Submission
No 129

INQUIRY INTO A SUSTAINABLE WATER SUPPLY FOR SYDNEY

Organisation: Sutherland Shire Council

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Date Received: 22/02/2006

Subject:

Summary

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17 February 2006

Committee Secretariat
General Purpose Standing Committee No.5
NSW Legislative Council
Parliament House
Macquarie Street
SYDNEY 2000

Dear Sir/Madam

Please find attached Sutherland Shire Council's submission in response to Inquiry into a Sustainable Water Supply for Sydney. The submission provides information and comment in relation to all the matters included in the terms of reference.

Sutherland Shire Council objects to the proposed desalination plant and considers that other more sustainable options exist for the management of Sydney's water into the future. This submission outlines the basis for this objection and identifies areas where potential impacts from the construction of the operation of the plant are significant and considered unacceptable. It also outlines areas where the assessment documentation is lacking in sufficient detail to undertake an accurate assessment of the impacts associated with the proposal.

Council also has specific concerns over the assessment process that has been undertaken for the proposed desalination plant. This includes several areas where the level of information provided is insufficient to meet the requirements of the Director General, Department of Planning as outlined in his letter to Sydney water dated 18 November 2005.

The submission outlines options for sustainable water usage supported by Council and provides information on Council experiences in the implementation of these options.

Council would welcome the opportunity to supplement and further expand the information contained within this submission by way of a verbal presentation to the Committee. Council also has no objection to the information contained within this submission being made publicly available or posted on the Committee's website.

Should you wish to seek clarification of any of the issues raised within our submission please do not hesitate to me, or Council's Principal Environmental Scientist, Mr Ian Drinnan on 9710 0584.

Yours sincerely

J W Rayner
General Manager

SUTHERLAND SHIRE COUNCIL

SUBMISSION TO THE GENERAL PURPOSE STANDING COMMITTEE NO. 5

RE

INQUIRY INTO A SUSTAINABLE WATER SUPPLY FOR SYDNEY

February 2006

1. Introduction

Sutherland Shire Council is pleased to present a submission to the Parliamentary Inquiry into a sustainable water supply for Sydney.

Sutherland Shire Council is a leading Council in the field of water conservation, water quality management and water sensitive urban design. This background provides us with a sound basis to comment on proposals which relate to the sustainable supply of water for Sydney.

Sutherland Shire Council has significant concern over the impacts of the Kurnell Desalination Plant which is proposed within our local government area. These concerns relate to potential impacts of the proposal and the lack of detail within the proposal, which does not provide for informed and accurate decision making.

Council also has concerns regarding the assessment process undertaken for the proposal, with particular reference to areas of non-compliance with the requirements of the Director General. Council is also concerned over the lack of appropriate consultation associated with the proposal.

Sutherland Shire Council strongly supports alternatives to desalination, and considers other more sustainable options such as waste water recycling, stormwater harvesting and demand management should be pursued in preference to desalination. Council is concerned that the desalination option has been chosen a quick and easy fix for Sydney's current water crisis, and that a more thorough examination of options for water management should be undertaken. This process should be open and accountable, and provide for public input into this decision making process.

Council also has concerns regarding probity and the transparency of the tender process associated with the desalination plant. Council has referred this matter to the Independent Commission Against Corruption. While the ICAC has considered Councils referral, Council considers that further examination of this issue is warranted.

2. Scope of the Submission

This submission addresses each of the Terms of Reference set by the Parliamentary Steering Committee No 5:

(a) *The environmental impact of the proposed desalination plant at Kurnell*
(b) *The environmental assessment process associated with the proposed desalination plant*
(c) *Methods for reducing the use of potable water for domestic, industrial, commercial and agricultural purposes, including sustainable water consumption practices*

(d) *The costs and benefits of desalination and alternative sources of water including recycled wastewater, groundwater, rainwater tanks and stormwater harvesting.*

(e) *Practices concerning the disposal of trade waste*

(f) *The tender process and contractual arrangements, including public-private partnerships, in relation to the proposed desalination plant.*

a) - the environmental impact of the proposed desalination plant at Kurnell

Sutherland Shire Council believes that there will be significant environmental impacts associated with the construction and operation of the proposed desalination plant. Council considers that these impacts are substantially beyond those outlined in the Environmental Assessment (EA). Council also considers that in many instances assessments of the scale of potential impacts have been made based on limited and/or inaccurate information.

Sutherland Shire Council outlined these concerns and issues in a submission to the Department of Planning. A brief summary of these inadequacies and impacts are outlined below.

Greenhouse gas emissions – while the plant will be a significant contributor to greenhouse gas emissions, there is little detail and no certainty to the proposed mitigating measures.

Terrestrial Ecology – the Kurnell peninsula and many of the proposed distribution routes contain threatened species and endangered ecological communities, but there is no certainty to the potential routes, and there has been no assessment of delivery infrastructure on Kurnell Peninsula or elsewhere.

Indigenous Heritage – the Kurnell peninsula has a rich heritage of aboriginal occupation, despite this there has been no assessment of impact of delivery infrastructure on Kurnell Peninsula or elsewhere.

Water Quality – assessment of the impacts of the proposal on water quality are not possible as there is no detailed assessment of impacts within the mixing zone, lack of calibration of dispersal modelling, and lack of understanding of dense plume dispersal. There has also been no accurate assessment of water quality impacts as Sydney Water doesn't know the type or volume of chemicals used or existing water quality.

Aquatic Ecology – one of the major potential impacts of the proposed plant is the impact on marine ecosystems, both from the water intake and the outlet discharge. Despite this there is no accurate assessment of the impact on marine ecosystems as there is no knowledge of the impact of increased salinity or discharge chemicals on receiving species, and there is no knowledge of the planktonic community in the region of the intake or outlet.

Aquatic Ecology Botany Bay – the laying of distribution pipework across Botany Bay will impact on seagrasses and benthic communities. Work in assessing these impacts has been inadequate as there are potential routes that have significantly lower impacts

on sea grasses than those proposed by Sydney Water. Sydney Water also notes they will restore sea grasses, but Posidonia restoration has met with very limited success.

Spoil Management – accurate assessment of the impact of spoil disposal is not possible as there is no definite proposal, and the EA itself acknowledges that impacts beyond the Kurnell Peninsula have not been accurately assessed, rather a range of management actions are presented which potentially cause other problems, i.e. avoidance of AM and PM peaks leads to poor intersection performance at other times.

A full description of these impacts is contained within Council's "Primary Submission to the Department of Planning on the Kurnell Desalination Plant and Associated Infrastructure", which is contained within Appendix A.

(b) - The environmental assessment process associated with the proposed desalination plant

Sutherland Shire Council is extremely dissatisfied with the inadequate environmental assessment process associated with the proposed desalination plant and the distribution infrastructure.

The Environmental Assessment (EA) for the proposed desalination plant states that the Concept Plan is sufficient to *"assess the key environmental aspects of the project and determine the required level of environmental management and monitoring for the project"*. However, the EA is completely lacking in critical detail such as distribution routes, methods of construction or the environmental impacts of the project.

The process provided no opportunity for Council to review the adequacy of the Environmental Assessment prior to it being placed on public exhibition. The process also provides no opportunity for the community or Council to be consulted with once further information critical to the adequate review of the proposal, such as distribution routes, and impacts on marine ecosystems, becomes available. This is considered unacceptable and is not in the spirit of the recent revisions to the *Environmental Planning and Assessment Act 1979.*

Sutherland Shire Council has sent a submission to the Department of Planning outlining our concerns over the adequacy of the assessment process which highlights specific areas of concern such as non-compliance with the requirements of the Director General. This submission is contained within Appendix B.

(c) - Methods for reducing the use of potable water for domestic, industrial, commercial and agricultural purposes, including sustainable water consumption practices.

Sutherland Shire Council is a member of the International Council for Local Environmental Initiatives (ICLEI) Water Campaign, and is committed to pursuing water conservation, and sustainable use of water resources, both within our area of operations and within our community. Council has serious concerns that the desalination plant proposal conveys the incorrect message to the community about water use and that it will compromise the principle of sustainable water usage in the population.

It is of great concern that the proposal will undermine Council's efforts of encouraging the community to adopt sustainable solutions to water shortages such as stormwater and rainwater harvesting, installation of water saving devices and water recycling. The production of more water via a desalination plant will discourage the population from conserving water.

Council acknowledges the efforts of the State Government to reduce water consumption via programs such as BASIX, which aims to reduce water usage in new households by 40%. These strategies have been supported by Council in development and planning controls, such as Council's Water Sensitive Urban Design requirements and our Stormwater Management Development Control Plan.

Council has made considerable reductions in potable water usage through a program of "retro-fitting" Council assets. Installation of new taps and water efficient fittings at Council beaches, along with installation of rainwater tanks and water efficient toilets at other council facilities, and changes to park maintenance and watering regimes, has seen Council reduce water consumption by over 32% in the last four years. Council is also currently developing a recycled water reuse project in conjunction with two other water users which will utilise effluent from the nearby Cronulla Sewage Treatment Plant. This is expected to further reduce our reliance on potable water. Implementation of similar programs with other major water users is expected to result in comparable water savings.

The range of measures that may be adopted to reduce potable water usage are many and varied and depend on a variety of factors such as proximity to alternative water sources (eg sewage treatment plant effluent), and ability to substitute potable water for water of lower quality. A range of appropriate strategies were outlined in the Expert Water Panel Report – A Sustainable Water Balance for Sydney – June 2004. This report outlined 12 areas for improvement in water conservation and water management. These included:

- Develop a community engagement plan
- Develop a Metro Water Strategy (done)
- Improve government water efficiency
- Reduce residential demand
- Reduce industry demand
- Increase agricultural efficiency
- Maintain river health

- Substitute water
- Options for increasing water supply
- Pricing mechanisms
- Improved governance of urban water cycle management.

Each issue included a variety of recommendations for achieving the water management goals. Sutherland Shire Council supports the majority of recommendations of this report.

In recognition of the need to consider alternatives to water supply other than desalination, and promote water conservation and sustainable water use, at its meeting of 14 November 2005, Sutherland Shire Council resolved the following:

"That :

because Sydney's water supply planned for a 4 million city is now under pressure from continuing rising population, prolonged drought and failure of not a few users to heed calls for voluntary water saving :

(i) *this conference calls* on the NSW Government to promote and lead three months of public forum on 'Finding Answers to Sydney's Water Needs';

(ii) *the purpose of this forum* being to circulate existing good ideas and invite new ones (especially of local initiatives), all to be incorporated in an 'Integrated Water Plan for Greater Sydney';

(iii) *with the forum* stressing responsibility at every level, i.e. of families, businesses, industry and all levels of government;

(iv) *and showing the necessity of a mix of policies*, such as vigorous public education, water saving devices, rainwater harvesting, leakage fixing, dam improvements, pricing curbs and very many recycling measures;

(v) *including* examination of the view that desalination be considered as an expensive and energy-demanding measure of last resort.

Council again calls on the State Government to undertake such a public forum. Such a forum provides the opportunity to identify and further develop "methods for reducing the use of potable water for domestic, industrial, commercial and agricultural purposes, including sustainable water consumption practices" in an open and accountable manner.

(d) - The costs and benefits of desalination and alternative sources of water including recycled wastewater, groundwater, rainwater tanks and stormwater harvesting.

Sutherland Shire Council considers that desalination is a costly, energy intensive and environmentally damaging option for augmenting Sydney's water supplies. Council considers that desalination should be viewed as an option of last resort, and that other options such as waste water recycling, sustainable groundwater use, rainwater tanks and stormwater harvesting should be pursued vigorously before desalination is considered.

The benefits of various alternative water supply options are outlined in Sydney Water's long term strategic plan, Waterplan 21. A key objective of Waterplan 21 is to provide "sustainable water supplies" and lists various methods and programs to reduce water demands. These include water conservation strategies, recycling of grey water, stormwater and effluent, and accessing local water supplies through rainwater tanks. In relation to treating seawater, Waterplan 21 states:

> *"The disadvantages of desalination are that it costs between $2.00 and $3.00 per kilolitre and requires large amounts of energy. The environmental impact is potentially significant due to the discharge of the heavily concentrated salt waste stream known as brine."*

This is similarly reflected in the Metropolitan Water Plan 2004, Meeting the challenges – Securing Sydney's water future. This plan outlined a range of options for meeting Sydney's water needs into the future. These included demand reduction programs, including rebates on water efficient appliances and BASIX, business water savings programs, expanded leak detection, increased wastewater recycling, accessing deep water within existing dams and using groundwater. While desalination was noted as an option within this plan, the largest plant envisaged under this plan was 100 megalitres per day. All plant options considered as part of the current proposal are significantly larger than this.

The government also commissioned a report from a range of independent water experts, the Expert Water Panel, on A Sustainable Water Balance for Sydney. This report contained a number of recommendations for managing Sydney's water future and specifically recommended against the construction of a new desalination plant.

These strategies and plans acknowledge the environmental and economic cost of operating a desalination plant and recognise alternatives which provide cheaper and more environmentally sustainable outcomes than the desalination plant.

Sutherland Shire Council is opposed to the proposed construction and operation of the desalination plant, viewing it as unsustainable and short-sighted for a number of reasons:

- desalination requires significantly higher inputs of energy than other water supply options such as stormwater harvesting and waste water recycling, contributing to greenhouse gas emissions and global warming;

- the effects of desalination outputs on marine life and hydrological cycles are potentially significant and have not been thoroughly investigated;
- the impact of the proposed desalination plant on habitat in the vicinity and on the amenity of the surrounding residential area have not been adequately assessed; and
- the communities and councils affected by the proposed desalination plant have only been consulted after the decision has already been made to go ahead with the project.

In addition, desalination does not address or allow better address of a "fit-for-purpose" model. This results in potable water – which is expensive to produce – being continually used for non-potable means. Council considers that the financial outlay required to construct and operate the desalination plant would be better spent on a wider range of demand management and water augmentation programs for both industry and domestic purposes. Such projects may include retrofitting major water users with a dual pipe system to enable the appropriate distribution of "fit-for-purpose" water.

As an alternative to desalination, through programs such as the ICLEI Water Campaign, Sutherland Shire Council supports a range of sustainable water management practices that encourage a respect for water within the community, a culture of water conservation and the protection of aquatic environments.

These include:

- *The widespread adoption of rainwater harvesting technology and water sensitive design principles throughout the residential, commercial and industrial sectors, supported by substantial State Government rebate schemes, advertising and a strong regulatory framework for new developments.*

  With up to 40% of impervious surface area in the urban environment made up of rooftops, rainwater harvesting has the additional benefit of reducing stormwater flows and the contamination of waterways. This will result in improved amenity leading to positive outcomes for tourism, community recreation and biodiversity conservation. There will also be a reduction in costs associated with flood events and the development and maintenance of flood management infrastructure, as well as decreased costs associated with the installation and maintenance of gross pollutant traps and other stormwater infrastructure.

  Sutherland Shire Council has introduced water sensitive urban design principles into several of its new buildings, including the Sutherland Shire Hub for Economic Development (SSHED) which is a showcase for water sensitive urban design. Within the SSHED, each year approx 320kL of water is used for toilet flushing of which 175kL, or 54%, is captured rainwater, resulting in a significant reduction in potable water usage.

- *The widespread adoption of domestic grey-water reuse and of the recycling of water in industrial and commercial contexts supported by education, progressive policy shifts by Local and State Governments and financial investment into research and development.*

Several types of high water usage commercial operations are currently leading the way in the application of water recycling technology. These include the car wash industry and marine operators. Sutherland Shire Council is currently working with the marine industry in the Sutherland Shire to improve the environmental performance of marinas. Here the emphasis has been on the prevention of pollution of waterways. Marinas have been encouraged to capture wash and waste water that flows from maintenance facilities preventing their entry into the environment. Once this water is captured it is traditionally treated prior to disposal to the sewer under a trade waste agreement with Sydney Water. However, this capturing of runoff has also provided the opportunity to treat and reuse this water on site, reducing the use of potable water. The majority of costs associated with the project are related to the pollution prevention measures. The smaller outlay on the associated water reuse infrastructure provides the opportunity for a return on this investment in the form of reduced water costs and reduced costs of trade waste disposal.

