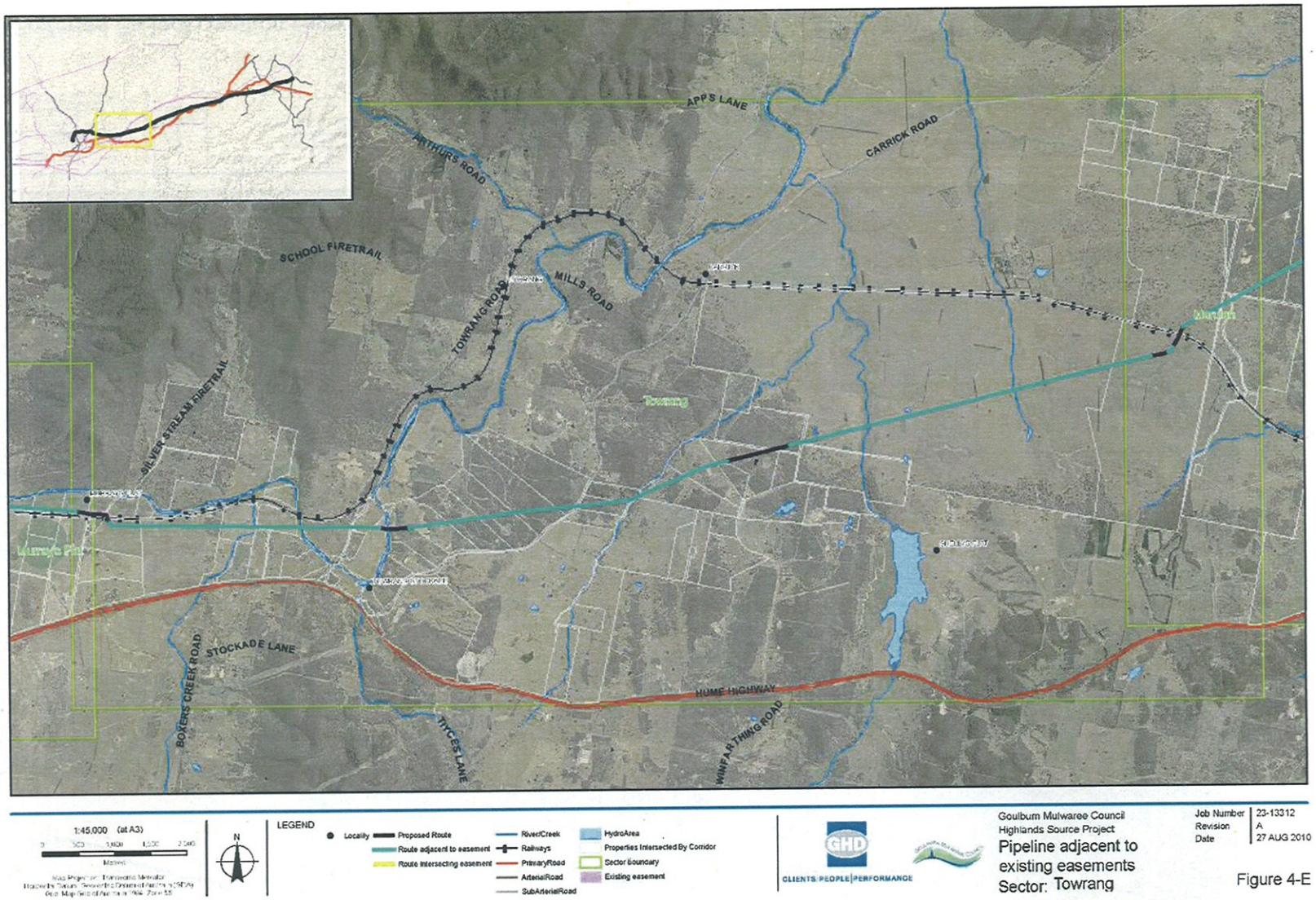

Figure 2e Preferred Project Location showing existing infrastructure easement (source GHD 2010)

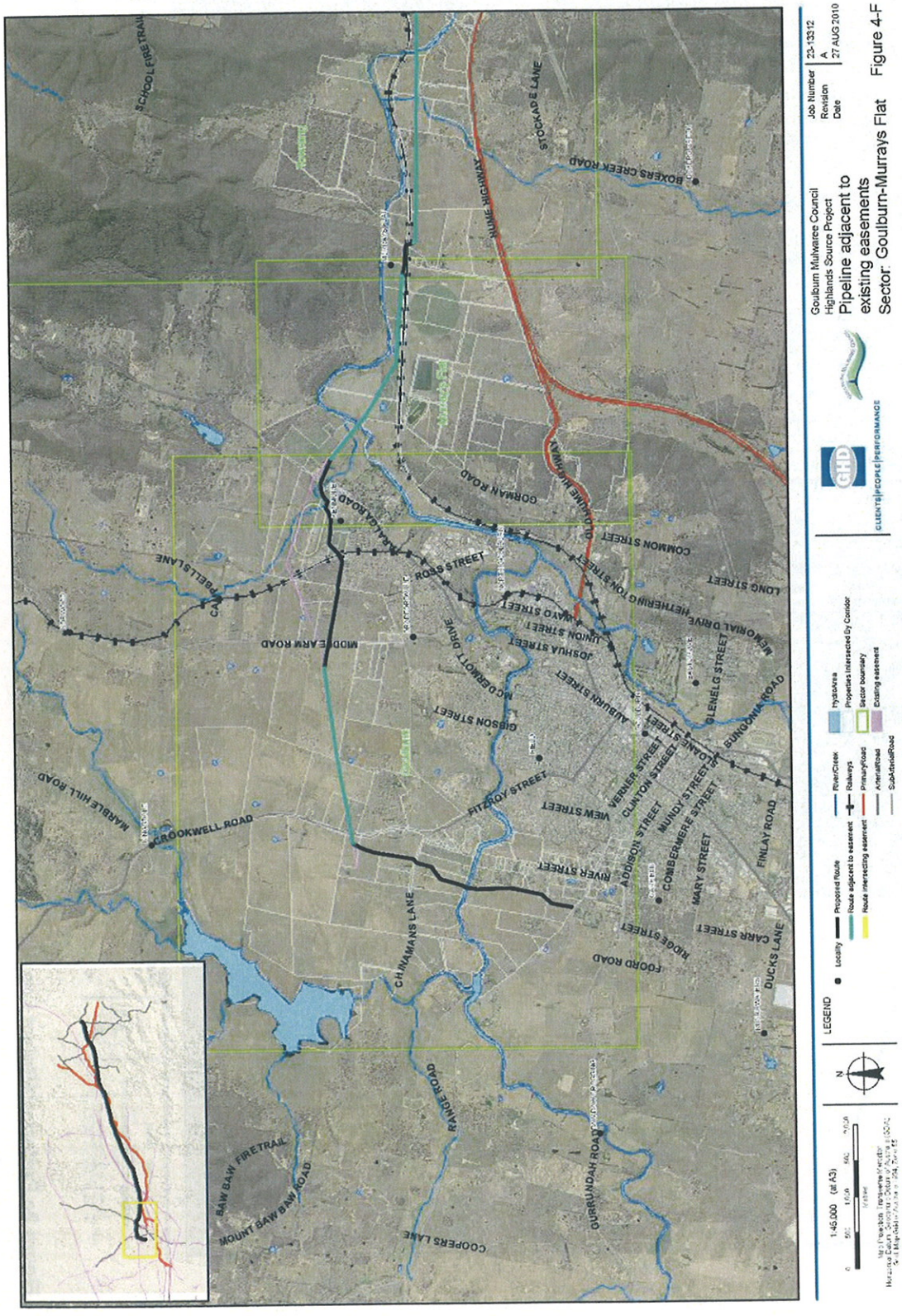

Figure 2f Preferred Project Location showing existing infrastructure easement (source GHD 2010)

2.2 Water Supply

The project will source water from the Wingecarribee Reservoir. The Wingecarribee Reservoir has a capacity of 25 900ML and receives water from the Wingecarribee River and transfers from Fitzroy Falls Reservoir. Wingecarribee Reservoir supplies water to the Bowral/Moss Vale region and transfers water to Warragamba Dam. Water extraction for the proposal was considered unlikely to affect Wingecarribee Reservoir supply commitments and operation, and is expected to have negligible impact on Sydney's water supply security. The proposed transfer rate of five ML/day equates to an additional transfer of 0.33 percent on top of Sydney's daily demand of 1,500ML/day (in 2006).

