JOHN HOLLAND

# INLAND RAIL
# ILLABO TO STOCKINBINGAL PROJECT

## Water Re-use Strategy

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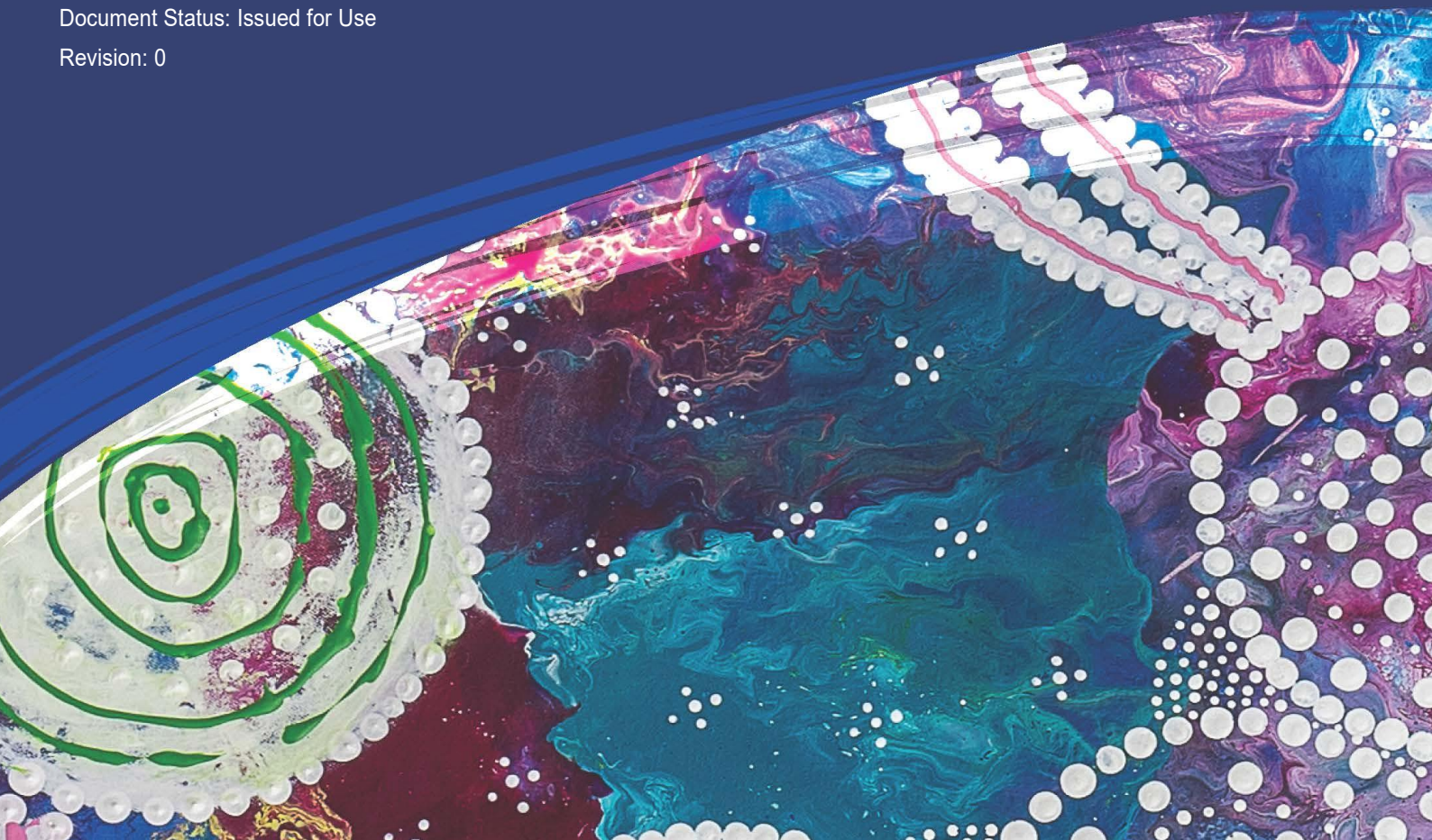

## Document Control

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## Revision History

| REVISION | DATE ISSUED | DESCRIPTION |
|---|---|---|
| A | 29/04/2025 | Issued for Review |
| B | 3/07/2025 | Issued for Review |
| C | 2/09/2025 | Issued for Review |
| 0 | 18/09/2025 | Issued for Use |

# Table of Contents

# Tables

# 1 Revisions and Distribution

## 1.1 Revisions

Draft issues of this document are identified as Revision A, B, C etc. Following acceptance by the document approver, the first finalised revision will be Revision 0. Subsequent revisions will have an increase of “1” in the revision number (1, 2, 3 etc.).

