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Comment on Referral 2020/8652: - Macquarie River Re-regulating Storage

Introduction

The Inland Rivers Network (“IRN”) is a coalition of environment groups and individuals that has been advocating for healthy rivers, wetlands and groundwater in the Murray-Darling Basin since 1991.

IRN has strongly objected to new dams and in stream water storages in NSW because of their extreme impacts on natural flows and water quality in river systems and on dependent threatened species, migratory birds, wetlands and Matters of National Environmental Significance (MNES).

The proposed Macquarie River re-regulating weir will increase the storage capacity at Gin Gin from 1.3 GL to 6 GL. The project would result in a reduction in low and medium flows downstream, the impact of these reduced flows, especially in dry years, has not yet been adequately assessed but is likely to have greater impacts than those identified in the referral document.

The main justification for the proposed action is to increase the volumes of water that can be extracted by increasing the reliability of general security licences, and reduce the volumes of Planned Environmental Water (PEW) as defined in the Water Management Act 2000 by increasing water delivery efficiency. A reduction of PEW is contrary to the objects of the Water Act 2007 (C’wlth) and of the Murray-Darling Basin Plan.

The Basin Plan was established to address over-extraction of water and declining environmental health in the Murray-Darling Basin. The Macquarie River is a major tributary of the NSW Northern Basin. Having a winter fed catchment, flows from the Macquarie enter the Barwon in spring and early summer, after being filtered by the Macquarie Marshes, when other monsoonal fed rivers aren’t contributing as much water.

The Macquarie Valley contains significant environmental assets recognised in the Basin Plan. These important wetland systems are also recognised within international agreements for the protection and management of migratory bird habitats, and the Ramsar convention.

Preliminary figures (subject to change) provided by WaterNSW suggest the project will result in a reduction of low flows and freshes of up to 6.2% from reaching the Ramsar listed Macquarie Marshes, which will compromise the NSW and Commonwealth Governments obligations under international treaties.

IRN supports the alternative to this project that is included in this referral, of replacing the existing weir at Gin Gin. There are also changes that could be made in the Water Sharing Plans (WSP) in the Macquarie Valley that would improve water security for the environment and communities.

IRN supports that the proposed action is assessed as a controlled action. We support that the project will have significant impacts on threatened ecological communities and species, however we strongly disagree that the impacts on migratory birds and Ramsar wetlands is listed as not significant.

The controlled action must include assessment of significant impacts on the Macquarie Marshes and the seventeen migratory bird species recorded in these wetlands.

IRN disagrees that the proposed action should be considered a State Significant Infrastructure.

Comments on the Referral:

1. Justification for proposed action

The stated objectives of this project are to:

- Achieve long-term water security strategic objectives in the Macquarie River catchment
- Improve delivery efficiency to water customers downstream of Gin Gin Weir
- Reduce transmission losses when transferring and delivering water through the river system on an annual basis
- Maximise available water for general security water customers within the sustainable diversion limits set under the Murray-Darling Basin Plan

The 2014 NSW State Infrastructure Strategy Update¹ on page 89 sets out how the irrigation industry in the Macquarie Valley has exceeded the natural capacity of the valley.

“Burrendong dam is the largest but small compared to environmental and irrigation demands resulting in low water reliability. High distribution losses due to long rivers and effluent creeks.”

The Macquarie Valley is over allocated, which has resulted in low reliability of general security licences. While quoted figures vary, the average reliability of a general security licence in the Macquarie Valley is probably between 30 and 40%. When Burrendong was completed in 1966/67 the yield of the Macquarie River was assessed as 406 Gegalitres (GL – a billion litres), yet the total allocation of regulated and supplementary flow water for the system is now around 899GL.

Water is mentioned in terms of *losses* and *surplus* more than 60 times in the MRSS Scoping Report. ‘Delivery efficiency’ and ‘transmission losses’ is referring to water in the

¹ http://www.infrastructure.nsw.gov.au/media/1096/inf_j14_871_sis_report_ch06_web.pdf

environment behaving naturally as a part of the fresh water cycle. The Macquarie River is a long river with many creeks that both feed water into the Macquarie and disperse water through the landscape. By attempting to ‘improve delivery efficiency’, great volumes of water are being lost to the environment, and the impacts of these losses to the environment are evident in the dramatic decline in the size and health of the Macquarie Marshes in recent years.

This project proposes to capture operational surplus flow events and re-regulate them. Operational surplus flow events, and water lost to the environment through ‘increased efficiency’ and reduction in ‘transmission losses’ are classified as PEW as defined by the NSW Water Management Act 2000. Any reduction of PEW is not consistent with the Murray Darling Basin Plan.

