

# ASSESSMENT REPORT

## PENRITH LAKES SCHEME LEWIS LAAGOON MODIFICATION (DA4 – MOD 7)

### 1 BACKGROUND

The Penrith Lakes Development Corporation (PLDC) seek approval to modify DA4 for the development of the Penrith Lakes Scheme in the Penrith City Council local government area, pursuant to section 75W of the Environmental Planning and Assessment Act 1979 (EP&A Act). The proposal seeks to retain a temporary water body known as Lewis Lagoon as a permanent water quality control pond as part of the Penrith Lakes Scheme.

The Scheme's extraction and rehabilitation operations are governed by the State Environmental Planning Policy (Penrith Lakes Scheme) 1989, including the structure plan currently in force. Development for the purpose of implementing the Penrith Lakes Scheme should generally be in accordance with the structure plan (Figure 1).

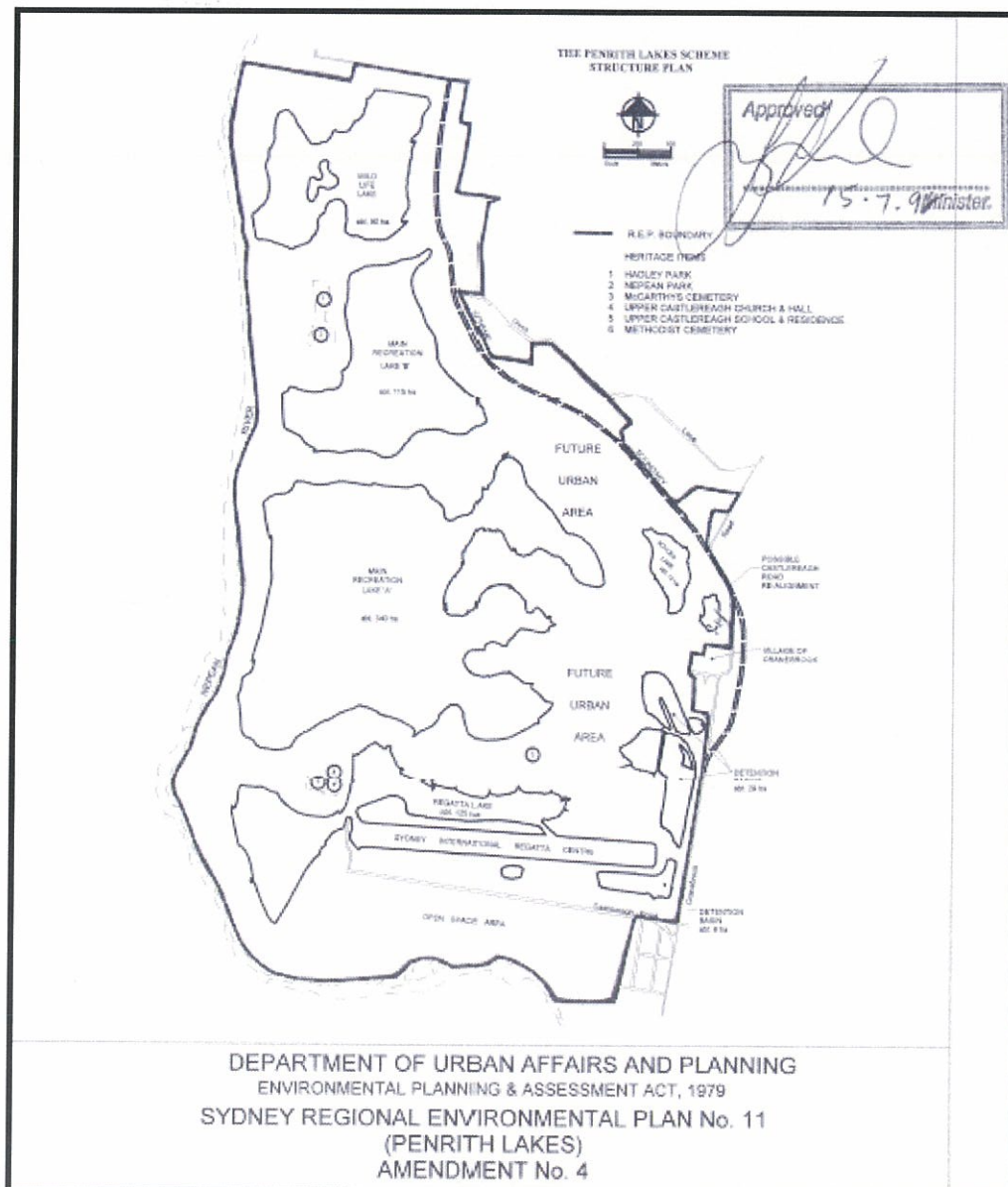
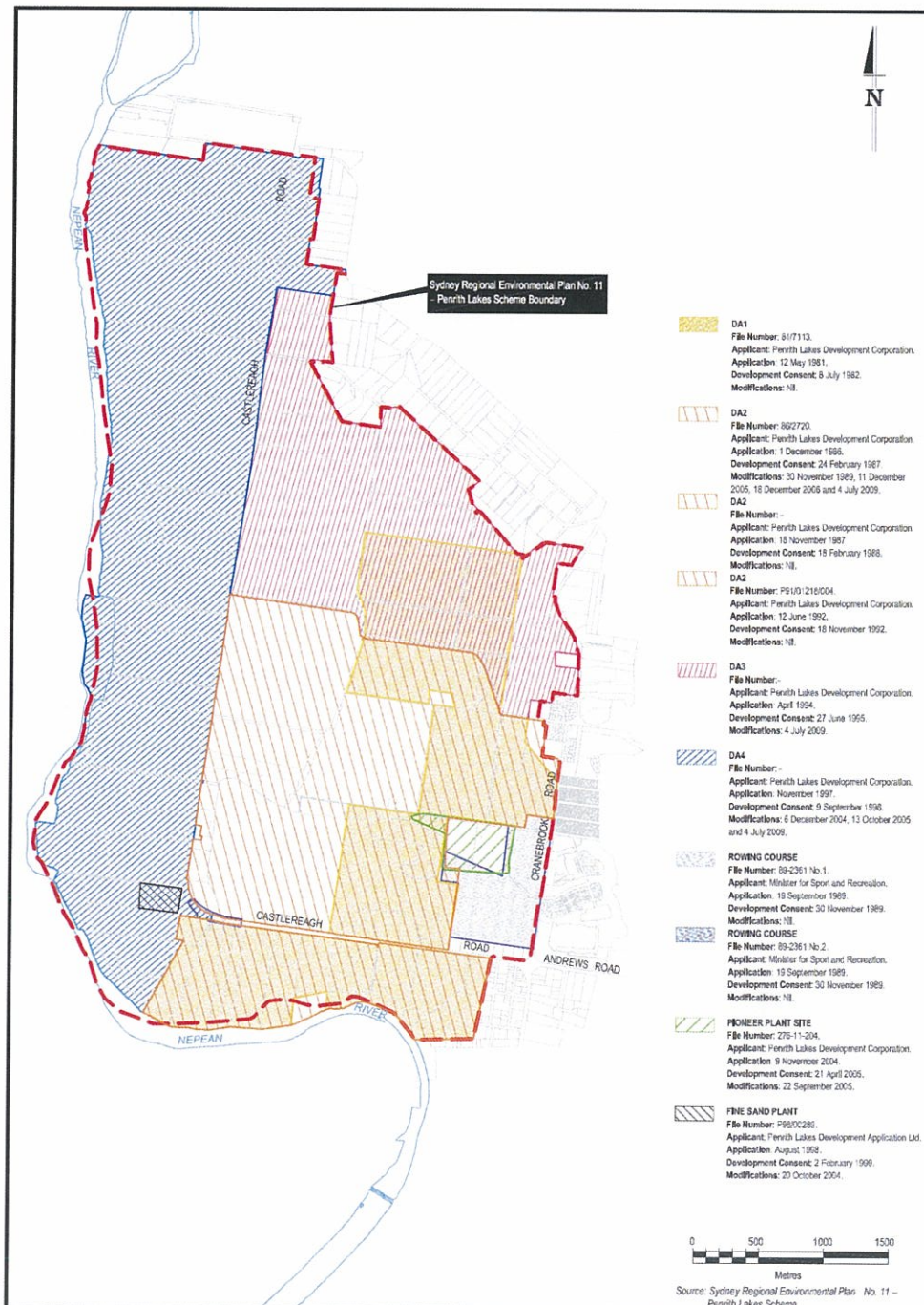