## 1.2 Distribution

The controlled master version of this document is available for distribution as appropriate and maintained on the document management system being used on the project. All circulated hard copies of this document are deemed to be uncontrolled.

| | |
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| Project Director | Rob Pitt |
| Environmental Approval Manager | Daniel Lidbetter |
| Environmental Representative | Ricardo Prieto-Curiel |
| Environment & Sustainability Manager | Andy Robertson |
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# 2 Terms and Abbreviations

Definitions and abbreviations relevant to this Water Reuse Strategy are provided in Table 2-1.

**Table 2-1 Definitions and abbreviations relevant to this Water Reuse Strategy**

| Term / Abbreviation | Definition / Expanded text |
|---|---|
| CEMP | Construction Environmental Management Plan |
| CoA | Conditions of Approval |
| CSSI | Critical State Significant Infrastructure |
| CWMP | Construction Waste Management Plan |
| Environmental Assessment Documentation | Inland Rail – Illabo to Stockinbingal Environmental Impact Statement (ARTC 2022)<br>Illabo to Stockinbingal Project Response to Submissions (ARTC 2023)<br>Response to Submissions – Appendix E - Biodiversity Development Assessment Report version 12 (IRDJV, June 2024)<br>I2S – Mitigation Measures (Inland Rail, April 2024)<br>Illabo to Stockinbingal (SSI-9604) Additional and Appropriate Measures for Box Gum Woodland Impacts (Inland Rail, June 2024)<br>Technical and Approvals Consultancy Services: Illabo to Stockinbingal – Box Gum Woodland Gum Flat Rehabilitation Opportunity (IRDJV, June 2024) |
| EIS | Environmental Impact Statement |
| EPA | NSW Environment Protection Authority |
| EPL | Environment Protection Licence |
| ER | Environmental Representative |
| Incident | An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance. |
| GDEs | Groundwater dependent ecosystems |
| GWCC | Goldenfields Water County Council |
| ISC | Infrastructure Sustainability Council |
| I2S | Illabo to Stockinbingal |
| JHG | John Holland Group |
| NSW | New South Wales |
| RMMs | Revised Mitigation Measures |
| SEARs | Secretary's Environmental Assessment Requirements |
| Strategy | Water Reuse Strategy |
| WELS | Water Efficiency Labelling and Standards |
| Work | Any physical work for the purpose of the CSSI including construction and low impact work but not including operational maintenance work |
| WRS | Water Reuse Strategy |

# 3 Introduction

## 3.1 Context

This Water Reuse Strategy (WRS or 'Strategy') has been prepared for the Inland Rail – Illabo to Stockinbingal Project (the Project) to address the requirements of the Minister's Conditions of Approval (CoA), the measures listed in the Environmental Assessment Documentation, revised mitigation measures (RMMS) listed in the Submissions Report and all applicable legislation. This water reuse strategy is only applicable to the construction phase of the Project.

## 3.2 Scope of the Strategy

This Strategy has been developed in accordance with New South Wales (NSW) CoA E149 and Revised Mitigation Measure (RMM) AHF-6. This strategy details considerations of the current and future demand of potable water within the Project and considers possible alternate water sources to be used for construction, where potable water may not be required.

This Strategy describes how the reuse of water will be managed during construction of the Project. CoA E149 states that the Water Reuse Strategy must include items provided in Table 3-1.

