



Submission to the Natural Resources Commission regarding the Review of 31 Water Sharing Plans in NSW

prepared by

**EDO NSW
February 2013**

About EDO NSW

EDO NSW is a community legal centre specialising in public interest environmental law. We help people who want to protect the environment through law. Our reputation is built on:

Successful environmental outcomes using the law. With over 25 years' experience in environmental law, EDO NSW has a proven track record in achieving positive environmental outcomes for the community.

Broad environmental expertise. EDO NSW is the acknowledged expert when it comes to the law and how it applies to the environment. We help the community to solve environmental issues by providing legal and scientific advice, community legal education and proposals for better laws.

Independent and accessible services. As a non-government and not-for-profit legal centre, our services are provided without fear or favour. Anyone can contact us to get free initial legal advice about an environmental problem, with many of our services targeted at rural and regional communities.

EDO NSW is part of a national network of centres that help to protect the environment through law in their [states](#).

Submitted to:

Natural Resources Commission
Water Sharing Plan Review
NRC, GPO Box 4206
Sydney NSW 2001

For further information on this submission, please contact:

Emma Carmody, Policy and Law Reform Solicitor, EDO NSW
T: 02 9262 6989
E: emma.carmody@edonsw.org.au

EDO NSW

ABN 72 002 880 864
Level 5, 263 Clarence Street
Sydney NSW 2000 AUSTRALIA
E: edonsw@edonsw.org.au
W: www.edonsw.org.au
T: + 61 2 9262 6989
F: + 61 2 9264 2412

1. Introduction

EDO NSW welcomes the opportunity to respond to the Natural Resource Commission's (NRC's) review of 31 water sharing plans (WSPs) due to expire in 2014, 14 of which are located within the Murray-Darling Basin (MDB).

Given the magnitude and inherent complexity of this review, we would like to express our concern regarding both the timing of the call for public submissions (the December-January holiday season) and the relatively short submission period (two months). Indeed, based on our experience, these two factors are likely to constitute significant barriers to meaningful community participation in the review process.

To these barriers we may add the recently passed Basin Plan,¹ a highly technical legislative instrument which has extensive implications for the operation of WSPs within the MDB. Ideally, the community would have been given additional time to come to terms with the scope of this instrument before being asked to comment on 14 WSPs that will be subject to its requirements by 2019.²

In light of these issues, EDO NSW would welcome any future initiatives by the NRC to seek community feedback with respect to water management in NSW, particularly under the Basin Plan.

1.1 Scope of submission

EDO NSW has extensive experience advising on water law and water reform at both a State and Basin level. Together with the Australian Network of Environmental Defender's Offices (ANEDO), our engagement has included submissions on a range of matters, including: implementation of the Intergovernmental Agreement on a National Water Initiative (NWI) in NSW;³ the Draft NSW Floodplain Harvesting Policy;⁴ the Proposed Guide to the Basin Plan;⁵ the Draft Basin Plan;⁶ the Proposed Framework for Shepherding Water in NSW;⁷ the MDB Ministerial Council s. 43A Notice;⁸ Bills to amend the *Water Act 2007 (Cmth)*;⁹ and the Draft NSW Aquifer Interference Policy – Stage 1.¹⁰

Significantly, our experience also includes a test case in the Land and Environment Court (LEC) regarding the environmental performance of a NSW WSP,¹¹ giving evidence at

¹ The Basin Plan was registered on 23 November 2012.

² Basin Plan, Chapter 10; *Water Act 2007 (Cmth)*, Division 2, Part 2.

³ Submissions available at: <http://www.edo.org.au/edonsw/site/policy/watref050902.php> and http://www.edo.org.au/edonsw/site/pdf/subs/070212nwi_nsw.pdf

⁴ Submission available at: http://www.edo.org.au/edonsw/site/pdf/subs/100528floodplain_harvesting.pdf

⁵ Submission prepared by ANEDO. Available at: http://www.edo.org.au/policy/101216mdb_guide.pdf

⁶ Submission prepared by ANEDO. Available at: http://www.edo.org.au/policy/120416mdbdraft_plan.pdf

⁷ Submission available at:

http://www.edo.org.au/edonsw/site/pdf/subs/120702Proposed_arrangements_for_shepherding_environmental_water_in_NSW.pdf

⁸ Submission available at: <http://download.mdba.gov.au/altered-PBP/APBP-EDO-NSW-submission-re-section-43A-response.pdf>

⁹ *Water Amendment (Long-term Average Sustainable Diversion Limit Adjustment) Bill 2012*; *Water Amendment (Water for the Environment Special Account) Bill 2012*. Submissions prepared by ANEDO. Available at:

