



Southern Seawater Desalination Project

Environmental Scoping Document

Response to Public Submissions

January 2008



Document History

Report	Version	Prepared by	Reviewed by
Southern Seawater Desalination Project – Environmental Scoping Document Response to Public Submissions	Draft for Internal Review December 2007.	S. Brown	J. Stansfield – Project Management D. Luketina – Environment Branch F. Faskel – Project Management
Southern Seawater Desalination Project – Environmental Scoping Document Response to Public Submissions	Final for submission to EPA and community members	S.Brown	D.Luketina – Environment Branch
Southern Seawater Desalination Project – Environmental Scoping Document Response to Public Submissions	Revised final submission to EPA and community members	S.Brown	J.Madin – Project Management

Introduction

Purpose of this report

This report provides a summary of the issues raised in the 16 submissions (1 supportive) received during the public review period of the Southern Seawater Desalination Project's *draft* Environmental Scoping Document (ESD), and the Water Corporation's response to them. The ESD was released for public review from 26 November to 10 December 2007.

Every effort has been made to clarify points made or to answer questions raised, however parts of some submissions were statements rather than queries. Many issues will be further clarified and explained in fuller detail in the Public Environmental Review, once the results of technical studies are completed. For issues where the intent is to assess them fully in the Public Environmental Review, the Water Corporation response is generally "agreed".

As there were many overlaps in the issues raised in the submissions, some have been combined and summarised.

To arrange a copy of the submissions to be forwarded to you:

- Call 1800 810 075; or
- Email desalination@watercorporation.com.au.

Background

The Environmental Protection Authority has determined a 'Public Environmental Review' level of assessment for the Southern Seawater Desalination Project proposal, under the *Environment Protection Act* (1986). A Public Environmental Review (PER) requires that the Corporation prepare an ESD, to outline the environmental matters being assessed. Following further community and stakeholder consultation, the Corporation will then prepare the PER in 2008 to outline the environmental impacts of the project, assess those impacts, and explain how they will be managed.

Purpose of the Environmental Scoping Document

The purpose of an ESD is to scope the work required to prepare the environmental impact assessment documentation (PER), rather than to present the findings of an assessment. The Water Corporation released the ESD for public review voluntarily in response in the level of community interest in the proposal and in recognition of the value to local public input into projects such as this. The community will have a second opportunity to make submissions on the proposal during the 8 week public review period for the PER, which will contain much more detail on the impact assessment, mitigation and management plans proposed.

Responses to issues raised in public submissions

Category	Issue/question raised in submission(s)	Water Corporation response
Environmental		
Marine	Impacts on marine animals should be addressed.	Agreed (see p.31 of the ESD).
	Impacts on seagrasses should be addressed.	Agreed (see p.31 of the ESD).
	Brine mixing/diffusion, including water density stratification, salinity increases and dilution.	Agreed (see p.34 of the ESD).
	Will background currents (such as the Leeuwin/Capes currents) be included in the model?	Effects due to local currents (i.e. where the brine is released) will be modelled. There is no need to specifically model broader regional water movements such as the Leeuwin Current. This will be explored further in the PER.
	Climate (or other future) changes	Brine mixing will be modelled using a variety of scenarios, including worse case.

	affecting brine mixing and impacts on marine life.	
	Moorings, groyne/jetty construction and pipelaying impacts need further investigation.	Agreed. A construction management plan will be developed by the Water Corporation (and included in the PER for assessment by the EPA) to specifically manage marine construction impacts.
	Impacts of a lack of dissolved oxygen in the brine discharge needs to be addressed.	Agreed (see p.34 of the ESD).
	What longitudinal studies show that preliminary studies indicate favourable conditions for the dispersion of the brine or by product?	<p>Preliminary hydrodynamic studies, including bathymetric analysis, were undertaken in late 2006 and early 2007 which showed that the ocean was highly energetic in this area. For effective mixing the following features are required:</p> <ul style="list-style-type: none"> • Bathymetry sloping offshore; • Exposed coastline with few reefs or islands; • Strong regular winds/swells; and • Weak to no stratification. <p>At Binningup, all these criteria are met and are more favourable than in Cockburn Sound, which is not demonstrating any impacts due the brine discharge from the Perth Seawater Desalination Plant.</p>
	Testing carried out in Cockburn Sound is	Toxicity testing carried out for the Perth Seawater Desalination Plant at Kwinana is directly relevant as it has been applied to a variety of representative organisms. The impacts of desalination brine discharge to Cockburn Sound have been closely monitored, and although it is agreed that the ocean