**Table 3-1 Primary NSW CoA**

| CoA | Requirement | Where addressed |
|---|---|---|
| E149 | A Water Reuse Strategy must be prepared, which sets out options for the reuse of collected stormwater and groundwater during construction. The Water Reuse Strategy must include, but not be limited to: | This Strategy |
| | (a) Evaluation of reuse options | Section 6.3 |
| | (b) Details of the preferred reuse option(s), including: | Section 7 |
| | - volumes of water to be reused | Table 7-1 |
| | - proposed reuse locations and/or activities, | Section 7.3 |
| | - proposed treatment (if required), and | Section 6<br>Section 7 |
| | - any additional licences or approvals that may be required; | Section 7.1 |
| | (c) Measures to avoid misuse of recycled water as potable water; | Section 7 |
| | (d) Consideration of the public health risks from water recycling; and | Section 6.4 |
| | (e) A time frame for the implementation of the preferred reuse option(s) | Section 6<br>Section 7.1 |
| | The Water Reuse Strategy must be prepared based on best practice and advice sought from relevant agencies, as required. The Strategy must be applied during construction and operation. | Section 5<br>Section 3.2 |
| | Justification must be provided to the Planning Secretary if it is concluded that no reuse options prevail. | N/A – re-use options are described in this strategy |
| | *Note: Nothing in this condition prevents the Proponent from preparing separate Water Reuse Strategies for the construction and operational phases of the CSSI.* | Noted |

The relevant RMMs relating to water reuse for the Project are presented in Table 3-2.

**Table 3-2 RMM Relevant to Water Reuse Strategy**

| Ref | Issue | Mitigation measure | Where addressed |
|---|---|---|---|
| AHF-6 | Reuse of rainwater | Capture of all rainwater from the roofs of camp buildings across the accommodation camp site for suitable reuse within the site. | This plan (which addresses construction only), section 7.3 |
| WQ-4 / HF-7 | Dewatering of farm dams that require relocation and/or decommissioning | A dam dewatering protocol would be developed as part of the soil and water management plan. It would consider:<br>- options for reuse of water in the dam<br>- licensing and approval requirements, where relevant<br>- the quality and quantity of the water to be released, where relevant<br>- strategies to minimise impacts on native, threatened or protected species<br>- strategies to minimise spread of nuisance flora and fauna species. | Section 6.2.3<br>SWMP Dewatering Procedure |

# 4 Purpose and Objectives

## 4.1 Purpose

This Strategy outlines the possible construction water sources and a strategy on how to reuse water to assist in the reduction of potable water usage for the duration of construction of the Project.

## 4.2 Objectives

The key objective of this Strategy is to ensure that water use is minimised as far as possible, and use of this resource is appropriately managed throughout construction of the Project.

To aid in achieving this objective, RMMs relevant to the water reuse strategy are described, scheduled and assigned responsibility as outlined in:

- Environmental Assessment Documentation (the Environmental Impact Statement (EIS)).
- Infrastructure Approval (SSI-9406).
- All relevant legislation and other requirements.

### 4.2.1 Performance Outcomes

John Holland group (JHG) will meet the performance outcomes relating to water reuse from the EIS (Chapter 27.5). The relevant performance outcomes are detailed in Table 4-1.

**Table 4-1 Performance Outcomes identified in the EIS Relevant to the water reuse strategy.**

| Performance Outcome (as identified in the SEARS) | How the Outcome is Addressed | Measurement Tool |
|---|---|---|
| **Water – Hydrology**<br>Long term impacts on surface water and groundwater hydrology (including drawdown, flow rates and volumes) are minimised.<br>The environmental values of nearby, connected and affected water sources, groundwater and dependent ecological systems including estuarine and marine water (if applicable) are maintained (where values are achieved) or improved and maintained (where values are not achieved).<br>Sustainable use of water resources | Consider opportunities for reuse of treated water during construction<br>Potable water use will be minimised as far as practicable<br>The use of potable water during construction will be minimised where possible.<br>Environmental values of nearby, connected and affected water sources are improved and/or maintained<br>Implement the environmental control measures detailed in the Soil and Water Management Sub-plan | Permit to Discharges<br>Erosion and Sediment Control Plans<br>Outcome of environmental and Environmental Representative (ER) inspections |

## 4.3 Targets

Targets for the management of impacts relating to the water reuse strategy during the construction include:

- Full compliance with the relevant legislative requirements and RMMs.
- Manage complaints from the community and stakeholders in accordance with the complaints management process detailed in the Construction Environmental Management Plan (CEMP).

- Manage impacts during the construction of the Project through the implementation of feasible and reasonable water reuse management measures, including those detailed in Section 7.
- Maintain all plant and equipment associated with water usage (i.e. pump and pipe infrastructure) in accordance with manufacturer's requirements.
- All construction personnel to undergo site induction training which will include detail on best practise.

