the Figure 3-2 and Figure 3-3 below. The noise modelling indicated that:
 	
• **During day construction hours:**
  ○ 3 receivers are within the Highly Intrusive Noise Catchment Area (NCA1)
  ○ 7 receivers are within the Moderately Intrusive NCA2
• **During nightworks:**
  ○ 8 receivers are within the Highly Intrusive NCA1
  ○ 9 receivers are within the Moderately Intrusive NCA2
  ○ 23 receivers are within the Clearly Audible NCA3
  ○ 42 receivers are within the Noticeable NCA4
 	
These would be expected to only be temporary, with the duration of works only being 6 – 12 weeks.
 	
Through implementing the safeguards and mitigation measures outlined below, the noise impacts for all identified receivers would be expected to be low.
	Yes ☒	No ☐

Is the proposal going to be undertaken only during standard working hours? Standard construction working hours for Leeton LGA are: • **Monday to Friday**: 7:00am to 6:00pm • **Saturday**: 8:00am to 1:00pm • **Sunday and Public Holidays**: No construction work is permitted It should be noted that a diesel pump may be required to operate outside the standard working hours (worst-case over a 24hr period), to dewater the existing channels or supply water.	Yes ☐	No ☒
Is any explosive blasting required for the proposal?	Yes ☐	No ☒
Would construction noise or vibration from the proposal affect sensitive receivers? The proposed works would have the potential to affect up to 10 sensitive receivers during standard construction hours and up to 82 outside of standard construction hours, as outlined	Yes ☒	No ☐

above. It is anticipated that any impacts would be able to be mitigated by the recommended measures, and any residual impacts would be minimal due to the short-term durations of the works. No vibration intensive equipment listed in the NSW *Construction Noise and Vibration Guideline* (CNVG) are expected to be used for this proposal. As such, the proposal would not result in vibration being experienced by any surrounding properties or infrastructure.		
Would operation of the proposal alter the noise environment for sensitive receivers? Following completion of the proposal, there would be no operational change in the noise environment.	Yes ☐	No ☒
Would the proposal result in vibration being experienced by any surrounding properties or infrastructure during operation?	Yes ☐	No ☒

3.6.1. Noise detailed assessment

Criteria

For construction, the background noise level (LA90) was determined by the method described in the *NSW Noise Policy* for Industry (EPA, 2017). The "Energy Average Noise Level" during construction activities, evaluated over a measurement period of 15 minutes. This is the main parameter used to assess the construction noise impacts. The LAeq (15 minute) construction noise objectives are based on an allowance margin above the LA90 background noise levels.

The Noise Mangement Level (NML) is determined by the existing noise area R2, which is 55dB(A) for standard hours works and 45dB(A) for night works.

Noise modelling was conducted around the investigation locations, with the areas around these points divided into the following Noise Catchment Areas (NCA) to represent the changes in ambient noise levels and to assess the levels of impact.

Table 3-8 Noise Catchments Areas

Day	
NCA	**Description**
NCA1 – Highly intrusive (15m)	Noise catchment area directly adjacent to the proposal site with direct line of sight to the construction works and predicted to be exposed to LAeq(15min) construction noise levels >30dB(A) above the applicable construction NML
NCA2 – Moderately intrusive (30m)	Noise catchment area predicted to be exposed to LAeq(15min) construction noise levels that are between 20dB(A) and 30dB(A) above the applicable NML.

NCA3 – Maximum Affected Distance (85m)	Noise catchment area predicted to be the maximum distance from the proposed works where noise level above background may be noticeable but would not require any additional measures for noise mitigation.
Night	
NCA1 – Highly intrusive (35m)	Noise catchment area directly adjacent to the proposal site with direct line of sight to the construction works and predicted to be exposed to LAeq(15min) construction noise levels >30dB(A) above the applicable construction noise management level (NML).
NCA2 – Moderately intrusive (95m)	Noise catchment area predicted to be exposed to LAeq(15min) construction noise levels that are between 30dB(A) and 20dB(A) above the applicable NML.
NCA3 – Cleary audible (220m)	Noise catchment area predicted to be exposed to LAeq(15min) construction noise levels that are between 20dB(A) and 10dB(A) above the applicable NML.
NCA4 – Noticeable (335m)	Noise catchment area predicted to be exposed to LAeq(15min) construction noise levels that are <10dB(A) above the applicable NML.

Potential impacts

Construction

Potential construction noise impacts have been measured from the proposed works maximum area (10m buffer either side of the proposed new pipeline). Noise catchment were identified, the extents of which are outlined in Table 3-8, and displayed in the figures below. Note that vehicle noise from the compound/laydown areas were not modelled, as the vehicle movements to/from the areas would be brief and would not occur in a standard back/forth fashion as with typical works within a road corridor.

Table 3-9 Residential noise estimates for works during standard construction work hours

NCA (Extention from propsoed works area)	NML (dB(A))	NML Exceedance dB(A)	Recommended additional mitigation measures*
Day			
NCA1 (15m)	55	>30	N, PC, RO
NCA2 (30m)	55	20<30	N
NCA3 (85m)	55	Nil	Nil

NCA (Extention from propsoed works area)	NML (dB(A))	NML Exceedance dB(A)	Recommended additional mitigation measures*
Night			
NCA1 (35m)	45	>30	N, PC, SN
NCA2 (95m)	45	20<30	N, PC, SN
NCA3 (220m)	45	10<20	N
NCA4 (335m)	45	5<10	N

*AA=Alternative Accomodation, SN=Specific Notifications, N=Notification, PC=Phone Call, RO=Respite Offer, R2=Respite Period 2, DR=Duration Respite

Day Time

As shown in Figure 3-2 here would be up to 10 sensitive receivers expected to receive noise impacts from construction works undertaken during standard construction hours. Of these receivers:

- 3 receivers are expected to experience highly intrusive noise impacts (>30 dB(A))
- 7 receivers are expected to experience moderately intrusive noise impacts (20<30 dB(A))

The safeguards and mitigation measures set out in Section 3.6.2 would readily mitigate the expected noise impacts. In addition to these measures, the following mitigation measures, as given by the CNET, should be implemented:

- For NCA1
    - Notification (letterbox drop or equivalent) of prior warning of works and potential disruptions can assist in reducing the impact on the community. Notification should be a minimum of five working days prior to the start of works.
    - Phone calls detailing relevant information made to identified/affected stakeholders, who have provided their contact details, within seven calendar days of proposed work.
    - Respite Offers should be considered where there are high noise and vibration generating activities near receivers. The purpose of such an offer is to provide residents with respite from an ongoing impact. This measure is evaluated on a project-by-project basis.
- For NCA2
    - Notification (letterbox drop or equivalent)

It should be noted that the noise assessment has been determined based off the noisiest plant in operation with clear line of sight to the receiver. The assessment does not take into consideration existing intervening vegetation, structures, and topography. As such, this provides a worst-case scenario with actual noise impacts expected to be lower than those identified.

Nighttime

As shown in Figure 3-3, there would be up to 82 sensitive receivers expected to receive noise impacts from construction works undertaken outside of the standard working hours. Of these receivers:

- 8 receivers are expected to experience highly intrusive noise impacts (>30 dB(A))
- 9 receivers are expected to experience moderately intrusive noise impacts (20<30 dB(A))
- 23 receivers are expected to experience clearly audible noise impacts (10<20 dB(A))
- 42 receivers are expected to experience noticeable noise impacts (5<10 dB(A))

While there are a large number of sensitive receivers for the nighttime works, the diesel pump would only be operating in discrete locations within the proposed works area, not along the entirety of the pipeline works. Therefore, only a small portion of the total identified sensitive receivers would be impacted and require notification as part of the nighttime construction works. However, as these discrete locations are not yet known, the entirety of the proposed works area was assessed to capture all potential affected sensitive receivers.

The safeguards and mitigation measures set out in Section 3.6.2 would readily mitigate the expected noise impacts. In addition to these measures, the following mitigation measures, as given by the CNET, should be implemented:

- For NCA1
    - Specific notification (letterbox or equivalent) to identified stakeholders no later than five days ahead of construction activities. Specific notification provides additional information when relevant and informative to more highly affected receivers.
    - Notification (letterbox drop or equivalent) of prior warning of works and potential disruptions can assist in reducing the impact on the community. Notification should be a minimum of five working days prior to the start of works.
    - Phone calls detailing relevant information made to identified/affected stakeholders, who have provided their contact details, within seven calendar days of proposed work.
    - Due to the short duration of works, other measures such as verification monitoring, respite periods and duration reductions are not considered practical mitigation options as these would extend the overall duration of works and subsequent noise impacts.
- For NCA2
    - Specific notification (letterbox or equivalent) to identified stakeholders no later than five days ahead of construction activities. Specific notification provides additional information when relevant and informative to more highly affected receivers.
    - Notification (letterbox drop or equivalent) of prior warning of works and potential disruptions can assist in reducing the impact on the community. Notification should be a minimum of five working days prior to the start of works.
    - Phone calls detailing relevant information made to identified/affected stakeholders, who have provided their contact details, within seven calendar days of proposed work.
    - Again, other mitigation measures are not considered practical for NCA2
- For NCA3
    - Notification (letterbox drop or equivalent) of prior warning of works and potential disruptions can assist in reducing the impact on the community. Notification should be a minimum of five working days prior to the start of works.
- For NCA4
    - Notification (letterbox drop or equivalent) of prior warning of works and potential disruptions can assist in reducing the impact on the community. Notification should be a minimum of five working days prior to the start of works.

It should be noted that the noise assessment has been determined based off the noisiest plant operation with clear line of sight to the receiver. The assessment does not take into consideration existing intervening

vegetation, structures, and topography. As such, this provides a worst-case scenario with actual noise impacts expected to be lower than those identified.

Operation

As the proposed works would not result in any permanent structures above natural ground level or change to existing structures, there would be no change in the operational noise or vibration environments.

Note this scenario is calculated as a worst-case situation and it is unlikely that the diesel pumps would be operated outside of the standard working areas, as such the above noise assessment is capturing a worst-case scenario.

Figure 3-2 Noise catchment areas – standard construction work hours

Figure 3-3 Noise catchment areas – standard construction work hours (nighttime)

3.6.2. Safeguards and mitigation measures

- Work hours are defined in Section 2.1.6, and are as follows
    - **Monday to Friday**: 7:00am to 6:00pm
    - **Saturday**: 8:00am to 1:00pm
    - **Sunday and Public Holidays**: No construction work is permitted
- Implementation of the above recommended additional mitigation measures for receivers affected by standard construction work hours (daytime):
    - Notification in the form of letter box drops for affected receivers in NCA1 and NCA2
    - Phone calls for affected receivers in NCA1
    - Respite Offer for affected receivers in NCA1
- Implementation of the above recommended additional mitigation measures for receivers affected by outside of standard construction work hours (nighttime):
    - Prior approval from MI Project Manager for all works outside of standard construction work hours
    - Notification and specific notification in the form of letter box drops for affected receivers in NCA1 and NCA2
    - Phone calls for affected receivers in NCA1
- Ensuring that noisy plant and equipment are not operated simultaneously where avoidable.
- Switching off plant and equipment when not in use.
- Consider the use of non-tonal reverse beepers and ambient sensitive alarms (that adjust noise output relative to the ambient level) where practicable.
- All employees, contractors and subcontractors are to receive an environmental induction. The induction must at least include:
    - All project specific and relevant standard noise and vibration mitigation measures
    - Relevant licence and approval conditions
    - Permissible hours of work
    - Any limitations on high noise generating activities
    - Location of nearest sensitive receivers
    - Construction employee parking areas
    - Designated loading / unloading areas and procedures
    - Site opening/closing times
    - Environmental incident procedures

3.7. Landscape character and visual amenity

Table 3-10 Landscape character and visual amenity

Description of existing environmental and potential impacts		
Is the proposed work over or near an important physical or cultural element or landscape? (For example, heritage items and areas, distinctive or historic built form, National Parks, conservation areas, scenic highways etc.) As stated in Section 3.3, The nearest non-Aboriginal heritage listed items are the LEP listed Cannery Office and Gardens – I48 and the Leeton Railway Station and Yard Group – I81, located approximately 1.2km east of the proposed works. As works would be restricted to MI managed land or within the road corridor, there is little risk of impacts to the above listed non-Aboriginal heritage items from the proposed works.	Yes ☐	No ☒
Would the proposal obstruct or intrude upon the character or views of a valued landscape or urban area? (For example, locally significant topography, a rural landscape or a park, a river, lake or the ocean or a historic or distinctive townscape or landmark) The proposed works would not result in the construction of any new structures or features that would obstruct or intrude on the character or views of local landscapes. The works would also be temporary, with no lasting impact after the works are complete	Yes ☐	No ☒
Would the proposal require the removal of mature trees or stands of vegetation, either native or introduced? It is noted that pruning or removal of mature native trees may occur along the western boundary as part of the proposed works for EA9.	Yes ☒	No ☐
Would the proposal result in large areas of shotcrete visible from the road or adjacent properties?	Yes ☐	No ☒
Would the proposal involve new noise walls or visible changes to existing noise walls?	Yes ☐	No ☒
Would the proposal involve the removal or reuse of large areas of road corridor, landscape, either verges or medians?	Yes ☐	No ☒
Would the proposal involve substantial changes to the appearance of a bridge (including piers, girders, abutments and parapets) that are visible from the road or residential areas?	Yes ☐	No ☒

Description of existing environmental and potential impacts		
If involving lighting, would the proposal create unwanted light spillage on residential properties at night (in construction or operation)?	Yes ☐	No ☒
Would any new structures or features to be constructed, result in over shadowing to adjoining properties or areas?	Yes ☐	No ☒
There would a small impact to landscape character or visual amenity as a result of the proposed works. This would be temporary and limited to the construction period and would not have any lasting impacts on landscape character or visual amenity following the completion of works.		

3.7.1. Safeguards and mitigation measures

- Contain all work within the boundaries designated on the site plan
- Work areas shall be maintained in an orderly manner
- On completion of the works, all vehicles, construction equipment, materials, and refuse relating to the works shall be removed from the work site(s) and any adjacent affected areas
- All exposed areas shall be stabilised with the excavated topsoil being placed back on site as soon as possible. Remove temporary erosion and sediment controls from the site once landforms have been assessed as stable.

3.8. Air quality and climate change

Table 3-11 Air quality

Description of existing environmental and potential impacts		
Is the proposal likely to result in large areas (>2ha) of exposed soils? The proposed works could require approximately 1ha (worst-case scenario) of earthworks if the entirety of the pipeline would be new pipeline constructed adjacent to the existing channel. The final area of disturbance is likely to be significantly less. Disturbed soil would be replaced with backfilling of topsoil likely occur on completion of works.	Yes ☐	No ☒
Are there any dust-sensitive receivers located within the vicinity of the proposal during the construction period? Depending on the specific location of the proposed works for EA9, soil moisture and weather conditions, there is potential for dust generation resulting in a localised nuisance. The potential impact has been addressed by the proposed safeguards.	Yes ☒	No ☐
Is there likely to be an emission to air during construction? Dust would be produced by the excavations undertaken as part of the proposed works. Similarly, there would be some particulate emissions from the use of plant and equipment. The potential impact from emissions is expected to be low given the works are not in a high-density residential area and areas of exposed soil would be limited. Any residual impacts from emissions would be managed with the appropriate implementation of safeguards listed below.	Yes ☒	No ☐

Table 3-12 Climate change

Description of existing environmental and potential impacts		
Is the proposal located in an area likely to be permanently or tidally inundated in the future or subject to increased duration and intensity of flooding?	Yes ☐	No ☒
Have opportunities for reduced energy consumption during construction and operation been considered. The proposed works will be for a limited time, and as such opportunities for reducing the energy consumption are limited.	Yes ☒	No ☐
Greenhouse gas emissions sources during construction are likely to be largest from: • Transporting materials to site.		

Description of existing environmental and potential impacts
• Operation of plant and equipment. There would be no operational sources of greenhouse gasses arising from the proposed works.

3.8.1. Safeguards and mitigation measures

- Works are not to be carried out during strong winds or in weather conditions where high levels of dust or air borne particulates are likely
- Vegetation or other materials are not to be burnt on site
- Vehicles and vessels transporting waste or other materials that may produce odours or dust are to be covered during transportation
- Vehicles and equipment are to be maintained in good working order
- Measures (including watering or covering exposed areas) are to be used to minimise or prevent air pollution and dust
- Do not leave vehicles idling.

3.9. Traffic and transport

Table 3-13 Traffic and transport

Description of existing environmental and potential impacts		
Is the proposal likely to result in detours or disruptions to traffic flow (vehicular, cycle and pedestrian) or access during construction? Minor traffic disruptions may occur when plant and equipment is transported to the proposed works location, and when construction activities are conducted across Stafford Road and Sidlow Road. A Traffic Management Plan (TMP) would be prepared and would likely involve speed reductions or short lane closures around work sites. Traffic would remain able to pass work sites and access nearby properties throughout the duration of works. Traffic control measures would be demobilised at the conclusion of each work shift.	Yes ☒	No ☐
Is the proposal likely to result in detours or disruptions to traffic flow (vehicular, cycle and pedestrian) or access during operation? No operational changes would occur once works are complete.	Yes ☐	No ☒
Is the proposal likely to affect any other transport nodes or transport infrastructure (e.g., bus stops, bus routes) in the surrounding area? Or result in detours or disruptions to traffic flow (vehicular, cycle and pedestrian) or access during operation? No transport nodes, or vehicular, cycle or pedestrian access would be affected during operation, and no changes would be present following completion of the proposal.	Yes ☐	No ☒
The proposed works may have minor impacts on traffic during contruction and the delivery of plant equipment, but the proposal would not permanently alter any existing traffic arrangements during operation. Any impacts would be mitigated by the implementation of the below safeguards.		

3.9.1. Safeguards and mitigation measures

- Where possible, current traffic movements and property access are to be maintained during the construction works. Any disturbance is to be minimised to prevent unnecessary traffic delays.
- A Traffic Management Plan (TMP) will be prepared in accordance with the relevant guidelines and procedures.

3.10. Socio-economic

Table 3-14 Socio-economic

Description of existing environmental and potential impacts		
Is the proposal likely to impact on local business?	Yes ☐	No ☒
Is the proposal likely to require any property acquisition? The proposed works would not require any property acquisition; however, access may be required to a number of private lots to undertake the works. Access agreements must be sought by all property owners.	Yes ☒	No ☐
Is the proposal likely to alter any access for properties (either temporarily or permanently)? Temporary access restrictions may apply where access culverts are removed and replaced with pipeline infrastructure within the same day. MI customer engagement will negotiate timing with affected customers.	Yes ☒	No ☐
Is the proposal likely to alter any on-street parking arrangements (either temporarily or permanently)? Temporary alterations to on street parking may apply to along Toorak Road as part of the construction works at EA9 due to underboring on the southern section of Toorak Road.	Yes ☒	No ☐
Is the proposal likely to change pedestrian movements or pedestrian access (either temporarily or permanently)? As outlined in Section 3.9, there may be some temporary traffic, including pedestrian traffic) disruptions on Toorak Road when construction works are required within the road corridor. There would be no permanent impacts on pedestrian movements.	Yes ☒	No ☐
Is the proposal likely to impact on any items or places of social value to the community (either temporarily or permanently)?	Yes ☐	No ☒
Is the proposal likely to reduce or change visibility of any businesses, farms, tourist attractions or the like (either temporarily or permanently)? No permanent changes to landscape would arise from the proposed works.	Yes ☐	No ☒
Is the proposal likely to impact trees planted by a community group, Landcare group or by council or a tree that is a memorial or part of a memorial group	Yes ☐	No ☒

Description of existing environmental and potential impacts		
e.g., has a plaque?		
Is the proposal likely to impact trees that form part of a streetscape, an avenue or roadside planting?	Yes ☐	No ☒

3.10.1. Safeguards and mitigation measures

- Any complaints received during the undertaking of the works are to be recorded and addressed within a reasonable time
- Obtain appropriate landholder consent for works on private land.

