APPLICATION FOR RESOURCE CONSENT

AND

ASSESSMENT OF ENVIRONMENTAL EFFECTS

TO

UNDERTAKE CAPITAL DREDGING

AND

ON-GOING MAINTENANCE DREDGING ACTIVITIES

WITHIN THE

WAITEMATĀ NAVIGATION CHANNEL PRECINCT
AND
PORT PRECINCT,
AUCKLAND

PREPARED BY

BENTLEY&Co
Resource Management Consultants

OCTOBER 2019

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RESOURCE CONSENT APPLICATION

Form 9

APPLICATION FOR RESOURCE CONSENT OR FAST-TRACK RESOURCE CONSENT
SECTIONS 87AAC, 88, AND 145 OF THE RESOURCE MANAGEMENT ACT 1991

TO: **Auckland Council**
Private Bag 92300
Auckland

1. Ports of Auckland Limited, c/- Bentley & Co. Limited at the address for service listed below, applies for the following type of resource consent:
   - Coastal permit (s.12(1) and s.15(1) RMA)

2. The activity to which the application relates (the proposed activity) is as follows:
   To undertake capital dredging and on-going maintenance dredging activities within the Waitematā Navigation Channel Precinct and Port Precinct.

   Without limitation, the proposal has been assessed to require resource consent for the following reasons:

   Auckland Unitary Plan (Operative in part)
   - Capital works dredging activities within the Waitematā Navigation Channel Precinct require resource consent as a **restricted discretionary** activity (Rule I103.4.1 (A3));
   - Capital works dredging activities within the Port Precinct require resource consent as a **restricted discretionary** activity (Rule I208.4.1 (A6)); and
   - Maintenance dredging activities within the Waitematā Navigation Channel Precinct require resource consent as a **controlled** activity (Rule I103.4.1 (A2));
   - Maintenance dredging activities within the Port Precinct require resource consent as a **controlled** activity (Rule I208.4.1 (A5)).

3. The site at which the proposed activity is to occur is as follows:
   (a) That part of the coastal marine area comprising the Waitematā Navigation Channel Precinct and the Port Precinct.
   (b) The natural and physical characteristics and any adjacent uses that may be relevant to the consideration of the application are detailed within the assessment of environmental effects.

4. The other activities that are part of the proposal to which the application relates are as follows:
   (a) The proposal will require the positioning of new navigation buoys to the northern end of the Rangitoto Channel and the repositioning of associated navigation safety devices. This is a permitted activity pursuant to Rule F2.19.10(A129) and Rule I103.4.1(A1) of the Auckland Unitary Plan (Operative in part). The precise location of navigation buoys and safety devices has yet to be confirmed. In

accordance with the requirements of Standard F2.21.10.5 and Standard I103.6.1, written advice will be given prior to the work being undertaken to the council harbourmaster, and the National Topo/Hydro Authority at Land Information New Zealand at least five working days prior to the work being undertaken.

5. No additional resource consents are required for the proposal to which this application relates.

6. I attach an assessment of the proposed activity's effects on the environment that-
   (a) includes the information required by clause 6 of Schedule 4 of the Resource Management Act 1991; and
   (b) addresses the matters specified in clause 7 of Schedule 4 of the Resource Management Act 1991; and
   (c) includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.

7. I attach an assessment of the proposed activity against the matters set out in Part 2 of the Resource Management Act 1991.

8. I attach an assessment of the proposed activity against any relevant provisions of a document referred to in section 104(1)(b) of the Resource Management Act 1991, including the information required by clause 2(2) of Schedule 4 of that Act.

9. There is no further information required to be included in this application by the district plan, the regional plan, the Resource Management Act 1991, or any regulations made under that Act:

Signature: **Ports of Auckland Limited**
by its authorised agents Bentley & Co. Limited:

……...
Mark Arbuthnot
Date: 25 October 2019

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ASSESSMENT OF ENVIRONMENTAL EFFECTS

UNITARY PLAN INFORMATION

Zoning:	Coastal – General Coastal Marine Zone
Precinct:	Waitematā Navigation Channel Precinct Port Precinct
Overlays:	Cable Protection Areas Control [rcp]

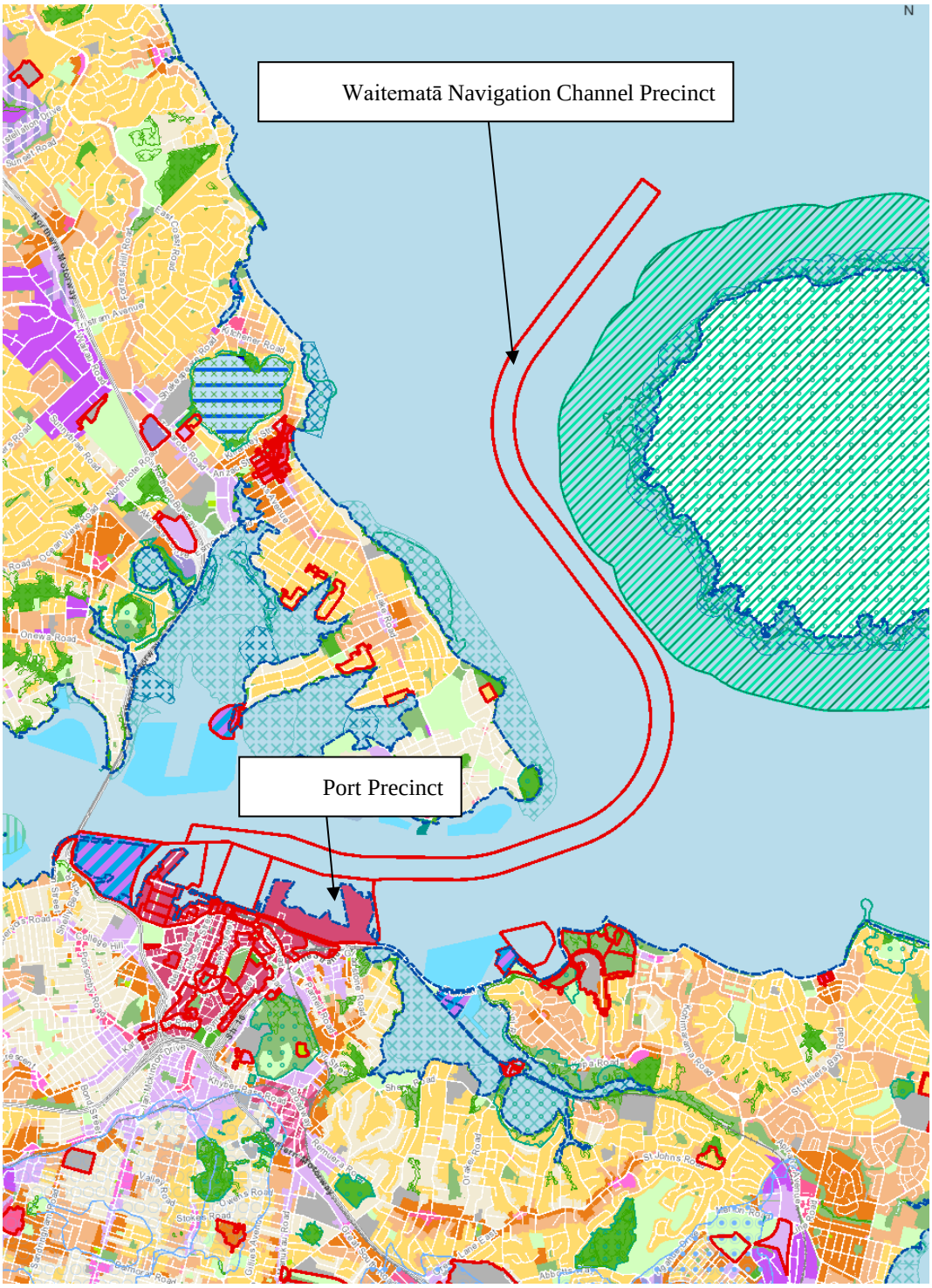

Figure 1 – Auckland Unitary Plan Map extract illustrating the extent of the Waitematā Navigation Channel Precinct and Port Precinct (red outline)

Figure 2: Aerial Photograph illustrating the extent of the Waitematā Navigation Channel Precinct and Port Precinct (red outline)

1 INTRODUCTION

1.1 All regions require an efficient and integrated transport network to provide for the transportation of people and goods. In Auckland's case, this integrated transport network must also cater for significant levels of growth, with more than 600,000 additional people expected to be living in Auckland by 2043.[1]

1.2 At a national level, the New Zealand Coastal Policy Statement ('**NZCPS**') recognises that a sustainable national transport system requires an efficient national network of safe ports which service national and international shipping, and which have efficient connections with other transport modes. The NZCPS seeks to ensure that the operation of ports and their connections with other transport modes, and to strategically consider where, how and when to provide in regional policy statements and in plans for the efficient and safe operation of ports, the development of their capacity for shipping, and their connections with other transport modes.[2]

1.3 In giving effect to the NZCPS, the Regional Policy Statement for Auckland recognises the national and regional significance of the Port of Auckland and its need to be located within the coastal environment by enabling the efficient and safe operation of the ports and their connections with other transport modes; enabling the safe navigation and berthing of vessels, including by dredging; and avoiding or mitigating the adverse effects of activities that may compromise efficient and safe port operations.[3]

1.4 Specific to the navigational approach to the Port of Auckland, the Unitary Plan includes the Waitematā Navigation Channel Precinct which aligns with the existing shipping channel and provides for the navigational requirements of marine and port activities and other vessels in the main channel leading in to the Waitematā Harbour. Dredging activities that are necessary to achieve safe and efficient navigation and berthage are also enabled within the Waitematā Navigation Channel Precinct.

1.5 The Port Precinct abuts the Waitematā Navigation Channel Precinct and contains the turning basins and berths for vessel loading and unloading, cargo storage and cargo handling activities. The Unitary Plan recognises that the coastal environment has already been modified by dredging, structures and port activities and that the land adjoining the coastal marine area provides for the infrastructure to service the marine and port activities. Dredging activities that are necessary to provide for the safe and efficient navigation, manoeuvring, and berthing of vessels are enabled within the Port Precinct.

1.6 The global trend in international shipping is that ships are getting bigger, driven by several factors including; the consolidation of shipping lines through acquisitions and mergers; the economies of scale; and the widening of the Panama Canal. The deep draught container ships (as opposed to general bulk ships or roll-on roll-off car carriers) dictate channel depth at most NZ ports, including Auckland. The longer cruise ships can dictate channel alignment (bend radius) rather than channel depth.

