

---

# Business Case Summary

---

## Wyangala Dam Wall Raising Project

August 2023



# Table of Contents

<b>1</b>	<b>About this report.....</b>	<b>3</b>
<b>2</b>	<b>Strategic alignment and context.....</b>	<b>5</b>
<b>3</b>	<b>Project Need.....</b>	<b>8</b>
<b>4</b>	<b>Project objectives and design.....</b>	<b>9</b>
4.1	Objectives.....	9
4.2	Design.....	9
4.3	Capital and Operational Cost.....	10
<b>5</b>	<b>Options identification and assessment.....</b>	<b>11</b>
5.1	Strategic Business Case.....	11
5.2	Final Business Case.....	11
<b>6</b>	<b>Economic evaluation.....</b>	<b>12</b>
6.1	Evaluation.....	12
6.2	Outcomes of the Analysis.....	12
<b>7</b>	<b>Deliverability.....</b>	<b>13</b>
7.1	Procurement.....	13
7.2	Timeframe.....	13
7.3	Key risks and mitigation.....	14
<b>8</b>	<b>The Infrastructure NSW view.....</b>	<b>16</b>

---

# 1 About this report

---

## Wyangala Dam Wall Raising Project



The Wyangala Dam Wall Raising Project (the Project) aims to help ensure adequate water security and water reliability for water users across the Lachlan region and to mitigate the impact of floods. It is a project with significant complexities and scale. The Project is subject to the requirements of the Infrastructure NSW (INSW) Infrastructure Investor Assurance Framework (IIAF) and NSW Gateway Policy. The IIAF establishes independent assurance for capital projects where the NSW Government is an investor. It ensures that key infrastructure projects are appropriately evaluated for development and delivery on time and on budget and for alignment with government objectives.

The existing dam is over 1.3 kilometres long, and 85 metres high. The lake is 54 square kilometres and has a storage capacity of 1,217,000 megalitres (MLs) – almost two and a half times the volume of Sydney Harbour. The Lachlan Valley has low water security due to high distribution losses from long rivers, anabranches, and effluent streams. It is located in the Lachlan Region which is home to 100,000 people and contributes \$6.73 billion to the NSW economy in Gross Regional Product. Wyangala Dam is situated on the junction of the Lachlan and Abercrombie rivers, just over 300 kilometres west of Sydney and has a catchment of over 8,300 square kilometres.

The length of the Lachlan River creates a challenge for water delivery as large users and assets are widely dispersed. In normal circumstances water delivery from Wyangala Dam to the end of the regulated system can take over 30 days, and significantly longer in times of drought. In addition, the topography of the river is unique, with low gradients in some locations and a ridge at Jemalong Gap that impedes the flow of water downstream. These factors can make it difficult to deliver water to towns, stock and domestic users, industries, and environmental assets during dry periods once the Lower Lachlan re-regulating storages are empty or are below effective capacity.

The lower Lachlan floodplain at the western end of the river is internationally significant – featuring nine nationally important wetlands, including Lake Brewster, the Booligal Wetlands and the Great Cumbung Swamp. The wetlands of the Great Cumbung Swamp alone are extensive and unique. Covering 20,000 hectares, the area is home to one of the largest remaining examples of river red gums in NSW, and it is one of the most important waterbird-breeding areas in eastern Australia. The past 20 years have shown that the Lachlan Valley is susceptible to significant climatic events. The Millennium Drought was the worst drought on record for the region – this period of almost 10 years without significant rainfall or inflows into the region’s main storages caused profound hardship. There were numerous consecutive years of zero to little general security water allocations and communities experienced extreme water restrictions and the threat of running out of water.

Between 2017 and 2020 the region experienced another severe drought, once again bringing hardship. Wyangala Dam's storage fell to 9 per cent at the height of the drought during the summer of 2019-20 and as low as 8 per cent in February 2020, resulting in the Lachlan Valley reaching stage 4 water restrictions.

Between 2014 and 2022, a range of investigations have been undertaken to explore options to secure long-term water supply and improve water reliability for Lachlan Valley water users, as well as to improve flood management in the Lachlan Valley. This included Water Infrastructure NSW conducting detailed investigations into a proposed 10-metre Full Supply Level (FSL) raise of Wyangala Dam to address known water security concerns. These investigations examined the technical viability and the cost of building a new dam, as well as identifying and exploring opportunities associated with the supply of water from a larger dam and any opportunities to achieve a significant reduction in flood impacts. The details of these investigations are discussed in the Final Business Case (FBC) for the project.

