Regulatory Committee Meeting Agenda
Thursday, May 23, 2024
2:00-3:00 p.m.
Zoom Meeting

Agenda

- Co-Chairs **Kevin Thomas**, Kimley-Horn and **Eric Miller**, Miller Marine Science and Consulting – Welcome

Update Items

- Legislative update
    - Resources/climate resilience bond discussion **(Attachment)**

- Events update
    - 2024 CalDesal Fall Mixer
        - ACWA Fall Conference – Palm Desert
        - Wednesday, December 4, 2024

    - Save the Date – 2025 CalDesal Annual Conference
        - Pechanga Resort – Temecula, CA
        - Wednesday, February 5 – Thursday, February 6

Discussion Items

- DWR Draft Resources Management Strategy for Desalination **(Attachment)**

- DWR Urban Water Management Plan guidebook update **(Attachment)**

- OPA 2.0 planning efforts (**Attachment**)

- Brine discharge study – Australia (**Attachment**)

- Update on recent offshore wind conference (Miller)

2:30 PM: Special Guest: Paul Michel, NOAA – Proposed Chumash Marine Sanctuary

Recent Project Activity, Upcoming Milestones

- Doheny Desalination Project
- Monterey Desalination Project
- Carlsbad Desalination Facility Intake Project
- MWD desalination siting and technical studies
- Updates on any other ongoing desalination projects?

Other Items

Next Regulatory Committee Meeting:
June 27, 2024 – 2:00 PM

MEMO

TO: Senate Climate Resilience Bond Working Group

FROM: Association of California Water Agencies (ACWA)

DATE: May 13, 2024

RE: ***UPDATED*** ACWA Priorities for Climate Resilience Bond

In response to the Legislature advancing a smaller climate resilience bond than had previously been proposed, ACWA has updated its funding recommendations to reflect an $8.5 billion bond. ACWA is now advocating for a **$5.75 billion** investment in water infrastructure that will help California adapt to and prepare for the effects of climate change. Specifically, ACWA urges the inclusion of the following categories and updated funding amounts:

UPDATED

ACWA'S CLIMATE RESILIENCE BOND PRIORITIES

Categories	April 2024	May 2024
Dam Safety/Forecast-Informed Reservoir Operations	$850 million	$623 million
Recycling and Desalination	$1.35 billion	$990 million
Safe Drinking Water/Clean Water	$600 million	$440 million
Groundwater Management/Aquifer Recharge	$1 billion	$733 million
Flood Protection	$1 billion	$733 million
Regional Water Conveyance	$800 million	$586 million
Regional Watershed Resilience	$500 million	$366 million
Surface Water Storage	$750 million	$550 million
State Water Project	$500 million	$366 million
Water Conservation/Use Efficiency	$500 million	$366 million
TOTAL:	**$7.85 billion**	**$5.75 billion**

California's changing climate creates increased risks of drought, floods, intense rain events, and sea level rise that are presenting unique challenges to public water agencies and their ability to reliably provide water to California's cities, communities, farms, and businesses. The costs associated with water projects are significant and will continue to rise. Projects are typically funded in large part by the customers of one or more local public water agencies. **State funding assistance is needed to help deliver the projects and help keep water bills affordable for customers.** ACWA also supports inclusion of funding for wildfire protection/forest health improvement.

ACWA thanks you for your attention to this issue. Please direct any questions to ACWA State Relations Advocate, Soren Nelson, at sorenn@acwa.com or (916) 669-2367.

DROUGHT AND FLOOD

Climate Resilience Bond – Water Infrastructure Priorities

UPDATED MAY 13, 2024

Adapting to climate change requires California to urgently and significantly rehabilitate and modify existing water facilities, improve operational flexibility, and make generational investments in new water infrastructure. The State is currently underprepared to manage a water system with a decreasing snowpack, less frequent precipitation, and weather extremes. Additional above- and below-ground storage capacity must be developed to capture precipitation. In addition, new and enhanced conveyance facilities are essential for moving collected and stored water, connecting suppliers with different supply sources, transferring water among water users, and recharging groundwater for multi-beneficial purposes. State investment in water infrastructure is crucial to providing the reliable delivery of water to California residents, businesses, and agriculture. In addition, climate resilience projects have also been shown to stimulate local economies and create jobs.