The water within Wingecarribee Reservoir is described as being soft with the occasional blue-green algal bloom and is currently used for drinking water. The Goulburn Water Treatment Plant is expected to be able to effectively treat different grades of raw water quality as it has more barriers to the progression of pathogens than does the Wingecarribee Water Treatment Plant.

2.3 Amendments to the Proposal

The Preferred Project and Submissions Report outlines refinements and changes to the project when compared to the exhibited Environmental Assessment. A refinement was defined as an alteration to the route assessed in the Environmental Assessment, where as a change was considered to be an alteration to the Project, such as the construction method or the proposed operation of the pipeline.

The following refinements and changes are included in the Preferred Project Report:

- removal of treated water alignment and transfer option from the proposal;
- realignment through the Werai-Glenquarry sector; Illawarra and Hume Highway crossings; Paddys River sector; Marulan River sector; Kenmore and Goulburn-Murrays Flat sector;
- changes to the connection point at Goulburn;
- changes to the alignment adjacent to the gas pipeline corridor;
- changes to waterway crossing methodologies; and
- changes to project timing.

2.4 Project Need and Justification

The Goulburn region experienced severe drought conditions over the period 2001-2007 with significant decreases in water storage levels as show in Figure 3. While supply levels increased sharply from mid 2007, they have fluctuated since this time and remain well below full supply level. The Department considers that the likely impacts of climate change will also reduce streamflows in the Goulburn catchment, further limiting available water supply. Based on CSIRO 2007[1] mid-range projections, it is possible that the Goulburn catchments could decline in secure yield by about 20 percent per degree of global warming further exacerbating water security issues in the region. The Wingecarribee catchment is considered likely to be less affected by climate change because of the higher rainfall and smaller climate change effects projected for the catchment due to its proximity to the coast[2].

1 CSIRO, 2007. Climate Change in Australia – Technical Report 2007

2 NSW Department of Commerce, 2009 – Goulburn Water Supply Strategy Review

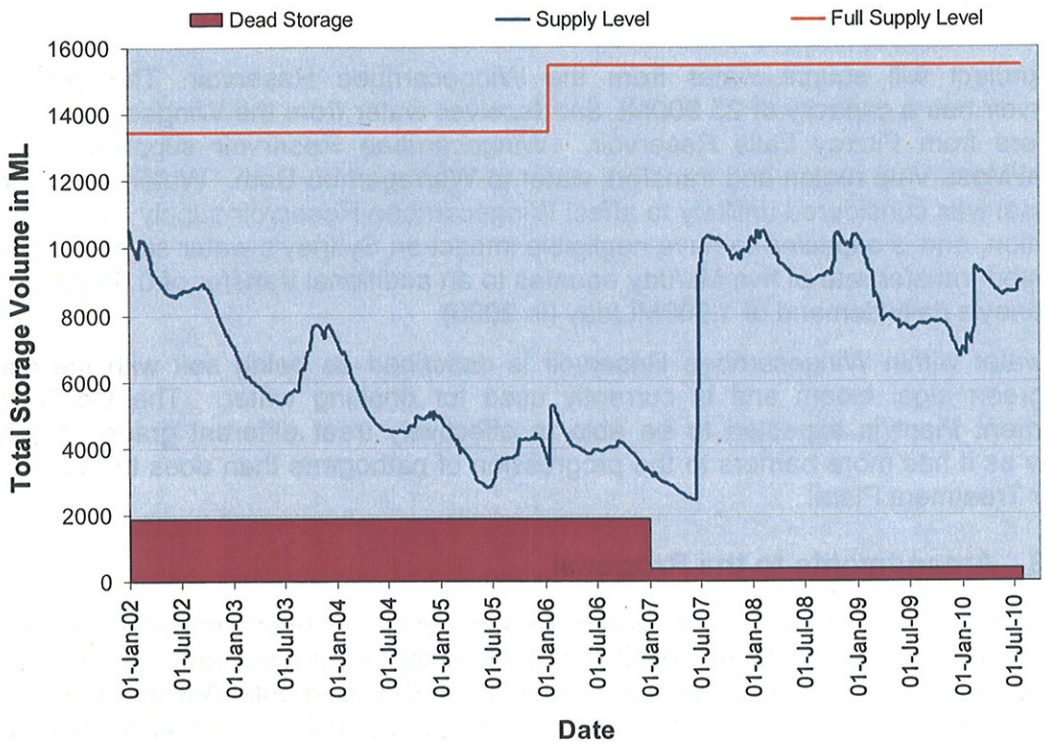

Figure 3 Goulburn Water Storage Supply Trace to 31 July 2010 (source GMC Water Supply Update 2010)

In response to the challenges in securing a sustainable water supply in a drying climate with increased demands for water, the Australian Government's initiative, Water for the Future, aims to provide national leadership in water reform. It has four priorities including Priority 3, Securing Water Supplies. In addition, an Intergovernmental agreement on a National Water Initiative was signed committing each state and territory government to a number of actions including:

- dealing with over-allocated or stressed water systems; and
- meeting and managing urban water demands.

At the regional level, the Sydney-Canberra Corridor Regional Strategy 2006-31 identifies Goulburn as Australia's first inland city playing an important role as the regional service centre for the central part of the Region. The plan notes the decline in population of -0.1 percent per annum but has adopted a forecast population growth of 0.5 percent per annum based on a strategic direction that supports and encourages settlement in these areas, along with economic development strategies.

The Proponent has commissioned investigations in conjunction with the Department of Commerce, NSW Public Works and Hunter Water Australia to investigate options for securing Goulburn's water supply. The Environmental Assessment and Preferred Project and Submissions Report summarise options and alternatives considered.

Of the schemes considered, four pipeline schemes were shortlisted; two of these schemes were based on a Pejar to Sooley Dam pipeline harvesting more water from the local catchments by piping water between the Goulburn Mulwaree Council storages and two based on the Highlands Source pipeline involving water transfer from Wingecarribee Reservoir to Goulburn. The Highlands Source pipeline options were preferred as water security and environmental risks associated with the Pejar to Sooley Dam options, such as impact on local waterways were considered to be too high.

In addition to recommending the Highlands Source Project, GMC's Integrated Water Cycle Management Strategy (May 2010) recommends the preferred Highlands Source scenario also include:

- augmentation of Goulburn Sewage Treatment Plant to produce effluent quality suitable for reuse farm application, centralised effluent reuse (including dual reticulation) and disposal of excess flows to the river;
- centralised effluent reuse scheme supplying up to 500 ML/annum of high quality recycled effluent, with gradual uptake of recycled effluent over 30 years for new urban release areas, along with irrigation of associated open spaces; and
- further expansion of the Demand Management Program including the engagement of a part-time water efficiency officer.

The release of the strategy post-dates the preparation and exhibition of the Environmental Assessment for the project. It is not known what the Council's position is on these additional recommendations at this time, however they do not form part of the project for which approval is sought.

The Department considers the pipeline is justified based on the need for securing water for the Goulburn region; and is satisfied that Wingecarribee Reservoir has the capacity to provide water to meet Goulburn's requirements without impacting on other water supply commitments. Furthermore, transferring water from the Wingecarribee catchment is considered to be desirable in the long term as this catchment is predicted to be less affected by climate change because of the higher rainfall and smaller climate change effects predicted for the Wingecarribee catchment[3]. The Department also considers the project to be consistent with Government frameworks and initiatives for securing water supply in the region.

3 STATUTORY CONTEXT

3.1 *Major Project*

On 9 July 2007 the Minister for Planning declared the project to be a project of regional environmental planning significance and therefore pursuant to section 75B(1) subject to Part 3A of the Environmental Planning and Assessment Act 1979 (EP&A Act). The Minister for Planning is, therefore, the approval authority.

3.2 *Permissibility*

The proposal is located on land within the Goulburn Mulwaree and Wingecarribee local government areas. As shown in Tables 2 and 3, the proposal is partially permissible and partially prohibited in the various zones that apply. The Environmental Assessment considered the Draft Wingecarribee LEP 2009, however, on the 16 June 2010 the Wingecarribee LEP 2010 commenced.

Notwithstanding the LEP provisions, the *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP) applies to the project. Division 24 of the Infrastructure SEPP relates to water supply systems with Clause 125 stating that water reticulation systems may be carried out on behalf of a public authority without consent on any land. The Proponent is a public authority and all works will be carried out by or on behalf of the Proponent and therefore the project is permissible within all zones.

