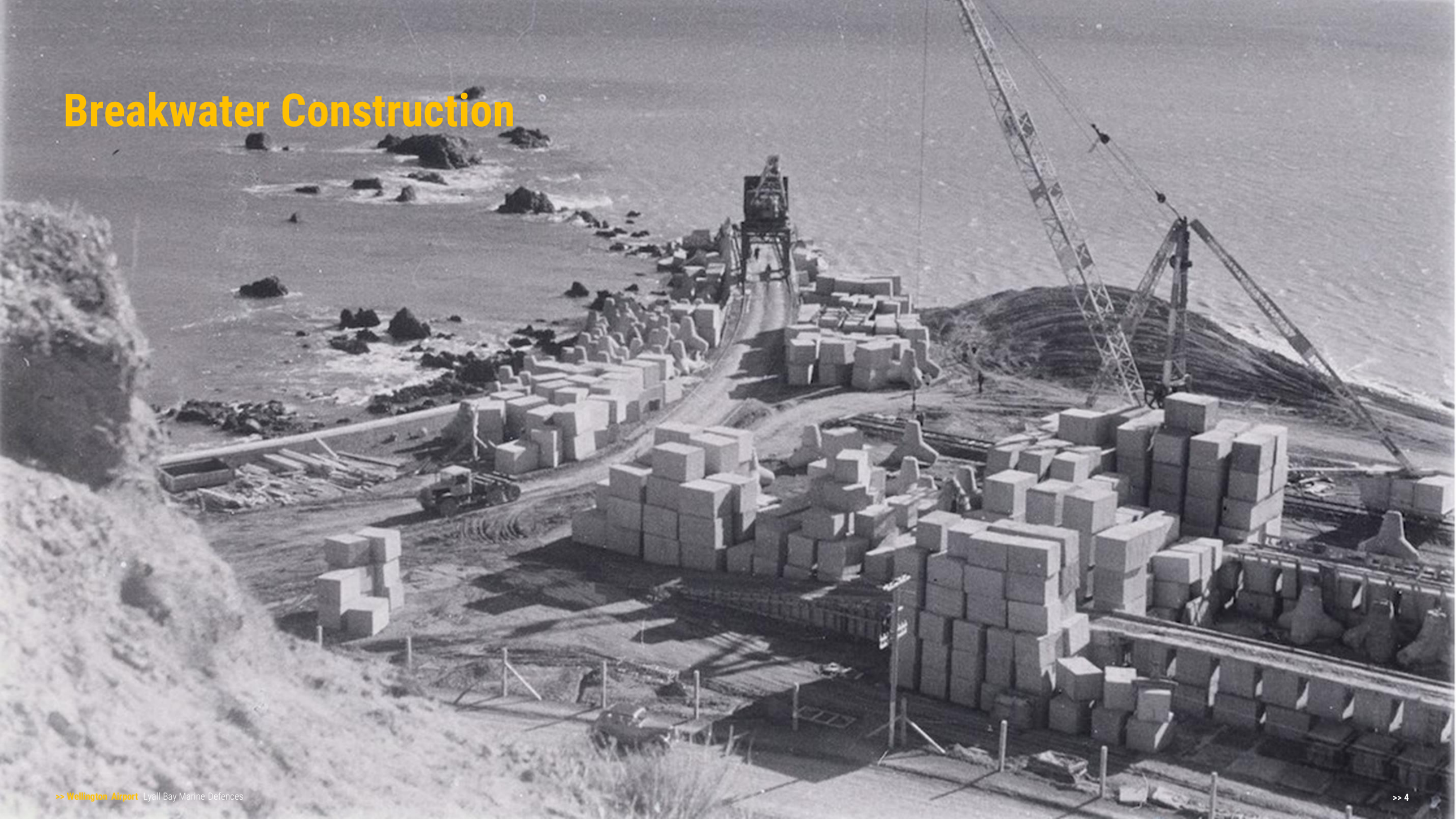
Marine Defences Renewal

Topics

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

Marine Defences

Breakwater Construction



1950’s causeway construction

Causeway Construction

Moa Point Rd today

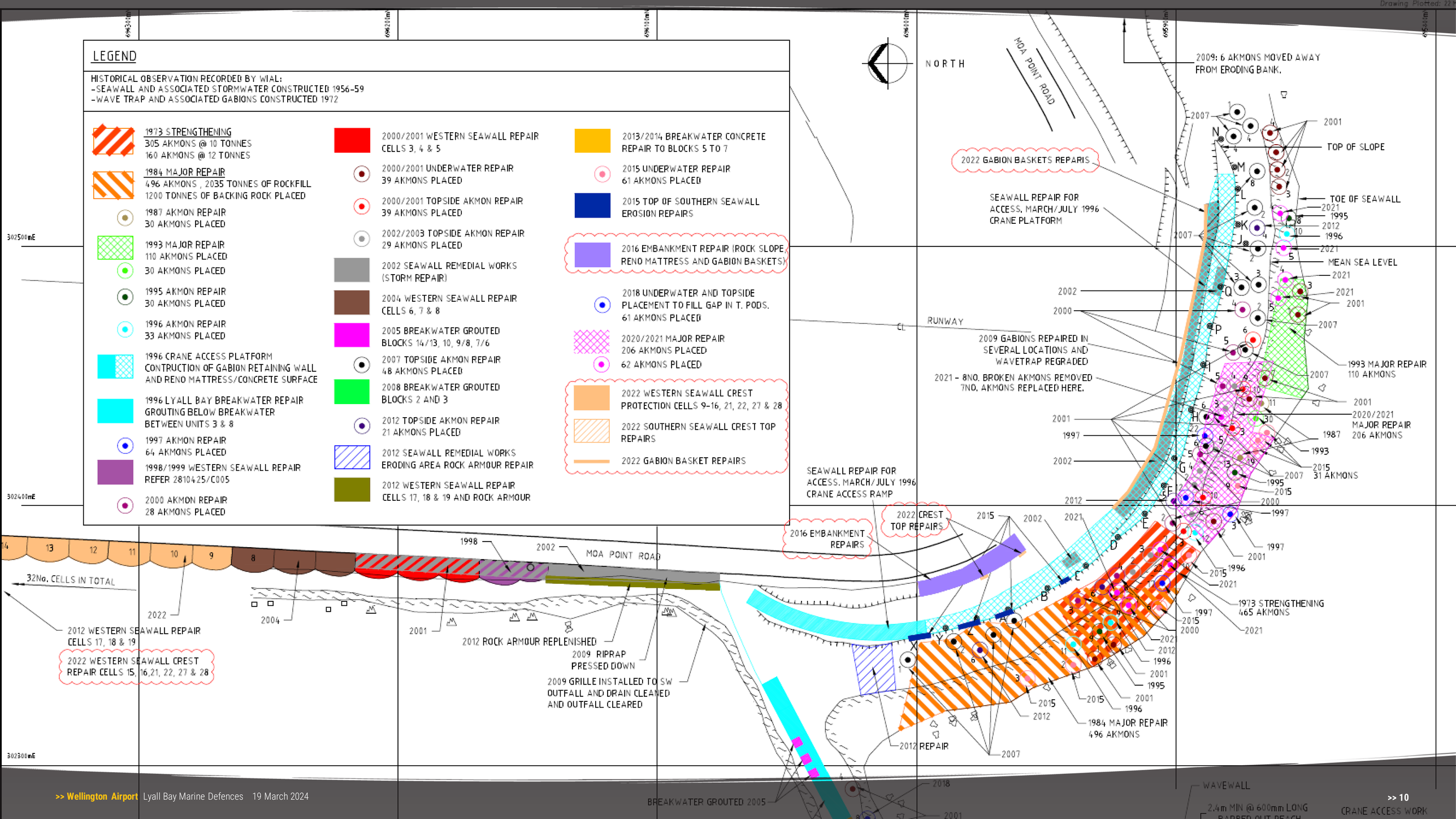
Runway Construction

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
1984 MAJOR REPAIR
496 AKMONS , 2035 TONNES OF ROCKFILL
1200 TONNES OF BACKING ROCK PLACED
1987 AKMON REPAIR
30 AKMONS PLACED
1993 MAJOR REPAIR
110 AKMONS PLACED
30 AKMONS PLACED
1995 AKMON REPAIR
30 AKMONS PLACED
1996 AKMON REPAIR
33 AKMONS PLACED
1996 CRANE ACCESS PLATFORM
CONTRUCTION OF GABION RETAINING WALL
AND RENO MATTRESS/CONCRETE SURFACE
1996 LYALL BAY BREAKWATER REPAIR
GROUTING BELOW BREAKWATER
BETWEEN UNITS 3 & 8
1997 AKMON REPAIR
64 AKMONS PLACED
1998/1999 WESTERN SEAWALL REPAIR
REFER 2810425/C005
2000 AKMON REPAIR
28 AKMONS PLACED
2000/2001 WESTERN SEAWALL REPAIR
CELLS 3, 4 & 5
2000/2001 UNDERWATER REPAIR
