



NSW GOVERNMENT
Department of Planning

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Dr Judi Hansen
General Manager, Sustainability
Sydney Water Corporation
PO Box A53
SYDNEY SOUTH NSW 1232

Our ref: 9043442
Your ref:

Dear Dr Hansen

Proposed Western Sydney Recycled Water Initiative – Replacement Flows Project (Application: 06_0190)

I refer to your application dated 14 July 2006 and accompanying Preliminary Environmental Assessment document. The Director-General's Environmental Assessment Requirements for the abovementioned project are attached, pursuant to section 75F(2) of the *Environmental Planning and Assessment Act 1979*. The Director-General's requirements have been prepared based on the information provided to date, specifically:

- the Preliminary Environmental Assessment document submitted;
- information presented at the Planning Focus Meeting held on 27 July 2006; and
- subsequent consultation with the attendees of that meeting.

Under section 75F(3) of the Act, the Director-General may alter or supplement these requirements if necessary in light of any additional information that may be provided prior to the proponent seeking approval for the project.

Sydney Water's Environmental Assessment should be prepared using valid and accepted technical and scientific tools and methodologies, focussing on key environmental impacts and robust mitigation measures to address potential impacts from the project.

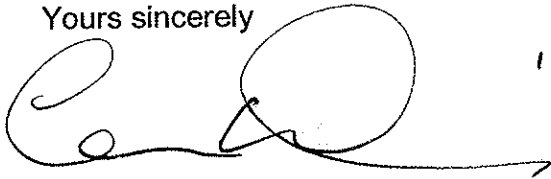
You should ensure that you consult with the Department prior to submission of a draft Environmental Assessment to determine:

- fees applicable to the application;
- consultation and public exhibition arrangements that will apply; and
- number and format (hard-copy and/or CD-ROM) of the Environmental Assessments that will be required.

Once you have lodged the Environmental Assessment, the Department will consult with the relevant authorities to determine the adequacy of the Environmental Assessment. Following this review period the Environmental Assessment will be made publicly available for a minimum period of 30 days.

You should keep the contact officer for this project, Ingrid Ilias ((02) 9228 6411 ingrid.ilias@planning.nsw.gov.au), up to date with the progress of preparation of the Environmental Assessment, and seek clarification of any issues that may be unclear or may arise during this process.

Yours sincerely

A handwritten signature in black ink, appearing to be 'Chris Wilson', with a long horizontal flourish extending to the right.

1.9.06

Chris Wilson
Executive Director
As delegate for the Director-General

**WESTERN SYDNEY RECYCLED WATER INITIATIVE – REPLACEMENT FLOWS
PROJECT, BLACKTOWN, PENRITH, BAULKHAM HILLS AND PARRAMATTA LOCAL
GOVERNMENT AREAS**

**ENVIRONMENTAL ASSESSMENT REQUIREMENTS UNDER PART 3A OF THE
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979**

Project	The Western Sydney Recycled Water Initiative – Replacement Flows Project, involving the interconnection of three existing sewage treatment plants and treating the available effluent from these plants via a new advanced water treatment plant to replace the water that is currently released from Warragamba Dam for extraction and river health purposes. The project involves the construction and operation of the following key components (Major Project Application: 06_0190): a) an advanced water treatment plant at St Marys sewage treatment plant; b) effluent transfer pipelines from Quakers Hill, Penrith and St Marys sewage treatment plants to the advanced water treatment plant; c) a brine transfer pipeline and pumping station for the transfer of brine from the advanced water treatment plant to a storage pond at Quakers Hill sewage treatment plant. This will connect with a pipeline which will transfer brine from the pond to the Northern Suburbs Ocean Outfall Sewer (NSOOS); d) balance storage tanks and effluent pumping stations at Penrith, Quakers Hill and St Marys sewage treatment plants; e) a recycled water pipeline for the transfer of treated recycled water (replacement flow) produced by the advanced water treatment plant to Penrith sewage treatment plant. The replacement flow is proposed to be discharged via the existing effluent outlet into Boundary Creek, which discharges into the Hawkesbury-Nepean River below Penrith Weir.
Site	The advanced water treatment plant is to be located within the current boundary of the St Marys sewage treatment plant on Lot 1, DP 223888, Lot 1, DP 31910 and Lot 1, DP 803832, within the Dunheved Industrial Area. The effluent transfer, brine transfer and replacement flows discharge pipelines would be located adjacent to the northern edge of urban areas within road reserves, service easements or asset protection zones. The pipelines traverse four local government areas – Penrith, Blacktown, Baulkham Hills and Parramatta. <i>Note: The location of the project and indicative alignment of pipelines is provided in the Preliminary Environmental Assessment for the project (Sydney Water, 15 August 2006)</i>
Proponent	Sydney Water Corporation
Date of Issue	1 September 2006
Date of Expiration	1 September 2008
General Requirements	The Environmental Assessment must be prepared to a high technical and scientific standard and must include: • an executive summary; • a description of the proposal, including construction, operation, and staging; • an assessment of the environmental impacts of the project, with particular focus on the key assessment requirements specified below; • justification for undertaking the project with consideration of the benefits and impacts of the proposal; • a draft Statement of Commitments detailing measures for environmental mitigation, management and monitoring for the project; and • certification by the author of the Environment Assessment that the information contained in the Assessment is neither false nor misleading.
Key Assessment Requirements	The Environmental Assessment must include assessment of the following key issues: • Project Scope, Technology and Operation – the Environmental Assessment must provide a detailed description of the project, its components, technology (including options where a preferred technology has yet to be selected), any