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1 Statistics New Zealand; Area unit population projections, by age and sex, 2013(base)-2043 update.
2 NZCPS, Policy 9: Ports.
3 Policy B8.3.2(8); Auckland Unitary Plan (Operative in part).

1.7 This trend to increasing ship size has been underway for some time as seen by the freight throughput through the Port of Auckland increasing while the number of ship calls has been relatively static over the past decade.

1.8 Ports of Auckland Limited's ('**POAL**') previous capital dredging, consented in 2001 and completed in 2007, was designed to cater for container vessels up to 4,100 TEU[4] – although container ships in the 4,000 – 5,000 TEU range now routinely call at the Port of Auckland. The largest container ship to call at the Port of Auckland has a capacity of around 6,000 TEU (although this ship was lightly loaded so could access the channel). Similarly, the world's second largest cruise ship class (with a length of up to 350 metres) are already calling at Auckland.

1.9 The global trend of container ships getting larger is best demonstrated in *Figure 3* below, which shows the global orders for new container ships as at March 2019. 22% of new build container ships are under 3,999 TEU in size and 78% of the container ships are above 10,000 TEU in capacity.

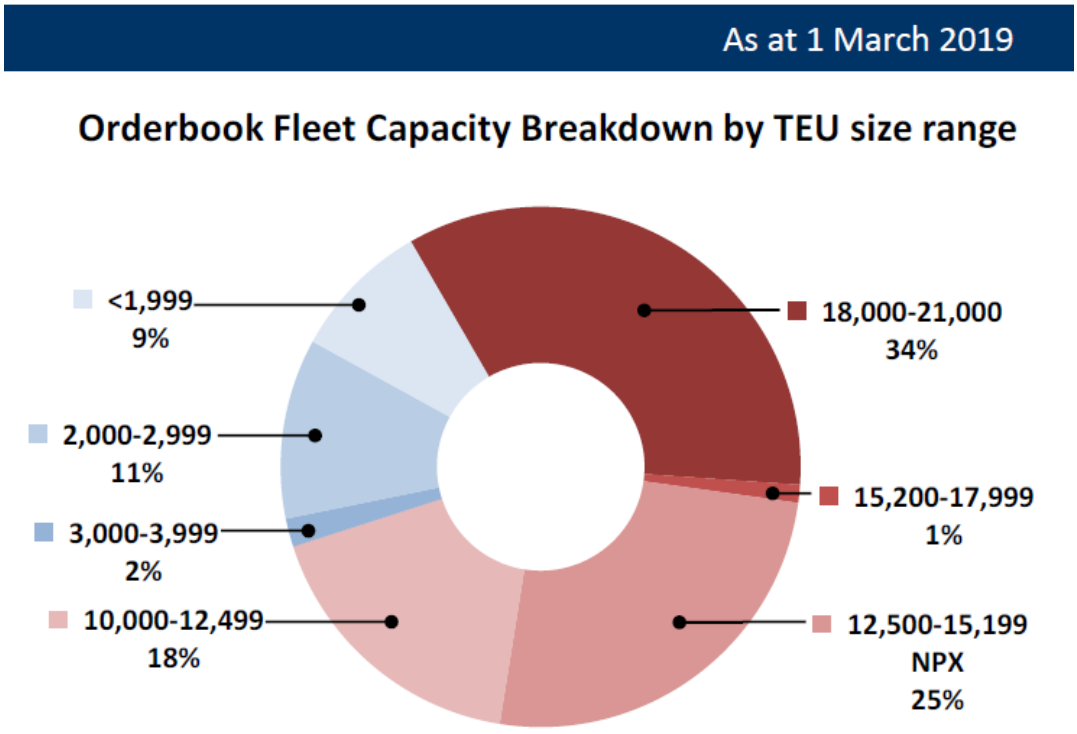

Figure 3: Container Ship Fleet Order Book - Alphaliner Monthly Monitor March 2019

1.10 These larger container ships (above 10,000 TEU) are being constructed and deployed on to the west-east trades (trans-Atlantic and Asian routes). This is turn displaces the existing ships off these routes on to other routes. The trend is known in the shipping industry as "cascading", where deployment of the new build ships on to the west-east trades is cascading ships from these routes on to the north-south routes including New Zealand and Australia.

1.11 International shipping operates on scheduled services with the same vessel calling at multiple ports on a planned schedule. As ship sizes increase, so does the need for all ports of call on a given route to develop so they can cater for them.

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[4] The term 'TEU' relates to a twenty-foot equivalent unit and is a method to describe the capacity of container ships and container terminals. It is based on the volume of a 20-foot-long container.

1.12 Based on industry trends, POAL expects container ships of between 6000 and 7000 TEU to be regularly calling into Auckland within the next 2-3 years and expects to host the new "Panamax" class ships of around 12,000 TEU within the next 10-15 years. As a result, the Rangitoto shipping channel, the approaches to the Fergusson Container Terminal and the Fergusson North berth all need to be progressively deepened to safely accommodate this staged increase in container ship size.

1.13 Given this trend, all major New Zealand ports, including Port of Tauranga, Lyttleton Port, Port of Napier and Port Otago have already deepened their shipping channels (or plan to deepen their shipping channels) to cater for these same larger vessels.

1.14 POAL envisaged the need to accommodate both increased ship sizes and increased freight volumes in its 30-Year Master Plan, released in 2018. Following public consultation and feedback, the Master Plan received the support of Auckland Council in May 2018.

1.15 The Master Plan aims to accommodate the foreseeable growth over the next 30 years, brought about by the growth in Auckland's population and Auckland's freight task, while providing time for the Port's owner, Auckland Council, to address the question of its future location.

1.16 The Master Plan identifies a range of projects required to maintain and optimise the capacity of the Ports of Auckland, including identifying the need to deepen the Rangitoto shipping channel to keep up with the increasing size of container vessels that will call at the port over the foreseeable future.

1.17 In order to provide for the safe and efficient navigation and manoeuvring of larger vessels that are likely to call at the Port of Auckland into the future, POAL proposes to undertake the capital works dredging of the Rangitoto shipping channel (located within the Waitematā Navigation Precinct and the Port Precinct) in 2 stages. The first stage will deepen the navigation channel to a depth of -13.5m below Chart Datum, the Fergusson approaches to -13.0m and the Fergusson North berth pocket to a depth of -15.2m. The second stage will deepen the navigation channel to -14m (-14.2m on the bends) and -13.5m in the Fergusson Approaches.

1.18 POAL will continue to utilise tidal windows for the larger ships expected to call at the Port of Auckland. The required channel depths have been determined following simulation of the Stage 1 and Stage 2 "design" vessel requirements by POAL Pilots. Simulations are undertaken to ensure that ships can safely navigate the channel at an adopted speed. The "design" vessels for Stage 1 and Stage 2 dredging will be limited to a 3 hourly tidal window at the top of the tide (around high tide). Tidal windows are adopted by most ports around the world to balance port access requirements whilst minimising the extent of dredging. POAL has adopted a 3 hourly tidal window for the design vessels to minimise the extent of dredging (as opposed to deepening even further to accommodate these ships at all stages of the tide cycle).

1.19 As a large ship enters the port at the top of the tide (during its tidal window), it must remain at its berth for loading/unloading during the full tidal cycle (including low tide). Therefore, the berth pocket (alongside the wharf) must be dredged to a greater depth to accommodate the ship during all stages of the tide. This application includes capital dredging of the existing Fergusson North berth pocket for this reason. The adjacent wharf structure and batter have been designed and constructed for this increased depth.

2 DREDGING HISTORY OF THE SHIPPING CHANNEL

2.1 Dredging of the shipping lane and approaches has been undertaken for over fifty years, with barge-mounted excavators and clamshell dredgers used as the main method of dredging for the past twenty-five years. Dredging campaigns since the late 1960s have included:

(a) 1968-early 1970s: approximately 40,000m^3 of capital dredging using a trailing suction hopper dredger and a bucket dredger.

(b) 1973-1976: average maintenance dredging of 183,000m^3 per year in the Waitematā Harbour using a bucket dredger.

(c) 1974-1976 and 1977-1979: approximately 750,000 to 1,150,000m^3 of capital dredging using a trailing suction hopper dredger, bucket dredger and suction dredger.

(d) 1986: maintenance dredging of 10,000m^3 using a grab dredger.

(e) 1988-1990: maintenance dredging of 23,000m^3 using a clamshell bucket fitted to a barge-mounted crane.

(f) 1992: maintenance dredging of 262,000m^3 using a trailing suction hopper dredger.

(g) 1995-1997: maintenance dredging of approximately 40,000m^3 per year using a barge-mounted clamshell dredger.

(h) 2004-2007: approximately 600,000m^3 of capital dredging using a barge-mounted excavator and hopper barges and sweeping to smooth seabed contours.

(i) 2004-2007: maintenance dredging of approximately 20,000m^3 per year using a barge-mounted excavator and hopper barges and sweeping to smooth seabed contours.

(j) 2007- present: approximate average of 15,000m^3 per year maintenance dredging using a barge-mounted excavator and hopper barges and sweeping to smooth seabed contours.

3 HISTORIC DREDGING PERMITS (NOW EXPIRED)

Capital dredging permit 24730

3.1 Capital dredging permit 24730 was granted by the Minister of Conservation on 19th April 2002 and enabled the removal of 1,000,000m^3 (in situ) from the Rangitoto channel and the approaches and berth areas of the Port of Auckland to achieve a maximum navigable depth of 13m below Chart Datum.

3.2 *Figure 4* below illustrates the location of these dredging works. The Rangitoto channel was ultimately dredged to a depth of 12.7m to 12.8m in 2007.

3.3 Two variations (under s.127 of the RMA) to the capital works permit were granted by Auckland Council:

(a) changes to the monitoring conditions to enable trial dredging to be undertaken in one part of the channel prior to the commencement of the main dredging programme (30th July 2003); and

(b) changes to the conditions relating to the timing of benthic sampling (granted 8th April 2009).

3.4 No applications were made to re-consent the capital dredging permit (s.124 of the RMA), and as such was given effect to (to the extent of the works undertaken) and expired on 18 April 2010.

Maintenance dredging permit 25427

3.5 The maintenance dredging permit was also granted by the Minister of Conservation on 19th April 2002, and authorised the removal of 5,000m^3 of material per annum (or the equivalent accumulated amount for a period of no more than 5 years – up to 25,000m^3) from the corresponding area of the Rangitoto channel and the approaches and berth areas of the Port of Auckland that were subject to capital dredging permit 24730.

3.6 The duration of the maintenance dredging permit is 15 years from the date of commencement and expired on 18 April 2017.

