



# Gladstone Area Water Board

Submission to the Queensland Competition Authority (Authority)

Fitzroy River Contingency Infrastructure

Response to the Authority's draft report

Part (b) – Augmentation Triggers

3 September 2008

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## **Summary**

In December 2007 GAWB proposed criterion to trigger augmentation in response to drought or unexpected demand. These criteria were deliberately framed to be:

- generic in so far as they could be applied in a wide range of future circumstances;
- specific in terms of the matters to be taken into account when deciding to trigger; and
- certain, in establishing a framework for how those matters would be determined at any point in time.

GAWB anticipated that the Authority's conclusions on the appropriateness of the criteria would achieve or enhance GAWB's decision making processes by providing a 'predictable' and certain pathway for investment. However, the reliance on consultation as an end point for decision making, and a focus on reviewing and setting precise parameter values has not:

- provided clarity as to whether the Authority considers the proposed criteria appropriate; and
- improved GAWB's investment certainty.

## **Drought trigger**

The draft report concludes that GAWB's proposed criterion sets out relevant objectives and factors to be considered in deciding the timing for augmentation. However, the Authority has not clearly stated whether or not the Drought Management Plan (DMP)<sup>1</sup> is the appropriate mechanism to determine the parameter values that determine the drought trigger.

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<sup>1</sup> GAWB is required to prepare a DMP under section 123 of the *Water Supply (Safety and Reliability) Act 2008*. The requirement to develop and maintain a DMP has also been included in standard customer contracts.

The DMP by its very nature is a living, breathing document and subject to periodic review and regulatory oversight. GAWB's proposal remains, that the DMP is the appropriate mechanism.

In contrast, the Authority appears to propose that GAWB should consult about key parameters close to the time of a trigger. GAWB believes this will increase uncertainty for customers and reduce the effectiveness of prior consultation. Rather, assumptions should be revised regularly in accordance with the DMP, which is prepared in consultation with customers and updated annually to reflect new information or changes to circumstances.

The Authority has also suggested that the DMP should be amended to reflect the Authority's conclusions. GAWB submits that it is not the role of the Authority to assume responsibility for reviewing and recommending changes to GAWB's DMP through an investigation under the QCA Act.

Moreover, the Authority's analysis of specific parameters applied in the current DMP does not support a conclusion that these values are inappropriate or unreasonable. Given the inevitable scope for uncertainty and variability when forecasting future supply and demand conditions, combined with the risk and consequences of error, GAWB submits that the appropriate approach to reviewing its criteria is not to contrast GAWB's parameters against alternative scenarios put forward by the Authority (which are inevitably interpreted as a recommended position), but to consider whether GAWB's parameters sit within a reasonable range of forecasts and assumptions.

In any case, a detailed examination of parameter values is not relevant to considering the appropriateness of the criterion, which is generic.

The Authority also suggests in the draft report, that the trigger point for construction of the Gladstone-Fitzroy Pipeline could be delayed by one year and still meet GAWB's target outcome – the deferral of dam failure by two years. In making this observation, the Authority has not had sufficient regard to the project delivery risks that may materialise and cause the construction program to be exceeded – thereby not meeting the target outcome. GAWB contends that the target outcome is a *minimum* standard (or threshold requirement), rather than a precise outcome to be achieved.

## **Demand trigger**

The draft report states that GAWB's criterion was considered appropriate.

However, in relation to provision for contingency, the Authority noted that contingency seemed unnecessary in current circumstances.

It is not clear to GAWB whether the criterion is in fact considered appropriate by the Authority, or whether it concludes that the reference to contingency should be deleted or qualified. Nonetheless, GAWB submits that a 5% contingency allowance is prudent and appropriate.

Moreover, the limits proposed, including for contingency allowance and distribution losses, are reasonable in the circumstances. Adopting the Authority's values (i.e. nil contingency allowance and 3% distribution losses) creates substantial risk to GAWB in being able to meet its ongoing supply commitments as it contracts towards its full water entitlement.

## **Proposed Process**

The Authority concluded that GAWB's proposed process is reasonable for general application.

GAWB has since refined this process as it implements standard contracts with its customers. One outcome from this negotiation is the provision of greater flexibility for customers to respond to major price increases (e.g. contract termination) following augmentation. GAWB submits that the Authority should allow the process of negotiation to ultimately determine the timeframe.

As the Authority has recommended a specific time frame in the draft report for customer responses, it is considered unlikely that GAWB will be able to negotiate contract terms that have a shorter timeframe than that which is proposed by the Authority, if their recommendation is adopted in the final report. GAWB does not believe that a 30 day period is unreasonable given the information from prior planning studies that will have preceded any notice. Moreover, the declaration of a Low Supply Alert will provide customers with six months advance warning of the need to consider their options to

respond to possible augmentation. This should provide sufficient time and information for customers to prepare a response to GAWB, when required.

GAWB also notes the Authority's comments on the constraints in committing to ex ante approvals. GAWB expects that it would liaise with the QCA Ministers if it believed that an ex ante approval process was desirable to facilitate an investment decision.

# 1 Introduction

This submission is made in relation to the Queensland Competition Authority (Authority) draft report relating to construction triggers for source augmentation.<sup>2</sup>

This submission is structured as follows:

- Section 2 sets out the key background matters: GAWB's commercial framework and its management of supply security;
- Section 3 provides an overall comment on the implications of the draft report for future decision making;
- Section 4 provides GAWB's response to the draft report's assessment of the drought trigger;
- Section 5 provides GAWB's response to the demand trigger; and
- Section 6 sets out GAWB's response to the Authority's conclusions regarding the process for augmentation.

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<sup>2</sup> QCA. *Draft Report. Gladstone Area Water Board: Investigation of Contingent Water Supply Strategy Pricing Practices. Part B.* July, 2008.

## **2 Background**

GAWB's proposed criteria for augmentation must be considered within its broader commercial framework and approach to managing for water supply security. Whilst the Authority has acknowledged elements of this framework at different points in its draft report, the key elements are summarised below as background to GAWB's submission.

### **2.1 Commercial framework**

For completeness, this framework can be summarised as including the following elements:

- a central-planning role to provide a secure water supply for current and future customers;
- a regular planning cycle involving customers and other stakeholders;
- supply of a contracted volume (a 'reservation volume'), with customers having the ability to adjust this volume from time to time, and use over and above this contracted volume in certain circumstances;
- allowance of the trading of reservations to facilitate best use of available water;
- managing supply shortages (drought) through a mixture of restrictions and augmentations, with a preference to clearly set out to customers the actions and their timing to give certainty about their risk profile;
- reliance on existing statutory mechanisms – particularly the Drought Management Plan which is also referred to in the standard contract – as the tool to set and enforce drought management measures, including supply restrictions;
- the DMP outlines the process undertaken by GAWB in the:
  - annual review of data inputs used to calculate drought trigger levels;

- issuing of Low Supply Alert notices;
  - imposition of supply restrictions and emergency restrictions including the ability to trade reservations between customers;
  - review and adjustment of the plan if required; and
  - management and communication strategy of the plan.
- providing flexibility for customers to elect for lower supply security through commercially-negotiated ‘curtailment’ arrangements – for example further restrictions to supply when faced with imminent drought;
- providing information to customers on the cost and other impacts from possible future supply augmentations, to enable them to make informed assessment about their future demands from GAWB, and any substitute or bypass options that may be available to them;
- allowing for contract terminations or reductions to water reservations in certain events that would allow customers to pursue alternative substitute or bypass alternatives; and
- providing for customers to submit their own alternatives, including funding proposals that would result in lower cost outcomes for GAWB’s broader customer base.

The proposed triggers for construction should be considered within this framework, which clearly provides customers with flexibility in terms of reducing their supply security and water costs (e.g. through curtailment) and seeking alternative supplies in the event of imminent source augmentation.

## **2.2 Supply security**

GAWB’s customers include two power stations, one local government and a number of major industrial users. These customers have different water needs, particularly in relation to their:

- capacity to abate consumption;
- costs of abatement;
- access to alternative sources; and
- capacity to mitigate risks of shortages.

In undertaking planning and water supply management, GAWB has placed great emphasis on supply security in recognition of the consequences of supply interruptions or shortages to a majority of its customers. The importance of supply security is confirmed by submissions from customers such as RTA, and customer views during and following the 2002 drought. These customers stressed the importance of early action to manage the drought.<sup>3</sup>

At the same time, more recent submissions from CS Energy and its associated joint venture entity CPM indicate a current preference to manage to a lower level of security.<sup>4</sup>

The Authority should therefore view GAWB's current inflow and other assumptions within the commercial framework described above, which provides flexibility for those customers who are willing to do so to reduce supply security (e.g. through curtailment) whilst meeting the high standards otherwise required.