<http://www.edo.org.au/edonsw/site/pdf/subs/121108ANEDOWaterfortheEnvironmentSpecialAccountBill2012.pdf> and http://www.edo.org.au/edonsw/site/pdf/subs/121026anedo_sdl_adjustment_mechanism_bill.pdf

¹⁰ Submission available at: http://www.edo.org.au/edonsw/site/pdf/subs/120503aquifer_interference.pdf

¹¹ *Nature Conservation Council of NSW v Minister administering the Water Management Act 2000 [2005] NSWCA 9 (NCC Case)*.

parliamentary hearings and inquiries,¹² and writing academic papers concerning State¹³ and Federal¹⁴ management of water resources.

As the aforementioned list indicates, EDO NSW is principally concerned with the legislative and policy framework for water management at a State and Basin level. Accordingly, our responses to 'key questions' specified in the NRC Issues Paper are intended to build on our previous work in this area.

Given our expertise as environmental lawyers, we further consider it appropriate to make comments of a more general nature regarding the relationship between the WSPs under review and relevant regulatory mechanisms and policies including the Basin Plan, NWI and *Water Management Act 2000 (WM Act)*.

2. Executive Summary

EDO NSW strongly supports the use of WSPs to manage water in NSW. However, our research indicates that there is significant scope to improve the way in which they are drafted and implemented. We therefore recommend that the 31 WSPs be amended in light of the following:

1. The NSW Office of Water (**NOW**) and other relevant agencies should begin working toward ensuring that all WSPs in the MDB will comply with the SDL and other requirements of the Basin Plan.
2. WSPs should reflect the agreement made under the NWI to manage connected surface and groundwater systems as a single resource.
3. The State Water Management Outcomes Plan (**SWMOP**) should be updated to include specific ecological targets for water-dependent ecosystems within water resource areas (as per the hydrologic indicator – or equivalent - method) and reinstated. Success of environmental rules in a WSP should be measured against these ecological targets and the results published online.
4. The WM Act should be amended to reinstate the original definition of environmental water, which provided for a guaranteed quantity of water to be set aside for fundamental ecosystem health. The amended provision should be interpreted in good faith so that WSPs actually contain environmental water rules that reflect this requirement (as opposed to merely providing for a notional quantity of environmental water). This is an important step toward ensuring the security of environmental water, as required under the NWI.

¹² For example The Senate Environment and Communications Legislation Committee Inquiry into the *Water Amendment (Long-term Average Sustainable Diversion Limit Adjustment) Bill 2012* and *Water Amendment (Water for the Environment Special Account) Bill 2012*. 8 November 2012.

¹³ Miller, I, *Testing the Waters, Legal Challenges to Water Sharing Plans in NSW*, EDO WA Water Law Conference, 8 July 2005. Paper available at: http://www.edo.org.au/edonsw/site/pdf/presentations/edowa_water_paper050706.pdf

¹⁴ La Nauze, J and Carmody, E, Will the Basin Plan uphold Australia's Ramsar Convention Obligations?, *Australian Environment Review*, 2012, Vol 27 No 9, pp 311-317; Carmody, E, The silence of the plan: will the Convention on Biological Diversity and the Ramsar Convention be implemented in the Murray-Darling Basin?, *Environmental and Planning Law Journal*, (2013) Vol 30 No 1, pp 56-73.

5. The WM Act should be amended to reinstate 'supplementary environmental water', as per the definition of 'environmental water' contained in the original version of the WM Act.
6. Section 49A of the WM Act should be amended to provide greater transparency regarding suspension of WSPs. Furthermore, this section should be amended to include a requirement that water management during periods of extreme drought reflect best available science, and take into account fundamental ecosystem health. Again, this would help to improve the security of environmental water.
7. The WM Act should be amended to limit the circumstances in which Minister's plans can be made, thereby guaranteeing greater community participation in the plan-making process.
8. The WM Act should be amended to remove the exemption applying to Minister's plans (that is, to deal with the relevant matters in 'general terms').
9. The WM should be amended to require WSPs to include specific ecological and other pertinent objectives and detailed performance indicators capable of measuring progress toward achieving these objectives.
10. Monitoring should be improved to determine the practical impacts of rules in WSPs. For example, the Integrated Monitoring of Environmental Flows (**IMEF**) program should be properly resourced and augmented.
11. Metering technology should be updated so that water extraction data is accurate, and capable of being analysed in real-time.
12. The WM Act should be amended to require data indicating whether individual licence holders have complied with relevant licencing conditions to be publicly accessible.
13. WSPs are highly complex and to that extent inaccessible documents. Efforts should therefore be made to ensure that guides to WSPs translate all rules into plain English, and explain their impact on water-dependent ecosystems within a resource area. This would increase community understanding of, and participation in, the water management process.
14. As our case study of the Macquarie Valley and Macquarie Marshes indicates, efforts are required to ensure that rules in WSPs are based on best available science. This includes taking into account the report cards produced by the MDBA for 23 river valleys across the Basin as part of their Sustainable Rivers Audit.