There are significant opportunities to implement similar strategies within other commercial businesses and industry. These practices have the dual benefit of improved environmental performance and reduced pollution of the environment, as well as cost benefits associated with reduced water usage and reduced disposal of wastes.

The substitution of water of lower quality, such as recycled water and grey water where appropriate, was a key recommendation of the Expert Water Panel – A Sustainable Water Balance for Sydney – June 2004. Sutherland Shire Council supports this recommendation.

- *The appropriate use of recycled and appropriately treated sewage for purposes such as the irrigation of golf courses and race courses and for industrial and commercial use.*

Landscaped areas, playing fields and golf courses require significant use of water to maintain visual appearance and recreational performance. Industrial and business processes are also significant users of water. Together industry, business and government bodies accounted for around 30% of the water used in the Sydney region. Many of these uses do not require water of potable standard, and water of lower quality may be substituted with no impact on performance. Recycled water and appropriately treated sewage may provide an alternative source of water for this purpose, significantly reducing the demand for potable water.

Sutherland Shire Council is currently developing a project, in conjunction with two other water users, to construct the distribution infrastructure to enable access to recycled water from the Cronulla Sewage Treatment Plant. This project will see the three water users share the cost of the delivery infrastructure which will enable them to obtain tertiary treated and disinfected sewage effluent from the Cronulla STP. This recycled effluent will be used by Council for irrigation of golf courses and playing fields, with other users utilising the water for landscaping and industrial purposes.

The reuse/recycling of this effluent has several benefits for the environment. It reduces the amount of sewage discharged from the Cronulla STP, reducing impacts on water quality and marine life, as well as reducing the use of potable water.

The substitution of water of lower quality, such as recycled water and grey water where appropriate, was a key recommendation of the Expert Water Panel – A Sustainable Water Balance for Sydney – June 2004. Sutherland Shire Council supports this recommendation.

- *The immediate introduction of an assistance program for the retrofitting of all public and privately owned residential, commercial and industrial buildings with water-efficient fittings and appliances, supported by education and an appropriate rebate scheme.*

  Sutherland Shire Council has a program of retrofitting and upgrading Council facilities and amenities with water efficient fittings and where appropriate, rainwater tanks. This, in conjunction with changed water use practices, has seen Council reduce its potable water usage by over 32% in the past four years.

  The BASIX system introduced by the State Government aims to reduce water usage in new dwellings by 40% compared to current average usage. This demonstrates that significant savings can be made by using appropriate fittings, appliances and design. However the current development turn over of the Sydney housing market is approximately two percent. This indicates that it will be a significant time before these water savings will be achieved on the majority of dwellings and industry within the Sydney region. In order to increase the rate of dwelling conversion to water efficiency, it is recommended that the government further facilitate the retrofitting of public and private dwelling, and commercial and industrial buildings, to ensure that savings in water efficiency achievable through programs such as BASIX are achieved more rapidly.

  Reducing water demand of industry and residences was a key recommendation of the Expert Water Panel – A Sustainable Water Balance for Sydney – June 2004. Sutherland Shire Council supports this recommendation.

- *Regulatory action requiring the manufacture of non water-efficient appliances ceases.*

  There are opportunities for significant water savings by switching to water efficient appliances. Approximately 20% of household water usage occurs in the laundry. Use of water efficient washing machines, such as front loading machines, has the potential to significantly reduce potable water usage for clothes washing. Opportunities exist for water savings by switching to other water efficient appliances such as dishwashers. Regulatory action to restrict the manufacture of non water efficient appliances will assist in achieving water savings within the home, and reduce potable water demand.

  Research carried out by Marrickville Council in partnership with Monash University's School of Geography and Environmental Science through the Urban

Stormwater Integrated Management project has revealed widespread community support for these approaches.

A regulatory approach to water efficient appliances was a recommendation of the Expert Water Panel – A Sustainable Water Balance for Sydney – June 2004. Sutherland Shire Council supports this recommendation.

- *Participatory sustainable water management involving the local community.*

Sutherland Shire Council strongly believes that sustainable water management needs to be participatory, and that responsibility for sustainable water use needs to be stressed at every level, i.e. of families, businesses, industry and all levels of government. Unless the community is directly involved in water management, through recycling, conservation and the hands-on restoration of ecosystems, they will not develop the awareness and respect that required for the long-term protection of this finite resource.

The desalination plant has been presented to the community as a fate accompli, with little or no opportunity to enter into meaningful dialogue as to alternatives. On the contrary, the sales pitch for the desalination plant has often included references to the ability of the community to continue or reengage in non-sustainable water practices such as hosing driveways. The key to Sydney's water future needs to involve all members of the community in recognising the problem and identifying an appropriate range of solutions. In this way the community will own both the problem and the solution, rather than have unacceptable solutions forced upon them.

One of the major recommendations of the Expert Water Panel Report – A Sustainable Water Balance for Sydney – July 2004, was the development of a community engagement plan. This plan would ensure that the community had ownership of both the problems and solutions associated with Sydney's water shortage. Sutherland Shire Council supports this recommendation.

Costs and Benefits

When considered over the lifecycle of the project, the financial, social and environmental costs of desalination will be substantial including:

- cost of development and construction;
- operation and maintenance costs;
- loss of marine habitat, requiring costly remediation; and
- exacerbation of global warming through increased greenhouse gas emissions leading to devastating and costly problems in the future such as global warming, climate change and sea level rise.

In contrast, the options outlined earlier require a substantial initial outlay but very little financial expense in the long-term. They also have negligible environmental impacts. Much of the infrastructure associated with desalination plants also has a short lifespan. Salt is highly corrosive to metal, and infrastructure components such as inlet and outlet structures have been shown to require replacement in as little as 13

years. However infrastructure associated with alternatives such as distribution of wastewater are not subject to these corrosive forces and may last as long as 150 years, making these alternative much better long term investments.

When compared with alternative strategies, which provide a diverse and sustainable water supply over the long-term, desalination does not offer any substantial benefit to the community. Although desalination is perceived to be more palatable to the community, research undertaken by Sydney Community United against Desalination (SCUD) suggests that the majority of Sydney residents are willing to use recycled water for a number of non-potable purposes.

A recent research paper produced by the NSW Parliamentary Library Research Service (Desalination, Waste Water, and the Sydney Metropolitan Water Plan, by Stewart Smith, Briefing Paper No 10/05) compared the total lifecycle costs of producing water from secondary effluent (recycling) and from seawater (desalination). Due to the high energy costs associated with desalination this study found that the cost of producing one kilolitre of desalinated water ($0.62/KL) was over twice as much as the cost of production of one kilolitre of recycled water ($0.28KL). Thus waste water recycling makes better economic and environmental sense.

The Expert Water Panel Report – A Sustainable Water Balance for Sydney – July 2004 noted that since 1999 the NSW government had spent $51 million on water reduction initiatives including:

- Leak detection and repairs saving 11GL/year,
- Business water reduction programs with the 150 biggest water users saving 2.3GL/year,
- Residential water reduction programs, including installation of over 200,000 water efficient shower heads saving 4.2GL/year, and
- Recycling initiatives saving 13.1GL/year.

These programs have saved over 30.6GL/year for an expenditure of $51 million. This compares with the estimated cost of $1.3 billion for a 125ML/day desalination plant that will produce only 45.6GL/year. These figures show that the return on the current water savings plans represents a much better investment than the proposed desalination plant.

The cost of distribution is often cited as a major impediment to waste water recycling. The costs of infrastructure associated with a full dual reticulation system, are considerable, however as noted earlier the life span of this infrastructure is approximately 150 years, so the costs have a considerable recovery period. The costs of indirect recycling, where water is not put directly put back into the distribution network but is placed back into dams and other water storages where it is mixed with existing water, are also stated to be considerable. This arises as many of our sewage treatment plant are on the coast at the bottom of the catchment while our dams are in the mountains at the top of the catchment. However it must again be remembered that any investment in infrastructure to pump this water to these dams is a long term investment that will have a return period of over 100 years. There is also the opportunity to recover some of the costs associated with the pumping of the water by

the recovery of energy via low impact hydro schemes associated with the distribution network. These will also go some way to offsetting the greenhouse impacts associated with pumping water to the dams. There is also the opportunity to utilise sewage treatment plants that are closer to the dams rather than the larger ones on the coast. Such plants include those at Liverpool, Glenfield and West Camden. The cost of returning water from these sewage treatment plants to the upper catchment is considerably than that for coastal STPs.

There is also significant opportunity for supply of recycled water to local industry at considerably less cost than returning it to the major dams. Significant industrial areas exist in close proximity to major sewage treatment plants. These include the Botany industrial area in close proximity to the Malabar STP and the Kurnell industrial area in close proximity to the Cronulla STP. Due to the proximity of supply and end use, the infrastructure required to supply recycled water to these industries would be less than the cost of the distribution of water produced by the proposed desalination plant.

Council considers that there are a range of options for water conservation and water supply augmentation that make better economic, social and environmental sense. As noted earlier in this submission, Council has called on the state government to promote and lead a three month forum to critically examine this wide range of options. This forum should be an open and accountable review of strategies to resolve Sydney's water future. Council notes that the state government has previously engaged independent experts to provide options for meeting Sydney's water future, the Expert Water Panel. The recommendations of this panel have not been made widely available to the public. However one significant recommendation of the Panel was Recommendation 22 of the May 2004 draft report -

"The panel recommends that the Government not consider the following new infrastructure at present:

- *Constructing new dams,*
- *Constructing new desalination plants,*
- *Installing cloud seeding equipment."*

Here the recommendations of this independent expert panel have been clearly ignored, and these recommendations hidden from the public. A full and public forum which examines these issues would provide for publicly accountable decision making in regards Sydney's water future.

e) Practices concerning the disposal of trade waste

Sutherland Shire Council has concerns regarding the current practices relating to the disposal of trade waste to the Sydney Water Sewer System.

Whilst the majority of Trade Waste Agreements require some degree of pre-treatment of wastes prior to their disposal to the sewer system, in many cases this level of pre-treatment is inadequate. Other practices rely on dilution of pollutants within the sewer stream to achieve desired results. These practices reduce the opportunities for waste water recycling within the sewer catchment.

Opportunities for waste water recycling are often only considered at the "end of the pipe", at the exist from the sewage treatment plant. This has the advantage of achieving high dilution rates for individual pollutants of concern and also of having the benefit of having at least some degree of treatment for the effluent product. It is this high degree of treatment undertaken at the Cronulla Sewage Treatment Plant that has prompted Council to develop a waste water reuse project with two other stakeholders in the catchment. However not all potential users of recycled water are located in close proximity to Sewage Treatment Plants. In these instances, the costs of piping effluent from the STP to the intended site of use may be cost prohibitive. Accordingly, it may be more appropriate to "mine" the sewer at the point of use and provide the appropriate level of treatment at the site of reuse.

The ability to undertake such a project is potentially compromised by the trade waste disposal practices which occur within the sewer catchment. Businesses that discharge highly toxic or concentrated wastes into the sewer may limit the opportunities for other water users within the catchment to successfully mine the sewer waters and undertake recycled water projects.

Such a barrier to potential waste water reuse has been encountered by Council in relation to the trade waste discharged by the Lucas Heights Science and Technology Centre at Lucas Heights. The operations of ANSTO at the Lucas Heights facility involve the discharge of radioactive isotopes to the Sydney Water sewer system in accordance with a Trade Waste Agreement. Information provided by ANSTO indicates that levels of radioactive isotopes reach acceptable limits at the discharge point from the Cronulla Sewage Treatment Plant, and thus do not pose any potential barrier to recycling waste water. While this is the case for waste water sourced from the outlet of the Cronulla STP, the situation for water "mined" upstream of the STP within the sewer catchment is less clear. Council has considerable assets within the catchment in close proximity to the Lucas Heights facility, and mining and localised treatment of the sewer at this location would make better economic and environmental sense that piping the water from the STP to this location. Were ANSTO to be required to comply with discharge limits that required acceptable performance at the point of discharge from the site rather than discharge from the bottom of the catchment at the Cronulla STP, this situation would not arise.

While the above example related to one specific waste disposer within the sewer catchment, it is not unique, and serves to highlight the potential problems associated with access to effluent of suitable quality for recycling schemes within all sewer catchment where Trade Waste Agreements exist.

(f) The tender process and contractual arrangements, including public-private partnerships, in relation to the proposed desalination plant.

Sutherland Shire Council has serious concerns in relation to the contractual arrangements associated with the proposed desalination plant. These concerns prompted Council to refer the matter to the Independent Commission Against Corruption (ICAC). The letter to ICAC which outlines Council's concerns is reproduced below.

File Ref: GO/06B/944955

23 November 2005

The Hon. Gerald Cripps QC
Commissioner,
Independent Commission Against Corruption,
L 21 133 Castlereagh St
SYDNEY NSW 2000

Dear Mr Cripps,

The Sydney Morning Herald of today's date reports on the situation with the preferred tender for the desalination plant to be built at Kurnell. The report raises issues of probity, integrity and transparency.

My understanding of the procurement process as published by Sydney Water on its web site is;

- expressions of interest were called on 27 June 2005 and closed on 4 August 2005;
- eight EOI's were received and assessed;
- three consortia were invited on 23 September 2005 to proceed to the next phase;
- the three short-listed consortia are
    - Freshwater Alliance, with John Holland Tunnelling and Underground Mining, Leighton Contractors Pty Ltd, Veolia Water Australia Pty Ltd, United KG Pty Ltd, Sinclair Knight Mertz Pty Ltd and Maunsell Australia Pty Ltd.
    - Sydney AquaSolutions, with Degremont, Australian Water Services, Bovis Lend Lease, Bilfinger Berger and Baulderstone Honibrook V. WITHDRAWN

- PureSolutions, with Theiss Pty Ltd, Parsons Brinckerhoff, GE Ionics Inc, GE Infrastructure and Black and Veatch Corporation V.

- the short-listed consortia submit proposals to undertake pre-construction design and pilot testing and submit costs and methodology;
- the selection of two consortia to undertake pilot plants testing and engineering design;
- selection of the two consortia was to take place in December 2005;
- at the end of pilot testing one tenderer is selected to construct and operate a plant.

Today's Sydney Morning Herald makes reference to the Sydney AquaSolutions consortium and states:

> *"The Government refused to allow Degremont to replace its construction partner, Baulderstone Hornibrook, with a new company after Baulderstone pulled out. This has left the Government with a choice of two consortiums, both of which involve construction companies from Leighton Holdings."*

The fact that both consortia involve construction companies from Leighton Holdings raises serious probity concerns.

Notwithstanding that a spokesman for Leighton Holdings has "Chinese walls" in place, this gives little comfort that a fully transparent tender process will occur.

Further with two 'competing' Leighton Holding remaining as the two preferred consortium, how are Sydney Water users guaranteed that the project will proceed at a competitive cost? Best value for money can only be achieved through an open, competitive environment which cannot exist with Leighton Holdings involved in both bids.

I believe there are serious issues of probity, transparency and competitive process which should be investigated.

Your advice would be appreciated.

Yours sincerely

Councillor Kevin Schreiber
Mayor

3. Conclusion

It is hoped that the Inquiry will firmly establish that the desalination plant is an expensive, unreasonable and unsustainable option for Sydney's water supply, and that there are numerous sustainable alternatives currently available, many of which are already being implemented.

Desalination is not a sustainable option and Sutherland Shire Council opposes its implementation without a thorough independent investigation into the feasibility of other options.