3.11. Waste

Table 3-15 Waste

Description of existing environmental and potential impacts		
Is the proposal likely to generate >200 tonnes of waste material (contaminated and /or non-contaminated material)?	Yes ☐	No ☒
Is the proposal likely to require a licence from EPA?	Yes ☐	No ☒
Is the proposal likely to require the removal of asbestos?	Yes ☐	No ☒
The main waste streams would include small amounts of ashphalt and road base, excess soil and excavted material, and small amounts of construction piping material.		

3.11.1. Safeguards and mitigation measures

- Classify all excavated material in accordance with the EPA Waste Classification Guidelines (EPA, 2014). Dispose of or reuse material in accordance with its waste classification
- Waste material, other than vegetation mulch, is not to be left on site once the works have been completed (refer back to Section 3.4.1)
- Resource management hierarchy principles are to be followed (in accordance with the Waste Avoidance and Resource Recovery Act 2001):
    - Avoid unnecessary resource consumption as a priority
    - Avoidance is followed by resource recovery (including reuse of materials, reprocessing, recycling and energy recovery)
    - Disposal is undertaken as a last resort.

3.12. Cumulative impacts

Table 3-16 Cumulative impacts

Description of existing environmental and potential impacts		
Are there other projects and developments in the study area which could add to potential impacts in both construction and operation? A search of the Leeton Shire Council Development Applicant tracker and a search of the NSW Major Project Portal on the 18 June 2025 found no other projects or developments in the wider locality which would add to potential impacts arising from this proposed works. There is the potential that the proposed works in other areas of the broader UCP project would be undertaken concurrently with the proposed works for EA9. While this may constitute some cumulative impacts in relation to traffic and social, the works would be completed over a small timeframe of approximately 6 - 12 weeks. Therefore, the cumulative impacts are expected to be low.	Yes ☐	No ☒

3.12.1. Safeguards and mitigation measures

No additional safeguards are proposed.

4. Summary of proposed safeguards and mitigation measures

This section provides a summary of the site-specific environmental safeguards and management measures identified in described in Section 3 of this MWREF. These safeguards will be implemented to reduce potential environmental impacts throughout construction and operation. Any potential licence and/or approval requirements required prior to construction are also listed.

4.1. Safeguards and mitigation measures

Table 4-1 Summary of proposed safeguards and mitigation measures

Environmental factor	Safeguards	Relevant Section
Biodiversity	**Vegetation** • Establishing a Tree Protection Zone (TPZ) around trees that will be retained but are adjacent to construction works • All fallen timber and deadwood within the proposed works area should be retained or relocated to an adjacent area with the Proposal site. **Threatened species and migratory species** • Avoiding undergoing works (as far as practical) in Spring or Summer, which is when Southern Bell Frog are most active and the most likely to utilise the irrigation channels. As reasonable, undergo as much works in Autumn and Winter. • If works are to be completed in Spring and Summer; c. a fauna spotter catcher can be on site to confirm if Southern Bell Frog is present, only if a recent, significant rise in water has occurred (a significant flooding event). Or;	Section 3.1

Environmental factor	Safeguards	Relevant Section
	d. If rain events are not significant enough to create a rise in water that would retain water for at least a four-month period (a significant flooding event), no additional mitigation is required • An allowable time of two weeks following dewatering of existing earthen channels or 1-2 days for existing concrete channels would encourage the Southern Bell Frog offsite. • The Construction Environment Management Plan (CEMP) should include measures to make field staff aware of potential threatened fauna during works and understand the procedures if threatened fauna are detected. **Water quality** • Install appropriate sediment controls if there are areas of predicted sediment runoff. • Soil stockpiles to be kept away from concentrated waterflow and covered if left for extended periods of time. • Incorporate best management erosion and sediment control practices for the duration of the development. **Weeds and pest animals** • Ensure appropriate weed and pest controls are included in the CEMP. • Ensure appropriate vehicle and footwear hygiene protocol is included in the CEMP. • Ensuring the vehicle and footwear hygiene is included in site inductions and toolbox talks.	
Aboriginal heritage	• One old growth native tree could only be assessed from the road as it is located on private property. This tree will require a thorough visual inspection prior to any proposed impacts. • The laydown area originally marked within EA9 was not assessed as it was removed from the scope of works for the visual inspection. If this laydown area is still required it will require a visual inspection prior to impacts. • All other works must be constrained to the assessed areas. Any activity proposed outside of the current	Section 3.2

Environmental factor	Safeguards	Relevant Section
	assessment areas should be subject to assessment. • Wherever possible, all works should be confined to those areas between the road and the channel on the western side of Toorak Road. • If any items are suspected of being Aboriginal in origin are discovered during the work, all work in the immediate vicinity must stop. The find will need to be assess and if found to be an Aboriginal object must be reported to Heritage NSW. • MI is reminded that it is an offence under the *NSW National Parks and Wildlife Act 1974* to disturb, damage or destroy an Aboriginal object without a valid approval to do so.	
Non-Aboriginal heritage	In the event that any unexpected substantial intact historic archaeological relics of State or local significance are unexpectedly discovered during the proposed works, the following management protocols will be implemented: • A works at the identified heritage locations will cease with an appropriate buffer zone of at least 20m to allow for the assessment and management of the find. All site personnel will be informed about the buffer zone with no further works to occur within the buffer zone. • A heritage specialist shall be engaged to inspect and assess the item. • For items determined to be historic relics, work must remain ceased in the affected area and the Heritage Council must be notified in writing. This is in accordance with Section 146 of the *Heritage Act 1977* (NSW). • Depending on the nature of the discovery, additional assessment may be required prior to the recommencement of work in the area. At a minimum, any find should be recorded by an archaeologist. In the event of discovery of human remain, contact the local police immediately.	Section 3.3
Soil	• Site management will incorporate best management erosion and sediment control practices such as those found in the Department of Housing's "Blue Book" (4th Edition) (OEH, 2004) on erosion and sediment control including: o At the commencement of the works, and progressively during the work install the required erosion control	Section 3.4

Environmental factor	Safeguards	Relevant Section
	and sediment measures ○ Regularly inspect erosion and sediment controls, particularly following rainfall. ○ Maintain a register of inspection and maintenance of erosion control and sediment capture measures, where the duration of works at a single location is more than one shift. ○ Ensure that machinery leaves the site in a clean condition to avoid tracking sediment onto public roads. ○ In all excavation activities, separate subsoils and topsoils to ensure that they are replaced in their natural configuration to assist revegetation ○ Manage works in consideration of heavy rainfall events ○ Areas of disturbed soil would be rehabilitated promptly and progressively during investigation works. ○ Ensure a spill procedure is in place • If contaminated areas are encountered during construction, appropriate control measures will be implemented to manage the immediate risks of contamination. All other works that may impact on the contaminated area will cease until the nature and extent of the contamination has been confirmed and any necessary site-specific controls or further actions identified in consultation with relevant government agencies • Classify all excavated material in accordance with the EPA Waste Classification Guidelines (EPA, 2014). Dispose of or reuse material in accordance with its waste classification.	
Waterways and water quality	• No dirty water may be released into drainage lines and/or waterways • Water quality control measures are to be used where relevant to prevent any materials (e.g., concrete, grout, sediment) entering drain inlets or waterways. • Store any fuels, chemical and hazardous materials in secure, bunded areas and at least 40m from all waterways • An emergency spill kit will be kept on site at all times. All staff are to be made aware of the location of the spill kit and trained in its use.	Section 3.5
Noise and	• Work hours are defined in Section 2.1.6, and are as follows	Section 3.6

Environmental factor	Safeguards	Relevant Section
vibration	○ **Monday to Friday**: 7:00am to 6:00pm ○ **Saturday**: 8:00am to 1:00pm ○ **Sunday and Public Holidays**: No construction work is permitted • Implementation of the above recommended additional mitigation measures for receivers affected by standard construction work hours (daytime): ○ Notification in the form of letter box drops for affected receivers in NCA1 and NCA2 ○ Phone calls for affected receivers in NCA1 ○ Respite Offer for affected receivers in NCA1 • Implementation of the above recommended additional mitigation measures for receivers affected by outside of standard construction work hours (nighttime): ○ Prior approval from MI Project Manager for all works outside of standard construction work hours ○ Notification and specific notification in the form of letter box drops for affected receivers in NCA1 and NCA2 ○ Phone calls for affected receivers in NCA1 • Ensuring that noisy plant and equipment are not operated simultaneously where avoidable. • Switching off plant and equipment when not in use. • Consider the use of non-tonal reverse beepers and ambient sensitive alarms (that adjust noise output relative to the ambient level) where practicable. • All employees, contractors and subcontractors are to receive an environmental induction. The induction must at least include: ○ All project specific and relevant standard noise and vibration mitigation measures ○ Relevant licence and approval conditions ○ Permissible hours of work ○ Any limitations on high noise generating activities ○ Location of nearest sensitive receivers	

Environmental factor	Safeguards	Relevant Section
	○ Construction employee parking areas ○ Designated loading / unloading areas and procedures ○ Site opening/closing times Environmental incident procedures	
Landscape character and visual amenity	• Contain all work within the boundaries designated on the site plan • Work areas shall be maintained in an orderly manner • On completion of the works, all vehicles, construction equipment, materials, and refuse relating to the works shall be removed from the work site(s) and any adjacent affected areas • All exposed areas shall be stabilised with the excavated topsoil being placed back on site as soon as possible. Remove temporary erosion and sediment controls from the site once landforms have been assessed as stable.	Section 3.7
Air quality and climate	• Works are not to be carried out during strong winds or in weather conditions where high levels of dust or air borne particulates are likely • Vegetation or other materials are not to be burnt on site • Vehicles and vessels transporting waste or other materials that may produce odours or dust are to be covered during transportation • Vehicles and equipment are to be maintained in good working order • Measures (including watering or covering exposed areas) are to be used to minimise or prevent air pollution and dust • Do not leave vehicles idling.	Section 3.8
Traffic and transport	• Where possible, current traffic movements and property access are to be maintained during the construction works. Any disturbance is to be minimised to prevent unnecessary traffic delays.	Section 3.9

Environmental factor	Safeguards	Relevant Section
	• A Traffic Management Plan (TMP) will be prepared in accordance with the relevant guidelines and procedures.	
Socio-economic	• Any complaints received during the undertaking of the works are to be recorded and addressed within a reasonable time • Obtain appropriate landholder consent for works on private land.	Section 3.10

Waste	• Classify all excavated material in accordance with the EPA Waste Classification Guidelines (EPA, 2014). Dispose of or reuse material in accordance with its waste classification
	• Waste material, other than vegetation mulch, is not to be left on site once the works have been completed (refer to Section 3.4.1)
	• Resource management hierarchy principles are to be followed (in accordance with the Waste Avoidance and Resource Recovery Act 2001):
	  ○ Avoid unnecessary resource consumption as a priority
	  ○ Avoidance is followed by resource recovery (including reuse of materials, reprocessing, recycling and energy recovery)
	  ○ Disposal is undertaken as a last resort.
		Section 3.11

Cumulative impacts	• N/A	Section 3.12

4.2. Licensing and approvals

Table 4-2 Summary of licensing and approvals required

Instrument	Requirement	Timing
Water Act 1912 (s10 / s18F)	Licence and/or permit for construction or use of a 'work' (e.g., water conservation, irrigation, water supply, drainage or changing the course of a river) for certain purposes from DPE (Water).	Prior to start of the activity.
Roads Act 1993	Road Occupancy Licence (ROL) - Approval under Section 138 of the Roads Act from the appropriate road authority prior to works on roads or closures of lanes	Prior to work on roads.
Water Management Regulation 2018	The construction of a water pipe solely for conveying water from one place to another is exempt from water supply approval under the WM Regulation, provided the work is not on waterfront land other than a minor stream. A water supply work approval is not required for the proposal	Prior to start of the activity

5. Summary of impacts

Environmental factor	Potential impacts	Relevant Section	Need for further assessment? (Y/N)

Biodiversity	• No direct impacts to any threatened species are expected, with the exception of threatened birds, such as Grey Falcon, Australasian Bittern and Southern Whiteface, that would use the channel for foraging habitat. However, as birds are more mobile than most species, these impacts are considered negligible
	• Southern Bell Frog (*Litoria raniformis*) could potentially use the channel for habitat, and adjacent areas to the channel, as foraging habitat
	  ○ The ToS found that the proposed development is not likely to have a significant impact on the Southern Bell Frog due to the lack of records within and near the proposed development and the limited habitat suitability that irrigation channels provide for the species
	  ○ The AoS found that the proposed development is not likely to have a significant impact on the Southern Bell Frog due to the lack of records within and near the proposed development and the limited suitability that irrigation channels provide for the species
	• As such, the overall potential impact of the proposed works on biodiversity would be low.
		Section 3.1	N

Aboriginal heritage	• The potential for the proposed work activities in EA9 to disturb Aboriginal heritage objects or sensitive landscape features is low although, it cannot be entirely discounted in those portions of adjacent land that have far less disturbances. • There are no previously recorded AHIMS sites within or in close proximity to the proposed works areas. • The site survey did not identify any Aboriginal heritage items or sites within EA9 or associated compound/laydown areas. • As such, the overall potential impact of the proposed impacts on Aboriginal heritage would be low.	Section 3.2	N

Environmental factor	Potential impacts	Relevant Section	Need for further assessment? (Y/N)
Non-Aboriginal heritage	• Proposed works are unlikely to impact any non-Aboriginal heritages items or sites.	Section 3.3	N
Soil	• Approximately 1ha of earthworks could be required as part of the proposed works. Exposed soil would be limited and temporary during the construction phase, with backfilling to occur on completion of the proposed works. • The risk of soil erosion or sedimentation would be minimal with the incorporation of best management erosion and sediment control practices. • As such, the potential impacts to soil as a result of the proposed works would be low.	Section 3.4	N
Waterways and water quality	• The proposed works involve the disturbance of soils by way excavation for the new pipelines. These works would pose minimal risk to any nearby waterways, and any impacts would be mitigated outlined. • As such, the potential impacts to waterways and water quality as a result of the proposed works would be negligible.	Section 3.5	N

Noise and vibration	• There would be up to 10 senstive receivers expected to receiver noise impacts from construction works undertaken during standard construction hours. Of these receivers:
	  ○ 3 receivers are expected to experience highly intrusive noise impacts (>30 dB(A))
	  ○ 7 receivers are expected to experience moderately intrusive noise impacts (20<30 dB(A))
	• There would be up to 82 senstive receivers expected to receiver noise impacts from construction works undertaken outside standard construction hours. Of these receivers:
	  ○ 8 receivers are within the Highly Intrusive NCA1
	  ○ 9 receivers are within the Moderately Intrusive NCA2
	  ○ 23 receivers are within the Clearly Audible NCA3
	  ○ 42 receivers are within the Noticeable NCA4
	• The noise assessment have been determined based off the noisiest plant operation with clear line of
		Section 3.6	N

Environmental factor	Potential impacts	Relevant Section	Need for further assessment? (Y/N)
	sight to the receiver. The assessment does not take into consideration existing intervening vegetation, structures, and topography. This provides a worst-case scenario with actual noise impacts expected to be lower that those identified. • The duration of the proposed works would be approximately 6 – 12 weeks, and as such the noise impacts would be temporary and only fall within the standard construction work hours. • As such, with the implementation of appropriate safeguards and mitigation measures outlined, the potential noise impacts due to the proposed works would be low.		
Landscape character and visual amenity	• There would a small impact to landscape character or visual amenity as a result of the proposed works. This would be temporary and limited to the construction period and would not have any lasting impacts on landscape character or visual amenity following the completion of works. • As such, the potential impacts to landscape character and visual amenity as a result of the proposed works would be low.	Section 3.7	N
Air quality and climate	• The potential impact from emissions is expected to be low given the works are not in a high-density residential area and areas of exposed soil would be limited. Any residual impacts from emissions would be managed with the appropriate implementation of safeguards listed • The proposed works will be for a limited time, and there would be no operational sources of greenhouse gasses arising from the proposed works. • As such, the potential impacts to air quality and climate as a result of the proposed works would be low.	Section 3.8	N
Traffic and transport	• The proposed works may have minor impacts on traffic during contruction and the delivery of plant equipment, but the proposal would not permantly alter any existing traffic arrangements during operation. Any impacts would be mitigated by the implementation of the safeguards and mitigation measures listed. • As such, the potential impacts to traffic and transport as a result of the proposed works would be	Section 3.9	N

Environmental factor	Potential impacts	Relevant Section	Need for further assessment? (Y/N)
	low.		
Socio-economic	• There may be some temporary traffic, including pedestrian traffic) disruptions on Toorak Road when construction works are required within the road corridor. There would be no permanent impacts on pedestrian movements. • As such, the potential impacts to socio-economic matters as a result of the proposed works would be low.	Section 3.10	N
Waste	• The main waste streams would include small amounts of ashphalt and road base, excess soil and excavted material, and small amounts of construction piping material. • No contaminated waste material and/or the removal of abestos containing material is likely • As such, the potential impacts to waste as a result of the proposed works would be negligible.	Section 3.11	N
Cumulative impacts	• A search of the Leeton Shire Council Development Applicant tracker and a search of the NSW Major Project Portal on the 18 June 2025 found no other projects or developments in the wider locality which would add to potential impacts arising from this proposed works. • There is the potential that the proposed works in other areas of the broader UCP project would be undertaken concurrently with the proposed works for EA9. While this may constitute some cumulative impacts in relation to traffic and social, the works would be completed over a small timeframe of approximately 6 - 12 weeks. Therefore, the cumulative impacts are expected to be low. • As such, the potential cumulative impacts as a result of the proposed works would be low.	Section 3.12	N

5.1. Need for further assessment?

In considering the propoed works, this assessment has examined and taken into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of that activity as addressed in the MWREF and associated information. At this stage, no further assessment of any of the identfied environmental factors is considered warranted.