3. General Comments

3.1 Assessing environmental performance of WSPs

EDO NSW is cognisant of the statutory requirements imposed on the NRC with respect to this review. In particular, the WM Act provides for the NRC to assess WSPs against the relevant State-wide standards and targets (**Standards and Targets**) in the relevant catchment management area.¹⁵

Notwithstanding these obligations, it is our view that the Standards and Targets are too general to meaningfully assess the impact of a given WSP on a water-dependent ecosystem or ecosystems within a resource area. Furthermore, their generality is arguably inconsistent with one of the NRC's guiding principles for this review, namely 'evidence-based decision making.' That is, a vague target such as 'By 2015 there is an improvement in the condition of riverine ecosystems'¹⁶ does not reflect best available science regarding measurable indicators of ecosystem health, which as discussed below is one of the goals of the NWI. Finally, it is not clear how the Standards and Targets align with the sustainable diversion limits (**SDLs**) that will apply to the 14 WSPs located within the MDB from 2019.

The following three subsections discuss more appropriate methods for assessing the environmental performance of not only the 31 WSPs currently under review, but WSPs in general.

a. NWI

The NWI forms part of a continuum of intergovernmental agreements that culminated in the recently adopted Basin Plan. Entered into between the Commonwealth, Basin States and Territories in 2004, its stated objectives included:

- iv. *to complete the return of all currently overallocated or overused systems to environmentally sustainable levels of extraction; ...*
- x. *recognition of the connectivity between surface and groundwater resources and connected systems managed as a single resource.*

While these two objectives are clearly high-level in scope, they should nevertheless inform the creation of WSPs and any subsequent assessment of their environmental performance. These and other relevant NWI outcomes and actions will be discussed as necessary throughout this submission.

b. State Water Management Outcomes Plan

One of the desired outcomes under the NWI for 'integrated management of environmental water' is to identify 'the desired *environmental and other public benefit outcomes* with as much specificity as possible.'¹⁷

At a State level, the WM Act provides for the creation of a SWMOP¹⁸ which includes objectives and reasonably specific targets against which to measure progress toward meeting the objectives.

¹⁵ WM Act, s. 43A (3).

¹⁶ Target 5 (Water). <http://www.nrc.nsw.gov.au/Workwedo/Standardandtargets.aspx>

¹⁷ NWI, Integrated Management of Environmental Water, paragraph 78.

¹⁸ WM Act, s. 6.

We note that the SWMOP lapsed in 2007 and has not been remade. While the legislation provides the Minister with discretion regarding the creation of a SWMOP, we strongly recommend that it be updated and reinstated for the purposes of measuring the environmental performance of WSPs. We further recommend that the updated SWMOP include ecological targets that reflect, where possible, the hydrologic indicator method used by the MDBA when developing the Basin Plan (discussed in the following subsection).

c. Basin Plan: hydrologic indicator method

The inadequacy of the Standards and Targets as an assessment tool becomes particularly apparent when compared to the hydrologic indicator method used by the Murray-Darling Basin Authority (MDBA) to determine the volumes and timings of water necessary to protect key environmental assets (KEAs) in the Basin. Specifically, the MDBA selected 18 hydrologic indicator sites as proxies for KEAs and assigned each of these a suite of ecological targets (such as maintenance of endemic wetland vegetation, or recurrence of waterbird breeding). These ecological targets were then linked to hydrologic targets, generally comprising a specific flow event (defined in terms of magnitude, duration and specificity) and frequency of occurrence. Using hydrologic models based on actual climatic and river flow data for 114 years, the MDBA assessed whether the ecological targets could be met under these historic conditions. Ecological targets were taken to have been achieved if the relevant flow event occurred with sufficient frequency, within a range of uncertainty.¹⁹

The case study below illustrates how this assessment tool works.

Ramsar-listed Barmah-Millewa Wetland

The Barmah-Millewa forest straddles the NSW-Victoria border, with the NSW portion being covered by the MSW Murray and Lower Darling Regulated Rivers WSP 2003.

