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Environmental & Social Consultants

BELMONT DESALINATION – PERMANENT OPERTATION

Aboriginal Cultural Heritage Assessment (ACHA) Addendum

FINAL

December 2023

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Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Hunter Water

Technical Director: Ryan Desic
Technical Manager: Sarah Mane
Report No. R59
Date: December 2023

Environmental & Social Consultants

Acknowledgement of Country

Umwelt would like to acknowledge the traditional custodians of the country on which we work and pay respect to their cultural heritage, beliefs, and continuing relationship with the land. We pay our respect to the Elders – past, present, and future.

Document Status

Rev No.	Reviewer		Approved for Issue	
	Name	Date	Name	Date
1	Ryan Desic	21/12/2023	Ryan Desic	21/12/2023

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1.0 Introduction

1.1 Background

The Belmont Drought Response Desalination Plant was approved as SSI-8896 by the then New South Wales (NSW) Minister for Planning and Public Spaces on the 23 July 2021. The approved Project (refer to Figure 1.1) involves the construction and operation of a drought response desalination plant producing up to 30 megalitres per day (ML/day)including seawater intake infrastructure; desalination units; brine discharge via existing ocean outfall; electricity/water supply; ancillary works.

An Environmental Impact Statement (EIS), Response to Submissions and Amendment Report (Amendment Report) were submitted to the Department of Planning and Environment (DPE) in November 2019 and August 2020 respectfully, for the State Significant Infrastructure (SSI) project. Hunter Water proposes to modify the approved Project, from a drought response desalination plant with a 30 megalitres per day (ML/d) capacity (the approved Project) to a desalination plant that is permanently available for operation with the same capacity. Some other changes to the design and construction have also been identified by Hunter Water during design refinement which also require assessment as part of this modification and which together will be referred to as the 'Proposed Modification'. Further description of the Proposed Modification is included in **Section 2.0.**

1.2 Location

The approved Project is being developed on land (Part Lot 1 DP 433549) at 12a Ocean Park Road, Belmont South ('the Project area') that comprises a portion of the Belmont Waste Water Treatment Works (WWTW) which is located to the southeast of the town of Belmont, NSW within the Lake Macquarie Council local government area (LGA), refer to Figure 1.2**.**

1.3 Purpose and Scope of This Report

The purpose of this Aboriginal Cultural Heritage Assessment (ACHA) addendum is to assess the Proposed Modification for its potential impact to Aboriginal cultural heritage values and to provide management and mitigation measures consistent with the commitments made in the existing ACHA prepared for the Project EIS (RPS 2019) and the Addendum to the ACHA (RPS 2020) for the Amendment Report. The Secretary's Environmental Assessment Requirements (SEARs) relevant to this assessment of the Proposed Modification are presented in Table 1.1**.** No additional SEARs have been issued by the DPE in response to the Scoping Letter (dated 8 November 2023) for this EIS Modification.

Table 1.1 SEARs for Aboriginal Cultural Heritage

SEARs	Relevant Section
And assessment of the impact of the proposed development on Aboriginal cultural heritage (archaeological and cultural) in accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011), and* the Code of Practice for the Archaeological Investigation of Aboriginal objects in NSW (DECCW, 2010)	Entire Report
Adequate consultation with Aboriginal stakeholders having regard to the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010)	Section 4

This report is intended to be read in conjunction with the previous ACHA reports prepared for the Project by RPS for the EIS (RPS 2019) and Amendment Report (RPS 2020) which contain detailed background information about the environmental and Aboriginal cultural heritage contexts for the Project. This report refers to those reports where relevant and informative.

1.4 Authorship & Acknowledgements

This report was prepared by Umwelt Archaeologists Sarah Mané and Ryan Desic. We would like to thank the Registered Aboriginal Parties for the Project for their ongoing involvement in Aboriginal cultural heritage management for the Project and Proposed Modification.

