



Belmont Drought Response Desalination Plant

State Significant Infrastructure Assessment SSI 8896

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Glossary

Abbreviation	Definition
ACHA	Aboriginal Cultural Heritage Assessment
AHD	Australian Height Datum
BCA	Building Code of Australia
BDAR	Biodiversity Development Assessment Report
CM1	Construction Method 1 (horizontal directional drilling)
CM2	Construction Method 2 (pipejacking/micro-tunnelling)
CIV	Capital Investment Value
CIP	Community Involvement Plan
Consent	Development Consent
Council	Lake Macquarie City Council
Crown Lands	Crown Lands, DPIE
Department	Department of Planning, Industry and Environment
DPI	Department of Primary Industries, DPIE
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EPI	Environmental Planning Instrument
EPL	Environment Protection Licence
ESD	Ecologically Sustainable Development
FRNSW	Fire and Rescue NSW

FTE	Full time equivalent
HDD	Horizontal directional drill
LAT	Lowest Astronomical Tide
LEP	Local Environmental Plan
Minister	Minister for Planning and Public Spaces
ML	Megalitres
ML/day	Megalitres per day
NRAR	Natural Resources Access Regulator, DPIE
RMS	Roads and Maritime Services, TfNSW
RO	Reverse Osmosis
RtS	Response to Submissions
SEARs	Planning Secretary's Environmental Assessment Requirements
Planning Secretary	Secretary of the Department of Planning, Industry and Environment
SEPP	State Environmental Planning Policy
SRD SEPP	State Environmental Planning Policy (State and Regional Development) 2011
SSD	State Significant Development
SSI	State Significant Infrastructure
TBM	Tunnel boring machine
TfNSW (RMS)	Transport for NSW (formerly RMS)
WWTW	Wastewater Treatment Plant

Executive Summary

This report provides an assessment of a State significant infrastructure (SSI) application for the proposed Belmont Drought Response Desalination Plant (SSI 8896). The site of the proposal forms part of the existing Belmont Wastewater Treatment Works (Belmont WWTW), located off Ocean Park Road, Belmont South and is legally identified as Part Lot 1 DP 433549. The Applicant is Hunter Water Corporation and the proposal is located within the Lake Macquarie local government area (LGA).

The Department concludes the proposal is in the public interest and recommends the application be approved, subject to conditions.

The proposal

The proposal seeks approval for the construction and operation of a desalination plant to produce up to 30 megalitres per day (ML/day) of drinking water. Infrastructure associated with the proposal includes a direct seawater intake, desalination units, brine discharge via the existing ocean outfall at the Belmont WWTW, electricity and water supply works as well as other ancillary works.

The proposal has a Capital Investment Value (CIV) of over \$201 million and would generate 60 construction jobs and 5 operational jobs.

The site

The plant would be situated on low lying terrain between the Belmont Lagoon and Belmont Wetland State Park to the west and the Nine Mile Beach to the east. The area of the proposal was previously utilised as evaporation ponds which were decommissioned in the 1990's. The site is approximately 800 metres (m) from the nearest residential properties in the suburb of Belmont South.

Statutory context

Clause 4(1) of the *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP) identifies development for the purpose of desalination plants by or on behalf of a public authority with a capital investment value of more than \$10 million as State significant infrastructure (SSI). The proposal meets this criterion, and the Minister for Planning and Public Spaces is the consent authority.

Engagement

The application was publicly exhibited from 21 November 2019 to 19 December 2019. The Department of Planning, Industry and Environment (the Department) received a total of 18 submissions, including 7 from public authorities, 2 from special interest groups and 9 from the public of which 4 were in the nature of objection. The Proponent amended the application and submitted an Amendment Report and Response to Submissions (RtS). As a result of significant changes to the proposal and changes to infrastructure requirements, to facilitate the increased capacity of the plant the Department exhibited the RtS and Amendment Report from 10 September 2020 to 7 October 2020 (28 days).

During this exhibition, the Department received 11 submissions from public agencies commenting on the amended application, 1 from a special interest group and 2 from the public. No comments in the nature of objection were received on the RtS and Amendment Report.

The key issues raised in all submissions included impacts upon the marine environment, the sensitivity of the surrounding environment, including the nearby Belmont Wetlands State Park, impacts as a result of groundwater drawdown as well as potential groundwater contamination, and visual impacts.

Assessment summary and conclusions

The Department has considered the above issues in its assessment, along with the potential impacts of coastal processes, both upon the proposal and from the proposal. The Department has considered the merits of the proposal in accordance with relevant matters under section 4.15(1) and the objects of the *Environmental Planning and Assessment Act 1979*, the principles of ecologically sustainable development, and issues raised in submissions and the Applicant's response to these.

The Department considers the impacts of construction and operation upon the marine environment would be manageable having regard to the Proponent's commitments and the implementation of the Department's recommend conditions. Recommended conditions in relation to the ongoing management and monitoring of ecological changes and water quality changes, reducing light and noise pollution, monitoring and managing the release of potential contaminants and ensuring ongoing access to users of the surrounding environment, both land based and offshore are considered by the Department to address potential impacts of the proposal. The Department has recommended the retirement of biodiversity credits to offset unavoidable clearing impacts, and development of a biodiversity management plan and landscape management plan to ensure impacts on the sensitive surrounding environments are properly managed.

The Department considered the potential impacts upon groundwater and visual amenity as a result of the proposal and considered that these impacts would be managed with the implementation of the Applicant's mitigation commitments and the Department's recommendations.

The Department acknowledges the Aboriginal people as the first people of the land of this proposal. The Department also acknowledges the Traditional Custodians of Country throughout Australia and recognises their continuing connection to the land, waters and culture and pays respect to Elders past, present and emerging.

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1 Introduction

This report provides an assessment of a State significant infrastructure (SSI) application for the Belmont Drought Response Desalination Plant (SSI-8896) (the proposal) in Belmont South, in the Lake Macquarie local government area (LGA).

The proposal seeks approval for the construction and operation of a drought response desalination plant to produce up to 30 megalitres per day of potable water for supply to the Hunter Water network.

The application has been lodged by Hunter Water Corporation (the Proponent).

1.1 Site description

The site is located on Hunter Water owned land within and adjacent to the existing Belmont Wastewater Treatment Works (Belmont WWTW) on Ocean Park Road, Belmont South. The legal description of the land is Lot 1 DP 433549. The proposal would be located within the boundary of the existing Belmont WWTW, immediately to the south of the operational WWTW with the seawater intake pipeline, similar to the existing ocean outfall, extending onto Crown Land. Most of the land-based area of the proposal was previously used as evaporation ponds which were decommissioned in the 1990s.

The site is situated on low lying terrain between the Belmont Lagoon and the Belmont Wetland State Park to the west and the Nine Mile Beach to the east (Figure 1). The site is approximately 800 metres (m) from residential properties in the suburb of Belmont South.

The proposal would operate in parallel to the existing Belmont WWTW with the proposal anticipated to use the existing ocean outfall associated with the Belmont WWTW for the disposal of brine waste generated by the desalination process. The indicative layout of the seawater intake pipeline is provided in Figure 1.

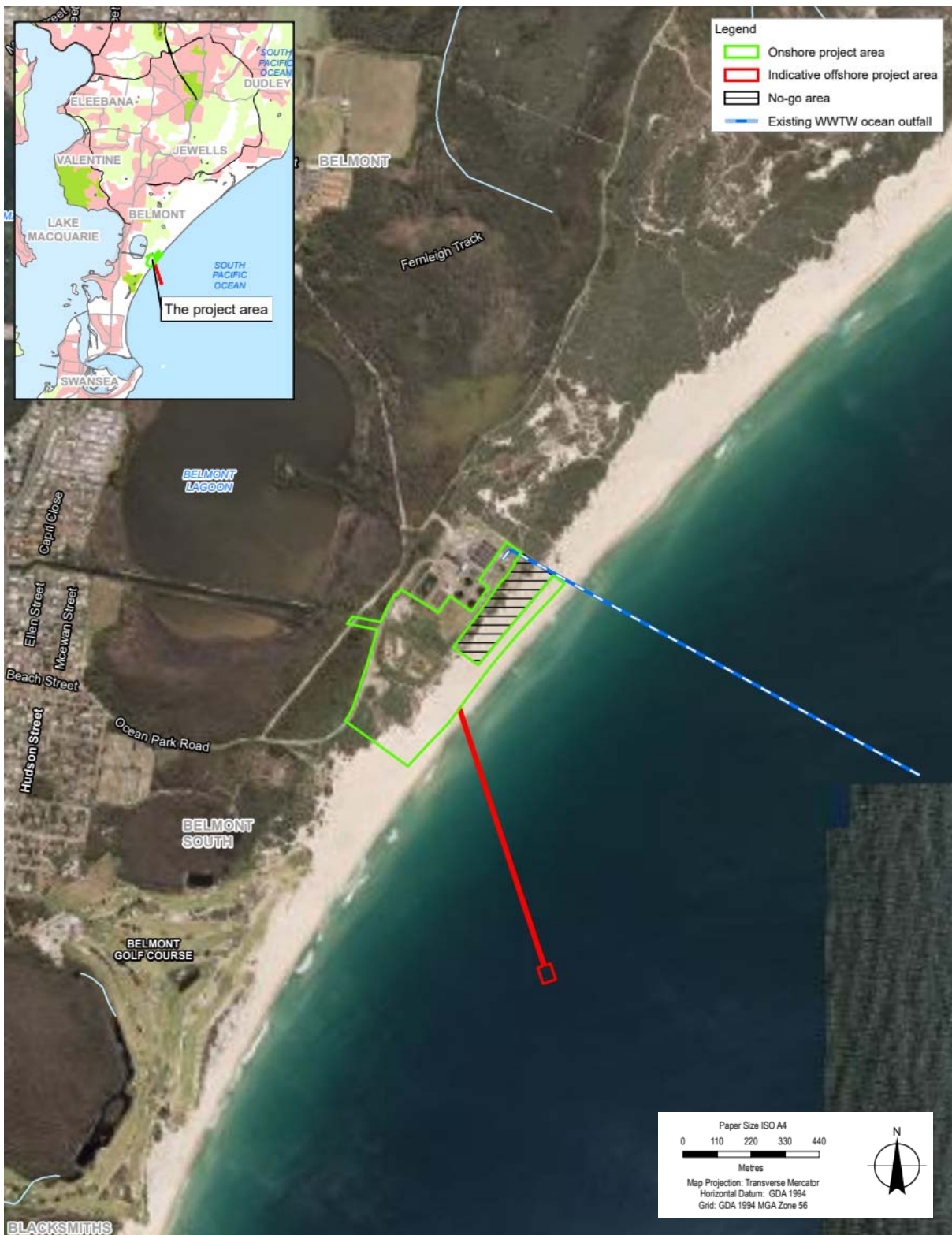


Figure 1 | Local context map (Source: Proponent’s Amendment Report, 2020)

2 Project

The key components and features of the proposal, as set out in the Environmental Impact Statement (EIS) and amended by the Amendment Report and Response to Submissions (RtS) documents as well as supplementary information, are provided in **Table 1** and depicted in Figure 2 and Figure 3.

Table 1 | Main components of the amended project

Aspect	Description
Project summary	Construction and operation of a drought response desalination plant to produce up to 30 megalitres (ML) per day (ML/day) of potable water.
Main project elements	<ul style="list-style-type: none"> • Ocean intake. • Water treatment process plant. • Brine disposal system. • Power supply. • Ancillary facilities.
Ocean intake components	<p>Ocean intake infrastructure to provide raw feed water, includes:</p> <ul style="list-style-type: none"> • On shore sea water pump station including a central well of 9-11 metres (m) in diameter installed to a depth of up to 25 m below existing surface levels with screening. Pumps would be located within a concrete structure. • Intake pipeline extending approximately 1000 m from the pump station to the off-shore intake structure. • Off-shore intake structure would be a horizontal pipe of 5 m in diameter, with a velocity cap achieving low through-screen velocity. The off-shore intake structure would have a clearance of at least 5 m from the seabed and be located beneath approximately 18 m of water offshore.
Water treatment process plant components	<ul style="list-style-type: none"> • Total hardstand for housing equipment would be 6,300 m² with the total building footprint and roof area totalling an additional area of 6,900 m². • Buried and overhead services for power, communications and raw feed water (seawater). • Pre-treatment system to remove micro-organisms, sediment and organic material from the raw feed water. • Desalination system made up of modular reverse osmosis (RO) units containing pressurised pumps, membranes, tanks and pipework. • Post-treatment system to treat water to drinking water standards and associated tank storage and pumping infrastructure to convey treated water to the potable water network.

Aspect	Description
Brine disposal system components	<ul style="list-style-type: none"> • Transfer of up to 56 ML/day of brine via a pipeline connected to a brine pump station. • Land connection to the existing ocean outfall pipeline.
Power supply components	<p>Private power line connecting to a substation within the site. Connection to Ausgrid's 33 kV line located to the north-west of the site.</p>
Land-based ancillary facilities	<ul style="list-style-type: none"> • Raw feed water (seawater) intake, screening and pumping structure. • Tank farm. • Chemical storage and dosing infrastructure. • Hardstand areas. • Stormwater and cross-drainage infrastructure. • Access roads. • Parking areas. • Fencing. • Signage. • Lighting.
Site preparation	<ul style="list-style-type: none"> • Establishment of laydown, equipment storage areas and spoil storage areas. • Installation of foundations for concrete pads. • Temporary fencing around construction area, demarcation of environmentally sensitive areas, vehicle entry points, access roads and turning bays. • Vegetation clearing.
Built form	<p>Water treatment process plant would include permanent buildings, located above ground level and incrementally installed. The final layout would be confirmed as part of detailed design. The buildings are anticipated to:</p> <ul style="list-style-type: none"> • Include seven buildings (administration, seawater infiltration, reverse osmosis, electrical, chemical storage, de-watering, lime and CO2 dosing). • Be constructed of pre-cast concrete panels and bricks with colorbond metal roofing and wall sections. <p>The tallest structure at the site would be 14 metres tall.</p>
Site area	<p>17.39 hectares (ha):</p> <ul style="list-style-type: none"> • 2.21 ha associated with sea water intake and associated pipeline.