39 AKMONS PLACED
2000/2001 TOPSIDE AKMON REPAIR
39 AKMONS PLACED
2002/2003 TOPSIDE AKMON REPAIR
29 AKMONS PLACED
2002 SEAWALL REMEDIAL WORKS
(STORM REPAIR)
2004 WESTERN SEAWALL REPAIR
CELLS 6, 7 & 8
2005 BREAKWATER GROUTED
BLOCKS 14/13, 10, 9/8, 7/6
2007 TOPSIDE AKMON REPAIR
48 AKMONS PLACED
2008 BREAKWATER GROUTED
BLOCKS 2 AND 3
2012 TOPSIDE AKMON REPAIR
21 AKMONS PLACED
2012 SEAWALL REMEDIAL WORKS
ERODING AREA ROCK ARMOUR REPAIR
2012 WESTERN SEAWALL REPAIR
CELLS 17, 18 & 19 AND ROCK ARMOUR
2013/2014 BREAKWATER CONCRETE
REPAIR TO BLOCKS 5 TO 7
2015 UNDERWATER REPAIR
61 AKMONS PLACED
2015 TOP OF SOUTHERN SEAWALL
EROSION REPAIRS
2016 EMBANKMENT REPAIR (ROCK SLOPE
RENO MATTRESS AND GABION BASKETS)
2018 UNDERWATER AND TOPSIDE
PLACEMENT TO FILL GAP IN T. PODS.
61 AKMONS PLACED
2020/2021 MAJOR REPAIR
206 AKMONS PLACED
62 AKMONS PLACED
2022 WESTERN SEAWALL CREST
PROTECTION CELLS 9-16, 21, 22, 27 & 28
2022 SOUTHERN SEAWALL CREST TOP
REPAIRS
2022 GABION BASKET REPAIRS