3 Goulburn Water Supply Strategy Review January 2009

Table 2 Wingecarribee Local Environmental Plan 2010

Zoning	Permissibility
Zone E2 – Environmental Conservation	Prohibited
Zone E3 – Environmental Management	Prohibited
Zone IN1 – General Industrial	Permissible with consent
Zone R1 – General Residential	Permissible with consent
Zone R2 – Low Density Residential	Permissible with consent
Zone R5 – Large Lot Residential	Permissible with consent
Zone RE1 – Public Recreation	Prohibited
Zone RE2 – Private Recreation	Prohibited
Zone RU1 – Primary Production	Permissible with consent
Zone RU2 – Rural Landscape	Permissible with consent
Zone RU6 – Transition	Permissible with consent
Zone SP2 – Infrastructure (Public Utility Undertaking)	Permissible with consent

Table 3 Goulburn Mulwaree Local Environment Plan 2009

Zoning	Permissibility
Zone E2 – Environmental Conservation	Prohibited
Zone E3 – Environmental Management	Prohibited
Zone RU2 – Rural Landscape	Prohibited
Zone SP2 – Infrastructure	Prohibited
Zone SP2 – Infrastructure (Water Supply System)	Permissible with consent
Zone SP2 – Infrastructure (Rail Infrastructure Facility)	Prohibited
Zone SP3 -Tourist	Prohibited

3.3 *Environmental Planning Instruments*

There are no environmental planning instruments that substantially govern the carrying out of the project.

3.4 *Objects of the EP&A Act*

Decisions made under the EP&A Act must have regard to the objects of the Act, as set out in Section 5 of the Act. The relevant objects are:

(a) to encourage:

(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,

(ii) the promotion and co-ordination of the orderly and economic use and development of land,

(iii) the protection, provision and co-ordination of communication and utility services,

(iv) the provision of land for public purposes,

(v) the provision and co-ordination of community services and facilities, and

(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and

(vii) ecologically sustainable development, and
(viii) the provision and maintenance of affordable housing, and

(b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and

(c) to provide increased opportunity for public involvement and participation in environmental planning and assessment.

Of particular relevance to the environmental assessment and eventual determination of the subject project application by the Minister, are those objects stipulated under section 5(a). Relevantly, the objects stipulated under (i), (ii), (iii), (vi) and (vii) are significant factors informing determination of the application (noting that the proposal does not raise significant issues relating to land for public purposes, community services and facilities or affordable housing). With respect to ecologically sustainable development, the EP&A Act adopts the definition in the *Protection of the Environment Administration Act 1991.* This is discussed further in Section 3.5.

In addition to the above, the agency and community consultation undertaken as part of the assessment process (see Sections 1 of this report), address objects 5(b) and (c) of the Act.

3.5 *Ecologically Sustainable Development*

The EP&A Act adopts the definition of Ecologically Sustainable Development (ESD) found in the *Protection of the Environment Administration Act 1991.* Section 6(2) of that Act states that ESD requires the effective integration of economic and environmental considerations in decision-making processes and that ESD can be achieved through the implementation of:

(a) the precautionary principle,
(b) inter-generational equity,
(c) conservation of biological diversity and ecological integrity,
(d) improved valuation, pricing and incentive mechanisms.

It is important to recognise that while the EP&A Act requires that the principles of ecologically sustainable development be encouraged, it provides other objects that must be equally included in the decision-making process for any proposal.

The Department has considered the need to encourage the principles of ecologically sustainable development, in addition to the need for the proper management and conservation of natural resources such as: water resources; the orderly development of land considering landuse; the need for the project as a whole (which comprises a utility provision); and, the protection of the environment including threatened species in Sections 2, 1 and 1 of this report.

The Department considers that the project generally promotes the principles of ESD as it is proposed to be undertaken in a manner that minimises environmental impacts, including to biodiversity, and considers inter-generational equity through provision of water supply over the longer term for the city of Goulburn.

3.6 *Statement of Compliance*

On 14 May 2010 the Department notified the Proponent, in accordance with section 75I of the EP&A Act, that it was satisfied that the Director-General's environmental assessment requirements had been complied with.

4 CONSULTATION AND SUBMISSIONS

4.1 *Exhibition*

Under section 75H(3) of the EP&A Act, the Director-General is required to make an environmental assessment (EA) publicly available for at least 30 days. After accepting the EA, the Department publicly exhibited it from 28 May 2010 until 30 June 2010 (34 days) on its website, and at the Department of Planning, Information Centre Sydney; Nature Conservation Council of NSW; Goulburn Mulwaree Council; Exeter General Store; Marulan Post Office; Wingecarribee Shire Council and Moss Vale Branch Library. The Department also advertised the public exhibition in the following newspapers:

- Bowral Moss Vale Highland Post 27 May 2010 and 10 Jun 2010;
- Goulburn Post Weekly 27 May 2010 and 10 Jun 2010;
- Bowral Southern Highlands News 28 May 2010 and 11 Jun 2010; and
- Goulburn Post 28 May 2010 and 11 Jun 2010

Relevant State and local government authorities were notified of the exhibition in writing.

The Department received 14 submissions during the exhibition period - six submissions from public authorities and eight submissions from the general public and special interest groups.

A summary of the issues raised in submissions is provided in sections 4.2 and 4.3.

4.2 *Public Authority Submissions*

Six submissions on the EA were received from public authorities which are summarised below.

Sydney Catchment Authority (SCA) did not state a position on the proposal and notes that the largest potential impact on water quality would be during construction, however, a neutral or beneficial effect on water quality is likely to be achieved provided erosion and sediment control, and mitigation of soil, groundwater and contamination impacts are appropriately documented and managed.

Hawkesbury-Nepean Catchment Management Authority (HNCMA) did not state a position on the proposal but recommended amendments to avoid or reduce the impacts to endangered ecological communities and threatened species. HNCMA was concerned that development near Regional Biodiversity Corridors could adversely affect their ecological integrity and offered assistance in the preparation of the Biodiversity Management Strategy and the Offset Plan.

NSW Industry & Investment (I&I) did not state a position on the proposal but provided comments on fishery, agricultural issues and mineral resource issues. I&I supports the development of construction and operation environmental management and monitoring plans and outlined particular issues it considers should be addressed in the Conditions of Approval including:

- waterway crossing methodologies, site specific mitigation and rehabilitation plans with recommendations to use horizontal directional drilling or underboring under a number of waterways nominated as key fish habitat;
- farm access, management of biosecurity, weed and livestock risks; and
- Proponent consultation with local quarry operators regarding access to mineral resources that may be affected by the proposal.

Department of Environment, Climate Change and Water (DECCW) did not state a position on the proposal but provided comments on cultural and heritage investigation, conservation and protection; biodiversity surveys including extent, effort and accuracy, offsets and management measures and construction noise and vibration management, specifically in relation to construction compounds and access roads, hours of construction, management and monitoring

NSW Office of Water (NOW) did not state a position but was concerned about inconsistencies within the document including: creek crossings proposed; waterway rehabilitation; wetland impacts; use of non potable water supply during construction; and the Statement of Commitments.

Land and Property Management Authority (LPMA) did not state a position on the proposal but provided comments on the impact to identified Crown Land including Crown public roads, waterways and reserves including impacts on lands reserved for trigonometric, environmental protection and future public recreation purposes. LPMA also commented on the application of the *Native Titles Act 1993 (*Commonwealth*)*, easement or land acquisition and vegetation offsets.

It is also noted that a submission was received on the Preferred Project and Submissions Report from Wingecarribee Shire Council. This submission did not state a position on the proposal but requested ongoing communication with Goulburn Council through working group involvement, consideration of biodiversity offsets within the Wingecarribee Shire Council and for water course crossings to be constructed by horizontal directional drilling.

4.3 *Public Submissions*

Eight submissions were received from the public including two individuals who submitted two submissions each. Of the eight submissions, five objected to the project and three did not state a position but raised concerns. The key issues raised in public submissions are identified in Table 4 with the number of submissions in which they were raised.

Table 4: Summary of Issues Raised in Public Submissions

Issue	Number of submissions
Alternative options and route selection	7
Land use	7
Consultation	6
Rehabilitation	4
Adequacy of the Environmental Assessment	3
Project Justification	3
Flora and Fauna	3
Water Quality, Geomorphology and Hydrology	3
Sustainability	3
Visual	2
Noise	1
Waste	1

The Department has considered the issues raised in submissions in its assessment of the project.

4.4 *Proponent's Response to Submissions*

The Proponent provided a response to the issues raised in submissions (see Appendix B). The response included a Preferred Project and Submissions Report, which details the proposed refinements and changes to project. Key changes described in the Preferred Project and Submissions Report are summarised in section 2.3.