Aspect	Description
	<ul style="list-style-type: none"> 15.18 ha associated with water treatment process plant, brine disposal system, power supply and ancillary facilities.
Site zoning	<p>Onshore:</p> <ul style="list-style-type: none"> SP2 – Infrastructure. E2 – Environmental Conservation. <p>Offshore (immediately adjacent to the shoreline):</p> <ul style="list-style-type: none"> Crown land E2 – Environmental Conservation.
Construction period	<p>Between 8-13 months depending on phasing and overlap of construction activities (see Section 2.1 and Section 2.2).</p> <ul style="list-style-type: none"> Ocean intake: approximately 8 months. Water treatment process plant: approximately 4 months. Power upgrades: approximately 4 weeks.
Construction hours	<ul style="list-style-type: none"> 7:00 am to 6:00 pm Monday to Friday. 8:00 am to 1:00 pm Saturday. No works proposed on Sundays or Public Holidays.
Operational hours	24 hours a day, seven days a week when operational requirements are triggered.
Jobs	<ul style="list-style-type: none"> Construction: 60 FTE personnel. Operation: 5 FTE personnel.
Car parking	<ul style="list-style-type: none"> Construction: parking would be provided in the main compound area and in a temporary car park to the north of the water treatment process plant. No off-site parking, such as on Ocean Park Road, would be required during construction. Operation: the existing administration car park associated with the water treatment plant would provide parking once the proposal is operation.
CIV	\$201 million.

The proposed desalination plant would be connected to the existing potable water network owned and managed by Hunter Water. This connection and associated pipeline do not form part of this application. The pumping station to convey potable water to the potable water network forms part of this application (**Section 2.3**).

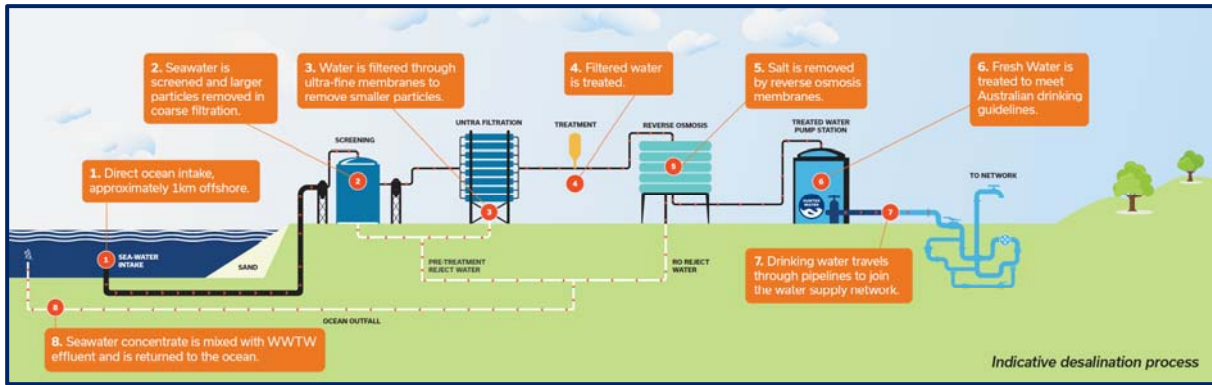


Figure 2 | Schematic desalination process overview (Source: Hunter Water, September, 2020)

2.1 Physical layout and construction methodology

2.1.1 Water intake infrastructure

On shore pumping infrastructure

The ocean intake infrastructure would require an on shore sea water pump station and shaft to be installed via a wet well technique to a depth of approximately 25 m below existing surface levels. This would involve the installation of a concrete caisson (watertight retaining structure) into the ground and the subsequent excavation of material within the shaft.

Works to install the shaft would be undertaken over an area of 1,000 to 1,500 m² and require:

- A hardstand area of approximately 570 m².
- Installation of dewatering spears to remove water from the shaft.
- Installation of the caisson (a shaft of 9-11 m in diameter) up to a depth of 25 m. Methodology to install the caisson may include excavation and jacking rings down or excavation and installing ring segments from the base. Shoring or contiguous pile methods may be considered following detailed design.
- Establishment of the concrete base of the caisson to seal the shaft and enable dewatering.
- Sump pumping to a groundwater treatment system.
- Removal of construction equipment prior to intake pipeline construction and removal of dewatering infrastructure.

Material excavated for the purposes of the proposal would be initially stockpiled in the south-east corner of the site across an area of 150m by 30m. Spoil would then be beneficially re-used on site where possible and any additional spoil would be disposed of off-site in accordance with relevant waste management guidelines. The intake pipeline would extend approximately 1000 m from the on shore pump station to the offshore intake structure. Two construction methodologies, horizontal directional drilling (HDD) and pipejacking/micro-tunnelling, have been assessed and the selected methodology will be confirmed following detailed design.

Intake Pipeline – Horizontal Directional Drilling method (CM1)

CM1 requires the pipeline to be constructed as the first phase of construction. Construction works include:

- Establishment of a 40 m by 40 m plant area and placement of drilling rig approximately 200 m west of the on shore sea water pump station.
- Establishment of a laydown area to provide storage for supporting equipment and the management of drilling fluid.
- Utilisation of the construction access road for the stringing of pipe.

From on shore, a pilot hole of approximately 200-300 mm diameter would be drilled to an off-shore barge, located at the intake location, which would store the HDD equipment required to enlarge the pilot bore to the outer extent of the pipeline. Following establishment of the void, the pipeline would be pulled through the bore hole.

Intake Pipeline - Pipejacking/micro-tunnelling method (CM2)

CM2 would be undertaken after the construction of the on shore pump station and associated infrastructure. This method of construction would establish the intake pipeline via a remotely-controlled micro-tunnel boring machine (TBM). This method would require a launch shaft constructed to a depth of up to 20 m. The launch shaft would be constructed via sheet piling with associated secant piles, underpinning and caisson construction to suit the sandy soils of the site. The TBM would bore a hole from the launch shaft along the pipeline alignment to a 20 m x 10 m reception pit, extending from shore approximately 1000 m. Due to the saturated soils and excessive friction, intermediate jacking stations would be established every 100 to 300 m along the pipeline alignment. A barge would house receival equipment and be required for the removal of the drilling head at the off-shore intake structure.

In the event that horizontal directional drilling (construction method 1 (CM1)) is selected as the preferred construction method, this would precede installation of the ocean intake infrastructure. If construction method 2 (CM2), pipejacking/micro-tunnelling, is selected this would be undertaken following caisson installation with ocean intake infrastructure construction does not rely on other aspects, so construction of this component may commence at any time in the construction period.

Off-shore intake infrastructure

Once the on- shore pump station infrastructure and pipeline have been established, the off-shore intake would be constructed. The intake structure would be between 15 and 18 m below the lowest astronomical tide (LAT) level and at a minimum distance of 500 m from the low tide mark. The siting of the pipeline and intake structure has been identified to ensure negligible interaction between the ocean outfall and the intake. These specifications would provide for sufficient access to high quality ocean water, enable maintenance of the infrastructure by divers, be beyond the surf zone to avoid significant forces upon the infrastructure, and be located at a sufficient depth to minimise risks of vessels striking the structure. The structure would minimise approach velocity through its screens to 0.15 m/s, to minimise entrainment of marine life and sediment and meet impingement mortality performance standards. The intake zone would be at least 3 m from the seabed for optimal operation.



Figure 3 | Development overview (Source: Proponent's Amendment Report, 2020)

2.1.2 Water treatment infrastructure

To facilitate the water treatment process plant, earthworks, including establishment of hardstand pads and access roads, would be required. To facilitate this the site would be made suitable through:

- 9,800 m³ of cut and 670 m³ of fill.
- Importation of subgrade improvement materials.
- Localised dewatering.
- Reuse of excess fill generated by the works to fill the existing evaporation ponds.

The construction of the desalination plant would include:

- Preparation and establishment of foundations for the placement of liner type storage tanks that would include 2 x 14L storage tanks for treated water and raw seawater and up to seven storage tanks of significantly smaller size to store permeate, ultra-filtration backwash, supernatant and would include a centrifuge tank.
- Establishment of concrete areas, including requisite bunded areas or slabs for chemicals, sludge/backwash pit and/or clarifier, foundations and/or slabs for pump stations, electrical supply, intake roofing, footpaths and fence posts.
- Installation of desalination equipment including reverse osmosis units that would be transported to the site via road, arranged via crane, and secured to foundations.
- Connection of the plant to the ocean intake infrastructure.
- Connection of plant to the existing ocean outfall.

To dispose of brine generated by the desalination process, a 300 m long pipeline would be installed via open trenching of up to 2 m in depth, from the development site to the existing brine pump station located within the adjoining Belmont WWTW site. All of the infrastructure works would be located within Hunter Water owned land, with the seawater intake located offshore on Crown Land. Hunter Water is presently securing appropriate approvals to utilise this land. This would enable brine to be discharged via the existing ocean outfall. Underground piping may also be required to connect waste from the proposal to the existing sewer rising main, which would also be undertaken by open trenching.

A pumping station would be installed to connect the proposed development to the desalination plant to the potable water network.

Power upgrades required to facilitate the development would include the construction of approximately 4 new poles and stringing of overhead and underground powerlines to connect to the existing 33 kV network located west of the site, owned and operated by Ausgrid.

Clearing would be required to facilitate the construction works. Clearing and offsetting of native vegetation to be cleared is discussed further in **Section 6.1.2**.

2.2 Timing for commencement of operation

The Proponent is seeking a 10 year approval to enable construction of the desalination plant in the event it is required during severe drought conditions in the future. See **Section 2** for further detail.

2.3 Related development

The potable water generated by the proposed desalination plant would be transferred to Hunter Water's potable water network via a potable water pipeline. A new pipeline would be constructed to facilitate the delivery of the potable water. This pipeline does not form part of the Project and would be part of a separate design and approvals process.

The Applicant also completed the restoration of an 800 m section of the Nine Mile Beach sand dunes in November 2020. The works aim to prevent further erosion of the sand dunes as well as protect the area behind the dunes from erosion and rising sea levels.

3 Strategic context

The proposal is located within the Lower Hunter Region within the Lake Macquarie City local government areas (LGA).

3.1 Lower Hunter Water Plan 2014 and the Lower Hunter Water Security Plan

The water supplies of the Lower Hunter region are susceptible to drought conditions as storages are typically small or shallow, resulting in water levels dropping quickly. Modelling of extreme drought conditions has indicated that water storage levels in the region could drop from 65 per cent to 15 per cent in two years. The Lower Hunter Water Plan 2014 developed a range of response measures to respond to these conditions which included the operation of a 15ML/day desalination plant during severe drought where water storage levels reach critical levels.

A whole-of-government review of the Lower Hunter Water Plan, referred to as the Lower Hunter Water Security Plan (LHWSP) is currently underway and seeks to determine the preferred portfolio of supply options to ensure a resilient supply of water across the region over the long-term as well as during drought conditions and establish the triggers for implementation.

The review has indicated that the implementation of the measures identified to date would result in a shortfall in supply and that a desalination plan with a nominal capacity of up to 30ML/day would provide increased reliability in meeting the water supply needs of the region.

This application seeks to obtain approval for a desalination plant that would deliver up to 30ML/day of potable water to the Lower Hunter region in times of severe drought.

3.2 Strategic considerations and policies

The Department has considered the broader State and Regional plans in its assessment of the application. The Department considers that the proposal is appropriate for the site given it is consistent with the:

- *State Infrastructure Strategy 2018 - 2038 Building the Momentum*, as the proposal contributes to a safe and secure water supply in times of extreme events.
- *State Water Strategy 2018* and associated *Greater Hunter Water Strategy*, delivering a drought response program to a priority area of NSW and a whole-of-government drought response to assist in the long-term land use planning of the region.
- *Hunter Regional Plan 2036*, providing a reliable potable water source to a significant regional economy in Australia.
- *Lower Hunter Regional Strategy*, providing water demand management strategies to provide the community with a reliable source of potable water.
- *Lake Macquarie Local Environmental Plan 2014* as it would deliver water supply infrastructure in an appropriately identified zone (SP2) and would seek to result in minimal impact within an environmental zone through locating works underground where possible and through the mitigation measures and Department's recommendations.

The proposal would provide direct investment of over \$200 million, to support 60 construction jobs and 5 operational jobs.

4 Statutory context

4.1 State Significant Infrastructure

Clause 4(1) of the *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP), identifies development for the purpose of desalination plants by or on behalf of a public authority with a capital investment value of more than \$10 million as State significant infrastructure (SSI). The proposal meets this criterion.

The Minister for Planning and Public Spaces is the approval authority under Division 5.2 of Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

In accordance with the Minister's delegation to determine SSI applications, signed on 26 April 2021, the Director, Social and Infrastructure Assessments may determine this application as:

- the relevant Council has not made an objection.
- there are less than 15 unique submissions in the nature of objection.
- a political disclosure statement has not been made.