Tributary inflows enter the Macquarie River downstream of Burrendong through rivers like the Bell, Little, Talbragar and several creeks including the Coolbaggie. These flows provide valuable natural pulses that perform important ecological services to the river, creeks, and marshes, and assist greatly in achieving connection between the Macquarie and Barwon Rivers. Wildlife respond to natural triggers from free flowing nutrient rich inflows, which deliver far more to the environment than can be achieved by environmental water delivered by dam releases.

Page 16 of the MRRR Scoping report defines operational surplus flows:

“The source of operational surplus flows released from Burrendong Dam can include the following:

- Customer orders that are subsequently cancelled due to, for example, rainfall events occurring which negate the need for irrigation
- Orders subsequently met by useful tributary contributory inflows
- Releases in excess of those required to cover delivery losses.”

In the Macquarie Valley, a volume of tributary flows are considered dam releases for the purposes of filling customer orders, including general security orders. The volumes of tributary inflows considered dam releases are not publicly available.

Should this project go ahead, there is an unacceptable risk that an increased volume of tributary inflows will be classified as dam releases and be regulated to meet general security customer orders. This project promises to deliver more water for general security customers. The only place that water can come from is tributary inflows. Statements by WaterNSW and the NSW Government that downstream tributary flows will not be regulated by the new storage is based on an interpretation because they are considered by WaterNSW to be releases from Burrendong Dam and allocated as such.

The referral notice states one of the objectives of the project is to improve town water security in the region. This objective has not been noted in any previous NSW Government or WaterNSW publications about the project. This project only applies to general security water access licences, town water supply is not included in the operational plans for this project.

Increasing extraction from the river by higher general security reliability, can only reduce water security for towns in the Macquarie Valley. We have experienced a summer in 2019/20 where many towns in the valley including Dubbo were at risk of running out of water.

Communities, domestic and stock requirements could not be met from the river downstream of Warren after the weir was raised and flows ceased at that point.

Changes to the WSP in the Macquarie Valley are urgently required to improve water security for the environment and communities. These changes are mentioned in **Section 9 Proposed Alternatives** later in this submission.

IRN does not support this project being listed as a State Significant Infrastructure. “Projects can be classified as State significant infrastructure (SSI) if they are important to the State for economic, environmental or social reasons.”² This project serves only to increase the profitability of private and corporate businesses who have general security water access licences, which is only a small portion of the community. It is not a project for the public good, it will only harm the environment and the social amenity of the river for local communities.

2. Consultation

Consultation on the project began in mid-2018 with targeted stakeholders. It was not until November 2019 that community consultation was offered by WaterNSW, by which stage the plans for the proposal were advanced, given the concept design was due to be submitted to the planning department in December 2019.

At two of the public consultations in November 2019, recreation river users and environmental groups were told by the consultants and WaterNSW that the project was ‘liked’ by environmentalists and the licenced environmental water holders. The reasons given were that 1) too much water gets to the Macquarie Marshes and the roots of the plants rot and 2) that the general security environmental water accounts will increase.

There is no reputable environmental group in the Macquarie Valley that has announced support of this project. The claim that the plants in the Macquarie Marshes receive too much water is easily disproven by many means, not least the notification of likely change in ecological character of the Macquarie Marshes Ramsar site that was submitted to the Ramsar Secretary General on 17 July 2009 under Article 3.2 of the Ramsar Convention. This change can best be described as a ‘likely change’ from a semi-permanent wetland system to an ephemeral wetland system in parts of the Ramsar site.³

It was confirmed following those consultations that formal support for the project has never been publically stated by NSW Department of Planning, Industry and Environment – Environment, Energy and Science (EES), the Commonwealth Environmental Water Holders Office (CEWHO) nor NSW DPIE Fisheries.

Any increase to general security licence reliability (including environmental general security licences) will come at the expense of the environment in one way or the other. A lot of water will be taken from Planned Environmental Water, and only a small bit of it will be added to general security environmental water accounts.

² <https://www.planningportal.nsw.gov.au/major-projects/assessment/state-significant-infrastructure>

³ <https://www.environment.nsw.gov.au/research-and-publications/publications-search/macquarie-marshes-ramsar-site-response-strategy>

3. Matters of national environmental significance (MNES)

3.1 Threatened native fish populations

This proposed action will have a significant impact on the critically endangered Silver Perch, endangered Trout Cod and vulnerable Murray Cod. These three fish species that are protected under the EPBC Act are not listed in full in the referral.