6. Conclusion

6.1. Justification for the proposed works

While the proposed works would potentially have some environmental impacts, the existing environmental values are well understood, and any potential impact can be ameliorated satisfactorily. It is considered that the proposed works are considered justifiable and acceptable for achieving the objectives of the works through:

- Significantly increasing customer service levels and system capacity
- Increasing regional productivity through water use efficiency
- Providing further security of water supply to towns and industry
- Investing in regional communities through local contractors
- Enhancing socio-economic outcomes by supplying water for urban green spaces, as well as providing the opportunity for local councils to deliver improved infrastructure
- A reduction in mosquito borne diseases
- Enhanced road safety
- Providing water recovery for the Murray Darling Basin through improved water use
- Investment in infrastructure that provides:
    - longer-term outcomes
    - multiple benefits
    - water recovery for the environment
- Underpinning long-term, climate change resilient primary production

6.2. Overall conclusion

This MWREF has been prepared for MI, to access the construction and operational environmental impacts of the proposed UCP works. The proposed works include 480m of new pipeline and 30m of existing pipeline requiring modification.

This MWREF has been prepared according to the requirements of Part 5 of the EP&A Act, specifying a "duty to consider environmental impact". It provides a full analysis of all environmental, economic, physical and social implications of the proposal.

The key environmental risks of the works have been identified as biodiversity, Aboriginal heritage and noise and vibration. A range of safeguards have been developed for the potential impacts identified. These would ensure that the negative impacts of the proposed works are avoided, mitigated or minimised as far as practical. With the effective implementation of the safeguards listed in this MWREF the potential impacts of the proposal are considered acceptable and justified and unlikely to generate a significant adverse impact.

7. Certification, review and decision

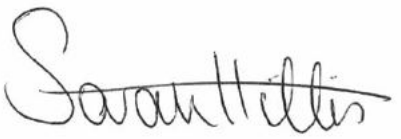
This minor works REF provides a true and fair review of the proposal in relation to its potential effects on the environment. It addresses, to the fullest extent possible, all matters affecting or likely to affect the environment as a result of the proposal.

Prepared by:

Signature 

Name:	Terence Miller
Position:	Environmental Planner
Company name:	NGH – A Fyfe Company
Date:	19/06/2025

Minor works REF reviewed by:

Signature 

Name:	Sarah Hillis
Position:	Regional Lead – Environmental Planning NSW
Company name:	NGH – A Fyfe Company
Date:	27/06/2025

Minor works REF approved by:

Signature

Name:	Brooke Amaro
Position:	Manager - Environmental Planning (Acting)
Company name:	Murrumbidgee Irrigation
Date:	4/7/2025

8. References

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Appendix A Concept plans

180 m
90
0
Map Scale 1:2,500 @ A3 Size

Legend

Remove/Decommission | Convert to drainage channel | New Pipeline | Existing Laterals

G:\Shared drives\Clients\Murrumbidgee Irrigation\Design for Urban Channels Pipeline Project\Design\GIS\PLOT FILE - MI - UCP Project.qgz, Environmental - Overview Layout, plotted by tombu, 03:11 pm, 17.06.2025

partnear

Murrumbidgee Irrigation	Urban Channels Project (UCP)	EA9 - Leeton Lateral 63	For Information	17.06.2025	Rev: A	P009

Appendix B Construction Methodology Types

MI UCP Enviro Approvals - Construction Methods

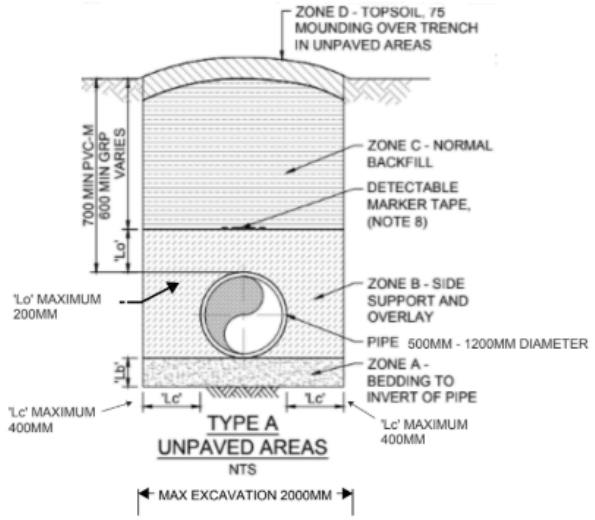
Summary: Murrumbidgee Irrigation UCP Project is undertaking piping and rationalisation of urban channels, funded as eligible activities under the Resilient Rivers Water Infrastructure Program and will deliver 2,541 ML of Water Entitlement for the environment. The project involves replacing approximately 50 km of aging concrete and earthen urban supply channels in and adjacent to existing channels, as well as 1.4 km of leaking pipeline, with new pipelines. The project also includes rationalisation of 33 escapes, removing and replacing approx. 500 customer outlets, 2 new pump stations, road and rail crossings and a reconfiguration of the network creating greater water delivery efficiency.

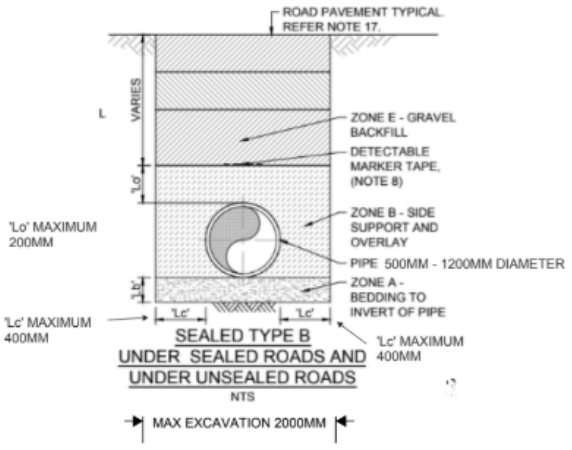
Purpose: Outline approach to the MI UCP Project construction methods for the purpose of guiding the Environmental Planning & Approval Consultants in the desktop assessment. Specifically helping the environmental consultants to determine the extent of disturbance that will take place during the project.

Types of Construction:

1. New pipeline - to be constructed within the specified new alignment.
2. Convert existing channels to new pipeline - new pipeline to be constructed within or beside the existing channel;
3. Remove and/or decommission existing channel - remove concrete channel and backfill channel to natural ground level.
4. Install new drainage channel - construct new channel at a single location - Yenda.
5. Retain-as-is, no construction.
6. Underboring to be utilised in sensitive areas where surface access is unavailable.

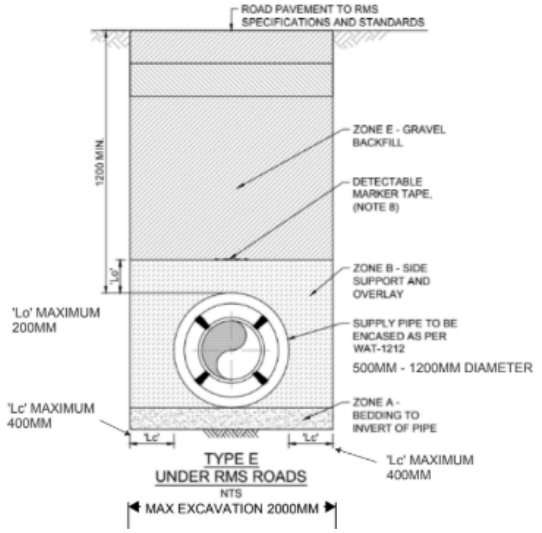
Construction Type 1 - New Pipeline





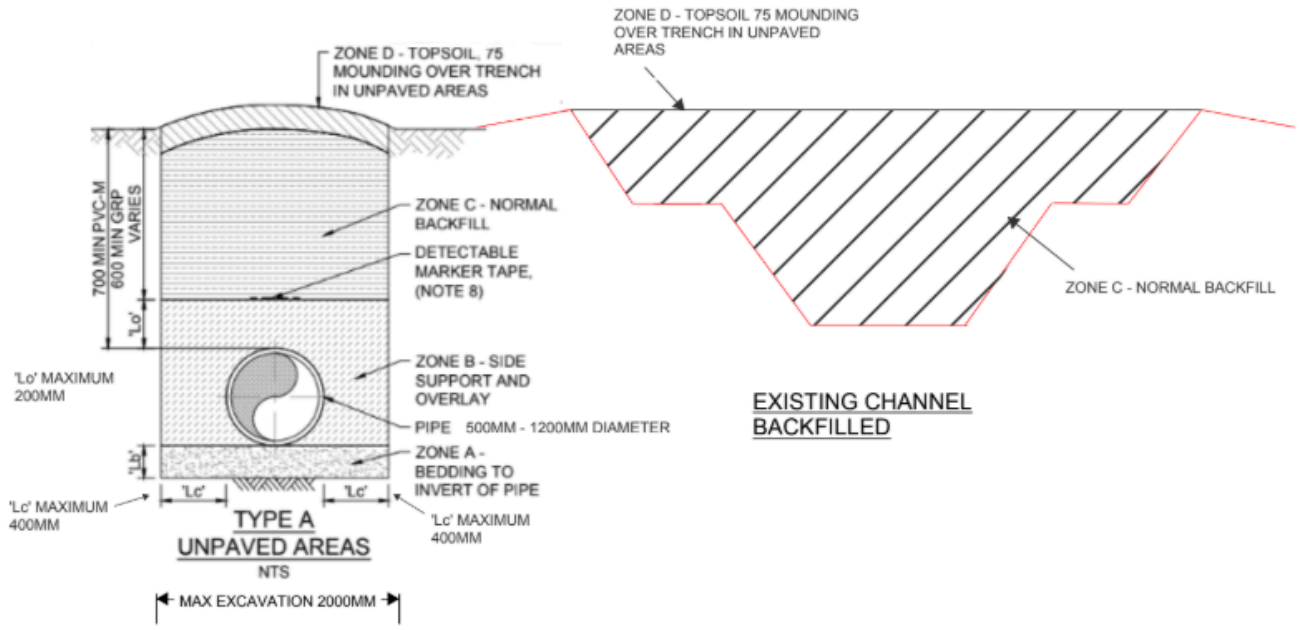
TYPES A, B & E STANDARD TRENCH DETAILS

PRESSURE CLASS AND MATERIAL	NOMINAL DIAMETER DN	MINIMUM CLEARANCE 'Lc'	MINIMUM OVERLAY 'Lo'	MINIMUM BEDDING 'Lb'
PN6 PVC	DN150 AND SMALLER	100	100	75
	DN200	150	150	100
	DN250			
	DN300			
	DN375	200	150	100
	DN450			
	DN500	350	150	150
	DN575	400	150	150
PN9 PVC	DN150 AND SMALLER	100	100	75
	DN200	150	150	100
	DN250			
	DN300			
	DN375	200	150	100
	DN450			
	DN500	300	150	150
	DN575			
PN6 SN10,000 GRP	DN600	300	150	150
	DN675			
	DN750			
	DN900			
	DN1000	350	200	150
	DN1100			
	DN1200			

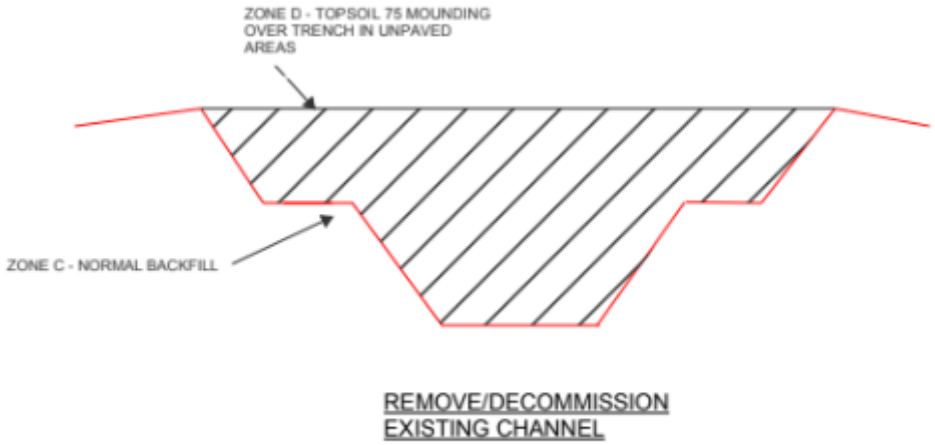


TRENCH BACKFILL MATERIALS SCHEDULE	
TYPE	DESCRIPTION
ZONE A	BEDDING - BEDDING SAND PARTICLE SIZE AND GRADING LIMITS AS PER AS2566.2 APPENDIX G. COMPACT TO A DENSITY INDEX OF AT LEAST 60% IN NON-TRAFFICABLE AREAS AND 70% IN TRAFFICABLE AREAS. REFER TO NOTE 6.
ZONE B	SIDE SUPPORT AND OVERLAY - MATERIAL AND COMPACTION REQUIREMENTS EQUAL TO BEDDING.
ZONE C	NORMAL BACKFILL - TRENCH SPOIL FREE OF STONES LARGER THAN 100mm, COMPACTED TO AT LEAST 95% STANDARD MAXIMUM DRY DENSITY RATIO IN ROAD VERGES AND 90% ELSEWHERE. LIFT THICKNESS AS PER NOTE 6.
ZONE D	TOP SOIL - SURFACE LAYER OF SOIL CONTAINING ORGANIC MATTER PREVIOUSLY STRIPPED PRIOR TO TRENCHING, UNCOMPACTED.
ZONE E	GRAVEL BACKFILL - CRUSHED ROCK CLASS 2 SUB-BASE MATERIAL WITH PLASTICITY INDEX LESS THAN 12, 100% PASSING 19 SIEVE AND 6-20% 0.075 SIEVE. COMPACTED TO AT LEAST 95% STANDARD MAXIMUM DRY DENSITY RATIO IN LAYERS NOT EXCEEDING 300.
PAVEMENT	PAVEMENTS FOR ROADS, TRACKS, FOOTPATHS OR DRIVEWAYS EITHER EXISTING (TO BE REINSTATED) OR PROPOSED. PAVEMENT REINSTATEMENT TO MATCH EXISTING CONDITION APPEARANCE AND FUNCTIONALITY OR BETTER.

Construction Type 2 - Convert Existing Channel to New Pipeline



Construction Type 3 - Remove and/or Decommission Existing Channel



Construction Type 4 - Install New Drainage Channel

A new drainage channel is to be constructed at Yenda. A pipeline for this drainage channel is to be constructed by digging the earth though farmers channel and pipework as per the Construction Type 1 mentioned above. The excavation depths to which the drain is going to be constructed depends on the design outcome. This drainage pipeline runs west from the end of lateral 89 into MI`s existing drainage next to Twigg Road.

Construction Type 5 - Retain-as-is

Retain existing pipeline.

Construction Type 5 - Underboring

Underboring to be utilised in sensitive areas where surface access is unavailable and/or impacts being avoided.

General Notes:

For the construction types from 1 to 4 the machinery used would be excavators of varying sizes as per the location which governs the allowable or practical size of excavators that can be used.

HDPE welding machines shall be used for different welding sizes. Pipes would be strung and welded. The welded pipes are then lowered into the excavated trenches. Bedding material shall be laid before the pipe is laid at the bottom of the pit. Where we have outlets and other fittings like valves, air valves, isolation valves involved Tee`s or specific will be welded on to the pipe as per the design specifications.

All the pipelines to be constructed will run across different roads. These will be sleeved into existing MI`s culverts if the design allows. New envelopers or other sleeving materials are to be constructed if the design does not allow to use the existing culvert infrastructure. There are two rail crossings where the pipelines must be sleeved or constructed in a different way if design does not allow using existing culverts under these rail lines.

Appendix C Database searches

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 05-Mar-2025

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	5
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	43
Listed Migratory Species:	18

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	13
Commonwealth Heritage Places:	None
Listed Marine Species:	30
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	1
Regional Forest Agreements:	None
Nationally Important Wetlands:	2
EPBC Act Referrals:	5
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)		[Resource Information]
Ramsar Site Name	Proximity	Buffer Status
Banrock station wetland complex	500 - 600km upstream from Ramsar site	In feature area
Fivebough and tuckerbil swamps	Within Ramsar site	In feature area
Hattah-kulkyne lakes	300 - 400km upstream from Ramsar site	In feature area
Riverland	400 - 500km upstream from Ramsar site	In feature area
The coorong, and lakes alexandrina and albert wetland	600 - 700km upstream from Ramsar site	In feature area

Listed Threatened Ecological Communities			[Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions	Endangered	Community may occur within area	In feature area
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community likely to occur within area	In feature area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community may occur within area	In feature area
Weeping Myall Woodlands	Endangered	Community likely to occur within area	In feature area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat known to occur within area	In feature area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Species or species habitat known to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat known to occur within area	In feature area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat known to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area	In feature area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat may occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat known to occur within area	In feature area
Lophochroa leadbeateri leadbeateri Major Mitchell's Cockatoo (eastern), Eastern Major Mitchell's Cockatoo, Pink Cockatoo (eastern) [82926]	Endangered	Species or species habitat known to occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat known to occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area
FISH			
[Bidyanus bidyanus](#) Silver Perch, Bidyan [76155]	Endangered	Species or species habitat known to occur within area	In feature area
[Craterocephalus fluviatilis](#) Murray Hardyhead [56791]	Endangered	Species or species habitat may occur within area	In buffer area only
[Galaxias rostratus](#) Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow [84745]	Critically Endangered	Species or species habitat may occur within area	In feature area
[Maccullochella macquariensis](#) Trout Cod [26171]	Endangered	Species or species habitat known to occur within area	In buffer area only
[Maccullochella peelii](#) Murray Cod [66633]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
[Macquaria australasica](#) Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area	In feature area
FROG			
[Crinia sloanei](#) Sloane's Froglet [59151]	Endangered	Species or species habitat may occur within area	In feature area
[Litoria raniformis](#) Southern Bell Frog, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat likely to occur within area	In feature area
MAMMAL			
[Nyctophilus corbeni](#) Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In feature area
PLANT			
Austrostipa wakoolica			
[66623]	Endangered	Species or species habitat may occur within area	In feature area
Brachyscome papillosa			
Mossgiel Daisy [6625]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Caladenia arenaria			
Sand-hill Spider-orchid [9275]	Endangered	Species or species habitat may occur within area	In feature area
Lepidium aschersonii			
Spiny Peppercress [10976]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Lepidium monoplocoides			
Winged Pepper-cress [9190]	Endangered	Species or species habitat likely to occur within area	In feature area
Sclerolaena napiformis			
Turnip Copperburr [11742]	Endangered	Species or species habitat may occur within area	In feature area
Swainsona murrayana			
Slender Darling-pea, Slender Swainson, Murray Swainson-pea [6765]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Swainsona plagiotropis			
Red Darling-pea, Red Swainson-pea [10804]	Vulnerable	Species or species habitat may occur within area	In feature area
REPTILE			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Aprasia parapulchella			
Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hemiaspis damelii			
Grey Snake [1179]	Endangered	Species or species habitat may occur within area	In feature area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Motacilla flava			
Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Arenaria interpres			
Ruddy Turnstone [872]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris melanotos			
Pectoral Sandpiper [858]		Species or species habitat known to occur within area	In feature area
Calidris pugnax as Philomachus pugnax			
Ruff [91256]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area	In feature area
Calidris subminuta Long-toed Stint [861]		Species or species habitat known to occur within area	In feature area
Charadrius bicinctus Double-banded Plover [895]		Species or species habitat known to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat known to occur within area	In feature area
Pluvialis fulva Pacific Golden Plover [25545]		Species or species habitat known to occur within area	In feature area
Tringa glareola Wood Sandpiper [829]		Species or species habitat known to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat known to occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Commonwealth Bank of Australia		
Commonwealth Land - Commonwealth Bank of Australia [15392]	NSW	In feature area
Commonwealth Land - Commonwealth Bank of Australia [15393]	NSW	In feature area
Commonwealth Land - Commonwealth Bank of Australia [15390]	NSW	In feature area
Commonwealth Land - Commonwealth Bank of Australia [15391]	NSW	In feature area
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [15397]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [15394]	NSW	In feature area
Commonwealth Land - Australian Telecommunications Commission [15395]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [15396]	NSW	In buffer area only
Defence		
Defence - LEETON ARES DEPOT ; 4/3 RNSWR ANNEX & POL STORE [10064]	NSW	In feature area
Defence - LEETON ARES DEPOT ; 4/3 RNSWR ANNEX & POL STORE [10065]	NSW	In feature area
Defence - LEETON ARES DEPOT ; 4/3 RNSWR ANNEX & POL STORE [10063]	NSW	In feature area
Defence - LEETON ARES DEPOT ; 4/3 RNSWR ANNEX & POL STORE [10062]	NSW	In feature area
Unknown		
Commonwealth Land - [16057]	NSW	In feature area