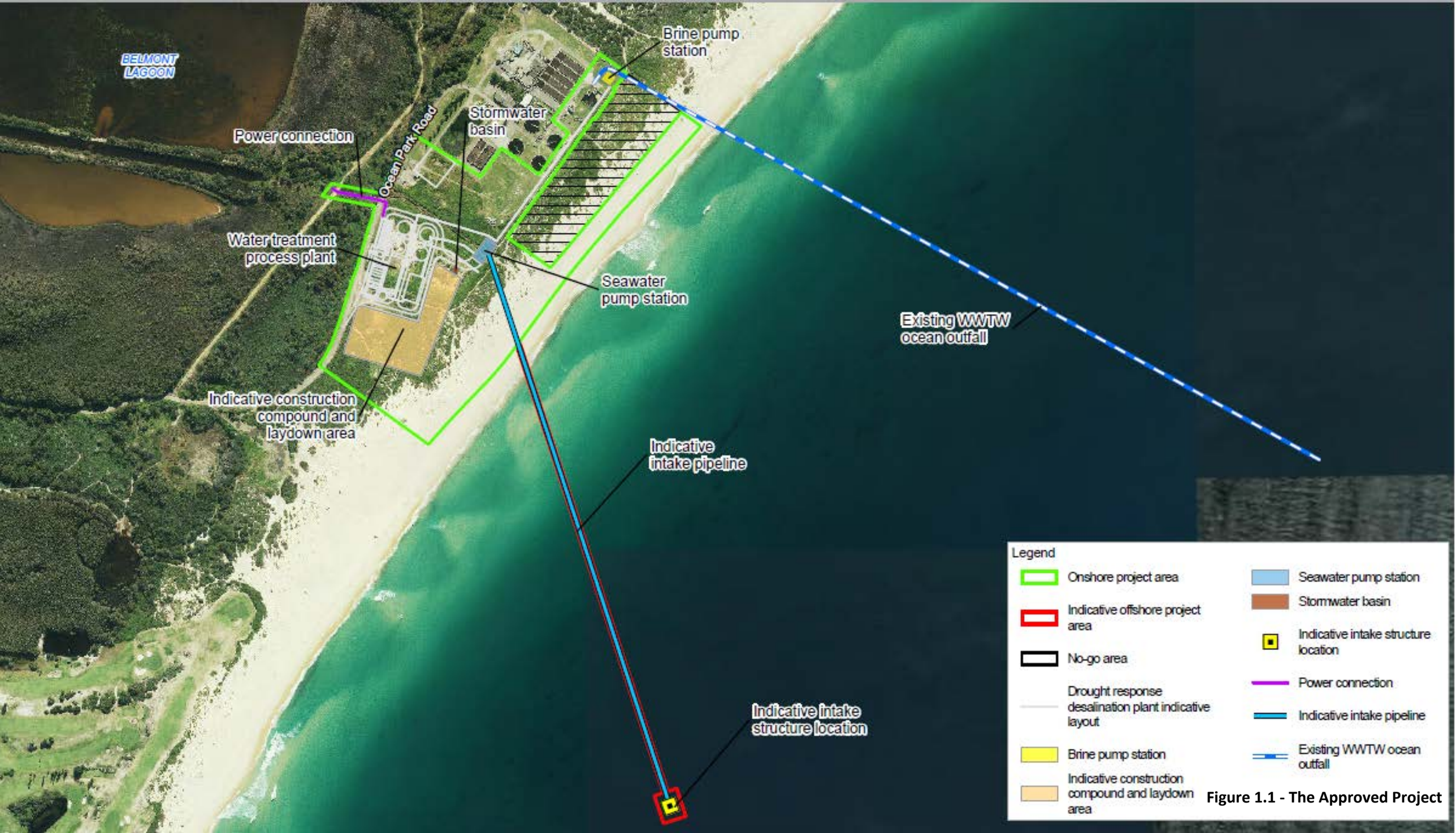


Figure 1.1 - The Approved Project

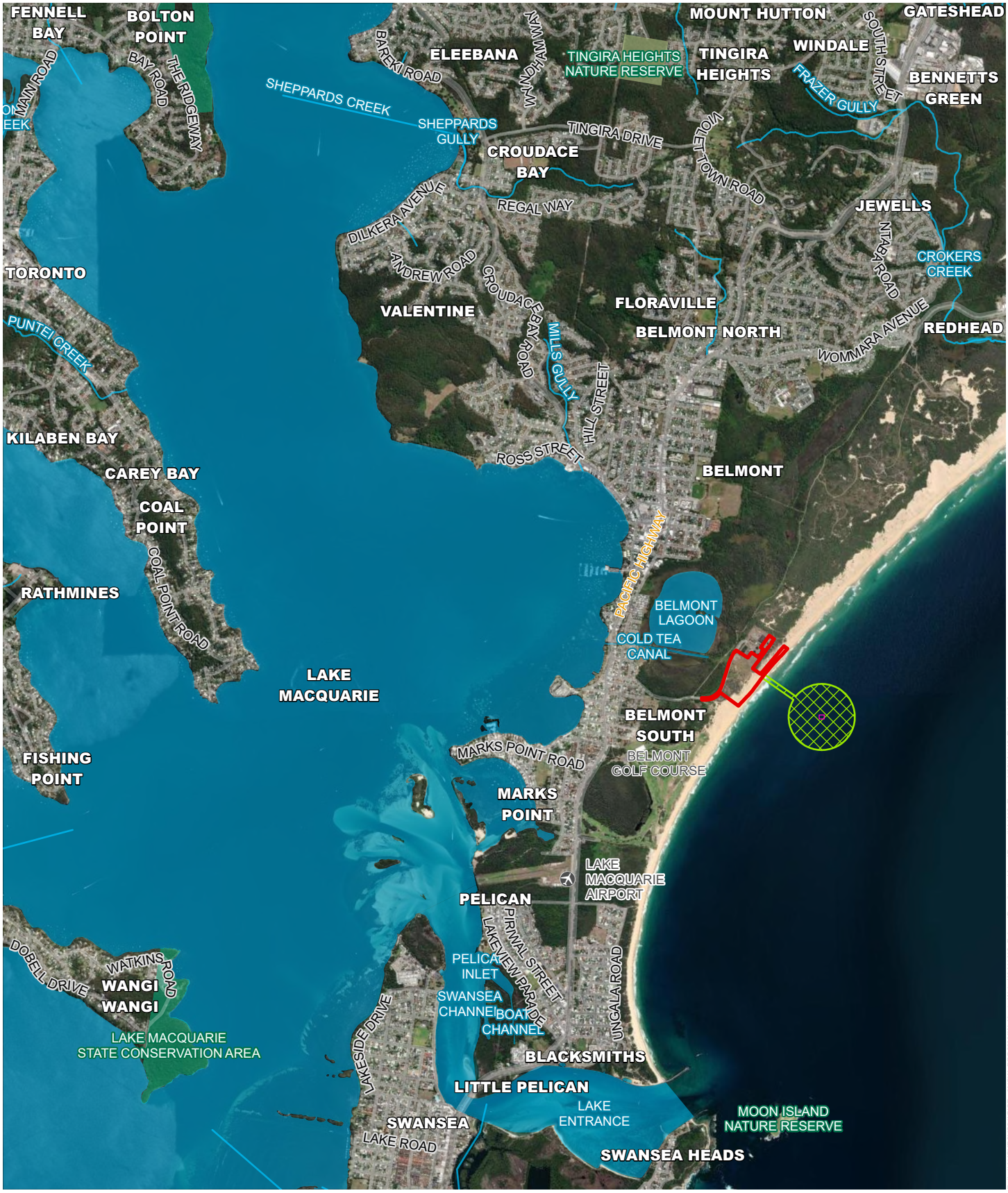


Figure 1-2 Locality

2.0 Proposed Modification

2.1 Overview

The Key elements of the Proposed Modification are shown in Figure 2.1 and include the following (noting some further refinements may occur during compilation of the Modification):

- A 30 ML/d desalination plant that is permanently available for operation
- Infilling to raise the area underneath the building and infrastructure footprint by between 1.5 - 2.5 metres to a height of around 3.8 - 4.3 metres Australian Height Datum (AHD), to cater for the 1 in 100 year flood event under predicted climate change conditions
- Increase in building area footprint (but all new area within the approved Project footprint) associated with:
    - The inclusion of additional infrastructure such as a fire water system, process tankage, administration building, workshop building, switch rooms and other ancillary buildings
    - Sizing of building footprints for all key Project elements including the direct ocean intake (DOI) system, the water treatment process plant, the brine disposal system, the power supply and ancillary facilities area
- Increase in height of the lime tower up to 15 metres above the infilled ground level
- Relocation of the DOI offshore elements, further to the north, resulting in a decrease in the length of the ocean intake pipeline to around 850 metres
- Increase in the diameter of the DOI intake structure (including a marine caisson) to up to 14 metres to allow for future proofing of the system
- Increase in the size of DOI elements including the on-shore seawater pump station structure, ocean intake pipeline and riser which connects the ocean intake pipeline to the above seafloor intake structure to allow for future proofing of the system
- Option of an underground brine pipeline (between the desalination plant and the Belmont WWTW) in addition to the approved Project above ground option
- Power connection changed to a dual 11 kilovolt (kV) system that will tie into the existing network located to the southwest of the Project area. This will require a 200 metre long upgrade oto an underground/overhead power supply under or on the southern side of Ocean Park Road at the southwest end of the approved Project footprint. The removal of the connection to the west of the Project for the previous 33 kV connection (refer to Figure 1.1.). There will be a new 11kV power connection from the sub-station at Pelican to the Hunter Water gate however this would be assessed separately by AusGrid
- Change in the approved Project footprint associated with the realigned marine elements and the change in power supply connection described above

- Change in stormwater management

Some aspects of the construction methodology have changed and include:

  - Small changes in the dredging impact area at the proposed ocean intake site and inclusion of an additional option to dispose of dredged material in Coastal Waters at an approved marine reception area
  - Inclusion of a larger crane (up to 700 tonne (t)) that would be up to 60 metres above sea level on the offshore jack-up barge during construction of the DOI offshore elements. The offshore jack-up barge would also include onsite accommodation for construction staff working shifts
  - A helicopter w be used to transfer construction personnel and materials to and from the offshore jack-up barge to construct intake structure of the DOI offshore element and generally there will not be more than 24 flights per day and around 3000 flights in total for around eight months allowing time for weather contingencies
  - Change of the construction ancillary facilities location from the southern end of the Project area to the northern end of the Project area
  - A requirement for out of hours work (OOHW) during construction including 24 hours 7 days per week (24/7) over a 9-12 month period associated with the micro Tunnel Boring Machine (micro-TBM) activities for the DOI pipeline.
  - Some short duration OOHW associated with some crane lifts to avoid windy weather periods in the early morning; a small amount of light and heavy vehicle movements, and some cut-over and commissioning activities
  - Some changes to the plant and equipment required to construct the Project
  - Increase in project construction duration to 36 months
  - Increase in construction workforce numbers peaking at around 215 Full Time Equivalent (FTE) construction personnel
  - Increase in heavy vehicle movements (two way) to about 10,000 vehicle movements over the three year duration of construction (peaking at around 180 – 200 heavy vehicle movements per day – equating to around 10 inbound and 10 outbound per hour) to cater for the increased volume of fill required, transport of pipe segments and other construction material
  - Increase in light vehicle movements to around 72,000 over the three year duration of construction (peaking at around 430 light vehicles movements a day) to cater for the increase in construction workforce required on site. Generally, around 80% of the staff (i.e. 172 of the 215 FTE peak) would arrive before the start of the day shift which is scheduled to start at 7AM and around 80% (i.e. 172 of the 215 FTE peak) would depart after the end of the day shift which is scheduled for 6PM.