	irrelevant to this proposal due to Cockburn Sound being a sea desert (caused by industrial activity).	at Binningup is not identical to that at Cockburn Sound, the statement that Cockburn Sound is a sea desert is not supported (see the annual Cockburn Sound Management Council 'report card').
	Impacts on corals not addressed.	Bathymetric mapping shows that the nearest reef is approximately 1.2km offshore and contains no coral. The inlet/outlet pipes for the plant will be at 500m/800m offshore (approximately) and therefore no impact on the reef is expected.
Terrestrial	Impacts on land-based animals (particularly Western Ringtail Possums, chuditch, birdlife) need to be assessed.	Agreed (see p.30 of the ESD).
	The WWTP site has little area suitable for construction according to the 2006 flora and fauna investigation.	This was recognised by the Water Corporation and as a result part of the nearby Lot 8 (a limestone quarry) was purchased for the flexibility it offered in plant layout and impact minimisation.
	The 2006 flora and fauna survey did not cover the birdlife of the dunes and beach	The survey did cover the dune/beach area, and the subsequent 2007 survey will also cover this area.

	area.	
	Vegetation impacts (particularly Tuarts and peppermints).	Agreed (see p. 29 of the ESD).
	What are the impacts on the terrestrial corridors?	At this stage final plant layout is not known. However "no-go" areas will be specified to constrain the design to areas selected to minimise corridor impacts. These will be assessed fully in the PER (see p.28 and 29 of the ESD).
	What are the impacts on wetlands, particularly the Conservation Category wetland on Lot 8?	The northernmost tip of a Conservation Category wetland does extend into the part of Lot 8 proposed for the desalination plant. The Water Corporation will be applying to the DEC for reclassification of this section of the wetland. This part of the wetland (not a significant portion of the entire wetland which extends further south into the area not impacted by the desalination plant) has been highly modified by grazing and draining and is not considered to be of high conservation value. This (and any impacts on other wetlands close to the pipeline route) will be fully assessed in the PER (see p.33 of the ESD).
	Will there be sufficient geotechnical information prior to the PER release? Important for subterranean fauna impact assessment (should be upgraded to a 'key' factor).	There will be sufficient information to ascertain the likelihood of impacts on subterranean fauna. Dewatering impacts will be localised and temporary, therefore upgrading to a 'key' factor is not considered to be warranted.

	Impact of a proposed berm on stormwater flows.	The proposed berm will be designed to meet all relevant hydrological standards for flooding.
	Acid sulphate soils should be upgraded to a 'key' factor.	Field surveys will be conducted and a construction management plan will be developed to mitigate this issue (see p.32 of the ESD), therefore upgrading to a 'key' factor is not considered to be warranted.
	What does "land immediately adjacent to waters for potential for fouling" mean?	This is related to intake water quality (i.e., the most suitable sites for a desalination plant are far away from potentially contaminated water).
	The costs of modelling and other studies should be disclosed.	These are not finalised yet as modelling and other studies are still being undertaken. Costs of studies are not part of the scope of an ESD.
	Vibration impacts from running the plant should be considered.	Agreed. This will be added to the scope of the ESD.
	Dune fragility needs to be assessed.	Agreed (see p.34 of the ESD)
	A dust management plan is required.	Agreed. This is intended to be included in the Construction Environmental Management Plan (see p.35 of the ESD).
	The ESD contains no information on	Only limited information had been collected specifically for the Binningup site at the time of preparation of the ESD. This included a flora and fauna survey (repeated in 2007, the results of