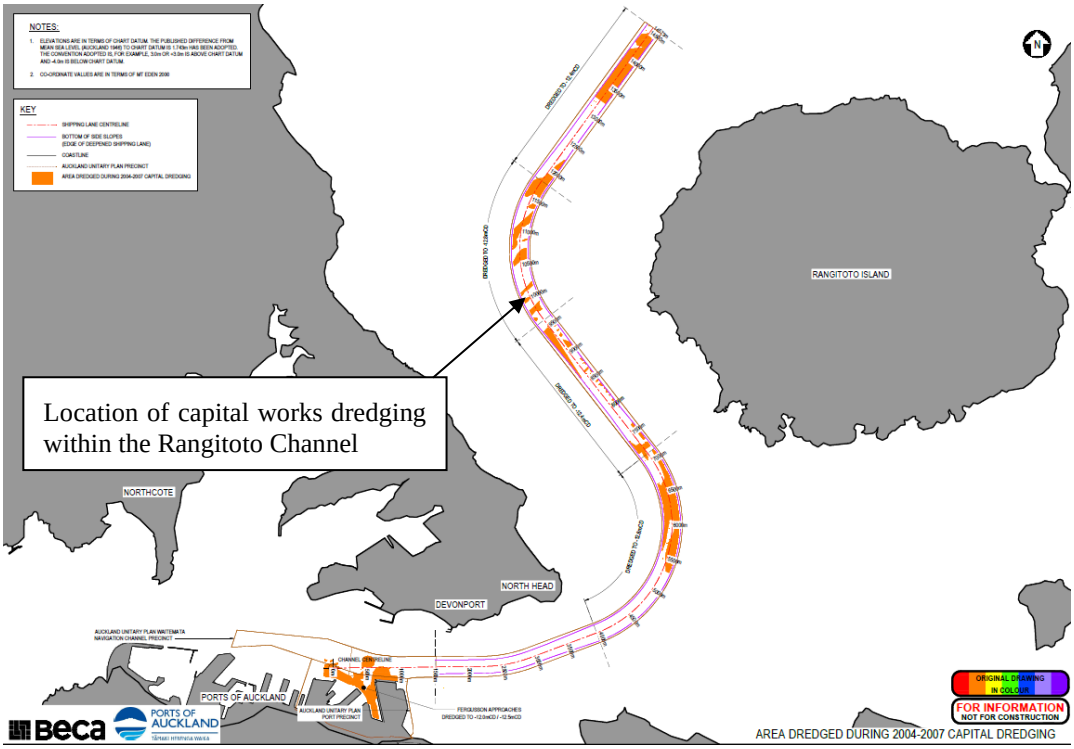

Figure 4: Location of historic capital works dredging (shaded green)

4 RELEVANT PERMITS HELD

Maintenance dredging permit R/REG/2016/3946

4.1 POAL is the holder of a maintenance dredging permit (ref. R/REG/2016/3946) which was granted by Auckland Council on 20th November 2016 and authorises the removal of 15,000m^3 of sediment (or the equivalent accumulated amount of up to 75,000m^3 for a period of no more than 5 years) to:

(a) maintain the seabed depths achieved under capital dredging permit 24730; and

(b) enable the removal of any accretion that occurs in areas where no capital dredging works have been undertaken to maintain the existing recorded depths of the seabed.

4.2 The coastal permit expires on 4th November 2036. A copy of the coastal permit is appended to this application as **Attachment 1**.

Maintenance dredging permit 34673

4.3 POAL is also the holder of a maintenance dredging permit (ref. 34673) that enables an average of 35,000m^3 of sediment to be dredged from the seabed annually within the berths and approaches that are located within the former downtown Port Management Areas under the former Auckland Regional Coastal Plan (now the Port Precinct, Central Wharves Precinct, Viaduct Harbour Precinct and Wynyard Precinct. This consent expires on 31st August 2027 and is appended as **Attachment 2**.

Marine dumping consent EEZ400011

4.4 POAL holds marine dumping consent EEZ400011, which was granted by the Environmental Protection Authority on 27th June 2019 under the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 ('**EEZ Act**') and authorises the dumping of the following at the Cuvier Disposal Site:

(a) No more than 50,000m^3 of dredged material from maintenance dredging, nor more than 400,000m^3 of dredged material from capital dredging in any consecutive 12-month period.

(b) No more than a total volume of 2,000,000m^3 of dredged material from capital dredging over the term of the consent.

4.5 The marine dumping permit expires on 27th June 2054.

5 SITE DESCRIPTION

5.1 The subject area of this application relates to the shipping channel, turning basins, and ship manoeuvring areas that are located within the Waitematā Harbour and inner Hauraki Gulf, as well as the approaches to the Fergusson Terminal of the Port of Auckland.

5.2 The subject area excludes the berthing areas of the Viaduct, Central Wharves, Wynyard and Westhaven Precincts of the Coastal – General Coastal Marine Zone.

5.3 The extent of the subject area relates to that part of the Waitematā Navigation Channel Precinct and Port Precinct shaded red in *Figure 5* below.

5.4 The CMA in the Waitematā Navigation Channel Precinct is one of the most traversed areas of the Waitematā Harbour, servicing not only vessels calling at the Port of Auckland, but also other vessels associated with the Devonport Navy Base, the Chelsea Sugar Refinery, Panuku Development Auckland (as the owner of Wynyard Wharf and super yacht facilities) and Viaduct Harbour Holdings (as the owner of yacht facilities).

5.5 Despite this, POAL is the only party who dredges the channel and maintains the navigation buoys to provide for the safe navigation of commercial shipping, to the significant benefit of all harbour users.

5.6 POAL's customers are entirely dependent on the Waitematā Navigation Channel to access the Port of Auckland, as it is the only route available for large ships to access the Port, as there are no naturally deep alternative routes available.

5.7 The plan appended as **Attachment 3** confirms the existing water depths within the Waitematā Navigation Channel that were established from the 2004 capital dredging campaigns.

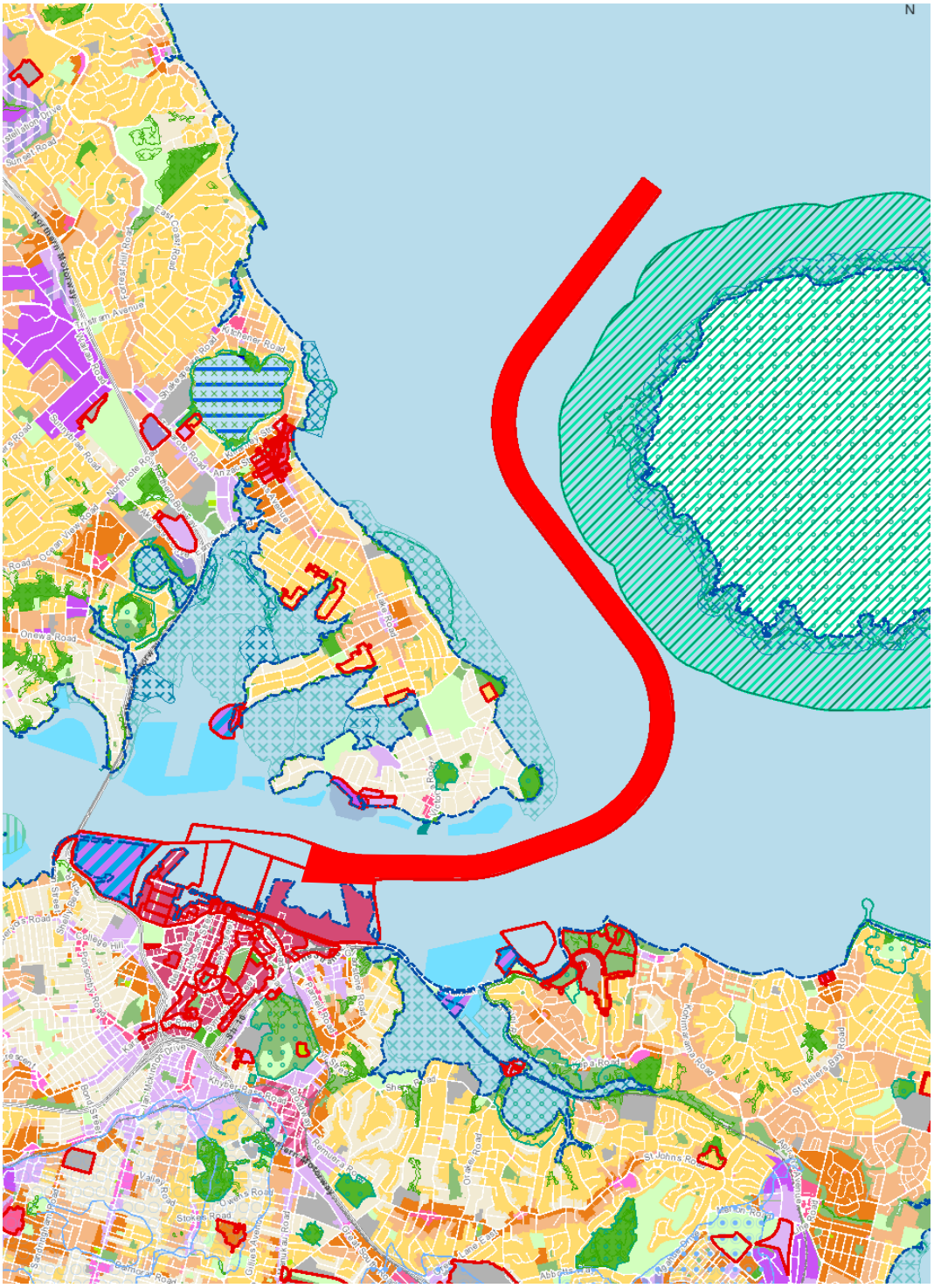

Figure 5: Application subject area (red)

5.8 Section 4 of the Coastal Processes Assessment Report prepared by Beca Limited ('**Beca**') (refer to **Attachment 4**) provides detailed information in respect of the existing bathymetry, wind characteristics, tides and currents, waves and wakes, sediment types and sediment processes, natural hazards, and submarine services and cables within the subject area.

5.9 The Assessment of Effects prepared by Kennedy Environmental Limited ('**KEL**') (refer to **Attachment 5**) provides detailed information in respect of the sediment quality, water quality, intertidal and benthic ecology and other fauna within the subject area.

6 THE PROPOSAL

6.1 POAL seeks consent to undertake capital works dredging and ongoing maintenance dredging activities within the Waitematā Navigation Channel Precinct and the Port Precinct.