staging of project implementation and interfaces with existing sewage treatment plants and infrastructure. The Environmental Assessment must include:

- consideration of wastewater treatment technologies for the removal/ reduction of key water quality constituents including, but not limited to, phosphorus and nitrogen. Particular consideration must be given to options to reduce readily bioavailable forms of nutrients;
- details of the proposed wastewater treatment process at the Advanced Water Treatment Plant, alternative treatment processes evaluated and reasons for the selection of the preferred treatment process;
- details of the approach to be applied to brine management including measures to ensure that any overflow only occurs in exceptional circumstances. Consideration of management measures should include, but not necessarily be limited to, options for storage capacity at St Marys sewage treatment plant or elsewhere, improvement to sewers to increase capacity or reduce wet weather infiltration, reduction of the throughput of the Advanced Water Treatment Plant;
- details of the current condition of the Northern Suburbs Ocean Outfall Sewer (SOOS) and the available capacity of the sewer to transport brine from the project now and in the future;
- details of the expected composition of brine including the expected concentration of key constituents (i.e. nitrogen, phosphorus, total dissolved solids);
- details of the likely frequency and volume of overflows and the load of pollutants that would be discharged during those events;
- assessment of the capacity of St Marys sewage treatment plant to receive backwash waste from the plant and any potential impacts on the performance of the sewage treatment plant;
- details of pipeline routes, construction methods and construction environmental management;
- clear maps indicating the location of project components, including plant and pipelines, including an indication of land tenure and land use zoning.
- **Strategic Planning and Project Context** – the Environmental Assessment must clearly outline the strategic context of the project, having regard to the 2006 Metropolitan Water Plan. The Environmental Assessment must also outline the context of the project within the suite of other relevant water supply, recycling and demand management projects currently being undertaken or proposed by Sydney Water, in order to provide a clear picture of the position of this project in the broader scheme of water management initiatives.
- **Water Quality and Water Cycle Management** – the Environmental Assessment must include a comprehensive assessment of the impacts of the project on water quantity and quality, including:
 - a detailed description (supplemented by simple and clear diagrams) of the position of the project within the Hawkesbury-Nepean River System, including all points at which water flows will be altered as a result of the project (increased and decreased). The Environmental Assessment must indicate how the project will affect flowrates and the water balance across the System, both during wet weather and dry weather scenarios;
 - details of how the project will be designed and operated to meet water quality criteria detailed in *Australian and New Zealand Water Quality Guidelines 2000* (ANZECC, 2000) for discharges from existing sewage treatment plants and the replacement flow into the Hawkesbury-Nepean River System;
 - details of the likely water quality impacts of the replacement flows during wet weather and dry weather, with specific (but not necessarily exclusive) reference to total nitrogen, total phosphorus, ammonia and total dissolved solids;
 - details of the likely water quality impacts generated by a reduction in discharges from the St Marys and Quakers Hill sewage treatment plants;
 - details of the likely impacts from the cessation/ alteration of flow from Warragamba Dam between the dam wall and Penrith Weir;
 - a clear demonstration of how the project will protect (or otherwise not compromise) water quality and river flow objectives for the Hawkesbury-Nepean River System where they are currently being achieved and contribute toward (or otherwise not compromise) the achievement of these objectives

over time where they are currently not being achieved;

The Environmental Assessment must also outline a framework for a monitoring program to be applied to the project with respect to the impacts on water quality and aquatic ecology. The framework monitoring program shall be developed having regard to flow regime, phytoplankton (abundance and composition), submerged aquatic vegetation (abundance and composition), flowering aquatic vegetation (abundance and composition), macro invertebrates (abundance and composition), fish (abundance and composition), human pathogens (abundance and composition), nutrients (nitrogen and phosphorus). The framework should also include provision for the collection of baseline data prior to the operation of the project, and timing for monitoring both prior to and during operation.

