

Department of Planning and Environment

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Landscape rehydration infrastructure works – approvals and procedures

March 2023





Acknowledgement of Country

The Department of Planning and Environment acknowledges that the work it undertakes occurs on Aboriginal land. We acknowledge the Traditional Custodians of the land and we show our respect for Elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

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Landscape rehydration infrastructure works – approvals and procedures

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Front page photo: An operating landscape rehydration infrastructure

Contact us:

DPE – Water: water.enquiries@dpie.nsw.gov.au or 1300 081 047

DPE – Crown Lands: cl.enquiries@crownland.nsw.gov.au or 1300 886 235

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1 Introduction

All development in NSW is managed through the NSW planning system. The system enables and guides development to achieve various aims, including maintaining a healthy environment.

This guideline provides advice on the development of landscape rehydration infrastructure and how this type of infrastructure will be managed within the NSW planning system.

State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) is the planning policy that introduces a planning pathway for landscape rehydration infrastructure. Section 2.165A of the T&I SEPP describes the infrastructure as “works involving placing permeable structures on the bed of a stream to reduce erosion and maintain or restore flows for ecological purposes, not including works designed to impound water or impede the passage of fish.”

The T&I SEPP allows any proposed landscape rehydration infrastructure to be developed without consent so long as it occurs in one of 3 rural zones:

- Zone RU1 Primary Production
- Zone RU2 Rural Landscape
- Zone RU4 Primary Production Small Lots.

Not all locations or river styles are suitable for landscape rehydration infrastructure. The determining authority (either the Water or Crown Lands divisions of the Department of Planning and Environment) will assess whether the proposal is suitable and can proceed. Decisions are informed by the information provided in your environmental assessment.

This guideline:

- explains the planning and approval requirements
- sets out what you need to include in the environmental assessment - known as a review of environmental factors (REF) - that will need to accompany the application
- outlines the environmental factors you will need to examine and take into account in the REF (these are listed in Appendix A).

You should read this guideline alongside the [*Guidelines for Division 5.1 assessment*](#).

You may also need to seek further information from planning officers in relevant state agencies or councils, or independent planning professionals.

1.1 About landscape rehydration infrastructure

Landscape rehydration is the process of restoring the natural movement of water through rural landscapes. Land use changes such as vegetation clearing can affect how water flows – for example, the velocity of water moving across a landscape might increase to the extent that its energy erodes stream banks, removes bank vegetation and wildlife habitat, or scours or deepens a stream bed. This reduces the stream’s connection to its flood plain.

Landscape rehydration infrastructure includes the permeable bed control structures installed in watercourses to raise the stream bed. This can help to create healthy landscapes, including hydrated soils, by resisting the erosive forces of the water flow.

The infrastructure changes hydraulic conditions to enable the stream's energy to deposit sediment behind the permeable structure rather than scour the stream bed. Over time the elevation of the stream bed rises and the flood plain rehydrates.