2.2 Changes Relevant to the ACHA

As outlined above in **Section 2.1,** the majority of changes associated with the Proposed Modification are either operational in nature (i.e. not involving ground disturbance activities and therefore has no potential to impact Aboriginal cultural heritage values), or are within the existing approved Project Footprint.

Changes within the approved Project Footprint are not relevant to this ACHA addendum. This is because the EIS assumed the potential for ground disturbance activities within the entire Project Footprint, and the recommendations/management measures of the ACHA (RPS 2019 and RPS 2020) assumed that Project-related impacts could potentially occur within the entirety of the Project Footprint.

The Proposed Modification changes that are relevant to this ACHA addendum are those that involve ground disturbance activities outside of the existing approved Project Footprint. These components are:

- Power connection changed to a dual 11 kilovolt (kV) system that will tie into the existing network located to the south of the Project area. This will require the upgrade of around 0.2 kilometre long underground/overhead power supply along Ocean Park Road at the southwest end of the approved Project footprint and the removal of the connection to the west of the Project for the previous 33 kV connection. There will be a new 11kV power connection from the sub-station at Pelican to the Hunter Water gate however this would be assessed separately by AusGrid
- Change in the approved Project Footprint associated the change in power supply connection described above. This additional area outside the approved Project Footprint is referred to as the 'modification power supply area' where specific reference is required.

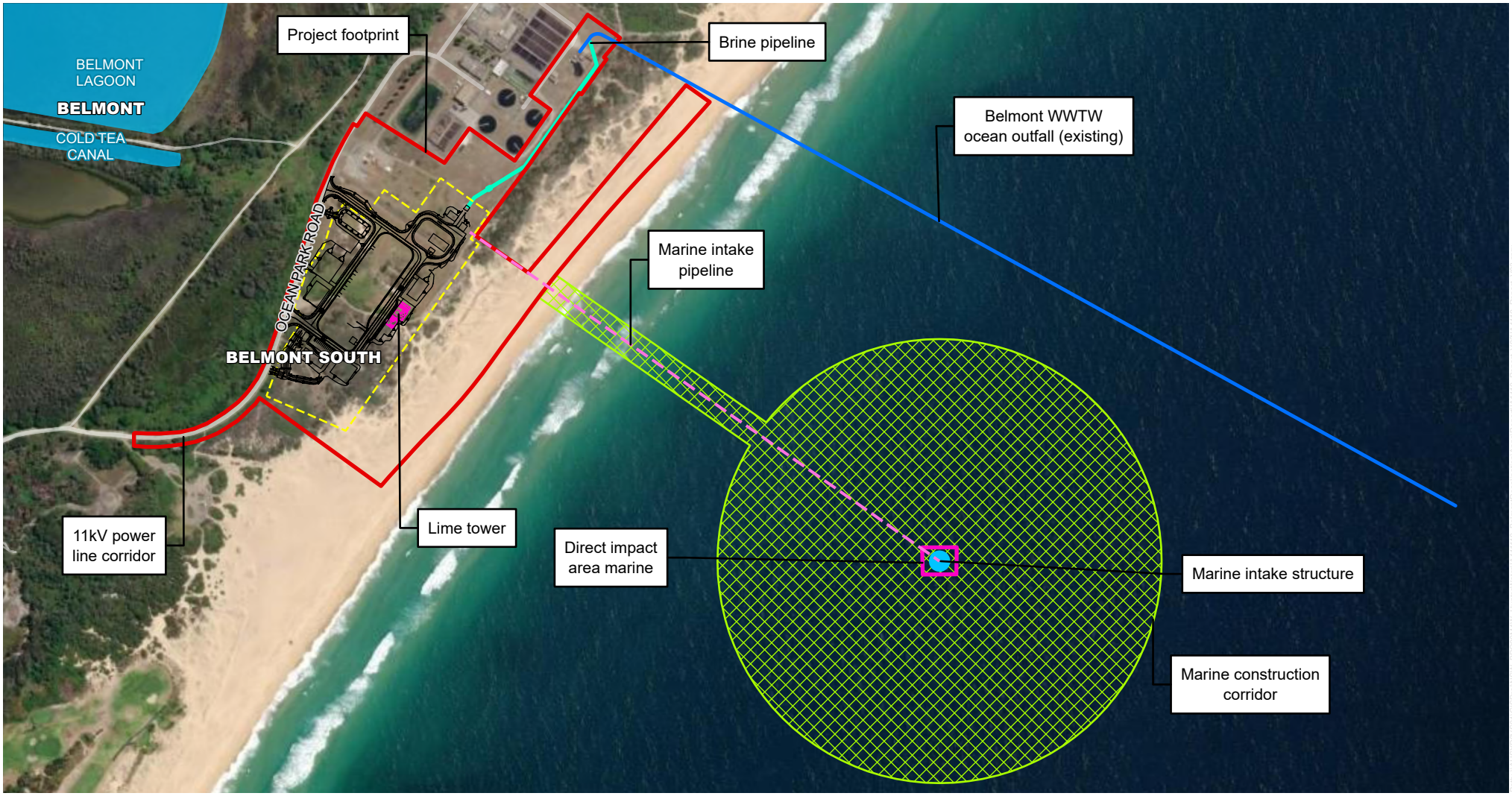


Figure 2-1 Key elements of the Proposed Modification

3.0 Legislative Context

Legislation and its relevance to the project is summarised in **Table 3.1.**

Table 3.1 Commonwealth and State Legislation Relevant to the ACHA

Legislation	Description	Relevant to the project?	Details
Commonwealth			
Environment Protection and Biodiversity Conservation Act 1999	Recognises sites with universal value on the World Heritage List (WHL). Protects Indigenous heritage places with outstanding heritage value to the nation on the National Heritage List (NHL), and significant heritage value on the Commonwealth Heritage List (CHL).	No	There are no Indigenous heritage places within the project area that are listed on the WHL, NHL, or the CHL.
Native Title Act 1993	Administers rights and interests over lands and waters by Aboriginal people. Provides for negotiation and registration of Indigenous Land Use Agreements (ILUAs). Often used in NSW to identify relevant stakeholders for consultation.	No	No native title claim applications or determinations or Indigenous Land Use Agreements exist over the Proposed Modification Area or Approved Project Area.
Aboriginal and Torres Strait Islander Heritage Protection Act 1984	Preserves and protects areas and objects of particular significance to Aboriginal people that are under threat from injury or desecration.	No	There are no areas or objects within the Proposed Modification Area or Approved Project Area subject to a Declaration under the Act.
State			
Environmental Planning and Assessment Act 1979	Requires environmental impacts, including to Aboriginal heritage, to be considered in land use planning. Provides for the development of environmental planning instruments, including State Environmental Planning Policies and Local Environmental Plans.	Yes	The Project was assessed as State Significant Infrastructure under Part 5, Division 5.2 of the Act.
National Parks and Wildlife Act 1974 (NPW Act)	Provides blanket protection for all Aboriginal objects and declared Aboriginal places. Includes processes and mechanisms for development	Yes	The NPW Act generally remains in force for the project in relation to the discovery, impact notification and care of Aboriginal objects in NSW. However, as the project is

	where Aboriginal objects are present, or where Aboriginal Places are proposed for harm.		classed as SSI, an Aboriginal heritage impact permit (AHIP) is therefore not required to permit harm to Aboriginal objects associated with the project. Instead, the SSI consent and an approved ACHMP serve as an approval to impact on and manage impacts to Aboriginal objects.
Aboriginal Land Rights Act 1983	Establishes Local Aboriginal Land Councils (LALCs). Allows transfer of ownership of vacant crown land to a Local Aboriginal Land Council. The Office of the Registrar, Aboriginal Land Rights Act 1983 (ORALRA), registers Aboriginal land claims and maintains the Register of Aboriginal Owners. Often used in NSW to identify relevant stakeholders for consultation.	No	The Proposed Modification and Project Area does not appear to have Registered Aboriginal Owners pursuant to Division 3 of the Act.