5 ASSESSMENT

The Department considers the key environmental issues for the project to be:

- flora and fauna impacts;
- creek crossings;
- operational water quality;
- land use;
- rehabilitation; and
- heritage.

All other issues are considered adequately addressed by the Preferred Project and Submissions Report and the Proponent's Statement of Commitments. The identified key issues are discussed in detail in the following sections.

5.1 *Flora and Fauna*

Terrestrial Ecology

Eight vegetation communities were identified within the proposed pipeline corridor, four of which meet the definition of two Endangered Ecological Communities - Southern Highlands Shale Woodland and Box-Gum Woodland. Box-Gum Woodland is also a Critically Endangered Ecological Community in the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). One threatened flora species, Camden Woollybutt (*Eucalyptus macarthurii)*, is likely to be directly impacted by pipeline construction.

Suitable foraging habitat is considered present for 30 fauna species listed in the *Threatened Species Conservation Act 1995* (TSC Act) and/or EPBC Act. Eight TSC Act listed species were observed on site, comprising five bird and three bat species and including two preliminary listed bird species. A further seven threatened species not recorded during field survey are considered likely to be present based on habitat availability and recent local records. A further 18 species may be occasional or opportunistic users of the habitats available.

Approximately 171.7 hectares comprising native and non native vegetation would be cleared for construction. Of this, 47 hectares would be permanently lost to provide a 6 metre wide easement for maintenance. The remainder would be reinstated through revegetation and other mitigative measures.

Table 5: Vegetation Clearing

Vegetation Type	Area (hectares)
Non-native vegetation communities	161.9
Native forest and woodland (non EEC)	5.4
Southern Highlands Shale Woodland (EEC)	4.3
Box-Gum Woodland (EED & CEEC)	0.1
Up to 100 individuals of Camden Woollybutt (*E, macarthuri*)	
Total	**171.7**

Riparian and Aquatic Ecology

The pipeline route is expected to cross 130 watercourses including 12 perennial waterbodies. The remainder are ephemeral or intermittent drainage lines. Key fish habitat has been identified in 21 waterways of which four are Class 2 – Moderate fish habitat and the remainder have low to moderate ecological values. A worst case scenario of trenching has been assumed for most crossings. Pipeline construction is expected to remove <0.01 hectares of riparian vegetation at each location though many drainage lines were considered

substantially degraded, with little to no native riparian vegetation, and often dominated by exotic species.

In some cases, potential impacts on riparian vegetation were avoided by selecting a crossing method (trenching or underboring) to reduce vegetation impacts or by locating the pipeline adjacent to existing easements that have been previously cleared or otherwise disturbed. Limiting the construction impacts to a six metre wide corridor further reduced impacts at waterway crossings.

Twenty two species of aquatic flora were recorded, of which five are introduced. No threatened aquatic flora or EECs were identified. The Macquarie Perch and the Australian Grayling, both listed in the *Fisheries Management Act 1994* (FM Act) or the EPBC Act, were identified as potentially occurring in the study area but were not recorded and are considered unlikely to occur in the study area.

Mitigation & Offset

Measures are included in the project design to avoid impacts to native vegetation, including the avoidance of individuals of Camden Woollybutt, EECs, mature trees, the Kenmore Creek Wetland and Crown Reserves gazetted for Environmental Protection. Further impacts were reduced by limiting the construction impacts to a six metre wide corridor in sensitive areas.

The Proponent has committed to the preparation of a Flora and Fauna Management Plan and a Bio-security Management Plan to detail site specific and species specific management measures before, during and after construction, including the preparation of an Offset Plan to address the residual impacts of:

- removal or modification of up to 9.8 hectares of native vegetation, including 4.3 hectares of Southern Highlands Shale Woodland and 0.1 hectare of Box-Gum Woodland;
- removal of individuals of Eucalyptus macarthurii (Camden Woollybutt); and
- removal or modification of habitat resources for native fauna species, including threatened woodland birds and microchiropteran bat species.

Potential offset locations have been identified at Marulan (178 hectare) and Goulburn (232 hectares). Both locations include similar fauna habitat to that affected including open forest and grassy open forest, low woodland and grassland and contain the endangered ecological community Southern Highlands Shale Woodland. Further detailed site surveys are proposed to determine the suitability of the proposed offset locations.

The potential offset site at Goulburn is adjacent to Crown land on the Wollondilly River. The Proponent has committed to development of an offset package prepared in consultation with DECCW, HNCMA, Wingecarribee Shire Council and the Department.

Submissions

Submissions from the DECCW, I&I and the Hawkesbury-Nepean Catchment Management Authority raised issues regarding the impacts of the project on threatened species and habitat; habitat fragmentation; over-cleared vegetation landscapes; rehabilitation; and the adequacy of the proposed offset. The DECCW submission also raised concerns regarding the survey effort undertaken for the project and supports modification of the project to further avoid biodiversity impacts.

The LPMA submission raised concerns about the impact on a Crown Reserve gazetted as Environmental Protection and the appropriateness and possible future burden of using Crown land at Goulburn as an offset site.

One public submission raised a concern regarding the impact of the project on *Eucalyptus macarthurii* and requested consideration of offset sites within the Wingecarribee Shire. Wingecarribee Shire Council also requested consideration of biodiversity offsets for impacts within its local government area.

Consideration

Terrestrial Ecology

The Department has considered the Proponents' biodiversity assessment and is satisfied that the level of assessment undertaken for the Highland Source Project is sufficient to enable the Department to form a view on the existing biodiversity values on site and likely extent and significance of impacts associated with these project elements. In assessing the acceptability of the biodiversity impacts, the Department has considered whether the Proponent has demonstrated that impacts on biodiversity have been avoided wherever possible and, where unavoidable, whether viable options exist to offset the impacts of the project consistent with "maintain or improve" principles.

The Proponent has sought approval for a specific route alignment with a variable six to 20 metre wide disturbance corridor. The Proponent's assessment stated that the potential impact on threatened flora and fauna species, endangered ecological communities and their habitats will not be significant, however, only selected locations along the corridor have been ground surveyed. The Department notes that where the survey could not be completed due to access restrictions, the Proponent's ecological assessment was, where possible, based on inspections from adjoining properties, road and aerial photograph interpretation and extrapolation.

The Department also notes that Black Gum (*Eucalyptus aggregata*) was listed as vulnerable in the schedules of the TSC Act on the 12 February 2010. This species was recorded along the alignment during the flora survey and more records of this species could be located on land that has not yet been surveyed. While the Proponent proposes to conduct further surveys, until these are finalised, it is not clear from the information provided how many individuals could be affected, whether these could be avoided with further refinement to the pipeline alignment or whether these have been considered in the preparation of the offset plan.

It is acknowledged that until detailed survey is completed, the exact location, extent and type of vegetation or species to be removed, cannot be accurately defined. However, it is also acknowledged that the area of endangered or threatened vegetation is a small proportion of the total area to be cleared for the project (refer to Table 5). Consequently, the Department has recommended that, following further survey and before construction commencement, the Proponent be required to submit pipeline route alignment plans to the Director-General that accurately show the location of threatened flora species and endangered ecological communities affected during construction. Development of the plans shall be consistent with commitments in the Environmental Assessment and Preferred Project and Submissions Report for avoiding impacts and/or reducing the impact to threatened flora species and endangered ecological communities. In this regard, the Department is supportive of development options that would reduce impacts to threatened flora and endangered ecological communities. This requirement addresses DECCW's concerns over the need for more detailed assessment of the presence of threatened flora species.

With respect to biodiversity impacts, the Department considers that a suitable offset is required . The Department therefore recommends that the Proponent be required to prepare an offset package to ensure that residual impacts on vegetation are adequately compensated for, consistent with the principles of "maintain or improve" given:

- the nature of vegetation to be cleared which comprises listed endangered ecological communities, threatened species and suitable foraging and/ or roosting habitat for up to 30 listed fauna species;
- the nature of proposed clearing which would involve the bisecting, fragmentation and increased edge effect impacts (even after rehabilitation) through operational maintenance activities along the pipeline corridor; and
- the extent of vegetation clearing including up to 9.8 hectares of native vegetation, approximately half of which comprises endangered ecological communities .

Whilst the Department accepts that the biodiversity impacts of the pipeline route could in principle be offset to ensure no net loss of biodiversity values in the long term, the offset locations investigated to date require further investigation to determine their suitability. Further to this, Wingecarribee Shire has specifically requested that impacts in its local government area also be offset within the LGA. Whilst the Department understands this request from a perspective of offsetting impacts locally, it is considered that location should be a secondary consideration to determining an appropriate offset for the overall impact of the proposal.