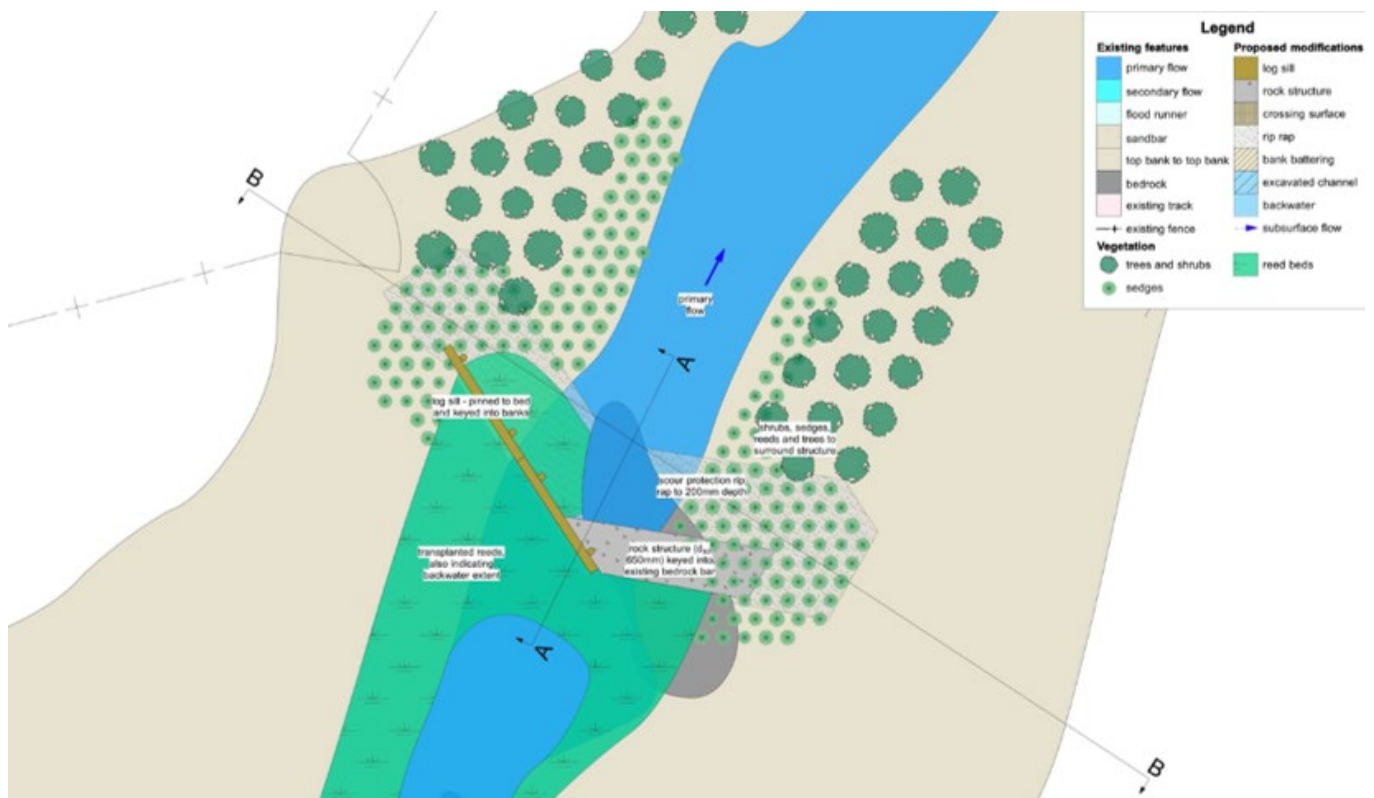


Figure 1 Design example of a landscape rehydration infrastructure (source: © The Mulloon Institute)

1.2 Guideline purpose

Those building landscape rehydration infrastructure (referred to in this guideline as the proponent), determining authorities, the community and the Department of Planning and Environment will use this guideline to understand and work through the relevant provisions under the T&I SEPP.

The guideline is considered a 'section 170 guideline', as it is issued under section 170 of the *Environmental Planning and Assessment Regulations 2021* (EP&A Regulations 2021). This means the proponent and the determining

authority must examine and take into account the environmental factors set out in this guideline, rather than those listed under section 171(2) of the EP&A Regulation 2021.

This guideline is effective from 20 March 2023 and applies to applications made to determining authorities for landscape rehydration infrastructure after 20 March 2023. It will remain in force until it is removed from the NSW Planning Portal or varied or revoked in accordance with the EP&A Regulation 2021.

1.3 Using the guideline

The guideline shows the step-by-step process for determining if the landscape rehydration project can be carried out and the subsequent approval process.



2 Part 1: Getting started

Step 1: Confirm if the proposal meets the definition of landscape rehydration infrastructure

You will begin with a scoping and initial assessment process that identifies whether the project will be considered as landscape rehydration infrastructure under the T&I SEPP. Section 2.165A of the T&I SEPP defines landscape rehydration infrastructure.

Landscape rehydration infrastructure works means *works involving placing permeable structures on the bed of a stream to reduce erosion and maintain or restore flows for ecological purposes, not including works designed to impound water or impede the passage of fish.*

To confirm whether the proposal meets all the elements of the definition your proposal must:

- aim to reduce erosion or restore flows for ecological purposes, which means works constructed for purposes such as for stock water or flood mitigation cannot be considered LRI
- not be designed to impound water
- not be designed to impede fish passage, which means works and structures must not impede the free passage of fish, whether through design, accident or operation
- involve placing permeable structures such as natural materials such as logs, rocks and plants on the stream bed, which means structures made of concrete or similar impermeable materials, or structures acting as a dam, do not meet the definition.

Get in touch with [DPE - Water](#) if you need clarification.

Step 2: Confirm the zoning of the land

Various pathways are available for different types of development. In general, the NSW planning system defines these pathways as:

- development permitted without consent
- development permitted with consent
- development that is prohibited.

The T&I SEPP states that landscape rehydration infrastructure can be constructed as development without consent only in the following zones:

- RU1 Primary Production
- RU2 Rural Landscape
- RU4 Primary Production Small Lots.

To check the zoning of your land, order a section 10.7 planning certificate from council. Planning certificates are legal documents that set out how the property can be used, applicable planning instruments and legislation, and any restrictions on development.

You can also determine your land's zoning on the [NSW Planning Portal](#) or visit your council's customer service centre to view zoning maps.

Step 3: Ensure the proposal is not for extraction purposes nor for impoundment to facilitate water extraction.

The *Water Management Act 2000* (WM Act) is the main law that provides for managing and allocating surface and groundwater resources in NSW. A water access licence is required to 'take' water from a river, lake, dam or groundwater for irrigation, industrial or commercial purposes.

Any proposal designed for extraction purposes or for impoundment to facilitate water extraction is not landscape rehydration infrastructure – it must not:

- 'take' water from a river
- use water for a purpose other than landscape rehydration
- be for flood control purposes
- be associated with water supply work.

If you are unsure, check the Water NSW website at <https://www.waternsw.com.au/>

Your REF must include an assessment of how your proposal meets these requirements. See Step 6.

Step 4: If your landscape rehydration infrastructure meets the definition and is in the correct zone – go to Step 6

If the proposal meets the definition and is located within one of the 3 land use zones, then go to Step 6 of this guideline. This means your proposal can be assessed without the need for a development application.

Step 5: If your proposal does not meet Steps 1 to 3 then you cannot proceed under Part 5 planning pathway – ask Council

If your proposal does not meet the definition or is not in the correct zone, the development is **not** permitted without consent. At this point, get in touch with your council. The proposal may require a development application or it may be prohibited.



