

3. STATUTORY CONTEXT

3.1 Major Project

The project is declared to be a Major Project under *State Environmental Planning Policy (Major Development) 2005* because it is a proposal requiring a licence under the *Pipelines Act 1967* (Schedule 1, clause 26(a)). The project is therefore subject to Part 3A of the *Environmental Planning and Assessment Act 1979* (the Act) and the Minister for Planning is the approval authority. The project has also been declared to be a critical infrastructure project under section 75C of the Act, as the project is considered to be essential for the State for economic, social and environmental reasons.

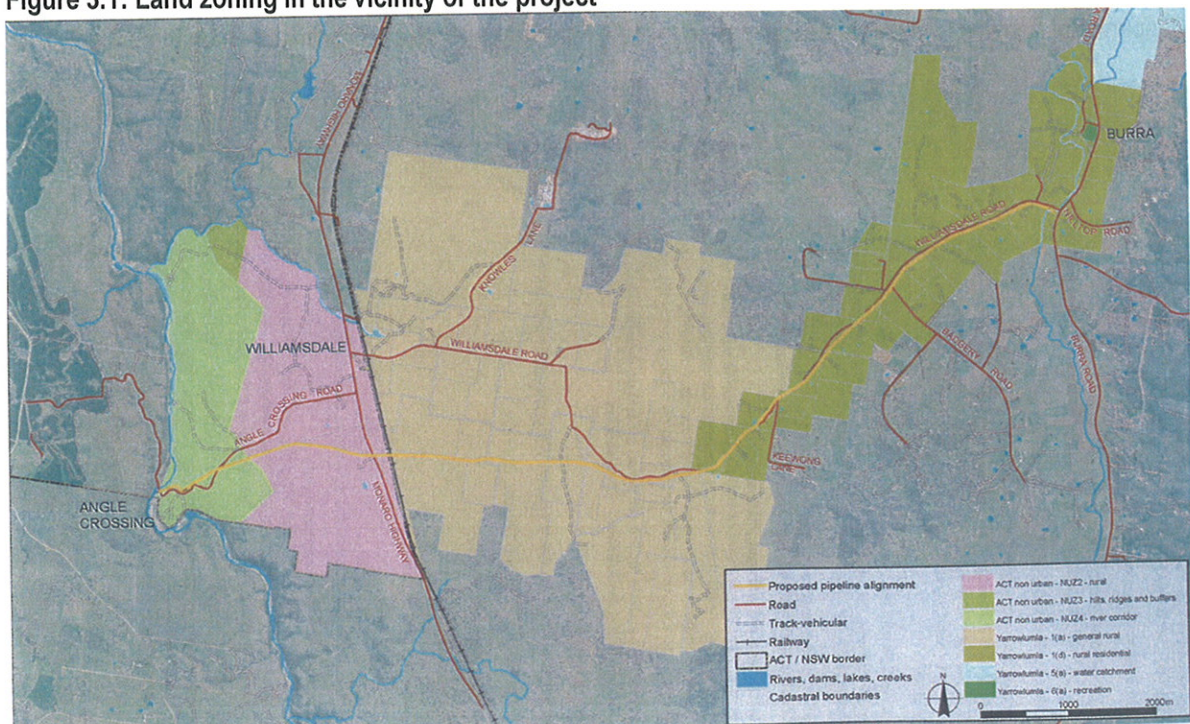
3.2 Permissibility

The project is located in the Palerang local government area, within land zoned 1(a) General Rural, 1(d) Rural Residential, 5(a) Water Catchment, and 6(a) Recreation in the *Yarrowlumla Local Environmental Plan 2002*. Figure 3.1 shows the land zoning in the vicinity of the project. In NSW, the project is permissible under these zonings with consent.

The project is subject to Impact Track Assessment according to the Territory Plan under the *Planning and Development Act 2007* (ACT Act). Under the ACT Act the Planning Minister represented by the ACT Planning and Land Authority will be the approval authority. The project is located on lands within the River Corridor Zone (NUZ4) and the Rural Zone (NUZ2).

The project has also been declared a "Controlled Action" under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (EPBC reference no. 2009/5124), i.e. the project will need approval from the Department of the Environment, Water, Heritage and the Arts. The EPBC Act Part 3, Division 1 controlling provisions are section 18 and 18a (listed threatened species and communities) as well as 26 and 27a (environment on Commonwealth land).

Figure 3.1: Land zoning in the vicinity of the project



3.3 Environmental Planning Instruments

There are no environmental planning instruments that substantially govern the carrying out of the project. Only State Environmental Planning Policies pertaining to Critical Infrastructure are considered.

3.4 Director-General's Requirements and Adequacy of Environmental Assessment

The Director-General's Requirements for the preparation of an Environmental Assessment for this Project were issued on 7 October 2008 in accordance with 75F of the EP&A Act. The Environmental Assessment was deemed to be adequate for exhibition on 5 August 2009 in accordance with section 75H of the EP&A Act.

3.5 Exhibition of the Environmental Assessment

The Murrumbidgee to Googong Water Transfer Environmental Assessment was placed on public exhibition from 17 August 2009 to 18 September 2009. The Department invited submissions in accordance with Section 75H of the Act. The exhibition locations were:

- Department of Planning's Information Centre in Sydney;
- Nature Conservation Council of NSW;
- Palerang Council;
- Queanbeyan Palerang Public Library; and
- ACT Planning and Land Authority.

The Environmental Assessment was also provided for download on the Department's internet site, the ACT Planning and Land Authority internet site and the Proponent's internet site. Notification of the exhibition period was made through separate advertisements in the *Canberra Times* and the *Queanbeyan Age*.

At the request of the community for an extension to the exhibition period, the Department accepted submissions up until 2 October 2009.

Following the exhibition period, the Director-General directed the Proponent to respond to the issues raised in submissions. The Preferred Project Report (see Appendix C) prepared by the Proponent was subsequently made publicly available on the Department's website.

The Department has met all its legal obligations so that the Minister can make a determination on the project.

4. CONSULTATION AND ISSUES RAISED

4.1 Public Submissions

The Department received a total of 53 submissions on the Murrumbidgee to Googong Water Transfer project. Of these, twelve specifically objected to the project and three indicated in principle support subject to the issues raised being addressed. The remainder did not specifically state a position although raised issues for consideration in the Department's assessment. Approximately half of submissions suggested alternative routes for the pipeline. The key issues identified in public submissions are summarised in Table 4.1.