4.0 Aboriginal Consultation

4.1 Registered Aboriginal Parties

There are 13 Aboriginal parties registered for the project (**Table 4.1)** The RAPs were identified, registered and consulted as part of the ACHA (RPS 2019, 2020).

Table 4.1 List of Project RAPs

Organisation	Contact name
Divine Diggers Aboriginal Cultural Consultants	Deidre Perkins
Guringai Tribal Link	Tracie Howie
Yarrawalk: A division of Tocomwall Pty Ltd	Scott Franks
Jumbunna Traffic Management Group Pty Ltd	Norm Archibald
Wattaka Wonnarua CC Service	Des Hickey
Kawul Pty Ltd Trading as Wonn1 Sites	Arthur Fletcher
Didge Ngunawal Clan	Paul Boyd
Widescope Indigenous Group	Steven Hickey
Amanda Hickey Cultural Services	Amanda Hickey
Lower Hunter Aboriginal Incorporated	David Ahoy
A1 Indigenous Services	Carolyn Hickey
Awabakal Descendants Traditional Owners Corporation	Peter Leven
Batahbah Local Aboriginal Land Council	CEO

4.2 Previous Consultation for the Project ACHA

The following provides a summary of the Aboriginal consultation process completed previously for the ACHA to support the project EIS. Further detail of this process is provided in the project ACHA (RPS 2019, 2020).

The *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010a) were followed for the ACHA. RAPs were invited to provide cultural information about the Project, were provided with draft assessment and fieldwork methods for review, were kept consulted about project updates and management and were provided with assessment documentation for review and comment. A summary of the main consultation components during the ACHAR phase is provided in Table 4.2.

Table 4.2 Summary of Consultation for the Project ACHA

Component	Key features
Main ACHAR consultation component November 2018–October 2019	This phase included: • the identification, notification and registration of RAPs (November 2018); • presentation of project information and assessment methodologies (February 2019); • gathering cultural information throughout ACHAR; • archaeological survey with RAP representatives (May 2019) • provision of draft ACHAR for RAP review (September 2019).
Addendum to ACHAR January–June 2020	This phase included: • RAPs were informed of project amendments and extension to project area (January 2020) • Additional archaeological survey of amended project area with RAP representatives (February 2020) • provision of draft amended ACHAR for RAP review (May 2020).

4.3 Consultation for the ACHMP

In accordance with CoC C17(a), Umwelt has consulted RAPs in developing the Project ACHMP. Aboriginal consultation for this ACHMP was approached in a manner consistent with the requirements set out in the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010a). Consultation was undertaken with existing RAPs who have been involved in the consultation process since the preparation of the ACHAR (RPS 2019, 2020).

Umwelt distributed a draft version of this ACHMP to RAPs on 21 October 2022 for their review and comment by 18 November 2022. Additionally, a follow up email was distributed to RAPs on 15 November 2022 reminding them that the review period would close on 18 November 2022. Only one response was provided: from Didge Ngunawal Clan who supported the content of the ACHMP.

Although this ACHMP has been subject to RAP review it has not been lodged with DPE for approval. The ACHMP will need to be updated with the outcomes of the Proposed Modification.

4.4 Consultation for the Proposed Modification

The registered Aboriginal parties were notified on 5 December 2023 of the requirement for further assessment for the Proposed Modification including the proposal for archaeological survey. RAPs were provided with a copy of this document on 21 December 2023 for their review and comment within a 28-day review period. The outcomes of consultation will be included in an updated version of this report. Evidence of consultation is provided in **Appendix B.**

5.0 Environmental and Aboriginal Heritage Context

Section 5 of the original Project ACHA (RPS 2019) and Section 4 of the Addendum to ACHA (RPS 2020) provides detail of the environmental, land use history, archaeological and ethno-historical context of the Project inclusive of the Proposed Modification area and its surrounds. This information provided in those chapters are directly relevant to the Proposed Modification, inclusive of the modification power supply area.

In summary, Proposed Modification area inclusive of the modification power supply area is part of the Lake Macquarie coastal corridor, comprising marine, estuarine, lake shoreline, open woodland and heath environs. The modification power supply area is on a level to gently inclined, low-lying estuarine landscape at an elevation less than 5 m Australian Height Datum (AHD) and features some low-lying dune features. The predominant geology specific to the Project Area comprises Aeolian quartz dunes and sand sheets of Pleistocene age perched on Triassic and Permian bedrock. This is intermittently overlain with Quaternary sands of marine quartz sands, coarse with shell fragments, and alluvial and marine Quaternary sediments which consist of gravel, sand, silt and clay. Rock outcropping is absent across the Proposed Modification area (eSpade 2023).

Key local fresh water supplies included the adjacent west Belmont Lagoon[1] which would have provided Aboriginal people with water, food resources, while maintaining proximity to estuarine and coastal saltwater resources (RPS, 2019 Section 4).

Proposed Modification area, inclusive of the modification power supply area, has been subject to various levels of historical disturbance, which is arguably one of the primary factors influencing the potential for Aboriginal objects to occur in the landscape. The construction of the wastewater works within the approved Project Footprint has significantly disturbed ground surface through vegetation clearance and subsequent removal and distribution of topsoils. The northern half of the modification power supply area has been previously disturbed through the construction of an access road leading to the wastewater works site. The southern half of the modification power supply area is superficially less disturbed and is vegetated with some instances erosion scars from informal 4WD vehicle tracks.

RPS assessed the archaeological potential of the approved Project Footprint and approximately half of the modification power supply area as part of their ACHAR to support the project EIS (2019) and an Addendum to the ACHAR (RPS 2020) to support the Amendment Report. Their investigations included Aboriginal community consultation, desktop studies and archaeological survey. The Aboriginal cultural heritage values identified from the ACHAR investigations are the following (refer Figure 6.1):

- The recorded/known Aboriginal objects within the project area are two isolated stone artefacts: AHIMS #45-7-0397 (RPS BEL IF01) and AHIMS #45-7-0402 (RPS_IF2).[2]
- RPS identified two areas with potential to contain Aboriginal objects associated with A-horizon soils:

[1] Belmont Lagoon was previously freshwater until the 1940s until it became saline after infiltration from Lake Macquarie.

[2] Umwelt completed an updated AHIMS search over the Proposed Modification area on 13 December 2023 which did not identify any additional sites registered in this area (attached as Appendix A).

- A-horizon soils present in disturbed context, and
- Potential for intact A-horizon soils.

RPS's premise for identifying potential for A-horizon soils to occur in this landscape was underpinned by review of Soil Landscapes information available through eSpade (eSPADE v2.2 (nsw.gov.au)). The Tuggerah (tg) soil landscape was identified as potentially featuring intact A-horizon soils and is summarised in **Figure 5.1** below. Importantly, the Tuggerah soil landscape covers the modification power supply area of the Proposed Modification and therefore undisturbed portions of this area theoretically have the potential to feature intact A-horizon soils.

Soil Profile	Soil Layer	Description
Tuggerah (tg)	A1 Horizon	Loose speckled grey brown loamy sand. Grey brown speckled sand to loamy sand with a pedal single-grained structure and porous sandy fabric. It generally occurs as topsoil (A1 Horizon). Colour ranges from brownish grey (10YR 4/1) to brownish black (10YR 2/3) or black (10YR 2/1).
	A2 Horizon	Bleached loose sand. Bleached sand with single-grained structure and porous sandy fabric. It occurs as a shallow subsoil (A2 horizon). Colours are commonly bleached, and moist colours range from light grey (7.5YR 8/1) and greyish yellow (2.5Y 7/2) to dull yellow orange (10YR 7/4).
	B Horizon	Soft sandy pan. Black soft organic-stained sand to loamy sand with massive structure and sandy or, less commonly, earthy fabric. It often occurs as subsoil pan (B horizon). Colour is commonly black (10YR 1.7/1) or brownish black (10YR 3/1); dull yellow orange sand. Loose sand with single-grained structure and porous sandy fabric. It occurs as either deep subsoil or clay (B horizon). Colour varies from light yellow (2.5Y 7/4) to dull yellow orange (10YR 7/3).