Figure 1: Area Covered by the Penrith Lakes Scheme Structure Plan

The Scheme is regulated by a number of development consents granted by the Minister. Operations to the west of Castlereagh Road are covered by Development Consent 4 (DA4), while operations to the east of Castlereagh Road are generally covered by Development Consents 2 & 3 (DA2 & DA3) (see Figure 2).

Lewis Lagoon is a constructed water-body with an area of approximately 3 hectares located just north of Church Lane on the eastern side of Castlereagh Road at Castlereagh and thus falls under DA4. Figure 3 shows the location of Lewis Lagoon within the Penrith Lakes Scheme (see Figure 3).

Six previous modifications have been approved to DA4 as outlined in Table 1.



**Figure 2: Existing Penrith Lakes Scheme Approvals**



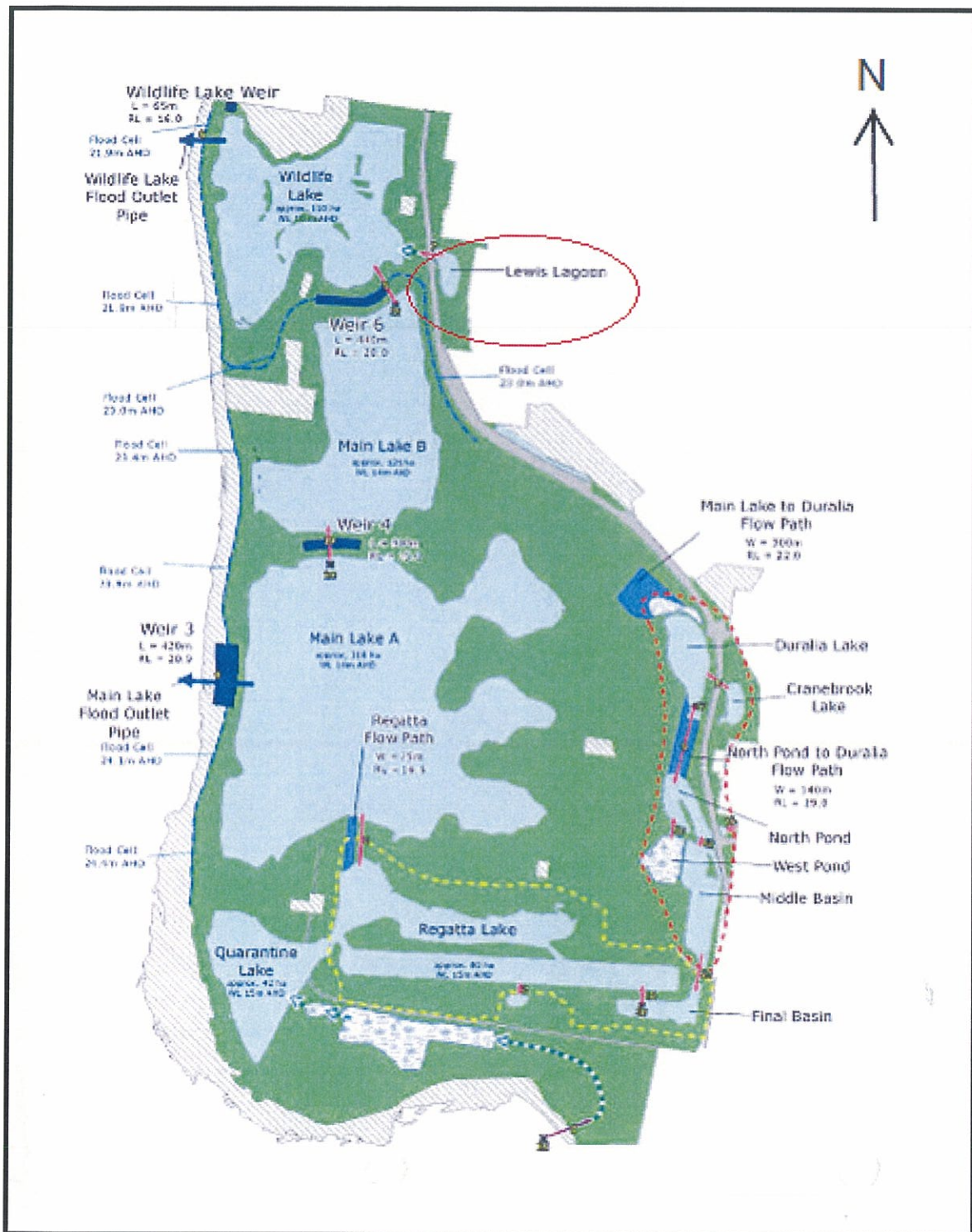


Figure 3: Location of Lewis Lagoon within the Penrith Lakes Scheme

**Table 1: Summary of Approved Modifications**

<b>Modification Application</b>	<b>Modifications to the Development</b>
Modification 1, (s96) Approved December 2004	To carry out sand and gravel extraction and haulage to processing plants between 5.00am and 9.00pm from Monday to Friday in most of the area covered by DA4.
Modification 2, (s96) Approved October 2005	The proposal involves extending the operations that are currently being carried out under DA4 onto the Camenzuli property.
Modification 3, (s96) Approved July 2009	To modify development consents DA2, DA3 and DA4 under section 96(2) of the Environmental Planning and Assessment Act 1979 (EP&A Act), to allow it to import up to 3 million tonnes (Mt) of Virgin Excavated Natural Material (VENM) over a 3 year period, in order to fill specific areas where extraction has occurred.
Modification 4, (s75W) Approved May 2011	Modifications to the configuration and location of the Wildlife Flood Outlet Pipe as detailed in the Structure Plan.
Modification 5, (s75W) Approved May 2011	Modifications to the configuration and location of the Wildlife Lake Weir as detailed in the Structure Plan.