Finally, GAWB continues to be concerned about the Authority's contention that "supply augmentations are usually more costly than supply restrictions, particularly restrictions imposed upon urban consumption".<sup>5</sup> As evidenced by submissions from RTA and QAL, if supply restrictions inhibit production, their cost is much greater than that associated with supply augmentation. Moreover, urban demand to which restrictions might normally apply only accounts for 18% of total contracted demand.

In a report for the Federal Government's Department of Industry, Tourism and Resources regarding the implications of recent water initiatives for the minerals, petroleum, energy, pulp and paper industries, ACIL Tasman calculated the value of

<sup>3</sup> These views were summarised in GAWB's Part A submission (p30).

<sup>4</sup> GAWB notes this contrasts with the power stations' position during and emerging from the 2002 drought.

<sup>5</sup> Refer pp 19-20.

water to black-coal-fired electricity generators at around \$18,000/ML.<sup>6</sup> High marginal water values were also calculated for mining (\$5,000/ML to \$15,000/ML) but no data was provided for light metals processing.

Whilst these marginal values must be treated with care (they are industry average rather than Gladstone-specific values and some customers may be able to make deep cuts and trade their savings to others), there is a *prima facie* case that, given GAWB's largely industrial customer base, blanket restrictions are likely to destroy economic value.

A superior economic model would allow those customers that value water least to reduce demand first, with compensation from other customers. This is the outcome GAWB has sought to achieve through its commercial framework, which allows customers to offer compensated demand reduction or terminate their contracts under certain conditions.

GAWB's commercial framework with its contract-based, customer-specific and circumstance-specific approach delivers a better outcome for customers and the region than blanket restrictions.

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<sup>6</sup> [www.minerals.org.au/\\_\\_data/assets/pdf\\_file/0013/20236/ACIL\\_Water\\_Reform\\_and\\_Industry\\_May07.pdf](http://www.minerals.org.au/__data/assets/pdf_file/0013/20236/ACIL_Water_Reform_and_Industry_May07.pdf)

### **3 Implications for decision making**

In investigating and reporting on GAWB's proposed criteria, it is vital that the Authority:

- has regard to the need to provide clarity, certainty and predictability;
- recognises that there is potential for uncertainty and variability when attempting to predict future supply and demand conditions; and
- recognises the risk and consequences of error.

#### **3.1 The importance of certainty**

Decisions must ultimately be made about augmentation when faced with demand growth or imminent supply shortage. GAWB submits that some aspects of the draft report do not assist this decision making process. The Infrastructure Task Force's comments about the impact of regulation on investment decisions, as set out in GAWB's submission to the Part A terms of reference, remain relevant:

Infrastructure assets are by their nature long lived and involve lumpy investment. Just as there will be periods when assets that have been built ahead of demand are underutilised, so will there be periods of rapid growth in demand that strain the supply/demand balance. That a lengthy period of domestic economic growth, combined with a sharp increase in export demand, has placed pressure on capacity should not in and of itself be a cause for concern.

What is concerning, however, are the difficulties that have been encountered in responding to those pressures by investors in some parts of our infrastructure. If our problem in earlier years was at time profligate investment by government owned monopolies, the risk today is that efficient, commercial investment will be delayed or even deterred by inappropriate policy settings. Simpler, more transparent, predictable and accountable regulation is of key importance in this respect.<sup>7</sup>

In making this submission, GAWB is not expressing a desire for the Authority to be more

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<sup>7</sup> "Australia's Export Infrastructure – Report to the Prime Minister by the Exports and Infrastructure Taskforce". May 2005. p6.

specific or prescriptive about parameter values to be adopted. This is not appropriate as information, circumstances and practices change over time. Rather, the outcomes of the Authority's investigation should allow GAWB to apply the criterion whilst adapting to change, and provide a high degree of certainty about the regulatory treatment of these decisions.

Hence the criterion put forward by GAWB in its December 2007 submission was framed to be:

- generic in so far as they could be applied in a wide range of future circumstances;
- specific in terms of the matters to be taken into account when deciding to trigger; and
- certain, in establishing a framework for how those matters would be determined at any point in time.

The Authority's conclusions on the appropriateness of the criteria do not provide a 'predictable' and certain pathway for investment. This is particularly the case in relation to the drought trigger, given broad references to consultation expectations and a focus on the appropriateness of specific parameter values. The effect of several of the proposals foreshadowed in the draft report is to replace the criterion for triggering augmentation with a criterion for triggering further consultation, with a view to determining whether there is a need to undertake augmentation. Such an outcome would prolong the uncertainty surrounding GAWB's response to imminent supply shortage and increase the risks that an appropriate augmentation will not be implemented in time to avoid emergency restrictions and defer dam failure. Rather, it is appropriate to review assumptions through the annual review mechanism for the DMP, to capture and respond to changes to information and circumstances as they arise.

This is considered further below.

### **3.2 Consultation and decision making**

The draft report rightly points to the need for GAWB to consult with customers on matters such as drought management and augmentation triggers. Whilst this is an

important input, GAWB is ultimately charged with the role of making decisions in accordance with its charter and contractual obligations to customers.

GAWB's experience to date is that views vary between customers, and individual views change over time. Moreover, there are differing levels of participation among customers in these processes. GAWB must be attentive to the needs of all customers, and not give undue weight to customers who pursue a more vigorous posture throughout the consultation process.

The draft report does not provide GAWB with a clear pathway for making decisions about augmentation, particularly in relation to the drought criterion. Rather, the draft report concludes that customer views are to be sought on some matters (e.g. inflows) close to the time of augmentation and others are ultimately a matter for customers and other stakeholders.

### **3.3 Certainty for customers**

Whilst GAWB needs certainty for its own planning and investment decisions, customers also require certainty about how GAWB will respond to different situations – particularly during imminent drought. GAWB's DMP is aimed at achieving this. Reviewing arrangements at the time that key decisions arise is not desirable as this erodes this certainty, making it difficult for customers to plan for drought and other scenarios.

As such, GAWB believes that consultation should be undertaken in advance of events (e.g. drought), and when new information arises. It is not appropriate to revisit past decisions. Rather, the annual review process for the DMP enables GAWB and customers to consult and respond to change as it occurs.

### **3.4 Parameter values**

#### *Relevance to the criteria*

Whilst the draft report makes some conclusions about the appropriateness of the criteria, the focus on parameter values undermines the purpose of setting generic criteria. Rather, the focus should be on the appropriateness of the (generic) criteria, and

how the criteria should be applied over time.

#### *Regulatory practice in determining 'point' values*

The issue of the appropriate 'decision rule' for regulatory decision-making frameworks has been extensively canvassed as part of recent energy market regulatory reforms in Australia. The key issue is whether a regulator should be bound to accept a business' proposal if it is reasonable, or within a reasonable range of values, or whether the regulator is able to substitute its own preferred estimate.

The rationale for adopting a reasonableness decision rule is that a number of the variables submitted as part of a business' regulatory proposal, such as demand forecasts and associated forecast capital expenditure, are inherently uncertain. Making a decision on a proposal on the basis of whether it is reasonable in the circumstances or not recognises that there is unlikely to be one correct answer or clear 'best estimate' of certain parameter values. Different estimates may in fact be derived by using different methodologies and assumptions which are all equally valid.

Where such uncertainty exists and the regulator substitutes its own preferred estimates over the reasonable estimates submitted by the business, this will substantially increase the risk of regulatory error, with potentially adverse implications for investment in infrastructure assets and, ultimately, for the long term interests of consumers. The risk of error resulting from a regulator pursuing excessive precision in its decision making was highlighted by the Productivity Commission (PC) in its review of the national access regime. The PC concluded that one of the key factors likely to contribute to efficient regulatory outcomes is that, when regulatory intervention occurs:<sup>8</sup>

it is important that regulators are not overly ambitious in their attempts to remove monopoly rent....access regulation must recognise the potential costs of a 'surgical' approach to rent removal and encourage regulators to focus on the more modest objective of reducing demonstrably large rents resulting from inefficient pricing or denial of access.

This highlights the need for regulators to exercise caution in seeking to substitute their own preferred values for reasonable values submitted by a business. Given the inherent uncertainty of many parameter values, the pursuit of an unachievable precision in

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<sup>8</sup> Productivity Commission, Review of the National Access Regime, Inquiry Report, Report No. 17, 28 September 2001, p. 59p.94

regulatory decision making can result in costly regulatory error.

The principles that underpin this approach to regulation in the energy context are equally relevant to the Authority's review of GAWB's proposed criteria. Given the scope for uncertainty and variability when attempting to predict future supply and demand conditions, the Authority should not seek to assess GAWB's criteria by contrasting GAWB's forecasts with the Authority's own estimates or scenarios. A more appropriate approach is to consider whether GAWB's forecasts and estimates are within a reasonable range of outcomes.