Appendix A

SUTHERLAND SHIRE COUNCIL

SUBMISSION TO THE NSW DEPARTMENT OF PLANNING

RE

KURNELL DESALINATION PLANT AND ASSOCIATED INFRASTRUCTURE

Major Project Application 05_0082

January 2006

Sutherland Shire Council has significant concern over the impacts of the Kurnell Desalination Plant which is proposed within our local government area. Council is in the fortunate position of having access to the majority of studies undertaken for a range of development proposals, planning studies and management plans on the Kurnell peninsula. This provides us with a unique and detailed knowledge of the Kurnell peninsula and surrounds. It is this detailed knowledge of the environmental sensitivities of the area, and the interplay and impact of development on this environment that has given rise to the concerns over the potential impacts of the proposal on items of environmental significance.

A major concern of Council is the lack of detail within the proposal, which does not provide for informed and accurate decision making. Within the information supplied in the Environmental Assessment there are many statements such as 'the area covered by the delivery infrastructure is dependent on the construction methodology and the route selected'. Other similar statements indicate that the level of detailed knowledge of the various components of the proposal are lacking, including location of works, methodologies for works, timing and duration of works and extent of works. Following from this, the ultimate impact of the works depend on knowledge of these factors. Accordingly, Council considers that at present it is not possible to accurately determine the impacts of the proposal.

While the new provisions of Part 3A of the Environmental Planning and Assessment Act provide for concept approvals, there is a statutory requirement that the information contained within the Environmental Assessment must be sufficient to:

Enable environmental assessment of the key issues surrounding the project, and
Assess the required level of environmental management and monitoring for the project.

It is Council's view that the current Environmental Assessment fails to meet these requirements.

The proponent also has a statutory obligation to ensure that the Environmental Assessment meets and addresses the specific requirements of the Director General. It is Council's view that the current Environmental Assessment again fails to meet these requirements.

The following submission further expands on these issues. The initial section deals with specific instances where the requirements of the Director General have not been addressed. The second section deals in more detail with inadequacies with the report, areas where detail or consideration of potential impacts is lacking and concerns with identified potential impacts.

Specific Areas of Non-compliance with the Director General's Requirements

The Director General's requirements for the proposed Desalination Plant are outlined in a letter from the Department of Planning dated 18 November 2005. A copy of this letter and the Director General's requirements are contained within Appendix A1 of the Environmental Assessment. The Director General's requirements set out specific, key issues which must be addressed in the Environmental Assessment. It is Council's opinion that in several areas these requirements have not been met. One particular reason for this lack of compliance with the requirements may be the short timeframe for the preparation of the Environmental Assessment. The Director General's requirements were released on 18 November 2005 with the Environmental Assessment being completed and released on 23 November 2005. Thus there were a total of five days (including weekends) in which to consider and address the Director General's requirements. Council considers that this is an inadequate amount of time to satisfactorily address these requirements. Specific examples of this non-compliance are outlined below.

Greenhouse Gases and Offsets

The Director General's requirements state that "where greenhouse gas offsets are proposed, appropriate details of each offset option must be included in the Environmental Assessment, including implementation measures for each offset option". While greenhouse offsets are a critical component of the proposed desalination plant, the Environmental Assessment contains little or no detail on the greenhouse offsets associated with this proposal. The Environmental Assessment notes that "Sydney Water is committed to investing in greenhouse gas reduction strategies for the desalination plant to effectively reduce greenhouse gas emissions by 50 per cent". This is a commitment, but it contains no detail of the mitigating measures as required in the Director General's requirements. The Environmental Assessment then refers to several potential options such as renewable energy certificates, purchase of green power, and forest sequestration, but there is no commitment to undertake any of these, or details of how much, when, etc. This is critical, as for example, there is not enough green power currently available to offset the power usage of a 500ML/day plant. There are also currently insufficient greenhouse abatement certificates in New South Wales to offset anticipated greenhouse emissions. Sydney Water indicates that they will develop a cost effective portfolio of mitigation measures. This is all detail to come in the future. The Director General's requirements indicate that these details must be provided now within the Environmental Assessment, therefore the Environmental Assessment fails to comply with the Director General's in relation to greenhouse gases.

Ecological Impacts

The Director General's requirements state that "the assessment must consider direct impacts on ecological values, as well as indirect impacts". The only consideration of direct terrestrial impacts has been for the site of the actual desalination plant. There has been no consideration of direct impacts associated with trenching of pipework and other works beyond the plant site. This is acknowledged by Sydney Water who indicates that "No detailed

surveys along the delivery infrastructure route options were undertaken". There is potential for significant direct impacts on terrestrial ecology beyond the immediate plant site including impacts on threatened species and endangered ecological communities. The Director General's requirements also require an ecological impact assessment "generally in accordance with the DEC's Guidelines for Threatened Species Assessment". This has also not been complied with. While there has been consideration of threatened species impacts on the actual plant site, the consideration of threatened species impacts beyond the site has been completely inadequate and does not comply with the DEC guidelines. No eight part test (or more recently assessment of significance) has been performed for works beyond the desalination plant site. Impacts beyond the actual desalination plant site are likely due to changes to hydrological regimes impacting on groundwater dependent ecosystems in the area. These ecosystems are already under significant stress due to the effects of the drought. There is also potential for other significant impacts associated with delivery infrastructure and pipework associated with the intake and outlet. While several eight part tests have been performed for species and communities potentially impacted by works on the desalination plant site and in the area of the intake and outlet, the eight part test has recently been replaced by the significance assessment under part 5A of the Environmental Planning and Assessment Act. This requirement came into effect on 31 October 2005. The Environmental Assessment was released after this date and therefore should have complied with the new legislative requirements in accordance with the DEC's Guidelines for Threatened Species Assessment. Accordingly the Environmental Assessment fails to comply with the Director General's requirement as it does not adequately consider both direct and indirect impacts and does not comply with legislative requirements and the DEC's guidelines for threatened species.

Spoil Management

The Director General's requirements state that the Environmental Assessment "must include estimates of likely spoil generation, ..., and options for spoil management, reuse and/or disposal". While the Environmental Assessment does provide estimates of likely spoil generation, the Environmental

Assessment specifically notes that this has not been done for all spoil management and disposal. It states that "Traffic impacts of spoil removal other than at Kurnell are not dealt with in detail in this assessment". In order to fully assess the impacts of spoil management and disposal the full impacts of the proposal must be considered. In failing to address "options for spoil management, reuse and/or disposal" beyond the Kurnell site, the Environmental Assessment has failed to comply with the Director General's requirements.

General Environmental Risk Analysis

The Director General's requirements state that in addition to the risk areas specifically identified in the Director General's requirements, "the Environmental Assessment must include an environmental risk analysis to identify potential environmental impacts associated with the project". The requirements further state that "where additional key environmental impacts are identified through this environmental risk analysis, an appropriately detailed impact assessment of this (sic) additional key environmental impacts must be included in the Environmental Assessment". This has not been done for other risks such as indigenous heritage and groundwater, where detailed analysis has been confined to the desalination plant site only and no detail is provided of impacts associated with other works and sites. There is even acknowledgment that groundwater impacts will be the subject of further studies. Therefore by failing to provide detailed assessment of other environmental impacts identified by the environmental risk assessment process, the Environmental Assessment fails to comply with the Director General's requirements.

Further details of each of these areas of non-compliance are outlined below in the detailed review of the Environmental Assessment.

Critical review of the Environmental Assessment

The following section of the submission provides a critical review of the Environmental Assessment, with particular emphasis on areas where insufficient information has been provided or inadequate consideration has been given to environmental impacts. The consequence of this lack of detail and consideration is that the resultant Environmental Assessment does not meet the statutory requirements, in that it is insufficient to:

- Enable environmental assessment of the key issues surrounding the project, and
- Assess the required level of environmental management and monitoring for the project.

The review is set out so that it follows the format of the Environmental Assessment. Each section of the Environmental Assessment is reviewed (including a reference to page numbers or section numbers where appropriate), deficiencies in information and assessment are highlighted and the consequences of these discussed.

Chapter 1. Introduction and Context

Insufficient Information

An example of the deficiency in information within the Environmental Assessment (EA) is included on the first page of the EA at 1.1, where it is noted "Precise details of the desalination proposal, including final distribution routes, construction methods and other associated infrastructure *will not be available* until further investigation and design are undertaken ... ". The Environmental Assessment states that the concept plan and level of detail within the EA is sufficient to assess key environmental impacts and determine level of management and monitoring. However Council considers that where details of distribution routes, construction methods and details of other associated infrastructure are lacking that the level of detail is not sufficient and could not be considered so by any reasonable person.

Lack of Justification for the Proposal

There is insufficient justification for the proposal. While section 1.2 briefly outlines the need for the proposal, this provides a justification for a 500 ML/day desalination plant only, in that it will be sufficient to maintain supply even if historically low inflows of 2003/2004 are sustained into future. There is no justification for plants smaller than 500 ML/day. This is particularly relevant as the State Government has now indicated that initially it intends to construct a 125 ML/day plant only.

There is insufficient justification for the choice of desalination over recycling and other water conservation and reuse strategies. While the Environmental Assessment notes for the first time that other water supply measures may include the "possibility of recycling water for potable purposes", the EA notes that current barriers to recycling include, time to demonstrate it is safe, acceptability to the community, the cost of implementation, and the community's willingness to pay. The last two are completely insufficient justification, as the cost to implement recycling is potentially cheaper than desalination, and the community have had no say in the willingness to pay for current desalination project, in fact much of the community consultation has indicated a lack of willingness to pay for and support the desalination project. The initial two barriers are artificial barriers created by the timeframe of Sydney Water. Regardless, the same processes apply to desalinated water, i.e. it must be shown to be safe to the community and acceptable to the community. Recently community attitudes towards recycled water have shown increasing acceptance, despite the lack of education from Sydney Water.

Cost of Desalination

The figures indicated in section 1.3 do not appear to add up. A 500 ML/d plant adds $150/year to average household, while a 125 ML/d plant only adds $60/year. While it is acknowledged that these figures take into account operating costs, however:

500ml/d = $2.26b 125ml/d = $1.3b or 60%

60% x $150 = $90 or $1.70/week

The Environmental Assessment indicates that a 125 ML/day would add $1.20 per week to the average bill not the $1.70 as calculated above. Operating costs of the plant are not provided within the Environmental Assessment so an accurate check of these figures is not possible.

Chapter 2. The Concept Plan

Insufficient Information

Details of the distribution network are currently unknown, therefore it is not possible to assess the impacts of delivery infrastructure. While a range of options are presented for assessment the Environmental Assessment notes that " Precise details of the site layout, distribution routes and other infrastructure will not be available until further investigation and design are undertaken". The EA further notes that "alternative distribution methods may arise during the detailed design process". Therefore it is possible that routes other than those considered within the EA may be implemented. This is further highlighted by the fact that at present there is not even certainty as to which local government areas may be impacted by the works (section 2.3).

The Environmental Assessment also notes that within the proposed routes "the exact impact zones are not defined at this stage". It is not possible to accurately assess the potential impacts of proposal where the location, method of construction or size of the impact zone is not known.

The inability to assess the impact of the works and the need for further detailed studies is acknowledged within the Environmental Assessment in section 2.4.1 where it is noted that "Before construction commences, additional *routine* feasibility studies need to continue " such as "geotechnical, groundwater, soil and sediment" plus others. It is impossible to assess the environmental impacts of the proposal in the absence of this information,

therefore this information is required now within the EA and should not be deferred to a later date.

Insufficient Understanding of the Desalination Process

Section 2.4.4. of the Environmental Assessment notes that water production may be "reduced, suspended and recommenced as required". Recent experiences with desalination plants in the United States, in particular Santa Cruz shows this not as easy as stated in the EA and can result in considerable expense, and additional chemical usage which has not been considered anywhere in the Environmental Assessment.

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Chapter 3. The Environmental Assessment Process

Section 3.1.2 of the Environmental Assessment notes the various agency input at the Planning Focus Meeting held in August 2005. Council was a participant at this planning focus meeting. Several of these issues have formed the basis for the Director General's requirements. Many of the other issues raised by Council and other agencies that were not specifically included in the Director General's requirements, are items identified within the environmental risk analysis, and have also not been adequately dealt with in this EA. As noted earlier in this submission, a potential reason for this is the short timeframe between the receipt of the Director General's requirements and the release of this Environmental Assessment which did not provide sufficient time to adequately address these issues.

Further consideration of the lack of compliance with the Director General's requirements and legislative requirements has been provided earlier in this submission.

Mitigating Measures

Section 3.1.5. of the Environmental Assessment notes that while an Environmental Impact Statement usually includes mitigating measures, they are not described in a way that can put into approval or consent conditions. It

is then noted that this EA contains a Statement of Commitments that is designed to be incorporated into the consent conditions. As with the rest of the Environmental Assessment the Statement of Commitments lacks sufficient detail to provide any comfort that their application will sufficiently mitigate and compensate for potential environmental impacts. A detailed review of the Statement of Commitments, highlighting its shortcomings is provided at the end of this submission.

Chapter 4. Site Selection

Inadequate Justification of Selected Site

At the presentation to Council on 19/09/2005 Sydney Water indicated that details of the background studies involved in the site selection process would be made available as supplements within the Environmental Assessment. Such studies included the Indigenous Heritage Assessment and Flora and Fauna Assessment. None of these studies have been included in the EA and only two pages within the report have been dedicated to the site selection process. The justification within the Environmental Assessment appears to focus exclusively on zoning, proximity to residences and economic factors related to length of intake and outlet structures. There is little or no consideration of environmental sensitivity of the site contained within the Environmental Assessment. Council considers that this is totally inadequate.

Chapter 5. Description of the Assessment

Inadequate Assessment

Section 5.1 of the Environmental Assessment notes that the end of each chapter contains an assessment of other issues than can be readily managed using standard procedures, however these procedures are not identified anywhere within the Environmental Assessment. While some potential impacts will undoubtedly have management responses that are well developed and understood, others such as the impact of and behaviour of

saline plumes are not well understood and there are no standard management procedures for dealing with these potential impacts. Elsewhere management responses such as replanting of seagrasses, including Posidonia are suggested as standard management responses, this is despite the fact that Posidonia has a very low success rate in replanting. Therefore further information is required rather than just relying on "standard management procedures".

Section 5.2 of the Environmental Assessment notes that results of the preliminary environmental investigation undertaken for the planning process were used to identify key environmental issues. These studies have not been made available despite Sydney Water assuring Council that they would form part of this EA. An assessment of the adequacy of these studies is critical to ensuring that they were sufficiently detailed to enable accurate identification of key environmental issues. The fact that these reports have not been made available, despite assurances from Sydney Water and Sydney Water's refusal to make these studies available under a Freedom Of Information request, indicates to Council that these preliminary environmental studies are inadequate for this purpose.

The Environmental Assessment also notes that the risk assessment process involved research and data collection, but there is very little in the way of data presented anywhere in EA. This lack of data and detail on which to base risk assessments raises questions over the rigor of risk assessment. This lack of detail can result in underestimation of risks or misidentification of risks undermining the assessment process.

Chapter 6. Assessment of Desalination Plant Project Components

Inadequate Description and Assessment of the Desalination Process

The Environmental Assessment contains very little detail on the actual desalination process. The EA notes that the pre-treatment *may involve* coagulation with chemicals such as ferric chloride, but there is no indication of

what alternatives may be used if not Ferric Chloride. The EA further notes that design and optimisation of the pre treatment process will be addressed during pre-construction testing i.e. not now in this Environmental Assessment. Without this information relating to type of chemicals used, amounts, concentrations, etc it is not possible to determine the impacts of this process.

The Environmental Assessment also does not adequately describe the desalination process. While section 6.1.2 notes that the treatment method will be via reverse osmosis membrane treatment, the Environmental Assessment states that there is still no certainty as to whether the process will be a one pass or two pass process. This will dramatically affect operating and construction costs, and potentially chemical usage. In order to accurately assess these issues this detail must be known now.