NORTH
MOA POINT ROAD
2009: 6 AKMONS MOVED AWAY
FROM ERODING BANK.
2022 GABION BASKETS REPAIRS
SEAWALL REPAIR FOR
ACCESS, MARCH/JULY 1996
CRANE PLATFORM
TOP OF SLOPE
TOE OF SEAWALL
MEAN SEA LEVEL
CL RUNWAY
2009 GABIONS REPAIRED IN
SEVERAL LOCATIONS AND
WAVETRAP REGRADED
2021 - 8NO. BROKEN AKMONS REMOVED
7NO. AKMONS REPLACED HERE.
1993 MAJOR REPAIR
110 AKMONS
2020/2021
MAJOR REPAIR
206 AKMONS
1987
1993
2015
31 AKMONS
SEAWALL REPAIR FOR
ACCESS. MARCH/JULY 1996
CRANE ACCESS RAMP
2016 EMBANKMENT
REPAIRS
2022 CREST
TOP REPAIRS
1973 STRENGTHENING
465 AKMONS
1984 MAJOR REPAIR
496 AKMONS
2012 REPAIR
32No. CELLS IN TOTAL
2012 WESTERN SEAWALL REPAIR
CELLS 17, 18 & 19
2022 WESTERN SEAWALL CREST
REPAIR CELLS 15, 16,21, 22, 27 & 28
2022
2004
2001
1998
2002
MOA POINT ROAD
2012 ROCK ARMOUR REPLENISHED
2009 RIPRAP
PRESSED DOWN
2009 GRILLE INSTALLED TO SW
OUTFALL AND DRAIN CLEANED
AND OUTFALL CLEARED
BREAKWATER GROUTED 2005
WAVEWALL
2.4m MIN @ 600mm LONG
302500mE
302400mE
302300mE