A flow event of 25,000 ML/day for a minimum of six weeks in winter-spring was linked to ecological targets for maintaining Freshwater meadows, Moira Grass Plains and Red Gum Forest within this wetland. If a flood of this nature occurred in less than 40% of years, the ecological targets would not be achieved. If it occurred in at least 40% of years, it was assumed that the targets would probably be achieved, but with a high level of uncertainty. If the figure was greater than 50%, it was considered likely that the target would be achieved with a low degree of uncertainty. Under natural conditions, the model predicted that it would have occurred in about 66% of years.²⁰

While it is beyond the scope of this submission to discuss the advantages and disadvantages of the hydrologic indicator method, it does demonstrate the degree of specificity required to meaningfully assess whether flow events (as determined under environmental watering rules in WSPs) are maintaining the ecological health of a particular water resource or a water-dependent ecosystem.

EDO NSW understands that assessing the watering requirements of environmental assets across the State is a complex, resource-intensive exercise. However, as most of the eighteen hydrologic indicator sites are located in NSW, there is a significant amount of information available regarding the volumes and timings of water required to maintain these

¹⁹ MDBA, *The Proposed "Environmentally Sustainable Level of Take" for Surface Water of the Murray-Darling Basin: Methods and Outcomes*, 2011.

²⁰ MDBA, *Guide to the Proposed Basin Plan: Technical Background*, 2010; MDBA, *Hydrologic Modelling to Inform the Proposed Basin Plan – Methods and Results*, 2012.

specific sites (most of which are Ramsar-listed wetlands).²¹ This information could be used by NOW to modify as necessary the environmental watering rules in the relevant WSPs for the purposes of meeting the ecological targets set by the MDBA for the 18 indicator sites. To clarify, the following WSPs under review include or are connected to hydrologic indicator sites:

- Macquarie and Cudgegong Regulated Rivers;
- Lachlan Regulated River;
- NSW Murray and Lower Darling Regulated Rivers;
- Gwydir Regulated River.

3.2 WM Act

The WM Act is the enabling legislation under which WSPs are made. As such, it is essential to analyse the enabling provisions within the Act with a view to understanding how they contribute to the success or otherwise of WSPs in NSW, including the 31 plans that are the subject of this review.

By way of background, we note that the WM Act has been amended several times since its inception in 2000. We are of the opinion that these amendments have undermined the provisions regarding environmental water and the making of WSPs. These and other relevant sections will be discussed in turn.

a. Environmental water

The WM Act as originally made provided for three classes of environmental water:

- (a) *water that is committed for fundamental ecosystem health at all times, and may not be taken or used for other purposes (**environmental health water**),*
 - (b) *water that is committed for specified environmental purposes at specified times or in specified circumstances, but may, at other times and in other circumstances, be taken and used for other purposes (**supplementary environmental water**),*
 - (c) *water that, pursuant to an access licence, is committed for specified environmental purposes, either generally or at specified times or in specified circumstances (**adaptive environmental water**).²²*
- 2) *Rules for the identification, establishment and maintenance of each class of environmental water (**environmental water rules**) are to be established for all of the water sources in the State, by means of a management plan, as soon as practicable after the commencement of this Act.*

In a test case run by EDO NSW in 2004-5 concerning the WSP for the Gwydir Regulated River Source (**Gwydir WSP**),²³ the NSW Court of Appeal (**CA**) determined that the first category of environmental water, together with subsection 2, amounted to a requirement to include rules in a WSP *guaranteeing* a physical quantity of water for the environment. Specifically, it was not sufficient to include rules based on formulae that merely provided for

²¹ For further information regarding these eighteen sites, see MDBA, *Guide to the Proposed Basin Plan*, Volume 2, Chapter 4, page 96. Available at: <http://download.mdba.gov.au/Guide-to-proposed-BP-vol2-04.pdf>

²² WM Act (as made), s. 8 (1) (a), (b), (c).

²³ *Nature Conservation Council of NSW Inc v Minister administering the Water Act 2000 (2004) NSWLEC 33 and on appeal [2005] NSWCA 9. (Gwydir Case).*

a *notional or abstract quantity* of environmental water to be dedicated to the water resource. In this instance, the relevant rule allocated (abstract) water that was 'in excess of the long term average annual extraction limit' to fundamental ecosystem health.²⁴

While the CA held that the Minister failed to make an environmental health rule as per the requirements of the WM Act, the Court chose not to exercise its discretion and invalidate the Gwydir WSP. As a result, environmental water effectively amounted to the water that was 'left over' after extractions. This was and continues to be problematic. First, it is not based on best available science and second, it fails to secure a specific amount of environmental water for ecosystem health.

