

SUBMISSION TO THE PRODUCTIVITY COMMISSION MURRAY DARLING BASIN PLAN 5 YEAR ASSESSMENT

From: Jan Beer
15TH APRIL 2018

The Commission is seeking information on:

- a. why progress to remove constraints has been slower than expected*

The Constraint Management Strategies is now 2 and a half years behind the proposed schedule, it cannot meet future legislated timeframes and cannot achieve the 'enhanced environmental outcomes' as proposed in the Lower Lakes, Murray Mouth and Coorong as intended with delivery of the extra 450 GL.

The Victorian State Water Minister, Lisa Neville has previously publicly stated :

1. All Goulburn flows will now be in-channel to top of bank
2. No flooding of private property
3. No easements
4. In relation to the 450GL upwater, NO further recovery of water due to severe social and economic impacts that have already occurred and would occur.

If Victoria stands by these statements, this means that it is simply not possible to deliver the 450GL upwater, and large environmental flood flows downstream with the specific objective of achieving flows of 60,000-80,000ML/day at the SA border.

However in-channel top of bank flows when combined with the proposal to "piggy-back" releases from Eildon Weir on top of high tributary flows (now known as Hydro Cues), is of great concern to floodplain landowners who from experience know the unpredictability of fast flowing floods in the Upper Goulburn Catchment and fear that they will severely impacted.

The initial Goulburn Constraints Business Case was submitted as both a supply and constraint measure, however after investigation and modelling by DELWP it was found that the project could only supply 3-4 GL, at a revised mitigation cost estimate of \$139.3 million, so it was withdrawn as a supply measure and the initial constraint business case was also withdrawn in 2016, with the intention of re-writing it. I was a member of the Mid-Goulburn Constraints Technical Advisory Committee, with other landowners advising the MDBA on the constraints proposal from 2013-2015. Landowners consistently told the MDBA that the man-made environmental flood flows they were proposing were not achievable without causing serious social, environmental and economic impacts.

The last community meeting in the Upper Goulburn was in January 2016 when we were presented with revised flood flows and revised estimated mitigation costs. The community has had no contact with the MDBA, any proponents of constraints, that is the Victorian DELWP, GBCMA or any other state organisation since January 2016.

I have personally contacted DELWP and been told that the Goulburn Business Case has been re-written, was now in Canberra for Federal approval and approval by the other basin states. Communities have had no input whatsoever into the revised business cases.

Obviously, it has also been delayed pending the SDL vote in the Senate some time in May 2018.

The Constraints Management Strategy came into being when the Hydrological Modelling of the Relaxation of Operational Constraints in the Southern Connected System 2012 document by the MDBA stated that 'enhanced environmental objectives' could be obtained if an additional 450GL was recovered under the Basin Plan and system constraints were relaxed.

The then SA Premier Jay Weatherill threatened the Federal Government with court action unless an extra 450 GL was added to the already decided recovery target of 2,750GL, hence to avoid political losses in an upcoming Federal election, a hasty decision was made to increase the environmental recovery target to 3,200GL. The caveat being that there were no adverse social or economic impacts. Under the Water Amendment(Water for the Environment Special Account) Bill 2012, extra funding was enabled to acquire the 450GL and for the constraints Projects.

The modelling that stated constraints could be 'relaxed' to provide benefits to 17 of the 18 environmental indicators instead of 13, a flow of 60,000-80,000ML/day at the SA border and enhance other environmental objectives used 7 channel capacity restrictions in the major river systems and the use of a regulator at Menindie Lakes and deemed these to be 'relaxed' for their modelling.

It should be noted that Page xiii Hydrologic Modelling of Relaxation of Operational Constraints in the Southern Connected System states:

"Undertaking detailed assessments and analysis to identify whether any of the constraints tested in this study could actually be relaxed was not within the scope of this report."

In other words the decision to proceed with a Constraint Management Strategy in order to deliver greater volumes of environmental water downstream was based on no evidence whatsoever that the channel restrictions in the 4 major river systems or the multitude of other constraints throughout the basin could, in actual fact, be 'relaxed' and the proposed flows actually delivered.