6.2 Section 2 of the Coastal Processes Assessment Report prepared by Beca sets out the detail of the proposal; a summary of which is provided below.

Capital works dredging

6.3 The depth of dredging required to be undertaken within the Rangitoto shipping channel has been determined through a design and simulation process. The channel is proposed to be deepened from its existing depth of -12.5m CD to -14.0m to -14.2m CD. At this stage, it is intended that the deepening will occur in two stages, as summarised in *Table 1* below.

Table 1: Summary of dredge depths

Location	Width	Design Depth (Stage 1)	Design Depth (Stage 2)
Shipping lane - bends	250m	-13.5m CD	-14.2m CD
- straights	200m	-13.5m CD	-14.0m CD
- tapers	varies 200m – 250m	-13.5m CD	-14.0m CD
Fergusson approaches	Varies	-13.0m CD	-13.5m CD
Fergusson North Berth	60m	-15.2m CD	

6.4 A combined volume of up to 2,500,000m^3 of seabed material is proposed to be removed from the Rangitoto channel and the Fergusson approaches. *Table 2* below summarises the approximate dredging volumes that are anticipated to occur, including over dredge allowances. The precise detail of the dredging volumes may be subject to change, however will not exceed the maximum combined volume of 2,500,000m^3.

Table 2: Estimated dredging volumes by stage and location (in situ volume)

Location	Stage 1 (indicative)		Stage 2 (indicative)		Dredged Volume Subtotal (m^3)
	Dredged Depth (m CD)	Dredged Volume (m^3)	Dredged Depth (m CD)	Dredged Volume (m^3)	
Shipping lane – bends, straights and tapers	-13.5 (max depth)	680,000	-14.2 (max depth)	1,570,000	2,250,000
Fergusson approaches	-13.0	70,000	-13.5	120,000	190,000
Fergusson North Berth	-15.2	60,000	-15.2	0	60,000
Total		810,000		1,690,000	2,500,000

6.5 Consistent with the previous capital works dredging campaign, the shipping lane and approaches will be dredged as "box cut" cross sections with vertical sides, which will reach its natural repose to form the final side slopes. The maintenance dredging activities will remove any slumped material that is impacting on shipping depths.

6.6 The dredged material will be mainly marine muds, mixed with sand and shell, and Waitematā Group sandstones and siltstones in some locations. Approximately

15,000m^3 of harder Parnell Grit rock is estimated as being required to be removed as part of the capital works dredging.

6.7 A 15-year duration is sought in respect of the capital works dredging activities that will be enabled by the proposal.

Maintenance dredging

6.8 Consistent with maintenance dredging permit R/REG/2016/3946, and in order to maintain the seabed achieved under the capital works dredging, it is proposed to remove the equivalent accumulated amount of up to 75,000m^3 of material over any five-year period. The maintenance dredging activities will include:

(a) the maintenance of seabed depths achieved under the capital dredging works;

(b) the removal of any slumped material that is impacting on shipping depths; and

(c) the removal of any accretion that occurs in areas where no capital dredging works have been undertaken to maintain the existing recorded depths of the seabed.

6.9 The maintenance dredging activities that are subject to this application will be limited to the Waitematā Navigation Channel Precinct and that part of the Port Precinct that is occupied by the Fergusson North berth. The existing maintenance dredging permit (ref. 34673) for the berths and approaches of the balance of the downtown Port Management Areas will continue to apply and are not proposed to be altered.

6.10 A 35-year duration is sought in respect of the maintenance dredging activities that will be enabled by the proposal.

6.11 A lapse date of 10 years is sought under section 125 of the RMA for the proposed maintenance dredging activities. This is necessary because maintenance dredging activities will not be required immediately following the completion of each stage of the capital works dredging (it is anticipated that maintenance dredging activities will be required to be undertaken 3 or 4 years following the completion of any capital works dredging). A 10-year timeframe will provide POAL with the necessary flexibility in managing the staging of the capital works dredging activities.

Dredging methodology

6.12 As outlined within the Coastal Processes Assessment report prepared by Beca, mechanical dredging will be used to deepen the shipping lane and approaches. One barge-mounted hydraulic excavator (backhoe dredger) will be used to excavate material and load it into hopper barges. The typical backhoe dredger employed in New Zealand for channel dredging is approximately 40-50m long and fitted with spuds, which hold the vessel in place while dredging. Production rates are typically up to 1,000m^3 per 10-hour day.

6.13 The dredger is expected to remain operating in the shipping lane, except when forced to move to shelter by poor weather, or to move temporarily out of the shipping lane to allow commercial shipping to pass, or on event days when dredging will not take place (i.e. Auckland Anniversary Day, Prada Cup and America's Cup race days).

6.14 A sweep bar (a horizontal bar towed at seabed-level behind a boat) will be used to smooth seabed contours following the dredging, as has been standard practice on previous dredging campaigns.

6.15 A similar approach to that described above was used for the 2004-2007 shipping lane deepening (shown in Figure 2) and is used for much of the current dredging in the Auckland region for POAL, Panuku Development Auckland, the America's Cup project and marina operators.

6.16 The disposal of the dredged material does not form part of this application for resource consent. The disposal of the dredged material (including its rate, volume and timing) is intended to be undertaken in accordance with the terms and conditions of marine dumping consent EEZ400011. To the extent that the volume of dredged material exceeds the limits imposed under the marine dumping consent, POAL will find alternative methods to dispose of any excess material.

Dredging noise

6.17 The Waitematā Navigation Channel Dredging Noise Assessment prepared by Marshall Day Acoustics (**Attachment 6**) has undertaken measurements of the existing airborne and underwater noise environments, quantified the airborne and underwater noise emissions of the proposed activities, and provides relevant compliance and noise effects assessments. In summary:

(a) The closest residential zoned sites are in Stanley Point and Devonport, approximately 550 metres north of the Waitematā Navigation Channel Precinct boundary. Dredging noise levels of up to 47 dB L_{Aeq} are predicted at the closest properties fronting the harbour edge. Noise levels in Parnell and Ōrākei are predicted to be below 40 dB L_{Aeq}. Therefore, dredging west of Bean Rock is predicted to exceed the 40 dB L_{Aeq} night-time noise limit in Stanley Point or Devonport by up to 5 – 7 decibels at the closest receiver. Although, as the assessment notes, the noise levels are predicted to be similar to the existing coastal noise environment, both in terms of level and character, and are acceptable for short periods and readily mitigated by closing windows to reduce noise levels if necessary.

(b) The existing underwater noise environment is controlled by vessel movements. Proposed back-hoe dredging activities are relatively quiet and tug and barge movements are comparable to other medium to large vessels currently operating in the Channel. Larger ships enabled by the deepening works are predicted to be marginally louder, but significantly mitigated by the POAL Hauraki Gulf Transit Protocol 10 knot speed limit applying to the Channel approach.

6.18 Dredging activities are required to be undertaken at night within the Fergusson North Berth to ensure that disruption to the operation of the berth is minimised. The assessment of Marshall Day Acoustics confirms that noise levels will be up to 40 dB L_{Aeq} at the closest residential site in Devonport.

6.19 In order to ensure that the capital works and maintenance dredging activities achieve compliance with the relevant noise standards of the Unitary Plan, and to avoid a situation whereby windows are required to be closed to mitigate short-term night-time noise effects, it is proposed not to undertake dredging works west of a line between North Head and Bastion Point (not including the Fergusson North Berth) during the night-time period (10pm – 7am).

7 CONSULTATION

7.1 The applicant has consulted widely in respect of the proposal. A summary of the consultation and the responses received is appended to this application for resource consent as **Attachment 8**.

8 REASONS FOR THE APPLICATION

8.1 An analysis of the proposal against the relevant provisions of the Auckland Unitary Plan (Operative in part) ('**Unitary Plan**') and is appended to this application for resource consent as **Attachment 9**. Without limitation, resource consent has been assessed to be required for the following reasons:

Auckland Unitary Plan (Operative in part)

Capital works dredging

- The proposal involves capital works dredging activities within the Waitematā Navigation Channel Precinct. This is a restricted discretionary activity pursuant to Rule I103.4.1(A3) of the Auckland Unitary Plan (Operative in part).
- The proposal involves capital works dredging activities within the Port Precinct. This is a restricted discretionary activity pursuant to Rule I208.4.1(A6) of the Auckland Unitary Plan (Operative in part).

Maintenance dredging

- The proposal involves maintenance dredging activities within the Waitematā Navigation Channel Precinct. This is a controlled activity pursuant to Rule I103.4.1(A2) of the Auckland Unitary Plan (Operative in part).
- The proposal involves maintenance dredging activities within the Port Precinct. This is a controlled activity pursuant to Rule I208.4.1(A5) of the Auckland Unitary Plan (Operative in part).

8.2 Overall, resource consent is required as a **restricted discretionary** activity.

9 ASSESSMENT OF EFFECTS ON THE ENVIRONMENT

9.1 In respect of the elements of the proposal that require resource consent as a restricted discretionary activity (capital works dredging within the Waitematā Navigation Channel Precinct and the Port Precinct), Council must only consider the matters over which it has restricted its discretion in the Unitary Plan; being the matters contained within:

(a) F2.23.1(1) – all restricted discretionary activities.

(b) I103.8.1(1) – capital works dredging (Waitematā Navigation Channel Precinct).

(c) I208.8.1(3) – capital works dredging (Port Precinct).

9.2 In respect of those elements of the proposal that require resource consent as a controlled activity (maintenance dredging within the Waitematā Navigation Channel Precinct), the Council must grant resource consent, and may only impose conditions in respect of the matters over which it has reserved its control in the Unitary Plan; being:

(a) I103.7.1(1) – maintenance dredging (Waitematā Navigation Channel Precinct).

(b) I208.7.1(1) – maintenance dredging (Port Precinct).

9.3 The matters over which Council has restricted its discretion in relation to the proposed capital works dredging activities set out within F2.23.1(1), I103.8.1(1) and I208.8.1(3) of the Unitary Plan overlap, and are summarised below as follows:

(a) the effects of construction works methods, and the timing and hours of operation;

(b) the effects of the location, extent, design and materials;

(c) effects on coastal processes, ecological values, water quality including the release of any contaminated sediment, and natural character and landscape values;

(d) effects on public access, other users of the coastal marine area, harbour traffic, and navigation and safety;

(e) effects on existing uses and activities (including significant infrastructure);

(f) effects on Mana Whenua values;

(g) effects on historic heritage; and

(h) consent duration and monitoring.