The Proponent has identified two possible sites for offsets, which are both located within the Goulburn-Mulwaree LGA, however further investigation will be required to determine their suitability for this purpose. Should it be demonstrated that either site can satisfactorily address the principles of maintain or improve in relation to the subject communities or species, the Department considers it inappropriate to reject these on the basis that they are situated outside the Wingecarribee LGA provided the optimum biodiversity outcome is achieved. Nothing within the Department's recommendation restricts the Proponent from considering the already identified sites in developing its offset package or other suitable locations, including within the Wingecarribee LGA, should it be considered that biodiversity outcomes could be further enhanced. Further, it is recommended that development of the biodiversity offset be undertaken in consultation with DECCW, LPMA, HNCMA and Wingecarribee Shire Council.

Aquatic Ecology

The Department is satisfied that, with the limit of clearing for construction within and adjacent to waterways reduced to six metres, the impact to riparian and aquatic values is unlikely to result in a significant impact as most of the waterway crossings are located adjacent to existing subsurface infrastructure easements and are typically already cleared of native riparian vegetation. For crossings, which have not been the subject of discussions with NOW and I&I, the Department is confident that ongoing consultation in this manner would ensure that agreed treatments could be determined. This is further discussed in Section 5.2.

Where waterway crossings require riparian vegetation clearing this would be subject to appropriate rehabilitation to ensure no net loss of ecology values. In this regard, the Department recommends that all watercourses disturbed during construction be rehabilitated to a standard equal to or better than the existing condition, in consultation with relevant agencies.

Overall, the Department is satisfied that there are no terrestrial and aquatic biodiversity constraints to recommending full project approval for the pipeline route identified as all impacts would be acceptable with the implementation of appropriate management measures as outlined. The Department also recommends that the Proponent be required to:

- limit native vegetation clearing to the minimal extent practicable to enable construction, including limiting the the construction easement to six metres within EECs and areas containing threatened species;
- detail procedures for clearing vegetation and minimising clearing within vegetated corridors in a Flora and Fauna Management Plan; and
- document the measures to control the spread of weeds, pests and diseases in a Flora and Fauna Management Plan.

5.2 *Creek Crossings*

The proposed pipeline route crosses 130 waterways. Bed instability, headward erosion and bank instability is present indicating past erosion at some locations. These issues could be further exacerbated by disturbance during pipeline construction if appropriate mitigation measures are not implemented.

While trenching is proposed for most crossings, other methods including anchoring the pipeline to the creek/river bed and underboring or horizontal directional drilling (HDD) will be

used at selected locations. Determining the technique to be adopted at each crossing included consideration of:

- the location of the existing underground services;
- waterway shape and existence of shallow bedrock; and
- riparian vegetation impacts.

Water flow through the pipeline can be stopped and released to the environment during maintenance using stop or divide valves. The volume of water released (scour water) would be dependent on the length of the pipeline section isolated. No scour water would be released directly into watercourses. Instead it would be pumped into a nearby farm dam or transported offsite to minimise further erosion and water quality impacts.

Mitigation

Measures were built into the project design to avoid and/or minimise impacts to waterways. General construction mitigation measures to be implemented include:

- erosion and sediment control measures;
- scheduling of construction to avoid heavy rain and flood events;
- minimising site disturbance and limiting the construction corridor to six metres for waterway crossings;
- determining the appropriate depth of the pipeline based on the type of crossing and depth to bedrock;
- implementing stream flow diversion where high volumes of water are present during construction

The Proponent also commits to reinstating creek profile and promoting stability of the waterway. Areas not accessible in preparing the Environmental Assessment will be subject to further investigation prior to construction.

A Scour Water Management Plan will be developed in consultation with SCA and DECCW.

Submissions

Submissions from the NOW, I&I, SCA and LPMA raised issues regarding the impacts of the project on waterways including impacts on access, water quality, water flow and rehabilitation. The NOW submission raised issues about creek crossings for access tracks as well as pipeline creek crossings, in particular the proposed trenching of all valley fill systems, waterway mitigation measures, wetland impacts and water supply during construction. One public submission raised a concern regarding the impact of the project on the local drainage patterns.

Consideration

The Proponent argues that the potential impacts on waterways of installing the pipeline will not be significant, however, not all crossings have been surveyed due to access restrictions. The Department notes that where access was restricted a desktop assessment considered trenching as a worst case scenario. In assessing the acceptability of the impacts associated with the project, the Department has considered whether the Proponent has demonstrated that waterway impacts have been avoided or minimised wherever possible and, where unavoidable, whether viable options exist for mitigation.

With respect to construction impacts on waterways, the Department considers that there is the potential for significant impacts on the hydrological and geomorphic aspects of the waterways if these impacts are not adequately managed. It is unclear whether the mitigation measures proposed for trenching would be adequate to prevent ongoing impacts on fragile geomorphic waterway types such as valley fill systems, particularly impacts to those systems identified as being considered: in good natural condition; with native riparian vegetation; or displaying existing bank instability or headward erosion. In particular, it is unclear whether current instability and erosion issues could be exacerbated, placing the pipeline at risk of future exposure and ultimately causing water quality and erosion impacts of a waterway if

ruptured. The Department also notes that the Proponent has stated that the major constraint to underboring under valley fills and other geomorphically fragile waterways were the associated construction costs. Construction cost in isolation is not considered an appropriate reason not to adopt a particular method if other reasons, including environmental, indicate that the benefits outweigh the costs.

Trenching was, in some instances, preferred over underboring or anchoring the pipeline to the bed due to:

- the offset construction distances required between the pipe and any existing underground services being at least the length of the drill to prevent accidental damage to the existing pipeline;
- a larger impact on riparian vegetation due to the required offset distances, for example, at Jaorimin Creek; and
- much longer completion time for each crossing (one to four days for trenching instead of three to seven weeks for anchoring the pipeline to the bed).

Based on the above information, the Department recognises that the proposed open trenching method could be more practicable than underboring for some creek crossings.

In this regard, the Department is supportive of commitments to completing additional investigations prior to construction including further aquatic ecology, engineering and soil property surveys in determining the appropriate method to cross the waterways. The Department recommends that the Proponent be required to adopt a risk management approach to determine the appropriate technique for each crossing. The Department also recommends that this include a series of factors for consideration which provide a filter approach to identify low risk crossings which could be crossed using standard trenching methods. These could include:

- condition and fragility of the waterway;
- impact on native riparian vegetation and aquatic ecology;
- impact on waterway stability and the pipeline protection; and
- likely rehabilitation measures and their long term success.

Those crossings which are 'captured' in the filter would need to be the subject of further consultation with relevant stakeholders such as NOW, I&I, SCA and Wingecarribee Shire Council before a final decision is made on the crossing method and a submission made to the Director-General for approval. Further it is recommended that the suite of the management and mitigation measures available be used to develop work method statements for each technique or crossing location.

The Department has considered the Proponent's waterway crossing geomorphology assessment, aquatic ecology assessment and Statement of Commitments and is satisfied that the level of assessment undertaken indicates that there are no constraints to recommending full project approval subject to the implementation of the recommended conditions of approval.

5.3 *Operational Water Quality*

Scour valves located at regular intervals along the pipeline will be located at low points though not within waterways. Scour valves enable the release of water from the pipeline for maintenance activities. It is noted that the raw water from Wingecarribee Reservoir generally meets the water quality guideline values of the *Fresh and Marine Water Quality Guidelines* (NHMRC, 2000) for the maintenance of aquatic systems and for crop irrigation or livestock watering except for the fluctuating levels of *E. coli* and cyanobacteria.

Scour water would not be released directly to waterways. The Proponent's preference is to release scour water to nominated farm dams along the route, however, if treatment is required before being released to the environment, it is proposed to either treat the water (by filtration or disinfection) on site or tanker the water to a suitable disposal area.

To minimise the impacts to drinking water the Proponent has committed to developing:

- a Hazard Analysis and Critical Control Point Plan to be incorporated into GMC's existing Drinking Water Quality Management Plan to document the operation and monitoring of the water quality within the pipeline;
- a Strategic Monitoring Plan to monitor the water quality within Wingecarribee Reservoir and the pipeline with measures to cease supply when results are not desirable;
- a cyanobacteria monitoring, assessment and management protocol;
- a Water Delivery and Blending Strategy to limit rapid or step changes in the characteristics of raw water; and
- a Pipeline Flushing and Maintenance Program.