Deferment of Critical Assessment Detail to Later Stages (Chemicals and Noise)

The Environmental Assessment notes that contractors will determine where chemicals will be stored on site and they will be responsible for bunding arrangements, etc. This information is required now, along with chemical storage details including types and volumes, in order to accurately assess the risk to nearby sensitive groundwater dependent ecosystems. Such storage areas should be furthest from sensitive wetlands, etc, *not* where the contractor considers convenient.

Section 6.1.5 of the Environmental Assessment notes that there will be potential for some communities to experience longer term construction noise impacts especially near the tunnel entrances, but there is no information provided as to how noisy, for what length of time or what duration i.e. 24 hour? The Environmental Assessment contains no information on current background noise levels at these potentially impacted sites. There is a need to undertake noise modelling of potential impacts near tunnel entrances to determine increases in noise levels above background. This information is needed now in order to accurately assess the impact of these works on neighbourhood amenity.

Greenhouse Emission Reduction

The Environmental Assessment notes the greenhouse gas reductions proposed as part of this project. It proposes greenhouse off-sets of 50% of emissions from the plant based on a comparable gas fired plant producing 50% less emissions than coal for equivalent energy output. Elsewhere in the Environmental Assessment it is noted that 50% greenhouse offsets will be provided to mitigate the emissions from the seawater desalination plant when compared with the comparable energy consumption of a waste water recycling plant. Therefore if Sydney Water were to construct a gas fired wastewater recycling option, which provides their offset goals, it would result in approximately 25% the emissions of this plant. The Environmental Assessment indicates that while Sydney Water aim for this as their offset goal their proposed offset program will not deliver on this, as it only provides for 50% greenhouse offsets. Therefore the proposed Sydney Water greenhouse offset strategy will be comparable with either a gas powered seawater desalination plant, or a waste water recycling plant but not both as claimed.

The Environmental Assessment notes further greenhouse mitigation in that, energy recovery devices will be used to reduce energy requirements by approx. 40%. The EA states that these technologies have been successfully applied elsewhere in the world. Thus it would be expected in any case that they would be applied to any RO plant being built today. This is not a significant and innovative step but rather is one it would be negligent not to employ.

Further discussion on the limitations and deficiencies of the greenhouse gas abatement initiatives have been discussed previously in this submission, in relation to non-compliance with the Director General's requirements.

Chapter 6.3 Terrestrial Ecology

Lack of Consideration of Off-site Impacts

The Assessment of impacts on terrestrial ecology is confined to the immediate desalination plant site. All flora and fauna studies have been confined to the actual desalination plant site (see section 6.3.2) and there have been no

studies or assessments of surrounding sites, this is despite the fact that surrounding areas contain ecosystems of high conservation significance including endangered ecological communities and threatened species habitat. Immediately adjoining areas include the Calsil dune which contains the type example of the Kurnell Dune Forest (an endangered ecological community), and represents the best example of remnant dunal forest in the Sydney region. There has been no assessment of off-site impacts associated with the tunnelling or pipelaying of the intake and outlet infrastructure on these adjacent areas.

Hydrological Impacts

The Environmental Assessment notes the potential for impacts to wetlands and groundwater dependent ecosystems from hydrological change. Sydney Water indicates that they *will* develop strategies to recharge groundwater. However there is no certainty that there will be enough area available for suitable strategies such as infiltration. Within the Environmental Assessment, Sydney Water must demonstrate that there is potential to implement such an infiltration strategy, particularly as 20ha out of 30ha i.e. 67%, not the usual 50% will only be available for infiltration. Without such confirmation there is no confidence that the proposed mitigating strategies will be successful and that unacceptable impacts will be avoided.

Isolation from Proximate Areas of Habitat

The project intends to maintain linkages with larger habitat areas to the north of the site. This is consistent with previous Council approvals and is supported by Council. However, previous Council approvals also required a 20m wide landscape strip along southwest boundary to improve connectivity between the conservation area and Botany Bay National Park. The provision of such a linkage should be required as a *condition of consent.*

Light and Noise Impacts on the Grey-headed Flying Fox

The Environmental Assessment notes the potential for noise and light impacts on the colony of the Grey-headed Flying Fox that occurs on site, and states that these impacts will be minimised by a range of measures. However in

order to accurately assess the potential impact on the colony, which currently includes lactating females, it is necessary to know the proximity of proposed works to the colony and what the anticipated noise levels are, both with and without mitigating measures, at the colony. This information has not currently been provided within the Environmental Assessment.

Threatened Species Assessment

The threatened species assessment within the Environmental Assessment has been undertaken utilising the 8-part test. This has been replaced in legislation and is now is outdated. The assessment should have been done using the Assessment of Significance, as this replaced the 8-part test on 31 October, 2005, i.e. before this Environmental Assessment was submitted.

Chapter 6.4 Indigenous Heritage

Similar to terrestrial ecology above, the assessment of indigenous heritage concentrates solely on the desalination site, with no assessment of impacts of pipes to and from the plant. The Kurnell peninsula has a rich history of Aboriginal occupation, and contains some of the largest middens within the Sydney region, thus there is significant potential for items of indigenous heritage on adjoining sites. The consideration of potential impacts on indigenous heritage needs to include potential off-site impacts associated with delivery infrastructure including intake and outlet pipes, tunnelling of the delivery pipeline to Silver Beach, and provision of site services such as electricity and water.

Chapter 7. Assessment of Seawater Intake and Concentrate Outlet Project components

7.2 water Quality

Water Quality Assessment

There is insufficient information relating to background water quality and potential discharges in the vicinity of the intake and outlet structures to provide

for a sufficiently robust assessment of impacts. This is acknowledged within the Environmental Assessment in section 7.1 where the EA notes that a detailed seawater sampling program has been initiated (i.e. not completed) and that the program will "establish the background water quality in the ocean to allow discharges from the plant to be assessed". The EA also confirms that intake water quality is not well established at present and will need further testing (section 7.2). Therefore the Environmental Assessment acknowledges that this information, which is not yet available, is required in order to properly assess the impact of discharges from the plant. Without establishing background water quality there is no sound basis for estimation of impacts associated with the addition of further discharges to receiving waters. There is also potential for discharges from the plant to interact chemicals within receiving water resulting in unforseen impacts. Therefore it is critical that potential water quality impacts be assessed against well researched background conditions.

The Environmental Assessment also notes the potential for $FeOH_3$ to settle on bottom and accumulate. Sydney Water indicates that if this happens they will manage it, however there is no detail on the management strategy apart from a potential change in the chemical flocculants to be used. There is no corresponding assessment of the impact of these other potential flocculants which will likely result in similar impacts. Thus there is an identified potential significant impact that is not quantified, or further assessed, and has no acceptable management strategy. The Environmental Assessment further notes that there are no trigger values for iron, and that it is not a pollutant of concern. However in significant concentrations it can become a pollutant of concern. Guidelines for Iron have been established in the Canadian Water Quality guidelines, and the proposed discharge from the plant considerably exceeds their guidelines.

Discharge Characteristics

The Environmental Assessment notes that it has used indicative/conservative treatment and chemical usage for discharge modelling. However as there is no certainty as to the nature of the pre-treatment process and the chemicals

used, and there is no indication of the chemicals needed during periodic shut down of the plant and the likely duration of these periods, or any certainty over the chemicals needed to clean membranes, there is no guarantee that the figures used are indicative of the final desalination discharge. There is no detail of any contingency for variation of chemicals/processes. The Environmental Assessment notes that many of these details will not be known until the completion of the pilot testing.

This lack of knowledge of the discharge characteristics couped with a lack of knowledge of the background water quality conditions makes it impossible to determine potential impacts on water quality with any degree of certainty.

Discharge Modelling

There is insufficient background data on coastal processes including current direction and strength to accurately model dispersal of discharge. The Environmental Assessment notes that Sydney Water now has a current meter installed at the proposed intake and outlet sites to get this information, but this is not yet available. Many of the deficiencies with the modelling are not specifically reported in the Environmental Assessment. However the appendix contains the consultants report titled "Desalination Planning Study Ocean Modelling Report", which notes may of the shortfalls in the modelling, including the lack of quality control and verification of the modelling. Some of these shortfalls are noted below in direct quotes from the consultants report.

Page 9. "Attempts were made within the short period between data being gathered and this report being finalised to simulate the same period collected. This was undertaken, however, the model input from the Ocean Reference Station had two gaps within the period and had not been quality controlled".

Page 9. "indicates that the model may be slightly under-predicting the shore parallel component."

Page 13. "it must be noted that no data collection has been undertaken for the verification of the relative impacts of these plumes at the Kurnell intake."

These deficiencies are particularly critical as the science of modelling of dense plumes is not a well understood science. This is a fact that is again

noted within the consultants report, but is not highlighted within the main Environmental Assessment. The consultants report specifically notes:

Page 14. "It must be noted that the science of predicting near field distributions of dense plumes has not been greatly studied."

Page 19. "The science of predicting near field (not far field) dilution of dense plumes has been subject to only limited study" ... "additional study (including physical modelling of the near field dilution) is highly recommended"

The last comment is particularly relevant as all the assessment on predicted water quality impacts in the Environmental Assessment is based on near field dilutions.

It is apparent that there is a poor understanding of the exact nature of the chemicals to be used in the desalination process, and that such information will not be available until the completion of the pilot testing. There is also a lack of knowledge of background water quality of the receiving waters. These factors coupled with the lack of quality control and calibration of the dispersal models for what is admitted a poorly understood science of dense plume modelling, means that there can be no certainty to the assessment of water quality impacts. It is considered that an accurate assessment of water quality impacts cannot be made until these deficiencies have been addressed by further data collection and model calibration.

Finally all modelling has predicted levels of pollutants at the edge of the near field mixing zone. There has been no assessment of concentrations within the mixing zone. Within this zone concentrations of pollutants will vary from most concentrated at the outlet, to those predicted at the edge of the mixing zone (although the accuracy of these predictions has been questioned). In order to accurately assess the impacts on aquatic organisms there is a need for further data on pollutant levels within the mixing zone, other wise the predictions and assessments must be based on the worst case scenario, that pollutant concentrations within the near field mixing zone are similar to those at the outlet. This has not been done within the Environmental Assessment.

Size of the Impact Zone

There is some inconsistency between the size of the potential impact zone reported in the Environmental Assessment and the dispersal figures noted throughout the EA. The Environmental Assessment notes that impacts will largely be confined to the near field impact zone and that this will be approximately 50-75m from the discharge point, with the EA stating the mixing zone is estimated to be less than half a hectare. However a 50m radius mixing zone equates to a 0.78ha impact zone, while a 75m radius gives a 1.7ha impact zone. The Environmental Assessment also notes that the discharge will be via a series of risers, potentially three in total. Therefore there is potential for this mixing/impact zone to be experienced at each of these three risers. If this experienced around each riser then the impact zone is potentially up to 5ha, significantly more than the half a hectare reported in the Environmental Assessment.

The Environmental Assessment further notes in section 7.12, that during periods where currents occur (i.e. most of the time) mixing zone will be larger. Therefore there is significant potential for the impact zone to be larger than the half a hectare stated in the Environmental Assessment for substantial periods of time.

7.3 Assessment Aquatic Ecology

Location of the Intake and Outlet Structures

The Environmental Assessment notes that the intake and outlet structures are to be located on a large rocky reef bed. These environments are highly diverse, and as noted in the EA support a wide variety of marine life with "fish fauna abundant and diverse" (Table 7.6). In the agency consultation phase, NSW Fisheries specifically requested that the intake and outlet structures not be located on rocky reef environments due to their high conservation and biodiversity values. Environments of lower conservation value, including sandy beds, exist further off shore. There has been no justification within the Environmental Assessment for the choice of the location of the intake and outlet structures over other more suitable locations off shore. The

Environmental Assessment should include consideration of alternative intake and outlet locations and should provide justification for the chosen option.

Construction of the Intake and Outlet Tunnels and Impacts on Hydrology

While the proposed method for construction of the intake and outlet pipes is not specifically stated in the Environmental Assessment, it is assumed that they will be tunnelled from the site of the desalination plant. Chapter 9 of the EA notes that the access shaft on the desalination site will be approximately 70m deep. The groundwater on the desalination plant site is at about 2.6m AHD. Therefore these excavations will represent a significant incursion into the water table. There is no information within the Environmental Assessment on this will be managed. It will be necessary to dewater the access shaft, which could involve considerable pumping of groundwater from the excavation. This has the potential to impact local hydrology, and potentially result in localised reversals of groundwater flows and significant drops in localised water tables. This is particularly relevant as the adjoining areas contain significant groundwater dependent ecosystems and wetlands including endangered ecological communities and threatened species habitat.

Intake Entrainment and Impingement

The Environmental Assessment notes that the intake is designed so that intake velocity is less than the surrounding current *generally*. However there is no information provided as to how often the intake velocity will be above the surrounding current, and for what duration. At present the Environmental Assessment estimates that up to 2% of fish larvae in Southern Sydney region may be entrained for a 500ML/day plant, but notes *more work is needed* to improve this estimate. Page 7.23 also notes "more detailed information on the nature of the planktonic community is needed to finalise screening and pre-treatment design". The EA further notes that entrainment of planktonic larvae may affect recruitment to local fishing stocks. Again the nature and scale of these potential impacts is not known. Therefore uncertainty exists at two levels when considering the impacts on planktonic communities, both at the level of current modelling to determine potential for entrainment and impingement, and in the make up of the community to be impacted. With

such a high degree of uncertainty surrounding this impact at present it is not possible to make an accurate and informed decision in relation the impact of the plant intake. As planktonic communities represent the base of the food chain for the many marine organisms, the potential for flow on impacts to higher organisms is significant.

The need for further study and the highlighting of shortfalls of information in relation to potential impacts of the intake structure are highlighted within the consultant's report into marine Ecological impacts, who note:

Page ii. "Gathering additional information on the abundance, type, spatial and temporal variation of plankton that would be entrained into the desalination plant would be important, in terms of formulating an accurate assessment of the impacts on the ecosystem'.

The Environmental Assessment notes that there is evidence that an elevated intake above sea bed can minimise the intake of larval species. However this has not been incorporated into the design of the plant. Throughout the Environmental Assessment there is no justification for the choice of location of the intake and outlet structures. This is despite the uncertainty that exists over the current choice of site and the recognised abundance and diversity of marine life at these locations. It appears evident that should a more thorough study be undertaken of the area and a better understanding of the nature of the potential impacts of the proposal, more acceptable designs and locations may be available. However in the absence of this information Sydney Water appear to have based design decisions on minimal information and with a poor understanding of potential impacts. This is not considered an acceptable approach for a project of this magnitude.

Outlet Discharge

As with the potential impacts of the intake structure a large degree of uncertainty surrounds the assessment of impacts associated with discharge from the desalination plant. While the Environmental Assessment acknowledges that the structure of assemblages around outlet may be affected, it also acknowledges that there is little information available on

salinity tolerances of these species or their chemical tolerances. The Environmental Assessment notes that further specific studies which examine the toxicity of discharge on a range of species will be required to more accurately determine the impacts of discharge on local marine organisms. As with ocean modelling earlier, the degree of uncertainty and need for further studies has been downplayed somewhat within the main Environmental Assessment compared to the consultants report. Some of these shortfalls are noted below in direct quotes from the consultants report.

Page v. "Because no specific information can be found on the likely effects on local benthic or planktonic communities, it is essential that monitoring of local populations of species and toxicity tests be done."

In assessing the potential scale of the impacts, the Environmental Assessment notes that it is expect that the near field will be 0.5ha which is 0.05% of rocky reef within vicinity of Kurnell. However as noted above it is considered that half a hectare is a considerable underestimation of the size of the impact zone which could be up to 5 hectares in size.

There is also uncertainty as to the extent of potential impacts beyond the mixing zone. While the EA notes that the area affected is small, there is potential for wider ranging impacts, i.e. if fish and other marine organisms preferentially avoid the area of the plume, then how big an area will they avoid, is it just the plume or wider area? As noted earlier little is known of the response of marine species to elevated levels of salinity, including avoidance behaviour, accordingly there is potential for impacts to be experienced beyond the actual mixing zone.

