

18 June 2013

**NSW Planning Assessment Commission Determination Report
Macquarie River to Orange Pipeline Project
Orange and Cabonne Local Government Areas**

Background

Over the past ten years the city of Orange has faced significant and prolonged drought periods and almost continuous water restrictions. Level 5 restrictions were in place from 2008 to 2010. Orange city's water supply does not meet best practice water supply security and the Central NSW Regional Organisation of Councils undertook a study of options to improve water supply security across the region. The study found that one element of a water security strategy for Orange is the proposed pipeline, to transfer water from the Macquarie River to Orange's Suma Park Reserve which is the subject of this application.

Project

Orange City Council proposes to construct and operate an underground pipeline (39 km in length) to extract water from the Macquarie River to supplement Orange's existing town water supply. The pipeline would extract water at Cobbs Hut Hole, located on the Macquarie River and deliver it to the Suma Park Reservoir.

Up to 12 ML of water would be extracted from the Macquarie River each day. Water is proposed to be extracted as needed provided that flows in the Macquarie River exceed 38 ML a day and the storage level in the Suma Park Reservoir is below 90%.

Department of Planning and Infrastructure's Assessment Report

The Department of Planning and Infrastructure (the Department) completed its assessment of the application and referred it to the NSW Planning Assessment Commission (the Commission) for determination. The assessment report considered the following issues:

- sustainability and socioeconomic considerations;
- hydrology;
- aquatic ecology;
- terrestrial ecology;
- geomorphology and watercourse impacts;
- water quality;
- Aboriginal and non Aboriginal heritage; and
- recreational fishing.

The Department concluded that the project would provide significant benefits to the community of Orange, by diversifying and helping secure its water supply. The Department found that the impacts of the project can be managed and mitigated to an acceptable level and that operational impacts on hydrology and aquatic ecology would be acceptable if extraction is limited to periods of river flow in excess of the 80th percentile which has been assessed to be 38ML/day. The Department recommends that the project should be approved subject to conditions, including an interim pumping trigger of 108ML/day, based on a more conservative estimate of the 80th percentile river flows.

Delegation to the Commission

On 7 May 2013 the project was referred to the Commission for determination, under the terms of the Minister's delegation.

The acting Chair of the Planning Assessment Commission, Mr Garry West, nominated Mr Paul Forward (Chair) and Mr Brian Gilligan to constitute the Commission for the project.

Meetings and Site Visit

Briefing from the Department of Planning and Infrastructure

On Wednesday 15 May 2013 the Department's officers, along with the Department's expert consultant Mr Drew Bewsher, briefed the Commission on the project. The Department noted the concerns raised in submissions including preferences for alternatives such as: reuse of groundwater extracted from nearby mining operations and further stormwater harvesting. The Department noted that there are a number of issues with these options, in particular, contamination of water sourced from mining operations and licensing matters and downstream objections to additional stormwater harvesting.

The Department and its expert Mr Bewsher provided further explanation of the concern about the Proponent's predicted 80th percentile flow rate (which would produce an extraction cut off limit of 38 ML/day). The flow rate has been derived from a model which has given particular weight to the drought conditions of the last decade. Instead the Department's expert used the NSW Office of Water's model which assumes flows will be higher and consequently the 80th percentile flow trigger would be 108 ML/day, upstream of the pumps.

The Department indicated that it is satisfied the 80th percentile trigger level is appropriate in this instance. As more data is collected over time it will be possible to refine the model to more precisely define the 80th percentile flow and this refinement has been provided for in the recommended conditions. In the interim the proponent would be limited to the more stringent 108 ML/day trigger level derived by Mr Bewsher from the model provided by the NSW Office of Water.

Meeting with the Proponent (Orange City Council representatives and consultants)

Following the briefing from the Department, the Commission met with the Proponent. The Proponent provided a background to the recent drought periods and resulting uncertainties. The Council indicated it is now taking a strategic view, looking at providing long term water security for Orange.

Council indicated that demand management has been very effective in changing water consumption behaviour in the Orange community. Nonetheless Orange City is planning for future population growth, and also planning to be able to deal with the impacts of climate change.

Council has already undertaken some measures to diversify its water supply, including with the use of bore water and with stormwater harvesting, not just for irrigation, but for drinking water.

