

**Before an Independent Hearings Panel of Wellington
City Council**

In the matter of the Resource Management Act 1991 (the **Act**)

And

In the matter of hearing of submissions and further submissions on the
Wellington City Proposed District Plan (**PDP**)

**Statement of Evidence of
Jo Lester for Wellington International Airport Limited**

Dated: 5 March 2024

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1. INTRODUCTION

Qualifications and Experience

- 1.1** My name is Jo Lester. I hold a Bachelor of Resource and Environmental Planning (with Honours) from Massey University, obtained in 1995.
- 1.2** I am currently employed as the Airport Planning Manager at Wellington International Airport Limited (**WIAL**) that owns and is responsible for Wellington International Airport (**Wellington Airport or Airport**). I have held that position since 2021. Prior to that, I was employed by WIAL in 2019 as the Airport Planner. From 2015 until 2019, I worked as a Senior Policy Advisor in the Resource Management Practice Team at Ministry for the Environment.
- 1.3** My principal role at WIAL is the primary resource management planner of all environmental aspects at Wellington Airport. I have day-to-day oversight and management responsibility for all environmental planning, Resource Management Act 1991 (**RMA**) planning, noise, and monitoring the local, regional and central government legislative and regulatory environment for changes that may impact Wellington Airport operations.

2. SCOPE OF EVIDENCE

- 2.1** This statement of evidence relates to Hearing Stream 7 and in particular the Natural Open Space zone provisions that relate to the seawall area between Lyall Bay and Moa Point. My evidence outlines:
- (a) The history of the seawall area zoned Natural Open Space;
 - (b) The importance of the seawalls to Wellington and the Airport;
 - (c) The current maintenance requirements of the seawalls;
 - (d) The character of the seawall area and how the seawalls and maintenance activities affect this;
 - (e) How the seawalls are nearing the end of their life span;
 - (f) WIAL's future plans for the seawall and the potential for resource consents.

3. HISTORY OF THE SEAWALL AREA

- 3.1 An existing system of seawalls is located along the coastal interface between Lyall Bay and Moa Point, within and adjacent to the land held in record of title WN45A/75 (Lot 3 Deposited Plan 78304) and about 2.2 hectares in area.
- 3.2 The land is owned by Wellington City Council (WCC) and is a Local Purpose Reserve (Esplanade), and as such has been zoned as Natural Open Space in the WCC Proposed District Plan.
- 3.3 I understand the land was vested in WCC as part of the transaction when the Airport was transferred from the Crown to Wellington International Airport Limited.
- 3.4 It is important to understand that the majority of this land is actually part of the overall seawall structures which are discussed in more detail below.
- 3.5 Currently the seawalls are comprised of three main structures, specifically the southern seawall including a wave trap constructed in 1972, the Lyall Bay breakwater (built in 1954-1955, and the western seawall (built in 1955-56 and modified between 1983 and 1987).

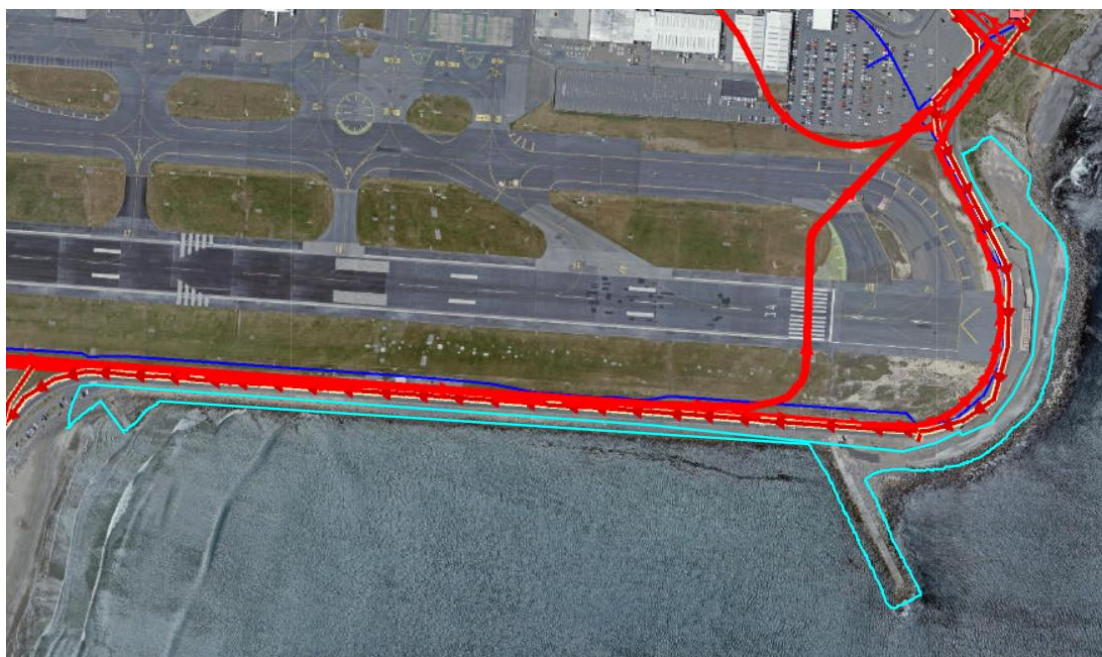


Figure 1: Seawall Structures Lyall Bay

4. SIGNIFICANT FUNCTION OF THE SEAWALLS

4.1 The seawalls serve a significant function for the surrounding landform. They protect vital WCC infrastructure including Moa Point Road, stormwater and potable water infrastructure, and major sewage pipes (interceptors and sludge risers) to/from the Moa Point wastewater treatment plant. Most of Wellington's untreated sewage flows through pipes behind the seawall, which could end up in Lyall Bay if there was damage to the pipes.

4.2 The seawalls also protect Wellington Airport and in particular the southern end of the runway from the effects of coastal erosion and storm surges. Refer to Figure 2 below which shows the location of the potable and wastewater pipes mentioned above and the location of the runway beyond.



- Wastewater Pipe Directionality
- ➔ Trunk Main
 - ➔ Rising Main
 - ➔ Main
 - - - Service Connection
 - ➔ All other values

Figure 2: WCC Wastewater Pipes and WCC land ownership (local Purpose (Esplanade) Reserve)

5. REQUIREMENT FOR MAINTENANCE OF THE SEAWALLS

- 5.1** A consent notice (dated 18 December 1992) is registered against WIAL’s main land title which requires WIAL to “protect the land from erosion and inundation by the sea” on a continuous basis including:
- keeping the existing sea wall, breakwater and other sea protection works fully maintained, and
 - constructing new or replacement sea protection structures.
- 5.2** As noted above, these seawalls were constructed in the 1950’s and have required ongoing maintenance due to storm damage and age-related deterioration. WIAL has therefore continued to maintain the seawalls at significant cost. This has necessarily included the land owned by the Council and now proposed to be zoned as Natural Open Space (Figure 3 below).
- 5.3** All of this land either forms part of the primary seawall structure, or is integral to the functioning of the seawalls, by helping to prevent overtopping, prevent scouring, to dissipate energy of water back into the sea, or provide a solid platform for heavy maintenance plant etc. Refer to Photos 2-7 below.