Therefore while impacts on marine species are likely, the scale or nature of these impacts cannot be determined.

Impacts on Cetaceans (Whales)

The Environmental Assessment notes that during construction, noise may cause whales to move further offshore. However the EA concludes as corridors for migration are *likely* to be wide, there will be no significant impact.

There has been no study of the migratory patterns of whales off this area, so the statement that the migratory corridor is wide is just a guess. Whales also have preferential resting areas along migratory pathways, and there has been no study to determine if this area functions as such a rest area. The high incidence of visual sightings in close proximity to the coastline in this area indicates a preferential migratory pathway that is likely to be within the proposed intake and outlet structure construction zone.

In acknowledging the potential for impacts on whales during construction, Sydney Water indicates that they will manage impacts on whales, which could include stopping or scaling down works where practicable. However it is likely that in the majority of instances such a management action will not be practical, as in days when whales pass consistently or rest in the area. It is unlikely that work will be stopped for days or weeks on end as would be necessary at such times. Therefore it is likely that significant impacts will be experienced and will not be effectively mitigated.

Chapter 8. Assessment of Delivery Infrastructure Project Components

Delivery Infrastructure Route

As noted earlier in this submission, it is difficult to assess the impacts of the proposed delivery infrastructure as there is no certainty to the proposed route, or the proposed construction methodology. The Environmental Assessment attempts to overcome this by suggesting that while the routes may change, the types of impacts will be similar. This is not necessarily the case. Some of the proposed routes contain remnant vegetation including endangered ecological communities, while other routes involve considerable works in close proximity to, and through, residential neighbourhoods. Table 8.2 notes that noise from construction activities *may not* meet Environmental Noise Control Manual requirements, but there is no indication of where this may occur, for long this may happen, how often, or by how much. The EA notes that the selection of pipeline and tunnel routes within urban areas and siting of tunnel shafts will be subject to further assessment. However there is no detail

as to when this assessment will take place, what level of assessment will be undertaken, and what opportunity for public comment and input will be available. In order to accurately assess the impacts of the proposal the affected communities must be consulted and potential impacts upon them determined. They must then have the opportunity to comment on the assessment process. At present it is not possible for an accurate assessment to be undertaken as the required level of detail is completely lacking to the extent that it is not even possible to accurately identify which local government areas will be impacted by the works. For example, page 8.6 of the Environmental Assessment notes that there is potential for additional shaft sites to be required, and that while there are unlikely to be any impacts of ecological significance, there may be additional traffic and noise impacts. Not only has there been no detailed assessment of traffic and noise impacts from a base scenario, there is acknowledgement that impacts may be beyond those referred to in the Environmental Assessment.

Construction Methodologies

There is no certainty over the nature of the construction methods that will be used for the delivery infrastructure. Various scenarios are presented from trenching within a road reserve, to tunnelling under Botany Bay. An example of the lack of detail within the Environmental Assessment can be found in the following statement relating to potential trenching of the pipeline across Botany Bay, "Construction of a pipeline crossing Botany Bay would *likely broadly involve*".

Each construction method presents a unique series of potential impacts. While trenching tends to disperse impacts of noise, traffic and general inconvenience, with areas experiencing impacts for a short duration of time, tunnelling tends to concentrate these impacts to particular areas which experience them for longer periods of time. Thus there are considerable differences in impacts between the two construction methods.

Therefore it is necessary to know both the pipeline route and the construction methods in order to accurately assess the impacts of the proposal. As neither

of these is known with any degree of certainty satisfactory assessment cannot be undertaken.

Aquatic Ecology in Botany Bay

The Environmental Assessment notes that areas where previous infrastructure has been developed, such as the Caltex wharf and the Caltex outfall, are now fragmented with loss of Posidonia. It therefore appears logical to expect that a similar situation will arise in this instance with the installation of the delivery infrastructure. The EA notes that the area of the proposed pipeline is healthy and contains benthic organisms in the soft sediment zone, and healthy seagrass, with some Caulerpa present but patchy in its distribution. The marine ecological study contains a comparison of the route proposed by Sydney Water against an alternative route across Botany Bay from Silver Beach. The original Sydney Water route requires removal of approximately 0.5ha of sea grass, while the other route identified by the ecological consultants requires removal of approximately 0.2ha. The marine ecological consultants note that they need to do further studies to determine best route through sea grasses. It therefore appears that when the proposal is subject to further studies and more detailed scrutiny that alternative options which result in decreased impacts may be available. As with many other aspects of this proposal, the haste with which the proposal has been prepared has led to decisions being made based on little of no detailed site information. When the proposal is subject to a greater degree of scrutiny, and where further detailed information in provided more informed decisions can be made and a more accurate assessment of impacts is possible. In this instance the route that requires the minimal removal of seagrasses should be required as the preferred route.

The Environmental Assessment notes that impacts on seagrasses may be further minimised by the use of sheet piling. With the uncertainty that surrounds much of the construction methodology, there is no certainty that such a method would be used, as it may subsequently be found to be "not practicable or feasible" due to economic or time constraints. Accordingly this construction methodology should be required as a condition of any consent.

Mitigating Measures

The Environmental Assessment notes that seagrass replanting is to be employed as a mitigating measure, to compensate for the loss of seagrasses. While this is to be supported it should be remembered that success in the transplanting of Posidonia has been extremely limited. It is therefore essential that further studies be done to select a route that minimises the loss of Posidonia in the first place, rather than rely on an unreliable mitigating measure to compensate for potential losses.

Terrestrial Ecology

The Environmental Assessment notes that there have been no ecological surveys of the proposed distribution routes. Therefore the potential ecological constraints of the proposed routes are poorly known. An example of this is the consideration of the route from Kyeemagh to Marrickville where it is noted that there is *unlikely* to be any remnant vegetation along the river here, i.e. the status of vegetation along this route is not known with any degree of certainty. Some potential routes contain threatened species such as the Green & Golden Bell Frog. The Environmental Assessment further notes at page 8.19 "None the less it will be necessary to remove vegetation ... some has been mapped as endangered ecological communities", however there is no quantification of where, how much, or which communities.

There has been no proper assessment of the proposal on terrestrial ecology along the proposed distribution routes, including impacts on threatened species and endangered ecological communities, as the routes are not known, the construction methodology is not known and the ecology of the area is not known with any degree of certainty. Therefore at present it is not possible to accurately assess the impact of the proposed delivery infrastructure works. In failing to properly address the impacts of the delivery infrastructure on threatened species and endangered ecological communities the Environmental Assessment fails to comply with the Director General's requirements and the requirements of the DEC.

Chapter 9. Spoil Management

Underestimation of Spoil Generation

It appears that the spoil generation figures referred to in the Environmental Assessment represent an underestimation. On page 9.3 they have converted incorrectly from tonnes to m3. The same has occurred in Table 9.1. The mistake involves the non-inclusion of the bulking factor in the calculations. For example, using Sydney Water figures, that do not incorporate the Bulking Factor:

Intake & Outlet = 277,000 tonnes

$$\text{Volume} = 1{,}000 \times \frac{277{,}000}{1{,}600} = 173{,}125\text{m3}$$

They have now used this figure to determine total truck movements in Table 9.1, with a 31m3 truck giving 5,580 movements and 8,650 movements for a 20m3 truck, for a total of 173,000m3 as noted above.

But when the 1.6 Bulking Factor is applied, the actual volume is 173,125 x 1.6 which is equal to 277,000m3. This then equates to between 8,935 – 13,850 movements.

Therefore there has been a significant underestimation of total vehicle movements associated with the disposal of spoil in the Environmental Assessment.

Transport of Spoil

The Environmental Assessment notes that consideration of the traffic impacts of spoil movement has been restricted to those associated with the Botany Bay tunnel and intake and outlet tunnel. Other spoil generated from ventilation tunnels and the terminal shaft are *not* dealt with in the EA. In some instances the volume of spoil generated by these works are quite considerable i.e. Coward St, Mascot 314,000 tonnes. Sydney Water indicates

that consideration of disposal of spoil from these sites will not to be done until final selection of route and construction methodology. This is not acceptable. It is proposed the majority of spoil be disposed of at the Holt Landfill site on the Kurnell peninsula. Thus there is significant potential for traffic impacts on roads in the vicinity of this site and surrounds. Currently it is only possible to assess half of the impacts of spoil disposal due to this lack of information. However even under this half spoil disposal scenario potential for unacceptable impacts are noted.

Traffic Impacts of Spoil Movement

The Environmental Assessment notes a range of potential spoil transport options.

Page 9.9 of the Environmental Assessment notes that traffic modelling shows that movement of spoil "*will* impact on the operational performance of key intersections during AM and PM peak periods". However the intersections that will be impacted are not identified, nor are the duration or severity of the impact identified. As a potential mitigating strategy, the Environmental Assessment further states that additional traffic volumes during these periods will be avoided *if* adequate space for storage can be found at work sites. However, earlier in the EA it is stated that stockpiling on site will not be utilised in an attempt to minimise the area of disturbance. Thus there is conflict within the document as to proposed mitigating measures, with some measures being proposed to solve one problem but exacerbating those in another area.

Similarly, a strategy is proposed to limit vehicle movements during the peak period and concentrate vehicle movements outside of peak hours. However, elsewhere in the Environmental Assessment it is noted that the "impact of additional traffic will be significant if the movement of material is restricted to certain periods of the day". While the EA also notes that there will be a significant impact on AM and PM intersection performance as well, if more spoil is moved at this time. It appears that there is no acceptable spoil transport strategy, with each strategy having flow on, unacceptable impacts during other periods.

Again, there is insufficient information on which to base accurate assessment decisions. The ultimate volume of spoil is not known, there have been underestimations in spoil volumes where they are known, there is no certainty over the disposal sites, and based on the limited information available there is a conclusion that there will be unacceptable impacts, but no description of where, how often or how severe these impacts will be.

Chapter 10. Matters of National Environmental Significance

Council has previously prepared a submission to the Federal Department Environment and Heritage. That submission addressed matters of national environmental significance. This submission is attached in appendix A.

Chapter 11. Stakeholder Consultation and Engagement

Information versus Consultation

The majority of actions contained within the Environmental Assessment relate to informing the community about desalination, with most things mentioned relating to information presentation rather than consultation. To date, much of this has occurred after major announcements, for example Kurnell residents being notified by Sydney Water that Kurnell is the preferred site for the desalination plant after they had seen it on the news several days before. There is little value in such information provision when it occurs after the fact. Regardless, the provision of information alone cannot be considered appropriate consultation.

Value of the Consultation Process

There is a question over the value of any consultation associated with the proposal when the Minister consistently says "it will be built" regardless.

Having regard to the degree and quality of consultation to date there is also serious concerns relating to the proposed pre-construction consultation which notes that communities will be consulted to ensure that appropriate measures are put in place to mitigate impacts. However where mitigating measures are referred to within the Environmental Assessment they are very general and also come with qualifiers such as "where appropriate" and "where feasible". The aim of such consultation is also generally to "minimise impacts". There is no goal beyond this. It must be understood that minimised impacts do not always translate to acceptable impacts. What if there aren't appropriate strategies available, they are not economically viable, or they fall outside construction timeframe? Thus while Sydney Water may achieve the goals outlined within the consultation section, it may still result in significant adverse impacts on affected communities.

Chapter 12. Conclusions

Economic Justification

Within the Environmental Assessment, Sydney Water note that their planning process in the Metropolitan Water Plan concluded that desalination is a viable option based on financial, economic, environmental and risk criteria. This Plan included economic consideration against other forms to justify this statement. The cost figure of $2b noted in the Metro Water Plan and the Environmental Assessment, provided for 500ML/day plant, is not accurate, and is a considerable underestimation of the true cost of the plant. Latest Government estimates of the cost are currently $2.6b for a 500ML/day plant and approximately $1.3b for a 125ML/day. In the light of these revised figures the economic viability and justification for the plant should be re-examined.

There is no comparison with other alternative forms of water supply augmentation, such as waste water recycling and stormwater harvesting, or demand management measures to demonstrate the economic viability of the proposal.

Overall Conclusion

The Environmental Assessment concludes that the project can proceed without any significant environmental impacts. However a thorough review of the EA indicates that there is insufficient information to reach such a conclusion. Rather the information presented within the Environmental Assessment indicates that adverse environmental impacts will be experienced, that there is currently insufficient information regarding potential impacts, or that there is current insufficient detail regarding the proposal itself to accurately determine impacts.

In summary it is not possible to conclude that the proposal will not have significant adverse environmental impacts in the following areas:

Greenhouse gas emissions – as there is no certainty to the proposed mitigating measures.

Terrestrial Ecology – as there is no certainty to the potential routes, and there have been no assessment of delivery infrastructure on Kurnell Peninsula or elsewhere.

Indigenous Heritage – as there has been no assessment of impact of delivery infrastructure on Kurnell Peninsula or elsewhere.

Water Quality – there is no detailed assessment of impacts within mixing zone, lack of calibration of dispersal modelling, and lack of understanding of dense plume dispersal. There has also been no accurate assessment of water quality impacts as SW doesn't know type/volume of chemicals used or existing water quality.

Aquatic Ecology – there is no accurate assessment of the impact on marine ecosystems as there is no knowledge of the impact of increased salinity or discharge chemicals on receiving species, and there is no knowledge of the planktonic community in the region of the intake or outlet.

Aquatic Ecology Botany Bay – as there are potential routes that have significantly lower impacts on sea grasses than those proposed by Sydney Water. Sydney Water also notes they will restore sea grasses, but can't restore Posidonia.

Spoil Management – as there is no definite proposal and the EA itself acknowledges that impacts beyond the Kurnell Peninsula have not been assessed, rather a range of management actions are presented which potentially cause other problems, i.e. avoidance of AM and PM peaks leads to poor intersection performance at other times.

Chapter 13. Draft Statement of Commitments

Desired Outcomes

Figure 13.2 notes desired outcomes for the identified key issues. While many of these are appropriate, there is little detail on how they will be achieved (even when read in conjunction with tables 13.1 and 13.2). Many of them however just refer to "minimising impacts". It should be noted that just because an impact has been minimised when compared with a previous or original impact, that does not necessarily equate to an acceptable impact or an impact that is not significant. A simple statement that impacts will be minimised is therefore not sufficient.

Figure 13.3. Similar to above many desired outcomes are simplistically stated as minimised impacts. This is not sufficient.

These desired outcomes should have guided the project design and ultimately the assessment process rather than just being tacked on the end to encompass all the things that weren't properly considered during the environmental assessment.