Dam Safety/Reservoir Operations: ($623 million)

In California, the average age of the 1,246 dams that fall under the jurisdiction of the state's Division of Safety of Dams is more than 70 years. In 2022, the state rated 112 of those dams as "less than satisfactory" and applied capacity restrictions to many reservoirs, resulting in significantly reduced water storage. Dam safety projects protect public safety, regain lost storage capacity, and fortify facilities for intensified storms due to climate change. In addition, dam enhancements to support Forecast-Informed Reservoir Operations (FIRO) further increase the climate resilience of dams using data from watershed monitoring and weather forecasting, which in turn allows for optimization of water releases from reservoirs to better respond to droughts and floods.

Recycling and Desalination: ($990 million)

The State has set a target of 1.8 million acre-feet of new recycled water by the year 2040. In order to meet this goal, the State Water Resources Control Board (State Water Board) estimates that the cost to State, local, and federal agencies will total approximately $27 billion. In addition, the State has set a target of expanding brackish groundwater desalination by 84,000 acre-feet per year by 2040. Both ocean and brackish groundwater and surface water desalination play an important role in local communities' water supply planning process to enhance California's drought resilience.

Eastern Municipal Water District:
French Valley Recycled Water Expansion

Fresno Irrigation District:
Savory Groundwater Recharge Basin


Western Municipal Water District:
Recycled Water & Groundwater Recharge


Los Vaqueros Reservoir

Safe Drinking Water/Water Quality: ($440 million)

ACWA strongly supported the creation of California's Safe and Affordable Drinking Water Fund and recognizes the need to continue to direct resources to disadvantaged communities dealing with water quality issues. In addition, there are a number of communities throughout California dealing with water quality issues, including those caused by perfluoroalkyl and polyfluoroalkyl substances (PFAS) and other contamination that will result in hundreds of millions of dollars in treatment costs to ratepayers.

Groundwater: ($733 million)

Historic droughts over the last several decades have placed extreme strain on California's groundwater basins. In response to the Sustainable Groundwater Management Act (SGMA), local agencies have proposed more than 340 new recharge projects that, if built, could result in as much as 2.2 million acre-feet of additional stored water in a single wet year by 2030.

Flood Protection: ($733 million)

Levees, weirs, bypasses, and other flood protection facilities reduce the risk of major flooding. Projects that repair, expand, or replace these facilities are essential to flood management and public safety. As recent atmospheric rivers have shown, California must invest significant resources in coastal and inland flood protection including new infrastructure to capture flood flows and divert them to groundwater recharge facilities.

Regional Water Conveyance: ($586 million)

New regional water conveyance systems and repairs of existing facilities will be essential to create a more resilient water infrastructure system. The Bureau of Reclamation estimates that repairing arterial canals in the central valley that have been damaged due to subsidence will cost over $500 million. Many local and regional conveyance upgrades and repairs are needed throughout the State to create access to new water sources or provide emergency backup conveyance.

Regional Watershed Resilience: ($366 million)

Regional and inter-regional scale watershed resilience projects are essential to maximize investments that increase water infrastructure resilience to climate change. These projects include Integrated Regional Water Management (IRWM) projects and other regional collaborations that focus on managing the region's water resources, setting regional priorities for water infrastructure, improving regional water self-reliance, or reducing reliance on the Sacramento-San Joaquin Delta.

Surface Water Storage: ($550 million)

As climate change continues to reduce California's snowpack, which serves as a natural storage reservoir, the State must invest in additional water storage infrastructure to capture and store rainfall for utilization during dry periods. The Governor's Water Supply Strategy identifies the need to develop over 4-million-acre feet of new storage facilities with other estimates placing the need much higher.

State Water Project Climate Change Resilience: ($366 million)

The California State Water Project (SWP) is a multi-purpose water storage and delivery system that delivers water to 27 million Californians and many farms and businesses throughout the state. In order to continue to provide safe and reliable drinking water and to meet the renewable energy goals established for the SWP, California should provide funding to enhance the SWP delivery of water and increase its energy resilience.

Water Conservation: ($366 million)

From 2013 to 2016, statewide per capita residential water use declined 21 percent and has remained 16 percent below (on average) 2013 levels. Public water agencies continue to invest in water conservation projects and programs that increase conservation efforts, such as turf replacement programs, water loss projects, and other water-use efficiency upgrades. Similarly, there are significant infrastructure projects at agricultural irrigation districts that would yield water savings.