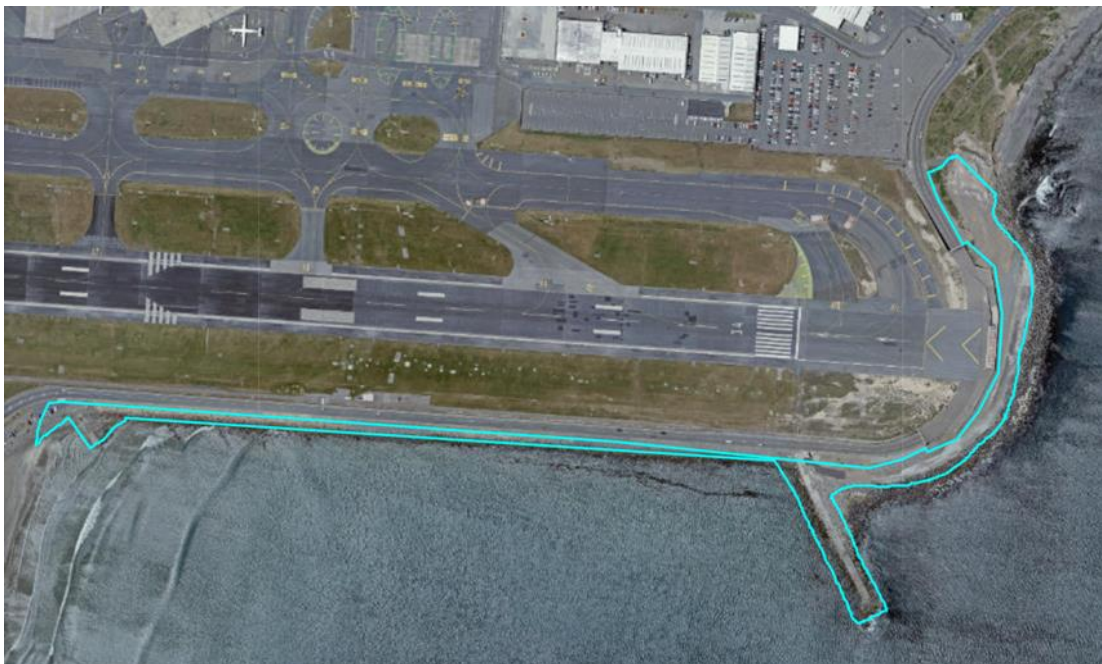


Figure 3: Land vested in WCC for Local Purpose Reserve (Esplanade)

6. THE CHARACTER OF THE LAND AREA AND MAINTENANCE ACTIVITIES

6.1 This land area therefore has a very different character to other Natural Open Space areas within the District. The key function of this area is to provide protection for the coastal road (Moa Point Road) and the infrastructure within (as noted above), as well as the Airport itself.

6.2 This area it is not “natural’ (i.e. it is reclaimed), and nor is it really “open space” in the sense provided for in the District Plan as a recreational area in a natural setting. The use of the majority of this area of land (especially in the southern portion and breakwater) by the public for recreational activities is currently discouraged as it is dangerous for a number of reasons including:

- Rogue waves during storms (refer to Photo 1 below to consequence of this);
- Boulders etc being thrown into the wave trap (refer Photos 2-3 below);
- Risk of persons falling between the akmons and the uneven nature of the western seawall bund;
- Jet Blast and wake turbulence at the southern end (equivalent to hurricane force winds, enough to tip over a vehicle) noting that WIAL is required to protect people from jet blast including beyond the Airport boundaries¹.



¹ Civil Aviation Rule 139.69 ([Part 139 Aerodromes Certification, Operation and Use | aviation.govt.nz](https://aviation.govt.nz/part-139-aerodromes-certification-operation-and-use))

Photo 1 - 2018: A car parked on Lyall Bay breakwater pushed into sea by wave

6.3 As can be seen in Photo's 2-5 below, the "natural open space" area between the runway and the southern seawall consists of a wave trap, seawall crest and akmon and rock armour. The Southern seawall structure extends from the Moa Point Road/tunnel to the seawall toe (all that area shown in Photos X and X below) and includes:

- A bund made of fill material forms the core of the seawall. See photos of the 1970s extension which show this bund south of Moa Point Road. As well as forming the seawall core, the height of this bund helps to protect Moa Point Road and tunnel from disruption and damage due to wave overtopping;
- The gabions and armour at the west end of Moa Point Tunnel protect against erosion from wave overtopping – without this, the landward side of the seawall is progressively eroded;
- The wave trap captures wave overtopping in the central section of the seawall and carries this seawater eastward, returning it back into Lyall Bay. It is formed from gabion baskets with a rock-armoured base and helps to protect the road and tunnel from wave overtopping;
- The seawall crest and seaward face are integral parts of the seawall, protecting the structure from storm/swell wave damage. The crest also provides access for regular maintenance of the crest and face of the seawall;
- The unpaved crest area immediately east of the formal seawall is part of the 1970s bund that forms the core of the seawall (see above).

6.4 All of the areas above require regular maintenance to address storm damage and age-related deterioration (e.g. placing additional akmons, re-grading wave trap, gabion basket re-wiring and re-filling; cavity filling in the unpaved crest areas, etc). The wave trap, crest, eastern crest (and access track leading from Moa Point Road) also provide maintenance access and space for emergency akmon replacement storage.



Photo 2: "Natural Open Space" area between the airport and the southern seawall (looking towards Moa Point)



Photo 3: Area of "Natural Open Space" zoned land looking from Moa Point end of Southern Seawall towards the west.



Photo 4: Area of “Natural Open Space” zoned land to south of Western Seawall adjacent to the Lyall Bay Breakwater.



Photo 5: Lyall Bay and the breakwater on a calm day



Photo 6: Lyall Bay Breakwater

- 6.5** Lyall Bay Breakwater is built of large concrete blocks founded on the underlying rock outcrop and smaller concrete cubes. The southern side of the breakwater is partly protected by concrete armour units and rock. Maintenance of Lyall Bay Breakwater potentially includes placing armour units on the southern side of the breakwater to help protect it from storm wave attack and grouting of cavities within and beneath the breakwater caused by 70 years of exposure to the dynamic marine environment.



Photo 7: Moa Point Road – crest of western seawall.

6.6 Circular sheetpile cells make up the core of the Western Seawall. These extend some 10-15m landward of the edge of the crest. Maintenance of the 70-year old seawall over the next 10-15 years will include repairs to the sheetpile cells. Excavation of the seawall crest to a depth of several metres is expected to be required to place geotextile or PE sheeting to protect the fine fill material landward of these sheetpiles. Similar repairs have been required over the past two decades.

