

# Macquarie River Re-regulating Storage Project

## WaterNSW FAQs

(updated 23 September 2020)

### Project background

#### ***What is this project about?***

WaterNSW has been engaged by the Department of Planning, Industry & Environment (DPIE) on behalf of the NSW government to develop a Final Business Case (FBC) for the proposed re-regulating storage on the Macquarie River. This follows recommendations by Infrastructure NSW in the 2014 State Infrastructure Strategy and WaterNSW's 20 Year Infrastructure Options Study. The proposed project will involve construction of a new gated weir and fishway that will contribute towards improving water access reliability for the region and industries in line with the strategic objectives set by the NSW Government for Regional Water Strategies.

The proposed new weir will be located downstream of Burrendong Dam, between the townships of Warren and Narromine, 200 metres downstream of the existing Gin Gin weir.

#### ***Why is this project necessary?***

Currently, the Macquarie River experiences delivery inefficiency and high water transmission losses. This project provides an option to improve general water security availability, reliability and enhance delivery efficiency to customers, community and the environment downstream of the existing Gin Gin Weir. In alignment with the state government's Regional Water Strategy, the project will also help to reduce transmission losses when transferring and delivering water through the Macquarie Valley system which will aid in increasing the Valley's resilience to drought.

#### ***What is the planning and engagement process for this project?***

The development of the FBC involves stakeholder consultation, as well as comprehensive environmental and engineering studies. Preliminary studies commenced in August 2019 and will continue to late-2020.

It is important for WaterNSW to understand the needs, requirements, and concerns of key stakeholders and the local community in the development of the FBC. WaterNSW is committed to keeping communities and stakeholders informed throughout the process, providing opportunities for review, feedback, and input where possible.

Submission of the FBC to DPIE is due in late 2020. The investment decision by the NSW Government will provide further funding for the project to proceed to construction. An Environmental Impact Statement (EIS) will also be undertaken as a separate approval process and is planned to be made available for public exhibition in mid-late 2021.

***Is this project happening because of the drought?***

This project is part of the NSW Government's commitment to delivering long term water security solutions for regional communities. WaterNSW is delivering urgent drought response projects and temporary works in the Macquarie Valley, however, this project is not part of this program. The drivers for this project are long term water security in the valley and the NSW Government's commitment to identifying long term solutions for regional communities.

***Who is GHD and how are they involved?***

WaterNSW has engaged GHD, an environmental and engineering consultancy, as a delivery partner for the project. GHD will assist with stakeholder engagement and undertake a number of detailed investigations to inform the development of the Final Business Case.

***Is this a state significant project?***

The Macquarie Valley has been identified in the NSW State Infrastructure Strategy as a priority valley for improved water management and critical water infrastructure projects. As a result, this project has been classified as State Significant Infrastructure (SSI).

Under Section 5.12 of the Environmental Planning & Assessment Act 1979 (EP&A Act), a development may be classified as SSI in two ways. One of these ways is through a State Environmental Planning Policy (SEPP) which declares developments SSI if they can be carried out without development consent under Part 4 of the EP&A Act. Schedule 3 of the State and Regional Development SEPP classifies several types of general development as SSI. The Macquarie River Re-regulating Storage Project is one of the types of development identified in this schedule.

The project will require development consent from the Minister for Planning (or delegate) before it is permitted to proceed.

***How does this project align with the State Governments Macquarie Regional Water Strategy?***

The project will be developed to align with the priorities of the DPIE's Macquarie Regional Water Strategy. The strategy identifies policy, planning and infrastructure options that deliver resilient water resources for all water users in the Macquarie Valley.

For more information on the Regional Water Strategy, please visit the DPIE Water webpage:

<https://www.industry.nsw.gov.au/water/plans-programs/regional-water-strategies>

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***How does WaterNSW interrelate with the Department of Planning, Industry & Environment (DPIE) and Infrastructure NSW, and who has initiated this project?***

DPIE is a department of the NSW Government responsible for the long-term development of connected communities, preservation of the environment, providing support to industry, and contributing to strengthening the state economy. DPIE is also responsible for the evidence-based assessment of state significant development applications, planning assessments, and the assessment of infrastructure priorities across the state.