4.2 Permissibility

The site of the main desalination component of the proposal is identified as being within the SP2 – Infrastructure zone with some ancillary components located on land identified as E2 – Environmental conservation zoning. The desalination plant would constitute water supply infrastructure which is consistent with the objectives of the SP2 zone. The works that are to be located in the E2 – Environmental conservation zone (water and power supply infrastructure) are prohibited. However, as they are sufficiently related to the main desalination plant component of the development, clause 14(2) of the SRD SEPP operates to include them as part of the declared SSI development.

Section 5.22(2) of the EP&A Act provides that Part 3 of the EP&A Act and environmental planning instruments (EPIs) do not apply to SSI. Therefore, the application can be determined, subject to an environmental assessment under section 5.28 of the EP&A Act.

4.3 Other approvals

Under section 5.24 of the EP&A Act, a number of other approvals are not required as part of the State significant infrastructure approval process.

Under section 5.24 of the EP&A Act, a number of further approvals are required, but must be substantially consistent with any State significant infrastructure approval for the proposal (e.g. approvals for any works under the *Roads Act 1993*).

The Department has consulted with relevant public authorities responsible for integrated and other approvals, considered the advice in its assessment of the proposal and included suitable conditions in the recommended conditions of approval (**Appendix C**).

4.4 Objects of the EP&A Act

The objects of the EP&A Act are the underpinning principles upon which the assessment is conducted. The statutory powers in the EP&A Act (such as the power to grant approval) are to be understood as powers to advance the objects of the legislation, and limits on those powers are set by reference to those objects. Therefore, the objects should be considered to the extent they are relevant. A response to the objects of the EP&A Act is provided at **Table 2**.

Table 2 | Response to the objects of section 1.3 of the EP&A Act

Objects of the EP&A Act	Consideration
(a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State’s natural and other resources,	The proposal would provide an alternate source of potable water where existing water storages are depleted in the event of an extreme drought, resulting in a positive benefit for a range of local and regional businesses and the broader community.
(b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,	The proposal includes measures to deliver ecologically sustainable development (Section 4.5).
(c) to promote the orderly and economic use and development of land,	The development would deliver orderly and economic use of land as the proposal would make use of disturbed and rehabilitated land for infrastructure purposes. The proposal would also be of economic benefit through job creation and infrastructure investment.
(d) to promote the delivery and maintenance of affordable housing,	Not applicable.
(e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,	The impact of the proposal on biodiversity values has been assessed in the BDAR. The BDAR has been considered by the Department and is discussed further in Section 6.1 .
(f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),	The Proponent undertook an ACHA process for the Project in consultation with the Registered Aboriginal Parties (RAPs) for the Project. Recommendations have been incorporated to minimise impacts on Aboriginal and non-Aboriginal heritage, including heritage inductions and preparation of an Aboriginal Cultural Heritage Management Plan (ACHMP).
(g) to promote good design and amenity of the built environment,	Amenity impacts associated with the proposal have been considered in Section 6.3 .

Objects of the EP&A Act	Consideration
(h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,	The Department has considered the proposed development and has recommended a number of conditions of approval to ensure that construction and maintenance are undertaken in accordance with legislation, guidelines, policies and procedures as part of its assessment.
(i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,	The Department publicly exhibited the proposed development as outlined in Section 5 , which included consultation with Council and other public authorities, and consideration of their responses.
(j) to provide increased opportunity for community participation in environmental planning and assessment.	The Department publicly exhibited the application and the amended application as outlined in Section 5 , which included notifying adjoining landowners, placing a notice in the press and displaying the application on the Department's website and at the Department's Sydney office and Council's office.

4.5 Ecologically sustainable development

The EP&A Act adopts the definition of ecologically sustainable development (ESD) found in the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD requires the effective integration of economic and environmental considerations in decision-making processes and that ESD can be achieved through the implementation of:

- the precautionary principle.
- inter-generational equity.
- conservation of biological diversity and ecological integrity.
- improved valuation, pricing and incentive mechanisms.

The Department required the application demonstrate how the principles of ESD have been incorporated into the proposal, provide a framework to address national best practice sustainable building principles to improve environmental performance and reduce ecological impact and demonstrate how the development addresses projected climate change impacts.

The Proponent demonstrated the proposal would be consistent with ESD principles through considering the principles of the Infrastructure Sustainability Council of Australia's (ISCA) *Infrastructure Sustainability (IS) rating scheme*, the *NSW Government Resource Efficiency Policy 2019* and Hunter Water policies. The development proposes ESD initiatives and sustainability measures that are aligned with good design practice to reduce waste, energy and water use. The Proponent would consider measures to achieve greater sustainability during operations including:

- adoption of a reduction in 10 per cent energy consumption compared to 'business as usual' for a desalination plant.

- incorporation of financially viable measures to reduce greenhouse gas emissions and energy use into design.
- consideration of low carbon cementitious materials to reduce embedded carbon.
- sourcing of sustainable steel.
- establishment of targets to reduce waste.

The Department has considered the proposed development in relation to the ESD principles. The precautionary and intergenerational equity principles have been applied in the decision-making process via an assessment of the environmental impacts of the proposed development. The proposed development is consistent with ESD principles as described in Section 7.7 of the Proponent's EIS, which aligns with Clause 7(4) of Schedule 2 of the Environmental Planning and Assessment Regulation 2000 (EP&A Regulation).

To ensure the proposal is designed to reflect national best practice sustainable principles, the Department has recommended that a condition be implemented requiring the development be designed and certified under the IS rating scheme.

Overall, the proposal is consistent with ESD principles and the Department is satisfied the proposed and recommended sustainability initiatives will encourage ESD, in accordance with the objects of the EP&A Act.

4.6 Planning Secretary's Environmental Assessment Requirements

The EIS is compliant with the Planning Secretary's Environmental Assessment Requirements (SEARs) and is sufficient to enable an adequate consideration and assessment of the proposal for determination purposes.

4.7 Biodiversity Conservation Act 2016

Under section 7.9 of the *Biodiversity Conservation Act 2016* (BC Act), SSI applications are "to be accompanied by a biodiversity development assessment report unless the Planning Agency Head and the Environment Agency Head determine that the proposed development is not likely to have any significant impact on biodiversity values".

The impact of the proposal on biodiversity values has been assessed in the BDAR. The BDAR has been considered by the Department and is discussed further in **Section 6.1.2**.

4.8 Environment Protection and Biodiversity Conservation Act 1999

Under the assessment and approval provisions of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), actions that are likely to have a significant impact on a matter of national environmental significance are subject to an assessment and approval process. An action includes a project, development, undertaking, activity, or series of activities.

The site does not contain any vegetation communities that are listed as critically endangered and endangered ecological communities under the EPBC Act. Species listed under the EPBC Act are considered further in **Section 6.1**.

As the proposal is unlikely to have a significant impact upon matters of national environmental significance, or upon Commonwealth land, the Proponent did not refer the proposal to the Commonwealth for consideration.

5 Engagement

5.1 Department's engagement

In accordance with Schedule 1 of the EP&A Act, the Department publicly exhibited the application from 21 November 2019 to 19 December 2019. The application was exhibited at:

- the Department and on its website.
- ServiceNSW Centres.
- Lake Macquarie Council's Head Office, Speers Point.
- Belmont Library, Belmont.
- Hunter Water Customer Centre, Newcastle.

The Department placed a public exhibition notice in the Newcastle Star on 20 November 2019 and the Lake Macquarie Lakes Mail on 21 November 2019 and notified relevant State and local government authorities in writing.

5.2 Summary of submissions

The Department received a total of 18 submissions comprising seven from public authorities, including Council, two from special interest groups (the Hunter Bayswater Recycling Water Scheme and Lake Macquarie Sustainable Neighbourhood Alliance) and nine from the public.

Table 3 | Summary of submissions

Submitter	Number	Position
Government Agencies	7	
Lake Macquarie City Council (Council	1	Advice
NSW Biodiversity and Conservation Division (NSW BCD) (part of the NSW Environment, Energy and Science Group (EES Group))	1	Advice
NSW Environment Protection Authority	1	Advice
Transport for NSW	1	Advice
NSW Health	1	Advice
Crown Lands	1	Advice
Department of Primary Industries	1	Advice
Special Interest Groups	2	
Hunter Bayswater Water Recycling Scheme	1	Object

Submitter	Number	Position
Lake Macquarie Sustainable Neighbourhood Alliance	1	Object
Community Members	9	
	4	Object
	2	Support
	3	Comment
TOTAL	18	

5.3 Public authority submissions

A summary of the issues raised in the public authority submissions is provided at **Table 4** and copies of the submissions may be viewed at **Appendix A**.

Table 4 | Summary of public authority submissions to the EIS exhibition

Lake Macquarie City Council (Council)

Council does not object to the proposal, however it provided comments in relation to:

- Impacts associated with the increased saline discharge.
- Additional hydrological studies to better outline the direct and indirect impacts of the proposal on wetland ecosystems.
- Appropriate consideration of emergency response and contingency planning.
- The requirements of section 27 of the *Coastal Management Act 2016* and clause 19 State Environmental Planning Policy (Coastal Management) 2018.
- Inconsistency of the adverse impacts upon wetland ecosystems with the objectives of the site zoning.
- Offsetting obligations and requirements under the BC Act.
- Surface hydrology and ensuring this factor in related roadworks.
- Reconstruction of Ocean Park Road, noting the presence of asbestos.
- The presence of Aboriginal artefacts in construction areas and recommended including the recommendations of the Aboriginal Cultural Heritage Report as part of any conditions, if approved.
- Impacts upon groundwater drawdown on aquatic ecosystems and the impact of drawdown on the composition of wet heath and swamp mahogany over the long term.
- Service vehicle parking and unloading areas.
- The need for a detailed Construction Management Plan to protect neighbouring wetland and Belmont Lagoon.

-
- Recommended a Stormwater Management Plan be developed prior to construction.

NSW Biodiversity and Conservation Division (NSW BCD)

The NSW BCD provided comments on the proposed development, in addition to a number of recommendations as follows:

- Recommended monitoring of vegetation potentially impacted by groundwater drawdown.
- Required a revised Aboriginal Cultural Heritage Assessment Report (ACHAR) to demonstrate that adequate consultation had been conducted.
- Recommended an Aboriginal cultural heritage management plan be prepared and implemented.
- Required the project area be re-surveyed for any Aboriginal objects or sites following vegetation removal.
- Recommended an Aboriginal Cultural Heritage Management Plan (ACHMP) be implemented for the works, particularly in relation to impacts upon Aboriginal site AHIMS #45-7-0397.
- Recommended a care agreement be prepared for the project as part of the ACHMP.
- Requested further investigations into the detailed design of the intake caisson and consideration of relocating the intake caisson further landward to minimise potential coastal erosion and recession risks.
- Recommended consideration be given to increasing the dune crest height in the vicinity of the desalination plant to reduce the potential risk of waves overtopping of the project.

NSW Environment Protection Authority (EPA)

The NSW EPA was satisfied the documentation provided adequately addressed relevant environmental pollution matters and provided a number of recommended conditions relating to the following environmental aspects:

- Incident management, including requiring procedures to notify appropriate regulatory authority/ies of any incidents that cause or have the potential to cause material harm to the environment.
 - Water quality, including requiring installation of sediment and erosion controls prior to the commencement of any surface works or construction activities, compliance with section 120 of the *Protection of the Environment Operations Act 1997* and reporting on the performance of the outlets from the site to inform the Environment Protection Licence held for the operation of the Belmont Waste Water Treatment Plant.
 - Contaminated land, including requiring the preparation of a Detailed Site Investigation (DSI) to address potential acid sulphate soils (PASS) and contamination issues at the site.
-

- Groundwater quality, including submission of an expanded groundwater monitoring program, detailing trigger, action and response measures and specifying annual reporting to the EPA.
- Noise and vibration, including specific construction hours, operational project specific noise goals and preparation of a noise compliance assessment within 12 months of operations commencing.
- Air quality, including requiring appropriate management of emissions and odours from site activities and compliance of the site operations with the relevant standards specified in the Protection of the Environment Operations (Clean Air) Regulation 2010.
- Waste management, including requiring waste be minimised and disposal of waste handled and recorded appropriately.
- Chemical storage, including requirements for the containment of chemicals and appropriate spill containment systems.

Transport for NSW (TfNSW)

TfNSW provided no objection or requirements as the proposed development is not anticipated to impact upon the classified State road network.

NSW Health

NSW Health requested they be consulted throughout the life of the project and made the following comments on the proposal:

- Noise generated, particularly during power upgrades and associated with additional traffic, should comply with EPA noise criteria and measures implemented to minimise the impact upon surrounding receivers.
- Recommended ongoing consultation with the surrounding community.

Crown Lands

Crown Lands identified a number of matters relating to the ownership of land being utilised for the proposed development. The submission requested:

- Hunter Water compulsorily acquire road assets currently held by Crown Lands within the site area;
- Provide evidence for the authorised occupation of Crown land by the existing ocean outfall pipe and for future assets proposed to be located on Crown Land or provide evidence of any legislative exemption that negates the required authorisation for the ocean outfall pipe under the former *Crown Lands Act 1989* and/or *Crown Land Management Act 2016*. If no approval or exemption exists, an easement for the pipe should be created and the Proponent should close and purchase the Crown road within the site area.

Department of Primary Industries (DPI)

DPI reviewed the proposal and noted that the impacts were anticipated to be minimal.

5.4 Public submissions

During the exhibition of the EIS, the Department received a total of nine submissions from members of the community and two submissions from special interest groups. Of these eleven submissions, three submissions supported the proposal, six objected to the proposal and two provided comments.

