

**BEFORE AN EXPERT PANEL  
SOUTHERN SEAWALL RENEWAL PROJECT**

**FTAA-2510-1118**

Under the **FAST-TRACK APPROVALS ACT 2024**

In the matter of an application by Wellington International Airport Limited for approvals for the Southern Seawall Renewal Project

By **WELLINGTON INTERNATIONAL AIRPORT LIMITED**  
Applicant

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**STATEMENT OF EVIDENCE OF JENNIFER HELEN HART AND AMY LOUISE SHEPPARD (COASTAL PROCESSES, ENGINEERING AND DESIGN) ON BEHALF OF WELLINGTON INTERNATIONAL AIRPORT LIMITED**

17 March 2026

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**BUDDLE FINDLAY**

Barristers and Solicitors  
Wellington

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## INTRODUCTION

1. Our full names are **Jennifer Helen Hart** and **Amy Louise Sheppard**.
2. Our evidence is given on behalf of Wellington International Airport (**WIAL**) in respect of WIAL's proposed Southern Seawall Renewal project (**Project**) in response to comments made under section 53 of the Fast-track Approvals Act 2024 (**Act**) by:
  - (a) Wellington City Council (**WCC**);
  - (b) Wellington Regional Council (**GWRC**);
  - (c) Guardians of the Bays; and
  - (d) [REDACTED].
3. We prepared the Beca – Assessment of Effects on Coastal Processes, dated 22 July 2025, in Part B of the application for the Project (**Coastal Processes Assessment**). Our qualifications and experience are set out in Appendix A of the Coastal Processes Assessment.<sup>1</sup>
4. Jennifer Hart reviewed and approved for issue the Beca – Options Assessment & Design Summary Report dated 22 October 2025<sup>2</sup> and was the Beca Project Director for the Southern Seawall Project. Amy Sheppard was the Design Manager for the Project.

### Code of conduct

5. We confirm that we have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2023 and have complied with it in preparing this evidence. In particular, unless we state otherwise, the issues addressed in our evidence are within our area of expertise and we have not omitted to consider material facts known to us that might alter or detract from the opinions we express.

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<sup>1</sup> [https://www.fasttrack.govt.nz/\\_data/assets/pdf\\_file/0013/14422/B.05-Beca-Coastal-Processes.pdf](https://www.fasttrack.govt.nz/_data/assets/pdf_file/0013/14422/B.05-Beca-Coastal-Processes.pdf); and [https://www.fasttrack.govt.nz/\\_data/assets/pdf\\_file/0012/14421/B.04-Beca-Engineering-and-Design.pdf](https://www.fasttrack.govt.nz/_data/assets/pdf_file/0012/14421/B.04-Beca-Engineering-and-Design.pdf).

<sup>2</sup> [WIAL Southern Seawall Design Summary Report](#).

## WCC SECTION 53 COMMENTS

### Geotechnical supervision and completion report for MGC Yard

#### *Issue*

6. WCC's section 53 comments seek amended conditions for geotechnical supervision and a geotechnical completion report for the Miramar Golf Course (**MGC**) Yard, as follows:
  - (a) that a suitably experienced Chartered Engineering Geologist (PEngGeol) or Chartered Professional (Geotechnical) Engineer (CPEng) is present on site at all times during excavation works (cuts); and
  - (b) that a geotechnical completion report prepared by a suitably experienced Chartered Professional (Geotechnical) Engineer or an Engineering Geologist must be supplied to the Council, and must:
    - (i) confirm that the completed earthworks reflect current engineering guidelines and standards, and are completed in accordance with Council's Code of Practice for Land Development 2025 for earthworks (Part B); and
    - (ii) include a statement of professional opinion that any un-retained cut slopes and fill batters are considered stable with respect to the future use, and that the risk of instability is as low as reasonably practicable.

#### *Response*

7. We have conferred with engineering geologist Anna Punt, who reviewed the Geotechnical Assessment of MGC Yard Cut Batter Slopes report.<sup>3</sup> Her qualifications and experience are set out in Appendix A of that report. We have also conferred with our colleague Nicola Ridgley, the Beca geotechnical engineering lead for the project. Nicola is a Senior Technical Director at Beca with 35 years' experience in geotechnical engineering and is a Chartered Member of Engineering New Zealand and Chartered Professional Engineer.