It failed to recognise the theory of constraints, whereby whatever obstruction is preventing the system from achieving a higher output is removed, in reality, when applied to river systems and the vagaries of nature simply cannot work due to the hundreds of constraints within each key focus area, which are all interdependent not only in their own area and river system, but on all downstream systems as well.

The Constraints Management Strategies are simply not feasible nor are they technically achievable and the proponents are now discovering the insurmountable problems of attempting to 'relax' constraints. Some of these myriad constraints are:

1. The natural physical landscape and topography and river channel capacity which can never be mitigated or overcome.
2. The steep mountain and hill country particularly in the Upper Goulburn Catchment where unpredictable, flash flows occur
3. The river channel capacity in the major river systems of less than 9,500ML/day above which flooding starts -Molesworth Choke in the Goulburn, Barmah Choke in the Murray, chokes near Tumut and Balranald in the Murrumbidgee and the Malebo/Parmaligano choke downstream of Wagga
4. River travel time lag -6 days from Eildon Weir to McCoys Bridge in the Lower Goulburn
Floodplain
Lake Eildon to Trawool – one to two days.
Trawool to Seymour – zero to one day.
Seymour to Shepparton – one to two days.

Shepparton to Loch Garry – one day.

Loch Garry to McCoys Bridge – one day

5. Run of river losses- not accounted for in business case strategies. Changes in loss behaviour for events which move from in-channel to overbank have not been considered.
6. Attenuation, evaporation losses- the flat, hot, arid terrain through which the river systems so slowly wend their way towards the Murray mouth and Southern Ocean means that due to evaporation and attenuation it is totally impossible to provide flows that will keep the Murray Mouth open 9 years out of 10.
7. Individual tributary flow contribution and inability to coincide upper Goulburn tributary flows which contribute 50% of river flow, with flows downstream Broken River, Seven Creeks
A key risk for the project is supplementing tributary inflows to meet the planned flow targets at Shepparton. There are two aspects to this issue.
Supplementing tributary inflows with releases from Lake Eildon has been assessed as a **significant risk** for the project. If the expected inflows from tributaries cannot be predicted with sufficient accuracy, then there is potential for releases to result in flows higher or lower than the targeted rates, which may result in unintended flooding of private land with potentially large financial consequences, or failure to achieve the intended environmental outcomes.
The second and closely related aspect of this risk is that once a release event has been initiated, if unexpected rainfall events occur, natural tributary inflows may increase, with potential for unplanned flooding to occur.
“The many dynamics involved in the river systems between Seymour and Shepparton, means there can be little confidence in the probability accuracy in any modelling. For example the fact that flows from Seven Creeks, Broken River and Goulburn never coincide make achieving a peak environmental flow extremely difficult. The difference in timing of the three main inflows is a regular characteristic of flooding in the Goulburn at Shepparton.”(Environmental Water Delivery: Lower Goulburn 2011)
8. Flow duration -flows in upper catchment are short, peak quickly, as flow out of the mountains and recede quickly.
9. Lack of perfect forecasting of rainfall, real-time run-off figures. *“The availability of, and access to, up to date rainfall and river flow/level data is critical for flood forecasting in rapidly reacting river catchments. Without this data, the BoM is limited in its ability to fit and then utilise a rainfall runoff model for the catchment and limits its ability to provide timely and accurate flood predictions.” (The Comrie Report December 2011 Page 49)*
10. Paucity of real-time telemetry streamflow gauges- 45% of the Yea/Murrindindi catchment is not gauged. 57% of the Goulburn catchment from Eildon to Trawool is ungauged. To my knowledge there has been no increase in the number of gauges in the Upper Goulburn Catchment since the Constraints strategy was first proposed. If the implementation stage is to commence in 2017 and less than 50% of the catchment is gauged this leaves precious little time to gather any historical data.
11. Legislative requirement that there be no adverse socio-economic impacts. There will be serious socio-economic impacts of flooding on public infrastructure and the thousands of hectares and hundreds of businesses that belong to private property owners. Landowners in the Upper Goulburn Catchment, the mid-Murrumbidgee and the mid-Murray are adamant and resolute in their determination to refuse to negotiate easements on their private property.