Figure 2 Landscape rehydration infrastructure after construction with plantings established

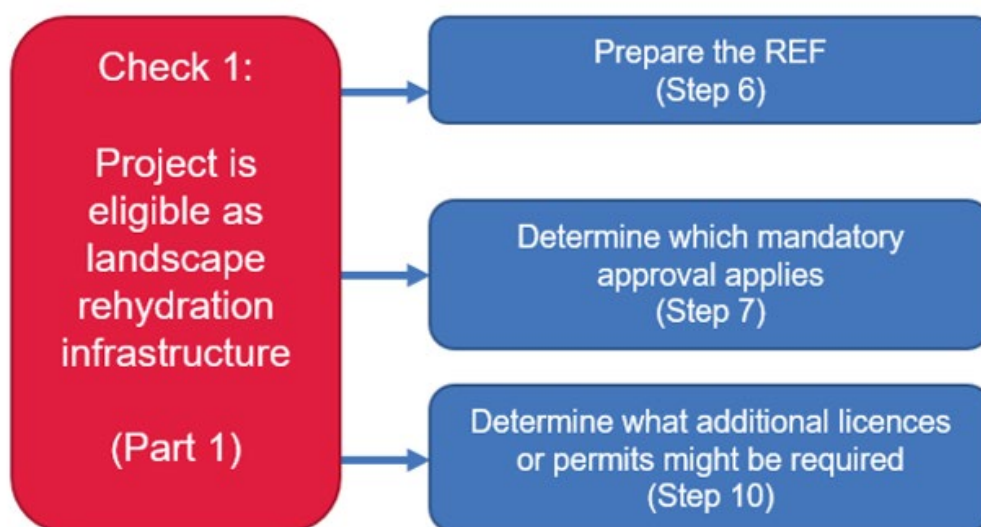
3 Part 2: Approval process

At this point, you have determined that you do not need to obtain development consent from council. However, you will need to meet several requirements from different state agencies, which get involved across the approval process.

A key requirement is an environmental assessment. Environmental impacts are assessed in a document referred to as a review of environmental factors or REF. You will also need to consider:

- **mandatory approval** from either DPE – Water or DPE – Crown lands, as the works are located on a watercourse or waterfront land, or may be located on Crown land. The REF accompanies your application for the mandatory approval and, depending on the type of approval, will determine which state agency will determine the application
- **other approvals, licences or permits** from state agencies.

Steps 6, 7 and 8 will help you to understand what is required.



Step 6: Prepare the REF

The REF outlines the environmental impacts of your proposal and any steps that you will take to protect the environment and manage impacts. State agencies use this to assess your application.

The type of information depends on the proposal and the site. The REF may be a checklist-style document for activities with minor and predictable impacts, or it could be more detailed and include expert consultant reports if the proposal is complex. You'll understand the approach you'll use as you work through the following steps.

The REF must also meet requirements under Part 5, Division 5.1, section 5.5 of the EP&A Act and examine and take into account the environmental factors provided in Appendix A, which are tailored to landscape rehydration infrastructure.

Remember: *Guidelines for Division 5.1 assessment* provides information for proponents and determining authorities assessing activities under Part 5, Division 5.1 of the EP&A Act. Use the guidelines when preparing the REF and to understand other permits and licences you may require.

Step 7: Determine which mandatory approval applies

The proponent needs to confirm which mandatory approval the proposal requires by identifying whether the land is private property, or is owned by the Crown or partly owned by the Crown.

- If the site is **not on Crown land** you need to apply for a controlled activity approval (CAA) under the WM Act and submit the REF with your application to DPE – Water.
- If the site is **partly on Crown land**, your CAA application will need to be accompanied by owner's consent from the DPE - Crown Lands.
- If the site is **totally on Crown land**, you need to apply for a Crown land licence (under the *Crown Land Management Act 2016*) and submit the REF with the application to DPE – Crown Lands.

If you are not sure whether your site is located on Crown Land, contact DPE – Crown Lands.

Remember that the determining authority may also refer the REF to other state agencies for their advice.