	the Binningup site.	which will be included in the PER) and some water quality monitoring. The purpose of the ESD was to outline the studies proposed for the future impact assessment of the proposal, not to detail the results of such studies (this is the purpose of the PER to be completed in 2008).
Waste and chemical management	Leakage to treatment ponds (DPNPA) and groundwater.	Treatment ponds are not required for the Binningup desalination plant.
	Chemical storage facilities should be included in the infrastructure requirements. Lists of chemicals used on site should be provided, including chemicals to be released to the ocean.	Chemical storage facilities are included in the pre- and post-treatment facilities listed on p.10 of the ESD. This will be expanded on in the PER. The exact process chemicals to be used will not be known until the final design is completed, late in 2008. However equivalent process chemicals will be listed in the PER, and have previously been published on the Water Corporation's desalination website (see: http://www.watercorporation.com.au/_files/PublicationsRegister/15/ChemicalQuestions.pdf).
	THM generation needs to be addressed.	Desalinated water has a very low organic content and therefore THMs will not be generated by the desalination process. THMs are generated when water with a high organic content is chlorinated for drinking water.
	Does the 800m buffer zone comply with industrial buffer zone standards or compliance with laws regarding industry and	There are two buffer zones associated with the Water Corporation-owned Taranto Road site: an existing 500m odour buffer (to exclude incompatible development from odours from the existing wastewater treatment plant) and a smaller proposed chlorine buffer (which will be contained on the Water Corporation-owned site, as chlorine will be stored in the middle of the site). There is no 800m buffer zone.

	potential dangerous chemicals?	
	What does the sludge consist of? What guarantees does the Water Corporation give that this will be thoroughly investigated based on longitudinal studies?	The waste sludge from the Perth Seawater Desalination Plant at Kwinana comprises precipitated iron, solid particulate matter from the seawater (comprising silt, plankton, fragments of organic matter, etc) and a range of precipitated compounds from the seawater, including heavy metals. Sludge removed from the PSDP site typically amounts to approximately 250 tonnes/month. The Water Corporation will be required to analyse sludge composition and disposal methods for the life of the plant.
	A waste management plan needs to be developed and approved by the CEO of the DEC to address the waste generated by the high turbidity of the local seawater.	The waste sludge generated by the plant process will be disposed of in accordance with the EPA and Ministerial approval and local government requirements for an appropriate landfill site.
	Waste management needs to be upgraded from an 'applicable' factor to a 'key' factor.	The waste sludge generated by the plant process will be disposed of in accordance with the EPA and Ministerial approval and local government requirements for an appropriate landfill site. Therefore waste management is considered to be an 'applicable' factor.

	Emissions from the plant affecting Binningup.	Other than the brine discharge to the ocean and some noise, no emissions are generated by the plant. In particular there will be no emissions to the air which could affect Binningup.
Energy	Greenhouse gas emissions impact if non-renewable source of energy is used.	Agreed. This will be covered in the PER (see p.35 of the ESD).
	Power line route selection and impacts (social and environmental).	Western Power will be the proponent for the power line route approvals. The Water Corporation is already working closely with Western Power to share information on environmental and social issues in the area, however the final decision on the power line route selection will be with Western Power.
	The renewable source of energy should be identified – more commitment to this is vital.	The Water Corporation has called for Expressions of Interest from renewable power generators and work will continue on this throughout 2008.
	No detail on how energy costs (higher for wind power) are factored into costings for the plant.	The final costings for the plant were based on the use (and associated higher costs) of renewable energy.
	Should be upgraded to a 'key' factor.	As renewable energy is planned to be used, the greenhouse gas impacts for this proposal are considered to be an applicable' factor.