Key issues raised by the community and special interest groups are provided within **Table 5** and copies of the submissions may be viewed at **Appendix A**.

Table 5 | Summary of public submissions to the EIS exhibition

Issues raised

Suitability of the site given the environmentally sensitive surrounds, flood risk and potential sea level rise.

Preferred options of increased water restrictions or water demand reduced rather than desalination.

Significant energy demand.

The capacity of the plant would be insufficient for the region.

Significant expense for a temporary development.

Preferred alternative options, such as a new bulk water supply, such as a dam.

Recommended an alternate intake be engineered and additional studies be undertaken.

Recommended increased storage for potable water at the site.

Asbestos on the site.

Additional consultation time requested.

5.5 Response to Submissions and Amendment Report

Following the exhibition of the EIS, the Department placed copies of all submissions received on its website and requested the Proponent to provide a response to the issues raised in submissions.

On 12 May 2020, the Proponent indicated that as a result of the submissions and additional studies and feasibility analyses undertaken, the proposal would be amended and sought approval from the Planning Secretary to submit an amended application. On 20 May 2020, the Department accepted the amended proposal and provided requirements for the Amendment Report.

On 31 August 2020, the Proponent provided an RtS and an Amendment Report to the Department. The RtS and Amendment Report provided additional information in relation to the amended proposal including detailed assessment of biodiversity, coastal processes and revised assessment of the environmental impacts of the amendments.

As a result of the significant changes to the proposal and infrastructure requirements to double the capacity of the desalination plant, the Department exhibited the RtS and Amendment Report from 10 September 2020 to 7 October 2020 (28 days) on its website and notified previous submitters and agencies. During the exhibition of the RtS and Amendment Report, the Department received a total of fourteen submissions including eleven submissions from public agencies, one from a special interest group and two from members of the public.

5.5.1 RtS and Amendment Report – Public agencies

Key issues raised by public authorities are provided within **Table 6** and copies of the submissions may be viewed at **Appendix A**.

The Department has considered the comments raised by government authorities and in public submissions during the assessment of the application (**Section 6**) and/or by way of recommended conditions in the instrument of approval at **Appendix C**.

Table 6 | Summary of public authority submissions to the RtS and Amendment Report

Council

Council does not object to the proposal, however, it provided comments in relation to:

- Bycatch (incidental entrapment of marine life) associated with drawing in of ocean water should be addressed.
- Visual impacts and implementation of appropriate mitigation measures to address identified visual impacts from Nine Mile Beach and the western tracks, by way of a landscape restoration plan.
- The minimum floor level of the development to address flooding impacts.
- The intake structure pipeline, including the amount of sand to be removed by the direct pulling process and requested the pipeline is installed at an adequate depth to ensure it does not result in altered sand movements in either the near-shore or off-shore area.
- Potential impacts on marine biodiversity, particularly larval impacts related to the operation of the intake structure.
- Construction management requesting a Construction Management Plan be required, to protect neighbouring wetlands and Belmont Lagoon.

NSW BCD

The NSW BCD advised that the RtS report had satisfactorily addressed previous biodiversity and coastal management comments.

NSW EPA

The NSW EPA provided no further comments and made no changes to the recommended conditions provided previously as part of the exhibition of the EIS.

TfNSW (+RMS)

TfNSW provided no objection or requirements as the proposed development is not anticipated to impact upon the classified State road network.

NSW Health

NSW Health advised that the amended proposal is likely to have minimal impact on public health, and requested they be consulted throughout the life of the project.

Crown Lands

Crown Lands identified matters relating to the ownership of land being utilised for the existing ocean outfall pipe. Noted that Hunter Water has requested the closure and purchase of affected Crown road.

Department of Primary Industries Fisheries (DPI Fisheries)

DPI Fisheries reviewed the RtS and made no changes to the original position advised by DPI as part of the exhibition of the EIS.

Heritage Council of NSW

Heritage Council of NSW advised that the site is not listed on the Stage Heritage Register (SHR), nor is it in the immediate vicinity of any SHR items. The site does not contain any known historical or archaeological deposits. Therefore, no further comments were provided.

Heritage NSW – Aboriginal Cultural Heritage (ACH)

ACH, as the office now responsible for Aboriginal cultural heritage (previously the responsibility of NSW BCD), reviewed the *Addendum to the Aboriginal Cultural Heritage Assessment Report* and determined that the document sufficiently addresses the issues raised in previous comments. The submission does, however, request that:

The report is corrected to remove reference to the preparation of an Aboriginal Heritage Impact Permit (AHIP), which is a statutory instrument issued under Part 6 of the National Parks and Wildlife Act 1974 and is not applicable to the current project.

DPIE Water and the Natural Resources Access Regulator (NRAR)

DPIE Water and NRAR do not object to the proposal, however requested the following:

- Provision of information regarding the maximum volume of groundwater inflow predicted for the final design construction method.
- Details of the method of estimation of the maximum volume of groundwater inflow predicted.
- Should re-injection of fresh groundwater back into the coastal sand aquifer occur, further detail outlining this approach should be submitted to DPIE Water prior to commencement of these activities.
- Details of how a Water Access License will be acquired to account for maximum volume of groundwater inflow predicted for the final design construction method selected; this must be obtained from NRAR prior to any take of water occurring.
- Preparation of an acid sulphate soil management plan for submission to DPIE Water.

5.5.2 RtS and Amendment Report – community and special interest group submissions

During the exhibition of the RtS and Amendment Report, the Department received two submissions from community members and one submission from a special interest group. Of these three submissions, one submission supported the proposal, and two provided comments.

Key issues raised by the community and special interest groups are provided within **Table 7** and copies of the submissions may be viewed at **Appendix A**.

Table 7 | Issues raised by the community and special interest groups

Issues raised

Impact of the desalination plant on customer water prices.

Renewable power supply should be constructed to provide sufficient capacity to power the plant.

Insufficient information regarding the detailed design of the direct ocean intake.

Outfall discharge contamination.

Suggestion that alternative technological solutions are adopted, to utilise independent desalination units, in a containerised design, suitable for up to 30ML per day within the defined site area.

Further consideration and assessment of the submissions received from the community and special interest groups throughout the two exhibitions is provided within the Notice of Decision that accompanies this report.

6 Assessment

The Department has considered the EIS, Amendment Report, RtS and supplementary information provided by the Proponent in its assessment of the proposal. The Department considers the key issues associated with the proposal to be:

- Biodiversity – both marine and terrestrial.
- Coastal processes.

6.1 Biodiversity

As the proposed development is located both on land and offshore, the assessment of biodiversity impacts has been separated into those relating to the marine environment and those relating to terrestrial and freshwater environments. The assessment of these impacts considers separately the impacts of construction of the preferred project and the impacts of operation.

6.1.1 Marine environment

The preferred project approach seeks to construct a direct ocean intake pipeline to deliver saline water to the desalination plant. The area of the direct ocean intake pipeline and associated infrastructure is located directly south of the existing WWTW outfall pipeline (Figure 3) and is anticipated to cover an area of 2.2 hectares (ha). Brine generated from the desalination process will be discharged via the existing WWTW outfall pipeline. Other than a new connection, no physical changes are required to facilitate the increased discharge via the existing ocean outfall pipeline, however current water quality and volume of discharge will be altered by this project.

To assess the impacts of the proposal upon the marine environment, the Proponent undertook baseline surveys of habitat, fish and benthic organisms (e.g. marine sponges and corals) of both the area of the proposed direct ocean intake infrastructure and the area of the existing ocean outfall.

The benthic environment (region of the sea floor) of both areas was generally open homogenous sand substrate interspersed with ripples associated with wave action. Little evidence was found of burrowing or mound building activity.

The following species were detected in the proposed area of the direct ocean intake by marine ecologists during surveys undertaken in December 2019:

- A small unidentified shark, numerous jellyfish, octocorals, southern eagle rays and a school of fish (possibly perch).

Species observed immediately surrounding the Belmont WWTW ocean outfall include:

- Fish assemblages, with the most abundant being yellowtail mackerel.
- Mado, wrasses, old wife, red scorpionfish and half-banded seaperch, a green moray eel, and several shark and ray species.
- Benthic organisms including sponges, corals, marine worms, molluscs, echinoderms and ascidians.

The Proponent undertook a desktop review of State and Commonwealth protected matters within a 10 kilometre buffer of the inlet of the existing direct ocean outfall, which included the area of the proposed ocean intake pipeline. Whilst a number of Commonwealth habitat and other matters were identified, based on the distance of the matters from the area of works and the nature of the works, impacts upon these matters were considered to be negligible. A 'likelihood of occurrence' assessment was undertaken to determine the likelihood of Commonwealth species identified occurring within the project area. Eleven groups of species listed under State and Commonwealth legislation were identified as likely to occur within the project area including one shark, three reptiles, five mammals, protected marine shore birds and syngnathids (seahorses, pipefish and sea dragons). Migratory shorebirds were also considered likely to occur in the project area.

A larval study was undertaken within the area of the direct ocean intake. The purpose of the study was to ascertain if any species of relevance to the assessment had the potential to be impacted by the construction and presence of the intake pipe during their various life stages. The study found that no Commonwealth or State listed threatened species were considered likely to occur in the area as larval stages. The larvae of 32 NSW commercial fisheries species were identified to occur near the direct ocean intake and it is anticipated that the larvae of a variety of filter feeding, sessile organisms may colonise the pipeline once installed as a result of the hard substrate provided, similar to the ocean outfall pipeline.

Direct ocean intake – construction impacts

Construction of the direct ocean intake infrastructure would directly harm the marine environment through activities including drilling, the installation of the intake pipeline and pump station and the installation of supporting infrastructure. Additionally, support vessels would be required to support the construction activities, that would be lighted in accordance with *Navigation Act 2012* and the subordinate Marine Orders associated with navigation introducing artificial light, noise, waste and chemicals into the environment.

The direct impacts of the construction of the intake pipeline include:

- Direct seabed disturbance (104 m² with CM1; 2,200m² with CM2) and increased turbidity and associated water quality changes which have the potential to impact upon both pelagic (in open water) and benthic (on sediment) marine fauna.
- Fauna collision and entanglement.
- Light and noise pollution which has the potential to disturb, disorientate and on occasion deafen fauna, particularly during peak breeding and migratory periods.
- Planned release of waste, contaminants or pollutants impacting upon the quality of the marine environment and marine flora and fauna.
- Accidental release of solid wastes and dropped objects.
- Hydrocarbon and chemical spills.
- Atmospheric emissions.
- Pest introduction and proliferation.
- Impacts upon users of the surrounding environment.

Direct seabed disturbance

The direct ocean intake would result in the introduction of a pipeline and pump station to the marine environment, in addition to maritime vessels, plant and machinery utilised for the installation of the infrastructure. The construction would result in unavoidable disturbance of the seabed. Whilst unavoidable, the Proponent has proposed a number of mitigation measures to minimise the disturbance to the seabed. The Proponent proposes to review the speed of drilling and reduce speeds, where possible to minimise the volume of drilling fluids in the marine environment, undertaking monitoring of turbidity during drilling activities and implementing an Emergency Management Plan to support drilling activities. Whilst the Department acknowledges there would be some direct and unavoidable impacts to the seabed as a result of the construction of the sea water intake infrastructure, the Department considers that with appropriate management measures, these impacts can be minimised. The Department notes the Proponent would consider a number of strategies and these are supported by the Department. As such, recommendations have been included that require the minimisation of drilling speeds and ongoing turbidity monitoring throughout the works. In addition, the development of an Emergency Management Plan has been recommended.

Fauna collision and entanglement

Some marine fauna are attracted to vessels and offshore activities which has the potential to result in collisions and potential significant injuries or death to marine fauna. Generally, marine species are likely to adapt evasive behaviours around foreign vessels and sounds. As such, the risk of vessel strike is considered low for marine species, particularly with the low speeds of construction vessels, being between 6-10 knots. The potential for impacts is anticipated to be minor and avoidable through the implementation of appropriate controls, including vessels would comply with legislative requirements and a marine fauna observer would be in place during daylight works, in support of Part 8 of the EPBC Regulations and the Australian Guidelines for Whale and Dolphin Watching (Commonwealth of Australia, 2017). These measures are supported by the Department to assist in the minimisation of marine fauna collisions and injury and have been recommended to form part of an Offshore Construction Works Management Plan.

Lighting and noise pollution

The Commonwealth *Navigation Act 2012* and the subordinate Marine Orders require lighting of vessels as well as plant and machinery in the ocean for safety purposes. The presence of these additional maritime vessels would also introduce additional light and noise to the marine environment.

The potential impacts of lighting would be managed by the Proponent through the consideration of the employment of best practice light design in accordance with the Commonwealth Department of Energy and Environment's *National Light Pollution Guidelines (2020)*, use of directional lighting and light shields as well as minimising light spill in marine waters unless required in accordance with navigation and safety standards. Off-shore lighting would not be utilised once the proposal is operational.

The Proponent's EIS indicates that fish typically have poor hearing and a generally reduced sensitivity to noise with no known sensitivities recorded for syngnathids, although some exhibit signs of stress in some noise environments. Turtles are considered to be highly sensitive to low frequency sound and noise impacts of construction have the potential to significantly impact upon turtles. With no quantitative national guidelines on acceptable noise exposure levels, the Proponent has committed to utilising the *Underwater Piling Noise Guidelines (2012)* as the accepted criteria for noise management, particularly for marine megafauna species.