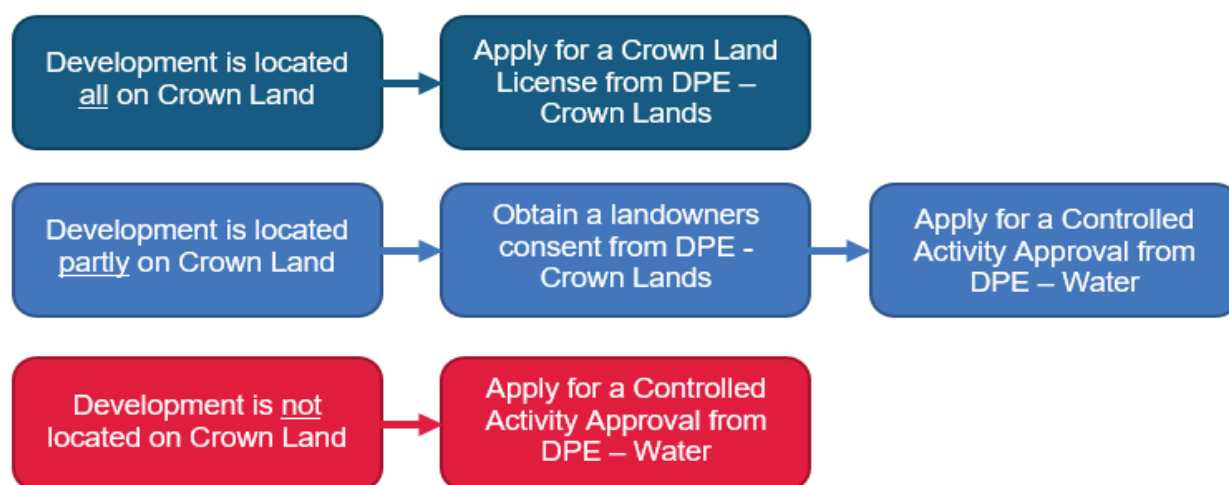


Figure 3 Mandatory approvals

Note: Once the infrastructure is constructed, and the infrastructure needs maintenance work, contact the determining authority to ascertain whether or not the maintenance works are exempted or whether an application is required. Maintenance may be exempt, providing it does not increase the height or width of the existing infrastructure.

Step 8: Apply for a controlled activity approval (if applicable)

You can apply for the controlled activity approval (CAA) from the [DPE - Water](#), which is the determining authority of the REF when a CAA is required. This means it has a duty to consider the environmental impact of the proposal (section 5.5 of the EP&A Act), and whether the proposal is likely to significantly affect the environment (section 5.7 of the EP&A Act). The REF assists with this decision.

A 'controlled activity' is an activity on waterfront land, where waterfront land is defined as the bed and bank of any river, lake or estuary and all land within 40 m of the highest bank of the river, lake or estuary.

Visit [Water Assist](#) to download the CAA application. Follow the questions in sequence to learn about the information requirements and include these in the REF.

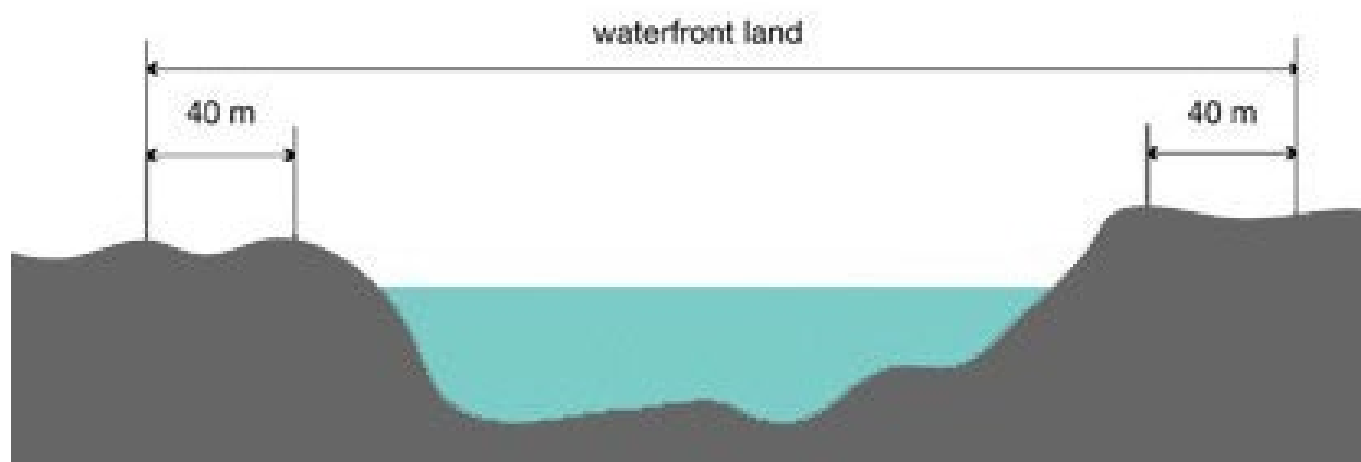


Figure 4 Waterfront land

Step 9: Apply for a Crown Land licence (if applicable)

You can apply for a Crown Land licence from the DPE – Crown Lands, which is the determining authority if a Crown Land licence is required. This means it has a duty to consider the environmental impact of the proposal (section 5.5 of the EP&A Act), and whether the proposal is likely to significantly affect the environment (section 5.7 of the EP&A Act). The REF assists with this decision.

Crown Land is owned and managed by the NSW Government and includes many non-tidal waterways. DPE - Crown Lands issues licences to individuals, companies or entities and community organisations to occupy Crown Land for various purposes. The licence is a contractual agreement that grants the licensee a personal right to occupy and use Crown Land.

DPE - Crown Lands considers the following elements in its assessment:

- site inspection
- REF
- valuation
- current land use and condition
- related policies and guidelines

- land assessment requirements
- Native title
- Aboriginal land claims.

Find out more by visiting their [Licences, leases and purchases website](#). When submitting the application include the required information in the REF rather than a separate document.

Note: If the proposal is likely to significantly affect threatened species or ecological communities or their habitats you need to prepare a species impact statement (SIS) or a biodiversity development assessment report (BDAR). If the proposal is likely to have a significant impact on the environment more broadly you need to prepare an environmental impact statement (EIS) rather than a REF.