In October 2019, the then Prime Minister, Scott Morrison, and then NSW Premier, Gladys Berejiklian, announced a joint New South Wales and Australian Government funded package for the planning and delivery of three new or augmented dams in NSW. The projects included in this package were raising the Wyangala Dam wall and constructing new dams on the Mole River and Dungowan Creek. The announcement included a \$650 million funding commitment to raise the Wyangala Dam wall by 10 metres.

In making the announcement, a commitment was also made to fast-track delivery of the project including 'shovels in the ground' in the form of early works by October 2020 and construction commencement of the main dam works by October 2021. The announcement was made at the initial stages of the project development and without the full cost and impacts of the project being clear, based on the cost estimate included in the 2018 Preliminary Business Case (PBC).

In November 2019, the Project was declared Critical State Significant Infrastructure (CSSI) under the *Water Supply (Critical Needs) Act 2019* (NSW). In order to fast-track development and meet the commitment to start construction within two years, detailed design, the FBC, Environmental Impact Statement (EIS) and early works were developed in parallel. The CSSI designation has lapsed, and the project is now classified as State Significant Development.

The April 2023 FBC was developed by Water Infrastructure NSW, with the support of WaterNSW. The FBC presents the pathway to make an informed investment decision to contribute to long-term water reliability, water supply security and improved flood management for the Lachlan Valley.

The FBC concluded the Wyangala Dam project is not viable to proceed as it would:

- Cause significant and irreversible environmental impacts at either 10 or 5 metre wall raise height;
- Not receive regulatory approvals due to environmental impacts on downstream habitat and species, and the changes that would be required to planned environmental water; and
- Not represent value for money.

In making an investment decision for an infrastructure project, the NSW Government considers the Final Business Case, along with Treasury and INSW advice.

---

## 2 Strategic alignment and context

---

### Alignment with Government Strategies & Policies

#### Commonwealth

In Australia, The Commonwealth has responsibility to improve the sustainable management of Australia's water resources.<sup>1</sup> At a Commonwealth level, The *Water Act 2007* (Cth) provides the legislative framework for ensuring that Australia's largest water resource – the Murray Darling Basin – is managed in the national interest.<sup>2</sup>

#### New South Wales Government

In NSW, the key Government agencies responsible for developing, implementing, and reviewing the regulatory framework for water management in regional NSW include the Department of Planning and Environment (DPE) Water, WaterNSW, the Natural Resources Access Regulator and the Natural Resources Commission (NRC). In August 2021, the NSW Government Department of Planning and Environment published the NSW Water Strategy.

#### The NSW Water Strategy

The NSW Water Strategy is a 20-year state-wide strategy to improve the security, reliability, quality, and resilience of the state's water resources over coming decades. The strategy addresses key challenges and opportunities for water management and service delivery across the state and sets the strategic direction for the NSW water sector over the long-term.

**Table 1: The seven strategic priorities of the NSW Water Strategy**

Priority
Build community confidence and capacity through engagement, transparency, and accountability
Recognise First Nations/Aboriginal People's rights and values and increase access to and ownership of water for cultural and economic purposes
Improve river, floodplain and aquifer ecosystem health, and system connectivity
Increase resilience to changes in water availability (variability and climate change)
Support economic growth and resilient industries within a capped system
Support resilient, prosperous, and liveable cities and towns
Enable a future focused, capable, and innovative water sector

The Wyangala Dam Wall Raising Project's objectives (outlined in section 4.1) seek to align with these strategic priorities.

#### Lachlan Regional Water Strategy

Within the state, at a regional level, 12 Regional Water Strategies (RWS) have been developed or are under development. The Lachlan RWS is being developed alongside the Project. To meet the needs of the region and capitalise on future opportunities, DPE Water has stated that the Lachlan RWS is intended to be adaptable to consider the outcomes of the Project FBC.

---

<sup>1</sup> Australian Government, Department of Climate Change, Energy, the Environment and Water, *Water policy and resources*, Hyperlink: [Water policy and resources - DCCEEW](#).

<sup>2</sup> *Water Act 2007* (Cth).