Table 4.1: Issues Raised by Public Submissions

Issue		Number of submissions
Alternative options / route selection	- alternative options not properly considered; 'early upstream' option identified as preferred route; and - discharge directly to Googong dam identified as preferred route.	33
Flora and Fauna	- flora and fauna impacts of the proposed pipeline; - spread of weeds from construction and maintenance activities; - offsets package; and - aquatic ecology impacts of increased flows.	30
Water quality, hydrology	- changes in flows affecting in-stream water quality and geomorphology; - total amount of flows; - inadequate water quality data available for assessment; and - impacts of potential Tantangara releases.	29
Noise	- potential for noise to impact livestock and horses; - inadequate consideration of noise from air release valves; - concerns that the noise modelling is not representative of all sensitive receivers; and - potential vibration and blasting impacts.	22
Land use	- cumulative impacts (noise, visual) would affect rural amenity and lifestyle; - constraints due to pipeline easement; and - property values affected by amenity impacts and compensation matters.	20
Heritage	potential impacts to indigenous and non-indigenous heritage items, in particular London Bridge.	17
Justification	- project not needed due to Cotter Project; and - future development driving project not justified.	16
Consultation	inadequate consultation / notification on the project.	14
Roads, traffic and safety	- potential impacts of construction traffic and road closures; and - impacts to users of local roads eg horses.	13
Climate change	impacts of climate change on water availability.	7
Visual	- visual impact of proposed facilities including air and water scour valves; and - visual impact of removal of trees within pipeline easement.	6
Air Quality	generation of dust during construction.	1
Waste	generation and disposal of waste during construction.	1
Bush Fire	bush fire risk to the facilities.	1

4.2 Submissions from Public Authorities

Eleven submissions were received from public authorities: the ACT Land Management and Planning, National Capital Authority, ACT Environmental Protection Authority, Murray-Darling Basin Authority; Department of

Planning Heritage Branch, NSW Department of Environment, Climate Change and Water; NSW Department of Industry and Investment (Fisheries), NSW Office of Water and Palerang Council. None of the agencies objected to the proposal, however raised issues for the Department's consideration.

ACT Land Management and Planning

- Offset policy and management actions should be implemented to conserve habitat and biodiversity values;
- Impacts on present aquatic ecology on surrounding waterways should be considered including changes to environmental flows at Burra Creek and the Murrumbidgee River, releases of water from Tantangara Dam, consideration of pipeline pump design impacts and construction, consideration of pipeline water intake design, and establishment monitoring and management practices to identify and mitigate any resulting impacts from the operation of the pipeline; and
- The Heritage Council requires a final heritage report to be reviewed in order to identify any impacts the proposal may have on matters of heritage significance in the area.

National Capital Authority

- The Monaro Highway is a Designated Area under the National Capital Plan, as such approval for any works in the area of the Highway is required; and
- The Murrumbidgee River Corridor is covered by principles, policies and special requirements contained in the Plan.

ACT Environmental Protection Authority

- Revision of statements contained in the Environmental Assessment pertaining to the legal use of water from the Murrumbidgee River and Tantangara Dam; and
- A noise management plan is required to be submitted to the Environmental Protection Authority to mitigate against noise impacts during construction and operation.

Murray-Darling Basin Authority

- noted the potential impacts associated with natural flow downstream of Angle Crossing, as well as flow depth and velocity downstream of Angle Crossing, and flow leaving the ACT, with particular reference to the higher percentage impacts of the last ten years of data, i.e. drought conditions;
- noted that the proposed release of water from the Tantangara dam will reduce the above impacts considerably;
- noted that the ACT is committed to managing its water use within the 40 GL Cap on its net diversions;
- raised concerns that two of their previous requests were not considered; regarding the impact on average salinity at Morgan and Murrumbidgee River at Halls Crossing; and operating rules for the proposed works with relation to the environmental requirements of the Murrumbidgee River between Angle Crossing and Burrinjuck Dam;
- requested to be informed of the substantial matters of impacts on water quantity, quality and consumption; and
- reminded the ACT of its obligations to comply with Clause 49 of the Murray-Darling Agreement in relation to Water Trade and Cap on Water Diversions, with reference to the proposed Tantangara releases.

Department of Planning Heritage Branch

- recommended that mitigation measures be developed for identified non-indigenous heritage items as well as unexpected finds, and that the Heritage Branch be immediately notified in such an event.

Department of Environment, Climate Change and Water (DECCW)

- recognises Burra Creek as an area of national and state significance in terms of Aboriginal, European, biological and geomorphologic history;
- notes that an Environmental Protection Licence (EPL) may be required in relation to the extraction of spoil;

- queried the water quality and fluvial geomorphic assessments, as well as potential impacts associated with the Tantangara releases. Suggests the magnitude of adverse effects to Burra Creek have been underestimated;
- raised concerns that the proposed transfer flows may not be sustainable in the long term for fish habitation and or breeding requirements, potential impacts associated with introduced species and viruses, loss of riparian vegetation, and water quality impacts;
- advised on potential impacts to the platypus and noted they do not support the relocation of platypus young. Suggested the project be modified to avoid works within riparian areas during the breeding season;
- queried whether the proposed route avoids the *Swainsona recta* site, and whether additional targeted surveys requested have been undertaken;
- notes that it is not possible to determine the adequacy of the proposed offset strategy, and that the site must be secured in perpetuity;
- suggests that additional subsurface investigations be undertaken as part of the Aboriginal Cultural Heritage Assessment to clarify the extent of impact; and
- raised concerns that the stated mitigation measures would not be able to ameliorate potential impacts and required revised assessment of mitigation options and statements of commitment.

NSW Department of Industry and Investment

- raised concerns regarding the potential transfer of alien fish species from the Murrumbidgee River to Googong Reservoir, and associated potential impacts to endangered Macquarie Perch population;
- noted that the further reductions in flows would have an impact upon the viability of native fish communities and water using industries and communities in the lower reaches of the Murrumbidgee River valley;
- queried the effect of transfers when Googong is less than 80% capacity, in relation to seasonality of water transfers and mimicking natural flows;
- raised concerns that the proposed 48 hour ramp down period for discharges to Burra Creek is too short to mimic natural recession of a flow event; and
- recommended conditions of approval in relation to design and operating procedures, adopting a variable flow regime to mimic natural flows, and review of proposed 48 hour ramp down.

NSW Office of Water

- noted the risks associated with the geomorphic alteration of Burra Creek, and that the modelling has highlighted uncertainty in relation to impacts, particularly in reaches 2 and 3 of the Creek;
- identified a preferred location of the outlet structure to the backwaters of Googong Dam, to prevent long-term stability management issues of Burra Creek;
- raised concern regarding downstream impacts to the environment and users, and that the project may no longer be in the spirit of the Cap agreement; and
- recommended conditions of approval in relation to surface and ground water management.