# 5 Consultation

Condition E149 states that this Strategy must be based on best practice and advice sought from relevant agencies, as required. This Strategy has been developed using best practice water management techniques implemented on past projects such as the Narrabri to North Star (Inland Rail) Project.

Based on the water use options that have been identified in this Strategy, the following agencies have been sought for advice in the making of this Strategy:

| Agency | Consultation | Outcome |
|---|---|---|
| Cootamundra Gundagai Regional Council (CGRC) | John Holland engaged with CGRC to confirm the process for obtaining approval to operate and re-use treated water obtained from an onsite Sewage Treatment Plant at the Temporary Workers Camp facility on Grogan Road, Stockinbingal. | CGRC advised that a section 68 approval under the *Local Government Act 1993* would be required to operate an onsite sewage treatment system. |
| Goldenfields Water County Council | John Holland engaged with Goldenfields Water to confirm the available capacity of water that could be sourced within the network. | Goldenfields Water requested an independent study to be undertaken at the cost of John Holland to confirm the available capacity within the network to provide as potable water for use by JHG on the Project.<br><br>Goldenfields Water have since reviewed this independent study procured by JHG and confirmed that water supply to the Project will be acceptable based on the findings of this study. |

In addition to the agency advice provided above, the Project have undertaken community engagement with local landowners and affected property owners with regards to opportunities to source harvested water within farm dams that are not required for agricultural production. These discussions are ongoing and will be managed throughout construction in line with Conditions E94 and E95 of the CoA.

Consultation being undertaken with affected property owners associated with farm dam water re-use opportunities will also take into consideration the requirements for consultation and design associated with Conditions E79, E80 and E81. This Strategy has also been provided to the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) as evidence of addressing comments raised in the CoA C17 review undertaken for the Project Soil & Water Management Plan (SWMP).

# 6 Water Sources and Reuse Options

Preferred water sources for the Project have been identified to include town water supply, purchase from local water utility and reuse of suitably treated wastewater (including stormwater run-off collected from compound and sheds). Non-potable water would be required for a number of construction activities such as dust suppression and earthworks compaction.

Water in temporary sediment basins may require testing under certain conditions. Water that is captured in sedimentation ponds or comes directly from our site and will be used on our site will not require mandatory testing. However if signs of depreciated water quality are detected, e.g. if showing signs of PH imbalance, saline, or high turbidity depending on its appearance and source, testing will be undertaken. Where determined as being required, water showing pH levels outside acceptable ranges would be

treated, while turbid water would be treated through normal operation of the temporary sediment basins. If saline water is identified it will be land infiltrated within the vicinity of where it was identified, reused within the immediate vicinity for dust suppression (or disposed of offsite at a licenced liquid waste facility).

With the appropriate sizing of the temporary sediment basins to allow for treatment of surface water runoff and implementation of other management measures (including sediment basin water quality checks prior to reuse), reuse of this water for construction activities would not pose a risk to downstream surface water and groundwater quality including any risks to ecosystem and human health.

Because the rate of consumption of construction water exceeds the available rate of supply from Goldenfields Water County Council (GWCC), accumulation of construction water prior to construction commencement would be required. This would be facilitated by provision of water storage tanks adjacent to the alignment, and a water tanker road haulage program to transport the reticulated supply availability at Cootamundra and Stockinbingal. A simple water supply model (no storage losses or rainfall gains considered) has been used to estimate the length of the pre-construction water accumulation period and the capacity of required water storages. Water tanks would be placed within construction compounds.

The use of recycled water from sewage treatment plants would be considered during detailed design as per the EIS. Groundwater sources were identified as potential sources, but availability and yield were estimated as low and therefore not likely to meet demands. Farm dams are located along the alignment of the project. Section 5.2.3 covers farm dams in greater detail and outlines the Farm Dam Dewatering Procedure (Appendix E of the Biodiversity Management Sub-plan) and a Dewatering Procedure (Appendix D of the Soil and Water Management Sub-plan) which also consider options for reuse of water in dams directly impacted by the project and identify licensing and approval requirements for reuse of water as a dust suppression on site.

As described in Section 8.5.4 of the EIS, water would be required for a number of construction activities, including rail and road formation works, dust control, spoil compaction and reinstatement works. Preliminary estimates of water requirements for the Project indicate that a total of 675 ML of water would be required over the duration of construction as shown in Table 6-1.