Condition of Western Sheetpile cells

April 1984 Breach

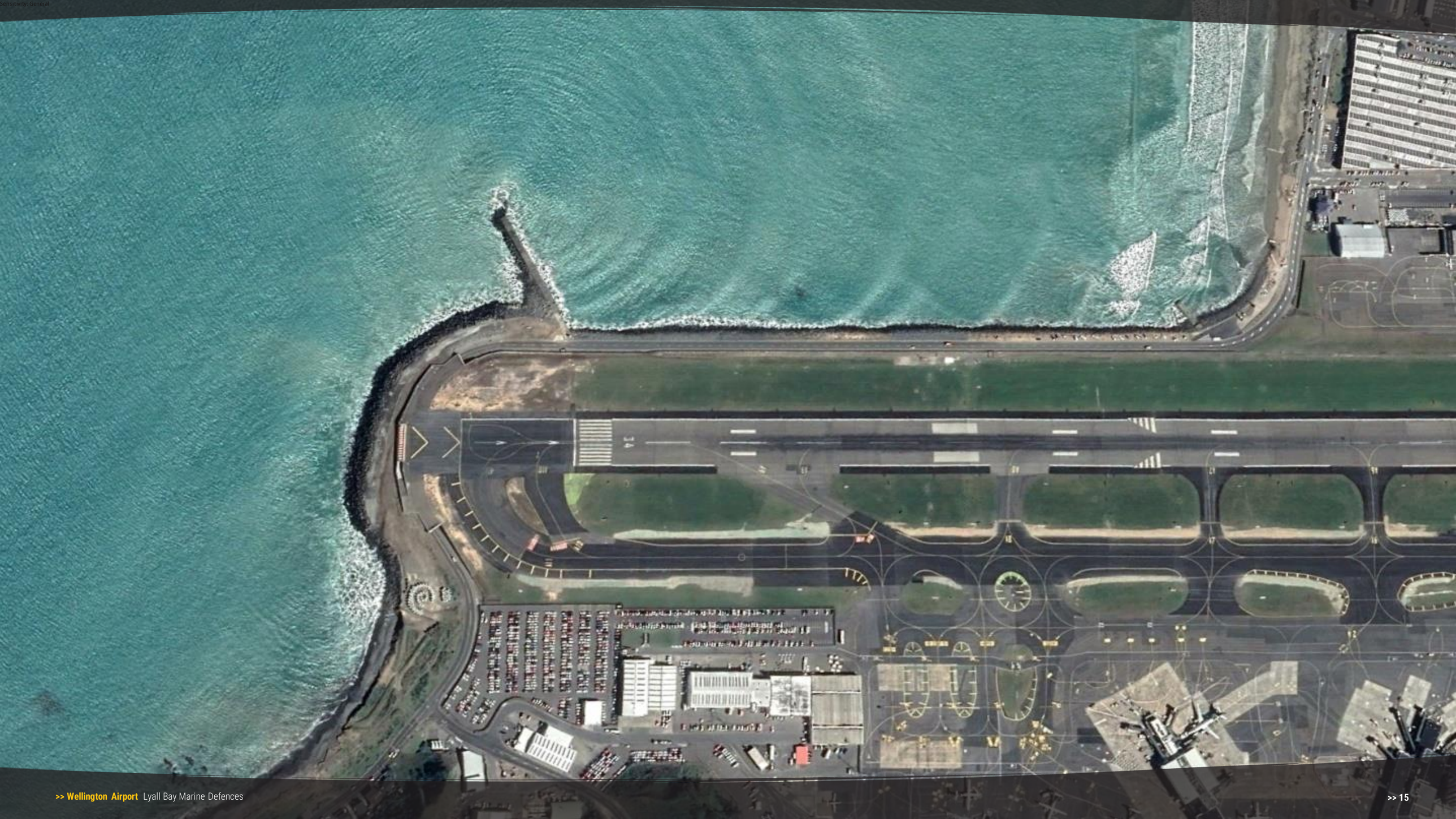
Project Overview

- 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