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Apus pacificus](#) Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
[Arenaria interpres](#) Ruddy Turnstone [872]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Bubulcus ibis as Ardea ibis](#) Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area	In feature area
[Calidris pugnax as Philomachus pugnax](#) Ruff [91256]		Species or species habitat known to occur within area overfly marine area	In feature area
[Calidris ruficollis](#) Red-necked Stint [860]		Species or species habitat known to occur within area overfly marine area	In feature area
[Calidris subminuta](#) Long-toed Stint [861]		Species or species habitat known to occur within area overfly marine area	In feature area
[Chalcites osculans as Chrysococcyx osculans](#) Black-eared Cuckoo [83425]		Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Charadrius bicinctus Double-banded Plover [895]		Species or species habitat known to occur within area overfly marine area	In feature area
Charadrius ruficapillus Red-capped Plover [881]		Species or species habitat known to occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat may occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Pluvialis fulva Pacific Golden Plover [25545]		Species or species habitat known to occur within area	In feature area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Stiltia isabella Australian Pratincole [818]		Species or species habitat known to occur within area overfly marine area	In feature area
Tringa glareola Wood Sandpiper [829]		Species or species habitat known to occur within area overfly marine area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat known to occur within area overfly marine area	In feature area

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Murrumbidgee Valley	National Park	NSW	In buffer area only

Nationally Important Wetlands [Resource Information]

Wetland Name	State	Buffer Status
Fivebough Swamp	NSW	In buffer area only
Tuckerbil Swamp	NSW	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Tuckerbil Wetland Hydrological Improvement Works	2024/09895		Assessment	In buffer area only
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
Fivebough and Tuckerbil Wetland Management and Maintenance, Leeton, NSW	2015/7446	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Row Labels	Sum of Number Individuals
A spear-grass	600
Austral Pillwort	
Australasian Bittern	429
Australian Bustard	13
Australian Painted Snipe	56
Barking Owl	31
Black Falcon	132
Black-breasted Buzzard	2
Black-chinned Honeyeater (eastern subspecies)	19
Black-tailed Godwit	157
Blue-billed Duck	1540
Blue-winged Parrot	96
Brolga	1490
Brown Treecreeper (eastern subspecies)	778
Bush Stone-curlew	32
Chariot Wheels	
Chestnut Quail-thrush	57
Claypan Daisy	17000
Cocoparra Pomaderris	4585
Common Greenshank	1732
Corben's Long-eared Bat	10
Curlew Sandpiper	319
Curly-bark Wattle	5075
Diamond Firetail	373
Dusky Woodswallow	604
Eastern Grass Owl	6
Eastern Osprey	2
Flame Robin	102
Fleshy Minuria	
Floating Swamp Wallaby-grass	

Freckled Duck	2649
Gang-gang Cockatoo	2
Gilbert's Whistler	77
Grey Falcon	6
Grey-crowned Babbler (eastern subspecies)	3327
Grey-headed Flying-fox	10
Holly-leaf Grevillea	
Inland Forest Bat	9
Koala	1439
Lanky Buttons	5998000
Large-eared Pied Bat	
Latham's Snipe	129
Little Eagle	128
Little Lorikeet	
Little Pied Bat	8
Magpie Goose	7591
Mallee Worm-lizard	5
Malleefowl	103
Masked Owl	3
Mossgiel Daisy	
Painted Honeyeater	470
Pied Honeyeater	108
Pine Donkey Orchid	9353
Pink Cockatoo	798
Pink-tailed Legless Lizard	
Plains-wanderer	495
Red Darling Pea	5
Red Knot	3
Red-lored Whistler	1
Regent Honeyeater	6
Regent Parrot (eastern subspecies)	

Sand-hill Spider Orchid	224
Scarlet Robin	11
Shy Heathwren	153
Silky Swainson-pea	1029
Slender Darling Pea	6629
Sloane's Froglet	1
Small Scurf-pea	1
South-eastern Glossy Black-Cockatoo	650
South-eastern Hooded Robin	183
Southern Bell Frog	2167
Southern Myotis	23
Southern Scrub-robin	11
Southern Whiteface	972
Speckled Warbler	532
Spiny Peppercress	250
Spotted Harrier	169
Spotted-tailed Quoll	1
Square-tailed Kite	7
Squirrel Glider	3
Squirrel Glider in the Wagga Wagga Local Government Area	3
Stripe-faced Dunnart	1
Superb Parrot	7115
Swift Parrot	126
Turquoise Parrot	210
Varied Sittella	328
Velvet Thread-petal	
Western Blue-tongued Lizard	
White-bellied Sea-Eagle	226
White-browed Treecreeper population in Carrathool local gover	42
White-fronted Chat	857
White-throated Needletail	676

Winged Peppercress	904
Yellow-bellied Sheathtail-bat	5
(blank)	7
Grand Total	6083481

Department of Planning and Environment

Biodiversity Values Map and Threshold Report

This report is generated using the Biodiversity Values Map and Threshold (BMAT) tool. The BMAT tool is used by proponents to supply evidence to your local council to determine whether or not a Biodiversity Development Assessment Report (BDAR) is required under the Biodiversity Conservation Regulation 2017 (Cl. 7.2 & 7.3).

The report provides results for the proposed development footprint area identified by the user and displayed within the blue boundary on the map.

There are two pathways for determining whether a BDAR is required for the proposed development:

1. Is there Biodiversity Values Mapping?
2. Is the 'clearing of native vegetation area threshold' exceeded?

Biodiversity Values Map and Threshold Report

Date of Report Generation		27/06/2025 1:53 PM
1. Biodiversity Values (BV) Map - Results Summary (Biodiversity Conservation Regulation Section 7.3)		
1.1	**Does the development Footprint intersect with BV mapping?**	no
1.2	Was ALL BV Mapping within the development footprinted added in the last 90 days? (dark purple mapping only, no light purple mapping present)	no
1.3	**Date of expiry of dark purple 90 day mapping**	N/A
1.4	**Is the Biodiversity Values Map threshold exceeded?**	no
2. Area Clearing Threshold - Results Summary (Biodiversity Conservation Regulation Section 7.2)		
2.1	**Size of the development or clearing footprint**	79,470.6 sqm
2.2	**Native Vegetation Area Clearing Estimate (NVACE)** (within development/clearing footprint)	25,721.4 sqm
2.3	**Method for determining Minimum Lot Size**	LEP
2.4	**Minimum Lot Size** (10,000sqm = 1ha)	4,000 sqm
2.5	**Area Clearing Threshold** (10,000sqm = 1ha)	2,500 sqm
2.6	**Does the estimate exceed the Area Clearing Threshold?** (NVACE results are an estimate and can be reviewed using the Guidance)	yes

REPORT RESULT: Is the Biodiversity Offset Scheme (BOS) Threshold exceeded for the proposed development footprint area? (Your local council will determine if a BDAR is required)	**yes**

What do I do with this report?

• If the result above indicates the BOS Threshold has been exceeded, your local council may require a Biodiversity Development Assessment Report with your development application. Seek further advice from Council. An accredited assessor can apply the Biodiversity Assessment Method and prepare a BDAR for you. For a list of accredited assessors go to: https://customer.lmbc.nsw.gov.au/assessment/AccreditedAssessor.

• If the result above indicates the BOS Threshold has not been exceeded, you may not require a Biodiversity Development Assessment Report. This BMAT report can be provided to Council to support your development application. Council can advise how the area clearing threshold results should be considered. Council will review these results and make a determination if a BDAR is required. Council may ask you to review the area clearing threshold results. You may also be required to assess whether the development is '"likely to significantly affect threatened species" as determined under the test in Section 7.3 of the *Biodiversity Conservation Act 2016*.

• If a BDAR is not required by Council, you may still require a permit to clear vegetation from your local council.

• If all Biodiversity Values mapping within your development footprint was less than 90 days old, i.e. areas are displayed as dark purple on the BV map, a BDAR may not be required if your Development Application is submitted within that 90 day period. Any BV mapping less than 90 days old on this report will expire on the date provided in Line item 1.3 above.

For more detailed advice about actions required, refer to the Interpreting the evaluation report section of the Biodiversity Values Map Threshold Tool User Guide .

Review Options:

• If you believe the Biodiversity Values mapping is incorrect please refer to our BV Map Review webpage for further information.

• If you or Council disagree with the area clearing threshold estimate results from the NVACE in Line Item 2.6 above (i.e. area of Native Vegetation within the Development footprint proposed to be cleared), review the results using the Guide for reviewing area clearing threshold results from the BMAT Tool.

Acknowledgement

I, as the applicant for this development, submit that I have correctly depicted the area that will be impacted or likely to be impacted as a result of the proposed development.

Signature: _____ Date:_____

(Typing your name in the signature field will be considered as your signature for the purposes of this form)

27/06/2025 01:53 PM

Biodiversity Values Map and Threshold Tool

The Biodiversity Values (BV) Map and Threshold Tool identifies land with high biodiversity value, particularly sensitive to impacts from development and clearing.

The BV map forms part of the Biodiversity Offsets Scheme threshold, which is one of the factors for determining whether the Scheme applies to a clearing or development proposal. You have used the Threshold Tool in the map viewer to generate this BV Threshold Report for your nominated area. This report calculates results for your proposed development footprint and indicates whether Council may require you to engage an accredited assessor to prepare a Biodiversity Development Assessment Report (BDAR) for your development.

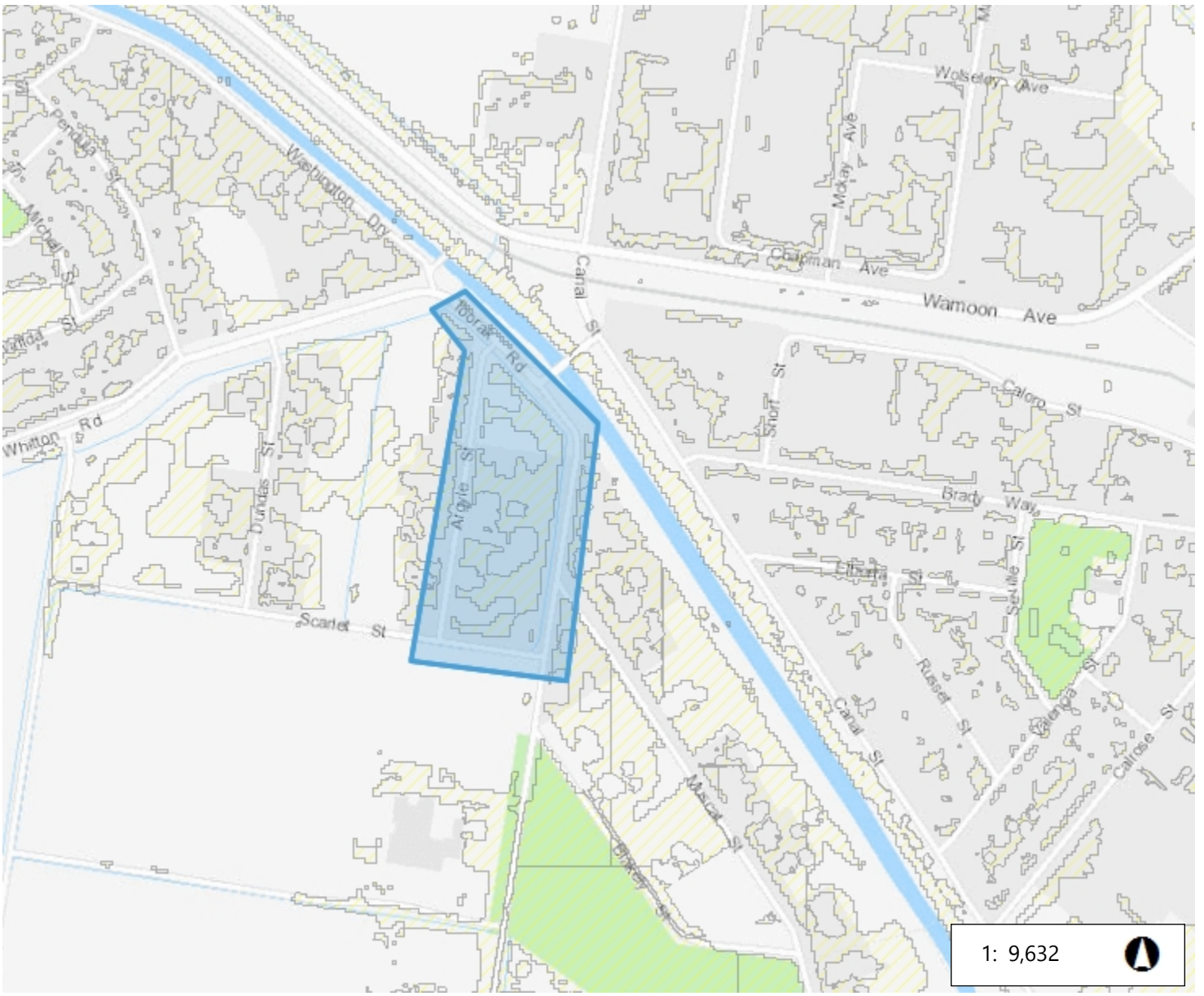
This report may be used as evidence for development applications submitted to councils. You may also use this report when considering native vegetation clearing under the State Environmental Planning Policy (Biodiversity and Conservation) 2021 - Chapter 2 vegetation in non-rural areas.

What's new? For more information about the latest updates to the Biodiversity Values Map and Threshold Tool go to the updates section on the Biodiversity Values Map webpage.

Map Review: Landholders can request a review of the BV Map where they consider there is an error in the mapping on their property. For more information about the map review process and an application form for a review go to the Biodiversity Values Map Review webpage.

If you need help using this map tool see our Biodiversity Values Map and Threshold Tool User Guide or contact the Map Review Team at map.review@environment.nsw.gov.au or on 1800 001 490.

Biodiversity Values Map



489.3 0 244.66 489.3 Metres

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Legend

- Biodiversity Values that have been mapped for more than 90 days
- Biodiversity Values added within last 90 days
- Native Vegetation Area Clearing Estimate (NVACE)
- Development area selected by proponent

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The results provided in this tool are generated using the best available mapping and knowledge of species habitat requirements.

This map is valid as at the date the report was generated. Checking the Biodiversity Values Map viewer for mapping updates is recommended.

Priority weeds for the Riverina

Note: this region includes the local council areas of Bland, Carrathool (lower), Coolamon, Cootamundra-Gundagai, Griffith, Hay (lower), Hilltops (western), Junee, Leeton, Lockhart Shire Council, Murrumbidgee (upper), Narrandera, Snowy Valleys (upper), Temora and Wagga Wagga.

Select another region

Weed	Duty
All plants	**General Biosecurity Duty** *All pest plants are regulated with a **general biosecurity duty** to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.*
Aaron's beard prickly pear *Opuntia leucotricha*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
African boxthorn *Lycium ferocissimum*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Alligator weed *Alternanthera philoxeroides*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Alligator weed *Alternanthera philoxeroides*	**Biosecurity Zone** The Alligator Weed Biosecurity Zone is established for all land within the state except land in the following regions: Greater Sydney; Hunter (but only in the local government areas of City of Lake Macquarie, City of Maitland, City of Newcastle or Port Stephens). *Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone*

Alligator weed *Alternanthera philoxeroides*	**Regional Recommended Measure** *Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.* **Griffith City Council has issued a General Biosecurity Direction to the entirety of Barren Box Storage and Wetland and its riparian areas. A link to the direction is above under More Information.**
Anchored water hyacinth *Eichhornia azurea*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Athel pine *Tamarix aphylla*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Bellyache bush *Jatropha gossypifolia*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Bitou bush *Chrysanthemoides monilifera* subsp. *rotundata*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Bitou bush *Chrysanthemoides monilifera* subsp. *rotundata*	**Biosecurity Zone** The Bitou Bush Biosecurity Zone is established for all land within the State except land within 10 kilometres of the mean high water mark of the Pacific Ocean between Cape Byron in the north and Point Perpendicular in the south. *Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone*

Black knapweed *Centaurea* x *moncktonii*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Black willow *Salix nigra*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Black willow *Salix nigra*	**Regional Recommended Measure** Core infestation areas: Snowy Valleys Council, Cootamundra - Gundagai Regional Council, Wagga Wagga City Council. Exclusion zone: All of Riverina except identified core infestation areas. *Within exclusion zone: Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Within core infestation area: Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.*
Blackberry *Rubus fruticosus* species aggregate	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Rubus fruiticosus species aggregate have this requirement, except for the varietals Black Satin, Chehalem, Chester Thornless, Dirksen Thornless, Loch Ness, Murrindindi, Silvan, Smooth Stem, and Thornfree**
Blind cactus *Opuntia rufida*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Boneseed *Chrysanthemoides monilifera* subsp. *monilifera*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*

Boneseed *Chrysanthemoides monilifera* subsp. *monilifera*	**Control Order** Boneseed Control Zone: Whole of NSW *Boneseed Control Zone (Whole of NSW): Owners and occupiers of land on which there is boneseed must notify the local control authority of new infestations; immediately destroy the plants; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of boneseed must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant.*
Boxing glove cactus *Cylindropuntia fulgida* var. *mamillata*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Bridal creeper *Asparagus asparagoides*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* ***this requirement also applies to the Western Cape form of bridal creeper**
Bridal veil creeper *Asparagus declinatus*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Broomrapes *Orobanche* species	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species of Orobanche are Prohibited Matter in NSW, except Clover broomrape, Orobanche minor and Australian broomrape, Orobanche cernua var. australiana.**
Brown-spined Hudson pear *Cylindropuntia tunicata*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*

Bunny ears cactus *Opuntia microdasys*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Cabomba *Cabomba caroliniana*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Cane cactus *Austrocylindropuntia cylindrica*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Austrocylindropuntia genus have this requirement**
Cane needle grass *Nassella hyalina*	**Regional Recommended Measure** Eradication zone: whole region except for the containment zone of Wagga Wagga City Council *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.*
Cape broom *Genista monspessulana*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Cape broom *Genista monspessulana*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.*
Cat's claw creeper *Dolichandra unguis-cati*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*