The release of scour water would be managed by:

- maintenance scheduling – maintaining the pipeline outside of the periods when cyanobacteria are likely to be high;
- testing the water prior to release and either delaying the scour activity or providing on-site treatment (filtration or disinfection) prior to release; and
- release to an onsite reservoir to contain the scour water in agreement with the landholder and other relevant bodies where the raw water quality is adequate for the agreed use.

Submissions

The SCA requested that it be consulted on scour water management. LPMA raised concerns about a raw water outlet on land reserved for public recreation (Reserve 86639 – Simon Poidevin Park) and the associated health and safety concerns.

Two public submissions raised concerns about the release of untreated water onto private agricultural land limiting the future use of that land.

Consideration

Water from Wingecarribee Reservoir is currently used for drinking water and so no unmanageable health risks to Goulburn residents would be expected from the introduction of this raw water to the Goulburn supply system. The Goulburn Water Treatment Plant has more barriers to the progression of pathogens, including a Powdered Activated Carbon dosing facility to manage cyanobacteria and an additional ultra-violet microbial disinfection step, than does the Wingecarribee Water Treatment Plant. The Department considers that Goulburn Water Treatment Plant will appropriately treat water sourced from Wingecarribee Reservoir before it is added to the Goulburn drinking water supply.

The Department also considers that the measures proposed to manage scour water release are appropriate to prevent adverse impact from water with high readings for *E. coli* or cyanobacteria, however, it is recommended that management procedures for the release of scour water be included as part of a Operational Management Plan.

It is noted that the potential impact to Simon Poidevin Park has been removed by the route realignment through the Goulburn-Murrays Flat sector and therefore no further consideration of this issue is warranted. Based on the above information, the Department is satisfied that potential water quality impacts and management issues are unlikely to be significant and can be appropriately managed.

5.4 *Land Use*

The installation of the pipeline could restrict access to adjacent properties and enforce easements across private property which preclude or limit some activities and future development. The pipeline route is located mostly adjacent to existing infrastructure easements and takes into account required offset distances to existing services whilst taking advantage of opportunities to overlap the temporary construction corridor and existing easement (see Figure 2). The pipeline has been positioned, where possible, to be no closer than five metres to the nearest gas pipeline unless underboring is proposed where the offset distance needs to be increased to at least the length of the drill away from the existing gas pipeline to minimise the risk of puncture in any accident.

The Proponent has realigned the pipeline route in some cases to deviate from the existing infrastructure easements, to reduce impacts to:

- vegetation and fauna habitat, including EEC and threatened species;
- waterway crossings and wetlands;
- Crown land;
- potential archaeological deposits;
- existing infrastructure on private land and resource rich land; and
- risks to existing services and proposed future development.

The Proponent has also committed to undertaking the required notification and negotiation process as specified under the *Native Title Act 1993* (Commonwealth).

With respect to the location of air, stop and scour valves, and potential ongoing impacts to landuse and livestock, the Proponent has committed to ongoing consultation with the affected landholders.

The proposed pipeline also has the potential to permanently affect access to regionally significant mineral resources, particularly the:

- proposed Lynwood hard rock quarry near Marulan (approved 21 December 2005 and modified 7 May 2009 but yet to commence (figure 4); and
- Wandoo clay/shale/sand quarry near Hanging Rock Road (figure 5)

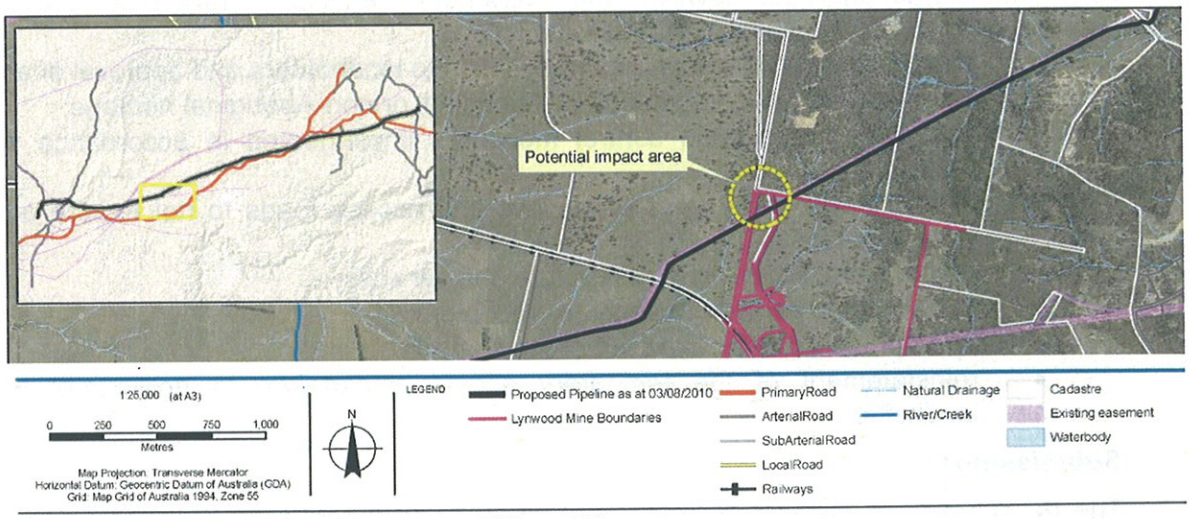

Figure 4 Potential impact to Lynwood Mineral Resource

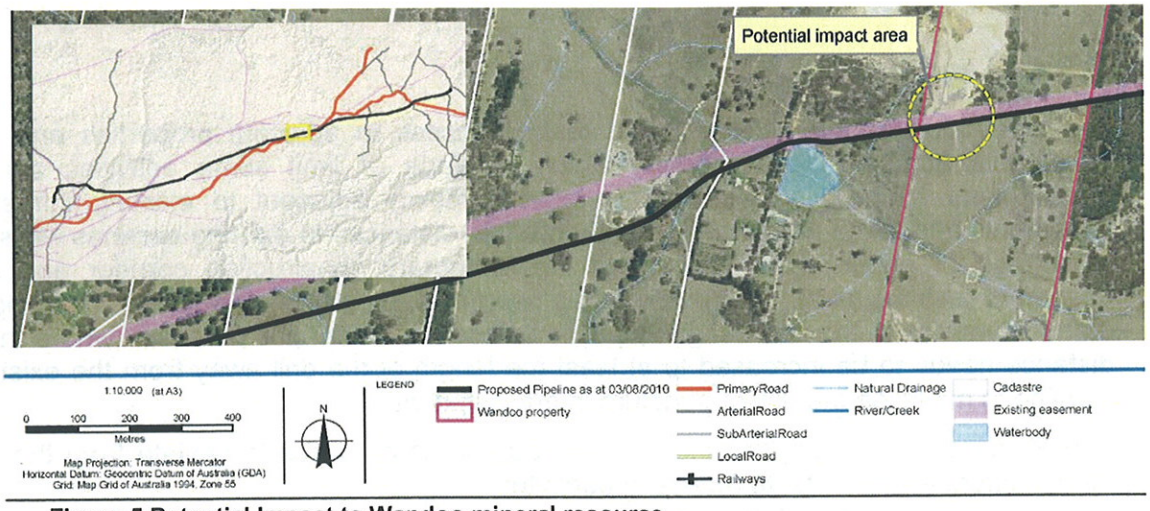

Figure 5 Potential Impact to Wandoo mineral resource

Permanent impacts on the accessibility of clay/shale/sand resources in Wandoo quarry have been reduced by modifying the design of the pipeline alignment through that property in consultation with the landowner. While the proposed pipeline route is located north of the proposed Lynwood quarry, it remains within an area identified as a potential mineral resource. In both these locations, the proposed pipeline is adjacent to an existing infrastructure easement. The Proponent has also committed to further consultation with the owner of the proposed Lynwood quarry.

Visual impacts of the proposal would result from the pumping station located at Wingecarribee Reservoir, the above ground air, stop and scour valves and the removal of vegetation along the easement. The Proponent has committed to preparing a Landscape Management Plan to address the visual impacts of the pump station and use shrubs and grasses to mitigate the impact of the valves where required.

Temporary Structures

Exact locations of compounds were not determined at the time the Environmental assessment was finalised, however the Proponent identified a range of factors to be considered in identifying suitable locations as follows:

- adequate consultation and compensation to landholders and approval of access;
- no impact to native vegetation or Aboriginal or non-Aboriginal heritage;
- sediment and erosion control measures implemented in accordance with the CEMP;
- to be located away from waterways and access roads to not require additional waterway crossings;
- do not disrupt existing infrastructure and services;
- to be located away from sensitive receptors;
- appropriate access in and out of the compound; and
- reinstatement of the temporary access undertaken in agreement with the landholder.