Detailed Comments on Sydney Water Commitments and Concerns re Implementation

Table 13.1 and 13.2

Commitment No	Comments
	Greenhouse
2	Notes that a portfolio of greenhouse mitigation measures will be developed – before the end of the first year of operation. The DG's requirements say this should be done as part of this environmental assessment. At present there may not be enough off-sets available to meet these requirements/proposed strategies. No certainty of implementation. No opportunity for public comment.
	Terrestrial Ecology
5 + 7	Stormwater controls – the previous approvals on the site had considerable site area dedicated to appropriate stormwater controls (i.e. it was not 70-80% impervious). There may not be sufficient site area available to implement similar or effective stormwater controls in this instance. No certainty re

	ability to implement this commitment.
8	Water balance – previous approvals had considerably less hard stand areas (impervious areas) and considerably greater site area available for groundwater recharge, including 20m wide landscaped buffers to adjoining wetland and conservation areas. No certainty re ability to implement this commitment.
	Previous approvals also required the establishment and maintenance of a 20m wide landscaped strip along the SW site boundary to connect the Conservation Areas on site with Botany Bay National Park. A commitment to provide a similar vegetated corridor should be provided for this project.
	Note, all these commitment relate solely to the desalination plant site. There are no commitments associated with areas adjoining the site, or the intake and outlet infrastructure.
	Indigenous Heritage
9 + 10	Commitments focus solely on the desalination plant site. There are no commitment to indigenous heritage sites elsewhere, i.e. adjoining sites, in the vicinity of the intake and outlet structures. There have been no surveys of any other areas.
	Water Quality and Aquatic Ecology (Intake + Outlet)
12	All commitments/targets relate to the edge of the mixing zone. By definition this is the zone in which dilution occurs, and is the zone of impact. Once you get beyond the mixing zone impacts are generally acceptable. What is more critical in terms of impacts is the size of the near field mixing zone. There has been minimal assessment of the impact within this zone. This ultimately determines the scale and magnitude of the impacts. What should be provided is a commitment to reduce the scale of impacts within the near field mixing zone, and to reduce the size of the near field mixing zone. This will result in a reduction in the impacts from the plant.
13	Note that there has still been no collection of baseline data. Baseline data is critical up front in the assessment process in order to make informed decisions. While a commitment to collect baseline data is required, it is after the fact and should be provided up front in the assessment process.
13	Who will be involved in the peer review of the results of the monitoring, and who will the results of the peer review be reported to? Council would like to participate in the review process.
14	Notes that there are still further studies required to determine the visual impact of ferric chloride. These studies should be done up front to inform the assessment process.
15	Notes a commitment to minimise the impact of impingement and entrainment of marine life related to the intake structure. Again it should be noted that a minimised impact does not necessarily equate to an acceptable impact or one that is not significant. A more detailed and quantifiable commitment

	should be provided.
16	Again who will peer review and have access to the results?
17	Notes that mitigation measures for impacts on marine mammals will be implemented "where practicable", when they may stop or scale down operations. A major concern with this project has been the tight timeframe. It is unlikely given these tight timeframes that stopping work during periods of constant migration will be "practicable". No certainty to implementation of this measure.
	Water Quality and Aquatic Ecology (Delivery Infrastructure)
18	Notes they are still to do a detailed survey to determine the preferred route of the Botany Bay pipeline, and thus quantify the impacts. These studies should be done now so that impacts are quantified and informed assessment decisions can be made.
18	While seagrass replanting should be included as a mitigating strategy, it should not be relied upon to completely mitigate impacts, due to the limited success of Posidonia replanting.
19	See above comments re Posidonia replanting.
21	What practices will be implemented to limit Caulerpa dispersal and when will they be "feasible".
	Terrestrial Ecology (Delivery Infrastructure)
24	Again the commitment is to "minimise" impacts "where practicable". Thus there is no certainty to any of this. Studies and data are needed now to ensure that they are practicable and that when they are minimised they will be acceptable and not significant.
	Spoil and Traffic Management
25	Notes that sites will be identified for beneficial re-use. There has been no consideration if these sites beyond the Kurnell peninsula.
26	Note that the project may stockpile spoil to limit truck impacts, but elsewhere it is noted that stockpiling will be limited to reduce work site impacts. These management practices are contradictory.
	Construction Hours
27	Notes that hours will be restricted to 7am to 6pm, but elsewhere in the EA it includes scenarios for 16 hours of spoil transport. The commitment states that work outside these hours will only be undertaken where "agreement has been reached with local residents". This is good and should be kept in, but what happens in instances where there is a need to move vehicles outside these hours to have more acceptable traffic impacts in one area, but residents in another area don't agree due to noise impacts at night or similar. This is why details of spoil and traffic movements are required now, in order to make informed decisions. Assessment of these issues now is required in accordance with the DG's requirements.
	Noise and Vibration

29	There has been no noise monitoring or modelling associated with the proposal, so there is no detail of the types of impacts anticipated. Again all commitments are "as far as practicable" and "where feasible". These will be implemented where noise objectives cannot be achieved, but there is no indication of where this will occur, by how much the objectives will be exceeded or for how long such exceedances will occur. This detail should be provided now.
30	Similar to above.
	Traffic and Access
32	Again practices are to "minimise" impacts "as far as practicable". This is not good enough when we don't even know the routes to be taken with any degree of certainty. No community can gain any comfort from such a poorly defined commitment.
33	Similar to above.
	Hydrology
37	Notes that work practices will be "generally" in accordance with relevant guidelines. Why only generally? Work practices should be in accordance with all relevant guidelines.
38	Similar to above, why are works only "generally in accordance" with discharge protocols?
	Groundwater
40	There are many sensitive groundwater dependent ecosystems in the area including those on perched aquifers. How will they manage these when they don't even know where they are as they have not surveyed adjoining sites, and they don't have specific information on where the groundwater level is on the site and surrounding areas? How will the grouting be undertaken in such a sandy environment?
41	The dewatering activities deal with discharge of extracted water. This needs to be minimised in the first place. How will these be achieved in this highly permeable environment?
42	Notes that tunnels will be designed and operated to ensure no alteration to groundwater regimes. How will this be achieved in such a highly permeable environment? How will this be achieved when there is no data available on groundwater regimes? This data and information is required now in order to inform assessment decisions.
	Heritage
43	Notes that buoys may be left in place at the completion of works. Where will these buoys be located, what type, what visibility? This impact has not been assessed elsewhere in the EA.
44	How can you design work practices (fences, etc) to protect items that you don't even know are there? There have been no surveys for heritage items beyond the actual desalination plant site. Such studies are required now to enable informed assessment and appropriate environmental management.
	Chemical Use

51	Notes that a preliminary hazard analysis will be done "if needed". There are no details provided as to which circumstances would require one, or who will make the decision if one is needed. Greater detail is required here. Obviously one has not been done to date as there is no certainty as to which chemicals will be used in the process or how much, etc. This is not considered an acceptable situation for an environmental assessment.
52	Why are chemical storage provisions to be only "generally" following relevant guidelines? All chemicals should be stored in accordance with relevant guidelines.
	Bushfire
53	A condition should require that all bushfire measures shall be contained within the development site. No clearing/fuel reduction works shall be permitted within the Conservation Areas, or adjoining lands.
	Water Use
57	This is a commitment to only investigate methods to optimise water efficiency. There is no commitment to implement these measures once they have been investigated, not even "where practicable" like everywhere else.
	Navigation and Fishing
58 + 59	It should be known now whether no anchor zones and/or fishing exclusion zones will be required. The commitment to minimise them means little, they are either there or they are not.
	Property
60	There is a commitment to minimise damage to property and infrastructure. There has been no identification of areas where damage to property may occur or any indication of the type and scale of damage. The community can take little comfort in a commitment that we will minimise the damage to your property.

Table 13.3

Commitment No	Comment
	Environmental Management Systems
63 + 64	What level of public scrutiny/comment will the EMS be subject to, as there is insufficient detail within the majority of the EA to determine the scale or nature of impacts, and much will depend on how the site is managed? This detail should be provided in the EMS. It is critical for reasons of transparency that this EMS be the subject of public review.
	Communications Process
65	Much of the communication committed to is one way, i.e. Sydney Water providing information to the community once a decision has been made, i.e. the decision that Kurnell would be the site for the desal plant. Given the tight timeframe for the project, what guarantee do we have that consultation (in the true sense of the word) will be undertaken early enough in the process, so that concerns of the community can genuinely be incorporated into designs and work practices. This is especially important as it has not happened to date.
	Further Approvals
66	What level of public scrutiny/comment will the further approvals for tunnelling be subject to? Why hasn't this been done as part of this EA process, when the DG's requirements state that this should be addressed in the EA as part of the considerations of management of spoil?

Appendix A

Sutherland Shire Council

Submission to the Federal Government

under the

Environment Protection Conservation of Biodiversity Act

SUTHERLAND SHIRE COUNCIL

SUBMISSION TO THE DEPARTMENT OF ENVIRONMENT AND HERITAGE

RE

Sydney Water Corporation/Water management and use/Kurnell/NSW/Sydney Desalination Plant

Reference Number 2005/2331

October 2005

Introduction and Background

Sutherland Shire Council has concern over the impacts of the Kurnell Desalination Plant which is proposed within our local government area. Council is in the fortunate position of having access to the majority of studies undertaken for a range of development proposals, planning studies and management plans on the Kurnell peninsula. This provides us with a unique and detailed knowledge of the Kurnell peninsula and surrounds. It is this detailed knowledge of the environmental sensitivities of the area, and the interplay and impact of development on this environment, that has given rise to the concerns over the potential impacts of the proposal on items of national environmental significance.

A major concern of Council is the lack of detail within the proposal, which does not provide for informed and accurate decision making. Within the information supplied by Sydney Water there are many statements such as 'the area covered by the delivery infrastructure is dependent on the construction methodology and the route selected'. Following from this, the impact of the works depends on the construction methodology and the route selected and as such cannot be determine at this time. Accordingly, Council considers that at present it is not possible to accurately determine the impacts of the proposal. Therefore it is not possible to determine that the proposal will not have a significant impact on items of national environmental significance. As such, Council considers that the provision of further detailed information and an approval from the Department of Environment and Heritage is required.

Council is also concerned that information referred to in the documentation provided by Sydney Water was not made available for review. In particular Attachments A to E which contain the ecological assessments. Again this represents a further example of the provision of insufficient information on which to base accurate and informed planning decisions.

It should also be noted that on Monday 31 October 2005 the state government announced that it intended to commence the construction of a pilot desalination plant at the Kurnell site. This pilot plant has the potential to have similar impacts to the proposal the subject of the current referral. However in this instance the state government has chosen to bypass the referral and approval process under the EPBC Act. Such an act again represents an example of how critical decisions in relation to this proposal have been made with inadequate consideration of impacts or approval requirements.

Details of Council's specific concerns are outlined further below.

Concerns re. Heritage values of listed National Heritage areas.

The proposal notes the proximity of the works to the Kurnell Peninsula Headland, an item of National Heritage. Despite this proximity, Sydney Water indicate that they will not have a significant impact on this item as they will be tunnelling/boring underneath it for the intake and outlet infrastructure. However, they note that the final layout of the form, fabric and finish of the plant is yet to be finalised, as are the construction methods. Tunnelling through some of the substrates on the Kurnell peninsula, including those found within the Kurnell Peninsula Headland, has proved difficult. Previously, during the upgrade of the Cronulla Sewage Treatment Plant and Outlet, Sydney Water had indicated that they would tunnel under sensitive Council land at the Charlotte Breen Reserve. Sydney Water then commenced open excavation through this area, without Council permission, as the contractor informed them

that tunnelling thought that substrate was not possible. These works resulted in significant degradation of the conservation significance of this area, which has still not recovered.

Based on the above Council considers that due to the similarity of portions of the soils and substrate through the Kurnell Peninsula Headland and the Charlotte Breen Reserve, statements that we 'will tunnel and not impact, and that construction methods will be found to avoid impacts' are not sufficient to conclude that impacts will be acceptable or that acceptable solutions to potential impacts are practical and available.

Groundwater is close to the surface in many of the proposed areas for the route of the intake and outlet pipework within the Kurnell Peninsula Headland. This groundwater is expressed at the surface in several areas through the proposed route. Other areas where surface wetlands are present occur in areas where perched aquifers are present. The tunnelling has the potential to require significant dewatering of tunnel excavations, leading to drawdown of the aquifer in the vicinity. There is also the potential for tunnelling operations to disrupt perched and confined aquifers leading to their drainage. This has the potential to impact on the groundwater dependent ecosystems within the area, including those within the Kurnell Peninsula Headland. There has been no information provided by Sydney Water in relation to this matter, again it is a case of leaving this detail to a later date, when no acceptable solution may be available. While Sydney Water indicate that the boring will be through rock, this is unlikely to be the case for the entire length of the pipe, as bedrock is in excess of 22m deep in several areas in this locality (Rocla Sand Mining EIS 2005).

Sydney Water also provides no information as to the location of staging and works areas, apart from the offshore barges. Such areas will be required along the proposed route, and have the potential to cause significant impacts. Further detail is required to assess the impact of these staging areas on the Kurnell Peninsula Headland.

Concerns re impacts on the ecological character of a declared Ramsar wetland

Sydney Water notes the proximity of the proposed development to the declared Ramsar wetland at Towra Point. However the reported proximity of these works to the wetland varies throughout the submitted information, depending on the component of the work being referred to. At one stage they note that the closest works to the Towra Point Wetland would be the Botany Bay pipeline which would be 1.2 km distant. This is not the case. The proposed desalination plant itself is to be located within 250m of the wetland (as noted on page 8 of the documentation).

Council has concerns that the proposal has the potential to significantly change the hydrological regime of the wetland, including the location of the saline freshwater interface.

The proposal will involve covering the current 44ha site with approximately 30ha of hard stand areas and buildings. This will significantly reduce the infiltration of rainwater into the site, which will in turn impact on groundwater recharge and flows from the site to the Towra Point Wetland.

While Sydney Water notes that Council had approved industrial subdivision on these sites, the form of this approved development is significantly different from that proposed by Sydney Water. The Council approved subdivisions had considerable requirements for landscaping between buildings, providing opportunities for water infiltration. To further facilitate

maintenance of groundwater hydrology all buildings on site were required to install roof water infiltration devices. Surface runoff is also required to be directed to treatment facilities prior to infiltration to the groundwater via wetland infiltration basins. This approach requires considerable additional area of land beyond that occupied by the buildings and hard stand areas. Again no detail has been provided as to how this potential for changed infiltration and groundwater recharge is to be managed.

Infiltration of rainwater and recharge of groundwater to protect sensitive wetland environments on the Kurnell peninsula has been a requirement of development that has been supported by the NSW Land and Environment Court, most recently in Australand V Sutherland Shire Council. Here the significance of these potential impacts has been demonstrated, and remedial measures required.

Sydney Water note that "Hydrological changes to groundwater systems as a result of increased hardstand areas on the desalination plant site. This may limit recharge of groundwater systems which could potentially affect the ecology of the Ramsar wetland if the changes were large enough". Council contends that based on evidence presented in Australand V Sutherland Shire Council, there is significant potential for these changes to be large enough. Council is also concerned that there is insufficient space available within the proposed "development area" of the site to provide the required measures to minimise these impacts. Thus, these impacts will either be experienced due to lack of appropriate management, or areas proposed for conservation will need to be utilised to provide appropriate mitigating structures resulting in increased impacts in other areas.

Concerns re impacts on members of listed threatened species or any threatened ecological community

Sydney Water note that a large Grey-headed Flying Fox colony is present within the proposed development site, but is to be conserved within and area managed as conservation area. Sydney Water again note that this is consistent with Council approved subdivisions in this area. However, again the scale of the development proposed by Sydney Water is not consistent with that approved by Council. The Council approved subdivision works provided for significant buffer areas, between the industrial development and the Conservation area, to limit the impacts of the proposed industrial subdivision. In addition to this, the scale of the buildings were also considerably different. The Sydney Water proposal has buildings of larger bulk, scale and height that those approved by Council.

Assessment of the impact of the proposal on marine mammals and marine threatened species appear to have been limited to noise impacts during construction. There has been no assessment of the impact of the brine plume, temperature differences in discharge waters or presence of other chemicals in the disposal effluent. As noted by Sydney Water, the adjoining area of Botany Bay National Park (which includes the Kurnell Peninsula Headland) is a key whale watching site for New South Wales. Potential impacts have been dismissed due to this corridor being only a small part of their migratory pathway. However this is a significant portion of their migratory pathway, and provides a unique opportunity for public to view these creatures, which in turn impacts on the community perception and conservation value of these species.

The sites for the proposed delivery infrastructure have the potential to pass through, via, or under several federally listed endangered ecological communities including, Eastern Suburbs

Banksia Scrub (ESBS), Shale Sandstone Transition Forest (SSTF) and Turpentine Ironbark Forest in the Sydney Basin Bioregion (TIF). While there is little detail of the exact route of delivery infrastructure, TIF is present in several locations along the potential delivery route for the Miranda pipeline. ESBS is also preset in several locations along the northerly distribution network. Simple statements such as these areas will be avoided are not sufficient justification for a conclusion of no significant impact. As has been demonstrated previously in many instances there is no alternative location available.