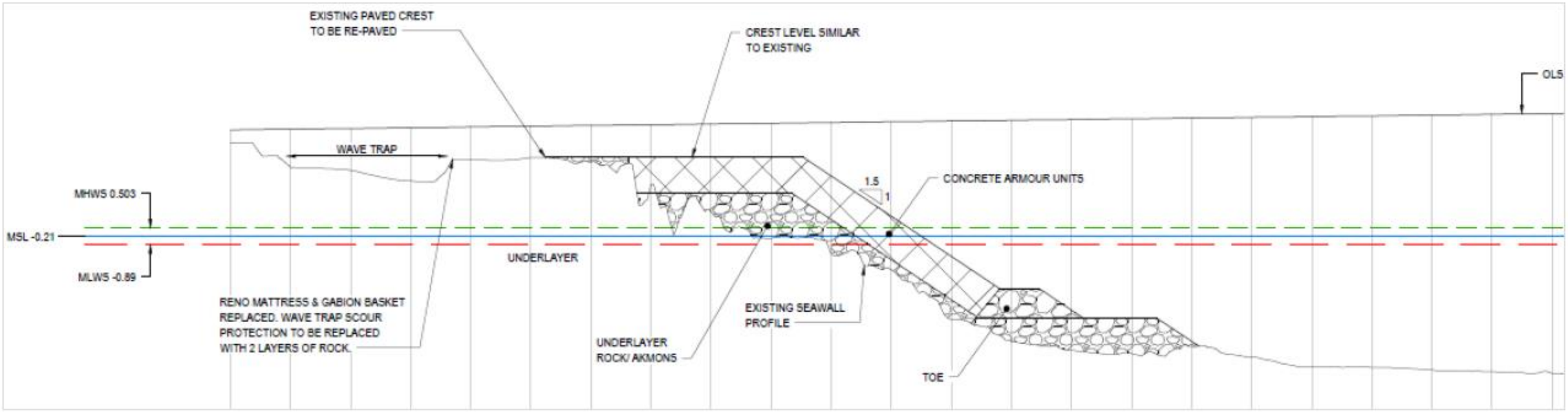
Site features

- 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