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<sup>3</sup> Appendix E in [https://www.fasttrack.govt.nz/\\_data/assets/pdf\\_file/0012/14421/B.04-Beca-Engineering-and-Design.pdf](https://www.fasttrack.govt.nz/_data/assets/pdf_file/0012/14421/B.04-Beca-Engineering-and-Design.pdf).

8. The Geotechnical Assessment of MGC Yard Cut Batter Slopes recommends that an Engineering Geologist or Geotechnical Engineer be on-site full-time during the MGC Yard excavations (cuts) because of the extent of existing site investigations on the south-western and south-eastern slopes in the MGC Yard area.
9. The site-based Engineering Geologist or Geotechnical Engineer should have two or more years' experience but does not need to be a Chartered Professional provided that the work is supervised by a suitably experienced Chartered Engineering Geologist (CMEngNZ (PEngGeol)) or a Chartered Professional (Geotechnical) Engineer (CPEng), who may be based off-site. This approach aligns with standard industry practice and is a more efficient use of senior resources while still managing the excavation activity effectively.
10. We also note that any engineering geologist or geotechnical engineer, however experienced, is unlikely to provide the "immediate direction" sought by WCC, as instructions to contractors need to be technically reviewed and communicated in accordance with NZS3910 construction contract processes.
11. The MGC Yard excavations (cuts) and proposed slope stabilisation reflect the temporary use of the MGC site as a construction and storage yard for the Southern Seawall project. A longer-term solution will be implemented by WIAL at a later date when the area is developed as aircraft apron, in accordance with their 2040 Masterplan. The proposed cut slopes will have a design life of 10 to 20 years, after which the slopes will be cut further and stabilised. There are no substantive fill batters associated with the MGC Yard earthworks.
12. As the MGC Yard cuts and associated slope stabilisation are interim works that will be replaced by a future permanent solution, WCC's Code of Practice for Land Development 2025 for earthworks (Part B) and engineering guidelines and standards for permanent works are not applicable, and the cuts are not expected to comply with them. It will therefore not be possible to provide the Geotechnical Completion Report sought by WCC.
13. It is suggested that the practical alternative to document the MGC Yard cuts is to provide WCC with a report that comprises:

- (a) a summary of site observation reports;
  - (b) the status of the interim works; and
  - (c) a statement of professional opinion regarding the risk of instability of the cut slopes being as low as reasonably practicable in the context of the interim works and the site's use as a construction yard.
14. Taking into account WCC's comments, we consider the following amendments to the proposed conditions to be appropriate:

*GEO.3 – Geotechnical supervision during MGC Yard excavations (cuts):*

*An Engineering Geologist or Geotechnical Engineer must be on-site at all times during the excavations (cuts). The Engineering Geologist or Geotechnical Engineer shall have a minimum of two years' experience and shall be supervised by a suitably experienced Chartered Engineering Geologist (CMEngNZ (PEngGeol)) or Chartered Professional (Geotechnical) Engineer (CPEng) who may be based off-site.*

*New condition GEO.6 – Geotechnical report on MGC Yard excavations (cuts):*

*Within one (1) month of the earthworks being completed, a geotechnical completion report prepared by a suitably experienced Chartered Professional (Geotechnical) Engineer (CPEng) or an Engineering Geologist (CMEngNZ (PEngGeol)) shall be supplied to the Manager WCC.*

*The Geotechnical Completion Report must include:*

- (a) a summary of site observation reports;
- (b) the status of the interim works; and
- (c) a statement of professional opinion regarding the risk of instability of the cut slopes being as low as reasonably practicable in the context of the interim works and the site's use as a construction yard.

## **GWRC SECTION 53 COMMENTS**

### **End effects and monitoring at the eastern end of the seawall**

#### *Issue*

15. GWRC's section 53 comments express uncertainty about whether the Eastern Bank Remediation and the eastern end of the Southern Seawall could cause end-effects erosion at Moa Point Beach if the eastern edge forms a hard 90-degree junction that causes substantial wave reflection.

16. GWRC considers post-construction monitoring necessary to identify and respond to any such effects:
  - (a) Dr Iain Dawe recommends annual beach survey monitoring for five years to monitor for any unexpected changes in Moa Point Beach as a result of the seawall extension; and
  - (b) Dr Dawe also recommends that, after five years of monitoring, an assessment report is prepared that summarises the findings of the monitoring and identifies any remedial action that could be undertaken.