Figure 5.1 Extract From RPS 2020 summarising the Tuggerah Soil Landscape, sourced from eSpade 2019 eSPADE v2.2 (nsw.gov.au)

The Addendum to the ACHA (RPS 2020) determined that the two known Aboriginal sites, along with the areas of disturbed and potentially intact A-horizon soils, will be impacted by the Project-related ground disturbance activities. Management and mitigation measures were developed in response to the proposed Project impacts and involved surface collection of visible archaeological material, along with additional inspection and surface collection in areas where the potential for A-horizon soils occur (both in disturbed contexts and potentially intact contexts) (refer to Figure 6.1 for visual guidance to these areas). These management measures would be implemented under an Aboriginal Cultural Heritage Management Plan (ACHMP), which is currently in draft and yet to be submitted to DPE.

6.0 Archaeological Survey

6.1 Survey Scope and Predictions

The archaeological survey component of this ACHA addendum was limited to the modification power supply area which is the only portion of the Proposed Modification area that extends beyond the approved Project Footprint. The rationale behind only assessing this area is described in **Section 2.2** of this report.

Review of background information indicates that the local area would have been utilised by Aboriginal people because it would have provided a variety of resources linked to coastal, estuarine and freshwater environments. However, the modification power supply area subject to archaeological survey has undergone historical disturbance from vegetation clearing, road development and construction activities on its northern half, and a lesser extent of disturbance of its southern half where vegetation remains in flat and low lying dune contexts. Based on this information, the following predictive statements apply:

- Artefact sites and cultural shell/midden deposits are the most common site type predicted to occur in suitably undisturbed areas.
- Artefact sites (such as isolated artefacts and artefact scatters) may occur in suitably undisturbed areas.

6.2 Survey Methods

Survey of the modification power supply area was conducted by Umwelt Archaeologist, Sarah Mané, together with representatives from the Bahtabah LALC, Marley Smith and David Wallace, and ADTOAC representatives Peter Leven and Tori Davis, on 14 December 2023. Representatives from Awabakal and Guringai Pty Ltd (formerly Guringai Tribal Link Aboriginal Corporation) and Lower Hunter Aboriginal Incorporated were invited to attend but were unable to attend on the day. Mathhew Laurie from Hunter Water and Madeleine Brighton from WSP accompanied the archaeologist and RAPs to assist in defining the survey area and explaining the aspects of the Proposed Modification.

The aim of the survey was, as far as practical, to record sufficient information to satisfy Requirement 5 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010c) (Code of Practice) and to provide RAPs with an opportunity to discuss the archaeological and Aboriginal cultural significance of the Study Area, and any sites/objects observed or revisited.

In accordance with the Code of Practice, the survey coverage description includes landform units, the total area surveyed within a landform unit and the quantification of the level of ground surface visibility and exposure. Ground surface visibility is defined as “the amount of bare ground (or visibility) on the exposures which might reveal artefacts or other archaeological materials” (DECCW 2010:13). Exposure is defined as “the percentage of land for which erosion and exposure was sufficient to reveal archaeological material on the surface of the ground” (DECCW 2010:13). As such, exposure refers to the potential for an area to reveal subsurface artefacts or deposits rather than the mere observation of the amount of bare ground.

6.3 Survey Results

The survey was conducted as a single pedestrian transect approximately 200 m long by 12 m wide along Ocean Park Road, Belmont. The survey transect was recorded using digital camera and GPS tracking. The

survey team was spread out along the existing road verge but vegetation within the southern portion of the modification power supply area was too overgrown with vegetation (namely Bitou bush). A broader area was surveyed (refer to GPS tracks) but the assessed surveyed area only responds to the modification power supply area (Figure 6.1**)**.

Survey coverage data is presented in Table 6.1 below, per Requirement 10 of the Code of Practice.

Table 6.1 Description of Survey Results

Unit	Landforms	Survey unit area (approx.)	Visibility (%)	Exposure (%)	Effective Coverage Area (%)	Sites	Archaeological Potential Rating	Disturbance factors
1	Disturbed (road easement) and adjacent vegetated flat/low lying dune	1,853 m^2	20	20	4%	None	Low to moderate	Construction of road for sewerage treatment plant

The inspected areas along the survey corridor were classed as one landform unit, generally noted as being flat with little to no topographic variation, consistent with the disturbed nature of the area due to the construction of the waste-water treatment plant and associated access road (**Photo 6.1** and **Photo 6.2**).

No Aboriginal sites or objects were identified during the survey.

Disturbance levels were noted to be generally high, largely due to the construction of Ocean Park Road and the ongoing use of the road. The corridor of Ocean Park Road is a heavily trafficked area which was assessed as retaining a low degree of ground integrity, due to the degree of impact from earth moving during construction, vehicular traffic, and subsequent erosion of ground surfaces. The 10 m buffer zone on the southern side of Ocean Park Road is assessed as having moderate level of integrity, but is largely unverifiable due to Bitou bush coverage.

The survey team observed that the majority of the vegetation along the road corridor comprised introduced plants such as grasses, weeds and Bitou bush, as native vegetation had been extensively cleared or modified as a result of land use activities (**Photo 6.3** and **Photo 6.4**). No mature trees were noted within the surveyed area and therefore, no scarring or other cultural modification was observed on any tree within the surveyed area.

Survey Photos

Photo 6.1 View east along Ocean Park Rd.

Photo 6.2 View north along Ocean Park Rd.

Photo 6.3 Example of exposure and vegetation growth along road corridor and bund, facing north.

Photo 6.4 Example of level of exposure and vegetation coverage, facing east.

6.4 Assessment of Archaeological Potential

Although no Aboriginal objects were identified, an assessment for the potential of subsurface Aboriginal objects to occur in the modification power supply area is discussed below.

Overall, the northern portion of the modification power supply area is considered to have negligible to low archaeological potential due to the levels of existing disturbance caused by road construction and easement grading. The exposures present in the road verge do not have the characteristics of A-horizon soils of the Tuggerah soil landscape and are likely to instead be the product of truncated soils and subsequent aeolian build-up of coastal sands.

The southern portion of the modification power supply area is considered to have the same characteristics as the adjacent landscape characterised by RPS with the potential for intact A Horizon soils. As this area was highly vegetated with limited to no accessibility for survey, this assessment has been made on a

predictive basis only. To maintain consistency with the RPS ACHAs, the predicted area with 'the potential for intact A horizon soils' has been extended to include a portion of the modification power supply area. Figure 6.1 demonstrates this extension. Consistent with the RPS ACHA (2020), no assessment of cultural or scientific significance has been made for these areas with potentially intact A horizon soils. The RPS ACHA only acknowledges that is there some potential for archaeological deposits to occur but does not extrapolate on their potential significance. Considering that there is a reasonable level of uncertainty as to whether intact A horizon soil exist (and if archaeological deposits exist within them), there is little value in ascribing significance values to these areas until there is demonstrated archaeological deposit within this area. Such assignation would need to be made after the Project ACHMP is implemented and post-fieldwork reporting is undertaken.

The RAPs present expressed the cultural sensitivity of the area, particularly around Belmont Lagoon. Umwelt acknowledges that the Proposed Modification area is culturally significant as part of the wider Aboriginal cultural landscape and that it provides a tangible connection to past culture and land use by Aboriginal people.