- **Impacts on Ecology** – the Environmental Assessment must include a comprehensive ecological impact assessment, including in relation to both terrestrial and aquatic ecosystems, in accordance with the DEC's *Guidelines for Threatened Species Assessment* and *Guidelines for Developments Adjoining National Park Lands*, and DPI's *Fish Habitat Protection Plan No. 1: General and Fish Habitat Protection Plan No. 3 – Hawkesbury-Nepean River System*. The Assessment must consider impacts on ecological values directly attributable to the project, as well as indirect impacts that may be associated with changes in water quality conditions and flow characteristics. The Environmental Assessment must also consider consistency of the project with the NSW State Rivers and Estuaries Policy.

With respect to aquatic ecology, the Assessment must include a particular focus on the reach from Warragamba Dam to Penrith Weir and downstream of the three sewage treatment plants. Specifically, the following issues are required to be addressed:

- impacts on fish movement past Boundary Creek and Penrith Weir;
- impacts on migratory fish species in the catchment;
- impacts on aquatic weed growth, including a demonstration that the discharge of readily bioavailable forms of nitrogen, such as ammonia, have been minimised and that the project will not result in the exacerbation of aquatic weed growth downstream;
- impacts of changes to the flow regime in South Creek, Eastern Creek, Breakfast Creek and Ropes Creek and associated potential ecological impacts;
- impacts on the stability of Boundary Creek and measures to rehabilitate the banks and bed of the creek;

With respect to terrestrial ecology, the Assessment must demonstrate a design philosophy of avoiding sensitive ecosystems and environments, and the minimisation of vegetation removal. The Environmental Assessment must specifically identify any impacts on Endangered Ecological Communities, and where relevant, detail mitigation, management and off-set measures with respect to impacts on those Communities.

- **Human Health Impacts** – the Environmental Assessment must include a detailed assessment of impacts on human health as a result of the project. The Assessment must consider the impact of replacing environmental flows with treated effluent on the current users of the Hawkesbury-Nepean River System. The Environmental Assessment must specifically consider microbiological and chemical hazards and relevant cumulative effects with other sources in the catchment. The Environmental Assessment must consider:
 - consumers of drinking water drawn from the river:
 - without further treatment such as direct extraction via camping areas or caravan parks;
 - with further treatment such as the Richmond Water Treatment Plant;
 - recreational users of the river engaged in activities including swimming, water skiing and use of watercraft;
 - irrigators and the potential implications from the use of water on their produce;
 - residents who use the water for non-potable private use e.g. home grown crops such as vegetables, irrigation, other domestic uses;

	◦ irrigation of public open space; ◦ any other significant use that may impact on human health. • Noise and Vibration Impacts – the Environmental Assessment must include an assessment of the noise impacts of the project in accordance with the <i>NSW Industrial Noise Policy</i> (EPA 2000) and noise control guidelines <i>Construction Site Noise</i> (previously Chapter 171 of the Environmental Noise Control Manual, 1994). With respect to potential vibration impacts, the Environmental Assessment must include consideration in accordance with the DEC's <i>Environmental Noise Management – Assessing Vibration: a Technical Guideline</i>. The Environmental Assessment must consider noise and vibration impacts during construction and operation, and in a cumulative context with existing developments. • Waste Generation and Management – the Environmental Assessment must detail the likely waste quantities and qualities generated during the construction (including spoil generation) and operation of the project. Specific focus must be placed on sludges, solids and aqueous wastes produced through the operation of the project, with details of appropriate waste management and disposal options for those materials. • General Environmental Risk Analysis – notwithstanding the above key assessment requirements, the Environmental Assessment must include an environmental risk analysis to identify potential environmental impacts associated with the project (construction and operation), proposed mitigation measures and potentially significant residual environmental impacts after the application of proposed mitigation measures. Where additional key environmental impacts are identified through this environmental risk analysis, an appropriately detailed impact assessment of the additional key environmental impact(s) must be included in the Environmental Assessment.
Consultation Requirements	You must undertake an appropriate and justified level of consultation with the following parties during the preparation of the Environmental Assessment: • NSW Department of Environment and Conservation; • NSW Department of Primary Industries; • NSW Department of Health; • NSW Department of Natural Resources; • Hawkesbury-Nepean Catchment Management Authority; • Sydney Catchment Authority; • relevant local councils. In addition, appropriate consultation with the local community should be undertaken. The Environmental Assessment must clearly indicate issues raised by stakeholders during consultation, and how those matters have been addressed in the Environmental Assessment.
Deemed refusal period	Under clause 8E(2) of the <i>Environmental Planning and Assessment Regulation 2000</i>, the applicable deemed refusal period is 60 days from the end of the proponent's environmental assessment period for the project.