The Commonwealth Environmental Water Holder Office has stated numerous times at public meetings and in letters to landowners that he will **“NOT intentionally inundate private property without the consent of landholders.”** It should be noted the decisions with regard to water orders made by the CEWH are totally independent of the MDBA and the Federal Govt. Both State and Federal Governments have clearly stated in letters to landowners that they **“will not intentionally flood private land without prior agreement of landholders, nor compulsorily acquire land or easements.”**

It is also very clear from the many documents produced or commissioned by the Murray Darling Basin Authority, the Department Environment, Water, Land and Planning, GBCMA and others that this flooding will cause such significant damage that the Federal Government will need to provide funding to compensate landowners for the numerous adverse impacts. Accordingly, not only is the probability of damage to private landowners clear, but the government agencies concerned have in effect acknowledged their liability.

If the government agencies concerned choose to use the expression ‘mitigation’ to describe in internal documents and discussions what steps they might take to reduce the amount and types of damages for which they may ultimately be found liable, well and good. As far as private landowners are concerned, however, steps such as negotiation of the acquisition of easements and financial compensation will do nothing to make less harmful the adverse impacts of flooding in perpetuity. Nor will those steps do anything to alleviate or minimize the frequency, duration or severity of the proposed intentional flooding.

Mr Glyde has stated that it is the MDBA’s and Basin Government’s collective responsibility *“to develop fair and equitable compensation to redress third party impacts.”*

The MDBA fails to understand that no amount of a proposed “one-off, up-front” financial compensation can compensate landowners for their property being flooded on a constant recurring basis forever into the future. The frequency, duration and timing of the proposed environmental man-made floods will destroy the rich, highly productive floodplain agricultural area, while also impacting on businesses such as caravan parks, trout and fish farms, huge areas of shire roads, bridges, parks and other infrastructure which must be repaired and maintained after each and every flood event.

12. Legal liability. River operators are keenly aware of the need to manage risks to keep within operating constraints, which is why the Goulburn Murray Water river operators in their submission to the Senate Inquiry on the Murray Darling Basin Plan Feb 2016, made it very clear that they cannot accept a transfer of operational risk to Goulburn Murray Water(GMW) and its customers. The MDBA have however stated that GMW will be the body held responsible. It is very obvious that with the trend to more extreme weather events that operational risks increase substantially.

At the Senate Estimates Hearing Senator McKenzie asked who has legal liability for operational decisions to release water that will flood private property.

In response, Mr Russell James, Executive Director Policy and Planning MDBA, stated *“the legal liability would rest with the relevant river operator. In the Goulburn Valley it would be Goulburn Murray Water.”*

It is important to note that the more investigation of constraints that takes place by the proponents, the more obvious it becomes that constraints and delivery of an extra 450GL downstream in the volumes proposed to 'enhance environmental objectives' such as 60,000-80,000GL at the SA border for 5 weeks duration and maintain an open Murray Mouth 95% of time, are simply unachievable, as to do this would require major flood flows in 3 of the 4 main river systems and also flooding in the tributaries for an increased frequency and duration.

It is important to note that even if the Constraints Management Strategy confirms the feasibility of overcoming constraints and that the benefits outweigh the costs; delivery of environmental flows to the 'actively managed' floodplain are still generally not expected to exceed currently identified minor flood levels. Any third party impacts that arise from these events would need to be addressed through mechanisms such as easements. (Page xiii)

The MDBA implemented a phased approach for assessing the Constraints Strategies, with a strict evaluation criteria at each stage. Constraints measures have not progressed past the feasibility phase, yet Phase 1 Assessment Guidelines state, "Phase 2 Assessments are expected to be completed by 30 June 2015"

Phase 2 Assessment Guidelines Section 3.3 states, *"This criterion reflects the requirement of the Basin Plan and the IGA Protocol that all supply and constraint measures must be ready to enter into operation by 30 June 2024 (cl.7.12 of the Basin Plan and Table 1 of the IGA Protocol)."*

However the Goulburn Broken Catchment Management Authority stated at the January 2016 community meeting that 3 years would be needed to develop a detailed proposal and 5 years to implement it, which takes us past the deadline of 2024 when the project must be fully operational.