A large part of the draft report is concerned with establishing precise parameter values, such as inflow assumptions, distribution losses and demand, shifting the focus from the generic criterion proposed by GAWB, to the specifics. Whilst the Authority may be of the view that it should comment on some of these parameter values as they are currently applied, the Authority's analysis implies a level of precision for these assumptions that is inappropriate for this report, and introduces substantial risk of regulatory error.

To the extent the Authority believes it should comment on specifics, GAWB submits that the Authority should:

- consider the risk of error in taking a view on these matters and making specific conclusions or observations, having particular regard to the risk of supply failure; and
- consider whether current assumptions are reasonable, having regard to the range of values that could be adopted given the uncertainties of forecasting.

The focus on parameter values detract from the assessment of the appropriateness of the proposed criterion and the goal of establishing a certain pathway for investment decision making. The above matters are addressed in detail throughout the following sections of GAWB's submission.

## **4 Drought Triggers**

The Direction to the Authority required that it investigate the appropriateness of pricing practices in relation to “GAWB’s proposed criteria for triggering construction of the appropriate augmentation in the event of drought or unexpected demand”.

GAWB proposed the following in respect to drought:

*GAWB’s proposed criterion to trigger construction is to enable the appropriate augmentation to commence operations in sufficient time to avoid emergency restrictions and defer supply failure for a target period (currently two years), after allowing for inflows, losses, current and future contracted demand and other forecasts as set out in the Drought Management Plan.*

GAWB’s submission below relates to the Authority’s response to the appropriateness of this criterion, and the comments made regarding the current parameter values.

### **4.1 GAWB's criterion for triggering augmentation**

The draft report concludes that GAWB’s proposed criterion sets out relevant objectives and factors to be considered in deciding the timing for augmentation.

Significantly, GAWB’s proposed criterion specified that key parameters, including the target outcome, inflows, demand and losses would be set in accordance with the Drought Management Plan, but the augmentation itself would be subject to regulatory scrutiny regarding scope, standard and cost of the augmentation itself.<sup>9</sup>

The Authority has not clearly stated in the draft report whether or not the DMP is the appropriate mechanism to determine the parameter values that determine the drought trigger. GAWB is seeking clarification from the Authority on this point.

GAWB’s proposal remains that the DMP is the appropriate mechanism, as suggested in

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<sup>9</sup> Refer to Section 5.1 of GAWB’s submission.

its December 2007 submission.<sup>10</sup> Existing regulatory and statutory mechanisms should be acknowledged and utilised, thereby avoiding the risk of regulatory duplication and conflicting requirements upon GAWB that would arise if the DMP was not adopted as the mechanism to determine inputs to the trigger and the target outcome.

The DMP is reviewed periodically, provides for customer input and involves regulatory oversight.<sup>11</sup> An example of this is the requirement under the DMP to review and update assumptions used for determining trigger levels at the end of each Wet Season.<sup>12</sup> GAWB has also demonstrated its capacity and willingness to adapt and review the DMP in response to material changes in circumstances or information – for example, the prompt review and removal of the Low Supply Alert upon receiving considerable rainfall in February 2008. GAWB will continue to further refine the processes under the DMP to ensure it is an effective tool in managing the risk of drought.

One interpretation of the draft report is that the Authority proposes GAWB should consult about key parameters close to the time of a trigger. GAWB believes this will increase uncertainty for customers and reduce the effectiveness of prior consultation. Indeed, the criterion becomes less of a trigger for augmentation than a trigger for further consultation about whether there is a need for augmentation. Rather, assumptions should be revised in accordance with the DMP, in consultation with customers, and when new information or circumstances arise.

Moreover, the Authority's draft report appears have assessed GAWB's criterion based on specific parameter values, rather than as presented in its generic form.

This highlights a potential confusion between GAWB's December 2007 submission and the draft report. GAWB's proposed criterion did not include specific assumptions or values to be adopted. Rather, the criterion set out the matters to be considered, and the way they would be determined (i.e. in the DMP).

GAWB notes that the Authority has partially addressed this issue, although in varying ways. Table 1 below provides a summary from the draft report.

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<sup>10</sup> Refer to section 2 and 5.1.

<sup>11</sup> For example, compliance with guidelines and other matters relevant to the registration of the plan.

<sup>12</sup> Refer section 9 GAWB's DMP.

TABLE 1. MECHANISM FOR DETERMINING PARAMETER VALUES

	GAWB'S CRITERION	DRAFT REPORT	COMMENT
TARGET OUTCOME	AS SET OUT IN THE DMP	NO COMMENT PROVIDED.	THE DRAFT REPORT DOES NOT COMMENT ON THE ROLE OF THE DMP IN SETTING AND ALTERING THESE ASSUMPTIONS.
INFLOWS	AS SET OUT IN THE DMP	INVITE CUSTOMER FEEDBACK AT TIME OF AUGMENTATION NOTICE.	THE DRAFT REPORT ALSO STATES THAT GAWB AND CUSTOMERS SHOULD REVIEW ASSUMPTIONS FROM THEIR COLLECTIVE PERSPECTIVES.
STORAGE LOSSES	AS SET OUT IN THE DMP	ACCEPTS CURRENT PARAMETER VALUES FOR STORAGE LOSSES.	THE DRAFT REPORT DOES NOT COMMENT ON THE ROLE OF THE DMP IN SETTING AND ALTERING THESE ASSUMPTIONS.
DEMAND	AS SET OUT IN THE DMP	INVITE CUSTOMER FEEDBACK AT TIME OF AUGMENTATION NOTICE.	THE DRAFT REPORT DOES NOT COMMENT ON THE ROLE OF THE DMP IN SETTING AND ALTERING THESE ASSUMPTIONS.

GAWB acknowledges the comments made on the legal status and binding nature of the DMP, and whether registration of the DMP implied approval of its contents.

Nonetheless, this argument is incidental to the assessment of the criterion – the key matter being that parameter values be determined using the existing DMP mechanism. The draft report is not clear in this regard.

The draft report does refer in part to consultative mechanisms between customers and other stakeholders, and between GAWB and customers. In particular, the Authority recommends that when an initial augmentation notice is issued, GAWB should invite customer feedback on the timing of the drought trigger, taking into account key assumptions such as inflows and demand.<sup>13</sup> One interpretation of the draft report could be that parameter values simply needed to be set following a process of consultation, rather than as set out in the DMP, requiring a change to the criterion. However, it is not clear to GAWB whether this is the Authority's intent, nor is it clear why this would not occur in any case as part of setting the DMP and its regular review.

The draft report states that the DMP should be amended to reflect the Authority's conclusions (subject to their acceptance by the Ministers). If this approach is followed in the final report the Authority will, in effect, be placing itself in the position of reviewing the DMP. The *Water Act 2000* (and now the *Water Supply (Safety and Reliability) Act 2008*) makes GAWB responsible for the development of its DMP. While registration of the DMP does not mean that it has been approved by the regulator, this plan was

<sup>13</sup> p49

prepared in accordance with the requirements of the legislation and in consultation with customers. The Authority should not take upon itself responsibility for reviewing and recommending changes to the DMP, especially where those changes are the result of an investigation under the QCA Act rather than the application of the legislation under which the DMP is produced. GAWB submits that it requires clear mechanism for setting parameters to determine trigger points, and the DMP is well suited to this purpose. The final report should clearly state whether this is appropriate, or if not, what other mechanism (s) would be. Any such mechanism should be more concrete than a simple requirement to consult on whether the parameters are appropriate after the trigger has occurred.

This submission now turns to the Authority's comments on the parameter values themselves.

## 4.2 Parameter values

The draft report made a number of observations, comments and conclusions about current parameter values, and stated that "... subject to the Ministers acceptance of them, the DMP should be amended to reflect the Authority's conclusions"<sup>14</sup>. GAWB sets out below its submission on the matters identified in the draft report.

As noted above, GAWB does not believe the Authority should assume responsibility for reviewing and recommending changes to GAWB's DMP. Furthermore, it is not clear to GAWB how many of these conclusions would be applied in the DMP (if this in fact became a requirement), as the draft report does not always define a specific parameter value or go beyond a broad requirement to consult.<sup>15</sup> In relation to consultation requirements, GAWB submits that the DMP provides a regular mechanism for this to occur.

### 4.2.1 Trigger point

A target outcome is a necessary ingredient in establishing an augmentation trigger (and hence part of GAWB's criterion), as it guides the timing and capacity of the

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<sup>14</sup> Refer page 32.