Modification 6, (s75W) Approved August 2011.	Modifications to allow construction of infrastructure (including rip rap) to enable the discharge of water into the Nepean River; amend five of the conditions amended in Mods 4 and 5, approve Erosion and Sediment Control Plans for various project components and confirm construction details of the Wildlife Lake Weir.

On 21 July 2005, the then Roads and Traffic Authority approved the Review of Environmental Factors (REF) for the Relocation of Castlereagh Road. This project included a sediment basin in the location of Lewis Lagoon to control runoff water quality during the construction phase of the new Castlereagh Road. The approval required its demolition at the completion of the road construction however the lagoon has not been removed.

At a similar time to the approval of Lewis Lagoon as a temporary sediment basin, an independent review by the then Department of Infrastructure, Planning and Natural Resources (DIPNR) identified the need for further runoff water quality treatment to improve catchment runoff flows to the Main Lake B and the Wildlife Lake. Brown Consulting on behalf of PLDC identified in July 2005 (Penrith Lakes Scheme North Scheme Drainage Concept Design) the potential for Lewis Lagoon to be retained to provide a significant water quality improvement benefit for flows to Main Lake B and the Wildlife Lake from the catchment east of Castlereagh Road.

## **2 PROPOSED MODIFICATION**

PLDC has submitted an application pursuant to Section 75W of the EP&A Act to incorporate the Lewis Lagoon as a permanent water quality control pond as part of the Penrith Lakes Scheme.

The application seeks to include Lewis Lagoon within the Lakes Scheme under DA4 to take advantage of the pollutant removal performance of this waterbody to assist with maintaining acceptable water quality in Main Lake B and the Wildlife Lake. Approval is not sought for any works however the modification relies upon DA4 to permit works required to enhance the water quality and ecological performance of the waterbody along with maintenance and monitoring works to maximise its benefit to the lakes.

The application is supported by a report from Brown Consulting which confirms that the lagoon has potential for a significant contribution to reducing the runoff pollutant load entering Main Lake B and the Wildlife Lake from these eastern catchments.

