

Environmental Approval

PURSUANT TO SECTION 69 OF THE *ENVIRONMENT PROTECTION ACT 2019*

Approval number	EP2022/015-001
Approval holder	Secretary of the Department of Defence
Australian business number (ABN)	68 706 814 312
Registered business address	R1-5-B Russell Drive, Russell ACT 2600
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Action	HMAS Coonawarra - Dredging and Dredged Material Management

Action description

The proposed action is to carry out two capital dredging campaigns as part of upgrades to the Royal Australian Navy wharf facilities and basin navigation area at HMAS Coonawarra Larrakeyah, Darwin, including:

- 101,000 m³ for the Current Works NCIS-5 Project Dredge Area (comprising 85,000 m³ made up of 79,000 m³ soft clay material and 6,000 m³ of rock material, with an additional 16,000 m³ of mixed clay and rock material; and
- 116,000 m³ for the Future Eastern Wharf Dredge Area (comprising 66,000 m³ soft clay material and 50,000 m³ of rock material).

Dredged soft clay material removed by cutter suction dredge would be discharged to Darwin Harbour at a location approximately 300 m southwest of the dredge areas. Dredged rock material removed by backhoe dredge would be transported on barges to the East Arm Wharf ponds for land-based disposal.


The proposed action includes ongoing maintenance dredging up to 15,000 m³ at HMAS Coonawarra every 5 to 7 years.

Advisory notes

- i. Approval is granted under section 69 of the *Environment Protection Act 2019* for the action to be undertaken in the manner described, including with implementation of the environmental management measures, commitments and safeguards documented in the Referral Information (including the Referral Report and Appendices) and Supplementary Environmental Report (SER) (including the SER and Appendices). If there is an inconsistency

between the Referral Information or the SER, and this environmental approval, the requirements of this environmental approval prevail.

- ii. Submission of all notices, reports, documents or other correspondence required as a condition of this approval, including notification to the CEO or Minister, must be provided in electronic form by emailing environmentalregulation@nt.gov.au

Address of action	Lots 5556 and 5239, Town of Darwin, NT
NT EPA Assessment Report number	103
Person authorised to make decision	Hon Lauren Jane Moss MLA, Minister for Environment, Climate Change and Water Security
Signature	
Date of decision	11 / 9 / 2023

Environmental approval conditions

Marine environmental quality and marine ecosystems

1 Limitations and extent

- 1-1 When implementing the action, the approval holder must ensure the action does not exceed the limitations and extent in Table 1.

Table 1 Limitations and extent

Action element	Figure	Limitation or maximum extent
Dredging	Figure 2	<ul style="list-style-type: none"> Capital dredging of no more than 101,000 m³ of material from the Current Works NCIS-5 Project Dredge Area; Capital dredging of no more than 116,000 m³ of material from the Future Eastern Wharf Dredge Area; and Maintenance dredging of no more than 15,000 m³ for any single maintenance dredging activity.
Dredged material disposal	Figure 2	<p>Dredged material may only be:</p> <ul style="list-style-type: none"> discharged to receiving waters via a pipeline from the cutter suction dredge to the discharge location*; or loaded onto a barge by the backhoe dredge and transferred to land for onshore containment and disposal in the East Arm Wharf ponds.

Note: *Dredge pipe outlet position may vary within a 50 m radius of the discharge location shown at Figure 2.

2 Environmental objectives

- 2-1 The approval holder must ensure the implementation of the action achieves the following environmental objectives:
- (1) no **material environmental harm** to the environmental values and declared **beneficial uses** of water in Darwin Harbour beyond the zone of high impact, including but not limited to ecosystem health, cultural, aesthetic, recreational, aquaculture;
 - (2) no **material environmental harm** to **benthic habitats and communities** beyond the zone of high impact; and
 - (3) risks of physical injury, mortality, behavioural changes and health impacts on marine megafauna are minimised.