*Response*

17. The proposed Eastern Bank Remediation replaces part of the existing informal rubble armouring with a rock revetment, from the Southern Seawall to opposite Stewart Duff Drive. Armour rock wraps landward around the eastern end of the revetment to provide a secure termination.
18. The Eastern Bank Remediation design also incorporates a tapered rock section on the upper beach at the eastern end of the revetment (refer to **Figure 1** for this detail). This tapered rock section is placed over geotextile.
19. The tapered rock section bridges between the revetment armour rock and the bank to the east, providing a smoother transition in the revetment footprint (i.e. avoiding a 90-degree intersection with the existing bank) and easing the change in slope from the milder revetment slope to the subvertical bank face. This minimises end effect erosion by providing an extended rock slope to help dissipate wave energy and reducing any theoretical reflection of waves from a 90-degree face laterally along the beach (although noting that waves approach and reflect perpendicular to the shoreline at this location). This design addresses GWRC's main concern.

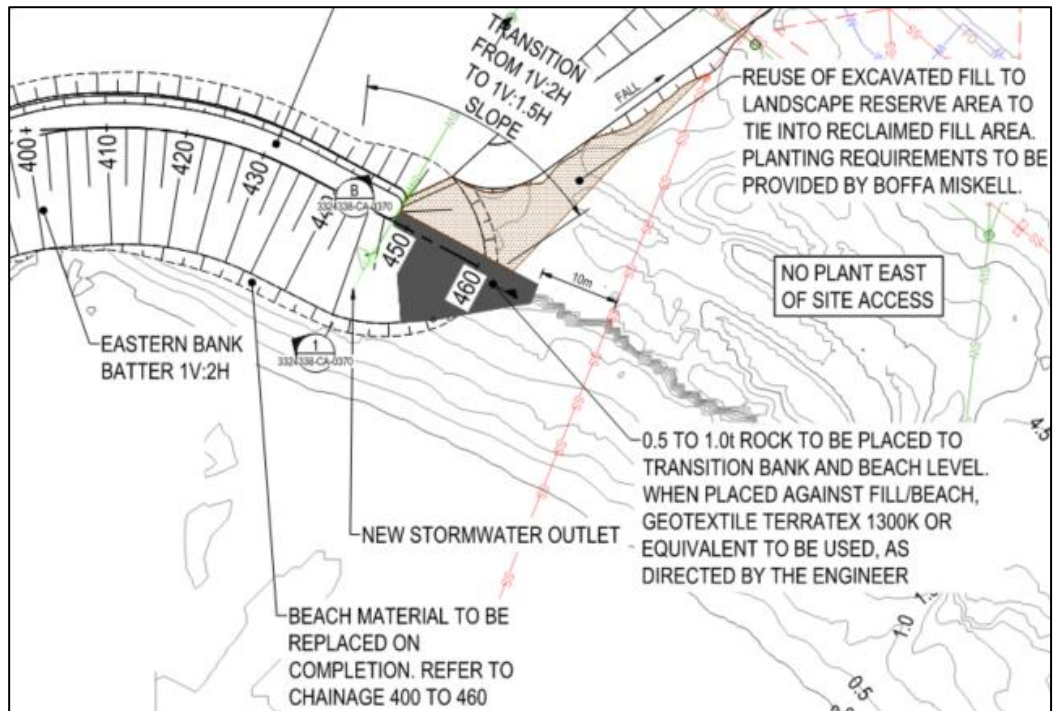


Figure 1: Eastern end of Eastern Bank Remediation

20. While this design addresses GWRC's comment, the proposed consent conditions also require post-construction inspection by a coastal/maritime engineer, annually for the first two years and five yearly thereafter (CA.26), with reports to be made available to GWRC on request (CA.29).
21. If any end-effect erosion or unexpected changes beyond the present and historic baseline processes occur, these will be identified as part of the post-construction inspections and recommendations made to address them. Condition CA.24 specifically requires the Project structures to be maintained, and repairs and reinstatements made (subject to obtaining the necessary statutory approvals). That condition specifically requires: "*Any material erosion, scour, or instability of land in the CMA that is attributable to the structures and works carried out as part of this consent is remedied by the Consent Holder*".
22. In conclusion, we consider the beach monitoring conditions sought by GWRC are not necessary as the tapered rock section included in the design addresses GWRC's main concern, and the proposed consent conditions already provide for a post-construction inspection regime.