The actual pollutant reduction performance of the lagoon is reported in the 2012 Water Management Plan - Stage 2 Draft Report, dated August 2012 submitted to the Department by PLDC. This performance was based on monitoring results from 2011 and 2012. The lagoon has achieved significant reductions in nutrient concentrations compared to the runoff inflow concentrations.

The application proposes that the lagoon be maintained as a permanent feature as part of the Penrith Lakes Scheme by way of modification of the DA4 consent condition 27B.

### **Modification**

Under clause 8J(8)(c) of the Environmental Planning and Assessment Regulation 2000, section 75W of the EP&A Act continues to apply to any modification of a development consent granted by the Minister under Part 4 of the EP&A Act before 1 August 2005. DA4 was granted prior to 1 August 2005; and must therefore be modified under section 75W of the EP&A Act.

In accordance with clause 12 of Schedule 6A of the EP&A Act, section 75W of the EP&A Act in force immediately before its repeal on 1 October 2011 continues to apply to modifications of certain pre-August 2005 consents.

The Department notes that:

- The proposed modification would not change the essential development for which consent was originally granted, namely a sand and gravel quarry to be rehabilitated to a system of lakes;
- The proposal would not change the quarrying, processing and transport methods, operating hours, rehabilitation methodology or life of the development consent; and
- The proposed modification would not substantially alter the future operation of the Lakes Scheme.

Consequently, the Department is satisfied that the proposal can be appropriately characterised as a modification to the original approval, rather than a new project in its own right, and that the application may be determined under section 75W of the EP&A Act.

### **Approval Authority**

Under section 75W of the EP&A Act, the Minister for Planning and Infrastructure is the approval authority for this modification application. However, under the Minister's delegation of 27 February 2013, the Executive Director, Development Assessment Systems and Approvals may determine this modification application as no objections were received, the proponent did not report any political donations and Council has not objected to the proposed modification.

### **State Environmental Planning Policy (Penrith Lakes Scheme) 1989 (Penrith Lakes Scheme SEPP)**

Under clause 8 of the Penrith Lakes SEPP, the consent authority must consider several matters when assessing applications within the Scheme. The Department has considered these matters in its assessment of the proposed modification and is satisfied that the proposal is able to be undertaken in a manner that is consistent with the provisions of the SEPP.

Lewis Lagoon is a feature of the Scheme that is not identified within the Structure Plan for Penrith Lakes. The Structure Plan provides indicative location and size for all substantial water bodies within the Scheme area. The provisions of the Penrith Lakes SEPP requires the consent authority to grant consent to development unless the consent authority is of the opinion that the development is not generally in accordance with the Structure Plan.

In 2005, the Department established a committee that undertook an extensive review of the Water Principles and Water Plan for the Penrith Lakes Scheme. The review considered a range of options that could deliver improved lake operations and water quality. The committee recommended retention of the Camenzuli Water Quality Control Pond (Lewis Lagoon). Lewis Lagoon, much like the other detention basins within the Scheme, will provide treatment for water entering the site from the external catchment before entering the Wildlife Lake.

The Department is satisfied that the proposal for continued operation of Lewis Lagoon is:

- Relatively minor and remains generally consistent with the approved Structure Plan;
- Is in the public interest as it assists to delivery improved water quality to the Wildlife Lake; and
- Would not conflict with the long-term operation of the Penrith Lakes parklands.

### **3 CONSULTATION**

Under Section 75X(2)(f) of the EP&A Act, the Director-General is to make publicly available requests for modifications of approvals given by the Minister. In accordance with clause 8G of the Environmental Planning and Assessment Regulation 2000, the request for modification was made publicly available on the Department's website on 21 February 2012.

The Department received no public submissions and two submissions from public authorities during the exhibition of the modification request.

#### ***Environmental Protection Authority***

The EPA concurred with the modification and did not propose to apply any conditions of approval.

#### ***Penrith City Council***

Penrith City Council provided a submission recommending that the water body should be designed to an appropriate standard (including the provision of details demonstrating it will function in the long term as a water quality control measure). Council also requested the Department to review potential flooding issues and to ensure a suitable monitoring and maintenance plan is developed.

### **4 ASSESSMENT**

The Department has considered the EA and the submissions on the proposed modification, and considers the key issues to be flood impacts, water quality and monitoring.