To ensure impacts are minimised, the Proponent has proposed to consider undertaking noise generating works outside of peak migration months, particularly for whales, sounding deterrent devices prior to commencing works to provide opportunities for the relocation of marine fauna, maintaining machinery to specifications and ensuring any interactions with cetaceans and sharks complies with EPBC Regulations and Australian Guidelines. These measures are supported by the Department and it is recommended they be implemented throughout the duration of construction works as part of a Construction Noise and Vibration Management Plan.

Planned release of waste, contaminants or pollutants

A number of planned discharges into the marine environment from offshore vessels, such as sewage and food waste would occur during the construction of the proposal. The Proponent anticipates the operational impacts of the planned continuous non-hazardous discharges, such as increased turbidity, temperature, salinity and nutrients to be short-lived (lasting hours) and typically localised to surface waters within 100 metres of the discharge. With the implementation of management controls, such as using non-hazardous agents where possible, storage of hazardous substances on vessels within appropriate bunds and managing releases in accordance with relevant legislation, discharges would have a negligible impact upon the surrounding marine environment. With the implementation of appropriate containment, the Department supports the conclusion of the Proponent that the impacts of planned discharges would be negligible.

Accidental release of solid wastes and dropped objects

Various hazardous and non-hazardous solid wastes may be accidentally released into the marine environment from the deck of vessels which has the potential to impact both pelagic and benthic organisms through injury (entanglement, ingestion) and habitat degradation (decreased water quality and destruction of habitat). The Proponent has indicated that all wastes on board vessels will be appropriately stored in lidded containers/bins and appropriately disposed of onshore, hazardous materials would be stored within appropriate bunding and equipment and other miscellaneous items would be appropriately secured to minimise any movements overboard.

The Department supports the commitments of the Proponent in managing unintentional releases of wastes and concludes that the impacts are anticipated to be manageable with the implementation of appropriate processes and procedures. Notwithstanding, the Department has recommended a Safety Management System and Emergency Plan be developed and all dangerous goods are stored in accordance with guidelines and procedures.

Hydrocarbon and liquid waste spills

Chemicals and hydrocarbons are required to be stored on vessels and machinery that would be utilised in the construction and installation of the ocean intake infrastructure for ongoing operation and maintenance. There are various scenarios that may result in accidental release of chemicals and hydrocarbons, which would impact upon water quality and contaminate the immediate vicinity of a spill. Controls would be implemented to mitigate or eliminate the potential for accidental spillages, including compliance with relevant legislation and guidelines, availability of Material Safety Data Sheets for all chemicals and hydrocarbons stored, emergency management plans, the presence of spill and containment equipment on board vessels and undertaking handling of chemicals and hydrocarbons onshore, where possible. The impact is considered manageable based on the restricted quantities stored on vessels and the implementation of requisite controls. The conclusion of the

Proponent is supported by the Department and it is anticipated that the risks of spills can be minimised through the implementation of requisite controls.

Atmospheric emissions

The use of predominantly diesel fuel to power vessel engines, generators, mobile and fixed plant, equipment and on-board waste incinerators releases both greenhouse gas and non-greenhouse gas emissions to the atmosphere. These releases are a result of the burning of hydrocarbons which would result in a decline in air quality in the immediate surrounds of the proposal in the short-term, potentially impacting humans and seabirds in the vicinity of the offshore works site. As most works would occur offshore away from populated areas, the reduction in air quality is not anticipated to impact upon coastal communities due to the low quantities and rapid dissipation of these gases in the environment. Management controls to minimise discharges include maintenance of equipment and appropriate fitting of converters and filters, limiting idling time and compliance with legislation. The Department notes that these impacts are generally unavoidable and supports the management controls of the Proponent to minimise discharges wherever possible.

Pest introduction and proliferation

Invasive pests may be introduced to the marine environment during construction via vessels, equipment and ballast water exchange, particularly where vessels are originating from Southeast Asian countries. To address the potential impacts upon the local environment, the Proponent has indicated vessels would be sourced locally where possible and will adhere to Australian quarantine requirements and guidelines. This is supported by the Department and a recommendation has been included that vessels utilised for construction be sourced locally to avoid the introduction of any invasive species to the marine environment.

Interference with users of the marine environment

The construction of the intake pipeline route has the potential to reduce access to the ocean area immediately in the vicinity of the pipeline during construction and may result in conflicts with shipping traffic and recreational fishing vessels. Vessels required for the laying of the intake pipeline and structure have limited maneuverability and would require any other maritime traffic to avoid these vessels and associated equipment. The Proponent has committed to undertaking all pipe laying activities in accordance with marine navigation and vessel safety requirements under the International Convention of the Safety of Life at Sea (SOLAS) 1974 and *Navigation Act 2012*. Additionally, stakeholder consultation would be undertaken to enhance awareness to users of the surrounding waters as well as relevant Australian Government agencies of the upcoming works and associated requirements.

The Proponent has committed to the installation of trained watch keepers that would be engaged 24 hours per day to support the management of collision risk. The limited maneuverability of vessels and equipment required for construction of the intake pipeline is acknowledged by the Department and consultation with relevant stakeholders and the utilisation of watchers 24 hours a day are supported by the Department to minimise impacts upon users of the environment.

Conclusion

In considering the impacts of the construction of the ocean intake and having regard to the Proponent's proposed management measures, the Department considers the commitments of the Proponent do not fully address all anticipated impacts associated with construction. The Department

has recommended a number of conditions to strengthen the commitments of the Proponent and ensure impacts would be minimised. These have included conditions to manage and monitor water quality changes, light and noise pollution, release of potential contaminants and impacts upon users of the marine environment. The Department recommends that works be undertaken in accordance with all measures proposed and that recommendations and management plans be implemented prior to the commencement of works to ensure that all aspects of works are monitored, both below the water surface and above and that processes and procedures are in place to mitigate unanticipated impacts as soon as they occur.

Direct ocean intake –operational impacts

Once operational, the direct ocean intake pipeline and offshore intake infrastructure would have the potential to impact on surrounding maritime traffic and on marine biota via impingement (becoming trapped against the screen by the force of water) and entrainment (organisms pass through the intake screens and are drawn into the intake system). Maintenance activities to maintain optimal flow velocities also has the potential to impact marine biota. The presence of the pipeline, once constructed, would create an artificial substrate habitat within the marine environment which may alter species abundance and diversity in the area.

To ensure impacts of the direct ocean intake infrastructure are not an impediment to maritime vessels using the area, following installation navigational charts would be updated with the locations of subsea pipelines and the offshore pump station to provide awareness to maritime users. The pipeline would be buried beneath soft sediments to also minimise entanglement with fishing activities.

Impingement and entrainment

To consider the impacts of the operation of the direct ocean intake upon marine biota through impingement and entrainment, the Proponent reviewed impingement and entrainment data collected from the operation of the Sydney Desalination Plant at Kurnell. The intake for the Kurnell plant is via four intake risers located approximately 300 metres offshore and 25 metres below the sea surface. The Kurnell intake can deliver up to approximately 600 ML/day of seawater via a 2.5 kilometres intake tunnel. The literature review indicated that approximately 2% of the total population of local fish larvae would be impinged or entrained by the plant at a productive capacity of 500 million litres per day, whilst entrainment for a plant operating at 125 ML/day would be significantly less with only minor impacts detected.

The intake of the Belmont Drought Response Desalination Plant would have a maximum productive capacity of 30 ML/day and as such, the impacts of impingement and entrainment on marine biota are anticipated to be minor, in comparison to the Sydney Desalination Plan, and manageable with the installation of appropriate design, screen aperture and flow velocity. In its submission, Council raised the impacts of bycatch associated with the operation of intake in addition to the impacts on the marine environment. The Proponent committed to operate the pipeline to minimise impacts of impingement and entrainment and any associated bycatch. The Proponent has committed to a low through-screen velocity to minimise entrainment of eggs and larvae and the installation of course screens to minimise impingement of other marine fauna. The Proponent considers these commitments would reduce the impingement and entrainment risks as much as possible.

Whilst the Department notes some impingement and entrainment of marine biota is inevitable from the operation of the intake pipeline, design measures and operational parameters are considered

suitable to minimise these impacts. The Department supports the use of low velocities for the intake pipeline and installation of appropriately sized screens to minimise risks to marine larvae and fauna.

Maintenance

To maintain optimal flow velocities and performance of the intake pipeline, maintenance activities would be required, which may include replacement of screens, mechanical scraping of the pipeline or high pressure water jetting of surfaces to remove encrusting biota that is impacting upon the performance of the intake.

Whilst impacts of maintenance works are anticipated to be minor, and localised to the intake structure and immediate vicinity, there is potential for slower moving biota (such as syngnathids) and non-moving organisms that colonise the pipeline to be directly impacted by these activities. To minimise the impacts of maintenance works, the pipeline would be buried or contained within a subsurface conduit to minimise direct damage. Additionally, the pipeline would be inspected prior to maintenance activities, and any slow-moving species relocated prior to maintenance works commencing. The Department acknowledges the need to optimise operation of the pipeline through undertaking maintenance activities and supports the proposed strategies for minimising the impacts of pipe maintenance upon the marine environment. The Department has recommended several monitoring programs to be implemented following the commencement of operation to ensure impacts upon the marine environment is minimised, including evaluation of results and corrective actions if required.

Whilst the construction of the pipeline and introduction of the offshore intake structure into the marine environment would result in short-term impacts to the immediate environment, the presence of this infrastructure, once constructed and operational has the potential to have a minimal impact, potentially benefitting the surroundings by creating micro-habitats. The ocean outfall associated with the Belmont WWTW currently provides the hard substrate required for a number of filter feeding, sessile organisms. The addition of the intake pipeline has the potential to create a further ecological community that can be sustained in the area. The Department has recommended an Ecological Monitoring Program be implemented for a minimum of three years following the commencement of operation to monitor changes to the marine environment.

Utilisation of existing ocean outfall – impacts

While no changes are proposed to the ocean outfall infrastructure, aside from an additional land-based connection, the amount of discharge through the pipeline will increase by up to 56.6 ML/day and the salt concentration of the discharge will also be altered with the operation of the desalination plant. Additionally, low concentrations of chemicals used in the desalination process would be present within the brine discharge stream.

The increase in discharge via the existing WWTW outfall is anticipated to increase turbulence at the point of discharge. This increase in turbulence has the potential to attract various marine species resulting in an increase in abundance within the vicinity of the discharge point. A similar outcome was observed at the Sydney Desalination Plant. Studies undertaken of larger desalination plants (Sydney and Gold Coast) have indicated that any changes to benthic communities would be contained to the immediate area of the outfall. There is potential for the increased turbidity at the outlet of the existing outfall to also impact on nearby benthic communities.

While a minor impact may be observed at the discharge location, the benthic community at the outfall is well represented and there are not anticipated to be any significant impacts to regional benthic

communities or species diversity as a result of the change in discharge. No interaction is anticipated between water from the outfall discharge and the water intake, with coastal processes diffusing waters within less than a kilometre. The Proponent has committed to ongoing monitoring of the outfall and amendment of the existing for environment protection licence (EPL) the operation of the ocean outfall to alter the discharge volume and salinity. Additionally, the Department's recommended Ecological Monitoring Program would provide a program to monitor and respond to any unanticipated impacts.

Regarding the operation of the ocean outfall, Crown Lands indicated that the existing ocean outfall is on Crown Land and no approval is currently in place for its presence. The Proponent has committed to obtain relevant permits for the existing and ongoing operation of the ocean outfall pipeline with Crown Lands.

In the second RtS, the Proponent indicated that the approval from Crown Lands to acquire an easement in relation to the existing ocean outfall and the propose seawater intake was in progress. The Department emphasises that this does not form part of the planning process, however, notes that the Proponent is seeking appropriate approvals.

The Department acknowledges there would be impacts in the vicinity of the ocean outfall, particularly at the commencement of operation, however these impacts would likely stabilise over time. Ongoing monitoring of benthic communities, compliance with an amended EPL to include the additional brine utilising the existing outfall and implementation of the Department's recommendations would manage and minimise any unanticipated impacts.

Based on the assessment of species near the ocean outfall, in conjunction with modelling of the dilution of the brine discharge, it is not anticipated that this increase in discharge would have an impact upon marine biodiversity. The Department recognises the Proponent is required to modify the existing EPL to enable the brine to be discharged via the outfall. This is required prior to the commencement of operation of the desalination plant. Additionally, the Department has recommended a detailed water quality monitoring program be developed to identify any long term impacts from the discharge of brine concentrate on water quality in the marine environment. The Department considers that using the existing ocean outfall to dispose of the brine associated with the desalination process, with the implementation of relevant conditions and operation in accordance with an amended EPL, would not significantly impact upon the marine environment.

6.1.2 Terrestrial and freshwater biodiversity

The on shore project site comprises an area of 15.18 hectares located on the low-lying coastal land between Nine Mile Beach and the eastern edge of Lake Macquarie. The site of the private power line connecting the substation on the site is located north-west of the site and includes an area of wetland and native swamp adjacent to the Belmont Lagoon, traversing Ocean Park Road (Figure 3).

The site is generally in poor ecological condition as a result of historical clearing and continued access by 4-wheel-drive (4WD) vehicles. The area is now predominantly exotic vegetation and in particular the 'high threat' weeds Bitou Bush and Kikuyu. As such, the site provides limited habitat. No threatened ecological communities, threatened flora or threatened fauna as listed under the BC Act and EPBC Act occur on the site of the desalination plant (Figure 4), as identified by the Proponent.

Three power poles are proposed to be installed in an area of wetland and native swamp, mapped as 'Coastal Wetlands' under the Coastal Management SEPP. Additionally, this area forms part of the Lake Macquarie Coastal Wetlands, a nationally important wetland. The coastal vegetation of the wetland and swamp include threatened ecological communities and provide habitat for threatened species.

