



Infrastructure
Western Australia

Major Infrastructure Proposal Assessment

Water Corporation

Goldfields and Agricultural Water Supply Upgrade

Summary Assessment Report

Infrastructure WA

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Acknowledgment of Country

Infrastructure WA acknowledges the Traditional Custodians of Western Australia and their continuing connection to the land, waters and community. We pay our respects to all members of the Aboriginal communities and their cultures; and to Elders both past and present.

Purpose

This assessment report has been prepared in carrying out Infrastructure WA's (IWA) legislative function to assess and report to the Premier on major infrastructure proposals. The assessment is of the Water Corporation's proposed Goldfields and Agricultural Water Supply (GAWS) Upgrade. Additional supporting information received from the proponent and consultation with relevant key stakeholders has also been used by IWA to support its analysis.

1. IWA observations

In April 2024, WA Government announced \$15 million of funding as part of the 2024-25 budget to enable Water Corporation to undertake scoping and design for staged upgrades to GAWS. IWA considers that this represents a previous decision of government demonstrating support for Water Corporation to respond to capacity constraints in the GAWS scheme. Therefore, this Major Infrastructure Proposal Assessment (MIPA) is primarily focused on the option assessments within these parameters, the associated delivery aspects of the proposal and areas of future improvement.

Based on this assessment context IWA considers the business case and additional investigations contain sufficient information to inform a WA Government investment decision. While the Stage 1 upgrade addresses near-term peak capacity constraints, additional capacity will be needed for future industry proposing to locate in and around the Strategic Industrial and General Industrial Areas in the Goldfields. These projects are not yet advanced enough for Water Corporation investment, but the Department of Jobs, Tourism, Science and Innovation (JTSI) deems them 'likely to proceed' in the medium-term. IWA recommends that Water Corporation continue planning and design for Stage 2 GAWS upgrades to meet medium term demand within required timelines.

IWA notes that engagement occurred early in project development and Water Corporation have produced a high-quality business case.

IWA recommends that Water Corporation include in its submission to government, updates on: commercial negotiations with key customers regarding cost recovery, the potential growth and timing of demand from the Mungari Strategic Industrial Area, and progress on environmental approvals.

2. Context

Project background

Water Corporation supplies water to industrial, agricultural, and residential customers in the Kalgoorlie-Goldfields region via the 550 km Goldfields pipeline, which has been in operation since 1903. Water is sourced from Mundaring Dam, treated, and pumped to various towns, with demand concentrated at the termini and varying seasonally. As the Goldfields and Agricultural Water Supply (GAWS) system has operational capacity limits in certain sections, Water Corporation has developed a business case to address growing demand and the associated infrastructure challenges.

The proposal is to upgrade sections of the pipeline and water storage capacity at the Binduli Reservoir to respond to additional water demand of up to 7.2 mega litres per day (ML/d) expected within the next 5 years. The proposal (GAWS Min) has an estimated capital cost of \$539.15 million.

3. Strategic merit

Alignment

IWA considers that the proposal has merit, aligns with WA Government strategies and notes it has been previously identified in Water Corporation's asset planning documents. It supports inter-agency initiatives like the Goldfields Industrial Areas Activation Roadmap and the Regional Drought Resilience Plan. IWA recommends further analysis of the Mungari Strategic Industrial Area's growth implications and greater clarity on any specific concerns raised by Traditional Owner groups, while noting their overall support for the project.

Since Water Corporation aims for net zero greenhouse gas emissions by 2035, as outlined in its corporate strategy *Thrive2035*, IWA recommends that future project planning should include information about how this proposal contributes to achieving this target.

Problems and opportunities

IWA considers the problems and intended outcomes are well described and justified in the business case as follows:

- GAWS has limited capacity east of Merredin to accommodate future major industrial water demand.
- GAWS cannot accommodate projected organic growth in regulated customer demand (residential and industrial) in certain zones.
- Existing infrastructure in the GAWS has exceeded its design life, and performance is deteriorating, leading to potential wastage of potable water, limited capacity, decreasing reliability and increased investment is needed in capital and maintenance.

