

## **Protecting Water Quality in Sydney's Drinking Water Catchments by Impact Assessment**

**Malcolm Hughes**

**In 1998 the New South Wales Government made a bold decision to pass legislation which required that new development should only proceed in Sydney's drinking water catchments if the application could demonstrate a neutral or beneficial effect on water quality. Prior to this time, the aim, as is common in most jurisdictions, was to minimise impacts on water quality. Experienced environmental impact assessment practitioners know only too well that the enactment of legislation is not enough to achieve the desired outcomes. Many of the barriers that often prevent the desired outcome from being achieved have been addressed in this case study. A specific regional agency was established, the Sydney Catchment Authority, with a key objective being the protection and enhancement of water quality. A specific planning instrument has been proclaimed which requires that local consent authorities must not grant consent to the carrying out of development unless it is satisfied that the carrying out of the proposed development would have a neutral or beneficial effect on water quality. The expertise and resources of the Sydney Catchment Authority are available to assist local consent authorities in undertaking assessments.**

Drinking water supplied to customers in Sydney, Australia is sourced from several water catchments located to the west and south of the Sydney metropolitan area – as shown on the figure below. While substantial parts of these catchments are covered with relatively undisturbed native vegetation, there are a range of current potentially water polluting land uses. In addition, there is pressure for more development within these catchments due to their proximity to an expanding Sydney.



In mid 1998, Sydney experienced a drinking water crisis due to measured levels of *Giardia* and *Cryptosporidium* being greater than levels considered safe by public health authorities (McClellan, 1998a). As a consequence, all residential users in the Sydney region were advised by the New South Wales State government to boil water before consumption. The government instigated an inquiry into this event. The outcome of the inquiry has had significant implications for the way in which raw drinking water is managed and in particular the way in which impact assessment is undertaken for development proposals located within these catchments. This paper outlines the best practice impact assessment that has been applied to protect and enhance the quality of water in these catchments. At the same time the paper outlines how many of the barriers to achieving this best practice were overcome.

## Context

The Sydney drinking water catchments supply raw water which after treatment is distributed to 1.8 million homes and businesses. The catchments provide water to 21 storage dams which when full, can provide water to Sydney for more than 5 years. These catchments cover approximately 16,000 square kilometres and have a variety of land uses summarised in Table 1.

TABLE 1 – Land Use in the Sydney Drinking Water Catchments (Department of Environment and Climate Change, 2007)

Land Use	Percentage by Area
Abandoned and degraded land	0.4
Conservation or natural areas	50.6
Cultivation or intensive agriculture	0.4
Forestry	5.3
Grazing or improved pasture	37.2
Mining	0.2
Natural water and wetlands	0.7
Special purpose	0.1
Transport and utilities	0.8
Urban and rural residential	3.4

Prior to the 1998 drinking water crisis, impact assessment was substantially the responsibility of the sixteen local councils with jurisdiction over the catchments. Except for developments located close to water storages – each council, some of which had limited resources and expertise, made decisions on individual development proposals. The general approach was to attempt to minimise water quality impacts. Each council also had the responsibility for ensuring developments were carried out consistent with the terms of the approval.

## Major Changes in Impact Assessment

### *Legislation and New Agency*

The drinking water crisis event precipitated a major change in the way impact assessment is undertaken in these catchments. Without this event, the changes would not have occurred and impact assessment would not have prevented new developments causing pollutants to enter waterways.

The drinking water crisis inquiry made a series of recommendations to government. Most significant was the proposals for a new agency charged with the responsibility

for managing and protecting these drinking water catchments and the development of new planning controls. In particular, the inquiry recommended that the planning controls specify that consent authorities must not approve a development application unless it has a neutral or positive impact on water quality in the catchment (McClellan, 1998b). All political parties supported the inquiry's recommendations. The *Sydney Water Catchment Management Act, 1998* (the Act) was passed by Parliament (see [www.legislation.nsw.gov.au/](http://www.legislation.nsw.gov.au/)). The Act required the establishment of the Sydney Catchment Authority (SCA) with a range of functions including the protection and enhancement of water quality. In particular, the Act (Section 53) required the making of a Regional Environmental Plan and that the plan make provision for consent authorities to refuse to grant development consent to a development application relating to land to which the plan applies unless the consent authority is satisfied that the carrying out of the proposed development would have a neutral or beneficial effect on the quality of water.

Significantly in establishing the SCA, the government provided sufficient funds to enable the Authority to create a small team of highly skilled and experienced impact assessment officers with a sole focus on water quality impact assessment. In addition, resources were provided to enable the SCA to obtain external expert advice as required and to defend planning appeals.