Further to this, JHG have undertaken a detailed assessment of the estimated construction water requirements for the Project. The assessment was based on and considered the following:

- Preliminary information provided in the EIS i.e. Table 6-1.
- Construction methodology and phasing proposed.
- Anticipated climatic conditions (i.e. temperature, wind and corresponding evaporation rates), including seasonal variation.
- Geotechnical data (specifically moisture content) of in situ formation material and quarry sourced materials.
- Similar projects (Inland Rail - Parkes to Narromine; Narrabri to North Star).
- Previous experience.

Results of the detailed assessment, timing and a comparison to the preliminary estimates provided in the EIS are provided in Table 6-1.

The water balance study will be updated as the Project progresses and as more detailed information is realised. The final water balance study will be submitted as part of the Projects ISC submission.

Table 6-1 Construction Water Requirements

| Construction Activity | Water Demand (ML) | | Timing |
|---|---|---|---|
| | EIS | JHG Assessment | |
| Earthworks | 585 | 322 | Predominantly during bulk earthworks |
| Site won formation | 42 | | |
| Dust suppression | 26 | | Predominantly during bulk earthworks but also generally throughout the Project where there is ground disturbance |
| Landscape establishment watering | 22 | 22 | During and following landscaping |
| Temporary Workforce Accommodation Facility | Not calculated | 30 | During operation of the temporary workforce accommodation facilty |
| **TOTAL** | **675** | **374** | - |

## 6.1 Potable Water

Potable water would be required at several locations across the Project for the compounds. Potable water will also be used to fill water tanks/ carts at various locations along the existing water mains where hydrant valves are located. Where potable water is used to fill water carts between the compound locations, hydrants will be utilised that are located on local roads away from traffic that can be accessed safety. Potable water will only be used for construction water (i.e. Dust suppression and conditioning of fill materials) where reuse of water is not possible.

Initial consultation with Goldenfields Water, who are responsible for water supply functions within the local government areas of Junee, Temora and parts of Cootamundra–Gundagai, has indicated that it can supply water at a rate of 15–20 L/s at Stockinbingal, adjacent to the rail alignment, and an additional 10 to 12 L/s at Cootamundra via its existing reticulated potable supply pipe network. Reliability of potable water supply at both locations is subject to restrictions at any time and at the discretion of Goldenfields Water. Goldenfields have also raised the opportunity to use raw water. The use of raw water accumulated from site help sustainability targets under the ISC rating.

## 6.2 Non-potable water

### 6.2.1 Groundwater

No groundwater ‘take’ for use as construction water supply is proposed. However, groundwater dewatering may occur during construction if excavations (cuts) or piling for bridge foundations intersect with the groundwater table. Based on the design and the current information in the EIS, anticipated volumes from these activities are considered negligible. The removal of the groundwater from its water source and the taking/using of water will be undertaken via an exemption under the *Water Management (General) Regulation 2018*. This exemption allows for water take by transport authorities (or on behalf of transport authorities) for the purposes of construction and/or maintenance of rail infrastructure.

The impact to registered users or groundwater dependent ecosystems (GDEs) due to construction of the proposal is considered to be negligible based on information provided in the EIS and will not be sufficient to trigger the need to apply for a WAL. Should groundwater in-flows be identified during detailed design or construction, this Strategy will be updated with further detail on groundwater volumes and license requirements (should these be triggered).

### 6.2.2 Rainwater Captured on Site

There are opportunities to use sediment basins and rainwater tanks for water storage on site. Once water has been treated in sediment basins and approved for discharge, water can either be transported to temporary storage areas for re-use in the earthworks or pumped into watercarts for re-use as dust suppression and during earthworks compaction. There are also opportunities to have site sheds with rainwater tanks, having the site facilities to utilise rainwater capture. Water tank farms that consist of up to 6 x 30,000 litre tanks would be placed within construction compounds 4,7,11,25 and 28.

### 6.2.3 Farm Dams

During construction there would be direct impacts to 14 farm dams and potential impacts to a number of other farm dams located close to the proposal. These farm dams are predominantly located on overland flow paths to opportunistically capture surface flows. The condition and volume of these dams is not known. A Farm Dam Dewatering Procedure (Appendix E of the Biodiversity Management Sub-plan) and a Dewatering Procedure (Appendix D of the Soil and Water Management Sub-plan) have been prepared as part of the CEMP, which also consider options for reuse of water in dams directly impacted and identify licensing and approval requirements. Water from farm dams is likely to be reused for dust suppression on site.