## Economic Development

To sustain economic growth in the region, infrastructure and non-infrastructure investments to improve water availability are critical. While industries in the Lachlan are generally well-adapted to the variable climate, new approaches will be needed to keep pace with changing industry profiles and water needs.

The Lachlan region is home to many vibrant towns and communities, productive agricultural and mining industries, important ecosystems, and nationally important and culturally significant wetlands, including the Lake Cowal/Wilbertray wetlands, Booligal wetlands and the Great Cumbung Swamp.

The four major regional towns of Cowra, Parkes, Forbes, and Young drive the region's economy. The region leverages its location in the geographic centre of NSW along nationally significant rail and road corridors to encourage further industry development.

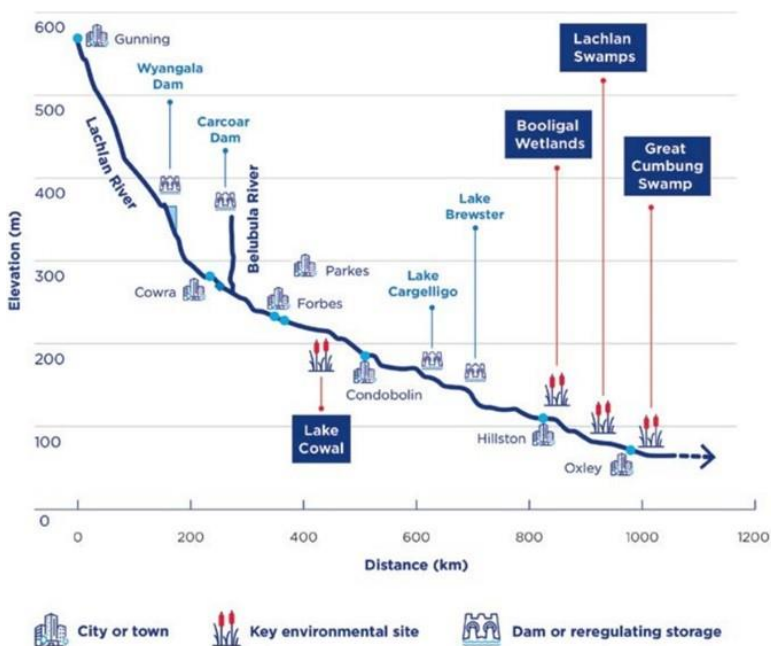
The local economy is heavily dependent on primary industry, a sector that consumes large volumes of water and is subject to seasonal weather conditions. Agriculture, mining, and manufacturing are all key players in the regional economy that rely on the Lachlan Valley's water system. These three industries contributed roughly \$2.7 billion (around 40 per cent) of the region's GRP in 2020/21.<sup>3</sup>

Businesses in the region have developed a conservative approach to water use and crop choices to adapt to the region's highly variable climate and manage their risk of low future water allocations. Many irrigators do not fully use their general security water allocation and choose to carry it over to the subsequent season to maintain water reliability, meaning surface water use in the Lachlan Valley has generally trended below the allowable extraction limit in the Water Sharing Plans. Lower utilisation of water in a given season results in a loss of potential economic activity. However, investment in high value but water intensive permanent crop types is unlikely to occur without improvements to the long-term security and reliability of water supply.

## Water Security

Water is the most vital resource and is essential to health and wellbeing. From a water security perspective, the Lachlan region is the fourth largest river catchment in NSW, primarily sourcing its water from the regulated Lachlan and Belubula Rivers, unregulated rivers and creeks, and groundwater.

Figure 1: Lachlan River longitudinal profile



<sup>3</sup> NSW Department of Planning and Environment, *Draft Regional Water Strategy, Lachlan: Shortlisted Actions – Consultation Paper*, (October 2022), Page 48, Hyperlink: [Draft Regional Water Strategy \(nsw.gov.au\)](https://www.nsw.gov.au/draft-regional-water-strategy).

Wyangala Dam is situated at the junction of the Lachlan and Abercrombie rivers approximately 48km upstream from Cowra in Central West NSW.<sup>4</sup> Completed in 1935 at a capacity of 374 gigalitres (GL), it was designed to irrigate 15,000 hectares along the upper reaches of the Lachlan River. It was enlarged in 1971 to a capacity of 1,217 GL, which is almost 2½ times the volume of water in Sydney Harbour. Water releases from Wyangala Dam are controlled by WaterNSW and are used to support irrigated agriculture across the Lachlan Valley around Cowra, Forbes, Condobolin, and Hillston.

