



ENGINEERS
AUSTRALIA

Attention: GABORA Water Plan Coordinator
Water Policy
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Engineers Australia Submission on new Great Artesian Basin Water Plan

Engineers Australia and its members have an interest in the management of water resources across Queensland and recognize that this most important resource must be managed as effectively as possible. The Great Artesian Basin (GAB) is a critical resource for many parts of the state. We are pleased to offer the following submission for your consideration in regards to the draft *Great Artesian Basin and Other Regional Aquifers Water Plan*.

About Engineers Australia

Engineers Australia is the peak body for the engineering profession. We are a member-based professional association with over 100,000 individual members. Established in 1919, Engineers Australia is a not-for-profit organisation, constituted by Royal Charter to advance the science and practice of engineering for the benefit of the community.

Evidence Based Decision Making

Engineers Australia supports evidence based decision making. The GAB is a real resource that can be quantified (with some uncertainty granted) but has many demands placed upon it. It is crucial that relevant data is collected so that useful models can be developed with the latest tools and methods.

Update of modelling with latest knowledge

Engineers Australia notes that the original plan is dated 2006, which means that all the modelling that was used to develop that plan was calibrated to a date prior to then. Available tools and methods have improved in this time and new data collected since 2006 is available to be used in the calibration of the models along with any new knowledge about aquifers and the associated environments they support.

One of the high level risks in managing the GAB is that management strategies from the 2006 plan may no longer be based on the best available science. Without incorporating new knowledge from the last ten years, the management strategies are likely to be less effective. New modelling work needs to include new data, new information about how aquifers behave and all expected demands regardless of whether a license was issued. Considering the

importance of the GAB, Engineers Australia believes that the plan should be maintained using the most recent and comprehensive information available.

Given this new information and the extent of recent and/or proposed developments such as Coal Seam Gas and mines for example across the GAB areas it would be prudent to ensure that the latest plan includes updated modelling. This will ensure that current allocation holders have a realistic understanding of the reliability and risk attached to their water allocations. Similarly, environmental needs are important in the arid and semi-arid regions of the state and need to be considered.

It is noted that a hydrogeology study is being undertaken as part of the plan development. Engineers Australia strongly supports this.

Engineers Australia notes that another high level risk is associated with the potential for significant future increase in groundwater demand from the resource sector as well as other commercial purposes that may result in significant competition in plan aquifers. Accounting for this growth in groundwater demand within the current models is important for managing this risk. Engineers Australia supports a detailed study and risk assessment to ensure that the long term performance of the GAB can be maintained.

Data collection

The plan requires detailed monitoring and reporting but comments on the previous plan (which also required monitoring) said that the monitoring was limited by the availability of resources. Considering the importance of the GAB especially for inland areas of Queensland, this should be seen as an important concern. Engineers Australia has commented on the value of water resources data collection in the past. Unfortunately if anything data quality is getting worse not better. Engineers Australia strongly reiterates that good quality relevant data is essential to build reliable models. Investment in enhanced monitoring is important and Engineers Australia recommends that monitoring effort be increased. Effective management is not possible without a clear understanding of the aquifer and the water balance, which is impossible without monitoring.

The report states that there is inadequate monitoring to determine if springs/baseflow are being protected. Springs are important environmental features of the GAB and their protection in conjunction with water supply must be maintained. In this case it cannot be stated that plan outcomes have been met. More detailed effort needs to be put in to establish what information needs to be monitored to check that plan objectives are being met. Suitable measures need to be developed which are measurable and relevant to the plan objectives.

Reducing losses

Losses from the domestic and stock water supply from the GAB accounts for almost 30% of the total water use from the basin. While this has improved significantly in recent years, there is room for further improvement.

Petroleum and gas

This industry uses about 20% of the total water use and this has been a concern for the graziers who have been the major users for many years. While this is an important industry, there should be more debate on whether this use is the best use for such a limited resource. This debate must ensure that long term established industries which are the basis of western Queensland towns should not suffer from the expansion of new water supplies.

Evidence based decision making in regard to water management cannot occur when water can be extracted without limit. The national principles of water reform recommended a volumetric limit on all water allocations and Queensland has been steadily moving towards

this goal. Allowing water associated with resource projects to be extracted without a volumetric limit puts any planning at risk.

Maximizing use of QLD Government Staff Resources

Water is very compartmentalized in the Queensland government with people across multiple departments. This increases the risk that people with the best relevant technical skills may not be engaged in the project. Engineers Australia remains concerned about the deskilling in the public sector. While there has been a long term trend to outsource engineering services rather than deliver such services within government agencies, it is important the government retains at least some engineering capability.

Engineering capability is required in order to be an informed regulator of water supply infrastructure and to be an informed buyer of engineering services. Those designing, constructing, operating, maintaining, monitoring and assessing water supply and related infrastructure need to be appropriately qualified and experienced.

The government also has an excellent resource in Department of Science, Information Technology and Innovation staff (e.g. ground/surface water modelers, ecologists, drillers). Engineers Australia encourages that these stakeholders are fully engaged throughout the planning process to maximize their full potential including:

- the development of meaningful plans by not limiting their involvement to discrete points in the process and
- to provide advice about any gaps in expertise within the government workforce.

Conclusion

This submission has been prepared by Engineers Australia with support from the organisation's Queensland Committee on Water Engineering.

Engineers contribute significantly to the community in the regulation, planning, design, construction, maintenance, operation, monitoring, management and assessment of water resources systems and infrastructure. Engineers provide these services while meeting clear ethical responsibilities to the Australian community. Engineers Australia supports the effective management of water across Queensland and, along with our members, are available for further input and would welcome further discussion on these important issues for Queensland.

Yours sincerely



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