## 6.3 Water Reuse Options Summary

Construction water will be required to be reused across the full Project site. Opportunities for construction water reuse are:

- Rainfall captured on site (either via rainwater tanks, sediment basins, low points or sumps).
- Farm dams.
- Investigation of options to use recycled water from sewage treatment plants.
- Potential groundwater dewatering if excavations (cuts) or piling for bridge foundations intersect with the groundwater table.

## 6.4 Consideration of the Public Health Risks

A consideration of the public health risks has been made when establishing water reuse options. The project area has a low risk of public health risks associated with water reuse. By undertaking the water reuse through the proposed sources and activities, the potential for contaminated water entering the project area is minimised and potential for public health risks associated with water reuse on the Project is reduced.

Where there is a feasible opportunity to utilise this form of water for re-use, investigations of options to use recycled water from sewage treatment plants will consider public health risks prior to reuse. These investigations will be undertaken in conjunction with the utility operator and IRPL.

# 7 Water Reuse and Reduction Strategies

## 7.1 Water Reduction Strategies

Reduction strategies proposed for the Project that potentially can be implemented during construction. The strategies listed in the EIS (refer to Table 7-1) will be investigated by the construction team during site implementation. These items in the table below will be captured and tracked in the Risk and Opportunities Register in addition to the items captured in the strategy, where opportunities are realised and can be implemented in the register, these will be incorporated into this strategy.

**Table 7-1 Opportunities for the water strategy**

| Source | Volume | Reliability | Cost | Opportunity Analysis | Reuse and Reduction Strategies | Social and Environmental | Approvals / Licences |
|---|---|---|---|---|---|---|---|
| **Potable Water** | Goldenfields Water has indicated that it can supply water at a rate of 15–20 L/s at Stockinbingal, adjacent to the rail alignment, and an additional 10 to 12 L/s at Cootamundra via its existing reticulated potable supply pipe network. | Reliability of potable water supply at both locations is subject to restrictions at any time and at the discretion of Goldenfields Water. | Unknown | Provides the highest reliability as would be sourced directly adjacent to the project with minimal additional work required.<br>Timing for use would be available throughout the construction program. | Potable water reduction and reuse strategies include (but are not limited to) the following:<br>• Water efficient fit out of accommodation facilities.<br>• Use of treated Camp water where practicable.<br>Prioritisation of non-potable water sources for non-potable purposes. | Easy to control volume required. Lower social outcome as it takes water out of the drinking water network | Nil |

| Source | Volume | Reliability | Cost | Opportunity Analysis | Reuse and Reduction Strategies | Social and Environmental | Approvals / Licences |
|---|---|---|---|---|---|---|---|
| **Rainwater captured on site / Farm Dam water** | Variable depending on climatic conditions and construction staging. | Variable reliability water loss to evaporation and absorption into the earth. | Low cost | Readily available opportunity.<br>Timing for use would be available throughout the construction program (subject to rain fall fluctuations). | • Rainwater captured at camp and dams to be visually inspected and treated for reuse if required.<br>• Prioritise the use of rainwater and other non-potable water sources on site to reduce potable water used.<br>• Prioritise dam placement to maximise water catchment potential. | No social impact to storing water onsite. Increased environmental risk if dirty water leaves site uncontrolled | NA |
| **Groundwater dewatering** | It is considered unlikely that any dewatering would exceed 3 ML of groundwater per year, | Unreliable as availability and yield were estimated as low and therefore not likely to meet demands. | Nil | Unreliable as only expected to incidentally hit ground water table in certain locations and activities during construction.<br>Timing for use would be ad-hoc and only in extenuating circumstances and subject to availability. | • Prioritise the use of non-potable (i.e. groundwater) on site to reduce potable water used.<br>• Prioritise non-potable other water sources in preference to groundwater in line with the hierarchy outlined in Section 7.5. | NA | Not required. As discussed in Section 6.2.1, JH will utilise an exemption available for incidental groundwater take during construction. |

| Source | Volume | Reliability | Cost | Opportunity Analysis | Reuse and Reduction Strategies | Social and Environmental | Approvals / Licences |
|---|---|---|---|---|---|---|---|
| **Treated Camp Water** | Variable depending on the water treatment facilities available and suitable to the align with camp functions. | Once set up the volume of water will be reliably produced from the treatment plant/s onsite. | Medium to high | Needs constant maintenance. variable and costly.<br>Opportunity to create efficiency through product designs and technology advancements.<br>Timing for use would be available throughout the construction program during STP operations. | Treated camp water to be used and prioritised for project construction to reduce potable water use where practicable. | Reduces consumption of potable water | Section 68 approval from CGRC |