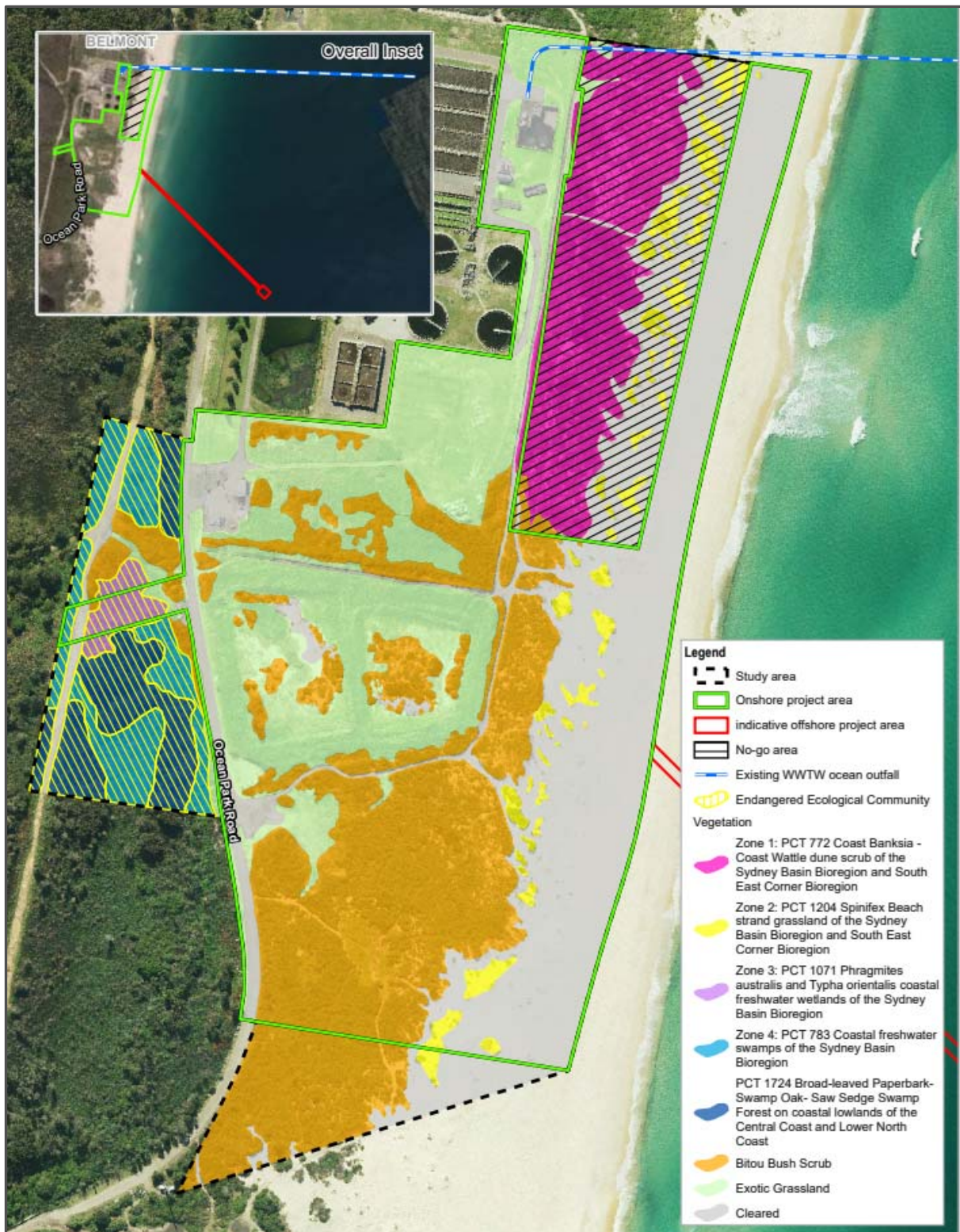


Figure 4 | Vegetation zones in and adjoining the project area (Source: GHD, 2020)

A BDAR was completed with the EIS and revised in the Amendment Report to ascertain the potential impacts of the amended proposal on biodiversity. The BDAR was completed in accordance with the Biodiversity Assessment Method (BAM) and also assessed potential impacts on Matters of National Environmental Significance (MNES). Commonwealth matters do not form part of the Department's consideration of this proposal.

The proposal would require clearing of 0.51ha of native vegetation and 9.39ha of non-native vegetation, with the balance of the site already cleared. Of the 0.51 ha of native vegetation, 0.12 ha is representative of two native Plant Community Types (PCTs) commensurate with the EEC *Sydney Freshwater Wetlands in the Sydney Basin Bioregion*.

In addition to the vegetation clearing, the Proponent considered potential impacts of the proposal on terrestrial biodiversity as mobilisation of sands and associated smothering of nearby native vegetation, spread of highly invasive weed species that are present at the site, increased run off from hardstand areas (both during construction and operation), potential spread of pathogens found in soil to the adjoining wetland area, potential disturbance of acid sulphate soils (ASS), and potential fauna injury and mortality. No direct impacts on key fish habitat nor significant impacts upon threatened biota or migratory species were anticipated as a result of onshore works.

In response to the impacts of the proposal, the Proponent proposes mitigation measures:

- To offset the impacts associated with the clearing of native vegetation, the Proponent proposes to retire biodiversity credits as follows:
 - one ecosystem credit to offset impacts to 0.08ha of Coast Banksia – Coast Wattle dune scrub of the Sydney Basin Bioregion and South East Corner Bioregion (PCT 772).
 - four ecosystem credits to offset impacts to 0.12 ha of *Phragmites australis* and *Typha orientalis* coastal freshwater wetlands of the Sydney Basin Bioregion (PCT 1071).
 - one ecosystem credit to offset impacts to 0.02 ha of Coastal Freshwater Swamps of the Sydney Basin Bioregion (PCT 783).
- Installation of impermeable concrete bunding around chemical storage areas to minimise the risk of contamination of surface flows from the site.
- Use of crushed gravel for hardstand areas to minimise the generation of runoff.
- Limit roof area to containers and tanks (i.e. no large buildings and roof surfaces that would generate runoff) to minimise runoff.
- Implementation of a Construction Environmental Management Plan (CEMP) throughout construction of the proposal.

In its submission on the EIS, Council indicated that impacts upon wetland ecosystems were inconsistent with the objectives of the site zoning and requested that offsets be required to mitigate the unavoidable impacts of the proposal. Two submissions from the public raised concerns with the proposal as a result of the sensitive surrounds to the site, particularly on Belmont Lagoon.

The Department considered feedback from Council and comments made by the public. While some impacts are anticipated from the proposal, particularly in relation to clearing of native vegetation, the Department is supportive of the comments made by Council and considers that impacts can be offset and mitigated with the retirement of requisite ecosystem credits. As such, the Department has

recommended a condition requiring the retirement of six ecosystem credits prior to the commencement of construction. While there is potential for indirect impacts of the proposal on adjoining vegetation, the Department considers these impacts can be managed through implementing the Proponent's proposed mitigation measures. The Department has recommended a condition specifying the requirements of the site CEMP including the development of a Biodiversity Management Sub-Plan to detail ongoing native vegetation rehabilitation and weed management, fencing, and details of chytrid fungus management, to be approved by the Secretary prior to the commencement of construction.

With implementation of proposed mitigation measures and compliance with recommended conditions, the Department considers both the direct and indirect impacts of the proposal on terrestrial and freshwater ecology are acceptable.

6.2 Coastal processes

The coastal location of the proposal, in the dunal environment behind Nine Mile Beach approximately 17 metres from the shoreline, means the site is subject to a number of coastal processes.

The assessment of coastal processes undertaken by the Proponent on the amended project identified coastal features and processes operating on the site of the desalination plant and the intake pipeline:

- Bathymetry and coastal morphology – the narrow and steep nearshore zone and the shelf offshore of Nine Mile Beach results in less energy dissipation of deep water waves, accentuating potential for coastal erosion.
- Wave action – the NSW coast is subject to year-round moderate wave activity, predominantly from the south to southeast and large waves can result from tropical cyclones, mid-latitude cyclones and east coast lows. Owing to the orientation of the site, waves from the southeast have the potential to result in shore erosion.
- Fluctuating water levels from wave and wind and currents.
- Sediment transport – longshore, cross-shore and aeolian (transport of sediment from the dry upper beach by wind).
- Climate change and sea level rise.
- Coastal hazards associated with inundation, erosion and recession.

Construction of the proposal, as well as the operation and presence of infrastructure in the adjoining coastal waters and on the shoreline, has the potential to result in ongoing impacts both to the infrastructure and the surrounding environment.

The land-based component of the proposal would be constructed on sandy soils and sand dunes, and there is potential for construction to impact the existing coastal processes acting on the site and for coastal processes to impact on construction. During construction, there is potential for significant delays as a result of tidal cycles and fluctuating water levels. The disturbance of the surface to facilitate construction may result in sediment transport, either to surrounding areas or sedimentation within excavations on the site. The construction of hard stand areas and buildings has the potential to impact upon inundation of surrounding areas, further erosion of the sand dunes and general recession of the dunes, particularly during storm events and king tides.

The construction of the direct ocean intake would require significant plant and machinery in addition to stockpiling, both on land and on the sea floor. The plant and stockpiling along the coast and within the ocean have the potential to alter the path of waves approaching the shoreline which may lead to more focussed or dissipated wave activity on the shore. The plant and stockpiling within the ocean would be short-term impacts for the period of construction only. As such, it is not considered that the presence of stockpiles or plant would result in long term changes to coastal processes.

Once operational, the direct ocean intake is not anticipated to significantly impact on nearshore waves as a result of the relatively small size and depth of the structure. Localised eddies and alterations to currents immediately around the direct ocean intake have the potential to result in some scour impacts, however the Proponent considered that these impacts would not alter broader coastal processes. Further, due to the location and size of the proposal, there are not anticipated to be any changes to coastal hazards as a result of the infrastructure.

To manage the potential impacts upon coastal processes as a result of the construction and operation of the proposal, the Proponent has identified mitigation measures including:

- Monitoring weather patterns during construction, to minimise works undertaken during extreme events where possible.
- Implementation of an erosion monitoring program both during construction and operation.
- Minimising hardstand / structures that would consolidate coastal dunes.
- Designing infrastructure to avoid existing areas of erosion, and locate infrastructure at sufficient depths to avoid localised scouring.
- Designing adequate drainage to manage flows associated with the flood potential and wave overtopping of the site.

During the exhibition, Council requested that the Proponent address section 27 of the *Coastal Management Act 2016* and clause 19 of the State Environmental Planning Policy (Coastal Management) 2018 be fully satisfied. Under the *Coastal Management Act 2016*, the Proponent has stated the proposal would not limit public access or use of the beach and subject to appropriate controls, the proposal would not pose a threat to public safety. Whilst acknowledging the position of the Proponent, given the high accessibility of the area, the Department has recommended conditions to ensure that public access is generally maintained, with clear delineation of no-go zones. Additionally, a number of community submissions noted the sensitivity of the site.

In relation to sensitivities of the site and restoration required as a result of the proposal, the Department notes that a dune restoration program was completed by the Proponent in September 2020. This program seeks to stabilise the banks of Nine Mile Beach. Given the increased disturbance to the shoreline as a result of the proposal, in addition to the unstable nature of sandy soils, the Department has recommended a condition requiring ongoing monitoring and planting of unstable areas to minimise ongoing sedimentation and erosion risks upon surrounding sensitive environmental areas and maintain the sensitive environment for ongoing use.

The EPA requested sedimentation and erosion controls be implemented prior to the commencement of works that have the potential to disturb soils. The Proponent has considered soil and erosion risks of some aspects of the construction and operation of the site. Given the sensitivities of the environment and sandy soils, the Department supports the recommendation of the EPA and requests

that all sedimentation and erosion controls be installed prior to the commencement of any works at the site, including installation of plant and machinery.

Overall, the Department considers that by implementing the management measures and mitigation strategies of the Proponent, in conjunction with the recommendations of the Department, the Proposal would be constructed and operated to minimise impacts upon coastal processes, and works can be managed to ensure the impacts of coastal processes are minimised.

6.3 Other issues

The Department’s consideration of other issues is provided at **Table 8**.