Chicken dance cactus *Opuntia schickendantzii*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Chilean needle grass *Nassella neesiana*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Chilean needle grass *Nassella neesiana*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.*
Chinese violet *Asystasia gangetica*	**Control Order** *Owners and occupiers of land on which there is Chinese violet must notify the local control authority for the area if the Chinese violet is part of a new infestation on the land, destroy all Chinese violet on the land ensuring that subsequent generations of Chinese violet are destroyed; and keep the land free of Chinese violet. A person who deals with a carrier of Chinese violet must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant on the land, or on or in a carrier.*
Climbing asparagus *Asparagus africanus*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Climbing asparagus fern *Asparagus plumosus*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Common pear *Opuntia stricta*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*

Coolatai grass *Hyparrhenia hirta*	**Regional Recommended Measure** Core infestation areas: Cootamundra - Gundagai Regional Council, Exclusion zone: All of Riverina except identified core infestation areas. *Within exclusion zone: Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Within core infestation area: Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.*
Creeping pear *Opuntia humifusa*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Eurasian water milfoil *Myriophyllum spicatum*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Eve's needle cactus *Austrocylindropuntia subulata*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Austrocylindropuntia genus have this requirement**
Fireweed *Senecio madagascariensis*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*

Fireweed *Senecio madagascariensis*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.*
Flax-leaf broom *Genista linifolia*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Foxtail fern *Asparagus densiflorus*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Frogbit *Limnobium laevigatum*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species of Limnobium are Prohibited Matter**
Gamba grass *Andropogon gayanus*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Gorse *Ulex europaeus*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*

Gorse *Ulex europaeus*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.*
Green cestrum *Cestrum parqui*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Grey sallow *Salix cinerea*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Grey sallow *Salix cinerea*	**Regional Recommended Measure** Core infestation areas: Snowy Valleys Council, Cootamundra - Gundagai Regional Council, Wagga Wagga City Council. Exclusion zone: All of Riverina except identified core infestation areas. *Within exclusion zone: Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Within core infestation area: Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.*
Ground asparagus *Asparagus aethiopicus*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*

Hawkweeds - Hieraciums *Hieracium* species	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species in the genus *Hieracium* are Prohibited Matter except for *Hieracium murorum* (wall hawkweed).**
Hawkweeds - Pilosellas *Pilosella* species	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species in the genus *Pilosella* are Prohibited Matter**
Horsetails *Equisetum* species	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.*
Hudson pear *Cylindropuntia pallida*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Hydrocotyl *Hydrocotyle ranunculoides*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Hymenachne *Hymenachne amplexicaulis* and hybrids	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*

Jumping cholla *Cylindropuntia prolifera*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Cylindropuntia genus have this requirement**
Karoo acacia *Vachellia karroo*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Kidney-leaf mud plantain *Heteranthera reniformis*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.*
King devil hawkweed *Pilosella piloselloides*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species in the genus *Pilosella* are Prohibited Matter**
Klein's cholla *Cylindropuntia kleiniae*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Cylindropuntia genus have this requirement**
Kochia *Bassia scoparia*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **Excluding the subspecies *trichophylla***

Koster's curse *Clidemia hirta*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Lagarosiphon *Lagarosiphon major*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Lantana *Lantana camara*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Madeira vine *Anredera cordifolia*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Mesquite *Prosopis* species	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the genus *Prosopis* have this requirement**
Mesquite *Prosopis* species	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.*
Mexican feather grass *Nassella tenuissima*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*

Miconia *Miconia* species	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species of *Miconia* are Prohibited Matter in NSW**
Mikania vine *Mikania micrantha*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* ***all species in the genus *Mikania* are Prohibited Matter in NSW**
Mimosa *Mimosa pigra*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Mother-of-millions *Bryophyllum* species	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.*
Mouse-ear hawkweed *Pilosella officinarum*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species in the genus *Pilosella* are Prohibited Matter**

Orange hawkweed *Pilosella aurantiaca*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species in the genus *Pilosella* are Prohibited Matter**
Parkinsonia *Parkinsonia aculeata*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Parkinsonia *Parkinsonia aculeata*	**Control Order** Parkinsonia Control Zone: Whole of NSW *Parkinsonia Control Zone (Whole of NSW): Owners and occupiers of land on which there is parkinsonia must notify the local control authority of new infestations; immediately destroy the plants; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of parkinsonia must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant.*
Parthenium weed *Parthenium hysterophorus*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Parthenium weed *Parthenium hysterophorus*	**Prohibition on certain dealings** *The following equipment must not be imported into NSW from Queensland: grain harvesters (including the comb or front), comb trailers (including the comb or front), bins used for holding grain during harvest operations, augers or similar for moving grain, vehicles used to transport grain harvesters, support vehicles driven in paddocks during harvest operations, mineral exploration drilling rigs and vehicles used to transport those rigs, unless set out as an exception in Division 5, Part 2 of the Biosecurity Order (Permitted Activities) 2017*

Pencil cactus *Cylindropuntia leptocaulis*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Cylindropuntia genus have this requirement**
Perennial ground cherry *Physalis longifolia*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.*
Pond apple *Annona glabra*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Prairie ground cherry *Physalis hederifolia*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.*
Prickly acacia *Vachellia nilotica*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Prickly pears - Austrocylindropuntias *Austrocylindropuntia* species	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Austrocylindropuntia genus have this requirement**

Prickly pears - Cylindropuntias *Cylindropuntia* species	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Cylindropuntia genus have this requirement**
Prickly pears - Opuntias *Opuntia* species	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **For all Opuntia species except for *Opuntia ficus-indica* (Indian fig).**
Ragwort *Senecio jacobaea*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.*
Riverina pear *Opuntia elata*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Rope pear *Cylindropuntia imbricata*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Cylindropuntia genus have this requirement.**
Rubber vine *Cryptostegia grandiflora*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Sagittaria *Sagittaria platyphylla*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*

Sagittaria *Sagittaria platyphylla*	**Regional Recommended Measure** Eradication whole of region except for Griffith. *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.*
Salvinia *Salvinia molesta*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Salvinia *Salvinia molesta*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.*
Scotch broom *Cytisus scoparius* subsp. *scoparius*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Scotch broom *Cytisus scoparius* subsp. *scoparius*	**Regional Recommended Measure** Core infestation areas: Snowy Valleys Council. Exclusion zone: All of Riverina except identified core infestation areas. *Within exclusion zone: Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Within core infestation area: Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread of the plant from their land. A person should not buy, sell, move, carry or release the plant into the environment. Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value.*

Senegal tea plant *Gymnocoronis spilanthoides*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.*
Serrated tussock *Nassella trichotoma*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Serrated tussock *Nassella trichotoma*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.*
Siam weed *Chromolaena odorata*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Silverleaf nightshade *Solanum elaeagnifolium*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Smooth tree pear *Opuntia monacantha*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Snake cactus *Cylindropuntia spinosior*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Cylindropuntia genus have this requirement**

Snakefeather *Asparagus scandens*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Spongeplant *Limnobium spongia*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species of *Limnobium* are Prohibited Matter**
Spotted knapweed *Centaurea stoebe* subsp. *micranthos*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Tiger pear *Opuntia aurantiaca*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Tropical soda apple *Solanum viarum*	**Control Order** Tropical Soda Apple Control Zone: Whole of NSW *Tropical Soda Apple Control Zone (Whole of NSW): Owners and occupiers of land on which there is tropical soda apple must notify the local control authority of new infestations; destroy the plants including the fruit; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of tropical soda apple must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant on the land, or on or in a carrier.*
Velvety tree pear *Opuntia tomentosa*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*

Water caltrop *Trapa* species	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species in the *Trapa* genus are Prohibited Matter in NSW**
Water hyacinth *Eichhornia crassipes*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Water hyacinth *Eichhornia crassipes*	**Biosecurity Zone** The Water Hyacinth Biosecurity Zone applies to all land within the State, except for the following regions: Greater Sydney or North Coast, North West (but only the local government area of Moree Plains), Hunter (but only in the local government areas of City of Cessnock, City of Lake Macquarie, MidCoast, City of Maitland, City of Newcastle or Port Stephens), South East (but only in the local government areas of Eurobodalla, Kiama, City of Shellharbour, City of Shoalhaven or City of Wollongong). *Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone*
Water lettuce *Pistia stratiotes*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.*

Water poppy *Hydrocleys nymphoides*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.*
Water soldier *Stratiotes aloides*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Wheel cactus *Opuntia robusta*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Willows *Salix* species	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the *Salix* genus have this requirement, except *Salix babylonica* (weeping willows), *Salix x calodendron* (pussy willow) and *Salix x reichardtii* (sterile pussy willow)**
Witchweeds *Striga* species	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species in the *Striga* genus are Prohibited Matter in NSW, except the native *Striga parviflora***
Yellow burrhead *Limnocharis flava*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*

Yellow waterlily *Nymphaea mexicana*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found. Your local biosecurity weeds officer can help to identify, advise on control, and how to remove this weed.*

The content provided here is for information purposes only and is taken from the *Biosecurity Act 2015* and its subordinate legislation, and the Regional Strategic Weed Management Plans (published by each Local Land Services region in NSW). It describes the state and regional priorities for weeds in New South Wales, Australia.

and Determinations
Search Records of Section 31 Agreements

Tribunal file no.	
Federal Court file no.	
Short name	
Case name	
State or Territory	ALL
Registered Native Title Body Corporate*	
Representative A/TSI body area	
Local government area	Leeton Shire Council
Determination type	ALL
Legal process	ALL
Determination outcome	ALL
Determination date between	and
Sort by	Determination date

Search >

*Please note: current contact details for the Registered Native Title Body Corporate are available from the Office of the Registrar of Indigenous Corporations www.oric.gov.au

No results for current search criteria

State Heritage Inventory

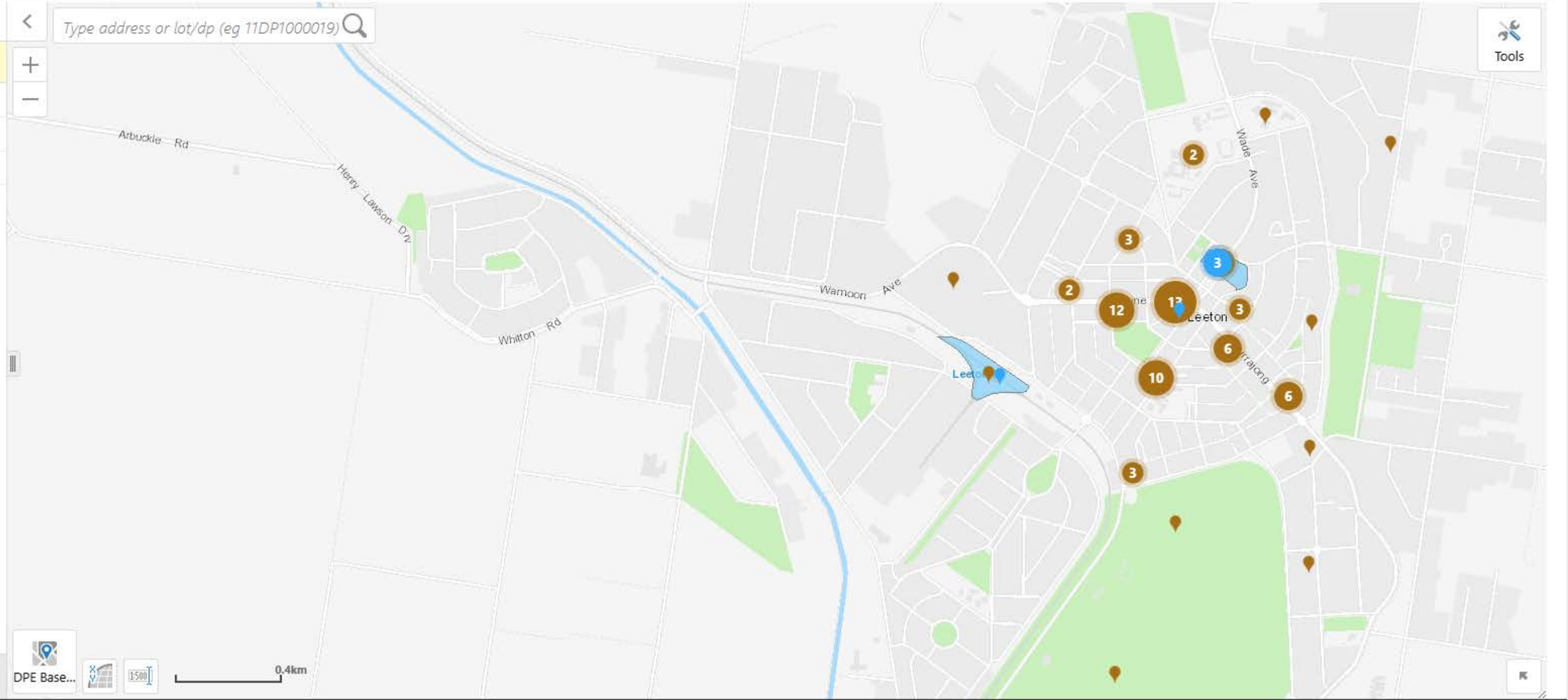
Start your search | Item Name | Street Name | Suburb/Town | Leeton | VIEW RESULTS | Advanced search

View Results By: Map | A-Z | Statutory list | CLEAR SPATIAL RESULTS

Search (127)

127 Results Found

- (1) Aboriginal Place
- (8) State Heritage Register
- (118) Local Environmental Plan



LEETON	Former Mobil Depot	108 Calrose STREET	Other Petroleum	Regulation under CLM Act not required	-34.55813326	146.3921296
LEETON	Caltex Service Station	1 Belah STREET	Service Station	Regulation under CLM Act not required	-34.55421752	146.3998431
LEETON	Yenda Producers (formerly Incitec) Leeton	1 - 2 Canal STREET	Other Petroleum	Regulation under CLM Act not required	-34.55184684	146.3862573
LEETON	Former Fuel Depot, Leeton	1-3 Short STREET	Other Petroleum	Regulation under CLM Act not required	-34.55253237	146.3864507
LEETON	United Leeton Service Station	110 Kurrajong AVENUE	Service Station	Regulation under CLM Act not required	-34.55573364	146.4099077

Appendix D Site photographs

Appendix E Construction Noise Estimator Tool (CNET)

Distanced Based Assessment (Noisiest Plant)

Please pick from drop-down list in orange cells

Noise area category		R2
RBL or L_{A90} Background level (dB(A))	Day	45
	Evening	40
	Night	35
$L_{Aeq(15minute)}$ Noise Mangement Level (dB(A))	Day	55
	Day (OOHW)	50
	Evening	45
	Night	40
Noisiest plant		Concrete pump
Is there line of sight to receiver?		Yes

Steps for Assessment:

1. Schedule noisy works to occur in standard hours where possible or before 11pm and implement Standard Measures.
2. Select the representative noise area category. The worksheet titled 'Representative Noise Environ.' provides a number of examples to help select the noise area category.
3. Select the noisiest plant. If not found in drop-down list, refer to 'Source List' and select a representative plant with equivalent sound power level.
4. Is there line of sight to receiver? Select the appropriate scenario from the drop down list.

Identify and implement standard mitigation measures where feasible and reasonable. Include any shielding implemented as part of the standard mitigation measures by changing the selection in the 'Is there line of sight to receiver' drop-down list. Solid barriers can be in the form of road cutting, timber lapped and capped fence, shipping container, site office, etc. Substantial solid barriers are barriers greater than 5 metres in height or multiple rows of houses or a sound barrier specifically designed to mitigate construction noise. Please note that vegetation and trees are not considered to be a form of solid barrier and any gaps would compromise the acoustic integrity of the solid barrier.

5. Determine if there are any receivers (both residential and non-residential receivers) within the affected distance for each relevant time period. Consider background LA90 noise measurements to check assumption in Step #2 if:

(a) there are many affected receivers and the impact duration at any one receiver is more than 3 weeks; or
(b) there are a few affected receivers and the impact duration at any one receiver is more than 6 weeks.

Note that consideration needs to be given to the construction staging plan when determining impact duration.

7. Identify if there are any receivers within the additional mitigation measures distances and identify feasible and reasonable measures at each receiver.
8. Where night works are involved, identify sleep disturbance affected distance.
9. Document the outcomes of these steps.