Step 10: Determine what additional licences or permits might be required

Approvals, licences or permits may also be required from other state agencies. The REF should identify which approvals, licences and permits are required.

Species impact statement (SIS) or biodiversity development assessment report (BDAR)

Terrestrial biodiversity

Under the *Biodiversity Conservation Act 2016* (BC Act), the REF should apply a ‘test of significance’ to assess any biodiversity impacts. The test of significance is a qualitative analysis of likely impacts and determines whether further assessment is required.

If the proposed landscape rehydration infrastructure is likely to significantly impact threatened species or ecological communities, or their habitats, or will be carried out in a declared area of outstanding biodiversity value (AOBV), a species impact statement (SIS) or biodiversity development assessment report (BDAR) may be required. Find out more by visiting:

- [Threatened species](#)
- [Areas of outstanding biodiversity value](#).

If the proposed landscape rehydration infrastructure is carried out in an AOBV, you must prepare a SIS. You must prepare a BDAR if you want to participate in the biodiversity offsets scheme for terrestrial biodiversity impacts.

If the proposed infrastructure will not be in an AOBV, you will need to undertake the test of significance and submit this to the determining authority. [The Threatened Species Test of Significance Guidelines](#) will help to interpret and apply the test.

If the test of significance indicates that a significant effect is likely, the REF must be accompanied by a SIS; similarly, if you elect to participate in the biodiversity offsets scheme for terrestrial biodiversity impacts, include a BDAR with your REF.

Aquatic biodiversity

You will need to assess whether the applicable site contains known or potential threatened species habitat. You can do this by using DPI Fisheries tools, including threatened species [mapping](#).

You will need to develop a SIS if any aquatic threatened species, populations or ecological communities will be significantly affected. To find out more, check the [Threatened Species Assessment Guidelines - The Assessment of Significance](#). Part 7A, Division 6, Subdivision 2 of the *Fisheries Management Act 1994* (FM Act) sets out what is required for SISs involving marine vegetation and fish.

Find out more about the SIS or BDAR requirements in the Guidelines for Division 5.1 assessment, or by contacting either the DPE – Environment and Heritage Group (for terrestrial biodiversity matters), or the Department of Primary Industries (DPI) – Fisheries (for aquatic biodiversity matters).

Dredging or reclamation works - referral to DPI Fisheries

If you will need to undertake dredging or reclamation or both, you will need to obtain a permit from the DPI Fisheries.

‘Dredging’ involves excavating water land, or moving or removing material on to or from water land. ‘Water land’ means land intermittently or permanently submerged by water (either naturally or artificially) including wetlands.

‘Reclamation’ means using materials like sand, soil, gravel, timber or rocks to fill reclaimed water land or depositing such material on water land to construct something over the water land.

Dredging or reclamation triggers section 199 of the FM Act if the works are undertaken or approved by a public authority other than DPI Fisheries. This requires determining authorities to consult with the Minister for Agriculture (through DPI Fisheries) when they receive the CAA or Crown Lands licence application including the REF.

This enables DPI Fisheries to raise relevant matters such as threatened species management or adequate provision for fish passage (see below). For this reason, be as thorough as possible in developing the REF to allow for a full and proper assessment. The REF should address:

- **environmental assessment requirements** as listed in sections 3.3.1 and 4.1.3 of [NSW DPI Policy and Guidelines for Fish Habitat Conservation and Management](#) (2013)
- **key threatening processes** and whether the proposal can avoid exacerbating the processes listed under Schedule 6 of the FM Act, particularly:
 - installation and operation of in-stream structures and other mechanisms that alter natural flow regimes of rivers and streams
 - degradation of native riparian vegetation along NSW watercourses
- **known or potential threatened species habitat** on the site, assessed using DPI Fisheries tools and [threatened species mapping](#)
- **threatened species**, informed by the [Fisheries NSW Spatial Data Portal](#)
- **fish habitat conservation and management** as outlined in the [Policy and Guidelines for Fish Habitat Conservation and Management](#)

- **fish passage**, by illustrating how the proposed infrastructure will ensure the free passage of fish (including threatened species) within the waterway, and whether the infrastructure requires a fishway - including how this will be installed and maintained in terms of the breeding, spawning and migration of fish
- **assessment of significance** of any potential impacts on aquatic threatened species to determine whether a SIS is required – visit <https://www.dpi.nsw.gov.au/fishing/species-protection> for more information

National parks

You may need authorisation from the NSW National Parks and Wildlife Service if the site is on land acquired or reserved under the *National Parks and Wildlife Act 1974*. Contact the [NSW National Parks and Wildlife Service](#) to obtain approval.

State heritage

An approval is required under the *Heritage Act 1977* if the site is listed on the State Heritage Register. Visit the [State heritage inventory](#) to find out if this applies.

Aboriginal heritage impact permit (AHIP)

To check if this permit is required, undertake an Aboriginal Heritage Information Management System (AHIMS) search. If you are proposing works or an activity that may cause harm to Aboriginal cultural heritage, you need an Aboriginal heritage impact permit (AHIP) before the work can take place. Find out more about the requirements at [Heritage NSW - Aboriginal objects and places](#).

Commonwealth approvals

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) requires approval from the Australian Government if a proposed development has a significant impact on matters of national environmental significance or a significant impact on Commonwealth land. Find out more at the [Significant Impact Guidelines 1.1 - Matters of National Environmental Significance](#).

