



NSW SDL ADJUSTMENT PROJECTS | SUPPLY MEASURE

Northern Basin Review – NSW Synopsis

November 2016

A review of the northern Basin water recovery target has been completed by the Murray–Darling Basin Authority (MDBA).

The three year review involved substantial new research into socio-economic, hydrology and environmental aspects of the northern Basin. It also included consultation with northern Basin communities, including industries and Aboriginal groups in the north.

As a result of the review, the MDBA is proposing the water recovery target be reduced from 390 GL to 320 GL. Feedback on the proposed amendments to give effect to the Northern Basin Review is now being sought by the MDBA. This reduced target is supported by NSW; however, NSW will be pressing for improved flexibility for recovery of the downstream contribution for NSW valleys, and progression of complementary or “toolkit” measures in a way that will avoid any third party impacts, in order to maximise environmental outcomes with the water that has already been recovered.

NSW position on Northern Basin Review outcomes

Based on the scientific, hydrological and socio-economic work undertaken throughout the Northern Basin Review, the NSW Government believes an increase to the NSW northern Basin Sustainable Diversion Limit (SDL) is required to meet agreed triple-bottom line outcomes.

NSW analysis shows that environmental benefits can be retained with zero or minimal further water recovery, accompanied by targeted complementary measures.

A number of proposed complementary measures have been brought forward by both State Governments and communities. These measures have the potential to realise significant environmental outcomes through improved natural resource management; such as carp control, managing cold water pollution of our rivers, fish ladders, etc.

The MDBA Northern Basin Review’s revised environmental flow requirements, or specific flow indicators (SFIs), show a lack of response to changes in the volume of water recovery, i.e. environmental outcomes are largely insensitive to the different water recovery scenarios. Hence, it would appear that reductions in water recovery targets could be made without material reductions in environmental benefits.

The MDBA’s socio-economic work shows that nine of 21 communities are likely to be impacted by water recovery, with impacts ranging from modest to significant. Based on the above findings, NSW sees this impact as unacceptable and unjustified for communities in the northern Basin. NSW therefore supports the MDBA’s proposal to reduce the water recovery target for the northern Basin from 390 GL down to 320 GL.

Background

NSW is committed to managing its water resources in the Murray-Darling Basin sustainably by balancing the requirements of industry, communities and the environment to achieve economic, social and environmental outcomes.

The NSW Government strongly supported reviewing the science and triple-bottom line decision making process to ensure that water recovery is necessary and does not create an unacceptable socio-economic impact for communities in the northern Basin.

In developing the Basin Plan and setting SDLs for the northern Basin valleys, it was recognised at the time that, compared to the southern Basin, less was known about the northern Basin's environmental water needs and the potential social and economic impacts of water recovery. To address these gaps the MDBA commenced work to deliver the Northern Basin Review.

The aim of the Northern Basin Review is to address knowledge gaps through improving underpinning environmental science and socio-economic assessments, to inform and improve hydrological modelling. Information gained from these studies is to be used to qualify and /or refine SDLs for the northern Basin.

The Northern Basin Review consists of projects across three key elements:

1. Environmental science projects - to improve the knowledge base on environmental water requirements in the Condamine-Balonne and the Barwon-Darling.
2. Social and economic assessments - to demonstrate the likely impacts of alternative SDLs and options for water recovery across the northern Basin.
3. Hydrological modelling - to explore potential outcomes from changes in sustainable diversion limits in each of the northern Basin valleys.

Hydrological modelling

Hydrological modelling was used to explore potential outcomes from changes in SDL's in each of the northern Basin valleys.

Hydrological modelling results show that Specific Flow Indicators (SFI) performance is largely insensitive to the different water recovery scenarios. Under different water recovery scenarios, the number of SFIs that meet their required target frequency during the modelled period only changes by 1 or 2, and often in counterintuitive directions. For example, under the 350 GL scenario (with targeted recovery), 22 of the 43 SFIs meet their target frequency range, compared to 21 SFIs under the 390 GL Basin Plan scenario. Similarly the 320 GL scenario meets 22 of the 43 SFIs. On the whole, the aggregated percentage improvement of these two scenarios shows only minor improvements with increasing water recovery.

The concept of SFIs is also structured largely on regulated systems, defining a particular flow target for a set number of days at certain times of the year. For particular features, such as drowning out weirs, this is important, but for other objectives like carbon mobilisation or bank wetting, the use of these types of objectives is less important. For example, a desired flow of 10,000 ML/day at Bourke might provide a certain area of inundation, but a slightly smaller flow will still provide a large proportion of the intended outcome.

The SFIs and the overall conceptual approach used by MDBA are based on a heavily regulated system and not the more variable unregulated systems seen in the northern Basin. NSW has continued to highlight the importance of a fit for purpose approach to Basin Plan objectives, which properly account for the operational capacity and limitations.

Limitations

The modelling of the 390 GL (Basin Plan recovery) scenario is based on a number of assumptions, such as event protection in the Barwon-Darling and successful co-ordinated water delivery through multiple river systems with long travel times. These assumptions are considered to be both unrealistic and unachievable, and outcomes of the 390 GL scenario should not be used as a basis of comparison.

The 390 GL modelling scenario using current operational arrangements removes the assumption that river flows would be coordinated and managed to achieve flows at Bourke. This would improve baseflows from tributaries, but would not meet the SFI at Bourke. Under this scenario, other SFIs are insensitive as they did not change substantially.