6.7 Maintenance activities entail contractors working within the open space zone area as a whole as opposed to simply providing access to the face of the sea wall structure both above and below the waterline (mean high water springs)

7. SEAWALLS ENDING LIFE SPAN

7.1 These current sea defences are between 50 and 70 years old and are under-designed by modern engineering standards and are reaching the end of their natural lives. This has been confirmed by expert marine engineering advice from Beca and peer reviewed by AECOM. In addition, it is also necessary to prepare for the impacts of climate change, given the frequency and severity of storms is

increasing and sea levels are rising. The current sea defences weren't designed or built to withstand the weather conditions Wellington is likely to experience in future.

7.2 The current seawalls are also considered vulnerable to earthquakes. Major damage to the runway and to sewage pipes could have a major impact on Wellington's emergency response and see sewage released into Lyall Bay. The southern seawall in particular is the most vulnerable, being exposed directly to the Southern Ocean with no land mass between Moa Point and Antarctica.

7.3 Temporary repairs and upgrades have been made many times over the years, but this is no longer adequate – they need more than patchwork repair.

7.4 Without adequate protection, the risk of inundation and disruption to Wellington Airport's operations is very real. For example, in 1983 the southern seawall was breached which caused the disruption to flights for a number of weeks.



Photo 8: June 1983 seawall breach

7.5 If this happened today, the impact would have far-reaching consequences given:

- The airport generates around \$1.1 billion per year and 11,000 jobs for the wider economy²;
- Tourism and trade in particular are heavily dependent on aviation;
- Over 1400 people are directly employed at the airport including businesses like rental cars, food and beverage, transport and aviation services;
- The immeasurable social and community benefits from connecting people and families with 230 flights and 19,000 passengers per day.

7.6 Finally I note that Wellington Airport is recognised as a lifeline utility in the Civil Defence Emergency Act 2002, meaning we provide infrastructure vital to the community. We are required by law to ensure we are able to operate to the fullest extent possible during and after an emergency. Not being able to appropriately upgrade these sea defences could place us in breach of these responsibilities quite part from the consent notice discussed above.

8. SEAWALL PROJECT AND FUTURE CONSENTING PROCESSES

8.1 Given the above, WIAL has been investigating options for protecting the Airport runway and renewing the seawall defences.

8.2 I have **attached** a powerpoint document that was presented to the community during initial public consultation sessions that briefly describes the project and options for the upgrade or renewal of each structure.

8.3 It is clear from these investigations that resource consents will be required from both the Regional and District Councils given the scale and location of the works regardless of which options are ultimately chosen. Once the project is completed it is anticipated that there will be less ongoing maintenance, however given the dynamic nature of this coastal environment, maintenance will still be required.

8.4 As such it is important to WIAL that the District Plan provide for maintenance work as a permitted activity and for there to be a express policy framework to properly

²Economic analysis by BERL for Wellington Airport's 2040 Masterplan:
https://www.wellingtonairport.co.nz/documents/3131/FINAL_Master_plan.pdf

inform a consenting pathway for the renewal project where a permitted activity status would not be appropriate.

Dated 5 March 2024

Jo Lester

Planning Manager

Marine Defences Renewal

Topics

- **Background and history**
- **Maintenance regime**
- **Proposed works**
- **Next Steps**

Marine Defences

Breakwater

Western Seawall

Sewerage to Moa Point WWTP & sludge back to Southern Landfill

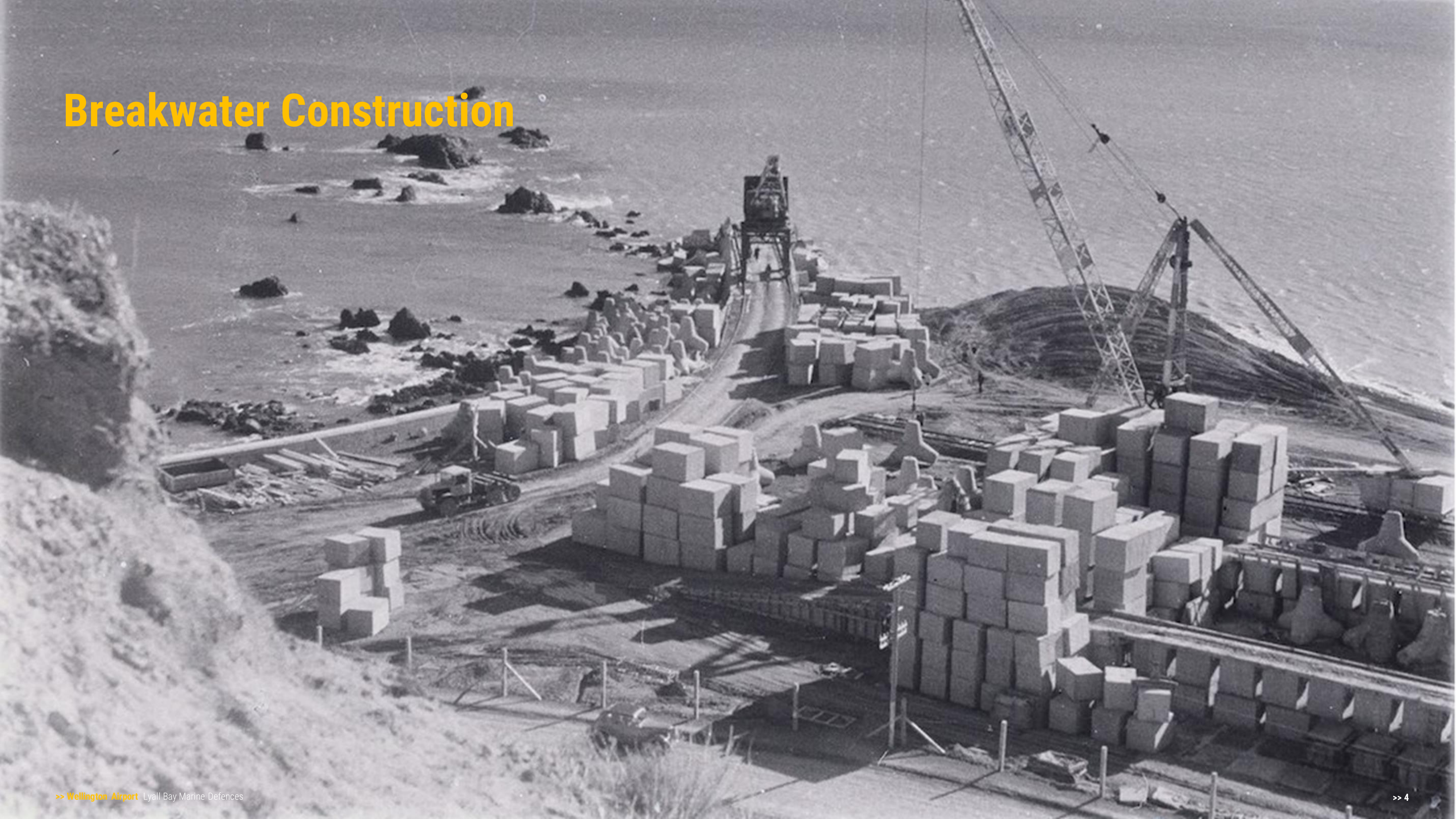
Southern Seawall

Moa Point Road

Potable Water supply

Eastern Eroding area

Breakwater Construction



1950's causeway construction



Causeway Construction

Moa Point Rd today



Runway Construction

18 Sept 1957



Runway Construction

8 Sept 1958









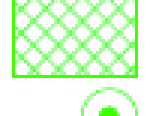

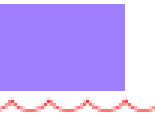





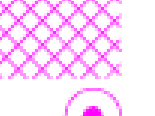




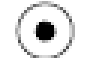













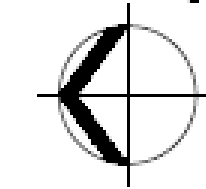
1972 Runway Extension



LEGEND

HISTORICAL OBSERVATION RECORDED BY WIAL:
-SEAWALL AND ASSOCIATED STORMWATER CONSTRUCTED 1956-59
-WAVE TRAP AND ASSOCIATED GABIONS CONSTRUCTED 1972