Palerang Council

- in relation to traffic and road works, noted that:
 - the design of the pipeline next to roads would need to allow for future road widening planned to cater for future development in the area, and the route along Williamsdale Road near Gibraltar Gap should be designed in accordance with Council's preliminary design;
 - appropriate road construction and management conditions should be developed, and included in the pipeline licence conditions (noting that if not for the licence, an approval would be required under section 138 of the *Roads Act 1993* for works within any Council roads);
 - appropriate construction traffic arrangements would need to be implemented during construction at or near roads;
 - use of the Council sites for the two pipe storage areas should be programmed and coordinated with Council;
 - lodgement of a bond with the council to ensure roads are left in at least their original condition;
 - engage appropriate designers and contractors to construct the project;
 - noted the proposed one month closure of Williamsdale Road is inappropriate;
 - recommended ongoing consultation with Council; and

- identified specific conditions of approval relating to road condition assessments, road construction, road maintenance during construction, final repair of any road damage and protocols for public consultation of road works and temporary road closures.
- noted that there may be potential impacts during construction in relation to noise, dust, vibration and blasting;
- in relation to Burra Creek, noted that:
 - once a revised channel regime is achieved, there should not be long term impacts; and
 - monitoring is recommended for water quality parameters as well as macroinvertebrates and fish stocks
- noted that the route had been chosen to avoid vegetated areas and areas of high conservation value, where possible;
- raised concerns regarding the potential stockpiling of material at an existing gravel pit and noted that this may be designated development;
- raised concerns regarding the potential spread of noxious weeds of such a development and noted the need to control, in particular in relation to use of contaminated equipment or imported bedding material;
- requested that Council and NSW Department of Industry and Investment be given an opportunity to review the rehabilitation plan and flora and fauna sub-plan of the CEMP; and
- requested that appropriate environmental conditions relating to noxious weeds, noise, dust, blasting, water quantity, water quality and spoil disposal be placed on any approval.

4.3 Submissions Report or Preferred Project Report

Upon review of the submissions received the Department directed the Proponent to prepare a Submission Report / Preferred Project Report. The Proponent has included its response to submissions in a Preferred Project Report, as they have altered the pipeline route as a response to submissions.

The preferred project report (including finalised Statement of Commitments) was made publicly available on the Department's website and copies provided to relevant agencies for comment.

4.4 Department's Consideration

The Department's consideration of issues raised in public and agency submissions is summarised in Table 2.

Table 2: Department's consideration of issues raised in Submissions

Issue	Department's Consideration
Project Justification	Section 5.1
Geomorphology and Hydrology	Section 5.2
Water Quality	Section 5.3
Aquatic Ecology	Section 5.4
Terrestrial Flora and Fauna	Section 5.5
Noise	Section 5.6
Land Use	Section 5.7
Heritage	The Department is satisfied that these matters have been adequately addressed in the Proponent's Preferred Project Report and / or Statement of Commitments and require no further consideration.
Greenhouse gas	
Visual	
Air Quality/ Dust	
Traffic, safety and road works	
Bushfire risk	
Waste generation and management	

5. ASSESSMENT OF ENVIRONMENTAL IMPACTS

After consideration of the Environmental Assessment, submissions, Preferred Project Report and Statement of Commitments, the Department has identified the following key environmental issues associated with the proposal:

- project justification;
- geomorphology and hydrology;
- water quality;
- aquatic ecology
- terrestrial fauna and flora;
- noise; and
- land use.

All other issues are considered to be adequately addressed by the Preferred Project Report and the Proponent's Statement of Commitments.

5.1 Project Justification

Issue

The Proponent has justified the need for the project based on the uncertainty surrounding water availability in the region with respect to current water use and predicted future water use. Issues relating to the need for such a pipeline and the availability of water to service such a need presently and into the future were assessed by the Department.

Submissions

Submissions questioning the need for the project were divided between submissions opposing the construction of the entire pipeline and submissions that suggested alternative routes for the pipeline. Submissions opposed the pipeline for the following reasons:

- populations of Canberra and Queanbeyan should be required to recycle their water in order to conserve their water supply;
- there is sufficient capacity in existing water infrastructure to meet the demand for the region;
- planning rules should be altered to minimise further development within the Googong Catchment; and
- water conservation measures should also be employed to minimise the population's use of water.

Submissions suggested the project utilise alternative routes in order to avoid impacts of pipeline construction and operation on approximately 120 rural residential properties located along the pipeline easement. Suggested alternatives included:

- locate the pipeline outlet at the low level crossing at Williamsdale Road in order to avoid impacts to a number of downstream sensitive receivers on Burra Creek located along the final kilometre of the exhibited pipeline route;
- re-locate the pipeline route from Point Hutt Crossing to Hume then onto Googong Reservoir; and
- pipe water directly into Googong Reservoir.

Consideration

The Department notes submissions have raised concerns regarding the need and ability to divert water from the Murrumbidgee River to the Googong Reservoir. As discussed in Section 2 of this report, current water regulation in the region under the *Murray Darling Basin Intergovernmental Agreement* caps the ACT water use from the Murrumbidgee River at 40 gigalitres per annum. The Proponent has stated the preferred project will be operated under the water take allowance as per the agreed cap. The agreed cap has been subject to previous assessment and agreement between Governments which took into account issues of sustainability in establishing the cap. On this basis assessment of the project is not focused on changes to Murrumbidgee water flows into the ACT from NSW as they are occurring under existing agreements. Rather, the principal focus of this assessment is the environmental impacts of this project on the land which it is to be sited as well as any downstream impacts resulting from increased flows based on the water that is available to be pumped.

The Department has reviewed the Proponent's justification for the project on the basis of securing water supply for the region as well as accommodating for projected population growth in the region.

As a result of the recent severe drought restrictions the Australian Capital Territory (ACT) has undertaken a multi faceted initiative to secure the region's water supply for current and expected future use. These initiatives include water conservation measures as well as the construction of new water infrastructure such as this pipeline proposal. It is important to note that this pipeline on its own is not aimed at entirely securing the future water requirements of the ACT and surrounding NSW population centres. Instead this pipeline is part of an overall plan (*Water Security for the ACT and Region: Recommendations to the ACT Government 2007*) for the region. The plan was prepared by the Proponent for the ACT Government. The plan is aimed at developing a sustainable water supply for the region.

Permanent water conservation measures have been implemented in the ACT and have resulted in a reduction in consumption during the first year of introduction of 23%. Currently Stage 3 water restrictions are in place for the region. These aim to reduce water consumption by 35%. Although current demand is being met, severe droughts in the region have highlighted the fragility of the region's water security. If climate patterns such as those experienced during the 1997 to 2006 drought were to persist, CSIRO projections conducted in its Murray-Darling Basin Sustainable Yields Project (2008) show the Murrumbidgee River region average surface water availability would reduce by 30%, diversions by 18% and end-of system flow by 46%. The potential for population growth in the region increases the need to supplement the water supply. The NSW Government in its *Sydney-Canberra Corridor Regional Strategy 2007* has planned for an additional 46,350 people to be living in the Queanbeyan Local Government Area by 2031. According to the Australian Bureau of Statistics the population of the ACT is projected to increase by up to 169,500 or 50% by 2056. These sorts of drought conditions coupled with expected population growth in the region mean current water supply would be at risk of not being able to meet the region's requirements. On this basis the project is necessary to meet the projected demands of future growth as well as securing current water supply.

The Proponent has formulated the project in order to avert such a situation occurring. The development of this infrastructure will supplement the region's water supply by providing an extra 8 to 10 gigalitre per annum to the Googong Reservoir. The reservoir provides a major supply of drinking water to Canberra and Queanbeyan. Currently the reservoir is at approximately 53% capacity, not accounting for any recent water recharges due to rainfall in the area.