## 7.2 Water Minimisation Strategies

Specific water reuse and recycling strategies for each water source have been outlined in the table 6-1 above. Where available, practicable, stormwater, recycled water or other water sources (e.g., treated water from sediment basins or the camp and harvested rainwater) will be used in preference to potable water.
To meet these targets, there are a number of strategies that can be implemented to reduce the water demand over the life of the project. Resource conservation opportunities are listed in Table 7-2 below.

**Table 7-2: Resource conservation opportunities**

| Resource | Conservation opportunities |
|---|---|
| Potable water | Use of non-potable alternatives (e.g. stormwater, harvested rainwater, or treated water from sediment basins, treated water from camp)<br>Use of non-potable water for landscaping<br>Minimise the use of water filled barriers where feasible<br>Use of water efficient taps, fittings, and appliances with at the following star ratings under the Water Efficiency Labelling and Standards (WELS) scheme:<br>○ Showerheads – 3.5 stars<br>○ Toilets and urinals – 4 stars<br>○ Washing machines – 4.5 stars<br>○ Dishwashers, Taps and flow controllers – 5 stars<br>Use of non-potable water for non-destructive digging<br>The use of potential water moisture testing. Testing of the soil moisture prior to compaction watering to ensure no over watering occurs.<br>Use of native drought tolerant species to reduce watering requirements during site rehabilitation.<br><br>Where available and practicable, non-potable water will be used in preference to potable water, e.g. for dust suppression. |
| All water | Binding polymer solution and tackifiers will be considered for large, disturbed areas to reduce the total water required for dust suppression. Application of spray seal and adequate compaction of unsealed access roads will also be considered to reduce water use.<br>Minimisation of clearing to reduce the area required for water used in dust suppression |

## 7.3 Water Reuse strategies

The reuse of water during construction of the Project will be predominantly for activities such as:

- Surface works activities.
- Dust suppression.
- Potential other uses within the construction boundary in the first instance.

Water that could not be reused for construction purposes would be stored onsite in construction sediment basins and tanks where possible. Where this is not possible due to excess volume opportunities to provide to the adjacent land holders will be investigated. Where these first two options are not possible, the Project will consider reinfiltrated at approved irrigation discharge points or disposed offsite accordingly.

## 7.4 Water Abstraction Management

The reuse of water during construction will be managed in accordance with this Strategy, with the aim of reducing the use of potable water and the overall use of water for construction.

JHG will not abstract water from waterways without obtaining all required approvals. If the proposed source is other than a town water supply or natural water source, procedures for regular testing to ensure that the water is suitable for the purpose and is not hazardous to health and the environment will be developed. The following hierarchy for reuse will be undertaken for captured rainwater:

- Utilised for surface works activities, dust suppression and potential other uses within the construction boundary in the first instance.
- Water that could not be reused for construction purposes would be reinfiltrated at irrigation points.
- Discharge to surface waters as approved by the Environmental Protection License (EPL).
- Sent off site as liquid waste.
- For the reuse of treated water from sediment basins which is approved for discharge, water can either be transported to temporary storage areas for re-use in the earthworks or pumped into watercarts for re-use as dust suppression and during earthworks compaction.

## 7.5 Dewatering Management

Dewatering is any activity that involves the removal of ponded stormwater or infiltrated groundwater from any location within the Project (including from sediment basins) and the subsequent reuse or discharge of that water.

JHG will plan to avoid and minimise discharges as much as practicable, while complying with the conditions of the EPL, and undertake dewatering activities in a manner to minimise erosion and pollution of the environment. The Project is subject to an EPL which will include discharge criteria for licenced discharge points. The specific discharge criteria will be confirmed as part of consultation with the NSW Environment Protection Authority (EPA) and award of an EPL.