Mesa Water:
Drought-Resilient Supply Project


Contra Costa Water District:
Contra Costa Canal

Climate Resilience Bond - Comparison Chart

	AB 1567 (Garcia) Amended May 26, 2023 $15.995 Billion GO Bond March 5, 2024, Primary Ballot	SB 867 (Allen) Amended June 22, 2023 $15.5 Billion GO Bond March 5, 2024, Primary Ballot	ACWA Priorities (May 13, 2024) $5.75B (**Original Ask of $7.85B)	Conservation, Environmental Justice & Sustainable Ag Coalition (May 2024) $10B (**$4.7B Priority)	SCWC/Bay Area Council/Water and Business Community (April 2024) $9.5B
Recycling/ Water Supply Resilience	$500M	$550M	$990 M	$450M	$2.8B
	• $300M to SWRCB for RW • $200M to DWR for multibenefit stormwater projects	• $300M to SWRCB for RW • $250M to SWRCB for multibenefit stormwater projects	$990M: Recycling and Desalination	$450M for CWSRF, to leverage federal funds (SWRCB) for RW	$1B for small-medium sized projects $800M for large scale regional projects $500M for stormwater capture $500M for deaslination
Conservation/ Water Use Efficiency		$100M	$366M	$100M	$500M
		$100M: DWR for ag and urban conservation	$366M: Conservation and Water Use Efficiency	$100M: Water Conservation/ Direct Install Prog for Low-Income	$500M: Water Use Efficiency

Groundwater	$350M	$800M	$733M		$250M
	• $250M to DWR for groundwater projects consistent with SGMA • $100M to Dept of Conservation for multibenefit groundwater sustainability projects **Additional $275 in Water Quality for groundwater remediation/treatment	• $400M to DWR for groundwater banking, storage, conjunctive use projects • $300M to Dept of Conservation for multibenefit groundwater sustainability projects • $100M for salt-removal projets including groundwater storage and treatment	$733M: Groundwater		$250M: Groundwater Storage
Surface Storage		$300M	$550M		$500M
		$300M for projects consistent with the Water Storage Investment Program	$550M Surface Water Storage		$500M for inflation adjustment to Water Storage Investment Program projects

SWP Resilience and Public Benefit	$350M	$500M	$366M		$1.5B
	• $100M to DWR for stream gauges • $250M for Stream Flow Enhancement Program for drought impacts	• $100M to DWR for stream gauges • $300M to Wildlife Conservation Board for Stream Flow Enhancement Program • $100M to Resources Agency for San Joaquin River settlements	$366M: State Water Project Climate Change Resilience		$750M for SWP infrastructure improvements $750M for SWP Renewable and Zero Emission Energy
Regional Conveyance	$350M	$550M	$586M		$500M
	$350M for Integrated Regional Water Management Program	$300M to DWR for integrated regional water management to improve climate resiliency • $250M to Resources Agency for regional conveyance projects	$586M: Regional Water Conveyance		$500M for Regional and Interregional Conveyance

Water Quality/Safe Drinking Water	$845M • $400M to SWRCB for clean, safe, and reliable water • $175M forgivable loans: groundwater and surface contamination (SWRCB) • $100M groundwater contamination (SWRCB) • $100M to for Chrom6 • $70M for PFAS	$400M $400M to SWRCB for clean, safe, and reliable water	$440M $440M: Safe Drinking Water/Water Quality	$1B • $1B for drinking water/wastewater infrastructure for communities and tribes (SWRCB)	$500M $500M for clean water and contamination prevention
Dam Safety and Reservior Operations	$965M • $900M to DWR to support dam safety • $65M to Coastal Conservancy for removal or upgrading outdated/obsolete dams	$500M • $400M to DWR for dam safety and reservoir operations • $100M to Coastal Conservancy for removal or upgrading outdated/obsolete dams	$623M $623M: Dam Safety/Reservoir Operations		$850M

	$1.1B	$1.5B	$733M	$300M	$1B
Flood Protection	• $200M to DWR for multibenefit flood control • $750M to DWR ○ $400M for State Flood Control Plan ○ $200M for State Flood Control Subventions ○ $150M for projects in the Delta • $150M for Resources Agency to address flooding in urban area	• $1B to Resources Agency to address flood management programs, that include: ○ Implementation of the Central Valley Flood Control Protection ○ Coastal Watershed Flood Risk Reduction Program ○ State Flood Control Plan • $500M to Coastal Conservancy for coastal flood management	$733M: Flood Protection	$300M: Flood Protection for DACs (Resources/SWRCB)	$1B for Geographically Balanced Urban Flooding • $300M for the State Flood Subvention Program