Concerns re the impact on members of a listed migratory species or their habitat

The consideration of the impact of the proposal has concentrated on direct impacts at sites where there is greater certainty as to the location of works, i.e. the desalination plant itself, and the inlet and outlet pipework and structures.

In relation to the impacts from the inlet and outlet structures, consideration of impacts again appears to be confined to noise and construction impacts. Again there is no consideration of the operational impacts associated with the discharge area which include increased temperature and salinity, and increase in concentrations of other pollutants such as coagulants and biocides.

In relation to potential impacts on migratory species which utilise Towra Point Aquatic Reserve, Sydney Water indicates that "measures will be implemented to limit indirect impacts on species of ... downstream effects associated with changes to drainage patterns and runoff from the site". As noted above Council has serious concerns about the ability of Sydney Water to implement the required measures within the proposed 'development area" of the site.

Other areas which are utilised by migratory waders, which also have the potential to be impacted by these works, do not appear to have been adequately considered. These include the beach area at Cooks Park Kyeemagh, and the beach at Foreshore Road Botany. In particular the area at Foreshore Road Botany, which is close proximity to the Botany Wetlands, provides extensive habitat for migratory waders. Consideration of impacts at these sites appears to have been minimal or neglected. Migratory species recorded in this area include the Terek Sandpiper *Xenus cincereus*, Black-tailed Godwit *Limosa limosa*, Great Knot *Calidris tenuirostris*, and the Little Tern *Sterna albifrons* (source NSW NPWS Wildlife Atlas).

However Council does note that on page 19 of the document Sydney Water concludes that "the ecological assessments conducted show that this species [*Charadrius leschenaultia* at Kyeemagh] **would be impacted significantly**". Accordingly the proposal is likely to significantly impact on migratory species and an approval from Department of Environment and Heritage should be required.

Concerns re the impact on the environment of the Commonwealth marine area

Sydney Water has often quoted an impact/dispersal zone of 50 – 75m from the point of discharge, however no modelling has been provided in justification of this. Despite this is considered unlikely that the direct impact/dispersal zone would extend beyond 3 nautical miles (5.56 km). However several species which range from the impact zone of the proposal

into the Commonwealth marine area have the potential to be impacted by this proposal, including marine reptiles and cetaceans.

Here again Sydney Water's consideration of impacts appears to be confined to impacts arising from construction noise and vibration. Sydney Water note that it may be required to develop management measures to minimise these impacts, including stopping or scaling down of operational works when cetaceans are approaching *as practicably as possible.* Council contend that this would not be a practical approach as during the migratory period between April and November, and particularly during the peak period of June to August, whales are constantly passing this area. The project is on a very tight timeframe, and is anticipated to be operational by 2008. Such a tight timeframe does not provide for extended periods of shut down of up to three months during the year. Therefore it does not appear that there will be any measures *practicable and possible* that could be implemented to minimise these impacts.

There is also an acknowledgement by Sydney Water of the potential impact of works on whale migratory pathways on page 19 where they note that that there is potential for fewer whales to be sighted off Cape Solander. Again, there is no indication of the scale of this impact, as there is insufficient detail of the project and insufficient assessment of the works, to enable an accurate assessment of the scale of these impacts possible.

Other issues such as the impact of the brine discharge, temperature increase and pollutant discharge have been dismissed as being only a small part of the potential habitat and migratory pathway, however this has not been demonstrated in terms of current preferential migratory pathways, resting areas, etc.

Concerns re Greenhouse gas emissions

On 16 November 2000 a model trigger for greenhouse gas emissions under the Environment Protection and Biodiversity Conservation Act 1999 was released. Under this draft regulation the EPBC Act is triggered by major new development likely to result in greenhouse gas emissions of more than 0.5 million tonnes of carbon dioxide equivalent in any 12 month period.

The information provided in the referral by Sydney Water does not give any details of the proposed greenhouse gas emissions. However, information provided in their "Planning for Desalination" report notes that a proposed 500ML/day plant would consume 906 GWh of electricity every year. The Securing Australia's Energy Future website of the Department of the Prime Minister and Cabinet, notes that indicative emissions for electricity generated from black coal (the major fuel for electricity in NSW) are approximately 1050kg CO2/MWh. Therefore a 500ML/day desalination plant utilising 906GWh of electricity each year will generate approximately 950,000 tonnes of carbon dioxide in a 12 month period. This is well in excess of the trigger of 0.5 million tonnes of carbon dioxide contained in the draft regulation. While the proponent has indicated a range of potential greenhouse offsets, there is no certainty as to the implementation of any of these measures.

Australia has also recently announced the Asia-Pacific Partnership on Clean Development and Climate. This international partnership aims to address the challenges of climate change, energy security and air pollution. The greenhouse gas emissions of the proposed desalination plant have the potential to impact on the ability of the Federal Government to meet the

requirements of this partnership, and therefore should be subject to a greater level of scrutiny and the approval of the Department of Environment and Heritage.

Concerns re nuclear actions

The Commonwealth operates a nuclear facility at the ANSTO site at Lucas Heights. The Lucas Heights facility is licensed to discharge radioactive wastes to the sewer, which is eventually discharged from the Cronulla Sewage Treatment Plant via the Potter Point outfall to the Tasman Sea. While little information has been provided as to the exact location of the inlet structure, special consideration must be given to inlet water quality with particular regard to discharges from the nearby Cronulla Sewage Treatment Plant. Monitoring and modelling of inlet water quality must consider the nature of the potential pollutants from this source, the potential for them to be drawn in the inlet, and the ability of the chosen treatment technology to deal with these pollutants. This will require an expansion of the consideration of water quality beyond the traditional consideration of pathogens, metals and nutrients. Of particular concern within the radioactive waste discharged by ANSTO via the sewage treatment plant, are radioisotopes including Tritium, Cobolt-60, Strontium-89, Strontium-90, Iodine-131, Caesium-134, Caesium-137, Radium-226, Uranium-238, Plutonium-239.

To date no documentation produced by Sydney Water has adequately addressed this issue.

Conclusion

In conclusion Council considers that there is insufficient detail in terms of the exact nature and form of the proposal on which to base an accurate and informed decision on the scale and nature of the impacts. Based on local site knowledge, impacts of previous works in the area, including those of a similar nature undertaken by Sydney Water, and studies of similar sites on the Kurnell peninsula, including evidence from the NSW Land and Environment Court, Council considers that there is potential for significant impacts on items of National heritage significance. The documentation presented by Sydney Water relies heavily on works yet to be undertaken and defers the consideration of assessment of impacts to a later date. Sydney water relies on statements such as works will avoid these areas, or management strategies will be implemented to avoid/minimise these impacts. Council is concerned that where such assessment considerations are deferred suitable sites and management strategies to avoid impacts may not be available.

Council also considers that in several areas, the threshold required to trigger an approval from the Department of Environment and Heritage has been reached. In particular the high energy demands of the proposed desalination plant and the associated greenhouse gas emissions, exceed trigger values, and have national and international consequences.

Council considers that based on the current level of information provided by Sydney Water that it is not possible to conclude that the proposal will not have a significant impact on items of National heritage significance. As such, Council considers that further detailed information must be submitted to meet the requirement of the Environmental Protection Biodiversity Conservation Act, and that a formal approval from the Department of Environment and Heritage is required.

Further Information

Should you require further information, or wish to discuss this submission, please contact Council's Principal Environmental Scientist, Mr Ian Drinnan, on (02) 9710 0547, or via email at idrinnan@ssc.nsw.gov.au

Appendix B

SUTHERLAND SHIRE COUNCIL

SUPPLEMENTARY SUBMISSION TO THE NSW DEPARTMENT OF PLANNING

RE

KURNELL DESALINATION PLANT AND ASSOCIATED INFRASTRUCTURE

Major Project Application 05_0082

February 2006

Sutherland Shire Council has significant concern over the impacts of the Kurnell Desalination Plant which is proposed within our local government area. These concerns relate to potential impacts of the proposal and the lack of detail within the proposal, which does not provide for informed and accurate decision making. These concerns have been addressed in Council's earlier submission to the Department of Planning which provides a critical review of the Environmental Assessment report.

Council also has concerns regarding the assessment process under taken for the proposal, with particular reference to areas of non-compliance with the requirements of the Director General. While many of these concerns are consistent with those raised in our previous submission, this supplementary submission seeks to highlight these and further expand on areas where statutory requirements have not been complied with.

While the new provisions of Part 3A of the Environmental Planning and Assessment Act provide for concept approvals, there is a statutory requirement that the information contained within the Environmental Assessment must be sufficient to:

- Enable environmental assessment of the key issues surrounding the project, and
- Assess the required level of environmental management and monitoring for the project.

It is Council's view that the current Environmental Assessment fails to meet these requirements.

The proponent also has a statutory obligation to ensure that the Environmental Assessment meets and addresses the specific requirements of the Director General. It is Council's view that the current Environmental Assessment again fails to meet these requirements.

Council also has concerns regarding apparent ad hoc amendments to the proposal announced by the State Government. The legal status of these amendments is questionable.

The level of detail provided within the Environmental Assessment, and the degree of consultation which has taken place is also against the spirit of the legislation as noted when the legislation was introduced to parliament when read by the then Minister for Infrastructure and Planning Mr Craig Knowles on 27 May 2005.

Specific Areas of Non-compliance with the Director General's Requirements

The Director General's requirements for the proposed Desalination Plant are outlined in a letter from the Department of Planning dated 18 November 2005. A copy of this letter and the Director General's requirements are contained within Appendix A1 of the Environmental Assessment. The Director General's requirements set out specific, key issues which must be addressed in the Environmental Assessment. It is Council's opinion that in several areas these requirements have not been met. One particular reason for this lack of compliance with the requirements may be the short timeframe for the preparation of the Environmental Assessment. The Director General's requirements were released on 18 November 2005 with the Environmental Assessment being completed and released on 23 November 2005. Thus there were a total of five days (including weekends) in which to consider and address the Director General's requirements. Council considers that this is an inadequate amount of time to satisfactorily address these requirements. Specific examples of this non-compliance are outlined below.

General Requirements Outlined in the Covering Letter

Use of Valid Tools and Methodologies

The Director General's requirements necessitate that "*Sydney Water's Environmental Assessment should be prepared using valid and accepted technical and scientific tools and methodologies...*". This has not been the case.

Much of the data presented has not been validated by field studies. The accepted methodology for determining ecological impacts is to undertake field studies to determine the presence and significance of flora and fauna, and the potential for

impacts on this biota. This has only been done for the actual desalination plant site, with no field studies being undertaken for any terrestrial environments beyond this site, nor have detailed studies been undertaken for marine life in the vicinity of the ocean intake and outlet. This is not consistent with accepted scientific methodologies. Also while the ocean modelling has been undertaken using accepted scientific tools this data has not been validated, a fact which is noted within the consultants report. Again this is standard scientific practice, which has not been followed in this instance due to time constraints. In these instances the consultants note that such studies should be undertaken, or will be undertaken in future in order to enable informed decision making. Again standard and accepted methodologies require that these studies be undertaken and that this information be validated prior to decisions being made and impacts assessed.

As much of the data presented within the EA has not been validated, and most studies have been inadequate and not used standard tools and methodologies, it is considered that the Environmental Assessment has failed to comply with the Director General's requirements.

Mitigation Measures

The Director General requirements note that the Environmental Assessment should contain "*robust mitigation measures to address residual impacts from the project*". This has not been done within the Environmental Assessment.

There is little specific detail in relation to mitigation measures. Where mitigation measures are proposed they are often noted as being implemented "where possible" or "where practicable", or "design to minimise" impacts. There is little robustness to mitigating measures, where there is no certainty of implementation such as those that will be implemented "where practicable". There is also no degree of robustness where the aim of the mitigating measure is simply to minimise impacts. A minimised impact does not necessarily translate to one which is acceptable or not significant. For example mitigating measures for noise control relate to minimising construction noise where practicable. Construction noise within a residential zone may be reduced from 105 dB(A) to 100dB(A), and also reduced from 24 hour operation to 20 hours of operation. In each instance the mitigating goal has been achieved as the

impact has been minimised but the outcome is still completely unacceptable. Accordingly mitigating measures must be detailed and specific and contain definable, achievable and acceptable goals.

As the mitigating measures presented within the EA are not robust and are in fact ill defined and inadequate, it is considered that the Environmental Assessment has failed to comply with the Director General's requirements.

Inadequate Consultation

The Director General's requirements note that "*once you have lodged the Environmental Assessment, the Department will consult with relevant authorities to determine the adequacy of the Environmental Assessment*". This process did not take place.

Sutherland Shire Council was not consulted as to the adequacy of the Environmental Assessment. Were it to have been consulted the deficiencies outlined within this supplementary submission and in our previous submission would have served to highlight significant areas where the Environmental Assessment is inadequate.

Council is also concerned that other "relevant authorities" such as the department of Environment and Conservation and the Department of Primary Industries (NSW Fisheries), were also not consulted as to the adequacy of the Environmental Assessment. In order to confirm this lack of consultation, Council has requested review documents from these departments under Freedom of Information, however at the time of this submission these documents were not available.

Here again a specific requirement of the Director General has not been complied with.

Specific Requirements as Outlined in the Table of Requirements

General Requirements – Description of the Proposal

The Director General's requirements state that the Environmental Assessment must contain "*a description of the proposal, including construction, operation and staging*". This has not been provided within the Environmental Assessment.

While the Environmental Assessment provides some detail on locations of infrastructure, and construction methodologies, much detail is missing, and there is no detail provided on staging beyond potential staging of the plant itself (staging associated with a 125ml/day plant with potential for a 500ML/day plant).

The Environmental Assessment notes that the "final distribution routes and other infrastructure will be available once further investigation and detailed designs are completed". The EA further notes that "other sites" not subject to this assessment "may be identified during the detailed design". Therefore the Environmental Assessment fails to provide an adequate description of the proposal.

There is little information on construction methodologies. This includes the methodology for the transport and disposal of spoil associated with the proposal. There is significant potential for unacceptable traffic impacts associated with the transport and disposal of spoil, some of which are noted within the EA, however this issue is not dealt with in sufficient detail within the EA. Rather consideration of this issue is deferred to later date once further detail of the proposal is known following from the detailed design phase.

There is no information provided in relation to staging. There is no indication of the duration or timing of major works which have the potential to cause significant environmental and residential amenity impacts. For example there is no indication of the staging or duration of works proposed for the tunnelling (or trenching) of the pipeline across Botany Bay. This has potential to significantly impact on residential amenity within Kurnell in terms of noise, dust, visual amenity and property access.

The Director General's requirements indicate that the details of the proposal, including construction, operation and staging must be provided now within the

Environmental Assessment. This has not been done. Therefore the Environmental Assessment fails to comply with the Director General's requirements in relation to the description of the proposal.

General Requirements – Justification for the Proposal

The Director General's requirements state that the Environmental Assessment must include "*justification for undertaking the project with consideration of the benefits and impacts of the proposal*". There has been inadequate justification for the proposal within the Environmental Assessment.

A grand total of one paragraph,, or less than 150 words, has been dedicated to the justification or need for the proposal (see chapter 1.2). This is considered totally inadequate for a proposal of this magnitude.

Justification for a proposal is often undertaken by considering alternatives to the proposal which indicate that the final version as proposed represents the "best value" and has the lowest potential adverse impacts. This has not been done for this proposal.

Consideration of alternatives within the Environmental Assessment focuses wholly on the consideration of differing technologies for the desalination process (thermal versus reverse osmosis) and some consideration of alternative routes for the delivery infrastructure. Council considers that this is not acceptable.

Consideration of alternatives should include alternative sources to supplement Sydney's water supplies. This should include examination of alternatives such as waste water recycling, increased stormwater harvesting, demand management and water conservation. The do nothing option should also be considered and the consequences of this option further explored.