- | | | | | | |
|---|---|---|--|---|--|
|  | 1973 STRENGTHENING
305 AKMONS @ 10 TONNES
160 AKMONS @ 12 TONNES |  | 2000/2001 WESTERN SEAWALL REPAIR
CELLS 3, 4 & 5 |  | 2013/2014 BREAKWATER CONCRETE
REPAIR TO BLOCKS 5 TO 7 |
|  | 1984 MAJOR REPAIR
496 AKMONS, 2035 TONNES OF ROCKFILL
1200 TONNES OF BACKING ROCK PLACED |  | 2000/2001 UNDERWATER REPAIR
39 AKMONS PLACED |  | 2015 UNDERWATER REPAIR
61 AKMONS PLACED |
|  | 1987 AKMON REPAIR
30 AKMONS PLACED |  | 2000/2001 TOPSIDE AKMON REPAIR
39 AKMONS PLACED |  | 2015 TOP OF SOUTHERN SEAWALL
EROSION REPAIRS |
|  | 1993 MAJOR REPAIR
110 AKMONS PLACED
30 AKMONS PLACED |  | 2002/2003 TOPSIDE AKMON REPAIR
29 AKMONS PLACED |  | 2016 EMBANKMENT REPAIR (ROCK SLOPE,
RENO MATTRESS AND GABION BASKETS) |
|  | 1995 AKMON REPAIR
30 AKMONS PLACED |  | 2002 SEAWALL REMEDIAL WORKS
(STORM REPAIR) |  | 2018 UNDERWATER AND TOPSIDE
PLACEMENT TO FILL GAP IN T. PODS.
61 AKMONS PLACED |
|  | 1995 AKMON REPAIR
30 AKMONS PLACED |  | 2004 WESTERN SEAWALL REPAIR
CELLS 6, 7 & 8 |  | 2020/2021 MAJOR REPAIR
206 AKMONS PLACED |
|  | 1996 AKMON REPAIR
33 AKMONS PLACED |  | 2005 BREAKWATER GROUTED
BLOCKS 14/13, 10, 9/8, 7/6 |  | 62 AKMONS PLACED |
|  | 1996 CRANE ACCESS PLATFORM
CONSTRUCTION OF GABION RETAINING WALL
AND RENO MATTRESS/CONCRETE SURFACE |  | 2007 TOPSIDE AKMON REPAIR
48 AKMONS PLACED |  | 2022 WESTERN SEAWALL CREST
PROTECTION CELLS 9-16, 21, 22, 27 & 28 |
|  | 1996 LYALL BAY BREAKWATER REPAIR
GROUTING BELOW BREAKWATER
BETWEEN UNITS 3 & 8 |  | 2008 BREAKWATER GROUTED
BLOCKS 2 AND 3 |  | 2022 SOUTHERN SEAWALL CREST TOP
REPAIRS |
|  | 1997 AKMON REPAIR
64 AKMONS PLACED |  | 2012 TOPSIDE AKMON REPAIR
21 AKMONS PLACED |  | 2022 GABION BASKET REPAIRS |
|  | 1998/1999 WESTERN SEAWALL REPAIR
REFER 28104.25/C005 |  | 2012 SEAWALL REMEDIAL WORKS
ERODING AREA ROCK ARMOUR REPAIR | | |
|  | 2000 AKMON REPAIR
28 AKMONS PLACED |  | 2012 WESTERN SEAWALL REPAIR
CELLS 17, 18 & 19 AND ROCK ARMOUR | | |



NORTH

MOA POINT ROAD

2009: 6 AKMONS MOVED AWAY FROM ERODING BANK.

TOP OF SLOPE

TOE OF SEAWALL

MEAN SEA LEVEL

CL RUNWAY

2009 GABIONS REPAIRED IN SEVERAL LOCATIONS AND WAVETRAP REGRADED

2021 - 8 NO. BROKEN AKMONS REMOVED 7 NO. AKMONS REPLACED HERE.

SEAWALL REPAIR FOR ACCESS, MARCH/JULY 1996 CRANE ACCESS RAMP

2016 EMBANKMENT REPAIRS

2022 CREST TOP REPAIRS

32 No. CELLS IN TOTAL

2012 WESTERN SEAWALL REPAIR CELLS 17, 18 & 19
2022 WESTERN SEAWALL CREST REPAIR CELLS 15, 16, 21, 22, 27 & 28

2012 ROCK ARMOUR REPLENISHED

2009 RIPRAP PRESSED DOWN

2009 GRILLE INSTALLED TO SW OUTFALL AND DRAIN CLEANED AND OUTFALL CLEARED

2012 REPAIR

1984 MAJOR REPAIR 496 AKMONS

Condition of Western Sheetpile cells



April 1984 Breach



Project Overview

- Strategic resilience project in WIAL's 2040 Masterplan.
- Objectives:
 - Safeguard the long-term operation of Wellington Airport and adjacent council infrastructure against natural hazards, e.g., coastal inundation, coastal erosion.
 - Provide for continued safe airport operation during the sea defences construction period.
 - Deliver a sustainable solution that is adaptable for any future Wellington Airport development opportunity and delivers prudent use of capital.