The problems are supported with relevant evidence including Water Corporation's obligations under the *Water Services Act 2012*. Growing seasonal demand, allocation exceedance by major customers and aging infrastructure requiring replacements highlight the need for the GAWS upgrade to ensure long-term demand is met.

The business case describes the intended outcomes as: reliable supply of potable water to regulated and industrial users along the GAWS Scheme; increased ability to support and establish additional economic development in the region through improved supply capacity; and reduced replacement and maintenance costs.

4. Options assessment

Within the context of the previous WA Government decision, IWA considers that an appropriate process was undertaken with sufficient information provided and risks identified, to select 2 shortlisted options. IWA observed that the 2 shortlisted options are variations of the same solution, differing mainly in scope and timing rather than being distinct alternatives. Water Corporation confirmed that external engineering experts validated the options and analysis. Additionally, all works in the GAWS Min option align with the GAWS Max option, ensuring no redundant effort or expenditure.

IWA sought clarification on whether Water Corporation had considered a "medium capacity solution" and was satisfied with the response that any additional capacity increase over the 7.2 ML/d achieved with GAWS Min option would require substantial infrastructure upgrades, effectively aligning with the GAWS Max Stage 2 option. IWA considers that the recommended option proposed by Water Corporation to progress Stage 1 of the larger upgrade (equivalent to GAWS Min) to address immediate near-term high probability demand of 7.2 ML/d is prudent, and provides a scalable foundation for future expansions to meet medium-term demand due to industry growth.

5. Societal impacts

Economic and financial assessment

Water Corporation has undertaken a probabilistic cost analysis (to P90) to develop project capital costs. The business case includes a list of assumptions and key inputs that formed the basis for the

cost estimates. Estimates include provisions for pipe disposal and Aboriginal heritage monitors, addressing stakeholder concerns, but does not include costs to mitigate or offset greenhouse gas (GHG) emissions resulting from the project. Water Corporation advise that GHG emissions are being addressed by a broader whole of organisation program that will request funding separately. IWA considers this appropriate, given Water Corporation is a high energy user and, the scale of interventions required for Water Corporation's decarbonisation goals.

The economic analysis shows that GAWS Min has a benefit-cost ratio (BCR) of 0.8 and a net present value (NPV) of (\$89.1) million, while GAWS Max has a BCR of 0.6 and an NPV of (\$378.7) million. IWA considers the assumptions and resulting BCRs to be reasonable and likely somewhat conservative, as they are based on historic major customer framework prices per zone and used as a lower-bound proxy for willingness to pay.

Although neither option meets the hurdle BCR of 1, IWA considers the recommended GAWS Min option a prudent investment, given the significant number of towns and users benefiting along the pipeline and the WA Government's support for a staged capacity expansion. The GAWS Max option carries a risk of over-capitalisation if growth is slow. However, since GAWS Max requires longer planning, design, and delivery timeframes, failing to progress the planning alongside GAWS Min could delay the larger upgrade when industry demand materialises.

Social assessment

The business case assesses social impacts for both shortlisted options, focusing on mitigation measures and opportunities to enhance social value, such as boosting economic output and prioritising local procurement. Water Corporation confirmed that heritage surveys for the pipeline replacement are complete, with one heritage site affected under the GAWS Min scope. While heritage approval has been secured, ongoing engagement with Traditional Owners should continue over the duration of the project.