Alternative routing for the pipeline has also been raised as an issue by a number of submitters. Concerns relate to Burra Creek being an unacceptable location for discharge waters on the basis that existing Creek geomorphology and biodiversity are unable to sustainably support the expected flows. The Proponent has detailed in its Preferred Project Report the reasons for choosing this particular pipeline route against other alternatives. The Department is satisfied that the Proponent has undertaken an appropriate and rigorous route selection process. While there may be alternatives, the Proponent has appropriately balanced environmental, economic and practiced engineering factors to determine a pipeline route that provides acceptable environmental and land use planning outcomes.

A large proportion of submissions raised issues regarding certain portions of the chosen pipeline route. In particular the last kilometre of pipeline that discharges into Burra Creek was questioned due to the perceived land use impacts it would have on surrounding landowners. The Proponent upon consideration of these submissions decided to alter the pipeline route. Reasons for this alteration include minimisation of noise impacts from the construction and operation of the pipeline outlet to residents located within Burra, minimisation of clearing of areas of Endangered Ecological Communities as well as minimising geomorphological impacts from having the pipeline avoid crossing a number of minor creeks. Based on recommendations contained in submissions the pipeline outlet was moved further upstream of the original location to a point just above the Williamsdale Road crossing of Burra Creek. Such an alteration is permitted under Part 3A of the *Environmental Planning and Assessment Act 1979*. The Department supports the Proponent's decision to alter the pipeline route as a response to the concerns raised in submissions.

On the basis of project justification the Department therefore accepts the Proponent's justification for extra water infrastructure as a means of augmenting existing supply in light of the existing supply risks and forecast population growth. Based on adherence to the recommended conditions of approval, the Department is satisfied the project will not cause adverse environmental impacts resulting from the construction and operation of the pipeline along the route that is contained in the Preferred Project Report.

5.2 Geomorphology and Hydrology Impacts

Issue

The project would have the capacity to transfer up to 100ML/day of water, subject to maintaining environmental flows in the Murrumbidgee River. The Proponent undertook an assessment of the hydrological and geomorphological impact of the project on waterways at the intake and outlet of the pipeline as well as any waterways to be crossed along the proposed pipeline route. This included analysis of the impacts to the Murrumbidgee River during normal and low flow conditions as well as at times of flood. Similar analysis was performed on Burra Creek. As the outlet location was changed to be further upstream of Burra Creek, a revised assessment of impacts was conducted and incorporated into the Preferred Project Report. The Proponent's assessment concluded that expected discharge volumes would not cause a significant impact to the existing hydrology and geomorphology of Burra Creek.

The Department has assessed the potential geomorphological and hydrological impacts of the pipeline located within the State including the outlet location at Burra Creek and downstream to the Googong Reservoir. The Department did not undertake an assessment of the pipeline in the area surrounding the proposed Murrumbidgee River intake structure, since the first three kilometres of the pipeline including the intake are located in the Australian Capital Territory. This part of the pipeline will be assessed by the relevant authorities within that Government area.

Submissions

A number of submissions raised the following issues in relation to the impact of flows on Burra Creek hydrology and geomorphology as well as waterways that cross the pipeline easement:

- inadequate application of historical flow data for Burra Creek;
- conclusions of impact to Burra Creek are based on assumed flows that are less than the expected flows proposed by the Proponent;
- flow impacts on London Bridge karst structure;
- potential increase in pool widths with the loss of fringing vegetation under prolonged periods of flow transfer and exposure of underlying sediments to flows;
- potential for localised undercutting and lateral stability of banks due to the higher flows operating on banks for longer durations; and
- a potential temporary increase in turbidity and bed smothering sediments as a result of the release of sediments through the predicted channel adjustments.

Consideration

One of the key concerns raised by the agencies and public submissions was the impact of increased flows to Burra Creek. The actual amount of water that would be transferred per day would be dependent on dam storage levels in Canberra, river flows, demand and the time of year. The assessment undertaken by the Proponent indicates that the average supply rate from Angle Crossing to Googong would be around 8-10 Gegalitres per year, without water input from the Tantangara Transfer (not a part of the current proposal). With the inclusion of Tantangara, predicted flows would increase to 10-15 gegalitres per year depending on environmental parameters. There is low probability that this level of water would be pumped continuously due to water supply availability and varying demand.

Based on 23 years of historical data, Burra Creek flow is characterised by a near ephemeral flow regime, with numerous and prolonged periods of very low to zero flow. Anecdotal evidence from members of the local community also notes that the recent drought has shown very low to zero flow, but also identifies that large flows have historically characterised the Creek for long periods of time.

Geomorphological impacts resulting from pipeline discharges are expected to occur in the lower reaches of Burra Creek towards the end of reach three and along reach four as shown in the Environmental Assessment. These areas are characterised by a lower gradient, wider valley setting and sinuous channel shape. Whereas the upper reaches of Burra Creek channel beginning from the outlet location are predominantly confined valley, steeper gradient and bedrock based. Channel disturbance is unlikely to occur in these reaches. Impacts likely to occur to the lower reaches of Burra Creek channel include riffle zone adjustment, existing pool disturbance, bank instability and mass sediment release.

On the basis of existing creek flow rates and channel morphology described in the Environmental Assessment, the Proponent argues that natural flood flows would still be the dominant factor that would change channel conditions. Due to existing current low flows the potential morphological impacts identified are considered to be within the bounds of the recent variability in channel form. Modelling results conducted by the Proponent indicate that a maximum 100 megalitre per day flow will result in an increase in the depth of water of between 0.1 and 0.5 metres. Figure 5.1 illustrates this depth variation between the expected maximum discharge and an inundation recorded on 5 August 2008 (representative of a typical one in 3 month flood event) on a receiving section of Burra Creek. The figure indicates the maximum predicted discharge volume will not significantly impact the waterway. Flow rates predicted by the Proponent utilising the maximum discharge rate are expected to range from 0.1 up to 0.9 metres a second. This is approximately equivalent to walking pace and on its own would not be sufficient to cause significant erosion of the waterway. In terms of flooding the maximum daily discharge rate would represent approximately 3% of a once in two year flood event, this represents less than a 5 centimetre increase in such flow levels.

Figure 5.1: A representative model of maximum pipeline flow and an inundation event recorded on 5 August 2008 overlaid on a section of Burra Creek approximately 3.1 kilometres from the preferred project discharge point.



The Department is satisfied that impacts to Burra Creek associated with the pipeline discharge will not alter channel morphology to such an extent that adverse impacts would result at a level greater than has naturally occurred in the historical record. The creek has been subject to significant alterations in geomorphological form in the recent past and is still in a state of adjustment. It must be noted that 23 years of historical flow data is a relatively short length of time in which to determine the predominant hydrology and resultant geomorphology of Burra Creek. Since colonisation, Burra Creek has been subject to significant land clearing and subsequent erosion that has likely altered channel morphology. The Department therefore considers that impacts from the pipeline discharges are not detrimental to existing Burra Creek channel geomorphology. The Department

however does have concerns relating to the relatively short historical flow record and the potential for variable future flows as well as the potential of pipeline discharges to amplify the effects of periodic flooding.