#### ***4.1 Flood Impacts on Adjacent Properties***

The modification request was submitted to the Department prior to finalisation of PLDC's draft updated Water Management Plan (Stage 1). A component of this plan considered the impact of proposed Scheme design changes on surrounding areas. The Director General approved the draft updated Water Management Plan subject to conditions on 5 November 2013.

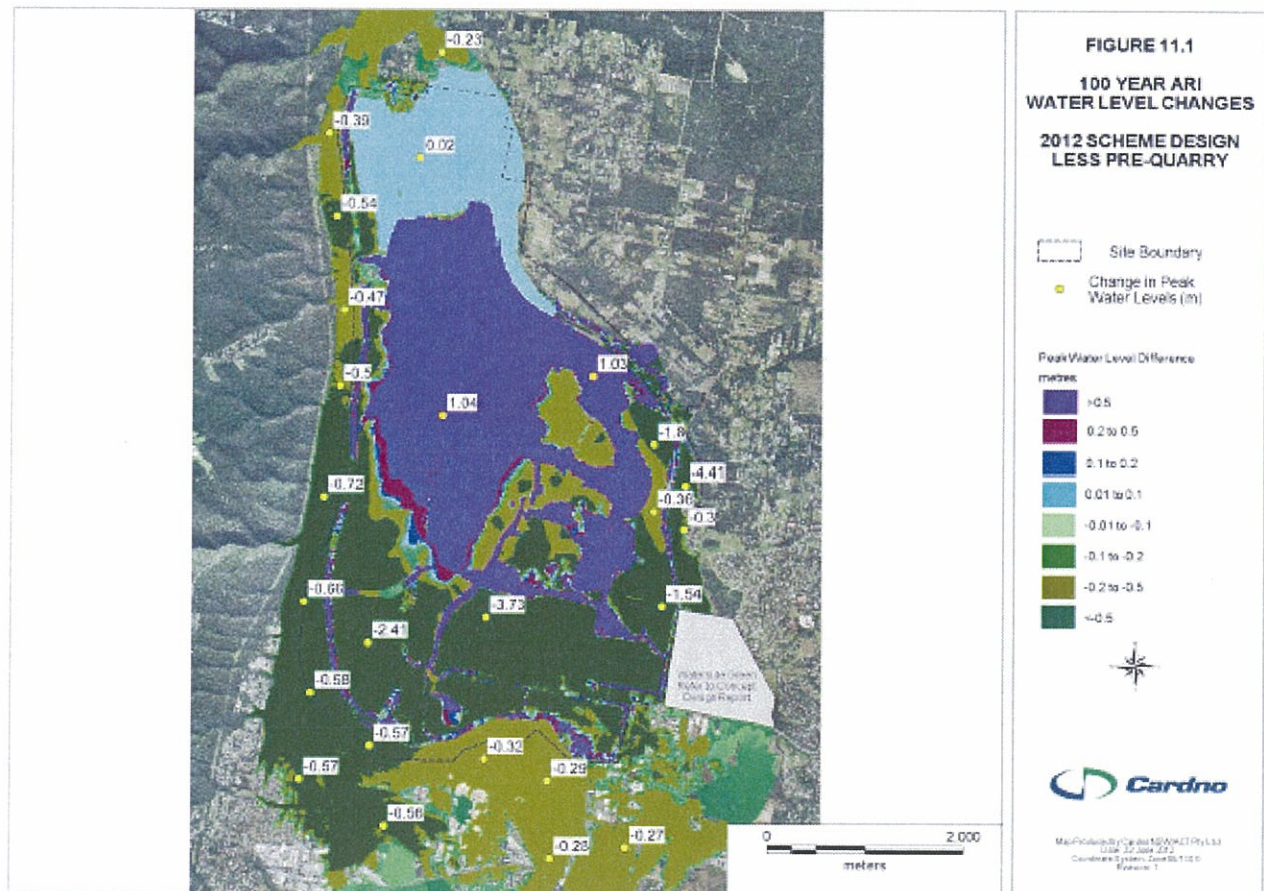
Penrith Council raised concerns regarding the appropriateness of PLDC's flood model software (Sobek) to accurately predict and assess flood impacts on urban areas surrounding the Scheme. Council requested consideration be given to use the alternative flood model (RMA) to undertake an assessment of the Scheme's impacts. The Department, relying on advice from a peer review undertaken in September 2013, found that the Sobek model was an appropriate model to assess impacts arising from changes to the Scheme design.