9.4 The matters over which Council has reserved its control in relation to the proposed maintenance dredging activities set out within I103.7.1(1) and I208.7.1(1) of the Unitary Plan are the same, and are summarised as follows:

(a) the effects on water quality;

(b) the effects on harbour traffic, navigation and safety; and

(c) monitoring

9.5 It is not considered necessary to consider other effects on the environment as the Unitary Plan is unable to control such effects.

9.6 The following analysis is provided in respect of the above matters of discretion and control, and their associated assessment criteria. As set out within section 2 of this assessment of environmental effects, the subject area of the coastal environment has been subject to dredging activities since the 1960's. Therefore, the effects of the dredging activities need to be considered in the context of an environment that has been modified by historic dredging activities.

The effects of construction works methods, and the timing and hours of operation

9.7 No construction activities are proposed to be undertaken in respect of the capital works and maintenance dredging activities.

The effects of the location, extent, design and materials

9.8 As no building works are proposed, there will be no materials placed in the coastal marine area.

Effects on coastal processes

9.9 Section 5 of the Coastal Processes Assessment Report prepared by Beca assesses the effects of the capital works dredging activities on coastal processes. In summary:

(a) The proposed deepening will increase the mid-tide cross sectional area of the Rangitoto Channel by less than 2%. The deepening in the Fergusson approaches will similarly increase the mid-tide cross sectional area by less than 2%. These small changes in cross-sectional area are considered negligible.

(b) Deepening of the shipping lane and approaches will have a negligible effect on tidal amplitude (the range between high water and low water levels) and tidal phases (patterns of spring and neap tides) as these are caused by large scale oceanic movement of water, driven by solar and lunar forces. The deepening will not measurably affect tide levels as the dredged area is sub-tidal.

(c) Current velocities for most of the Rangitoto Channel and Waitematā Harbour are expected to be negligibly affected by the proposed deepening.

(d) The effects of the proposed deepening on the wave climate are negligible in scale. Net effects for individual extreme wave conditions relative to the surf breaks are overall less than minor, noting the infrequency of these conditions and that the average scale of change is -2% to 0.3%.

(e) Vessel wake from the larger commercial shipping travelling at 7-9 knots in the deepened shipping lane (as required by POAL's pilots) will create wake heights of 0.08m to 0.2m for a 366m-long vessel with a 15.2m draught at mid-tide. This compares with a calculated wake height of 0.3m to 0.4m for a typical 270m-long container ship travelling at 10 knots. The slower speeds, and to a lesser degree the increased shipping lane depth, notably reduce wake height. The effect of the wake generation from larger ships is negligible.

(f) Changes in the wave climate and currents at the surf break locations, and hence changes in beach processes that may have the potential to alter surf break characteristics, are negligible.

(g) Suspended sediment effects from the proposed dredging will be localised and temporary. Increases in suspended solids will be less than 2% of the total sediment flux per tide. The effects of the proposed dredging on suspended sediment levels have been assessed to be less than minor.

(h) Based on previous studies and the monitoring during and post the previous dredging campaign, the proposed deepening will not have a detectable effect on sedimentation in the Rangitoto Channel and Waitematā Harbour.

(i) Previous studies have concluded that exposure of underlying finer sediment was unlikely to lead to enhanced entrainment and transport of this material. In addition, bathymetric surveys following the 2004-2007 dredging campaign have not indicated active erosion of exposed material. The proposed deepening has therefore been assessed to have negligible effects on the erodibility of the seabed exposed by the dredging.

(j) The effects of seal level rise and tsunami have also been taken into consideration and no adverse effects of concern have been identified within the Coastal Processes Assessment Report.

9.10 Having regard to the analysis undertaken by Beca, the adverse effects of the capital works dredging activities are considered to be minor at worst. Given the limited level of effects that will be generated, no specific mitigation measures (beyond the dredging methodology) have been identified within the analysis of Beca to avoid, remedy or mitigate the effects of the capital works dredging activity on the environment.

Effects on ecological values

9.11 The effects of the capital works dredging activities on ecological values have been assessed in detail within Section 8 of the Assessment of Effects that has been prepared by KEL.

Seabirds

9.12 Given the localised nature of water quality changes (turbidity) derived from the capital works dredging activities in relation to the scale of the coastal marine area between the Fergusson north berth approaches and the northern end of the Rangitoto Channel, the analysis of KEL confirms that no effects on coastal bird species are anticipated from sediment plumes.

9.13 No increased risk to coastal bird species is expected to arise from the vessel movements associated with dredging activities. The level of dredging activity movement has been assessed by KEL to be minor by comparison with all commercial and recreational vessel traffic using the area.

9.14 The majority of coastal birds are exposed to airborne noise rather than underwater noise. Coastal birds likely to be present within an area affected by underwater noise will be diving birds, which typically only underwater for a short period of time. Overall, KEL advises that TTS zones are expected to be very small as the duration of exposure is very short, and that although a range of coastal birds feed within the Rangitoto Channel, the most significant open water feeders are found in numbers typically further out in the Hauraki Gulf.

Marine mammals

9.15 In terms of vessel strike, the analysis of KEL confirms that the speed restrictions that have been set by POAL within the Hauraki Gulf are effective at reducing the potential for larger vessels to strike large marine mammals. Provided that the dredge tug and barge travel within this speed restriction, KEL confirms that dredging vessel movements are unlikely to make contact marine mammals within the Precinct. Commercial vessels will continue to travel at speeds within the restriction, thereby ensuring that vessel marine mammal strike is minimised.

9.16 Given the localised nature of distinguishable TSS plumes downstream of dredging activity (less than 200 metres), and the frequency of occurrence of individual or groups of marine mammals in the lower Waitematā Harbour, no effects of suspended sediment through changes in visual clarity (relating to prey gathering, behavioural activity etc.) are anticipated to occur by KEL.

9.17 The effects of underwater noise (from both dredging activities and vessel movement) on marine mammals have been assessed by Marshall Day. For dredging activities, the analysis of Marshall Day confirms that:

(a) There is no risk of auditory injury, regardless of species or exposure duration.

(b) The NOAA behavioural effects onset threshold of 120 dB re. 1 μPa RMS (unweighted) was measured at 25 metres from the dredging platform.

9.18 In terms of the underwater noise effects that will be generated by the larger vessels that will be able to utilise the channel on a more frequent basis, the analysis of Marshall Day has confirmed that the underwater noise levels would increase by 1 decibel, which has been assessed to not be materially different to the existing situation within this part of the Hauraki Gulf.

Fish

9.19 The analysis of KEL confirms that overall, plumes from excavator dredging activity occur as pulses with gaps in generation when dredging is not being carried out. Pulse generated plumes reduce exposure duration. Concentrations of TSS predicted and measured during excavator dredging in the Rangitoto Channel are lower than concentrations identified as having adverse effects on fish such as snapper. The effects on local adult fish from TSS are expected to be localised and minor at worst.

9.20 Although average TSS concentrations measured in the lower Waitematā Harbour and Rangitoto Channel have been assessed by KEL to be higher than the lowest concentrations of TSS predicted to result in the avoidance of effects on snapper larvae, the ambient concentrations may have little effect on snapper and TSS

concentrations from the dredging activities will reduce rapidly to ambient concentrations such that they are not expected to have effects on fish eggs or larvae or flow-on effects on local fish populations.

9.21 The underwater noise effects of the dredging activities on fish have been assessed by Marshall Day, who have confirmed that:

(a) There is no direct evidence of mortality or potential injury to fish from vessel noise. Furthermore, studies on the behavioural impacts from noise on fish are very limited and there are no widely accepted or validated guideline criteria. This is partly due to the practicalities of conducting such studies in the field, as well as the potential for large variations in responses across all fish species.

(b) Given the lack of available evidence or validated criteria, quantitative guidelines for the behavioural impact of fish are not provided in ASA S3/SC1.4-2014, and instead a subjective risk assessment approach is used. It notes there is potential for signal masking and changes in behavioural response close to moving vessels.

Biosecurity risks

9.22 The analysis of KEL concludes that there are a large number of non-indigenous species within the Waitematā Harbour and a smaller number known from the Rangitoto Channel. Although dredging has the potential to spread unwanted species through fragmentation, most species found in subject area sediments are already distributed beyond the Waitematā Harbour. Controls will be included to minimise the potential for the transfer of unwanted terrestrial pests to Rangitoto Island while working within the Rangitoto Channel. The draft proposed conditions of consent that are appended as **Attachment 11** set out the detail in this regard.

Habitat changes

9.23 No specific habitat loss of significance within the Fergusson terminal approaches is anticipated by KEL, given the area involved relative to the total area of deeper subtidal waters between the harbour bridge and Devonport.

9.24 Within the Rangitoto Channel, no changes in the nature of habitat are expected in the northern section of the channel where the seabed is dominated by fine muddy sands with minor amounts of shell. That said, within the balance of the channel, habitat changes will be variable at scales of tens to hundreds of metres and are principally determined by shell hash redistribution.

9.25 Re-colonisation and development of community structure similar to that present pre-dredging is predicted by KEL to occur over a shorter period of time in muddy sands at the north end of the channel. Elsewhere within the channel, colonisation will depend upon the amount of shell debris at the surface and the shell armouring process that will occur over time. The return of those areas identified as supporting sponges is expected to take longer than in areas where sponges were not present.

9.26 Based on information from post dredging sampling carried out by POAL, the analysis of KEL anticipates that it will take at least five years for benthic communities within the main body of the channel to achieve some similarity to pre-dredging biological abundance and richness. As the overall stage 1 and 2 dredging programmes will occur over a period of time, the channel will exhibit a patchy re-establishment of biological communities that will be similar to those present pre-dredging.

Food web/ecosystem

9.27 The analysis of KEL confirms that when dredging commences there will be a progressive change in the amount of biomass derived from infauna and epifauna within the channel. Over the period of dredging across both stages, the amount of biomass will reduce in the early period of dredging but as dredging reaches completion, areas dredged earlier will have reached and passed through the opportunistic colonisers phase. By the time southern section of the channel has reached a state with some similarities to its pre-dredging state, the northern section will be past the initial re-colonisation stages. As such, the analysis of KEL advises that at any point in time during the dredging, the channel will not be in the same stage of minimal post biomass state.

Ecological values

9.28 Overall, if re-colonisation follows the trend seen post the previous capital dredging, KEL anticipates that the ecological values will return to similar levels or values to those present currently.

9.29 Having regard to the above matters and the analysis of KEL, it is considered that the adverse ecological effects of the capital dredging activities will be minor at worst.

Effects on water quality including the release of any contaminated material

9.30 Sections 8.2 and 8.3 of the Assessment of Effects that has been prepared by KEL to assesses the effects of the capital dredging activities on water quality and forms the basis of the following analysis.