In order to mitigate against concerns relating to the short historical record, the Department has recommended an effective monitoring and mitigation program be implemented. Such a program was requested in submissions by the NSW Office of Water. This program shall include baseline monitoring prior to the introduction of any flows to the creek so that any changes resulting from pipeline discharge can be accurately measured. The Proponent should monitor impacts to Burra Creek during construction, operation and non-operational phases. Mechanisms will be in place to immediately investigate any anomalous results. The Proponent should incorporate mechanisms for the management and mitigation of any impacts on the waterways of Burra Creek. This may include soft or hard mitigation measures should they be required such as revegetation or engineered bank stabilisation. This Plan should be presented for approval to the Director-General and relevant government agencies prior to any construction occurring. In this manner the actual flow rates and their potential impacts on the Creek can be identified, measured and responded to. This includes potential impacts to existing bank formations, natural ponds, adjacent riparian vegetation and the London Bridge Karst formations. In this manner concerns relating to the reliability of the historical record can be managed such that no unaccounted for impacts occur.

In order to mitigate against any adverse impacts from pipeline discharge during flood events, the Department has recommended a condition in line with the Proponent's commitments that would prevent the Proponent from discharging into Burra Creek during times of a one in two year flood event or greater. The Department has also recommended the Proponent prevent discharges during high flow events where discharges would result in flood levels being greater than a one in two year flood event. This measure will prevent pipeline discharges from causing any damaging unnatural flooding downstream of the pipeline outlet.

5.3 Water Quality Impacts

Issue

The quality of water being transferred from the Murrumbidgee River catchment system to the Burra Creek Catchment system including Googong Reservoir was assessed by the Proponent in its Preferred Project Report. This was undertaken in order to identify any potential impacts from mixing transferred water with water present in Burra Creek. The Proponent considers that the water quality impacts (timing, location, etc) are generally below the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC guidelines)*. The *ANZECC guidelines* provide a framework for recognising and protecting water quality for the full value of existing environmental values.

Submissions

The key issue raised in submissions in relation to water quality is whether the quality of the Murrumbidgee River is adequate for transfer to Burra Creek (and eventually Googong Reservoir), given the:

- transfer of disease between different catchments;
- valuable aquatic ecology including presence of threatened species in Burra Creek and Googong Reservoir;
- recreational use of Burra Creek and Googong Reservoir; and
- use of Googong Reservoir for drinking water in the ACT and NSW.

Consideration

The Environmental Assessment shows differences between Murrumbidgee River and Burra Creek water quality primarily relate to the surrounding geology of Burra Creek being limestone. Subsequently water quality at Burra Creek is found to have a higher electrical conductivity, lower turbidity and higher pH compared to Murrumbidgee River water. These values along with other values for Total Phosphorus, Chlorophyll Total Algae and Dissolved Oxygen are generally below levels prescribed in the *ANZECC guidelines*. However during times of high flows at the Murrumbidgee River, turbidity levels are shown to regularly exceed *ANZECC guideline* trigger values. The Proponent has committed to regulating turbidity levels during these times by incorporating grit collection hopper sumps at the intake/low lift pump station. The Proponent is also currently undertaking a Source Water Protection Program. The Program aims to improve water quality at its source rather than relying solely on treatment plants such as that found at Googong Reservoir. As part of this program the Proponent is identifying turbidity sources along the Murrumbidgee River and undertaking measures to limit their impacts on the waterway.

As a result of water quality parameters generally meeting the *ANZECC guidelines* as well as mitigation measures identified by the Proponent the Department is satisfied that water quality at the receiving waters of Burra Creek would not be compromised as a result of the project. Notwithstanding in order that such an outcome is maintained and not exposed to any unforeseen circumstances that may impact water quality, the Department recommends the Proponent be required to develop and implement a surface water monitoring program. The program would be prepared in accordance with the *ANZECC guidelines* and would be developed in co-ordination with the Department of Environment, Climate Change and Water and to the satisfaction of the Director-General.

The program should include baseline monitoring of uptake waters and receiving waters prior to construction at Burra Creek. The Program should provide a comparison between discharge data and baseline data according to guidelines in order to identify any significant changes between water quality present at the catchments. Sampling and data collection points should be identified at representative sites including downstream of the pipeline discharge point on Burra Creek and upstream. This should act as a control on water quality already in the catchment. Sampling should aim to measure ecosystem health with specific reference to phytoplankton, aquatic vegetation, macroinvertebrates, fish, temperature, salinity, dissolved oxygen, iron and manganese as well as any other measurement that may be required to ascertain ecosystem health. The program should include management measures in the unlikely case that guideline parameters are exceeded. The measures should specify when they shall be implemented and ways in which to assess their effectiveness.

By undertaking such a program, the Department considers that the Proponent can mitigate against any adverse impacts that may occur from piping Murrumbidgee water into Burra Creek. Adherence to the criteria specified by the Department would maintain the existing water quality of the Creek. Recent flow data presented in the Environmental Assessment shows flows to be very low to zero. Increased flows that adhere to the water quality objectives of the *ANZECC guidelines* may also result in an overall improvement of ecological health at Burra Creek.

5.4 Aquatic Ecology Impacts

Issue

The Murrumbidgee River contains a number of exotic species that could impact on the native aquatic ecology present at Burra Creek and Googong Catchment. Increased flows also have the potential to harm the existing aquatic ecology due to a potential to alter the existing present habitat, thus threatening existing native species. The Proponent has committed to screening all water being transferred from the Murrumbidgee River to Burra Creek so that no cross contamination of fish species occurs to the catchment.

Submissions

Submissions regarding aquatic ecology included the following issues:

- adequacy of assessment – consideration of species other than fish;
- potential impact to threatened fish communities;
- potential spread of Carp, Oriental Weatherloach; and
- impacts to macrophytes and other riparian vegetation from flows.

Consideration

Burra Creek Catchment has been shown to contain a diverse assemblage of aquatic organisms including fish species, long necked turtles, eastern water rats, Platypus macrophytes and riparian vegetation. The density and location of these species varies within the Creek. Assessment by the Department of the potential aquatic ecology impacts brought about by pipeline discharges has raised concerns regarding the following issues: Translocation of alien fish species, impacts from differences in water quality and impacts of increased flows on riparian and creek bed vegetation communities.

Two alien fish species, Carp and Oriental Weatherloach are considered a high risk for translocation from the Murrumbidgee River into Burra Creek and Googong Reservoir. They are known or suspected to be present in reasonable numbers at Angle Crossing. They are hardy and known to impact native fish communities and could pose a threat to any native threatened species such as the Macquarie Perch present in the Burra Creek catchment. It is also believed the transfer of these alien fish into Googong Reservoir will increase the risk of these species invading the more significant conservation reaches of the upper Queanbeyan River. The pipeline

proposal aims to avoid precipitating such an impact by including a 0.5 millimetre offtake filtering system to minimise the potential risk for the transfer of fish in all their life stages. Submissions criticised the efficacy of this filtering system at preventing alien fish egg transfer. Primary concerns related to the maintenance of the screens and the potential for exotic species to pass through the pipeline during times of maintenance. The Department has recommended the Proponent consult with the Department of Industry and Investment regarding the final design of the fish egg screens and the proposed operating procedures of the pump stations. The Department also requires the pump stations to be designed in such a way that pumping cannot occur when adequate fish egg screens are not in place. By incorporating such designs, concerns regarding translocation of alien fish species can be addressed. The Department is therefore satisfied that the project would not risk the existence of any threatened fish species present within Burra Creek.