Subsequent to this decision, the NSW Government amended the WM Act, changing the definition of environmental water to officially allow the rules in WSPs to provide for notional quantities of water. Specifically, the amended Act states that:

A management plan is to commit water as planned environmental water in at least 2 of the following ways (whether by 2 separate ways or a combination of 2 ways):

- a) by reference to the commitment of the physical presence of water in the water source,*
- b) by reference to the long-term average annual commitment of water as planned environmental water,*
- c) by reference to the water that is not committed after the commitments to basic landholder rights and for sharing and extraction under any other rights have been met.²⁵*

In short, by combining (b) and (c), it would be possible to avoid committing a specific quantity of water to the environment in a given accounting year.

The NSW Government also removed 'supplementary environmental water' from the definition of 'environmental water'. Supplementary water enables flexible, site-specific delivery of 'additional' water to water-dependent ecosystems. By way of example, 1,015 ML of supplementary water was diverted into the Thegoa Lagoon in Wentworth, NSW between September and December 2005. As a result, '[w]ater quality monitoring showed all parameters were within, or close to, recommended levels for the protection of freshwater ecosystems.'²⁶

EDO NSW submits that these amendments have in combination decreased the security of environmental water in NSW, thereby potentially undermining efforts to protect and restore water resources.

The security of environmental water was further undermined when WSPs in five valleys in NSW were 'switched off' pursuant to s.49A of the WM Act during the Millennium Drought.²⁷ While we understand and support provisions in the WM Act and WSPs that prioritise water for critical human needs in situations of extreme drought, we are concerned by the generality of these provisions. As noted by the National Water Commission (**NWC**) in an assessment of

²⁴ Gwydir WSP, clause 14.

²⁵ WM Act, s. 8 (1A) (a), (b), (c).

²⁶ <http://www.mwmg.org.au/allocation.php>

²⁷ NSW EPA, *State of the Environment* 2012, p. 141.

NSW water management, '[m]ore transparency around the triggers for water sharing plan suspension would improve community confidence in water planning.'²⁸

We further note that blanket suspension of WSPs may be incompatible with best available science. That is, water managers may choose to respond to extreme weather events in a variety of ways; suspension of plans and environmental water rules is but *one option* (that may or may not be supported by science).²⁹ Furthermore and as outlined in the following paragraph, suspension can have severe consequences for water-dependent ecosystems:

*The ensuing years saw the worst drought on record in the Murray-Darling Basin. In many cases this triggered the suspension of water sharing plans, and water was managed at the discretion of the Minister. The drought exposed deficiencies in all plans, particularly the management of small to moderate flows which would previously have enhanced the resilience of significant wetlands and river reaches. The assumption that water could be allocated to the environment in wet years and to industry in dry exacerbated the impact of hyperdrought in the past decade.*³⁰

As these comments indicate, water managers should strive to maintain the full regime of flow events from base flows through the overbank events (as determined by ecosystem requirements) in order to protect and restore biota in the long-term.³¹ We submit that this requires both enabling legislation and WSPs to ensure that environmental water is secure. Indeed, failure to provide for the security of environmental water under the WM Act and WSPs deviates from one of the stated 'actions' of the NWI:

Water that is provided by the States and Territories to meet agreed environmental and other public outcomes as defined within relevant water plans (paragraphs 36-40 refer) is to:

- i. be given statutory recognition **and have at least the same degree of security as water access entitlements for consumptive use and be fully accounted for**;...³² (our emphasis).*

In summary, EDO NSW is of the opinion that the environmental performance of all WSPs in NSW is potentially compromised by the provisions in the WM Act concerning environmental water, as well as s.49A. We therefore strongly recommend that these be amended to accord with the NWI action outlined in the previous paragraph.

b. Minister's plans

The WM Act provides for the creation of two categories of management plans (including WSPs): those made by management committees,³³ and those made by the Minister.³⁴ Despite these provisions, all but one WSP made during 2002/3 were Minister's Plans. As noted by one commentator:

²⁸ NWC, National Water Planning Report Card: NSW, 2011, p. 13

²⁹ <http://www.csiro.au/en/Organisation-Structure/Flagships/Climate-Adaptation-Flagship/ScienceSupportingDroughtPolicy.aspx>

³⁰ Rogers, K and Ralph, T.J, *Floodplain Wetland Biota in the Murray-Darling Basin: Water and Habitat Requirements*, CSIRO Publishing, Collingwood Vic, 2011, p. 331.