9.31 Apart from suspended sediment, the analysis of KEL confirms that sediment disturbance during dredging releases a wide range of constituents to the water column. No significant releases are expected from sediments within the subject area.

9.32 The release of arsenic, nickel and ammonical-nitrogen is expected to occur from the capital works dredging activities. Minor dilution is required to reduce ammonia concentrations below ANZEEC (2018) water quality DGV (where they exceed the DGV in the elutriate) and this occurs within a short distance of the point of excavation (metres). No effects are anticipated in relation to other water quality changes such as reductions in dissolved oxygen or increases in the concentration of nitrogen or phosphorus downstream of the excavator.

9.33 Having regard to the analysis of KEL, the adverse effects of the dredging activities on water quality, including the release of any contaminated material, will be minor at worst.

Effects on natural character and landscape values

Natural character

9.34 As set out within section 2 of this assessment of environmental effects, the subject area of the coastal environment has been subject to dredging activities since the 1960's. As a result, the natural character of the shipping channel is one that has been modified by historic dredging activities and it is against this modified existing environment that the application is required to be assessed.

9.35 The dredging activities are not located within any identified areas of outstanding natural character or high natural character. The preceding analysis has confirmed that the proposal will not result in any significant changes to:

(a) coastal processes;

(b) natural landforms such as surf breaks;

(c) ecology; and

(d) the natural movement of water and sediment.

9.36 The proposed dredging activities will not adversely affect any natural landforms (such as headlands, peninsulas, cliffs, dunes or wetlands), the natural darkness of the night sky, or the experiential attributes of the environment (including the sounds and smell of the sea, and their context or setting).

9.37 Overall, and in the context of the location of the proposal within two Precincts that expressly anticipate and provide for dredging activities, it is considered that the adverse effects on the natural character of the subject area of the coastal environment will be minor at worst.

Landscape values

9.38 The dredging activities are not located within any identified areas of outstanding natural landscape. The preceding analysis has confirmed that the proposal will not result in any significant changes to ecology and natural processes. The proposal will not otherwise appreciably alter the seascape of the subject area, its aesthetic values, or the presence of wildlife (marine mammals and fish).

9.39 For these reasons, it is considered that the proposal will have no appreciable adverse effects on landscape values.

Effects on public access, other users of the coastal marine area, harbour traffic and navigation and safety

9.40 In order to reduce the effects of the proposal on navigational safety to a level that can be considered to be as low as reasonably practicable, the Navigational Risk Assessment that has been prepared by Navigatus (**Attachment 7**) recommends that the following controls are applied to the dredging operations:

(a) the preparation of an "Enhanced Dredging Management Plan" that sets out the operating procedures for interfacing with other harbour users including piloted ships, ferries and Royal New Zealand Navy vessels; and

(b) restricting dredging within "Area D" (refer to *Figure 6* over) during the summer peak period (1st December to Easter Monday) between 7am and 10am on weekdays to avoid times when ferries are under greater commuter timetable pressure.

9.41 The above controls are proposed as part of this application for resource consent. Furthermore, the applicant will not undertake dredging activities during Prada Cup and America's Cup racing, or public holidays, including Auckland anniversary weekend.

9.42 Public access within the immediate vicinity of the dredging activities is necessarily restricted for health and safety purposes, but only when dredging is occurring. Beyond this, there will be no adverse effects on public access to the coastal marine area.

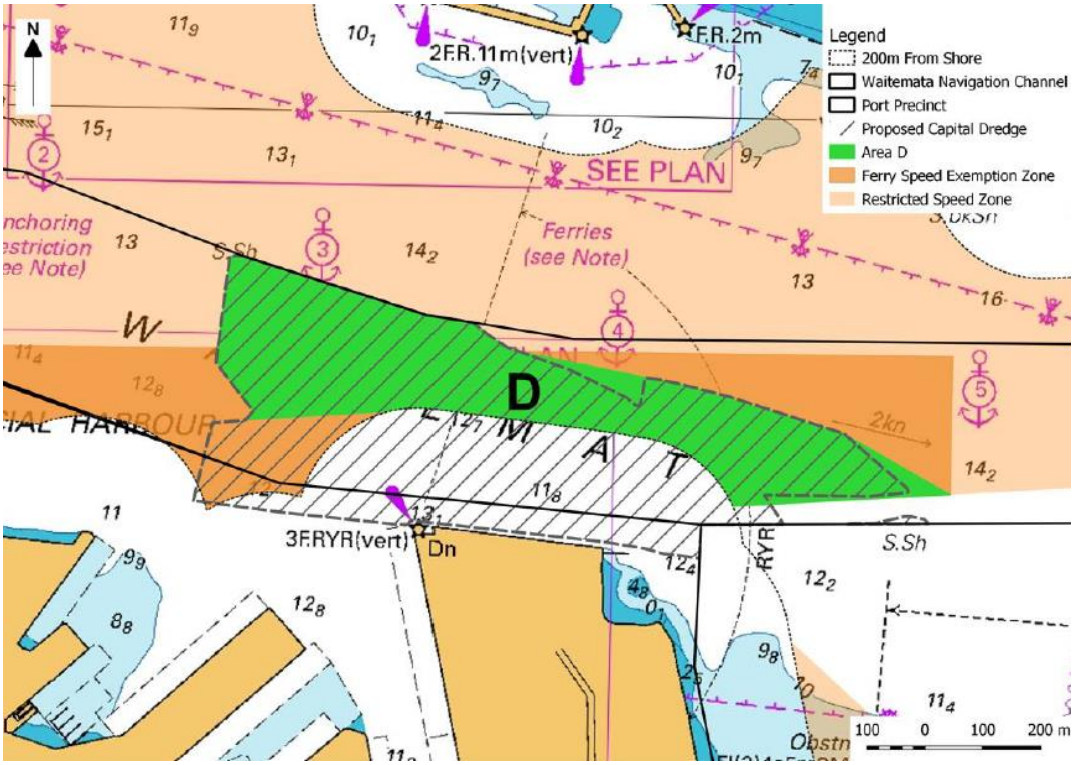

Figure 6: Extent of "Area D" (green)

9.43 The Navigation Risk Assessment prepared by Navigatus Consulting has assessed the effects of the proposal on other users of the coastal marine area, harbour traffic and navigation and safety. In summary:

(a) the interface between the dredger and ships carrying a pilot can be managed through the issuing of an exemption for the dredger to remain in the shipping channel at the pilot's discretion;

(b) no significant issues are anticipated in the interface between the dredger and vessels operating under a Pilot Exemption Certificate;

(c) dredging works in the Rangitoto channel to the east of North Head and to the north will not significantly affect ferry operations as there is sufficient navigable water for the ferries to keep clear of the dredger. The applicant has proposed to limit dredging activities to the north of the Fergusson North berth during the summer peak (1st December to Easter Monday) within the proposed conditions of consent (**Attachment 11**) to avoid times when ferries are under greater commuter timetable pressure;

(d) the majority of Royal New Zealand Navy vessels are expected to proceed outside the channel whenever appropriate to the prevailing conditions (noting that in visibility of less than 2nm and/or bad weather, Navy vessels are expected to apply the same procedure as commercial ships to ensure safe passing of the dredger;

(e) the applicant will not undertake dredging activities during Prada Cup and America's Cup racing to ensure that there will be no conflict with race vessels (a condition of consent is proposed to this effect); and

(f) the implementation of the "Enhanced Dredging Management Plan" through the proposed conditions of consent will ensure that interface conflicts with other recreational users of the Waitematā Harbour are appropriately avoided or mitigated.

9.44 Through the implementation of the additional controls that are proposed as part of this application for resource consent, the analysis of Navigatus confirms that the residual maritime safety effects of the proposal are as low as reasonably practicable. *Table 3* below summarises the conclusions of Navigatus in this regard.

Table 3: Summary of Maritime Safety Risk Assessment

Activity	**Navigational Risk Assessment for capital dredging activity with proposed controls**	**As low as reasonably practicable?**
Waitematā Channel – all seasons	Low risk for all vessels except naval	Yes
Port Approaches within 200 metres of reclamation – all seasons	Low risk for all vessels	Yes
Port Approaches beyond 200 metres – summer peak[5]	Medium risk in "Area D"	Yes
Port Approaches beyond 200 metres – remainder of the year.	Low risk for all vessels	Yes

9.45 Having regard to the analysis that has been undertaken by Navigatus, it is considered that the adverse effects of the proposal on public access, other users of the coastal marine area, harbour traffic and navigation and safety will be minor at worst.

Effects on existing uses and activities (including significant infrastructure)

9.46 As reported by Beca, 2019, the only submarine services or cables that are within the proposed works area are no longer in service. It is unlikely that one of these cables will be encountered during dredging, however, if a disused cable is encountered, Spark and Chorus will be advised as a courtesy, and the cable will be removed as far as practicable.

9.47 There are no other existing uses and activities within the subject area that would be adversely affected by the proposal.

Effects on Mana Whenua values

9.48 The applicant has engaged with all relevant Mana Whenua and customary marine title groups. A cultural values assessment in respect of the proposal has been received from Ngaati Whanaunga Incorporated Society; a copy of which is appended to this application as **Attachment 10** and is summarised below.

<u>Ngaati Whanaunga Incorporated Society</u>

9.49 The cultural values assessment provides POAL with an understanding of the Ngaati Whanaunga cultural values as the relate to Te Waitemataa, to ensure that they are fully understood in considering the application for resource consent, and sets out the views of Ngaati Whanaunga as they relate to:

(a) The Cultural Significance of Te Waitemataa and the surrounding areas.

(b) Ngāti Whanaunga's Cultural Values.

(c) Ngāti Whanaunga's Te Tiriti/Treat of Waitangi claims and redress.

(d) Ngāti Whanaunga's Marine and Coastal Area Application.

(e) Engagement with POAL in respect to the Application.

(f) Cumulative effects.

5 1st December to Easter Monday.

(g) Legacy.

9.50 The position of Ngāti Whanaunga in respect of the proposal is recorded as follows:

> NGAATI WHANAUNGA POSITION
>
> Rangitoto Channel Dredging Project
>
> 118. Ngaati Whanaunga, through our observations and experiences, have observed changes and losses on Te Waitemataa.
>
> 119. The effects of construction in the coastal marine area and the dumping of dredged material are highly likely to decimate what is there, should an accident or event occur. Therefore, management measures need to be planned and implemented to safeguard and mitigate for any accident or event that could damage the water quality of Te Waitemataa, the ecosystems and its surrounds.
>
> 120. It is critical that the management and maintenance programme of the Rangitoto Channel Dredging project should include practices that will support the restoration and enhancement of the delicate balance identified and required for the good health and wellbeing of Te Waitemataa, Tiikapa Moana, Hauraki and its environment.
>
> 121. Ngaati Whanaunga needs to receive all relevant information including plans and reports regarding this project.
>
> 122. Agreement for Ngaati Whanaunga to receive regular updates and participation in all aspects of the project proposal, planning and monitoring.