Flood impacts at the local level adjacent to Lewis Lagoon have been examined using information provided by PLDC in the draft Updated Water Management Plan (Stage 1). From this information, it is understood that Lewis Lagoon is connected to the Wildlife Lake through provision of culverts beneath Castlereagh Road. These culverts have been designed for the 100 year ARI flood flows from the local catchment. The 100 year ARI local catchment flood level in the lagoon is RL 15.5m AHD. However, the regional 100 year ARI flood in the Nepean River is much higher at around RL 22m AHD and as such, any impact on adjacent properties is controlled by this regional flood behaviour.

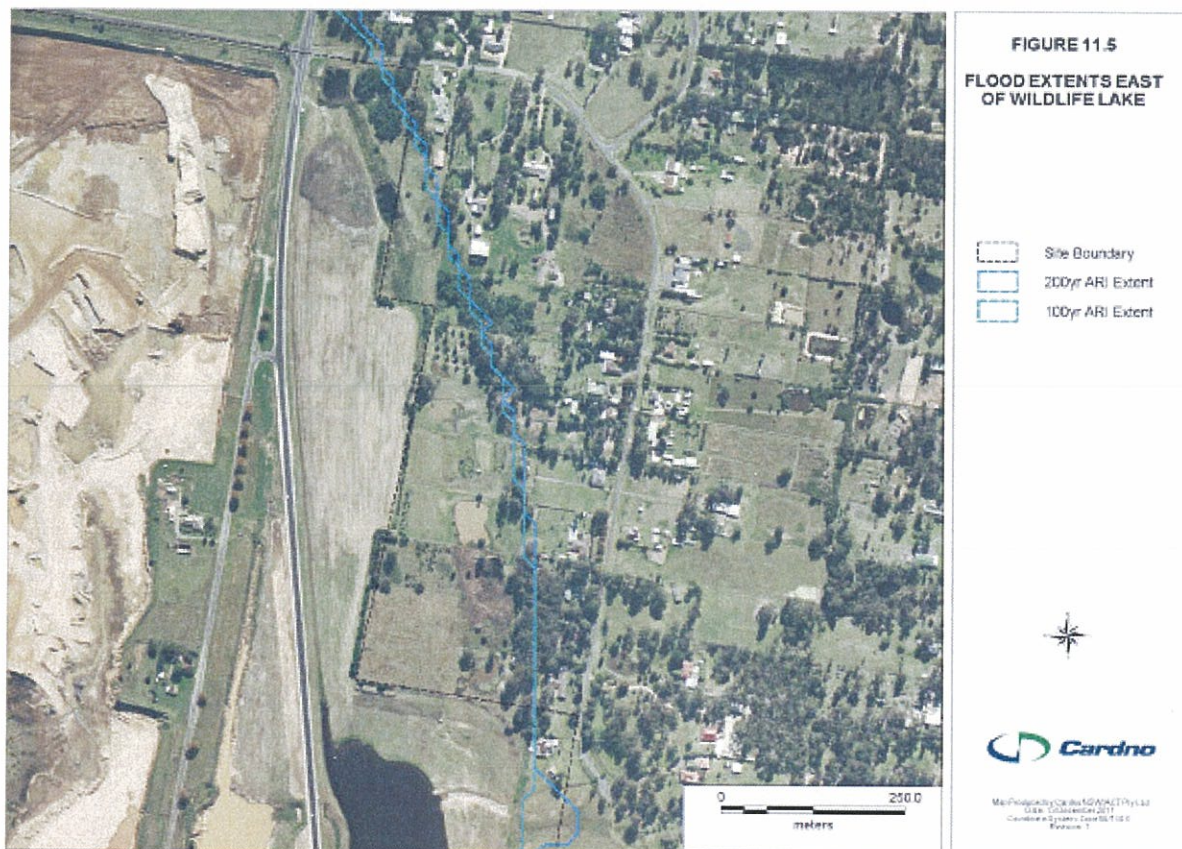
The updated Water Management Plan, prepared by PLDC, has presented the results of a comparison of the proposed and pre-quarry regional flood levels (Figures 4 and 5). It identifies in Figure 4 that there would be an increase of 0.02m in the 100 year ARI flood level around Lewis Lagoon and further north. This increase would result in some additional flood extent. The majority of this increase is located on PLDC land except for a small area immediately to the north of Lewis Lagoon.