<sup>15</sup> Which would occur in any case through the DMP.

augmentation. The following sections respond to the Authority's comments on the target outcome and trigger point for construction.

#### *Definition of the target outcome*

GAWB submits that the Authority has misinterpreted the target outcome – that is, it is a *minimum* standard (or threshold requirement), rather than a precise outcome to be achieved.<sup>16</sup>

This was in fact noted in GAWB's submission, where it stated that triggering the 30GL augmentation four years from failure would defer failure by 36 months. GAWB also noted this configuration of trigger and capacity "met the target outcome by postponing (supplies) by at least two years".<sup>17</sup> GAWB has also separately defined target period to the Authority as meaning, in the current context" extensions of supply of at least two years, as described in Chapter 3 (of GAWB's submission)".<sup>18</sup>

#### *Selection of a target outcome*

The selection of a target outcome informs the selection of augmentation options, which must have sufficient capacity and be deliverable within a timeframe that together exceed this threshold requirement. This in essence ensures that the:

- chosen augmentation option is operational within sufficient time to make a difference to the water supply network, allowing all customers to benefit from the augmentation regardless of their point of connection to the network; and
- augmented supply is introduced at least two years prior to otherwise possible dam failure, providing further time for inflows from at least two additional wet seasons to break a prolonged drought, potentially delaying the need for further augmentation.

Different types of augmentation may impact differently on various customers, depending on how it is integrated into the system. As such, the minimum period represents a

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<sup>16</sup> For example, refer sections 5.2 and 11.3. of GAWB's December 2007 submission.

<sup>17</sup> p52.

<sup>18</sup> Letter from GAWB to the QCA dated 30 January, 2008.

threshold to apply to all customers, regardless of their physical connection to the system – for example the Gladstone-Fitzroy pipeline prolongs supply for at least two years for users drawing directly from Awoonga Dam, despite the lack of physical connection to the pipeline.

GAWB does not accept the Authority's claim that GAWB has not substantiated the basis of the current two-year target period. In its December 2007 submission, GAWB stated that the rationale for setting a target outcome was to generate sufficient deferral to allow a further augmentation to be undertaken should severe drought continue beyond a five year period. The target period of at least two years is based upon GAWB's current assessment for project delivery of source augmentations generally, although this is to be refined in future planning. Both of these points were made in GAWB's submission<sup>19</sup>

Two years is GAWB's current estimate of the *minimum* period that would be required to allow for further augmentation to be undertaken should severe drought continue beyond a five year period. Inherent with any project are risks that are beyond GAWB's reasonable control that must be understood and acknowledged. The acceptance of this reality is inconsistent with an absolutist assumption that the augmentation is capable of certain completion within this two year period.

The recognition of such possibilities should not be interpreted to suggest that GAWB would seek to derogate from its responsibility to manage those risks to the greatest extent that is efficiently possible.

For the reasons set out below, a target of deferring dam failure for exactly two years creates additional and, in GAWB's submission, unacceptable risks to supply.

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<sup>19</sup> Refer Section 3.

### *Timing*

The trigger point for the Gladstone-Fitzroy Pipeline is currently four years from supply failure. This trigger point was selected by GAWB after taking into account the (minimum) target period of deferral, and various risks of supply failure from unforeseen circumstances or delay in delivering the project.<sup>20</sup>

The Authority has suggested that this trigger point could be delayed by one year, and still meet the target outcome. This suggests that the trigger should be set to defer supply by exactly two years (not more), and should not include any allowance for unforeseen circumstances or delay.<sup>21</sup>

In making this observation, the Authority has not had sufficient regard to the risk or consequences of error.

The only mitigant for unforeseen circumstances or delay is storage. Triggering an augmentation later will result in less storage being available to deal with unforeseen events. The table below sets out the storage level at various years from failure, under two sets of assumptions: GAWB's inflow assumptions (23,633ML – updated by the Authority to 24,161ML) and the alternative inflow scenarios described by the Authority.

**Table 1. Storage position at various assumptions**

Inflow	Failure	Trigger To Failure	Date	Volume <sup>22</sup> (m <sup>3</sup> )	% of Storage	RL (m)
24,161	Oct-14	3 yrs	Oct-11	164,840	21.41%	26.35
		4 yrs	Oct-10	231,773	30.10%	28.65
33,746	Oct-15	3 yrs	Oct-12	132,168	17.16%	25.05
		4 yrs	Oct-11	187,079	24.30%	27.20
42,000	Sep-16	3 yrs	Sep-13	102,752	13.34%	23.75
		4 yrs	Sep-12	146,567	19.03%	25.60

As would be expected, the volume of water in storage at the time of construction trigger is lower where a higher inflow is assumed. This table also highlights the relationship between trigger timing and storage (discussed below). Given the uncertainty of extreme drought inflows, and the consequences of failure, GAWB has sought to avoid triggering construction at a time when the storage is at very low levels. The behavioural

<sup>20</sup> Refer p15 of GAWB's submission.

<sup>21</sup> These project delivery risks are discussed in the following section

<sup>22</sup> Net of dead storage.

implications of deferring augmentation by a further year to be operational one year from failure also need to be considered, particularly in a delay scenario. Customers' responses to facing the possibility of emergency restrictions (even for a short period) are likely to result in customers incurring costs as they take measures to reduce their exposure to supply shortfall or emergency restrictions.

Finally, the draft report discusses a scenario where a larger capacity augmentation is deployed later – GAWB concurs this is a potential future scenario, as set out in section 11.3 of its submission. However, GAWB also has noted that at present it does not have such greater capacity options available to it, and hence the current proposed trigger remains relevant. Moreover, should a larger capacity option become available, then the delivery timeframe (and risks) would also need to be assessed when considering whether it met or exceeded the target outcome.

#### *Project delivery risks*

GAWB's submission proposed that the trigger point should take account of project delivery risks to ensure emergency restrictions were avoided.<sup>23</sup>

In general, project delivery is dependent on a range of factors including the availability of necessary resources (whether personnel, equipment or materials), and "disrupting" factors (e.g. flood, industrial disputes, environmental or safety concerns). Timing can also be subject to successful commissioning and 'proving' the performance of the asset. Other risks – which can be mitigated through preparatory expenditure - relate to the satisfaction of necessary pre-conditions (typically approvals, land and access rights, etc).

The current Gladstone-Fitzroy Pipeline (G-FP) Project provides an example of this risk and various scenarios.

The target delivery program (including construction and commissioning) for the Project is two years, following preparatory expenditure. Based on the detailed design and construction planning now near completion, this target delivery program is realistic and achievable. Nonetheless, there are risks that may materialise and cause the target

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<sup>23</sup> Refer p26.

program to be exceeded.

Delivery risks on two major elements of the project, the intake pumping station and the northern section of pipeline, are subject to the time of the year that construction commences due to potential impacts of a wet season. The intake pump station is located on the Fitzroy River and construction would be prevented if the river is in flood corresponding approximately to that of February 2008. Depending on the severity of flooding, construction along significant lengths of the northern section of pipeline (generally from Alton Downs to Raglan pump station) also would be prevented for as long as it takes the ground to dry out, which could be up to two months after floodwaters recede from affected areas.

For construction planning it is assumed that the wet season is from December to April, and the specified construction period is 24 months.

For construction commencement in January (or early in the year) there are two dry seasons available for construction in flood prone areas, which minimizes program risk in respect of any seasonal constraints. The objective would be to substantially complete works in those areas in the first dry season, thus ensuring ample opportunity to test and rectify any issues during the following dry season, without being put at risk by the intervening wet season.

For construction commencement in July (or about mid year) the intake pump station would be programmed for construction start the following May in order to avoid work necessarily overlapping the wet season. Hence, there would be only one dry season in which to carry out construction, testing and any rectification. With the likely lead time for pipe delivery, the start of pipe-laying would nearly coincide with the onset of the wet season. Whilst northern section pipe laying could be carried out in a wet season, there is the added risk that adverse conditions cause the workface to have to be closed down for the duration and crews relocated into the southern pipeline section, with potential cost impacts on the project.

Overall, there is greater risk to the two year build program if construction commences midyear because there is effectively only one dry season available in which to carry out a significant proportion of the project, compared with two dry seasons if construction commences early in the year.

The G-FP Project is not unique in having delivery risks, and it is not unusual for projects of this nature (or other options that may emerge over time) to experience delay due to factors generally outside the proponent's reasonable control.