The following significant impacts are mentioned in the referral:

- Loss of freshwater habitat types such as riffle zones due to inundation, and changes to flow regimes and water quality.
- Impacts to aquatic habitats and riparian vegetation from the regular variability of water levels within the storage and the associated effects on river bank stability.
- Loss or decrease of available recruitment area, due to changes in available habitat.
- Likely impacts to the structural elements that make up established habitat (of vulnerable Murray Cod) in the existing Gin Gin Weir pool, including potential spawning sites.
- The new operational regimes may impact larval recruitment and the movement of fish in the locality.
- Greater variability in the pool levels (30km weir pool created by the project) and altered fish passage opportunities at the location.
- The proposed fish passage to be provided at the new re-regulating structure and the removal of the barrier effect of Gin Gin Weir will improve overall fish passage at this location. However, the alterations to important fish habitat in this locality and the potential operation effects on habitat and spawning for Trout Cod and Murray Cod may give rise to potentially significant impacts to these species.

It is clear from the information provided in the referral that the significant impacts to threatened native fish populations expected by this project will not be offset by the legally required construction of fish passage.

It is not possible for the significant impacts to threatened native fish populations that this project would have to be offset, and on these grounds the project should not be approved.

Further to the significant impacts mentioned in the referral as above, IRN considers the impacts of changed hydrology downstream of the proposed action have not been adequately identified or assessed in regard to impacts on threatened fish populations as MNES.

This project will have a significant impact on the volumes of water available to connect the Macquarie River with the Barwon, especially in drier years. Connection between the Macquarie and Barwon rivers is critical for threatened fish populations.

The impact of the project on downstream threatened fish populations will also be compounded by climate change and predicted lower rainfall and inflow patterns, which has not been addressed in the referral.

As identified above in Section 1, there is a risk that increased volumes of tributary inflows will be classified as operational surplus flows and be regulated to fill general security orders. Any reduction in naturally occurring tributary inflows, especially in dryer years, will significantly impact threatened populations of native fish downstream from the project.

3.2 Migratory Birds

The referral has identified the potential of 9 migratory bird species being impacted by the proposed action. None of these species have been listed. There has been no on ground assessment undertaken.

IRN strongly disagrees that the impacts of this project on migratory birds will not be significant.

We believe the significant impact on migratory birds will extend to downstream to include the Macquarie Marshes, and that there should be many more migratory bird species listed in this referral, and that the impact on these further species should be considered significant.

The Macquarie Marshes provides important habitat for 77 species of wetland birds, 17 of which are covered under international agreements for protection of migratory birds and their habitat.

IRN considers that the assessment of impacts on migratory birds must be undertaken as a controlled action.

3.3 Wetlands

IRN considers that the threat to the ecological character of a Ramsar wetland should be listed as significant.

This project will reduce low flows and freshes into the Macquarie Marshes by around 6.2%. In dryer years (which most years are) the impact of any reduction in low flows and freshes into the Macquarie Marshes will be significant. The wetlands are recognised in listings by NSW and the Commonwealth – listed as Critically Endangered under the Environmental Protection & Biodiversity Conservation Act 1999.

Australia has legal responsibilities under the Commonwealth Water Act 2007, the Ramsar Convention, other international migratory bird agreements and the Murray Darling Basin Plan to ensure the character of Ramsar listed wetland is protected. The Macquarie Marshes are a key environmental asset of the Murray-Darling Basin.

As referenced above, the Australian Government has issued a notification of likely change in ecological character of the Macquarie Marshes Ramsar site, submitted to the Ramsar Secretary General on 17 July 2009 under Article 3.2 of the Ramsar Convention.

IRN considers that the impact from this project to the ecological character of Ramsar listed wetlands would be significant, and would not be able to be offset. IRN considers that the assessment of impacts on Ramsar wetlands must be undertaken as a controlled action.

3.4 Threatened ecological communities

IRN agrees that the impact to threatened ecological communities should be undertaken as a controlled action, and that the impact to threatened ecological communities by this project would be significant.

Of the 14 Threatened Ecological Communities (TECs) listed as threatened in the Narromine LGA, 7 of these have listing under the EPBC Act. Six threatened ecological communities are mentioned as being at risk of significant impact by this project.

Thirty kilometres of riparian zone vegetation will be destroyed by the resulting weir pool created by this project. This includes centuries old red gums, the loss of which cannot be offset.

The resulting weir pool will degrade the banks and cause erosion, most likely leading to the entire 30 km of riparian zone being lined with rocks, turning a natural stretch of river into an in-channel dam. In stream habitat for aquatic life will also be destroyed by the resulting weir pool. Impacts would likely include loss of freshwater habitat types such as riffle zones due to inundation, and changes to flow regimes and water quality. Loss or decrease of available recruitment area, due to changes in available habitat would likely ensue.

4. Description of project area

4.1 Further to impacts on native fish listed under the EPBC Act as mentioned above, this project would also significantly impact the habitat of three species of threatened native fish listed under the Fisheries Management Act - endangered Eel-Tailed Catfish, endangered Olive Perchlet, and endangered Southern Purple Spotted Gudgeon.