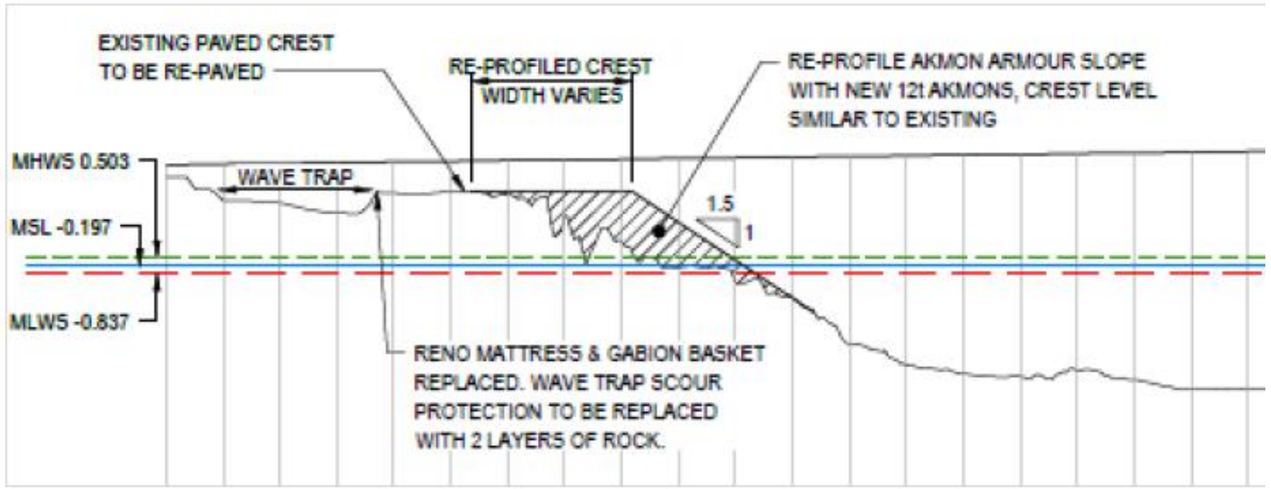
Southern Seawall options

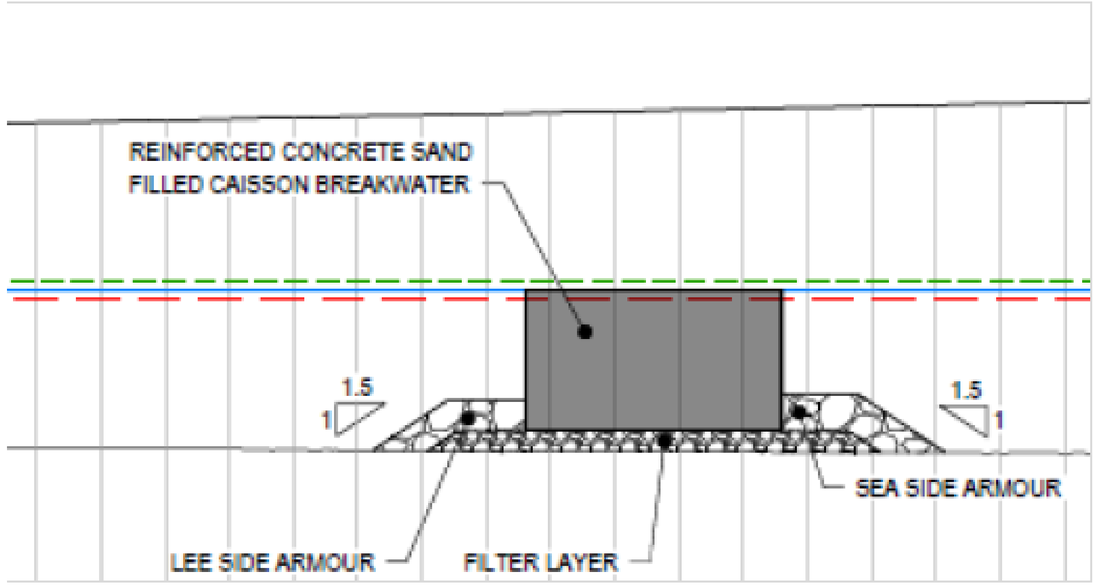
Overlay option



Southern Seawall options