Climate Resiliency, Wildfire and Habitat Restoration	$3.22B • $620M to Resources Agency to address climate resilience (**no earmark for conservation) • $25M for Open and Transparent Water Data • $200M for tribal water infrastructure • $450M to OES for prehazard mitigation, including zero emission back up generators and water delivery improvements for fire suppression • $1.95B to address sea coastal rise	$1.75B • $275M to OES for prehazard mitigation, including zero-emission back up power • $500M to Coastal Conservancy for coastal resilience program • $1B to Wildlife Conservation Board to enhance fish and wildlife habitat and state's biodiversity goals • $1B to Wildlife Conservation Board to enhance fish and wildlife habitat and state's biodiversity goals	$366 M $366 M: Regional Watershed Resilience	$8.15 B • $1B for Coastal Resilience • $150M Multi-benefit Land Repurposing Program • $420M for transformative climate communities program (SGC) • $150M for urban greening (Resources) • $120M for urban forestry (CalFire) • $200M Green Schoolyards (CalFire)	$1.1B • $1B for Coastal Resilience • $100M for multi-benefit land repurposing

				• $50M for extreme heat action plan (Resources) • $110M for extreme heat and community resilience program (OPR) • $400M for equitable building decarbonization (CEC) • $80M distributed energy (CEC) • $300M for AB 31 Grants (State Parks) • $450M for Salton Sea Restoration (DWR)	

Gmail

Glenn Farrel <glenn@gfadvocacy.com>

CA Water Plan Update 2023 Draft Resources Management Strategies Available for Review

1 message

Ly, Hoa@DWR <Hoa.Ly@water.ca.gov>
To: "Ly, Hoa@DWR" <Hoa.Ly@water.ca.gov>

Tue, Apr 30, 2024 at 4:53 PM

Hello,

Thank you for your interest in the RMSes and prior workshops.

DWR has released a public review draft of the 11 RMSes on May 1, 2024, for a 30-day comment period. **Comments received by May 31, 2024**, will be used to inform the final versions of the strategies. Comments can be submitted by using an **online comment form** or via email at: cwpcom@water.ca.gov.

Additional information for submitting comments including postal mail is available in the **Reviewer's Guide**, which is also included in the updated RMS Introduction chapter.

- **Introduction**
- **Agricultural Water Use Efficiency**
- **Conjunctive Water Management**
- **Desalination**
- **Flood Management**
- **Municipal Recycled Water**
- **Precipitation Enhancement**
- **Recharge Area Identification, Utilization and Protection**
- **Reservoir Reoperation**
- **Urban Stormwater Runoff Capture and Management**
- **Urban Water Use Efficiency**
- **Watershed Management**

Please submit your comments by May 31, 2024. If you have any questions, please contact us at cwpcom@water.ca.gov.

Thank you,

Hoa Ly

Strategic Planning Branch

CA Dept of Water Resources

Gmail Glenn Farrel <glenn@gfadvocacy.com>

Urban Water Management Plan Guidebook - Seawater Desalination Permitting

1 message

Huff, Gwen@DWR <Gwen.Huff@water.ca.gov> Tue, May 21, 2024 at 8:47 AM
To: glenn <glenn@gfadvocacy.com>, nelldimov1 <nelldimov1@gmail.com>, "Lopez, Efren" <elopez@sdcwa.org>

Thank you for your interest in participating in the update of the 2025 UWMP guidebook.

You are invited to join the first informal workgroup on the topic **"Seawater Desalination"** on Tuesday, June 11th 22nd from 9:00AM – 11:00AM. The meeting will be held using the Teams link below. Call in options are also provided if you are unable to join via Teams

Agenda

9:00 AM Welcome, introductions, overview

9:20 AM Review of the relevant material from our April public meeting on this topic

9:45 AM Open discussion to gather input from attendees.

10:45 AM Summary and next steps

We look forward to getting your input.

Sincerely,

Gwen Huff

Senior Environmental Scientist

Department of Water Resources

Microsoft Teams Need help?