(Note that suitable noise management levels for other noise-sensitive businesses not identified in the Construction and Maintenance Noise Estimator should be investigated on a project-by-project basis. Please contact a Transport for NSW noise specialist for more information)

Abbreviation	Measure
N	Notification
SN	Specific notifications
PC	Phone calls
IB	Individual briefings
RO	Respite offer
R1	Respite period 1
R2	Respite period 2
DR	Duration respite
AA	Alternative accommodation
V	Verification

Note that spot check verification of noise levels and individual briefings are not required for projects with less than 3 weeks impact duration

Residential receiver

			$L_{Aeq(15minute)}$ noise level above background (L_{A90})												$L_{Aeq(15minute)}$ 75 dB(A) or greater (Highly affected)			Sleep disturbance L_{Amax} 65 dB(A)
			5 to 10 dB(A)			10 to 20 dB(A)			20 to 30 dB(A)			> 30 dB(A)						
			Noticeable			Clearly audible			Moderately intrusive			Highly intrusive						
		Affected distance (m)	Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	Affected distance (m)
Undeveloped green fields, rural areas with isolated dwellings	Day	85							N	30	65	N, PC, RO	15	75	N, PC, RO	15	75	
	Day (OOHW)	130				N, R1, DR	85	55	N, R1, DR	30	65	N, R1, DR, PC, SN	15	75	N, PC, RO	15	75	
	Evening	185				N, R1, DR	130	50	N, R1, DR	50	60	N, R1, DR, PC, SN	25	70	N, PC, RO	15	75	
	Night	270	N	270	40	N, R2, DR	185	45	N, PC, SN, R2, DR	85	55	AA, N, PC, SN, R2, DR	30	65	N, PC, RO	15	75	50
	Highly Affected	15													N, PC, RO	15	75	
Developed settlements (urban and suburban)	Day	95							N	35	65	N, PC, RO	15	75	N, PC, RO	15	75	
	Day (OOHW)	145				N, R1, DR	95	55	N, R1, DR	35	65	N, R1, DR, PC, SN	15	75	N, PC, RO	15	75	
	Evening	220				N, R1, DR	145	50	N, R1, DR	55	60	N, R1, DR, PC, SN	25	70	N, PC, RO	15	75	
	Night	335	N	335	40	N, R2, DR	220	45	N, PC, SN, R2, DR	95	55	AA, N, PC, SN, R2, DR	35	65	N, PC, RO	15	75	55
	Highly Affected	15													N, PC, RO	15	75	
Propagation across a valley / over water	Day	105							N	40	65	N, PC, RO	15	75	N, PC, RO	15	75	
	Day (OOHW)	175				N, R1, DR	105	55	N, R1, DR	40	65	N, R1, DR, PC, SN	15	75	N, PC, RO	15	75	
	Evening	280				N, R1, DR	175	50	N, R1, DR	65	60	N, R1, DR, PC, SN	25	70	N, PC, RO	15	75	
	Night	445	N	445	40	N, R2, DR	280	45	N, PC, SN, R2, DR	105	55	AA, N, PC, SN, R2, DR	40	65	N, PC, RO	15	75	65
	Highly Affected	15													N, PC, RO	15	75	

Non-residential receiver
Undeveloped green fields, rural areas with isolated dwellings

				$L_{Aeq(15minute)}$ noise level above NML						LAeq(15minute) 75 dB(A) or greater (Highly affected)		
	Standard hours			<10 dB(A)			10 to 20 dB(A)					
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Classroom at schools and other educational institutions	Day	55	85				N	30	65	N, PC, RO	15	75
Hospital wards and operating theatres	Day	65	30							N, PC, RO	15	75
Place of worship	Day	55	85				N	30	65	N, PC, RO	15	75
Active recreation	Day	65	30							N, PC, RO	15	75
Passive recreation	Day	60	50				N	25	70	N, PC, RO	15	75
Industrial premise	Day	75	15							N, PC, RO	15	75
Offices, retail outlets	Day	70	25							N, PC, RO	15	75

				$L_{Aeq(15minute)}$ noise level above NML											
	OOHW			< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Hospital wards and operating theatres	Evening	65	30				N, R1, DR	25	70	N, R1, DR	8	80	N, R1, DR, PC, SN	3	90
	Night	65	30	N	30	65	N, R2, NR	25	70	N, PC, SN, R2, DR	8	80	AA, N, PC, SN, R2, DR	3	90
Place of worship	Evening	55	85				N, R1, DR	50	60	N, R1, DR	25	70	N, R1, DR, PC, SN	8	80
	Night	55	85	N	85	55	N, R2, NR	50	60	N, PC, SN, R2, DR	25	70	AA, N, PC, SN, R2, DR	8	80
Active recreation	Evening	65	30				N, R1, DR	25	70	N, R1, DR	8	80	N, R1, DR, PC, SN	3	90
Passive recreation	Evening	60	50				N, R1, DR	30	65	N, R1, DR	15	75	N, R1, DR, PC, SN	5	85
Industrial premise	Evening	75	15				N, R1, DR	8	80	N, R1, DR	3	90	N, R1, DR, PC, SN	1	100
	Night	75	15	N	15	75	N, R2, NR	8	80	N, PC, SN, R2, DR	3	90	AA, N, PC, SN, R2, DR	1	100
Offices, retail outlets	Evening	70	25				N, R1, DR	15	75	N, R1, DR	5	85	N, R1, DR, PC, SN	2	95
	Night	70	25	N	25	70	N, R2, NR	15	75	N, PC, SN, R2, DR	5	85	AA, N, PC, SN, R2, DR	2	95

Non-residential receiver
Developed settlements (urban and suburban)

				$L_{Aeq(15minute)}$ noise level above NML						LAeq(15minute) 75 dB(A) or greater (Highly affected)		
	Standard hours			<10 dB(A)			10 to 20 dB(A)					
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Classroom at schools and other educational institutions	Day	55	95				N	35	65	N, PC, RO	15	75
Hospital wards and operating theatres	Day	65	35							N, PC, RO	15	75
Place of worship	Day	55	95				N	35	65	N, PC, RO	15	75
Active recreation	Day	65	35							N, PC, RO	15	75
Passive recreation	Day	60	55				N	25	70	N, PC, RO	15	75
Industrial premise	Day	75	15							N, PC, RO	15	75
Offices, retail outlets	Day	70	25							N, PC, RO	15	75

				$L_{Aeq(15minute)}$ noise level above NML											
	OOHW			< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Hospital wards and operating theatres	Evening	65	35				N, R1, DR	25	70	N, R1, DR	8	80	N, R1, DR, PC, SN	3	90
	Night	65	35	N	35	65	N, R2, NR	25	70	N, PC, SN, R2, DR	8	80	AA, N, PC, SN, R2, DR	3	90
Place of worship	Evening	55	95				N, R1, DR	55	60	N, R1, DR	25	70	N, R1, DR, PC, SN	8	80
	Night	55	95	N	95	55	N, R2, NR	55	60	N, PC, SN, R2, DR	25	70	AA, N, PC, SN, R2, DR	8	80
Active recreation	Evening	65	35				N, R1, DR	25	70	N, R1, DR	8	80	N, R1, DR, PC, SN	3	90
Passive recreation	Evening	60	55				N, R1, DR	35	65	N, R1, DR	15	75	N, R1, DR, PC, SN	5	85
Industrial premise	Evening	75	15				N, R1, DR	8	80	N, R1, DR	3	90	N, R1, DR, PC, SN	1	100
	Night	75	15	N	15	75	N, R2, NR	8	80	N, PC, SN, R2, DR	3	90	AA, N, PC, SN, R2, DR	1	100
Offices, retail outlets	Evening	70	25				N, R1, DR	15	75	N, R1, DR	5	85	N, R1, DR, PC, SN	2	95
	Night	70	25	N	25	70	N, R2, NR	15	75	N, PC, SN, R2, DR	5	85	AA, N, PC, SN, R2, DR	2	95

Non-residential receiver
Propagation across a valley / over water

				$L_{Aeq(15minute)}$ noise level above NML						LAeq(15minute) 75 dB(A) or greater (Highly affected)		
	Standard hours			<10 dB(A)			10 to 20 dB(A)					
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Classroom at schools and other educational institutions	Day	55	105				N	40	65	N, PC, RO	15	75
Hospital wards and operating theatres	Day	65	40							N, PC, RO	15	75
Place of worship	Day	55	105				N	40	65	N, PC, RO	15	75
Active recreation	Day	65	40							N, PC, RO	15	75
Passive recreation	Day	60	65				N	25	70	N, PC, RO	15	75
Industrial premise	Day	75	15							N, PC, RO	15	75
Offices, retail outlets	Day	70	25							N, PC, RO	15	75

				$L_{Aeq(15minute)}$ noise level above NML											
	OOHW			< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Hospital wards and operating theatres	Evening	65	40				N, R1, DR	25	70	N, R1, DR	10	80	N, R1, DR, PC, SN	3	90
	Night	65	40	N	40	65	N, R2, NR	25	70	N, PC, SN, R2, DR	10	80	AA, N, PC, SN, R2, DR	3	90
Place of worship	Evening	55	105				N, R1, DR	65	60	N, R1, DR	25	70	N, R1, DR, PC, SN	10	80
	Night	55	105	N	105	55	N, R2, NR	65	60	N, PC, SN, R2, DR	25	70	AA, N, PC, SN, R2, DR	10	80
Active recreation	Evening	65	40				N, R1, DR	25	70	N, R1, DR	10	80	N, R1, DR, PC, SN	3	90
Passive recreation	Evening	60	65				N, R1, DR	40	65	N, R1, DR	15	75	N, R1, DR, PC, SN	5	85
Industrial premise	Evening	75	15				N, R1, DR	10	80	N, R1, DR	3	90	N, R1, DR, PC, SN	1	100
	Night	75	15	N	15	75	N, R2, NR	10	80	N, PC, SN, R2, DR	3	90	AA, N, PC, SN, R2, DR	1	100
Offices, retail outlets	Evening	70	25				N, R1, DR	15	75	N, R1, DR	5	85	N, R1, DR, PC, SN	2	95
	Night	70	25	N	25	70	N, R2, NR	15	75	N, PC, SN, R2, DR	5	85	AA, N, PC, SN, R2, DR	2	95

Appendix F Community and agency consultation

To whom it may concern,

RE: Murrumbidgee Irrigation Urban Channels Pipeline (UCP) Project

Murrumbidgee Irrigation (MI) is one of the largest private irrigation companies in Australia. Located within the Murray-Darling Basin in southern central NSW, MI services over 3,093 landholdings, owned by over 2,300 shareholder customers within an area of 378,911 hectares. MI's core business is the delivery of water through an extensive integrated supply and drainage network.

The Murrumbidgee Irrigation Urban Channels Pipeline (UCP) Project is proposing to undertake piping and rationalisation of urban channels, funded as eligible activities under the Resilient Rivers Water Infrastructure Program and will deliver 2,541ML of Water Entitlement for the environment. The project involves replacing approximately 50 kilometres (km) of aging concrete and earthen urban supply channels in and adjacent to existing channels, as well as 1.4km of leaking pipeline, with new pipelines. The project also includes rationalisation of 33 escapes, removing and replacing approximately 500 customer outlets, 2 new pump stations, road and rail crossings and a reconfiguration of the network creating greater water delivery efficiency.

MI has engaged NGH to prepare an environmental assessment for the proposed works, which would be completed in the form of Minor Works Review of Environmental Factors (MWREF). The MWREF will be completed in accordance with Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), taking into account the requirements of Section 171(2) of the Environmental Planning and Assessment Regulation 2021 (EP&A Reg) (previously Clause 228 Factors of the EP&A Regulation 2000).

The UCP Project within Leeton Shire Council (LSC) has been divided into 5 Environmental Areas (EA's) for the purpose of the planning, environmental assessments and approvals. Refer to Appendix A for LSC Environmental Assessment Areas Maps

As per Section 2.10 of the State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP), MI must consult with LSC as the proposed works are likely to impact council related infrastructure or services.

Table 1 LSC managed land impacted by the UCP Project and Planned Construction

Enviro Planning Areas & Laterals	Impacts on LSC managed Land	Planned Construction Year
EA9 – Leeton Lateral 63	Yes	2025
EA10 – Leeton Lateral 5, 21, 99	Yes	2025
EA11 – Leeton Lateral Other	Yes	2026
EA12 – Corbie Hill Laterals 7, 22, 23, 24	Yes	2025
EA13 – Wamoon Lateral 73	Yes	2026

Appendix B – F details the impacts to specific locations

Construction methodologies:

The construction approaches proposed are:

- New pipeline - to be constructed within the specified new alignment.
- Convert existing channels to new pipeline - new pipeline to be constructed beside the existing channel (up to 2m in depth).
- Remove and/or decommission existing channel - remove concrete channel and backfill channel to existing ground level.
- Infrastructure may also be retained as-is
- Underboring would be utilised in sensitive areas where surface access is unavailable

For all construction types, excavators of varying sizes will be used depending on the proposed works. HDPE welding machines would be employed for different welding sizes. The pipes would be strung and welded and then lowered into the excavated trenches. Before laying the pipes at the bottom of the pit, bedding material would be placed.

Where outlets and other fittings are involved, they would be welded onto the pipes according to design specifications. All pipelines to be constructed will run across

different roads and will be sleeved into existing MI culverts if the design permits. If the design does not allow the use of existing culvert infrastructure, the existing culverts would be removed, and pipe is laid by open trenching through the Council managed roads.

For the purpose of the MWREF's, all proposed work areas have had a 10m buffer applied either side of the channel/pipeline and have been assessed as 'new pipeline' to identify the worst-case scenario impacts. The final development areas are likely to be reduced in nature.

As stated above, MI is required to consult with LSC as part of the MWREF process. MI is seeking Council's comment on the proposed works in relation to the potential impact on LSC managed land.

If you have any questions, please contact Simon Jackson (simon.jackson@mirrigation.com.au or 0408 201 474). We would be pleased to discuss any aspect of this project with you further.

Yours faithfully

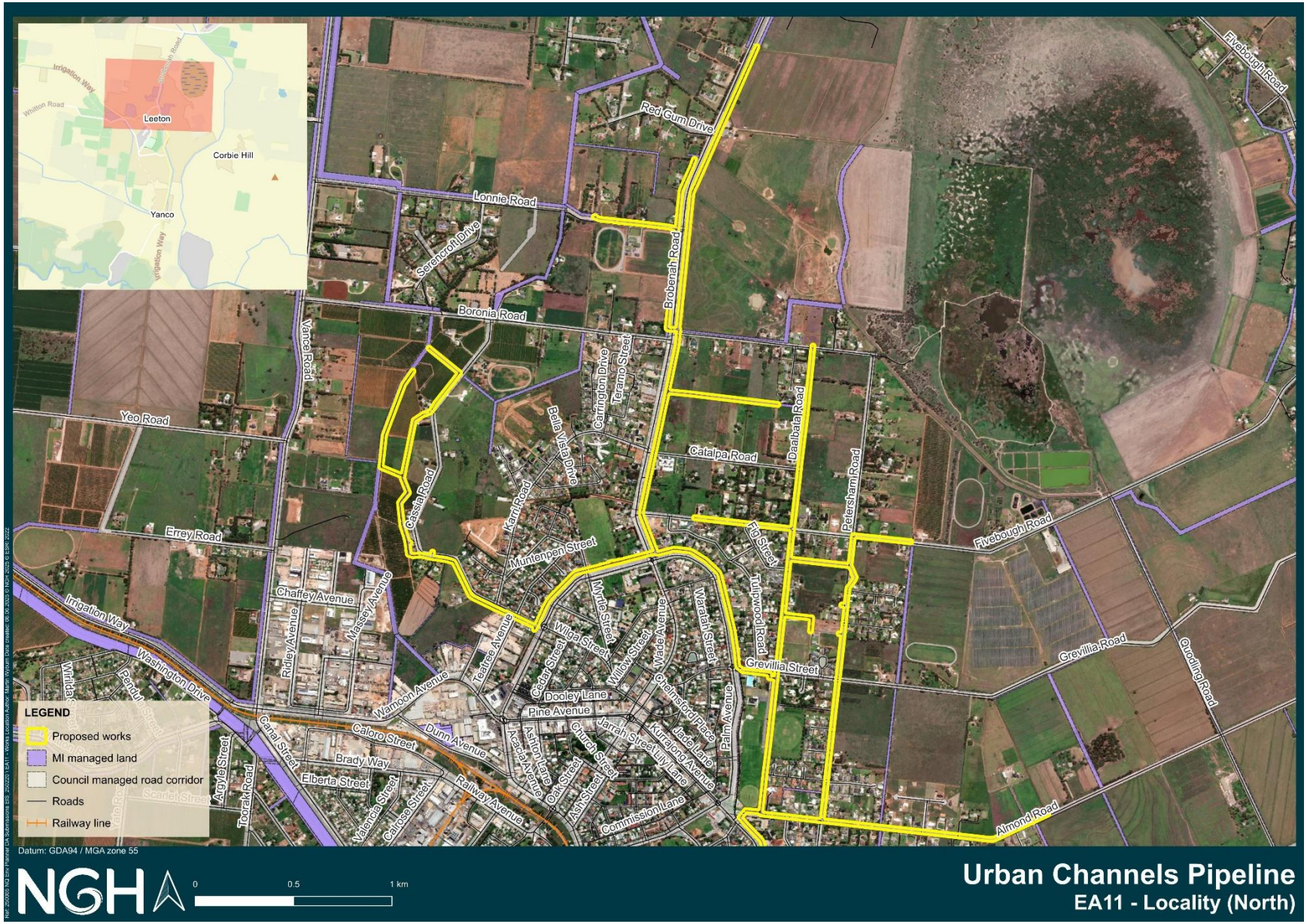
Steven Porter

General Manager – Asset Performance and Delivery

Appendix A – LSC Environmental Areas Assessed Maps

Murrumbidgee Irrigation

Murrumbidgee Irrigation



Murrumbidgee Irrigation

Appendix B – Environmental Area 9 – Leeton Lateral 63

The planned works for EA9 include approximately 0.52km of UCP modifications consisting of mainly new pipeline

While the majority of the proposed works falls within land managed by MI, the proposed works also fall within the road corridor of Scarlet Street, Toorak Road and Argyle Street, identified as managed by LSC.

The proposed works are:

- Not located within mapped flood prone land
- Not located on mapped bushfire prone land
- Not located within or adjacent to local heritage areas
- Not located within land zoned C1 National Parks and Nature Reserves, or adjacent to a national park.

Appendix C – Environmental Area 10 – Leeton Lateral 5, 21, 99

The planned works for EA10 include approximately 4.46km of UCP modifications consisting of mainly new pipeline

While some areas of the proposed works fall within land managed by MI, the proposed works also fall within the following road corridors, which are identified as managed by LSC:

- Petersham Road
- Lillypilly Road
- Irrigation Way
- McQuillan Road
- Breed Road
- Jackson Road
- Merungle Hill Road

The proposed works are:

- Not located within mapped flood prone land
- Located on mapped bushfire prone land – Category 2 Vegetation
- Not located within or adjacent to local heritage areas
- Not located within land zoned C1 National Parks and Nature Reserves, or adjacent to a national park.

Appendix D – Environmental Area 11 – Leeton Lateral Other

The planned works for EA11 include approximately 22.45km of UCP modifications consisting of mainly new pipeline.

While some areas of the proposed works fall within land managed by MI, the proposed works also fall within the following road corridors, which are identified as managed by LSC:

- Research Road
- Gladman Road
- Dempsey Road
- Back Yanco Road
- Warren Road
- Earle Road
- Irrigation Way
- Yanco Avenue
- Petersham Road
- Almond Road
- Grevillia Road
- Diabate Road
- Fivebough Road
- Cassia Road
- Brobenah Road
- Lonnie Road

The proposed works are:

- Not located within mapped flood prone land
- Not located on mapped bushfire prone land
- Located adjacent to the Italian Worker Cottage heritage listed item LEP #I63
- Not located within land zoned C1 National Parks and Nature Reserves, or adjacent to a national park.

Appendix E – Environmental Area 12 – Leeton Lateral 7, 22, 23, 24 Corbie Hill

The planned works for EA12 include approximately 3.57km of UCP modifications consisting of mainly new pipeline.

While the majority of the proposed works falls within land managed by MI, the proposed works also fall within the road corridor of Corbie Hill Road and Curtin Road.

The proposed works are:

- Not located within mapped flood prone land
- Not located on mapped bushfire prone land
- Not located within or adjacent to local heritage areas
- Not located within land zoned C1 National Parks and Nature Reserves, or adjacent to a national park.

Appendix F – Environmental Area 13 – Wamoon Lateral 73

The planned works for EA13 include approximately 2.37km of UCP modifications consisting of mainly new pipeline.

While some areas of the proposed works fall within land managed by MI, the proposed works also fall within the following road corridors, which are identified as managed by LSC:

- Henry Lawson Drive
- Phillip Street
- Crowes Road
- Bourke Road
- Oxley Road
- Lachlan Street

The proposed works are:

- Not located within mapped flood prone land
- Not located on mapped bushfire prone land
- Not located within or adjacent to local heritage areas
- Not located within land zoned C1 National Parks and Nature Reserves, or adjacent to a national park.