2-2 The approval holder must undertake monitoring in the zones of impact and influence during and following the cessation of **dredging activity** that is capable of demonstrating whether the environmental objectives in condition 2-1(1) and 2-1(2) have been met.

3 Dredging Management Plan

3-1 At least 10 business days prior to commencement of **dredging activity**, the approval holder must submit to the **Minister** a revised version of the document NCIS-5 HMAS Coonawarra Draft Dredging and Disposal Management Plan PED752-005-TD-EV-0004 Rev. 3 26 April 2023 (Dredging Management Plan (**DMP**)) to meet the requirements specified in condition 3-2.

3-2 The revised **DMP** required by condition 3-1 must incorporate an updated receiving environment monitoring program associated with sediment plumes generated by **dredging activity** that includes:

- (1) a requirement for **dredging activity** to achieve the environmental objectives required by condition 2-1;
- (2) clearly stated objectives, methods and outcomes including a conceptual model that defines stressors and potential impacts on sensitive receptors in the receiving environment and identifies the links between predicted response and the monitoring indicators to be monitored;
- (3) details of monitoring locations and water quality indicators pertinent to the sensitive receptor types and locations, designed to:
 - (a) assess the baseline condition of receiving waters spatially within the modelled zone of influence using accurate and reliable monitoring approaches sufficient to describe temporal variation and reliably detect impacts;
 - (b) confirm locally-relevant trigger values for turbidity (**NTU**)
 - (c) provide continuous logging (with on-line near real-time monitoring capability at WQ1) for turbidity (Table 3);
 - (d) provide periodic monitoring of **TSS**, nutrients, pH, conductivity, metals and metalloids at monitoring sites (Table 3);
 - (e) assess monitoring results based on site-specific baseline data with **reference site**-based checking, quality assurance methods and reporting of results;
- (4) details of measures to avoid dredging-related impacts to sensitive receptors during any critical windows of environmental sensitivity (such as known coral spawning and seagrass flowering windows);

a requirement to validate the adopted 1:1 TSS:NTU relationship using site-specific monitoring data collected during dredging activity within the Current Works NCIS-5 Project Dredge Area, to confirm the suitability of turbidity trigger values (

- (5) Table 2);
- (6) a requirement for sediment plume prediction validation monitoring to be undertaken periodically throughout the duration of **dredging activity** to allow comparisons between the predicted and actual spatial extent and characteristics of plumes generated by the **dredging activity**;
- (7) procedures for determining whether any exceedance of management **trigger values** is attributable to the action;
- (8) a trigger action response plan incorporating a tiered adaptive monitoring and management (including a feedback loop) to manage **dredging activity** to achieve the environmental objectives required by condition 2-1;
- (9) contingency measures to be implemented where **trigger values** are reached or exceeded or the sediment plume does not behave as predicted by modelling;
- (10) include monitoring and management measures to achieve the environmental objective required by condition 2-1(3) including but not limited to:
 - (a) measures to avoid direct impacts of vessel strikes and entrainment of marine megafauna, such as imposing speed limits on vessels and specifying safe distance for marine megafauna encounters during **dredging activity**;
 - (b) defined observation and exclusion zones, along with protocols for marine megafauna observation, and keeping a record of sightings and locations in the vessels' daily log book;
 - (c) trained marine megafauna observers to be present during **dredging activity**;
 - (d) procedures for reporting any incidents related to marine megafauna injury or mortality to the relevant regulators; and
- (11) provide measures to prevent the introduction of marine pests.

4 Revising the Dredging Management Plan

4-1 The approval holder:

- (1) must revise the **DMP** as required by condition 3-1;
- (2) must revise the **DMP** as and when directed by the **Minister**; and
- (3) may revise the **DMP** for its own purposes.

4-2 For any revised **DMP**, the approval holder must provide a copy to the **Minister** at least 10 business days prior to any amendment(s) being implemented, accompanied by:

- (1) a tabulated summary of the amendment(s) with document references;
- (2) reasons for the amendment(s); and

- (3) an assessment of environmental risks and potential impacts associated with the amendment(s).