#### *Initial Planning Measures*

The New South Wales environmental planning legislation (the *Environmental Planning & Assessment Act, 1979*) provides for the development and making of planning instruments. The process of making these planning instruments can occur either very quickly or over an extended period. At the time, the government realised that it would take some time to develop a comprehensive planning instrument and consequently gazetted an interim planning instrument on the day the Act came into force. This instrument - *State Environmental Planning Policy No.58 – Protecting Sydney's Water Supply* (SEPP 58) required local councils to consider the following criteria when assessing and determining individual development applications:

- a) *whether the development or activity will have a neutral or beneficial effect on the water quality of rivers, streams or groundwater in the hydrological catchment, including during periods of wet weather,*
- b) *whether the water quality management practices proposed to be carried out as part of the development or activity are sustainable over the long term,*
- c) *whether the development or activity is compatible with relevant environmental objectives and water quality standards for the hydrological catchment when these objectives and standards are established by the Government.*

In addition, SEPP 58 required local councils to refer scheduled development with a high risk of polluting waters to the SCA for its concurrence. The SCA did not grant concurrence (usually conditionally) unless it was satisfied the proposal would have a neutral or beneficial effect on water quality.

To compliment the new instrument, the NSW Minister for Planning instructed all local councils to make provisions when preparing their local planning controls (Local Environmental Plans) that required them to take into consideration the impact on water quality when assessing a development application. The instruction was designed to ensure the local strategic planning undertaken by councils had regard for potential water quality impacts.

### *Regional Environmental Plan*

From early 1999 through to mid 2006, the NSW Government and its agencies – principally the Department of Planning and the SCA, developed the Regional Environmental Plan (REP) required by the Act. During this time 2 versions of the REP were publically exhibited. The first was not well received by the communities living, working and governing in the catchments. Concerns related to the proposals for minor development requiring development consent and the need for the SCA's concurrence across a range of land use types. The second version of the REP was broadly accepted and was eventually finalised in mid 2006 and came into force in January 2007. Rather than having a schedule of development types that required concurrence, the REP states that concurrence is required except where the consent authority *is satisfied that the carrying out of the proposed development would have a neutral or beneficial effect on water quality.*

The REP states that a neutral or beneficial effect on water quality occurs when development:

- a) *has no identifiable potential impact on water quality, or*
- b) *will contain any such impact on the site of the development and prevent it from reaching any watercourse, waterbody or drainage depression on the site, or*
- c) *will transfer any such impact outside the site by treatment in a facility and disposal approved by the consent authority (but only if the consent authority is satisfied that water quality after treatment will be of the required standard).*

It became apparent during the development of the REP that local councils would require assistance in determining whether *the carrying out of the proposed development would have a neutral or beneficial effect on water quality.* To assist local councils, the SCA developed a guideline on the neutral or beneficial effect on water quality test (Sydney Catchment Authority, 2006). This guideline was accompanied by an electronic tool – containing a series of questions for the assessing officer to answer – with referral required to the SCA for its concurrence for high risk development types. The SCA provided training to staff from local councils and development consultant firms on the use of the guidelines and tools.

The REP also requires development to incorporate any water quality management practices endorsed by the SCA. These practices are referred to as *current recommended practices.* To date, the SCA has a range of practices covering different land uses such as urban development, roads, waste management, and agriculture with a focus on stormwater and sewage management.

The REP also requires each local council to provide to the SCA a report each quarter containing details of all development applications determined by it during the previous quarter. In early 2008, the SCA commenced an annual audit program based on these reports and other information available to the Authority, to assess compliance with concurrence conditions and to assess the application of the neutral or beneficial effect on water quality test by the local councils. This follow up is designed to ensure compliance with concurrence conditions and to assist local councils in the application of the neutral or beneficial effect on water quality test.

The REP includes a clause requiring the Department of Planning to commence a review of the REP within 5 years after the plan comes into effect to assess if it has achieved its aims. The outcomes of the annual audit program will be considered as part of this review.

### *Local Government Interaction*

The SCA recognised the importance of a constructive ongoing relationship with local councils as the REP was progressively implemented. To facilitate this relationship, the SCA sought a primary contact person from each local council. This has proved an effective means of communicating between the SCA and local councils.

The SCA also recognises it has a responsibility to keep the local councils – elected officials and professional staff - informed of the time it takes to process development applications referred to it for concurrence. This is done on a quarterly basis via a committee established by the SCA to exchange information with local councils. This forum also provides opportunities for local councils to raise particular development applications with the SCA.

### **Concluding Comments**

This case study has identified how many of the barriers to best practice impact assessment for water quality protection has been overcome. It is expected, over time, water quality improvements will be measured.

### REFERENCES

Department of Environment and Climate Change (2007) *2007 Audit of the Sydney Drinking Water Catchment*, (NSW Department of Environment and Climate Change)

McClellan, P (1998a) *Sydney Water Inquiry First Interim Report - Possible Causes of Contamination, August 1998*, (NSW Premiers Department)

McClellan, P (1998b) *Sydney Water Inquiry Third Report – Assessment of the Contamination Events and Future Directions for the Management of the Catchment, October 1998*, (NSW Premiers Department)

Sydney Catchment Authority (2006) *Neutral or Beneficial Effect on Water Quality Assessment Guidelines*, (Sydney Catchment Authority)