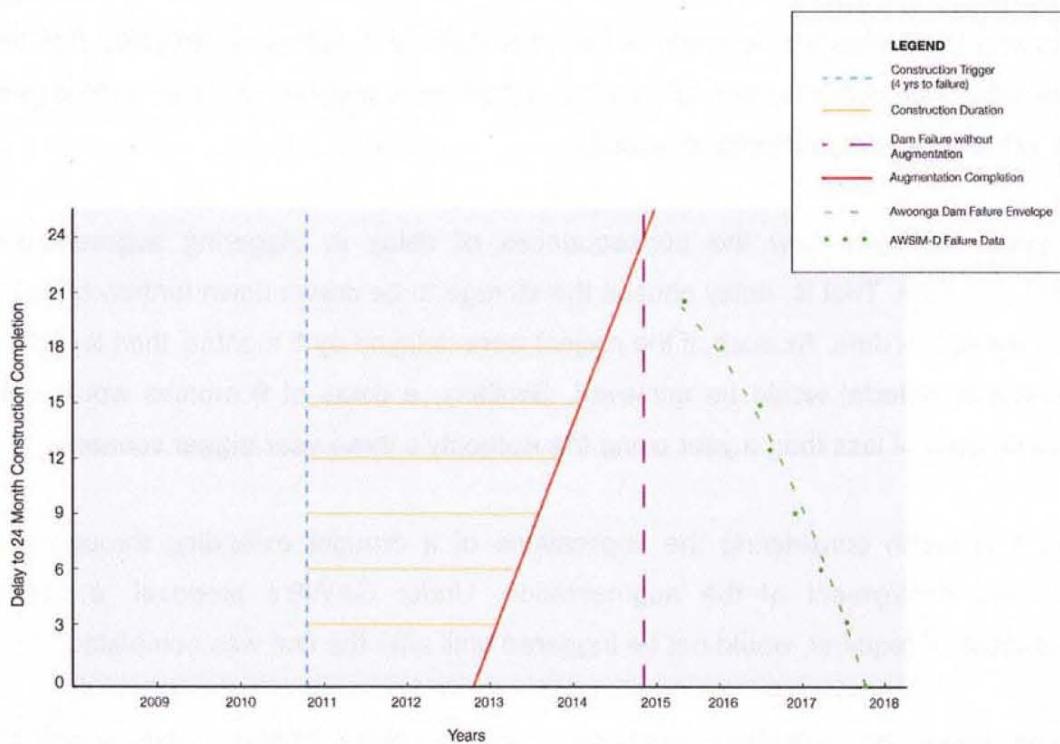
### *Scenarios*

The Authority's scenarios of deferring the trigger point fail to take account of the risks described above.

Figure 1 represents GAWB's proposed augmentation, triggered four years from failure and assuming the three-year average inflows from the actual storage position of Awoonga Dam in July 2008.

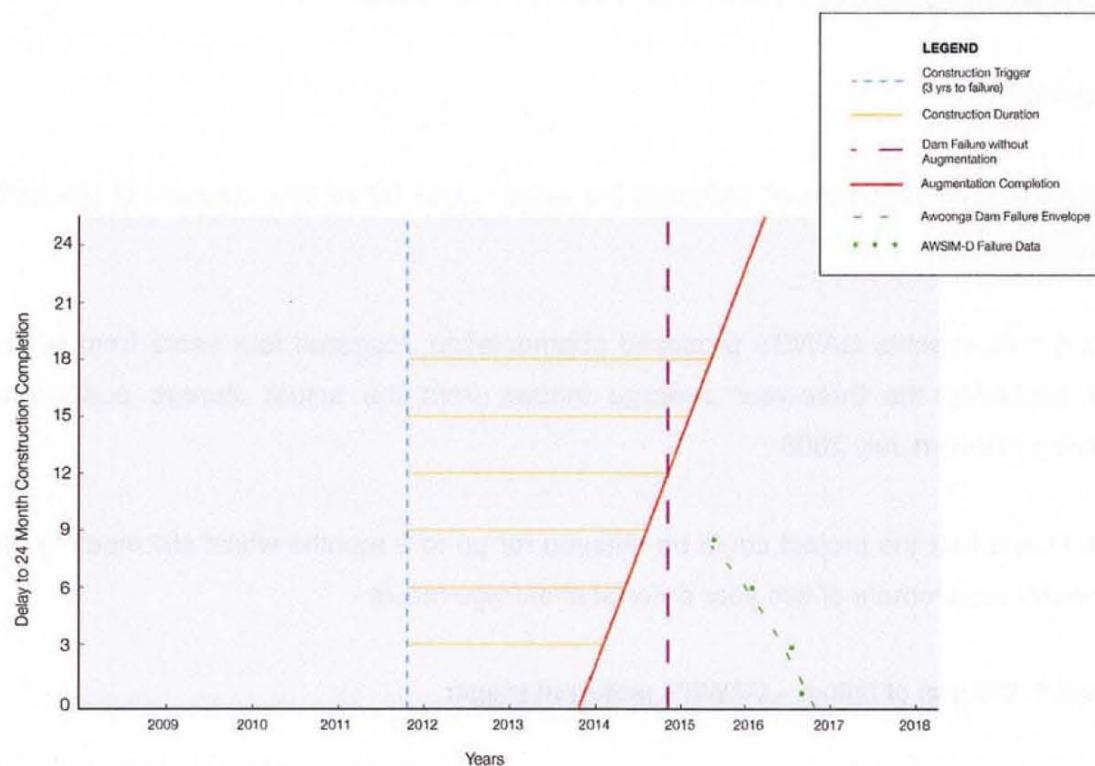
This shows that the project could be delayed for up to 9 months whilst still meeting the minimum requirement of two year deferral of storage failure.

**Figure 1. Deferral of failure – GAWB's preferred trigger**



The Authority has suggested that the trigger for construction could be deferred to three years from failure, under the above assumptions. This is represented in Figure 2.

**Figure 2. Deferral of failure – Authority Scenario**



By adopting the Authority's scenario, a two-year deferral is achieved, *provided that* the augmentation was delivered and operational according to program. That is, a three year trigger achieves a two year deferral exactly.

This figure highlights how the consequences of delay in triggering augmentation increase with time. That is, delay causes the storage to be drawn down further, bringing forward the failure date. As such, if the project were delayed by 6 months, then less than 18 months of deferral would be achieved. Similarly, a delay of 9 months would only achieve deferral of less than a year using the Authority's three-year trigger scenario.

Finally, it is worth considering the implications of a drought extending through and beyond the deployment of the augmentation. Under GAWB's proposal, a further augmentation, if required, would not be triggered until after the first was completed.

However, under the Authority's scenario, a second augmentation trigger would be reached approximately 4 months before completion of the initial augmentation. Hence, under an extreme (yet plausible) scenario of extended drought, delaying the trigger point for augmentation is more likely to result in a further augmentation being required before the benefits of the first are realised.

### *Linkage with supply restrictions*

The draft report asserts that GAWB has chosen to 'link' supply restrictions to the augmentation trigger.

For clarity, GAWB does not propose that the decision to trigger augmentation should be linked to the timing of restrictions. Rather, these two matters are clearly separated in its submission – in fact GAWB separately sets out the various demand management measures that could defer augmentation.

In conclusion, GAWB submits that:

- the trigger point should be determined in accordance with GAWB's proposed criterion;
- it is prudent for the timing of operation of the augmentation to account for delay;
- the target outcome, as described in GAWB's submission, is a prudent minimum or threshold requirement used to guide the capacity and timing of augmentation and to screen augmentation options, though this target may change over time; and
- in the current circumstances, triggering the G-FP Project four years from failure is reasonable, while deferral by one year would introduce unacceptable risk to supply.

#### **4.2.2 Inflows**

The Authority presented a detailed assessment of inflows in the draft report. Whilst a number of observations were made, it is not clear to GAWB whether the Authority has arrived at a conclusion or is in fact recommending an alternative inflow assumption. For example the draft report states that "the Authority considers that a number of alternative inflow assumptions could achieve GAWB's stated objectives... An example of such an alternative is Cardno's four-year worst consecutive inflow assumption which has a one

in 200 year chance of occurring".<sup>24</sup>

The Authority goes on to note that "the appropriate inflow assumption to apply is ultimately a matter for customers and other stakeholders" and that GAWB and its customers should review the assumptions over time.<sup>25</sup>

In relation to the DMP, the Authority concluded that "the DMP should be amended to reflect the Authority's conclusions".<sup>26</sup>

#### *Authority's conclusions*

While the draft report references a large amount of information on inflow probabilities and scenarios, it is not clear to GAWB what the Authority's conclusions are in relation to inflows, whether it expects the current DMP inflow assumption to be altered, and if so, to what value. Rather, GAWB understands the Authority has sought to present alternative scenarios, rather than recommendations, and has left final decisions to GAWB.