Native Title and Aboriginal land claims

Aboriginal communities in NSW can claim land to compensate them for the historic dispossession of land and to support their social and economic development under the *Aboriginal Land Rights Act 1983* (ALRA), whereas native title arises as a result of recognition, under Australian common law, of pre-existing Aboriginal rights and interests according to traditional laws and customs.

The REF needs to identify if there are any Native Title or Aboriginal land claims and resultant procedures that will be followed. To identify if your site has a native title claim, visit the [Register of Native title Claims](#).

You can request a search of Aboriginal land claims through [the Office of the Registrar – ALRA](#).

Once this work is undertaken, and the REF shows the relevant approvals or permits, the determining authority may receive advice from other agencies or request further information before proceeding with a determination.



Figure 5 Example of landscape rehydration infrastructure, with plants taking hold

4 Part 3: Determination

Step 11: The determining authority makes decision on the application

The determining authority will record a decision statement in the REF. This is signed by an authorised person on behalf of the determining authority. The determining authority is either DPE - Water or DPE - Crown Lands (refer to steps 8 and 9).

In doing so, the determining authority will review the REF, the relevant application, and advice from other agencies.

Potential outcomes for the proposal could be that:

- it is or is not likely to have a significant impacts on the environment, and an EIS is or is not required
- it will or will not be carried out in a declared AOBV; is or is not likely to significantly affect threatened species, populations or ecological communities, or their habitats; or is or is not likely to impact biodiversity values, meaning a SIS and/or BDAR is/is not required
- it may or may not proceed, and the reasons for the decision
- it does or does not require mitigation measures to eliminate, minimise or manage environmental impacts – and indicating where in the REF document the mitigation measures are set out, as well as listing any additional mitigation measures and/or conditions required by the determining authority and the reasons for these mitigation measures and conditions

A determining authority may also note whether referral to the Commonwealth Department of Agriculture, Water and the Environment has been considered.

If a SIS and/or BDAR is prepared, the decision statement will identify any recommendations from the DPE – Environment and Heritage Group or DPI Fisheries.

5 Part 4: Implementation

Step 12: Commence works

Construction may commence when:

- the determining authority has determined that the proposal may proceed and has approved the CAA or Crown Lands licence application
- all other approvals, licences or permits have been obtained
- all mitigation measures identified in the REF, together with any conditions listed in the application approval have been implemented either prior to construction (if required) or during or after construction depending on the measure.

Record keeping

You should retain a copy of the CAA or Crown Lands licence and any other approval required so that you can easily produce this information to authorised officers if requested.

Aim to keep sufficient records of works undertaken, monitoring and evaluation to show compliance with the CAA or Crown lands licence conditions and other legislative requirements. Record keeping will also benefit the management of the infrastructure.

Post approval requirements

Construction environmental management plan (CEMP)

Once all approvals are obtained and the REF determined, document how potential environmental impacts will be managed during construction and operation, and how you will comply with any relevant approval conditions and mitigation measures. You may decide to develop a construction environmental management plan (CEMP) which includes:

- all measures in the REF or by the determining authority to mitigate potential environmental impacts
- mitigation measures in the CAA or Crown Lands licence, and other conditions related to approvals/permits or licences.

Note that a determining authority may request a CEMP be submitted for consideration and approval prior to making a determination on the application. This may be to ensure that impacts identified in the REF can be managed appropriately during construction.

Monitoring

Monitoring the environmental performance is beneficial during construction, operational and decommissioning to:

- provide evidence of compliance with the REF, and approvals and any mitigation measures of the determination
- provide information to determine whether additional mitigation measures might be required to mitigate previously unidentified impacts.

The CEMP also may detail who is responsible for monitoring, evaluating and reporting on the environmental performance. For instance, all landscape rehydration infrastructure requires planting or vegetation works, which then also need to be maintained for a minimum of 2 years (or for other period specified by the determining authority) after the completion of works. The CEMP would specify that the proponent would be responsible for this work.

Maintenance

The REF should consider maintenance after construction. Before undertaking any maintenance, speak to the determining authority to understand if any post-construction approvals are required.



Figure 6 Example of landscape rehydration infrastructure during construction

Appendices

Appendix A: Environmental factors

The proponent and determining authority must take into account the factors set out below and include the assessment of each factor in the REF. These replace the list of environmental factors in s171(2) of the EP&A Regulation 2021.