Legend

Approved Boundary

- Project area
- No-go area
- Study area
- Indicative offshore project area

Proposed Boundary

- Proposed Modification Boundary

- A Horizon Soils Present in Disturbed Context
- Potential for Intact A Horizon Soils
- Disturbed Landscape with Low Archaeological Potential
- Additional Area of Potential for Intact A Horizon Soils
- GPS Tracklog
- Isolated find
- Artefact Site

FIGURE 6.1

Archaeological Context, Predicted Potential and Survey Tracks

Image source: NearMap (2022) **Data source:** DPIE (2022), DCS (2022), Jacobs (2023), AHIMS (2023)

7.0 Impact Assessment and Management Measures

7.1 Impact Assessment

The Proposed Modification will not result in additional impacts to any known Aboriginal objects. The previously recorded sites – AHIMS #45-7-0397 (RPS BEL IF01) and AHIMS #45-7-0402 (RPS_IF2) – within the approved Project Footprint will still be subject to impact (total loss) as previously documented in the RPS ACHA and Addendum ACHA (RPS 2019, RPS 2020).

It is currently indeterminable whether the addition of the modification power supply area to the Project Footprint will result in additional impacts to unknown Aboriginal objects/archaeological deposits. There is a small portion of the area that fulfills the characteristics of having 'potential intact A Horizon soils' in line with the RPS ACHAs; however, it has not been established whether Aboriginal objects occur in these landscape features. Overall, the management measures proposed in **Section 7.2** below provide a method of verifying if archaeological deposits exist in these areas.

7.2 Management measures

The recommendations set out in Section 9 of the RPS ACHA Addendum report (RPS 2020) are still relevant and apply to the Proposed Modification. The main approved measures are summarised as:

- **Collection:** surface collection of AHIMS #45-7-0397 (RPS BEL IF01) and AHIMS #45-7-0402 (RPS_IF2).
- **Additional inspection:** additional inspection (defined as either further site inspection of A-horizon soils following vegetation clearance or the monitoring of ground disturbance works) in areas of disturbed and potentially intact A-horizon soils.
- **General:** several ongoing general post-approval heritage requirements are required during project pre-construction and construction phases. These include the management of all salvaged Aboriginal objects, and protocols in the event that unexpected cultural materials or human remains are found.

As a result of the Proposed Modification, an area of additional inspection for potentially intact A-horizon soils is required for a portion of the modification power supply area as shown in Figure 6.1**.** As the RPS ACHA Addendum (RPS 2020) did not provide a method for this measure, Umwelt have developed a methodology for this component which has been presented in a draft ACHMP for the Project (Umwelt in draft, 2022). The method for inspection 'areas of potentially intact A horizon soils' will be as follows:

7.2.1 Additional Inspection Method for Areas of Potentially Intact A Horizon Soils

This area comprises low-lying dunes with remnant grasses and low-lying shrubs with potential for intact A-horizon soils. However, there are portions of this mapped area where potential for A-horizon soils have clearly been removed by recreational vehicle tracks. The additional inspection methods do not apply for areas that have had their A-horizon soils removed – this will be established through the archaeologists' interpretation of soils and archaeological potential and will be done in consultation with RAP representatives present during fieldwork.

The method is as follows:

- Additional inspection fieldwork will be directed by a suitably qualified archaeologist with the assistance of RAP representatives.
- The additional inspection process (including vegetation removal, earthworks, and inspection) may be staged according to schedule and timing needs of the project: i.e., smaller sections of the area may undergo the process to accommodate specific pre-construction and construction tasks such as geotechnical investigations or localised trenching.
- Machines will be used (e.g., excavator and/or grader or other suitable machinery) to systematically spread pond bund soils across the base of the evaporation ponds with an aim of achieving suitably spread layers visible for the purpose of inspecting soil for Aboriginal objects. An archaeologist and a RAP representative will be present during this process to ensure the soil is adequately distributed for inspection.
- a grader and/or other suitable machinery will be used to systematically clear vegetation and topsoil in approximately ~10 – 20 cm levels. The exposed surface and windrows will be inspected by an archaeologist and RAP representatives after each grader pass.
- Any artefacts identified during this process will managed in accordance with the surface collection methods (which will be stipulated in the ACHMP)
- If **Unexpected Sites** (which will be defined in the ACHMP) are identified during this process, they will be managed in accordance with the measures and procedures provided in for Unexpected Sites in the ACHMP**.**
- The process will cease once B-horizon soils are reached and/or culturally sterile layers are established. This will be established through the archaeologists' interpretation of soils and archaeological potential and will be done in consultation with RAP representatives present during fieldwork.

8.0 References

DECCW 2010a, Aboriginal Consultation Requirements for Proponents, Sydney.

DECCW 2010c, Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales, Sydney.

eSpade 2023, accessed online via eSPADE v2.2 (nsw.gov.au)

Mulvaney DJ and Kamminga J 1999, *Prehistory of Australia*, Allen & Unwin, St. Leonards.

RPS, 2019, Aboriginal Cultural Heritage Assessment, Belmont Drought Response Desalination Plant, Belmont NSW.

RPS, 2020, Addendum to Aboriginal Cultural Heritage Assessment Report – Project Area Amendment, Drought Response Desalination Plant, Belmont, NSW.

Umwelt, 2022, Aboriginal Cultural Heritage Management Plan, Drought Response Desalination Plant, Belmont, NSW (in draft).

APPENDIX A

AHIMS Search Results

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 21099

Client Service ID : 848691

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-7-0411	FAST AS01	GDA	56	374726	6342564	Open site	Valid	Artefact : -		
	Contact	**Recorders**	RPS AAP Consulting Pty Ltd - York Street Sydney ,Mrs.Amanda Crick					**Permits**	5110	
45-7-0030	Belmont;	AGD	56	374488	6343249	Open site	Valid	Stone Arrangement : 1, Shell : -, Artefact : -	Midden	
	Contact	**Recorders**	Unknown Author,Mrs.Angela Besant					**Permits**		
45-7-0403	Isolated artefacts	GDA	56	374637	6341922	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	MCH - McCardle Cultural Heritage Pty Ltd,Ms.Penny Mccardle,RPS AAP Consulting					**Permits**	4785	
45-7-0407	Relocated soil soil	GDA	56	374678	6341840	Open site	Valid	Artefact : -, Shell : -		
	Contact	**Recorders**	MCH - McCardle Cultural Heritage Pty Ltd,Ms.Penny Mccardle,RPS AAP Consulting					**Permits**		
45-7-0432	Belmont Cemetery AS1	GDA	56	374742	6342133	Open site	Valid	Artefact : -		
	Contact	**Recorders**	RPS AAP Consulting Pty Ltd - Carrington ,Doctor.Gary Marriner					**Permits**	5174	
45-7-0397	RPS BEL IF01	GDA	56	375626	6342539	Open site	Valid	Artefact : -		
	Contact	**Recorders**	RPS AAP Consulting Pty Ltd - Hamilton,Ms.Jo Nelson					**Permits**		
45-7-0377	Belmont Reburial 1	GDA	56	374708	6343681	Open site	Valid	Artefact : 1, Shell : 1		103867
	Contact	**Recorders**	Mr.Julian Travaglia,Virtus Heritage Pty Ltd - Pottsville					**Permits**		
45-7-0041	Mark's Point Nine Mile Beach	AGD	56	375251	6341618	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	**Recorders**	Unknown Author					**Permits**		
45-7-0404	Fernleigh Midden	GDA	56	374742	6342133	Open site	Not a Site	Shell : -		
	Contact	**Recorders**	RPS AAP Consulting Pty Ltd - York Street Sydney ,Mrs.Amanda Crick,RPS AAP Cons					**Permits**	5077	
45-7-0410	FAST IF02	GDA	56	374802	6343246	Open site	Valid	Artefact : -		
	Contact	**Recorders**	RPS AAP Consulting Pty Ltd - York Street Sydney ,Mrs.Amanda Crick					**Permits**		
45-7-0284	Anderson Pde	GDA	56	374585	6343273	Open site	Valid	Shell : -		101911
	Contact	**Recorders**	Mrs.Angela Besant					**Permits**		
45-7-0364	Bahtabah Mission Site PAD	GDA	56	374714	6343688	Open site	Partially Destroyed	Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Ms.Mary-Jean Sutton					**Permits**	4030	
45-7-0348	BHW04	GDA	56	375185	6343750	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Mrs.Angela Besant					**Permits**		
45-7-0130	Belmont STW Camp Site;	AGD	56	376400	6343000	Open site	Valid	Artefact : -	Open Camp Site	224
	Contact	**Recorders**	Mary Dallas Consulting Archaeologists (MDCA)					**Permits**	156	
45-7-0408	IF Belmont Golf Club	GDA	56	374641	6341852	Open site	Valid	Artefact : -		
	Contact	**Recorders**	RPS AAP Consulting Pty Ltd - York Street Sydney ,Mrs.Amanda Crick					**Permits**		
45-7-0402	RPS_IF2	GDA	56	375603	6342332	Open site	Valid	Artefact : -		
	Contact	**Recorders**	RPS AAP Consulting Pty Ltd - Hamilton,Mr.Ben Slack					**Permits**		
45-7-0042	Nine Mile Beach;	AGD	56	375610	6341991	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	**Recorders**	Len Dyall					**Permits**		