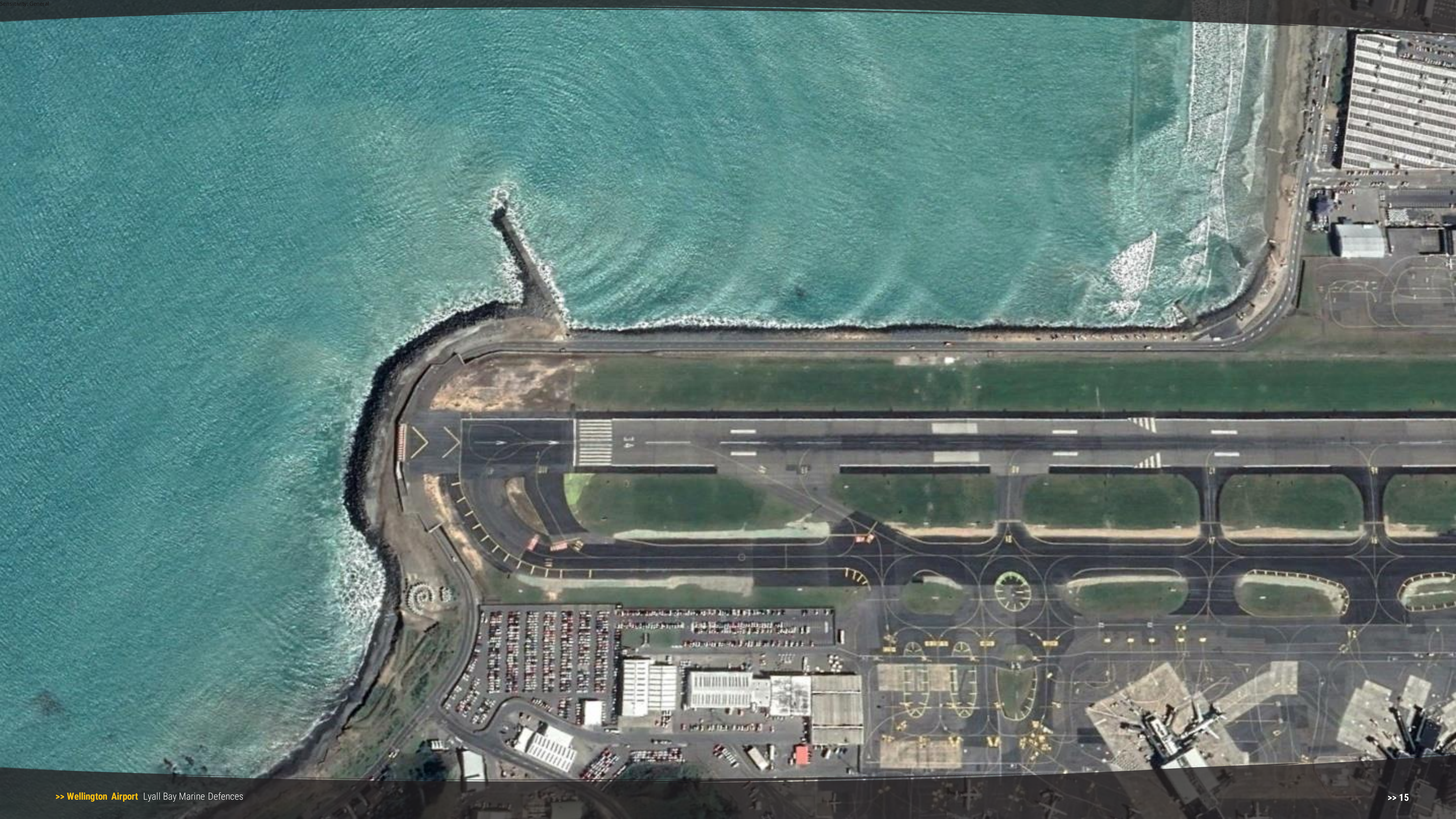


Western Seawall

Site features

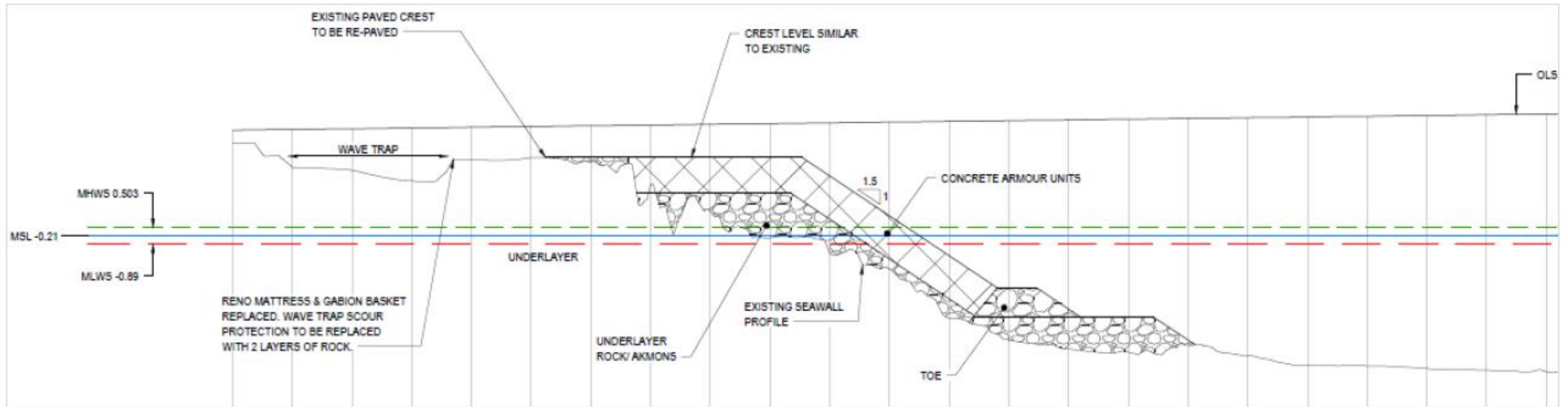
- Operational environment:
 - OLS (Obstacle Limitation Surface)
 - ILS (Instrument Landing System) glide path
- Wave, wind exposure
- Shallow water by Lyall Bay Breakwater & Western Seawall
- Moa Point Road traffic
- Underground services