³¹ See for example Bunn, S and Arthington, A, Basic principles and ecological consequences of altered flow regimes for aquatic biodiversity, *Environmental Management* **30**, 492-507.

³² NWI, paragraph 35.

³³ WM Act, s 14.

³⁴ WM Act, s 50.

*The making of Minister's Plans represented but one of the first controversies of the implementation of the NSW system. Many members of advisory committees (called water management committees) who were involved in the initial drafting of water sharing plans in their water management area felt that the Minister had either misled them as to their role in the plan making process or alternatively had exercised his power for an extraneous purpose to achieve outcomes that were unfair to stakeholders.*³⁵

The WM Act as made in 2000 required the Minister to make WSPs along the same lines as those produced by management committees. In other words, they had to include the same 'core provisions' and follow the same 'format'³⁶ as a committee when making a plan. However, the Act was amended in 2002 (shortly before the first tranche of WSPs were gazetted) to require the Minister to deal with these matters in 'general terms'.³⁷ As a consequence of these amendments, the Minister is not required to include detailed provisions concerning matters that go to the heart of water management, including (for example) environmental watering or performance indicators that measure progress toward achieving objectives in WSPs.³⁸

EDO NSW submits that there is no logical reason for exempting Minister's plans in this manner. We are further of the view that this exemption operates to undermine the environmental performance of WSPs. Indeed, in its 2012 review of water management in NSW, the NWC highlighted deficiencies in the construction of performance indicators, stating that 'performance indicators in WSPs are very broad and generalised.' They go on to observe that 'performance indicators in environmental watering plans are based on the achievement of the specific targeted environmental watering regimes rather than specific ecological targets.'³⁹

EDO NSW further submits that the 2002 amendment had the practical effect of severely undermining the appeal provisions regarding WSPs in the WM Act.⁴⁰ That is, it is virtually impossible to succeed in judicial review proceedings – no matter how poor the environmental provisions of a WSP – where the Minister need only draft these provisions in general terms.⁴¹

In light of these observations, EDO NSW strongly recommends that the WM Act be amended to limit the circumstances in which Minister's plans can be made, thereby guaranteeing greater community participation in the plan-making process. Furthermore, we are of the view that the exemption applying to Minister's plans (to deal with the relevant matters in 'general terms') be removed. Finally, the Act should be amended to require WSP to include specific objectives and detailed performance indicators capable of measuring progress toward achieving these objectives.

³⁵ Miller, I, *Testing the Waters, Legal Challenges to Water Sharing Plans in NSW*, EDO WA Water Law Conference, 8 July 2005, p. 9.

³⁶ WM Act, ss. 20, 35. These are the same sections in the current version of the Act, though we note s. 20 does include some amendments.

³⁷ WM Act, s. 50 (2).

³⁸ The CA confirmed that a Minister's plan need only deal with performance indicators in general terms. See the Gwydir Case.

³⁹ NWC, *Australian Environmental Water Management: 2012 Review*, p. 54.

⁴⁰ WM Act, s. 47 (2) (a). Judicial review proceedings must be commenced within three months of the WSP being published on the NSW Legislation website.

⁴¹ As per the Gwydir Case.

Part 2: Responses to ‘key questions’

1. Delivering better environmental outcomes

- *Has the implementation of WSPs contributed to the regional social, economic, cultural and environmental priorities expressed within the region’s catchment action plan?*

a. General comments

Only two Catchment Action Plans (**CAPs**) were concurrently operational with the WSPs under review (though even those two were made after the 2004 tranche of WSPs).⁴² Accordingly, it is not in practical terms possible to assess the performance of most WSPs against CAP objectives and priorities.

Nevertheless and as indicated in Part 1 of this submission, EDO NSW considers it appropriate to measure the impacts of WSPs against the requirements of the NWI and specific ecological outcomes (such as those assessed under the hydrologic indicator model, or outlined in an updated version of the SWMOP).

In addition to measuring performance against fit-for-purpose criteria, it is necessary to ensure that adequate monitoring and water accounting provisions are in place to furnish decision-makers and the community with accurate data regarding the impact of rules in WSPs concerning environmental water, licensing and so on.