Table 8 | Department’s assessment of other issues

Issue	Findings	Department’s consideration and recommended conditions
Noise and vibration	<ul style="list-style-type: none"> • Background noise monitoring was undertaken to enable site-specific noise goals to be set for the construction and operation of the proposal. • All construction activities are predicted to comply with the Construction Noise Management Limits (CNML). Construction is predicted to be noisiest during the installation of the intake pipeline, where activities would generate a predicted noise level of 61 dB(A) at the Nine Mile Beach recreation area and 39 dB(A) at No. 22 Williams Street (800 m from the site). • As a measure of operational noise impacts, Project Noise Trigger Levels (PNTLs) have been established for sensitive receivers at the Nine Mile Beach recreation area (53 dB(A)) and No. 33 Williams Street, Belmont (38 dB(A)). The predicted operational noise would be 3 dB(A) below the trigger level at No. 33 William Street. However, it would exceed the trigger level at Nine Mile Beach recreation area by 1 dB(A). • During construction, traffic noise impacts would 	<ul style="list-style-type: none"> • The Department notes that proposed construction and operational noise levels would largely be below the management and trigger levels identified. • Operation of the water treatment process plant is predicted to have an exceedance of 1 dB at the Nine Mile Beach recreation area. The Department considers that the impact of the predicted 1 dB exceedance at the Nine Mile Beach recreation area would be likely imperceptible to users of the area. • Traffic noise impacts during the construction phase would increase by a maximum of 3 dB(A) at the worst affected location, around 2 to 3 dB is typically the smallest change in decibels (increase/decrease) that a human ear can detect. The impact of the predicted noise increase is short-term and of minimal impact. • Overall, the Department considers the predicted increase in traffic noise during both the construction and operation

Issue	Findings	Department's consideration and recommended conditions
	<p>increase by a maximum of 3 dB(A) at the worst affected location at the corner of Beach Street and Ocean Park Road. During operation, daily traffic generation is expected to be within the existing traffic movement fluctuations, and therefore operational traffic noise impacts would be negligible.</p> <ul style="list-style-type: none"> • During construction, safe working buffer distances would be utilised based on indicative equipment type, to ensure that there would be no vibrational impacts on nearby sensitive receivers. • During operation of the desalination plant, vibration impacts are not expected, given the large distances of the plant from the nearest sensitive receivers. 	<p>stages of the Project would be negligible.</p> <ul style="list-style-type: none"> • The proposed construction mitigation measures are considered to be acceptable however a condition is included requiring the implementation of all reasonable and feasible noise and vibration mitigation measures to minimise construction noise and vibration impacts in accordance with the 'Interim Construction Noise Guidelines' (DECC, 2009) and 'Assessing Vibration: a technical guideline' (DEC, 2006). • The proposed operational mitigation measures are considered to be acceptable. The Department has included a condition requiring the implementation of all reasonable and feasible noise mitigation measures to minimise operational noise in accordance with 'Fact Sheet F: Feasible and reasonable mitigation contained within the Noise Policy for Industry' (EPA, 2017).
<p>Contamination and Acid Sulfate Soils (ASS)</p>	<ul style="list-style-type: none"> • Soil samples collected from eight locations across the site were compared to the Health Investigation Levels and Health Screening Levels (HIL/HSL) and Ecological Investigation Levels and Ecological Screening Levels (EIL/ESL) for commercial/industrial land use, as set out in the National Environment Protection (Assessment of Site Contamination) Measure (NEPC, 1999) (NEPM). • All soil samples reported concentrations below the adopted health assessment 	<ul style="list-style-type: none"> • The Department notes that the need to for an Acid Sulphate Soil Management Plan (ASSMP) has not yet been established based upon the investigations undertaken to date. • The Department has recommended the development of an ASSMP as part of the Construction Soil and Water Management Sub-Plan (CSWMSP) based on the high probability of ASS, which would be disturbed during construction.

Issue	Findings	Department's consideration and recommended conditions
	<p>criteria, however sample TP204, in the southern area of the site, showed indications of asbestos that were not fully quantified.</p> <ul style="list-style-type: none"> • A Detailed Site Investigation (DSI) was undertaken within the northern portion of the site, with samples collected from a further 12 locations. • Due to soils within the southern extent of the site having been identified as having the potential to contain Aboriginal cultural materials, sampling within the southern extent of the amended site, including around TP204 could not be completed until the implementation of an Aboriginal Cultural Heritage Management Plan (ACHMP). • The south western portion of the site is located in an area with a high probability of acid sulphate soils (ASS), the north eastern portion is mapped as having a low probability of ASS. • Due to the relative proximity of some construction areas to drainage lines and coastal wetlands, acid leachate and toxic metals could be released into waterways. This may result in damaging effects on the environment, including aquatic flora and fauna, corrosion of materials and health impacts to humans. • As set out within the Assessment Guidelines prepared by the Acid Sulphate Soil Management Advisory Committee (ASSMAC), the need for an ASS management plan (ASSMP) is triggered based on the quantity and texture of materials to be disturbed. • Given that the probability of occurrence of ASS within the Project site is variable, the Proponent considered the requirement for an ASSMP has not yet been established. 	

Issue	Findings	Department's consideration and recommended conditions
Hazards and human health	<ul style="list-style-type: none"> • Potential exists for undetected contaminated soils, waste or hazardous building materials to be encountered during construction. • Exposure to dust emissions during construction is unlikely to increase, as the sandy soils have large particle sizes and are predicted to only travel short distances. • The quantity of Class 8 dangerous goods (chemicals) to be handled as part of the development is above the SEPP 33 threshold quantity, and therefore a Preliminary Hazard Analysis (PHA) has been submitted. The only credible scenario that would result in an offsite impact to be a delivery truck accident/chemical spill, however the likelihood of such an event is low. • Mitigation measures are proposed to manage the risks involved with the transport and storage of hazardous materials, including but not limited to the implementation of a traffic management plan and driver competency training. • All chemical storage and delivery areas would be within bundled areas with a capacity of 110 per cent of chemical storage volume, and chemical storage would be in accordance with the ADG code and Australia Standards. Risk to human health are therefore considered low. • During full operation of the plant, 28.2 ML/day of brine would be co-mingled with existing WWTW effluent. Exceedances of the water quality objectives for recreational swimming would be <1 km from the nearest beach, and therefore do not pose a material risk to swimmers and the risk to human health, from baseline, is unchanged. 	<ul style="list-style-type: none"> • The Department considers that the Proponent has adequately identified safeguards and mitigation measures relating to the storage of dangerous goods, and therefore the risk from the storage of dangerous goods is minimised. The risk to human health is considered to be low. • The Department has recommended construction management measures relating to contaminated soils and construction waste are required to be submitted to the Planning Secretary for approval as part of the CEMP, prior to the commencement of construction. • Additionally, the Department has recommended dangerous goods be stored at the site in accordance with relevant codes and guidelines.

Issue	Findings	Department's consideration and recommended conditions
	<ul style="list-style-type: none"> Treated potable water from the desalination plant would be tested to meet the quality requirements of the <i>Australian Drinking Water Guidelines</i> (NHMRC, 2011). Additionally, the Proponent has committed to undertaking ongoing consultation with NSW Health. Therefore, supplementing the existing potable water supply with water produced by the desalination plan would be unlikely to alter any risk to human health. 	
Groundwater	<ul style="list-style-type: none"> Two construction methodologies have been considered for the direct ocean intake (DOI) (sea water pump station and intake pipeline), including horizontal directional drilling (methodology CM1) and microtunnelling/ pipejacking (CM2). Potential groundwater impacts under both scenarios include the take of groundwater from the Hawkesbury to Hunter Coastal Sands Groundwater Source; groundwater drawdown within the coastal sand aquifer impacting groundwater receptors; and deterioration in groundwater quality. CM1 would involve a single excavation for the installation of the sea water pump station, while CM2 would involve excavations for the sea water pump station and the pipe jacking entry shaft (two in total). The total construction dewatering requirements would therefore be greater for CM2 (3,047 ML) than for CM1 (911 ML). Dewatering volumes were found to be less than the unallocated water available in the groundwater source. Groundwater drawdown is not expected at the closest registered groundwater bores under either scenario. 	<ul style="list-style-type: none"> A groundwater management plan, including measures to mitigate groundwater contamination, is required to be submitted to the Planning Secretary for approval prior to the commencement of construction as part of the CEMP. Department notes that the need to for an ASSMP has not yet been established based upon the investigations undertaken to date. The Department has recommended the development of an ASSMP as part of the Construction Soil and Water Management Sub-Plan (CSWMSP).

Issue	Findings	Department's consideration and recommended conditions
	<ul style="list-style-type: none"> • Fresh groundwater extracted from the excavations may be disposed by infiltration back to groundwater at a distance to the site. An infiltration area of approximately 3.5 ha would be required to manage the highest inflow rate of 196 L/s under scenario CM2. • Where excavations may expose Potential Acid Sulphate Soils (PASS), there is potential for the generation of acid and localised impacts on groundwater quality. To mitigate this, an ASS investigation is to be undertaken in the vicinity of each excavation to determine the risk of exposure of PASS, with the preparation and implementation of an Acid Sulphate Soil Management Plan (ASSMP) if necessary. • To mitigate groundwater take and drawdown, sheet piling or similar would be investigated to support excavations and reduce groundwater inflow. • Additional measures to mitigate groundwater take include the metering of fresh groundwater removed from excavations; and the use of bund walls or similar around the perimeter of the infiltration area (CM2) to ensure no discharge of groundwater, with only fresh groundwater to be sent to the infiltration area. • The mitigate groundwater quality impacts, biodegradable drilling fluids would be used during drilling works for CM1, and an ASS investigation would be undertaken in the vicinity of each excavation as part of the detailed design phase. • Groundwater monitoring would be undertaken during construction, including continuous monitoring of groundwater levels and routine sampling for groundwater quality. 	

Issue	Findings	Department's consideration and recommended conditions
	<ul style="list-style-type: none"> Groundwater impacts are not expected during the operational phase of the development. 	
Stormwater and drainage	<ul style="list-style-type: none"> Stormwater runoff would be generated by hardstand areas and building roofs. To mitigate this, the development incorporates a 130 sqm stormwater basin in the north-east of the site to manage discharge from impervious surfaces and infiltration of stormwater within the site would also occur. A swale (designed for a 1 in 100 year Average Recurrence Interval storm) would sit on the southern and eastern sides of the water treatment process plant and drain to the proposed stormwater basin. An overflow swale draining to the east and infiltrating into the sand would accommodate any flows exceeding the stormwater basin capacity. A stormwater assessment was undertaken to assess the potential impact on stormwater quality from the construction of the on-site stormwater basin. The assessment utilised a Model for Urban Stormwater Improvement Conceptualisation (MUSIC) model, using the MUSIC-link feature to incorporate Lake Macquarie City Council model parameters and requirements. 	<ul style="list-style-type: none"> The Department is satisfied that the MUSIC model successfully demonstrates that the proposed 130 sqm stormwater basin would meet the stormwater pollution reduction targets set by the Council. The Department has recommended a Stormwater Operation and Maintenance Plan be implemented prior to the commencement of operation, to ensure that the proposed stormwater quality measures remain effective.
Aboriginal cultural heritage	<ul style="list-style-type: none"> Original soil profiles across the site have been disturbed due to past mining operations and the presence of the existing WWTW, reducing the potential presence and/or density of Aboriginal cultural objects. Two Aboriginal cultural sites were identified within the project area, including an artefact consistent with residue of stone tool production (AHIMS #45-7-0397), and an artefact 	<ul style="list-style-type: none"> The Department acknowledges that the site has been subject to past soil disturbance, however it is noted that additional Aboriginal objects or sites may be identified during surface removal of vegetation to facilitate construction. The Department recommends an Aboriginal Cultural Heritage Management Sub-Plan (ACHMSP) implemented (as part of the CEMP) in

Issue	Findings	Department's consideration and recommended conditions
	<p>comprised of a small, backed tuff flake (AHIMS #45-7-0402). Both artefacts are registered as isolated finds, and both have been found to be of low archaeological significance.</p> <ul style="list-style-type: none"> The Aboriginal cultural sites identified would be salvaged through Community Collection, prior to works proceeding. Further Aboriginal objects or sites may be identified during surface removal of vegetation. The Proponent has committed to the development of an Aboriginal Cultural Heritage Management Plan to provide management and protection processes for known and unknown Aboriginal objects and places. 	<p>consultation with Registered Aboriginal Parties and ACH prior to ground disturbing works being undertaken. The AHIMS registered sites previously identified are to be integrated into the ACHMSP.</p> <ul style="list-style-type: none"> Further, the Department recommends as part of the ACHMSP, re-survey of the project area following removal of surface vegetation, in consultation with the RAPs. Any Aboriginal objects or sites identified must be managed in accordance with the protocols of the adopted ACHMSP.
<p>Traffic</p>	<ul style="list-style-type: none"> 60 construction workers would be employed in total, half of which are expected during the construction of the water treatment process plant. Workers are predicted to access the site via their own light vehicle. Parking of vehicles would be predominantly on the land-based site of the proposal. A total of 752 trucks are expected to access the site across the eight-month construction period. For the purposes of a conservative analysis, the traffic assessment predicts that the Proposal would generate up to 42 vehicle movements in total in the morning peak hour (six inbound and six outbound truck movements, and 30 inbound light vehicle movements), and 42 movements in total in the afternoon peak hour (six inbound and six outbound truck movements, and 30 outbound light vehicle movements). The nearest signalised road intersection, at Pacific Highway/Beach Street, currently 	<ul style="list-style-type: none"> The Department notes that the nearest road intersection at the junction of the Pacific Highway and Beach Street would continue to operate at a good LoS during the construction phase, with a minor increase in the average vehicle delay during the AM and PM peaks. Overall, it is considered that the impact of construction vehicle traffic on the surrounding road network would be negligible. The Department has recommended a construction traffic management plan be developed to ensure sufficient construction parking is available at the site as well as pre- and post-construction dilapidation reports be undertaken to ensure that any damage to public infrastructure is mitigated. The cost of any repairs shall be borne by the Applicant.