The Commission asked whether there were alternative options for extracting water from Burrendong Dam. The Proponent indicated that extraction would only be possible at the dam wall (for regulation purposes and because backwaters are relatively shallow and may not be accessible at certain times). The additional pipeline distance required to reach the dam wall was considered a significant disadvantage, both in terms of cost and the energy requirements for the extra pumping distance.

Council noted that some members of the community had raised concerns about the water demand figures quoted, indicating that the consumption level of 404 litres per person per day is significantly higher than that quoted on many household water bills. Council explained this was because the figures used represented the total average consumption, which included not only the residential component but the commercial and industrial use as well.

Council's consultant provided to the Commission a detailed presentation on the water demand modelling, the current supply sources, security and infrastructure and the results of adding the proposed pipeline, both on Orange's water supply security and on the Macquarie River. The presentation also included details of the alternative options considered and the additional measures Council is planning for the future. The predicted financial impact of the proposal was also presented.

The Commission noted that as a result of the proposed pumping regime, Suma Park Reservoir would be likely to spill more frequently and asked what flooding impacts might be expected. The Council indicated flooding had not been raised as a concern and was not expected to be a significant issue.

The Commission sought and received clarification on several issues including:

- Council's intention to raise the Suma Park Reservoir dam wall by one metre, associated with an upgrade to meet dam safety requirements;
- the impact of raising the dam wall on the pumping regime and resulting total water volumes extracted from the Macquarie River; and
- the various flow trigger levels quoted and the potential impact of these on the security of supply.

Correspondence dated 16 May 2013 from Council's consultant Martin Haege was subsequently provided. The water supply security model was applied to a scenario assuming the pipeline had been in place and operating under the Department's recommended trigger level criteria (i.e. only when flows exceed 108 ML a day) for the ten year period from 2000 to 2010. The modelling indicated that water levels in Councils combined reserves would have dropped to 40% during 2008, remaining markedly higher than those actually experienced. Actual storage levels during this ten year period reached a minimum level of 23% in 2010, if the pipeline had been in place and operating under the recommended conditions storage levels would have been markedly higher at around 45% at that time.

Public Meeting

On Tuesday 28 May 2013 the Commission held a meeting at the Orange Function Centre to hear from the community comments on the assessment and recommended conditions. Sixteen people spoke at the meeting, including representatives of a number of special interest groups representing Macquarie River, environmental, business and Aboriginal interests. The local member for Orange Mr Andrew Gee MP had registered to speak but sent his apologies as he was unable to attend the meeting due to Parliamentary commitments.

The key concerns and issues raised in objection to the project included:

Ecological Impacts:

- impacts on threatened species – including both terrestrial and aquatic species, particularly on trout cod, at the extraction point, from noise and vibration; and the loss of microbat habitat with the removal of hollow bearing trees along the pipeline route;
- adequacy of the survey effort and baseline information for both aquatic and terrestrial species as well as uncertainties regarding associated impacts such as the effects on riffles;
- direct impacts at the extraction point and from pumping, including potential impacts on eggs, larvae, fingerlings and platypus;
- broader concerns about the potential impacts on the river system including impacts on riffles and downstream impacts, including on the Macquarie Marshes;
- impacts on habitat corridors, and hollow bearing trees, particularly along roadsides;
- the need for a more detailed revegetation plan including for the management of noxious weeds and a protocol for the removal of hollow bearing trees; and
- requests for additional offsets, including an increase of 10-15% and for tree hollows.

Alternatives considered and need for the project:

- the drivers for the project were questioned, with suggestions that the proposal is politically driven;
- it was suggested that alternatives should be considered further, in a regional plan including consideration of options for construction of another dam, stormwater harvesting, mine water, groundwater resources, water tanks, and/or an alternative pipeline route; and
- the need for the project was questioned, given there is no longer a drought, the financial impacts of the project on rate payers, that the Cadia gold mine is extracting too much water, and that Orange will be the only town that will benefit from the pipeline.

Hydrology:

- concerns with the modelling undertaken, both for the flows in the Macquarie River and the secure yield modelling, particularly that there is insufficient information on river flows and that daily water use predictions for Orange have been overestimated;
- lack of information on river flow, water balance and the secure yield model. Hydrological modelling needs to be reviewed;
- condition B5 should be reviewed by an independent expert and objections to condition B6 as the modelling should be dealt with by the NSW Office of Water; and
- that the Macquarie River is a critical resource needed in case of bushfire.