Consideration should also be given to alternative construction methods and locations. For example the location of the sea water intake and outlet structures are presented as a fait accompli. There has been no consideration of alternative

locations such as further off shore on the sandy sea bed, rather than in the current location on the rocky reef system. Relocation to these areas may avoid disturbance and destruction of such highly diverse marine habitats. Further consideration of alternative locations for a trenched pipe distribution system across Botany Bay by Sydney Water's consultants have also revealed alternative locations for this pipeline that would result in decreased impacts on sea grasses. This demonstrates that further consideration of alternative locations and construction methods for such major infrastructure has the potential reduce impacts.

Documented consideration of these alternatives is required to demonstrate that full and proper consideration has been given to the minimisation of the potential impacts from the proposal, and that the proposal represents the best possible outcome for a particular development scenario. Without such consideration the community can have no certainty that they are not getting a rushed and ill conceived development.

The conclusion of the Environmental Assessment notes that "A planning process has concluded that desalination is a viable option for supplementing the water supply based financial, economic, environmental and risk criteria". It should be noted that this economic assessment was based on the construction of a 500ml/day plant. There has been no economic assessment or justification of the viability of a 125ML/day plant as is now proposed.

There is also potential for this planning process to be flawed as the environmental impacts noted in the Environmental Assessment represent a significant underestimation of the environmental impacts associated with the proposal. When assessed a more rigorous and accurate evaluation of the environmental impacts associated with the proposal, this justification may no longer stack up.

The State Government's announcement of 8 February 2006 raise further question as to the justification for the proposal. This announcement indicated that the desalination plant would not be built immediately and would only be required if dam levels dropped below 30%.

One of the key justifications for the need for a desalination given within the Environmental Assessment was that it was the only solution that could be implemented within the identified timeframe of 2008. The EA noted that other options such as recycled water "*could not be implemented to augment supplies in the current timeframe due to the time required to demonstrate that the water satisfies public health requirements and is acceptable to the community*". As the timeframe for construction has now changed significantly this justification for the proposal is no longer valid.

As there is now a longer timeframe for implementation, re-examination of these options is warranted, as they may provided a cheaper, and more environmentally acceptable solution than the current proposal.

There is little justification for the proposal contained within the Environmental Assessment. What justification there is within the document has been outdated by recent government announcements, such that they are no longer valid justifications for the proposal. The Director General's requirements indicate that the justification for undertaking the proposal must be provided now within the Environmental Assessment. This has not been done. Therefore the Environmental Assessment fails to comply with the Director General's requirements in relation to the justification of the proposal.

<u>Key Assessment Requirements - Greenhouse Gases and Offsets</u>

The Director General's requirements state that "*where greenhouse gas offsets are proposed, appropriate details of each offset option must be included in the Environmental Assessment, including implementation measures for each offset option*". These details are not provided within the Environmental Assessment.

While greenhouse offsets are a critical component of the proposed desalination plant, the Environmental Assessment contains little or no detail on the greenhouse offsets associated with this proposal. The Environmental Assessment notes that "Sydney Water is committed to investing in greenhouse gas reduction strategies for the desalination plant to effectively reduce greenhouse gas emissions by 50 per cent".

This is a commitment, but it contains no detail of the mitigating measures as required in the Director General's requirements. The Environmental Assessment then refers to several potential options such as renewable energy certificates, purchase of green power, and forest sequestration, but there is no commitment to undertake any of these, or details of how much, when, etc. This is critical, as for example, there is not enough green power currently available to offset the power usage of a 500ML/day plant. There are also currently insufficient greenhouse abatement certificates in New South Wales to offset anticipated greenhouse emissions. Sydney Water indicates that they will develop a cost effective portfolio of mitigation measures. This is all detail to come in the future.

Recent announcements by the state government note that that power requirements for the desalination plant are now to be supplied by 100% renewable energy. As noted earlier it is unsure of this statement represents an amendment to the proposal, a policy statement of the government or a suggested condition of consent. Regardless there is currently insufficient renewable energy within NSW to supply power to a 125 ML/day desalination plant. Renewable energy production within NSW would need to more than double in order for there to be sufficient supply. While it is likely that the market will meet this demand where such a demand is guaranteed, this is not the case with the desalination plant. There is no certainty that the plant will be built, and if built there is no certainty that the plant will run at 100%on a full time basis. With this lack of certainty in the demand for renewable energy associated with the desalination plant it is unlikely that supplier will take the risk of investing in the significant infrastructure associated with its supply.

The Director General's requirements indicate that the details of greenhouse off-sets must be provided now within the Environmental Assessment, therefore the Environmental Assessment fails to comply with the Director General's requirements in relation to greenhouse gases.

<u>Key Assessment Requirements – Water Quality and Water Cycle Management</u>

The Director General's requirements state that the Environmental Assessment "*should indicate how the project will be designed and operated to address concentrations of compounds that are toxic to aquatic ecology, bio-accumulative, or*

that generate unacceptable odours, colours, turbidity, deposits or other deleterious water quality effects". This has not been adequately done in the Environmental Assessment.

The Environmental Assessment notes that the structure and assemblages around the outlet may be impacted by the proposal, but that there is little information available on the salinity or chemical tolerances of these species. The EA further notes that further specific studies that examine the toxicity of discharge on a range of species will be required to more accurately determine the impacts of discharge on local marine organisms. Therefore the project does not indicate how it will be designed and operated to minimise impacts on aquatic ecology because there is no detailed understanding of what these impacts will be.

The assessment of water quality impacts throughout the Environmental Assessment focuses on the edge of the near field mixing zone, or beyond this zone. By definition this is the zone where initial mixing and dilution takes place. Generally impacts are acceptable at the edge of this near field mixing zone, and become more acceptable as you move beyond it. What is of greater concern is the water quality impacts within the near field mixing zone. This is the area where impacts are likely to be the greatest. Water quality within this area has received inadequate consideration within the Environmental Assessment.

The Director General's requirements indicate that the details of the concentration of compounds and impacts on aquatic ecology must be provided now within the Environmental Assessment. This has not been done. Therefore the Environmental Assessment fails to comply with the Director General's requirements in relation to the water quality impacts of the proposal.

<u>Key Assessment Requirements - Ecological Impacts</u>

The Director General's requirements state that "*the assessment must consider direct impacts on ecological values, as well as indirect impacts*". This has not been appropriately considered in the Environmental Assessment.

The only consideration of direct terrestrial impacts has been for the site of the actual desalination plant. There has been no consideration of direct impacts associated with trenching of pipework and other works beyond the plant site. This is acknowledged by Sydney Water who indicates that "No detailed surveys along the delivery infrastructure route options were undertaken". There is potential for significant direct impacts on terrestrial ecology beyond the immediate plant site including impacts on threatened species and endangered ecological communities. The Director General's requirements also require an ecological impact assessment "generally in accordance with the DEC's Guidelines for Threatened Species Assessment". This has also not been complied with. While there has been consideration of threatened species impacts on the actual plant site, the consideration of threatened species impacts beyond the site has been completely inadequate and does not comply with the DEC guidelines. No eight part test (or more recently assessment of significance) has been performed for works beyond the desalination plant site. Impacts beyond the actual desalination plant site are likely due to changes to hydrological regimes impacting on groundwater dependent ecosystems in the area. These ecosystems are already under significant stress due to the effects of the drought. There is also potential for other significant impacts associated with delivery infrastructure and pipework associated with the intake and outlet. While several eight part tests have been performed for species and communities potentially impacted by works on the desalination plant site and in the area of the intake and outlet, the eight part test has recently been replaced by the significance assessment under part 5A of the Environmental Planning and Assessment Act. This requirement came into effect on 31 October 2005. The Environmental Assessment was released after this date and therefore should have complied with the new legislative requirements in accordance with the DEC's Guidelines for Threatened Species Assessment.

Accordingly the Environmental Assessment fails to comply with the Director General's requirement as it does not adequately consider both direct and indirect impacts and does not comply with legislative requirements and the DEC's guidelines for threatened species.

Key Assessment Requirements - Spoil Management

The Director General's requirements state that the Environmental Assessment "*must include estimates of likely spoil generation, ..., and options for spoil management, reuse and/or disposal*". This has not been included in the Environmental Assessment.

While the Environmental Assessment does provide estimates of likely spoil generation, the Environmental Assessment specifically notes that this has not been done for all spoil management and disposal. It states that "Traffic impacts of spoil removal other than at Kurnell are not dealt with in detail in this assessment". In order to fully assess the impacts of spoil management and disposal the full impacts of the proposal must be considered.

In failing to address "options for spoil management, reuse and/or disposal" beyond the Kurnell site, the Environmental Assessment has failed to comply with the Director General's requirements.

Key Assessment Requirements – Connecting Infrastructure

The Director General's requirements state that the "*Environmental Assessment must present justification of the desirability of any infrastructure options for connecting potable water supply from the desalination plant into the water distribution network including Miranda/Caringbah*". This has not been done within the Environmental Assessment.

While the route for a potential pipeline from the proposed desalination plant at Kurnell to Caringbah has been included within the Environmental Assessment there has been no justification for the need for such a connection or for the proposed route. A total of two small paragraphs or less than 100 words are dedicated to this issue, which generally states if this option was implemented this is what it would involve. No justification is provided beyond this.

The Director General's requirements indicate that the justification for the Caringbah distribution network must be provided now within the Environmental Assessment.

This has not been done. Therefore the Environmental Assessment fails to comply with the Director General's requirements.

Key Assessment Requirements - General Environmental Risk Analysis

The Director General's requirements state that in addition to the risk areas specifically identified in the Director General's requirements, "*the Environmental Assessment must include an environmental risk analysis to identify potential environmental impacts associated with the project*". The requirements further state that "*where additional key environmental impacts are identified through this environmental risk analysis, an appropriately detailed impact assessment of this (sic) additional key environmental impacts must be included in the Environmental Assessment*". This has not been done in the Environmental Assessment.

While there has been consideration of some risk, this has not been done for other risks such as indigenous heritage and groundwater, where detailed analysis has been confined to the desalination plant site only and no detail is provided of impacts associated with other works and sites. There is even acknowledgment that groundwater impacts will be the subject of further studies.

By failing to provide detailed assessment of other environmental impacts identified by the environmental risk assessment process, the Environmental Assessment fails to comply with the Director General's requirements.

Consultation Requirements

The Director General's requirements state that "*appropriate consultation with Sutherland Shire Council and the local community should be undertaken*". This has not occurred.

There has been inadequate community consultation associated with the proposal.

What has taken place to date cannot be considered adequate community consultation. Rather what has taken place is that Sydney Water have undertaken community information nights and sessions where Sydney Water personnel have

presented information on the proposal to the community and have been available for questioning, however the exchange of information has been very much one way. While these sessions have provided the community with the opportunity to voice concerns and opposition to the proposal, there has been little or no opportunity for the community to "inform the assessment and development process". In all instances the major decisions regarding the proposal have already been made prior to the consultation, and there has been no opportunity for the community input to result in changes and amendments to the proposals to reflect this concerns and feedback. Also in many instances there has been little information available for the community at these sessions to address specific concerns that they have with the proposal. Also in many instances requests for further specific information by Council regarding the proposal has been denied by Sydney Water.

The three workshops conducted by Sydney Water were structured in a way aimed at "brainwashing" the limited number of community who were permitted to attend. At the Cronulla workshop residents refused to cooperate in a structured workshop and demanded an open session where the participants asked many questions which could not be answered. Clearly this consultation was inadequate and inappropriate.

The Director General's requirements indicate that appropriate consultation must be undertaken with Council and the local community. This has not been done. Therefore the Environmental Assessment process fails to comply with the Director General's requirements in relation to consultation.

Ad Hoc Amendments to the Proposal

There have been several amendments to the proposal announced by the State Government both during and following the public exhibition process for the Kurnell Desalination Plant. These announcements have resulted in variations to the proposal as exhibited. The legal status of these amendments is not known and is a concern of Council.

On 9 February 2006 the State Government announced that 100% of the energy use of the desalination plant would be sourced from renewable energy – meaning no net increase in greenhouse gas emissions. It is unsure if this announcement related to a formal amendment of the proposal, a government policy statement, or a condition of approval. There is currently insufficient renewable energy within NSW to supply a plant of this size, so the mechanism of achievement of this statement is unclear.

As noted above the Director General's requirements specifically state that the "*appropriate details of each offset option must be included in the Environmental Assessment, including implementation measures for each offset option*". This clearly has not been done in this instance.

There is concern that this announcement has not been part of the formal development application, has not been the subject of public exhibition, and there has been no opportunity for public comment. Therefore the legal status of such a proposal is questionable.

The State Government has also announced that the desalination plant will only be built if dam levels drop below 30%. Again it is unsure if this statement represents an amendment of the proposal, a government policy statement or a condition of approval.

Similar to the above the Director General's requirements state that a description of the proposal must include "*construction, operation and staging*". The staging of the plant is now even more uncertain, in that potentially, now it may not be built. There is no certainty over the timeframe of construction or operation. This clearly fails to comply with the Director General's requirements.

Environmental Assessment Process is Against the Spirit of the Legislation

When the new legislative provisions of Part 3A of the Environmental Planning and Assessment Act were read in parliament by the then Minister for Planning and Infrastructure, Mr Craig Knowles, he noted that "*the new single assessment process will strengthen the rigour, transparency and independence of the process of assessment, providing higher levels of up front certainty for the proponent, the community and other stakeholders*".

The current proposal does not meet this criteria. The current proposal and Environmental Assessment is lacking in critical detail and provides little or no up-front certainty for the community or stakeholders. The community has not certainty over where infrastructure will be constructed, when or how construction will take place. Indeed at present there is doubt as to whether the proposal will even go ahead. There is little detail of the potential impacts from the proposal. Many assessment decisions are deferred to later when further detailed information is available. Again this provides no up-front certainty for the community or stakeholders.

The Minster also stated "*Prior to exhibiting the environmental assessment, the director-general must be satisfied that the assessment meets the specified requirements. The director-general will seek advice from relevant agencies in making this decision. If the assessment is not adequate, additional information must be provided prior to the exhibition of the project. This initiative ensures that the community, not just the regulators, have access to all relevant information important to the assessment of the project*".

Again this has not occurred. The requirements of the Director General for the Environmental Assessment were issued on 18 November 2005. The Environmental Assessment was placed on public exhibition on 24 November 2005. This allowed a total of six days (including weekends) for the preparation and finalisation of the Environmental Assessment, the review by the department of the adequacy of the Environmental Assessment, review by other relevant agencies, presentation of the

results of this review to the proponents, and response by the proponent to these identified deficiencies. This timeframe is clearly inadequate for this purpose.

Council considers that they are a relevant party that should have been consulted as to the adequacy of the Environmental Assessment prior to it being placed on public exhibition. No such consultation took place.

The aim of this advice and review period is to ensure that the '*community, not just the regulators, have access to all relevant information important in the assessment of the project*". The failure to undertake this review has meant that the community do not have "all relevant information". The Environmental Assessment notes the shortfalls in information and makes reference to further studies that are needed. Adequate review of the EA would identify that this information is required now as it is "relevant information important in the assessment of the project". Without this information, assessment is based on guesses and conjecture, and provides no up-front certainty for the community or other stakeholders.

Council's submission also highlights areas of the Environmental Assessment where information required in the Director General's requirements is inadequate or lacking. Again this information such as an accurate description of the proposal and greenhouse gas off-sets, is considered "important" and "relevant", and this is no doubt why it was specifically referred to by the Director General. The failure to provide this information as part of the EA again means that the community has not been provided with "*all relevant information important in the assessment of the project*".

Conclusion

While the new provision of Part 3A of the Environmental Planning and Assessment Act provide for the streamlining of the assessment process associated with major infrastructure, there are still, statutory requirements that must be complied with. Critical within this process is the need to comply with the Director General's requirements for the Environmental Assessment. A review of the Environmental Assessment prepared by Sydney Water which is currently on public exhibition indicates that these requirements have not been complied with. Sutherland Shire Council will now call on the Director General to require the submission of a revised Environmental Assessment report that complies with the Director General's requirements in accordance with the law.