Issue	Findings	Department's consideration and recommended conditions
	<p>operates with a good Level of Service (LoS) with an average vehicle delay of 7.9 seconds and 7.4 seconds during the AM and PM peaks, respectively. During construction works (modelled as commencing in 2024), this would increase to an 8.2 second average vehicle delay during both the AM and PM peaks. The difference in traffic generation is expected to have a negligible impact on the performance of the intersection and the adjoining road network.</p> <ul style="list-style-type: none"> • Maritime construction works may impact shipping traffic routes and waters utilised for recreational fishing, requiring a temporary reduction in accessibility or re-routing of movements for such vessels. • To mitigate maritime construction impacts, relevant stakeholders would be consulted and notified of all upcoming works; pipe-laying activities would be undertaken in accordance with marine navigation and vessel safety requirements under the Internal Convention of the Safety of Life at Sea (SOLAS) 1974 and <i>Navigation Act</i> 2012; vessels would be equipped with all navigation and safety requirements for operation in Australia waters; and visual observations would be conducted by trained watch keepers on all vessels 24 hours per day. • During operation, routine chemical and supply deliveries and waste removal would be undertaken and marine infrastructure would be added to relevant nautical maps. Overall operational maritime and land traffic impacts are anticipated to be negligible. 	
<p>Visual</p>	<ul style="list-style-type: none"> • A Landscape Character and Visual Impact Assessment was 	<ul style="list-style-type: none"> • The Department considers that the Proponent assessed the

Issue	Findings	Department's consideration and recommended conditions
	<p>undertaken as part of the application. The site and surrounds were separated into two 'landscape character zones' (LCZs), including LCZ1 Coastal Dunes and Beach Scape, and LCZ3 Ocean – Sea Scape. (Zone 2 formed part of the original application, however due to the redesign of the plant, was no longer applicable to the amended proposal).</p> <ul style="list-style-type: none"> • The desalination plant would be set back from the beach towards forested vegetation within an area already largely impacted by the existing WWTW, and would therefore not significantly detract from the vast, exposed, coastal dunes and beachscape character of the site and surrounds. The overall impact on the LCZ1 would be Moderate-Low. • The temporary presence of an off-shore barge during the construction phase of the intake structure would result in a Moderate-Low impact on LCZ3. • The site is over 1 km and 2 km away from the nearest residences in Anderson Point and Belmont North, respectively, and vegetation screening between the site and nearby elevated residences would reduce any impacts. • Whilst the visual impact of the proposal would be low overall, the plant would be visible above the dunes in sightlines directly adjacent to the plant (Viewpoint 1), resulting in a moderate-low impact from this viewpoint. • Council supports the findings of the visual impact assessment however requests that a landscape restoration plan be prepared, to address and mitigate the visual impacts identified (most notably from Nine Mile Beach). 	<p>worst- design of plant, noting that the design is yet to be finalised. Overall, the visual impact of the development is considered to be low, however, the proposed plant would result in a low/moderate visual impact in direct sightlines from Nine Mile Beach (Viewpoint 1).</p> <ul style="list-style-type: none"> • Noting the potential for visual impacts and the need to enhance stability of the area, the Department agrees with Council's recommendation that a landscape management plan be prepared to mitigate these impacts through planting and revegetation, as well as enhanced stability of the area.

7 Evaluation

The Department has reviewed the EIS, Amendment Report, RtS, and supplementary information and assessed the merits of the proposal. The Department has considered advice from public authorities, including Council. Issues raised in submissions have been considered and all environmental issues associated with the proposal have been addressed. The Department concludes the impacts of the proposal are acceptable and can be appropriately mitigated through the implementation of the recommended conditions of consent. Consequently, the Department considers the proposal is in the public interest and should be approved subject to conditions.

The proposal is consistent with the objects of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and is consistent with the State's strategic objectives to ensure a reliable water supply during periods of severe drought.

The proposal is suitable for the site and identified biodiversity impacts and coastal process impacts are considered satisfactory on balance, and in the context of the benefit the proposal would provide for the local and regional community. The Department has recommended conditions to manage potential construction and operational impacts of the proposal on the marine environment as well as upon the surrounding land uses. This includes recommending:

- An Environmental Representative for the site be engaged.
- A Community Consultative Committee be established.
- An Infrastructure Sustainability Council of Australia's (ISCA) Infrastructure Sustainability (IS) rating be obtained.
- Management plans and procedures be developed and implemented to manage construction impacts of offshore construction, both marine and land-based biodiversity as well as erosion and sedimentation.
- Ongoing monitoring of the marine ecological impacts and water quality at the ocean outfall following commencement of operation.

The proposal is considered to be in the public interest as it would provide benefits including:

- Delivering infrastructure and investment of over \$201 million to the Lake Macquarie LGA.
- Providing a reliable water supply to the local and regional community.
- Delivery of 60 construction jobs and 5 operational jobs.

8 Recommendation

It is recommended that the Executive Director, Infrastructure Assessments, as delegate of the Minister for Planning and Public Spaces:

- **considers** the findings and recommendations of this report.
- **accepts and adopts** the findings and recommendations in this report as the reasons for making the decision to grant approval to the application.
- **considers** any advice provided by the Minister having portfolio responsibility for the project.
- **agrees** with the key reasons for approval listed in the notice of decision.
- **grants approval** for the application in respect of SSI-8896 as amended, subject to the conditions in the attached project approval.
- **signs** the attached project approval and recommended conditions of approval (**Appendix C**).

Prepared by:

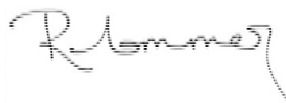


Nathan Stringer

Senior Planning Officer

Social and Infrastructure Assessments

Recommended by:



Rebecca Sommer

Principal Planning Officer

Social and Infrastructure Assessments

9 Determination

The recommendation is **Adopted** by:

A handwritten signature in black ink, appearing to read 'KH', with a large circular flourish at the beginning and a long horizontal stroke extending to the right.

23 July 2021

Karen Harragon

Director

Social and Infrastructure Assessments

Appendices

Appendix A – List of referenced documents

The following supporting documents and supporting information to this assessment report can be found on the Department of Planning, Industry and Environment's website as follows.

1. Environmental Impact Statement
<https://www.planningportal.nsw.gov.au/major-projects/project/10546>
2. Submissions
<https://www.planningportal.nsw.gov.au/major-projects/project/10546>
3. Amendment Report and Response to Submissions
<https://www.planningportal.nsw.gov.au/major-projects/project/10546>
4. Response to Submissions
<https://www.planningportal.nsw.gov.au/major-projects/project/10546>
5. Supplementary Information
<https://www.planningportal.nsw.gov.au/major-projects/project/10546>

Appendix B – Community Views for Draft Notice of Decision

<i>Issue</i>	<i>Consideration</i>
<p><i>Site suitability</i></p> <ul style="list-style-type: none"> • Site is surrounded by environmentally sensitive lands. • Given the coastal location of the site, impacts of flood and sea level rise on the site should be considered. 	<p><i>Assessment</i></p> <ul style="list-style-type: none"> • The site of the proposal is identified as SP2 – Water supply infrastructure and E2 – Environmental conservation. The desalination plant would constitute water supply infrastructure which is consistent with the objectives of the SP2 zone. The works are not a permissible land use within the E2 zone. • Notwithstanding, section 5.22(2) of the EP&A Act provides that Part 3 of the EP&A Act and environmental planning instruments (EPIs) do not apply to State significant infrastructure. Therefore, the application can be determined, subject to an environmental assessment under section 5.28 of the EP&A Act. • The Department considered both the sensitivities associated with the land and marine components of the proposal as part of its assessment. <p><i>Conditions</i></p> <p>Conditions include requiring the retirement of offset credits prior to the commencement of works, ongoing monitoring of the marine ecological environment and water quality monitoring, ongoing monitoring of land-based vegetation and implementation of erosion and sedimentation controls to ensure that impacts associated with the spread of sediments across sensitive lands is managed and minimised.</p>
<p><i>Energy consumption</i></p> <ul style="list-style-type: none"> • Significant energy demand of the plant should be considered and alternative energy sources considered. 	<p><i>Assessment</i></p> <ul style="list-style-type: none"> • The Department considered the proposal against the principles of ecologically sustainable development (ESD) in accordance with the <i>Protection of the Environment Administration Act 1991</i>. • The precautionary and intergenerational equity principles have been applied in the decision-making process via an assessment of the environmental impacts of the proposed development. The proposed development is consistent with ESD principles as described in Section 7.7 of the Proponent’s EIS, which aligns with Clause 7(4) of Schedule 2 of the Environmental Planning and Assessment Regulation 2000 (EP&A Regulation). • Overall, the proposal is consistent with ESD principles and the Department is satisfied the proposed and recommended sustainability initiatives will encourage ESD, in accordance with the objects of the EP&A Act. <p><i>Conditions</i></p> <p>To ensure the proposal is designed to reflect national best practice sustainable principles, the Department has recommended a condition requiring the development to be designed and certified under the Infrastructure Sustainability rating scheme.</p>
<p><i>Contamination</i></p> <ul style="list-style-type: none"> • Presence of asbestos at the site. • Potential contamination at the ocean outfall. 	<p><i>Assessment</i></p> <ul style="list-style-type: none"> • The Department acknowledges that there is potential for contamination to be encountered during construction works. • The Department considered the results of the Detailed Site Investigation (DSI) that was undertaken within the northern portion of the Project site. • Due to soils within the southern extent of the site having been identified as having the potential to contain Aboriginal cultural materials, sampling within the southern extent of the amended site could be completed until the implementation of an Aboriginal Cultural Heritage Management Plan (ACHMP).

	<ul style="list-style-type: none"> • Due to the relative proximity of some construction areas to drainage lines and coastal wetlands, acid leachate and toxic metals could be released into waterways. This has the potential to result in damaging effects on the environment, including aquatic flora and fauna, corrosion of materials and health impacts to humans. • Further, there is potential for the additional discharge via the ocean outfall to result in contamination in the immediate vicinity of the outlet. • During full operation of the plant, brine would be co-mingled with existing WWTW effluent. Any exceedances of the water quality objectives for recreational swimming would be <1 km from the nearest beach and would not pose a material risk to swimmers. <p><i>Conditions</i></p> <p>Conditions include the engagement of a NSW EPA-accredited Site Auditor to provide advice throughout the duration of works to ensure any works in relation to soil or groundwater contamination are appropriately managed; development of an ASSMP as part of the Construction Soil and Water Management plan; development of a management plan relating to contamination as well as waste management prior to the commencement of construction; water quality and ecological monitoring programs for the marine environment.</p>
<p><i>Consultation</i></p> <ul style="list-style-type: none"> • Additional consultation time requested 	<p><i>Assessment</i></p> <ul style="list-style-type: none"> • In accordance with Schedule 1 of the EP&A Act, the Department publicly exhibited the application from 21 November 2019 to 19 December 2019. • The Department placed a public exhibition notice in the Newcastle Star on 20 November 2019 and the Lake Macquarie Lakes Mail on 21 November 2019 and notified relevant State and local government authorities in writing. • During the exhibition, the Department received 18 submissions. • On 31 August 2020, the Proponent provided a Response to Submissions (RTS) and an amended application within an Amendment Report. • As a result of the significant changes to the proposal and infrastructure requirements, the Department exhibited the RtS and Amendment Report from 10 September 2020 to 7 October 2020 (28 days) on its website. During the exhibition of the RtS and Amendment Report, the Department received a total of 14 further submissions <p><i>Conditions</i></p> <p>No conditions are required.</p>
<p><i>Consideration of alternate options and technologies</i></p> <ul style="list-style-type: none"> • Preferred consideration of increased water restrictions or reduced water demand rather than desalination. • A new bulk water supply, such as a dam, should be considered. • Alternate intake should be considered and additional studies undertaken. • Requested additional storage of potable water at the site. 	<p><i>Assessment</i></p> <ul style="list-style-type: none"> • The consideration of water restrictions and other methods to reduce water demand are matters for the Proponent and Government policy and are not considered as part of the planning assessment process. • The desalination plant seeks to deliver infrastructure identified by government to assist in the delivery of potable water during periods of extreme drought. The Lower Hunter Water Plan and the government review of the plan seek to establish the most suitable and reliable approach to maintaining a potable water supply for the Lower Hunter Region. The plan and review have concluded a drought response desalination plant is a suitable approach. • With regards to the design of the of the sea water intake infrastructure, including the intake pipeline, the Proponent has proposed two methodologies that were considered by the Department as part of its assessment. • The Department has considered the potable water storage proposed and, based on the capacity of the desalination plant, considers it to be suitable. <p><i>Conditions</i></p> <p>No conditions are required.</p>

<p><i>Plant capacity</i></p> <ul style="list-style-type: none"> Insufficient capacity for the region. 	<p><i>Assessment</i></p> <ul style="list-style-type: none"> The Department acknowledges the water supplies of the Lower Hunter region are susceptible to drought conditions as storages are typically small or shallow, resulting in water levels dropping quickly. The Lower Hunter Water Plan 2014 developed a range of response measures to respond to these conditions which included the operation of a 15ML/day desalination plant during severe drought where water storage levels reach critical levels. A whole-of-government review of the Lower Hunter Water Plan, referred to as the Lower Hunter Water Security Plan (LHWSP) seeks to determine the preferred portfolio of supply options to ensure a resilient supply of water across the region over the long-term as well as during drought conditions. The review to date has indicated that with the implementation of the measures identified within the Lower Hunter Water Plan 2014 would result in a shortfall in supply and that a desalination plan with a nominal capacity of up to 30ML/day would provide increased reliability in meeting the water supply needs of the region, in conjunction with other approaches. As such, the application seeks approval for a desalination plant that would deliver up to 30ML/day of potable water to the Lower Hunter region in times of severe drought. It is the Department's understanding that the desalination plant would form part of a suite of potable water supplies to cater to the region <p><i>Conditions</i></p> <p>No conditions are required.</p>
<p><i>Expense</i></p> <ul style="list-style-type: none"> Significant expenditure on temporary infrastructure. Impact of the desalination on consumer water prices. 	<p><i>Assessment</i></p> <ul style="list-style-type: none"> The project expenditure and consumer pricing are not considered as part of the planning assessment process. <p><i>Conditions</i></p> <p>No conditions are required.</p>

Appendix C –Instrument of Approval

<https://www.planningportal.nsw.gov.au/major-projects/project/10546>