## GUARDIANS OF THE BAYS' SECTION 53 COMMENTS

### Erosion at the western end of Moa Point Beach and gravel in Lyall Bay from the seawall

#### *Issue*

23. The Guardians of the Bays' section 53 comments query whether:
- (a) wave effects and combined storm wave and rain-water run-off from the wave trap will increase the erosion of the western end of Moa Point Beach; and
  - (b) the proposed Cupipod armour will reduce the amount of gravel coming into Lyall Bay from the erosion of the Southern Seawall.

#### *Response: Wave effects and wave trap run-off*

24. Over time, the underlying greywacke rock that formed the original pre-1950s shoreline may ultimately become exposed as a result of sea level rise and on-going baseline erosion. The potential for wave effects and erosion of Moa Point Beach has been considered in the Coastal Processes Assessment for the proposed works, which notes the underlying bedrock could become more exposed or could become exposed sooner than would otherwise be the case. Measures incorporated in the Project to mitigate this include:
- (a) the alignment of the Eastern Bank Remediation, which follows the existing shoreline, smoothing the transition between the Southern Seawall and the shoreline further east (refer to **Figure 1**);
  - (b) the tapered rock section at the eastern end, which bridges between the of the Eastern Bank Remediation and the bank further to the east to minimise end effect erosion (refer to **Figure 1**); and
  - (c) reinstating existing beach material over the lower section of the Eastern Bank Remediation, with the new structure only expected to be exposed to waves if the beach lowers significantly or as a result of wave run-up during storm events (refer to drawing 3324338-CA-SK104 in Part C.01 of the application).
25. The proposed Southern Seawall includes a reservoir without an outlet, rather than the existing wave trap which drains to the sea (refer to drawing

3324338-CA-SK007 in Part C.01 of the application). The porosity of the Cubipod armour and rock underlayer allows the reservoir to drain seaward through the armour and underlayer so a wave trap outlet is no longer needed. This avoids any risk of erosion associated with a new wave trap outlet discharging onto Moa Point Beach.

*Response: Effect of Cubipod armour on gravel at Lyall Bay Beach*

26. In regard to the proposed Cubipod armour and gravel at Lyall Bay Beach, the existing Southern Seawall does not contribute any discernible proportion of gravel to Lyall Bay Beach. This is because the Southern Seawall area is located some 700m from Lyall Bay Beach and is physically separated from it by Lyall Bay Breakwater and the greywacke reef beneath the breakwater.
27. In addition, gravel requires high energy wave and current conditions to be transported. Numerical modelling shows separate circulation patterns for inner and outer Lyall Bay in high energy southerly conditions (refer to Figures 3-9 and 3-11 in the Coastal Processes Assessment) illustrating the separation in gravel-sized sediment transport mechanisms between inner and outer Lyall Bay.
28. As set out in Section 4.4.1 of the Coastal Processes Assessment, the proposed sea defences will not materially alter the nature of the existing sediments in Lyall Bay and numerical modelling shows minimal changes to waves and currents in inner Lyall Bay, which are not expected to result in any discernible change to sediment transport. In addition, the proposed Cubipods are a high-strength marine concrete mix to resist breakage and erosion of the units. The proposed Cubipods will therefore not contribute gravel to Lyall Bay Beach.

**Stage 1 Kororā Colony underpass, sea levels and blockage**

*Issue*

29. The Guardians of the Bays' section 53 comments query whether increased sea level and storm swells have been considered with the position and placement of the Kororā tunnel/underpass at the Stage 1 Kororā Colony, and ask how the underpass will be maintained with continued erosion and possible inundation of the tunnel with gravel.

## Response

30. The concept design of the proposed Kororā underpass has considered present day and future sea levels as well as erosion and accretion of gravel on the beach, as set out below.
31. The seaward end of the proposed Kororā underpass is located above the 1% Annual Exceedance Probability (AEP)<sup>4</sup> storm-tide level for both the present day and with projected Relative Sea Level Rise to 2080 (Shared Socioeconomic Pathway 5-8.5H+ projection).
32. The seaward end of the underpass is approximately 0.7m above the present day beach level, providing clearance for accumulation of gravel on the beach without blocking the underpass entrance.
33. The seaward end of the underpass is supported on a reinforced concrete footing, founded in the greywacke bedrock underlying the gravel beach. This will provide a resilient foundation for the culvert if the surficial beach gravels are eroded in the future.
34. A concept sketch of the seaward end of the proposed Kororā underpass, with present day and future water levels and present day beach levels, is shown in **Figure 2**.