The Authority's terms of reference require it to investigate the criteria for triggering augmentation. As set out above, GAWB's criterion references the values set in the DMP as the basis for determining the trigger. The DMP is subject to customer consultation, and GAWB has set out its intentions for ongoing engagement. GAWB submits that the Authority should not assume responsibility for reviewing and recommending changes to the DMP. Rather, GAWB submits that the Authority accepts GAWB's proposition: that inflows be set and amended via the DMP review process.

#### *Authority's analysis on parameter values*

GAWB also notes that there is a relatively very minor difference between its inflow assumption of 23,633ML / annum and that referred to by the Authority as the 'alternative' of 33,746ML. This difference of only 10 GL compares to:

- the average historic inflow of just over 300GL;

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<sup>24</sup> pp26-27

<sup>25</sup> p27

<sup>26</sup> p32.

- the worst 10-year sequence (GAWB's previous inflow assumption) of 69GL; and
- the lowest 4-year actual sequence – 46GL

GAWB submits that the Authority's analysis and commentary implies a level of precision in the forecasting of drought inflows that simply cannot exist. Rather, the selection of an inflow assumption should be based on analysis (referencing past data, but noting its limitations), risk management and judgement. Moreover, the Authority has not considered the risk of error, in potentially overestimating assumed drought inflows.

There is no single 'correct' value for this assumption, except one selected with perfect hindsight. In light of this, GAWB submits that the Authority should not investigate GAWB's criteria by contrasting GAWB's forecasts with the Authority's own estimates. If the Authority is to comment, then a more appropriate approach is to consider whether GAWB's forecasts and estimates are within a reasonable range of outcomes. In any case, the more important question (in the context of the terms of reference) is whether the criterion are appropriate – including the role of the DMP as the mechanism to determine parameter values.

In conclusion GAWB submits that:

- its current inflow assumption is within a reasonable range; and
- into the future, the inflow assumption as set out in the DMP would apply for determining the trigger point.

This submission now turns to some of the specific matters raised in the draft report regarding the reasonableness of the current inflow assumption.

#### *Difference in approach*

The approach to inflow selection in the draft report is fundamentally different to that of GAWB.

Cardno's assessment (as detailed in the draft report) appears to be driven by two factors:

- the cost of augmentation; and
- a reliance on stochastic modelling to quantify risk and predict the likelihood of future inflow events.

The Cardno report gives emphasis to the cost of augmentation in determining an inflow assumption – that is, given the substantial cost of augmentation, a less conservative inflow assumption should be adopted. This approach is flawed as it does not take account of the risk of error in over-estimating drought inflows. The consequences of this error are clearly substantial where they lead to supply failure or emergency restrictions being required.

As such, GAWB does not believe this is an appropriate criterion upon which to assess inflow assumptions.

Secondly, Cardno's conclusions are based on stochastic analysis of historic inflows, which contrasts to GAWB's approach to managing risks and adapting to an uncertain environment.<sup>27</sup> GAWB believes it is essential that the inflow assumption is not so aggressive as to rely heavily on assumed inflows to meet demand when faced with declining storage from drought. GAWB's approach has been to adopt an assumption that gives it time to respond to extreme or unforeseen circumstances where they occur. In fact, GAWB's submission emphasised this as a consideration in selecting its inflow assumption.

This contrasts with the alternative approach, which involves 'picking' an acceptable inflow probability without having regard to potential or unforeseen events. Neither the Authority nor Cardno has had proper regard to how this reduces the scope to take actions should unexpected events, such as lower inflows, occur.

Reliance upon stochastic modelling to predict extremely low flow periods is problematic. GAWB has sought advice from Connell Wagner on this matter. They have advised that they would not recommend using Cardno's proposed stochastic sequence to determine the inflow regime for drought modelling, as there is considerable uncertainty in the values generated for low probability events. Connell Wagner advised this uncertainty

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<sup>27</sup> Refer to Section 4.4.1 of GAWB's Part B submission, in particular. The draft report does not address the arguments raised in this section.

arises because:

- confidence limits become considerably wider (i.e. less confident) when calculating very low and very high probability events – that is, the further away from the mean, the wider the confidence limit. These confidence limits were not provided in the draft report or in Cardno's report; and
- Awoonga Dam has highly variable inflows and stochastic modelling is not well suited to such events.

In summary, GAWB's approach has been fundamentally different to that suggested by Cardno and the Authority. GAWB's inflow assumption has been developed considering a range of factors, particularly the need to be able to respond to extreme, and unforeseen events. There simply must be sufficient water in storage at the time that such unforeseen events occur to give GAWB time to respond.

This is considered prudent for a number of reasons including:

- the extreme variability of inflows to Awoonga Dam;
- the limited period of historic record, and the accuracy of past streamflow data;
- the uncertainty over future inflow events arising from climate change; and
- the very high economic cost of emergency restrictions or supply failure to Gladstone industry.

This is not to say that a precise assumption of 23,633ML/annum is 'correct' – as set out above, such forecasts are difficult and have substantial consequences from error. Nonetheless, GAWB is of the view that this assumption is reasonable given current information and circumstances.

#### **4.2.3 Demand assumptions**

##### *Demand forecasts*

GAWB's submission stated that demand forecasts would be based upon "demand

secured by contract that incorporates negotiated or mandated curtailment arrangements".<sup>28</sup>

The current DMP bases forward demand projections on contracted demand at the time of setting supply restrictions, including existing customers' revisions of their water reservations into the future. The current DMP provides for this process to occur at the point of supply restrictions being announced, although the Authority should note GAWB's current intention to revert this timing to a low supply alert.

It is not clear to GAWB whether the Authority supports this approach. For example, the Authority has modelled scenarios based on the demand profile identified in its Part (a) report.

The Authority appears to set out three demand forecasts for different stages of the DMP:

- Low supply alert – the 'low demand' forecast, being the most likely demand that existing and prospective customers can be expected to contract;
- Supply restrictions - forward demand projection should be adjusted to reflect contracted actual demand, including curtailment (as per current DMP); and
- Construction trigger - contracted actual demand at the time water restrictions are imposed (presumably the same as that applied for supply restrictions).

It is unclear to GAWB how this differs to the approach proposed by GAWB for triggering construction, given its proposals in its submission. Furthermore, it is not clear to GAWB why a different demand forecast should be adopted for a low supply alert.

The Authority should also note GAWB's current review of the DMP, where it intends to require an earlier commitment to contracted volumes – commencing just after a Low Supply Alert, in order to provide better information, earlier, on timeframes to failure.

In conclusion, GAWB submits that the Authority should clarify whether it accepts GAWB's submission that using contracted demand is appropriate for determining the construction trigger.

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<sup>28</sup> Refer p26.

### *Distribution losses*

GAWB acknowledges that demand forecasts should incorporate an allowance for distribution losses in its bulk transport network, and notes this allowance would have minimal impact

#### **4.2.4 Storage Losses**

The Authority has accepted GAWB's proposed approach to storage losses.

However, the draft report refers to an error in the model in relation to environmental flows, stating its modelling included "corrections to the modelling of environmental flows"<sup>29</sup>. The nature of these corrections is not clear to GAWB.

The model, which has been reviewed externally by both Connell Wagner (for GAWB) and Cardno (for the Authority) incorporates the cessation of environmental releases as required by the Resource Operations Plan.

GAWB notes it is presently engaged in discussions with the Authority to better understand the basis for its suggestion. The resolution of this discussion would not seem to have any further relevance for present purposes.

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<sup>29</sup> Refer p26.

## **5 Demand trigger**

The draft report noted GAWB's proposed demand trigger:

*GAWB's proposed criterion to trigger construction of the appropriate augmentation is when GAWB has entered into contracts with customers that exceed the capacity of its water sources, after allowing for distribution losses and contingency.*

The following sections discuss the Authority's response to this criterion, and its commentary on the parameter values.

### **5.1 Response to criterion**

The draft report states that GAWB's criterion was considered appropriate.

However, in relation to provision for contingency, the Authority noted that contingency seemed unnecessary in current circumstances.

As such, it is not clear to GAWB whether the criterion is in fact considered appropriate by the Authority, or whether it concludes that the reference to contingency should be deleted or qualified.

Nonetheless, GAWB submits that a contingency allowance is appropriate, and the criterion is appropriate.

The following sections discuss the Authority's commentary on the parameter values.

## **5.2 Parameter values**

GAWB's proposed criterion did not specify values for the various parameters, but rather the matters to be considered for determining the augmentation trigger. GAWB's submission also set out GAWB's current expectations for these values based on a reasonable maximum allowance, and noted that these would be reviewed over time.

### **5.2.1 Contracted demand**

GAWB notes the Authority's conclusion that GAWB's criterion for triggering augmentation in response to unexpected demand is appropriate, provided that the commitment from new customers is sufficient to justify the augmentation.<sup>30</sup>

### **5.2.2 Capacity of water sources**

The Authority's conclusions in relation to defining the capacity of water sources appear to align with GAWB's proposal.