Following its assessment of water quality, the Department considers that the quality of water being extracted from the Murrumbidgee River is not expected to be significantly different from Burra Creek water quality. Subsequently native species of flora and fauna living within Burra Creek are not expected to be adversely impacted by changes resulting from the pipeline discharge. In order to protect the existing aquatic ecology from any unforeseen impacts resulting from the discharge of Murrumbidgee River Water into Burra Creek the Department recommends the Proponent implement a surface water quality monitoring program. The NSW Office of Water also requested such a monitoring program in its submission. The program and its requirements are discussed in the Water Quality section (5.3). By implementing such a program it is believed the project will not have an impact on the existing environmental values of Burra Creek, including threatened species found in the area.

Other concerns relate to the threats posed by higher flows impacting on riparian vegetation along Burra Creek and on macrophyte beds and macroinvertebrate communities within the creek. Riparian vegetation was classified as in moderate condition by the Environmental Assessment while submerged macrophytes are a key component of aquatic ecology in the creek. The Department is satisfied with the information provided by the Proponent in its assessment that shows pipeline discharges would not change creek hydrology such that the present aquatic flora is adversely impacted. Should the maximum flow regime of 100 megalitres per day occur average water flow velocities are estimated to range from 0.1 to 0.9 metres a second and water depths in the creek are expected to increase 0.1 to 0.5 metres. The Department does not expect these changes to cause significant impacts to flora habitat along the creek, such as to natural ponds. The Proponent has however stated that some level of adjustment shall initially occur to such habitat as a result of the introduction of new flows. As a response and in line with comments from the Department of Environment, Climate Change and Water, the Department has recommended design measures be developed by the Proponent to limit the amount of impact likely to occur. If for unforeseen reasons flows are shown to be causing loss of ponding habitat, the Proponent is required to re-establish such habitat along the margins of the creek.

Although flows are not expected to impact aquatic ecology, the Proponent suggests that discharge to Burra Creek could occur at any time of the year, for varying lengths of time, however these flows would be gradually increased and decreased over a 48 hour period. Submissions from the NSW Office of Water noted that this period of time may be too short a period to avoid impacts to aquatic ecology. The Department has therefore recommended the Proponent maintain flow transfer volumes to reasonably and feasibly mimic natural flow regimes based on stochastic data provided in the Preferred Project Report. In this manner any impacts to aquatic ecology such as during native fish breeding seasons will be minimised.

The timing of flow releases also has the potential to impact on aquatic ecology within Burra Creek. Aquatic ecology has been shown in the Environmental Assessment to be adversely impacted by sudden increases and decreases to flow. Floods for example are shown to significantly impact macrophyte communities along Burra Creek. In order to limit any amplified impacts resulting from pipeline discharges during natural floods, the Department has recommended the Proponent be required to not operate the pipeline when Burra Creek is experiencing a one in two year flood or greater. As an additional measure the Department recommends the Proponent cannot operate the pipeline where additional water added to the existing water levels would result in the creek flooding. These measures would therefore protect aquatic ecology within the creek.

Consultation with The NSW Office of Water and the Department of Environment and Climate Change has shown there to be no particular concerns with the proposal as long as the discussed mitigation measures are included in

any recommended conditions of approval. The Department is therefore satisfied that with the inclusion of these measures, the pipeline proposal can avoid impacts to the aquatic ecology present at Burra Creek.

5.5 Terrestrial Flora and Fauna Impacts

Issue

Impacts to native terrestrial flora and fauna resulting from the construction and operation of the pipeline were examined by the Proponent. Endangered Ecological Communities of Box-Gum Grassy Woodland, Natural Temperate Grassland and Snow Gum Grassy Woodland were identified along the pipeline easement. Threatened flora species found to exist in the project area include the endangered Purple Pea, *Swainsona Recta*. Impacts are expected to result in the need for some vegetation clearing. The proponent expects to minimise this impact through careful route selection.

The Proponent has committed to minimise its development footprint in order to avoid where feasible, impacts to these communities. However, some removal of these communities is required. The Proponent in its Preferred Project Report has developed a compensatory habitat package in order to offset to a ratio of 3:1 any losses to these communities resulting from the construction of the project. Endangered Ecological Communities that are cleared during construction will also be re-seeded and re-habilitated once pipeline construction has finished. Table 3 below quantifies the expected impacts to Endangered Ecological Communities as a result of the pipeline proposal.

Table 3: Expected Quantity of Endangered Ecological Communities to be Removed

Endangered Ecological Communities	Native Vegetation (Hectares)
Box-Gum Grassy Woodland	11.1
Natural Temperate Grassland	1.7
Snow Gum Grassy Woodland	0.3
Other Native Vegetation	3.6
Total	16.7

The biodiversity assessment concluded there would be little likelihood that the proposed pipeline would impact upon populations of threatened fauna species recorded in the study area during surveys and contained in the *Atlas of NSW Wildlife*. However, the assessment accepted up to 36 threatened fauna could occur at the site from time to time. These include but are not limited to the Pink-tailed Worm Lizard, the Gang Gang Cockatoo, Rosenberg's Goanna and Eastern Bent-Wing Bats. Iconic species were also shown in the Proponent's assessment to be present in the area including, the Platypus, Common Wombat and Wedge-tailed Eagle.

Submissions

Submissions regarding terrestrial flora and fauna contained the following issues:

- impacts to Endangered Ecological Communities and threatened species known to reside in the area;
- the potential to impact the endangered Purple Pea, *Swainsona Recta* found at the site and the lack of adequate surveying of this species; and
- weed infestation during operation of the project.

Consideration

The Ecological Communities listed in Table 3 are defined under the *Threatened Species Conservation Act 1995* as endangered, that is, they are likely to become extinct or in immediate danger of extinction. The Preferred Project Report identified areas of Endangered Ecological Communities that are to be impacted by the proposal (Table 3). These areas were identified as a significant issue in submissions since measures to maintain or improve the ecological value of these areas into perpetuity were absent in the Environmental Assessment. The Proponent responded to these concerns in its Preferred Project Report by narrowing where feasible the pipeline easement in order to avoid impacts to these communities. There were, however, areas that could not be avoided. The Proponent therefore proposed a compensatory habitat package that offset the 16.7 hectares of Endangered Ecological Communities to be removed as a result of this project. The offset area is approximately 58 hectares in

size and is situated on the Williamsdale property adjacent to the easement in the ACT portion of the project. According to offset principles which aim to maintain or improve the value of habitat expected to be lost, this area was shown by the Proponent to contain a sufficient quantity and quality of like-for-like endangered ecological communities. The Department of Environment, Climate Change and Water was satisfied with the offset proposed by the Proponent and the measures taken to avoid impacts to Endangered Ecological Communities.