Join the meeting now

Meeting ID: 244 691 629 565

Passcode: vkeDmV

Dial in by phone

+1 916-573-2034,,979715025# United States, Sacramento

Find a local number

OPA 2.0 Working Group – Issues Matrix

ISSUE TYPE	PRIORITY LEVEL	ISSUE	OFFENSE/DEFENSE	NEXT STEPS
Technical Issues	**High Priority**	Allowance of flow augmentation without bias	Offense	
		Elimination of brine diffusers as best available technology	Offense	
		Elimination of mitigation for shearing mortality	Offense	
		De facto prohibition on open intakes	Defense	
		Specify a sequential order for assessing site, design, technology, and mitigation under the Water Code Section 13142.5(b) determination process *(Siting Criteria Report)*	Defense	
	Moderate Priority	Offshore/deep-sea desalination evaluation and permitting	Offense	
	Lower Priority	Articulate criteria for studies necessary to demonstrate subsurface intake feasibility *(Siting Criteria Report)*	Defense	
		Align the desalination provisions with the Coastal Act requirements regarding energy consumption and Resolution No. 2017-0012 *(Siting Criteria Report)*	Defense	

ISSUE TYPE	PRIORITY LEVEL	ISSUE	OFFENSE/DEFENSE	NEXT STEPS
Mitigation Issues	**High Priority**	Timing – requirement for mitigation to be in place prior to operations of a facility is problematic	Offense/Defense	
		Mechanisms – Fee-based mitigation; artificial reef efficacy	Offense	
		Elimination of mitigation for shearing mortality	Offense	
	Lower Priority	Establish definitions for terms such as "restoration," "creation," and "expansion" to improve clarity around mitigation planning expectations *(Siting Criteria Report)*	Defense	
		Clarify that "preservation" is not an acceptable means of mitigation under the Ocean Plan *(Siting Criteria Report)*	Defense	
Need for Desalination	**High Priority**	Who makes determinations or evaluations?	Offense/Defense	
		Factors comprising determination of "need"	Offense/Defense	
		Provide guidance on the information needed to prepare a Water Supply and Demand Assessment *(Siting Criteria Report)*	Defense	

ISSUE TYPE	PRIORITY LEVEL	ISSUE	OFFENSE/DEFENSE	NEXT STEPS
Societal Issues	**Moderate Priority**	Provide guidance on the application of existing policies and regulatory requirements relating to EJ, including siting projects with proactive community engagement and locally scoped EJ in mind at the onset of the permitting process *(Siting Criteria Report)*	Defense	
		Align the desalination provisions with the Human Right to Water and all applicable racial equity resolutions *(Siting Criteria Report)*	Defense	
		Cost of water as a consideration (rate-making)	Offense/Defense	

THE CONVERSATION

Academic rigor, journalistic flair

Gonzalo Buzonni/Shutterstock

More desalination is coming to Australia's driest states – but super-salty outflows could trash ecosystems and fisheries

Published: May 12, 2024 4:16pm EDT

Jochen Kaempf

Associate Professor of Natural Sciences (Oceanography), Flinders University

From around 1996 to 2010, Australia was gripped by the millennium drought. As water shortages bit hard, most of Australia's capital cities built large seawater desalination plants – Sydney, Adelaide, Brisbane, Melbourne and Perth. Remote towns have also built smaller desalination plants.

Most cities didn't actually use them much. The drought broke in 2010, and desalinated water is expensive. The exception is Perth, which has been hit by declining rainfall, a drying climate and overuse of groundwater. The city will soon open its third desal plant.

As climate change intensifies, other states are also looking to build more desal plants. In South Australia, for instance, there are plans to build one urgently in response to looming water shortages. The Eyre Peninsula, for instance, is expected to run out of drinking water within two years as groundwater runs dry.

But beyond the expense, many of these plants bring environmental problems of their own.

How does desal work?

A desalination plant pipes in seawater, filters out the salt (usually using a process called "reverse osmosis"), and then flushes the salt back out to sea. This creates plumes of hyper-salty brine.

If you position a desal plant near a strong current, this isn't a big issue – the salt is quickly diluted. But if you pump brine into a gulf or bay without much natural turnover of water, it can lay waste to entire ecosystems. And unfortunately, South Australia has two large gulfs – and two planned desal plants that could kill off giant cuttlefish or decimate mussel farms.

Mussel farms are vulnerable to brine flows. Drew McArthur/Shutterstock

When BHP Billiton was looking to expand its lucrative Olympic Dam uranium and copper mine in the mid-2000s, it had a problem: not enough water. To solve it, the mining giant announced plans to build a desal plant at Point Lowly, in the upper Spencer Gulf.