4-3 Prior to the commencement of capital **dredging activity** within the **Future Eastern Wharf Dredge Area**, provide a written review and endorsement from an **independent qualified person** stating that the revised **DMP** appropriately identifies and mitigates any environmental risk and complies with the conditions of this approval.

4-4 The approval holder must implement the action to comply with the latest revision of the **DMP** provided in accordance with condition 4-2.

5 Commencement of action

5-1 This approval expires 5 years after the date on which it is granted, unless **dredging activity** has commenced on or before that date.

5-2 The approval holder must provide notification in writing to the **Minister**, at least 5 business days prior to the commencement of **dredging activity**.

6 Change of contact details

6-1 The approval holder must notify the **Minister** in writing of any change of its name, physical address or postal address for the serving of notices or other correspondence within 10 business days of such change.

7 Environmental performance and compliance reporting

7-1 The approval holder must:

- (1) within 12 months after the completion of **dredging activity** carried out for any capital dredging under this approval, prepare a report to address conditions 7-2(1) to 7-2(8); and
- (2) submit each report to the **CEO** within 30 days of its completion.

7-2 The reports required by condition 7-1(1) must:

- (1) provide all monitoring data and reportable incidents required by the conditions of this approval;
- (2) provide an analysis and interpretation of monitoring data to demonstrate whether compliance with the requirements of condition 2-1 has been achieved;
- (3) describe the approaches used to validate the sediment plume modelling outputs;
- (4) provide a comparison between the actual and predicted:
 - (a) water quality changes in turbidity levels and **TSS** concentrations from **dredging activity**; and
 - (b) spatial extent of sediment plumes generated by **dredging activity**.

- (5) describe measurements of sediment and hydrodynamic information obtained under representative conditions;
- (6) include an assessment of the effectiveness of monitoring, management and contingency measures implemented to comply with the requirements of condition 2-1;
- (7) identify all non-compliances and describe corrective and preventative actions taken;
- (8) include a written review and endorsement by an **independent qualified person**.

8 Provision of environmental data

- 8-1 All environmental monitoring data required to be collected or obtained under this environmental approval must be retained by the approval holder for a period of not less than 10 years commencing from the date that the data is collected or obtained.
- 8-2 The approval holder must, as and when directed by the **Minister**, provide any environmental data (including sampling design, sampling methodologies, empirical data and derived information products such as maps) relevant to the assessment of the action and implementation of this environmental approval, to the **Minister** in the form and manner and at the intervals specified in the direction.

Definitions

The terms used in this approval have the same meaning as the terms defined in the *Environment Protection Act 2019* and *Environment Protection Regulations 2020*.

Term	Definition
baseline data	The environmental monitoring data, including chemical, physical and biological data collected (from studies undertaken) prior to commencement of dredging activity , that is used to characterise baseline conditions.
beneficial uses	Has the same meaning as in section 4 of the <i>Water Act 1992</i> .
benthic habitats and communities	The areas of seafloor that support functional ecological communities (e.g. high relief reef, platform reef, sand, silt and the depth they occur). The communities may include light dependent taxa (e.g. algae, seagrass, corals, some sponges, mangroves) or animals that obtain their energy by consuming live or dead organisms (e.g. ascidians, sponges, soft corals).
CEO	Has the same meaning as in section 4 of the <i>Environment Protection Act 2019</i> .
continuous logging	Requires ongoing data collection to be undertaken during dredging activity . Where specified in a condition of this approval, monitoring must be telemetered to ensure near real time availability of data).
Current Works NCIS-5 Project Dredge Area	The Current Works NCIS-5 Project Dredge Area as shown at Figure 2 of this approval.
DMP	Dredging Management Plan, which includes management and disposal of dredged material.
dredging activity	Dredging works carried out under this approval including: <ul style="list-style-type: none"> • dredging; • loading of barges or similar vessels with dredged material; • movement of barges or similar vessels from the dredge footprint to a barge unloading facility; • removal of dredged material from barges or similar vessels into trucks or similar infrastructure for transport to the East Arm Wharf ponds.
EP Act	<i>Environment Protection Act 2019</i> .
Future Eastern Wharf Dredge Area	The Future Eastern Wharf Dredge Area as shown at Figure 2 of this approval.