Figure 5 depicts the extent of the 100 and 200 year ARI flood events in relation to the surrounding cadastral. It is evident from the extent lines marked on this plan, that no nearby dwellings would be affected and the extra area inundated on these properties would be small and not significant.



**Figure 4: 100 Year ARI Water Level Changes – 2012 Scheme Design Less Pre-Quarry Draft Water Management Plan Stage 1 (Source: PLDC)**





**Figure 5: Flood Extent East of Wildlife Lake** (Source: 2012 Draft Water Management Plan, Penrith Lakes Development Corporation).

Prior to approving the draft updated Water Management Plan (Stage 1) in November 2013, the Director General considered the overall flooding impacts of the lakes scheme. This decision was informed by a comparison of the proposal against the approved Scheme (DA4 plus all 6 approved modifications). This comparison found no significant flooding impacts to the upstream catchment, including areas of residential development, surrounding the Scheme. No adverse impacts to the semi-rural areas surrounding Lewis Lagoon are expected from the proposed modification.

#### 4.2 Water Quality

PLDC has informed the Department that Lewis Lagoon already performs well in terms of removing pollutants from the local catchment runoff prior to discharge into Main Lake B and the Wildlife Lake. This is supported by monitoring data reported for 2011 and 2012 in PLDC's draft updated Water Management Plan. The lagoon, when incorporated into the Scheme, will then be managed by PLDC to assist to achieve appropriate water quality in Main Lake B and the Wildlife Lake.

As such, the overall basic parameters for the lagoon are already established and will be gradually refined as part of the implementation of the updated Water Management Plan required for DA4. The Department is satisfied that retention of Lewis Lagoon will deliver significant water quality benefits to the adjacent Main Lake B and Wildlife Lake.

#### 4.3 Monitoring

Monitoring and maintenance of water quality within Lewis Lagoon is currently being undertaken by PLDC in accordance with its commercial obligations under the 1987 Deed with the NSW Government. These obligations require PLDC to maintain full responsibility for all water bodies at Penrith Lakes until completion of the Scheme in full. PLDC has proposed that a specific



monitoring and maintenance plan for Lewis Lagoon be developed as part of the Stage 2 Water Management Plan, which addresses the issue of water quality. The Stage 2 Water Management Plan is to be submitted to the Department for review by 31 March 2014. Water quality targets, modelling scenarios and health criteria have been provided to PLDC for consideration in the development of the Water Management Plan.

The Department is satisfied that a regime of monitoring and maintenance can be developed for Lewis Lagoon, addressing water quality criteria and targets for the entire Scheme, that are currently under review by PLDC.

## 5 CONCLUSION

The Department has assessed the merits of the proposed modification in accordance with the requirements of the EP&A Act.

This assessment has shown that, the proposal, involving the retention of the existing Lewis Lagoon, can be carried out with minimal environmental impact. It is recommended that approval be granted subject to PLDC maintaining the existing hydraulic behaviour of the water body and continue monitoring operations of the water body in accordance with its existing water quality strategy and operations plans for the Lakes Scheme.

The Department considers the proposed modification will have a positive environmental impact because the lagoon contributes significantly to the improvement in local catchment runoff into the Lakes Scheme and its performance will be effectively managed in the future by the Stage 2 Water Management Plan.

Overall, the Department is satisfied that the proposed modification is in the public interest and should be approved.

## 6 RECOMMENDATION

It is **RECOMMENDED** that the Executive Director, Development Assessment, Systems and Approvals, as delegate of the Minister for Planning and Infrastructure:

- **considers** the findings and recommendations of this report;
- **approves** the application under section 75W, subject to conditions; and
- **signs** the notice of modification in Appendix A.

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05.02.14



5.2.14

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