Likewise, the Department is satisfied, firstly, that the Proponent has committed to minimise the extent of clearing as much as possible. Secondly the Department is satisfied that reasonable measures have been taken by the Proponent to maintain or improve the value of habitat to be lost. The Department is supportive of actions that avoid larger areas of Endangered Ecological Communities found adjacent to the pipeline by reducing the pipeline easement width to a minimum feasible size. The Department recommends the Proponent provide details of the extent and location of easement size minimisation in the Construction Environment Management Plan contained in the recommended conditions of approval so that actual avoidance can be calculated. This plan is to be presented to the Director-General for approval prior to construction. The Department is also satisfied that where clearing is unavoidable, the package described is adequate in quantity and quality to offset the value of Endangered Ecological Community lost as a result of this project. However it must be noted that the Proponent in its Preferred Project Report did not commit to maintaining the offset in perpetuity. The Department has therefore recommended that this offset be secured in perpetuity. Once secured the sites will effectively no longer be available for any future development, instead they will be secured for conservation so that local biodiversity values are maintained and improved. In this manner the Department considers the project will not have an adverse impact on Endangered Ecological Communities along the pipeline easement.

Concerns were also raised in submissions that the environmental assessment did not adequately assess the potential impacts on the endangered Purple Pea, *Swainsona Recta*. The species has been identified as being present within and adjacent to, the pipeline easement. The Proponent's pipeline easement deliberately avoids an identified population of the Purple Pea found along the Goulburn-Cooma railway. However, there are also areas of the easement that remain unsurveyed for the Purple Pea. As the species is endangered, any population level impacts of the species caused by the construction of the pipeline need to be avoided.

The Department therefore recommends that any identified populations of the species be avoided by this project and fenced off during construction in order to mitigate against any disturbance. The Department also notes that sections of the easement remain unsurveyed for this particular species. Therefore it is recommended that the Proponent conduct a pre-construction survey of all suitable habitat along the easement in order to identify any unsurveyed populations of the species. Should any new populations be identified the Proponent should minimise any potential impacts through detailed design and alignment refinements in order to protect any endangered populations of the species. By undertaking these measures the Department considers any population level impacts can then be avoided.

Other threatened species are also known to inhabit the area where the pipeline easement is proposed including the Pink Worm-tailed Lizard, Gang-Gang Cockatoo and Rosenberg's Goanna. Although the Proponent did not identify any of these species during its survey, the easement contains habitat likely to support such species. In order to mitigate against the possibility that these or other threatened species are found along the easement the Department recommends the Proponent be required to avoid to the maximum feasible extent any clearing of native vegetation or removal of rocky outcrops. If habitat containing hollow-bearing trees is required to be removed then these should be checked for the presence of any native species and the hollows re-located or nesting boxes installed. Methods for the implementation of such mitigation measures should be included in a Flora and Fauna Management Plan as part of the Construction Environment Management Plan recommended to be included in the conditions of this project approval. By undertaking such measures the Department believes that adverse impacts to threatened species populations can be avoided.

In addition concerns regarding weed infestation within the pipeline easement were also raised by submissions once the pipeline is in operation. Submitters believed that weed infestation of the pipeline easement will spread to adjacent landholdings. In order to avoid such an impact the Department recommends the Proponent monitor areas along the project alignment for weed infestation for a period of two years after construction is complete. If infestations are found to occur then they should be eradicated and measures undertaken to limit their spread. Such mitigation measures should be included in the Operation Environment Management Plan as part of the

recommended conditions of this project approval. In doing so the Department considers weed infestation at the project site can be avoided.

5.6 Noise Impacts

Issue

The Proponent's noise modelling found construction of the pipeline and outlet structure is predicted to potentially exceed construction noise goals and vibration criteria at residential receivers as follows:

- approximately 10 residential receivers may exceed the *highly noise affected level* (75 dB(A)), when construction activities are within 40m of receivers;
- approximately 120 residential receivers may exceed the *noise affected level* (40-75 dB(A)) when construction activities are within 1,200 m of residences; and
- approximately 10 residential receivers have the potential to exceed human vibration goals, as they are located within 50m of construction activities

In addition, construction compound noise has been predicted to potentially exceed noise criteria at four residential receivers. The duration of impact on receivers to the *highly noise affected level* would be for one day, while impacts associated with the *noise affected level* for each receiver may be up to 37 days, and exposure to vibration for less than one day.

The Proponent has identified a number of measures to mitigate construction noise and vibration, including the preparation of a noise and vibration management sub plan.

Submissions

Submissions raised the following issues relating to noise impacts:

- construction noise and its adverse impact on residential receivers and livestock; and
- the noise impact resulting from air release valves during operation of the pipeline may have a negative effect on rural amenity as well as disturbing livestock.

Consideration

The Department is satisfied that the Proponent's noise and vibration assessment has been undertaken in accordance with the *NSW Industrial Noise Policy*, the *NSW Interim Construction Noise Guidelines (July 2009)* and *Assessing Vibration: A Technical Guideline* including consideration of worst case operating scenarios and meteorological conditions. The operation of the pipeline air release valves, outlet structure and mini-hydro power facility were assessed to comply with noise and vibration criteria at the surrounding receivers during operation. Changes to the pipeline route as described in the preferred project report are not predicted to expose any new surrounding residences to increased noise impacts as compared to impacts shown in the Environmental Assessment. Approximately 12 receivers will experience reduced construction noise. The Department's assessment of the Preferred Project Report agrees with the views of the Proponent in this regard.

Air release valves are used to release air which can accumulate in water transfer pipelines. The valves only operate during special maintenance operations. Submissions were concerned air releases would impact receiver amenity values. The Proponent has modelled the operation of valves and found the noise level would be below the noise goal of 35dB(A) at identified residential receivers. In addition, the operation of the air release valves would be for minimal time (approximately 30 seconds) and on a highly intermittent basis. During maintenance operations that involve the opening of air release valves the Proponent has committed to notify the community of such operations. There is also a proportionate reduction in the number of valves due to the reduction of pipeline length in the altered project, contained in the preferred project report. The Department considers that the assessment demonstrates air release valves would have no adverse noise impacts to identified receivers as part of the operation of the pipeline. Consequently, the Department is satisfied that the project would not result in unacceptable operational noise impacts to existing sensitive receivers.

During construction, the Department is satisfied that mitigation measures proposed by the Proponent are viable and feasible options that can minimise the modelled noise impacts to sensitive receivers. Mitigation measures are explained in the Preferred Project Report, including mitigation to muffle noise and procedures on the timing and

number of plant to be used. The Department notes that exposure to construction noise is temporary and certain receivers will be exposed to a *highly noise affected level* for a maximum of one day out of the 18 month construction period. In order to coordinate the effective implementation of these mitigation measures the Department requires the Proponent to develop a construction noise and vibration management plan as part of the construction environmental management plan contained in the recommended conditions of approval. This plan is to be provided to the Director-General for approval prior to construction. The plan will be developed by a qualified acoustic consultant, agreed to by the Director-General and ensure the maximum feasible noise attenuation is achieved. In addition to these mitigation measures the Department requires the Proponent to utilise where feasible temporary noise attenuation barriers around relevant construction areas in order to shield potentially affected receivers who are modelled to exceed the noise affected level.