The overarching evaluation criteria as stated in the Phase 1 & 2 Assessment Guidelines for Constraint and Supply Proposals are:

1. The proposed measure is likely to be technically feasible;
2. The proposed measure is likely to be cost effective considering the qualitative estimate of the potential supply contribution or likely improved delivery of environmental water;
3. The proposed measure is likely to achieve its intended outcomes; and
4. The risks and impacts associated with the proposed measure are manageable and acceptable.

Does the Goulburn Constraints Business Case pass the above evaluation criteria? No, it fails on all 4 points.

1. **It is NOT technically feasible** – The 'relaxed' constraints strategy cannot be employed due to the refusal of landowners to negotiate easements and statements by the CEWH, State and Federal Water Ministers that they will not intentionally flood private property without consent and easements will not be forcibly acquired.

The 450GL 'upwater' cannot be delivered under the legislative requirement of no adverse social, economic impacts as the proposal to deliver 60,000-80,000GL to SA, the Lower Lakes, Murray Mouth and Coorong means a peak flow of 160,000ML/day from at least 3 of the 4 major river systems would be necessary- *"a typical combined peak flow from all four regions of approximately 160,000 ML/d would be necessary to result in a flow of 80,000 ML/d at the SA border. This is due to significant flow attenuation and the natural misalignment of contributory peak flows from the four regions."* (HMROSCS-Hydrological Modelling of Relaxation of Operational Constraints in the Southern Connected System 2012)

2. **It is NOT Feasible within the estimated cost** - Obviously as a supply measure the Goulburn Business Case failed miserably and was withdrawn as it could only contribute 3-4GL for a cost of \$139million. The Constraints case was also withdrawn and we have yet to see the revised version and have had no input or community meetings since January 2016. Mitigation costs in the Goulburn system have blown out from initial estimate of \$37-\$42million to \$139.3 million in 2016. This does not include any costs along the many Upper Goulburn tributaries caused by flooding back-up or increase in duration of inundation of tributaries upstream when flows cannot quickly recede due to continued high levels in the Goulburn channel. Costs have been calculated using a method of disaggregation, that is based only on the portion of land between where it is deemed natural flood level and the man-made environmental flood level.

Our accredited, experienced land valuer has informed us that the method of assessment as used by GHD is **NOT based on 'Just Terms', IS NOT A FAIR AND REASONABLE METHOD OF ASSESSING COMPENSATION, AND WOULD NOT SURVIVE JUDICIAL SCRUTINY.**

The Phased assessment guidelines state that the business case will be assessed by the Sustainable Diversion Limit Adjustment Assessment Committee on the basis that those materially affected have been consulted. The majority of people who stand to be affected HAVE NOT been consulted. The cost estimates were calculated on the basis of using 2-3 sample cases each of agricultural properties and businesses and it has not been acknowledged that the tributary floodplains will also be impacted by high flows of longer duration in the main river stem means tributary floods cannot drain or recede as quickly as they naturally would.

The Constraints Management Strategy states that Phase 2 is the phase which would get down to a property-by-property assessment with regard to landholder impacts and mitigation options. This has never happened, therefore the real agriculture and business mitigation costs will be well in excess of the revised \$139.3million, bearing in mind this is for the Goulburn Catchment alone and the total amount for constraint mitigation in the entire basin is \$200 million.

As the MDBA have stated that the Upper Goulburn and Murray are the drivers of their proposed target flows, it is very obvious that the mitigation fund of \$200 million is totally inadequate.

3. **It is NOT likely to achieve its intended outcomes**- the enhanced environmental outcomes such as restoring the ecosystems of the Coorong, keeping the Murray Mouth open 95% of time .
Fresh water flows out of the Murray can never reach further south than Parnka Point in the Coorong so can never assist in restoring the ecosystem in the Coorong for more than a short distance.
HMROSCS states *“Modelling indicated that relaxing constraints would provide relatively subtle changes to outcomes for the Coorong, Lower Lakes and Murray Mouth (CLLMM)”* The document states there were only *“minor scale changes to the CLLMM indicators in modelling in the relaxed constraints scenario..”*

The proposed flow target at the SA border is 60,000-80,000ML/day for a duration of 5 weeks as this was the flow envisaged by the MDBA needed to ‘enhance environmental outcomes’ including keep the Murray Mouth open 95% of time by scouring sand bars, provide fresh water to the Lower Lakes and Coorong etc.