### **5.2.3 Distribution losses**

GAWB proposed that the available capacity should take account of losses within its bulk water distribution network. GAWB proposed that a maximum allowance be set based on 95% distribution efficiency, but "revised over time as GAWB implements further measures to reduce leakage and losses after taking account of the costs and benefits derived. This revision would be part of water supply planning".<sup>31</sup>

The Authority concluded that a 3% allowance for system losses should be adopted. This represents a reduction of 840ML/annum, or 1.1% of the full yield of Awoonga Dam.

#### *Calculation of the loss allowance*

The Authority's draft report suggests that the source of losses is mostly meter error, and that this is not a legitimate loss to be accounted for. The Authority's 3% allowance

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<sup>30</sup> draft report, page 36.

<sup>31</sup> p35

however comprises 2% for meter error and 1 % for physical losses.

GAWB's most recent assessment is that the physical loss of water is around 2% from its distribution system. Losses from its water treatment plants are additional to this.

Meter error is a legitimate distribution loss, given best practice meters in the relevant application are only accurate to +/- 2%.

GAWB's position remains that 5% is a reasonable (maximum) loss allowance for planning purposes.

#### *Effect of the Authority's conclusion*

GAWB's proposal for determining distribution losses was to set a ceiling (5%), and then make decisions regarding augmentation based on actual losses at the time – not to be more than this ceiling. This provided scope for investments to reduce losses where this could defer augmentation. This approach also allowed for the likely increase in leakage from GAWB's assets as they age, which may then increase losses from that currently experienced.

The Authority's recommendations have had the effect of 'locking in' a loss allowance.

Moreover, by specifying a loss allowance, combined with removing any contingency, the Authority has effectively required GAWB to contract precisely to its annual water entitlement. This approach does not, for example, provide any buffer to GAWB in the event that losses increase in a particular year (e.g. pipe burst or undetected meter error). Nor has the Authority properly acknowledged that GAWB is volume constrained in the diversions taken from Awoonga Dam.

GAWB submits that, for planning purposes, there should be greater flexibility in defining the water required for distribution losses. GAWB's approach gives incentives to reduce losses, allows for further investments in reducing losses to be considered in light of augmentation options and allows for increased losses from ageing assets.

#### **5.2.4 Contingency**

GAWB proposed that the available supply should allow for contingency for certain events.

The Authority concluded that no such contingency was required in any case, and that GAWB should quantify the volumes associated with each risk. This suggests to GAWB that, based on its existing water entitlement and the Authority's allowed distribution losses, GAWB should contract to 68,740ML before augmentation could be triggered. In order to comply with its water entitlement, GAWB would rely upon customers not collectively taking this volume (although they have a contractual right to do so), so that GAWB could meet its 3% distribution loss allowance.

GAWB submits that this is unreasonable, and imposes a situation where GAWB may face conflict between its contractual and statutory obligations. The inclusion of a contingency reserve for other service providers underscores the prudence of the allowance proposed by GAWB.

##### *Short-term variations to demand*

The Authority found there was no evidence of actual demand exceeding contracted demand to justify a contingency reserve.

GAWB submits that a review of past usage is not sufficient to dismiss this risk. GAWB must manage its supply against its contractual obligations – particularly to enable it to meet those obligations where they arise. It is not disputed that customers can take up to 110% of their contracted volumes without incurring penalties. The Authority appears to recognise that this remains a possibility. The fact that it did not happen between 2001/02 and 2007/08 does not mean that it will not happen in the future. The Authority's suggestion that customers are deliberately contracting for volumes in excess of their actual requirements:

- (a) is speculative; and
- (b) does not mean that customer behaviour cannot or will not change in the future.

The Authority has not taken full account of the risks of error from its approach. Given the absence of alternatives, it is commercially imprudent for GAWB to be placed in a position where its contractual obligations could conflict with its statutory limits on diversions.

The Authority also appears to have given weight to CPM's argument that customers are in effect paying for this contingency. Contractual provisions – consistent with the Authority's prior recommendations – provide for water use over and above reservation. This flexibility comes at a cost – namely that GAWB must be satisfied it has sufficient reserves to meet these additional demands as they arise.<sup>32</sup>

#### *New demand*

The Authority concluded that "given the relatively short lead time and significant supply volume of the proposed Fitzroy pipeline, a contingency reserve is not considered appropriate at this time".<sup>33</sup>

This conclusion would appear to suggest that, given certain circumstances (e.g. where the next source increment involved a long lead time) a contingency volume for new demand would be appropriate.

GAWB accepts that its contingent supply strategy is designed to respond to increases in demand. However, GAWB's submission also contemplated circumstances where existing customers had cause to suddenly increase demand.

#### *Downgrades in supply*

GAWB's water entitlement is subject to review at the setting of the Boyne River Basin Water Resource Plan (WRP).<sup>34</sup> The WRP cannot be approved for a period exceeding 10 years, and is due to be reviewed with changes taking affect from 2010.

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<sup>32</sup> This is a matter for Part C of the Terms of Reference.

<sup>33</sup> p43

<sup>34</sup> This is subordinate legislation. Refer to the *Water Resource (Boyne River Basin) Plan 2000*.

A key outcome from the WRP review is to set an environmental flow objective (EFO) and water allocation security objective (WASO). At the moment, GAWB's entitlements are set based on a WASO of 100% monthly reliability. These then translate to entitlements and water sharing rules in a Resource Operations Plan (ROP).

In preparing water resource plans, the Minister must take into account, among other things, existing water entitlements and the State's future water requirements, and submissions made regarding the plan.

While reasonable compensation is payable by the State under the Act arising from a change to a water resource plan within its 10 year lifespan, section 985 of the Act expressly provides that compensation is not otherwise payable under the Act. Consequently, compensation is not payable if a water allocation is reduced on the introduction of a new WRP.

Therefore, the outcomes of a review of a WRP are uncertain.<sup>35</sup> For example, it is conceivable that either the WASO for GAWB's nominal entitlement is reduced to maintain the current nominal entitlement, or conversely its nominal entitlement is maintained, but at the expense of supply reliability (i.e. a lower WASO). This could arise where, for example, inflow expectations change such as a new critical period emerging in the previous 10 year period.

GAWB therefore faces a scenario where its water entitlements are reduced as a result of a new WRP and Resource Operations Plan to an extent where its limit on annual diversions are less than contracted volumes. Whilst there might be contractual remedies in place, this is not a matter than can easily be resolved in an ex post response.

GAWB's experience with past yield reassessments supports its concerns. As historic records lengthen, the greater the chance that a new "worst drought on record" will occur - resulting in a downgrade of the Historic No Failure Yield. Recent examples include:

- 1994 – 16% reduction;
- 1997 – 8% reduction;
- 2003 – 11% to 15% reduction.

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<sup>35</sup> To date, there is no precedent which serves to increase this uncertainty,

Furthermore, the costs of this 'reserve' can be attributed to customers, for entirely legitimate and commercial reasons, seeking long-term contractual commitments. Presently, there is no such mechanism that has been endorsed by the Authority to facilitate such price differentiation. This is a matter for GAWB's next price review (2010), where it has previously advised that it will make submissions to facilitate the continued evolution of its commercial and pricing framework, by outlining a mechanism that differentiates between and is reflective of the different costs and risks associated with long-term versus short-term contracts.

In conclusion, GAWB submits that:

- the criterion (as proposed) is appropriate, including provision for 'contingency'; and
- there are a range of scenarios where a contingency volume may be required, however it is reasonable to set this at 5%; and
- as noted in GAWB's submission, circumstances may arise where it is prudent to dedicate part of this allowance to meeting a relatively small demand that would otherwise trigger augmentation.<sup>36</sup>

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<sup>36</sup> p37.

## **6 Appropriate augmentation**

GAWB notes the Authority's draft conclusions that its proposed process for determining the appropriate augmentation is reasonable for general application. GAWB's response to specific comments and issues raised by the Authority are set out below.

### **6.1 Planning**

GAWB notes the Authority's conclusion that the proposed planning regime was appropriate.

The Authority should also note that GAWB still intends to provide customers with a project development plan, however the urgency for this plan has abated with recent inflows to the Awoonga Dam.

### **6.2 Notice**

GAWB notes the Authority's conclusion that the proposal to provide notice to customers of the appropriate augmentation, and the likely cost and pricing impacts prior to the trigger point, was appropriate, as was the nature of the notice. GAWB submits that if it is to implement longer timeframes for customer responses (refer the following section), these notices may need to be issued earlier in the process to allow for the extended timeframe.