Fishing and other recreation and tourism:

- Impacts on recreational fishing and associated loss of tourism, as well as visual and amenity impacts for campers including those using the Long Point Reserve and the road to Hill End.

Process and adequacy of information:

- Concerns about the level of information available and detail of the studies prepared, including the need for additional Aboriginal community engagement and Aboriginal heritage investigations, further aquatic surveys and studies, water modelling and river inspections during low flows; and
- requests to delay the determination until all uncertainties are resolved, including cumulative impacts which were not considered to have been addressed in the Director-General's Assessment Report.

Other:

- the safety of the Suma Park Reservoir was raised as a concern and speakers requested that upgrade works be undertaken prior to this project commencing;
- concerns were also raised that water pumped into the dam would then spill and eventually be returned to the River further downstream, at great expense to rate payers.

Key points raised in support of the project included:

- the need for a secure water source for Orange, economically for business growth, to support future population growth and to keep living standards high;
- that alternatives have been investigated and that this proposal is cost effective unlike alternatives such as water tanks;
- that water will be used by others if it is not used by Council, noting that Bathurst and Dubbo did not suffer severe water restrictions during the recent drought; and
- the ecological impacts were considered minimal.

Speakers, both for and against the proposal suggested that Orange's existing water restrictions should remain in place, expressing support for the water efficiency measures Orange has retained since the drought.

A number of community interest groups offered to escort the Commission on visits to various locations on the Macquarie River. To be fair to all parties the Commission did not accept any of these offers.

Site Visit

On Wednesday 29 May 2013 the Commission visited the proposed pipeline route, extraction point, Long Point Reserve and Suma Park Reservoir. As access to the extraction point is restricted, Orange City Council representatives accompanied the Commission on the site visit.

Other meetings

The Commission offered to meet with Cabonne Council, as the pipeline and extraction point are in Cabonne LGA. Cabonne Council did not take up this offer.

Meeting with Department of Primary Industries – Fishing and Aquaculture (DPI Fisheries)

On Wednesday 12 June 2013 the Commission held a meeting with DPI Fisheries to follow up on issues raised in submissions and presentations at the public meeting including:

- the trout cod restocking program under the Trout Cod Recovery Management Plan 2008 which is currently in its fourth year of implementation. DPI Fisheries indicated that it was not anticipated that the extraction point would impact on trout cod fingerlings and the recovery plan noting that the majority of fingerlings are released upstream and best practise pumping methods and extraction infrastructure would be adopted by Council. The Commission questioned the likely success of the restocking program and DPI Fisheries indicated that it considered the risks were largely unrelated to this proposal. The footprint of the extraction point was considered to be reasonably small and the extraction location selected was considered suitable.
- the 80th percentile extraction limit. DPI Fisheries indicated it was satisfied this is conservative and appropriate.
- the adequacy of the aquatic survey effort to date. DPI Fisheries indicated that the aquatic sampling was adequate for the purpose of the environmental assessment, but noted that additional baseline data was needed for the purposes of ongoing ecological monitoring and adaptive management of extraction operations. It was noted that the recommended conditions explicitly require the preparation of the Aquatic Environmental Monitoring Program (AEMP). The timing requirements for preparation of the AEMP and essential baseline monitoring were discussed. It was agreed that provided the parameters for the AEMP are promptly established, there should be adequate time for robustly designed baseline monitoring to meet proposed construction timeframes.

In summary DPI Fisheries confirmed it had no residual objection to the project and is satisfied the proposed conditions provide adequate controls for monitoring and adaptive management of potential impacts on aquatic ecosystems.

Meeting with NSW Office of Water (NOW)

On Wednesday 12 June 2013 the Commission met with the NSW Office of Water (NOW). The NOW confirmed that Council had adequately investigated alternatives and that the proposed pipeline was a suitable and cost effective option for improving secure yield for the Orange city water supply. The NOW also confirmed that Orange had limited water storage capacity and that raising of Suma Park Reservoir by 1m, in conjunction with operations of the pipeline was considered appropriate.