The September 2016 floods clearly showed a flow at the SA border of in excess of 60,000ML/day over 5 weeks, with a peak of 95,000ML/day and a flow over the barrages of 75,000ML/day as stated by Mr. Dreverman of the MDBA. Flows of 60,000ML/day commenced on 11th November 2016, peaked at 94,246ML/day on 30th November and were then in excess of 65,000ML/day till 18th December 2016). South Australia experienced the highest water levels since 1993 when the flow at the border was 110,000ML/day.

Although the target flow was reached, it did not achieve the intended outcome of keeping the Murray Mouth open for an extended time, in fact the dredges were back at the Murray Mouth 10 days later. This despite the peak flow at Tocumwal being gauged at 205,000ML/day and major flooding along the main river systems causing enormous damage.

This demonstrates the fact that the flows needed to deliver the target volume to SA, from upstream in the Murray, Murrumbidgee and Goulburn and their tributaries, are significantly in excess of the so-called “*small overbank flows*” or flows “*just exceeding minor flood level,*” as the MDBA continually states.

The major flood flows in NSW and Victoria in September/October 2016 caused millions of dollars damage to farmland, crops, infrastructure both public and private and were responsible for massive loss of farm and business income. Floods in Australia are the most costly of any natural disaster, yet these are the flood flow volumes required to send the MDBA’s proposed environmental flows of 60,000-80,000ML/day to the SA border in an attempt to achieve the desired environmental outcomes.

Massive losses occur with evaporation and attenuation when overbank floods flow across our very flat, very hot and arid landscape making it physically impossible to achieve the intended volume, frequency and duration of flows.

The flat, hot, arid terrain through which the river systems so slowly wend their way towards the Murray mouth and Southern Ocean means that due to evaporation and attenuation and the low energy of the river system, it is totally impossible to provide flows that will keep the Murray Mouth open 9 years out of 10.

Consider the following facts from Rivers of History- d McGill.

1. The Murray at Albury takes 4 weeks to reach South Australia.
2. The Murray at the confluence with the Goulburn is still 1992 kms from the Murray Mouth and a mere 124.9 metres above sea level.
3. All tributaries worthy of naming are in the upper reaches of our main rivers.
4. The Goulburn below Shepparton has virtually no tributaries.
5. At Albury the stream gradient of the Murray is 125mm/1km(5inches/km) down to Wentworth, which is a mere 33 metres above sea level.
6. Mildura is still 878 kms from the Murray Mouth but only 34.5 metres above sea level.

As Neil Motton, Geologist (B. App. Sc., MAusIMM, MAIG) explained several years ago, we have “*a mature river system coming off an old Palaeozoic(200-600 million years old) continent, where the erosional nature of the continent has reached a low-energy system. As always these systems have barrier estuaries clogged by years of sedimentation. Sediments held in suspension by freshwater systems invariably drop out of suspension when they hit the salt water interface of the sea, thus creating these clogged estuaries.*”

As a result at the Murray River Mouth we have at least 100km of the Younghusband Peninsula, which is made up of sand dunes. These dunes and beaches are like a large sponge where 90per cent to 100 per cent of the water coming down from the river seeps out to the sea, apart from the water that doesn't evaporate in the large shallow basin known as Lake Alexandrina."

4. **Risks and impacts are NOT manageable and acceptable** - CERTAINLY NOT to landowners and business owners where 562 properties and 11,552 hectares stand to be affected in the Goulburn Catchment alone.

The proposed frequency (average of 7-8 flood flows in every 10 years) and increased duration of inundation on both the main river and tributary floodplains are simply not acceptable and cannot be managed to maintain productivity.

The one-off, up-front mitigation payments are completely unacceptable to Shire Councils, businesses and landowners.

The MDBA surely, cannot believe they have the ability to manipulate flows from the upstream catchments in at least 3 of the 4 major river systems, coincide releases from major dams, 'piggy-back" them on top of high tributary flows, deliver these into the major rivers downstream so that they combine to deliver flows over the SA border of specifically 60,000-80,000ML/day for a sustained period of 5-6 weeks and then see these flows scour the Murray Mouth without any impact from incoming high tides, southerly winds or wind seiche , several months after the whole process commenced in the upper catchments, as that is the time these flows take to reach the sea.