Appendix G Biodiversity Assessment

G.1 Test of Significance

- Southern Bell Frog (*Litoria raniformis*) - Endangered

BC Act test of significance

Response
(a) whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction
Southern Bell Frog is usually found among vegetation within or at the edges of permanent water such as slow flowing streams, swamps, lagoons and lakes. In disturbed areas it also commonly occurs in artificial waterbodies such as farm dams, irrigation channels, irrigated rice crops and disused quarries, particularly where natural habitat is no longer available (DSE, 2012). Favoured sites frequently have a large proportion of emergent, submerged and floating vegetation, and slow-flowing or still water (Cth DCCEEW, 2024). The southern bell frog is divided into two lineages: the temperate southern lineage and the semi-arid northern lineage. The Project Area occurs in the northern part of the species range, hence, may be part of the semi-arid northern lineage, though the distribution limits for this species lineages is not yet resolved (Cth DCCEEW, 2024). Suitable habitat in the Development Footprint is aquatic habitat, consisting of open concrete irrigation channels (approximately 40cm high and 40cm wide), with limited fringing vegetation. The Southern Bell Frog breeds in the warmer months (September to April) following a rise in water levels (OEH, 2023). Mating occurs on the edge of, or within, permanent waterbodies, flooded plains, and creek pools, in areas with extensive growth of either emergent or submerged vegetation (Cth DCCEEW, 2024). Egg clusters are laid on the water surface or up to 50 cm below it and rapidly sink. The irrigation channel in the Development Footprint is unlikely to have permanence of water (still waterbody) for a duration long enough (at least four to 12 months) to allow a tadpole to fully develop into an adult, therefore, is unsuitable as breeding habitat for the Southern Bell Frog. There are no nearby water courses or waterbodies that connect with the area EA12 irrigation channels. The utilisation of this habitat by the Southern Bell Frog for breeding would also be limited by the lack of preferred vegetative cover e.g. emergent, submerged or floating plants. The proposed activity is not likely to have an adverse effect on the life cycle of this species such that a viable local population would be placed at risk of extinction

Response
(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity: **i. is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or** **ii. is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction**
n/a
(c) in relation to the habitat of a threatened species or ecological community: **i. the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and** **ii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and** **iii. the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality.**
i. Aquatic habitat in the project area consists of approximately 74.75 ha of irrigation channel and fringing vegetation. The proposal will reduce the area of occupancy of the Southern Bell Frog by removing 74.75 ha irrigation channels. ii. The aquatic habitat in the form of irrigation channels (in area EA12) would be fragmented by the proposed works with some existing earthen and earthen irrigation channels being converted to pipelines. The replacement of the irrigation channels with pipelines would reduce available water habitat for this species, however, is unlikely to fragment an existing population due to the mobility of this species. iii. The aquatic habitat occurs in the form of an open air, shallow (approximately 40cm deep) earthen irrigation channel (lacking aquatic vegetation) with ephemeral water and fringing vegetation. These channels with limited preferred habitat provide limited breeding and foraging habitat (Cth DCCEEW, 2024). The surrounding terrestrial habitat is already disturbed with a history of agricultural use and urban development in the Project Area. There are no BioNet records of the Southern Bell Frog within the Project Area (area EA12). Irrigation channels in area EA12 do not connect to primary habitat, such as Murrumbidgee River. It is unlikely that irrigation channels are being used as dispersal/recolonisation routes between the Murrumbidgee River and other permanent water bodies. Upgrading irrigation channels to pipelines will modify, destroy, remove, isolate or decrease the availability of habitat, however, as the present irrigation channels are low quality habitat they are not considered to be important for the long-term survival of this species in the locality.
(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).

Response
The proposed development is not directly or indirectly within any areas of outstanding biodiversity value mapped land. The closest areas of mapped biodiversity value are 6.4km south of the proposed development on Guises Creek, a tributary of Murrumbidgee River.
(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.
Weeds and Pests As outlined above, the habitat is already in a disturbed state and can be accessed by people, vehicles, farm animals and pest animals, with existing weed species within bordering vegetation of the irrigation channel. The proposal would not introduce or exacerbate harmful species into the area of the Southern Bell Frog habitat. **Disease** The Southern Bell Frog is susceptible to Chytridiomycosis, which is an infectious disease caused by amphibian chytrid fungus (*Batrachochytrium dendrobatidis*) (DSE, 2012). The fungus can be transferred through soil, therefore, there is a risk of the fungus being carried onto the site through contaminated machinery and footwear. To prevent the spread of the amphibian chytrid fungus, it is recommended that a hygiene protocol is followed. With these protocols followed, the proposal is unlikely to introduce a disease to the Project Area that would cause the Southern Bell Frog to decline. **Climate change** As the Southern Bell Frog is a habitat generalist, it is less likely to be impacted by effects of climate change (Cth DCCEEW, 2024). However, the effects of (chytridiomycosis caused by the chytrid fungus increases mortality rates of infected Southern Bell Frog. Climate change has the potential to exacerbate the impacts of chytridiomycosis.
Conclusion
There would be impacts to potentially suitable habitat for the Southern Bell Frog within the project area, however due to the following: • there is a lack of records indicating a lower likelihood of occupation. • earthen irrigation channels, with restricted fringing terrestrial and aquatic vegetation, provide limited breeding and foraging habitat for the Southern Bell Frog • there are no areas of important habitat in the Project Area • no important populations would be impacted. The impacts to this species are not considered to be significant.

G.2 Assessment of Significance

- Southern Bell Frog (*Litoria raniformis*)

Vulnerable species

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:
(a) lead to a long-term decrease in the size of an important population

Southern Bell Frog is usually found among vegetation within or at the edges of permanent water such as slow flowing streams, swamps, lagoons and lakes. In disturbed areas it also commonly occurs in artificial waterbodies such as farm dams, irrigation channels, irrigated rice crops and disused quarries, particularly where natural habitat is no longer available (DSE, 2012). Favoured sites frequently have a large proportion of emergent, submerged and floating vegetation, and slow-flowing or still water (Cth DCCEEW, 2024).

The Southern Bell Frog prefers to breed during spring and summer triggered by flooding or a significant rise in water levels. The species has been known to breed anytime from early spring through to late summer/early autumn (Sept to April) following a rise in water levels (OEH, 2023). Tadpoles require standing water for at least 4 months for development and metamorphosis to occur but can take up to 12 months to develop.

The Conservation Advice (2024) for the southern bell frog mentions that in the Murray River floodplain, this species has been documented moving several kilometres between waterbodies along drainage lines or other low-lying areas.

The presence of the Southern Bell Frog in the Project Area has been assumed based on local records within 30 km of the Development Footprint near Darlington Point on the floodplains of the Murrumbidgee River (these records are from around 2003), and the presence of potentially suitable habitat in the form of earthen and earthen irrigation channels. These channels are used for irrigation in spring and summer.

Suitable habitat in the Development Footprint is aquatic habitat, consisting of open earthen irrigation channels (approximately 40cm high and 40cm wide), with limited fringing vegetation. Species polygons have been determined by applying a 350 m buffer to the habitat (irrigation channels) as per the Significant impact guidelines (DEWHA, 2009), resulting in an impact area of 74.75 ha for the Southern Bell Frog.

The criteria of an 'Important Population' of the species is outlined in the EPBC Act Policy Statement for the species (DEWHA 2009a, 2009b):

'Much of the habitat for *L. raniformis* has been isolated or fragmented, restricting the opportunity for important population processes such dispersal and colonisation. As such, any viable population is considered to be an important population for the persistence and recovery of the species. For this species, a viable population is one which is not isolated from other populations or waterbodies, such that it has the opportunity to interact with other nearby populations or has the ability to establish new populations when the suitability or availability of waterbodies changes. Interaction with nearby populations and colonisation of newly available waterbodies occurs via the dispersal of individual frogs across suitable habitat.'

While this species is known to utilise irrigation channels (DSE, 2012) the present channels are earthen based with minimal vegetation present (only occur on the edge of the channels and where channels are cracked), there is isolation of potential populations due to urbanisation. There are also no local records of this species. Given this any population present is not considered to be a viable population, and therefore, not an 'important population'.

With regards to a 'non-important population' that may occur the irrigation channels present are not likely to be suitable breeding habitat as the channels are narrow and shallow so cannot be inundated with water

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:
and are not considered deep enough for breeding habitat. This along with when the water levels are increased a flow would likely be maintained to enable reaching irrigation crops. This is unsuitable for any tadpoles that may be in the water as they require a still waterbody for at least 4 months. Any present Southern Bell Frog population may be impacted directly by reduced water availability due to channels replacement with pipes, and/or indirectly by reduced water quality from erosion, runoff, dust and pollution in channels that would be retained. Preclearance for this species is recommended to enable relocation.
(b) reduce the area of occupancy of an important population
Any potential population present is not considered to be an 'important population', therefore, the area of occupancy would not be reduced. Aquatic habitat in the Project Area consists of the 74.75 ha of irrigation channel. Proposal will reduce the area of occupancy in the local area of any non-important Southern Bell Frog populations by removing 74.75 ha irrigation channels. Given this species is potentially present a preclearance protocol is recommended to enable relocation where needed.
(c) fragment an existing important population into two or more populations
Any potential population present is not considered to be an 'important population', therefore fragmentation of one would not occur. For the potential population present the irrigation channel (in area EA12) proposed works would reduce the available aquatic habitat with some existing open earthen irrigation channels being converted to pipelines, however, the shallow open earthen irrigation channels provide limited breeding and foraging habitat (Cth DCCEEW, 2024). Irrigation channels in area EA12 do not connect to primary habitat, such as the Murrumbidgee River, therefore, it is unlikely that irrigation channels are being used as dispersal/recolonisation routes between the Murrumbidgee River and other permanent water bodies.
(d) adversely affect habitat critical to the survival of a species

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

Habitat critical to the survival of a species may occur but is not limited to habitat identified in a recovery plan for the species or ecological community as habitat critical for that species or ecological community; and/or habitat listed on the Register of Critical Habitat maintained by the minister under the EPBC Act (Cth DCCEEW, 2024).

The Conservation Advice (2024) states the following under the heading 'Habitat critical to the survival':

'Areas with deep water (>1.5 m) that support a dense cover (30–40 % coverage) of submergent and floating vegetation, while also providing for extensive vegetated and/or rocky margins in the shallows, are required to support all life-stages. Critically, water needs to be available over the breeding season (September–February) (DELWP 2017). Vegetation protects all life-stages from predation, with tall emergent vegetation such as reeds and rushes providing protection for adults, while submerged and floating attached vegetation protects eggs and tadpoles (Wassens 2008; DELWP 2017). Warmer shallow areas increase productivity by accelerating vegetation

growth and providing an abundance of invertebrate prey items and quickens tadpole development (Heard et al. 2015). As well as providing refugia from predators, grass and shrub cover on the banks provides habitat for prey items (see Activity, dispersal and diet section). However, banks choked with vegetation prevent dispersal, which is critically important for survival (see Threats). Habitat critical to survival varies between the two lineages of the southern bell frog…Frogs from the semi-arid northern lineage are reliant on large wetland complexes, consisting of

a network of ephemeral waterbodies adjacent to permanent waterbodies, which act as a refuge during drought (Wassens et al. 2008, 2010). Frog presence is correlated with increasing aquatic vegetation complexity and flooding frequency (Wassens et al. 2008, 2010). For both lineages, movement between breeding sites or from refuge habitat is critical for maintaining genetic diversity and allowing temporal variation in habitat use and/or

recolonisation of sites following local extinction (DEWHA 2009; Turner et al. 2022b). Connective habitat includes wet areas, such as riverbanks, wetlands, drainage lines, swales, and other periodically damp areas, as well as grassy open areas (DSG 2015). Terrestrial foraging habitat is often open and contains flowering plants, tussocks, grasses, and foliage (DSG 2015). This vegetation may be near breeding habitat or some distance away, with frogs found up to 500 m from the nearest waterbody. Terrestrial vegetation, along with fallen logs and ground debris surrounding waterbodies provide essential shelter sites as well as over-wintering habitat.'

While the irrigation channels provide water during the breeding season and there is foraging habitat surrounding the waterbody there is a lack of emergent, submergent and floating habitat due to it being a disturbed earthen base, the irrigation channels are approximately 40cm deep and there were no deep water bodies (>1.5m) seen during the site visit or visible on aerial imagery or EPI mapping within 500m of the irrigation channels. Given this the Project Area is not a part of critical habitat for the Southern Bell Frog. The proposed works would not adversely affect habitat critical to the survival of this species.

(e) disrupt the breeding cycle of an important population

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:
An 'important population' is not considered to be present, as such the breeding cycle is not considered to be disrupted. The Southern Bell Frog breeds in the warmer months (September to April) following a rise in water levels (OEH, 2023). Mating occurs on the edge of, or within, permanent waterbodies, flooded plains, and creek pools, in areas with extensive growth of either emergent or submerged vegetation (Cth DCCEEW, 2024). Egg clusters are laid on the water surface or up to 50 cm below it and rapidly sink. The irrigation channel in the Development Footprint is unlikely to have permanence of water for a duration long enough (at least four to 12 months) to allow a tadpole to fully develop into an adult, and is only up to approximately 40cm deep, therefore, is unsuitable as breeding habitat for the Southern Bell Frog that may occur. There are no nearby water courses or waterbodies that connect with the area EA12 irrigation channels.
(f) modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
The proposed development would remove up to approximately 1.09 ha of aquatic habitat that this species may utilise. Most of the open channels would be converted to pipelines and the channels backfilled. The surrounding terrestrial habitat is disturbed with a history of agricultural use and urban development. While the irrigation channels and adjacent vegetation have potential to be habitat this species has the ability to move 1km in 24hours (DCCEW, 2012) and has been documented to travel several kilometres in the Murray River floodplain (Wassens (2005), in DCCEW 2024). Given the above and that the present irrigation channels have limited habitat suitability for breeding the proposed development is not predicted to modify, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.
(g) result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat
As outlined above, the habitat is already in a disturbed state and can be accessed by people, vehicles, farm animals and pest animals. The proposal would not introduce or exacerbate harmful species into the area of the Southern Bell Frog habitat.
(h) introduce disease that may cause the species to decline, or
The Southern Bell Frog is susceptible to Chytridiomycosis, which is an infectious disease caused by amphibian chytrid fungus (*Batrachochytrium dendrobatidis*) (DSE, 2012). The fungus can be transferred through soil, therefore, there is a risk of it being carried onto the site through contaminated machinery and footwear. To prevent the spread of the amphibian chytrid fungus, it is recommended that a hygiene protocol is followed. With this protocol followed the proposed works are unlikely to introduce a disease to the Project Area that would cause the Southern Bell Frog to decline.
(i) interfere with the recovery of the species

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

Currently, a national recovery plan has been adopted for the Southern Bell Frog (DSE, 2012). The species' conservation advice lists the key threats as (Cth DCCEEW, 2024):
• Human Disturbance (e.g., direct mortality and stress/encroachment from human activities)
  ○ Habitat loss, degradation, and fragmentation
  ○ Altered hydrology
  ○ Pollution
• Disease – animal pathogens (chytridiomycosis caused by the chytrid fungus)
• Competition and predation by introduced invasive fish species.
• Habitat damage by livestock
• Predation from foxes
• Climate change (temperature increase, extreme weather events e.g. cyclones, droughts)
  ○ Increase in drought frequency/severity
  ○ Increase in fire frequency/severity
The proposal would not exacerbate the threats of fragmentation, disease, predation by foxes, and climate change (see above). To decrease impact to potential populations, present several mitigation measures would be put in place. These include:
• Clear physical demarcation of boundary between retained and cleared areas
• Weed control and hygiene protocol
• Sediment and erosion controls.
• Avoiding undergoing works (as far as practical) in Spring or Summer, which is when Southern Bell Frog are most active and the most likely to utilise the irrigation channels. As reasonable, undergo as much works in Autumn and Winter.
• If works are to be completed in Spring and Summer;
  ○ A fauna spotter catcher to be on site to confirm if Southern Bell Frog is present, only if a recent, significant rise in water has occurred (a significant flooding event or increased irrigation supply needed). Or;
  ○ If rain events are not significant enough to create a rise in water- enough that would retain water for at least a four-month period (a significant flooding event), no additional mitigation is required
• An allowable time of two weeks following dewatering of existing earthen channels, or 1-2 days for existing concrete channels would encourage the Southern Bell Frog offsite.
With these mitigation measures in place, the proposal is unlikely to interfere with the recovery of the Southern Bell Frog or to cause significant adverse impacts on the species.

Conclusion

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:
The Southern Bell Frog would have impacts to approximately 1.09ha of potentially suitable habitat within the project area. Due to the following: • the Project Area is not considered to contain critical habitat • the Project Area is not considered to have an important population • there is a lack of records indicating a lower likelihood of occupation. • the irrigation channels are shallow, with flowing water • the irrigation channels' vegetation is restricted to fringing terrestrial habitat which provides limited breeding habitat for the Southern Bell Frog. The proposed works impacts to this species are not considered to be significant.

Appendix H Aboriginal Due Diligence Assessment

Aboriginal Due Diligence Assessment – Area 9

This brief report has been drafted in keeping with the sequence of steps identified in the NSW Office of Environment and Heritage's *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (OEH 2010). The Code of Practice provides a stepped approach to determine if an activity is likely to cause harm to an Aboriginal object, as defined by the *NSW National Parks and Wildlife Act 1974*. The steps follow a logical sequence of questions, the answer to each question determines the need for the next step in the process. The Code of Practice sets out the steps which the Proponent is required to take in order to:

- Identify whether Aboriginal objects are, or are likely to be, present in the works area; and
- Determine whether or not their activities are likely to harm Aboriginal objects.

Each question follows the relevant steps outlined in the Code of Practice.

This assessment reviews the proposed Area 9 works about 1.5km west of the centre of Leeton, in the Riverina of NSW.

Step 1.

Will the activity disturb the ground surface or any culturally modified trees?

The proposed works engage with water reticulation systems owned and operated by Murrumbidgee Irrigation. The water reticulation system includes pipes, tunnels, canals, pumping stations and related electricity infrastructure and dosing facilities.

The Area 9 Project Area works that are subject to this assessment will be undertaken for the water reticulation system include the excavation and construction of a new section of pipeline to replace an existing channel along Toorak Road as well as a laydown area on the corner of Argyle Street and Toorak Road in the Leeton Shire Council Local Government Area (LGA). These activities will entail substantial ground disturbance, however the area of land that the new pipeline will be constructed within has been subject to previous excavation for pre-existing channels located along the entirety of the alignment.

No previously recorded culturally modified trees or old growth mature native trees are located within the Area 9 Project Area. Although there are some trees visible within some parts of the Project Area on the satellite imagery along Toorak Road, these do not appear to be remnant old growth trees but deliberate plantings and are, therefore, unlikely to be culturally modified trees.

As ground disturbance is confirmed the next step in the due diligence process is required.

Step 2a.

Search the AHIMS database and use any other sources of information of which you are already aware.

The Aboriginal Heritage Information Management System (AHIMS) provides a database of previously recorded Aboriginal heritage sites in NSW although it is not conclusive evidence of the presence or absence of Aboriginal heritage sites. On 18th March 2025, a search of the AHIMS database was undertaken over an area of approximately 1,400 km^2 centred on the Project Area. The AHIMS Client Service ID was 986269.

There were 106 Aboriginal sites, and no declared Aboriginal Places recorded within the search area. Sites located in the area included artefact scatters, modified trees, hearths, Aboriginal ceremony and dreaming, burials, PAD, shell and stone arrangements.