This was immediately controversial. Point Lowly is very close to the breeding grounds of the famous giant Australian cuttlefish (*Sepia apama*), a tourist drawcard.

My research suggested the brine outflow from the desal plant would cause environmental harm to these spectacular breeding grounds.

Despite environmental concerns, the Olympic Dam expansion was eventually approved in 2011, and the approval for the Point Lowly desal plant carried forward to the new Northern Water partnership between the state government and the private sector, which involves BHP as a key player.

This, the government states, is designed to:

> *provide a new, climate independent water source for the Far North, Upper Spencer Gulf and Eastern Eyre Peninsula regions of South Australia, to enable the growth of industries crucial to achieving net-zero goals, including the emerging green energy and hydrogen industries*

The government recently changed the preferred location to Cape Hardy, much further down the Spencer Gulf. From as early as 2028, it will produce up to 260 million litres (megalitres) of desalinated water a day for use in mining and green industries.

A separate smaller desal plant (24 megalitres a day) is also planned for Billy Lights Point near Port Lincoln, to provide water for the lower Eyre Peninsula.

If the government was hoping to avoid controversy by moving away from the cuttlefish, it did not succeed. Opposition has come from the local council, First Nations groups, and fishing and aquaculture industries.

The problem with the location at Billy Lights Point is, once again, what happens to the brine. Salty outflows could damage mussel farms, fisheries and ecosystems.

Proposed desal plants on the Spencer Gulf, South Australia

Map: The Conversation • Download image • Created with Datawrapper

Super-salty brine is pollution

My research suggests these concerns are well founded.

While we might think brine is harmless – it's salty, like the sea – this is not correct. Desalination produces brine that is twice as salty as seawater. When you pump it back into the sea, it can form a layer of heavier water that creeps along the seafloor as a so-called brine underflow.

Desal brine can be dangerous, especially in waters that don't mix rapidly. Without sufficient mixing, the oxygen content of the brine underflow falls over time. Eventually, the brine underflow can turn into a dead zone where very little can survive.

Desalination plants also pump out harmful chemicals with the brine, including pre-treatment chemicals, anti-fouling agents, heavy metals, nutrients, organics, chlorine and acids.

This means we should think very carefully about where to build desalination plants. The Spencer Gulf is full of seagrass meadows, the nurseries of the sea, home to leafy seadragons, giant cuttlefish, king prawns and millions of larval and juvenile fish.

 port lincoln sea view

The waters of the Spencer Gulf are often calm. Charlie Blacker/Shutterstock

The brine can degrade or even destroy marine ecosystems. In the Arabian Gulf, where about half the world's desal plants are located, researchers have found the pulses of brine "greatly threatens sensitive species".

Given this marine pollution, any move to discharge desal brine into calm seas that have high ecological significance and do not flush rapidly is extremely risky.

At present, South Australia's two planned desal projects do not seem to properly value environmental principles.

For instance, while the large Northern Waters project lists Cape Hardy as the preferred site, Point Lowly is still on the list of options. This ignores previous evidence showing the Spencer Gulf flushes slowly, which means a higher risk of environmental damage. And Cape Hardy is still within valuable and vulnerable marine habitats.

The smaller Port Lincoln desalination plant is expected to be operational by 2026 on Billy Lights Point, which borders Proper Bay and Boston Bay in the lower Spencer Gulf.

These bays are ecologically important, as they provide safe havens to marine larvae. They're also part of the region's coastal upwelling, a vital source of nutrients for whales and tuna.

The proposed intake and discharge locations of the Port Lincoln plant are within a few kilometres of valuable mussel and tuna farming operations.

Looking forward

While Cape Hardy is environmentally more suitable for desal discharge than Point Lowly, it is still within the sheltered waters of Spencer Gulf. Hence, some environmental degradation is likely to occur here as well.

If authorities are determined to stick with brine-releasing desal, they should urgently look at sites outside Spencer Gulf, such as Ceduna or Elliston. Here, brine would be quickly diluted by the currents.

But there are other options not yet considered.

It is likely we will need more desalination plants as climate change intensifies. The best solution is a desal plant fully powered by renewables – and without brine discharge. How? By cleaning the brine and turning it into a valuable product: salt.

Read more: Desalinating seawater sounds easy, but there are cheaper and more sustainable ways to meet people's water needs