independent qualified person	A qualified person as defined under section 4 of the EP Act ; and who also meets the following requirements: <ul style="list-style-type: none"> a) was not involved in the preparation of the approval holder's referral; b) is independent of the personnel involved in the design and implementation of the action; and c) has obtained written approval from the CEO, on the advice of the Executive Director, of the NT Department of Environment, Parks and Water Security Flora and Fauna Division to be the qualified person to satisfy the independent qualified person reporting requirements under this approval.
material environmental harm	Has the same meaning as in section 8 of the <i>Environment Protection Act 2019</i> .
Minister	The Minister responsible for administering the <i>Environment Protection Act 2019</i> .
NT EPA	Northern Territory Environment Protection Authority.
NTU	Nephelometric turbidity units
reference site	A monitoring site located beyond the anticipated zone of influence of the modelled sediment plume (Figure 3). Monitoring at this site is intended to assist in determining if elevated sediment concentrations which may be detected at sensitive receptors are associated with the dredging activity or other mechanisms within the harbour unrelated to dredging activity .
referral	The approval holder's referral to the NT EPA under section 48 of the EP Act : NCIS-5 - HMAS Coonawarra Dredging and Dredged Material Management - Referral Report and Appendices, dated 21 March 2022.
SER	The approval holder's Supplementary Environmental Report submitted to the NT EPA under regulation 119 of the Environment Protection Regulations 2020: NCIS-5 - HMAS Coonawarra Dredging and Dredged Material Management Supplementary Environmental Report and Appendices, dated 26 April 2023.
trigger value(s)	The values of monitored environmental parameters that indicate when response actions are required to prevent impact.
TSS	Total suspended solids. In relation to a water sample, the measure of the particles mixed in the water sample.

Location and extent of action

Spatial data depicting information provided in Figures 1 to 3 are held by the Department of Environment, Parks and Water Security as follows:

- NTEPA2021/0174-016 - 14 Consultation on SER – Spatial Files - Department of Defence - HMAS Coonawarra - Dredging and Dredged Material Management.