The Authority also concluded that customer feedback be sought on the proposed timing of the drought trigger, taking into account assumptions such as inflows and demand.

#### **6.2.1 Need for consultation**

GAWB agrees that customer consultation on these matters is important, and expects that this consultation would occur throughout the planning and decision making process. However, GAWB is concerned about the ambiguity that arises from the nature of the Authority's conclusions, particularly the broad references to consultation as an end

point. Please refer to earlier sections that set out these concerns in more detail.

### **6.2.2 Timing of consultation**

GAWB does not support the Authority's position that inflow and other assumptions to the drought trigger be reviewed close to the decision point for augmentation (e.g. at Low Supply Alert).

There is a need to create certainty for customers about the responses to drought so they can take an informed position on their own risk profile. Hence, the DMP seeks to be clear about the conditions under which supply would be augmented to provide this certainty. Of course, the DMP is subject to ongoing review and consultation.

GAWB does not support a process that could lead to a substantial change to the underlying assumptions for augmentation just prior to the point when augmentation might otherwise be triggered. This process creates uncertainty, particularly for those customers who have chosen to rely upon the existing approach in assessing and managing their risk profile.

Rather than reviewing these assumptions close to the time of a drought trigger, GAWB submits that these assumptions should be subject to ongoing review of the DMP, and change in response to new information. Again, this reflects the adaptive management approach endorsed by the Authority.

However, a review is not appropriate simply because a decision is imminent as suggested in the draft report. This only serves to remove incentives for customers to engage in earlier consultation processes, and creates uncertainty for those customers relying upon the approach current at the time.

In conclusion, GAWB submits that:

- the underlying assumptions for the drought trigger should be reviewed and updated regularly to respond to new information (consistent with an adaptive management approach); and
- it is not appropriate to undertake a review simply because a decision is imminent.

## **6.3 Customer responses**

### **6.3.1 Timing issues**

The Authority acknowledged that customers would be in an informed position to prepare and submit responses, but recommended a 120 day period was appropriate, rather than the 30 to 60 day period proposed by GAWB.

GAWB is currently finalising draft standard contracts to provide for a process to inform customers of the augmentation trigger, the price impacts and to take and evaluate alternative proposals. In developing the precise timeframes in this process with customers, trade-offs will emerge between the need for timely decision making and timeframes to consider positions and put forward alternatives.

The steps for this refined process based on GAWB's 30 to 60 day customer response period are summarised below.

#### **Stage 1 – First GAWB Notice (six months from the forecast trigger point)**

- Timing:
  - Drought trigger: six months prior to when construction would need to be triggered (this would have been preceded by a Low Supply Alert);
  - Demand trigger: six months prior to construction needing to be triggered to supply contracted commitments.
- Notice to set out the specific actions to be taken:
  - restrictions (e.g. for drought); and
  - the supply options, and GAWB's preferred augmentation response.
- Price impact: GAWB will provide information on the estimated price impact of the response (e.g. augmentation);
- Customer responses invited: customers invited to submit proposals to reduce demand (on a voluntary basis), which would enable augmentation to be deferred.

Stage 2 – Customer Response (1 Month from GAWB's first notice)

- Customers consider the price impacts and any alternative options
- Customers may submit, on a voluntary basis, any demand reduction proposals – to include details and terms to enable assessment (by GAWB and potentially the Authority).
- If the price increase is above a defined threshold, then customers have the option to terminate their contract, without payment of early termination fees.

Stage 3 – GAWB Evaluation (2 months from GAWB's first notice)

- GAWB will evaluate any demand reduction proposals – particularly in terms of deferral of augmentation.
- GAWB to also take into account reduced demand that would occur from customer termination of contracts should augmentation proceed.
- GAWB to consider its preferred response (which is least cost to GAWB's customers) and may present this to the Authority.

Stage 4 – Authority Consultation and GAWB Decision (three months from GAWB's first notice)

- The Authority will be given opportunity to comment and give its endorsement to an approach.
- If this does not occur (e.g. a referral has not been made, or the Authority cannot respond in the timeframes) then GAWB will make a decision.

Stage 5 – Second GAWB Notice (four months from GAWB's first notice)

- GAWB notifies customers of the approach GAWB has decided to adopt or that recommended by the Authority,
- Customers are given an updated assessment of the price impacts of augmentation based on the final selected response.

- At this time any contract terminations take effect.

GAWB proposes to discuss this process with all customers in finalising new standard contracts.

As such, GAWB submits that the timing for customer responses should ultimately be a matter for negotiation in finalising standard contracts, although it is intended to apply the above process generally across the customer base as a general improvement to the process put forward in GAWB's Part B submission.

In conclusion, GAWB submits that the Authority should allow the process of negotiation to determine the timeframe. As the Authority has recommended a specific time frame in the draft report for customer responses, it is considered unlikely that GAWB will be able to negotiate contract terms that have a shorter timeframe than that which is proposed by the Authority, if their recommendation is adopted in the final report. GAWB does not believe that a 30 day period is unreasonable given the information from prior planning studies that will have preceded any notice. Moreover, the declaration of a Low Supply Alert will provide customers with six months advance warning of the need to consider their options to respond to possible augmentation. This should provide sufficient time and information for customers to prepare a response to GAWB, when required.

### **6.3.2 Scope of customer responses**

The Authority noted that the scope of possible customer responses appeared comprehensive. The Authority also proposed that responses made in relation to the drought trigger could be expanded by including responses on demand projections and risk attitudes regarding inflows.

GAWB submits that demand forecast data is captured at this time in any case.

Please refer to the matters raised in Section 4 regarding changes to the inflow assumption simply due to the proximity of a drought trigger.

## **6.4 Evaluation and option selection**

### **6.4.1 Reductions to contractual obligations**

GAWB proposed that customers respond with measures to reduce demand that GAWB would otherwise be contractually obligated to meet. The Authority recommended that this criterion could more appropriately be defined as requiring customers to provide any submission which could forestall the need for augmentation in a cost effective manner.

The Authority noted that customers could propose to trade water or generate supplementary supplies through recycling or stormwater management.

In order for any proposal to forestall augmentation, it must result in a reduction in contracted demand. GAWB's process separately provides for trading to occur to forestall a demand triggered augmentation.

GAWB submits that the Authority's recommended change to the criterion is not necessary.

### **6.4.2 Benefits of deferral must exceed costs**

The Authority accepted the adoption of a NPV approach, but suggested that GAWB undertake a broader analysis incorporating non-commercial proposals that could attract a community service obligation (CSO) payment. This would seem to be a matter for Government to initiate (as purchaser), not GAWB.

Whilst supporting the concept contained within this suggestion, GAWB submits that the specifics of the Authority's suggestion will introduce unnecessary complexity to the process, potentially serving to delay decision making, and create further uncertainty and risk to the process, particularly given GAWB will already have a commercially-viable proposal in place (i.e. augmentation).

### **6.4.3 Broader economic costs and benefits**

GAWB accepts that cost benefit analysis should consider broad impacts, however its proposed criteria focussed upon the option that was least cost to customers in terms of

their future water charges. Whilst the Authority may not be able to constrain itself in terms of future decisions, it is important to establish how any assessment should take account of broader economic costs and benefits, and how this might alter a decision to adopt the least cost option to customers.

GAWB's interpretation of the Authority's conclusion in this regard is that the preferred option should be measured in terms of least cost to customers, unless Government's preference is to secure, through a CSO 'purchase', benefits that arise from other options.

Clarification of this point is sought in the final report.

## **6.5 Ex ante approval**

The draft report states that the Authority cannot provide a binding ex-ante approval of the type sought by GAWB under the current provisions of the QCA Act, as the ultimate decision-making powers rest with the Ministers.

GAWB's submission acknowledged the constraints of the QCA Act, and noted that any ex ante approval would be subject to Ministers issuing relevant terms of reference.

While the Authority may be unable to bind itself in terms of ex ante approval, the Authority can (as it has acknowledged) provide guidelines as to how it would be likely to treat expenditure on an augmentation in terms of GAWB's asset base.

Such guidelines could, for example, express a view on whether the Authority saw merit in a DORC valuation or ex-post optimisation of an augmentation. While such guidelines would not bind the Authority in relation to a future investigation or decision, they would significantly improve the timeliness and predictability of the regulatory process. Similar guidelines were published by the ACCC in 2004 in relation to electricity transmission regulation.<sup>37</sup>

GAWB therefore urges the Authority to produce guidelines on the matters discussed in sections 9 and 10 of GAWB's submission.

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<sup>37</sup> *Statement of principles for the regulation of transmission revenues*, ACCC, December 2004.

## **6.6 Construction trigger**

GAWB notes the Authority's agreement to GAWB's proposal.