Submissions

The I&I submission raised concerns about internal or external farm access limiting efficient and sustainable operations of agricultural businesses and access to mineral resources. A submission from LPMA also raised concerns about impacts on Crown lands and the assessment of impacts of the Commonwealth *Native Titles Act 1993* on the proposal.

Five public submissions raised concerns including:

- the limits on current activities and future land use;
- the location of the easement, pipe and ancillary structures;

- visual impacts
- inconsistency of the proposed easement and the zoning under the LEP;
- compensation for, and acquisition of, the easement and impacts to property values;
- interaction with Brayton Power Station including the provision of water; and
- public liability and security issues.

Consideration

The Department is satisfied that the water pipeline cannot be located within the existing gas pipeline easement due to offset distances required to ensure the safety of both assets. It also considers that placing the easement adjacent to the gas pipeline easement includes some overlap of the temporary construction easement, would reduce the overall environmental impact of the temporary construction corridor.

In regards to the temporary construction site compounds and their associated access roads, the Department notes the stationary nature of these facilities and the risk they pose to noise amenity on surrounding properties, vegetation, waterways and Aboriginal and non-Aboriginal heritage if not sited appropriately. Accordingly, the Department has recommended a condition setting parameters that must be considered in determining the locations of site compounds. Where these cannot be met, the Director-General's approval is required. Any application for the Director-General's approval must show that the environmental impacts have been minimised to the greatest extent practicable.

Public submissions received raised concerns regarding the potential encroachment onto private property by the pipeline and requested that other alignment options be considered in preference to private property including one particular submission which raised concerns about the location of valves being a hazard to horses within the same paddock.

The pipeline would be mostly buried, with the exception of valves and is therefore considered unlikely to pose an ongoing constraint to existing landuse (which mostly comprises agricultural uses such as grazing) following rehabilitation. However, where there are specific issues surrounding the potential for valves to impact on current operations, the Department has recommended a condition requiring the proponent to consult with the landholder regarding measures to reduce the impact on those operations which may cause injury to livestock and horses.

Stop, air and scour valves are required at regular locations along the pipeline. The location of these valves has been, where possible, discussed and negotiated with landowners, however they cannot be removed entirely from most properties. The Department concurs with the proposed ongoing consultation with landholders in regards to optimising the locations.

The Department is confident that, where required, the visual impacts of the proposal would be appropriately mitigated through the use of vegetation screens and the Landscape Management Plan.

The Department considers that impacts on regionally significant mineral resources are likely to be minimal due to the proposed location of the pipeline adjacent to an existing infrastructure easement. The Department also considers that ongoing consultation with the affected landholders could provide for further opportunity to manage any the long term impacts on mineral extraction.

The Department notes that the acquisition of the pipeline easement would result in some limitations on future use, such as:

- landowners would not be able to erect a new, or change an existing building, structure, pipeline, road, fence, driveway or paving within the pipeline easement, without the approval of the Proponent; and

- approval to be sought from the Proponent prior to planting of trees, cropping, digging, ploughing or altering the ground level within the proposed pipeline easement.

The Department notes GMC has sought to negotiate easement acquisition with landholders. However, where agreement cannot be reached, the easement acquisition process and related compensation will be progressed under the *Land Acquisition (Just Terms Compensation) Act 1991*. Overall, the Department is satisfied that issues of acquisition have been adequately addressed in the Proponent's Preferred Project and Submissions Report and/or Statement of Commitments and that the pipeline would not unduly affect agricultural uses such as cultivation, grazing of livestock or normal farming activities in the long term due to it being located underground.

The Department agrees that all effort should be made to minimise intrusion onto private property where a reasonable and feasible alternative exists. The Department is satisfied that the route alignment did consider minimising the number of landholdings traversed and the impacts on those landholdings amongst other environmental, social, constructability and financial considerations.

It is noted that the provision of water to Brayton Power Station is not included within the scope of the project. If the project is approved, Goulburn Mulwaree Council, as proponent, will have approval to construct and operate the Highlands Source Project as described in the Environmental Assessment and as modified by the Preferred Project and Submissions Report for the purposes of securing water supply for Goulburn. Any additional infrastructure and purpose for use of the pipeline and water transferred, such as supply to Brayton Power Station, would be subject to a separate application and consideration on merit.

The Department is satisfied that short term and long term impacts to land use are not a constraint to recommending project approval.

5.5 *Heritage*

Non-Indigenous Cultural Heritage

The proposed pipeline directly impacts on house ruins and tree plantings located within the State Heritage Listed curtilage of the Kenmore Psychiatric Hospital Complex (HSPH1) and Veteran Allotments on the Wollondilly River at Murrays Flat.

The proposed pipeline would also come in close proximity to but not physically disturb a number of sites, including:

- brick bridge within 150 metres of the proposed pipeline route and within the Kenmore Psychiatric Hospital Complex;
- Lockyersleigh, Ruins of Kyle within 200 metres of the proposed pipeline route;
- chimney mound within 80 metres of the proposed pipeline route located northwest of Marulan; and
- concrete cellar within 50 metres of the proposed pipeline route located near Hanging Rock.

Management options proposed for the house ruins and tree plantings (HSPH6) include limiting the construction corridor width, archival recording, monitoring, subsurface testing and/or salvage excavation to identify the extent and nature of the deposits. Preparation of a Statement of Heritage Impact for the Veteran Allotments is also proposed. All other sites within close proximity to the pipeline would be fenced with high visibility fencing and/or have their location marked on maps and plans to minimise the risk of construction disturbance.

The Proponent has committed to investigating other options to avoid direct impacts to identified heritage items, such as the house ruins and tree plantings within the Kenmore Psychiatric Hospital Complex.

Indigenous Cultural Heritage

The proposed pipeline route would directly impact:

- three isolated finds including one with an associated Potential Archaeological Deposit (PAD);
- nine artefact scatters (five with an associated PAD); and
- seven PAD areas of moderate archaeological significance at a local level.

In close proximity to the site are a further:

- four isolated finds within 10-90 metres from the proposed pipeline route;
- five artefact scatters (one with an associated PAD) within 15-80 metres of the proposed pipeline route; and
- one PAD within 50 metres of the pipeline route.

Proposed mitigation measures for the directly impacted sites and/or PADs include the collection of surface artefacts and/or subsurface testing with the development of additional management options as appropriate for each site or PAD, such as salvage excavation. High visibility fencing and identification on relevant plans and maps is proposed for sites and PADs in close proximity to disturbance areas.

Submissions

The DECCW commented on the EA and supported recommendations for further testing, protection of sites not impacted and subsurface investigation of PADs.

The Heritage Branch of the Department of Planning provided additional comment on the impacts to the State Heritage Listed Kenmore Psychiatric Hospital and the Veterans Allotments and recommended conditions of approval to ensure the heritage impacts are appropriately managed commensurate with their heritage significance.

Consideration

The Department notes that the Goulburn Mulwaree Local Environmental Plan 2009 identifies a heritage conservation area which overlaps but does not completely cover the State Heritage Listed Kenmore Psychiatric Hospital site. The conservation area is shown in (Heritage Map - Sheet HER-013) of the LEP. Although, the proposed pipeline route would be located outside the heritage conservation area identified in the LEP, it is still within the State Heritage listed curtilage. A Conservation Management Plan[4] has been prepared for the Kenmore Psychiatric Hospital to provide guidelines for future use of the precinct, based on an understanding of the site's history and development. However the area covered by the Conservation Management Plan does not cover the area proposed to be impacted by the pipeline.

The Proponent's assessment indicates that the relationship between the identified sites and the Hospital complex is not known, however the house ruins (HSPH 1) are thought to exhibit characteristics of nineteenth century architecture and to pre-date the earliest available map (1898).

The Proponent's assessment concluded that the impact to the house ruins could be minimised through additional research and survey together with construction within a narrow corridor. However, the Department considers that the impact of the proposal on the heritage significance of the site considered as a whole is also unknown. Furthermore, the likely potential for archaeologically significant heritage to be located within the proposed pipeline corridor relating to existing and former uses of the site has not been determined. On this basis the Heritage Branch advised that for any works potentially impacting on the State Heritage listed item, the Proponent should be require to submit a Statement of Heritage

[4] Kenmore Hospital Complex Goulburn, Conservation Management Plan September 1993
Kenmore Hospital Goulburn Conservation Management Plan Review November 1999

Impact (SOHI) clearly identifying the significance of the element/s to the site as a whole and what the impact of the works would be on the heritage significance of the site.