The Wyangala Dam also supplies:

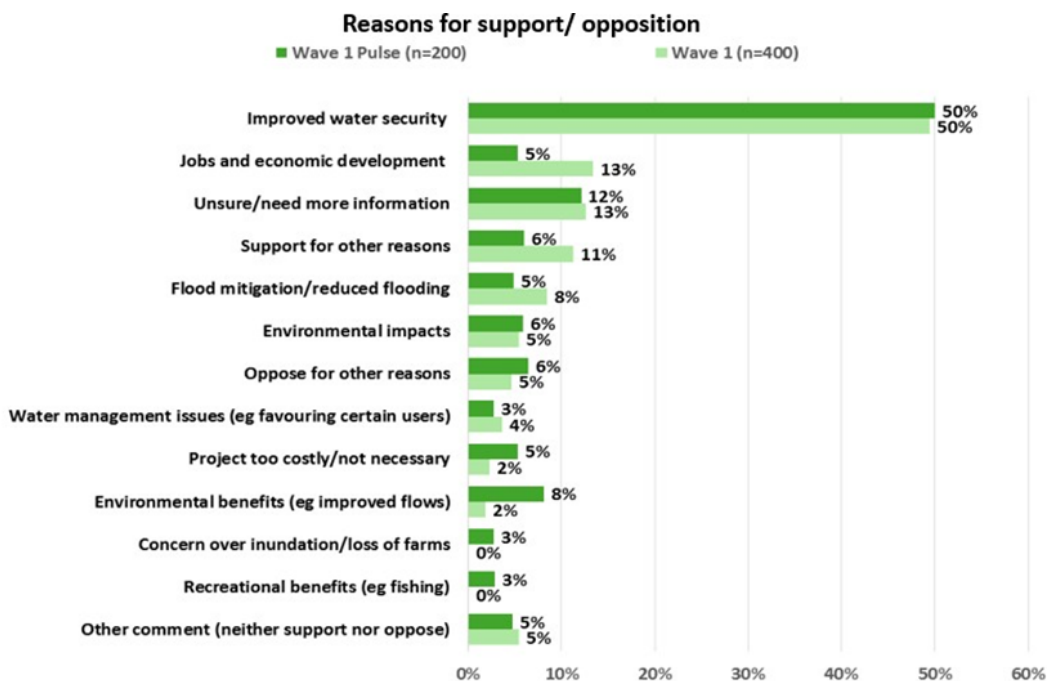
- ▶ stock and household needs for landholders and towns along the Lachlan River
- ▶ environmental flows
- ▶ flood mitigation and
- ▶ hydroelectricity.

The Lower Lachlan re-regulating storages such as Lake Brewster wetland and weir pool and Lake Cargelligo capture tributary inflows below Wyangala Dam, providing greater flexibility in managing flows across the Lachlan Valley.

### Stakeholder Endorsement

Early stakeholder consultation for the Project commenced in February 2020 and has continued to support the FBC through to 2023. Throughout the stakeholder engagement process, it was evident the stakeholders are mainly concerned about water security and reliability, flooding and inundation, and environmental impacts.

Figure 2: Reasons for Project support / opposition per 2021 Pulse Survey



<sup>4</sup> NSW Department of Planning, Industry and Environment, *Draft Regional Water Strategy, Lachlan: Strategy*, (September 2020), Pages 52 and 53, Hyperlink: [Draft Regional Water Strategy: Lachlan \(nsw.gov.au\)](https://www.nsw.gov.au/draft-regional-water-strategy-lachlan).