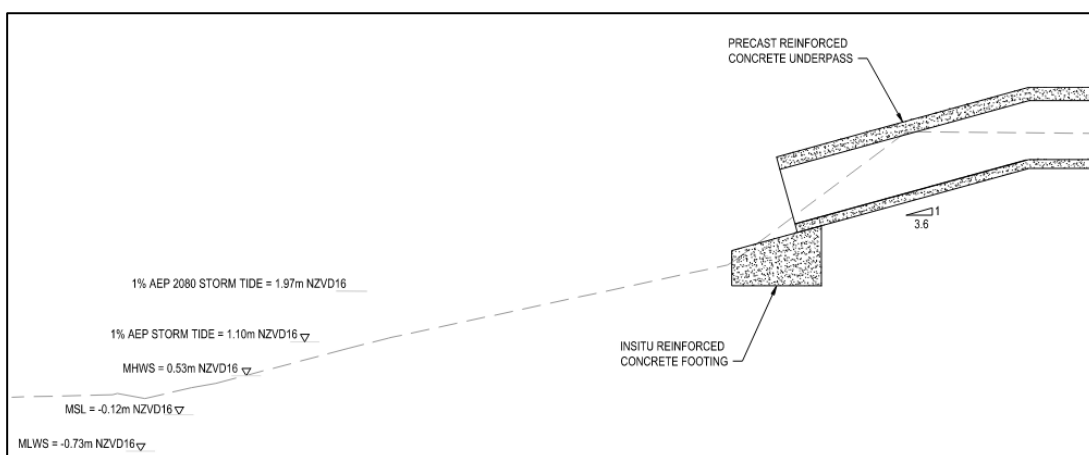


Figure 2: Section through Kororā underpass showing present day tide and storm-tide levels, 2080 storm-tide level and existing ground surface (dashed line)

<sup>4</sup> Annual Exceedance Probability, AEP, is the probability of an event of given magnitude being exceeded in a year.

## **Stage 1 Kororā Colony underpass and wastewater pipes**

### *Issue*

35. In their section 53 comments, the Guardians of the Bays request a plan showing the proposed Kororā underpass and habitat in relation to the existing wastewater pipes leading to the short wastewater outfall and query how the underpass would be affected if the wastewater pipes required maintenance.

### *Response*

36. Drawing 3324338-CA-SK120 in Part C.01 of the Application provides a concept plan of the proposed Kororā habitat, Kororā underpass and the existing wastewater pipes. The two western-most (seaward) pipes lead to the short wastewater outfall near Tarakena Bay.
37. The proposed underpass was discussed with Wellington Water (now Tiaki Wai) during 2025. Information and comments from Wellington Water have been incorporated in the drawings and the concept drawings were provided to the organisation. Wellington Water confirmed in September 2025 that they have no further comments on the proposed works.

## **SECTION 53 COMMENTS**

### **Potential for changes in wave action to increase erosion and impinge on the integrity of the southeastern end of the seawall**

#### *Issue*

38. [REDACTED] section 53 comments query whether seawall repair planning has considered possible changes in wave action and their potential to increase erosion and affect the integrity of the south-eastern end of the seawall at Moa Point.

#### *Response*

39. As described in the responses to comments in paragraphs 17 to 22 and paragraph 24 above, and also as covered in the Design Summary Report and Coastal Processes Assessment, these matters have been considered and addressed in the design of the Eastern Bank Remediation. Specific measures to minimise erosion and provide a resilient structure include:

- (a) the tapered rock section bridging between the armour rock of the Eastern Bank Remediation and the bank to the east to minimise end effect erosion;
- (b) wrapping the armour rock landward to protect the end of the Eastern Bank Remediation; and
- (c) founding the Eastern Bank Remediation in the greywacke bedrock underlying Moa Point Beach to prevent undermining of the structure.

**Jennifer Hart and Amy Sheppard**

**17 March 2026**