Social		
Amenity	Impacts on social, recreational use (such as fishing and surfing conditions), beach closure and lifestyle should be considered.	Agreed. These will be considered as part of our non-statutory (i.e. not required for the environmental approval) Social Impact Assessment, to be published concurrently with the PER.
	What does "virtually unnoticeable from the beach" mean?	The plant itself will be some 500-800m from the beach, behind many dunes and large trees, therefore not visible from the beach. The only part of the proposal which needs to be close to the beach is the seawater pumpstation which will be located behind a primary dune. This dune is currently blown out, and will be re-established to the height of neighbouring dunes and replanted with local species of vegetation. Once construction work is finished, all elements of the plant and pumpstation will be screened from the beach by the undulating landscape.
	There will be an unacceptable amount of light spill from the plant.	The Water Corporation recognises that this is a major concern for the people of Binningup and Myalup and has made an early commitment to lighting being no more obtrusive than street lighting. The plant does not require bright floodlights to operate at night. Viewshed modelling will be conducted (including lighting) as part of the PER (see p. 37 of the ESD). Preliminary results indicate that the plant will not be visible from the town of Binningup and more work will be done to ascertain the light impacts.
	Will lighting be visible from Myalup?	The Water Corporation recognises that this is a major concern for the people of Binningup and Myalup and has made an early commitment to lighting being no more obtrusive than street lighting. The plant does not require bright floodlights to operate at night. Viewshed modelling will be conducted (including lighting) as part of the PER (see p. 37 of the ESD). Preliminary results indicate that the plant will not be visible from the town of Myalup and more work will be done to ascertain the light impacts.
	Visual amenity impacts are important.	Agreed. The Water Corporation recognises that this is a major concern for the people of Binningup and Myalup and has made an early commitment to lighting being no more obtrusive than street lighting. The plant does not require bright floodlights to operate at night. Viewshed modelling will be conducted (including lighting) as part of the PER (see p. 37 of the ESD). Preliminary results

		indicate that the plant will not be visible from the towns of Binningup or Myalup and more work will be done to ascertain the light impacts.
	Buffer zones and the proximity of residential housing will be impacted. Can the Water Corporation guarantee that this will not affect residents?	There are two buffer zones associated with the Taranto Road site: an existing 500m odour buffer (to exclude incompatible development from odours from the existing wastewater treatment plant) which extends slightly north and south of the Water Corporation-owned site and a smaller proposed chlorine buffer (which can all be contained on the Water Corporation-owned site, as chlorine will be stored in the middle of the site). Therefore residents will not be affected by any buffer zones associated with the desalination plant.
	Noise management plan in accordance with AS 2436 needs to be published and approved by the CEO of the DEC.	Noise will be managed in accordance with AS 2436 (see p. 36 of the ESD) and addressed within the Construction Environmental Management Plan to be assessed by the EPA.
	Vibration impacts from running the plant should be considered.	Agreed. This will be included in the final ESD (see p. 36 of the ESD) and assessed in the PER.
	Complaints mechanism is needed if noise, dust or other levels are exceeded.	Agreed. This will be addressed within the Construction Environmental Management Plan and the Operational Environmental Management Plan to be assessed by the EPA.