# 3 Project Need

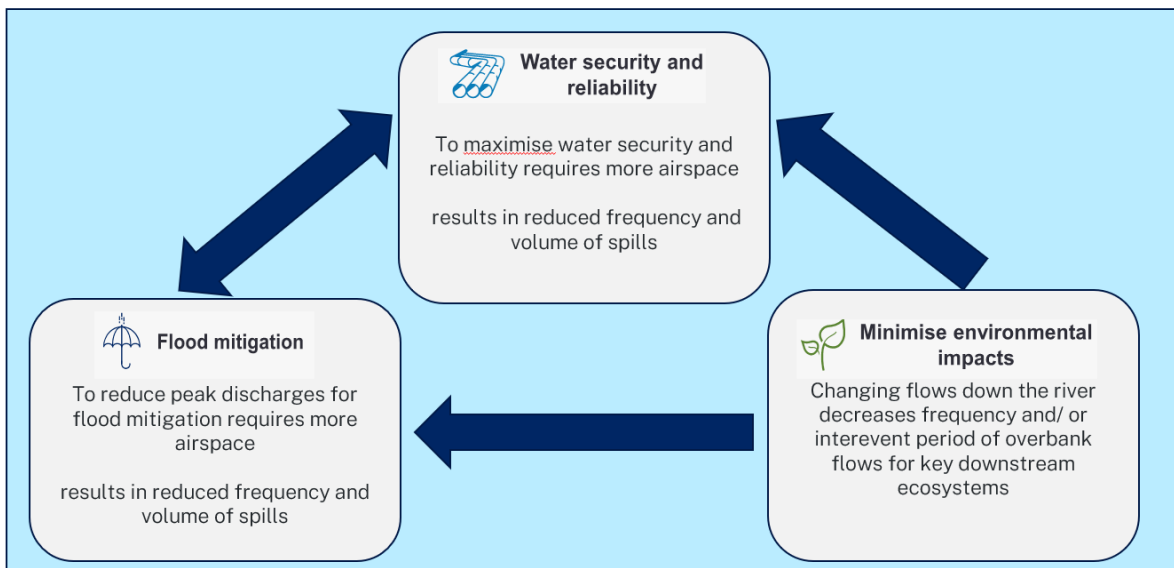
The established service needs, problems, and opportunities the FBC aims to address build on the findings of the PBC and SBC, and are as follows:

- ▶ **Problem statement 1:** The Lachlan Valley experiences highly variable water availability, which impacts water reliability for agriculture, mining, industrial and broader economic activity, as well as water security for towns.
- ▶ **Problem statement 2:** The Lachlan Valley experiences moderate to severe flooding that causes economic loss due to damage to towns, farms, and infrastructure.
- ▶ **Problem statement 3:** A range of plausible climate change futures may exacerbate the impacts of highly variable water availability, flood events, and could place greater stress on ecosystems in the lower Lachlan area.
- ▶ **Opportunity statement 4:** New Dam Safety Regulations, and cold water pollution issues may require capital works at Wyangala Dam, creating an opportunity to consolidate capital investment.

There is an inherent tension between the identified service needs because the solutions that mitigate flooding negatively impact on flows that are critical for the health of important downstream ecosystems. Further, solutions to mitigate flooding may also impact on water security and reliability outcomes, given that greater airspace capacity may be required in Wyangala Dam to manage flows during periods of flood. In some instances, addressing water security and reliability may reduce options to manage flows during periods of flood. Solutions to address these problems will require a careful balance of these outcomes.

Figure 3 illustrates the trade-offs of objectives relating to the development of the options i.e., raising the dam wall can achieve greater drought resilience and incidental flood benefit whilst impacting on environmental flows. Conversely, to increase flood benefit further will reduce the drought resilience for the region.

**Figure 3: Trade-offs between objectives for the Project**





---

## 4 Project objectives and design

---

### 4.1 Objectives

The primary objectives of the Wyangala Dam Wall Raising Project are:

- ▶ **Economic prosperity:** Improve the economic output of industry in the Lachlan Valley by strengthening drought resilience and water reliability.
- ▶ **Flood management:** Help mitigate flood damage to infrastructure, towns, and industry in the Lachlan Valley by enabling improved flood management from capital improvements and changed operation of Wyangala Dam.
- ▶ **Town water security:** Improve town water security in the Lachlan Valley by strengthening drought resilience and capacity to adapt to a changing climate.

### 4.2 Design

Water projects are complex due to system complexity, the hydrological environment, climate change impacts and the policy and regulatory environment across multiple jurisdictions. Further, environmental consequences go beyond the direct construction impact of building or upgrading a dam – downstream and upstream impacts in the river system, impacts on terrestrial and aquatic biodiversity and changes to flow regimes must also be considered. As such, the options identification and subsequent assessment processes in the Project have been a multi-stage, iterative process and built off extensive work in identifying options to improve water reliability, water security and flood management in the Lachlan Valley.