Report generated by AHIMS Web Service on 13/12/2023 for Sarah Mane for the following area at Lat, Long From : -33.0553, 151.6479 - Lat, Long To : -33.0374, 151.6788. Number of Aboriginal sites and Aboriginal objects found is 18

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 21099

Client Service ID : 848691

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-7-0409	FAST IF03	GDA	56	374784	6343026	Open site	Valid	Artefact : -		
	Contact	**Recorders**	RPS AAP Consulting Pty Ltd - York Street Sydney ,Mrs.Amanda Crick					**Permits**	5110	

**** Site Status**

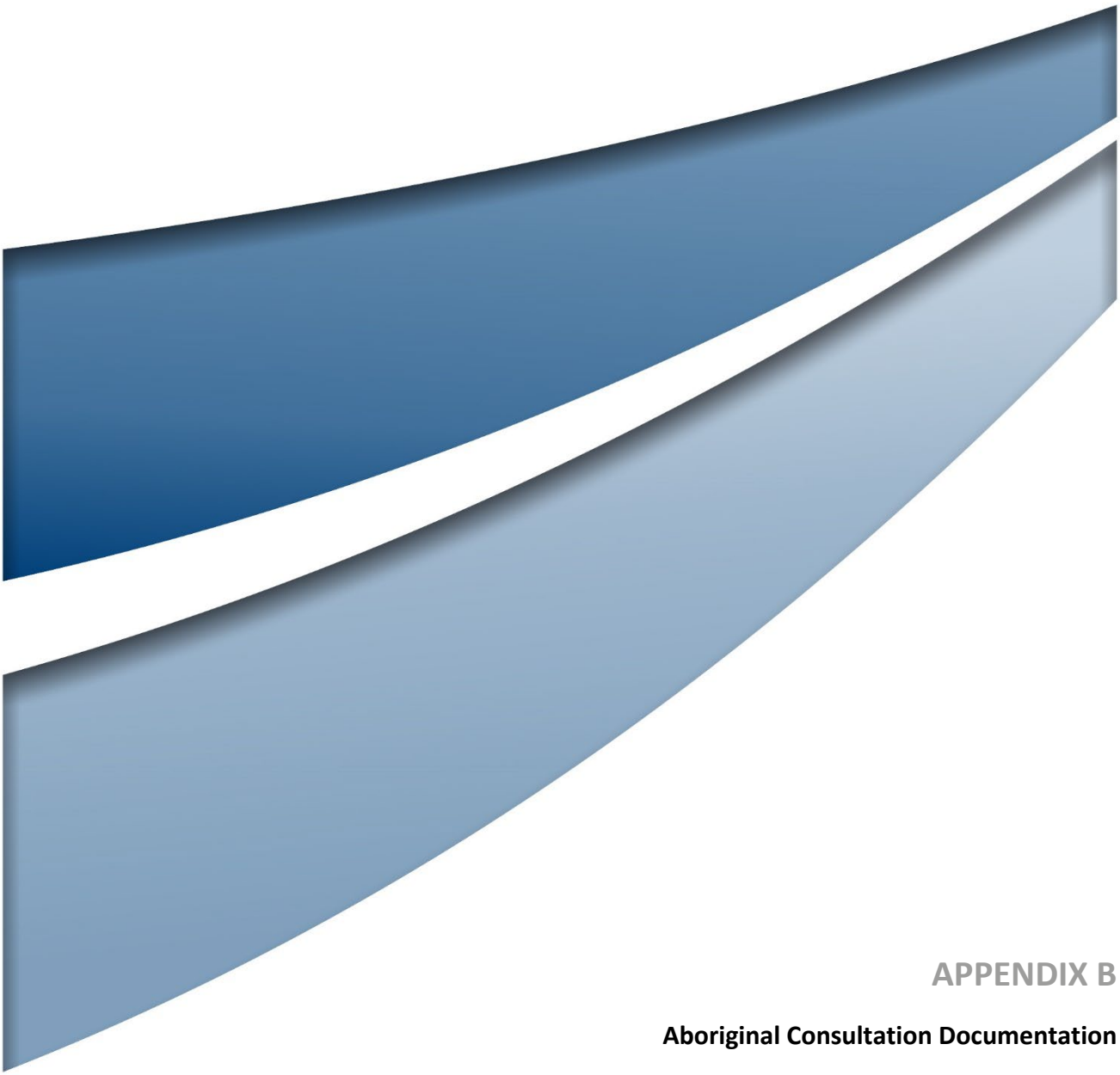
Valid - The site has been recorded and accepted onto the system as valid

Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.

Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground

Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 13/12/2023 for Sarah Mane for the following area at Lat, Long From : -33.0553, 151.6479 - Lat, Long To : -33.0374, 151.6788. Number of Aboriginal sites and Aboriginal objects found is 18



APPENDIX B

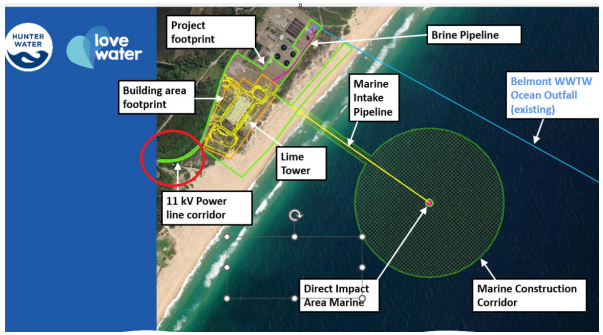
Aboriginal Consultation Documentation

From: Ryan Desic <rdesic@umwelt.com.au>
Sent on: Monday, December 4, 2023 11:43:50 PM
To:
CC: Sarah Mane <Smane@umwelt.com.au>
BCC: peterleven@y7mail.com; Cazadirect@live.com; lowerhunterai@gmail.com; amandahickey@live.com.au; Widescope.group@live.com; didgengunawalclan@yahoo.com.au; Wonn1sites@gmail.com; deshickey@bigpond.com; normarch60@gmail.com; scott@tocomwall.com.au; tracey@guringai.com.au; dedemaree3@hotmail.com; bahtabahmick@hotmail.com; awabakal.to@gmail.com
Subject: Belmont Desalination Plant: Proposed Addendum to Aboriginal Cultural Heritage Assessment for proposed modification

Dear Registered Party,

Thank you for your continued involvement in Aboriginal consultation for the proposed Belmont Desalination Plant at Belmont South NSW (proponent Hunter Water Corporation).

Hunter Water are seeking to modify the Project from a drought response desalination plant with a 30 ML/d capacity to a permanent operation desalination plant with the same capacity. Furthermore, there are some other changes to the design and construction have also been identified. Most changes are within the approved Project disturbance footprint, but there is a change to the disturbance footprint that requires consideration for potential Aboriginal cultural heritage impacts. This involves the removal of a 33kV power-line corridor to the west and inclusion of an 11kV powerline corridor to the south along an existing access road easement. **The only area that extends beyond the existing disturbance footprint is the proposed 11kv power line corridor which follows an existing road easement and is circled in red in the figure below for you information.**



The existing ACHA for the Project was prepared by RPS in 2019. Umwelt proposes to assess the proposed modification, including the 11kV powerline corridor in an addendum letter to the RPS ACHA. The addendum will consider potential impacts to Aboriginal cultural heritage as the result of the proposed modification.