The NOW confirmed that it agreed with the approach taken by the Department's consultant in reviewing the model and the recommendations made. The NOW also indicated the 80th

percentile flow level represented a conservative approach that would protect high in-stream values and was much more stringent than current restrictions on many other water users, who are only prevented from pumping when there is no visible flow. The NOW agreed that the Department's recommendation for a 108ML/day flow trigger level was acceptable and in keeping with its modelling of the river's 80th percentile flow.

The NSW Office of Water subsequently provided email correspondence (dated 13 June 2013) requesting minor amendments to draft condition B6 and B16 (now B17). These changes were adopted by the Commission.

Commission's Consideration

The Commission has carefully considered the Department's Assessment Report, documents provided, written submissions and views expressed at the public meeting and in meetings with the Proponent and the Department as well as knowledge gained from the site visit. There were a number of issues that emerged which are discussed in further detail below.

Hydrology

The Commission notes that securing and diversifying Orange's water supply is a high priority for the Council. Both Council and the NOW discussed a number of options which had been considered and indicated that the Macquarie River pipeline proposal is considered to offer the best outcomes both financially, and in terms of minimising environmental impacts.

The 80th percentile flow extraction limit proposed by Council is considered to be conservative, by both Fisheries and the NOW. Both agencies noted that many of the other water users in the area are only restricted when there are no visible flows. Low flows are defined as those less than the 80th percentile flow, so the proposal would not impact on low flows in the river. The Commission is satisfied that the 80th percentile flow is a conservative limit, which is appropriate for the project given the in-stream ecological values of the river.

The Commission considered the community concerns about the uncertainty in the modelling undertaken and determination of the actual 80th percentile flow figure. The NOW agreed with the approach recommended by the Department, to use a 108ML/day trigger level, rather than the Proponent's proposed 38ML/day flow trigger. The Commission questioned the NOW on the suitability of the modelling undertaken and is satisfied that by adopting an 80th percentile flow of 92 ML/day and preventing pumping when flows are less than 108ML/day (to account for the instantaneous 15.2 ML/day extraction rate) the project would not cause flows downstream of the pump to fall below the 80th percentile flow. The Commission has also provided that this figure can be updated in the future should further more detailed modelling undertaken to the satisfaction of the NOW and the Director-General be provided. The NOW agreed with this approach.

The Commission understands that extracting water during high flows would allow for greater water supply security during low flows. The Commission also notes that the *Water Management Act 2000* gives priority to the distribution of water for essential town services over other industries. Notwithstanding this, the Council has opted for a conservative 80th percentile flow extraction limit, which is more stringent than that imposed on some other water users. The Commission is satisfied that the proposal will minimise impacts on low flows in the Macquarie River (by ceasing extraction) and that the proposal represents a significant improvement to Orange's water supply security.

The Commission noted during the public meeting that there was a level of community concern about the transparency of Council's decision making process in relation to this proposal, and its impacts on rate payers. In light of this, the Commission has added additional requirements to the recommended conditions, to require the data regarding the pipeline's operations to be made publicly available. This should include clear and

transparent information about how the decision support tool is being used to determine when pumping occurs.

Aquatic Ecology and Fishing

The Commission notes that concern was raised at the public meeting regarding impacts to the endangered trout cod population and recreational fishing. Council provided further information regarding the design of the extraction point and DPI Fisheries indicated that the proposed design represents best practice. Following the meeting with DPI Fisheries and a review of the information provided by Council the Commission is satisfied that the extraction point would minimise impacts to juvenile and adult aquatic species, eggs and larvae including released endangered trout cod fingerlings and that best practise measures would be adopted by Council. Furthermore, the Department has recommended a condition to confirm and monitor the predicted aquatic impacts during operation along with recommending an adaptive management framework to manage the impacts to aquatic ecology which would be developed in consultation with DPI Fisheries. The Commission has modified the condition, requiring the aquatic environment monitoring program to be submitted to the Director-General within three months of project approval thereby providing a greater opportunity for baseline data to be gathered prior to construction. The Commission is satisfied that impacts to fish populations, aquatic ecology and associated recreational fishing values can be appropriately managed through the implementation of the conditions of approval.

Tourism and Recreation impacts including Long Point Reserve

Speakers at the public meeting raised concerns about potential impacts on campers and recreational users of Long Point Reserve and visually amenity impacts for tourists travelling between Orange and Hill End. The Commission travelled along Long Point Road to the Macquarie River crossing where it connects to Ullamalla Rd. There was evidence of camping activity near the River crossing. Nonetheless in considering potential impact on tourism, both in terms of recreational activities in the area and visual impacts to travellers on Long Point Road the Commission is satisfied that the amenity of Long Point Reserve would be maintained.

