Submission No 348

INQUIRY INTO PROPOSAL TO RAISE THE WARRAGAMBA DAM WALL

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Mr Justin Field, MLC
Committee Chair
Legislative Council Select Committee on the Proposal to Raise the Warragamba Dam Wall
NSW Parliament House
6 Macquarie Street
SYDNEY NSW 2000.

Dear Chair,

Preliminary report on societal preferences of and value of environmental and indigenous heritage conservation upstream of Warragamba dam compared to raising the Warragamba dam for flood mitigation in the western Sydney floodplain.

I am pleased to make this submission to support your inquiry into the proposal to raise the Warragamba dam wall. This submission comprises a report on preliminary findings of a contingent valuation study carried out to quantify the value of the non-market benefits of environmental and indigenous heritage assets potentially impacted by the proposed dam raising project, compared to flood mitigation in the western Sydney floodplain. Through implementation of a specialised two-way contingent valuation survey, the study investigated societal preferences and willingness to pay (WTP) for either flood mitigation or environmental and indigenous heritage conservation, within the context of the proposed Warragamaba dam raising project.

This substantiative submission provides a summary of data, results and conclusions with specific relation to item (e) of the Standing Committee Terms of Reference, inquiring into the nature and extent of the examination of alternative options for flood management that formed the basis of the Cost Benefit Analysis (CBA) of the proposed dam raising project and the 'Resilient Valley, Resilient Communities' strategy. The research provides a strong basis for assessing the non-market value of environmental and indigenous heritage assets potentially impacted by the dam raising project to be further investigated and quantified for inclusion within CBA undertaken in the future for the proposed project and other alternate flood mitigation options considered.

The research has been undertaken as part of the Final Project component of the Master of Integrated Water Management program of the University of Queensland, delivered by the International Water Centre (www.watercentre.org). As the lead researcher, I was supported by a research team from The University of Queensland, The International Water Centre and the Australian Rivers Institute at Griffith University. This report submission is considered preliminary in nature, as it is our endeavour to gain additional funding in order to further implement the specially developed survey tool to obtain a larger data set from the greater Sydney region and nationally Australia wide. In addition, the results of this study will be prepared as a journal paper manuscript for peer review and submission to a recognised academic journal.

In summary, this study implemented an online survey at pilot scale across the greater Sydney area, obtaining 180 survey responses in total. This number of responses is not considered enough to formally extrapolate analysis results across the study area of greater Sydney, however the data obtained is suitable for assessing preferences and valuation within the respondent groups. Extending implementation of the survey further to gather at least 1000 survey responses is required to confidently extrapolate results across the study area.

The study elicited valid and reliable data from which information of relevance and informative substance has been drawn to support the conclusions of the study. Overall the results show a divided population, with an underlying discourse of individuals grappling with what can be categorised as a philosophically challenging question of personal and public safety from a rare flood event versus the conservation of the environment and indigenous heritage sites for bequest and altruistic value (as highlighted in the respondent quote below).

"This survey brought about an interesting debate in my mind which I had never thought about earlier. Thank you for bringing this up in a survey forum…." *[Quote 5: Respondent 98, Zone 4, Preference 2 selected]*

The results show that 43% of respondents had a preference for raising the dam for flood mitigation, 47% had a preference for maintaining the existing height of the dam and thus conserving the environments and indigenous heritage sites upstream, and 10% indicated no preference between the two options. Of the respondents who selected raising the dam, 48% indicated they would be willing to personally contribute financially to help fund this outcome, while of the respondents who had a preference for maintaining the existing height of the dam, 43% indicated they would be willing to contribute financially to help fund that outcome.

Based on the data obtained, a mean individual WTP of $23.60 per year was calculated for the respondents who had a preference for raising the dam, and $10.90 per person per year for those who had a preference for maintaining the existing height of the dam.

Applying this WTP of $10.90 per person per year to the 47% of respondents within the group that expressed a preference for maintaining the existing height of the dam, to the population of greater Sydney, yields a total societal WTP estimate of approximately $24,713,000 per year for maintaining the existing height of the dam and conserving the environments and indigenous heritage sites upstream.

Based on these results, the total present value for conservation of the environment and indigenous heritage sites upstream, is estimated to be $174 million over a 10 year period, with a 7% discount rate applied. This value for conservation cannot be applied as an estimate for compensation for loss of the environment or indigenous heritage sites as the survey explicitly obtained stated preference data from respondents regarding their WTP for conservation, not the level of compensation they would be willing to accept in recompense for the loss of the conservation areas and heritage sites.

When this present value for conservation is included into the CBA previously undertaken for the dam raising project the outcomes of the CBA are changed from a net positive benefit to a negative present value of - $4 million. The study highlights the importance of including these non-use values in the CBA for the proposed dam raising project and other alternate flood mitigation options.

I trust this submission includes all necessary relevant information. However, if you require additional information, further investigation or discussion, please feel free to contact me. I would be happy to provide further explanation on any of the issues raised in the submission, data or references cited.

Kind regards,

Joel Dalberger