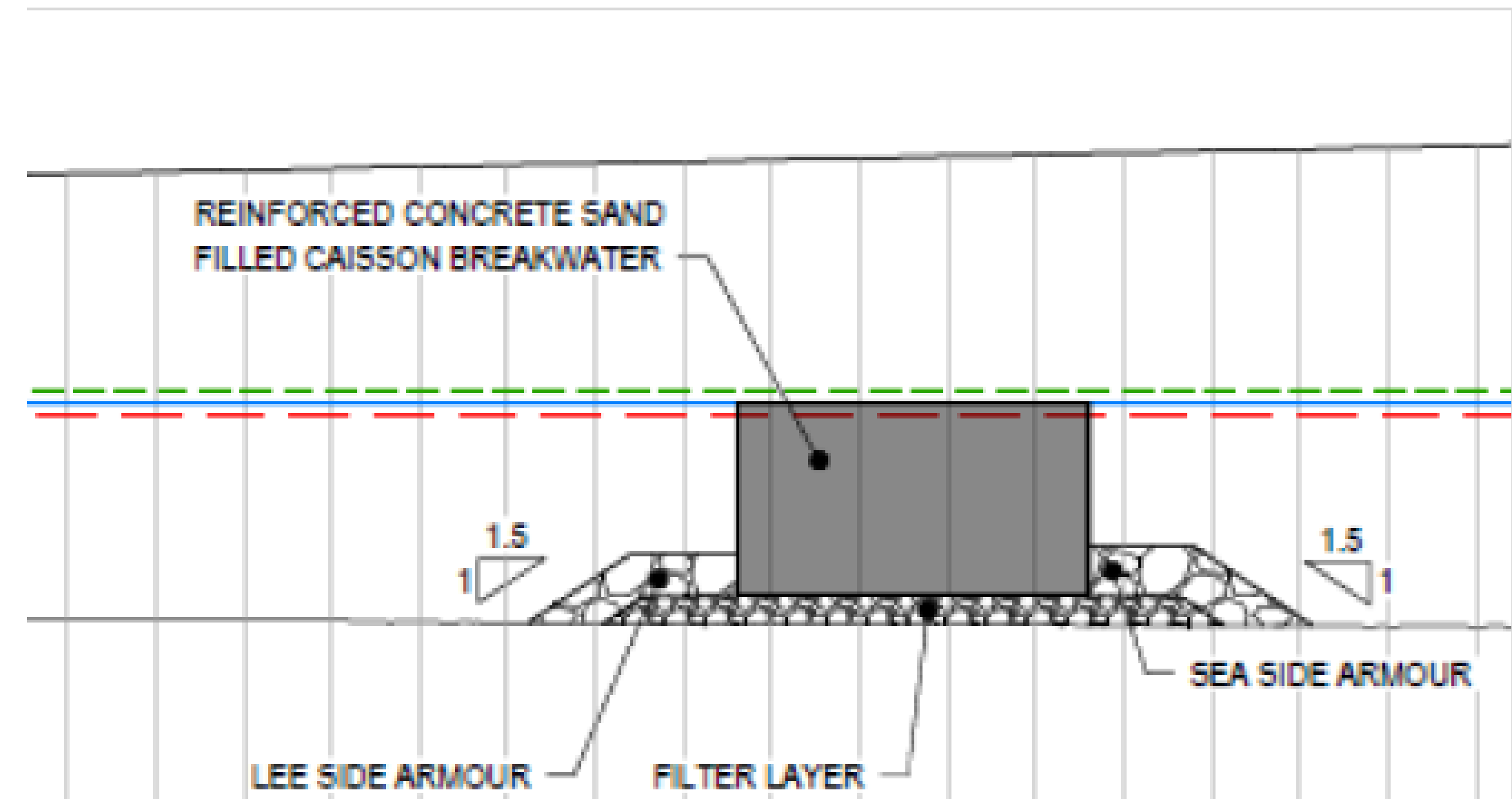
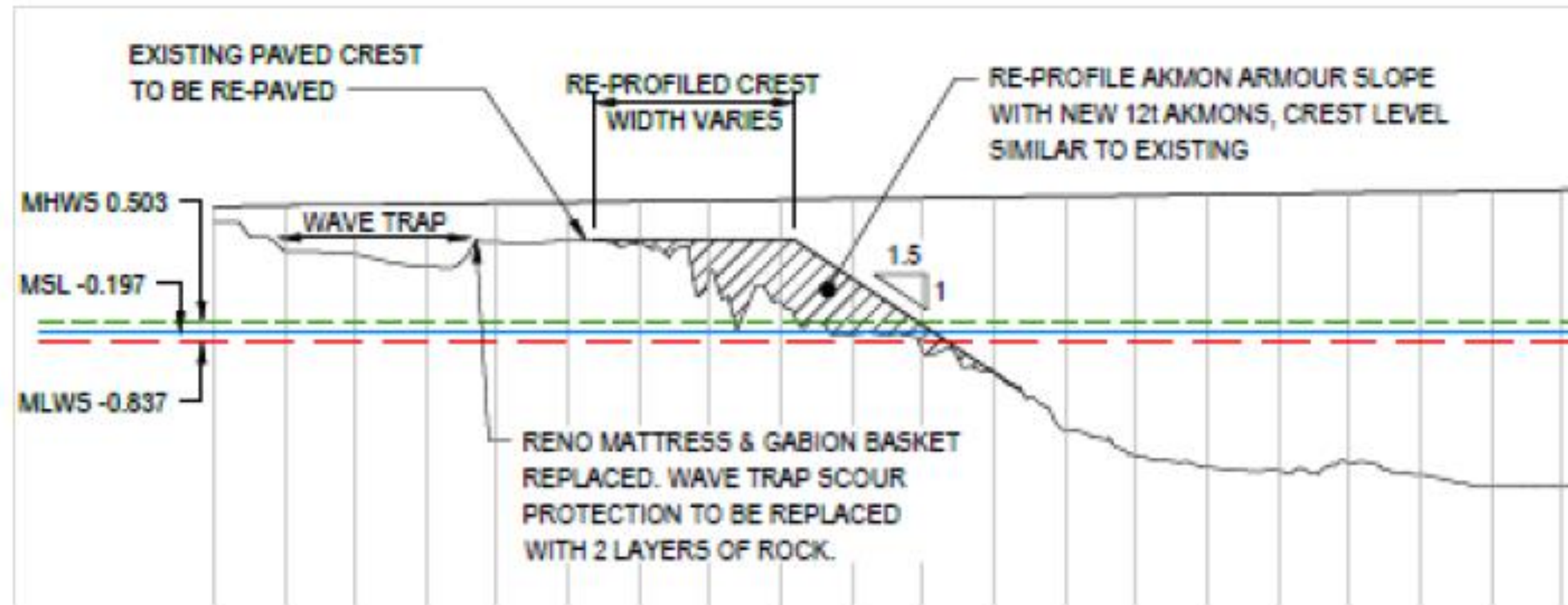
Southern Seawall options