Infrastructure NSW is an agency of the NSW Government, established in July 2011, which provides independent advice to assist the NSW Government in identifying and prioritising the delivery of critical public infrastructure across NSW. It is an independent statutory agency, established under the Infrastructure NSW Act 2011.

WaterNSW is a State-Owned Corporation established under the Water NSW Act 2014 and operates under an Operating Licence issued and monitored by the Independent Pricing and Regulatory Tribunal (IPART). We operate the state's rivers and water supply systems in accordance with the rules set out by regulators.

With more than 40 dams across the state, we supply two-thirds of water used in NSW to regional towns, irrigators, Sydney Water Corporation and local water utilities. We also own and operate the largest surface and groundwater monitoring network in the southern hemisphere and build, maintain and operate essential infrastructure.

Following recommendation by Infrastructure NSW in the 2014 State Infrastructure Strategy, WaterNSW has been engaged by the DPIE on behalf of the NSW government to develop a Final Business Case for a proposed re-regulating storage on the Macquarie River.

## **Project benefits**

***What are the project benefits?***

Benefits for the project include:

- Achieving long-term water security strategic objectives in the Macquarie Valley
- Improving delivery efficiency and aiding the ability to manage flows to customers downstream of Gin Gin
- Reducing transmission losses when transferring and delivering water through the river system on an annual basis
- Maximising available water for general security customers within the sustainable diversion limits set under the Murray-Darling Basin Plan.

## Preferred option selection

### ***What does the Final Business Case (FBC) process involve for this project?***

WaterNSW will undertake technical and environmental investigations, develop a detailed concept design, obtain planning approvals, develop a construction methodology and complete an economic analysis to develop the FBC to NSW Treasury guidelines and, subject to approval, proceed to construction and commissioning of the re-regulating storage.

### ***What is the preferred option?***

The project has now determined a preferred option to construct the re-regulating weir. The preferred location of the weir, if approved, will be located 200 metres downstream of the existing Gin Gin Weir.

### ***What is the difference between a Dam and a Weir?***

A dam is a wall of solid material built across a valley or catchment to block the flow of a stream. The dam wall allows water to pool behind it, forming a lake or reservoir. Dams create a permanent supply of water that can be distributed to the wider community for a variety of uses, such as, drinking water supply.

A weir is a barrier constructed across a stream, which restricts the flow of water so that it can be temporarily stored and slowly released downstream.

Unlike dams, which create reservoirs, the goal of building a re-regulating weir is not to create a permanent water storage, but to gain temporary control over the water flow as it moves downstream. They are designed to regulate water flow, and are an important part of the water supply network.

### ***What were the other options considered?***

A Strategic Business Case (SBC) for the Macquarie Valley was developed during 2018-19 where priority projects were identified and proposed for improved water management and critical water infrastructure. From this SBC, three feasible locations for the construction of a re-regulating weir on the Macquarie River were considered.

During the initial stages of the development of the FBC for the project, this selection was narrowed down to consider two options in more detail:

- Option A – the construction of a new gated weir located downstream of the existing Gin Gin site, and
- Option B - the construction of a new gated weir at Rocky Point (15km upstream of the existing structure at Gin Gin).

### ***How were the options assessed?***

A Multi-Criteria Assessment (MCA) process was used to determine the preferred option. An MCA is a form of analysis which assesses various contributors and constraints to a project to find the most effective option. This process assures that all defined criteria have been taken into account, and that the outcome is the best overall way forward.

Through this process, each of the options for the project were assessed against a set of pre-defined criteria to reflect the project objectives and strategic alignment with the Macquarie Regional Water Strategy, the issues and needs of the stakeholders, as well as value for money.

The MCA considered a number of criteria. These included:

- Construction cost and feasibility;
- Environment and heritage impacts;
- Stakeholder and social sustainability; and,
- Economic benefits.

### ***Why was the preferred option selected over other options?***

Taking the outcomes of the MCA process into account, the Gin Gin site was identified as the preferred location for the re-regulated storage on balance as it scored higher against the analysis criteria, in particular Aboriginal heritage, the impact on aquatic and terrestrial environments, and cost effectiveness.