In short, our research indicates that it is difficult to assess the performance of WSPs due to gaps in monitoring and data collection. The following part of our submission will discuss these gaps. Drawing on recent literature, we will recommend policy and institutional changes designed to improve understanding of the impacts of WSPs.

b. Monitoring

Our research indicates that there is significant scope to improve monitoring of flows in NSW. In a 2012 discussion paper, the NWC stated that their

*...assessments have found that in most cases it has not been possible to identify whether plans have achieved their stated objectives. Earlier plans set objectives at too high a level for the scope of the plan. However, as planners have refined their objectives to make them more measurable and achievable, the development of tailored monitoring, evaluation and reporting that address the need for transparency and community confidence in implementation has emerged as an issue.*⁴³

The NWC’s general comments are supported by recent literature examining monitoring and data collection in relation to compliance and enforcement in NSW. While the article in question acknowledges that ‘NOW’s new compliance case management system has advanced the rigour and management of compliance reports’,⁴⁴ it also reveals a general dearth of data necessary to enforce licencing conditions. For example, it is estimated that only half of the information required under the new compliance case management system is

⁴² Border Rivers-Gwydir CMA, *Catchment Action Plan* (NSW Government, 2007); Western CMA, *Catchment Action Plan* (NSW Government, 2007).

⁴³ NWC, *Water Planning in Australia – delivering on the intent of the National Water Initiative: Discussion Paper*, 2012, p. 9

⁴⁴ Holley, C and Sinclair, D, Compliance and Enforcement of Water Licences in NSW: Limitations in Law, Policy and Institutions, (2012) 15(2) *Australasian Journal of Natural Resources Law and Policy* 149, p. 174.

actually entered into NOW databases, with considerable gaps in hydrological data.⁴⁵ Furthermore, some data is so out of date that officers have indicated that they simply 'don't know' the extent of a given breach, particularly for groundwater licence conditions.⁴⁶

The authors of this article also discuss the impact of obsolete metering equipment on monitoring and data accuracy. For example, they note that water meters rely upon dated mechanical technology to measure the amount of water used by licence holders. As the equipment does not allow for real-time measurement, readings are inherently retrospective. This necessarily means that compliance and enforcement actions are delayed until well after the breach has occurred, thereby exacerbating potential impacts on the environment and other users. Finally, infrequent meter readings can mean that malfunctions remain undetected for extended periods.⁴⁷

As one would expect, the authors recommend metering reforms. They further suggest that these and other reforms be financed by the Commonwealth under the *National Framework for Compliance and Enforcement Systems for Water Resource Management 2012*.⁴⁸

EDO NSW has also been informed that the Integrated Monitoring of Environmental Flows (IMEF) program has been significantly reduced.⁴⁹ As one of our clients noted, 'the key issue is lack of continuity between monitoring programs so that long term change is adequately measured and reported.'⁵⁰ EDO NSW strongly recommends that this program be reinstated with a view to supporting the successful implementation of WSPs.

We further note that a properly resourced and fully functional IMEF program would help to meet the monitoring obligations under the Basin Plan.⁵¹ As previously noted in this submission, 14 of the 31 WSP currently under review will have to comply with the requirements of the Plan by 2019.

c. Accounting

A recent review of the regulatory framework in NSW found that two out of three criteria (developed by the authors) for genuinely transparent accounting were met under the WM Act.⁵² While we acknowledge the significance of this achievement, we are nevertheless of the opinion that steps should be taken to implement the third element, namely public access of individual accounts data.⁵³

Under the current statutory regime, it is possible to ascertain how much water is allocated to an individual by analysing water determinations and searching the NSW Water Access Register. However, it is not possible (using publically accessible data) to determine whether the individual licence holder has complied with their licencing conditions, including allocations.⁵⁴

⁴⁵ Ibid.

⁴⁶ Ibid.

⁴⁷ Ibid, 177.

⁴⁸ Ibid.

⁴⁹ Information regarding previous projects undertaken under the auspices of the IMEF can be found on the NOW website: <http://www.water.nsw.gov.au/Water-management/Monitoring/Regulated-rivers/Regulated-rivers/default.aspx>

⁵⁰ Email correspondence, 05.02.2013.

⁵¹ Basin Plan, cl. 10.46 (Monitoring water resources).

⁵² McKay, C and Gardner, A, *The Regulatory Framework of Water Accounting in Australia*, (2013) 41 *Federal Law Review* (forthcoming), pp. 4, 11, 12.

⁵³ Ibid, p. 12.

⁵⁴ Ibid.

EDO NSW is accordingly of the view that increased transparency with respect to individual accounts data would augment NOW's capacity to measure the practical impact of rules under WSPs, as well as improve community confidence in the licensing system.

Case study

As previously indicated, gaps in monitoring can make it difficult to assess the precise impacts of specific rules in WSPs on ecosystem health.