4.2 The description of the hydrology of the project area fails to identify the downstream impacts of the proposed action in the form of reduced natural flows and reduced flood flows. There will likely be impact to the interaction of ground water and surface water from this project, and there is not much detail given about what those impacts might be.

A project update from WaterNSW in December 2019 states that a strategic priority of the project is 'to improve and protect the health and integrity of environmental systems and assets, including improving water quality.' The referral notes in several places that water quality will be impacted, which would appear to be at odds with the strategic priority previously stated.

IRN believes that this project will not be able to achieve the above mentioned strategic priority.

4.3 Describe any outstanding natural features and/or any other important or unique values relevant to the project area. Describe any existing or any proposed uses relevant to the project area.

The regulated Macquarie River has high to very high ecological values due to the presence of Ramsar sites, threatened fish species, endangered ecological communities.

In 2014 the NSW Environmental Protection Agency classified the Macquarie River as being in Extremely Poor Health for fish condition, this project would significantly make the conditions in the Macquarie even worse for fish.

This project would destroy a beautiful natural beach that is a popular recreational spot for the community.

4.4 Indigenous Heritage values relevant to the project.

A registered Aboriginal Heritage site 20km north of the project will be inundated by the weir pool. WaterNSW have stated in the referral that there would likely be other similar sites in the area, as if that fact diminishes the value of the registered site.

IRN strongly objects to any consideration by WaterNSW that they can assess the value of this heritage site themselves.

5. Measures to avoid or reduce impacts

The construction of fish passage at the site would not be enough to offset the impact of this project to threatened fish populations, as described by this referral and discussed above.

Other significant environmental impacts identified in the referral are unable to be offset.

6. Conclusion on likelihood of significant impacts

IRN does not agree with the conclusion that there are unlikely to be significant impacts on migratory species, or the ecological character of Ramsar wetlands.

The proposed action will substantially modify (by altering hydrological cycles) an area of important habitat for a migratory species and could seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.

7. Environmental record of proponent

Water NSW has demonstrated poor environmental management of past projects.

A legal requirement under the NSW Fisheries Act to construct three fish ways on weirs in the Macquarie River system (at Gin Gin, Gunningbar and Marebone), to offset the impact of upgrades to Burrendong Dam, have not been met even though the upgrades were completed in 2011.

Many WaterNSW water storages, including Wyangala Dam, cause unmitigated severe cold water pollution problems.

As managers of water releases from NSW storages, including orders for environmental purposes, WaterNSW have made poor decisions that have impacted on environmental outcomes.

For example, in the Macquarie River system in 2019, a decision to provide flows to habitat of breeding vulnerable Murray Cod was interrupted by WaterNSW deciding to stop held environmental flow releases with no consultation.

We also note that a previously referred dam project, the Augmentation and Safety Upgrade of the Chaffey Dam on the Peel River, required an approved offset plan as a measure to mitigate impacts on the endangered Booroolong Frog. The biodiversity offset plan has not been implemented, meanwhile the Booroolong Frog has declined to the point of local extinction.

This is further evidence that WaterNSW does not carry out conditions of approval in regard to mitigating impacts on MNES and is therefore a poor environmental manager.

8. References

There have been no preliminary assessment reports provided at all for this project.

It is critical that the Commonwealth require rigorous assessment of the environmental impacts of the proposed action and that these requirements are clearly outlined for the assessment process.

9. Proposed alternatives

Changes to the WSPs need to be made which would to greatly improve water security in the valley:

1) The Macquarie is a 'credit river' meaning water that has not yet fallen as rain over the catchment is sold in advance, based on historic records of rainfall and run off. Other valleys only allocate water once it is in the dam, therefore reducing the risks of running out of water, which is a very high risk in the Macquarie. Burrendong has come close to running out of water three times in recent years, putting the environment, communities and their economies at great risk.

2) The historic data that the NSW Government uses to determine water allocations every year is limited to rainfall and run off data up to 2004. The current drought once it is over will be the worst drought on record, and the WSP must be updated to allow the rainfall and inflow data from the current drought to be used when determining allocations.

3) There is no end of system target for the regulated Macquarie Cudgegong water sharing plan. No requirement to provide base flows to the end of the regulated river has a significantly detrimental impact on the environment and communities in the unregulated Macquarie water source, and beyond into the Barwon and Darling River systems.

IRN supports the alternative proposed in the referral, of the replacement of the existing Gin Gin weir without re-regulating structure. We note that a fishway design would be mandatory for any replacement structure, as this is already a legal requirement under previous approvals processes.

Yours sincerely



Anne Reeves
Hon Secretary