Many of the SFIs are outside of a manageable range of flows and would require either dramatically larger holdings of environmental water. For example, in the Namoi catchment, the SFI targeting wetlands and floodplains specifies 4000 ML/day for 45 days, with a minimum duration of seven days. The total volume of such an event is approximately half of Lake Keepit, or one-quarter of the total system storage. Similarly a baseflow of 500 ML/day for 75 days with at least 25 consecutive days, would consume almost 38 GL of water, which is almost twice the volume of water recovery planned for this system under the current Basin

Plan. State jurisdictions requested that the MDBA concentrate on SFIs in the manageable zone, whereby proposed recovery volumes could be considered alongside modelling analysis; however, this request was not adopted.

Additionally, the MDBA modelling assumes the ability to release regulated flows on top of unregulated river flows in regulated river systems to achieve specified flows within those systems and in the downstream Barwon-Darling Unregulated River. The NSW *Policy Pre-requisite Measures Implementation Plan* (PPMIP) does not provide for this arrangement in any of the northern Basin valleys due to adverse third party impacts for other water access licence holders. However, the PPMIP indicates that NSW could consider implementing these measures if there was to be an acceptable measure to effectively offset these third party impacts.

Many of the shortcomings of the original Basin Plan modelling have been addressed through the Northern Basin Review, but some notable issues remain, including:

- Original Basin Plan modelling assumed that the Barwon-Darling River pump thresholds, as nominated in the Water Sharing Plan for the Barwon-Darling Unregulated and Alluvial Water Sources 2012, would be lifted. This scenario represents a new form of right for environmental water holders to “own” in-channel flow that would result in clear third party impacts to other licence holders.
- Original Basin Plan modelling was also often missing specific environmental water demands, or demands did not obey entitlement holder account limits.

Additionally, NSW has concerns regarding the MDBA’s emphasis on long-term average flow to the Barwon-Darling system as measure of environmental outcomes; however, this outcome is not an SFI and not clearly linked with specific environmental gains, and should not be considered as a proxy for environmental outcomes or SFI.

Complementary (toolkit) measures

Given the difficulty in achieving environmental outcomes from water recovery, a range of complementary measures have been proposed including;

- Infrastructure solutions - addressing cold water pollution or fish passage barriers.
- Rules based solutions - where third party impacts can be avoided.

Market based solutions – DPI Water and the Commonwealth Environmental Water Office are working with water holders to examine possible options. Complementary measures provide an opportunity to value-add to environmental water strategies by ensuring that the ecological benefits of environmental water can be maximised. There is also strong stakeholder support for exploring complementary measures that improve environmental outcomes, while minimising further water recovery.

Complementary measures have the potential to provide significant triple bottom line benefits and should be considered as part of adjustments for the northern Basin, including discussions with relevant jurisdictions to explore what commitments might be made to invest in (and fund) such measures. Complementary measures also require further analysis and investigation to ensure that third party impacts are identified and mitigated as required. DPI Water will continue to work with communities in the NSW northern Basin to identify and develop complementary measure proposals for the northern Basin.

Socio-economic assessment

The key finding of the MDBA socio-economic study is that water recovery to date of 278 GL, has had an impact on the area of irrigated agriculture across northern Basin communities, with a flow-on effect to jobs. MDBA analysis has shown the expected impact on jobs to be approximately 450 full time equivalent (FTE) jobs at the current recovery level. This impact is especially evident in Collarenebri, Dirranbandi and Warren.

The socio-economic review has found that implementing the original 390 GL recovery for the northern Basin would result in the loss of up to approximately 700 jobs across the northern Basin region. Whilst the impact at the 320GL scenario will be less under the 390GL scenario, the estimated loss 500-550 jobs across the northern Basin region, is a significant impact to regional communities, on top of the additional pressures on and changes within regional communities, identified by the MDBA in their socio-economic analysis. Continuing to recover water will have impacts on some communities, although the impacts vary substantially depending on the volume of water recovered and the location of water recovery. MDBA

analysis shows that the economies of many of the northern NSW Basin communities are highly dependent on irrigated agriculture and flow through impacts are likely.

A number of environmental outcomes are already achieved with the existing level of water recovery. Further water recovery is unlikely to provide further significant environmental outcomes. Analysis has demonstrated that similar outcomes can be achieved using complementary measures such as infrastructure, natural resource management and market-based solutions. Complementary measures need to be investigated further to ensure third party impacts are avoided, and that they deliver triple bottom line outcomes.

What happens next?

The MDBA is currently seeking feedback on the proposed amendments through a formal submission process. This closes on 10 February 2017. This is being supported by Information Sessions and Aboriginal Community Information sessions which are scheduled to be held in Basin Plan locations throughout the submission period.

For all the details on these information sessions visit <http://www.mdba.gov.au/basin-plan-roll-out/northern-basin/information-sessions>

NSW will be making a detailed submission as part of this consultation to the effect of the positions stated in this synopsis.

More information

Further detail on the Northern Basin Review and proposed Basin Plan amendments can be obtained from:

<http://www.mdba.gov.au/publications/mdba-reports/basin-plan-amendments-northern-basin>

DPI Water is the lead agency for the implementation of the Basin Plan agreements within NSW. Information on NSW Basin Plan Activities and the Northern Basin Review can be obtained from:

<http://www.water.nsw.gov.au/water-management/catchments/murray-darling-basin>

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