Overlay option



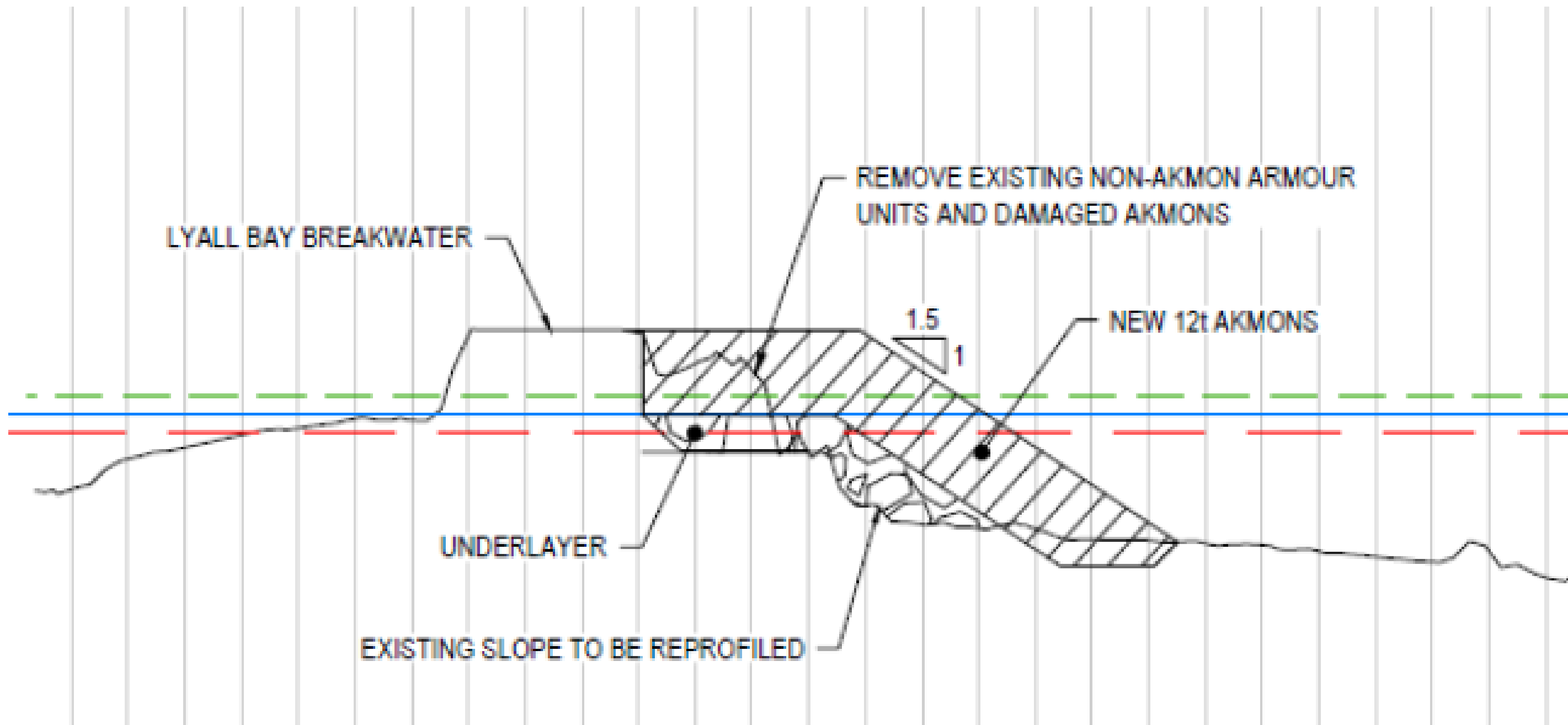
Southern Seawall options

Caisson option



Lyall Bay Breakwater options

Repair and armour

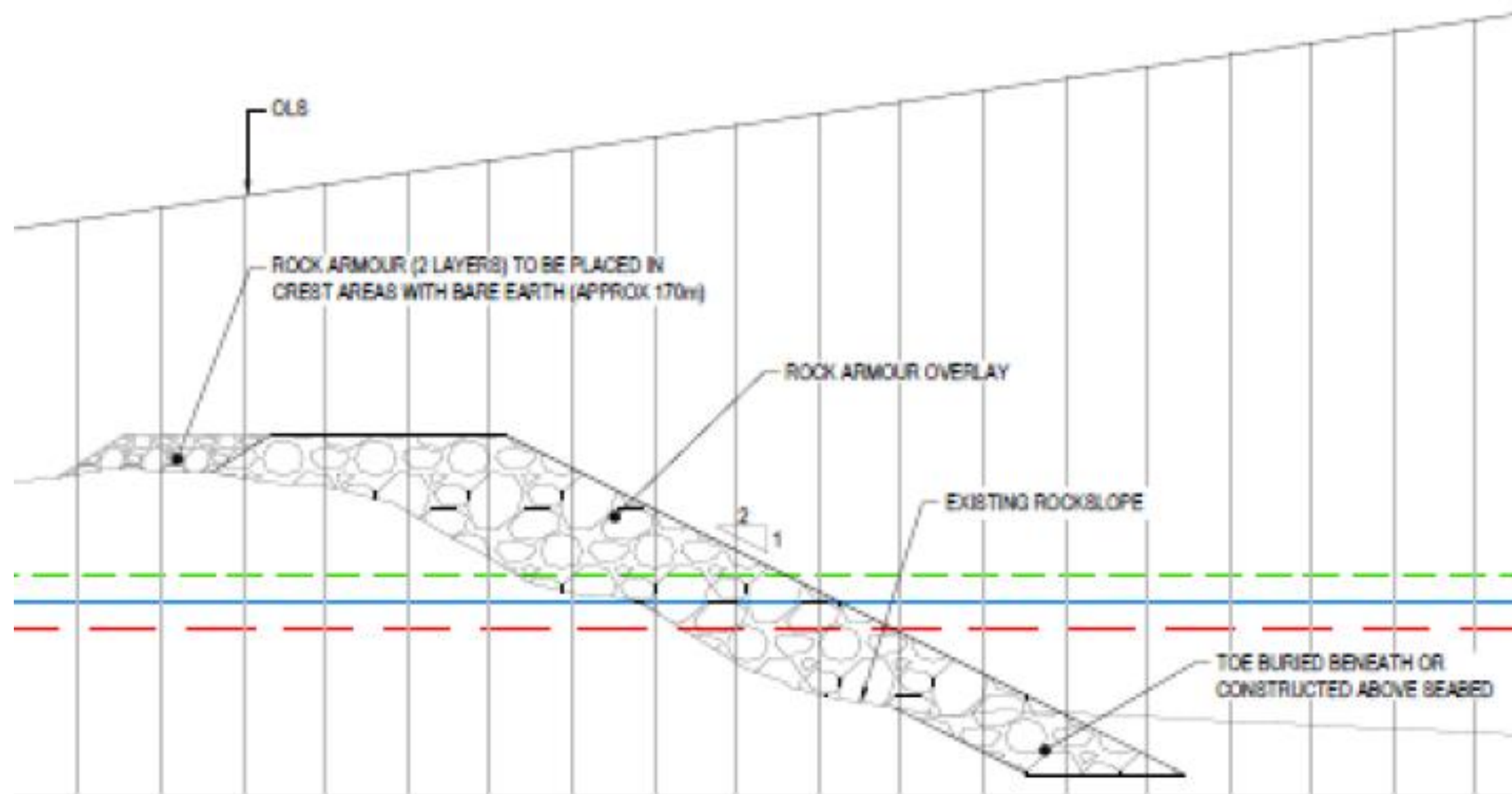


Monitor and manage

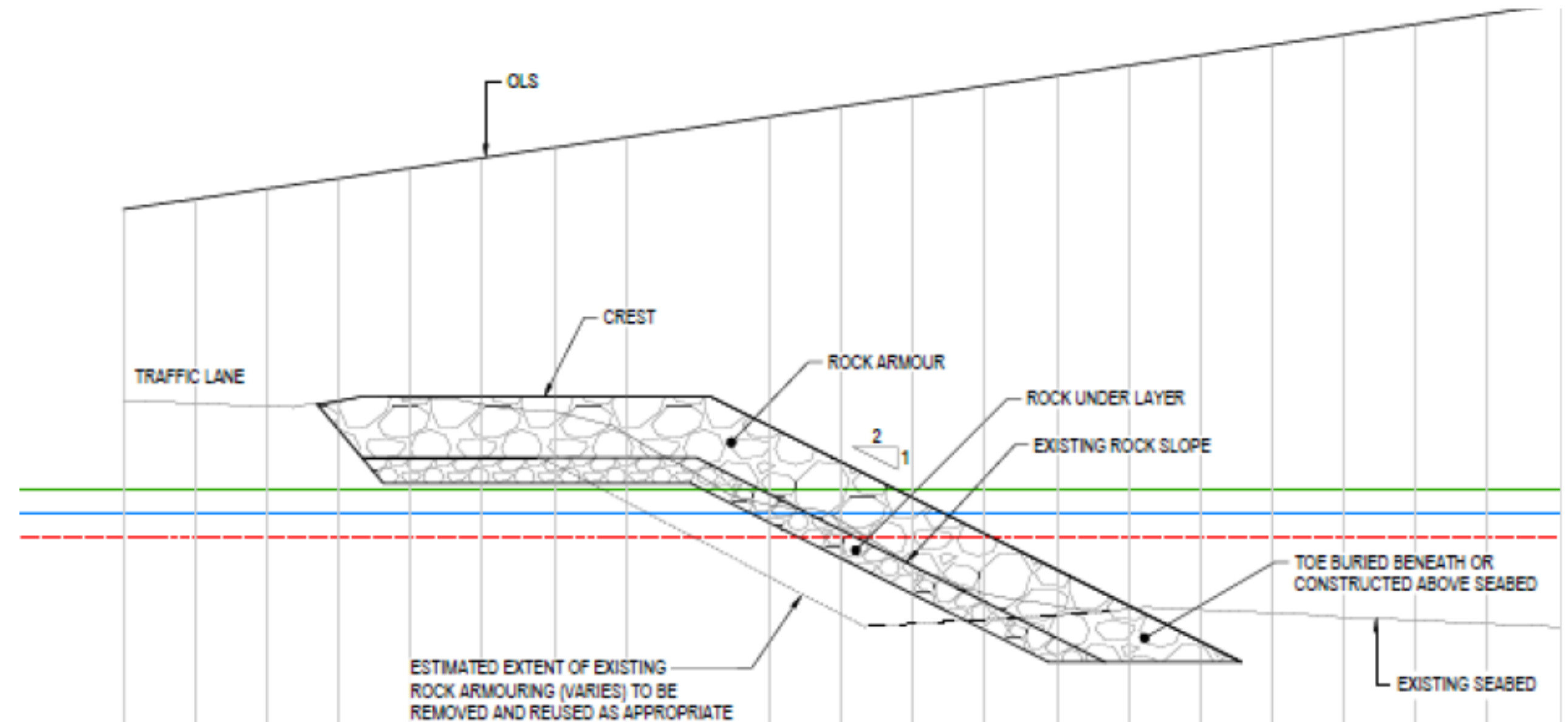


Western Seawall options

Rock overlay

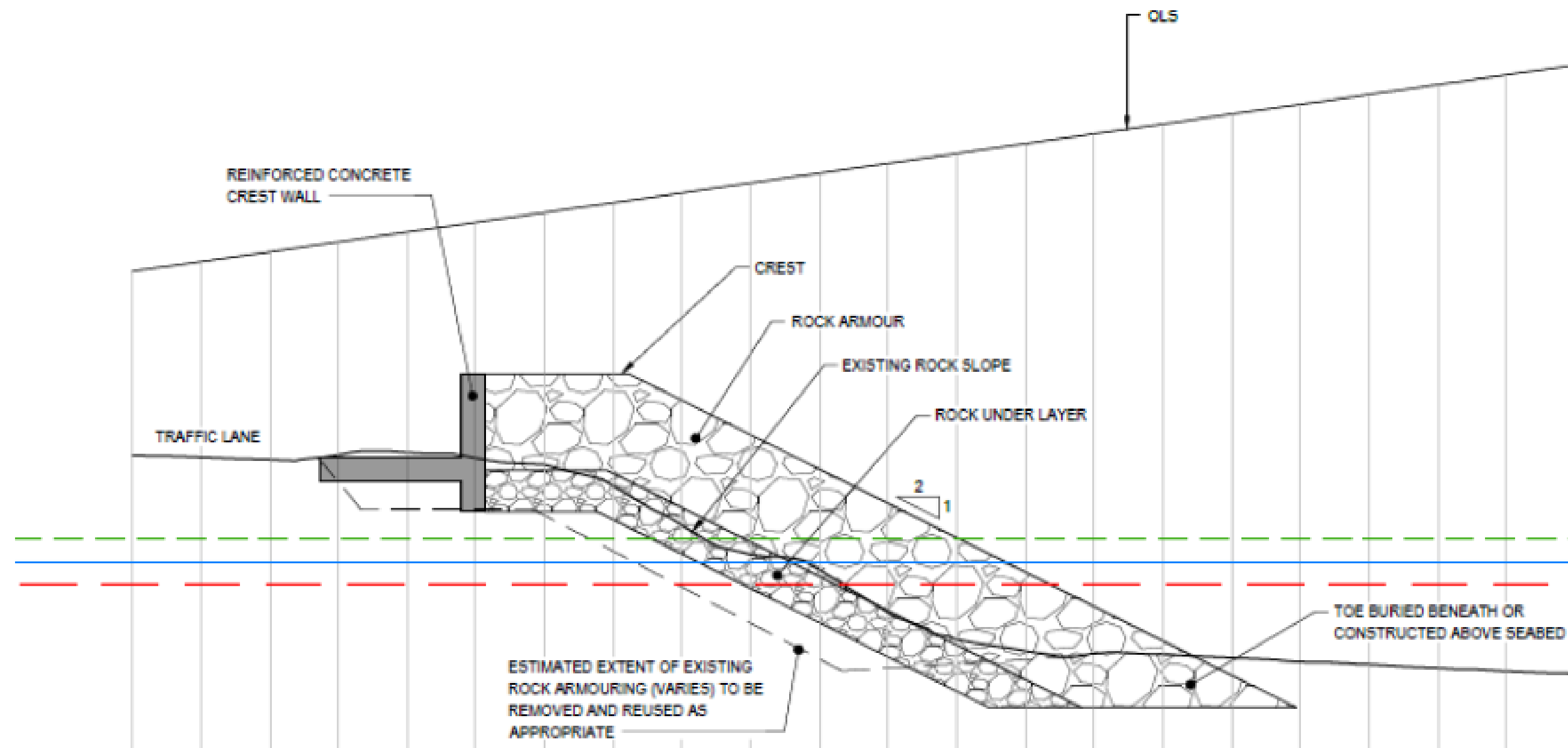


Rebuild and armour (low crest)



Western Seawall options

Rebuild and armour (high crest)



Community consultation and consenting – next steps

- GWRC Natural Resources Plan (NRP) includes rules that provide for routine repair and maintenance of coastal defence structures – scale of proposed works will not meet permitted activity standards.
- Resource consents will be required under NRP and WCC District Plan which will be open to public feedback.
- Range of technical assessments will be required to assist the consenting process including ecology, landscape and natural character, coastal processes, heritage, cultural and recreational use assessments.
- Construction related effects (noise, vibration, dust, transportation) will also require detailed assessment.
- Technical assessments will be commissioned in October.

Community consultation and consenting – next steps

- Wellington Airport is committed to engaging with community and key stakeholders, including mana whenua.
- As technical work continues, this will be shared. Collaboration is key to getting community perspectives about the range of environmental effects that will likely occur and how best to manage them.
- A key challenge is to address amenity related effects arising from construction activities, some of which need to occur after daily airport operations cease (i.e. at night) and which require the movement of construction materials, plant and machinery to and around the site.
- How can we work together to best manage these effects?

Questions?