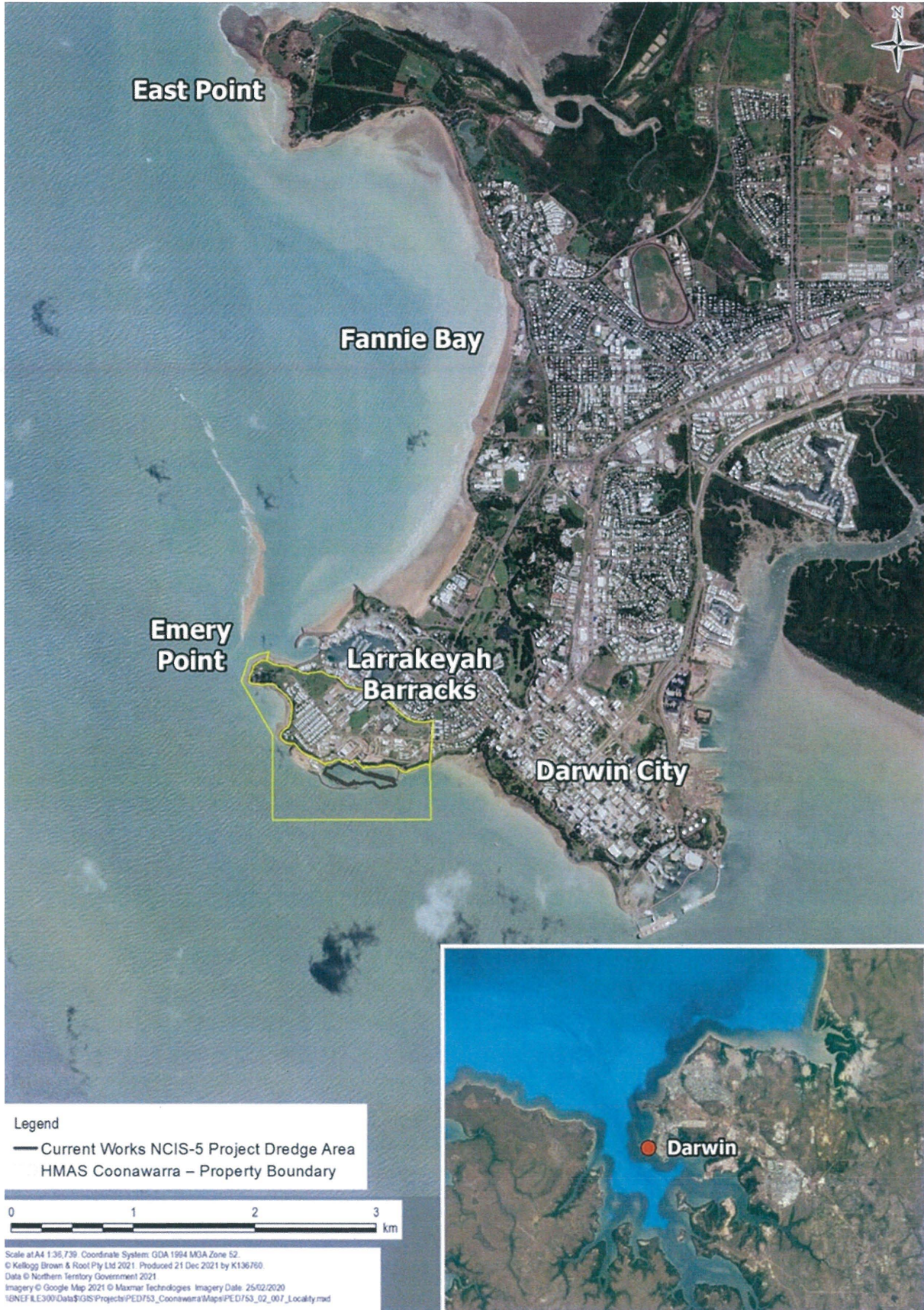


Figure 1 Location of action



Figure 2 Dredge areas and dredged material discharge location

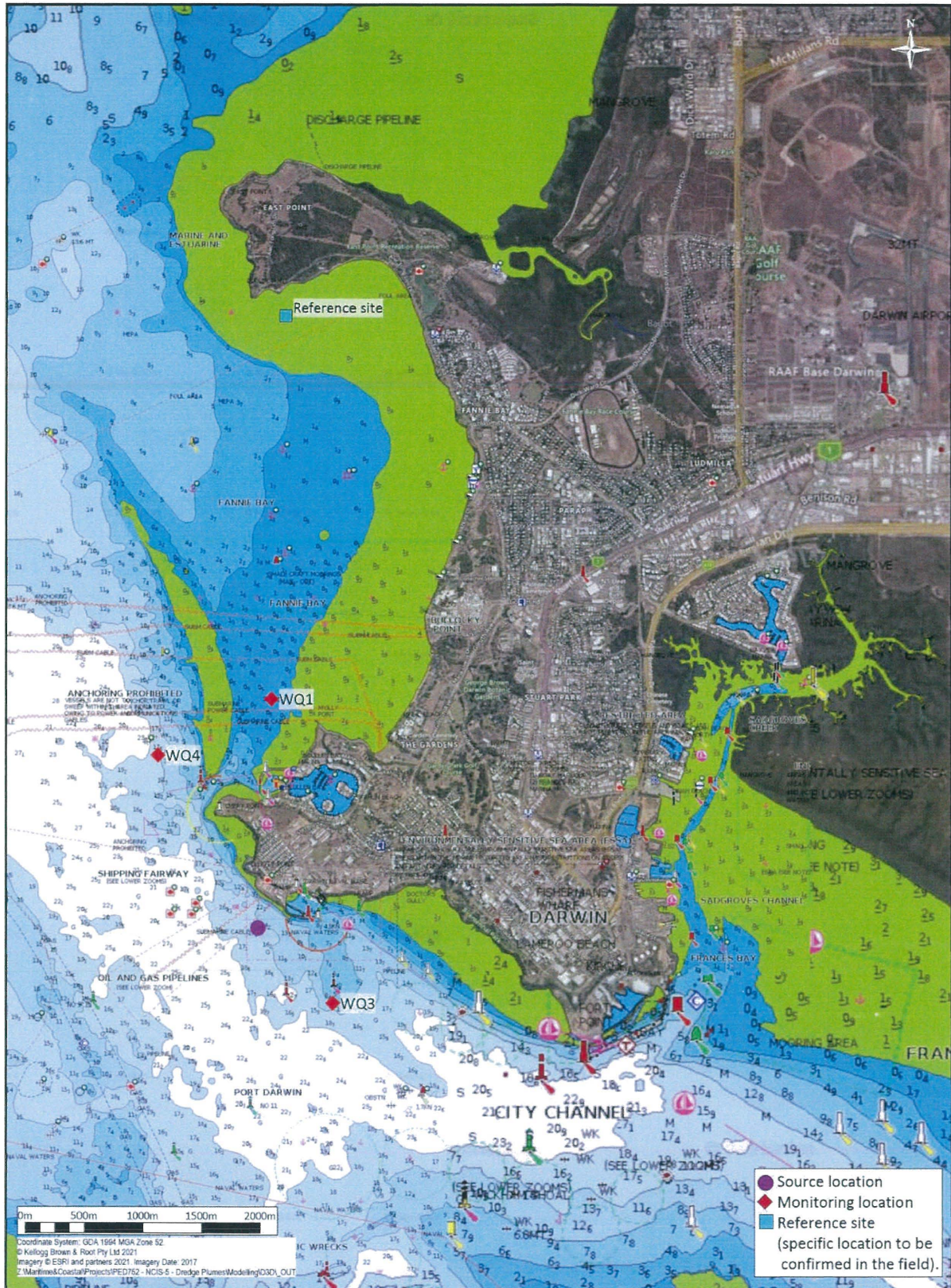


Figure 3 Monitoring locations during dredging

Table 2 Draft trigger values for zones and turbidity and time limits for monitoring site WQ1 (Figure 3)

Monitoring site [^]	Season	Draft trigger values >intensity value and >duration or >frequency		
		Intensity	Duration	Frequency
WQ1 Fannie Bay*	Wet and dry season	30 NTU (6-hourly average)	12 hours	12 hours
Zone of low to moderate impact*		70≥23 NTU (90th%ile)	N/A	N/A
Zone of influence*		10≤23 NTU (90th%ile)	N/A	N/A

Notes:

 *Only applicable where volume to be dredged is more than 20,000m³.

Draft trigger values to be confirmed and published in the revised DMP required by condition 3-1.

^ WQ1 trigger values are reactive. Zone triggers are informative only.

Table 3 Monitoring requirements

Monitoring location name	Monitoring points (GDA94 decimal degrees)		Quality characteristic	Timing	Minimum monitoring frequency
	Latitude	Longitude			
<ul style="list-style-type: none"> WQ1* Reference site WQ3 WQ4 	TBA	TBA	Turbidity (NTU)	During dredging activity	At the frequency specified in the revised Dredge Management Plan required by condition 3-1
			Water depth/pressure		
			<ul style="list-style-type: none"> pH Conductivity Dissolved oxygen Total suspended solids (TSS) Nutrients Metals and metalloids 		

Note: * Continuous data logging (at least every 15 minutes) with online or near real-time monitoring capability to be provided at WQ1.