Due to significant project complexities and interdependencies, the FBC used a bespoke project design which involved:

- ▶ **Options identification:** building on prior investigative studies and the draft Lachlan Regional Water Strategy, a list of 52 infrastructure and non-infrastructure options were identified for consideration against the defined Project service needs. From this, a longlist of 10 options (plus the Base Case) were selected for further consideration as these options were considered feasible solutions to address the service needs.
- ▶ **Preliminary analysis:** Preliminary analysis was undertaken on the longlist of options, which involved assessing the options against five criteria: the extent to which they would address the service needs; preliminary cost estimate; technical feasibility; deliverability; and environmental and cultural impact. This analysis indicated that dam wall raise options appeared to be the most viable alternatives to address the full set of service needs.
- ▶ **Economic and environmental analysis:** An iterative process was used to investigate the environmental and economic impacts of various dam raise options, including consideration of Flood Management Zone and maximum induced surcharge volumes, to identify the option that maximises potential benefits within the identified environmental constraints in the Lachlan Valley. Three rounds of hydrological modelling, economic benefit analyses and environmental impact assessments were undertaken to arrive at a shortlist of three options (plus the Base Case).

## 4.3 Capital and Operational Cost

The cost estimates for the Project options were developed using a bottom-up process. Table 2 outlines the estimated delivery costs for the project options. Table 3 below outlines the life cycle costs across 100 years for the options. For detail on the FBC options, please refer to Section 5.2.

**Table 2: Summary of the Project's construction cost estimates**

Option	Total Cost (P90 nominal - \$ million)
Option 1	\$3,879.6
Options 2 & 3	\$4,622.9

Estimated lifecycle costs have been determined based on a 100-year asset life for the Project options. Table 3 outlines the real, nominal and Net Present Cost lifecycle costs for the project's preferred option.

**Table 3: Summary of the Project's lifecycle cost estimates**

Cost Component (\$ million)	Life Cycle (100 years)		
	Base Case	Option 1	Options 2 & 3
Lifecycle Operating Costs	\$4,106.0	\$6,534.5	\$7,300.8
Lifecycle Ongoing Capital Costs	\$1,160.6	\$58,174.4	\$58,864.2
<b>Total Lifecycle Costs (nominal)</b>	<b>\$5,266.6</b>	<b>\$64,708.9</b>	<b>\$66,165.0</b>

---

# 5 Options identification and assessment

---

Identifying and subsequently assessing the options to address the issues facing the Lachlan Valley has been a multi-stage, iterative process and that built off extensive work undertaken since 2014. The process also involved engaging with key stakeholders.

## 5.1 Strategic Business Case

The SBC considered the following shortlisted options:

- ▶ Raising the Wyangala Dam FSL by 4m
- ▶ Raising the Wyangala Dam FSL by 6m
- ▶ Raising the Wyangala Dam FSL by 8m
- ▶ Raising the Wyangala Dam FSL by 10m
- ▶ Raising the Wyangala Dam FSL by 12m

## 5.2 Final Business Case

### Preliminary Analysis

Water Infrastructure NSW revisited the options identification process as part of the FBC process. The analysis found that dam wall raise options were considered to be the most viable alternatives to address the identified problems and opportunities.

### FBC Options Analysis

The shortlisted options considered in the FBC were all infrastructure options and were compared against the Base Case which was the current Wyangala Dam with no major infrastructure investment. The shortlisted options were:

- ▶ **Option 1:** Wyangala Dam with a 5m FSL raise and 185GL maximum induced surcharge volume (MISV)
- ▶ **Option 2:** Wyangala Dam with a 10m FSL raise
- ▶ **Option 3:** Wyangala Dam a 5m FSL raise and a 5m Flood Management Zone (FMZ)

### Commercial and Financial Structure

Initially WaterNSW was responsible for developing and delivering the Project including the PBC and SBC. As part of the developing the SBC, WaterNSW assessed a range of strategies to package the work and procure the capability to plan and deliver the Project.

Water Infrastructure NSW took over as the delivery agency in September 2021 and entered a Program Alliance Agreement (PAA) in January 2023 for both the Dungowan and Wyangala Dam projects. The Alliance's involvement in delivering the Wyangala Project is on hold until the recommendations of the FBC are considered by the NSW Government.