The Department has therefore recommended several conditions, in accordance with the Heritage Branch's recommendations, to ensure impacts to heritage items are appropriately managed. The conditions would ensure that:

- statements of significance and Statements of Heritage Impact (for the impacts to State Heritage Register items) are carried out, by appropriately qualified persons approved by the Director-General, to ensure impacts to known and potential archaeological heritage are appropriately documented prior to construction within that area;
- all options to avoid impacts to heritage items are considered and where they cannot be avoided appropriately mitigated (such as archival recording and excavation) prior to construction;
- all works within the Kenmore Psychiatric Hospital curtilage and the Veterans Allotments are monitored by appropriately qualified persons. The appropriately qualified person is to induct contractors, subcontractors and other relevant personnel who will be working within these areas;
- appropriate protection of heritage sites not impacted; and
- the results of any archival recording and post works reports are prepared and provided to the relevant bodies.

The Department supports the Proponent's management commitments for the Indigenous cultural heritage impacts of the project and reiterates the need to consult with the Aboriginal stakeholders throughout the development of the subsurface excavation and/or salvage methodology and the ongoing management of any salvaged artefacts.

5.6 *Rehabilitation*

The Proponent proposes to restore and rehabilitate the construction corridor as soon as possible after construction. A two stage rehabilitation plan is proposed involving a rapid stabilisation stage followed by measures to ensure long term cover. During construction topsoil would be stripped and stored separately from the sub-soil at the edge of the corridor for later reuse in rehabilitation. Permanent cover would use locally native species where previous cover was native vegetation or improved pasture on agricultural land. In previously weedy areas, rehabilitation outcomes would be discussed with the relevant landholder and weed control measures developed with consideration of the surrounding areas.

Rapid reinstatement activities would occur progressively once trenches have been back-filled, compacted and construction crews have moved on, although some areas may need to remain clear during hydrotesting. Rehabilitation would be as agreed with the landholder and documented in the Property Construction Report or the construction environmental management plan for public land and would include:

- reinstatement or replacement of fences or gates;
- spreading of top soil and groundcover seeding;
- installation of erosion and sediment control measures, stock-proof fences; and
- ongoing monitoring.

The Proponent has indicated that works would be enforced by the withholding of a financial bond from the contractor until rehabilitation is completed to the required standard.

Longer term restoration objectives would be based on the existing condition of the site with advice from an agronomist and agreement with each landholder, including:

- ongoing weed management;
- maintenance of erosion controls; and
- monitoring of revegetated areas.

Specialist waterways restoration contractors may be used for the ongoing management of disturbed waterways.

It is proposed that the maintenance period for the long term rehabilitation would be a minimum of two years, to be determined by an agronomist, and five years after the final planting within areas with native riparian vegetation.

Submissions

Submissions regarding rehabilitation of the construction corridor were received from the SCA, I&I, LPMA and NOW. Five public submissions were also received about rehabilitation of the disturbed corridor. Most of these raised concerns about previous experiences with the existing infrastructure easement.

Consideration

Whilst disturbance to vegetation cover would occur during construction, this would be largely temporary and would be subject to stringent rehabilitation requirements consistent with existing landuse in consultation with the landowner. The only potential ongoing constraint to rural agricultural activities would be restrictions to the planting of deep rooted vegetation which may damage the pipeline. However, any such restriction would be limited to the permanent (six metre) easement directly above the pipeline. The Department believes that this is not likely to significantly restrict the ongoing use of the land.

The Department considers that rehabilitation and restoration needs to be considered for private land, native vegetation and waterways in detail, as the resultant impacts from the pipeline construction are different for each of these land uses. Further, the Department considers that specific consideration of waterway crossing rehabilitation is required and recommends preparation of a rehabilitation and restoration management plan, in consultation with I&I and NOW with input from agronomists, geomorphologists and ecologists where required, to be applicable to all landscape types and to identify the objectives and specific management measures for each type.

The preparation of Property Construction Reports is recommended for all properties directly affected and all waterway crossings clearly identified with rehabilitation and management measures to be developed in consultation with NOW, I&I and a suitably qualified expert in waterway restoration. Where significant native vegetation exists, Property Construction Reports shall be developed in consultation with DECCW.

It is the Department's opinion that the "completion" of rehabilitation monitoring should be based on the achievement of established performance measures rather than an arbitrary time period, however a minimum period should be nominated, particularly for more sensitive areas. These would include waterway crossings, areas supporting or rehabilitated with riparian vegetation and other native vegetation. A period of at least five years would be considered an appropriate minimum period unless it can be shown that the performance measures, established in a Rehabilitation Management Plan and approved by the Director General, have been met and can be shown to be self sustaining, prior to this time. Despite this, a minimum two year maintenance period for other non-sensitive areas, such as agricultural or agistment land may be sufficient to meet the required rehabilitation outcomes.

In addition to the above the Department also recommends that the Rehabilitation Management Plan, required as part of the Construction Environmental Management Plan, include procedures for top soil and sub-soil management within the construction corridor. The Operation Environmental Management Plan should also include or make reference to procedures for ongoing corridor maintenance including, any further rehabilitation measures and measures to control weed infestations.

6 RECOMMENDATION

The Department considers that the Highlands Source proposal would entail significant benefits to the Goulburn Mulwaree community by helping to secure water supply to cater for existing and future inhabitants of the local government area.

The key environmental impacts associated with the proposal relate to the physical disturbance of flora and fauna, creek crossings and heritage from construction of the pipeline and ancillary infrastructure.

Public submissions on the proposal focused on the project justification and local impacts including concerns regarding land use, agricultural and vegetation impacts, rehabilitation and visual intrusion of the facilities and objection to pipeline location on private property.

The Department has assessed the Proponents' Environmental Assessment, Preferred Project and Submissions Report and Statement of Commitments as well as the submissions received from agencies and the public on the proposal. Based on its assessment, the Department is satisfied that sufficient justification exists for the project and that the Proponent has, for the most part, undertaken a robust and conservative assessment of the impacts of the proposal and that the impacts of the proposal can be managed and/or mitigated to an acceptable level.

The Department notes that the project will assist in achieving the aims of the Australian Government's framework, Water for the Future, the NSW Government's Intergovernmental agreement on a National Water Initiative and GMC's Integrated Water Cycle Management Strategy by improving the security of water supply within the Goulburn Mulwaree region.

The Department considers that, on balance, the project is 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, a range of conditions of approval are recommended. These conditions would ensure the key issues addressed in this report are appropriately addressed and managed to acceptable levels. The conditions will also ensure that commitments made in the Environmental Assessment and Preferred Project and Submissions Report are implemented as well as strengthening the management and mitigation of identified impacts where the Department, other government agencies, landholders and the general public have raised these.

The Department therefore recommends that this project be approved subject to the recommended conditions of approval.

4/11/10

Director
Infrastructure Projects

7.11.10

Executive Director
Major Projects Assessment

12/11/10

Deputy Director-General
Development Assessment & Systems Performance

APPENDIX A ENVIRONMENTAL ASSESSMENT

See the Department's website at
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=1356

APPENDIX B PROPONENT'S PREFERRED PROJECT AND SUBMISSIONS REPORT

See the Department's website at
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=1356

APPENDIX C OTHER RELEVANT REPORTS

Australian Government's framework, Water for the Future
See the Australian Government's website at:
http://www.environment.gov.au/water/australia/priorities.html

CSIRO Climate change in Australia: technical report (2007)
http://www.csiro.au/resources/Climate-Change-Technical-Report-2007.html

Department of Commerce Goulburn Water Supply Strategy Review (January 2009)
See the Goulburn Mulwaree Council's website at:
http://www.goulburn.nsw.gov.au/files/8211/File/Goulburn_Water_Supply_Strategy_Review.pdf

Hunter Water Australia Goulburn Mulwaree Council's Integrated Water Cycle Management Strategy Study (May 2010)
See the Goulburn Mulwaree Council's website at:
http://goulburn.local-e.nsw.gov.au/files/16537/File/GMC_IWCMFinal_2010.pdf

Intergovernmental agreement on a National Water Initiative
See the National Water Commissions website at:
http://www.nwc.gov.au/resources/documents/Intergovernmental-Agreement-on-a-national-water-initiative.pdf

NSW Public Works Integrated Water Cycle Management Evaluation Study (December 2009)
See the Goulburn Mulwaree Council's website at:
http://www.goulburn.nsw.gov.au/files/15248/File/20091216_GMCIWCMEvalStudyV5Final.pdf

APPENDIX D RECOMMENDED CONDITIONS OF APPROVAL