	What is suggested by the phrase “the social and recreational facilities may even be enhanced”?	The Water Corporation is working with local stakeholders and the Shire of Harvey to determine opportunities for partnerships which provide benefits for the community in the area. This may include providing or upgrading social and recreational facilities.
	Smell needs to be assessed.	The desalination process does not generate odours.
Occupational Health and Safety	Should be upgraded to a ‘key’ factor.	Public safety and risk (see p. 38 of the ESD) is an important factor for the Water Corporation to manage. To do this, a Construction Environmental Management Plan and an Operational Environmental Management plan will be developed by the Water Corporation and assessed by the EPA. Therefore this factor should be considered ‘applicable’.
Indigenous heritage	The ESD fails to address indigenous heritage even though there are many significant sites identified and documented sites in close proximity to the proposed site.	Throughout the planning and construction of the project, the Water Corporation has committed to thorough consultation with the Gnaala Karla Booja Native Title Claimant Group, the Department of Indigenous Affairs and the South West Aboriginal Land and Sea Council in order to avoid damage to identified heritage sites (see p. 37 of the ESD). The proposal will comply with all requirements of the <i>Aboriginal Heritage Act (1972)</i> and the <i>Native Title Act (1993)</i> .
Public safety	There are no adequate emergency services, doctors or hospitals in Binningup or Myalup to cope	Chemicals stored on site will be in accordance with dangerous goods standards and regulations. Emergency response planning will be in accordance with the Water Corporation’s standard emergency response protocols, in consultation with local emergency services providers, in order to ensure the safety of the community and the workers on the site itself. It is therefore considered that this should remain an ‘applicable’ factor.

	with a chemical spill at the plant. Should be upgraded to a 'key' factor.	
Technical		
	What is the seawater intake pipe length and the brine discharge pipe length?	The seawater intake pipe and brine discharge pipe will be approximately 500m and 800m (respectively) offshore.
Other		
Other water initiatives	Investment is needed in water education and recycling, and the promotion of innovation in the agriculture and private sector.	The Water Corporation has invested heavily in water education and recycling. 368 schools across Western Australia have been through the Waterwise Schools Program, a program which educates students, their families and the wider community about water conservation. The Kwinana Water Reclamation Plant treats 24 million litres/day from the Woodman Point Wastewater Treatment Plant for industry use, reducing the demand for scheme water by 6 GL/year. There are also over 60 wastewater recycling schemes across the state, where the treated wastewater is used for irrigation of parks, ovals, golf courses and tree plantations. For more information on the Water Corporation's recycling initiatives, see: http://www.watercorporation.com.au/_files/PublicationsRegister/22/Recycling_Nov06.pdf
Project approval process	The approvals process is being rushed. The community needs more time and information.	The Water Corporation acknowledges that the decision came as a surprise to the community, particularly the residents of Binningup and Myalup. However the usual environmental approvals process is being followed and all relevant statutory approvals will be obtained before construction begins. Public comment periods for the community are comparative for other significant projects.
Site selection	The site selection process was	The Water Corporation published its site selection report (see: http://www.watercorporation.com.au/_files/Site%20Alternatives%20Report,%20July%202007.pdf)

	<p>flawed and rushed (the plant should be in an industrial area such as Kemerton, or relocated to east of the coastal highway, not 700m from a town). Reasons for not proceeding with the East Rockingham/Port Kennedy proposal should be given.</p>	<p>which provides the site selection criteria and the rationale for the selection of the Taranto Road site. Subsequent to that report, the northern portion of Lot 8 Taranto Rd (a partially cleared quarry) was purchased, which will give greater flexibility in plant layout and design, to minimise impacts of the community and the environment. Reasons for not proceeding with the East Rockingham/Port Kennedy proposal are given in the report referred to above.</p>
	<p>Consultation with the community on the planning of the plant at Binningup presupposes that it will be located there. What measures are available to the community who oppose its location?</p>	<p>The Water Corporation is confident that the proposal's impacts can be minimised and managed to meet the EPA's and the Minister for the Environment's approval requirements but does not assume that the project is already approved. The Water Corporation has held many public meetings and individual or stakeholder group briefings since the government announced its intention to shelve the Yarragadee project in favour of a second desalination plant at Binningup. Social research (in the form of telephone surveys) has also been conducted in August and November 2007 to ascertain community views. These can be found at:</p> <p>http://www.watercorporation.com.au/files/PublicationsRegister/15/DesalinationResearchAug07.pdf</p> <p>http://www.watercorporation.com.au/files/PublicationsRegister/15/DesalinationResearchNov07.pdf</p> <p>There are also opportunities for the community to express their views during the PER process, such as commenting on the ESD and preparing a submission on the PER itself during the 8 week public comment period.</p>
	<p>No account taken of the</p>	<p>Currently all the water from the proposed desalination plant will be required for the Integrated Water Supply Scheme. Future landuse planning decisions which would require zoning changes and</p>