There are no Aboriginal sites recorded within or in close proximity to the Project area (Figure 1). The closest recorded sites are 700m to the south of the Project Area. These three sites are modified trees located next to

what appears to be a water holding facility but may have been a natural waterbody prior to its current use. It is likely that there would have been other ephemeral waterholes in the area that have now either been drained, or filled, or disturbed by extensive land modification and tree clearing for pastoralism and residential modifications in the area. The original hydrological regimes have also been altered through irrigation works associated with the Murrumbidgee Irrigation System and a major canal is located 300m east of these recordings. All three recordings are thought to have incorrect site locations details. The site name of all three sites is Amesbury Common which is the name of a nature reserve approximately 160m to the north of where the coordinates identify the sites to be.

Other heritage register searches were also undertaken to identify any items or places in proximity to the proposed work areas. The NSW State Heritage Inventory (SHI), includes items on the State Heritage Register (SHR) and items listed by state agencies and the local Government, to identify any items currently listed within or adjacent to the work areas. The SHI database also includes declared Aboriginal Places in NSW. A search of the SHI database was conducted, which revealed there is one declared Aboriginal Place within the Leeton Shire Council LGA. The Aboriginal Place is a ceremonial site (Koonadan), including burials, located approximately 4km northeast of the Project Area. Koonadan (AHIMS #49-2-0012) is also listed on the AHIMS register and is located on sand dunes near the Tuckerbil Swamp. The nearest listed item on the Local Environmental Plan (LEP) was the Cannery Office and Garden (LEP #I48) located approximately 770m to the east of the Project Area This site is not listed for Aboriginal significance.

Environmental Context

The study area is positioned within the broader Murrumbidgee River floodplain about 11km north of the river. The base geology comprises millennia of flood deposits of the Shepparton formation of poorly consolidated clay, silts, sand and gravel. At the southern end of the village is an occurrence of source bordering dune of unconsolidated sands but the Area 13 project ends at the boundary of this feature.

The location of Area 9 channels is within the Murrumbidgee Scalded Plains landscape according to the Mitchell Landscapes modelling. This comprises Quaternary alluvial deposits with native vegetation typical of low shrublands and grasslands and saltbushes. The Murrumbidgee source bordering dunes landscape is typified by sandy rises along waterways and prior streambeds containing White cypress pine, various Hakea, and other taller trees and shrubs such as bull oak belah and bimble box (DECC 2002).

There is no topographic variation within the landscape of Area 13, with the area considered very flat, there is no discernible variation in the elevation from one part of the area to another.

The Murrumbidgee Irrigation Scheme was approved by the NSW Government in 1906 and the first farms established in the area about 1916. The establishment of the irrigation scheme led to development of the region through construction of irrigation channels, either by constructing new ones or channelising existing creek lines and construction of banks and levees. The scale of the development and the subsequent division of the landscape into irrigation bays required extensive earthworks, including clearing and levelling of the ground surface.

The Area 9 channels Project Area is located on the western outskirts of the town of Leeton. The Project Area is bordered in the north by the Gogeldrie Branch Canal but is otherwise surrounded by medium to low density housing and recreational areas.

Overall, the proposal area would be categorised as highly disturbed through construction and maintenance of the channels, roads and housing and associated services. Some of the channels area are adjacent to active agricultural areas including vineyards.

Archaeological Context

The Leeton area is within an area identified as part of the Wiradjuri language group. This is an assemblage of many small clans and bands speaking a number of similar dialects (Howitt 1996, Tindale 1974, MacDonald 1983, Horton 1994). The Wiradjuri language group was the largest in NSW prior to European settlement. The borders were however, not static, they were most likely fluid, expanding and contracting over time to the movements of smaller family or clan groups. Boundaries ebbed and flowed through contact with neighbours, the seasons and periods of drought and abundance.

European settlers started arriving in the district in the 1830s, after the explorer Oxley passed through the region in 1817. At this point the Aboriginal population was in decline, due to disease such as small pox and influenza as well as dispossession from traditional lands and acts of violence against the Aboriginal people meant there was great social upheaval and partial disintegration of the traditional way of life. This meant that access to traditional resource gathering and hunting areas, religious life and marriage links and access to sacred ceremonial sites were disrupted or destroyed.

However, despite these disruptions, Aboriginal people continued maintain their connections to sites and the land in the early days of European settlement. Where Aboriginal people were taken to places like Warangesda, a mission established near Darlington Point in 1880, people were able to maintain at least some form of association with country and tell traditional stories and Wiradjuri people continue to have a strong connection to their land.

There have been very few archaeological surveys conducted within the wider Leeton area although some have been completed in a broader region, that can assist in development of models of Aboriginal site location. A summary of these reports relevant to the current area is provided in Table below.

Table 1 Summary of previous archaeological assessments.

Project	Relevant Findings	Relevance to Area 9
Gollan 1982 Griffith to Darlington Point transmission line	Recorded artefact scatters on either side of Mirrool Creek, a stone quarry on Whitton Road. No other sites nearby Leeton.	Alignment about 20km west , across floodplain environment.
Thompson 1982 Darlington Point to Yanco Transmission line.	Recorded scarred trees, possible oven sites, surface scatter or artefacts, four isolated artefacts.	15.5km south on southern side of River.
Creamer 1985 Koonadan - Tuckerbil study	Area of very high cultural significance to local Aboriginal people, including presence of burials and ceremonial ground.	Approximately 7km north.
McIntyre 1985 Darlington Point to Deniliquin transmission line.	27 sites recorded, mostly scarred trees and artefact scatters, mostly clustered around water courses.	29.5km south.
NGH 2019	Only a single isolated find was recorded. It was	2.6km south shows artefacts found

Project	Relevant Findings	Relevance to Area 9
Yanco Solar Farm	found between the south side of Houghton Road and a channel bank, about 2m form the bank. The are was disturbed form channel silt dumping.	in disturbed contexts.
Cooper Amesbury Common	Three scarred trees were recorded with a single site name which is called Amesbury Common. All three scars were recorded as being Coolamon scars, one was also recorded as a shield. The size of the scars varied but were all oval shaped. Two were described as having steel axe marks.	500m southeast of the Project Area. The coordinates in AHIMS are potentially incorrect.

After considering the results of these and other archaeological assessments in the region, it is possible to provide a model of Aboriginal site location to predict the potential of finding different types of sits in the region.

Table 2 Summary of predictive model.

Site Type	Description	Potential
Artefact scatters	Artefact scatter sites can range from two artefacts to high-density concentrations containing hundreds of stone artefacts. The size of these sites usually correlates with proximity to sources of fresh water.	Low potential to occur due to significant ground disturbance which has occurred during the construction and maintenance of the existing channels and roads. Given the disturbances of the area remnant low density scatters would likely be displaced and not located in their original context.
Isolated artefacts	These sites consist of a single artefact and usually represents accidental discard or disposal. Can occur anywhere.	Potential to occur anywhere however given the disturbance of areas any isolated finds would likely be displaced and not located in their original context. May be remnants of larger sites now destroyed.
Modified Trees	Trees that have undergone cultural modification. These require the presence of mature native trees and are likely to be concentrated along major waterways and around swamps or depression areas.	Potential to occur within areas where there are remnant mature native trees, and dead or fallen mature trees. Modified trees have been recorded in close proximity.
Burials	Ancestral Aboriginal burials are generally	Unlikely to occur due to historic

Site Type	Description	Potential
	found in elevated sandy contexts or in association with rivers and major creeks.	disturbances of the channels and roads as well as the absence of elevated sandy landforms or major creeks within the area.
Hearth/Ovens	Are identified by burnt clay used for heat retainers. Some are recorded in the district in association with resource locations. Hearths are generally considered to be limited, one-off use or perhaps reused only a few times and generally contain smaller concentrations of heat retainers. Ovens/mounds are considered to represent larger features, reused frequently over time, often extending over a larger area and can include other material such as bone.	Unlikely to occur due to historic disturbances, none have been recorded in the immediate area.
Potential Archaeological Deposits (PADs)	Potential subsurface deposits of archaeological material.	PADs have potential to occur in areas that are likely to have reasonable subsurface deposits in archeologically sensitivity landforms which are relatively undisturbed. While this feature has been recorded in the region the level of existing disturbance of the areas adjacent to the road suggests that this site type is unlikely to occur.

Understanding the landscape context of the proposed work areas assists in building an archaeological predictive model of the area and assist to identify local resources which may have been utilised by Aboriginal people. This information can then potentially be used in predicting the nature of Aboriginal occupation across the landscapes within and adjacent to the proposed work areas. Factors that are typically used to inform the archaeological potential of landscapes include the presence or absence of resources that would have been utilised by Aboriginal people including water, animal and plant foods, stone and other resources.

Based on the outline of previous results in the region, and the assessment of the types and location of sites, it is possible that artefact type sites (scatters and isolated finds) and scarred trees may occur adjacent to the Area 9 channels.

Step 2b.

Are activities proposed in areas where landscape features indicate the presence of Aboriginal objects?

The *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (*Code of Practice)* outlines a range of landscape features that have higher potential to contain Aboriginal objects. It is also

necessary to consider whether there are landscape features of undisturbed land that may contain Aboriginal objects. These include land that is:

- within 200m of water;
- located within a sand dune system;
- located on a ridge top, ridge line or headland;
- located within 200m below or above a cliff face, or
- within 20m of a cave, rock shelter or cave mouth.

There are no water courses mapped near the Project Area. The proposed works are located approximately 7km south of Tuckerbil Swamp (ephemeral depression) around which multiple Aboriginal sites have been recorded. The topography in this area is flat with very little elevation change across the floodplain even at distance from major waterways. Although the Project Area is outside the 200m buffer that is listed within the Due Diligence Code of Practice as a more sensitive area for Aboriginal sites to occur, there is still potential for sites to occur some distance away especially considering the uniform topographic landscape and findings from previous surveys.

Although the Project Area has also been disturbed through excavation for existing channels the area may have contained isolated artefacts or artefact scatters in the past.

Impact avoidance

Step 3. Can any AHIMS listed objects, or landscape features be avoided?

There are no known Aboriginal heritage sites within the proposed works area. There is some potential to limit the risk of impacting unrecorded Aboriginal archaeological objects if present, through managing the work program in those areas where sites have potential to occur. The program of work is varied however, and the channels themselves cannot now be realigned or avoided. The construction of the channels has resulted in considerable disturbance from earthworks and the proposed expansion cannot be relocated to another area.

There are no identifiable landscape features within Area 9 that would be considered as having high archaeological potential, while the general floodplain would be considered to have low to moderate potential based on other survey results from the region. This assumes a low level of disturbance, but the location of the channels and roads within Wamoon has significantly increased the level of disturbance.

The proposed works are shown in detail in Figure 2.

Desktop Assessment

The assessment of the project impacts on Aboriginal heritage was undertaken at a desktop level utilising the results of the background setting information including AHIMS results and aerial imagery and street view imagery publicly available in consideration of the type of activity proposed.

The proposed replacement of the channel with a new pipeline is identified for Toorak Road. There is also a proposed laydown area between Argyle Street and Toorak Road. All of these areas are shown in detail in Figure 2.

The following table outlines the assessment of each portion in relation to the potential for Aboriginal heritage items to occur.

Table 3 Summary assessment of works at Area 9.

Location	Description	Conclusion
Approximately 530m along the northern end of Toorak Road Laydown Area 50m x 100m	An existing channel is located on the western side of the road that is approximately 8m wide and is located 5 to 80m from the road edge. The Gogeldrie Branch Canal runs adjacent to the alignment for the first 230m and is approximately 24m from the road edge. Other site uses in proximity to the Project Area are medium density residential and a vineyard is located at the southern end. The laydown area is located within a cleared section of private property with channels on the western and eastern sides. The area is bordered by residential properties to the north and south. There is one native tree on the southeastern corner of the laydown area.	Very low potential for Aboriginal heritage to occur between the road and channel on the western side of Toorak Road. Low potential for Aboriginal heritage to occur within the laydown area.

Visual Inspection

The assessment process is primarily a desktop exercise, using available information such as the AHIMS search results and relevant archaeological reports to develop or refine a model of Aboriginal site prediction based on the type of activity proposed and the level of disturbance of the area. A visual inspection is also required where landscape features are present that may contain Aboriginal objects that cannot be avoided by the activity.

Due to the presence of old growth native tree a visual inspection was required to determine whether or not it had been culturally modified. A visual inspection of the project area was undertaken on 14th May 2025 by NGH archaeologist Cassandra Venn. An assessment of the native trees along the Area 9 alignment on Toorak Road was undertaken from the road. A closer inspection of the tree was not possible due to the position of the trees on the western side of the channel and their location on private property. It was possible to ascertain from that distance whether or not there was any scarring on the eastern side of the trees. However, upon visiting the location for the visual inspection most of the trees were assessed as being too young to contain cultural modifications

One tree in particular is of a size and age (more than 100 years) that increases the likelihood of containing cultural modifications, however, it is situated on private property and therefore inaccessible, all angles of the tree that were visible from the roadside were assessed and it was determined that there was no cultural modifications on the road facing side (Plate 1 to 4). The tree is a healthy Eucalyptus sp. approximately 8m in height. Other trees along this alignment were also checked for cultural modification. All of the trees along this alignment were younger trees, all on private property and did not show any evidence of cultural modification. There were no Aboriginal objects identified.

The laydown area was not inspected as it was removed from the scope of works for the visual inspection.

Site photographs below taken during field work:

	
Plate 1 Old growth native tree on Toorak Road facing west.	Plate 2 Native trees along the Area 9 alignment facing southwest.
	
Plate 3 Old growth native tree on Toorak Road facing northwest.	Plate 4 Old growth native tree on Toorak Road facing west.

Further Assessment

In accordance with the process outlined in the Code of Practice this assessment has found that the potential for the proposed work activities at Area 9 to disturb Aboriginal Heritage objects or sensitive landscape features is low. There are no previously recorded AHIMS sites within or in close proximity to the Project Area. Although it has been shown in the region that the landform on which the Project Area is located has some potential to contain Aboriginal objects, the level of disturbance reduces the degree of potential of any in situ cultural material or deposits being present.

Due to previous disturbance from the current channel, roads and other infrastructure as well as house construction it is unlikely that Aboriginal objects will be located within the Area 9 Project Area.

All native trees along the Area 9 alignment on Toorak Road are on private property and could not be accessed. Most of the trees along the alignment are not old growth trees and do not need to be assessed, However, one tree is an old growth native tree and due to it's location on private property could not be assessed in it's entirety. If impacts are proposed to this tree it will require private property access to complete a visual inspection.

If the laydown area in Area 9 is still required it will need a site inspection prior to any proposed impacts.

Recommendations

The proposed work can proceed with caution with the following recommendations:

1. One old growth native tree could only be assessed from the road as it is located on private property. This tree will require a thorough visual inspection prior to any proposed impacts.
2. The laydown area originally marked within Area 9 was not assessed as it was removed from the scope of works for the visual inspection. If this laydown area is still required it will require a visual inspection prior to impacts.
3. All other works must be constrained to the assessed areas. Any activity proposed outside of the current assessment areas should be subject to assessment.
4. Wherever possible, all works should be confined to those areas between the road and the channel on the western side of Toorak Road.
5. If any items suspected of being Aboriginal in origin are discovered during the work, all work in the immediate vicinity must stop. The find will need to be assessed and if found to be an Aboriginal object must be reported to Heritage NSW.

The Proponent is reminded that it is an offence under the *NSW National Parks and Wildlife Act 1974* to disturb, damage or destroy and Aboriginal object without a valid approval to do so.

Figure 1. AHIMS sites located within proximity to Area 9.

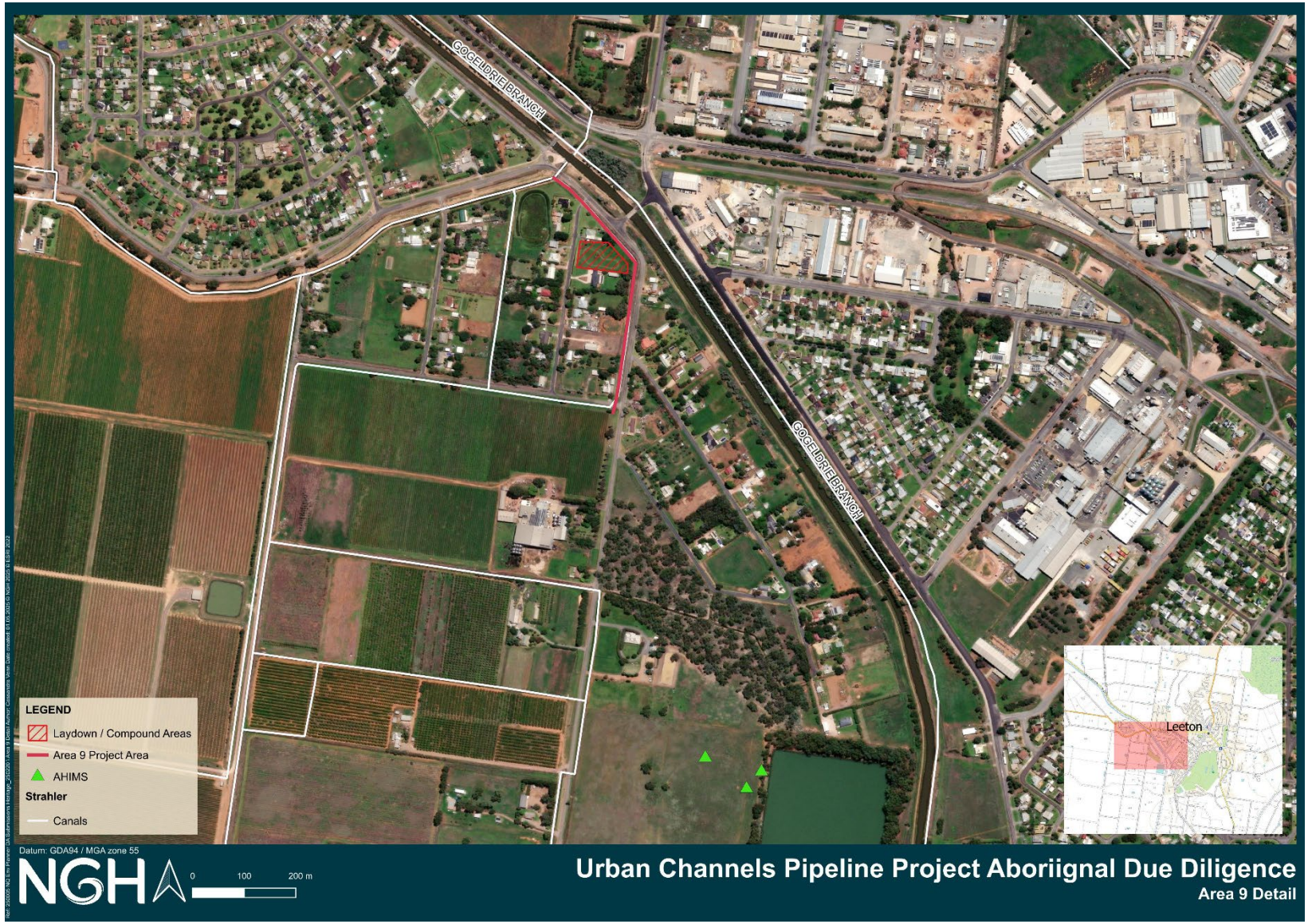


Figure 2 Detail of proposed work in Area 9.

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