Phase 2 Assessment Guidelines state, "*If the business case does not satisfy all relevant eligibility criteria, the measure will be assessed as ineligible and no further assessment will be undertaken.*"

As the Goulburn Business Case was withdrawn in 2016, as not satisfying all the relevant eligibility criteria, and therefore ineligible to continue being assessed, why has it been allowed to be re-written, instead of being abandoned as a project?

These business cases that we have seen, FAIL in all aspects of the over arching evaluation criteria as specifically set out by the MDBA in the Phased assessment guidelines, and in the Intergovernmental Agreement, which also states the measure must be technically feasible, feasible within the estimated cost, will achieve the stated outcome and risks and impacts are manageable and acceptable.

OTHER REASONS WHY THE GOULBURN CONSTRAINTS PROJECT CANNOT MEET ITS LEGISLATED TIMEFRAME

There is insufficient crucial data available for accurate forecasting of tributary inflows and improved planning of river flow behaviour. The following work has yet to be undertaken.

1. Expansion of telemetry real-time rainfall and streamflow monitoring network in the mid Goulburn catchment
2. Further development of existing streamflow forecasting services by the BoM
3. Development of automated data interfaces between GMW and BoM system to effectively share and manage forecast data which would drive modelling and decisions
4. Development of improved river management tools and procedures by the system operator, GMW

5. Development of sub-daily time-step data to allow detailed analysis of instantaneous flow peaks necessary for fast rising upper catchment tributaries
6. Investigation of run of river losses, currently not allowed for, and changes in loss behaviour for events which move from in-channel to overbank flows.
7. Property -by- property assessments
8. Further investigation of impacts on tributaries. All focus has been on the main Goulburn River channel and not on the implications for the many sub catchments and tributaries
9. The Phased assessment guidelines state that the business case will be assessed by Sustainable Diversion Limit Assessment Adjustment Committee *“on the basis that those materially affected have been consulted.”* The vast majority of people who stand to be affected HAVE NOT been consulted, mainly because the proponents are unsure of the extent of flooding that will occur due to the high risk and unpredictability of accurately forecasting flood flows and they have simply run out of time.

EFFECTIVENESS OF IMPLEMENTATION OF BASIN PLAN, WHEN EFFECTIVENESS IS THE EXTENT TO WHICH A POLICY ACHIEVES IT INTENDED OUTCOME

Modelling of the Relaxation of Operational Constraints in the Southern Connected System states that:

- 1) the 3,200GL relaxed constraints modelling showed *“limited improvement in achievement of Coorong, Lower Lakes and Murray Mouth flow and salinity indicators”*
- 2) the 3,200GL option showed *“showed marginal improvements in some outcomes; but no significant improvement for mid- and high-level floodplain environments in the southern Basin. This was because river operating constraints were found to limit the ability to deliver sufficiently high flows to inundate mid- to high-elevation floodplains; thus outcomes such as watering vegetation communities like river red gum and black box woodland on these floodplains was unachievable, regardless of the SDL volume. Within the boundaries of these constraints and the consideration of social and economic impacts, MDBA therefore proposed an SDL reflecting a 2,750 GL/y reduction in diversions.”*

Point 4.7 of the Intergovernmental Agreement states :

“The Commonwealth will consult closely with Basin States on the design of efficiency measure programs (including targeted volumes of water recovery and their regional distribution), and on arrangements for their subsequent delivery and implementation, with particular respect to arrangements to secure farm-level participation and the achievement of socio-economically neutral or beneficial outcomes.”

As the evidence in this submission has shown the Constraints policy cannot achieve its intended outcome within the legislation requirement that there be no adverse social or economic impacts. Due to variability and unpredictability of flows in the upstream tributaries, river run time lag of 6 days at least from Eildon to McCoy’s Bridge, the many dynamics involved in the river systems between Seymour and Shepparton, means there must be little confidence in the probability accuracy in any modelling. For example the fact that flows from Seven Creeks, Broken River and Goulburn never coincide make achieving a peak environmental flow extremely difficult. The difference in timing of the three main inflows is a regular characteristic of flooding in the Goulburn at Shepparton.