Notwithstanding this lacuna, work done by the MDBA for the purposes of developing the Basin Plan means that quite a lot is known about the eighteen hydrologic indicator sites in the Basin, many of which are located in NSW. This information, together with the results of the Sustainable Rivers Audit, CSIRO studies and peer-reviewed articles, enables us to build a picture regarding the health of certain water-dependent ecosystems in NSW. The following case study is intended to illustrate in concrete terms why reform is needed to improve environmental outcomes under WSPs.

Macquarie Valley

The Macquarie Valley covers a significant portion of North-Western NSW and includes the Ramsar-listed Macquarie Marshes. Three WSPs are applicable in the Valley: the Macquarie and Cudgegong Regulated Rivers WSP 2003 (currently under review), the Castlereagh River above Binnaway (Unregulated river) WSP 2004, and the Lower Macquarie Groundwater Sources WSP 2006.

The Sustainable Rivers Audit, which was published by the MDBA in 2012, is described by the Authority as 'the most comprehensive assessment of river health undertaken for the Murray–Darling Basin.'⁵⁵ It includes report cards for 23 valleys in the MDB which assess valley health against designated criteria. According to the Audit, **21 of the 23 valleys were rated in "poor" or "very poor health."**

The report card for the Macquarie Valley rates individual components of the river system, noting that:

- the fish community is in "**extremely poor condition**;"
- the macroinvertebrate community is in "**moderate condition**;"
- the riverine vegetation is in "**moderate condition**";
- the physical form of the valley is in "**moderate condition**"; and
- the hydrology of the valley as being in "**moderate condition**."

Overall, the Macquarie Valley river ecosystem was rated in "**very poor health**."⁵⁶

Furthermore, research conducted by Professor Richard Kingsford reveals that the ecological character of the internationally- listed Macquarie Marshes has been severely impacted by dams and water diversions. For example, 'successional changes in aquatic vegetation, reduced vegetation health, declining numbers of water-birds and nesting, and declining native have all fish and invertebrate populations' have been observed in the Marshes and other significant wetlands.⁵⁷

⁵⁵ <http://www.mdba.gov.au/programs/sustainable-rivers-audit>

⁵⁶ <http://www.mdba.gov.au/files/SRA2/SRA-2012-Summary-Macquarie.pdf>

⁵⁷ Kingsford, R, Ecological impacts of dams, water diversions and river management on floodplain wetlands in Australia, *Austral Ecology* (2000) 25, p. 109.

Finally, Climate modelling conducted by the CSIRO in respect of the Macquarie Marshes indicates the following:

- *Under the best estimate 2030 climate the average period between important inundation events in the Macquarie Marshes would increase by a further 10 percent. Flood events would be 5 percent smaller and the total higher floodlevel volume would reduce by 16 percent. This would be expected to reduce the scale of waterbird breeding events.*
- *Under the dry extreme 2030 climate the average period between events would increase by 24 percent and the total higher flood level volume would reduce by 38 percent. These changes would be likely to have serious consequences for all aspects of wetland ecology.⁵⁸*

EDO NSW submits that this information (or if it is obsolete, best available science) must be taken into account when developing rules for the relevant WSPs.

2. Integrated and efficient governance

- *Can WSPs be made more accessible, transparent and understandable?*

WSPs are complex and esoteric, thereby rendering them virtually inaccessible to all but those with specific training or experience in the field of water management. Indeed, several of our clients who are farmers have indicated that they find the WSP applicable to their property incomprehensible.

Water management is an inherently complex area. However, we are of the view that many difficult ideas and rules can be translated into plain English without losing their meaning. While we acknowledge that the guides to WSPs do translate certain rules and concepts into a more readily accessible format, it is arguable that these guides fail to properly explain why, for example, 56% of a water source⁵⁹ is reserved for environmental use (as opposed to 80%, for example). In the absence of this information, it is difficult for the community to meaningfully assess the efficacy of environmental rules.

In short, EDO NSW submits that it is impossible to hold governments and policymakers to account if the vast majority of people are unable to understand how WSPs work and their implications for water users and the environment.

Is there enough accountability for achieving WSPs objectives, or how can this be improved?

As our comments throughout this submission have indicated, there is significant scope to improve accountability with respect to the operation and implementation of WSPs in NSW. Our recommendations in the executive summary would assist in this regard.

⁵⁸ CSIRO, *Murray-Darling Basin Sustainable Yields Project – a report to the Australian Government: Water Availability in the Macquarie-Castlereagh*, March 2008, p. 2.

⁵⁹ Gwydir WSP.