### ***Why was it better to create a new weir rather than repurpose the existing weir at Gin Gin?***

Repairing and upgrading the existing 120-year-old weir at Gin Gin poses risks and uncertainty relating to its structural performance. The construction of a new weir downstream will negate these risks, and provide an offset for the projected maintenance and upgrade costs of refurbishment of the existing weir.

### ***What stakeholder consultation has occurred to date to inform the Final Business Case?***

Since July 2019, WaterNSW and their delivery partner have engaged with a number of stakeholders to inform the FBC. These include representatives from local, state and federal government

agencies, Local Aboriginal Land Councils, and a number of community, environmental, irrigation, angling and recreational groups. Directly impacted landowners have been engaged and consulted during this phase.

Further details of engagement activities undertaken during this process will be highlighted in the EIS, which will be on public exhibition for comment in mid-late 2021.

## **Project considerations**

### ***How will this project impact local biodiversity?***

A series of comprehensive environmental investigations will be undertaken as part of the development of the FBC. These include assessing potential impacts to threatened species and the ecosystems both upstream and downstream of the proposed infrastructure. The project will identify measures to mitigate impacts and deliver appropriate offsets where possible.

Extensive consultation will be undertaken with DPIE (state) and DoEE (federal) as well as other relevant government agencies and authorities. The technical assessment and consultation outcomes will inform the development of the EIS and will be made available for public comment.

### ***What is a 'rainfall rejection'?***

Unexpected changes in weather and water demands can lead to a scenario called a 'rainfall rejection' event. When rainfall is inconsistent or variable to what has been forecast, there can be a sudden reduction in irrigation demand compared to previous day's releases by WaterNSW from Burrendong Dam. This reduction in irrigation demand due to unexpected rainfall on irrigators' properties is called a 'rainfall rejection'.

### ***How much more water would be available as a result of the proposed works?***

Investigations are under way to assess in detail the potential benefits of the re-regulating storage, including establishing outcomes for water security and reliability of supply.

### ***Will there be any negative impact on aquatic habitats and fish communities?***

There are several threatened freshwater fish species that reside in the Macquarie River catchment in the vicinity of the study area. WaterNSW is consulting with the NSW DPIE – Fisheries on the impacts to fish species, as well as, the requirements for the proposed fish passage on the new weir.

### ***Will there be any impacts due to raised water levels or inundation?***

Early investigations suggest that the proposed option will raise the water level upstream of the new gated weir when the water is stored there temporarily following a rainfall rejection capture. The

duration of water storage is expected to be relatively short (an estimated two to four weeks), as storage drawdown is needed to prepare for a following capture event.

The water level is expected to remain within the existing river banks under normal operating conditions. The project will assess impacts of flooding and identify measures to mitigate potential impacts to bank stability and riverine vegetation. This will also involve consultation with the NSW DPIE and other relevant authorities. The technical assessment and consultation outcomes will inform the development of the EIS.

***Will the project impact landscape and visual amenity?***

The proposed new weir may pose potential impacts to the local landscape and visual amenity through construction of the weir infrastructure within the river. The new weir is likely to be close to 70 metres wide and 13 metres high. Comprehensive studies will further explore these impacts during the development of the FBC and EIS.

***Will the project impact public recreation and reserves on the river?***

The proposed new weir may have some impact on local reserves upstream of the new infrastructure. Any potential impacts will be explored in detail during the development of the EIS.

***Will there be any disturbance to items of Aboriginal heritage or European heritage?***

The project team are currently undertaking a number of investigations on the Aboriginal and European heritage impacts. Detail of any potential impacts to Aboriginal heritage and European heritage will be investigated during the development of the EIS. Early studies indicate that there may be Aboriginal heritage sites in the vicinity of preferred option. Comprehensive investigations and further consultation with Local Aboriginal Land Councils and potentially impacted Indigenous Communities will inform the development of the EIS.

***What are the construction impacts of the proposed work?***

Potential impacts of construction and opportunities to better manage these impacts were taken into consideration when determining the preferred option.

As this project is in the early phases of planning, consultation regarding construction impacts will occur once there is more clarity and detail around the proposed concept design. A construction management plan will be developed to manage any potential impacts.