Other Flora and Fauna

A number of concerns were raised regarding the impact of the pipeline on flora and fauna in submissions and at the public meeting. The Commission visited the site and traversed the proposed pipeline route. The Commission is satisfied that Council has chosen a proposed pipeline route which minimises impacts to flora and fauna as far as practicably possible including avoiding hollow bearing trees where feasible. The Commission has included a condition which requires the Proponent to keep vegetation clearing to a minimum, and that all contractors undertake a flora and fauna induction program for associated construction activities.

Aboriginal Heritage

The need for additional Aboriginal community consultation and the further Aboriginal heritage investigations was raised at the public meeting. The Commission considered this issue and has included additional requirements to the conditions; to induct all staff and contractors regarding Aboriginal heritage items and develop a management procedure for identified and unidentified Aboriginal objects. The Commission is satisfied that with the implementation of the additional conditions Aboriginal heritage items can be appropriately managed.

Alternatives to the project/project need

The Commission notes that a number of concerns were raised regarding the need for further investigations into alternatives to securing Orange's water supply. The Commission understands that 35 potential water supply options were considered and reviewed, and that

10 alternatives were further considered by Council. The Commission is satisfied that alternatives to the project have been adequately considered, and that some, such as the stormwater harvesting scheme may still be pursued in addition to this project. There is a clear need to diversify Orange's water supply resources and the Commission agrees with the findings of the Proponent, the Department and the NOW that this proposal is a suitable addition to Orange's existing water supply resources and infrastructure.

Other Issues

The safety of Suma Park Reservoir structure was raised as an issue during the public meeting. The Commission visited the dam and discussed this issue with both the Council and the NOW. The Commission has added a requirement that the Dam Safety Committee is to be consulted during the development of the Orange Water Supply System Decision Support Tool. This will ensure that any safety concerns related to the interaction of the operation of the pipeline with the Suma Park Reservoir can be addressed prior to commencement of operations.

The NOW also requested that the Department's recommended condition B16, relating to watercourse crossings be updated to refer to the NOW's most recent guidelines on this issue. The Commission has amended the condition accordingly.

The Commission also considered other issues including noise, flooding and visual amenity and believes these issues have been adequately addressed in the Department's Assessment Report. The Commission is satisfied that any residual impacts and issues can be managed by the implementation of the conditions of approval.

Commission's Determination

The Commission has carefully considered the Department's Assessment Report, including the submissions made, and the recommended conditions.

The Commission is satisfied that the project's impacts on the hydrology and aquatic ecology of the Macquarie River can be adequately managed and that the project will significantly improve Orange's water supply diversity and security. Consequently the Commission has determined to approve the proposal, subject to amendments (discussed in this report) to the Department's recommended conditions.



Paul Forward (Chair)
Member of the Commission



Brian Gilligan
Member of the Commission

Appendix 1
List of Speakers

**PLANNING ASSESSMENT COMMISSION MEETING
MACQUARIE RIVER TO ORANGE PIPELINE PROJECT**

Date: Tuesday 28 May 2013, 4pm
Place: Orange Function Centre, 18 Eyles Street, Orange

Speakers:

1. Mr Matt Hansen, Inland Water Ways Rejuvenation Association
2. Mr Colin Young, Orange Ratepayers Association Incorporated
3. Mr Nick King, Environmentally Concerned Citizens of Orange
4. Mr Cyril Smith
5. Mr Phil Stevenson
6. Ms Bev Smiles, Inlands River Network
7. Mr Colin Gordon, Sofala Branch of the Central Acclimatisation Society
8. Ms Jill Williams
9. Mr Richard Burns
10. Mrs Jane Paul, Daroo Orange Urban Land Care Group
11. Mr Tony Healey, Orange Business Chamber
12. Mr Paul Meeth, Central West Environment Council
13. Mr Rodney Tonkin
14. Mr Brad Bliss, Wellington Valley, Wiradjuri Aboriginal Corporation
15. Mr Paul Wettin, Orange and Region Water Security Alliance
16. Mr Ken Smith, Friends of the Macquarie