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**QUEENSLAND WATER COMMISSION  
MINISTERIAL BRIEFING NOTE**

**TO: Minister Robertson**  
**FROM: Karen Waldman, Chief Executive Officer**  
**SUBJECT: Progress of the Wivenhoe Dam full supply level review**

Advisor .....	OK
Dated	/ /
<b>Approved/Not Approved/Noted</b>	
<b>Further information required</b>	
Minister .....	
Dated	/ /

<b>Noted /</b>	
<b>Further information required</b>	
DG DERM .....	
Dated	/ /

**TIMEFRAME**

- Noting of this brief is required urgently as requested by the Minister's Office.

**RECOMMENDATION**

- It is recommended that the Minister note the progress of the review of Wivenhoe Dam's full supply level being conducted by the Queensland Water Commission (QWC) and Seqwater.

**BACKGROUND**

- One of the recommended planning activities to be undertaken by the QWC identified in the *South East Queensland Water Strategy* (the Strategy) is a review of the operation of the Brisbane River system to optimise the water supply yield and to balance the flood storage and water supply storage volume requirements.
- The Wivenhoe Dam is operated with a normal storage capacity at full supply level (FSL) of 1.165 million megalitres (ML). It is able to hold back a further 1.45 million ML during a flood situation. This additional storage is used to provide flood mitigation benefits along the Brisbane River downstream of the dam by spreading release over a large period.
- An investigation into increasing the yield from Wivenhoe and Somerset Dams was undertaken by Seqwater. Seqwater's March 2007 report, *Provision of Contingency Storage in Wivenhoe and Somerset Dam*, investigated three levels of possible increases to the current FSL of Wivenhoe Dam of two metres, three metres and four metres. This report, which is available on the QWC's website, did not consider the requirements of the Moreton Water Resource Plan in terms of environmental flow.

**CURRENT ISSUES**

- A detailed investigation is being conducted by the QWC in conjunction with Seqwater and in consultation with the Brisbane and Ipswich City Councils to determine the maximum level to which the FSL of Wivenhoe Dam could be raised without raising the dam wall.
- In addition, a study will be undertaken to identify alternative options to access additional water from the Brisbane River system to identify the most advantageous option.

**Key stages in the assessment**

- **Pre-feasibility study** – a desk top study using existing models is anticipated to be completed by March 2011. It involves:
  - assessing the maximum yield within the environmental parameters of the Moreton Water Resource Plan;
  - assessing the upstream and downstream flooding impacts;
  - undertaking a cost benefit assessment of these impacts against the value of the water sourced;
  - identifying alternative options to access water in the system;
  - peer review of the work undertaken; and
  - preparing a report on the study.

- Cost impacts would be based on the Brisbane City Council's Brisbane River Flood Damages Study and would be undertaken in conjunction with Brisbane and Ipswich City Councils.
- Based on the pre-feasibility investigation, the QWC will recommend to the Minister whether the option warrants further investigation through a feasibility study or not to proceed.
- **Feasibility study** – This will be at a more detailed level and will involve refinement of the models and may involve some site inspections. The feasibility study is anticipated to take 12 months and would involve:
  - upstream and downstream flood hydrology sufficient to clearly identify flood risks including infrastructure impacts and upstream land acquisition (amend leases);
  - identifying dam structure impacts;
  - identifying environmental impacts including fauna and flora;
  - quantifying the project costs and yield benefits; and
  - identifying the project delivery time frame including environmental approvals.
- A report will be prepared including briefing material to advise the Minister of the outcome of the studies with a recommendation to proceed or not proceed with the preparation of a business case.

#### **Current status of project**

- Preliminary investigations have been undertaken by QWC using the Integrated Quantity and Quality Model (IQQM) and the WATHNET model to determine the additional yield meeting both the environmental requirements under the Moreton Water Resource Plan and the Level of Service criteria adopted for supplies in south east Queensland.
- The investigations also indicate that an additional 5,000 ML per annum could be accessed with a 1 metre raising of Wivenhoe Dam's FSL.
- The investigations indicate that any raising of FSL above one metre actually results in a lower overall yield from the system due to higher evaporation losses.
- The Wivenhoe system is nearly at its limit in terms of the end of system environmental flow objective (EFO) which is set under the Moreton Water Resource Plan at 67.22%. The one metre raising results in a 67.28% end of system flow whereas two metres results in 67.03%.
- QWC is currently awaiting costs from Seqwater to undertake components of the work but Seqwater will fund all its internal costs.
- The project will be overviewed by a Project Steering Committee which will include representatives from the QWC, Department of Environment and Resource Management, Seqwater, Brisbane City Council, Ipswich City Council and two independent experts in hydrology and water engineering.
- Once the costing from Seqwater is received, work on the pre-feasibility study will commence and should be completed by March 2011.
- If the pre-feasibility study indicates that a proposal is viable, at least another 12 months of further detailed technical studies at an estimated cost of \$500,000. This cost would be incurred by the QWC.
- Consultation with stakeholders and the community will be undertaken during the feasibility study, but ultimately this could easily add to that timeframe, given the complex nature of the impacts to be investigated.
- Until this work has been completed, and in consideration of the safety of the community, flood waters will be cleared in accordance with the existing Flood Operations Manual developed by Seqwater and approved by the Dam Safety Regulator.

#### **RESOURCE/IMPLEMENTATION IMPLICATIONS**

- The pre-feasibility investigations are expected to be finalised in March 2011 at an estimated cost of \$100,000. If the pre-feasibility study indicates that a proposal is viable, at least another 12 months of further detailed technical studies at an estimated cost of \$500,000. This cost would be incurred by the QWC.

## PROPOSED ACTION

- The QWC will continue to work with Seqwater to undertake a pre-feasibility study on the viability of raising the Wivenhoe Dam FSL or an alternative option if identified.

## OTHER INFORMATION

- *Consultation:* Meetings have been held with Seqwater and discussions have been arranged with Brisbane City Council and Ipswich City Council.
- *Legislation:* Any option considered will be compliant with the Moreton Water Resource Plan.
- *Key Communication Messages:* As indicated in the Strategy, the QWC, in conjunction with Seqwater, will be investigating the maximum level to which the storage level of Wivenhoe Dam could be raised without raising the dam wall, while still remaining within acceptable risk levels. Until the detailed investigations have been completed, flood waters will be cleared in accordance with the existing gazetted Flood Operations Manual developed by Seqwater and approved by the Dam Safety Regulator. It is vital the Government takes all the time needed to get it right and the Government will not be rushed into making hasty decisions in the area of public safety. Getting this wrong has the potential to endanger homes, property and livelihoods of residents both upstream of the dam and downstream as far as Brisbane City.

## MINISTER'S COMMENTS