Therefore there is great danger in manipulating a man-made flood. Due to the time lag in flows down the river it will be impossible to forecast and manipulate an environmental release with high natural

tributary flows along the way, which is why the project proponent has proposed to 'piggy-back' releases from Eildon Weir on top of high rainfall and high tributary flows, commencing 6-7 days prior to forecast high rainfall events and high tributary flows. In order to provide sufficient lead time to enable effective supplementation of natural flow events, approximately six days lead time is required to initiate Lake Eildon releases, increase them in a controlled manner to the desired peak rates, and for flows to travel down the Goulburn River to the lower Goulburn.(Goulburn River Reach Report).

To attempt to maximise environmental flows by starting to make releases 6 days in advance of hopefully extremely accurate forecasting and coincide these releases with peak flows from unregulated tributaries is fraught with danger for everyone downstream.

b. the implications of this slow progress

This project cannot meet the Phase 2 evaluation criteria nor the operational deadline of 30th June 2024.

"The business case should form the basis of advice for executive decision-making and should provide a compelling case for investment"

Obviously the Goulburn Business Case failed this test miserably as it was withdrawn and we have yet to see the revised version and have had no input or community meetings since January 2016.

These business cases that we have seen, FAIL in all aspects of the over arching evaluation criteria as specifically set out by the MDBA in the Phased assessment guidelines, nor in the IGA which states the measure must be technically feasible, feasible within the estimated cost, will achieve the stated outcome and risks and impacts are manageable and acceptable.

The Goulburn Constraints Business Case should be abandoned

c. what can be done to ensure that constraints are removed in a more timely manner while managing impacts on third parties

Nothing. If Constraints are 'relaxed' / removed serious third party impacts will result that cannot be mitigated.

Landowners in the Upper Goulburn River Catchment Association(UGRCA), Edwards-Wakool region and mid Murrumbidgee, **are resolute in their decision not to negotiate the creation of easements on their private property** as they know the proposed environmental flood flows will cause an untenable loss in productivity of their farms, significant loss of amenity, increased major flooding risk and will lead to a serious devaluation of properties. (See attachment)

d. strategies that are, or could be, put in place to increase the extent to which Basin Plan objectives are met when constraints cannot be removed.

The Constraints Strategies and 450GL was implemented to satisfy SA's demand for extra water to 'enhance environmental outcomes in the Lower Lakes, Murray Mouth and Coorong.

As shown by the evidence in this submission the 450GL cannot be delivered within the legislative requirement of no adverse social or economic impacts.

However by reversing the South East drainage system in SA more than adequate fresh water could be returned to the Coorong.

This, in conjunction with the construction of Lock Zero(see attached a Better Way by Ken Jury) would provide the Lower Lakes with the fresh water needed to maintain them as estuarine lakes, without stripping water from the Basin consumptive pool.

CONCLUSION

The Upper Goulburn and Murray and their tributaries are the two main drivers of the proposal to send large volumes of water to the Lower Goulburn, Lower Murray and the SA border with the objective of increasing fresh water flows to the Lower Lakes and keeping the Murray Mouth open 9 years out of 10 .

If a 'relaxed constraints' scenario cannot operate in either of these systems then the stated objectives of the Special Amendment Water Act, particularly for the Lower Murray, Lower Lakes, Coorong and Murray Mouth simply cannot be achieved.

Unfortunately the Constraints Management Strategy was passed into legislation prior to any investigation of its viability , so that \$1.775 Billion is being utilised to reverse engineer this project in a futile attempt to replicate natural events that only ever occur when 3-4 of the major river systems experience floods at the same time.

The Constraint Strategies cannot satisfy the legislation that clearly states there must be no adverse social or economic impacts. That was specifically stated by

Minister Burke in 2013 who said-**“Any water obtained using the funds in the special account must be obtained through projects that ensure no social or economic downside for communities.”**

And at the Senate Rural and Regional Affairs and Transport Legislation Committee Estimates Hearing on February 28th the Assistant Water Minister, Ann Ruston stated that *“the federal government will not be funding any of the activities of the state government in this space if the conditions for the landowners are such that they do not wish us to proceed. That safety mechanism goes without saying no matter how far down the track we go in trying to achieve the outcomes”*

END OF SUBMISSION