### ***What will happen to the existing Gin Gin Weir?***

Impacts to the existing Gin Gin Weir, if any, will be investigated as the project progresses. The new weir will replace the operational purpose of the existing one. Issues associated with the existing weir that require assessment include stability, heritage and fish passage.

### ***How much would the proposed weir cost?***

The Final Business Case will inform the investment decision by Infrastructure NSW for the project to proceed. The development of the FBC will include a financial analysis to determine the costs associated with the proposed solution. Funding for the project is to be made available through the NSW Government-managed Snowy Hydro Legacy Fund or other agreed funds.

## **Property Acquisition**

### ***Will there be any acquisition of private or public land?***

The project is still in its early stages. Some public land will be impacted. Extensive stakeholder consultation will also be undertaken with land owners that are potentially impacted by the project and their considerations taken into account when determining the final design of the project.

## **Weir operation**

### ***Will the water storage be still or flowing?***

There will be times during the operational period when the storage pool is active and relatively still with minimal water flowing downstream. Water will be flowing when the weir is being managed to deliver water for downstream purposes. Outside of the operational period the weir will be operated in its fully open position and any water at the weir will be flowing.

### ***What will the weir look like?***

The weir will have a maximum storage height of 10 metres (base to max storage height) and will be about 70 metres wide. The main structural components on the weir will be made of concrete (overshot weir and fish passage) with associated steel radial gates.

### ***How will the operation rules be set?***

A number of workshops have been held to assist in setting the draft operating rules. The operating rules for the proposed weir will continue being developed in consultation with relevant government agencies and other key stakeholders.

Operation of the Macquarie River will require modification for both construction and post construction stages of the project. Relevant operating manuals and procedures would be updated accordingly. **How will safety be managed when the river level rises?**

The proposed re-regulating structure will be designed to meet current best practice and safety standards. Flood operation of the weir will be in accordance with approved operation protocols.

**What is the proposed capacity of the storage?**

The proposed capacity of the re-regulated storage is 6 gigalitres (GL). The design for the storage has evolved from 9 GL to 6 GL based on further investigations and stakeholder feedback received during the early stages of the project. The storage capacity was reduced in order to minimise the impact to aquatic and terrestrial environments, including impacts to landowners, while also meeting operational needs and reducing project cost.

**Will the tributary flows be captured?**

In the operational period, tributary flows will pass through the storage to downstream locations. At other times of the year, the weir will be 'open' and tributary flows will be conveyed via the River channel. It is not the intention to capture tributary flows with operational surpluses being targeted for storage. Hydrometric data will be used to track the tributary events in order to measure them within the network and calculate how much water should be released from the weir to flow downstream.

**Next Steps**

**Will the community have a chance to comment on the project proposal?**

Community participation is an essential part of the State Significant Infrastructure (SSI) process. The Environmental Impact Statement (EIS) for a SSI project must be exhibited for at least 28 days. As SSI projects can have major economic, environmental and social impacts, the EIS exhibition period provides the community with an opportunity to have their say on a given project before a final decision is made by the Minister for Planning.

Opportunity to provide comment on for the Macquarie River Re-regulating Storage project will be available during the EIS exhibition period in mid-late 2021. During the exhibition period, anyone may make a written submission on the SSI project.

***When would construction of the proposed weir begin?***

The program of works is yet to be determined. Timelines for the construction of the proposed weir will be determined post completion of the Final Business Case, which is currently scheduled for late 2020.

***What happens after the Final Business Case is approved?***

As part of Infrastructure NSW's Infrastructure Investor Assurance Framework, a gateway review process will be completed for the Detailed Business Case to determine whether the investment decision is ready to be made for the project to proceed.

***What happens if the Final Business Case is not approved?***

The NSW government is currently in the process of developing long-term regional water strategies. In the event that this project does not proceed, the NSW Government has a commitment to identify long term water security solutions for regional communities including the Macquarie Valley.

***How can stakeholders keep informed?***

To stay up to date with the project, request a project briefing for your community group, or to receive regular updates, please register your interest and contact information using the details provided below:

Visit the project webpage: [waternsw.com.au/MRRRS](http://waternsw.com.au/MRRRS)

Email us at: [MRRRS@waternsw.com.au](mailto:MRRRS@waternsw.com.au)

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