Table A.1 Environmental factors

Environmental factor	Specifically for landscape rehydration infrastructure (LRI)
a) Any environmental impact on a community	<p>(a1) Impacts during construction – noise, vibration, traffic, access, salinity, acid sulphate soils, soil erosion, sedimentation, water quality, water flow.</p> <p>(a2) Potential impacts post-construction – water flow/water quality at the site and downstream; potential flooding impact on the landscape rehydration infrastructure (LRI), community assets such as roads, bridges, dwellings/structures, flood evacuation transport routes.</p> <p>(a3) Impacts resulting from LRI on agricultural productivity and resilience of the landscape.</p> <p>(a4) Relationship of proposed LRI to environmental / remediation works in the catchment.</p>
b) Any transformation of a locality	<p>(b1) Short and longer term transformation of the existing river style of the stream.</p> <p>(b2) Short and longer term transformation of the stream banks, riparian zones, flora and fauna (terrestrial and aquatic), fish passage, water quality, sedimentation.</p> <p>(b3) Short and longer term transformation of the adjoining natural features to the stream (e.g. wetlands) and flood plain.</p> <p>(b4) Short and longer term transformation of water flow regime.</p>
c) Any environmental impact on the ecosystems of the locality	<p>(c1) Impacts of construction and post-construction on the existing terrestrial and aquatic biodiversity - instream and immediately adjacent and related landscape, including fish passage.</p> <p>(c2) Impacts of vegetation removal/planting.</p> <p>(c3) Weed and invasive species impact.</p>
d) Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality	<p>(d1) Findings of aesthetic, recreational, scientific or other environmental quality or value of the site, and potential reduction as a result of the proposed LRI.</p>

Environmental factor	Specifically for landscape rehydration infrastructure (LRI)
e) Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations	<p>(e1) Findings of basic search of the Aboriginal Heritage Information Management System (AHIMS) to identify any heritage items at or near the site and actions required such as whether AHIP is required.</p> <p>(e2) Results of consultation with the Local Aboriginal Land Council.</p> <p>(e3) Findings of Native Title Search and actions required.</p> <p>(e4) Findings of local or state heritage item search and actions required.</p>
f) Any impact on the habitat of protected fauna (within the meaning of the <i>National Parks and Wildlife Act 1974</i>)	<p>(f1) Findings of listed protected fauna at and in the vicinity of the site and their habitat.</p> <p>(f2) Potential impact on the habitat of listed protected fauna as a result of the proposed LRI.</p>
g) Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air	<p>(g1) Findings of review of existing information on protected and threatened vascular flora and vertebrate terrestrial and aquatic fauna species, populations, ecological communities and their habitats, and . potential impacts as a result of the proposed LRI.</p> <p>(g2) Any key threatening processes as a result of proposed LRI.</p> <p>(g3) Potential endangering of any species as a result of the proposed LRI.</p>
h) Any long-term effects on the environment	<p>(h1) Long-term effects of the proposed LRI on the:</p> <ul style="list-style-type: none"> natural water flow regime of the stream, including regime under projected climate change conditions <p>(Note: An assessment of stream water flow regime and hydraulics would involve an assessment of: past rainfall and flooding; existing and past (if known) stream flows at location of proposal; existing and past (if known) stream flows to downstream properties; potential impacts on water flow downstream – post construction of LRI. The assessment would detail the hydraulic calculations used to assess the effect of the proposal on the water level for natural bank-full discharge.)</p> <ul style="list-style-type: none"> flooding biophysical environment associated natural features and ecological function of the stream erosion of the stream flood plain resilience of the landscape agricultural productivity

Environmental factor	Specifically for landscape rehydration infrastructure (LRI)
i) Any degradation of the quality of the environment	<p>(i1) Findings on the existing quality of the environment.</p> <p>(i2) Potential degradation by the LRI on the existing quality of the environment (during construction and post-construction).</p>
j) Any risk to the safety of the environment	<p>(j1) The potential impact on flooding and its behaviour as a result of the proposed LRI.</p> <p>(j2) The potential impact as a result of the LRI, during a flood event, on existing infrastructure such as roads, bridges, buildings, structures and fences.</p> <p>(j3) The potential impact as a result of the LRI on flood emergency response to existing communities.</p> <p>(j4) The potential impact of a flood event on the proposed LRI and its ability to stay in place during a flood event.</p> <p>(j5) The potential impacts identified in <i>Flood Impact and Risk Assessment</i> (DPE, February 2022).</p>
k) Any reduction in the range of beneficial uses of the environment	<p>(k1) Findings of existing beneficial uses at the site and vicinity (e.g. agriculture, recreation, fishing, nature appreciation, access to stream by stock and the like).</p> <p>(k2) Any reduction in existing beneficial uses found at the site and the vicinity as a result of the LRI.</p>
l) Any pollution of the environment	<p>(l1) Any potential pollution of the water during construction and post construction as a result of the LRI.</p> <p>(l2) Impact of a potential rainfall or flood event during construction (e.g. storage of fuel for construction vehicles, vehicles, stock piles of soil, and the like).</p>
m) Any environmental problems associated with the disposal of waste	<p>(m2) Environmental problems of waste during construction of LRI (left over construction materials, and personnel waste).</p>
n) Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply	<p>(n1) Source of construction materials for LRI – from site, locally sourced, out of local area and scarcity.</p> <p>(n2) Water as a resource downstream.</p>
o) Any cumulative environmental effect with other existing or likely future activities	<p>(o1) Numbers of LRI on stream or proposed on the stream and the effect on the environment.</p> <p>(o2) Other environmental/landscape remediation being undertaken in the catchment/vicinity of the LRI.</p>

Environmental factor	Specifically for landscape rehydration infrastructure (LRI)
p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions	(p1) Potential impact on coastal processes and coastal hazards, including those under projected climate change conditions, where LRI is located in the coastal zone .
q) Any applicable local strategic planning statement, regional strategic plan or district strategic plan made under Division 3.1 of the Act	(q1) Findings of relevant issues, objectives, policies and actions identified in local, district and regional plans and compliance of the proposed LRI.
r) Any other relevant environmental factors	(r1) Any other factors relevant to the proposed LRI in assessing impacts on the environment to the fullest extent.