Effects on historic heritage

9.51 The proposed capital dredging activities do not implicate any historic heritage sites that are identified under the provisions of the Unitary Plan.

Consent duration and monitoring

Capital Works Dredging

9.52 A 15-year duration is sought in respect of the capital works dredging activities that will be enabled by the proposal. This is necessary to enable the staged implementation of the dredging activities in a manner that is responsive to changes in shipping requirements and to spread the costs of the dredging activity over a greater period of time.

9.53 In terms of monitoring, Beca has advised that based on the level of adverse effects that will be generated by the capital works dredging activities and the results from the monitoring that was undertaken during the 2004-2007 capital dredging campaign (and in addition to the water quality monitoring recommended by KEL), monitoring can be limited to the following:

(a) Visual suspended sediment monitoring; and

(b) Hydrographic survey of the dredged areas on completion of the major deepening stages, with details of channel dredging and Buoys A and B advised to Land Information New Zealand and the Maritime Safety Authority.

9.54 In addition to the above, the analysis of KEL confirms that water quality monitoring and ecological monitoring are also necessary in respect of the proposal.

9.55 The above monitoring measures have been included within proposed within the proposed conditions of consent and are considered to be sufficient to confirm the degree of the effects identified in this assessment of environmental effects.

Positive effects

9.56 Rule C1.8(3) of the Unitary Plan provides that when considering a restricted discretionary activity:

> (3) The absence of any specific reference to positive effects in the objectives, policies, matters of discretion or assessment criteria does not mean that any positive effects of allowing an activity are not relevant to the consideration of an application for resource consent for that activity.

9.57 The assessment of the positive effects of the activity is still required to be undertaken in respect of the matters over which Council has restricted its discretion in the Unitary Plan (set out at paragraphs 9.1 and 9.3).

9.58 The Waitematā Navigation Channel Precinct provides access for vessels to the Port of Auckland and the balance of the Auckland waterfront, including the berths, marine industries, and maritime passenger and cruise ship services that are located at Westhaven Marina, Wynyard Precinct, and the Viaduct Harbour and Central Wharves Precincts.

9.59 The proposal will have the positive effect of ensuring the safe and efficient navigation, manoeuvring and berthing of vessels of different types and sizes.

Maintenance dredging

The effects on water quality

9.60 There are no differences proposed to the maintenance dredging methodology when compared to historic maintenance dredging activities. The effects on water quality are anticipated to be the same or similar to those which have been assessed within the preceding analysis and are considered to be minor in nature at worst.

The effects on harbour traffic, navigation and safety

9.61 The maintenance dredging activities will be managed in the same manner as the capital works dredging activities to ensure that the effects on harbour traffic, navigation and safety are appropriately managed.

Consent duration and monitoring

9.62 A 35-year duration is sought in respect of the maintenance dredging activities. Such a timeframe is considered appropriate to provide POAL with long-the term certainty it requires to maintain the seabed depths that are to be achieved under the capital works, as well as to remove any slumped material that may impact on shipping depths and any accretion that may occur in other areas.

9.63 A 35-year duration also corresponds with the duration of the marine dumping permit that is held by POAL, which authorises the disposal of maintenance dredging material from the subject area at the Cuvier Disposal Site.

9.64 A similar monitoring regime is proposed to that required under maintenance dredging permit R/REG/2016/3946 for the maintenance dredging activities that are to be enabled under this application for resource consent.

9.65 Consistent with this maintenance dredging permit, it is proposed to maintain a photographic record of the dredging operations. The photographs shall:

(a) be taken at various stages of the tidal cycle, in different wind and wave conditions, and on days that dredging is in progress;

(b) be taken from an elevated vantage point;

(c) show the extent of any visible plume or water discoloration;

(d) verify that the expected range of the sediment plume is localised and of short duration; and

(e) be accompanied by brief notes which indicate when they were taken and what they show.

9.66 In the event that a noticeable sediment plume outside of the consent area that is not localised and is not of a short duration is observed, the applicant will cease the dredging activity and notify and consult with Council to determine an appropriate course of action to minimise further discharges and any adverse effects associated with the plume.

9.67 Given the recency of the maintenance dredging permit that is held by POAL (granted after the Auckland Unitary Plan became operative in part), and the fact that the same volumes and dredging methodology is proposed, it is considered that the proposed monitoring requirements are sufficient to confirm the degree of the effects identified in this assessment of environmental effects.

10 NOTIFICATION ASSESSMENT

Section 95A Public Notification of Consent Applications

10.1 Section 95A of the RMA prescribes the steps in order to determine whether to publicly notify an application for a resource consent.

Step 1: Mandatory public notification in certain circumstances

10.2 POAL made a commitment within the Ports of Auckland Annual Report 2019 to process the application on a notified basis, notwithstanding the assessed level of effects on the environment.

10.3 Pursuant to section 95A(3)(a), the applicant therefore requests that the application be publicly notified.

Section 95B Limited Notification of Consent Applications

10.4 As the applicant has requested that the application be publicly notified, it is not necessary to undertake an assessment of the proposal against section 95B of the RMA.

11 ASSESSMENT (SECTION 104)

11.1 Subject to Part 2 of the RMA, when considering an application for resource consent the Council must, in accordance with section 104(1), have regard to the following:

(a) any actual and potential effects on the environment of allowing the activity; and

(ab) any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity; and

(b) any relevant provision of –
  (i) a national environmental standard:
  (ii) other regulations:
  (iii) a national policy statement:
  (iv) a New Zealand coastal policy statement:

(v) a regional policy statement or proposed regional policy statement:

(c) any other matter the consent authority considers relevant and reasonably necessary to determine the application.

11.2 With reference to the controlled activity consent that is required in respect of the maintenance dredging activities, section 104A of the RMA requires that after considering an application for a resource consent for a controlled activity, a consent authority:

(a) must grant the resource consent, unless it has insufficient information to determine whether or not the activity is a controlled activity; and

(b) may impose conditions on the consent under section 108 only for those matters over which control is reserved in its plan or proposed plan.

11.3 In terms of the restricted discretionary activity consent that is required for the capital works dredging, section 104C of the RMA prescribes that a consent authority must only consider those matters over which it has restricted the exercise of its discretion in its plan. The consent authority may grant or refuse the application, however, if it grants the application, the consent authority may impose conditions under section 108 only for those matters over which it has restricted the exercise of its discretion in its plan or proposed plan.

11.4 The relevant matters of control and discretion have been set out within paragraphs 9.1 to 9.4 above.

Any actual or potential effects on the environment of allowing the activity (section 104(1)(a))

11.5 The actual and potential effects on the environment have been addressed within section 9, where it was concluded that any adverse effects on the environment would be minor at worst, and that the proposal will have will have the positive effect of ensuring the safe and efficient navigation, manoeuvring and berthing of vessels of different types and sizes. That said, there are options for the potential beneficial re-use of the dredged material that have been identified by POAL, which may be implemented depending on the other projects and decisions by third parties.

Any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity

11.6 No other measures are proposed (or considered to be required) to ensure positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity.

Relevant National Environmental Standards, Other Regulations, Policy Statements, Plans or Proposed Plans (section 104(1)(b))

11.7 Section 104(1)(b) of the RMA sets out that when considering an application for resource consent, the Council shall have regard to any relevant provisions of National Environmental Standards, Other Regulations, Policy Statements, Plans or Proposed Plans.

<u>Relevant National Environmental Standards (section 104(1)(b)(i))</u>

11.8 There are no National Environmental Standards relevant to the consideration of the application.

Other Regulations (section 104(1)(b)(ii)

11.9 There are no other Regulations relevant to the consideration of the application for resource consent.

National Policy Statements (section 104(1)(b)(iii))

11.10 There are no national policy statements directly relevant to the consideration of this application for resource consent.

New Zealand Coastal Policy Statement and Hauraki Gulf Marine Park Act 2000 (section 104(1)(b)(iv)

11.11 The Unitary Plan has been prepared in the last few years and has "given effect" to the provisions of the New Zealand Coastal Policy Statement ('**NZCPS**'). Therefore, a full assessment against the NZCPS is not considered necessary. However, for completeness, the following analysis is provided in respect of those matters of the NZCPS that are considered to be relevant to the matters over which Council has restricted its discretion and reserved its control in the Unitary Plan.

11.12 The NZCPS contains 7 objectives and 29 policies. It is considered that the proposed dredging of the subject area will not be contrary to any of the objectives and policies of the NZCPS, with particular reference to:

(a) Policy 11, which seeks to protect indigenous biological diversity that are threatened, naturally rare, or nationally significant; and avoid other significant adverse effects on indigenous vegetation, species, and ecosystems (the proposal is not located in such an environment);

(b) Policy 13, which seeks to avoid adverse effects of activities on natural character in areas of the coastal environment with outstanding natural character; and avoid other significant adverse effects and avoid, remedy or mitigate other adverse effects on natural character in all other areas of the coastal environment (the environment in which the proposal is located does not contain outstanding natural character. Further, the proposal relates to a part of the coastal environment that has been subject to historic dredging activities. This, combined with the dredging methodology proposed, will ensure that significant adverse effects on natural character are avoided, remedied or mitigated, due to the location of the proposal within an already modified environment);

(c) Policy 15, which seeks to avoid adverse effects of activities on outstanding natural landscapes in the coastal environment; and avoid significant adverse effects and avoid, remedy, or mitigate other adverse effects of activities on other natural features and natural landscapes in the coastal environment (the environment that the proposal is located in contains no outstanding natural landscapes. Other significant adverse effects on natural landscapes and features are avoided and other effects are avoided, remedied or mitigated, due to the location of the proposal within an already modified environment); and

(d) Policy 25, which seeks to avoid increasing the risk of social, environmental and economic harm from coastal hazards; and avoid redevelopment, or change in land use, that would increase the risk of adverse effects from coastal hazards (the proposal does not result in increased risks from coastal hazards).

11.13 The proposal is considered to give effect to Policy 9 of the NZCPS, which recognises that a sustainable national transport system requires an efficient national network of safe ports, servicing national and international shipping, with efficient connections

with other transport modes, including by considering where, how and when to provide in regional policy statements and in plans for the efficient and safe operation of ports, the development of their capacity for shipping, and their connections with other transport modes.