Environmental assessment

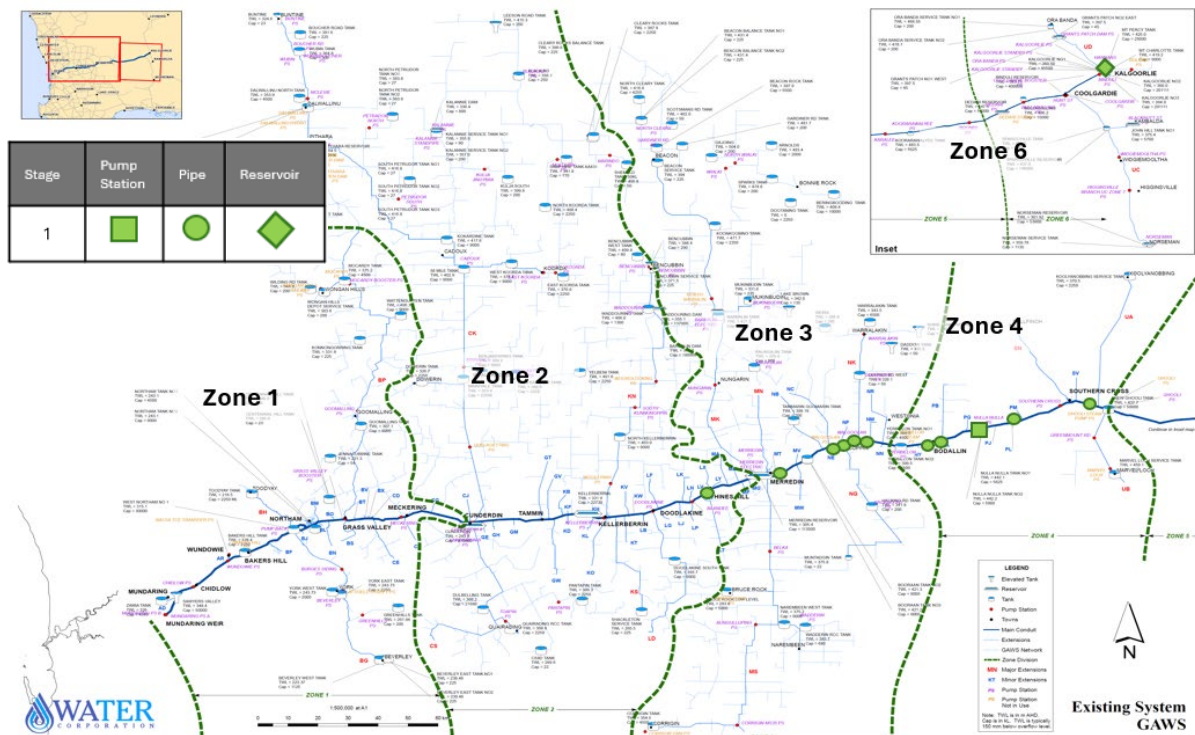
The business case identifies both GAWS Min and GAWS Max options as Matters of National Environmental Significance (MNES), requiring referral under the EPBC Act. Water Corporation has confirmed that completed flora and vegetation surveys have reduced the need for clearing of most of the identified significant vegetation. IWA commends Water Corporation for exploring opportunities to improve the project's sustainability credentials by seeking to achieve an Infrastructure Sustainability Council (ISC) rating. Water Corporation is further encouraged to seek a rating beyond the bronze level, through the project lifecycle, as improvements in the sustainability of GAWS Min can result in legacy benefits for current and future Water Corporation projects.

6. Recommended Option

Project definition

The recommended option involves the following core scope items:

- Replacement of 45km of pipework across various sites along the GAWS scheme.
- One minor pump station upgrade.
- Upgraded storage capacity at Binduli Reservoir (doubled with additional 400 ML).
- Surge mitigation (air cushions and air vessels) to support additional surge requirements.
- Minor digital upgrades to support upgrading the automation of the network.
- Minor water treatment plant upgrade.



Source: Water Corporation's GAWS Upgrade Business Case Version 05 March 2025 page 59

Deliverability

The business case includes a detailed risk register for both GAWS Min and GAWS Max and highlights supply and resource constraints as key risks. Water Corporation has undertaken market testing to confirm that the pipeline upgrades can be delivered if broken into smaller packages of works, and contractor capacity and materials would be available, though contractor shortages for the Binduli Reservoir remain a challenge. Water Corporation has incorporated lessons from past projects to mitigate risks, such as early procurement and addressing cost concerns. IWA recommends as a best practice approach that future proposals include further discussion on digital upgrades for network automation benefits. Water Corporation provides a well-documented benefits management approach, which IWA considers will provide a useful baseline to assess the project's success post construction and commissioning.