Umwelt understands that the 11kV powerline corridor has previously been assessed and inspected by RPS with RAPs as part of a due diligence assessment for a potable water pipeline REF from South Belmont to Jewells (RPS 2020). No Aboriginal objects or potential archaeological deposits were identified. Notwithstanding, Umwelt propose to survey the 11KV area for this project in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) as per Project SEARs for Heritage.

The scope of the addendum works will involve:

- An updated search of the AHIMS register
- Aboriginal consultation to notify project Registered Aboriginal Parties (RAPs) of the proposed modification via letter.
- Survey of the additional area by an Umwelt archaeologist, with the opportunity for survey extended to the RAPs previously involved in fieldwork for the Project, being: Bahtabah LALC, Guringai Tribal Link, Awabakal Descendants Traditional Owners Corporation and Lower Hunter Aboriginal Incorporated. **We propose to undertake this survey on 14 December 2023.**
- Reporting of the survey results, including an impact assessment and proposed management measures in an addendum letter.

Thank you for your time. If you have any feedback about the proposed approach please respond by 5 January 2024.

Regards,

Ryan Desic
Principal Archaeologist - NSW/ACT Team Leader

p. 1300 793 267
m. 0411 329 712
w. www.umwelt.com.au

Re: Belmont Desalination Plant: Proposed Addendum to Aboriginal Cultural Heritage Assessment for proposed modification

Ryan Desic <rdesic@umwelt.com.au>

Thu 12/21/2023 4:09 PM

Cc:Sarah Mane <Smane@umwelt.com.au>
Bcc:peterleven@y7mail.com <peterleven@y7mail.com>;Cazadirect@live.com <Cazadirect@live.com>;lowerhunterai@gmail.com <lowerhunterai@gmail.com>; amandahickey@live.com.au <amandahickey@live.com.au>;Widescope.group@live.com <Widescope.group@live.com>;didgengunawalclan@yahoo.com.au <didgengunawalclan@yahoo.com.au>;Wonn1sites@gmail.com <Wonn1sites@gmail.com>;deshickey@bigpond.com <deshickey@bigpond.com>;normarch60@gmail.com <normarch60@gmail.com>;scott@tocomwall.com.au <scott@tocomwall.com.au>;tracey@guringai.com.au <tracey@guringai.com.au>;dedemaree3@hotmail.com <dedemaree3@hotmail.com>;bahtabahmick@hotmail.com <bahtabahmick@hotmail.com>;awabakal.to@gmail.com <awabakal.to@gmail.com>

1 attachments (5 MB)
21099_BelDesal_ACHA_Addnm_v1.pdf;

Dear Registered Party,

Thank you for your continued involvement in Aboriginal consultation for the proposed Belmont Desalination Plant at Belmont South NSW (proponent Hunter Water Corporation).

The attached document provides an ACHA Addendum Report for the Belmont Desalination Plant Project and documents the outcomes of recent survey completed in December 2023. We understand that this assessment will be lodged with the Department of Planning and Environment on 22 December 2023 as part of an Environmental Impact Statement for the Proposed Modification and is anticipated to be on public exhibition from 22 January 2022.

If you party would like to make any comments or feedback about the attached report, please do so by 19 January 2023. Please advise if your party requires a time extension for this review and we can discuss further to accommodate such requests.

Thank you for your time.

Ryan Desic
Principal Archaeologist - NSW/ACT Team Leader

p. **1300 793 267**
m. **0411 329 712**
w. **www.umwelt.com.au**

From: Ryan Desic
Sent: Tuesday, December 5, 2023 10:43 AM
Cc: Sarah Mane <Smane@umwelt.com.au>
Subject: Belmont Desalination Plant: Proposed Addendum to Aboriginal Cultural Heritage Assessment for proposed modification

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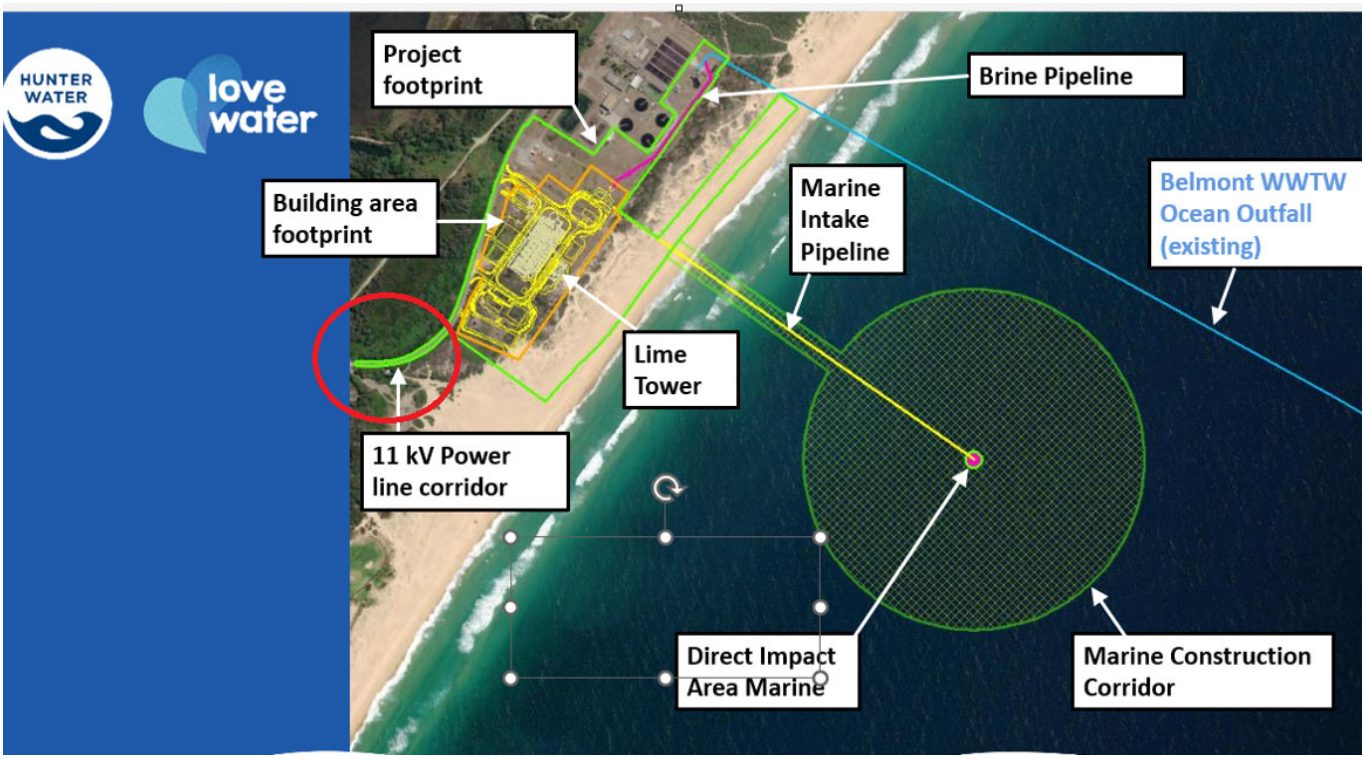

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The scope of the addendum works will involve:

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- Aboriginal consultation to notify project Registered Aboriginal Parties (RAPs) of the proposed modification via letter.
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- Reporting of the survey results, including an impact assessment and proposed management measures in an addendum letter.

Thank you for your time. If you have any feedback about the proposed approach please respond by 5 January 2024.

Regards,

Ryan Desic
Principal Archaeologist - NSW/ACT Team Leader

p. **1300 793 267**
m. **0411 329 712**
w. **www.umwelt.com.au**