11.14 Consistent with Policy 9(b) of the NZCPS, the proposed dredging activities will maintain the safety and efficiency of the Port of Auckland and its environs, enabling POAL to safely handle vessels; and thereby providing for the "safe and efficient" operation of the port.

Hauraki Gulf Marine Park Act 2000

11.15 The Hauraki Gulf Marine Park Act ("**HGMPA**") integrates the management of the Hauraki Gulf's islands and catchments across land and sea so that the effects of urban and rural land use are given proper attention, and its life supporting capacity is protected. The HGMPA also promotes the conservation and sustainable management of the natural, historic and physical resources of the Hauraki Gulf for the benefit and enjoyment of the people and communities of the Hauraki Gulf and New Zealand.

11.16 The proposal is consistent with the provisions of the HGMPA. In particular, the proposal will not affect the life supporting capacity or environmental amenity of the Hauraki Gulf, will promote the sustainable management of a physical resource and will not affect the ability of people and communities to benefit from and enjoy the amenity of the Hauraki Gulf.

Regional Policy Statement or Proposed Regional Policy Statement (section 104(1)(b)(v))

11.17 The regional coastal plan provisions of the Unitary Plan have been prepared to "given effect" to the Regional Policy Statement ('**RPS**') chapter of the Unitary Plan. Therefore, a full assessment against the RPS is not considered necessary. However, for completeness, the following analysis is provided in respect of those matters of the RPS that are considered to be relevant to the matters over which Council has restricted its discretion and reserved its control in the Unitary Plan.

B8. Toitū te taiwhenua - Coastal environment

11.18 The objectives of RPS pertaining to the "subdivision, use and development" of the coastal environment that are considered to be relevant to the consideration of the proposal seek to ensure that:

(1) Subdivision, use and development in the coastal environment are located in appropriate places and are of an appropriate form and within appropriate limits, taking into account the range of uses and values of the coastal environment.

(2) The adverse effects of subdivision, use and development on the values of the coastal environment are avoided, remedied or mitigated.

(3) The natural and physical resources of the coastal environment are used efficiently and activities that depend on the use of the natural and physical resources of the coastal environment are provided for in appropriate locations.

(6) Conflicts between activities including reverse sensitivity effects are avoided, remedied or mitigated.

11.19 These objectives are implemented by the following policies that are considered to be directly relevant to the consideration of the proposal:

(3) Require subdivision, use and development in the coastal environment to avoid, remedy or mitigate the adverse effects of activities above and below the mean high water springs, including the effects on existing uses and on the coastal receiving environment.

(8) Recognise the national and regional significance of the Auckland ports and the need for them to be located within the coastal environment by all of the following:

(a) enabling the efficient and safe operation of the ports and their connection with other transport modes;

(b) enabling the safe navigation and berthing of vessels, including by dredging; and

(c) avoiding or mitigating the adverse effects of activities that may compromise efficient and safe port operations.

11.20 Having regard to the preceding analysis, the proposal is considered to be consistent with the outcomes that the above relevant objectives and policies of the RPS are concerned with. Specifically:

(a) The dredging activities will be undertaken at a location that has been identified by the Unitary Plan as providing for the navigational requirements of marine and port activities and other vessels (the Waitematā Navigation Channel Precinct and the Port Precinct) and are necessary to ensure the safe navigation and berthing of vessels.

(b) The preceding analysis confirms that the effects of the proposed dredging activities on the environment and on any other users of the coastal marine area can been appropriately avoided, remedied or mitigated and appropriate conditions of consent are proposed in this regard.

A Plan or Proposed Plan (section 104(1)(b)(vi))

11.21 Section 104(1)(b)(vi) of the RMA requires that regard is had to any relevant provisions of a plan or proposed plan.

11.22 Rule C1.8(1) of the Unitary Plan provides that:

> (1) When considering an application for resource consent for an activity that is classed as a restricted discretionary… activity, the Council will consider all relevant overlay, zone, Auckland-wide and precinct objectives and policies that apply to the activity or the site or sites where that activity will occur.

11.23 The following analysis is provided in respect of the objectives and policies of the Waitematā Navigation Channel Precinct, the Port Precinct, and F2.4 of the General Coastal Marine Zone, which are considered to be the relevant zone and precincts to the proposal.

11.24 There are no overlay or Auckland-wide objectives and policies that are considered to be relevant to the consideration of the proposal.

Auckland Unitary Plan (Operative in part)

I103. Waitematā Navigation Channel Precinct

11.25 The sole objective of the Unitary Plan for the Waitematā Navigation Channel Precinct is to provide for the safe and efficient navigation of vessels (Objective I103.2(1)). This is to be achieved by (amongst other things) enabling dredging within the precinct that is necessary to provide for the safe and efficient navigation and manoeuvring of vessels (Policy I103.3(3)).

I208. Port Precinct

11.26 In a similar vein, the objectives of the Unitary Plan for the Port Precinct include providing for the efficient operation, growth and intensification of marine and port activities and marine and port facilities, including the development of the Port's capacity for shipping and its connections with other transport modes (Objective I208.2(1)). In the context of the proposal, this is to be achieved by enabling dredging within the precinct that is necessary to provide for the safe and efficient navigation, manoeuvring, and berthing of vessels, while avoiding, remedying or mitigating any adverse effects (Policy I208.3(12)).

F2. General Coastal Marine Zone

11.27 The objectives and policies that are contained within F2.4 of the General Coastal Marine Zone apply to the area where the proposal occur, and so are within the Council's discretion to consider under Rule C1.8. In respect of dredging activities, the objectives of the General Coastal Marine Zone seek to (amongst other things) provide and maintain adequate water depth, particularly in navigation channels, to ensure safe and efficient navigation, use and operation of activities in the coastal marine area (Objective F2.4.2(2)).

11.28 Dredging activities to provide for the ongoing safe and efficient use of navigation channel and the City Centre waterfront precincts are provided for (Policy F2.4.3(1)). Policy F2.4.3(4) also seeks to manage dredging activities so that they do not cause or exacerbate erosion; or result in the permanent loss of any habitat of a rare or endangered species; or result in any seabed disturbance which would result in turbidity other than that which is localised and limited in duration.

11.29 In doing so, best practicable methods and procedures for dredging of contaminated sediment are required to be implemented to minimise the mobilisation and dispersal of sediment and contaminants (Policy F2.4.3(5)).

11.30 Overall, for the reasons discussed within this assessment of environmental effects, the proposal is considered to be entirely consistent with the relevant objectives and policies of the Unitary Plan. Specifically:

(a) the proposal seeks to provide for the on-going safe and efficient navigation, manoeuvring of vessels within the Waitematā Navigation Channel Precinct and Port Precinct;

(b) the proposal seeks to implement long-established and proven methods and procedures to undertake dredging within the Channel, thereby ensuring that the adverse effects are appropriately avoided, remedied or mitigated;

(c) having regard to the operational requirements of the vessels that require access to the Port of Auckland, the proposal seeks to provide and maintain adequate water depth, particularly in navigation channels, to ensure safe and efficient navigation, use and operation of activities in the coastal marine area;

(d) the dredging activities have been assessed not to cause or exacerbate erosion; or result in the permanent loss of any habitat of a rare or endangered species; or result in any seabed disturbance which would result in turbidity other than that which is localised and limited in duration; and

(e) best practicable methods and procedures for dredging of contaminated sediment are proposed to be implemented to minimise the mobilisation and dispersal of sediment and contaminants.

11.31 Overall, the proposal is considered to be consistent with the above objectives and policies of the Unitary Plan.

Other matters (section 104(1)(c))

11.32 There are no "other matters" relevant to the consideration of this application for resource consent.

Part 2 Matters

11.33 It would be neither necessary nor helpful for Council to have recourse to Part 2 of the RMA in considering the application. To have resource to Part 2 will not add anything to the Council's evaluative exercise of the applications because:

(a) the Unitary Plan was competently prepared within the last few years;

(b) there have been no amendments to Part 2 since the development of the Unitary Plan; and

(c) the plan sufficiently anticipates the effects of the proposal.

11.34 However, for completeness, we set out our general assessment of the proposal in accordance with Part 2 below.

11.35 The preceding analysis has taken section 5 of the RMA into consideration, and it can be summarised that the proposal represents the sustainable management of the natural and physical resources that will appropriately avoid, remedy, or mitigate the adverse effects on the surrounding environment. The purpose of section 5 of the RMA is therefore achieved.

11.36 With reference to matters of national importance in section 6 of the RMA, the following comments are made:

(a) the proposal will not adversely affect the natural character of the subject site or surrounding environment (section 6(a));

(b) the subject site is not identified as containing any "outstanding" natural features or landscapes (section 6(b));

(c) the subject site is not identified as containing any "significant" indigenous vegetation and significant habitats of indigenous fauna (section 6(c));

(d) the proposal does not seek to alter the extent to which the public can access the coastal marine area at the Port of Auckland, which is necessarily restricted for safety and security reasons (section 6(d));

(e) the proposal will not adversely affect any identified ancestral lands, water, sites, waahi tapu, and other taonga (section 6(e)); and

(f) the proposal will protect identified historic heritage from inappropriate subdivision, use, and development on the basis that there are no historic heritage items within the vicinity of the proposal that may be affected by it (section 6(f)).

11.37 With reference to section 7 of the RMA, the proposal is considered to represent the efficient use, development and management of natural and physical resources (section 7(b)) and will not detract from the quality of the environment (section 7(f)).

11.38 POAL is not aware of any specific Treaty of Waitangi matters requiring consideration in accordance with Section 8 of the RMA in respect of this application for resource consent.

12 PROPOSED CONDITIONS OF CONSENT

12.1 The conditions of consent are appended to this application as **Attachment 11** are proposed as part of this application for resource consent. They have been prepared with reference to the technical documents that support the application for resource consent and are considered to be sufficient to mitigate the adverse effects that have been identified within this assessment of environmental effects.

13 CONCLUSION

13.1 The applicant seeks resource consent to undertake capital works dredging and maintenance dredging within the Waitematā Navigation Channel Precinct and the Port Precinct.

13.2 The adverse effects of the activity on the environment has been assessed to be minor at worst, while the effects on any person that has not given their written approval to the proposal have been assessed to be less than minor.

13.3 The proposal is consistent with the relevant objectives and policies of the Auckland Unitary Plan (Operative in Part), as well as the purpose and principles of the Resource Management Act 1991.

Mark Arbuthnot
Bentley & Co Limited
25 October 2019