## 6 Economic evaluation

### 6.1 Evaluation

The purpose of the economic evaluation is to estimate the economic, social, and environmental costs and benefits of the Project in monetary terms. Water Infrastructure NSW completed the economic appraisal and financial appraisal in consultation with relevant stakeholders:

- ▶ **Economic appraisal:** evaluate the Project options by undertaking an economic cost benefit analysis (CBA) consistent with the relevant guidelines.
- ▶ **Financial appraisal:** evaluate the financial viability of the Base Case and the Project options, including the estimated impact to the whole-of-Government budget.

The base case described the future approach to managing Wyangala Dam and using water resources in the Lachlan catchment in the absence of the proposed Project options. Because it describes a management regime in an uncertain and dynamic future, there is not a single, 'correct' definition of the base case. Consistent with Section 5.2 above, the following Project options were assessed in the CBA, relative to the Base Case:

- ▶ Option 1: 5m FSL raise and a 185GL MSV
- ▶ Option 2: 10m FSL raise
- ▶ Option 3: 5m FSL raise and a 5m FMZ.

### 6.2 Outcomes of the Analysis

The CBA found that none of the Project options returned a positive net benefit to the community under any future scenarios.

The downstream biodiversity offset costs were excluded from the CBA due to the substantial uncertainty around the estimates. However, in accordance with best practice CBA, these should have been included in the CBA. This means the CBA significantly underestimates the costs and overestimates the modelled Net Present Value (NPV) and Benefit Cost Ratio (BCR) results. This further demonstrates that the Project will not provide value for money.

Even so, the average BCRs are so low (less than 0.05) *without* the downstream biodiversity offset costs that it is not necessary to include these additional costs to conclude the Project is unviable. The below table outlines the CBA results.

**Table 4: Summary of the Project's CBA**

Option appraisal	Criteria	Option 1	Option 2	Option 3
Economic appraisal (7.00% real discount rate)	Average NPV (\$ million)	-\$2,057.8	-\$2,384.2	-\$2,354.5
	Average BCR	0.03	0.03	0.04
Economic appraisal (3.00% real discount rate)	Average NPV (\$ million)	-\$2,743.5	-\$3,149.3	-\$3,094.2
	Average BCR	-0.01	0.00	0.02

---

# 7 Deliverability

---

## 7.1 Procurement

WaterNSW was the organisation originally responsible for developing and delivering the Project until the project was transferred to Water Infrastructure NSW in September 2021. While responsible, WaterNSW assessed a range of strategies to package the work and procure the capability to plan and deliver the Project. This included consulting services to plan and contractor services to construct. WINSW took over as the delivery agency in September 2021 and entered a Program Alliance Agreement (PAA) in January 2023.

WaterNSW's delivery objectives were to:

- ▶ Deliver the Project as quickly as possible;
- ▶ Perform and complete all construction works safely without harm to the environment;
- ▶ Minimise customer supply impacts throughout construction;
- ▶ Comply with all regulatory requirements; and
- ▶ Deliver the Project within budget expectations.

To deliver these objectives, the procurement strategy options were consulted based on the Project being delivered across two phases:

- ▶ Phase 1 – Planning and Development; and
- ▶ Phase 2 – Project Delivery.

## 7.2 Timeframe

The following table highlights the Project baseline dates as of August 2022. Subsequently, the Project became aware of significant threshold issues and proceeded to finalise the FBC at the earliest opportunity to advise Government. The FBC was completed in April 2023.

**Table 5: Key Milestones (Baseline Dates as at August 2022)**

Milestone	Date
Environmental Impact Statement (EIS) public exhibition	May 2025
EIS Submissions Report	October 2025
Planning approval	March 2026
Early works construction starts	February 2022
Main works construction start	June 2026
First operations commence	September 2031

## 7.3 Key risks and mitigation

In 2020, WaterNSW assessed the risks associated with dams and dam improvement works. WaterNSW found dam projects are significantly different to traditional (major) civil infrastructure projects. While these risks were identified in 2020, they remain relevant noting that the project risks were regularly reviewed as part of the Water Infrastructure NSW risk management framework and associated processes. The risk profile of dam projects typically includes several risks that are difficult to quantify. The key Project risks are included in Table 6.