The following hierarchy for reuse will be undertaken for captured groundwater if excavations (cuts) or piling for bridge foundations intersect with the groundwater table:

- Incidental utilisation of groundwater within excavations for surface works activities, dust suppression and potential other uses within the construction boundary in the first instance.
- Water that could not be recirculated would be reinfiltrated at irrigation points
- Sent off site as liquid waste

A Farm Dam Dewatering Procedure (Appendix E of the Biodiversity Management Sub-plan) and a Dewatering Procedure (Appendix D of the Soil and Water Management Sub-plan) have been prepared as part of the CEMP, for the dewatering of farm dams that require relocation and/or decommissioning. These procedures consider:

- Options for reuse of water in the dam (based on quality of the water)
- Licensing and approval requirements, where relevant
- The quality and quantity of the water to be released, where relevant
- Strategies to minimise impacts on native, threatened or protected species
- Strategies to minimise spread of nuisance flora and fauna species.

All water reuse activities will be undertaken in a manner that runoff will be directly applied to land captured by the dirty water management system.

## 7.6 Disposal

Construction water which is deemed contaminated and cannot be reused will be disposed of offsite as outlined in the Construction Waste Management Plan (CWMP). Wastewater generated by site compound operation would be transported for offsite disposal (unless treated and reused) and include:

- Grey water
- Sewerage from site amenities
- Wash-down water used for vehicles, plant and equipment and amenities.

# 8 Compliance Management

## 8.1 Roles and Responsibilities

The Project Team's organisational structure and overall roles and responsibilities are outlined in CEMP. Implementation of this plan is the responsibility of the JH Project Environmental Manager (or delegate).

## 8.2 Training

To ensure that this Strategy is effectively implemented, all site personnel (including sub-contractors) will undergo site induction training relating to water management and documentation before construction commences including:

- Relevant legislation / regulations
- Dewatering procedures
- Water use requirements within project area.
- Site documentation and reporting requirements, and
- Incident response, management and reporting.

Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in the management of biodiversity. Daily pre-start meetings conducted by the Superintendent / Site Supervisor will inform the site workforce of any relevant environmental issues that could potentially be impacted by, or impact on, the day's activities. Further details regarding staff induction and training are outlined in the CEMP.

## 8.3 Monitoring and Inspections

Inspections of mitigation measures, and activities which have the potential for impacts to water reuse will occur for the duration of the Project. Requirements and responsibilities in relation to monitoring and inspections are documented in the CEMP.

Monitoring of water reuse and minimisation opportunities will be undertaken in accordance with the Soil and Water Management Sub-plan.

## 8.4 Auditing

Audits (both internal and external) will be undertaken to assess the effectiveness of environmental controls, compliance with this Strategy, CoA and other relevant approvals, licenses, and guidelines. These audits will be undertaken at planned intervals to provide information on whether the Project:

- Is meeting its compliance obligations.
- Conforms to this Strategy.
- Determines if this Strategy is effectively implemented and maintained.

The approach to internal and independent audits, including audit requirements and the auditing schedule and management of environmental incidents are detailed in the CEMP.

## 8.5 Reporting

Reporting requirements relevant to the water use are identified in the Soil and Water Management Sub-plan. A detailed list of reporting requirements for the Project is provided in Section 9 of the CEMP.

Accurate records will be maintained substantiating all construction activities associated with the Project or relevant to the conditions of approval, including measures taken to implement this Strategy. Records will be made available to the Department of Planning and Environment upon request, within the timeframe nominated in the request.

# 9 Review and Improvement

## 9.1 Continuous Improvement

Continuous improvement of this Plan will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives, and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management and performance
- Determine the cause or causes of non-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from process improvement
- Make comparisons with objectives and targets.

The Project Environment and Sustainability Manager (or delegate) is responsible for ensuring stage-specific environmental risks are identified and included in the Project risk register and appropriate mitigation measures implemented throughout the construction, as part of the continuous improvement process. The process for ongoing risk identification and management during construction is outlined in the CEMP.

## 9.2 Strategy update and amendment

The processes described in the CEMP may result in the need to update or revise this Strategy. Only the Project Environment and Sustainability Manager (or delegate) has the authority to approve changes to the requirements of this Strategy. The Strategy will be reviewed by John Holland regularly in the same time frames as required by the CEMP. Where opportunities to re-use water or alternative sources are identified and are used by the Project, these will be included in the Strategy at the next revision.

A copy of the updated Strategy and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure detailed in the CEMP.