Appendix B: Glossary

Relevant legislation and planning instruments contains terms that may have a different meaning in everyday language. Table B.1 clarifies what these terms mean within the context of these guidelines.

Table B.1 Terms used in this guideline

Term	Meaning for the purpose of this guideline
Bed control structure	An in-stream permeable work designed and constructed to stabilise a stream bed by controlling channel bed grade in order to reduce erosion and restore environmental values but does not include works that are designed to impound water or impede fish passage.
Biodiversity	The variety of life on earth (all plants, animals and micro-organisms). It encompasses genetic diversity, species diversity and ecosystem diversity. Ecosystems include species assemblages, habitats, processes and interactions with abiotic and human systems
Biodiversity development assessment report (BDAR)	A report required under the BC Act and prepared by a person accredited to apply the biodiversity assessment method
Coastal zone	<p>The <i>Coastal Management Act 2016</i> defines the coastal zone as four coastal management areas namely:</p> <ol style="list-style-type: none">(1) Coastal wetlands and littoral rainforest areas(2) Coastal vulnerability area(3) coastal environment area(4) Coastal use area. <p>These areas are mapped and available on the Department of Planning and Environment's web site.</p>
Cumulative impact	Impacts that are a result of incremental, sustained and combined effects of human action and natural variations over time, both positive and negative, or by the compounding effects of a single project or multiple projects in an area, and by the accumulation of effects from past, current and future projects on the stream or catchment.
Determining authority	A minister or public authority and, in relation to any activity, the minister or public authority by or on whose behalf the activity is or is to be carried out or any minister or public authority whose approval is required in order to enable the activity to be carried out.
Ecosystem	A biological community of interacting organisms and their physical environment. It includes all the living things in that community, interacting with their non-living environment (weather, earth, sun, soil, climate and atmosphere) and with each other.

Term	Meaning for the purpose of this guideline
Environment	All aspects of the surroundings of humans, whether affecting any human as an individual or their social groupings.
Environmental impact	Any change to the environment, whether adverse or beneficial, resulting from a proposed activity. In other words it is the effect that a proposed landscape rehydration infrastructure may have on the environment.
Environmental impact assessment	An assessment of the environmental, social and/or economic impacts of a proposal.
Flow regime	Flow regime refers to the pattern of flows in a waterway over time that will influence the response and persistence of plants, animals and their ecosystems.
Mitigation	Actions or measures to avoid, minimise, rectify (by repairing, rehabilitating or restoring) and/or reduce or eliminate over time (by preservation and maintenance) the adverse environmental impacts of a proposed landscape rehydration infrastructure.
Natural bank-full discharge	The water level of which a stream is at the top of the banks and any further rise would result in water moving (discharge) into the flood plain.
Pollution	Introducing any matter into waters which changes the physical, chemical or biological condition of the water. It also includes placing any matter where it might fall, descend, be washed, be blown or percolates into any waters (e.g. soil which might washed into a waterway). Under legislation, certain matters introduced onto or into waters are automatically assumed to constitute pollution of waters (e.g. animal matter, soil, thermal waste, any matter that contains faecal coliforms, pesticides, etc.).
Proponent	Those proposing to undertake a landscape rehydration infrastructure.
Public authority	Government departments, local councils, statutory bodies and prescribed determining authorities who have been deemed 'public authorities' under Part 5 of the EP&A Act.
Review of Environmental Factors (REF) -	The Division 5.1 of the EP&A Act environmental impact assessment
Riparian zone	Means any land that adjoins, directly influences, or is influenced by, a body of water (including land immediately alongside small creeks and rivers, such as banks, gullies and dips that sometimes run with surface water, areas surrounding lakes (including terminal lakes), and wetlands that interact with rivers in times of flood).
River style	A framework for determining stream geomorphic type, condition and recovery potential.

Term	Meaning for the purpose of this guideline
Salinity	Refers to the concentration of dissolved salts in water or soil. The presence of high levels of salt in water and/or soil can affect aquatic ecosystems, impact vegetation growth and health, reduce crop yields and damage infrastructure.
Species Impact Statement (SIS)	An assessment of the impacts of a proposed landscape rehydration infrastructure on threatened species, populations or ecological communities, or their habitats as established under the BC Act or FM Act.

Appendix C: Abbreviations

AHIMS	Aboriginal Heritage and Information Management System
AHIP	Aboriginal Heritage Impact Permit
BC Act	<i>Biodiversity Conservation Act 2016</i>
BDAR	Biodiversity development assessment report
CAA	Controlled Activity Application
DPE – Crown Lands	Crown Lands division of the Department of Planning and Environment
DPE – Water	Water division of the Department of Planning and Environment
DPI Fisheries	Fisheries division of the Department of Primary Industries
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation 2021	<i>Environmental Planning and Assessment Regulations 2021</i>
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
FM Act	<i>Fisheries Management Act 1994</i>
LRI	Landscape rehydration infrastructure
REF	Review of environmental factors
T&I SEPP	<i>State Environmental Planning Policy (Transport and Infrastructure) 2021</i>
SIS	Species impact statement
WM Act	<i>Water Management Act 2000</i>