**Table 6: Key Project Risks**

Key Risk	Details
<b>Project approvals</b>	Obtaining relevant Commonwealth and State environmental and planning approvals to enable contract award and commencement of construction. The model must ensure compliance with all approval conditions throughout delivery while accommodating as far as possible delivery on Project commitments for delivery.
<b>Environmental Offsets</b>	Dam projects and the associated inundation areas creates a significant impact to the existing land vegetation and aquatic habitats. State and Commonwealth bodies mandate that dam projects provide for environmental offsets to replace and often enhance the existing vegetation. Identifying appropriate offsets can be challenging and the costs for providing such offsets can be high. Early appreciation of the offsets required and consultation with the relevant agencies is essential to confirm the offset requirements and define strategies and projects to generate the additional habitat.
<b>Community and Landowners</b>	Opposition from those in the community affected by potential water shortages during construction. Landowners oppose the Project despite compensation due to loss of land and possible historic ties.
<b>Disruption to existing dam capacity during construction</b>	Undertaking the raising works may affect the existing dam capacity during construction and compromise water security in the catchment.
<b>Dam integrity and safety</b>	The obligations for compliance with Dam Safety NSW and Dam Safety Regulation 2019 requirements during and post construction is critical. The consequences of dam failure are catastrophic from a human life, environmental, water supply and cost perspective. Peer Review at all levels of the design development and at key hold points during construction is required. Verification of construction quality will be required.
<b>Foundation Uncertainty</b>	Potential for water loss from storage due to underlying geological faults.
<b>Environmental Impacts</b>	Impacts to threatened species, ecological communities, and historic aboriginal sites due to increased area of inundation.
<b>Inclement weather</b>	Heavy rainfall within the catchment during construction results in overtopping events requiring demobilisation from site and damage to permanent works in progress. Predicting the frequency and severity of these events is difficult and the construction methodology (including temporary work diversions) needs to envisage techniques that mitigate damage under overtopping events including safe and rapid demobilisation from the work fronts. Refer also to the update below.

The development phase of the Project has confirmed these risks. In addition, after WaterNSW's analysis, inherent risks were found in the concept design. These included:

- Significant environmental impacts downstream to endangered and sensitive ecological communities;

- Significantly reduced water allocations to agricultural uses and towns caused by the need to lower the reservoir's FSL during construction, impacting production and water security;
- Increased risk to workforce while working at depth underwater to strengthen the existing inlet towers; and
- Risks to downstream communities and construction workforce during heavy rainfall events due to inability to manage releases while the control gates are removed to modify the spillway.

---

## 8 The Infrastructure NSW view

---

The October 2019 NSW and Australian Government \$650 million commitment to raise the Wyangala Dam wall was based on the cost estimate included in the 2018 Preliminary Business Case. In each of the 2020 Strategic Business Case and 2023 Final Business Case (FBC) the construction costs and environmental offset costs increased substantially. The FBC cost estimate for the project represents a cost increase of over 600 per cent on the funding commitment.

The FBC concluded the Wyangala Dam project is not viable as it would:

- Cause significant and irreversible environmental impacts at either 10 or 5 metre wall raise height;
- Not receive regulatory approvals due to environmental impacts on downstream habitat and species, and the changes that would be required to planned environmental water; and
- Not represent value for money.

The FBC recommends the Wyangala Dam project not proceed.

Infrastructure NSW supports the FBC conclusions and recommendation, noting:

- The FBC capital cost estimate, at approximately \$4.6 billion, is extremely high and excludes costs for downstream biodiversity offsets.
- The Wyangala Dam project does not represent value for money, with a benefit to cost ratio close to zero.
- The original funding commitment was for a predetermined solution, in advance of full investigations.
- The FBC states solutions to address the identified problems will require a careful balance, and that a single infrastructure project solution such as the dam wall raising would not satisfy this requirement.
- Investigations identified that a 10-metre FSL raise, whilst technically feasible, would likely cause significant and irreversible negative environmental impacts, including catastrophic impacts on the internationally significant downstream environment.
- The FBC states the project would almost certainly not gain planning approval as a result of the identified environmental impacts.

The Final Business Case conclusion, that the Wyangala Dam Wall Raising project is not viable and should not proceed, demonstrates the credibility of the business case process. Before NSW infrastructure projects proceed, Business Case investigations, analysis and due diligence are critical to ensure projects are economically viable, technically possible, and environmental impacts can be minimised or mitigated.

INSW recognises the NSW Government will need to address the challenges facing the region through the Lachlan Regional Water Strategy, to provide improvements in water security and reliability and resilience to floods.