The construction noise and vibration management plan should also detail the procedure for notifying sensitive receivers of any construction activities that are likely to affect their noise amenity. This contact should be given within a reasonable timeframe to when the activity is scheduled to take place. A complaints procedure should be implemented by the Proponent in order to deal with any potential noise complaints arising from construction of the project. Any non-compliance should be dealt with in a contingency plan that is contained in the construction noise and vibration management plan.

As part of the mitigation measures proposed by the Proponent to limit noise at the site, the Department has also recommended construction and operational noise monitoring to verify that no excessive exceedances of the modelled noise impacts have occurred. These monitoring results should be provided in periodic reports that are to be presented to the Director-General. The details of noise monitoring and contingency plans to be implemented in the event of non-compliance are to be included in the construction noise and vibration management plan.

The Department is overall satisfied with the assessment conducted by the Proponent in relation to noise impacts. The Department considers that construction and operation noise resulting from the project will not adversely impact identified receivers.

5.7 Land Use Implications

Issue

Construction of the pipeline would potentially impact the use of the land for grazing and agriculture by requiring the stripping of topsoil, and restricting access for livestock and farming activities. As discussed in the Environmental Assessment, the construction corridor would generally be 40 metres wide, except in environmentally sensitive areas.

Submissions

Submissions relating to land use raised the following issues:

- loss of agricultural land during construction of the easement;
- disturbance of livestock from the construction and operation of the pipeline; and
- conflict with other land uses found along the easement particularly rock resources.

Consideration

The project is located within land zoned 1(a) General Rural, 1(d) Rural Residential, 5(a) Water Catchment, and 6(a) Recreation in the *Yarrowlumla Local Environment Plan 2002*. Predominantly the land is modified agricultural environment, mainly comprising livestock grazing, small scale cropping, pasture improvement and equine farms. In addition approximately 120 rural residential properties are scattered along the length of the pipeline corridor, and are concentrated along Williamsdale Road and near the altered pipeline outlet at Burra Creek.

The Environmental Assessment noted that as the pipeline would be located underground, operational impacts would be limited to maintenance operation, including periodic checking of above-ground air valves. Within the permanent, 15 metre pipeline easement, restrictions on the use of the land would include:

- land owners would not be able to erect a new, or change an existing building, structure, pipeline road, fence driveway or paving without the approval of the proponent; and

- approval would be required prior to planting trees, cropping, digging, ploughing or altering the ground level within the easement.

The Department recognises that the pipeline route has been selected to minimise impacts on land use, for example through road reserves where possible. In addition, the pipeline would be laid at sufficient depth to ensure most agricultural activities (such as cultivation, grazing of livestock and normal farming activities) would not be affected during operation of the pipeline. Furthermore, the Proponent would enter into a lease agreement with land owners regarding the easement and the restrictions. Submissions raised the issue that during construction there is potential for the pipeline to impact on grazing and agriculture. The Department considers such impacts to be minor. Any impact would be over a short period of time approximately 18 months and limited to the construction site (rather than the entire route for the entire time). The land being used for construction within the 40 metre easement is not considered to be of high agricultural value nor is it of sufficient size to negatively impact grazing. The Department therefore considers noise, soil and water quality impacts can be managed through its recommended conditions of approval. In addition the Department recommends the Proponent be required to re-habilitate any impacted land back to its pre-construction state, thereby maintaining the current land use.

Submissions have also raised the potential of the project to impact on identified hard rock resources within the pipeline easement. A geological evaluation of hard rock resources in the area, commissioned by a landholder at Williamsdale has shown the pipeline easement would potentially cross a resource containing in excess of 5 million tonnes of hard rock. The Williamsdale Quarry located approximately 2.5 kilometres from the pipeline easement is currently mining a similar resource. Hard rock mined in this quarry is used to supply the construction needs of the Canberra region. The Department, however notes that although a resource has been identified, further work needs to be undertaken by the landholder in order to establish the resources potential for development. Further, no planning or environmental approvals have been issued for extraction of this potential resource nor are there any current applications for such. To minimise the potential for future conflict between the project and the potential resource the Department recommends the Proponent undertake a review of potential conflicts between the project alignment and any identified resources existing adjacent to or along the pipeline easement. Such a review should consider all reasonable and feasible options for resolving any identified land use conflicts. The review shall be presented for the Director-General's approval prior to the commencement of construction. By undertaking such a review the Department considers this land use conflict can be resolved and managed in a way that balances the need for the project against hard rock resource needs.

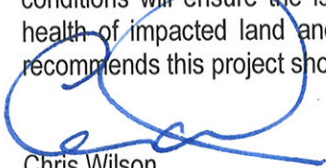
In addition to direct land use impacts, the Department has assessed the environmental impacts (including on noise and biodiversity) to determine the project impact on surrounding land use amenity. Based on its assessment, the Department is satisfied that the project can be constructed and operated to achieve acceptable environmental standards at existing surrounding receivers and is unlikely to result in future land use sterilisation.

CONCLUSIONS AND RECOMMENDATIONS

The Department has assessed the Proponent's Environmental Assessment, Preferred Project Report and Statement of Commitments regarding the Murrumbidgee to Googong Water Transfer. The Department has also assessed submissions received from public agencies and the community pertaining to this project. A pipeline alteration was made to the original route as a response to submissions made during the exhibition period. The altered project was presented in a Preferred Project Report and was subsequently made publicly available. The Department considers the pipeline route alteration does not significantly change the project. This report assesses the impacts of the newly routed pipeline and discharge of waters occurring within NSW. The Department has no issue with the altered pipeline alignment and welcomes such a change occurring as a positive response to issues raised in submissions.

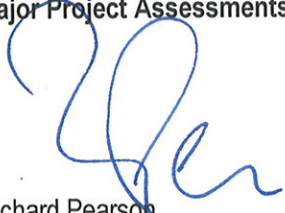
This proposal also occurs in land within the ACT, the project is currently being assessed under the *Planning and Development Act 2007*. The project has also been declared a "Controlled Action" under the "Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* and is being assessed by the Commonwealth Government. Relevant approvals from these Authorities are required prior to the commencement of this project.

Based on its assessment, the Department is satisfied that the Proponent has provided a robust and conservative assessment of impacts within NSW. The Department considers the project to be on balance, justified given its benefits to the broader community in securing future water supply for the region. In order to manage potential impacts resulting from the proposal, the Department has recommended a range of conditions of approval. These conditions will ensure the issues discussed in this report are managed in such a way that the environmental health of impacted land and the receiving waters of Burra Creek are maintained. The Department therefore recommends this project should be approved subject to the Department's recommended conditions of approval.



23.3.10

Chris Wilson
Executive Director
Major Project Assessments



Richard Pearson
Deputy Director-General



Sam Haddad
Director-General

24/3/2010