	significantly increased likelihood of heavy industry wanting to co-exist next to the plant due to the availability of the fresh water.	major amendments to town and regional planning schemes are a matter for local government and the WA Planning Commission.
Property values	Will compensation for the desalination plant causing real estate prices to fall be paid and if so could landowners have this in writing?	The Water Corporation does not anticipate that the desalination plant will cause real estate prices to fall in either Binningup or Myalup due to plant being located outside of the town sites.
Justification for desalination as the next source (compared to alternatives)	Water from the Kimberley (Ord) needs to be considered as a potential source for the Integrated Water Supply Scheme.	In 2004 the state government appointed an expert panel to examine the feasibility of transporting water from the Kimberley to Perth, by pipeline, canal or ocean transport. Major technical, economic and environmental constraints make this an option that is not favoured by government. Additionally, the indigenous communities of the Kimberley did not support taking water from the region. The report concluded that "while several methods are technically capable of delivering water from the Kimberley to Perth, the water would cost significantly more (at least five times) than if supplied by other available options and offer no other significant advantages to the development of the state" (<i>Options for bringing water to Perth from the Kimberley: an independent review</i> . The Kimberley Expert Panel, published by Department of Premier and Cabinet, 2006).
	Costs for desalination have been provided to the Water Corporation by	The Water Corporation has been operating the Perth Seawater Desalination Plant at Kwinana for over a year now and costs are well within the expected cost per cubic metre. The plant has operated more efficiently than predicted and reliability has not been an issue.

	the desalination industry and desalination plants have a major problem with reliability, therefore the cost per cubic metre is likely to be higher.	
	Desalination plants have a major problem with reliability.	This is not supported by the Water Corporation's experience, both at the Perth Seawater Desalination Plant at Kwinana (which has performed more efficiently than anticipated) or as evidenced at other plants visited around the world.
	More information is required to show that desalination is a good option.	The Water Corporation's experience at the Perth Seawater Desalination Plant at Kwinana has proven that desalination provides a climate-independent, reasonably priced reliable source of water for the Integrated Water Supply Scheme.
	No decision should be made until the new water planning system is put in place as recommended by the Economic Regulation Authority.	The decision to shelve the Yarragadee proposal and proceed with a second desalination plant at Taranto Road, Binningup was made by government in May 2007 and the Water Corporation is now well advanced in its planning and approvals for the Southern Seawater Desalination Plant. Any delays to developing this next major source may cause water supply problems for customers of the Integrated Water Supply Scheme.
	The ESD fails to investigate	The ESD explored alternative sources (pp 15-17 of the ESD) including Wellington Dam. Expansion of the Perth Seawater Desalination Plant at Kwinana is not possible as the existing site is not large

	<p>alternatives such as the expansion of Kwinana plant, Garden Island, a desalination plant in the northern suburbs recharging the Gnangara Mound with discharge of brine through Point Peron outfall and gives scant consideration to Wellington Dam.</p>	<p>enough. Although Garden Island was considered as part of the initial site selection process, routing pipes to the mainland (to connect to the Integrated Water Supply Scheme) would be prohibitively expensive. A desalination plant in the northern suburbs would require a large upgrade of the Integrated Water Supply Scheme infrastructure such as pipelines, pumping stations and storage reservoirs (and discharge of brine to Point Peron from the northern suburbs would be technically difficult and expensive). Sites between Jurien and Bunbury were examined and the Taranto Road site best met the site selection criteria.</p>
	<p>"Intergenerational equity" impacts should be addressed.</p>	<p>Agreed. As one of the principles of environmental protection, this will be explored more fully in the PER.</p>