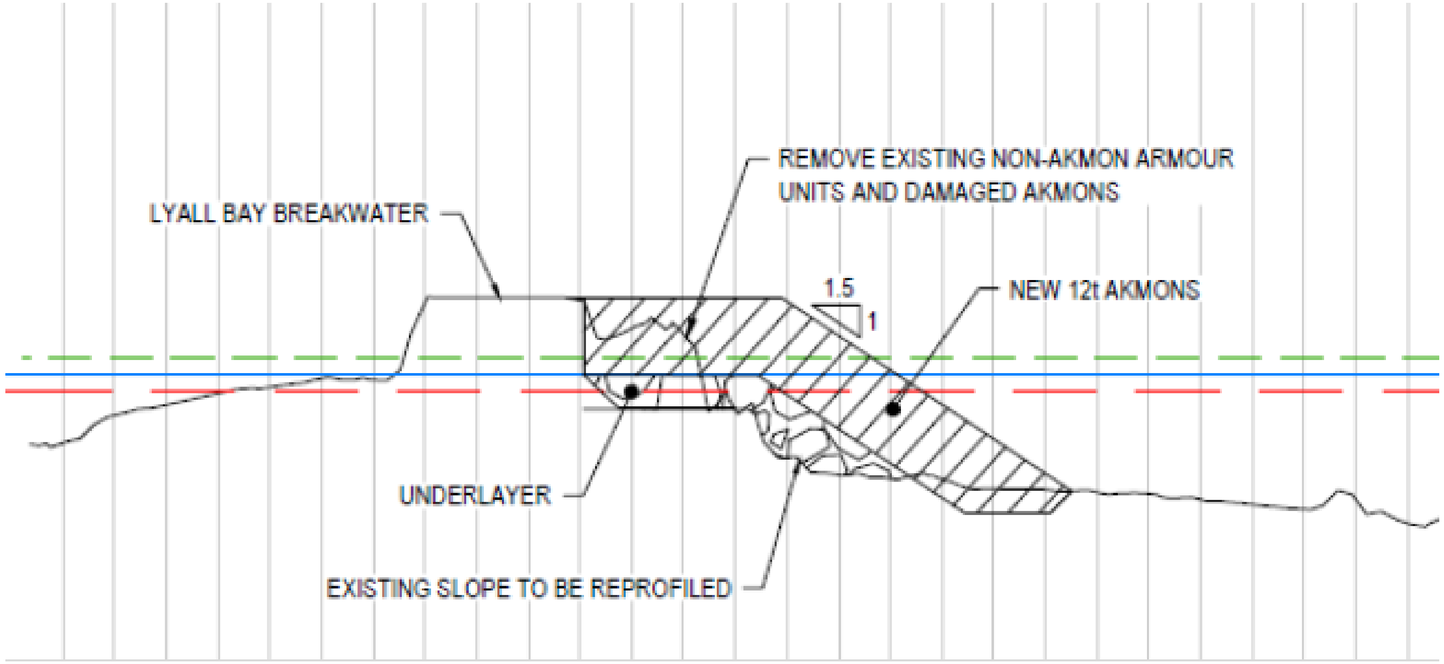
Caisson option





Lyall Bay Breakwater options

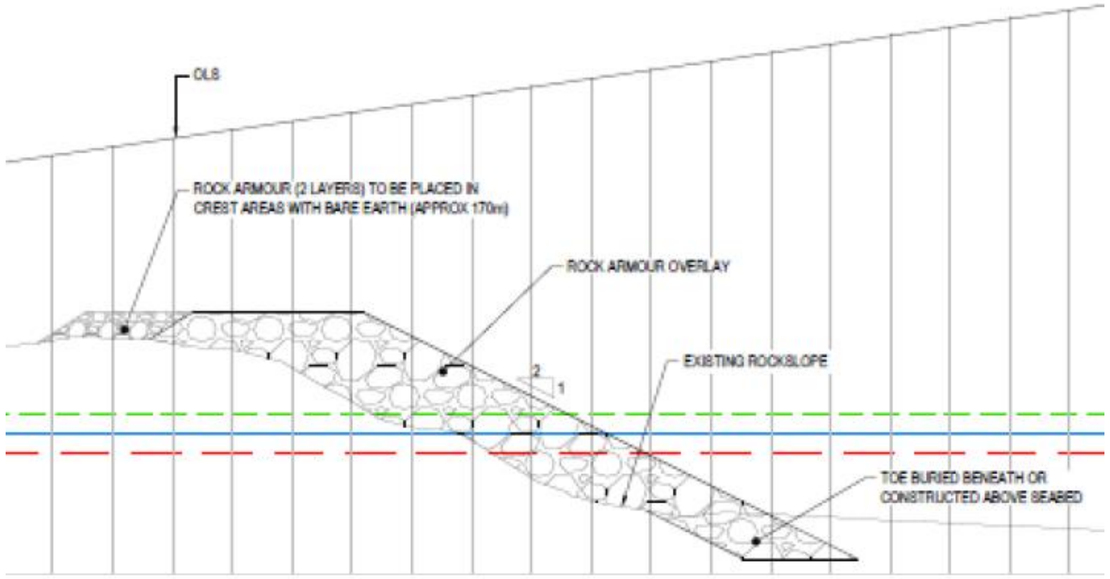
Repair and armour



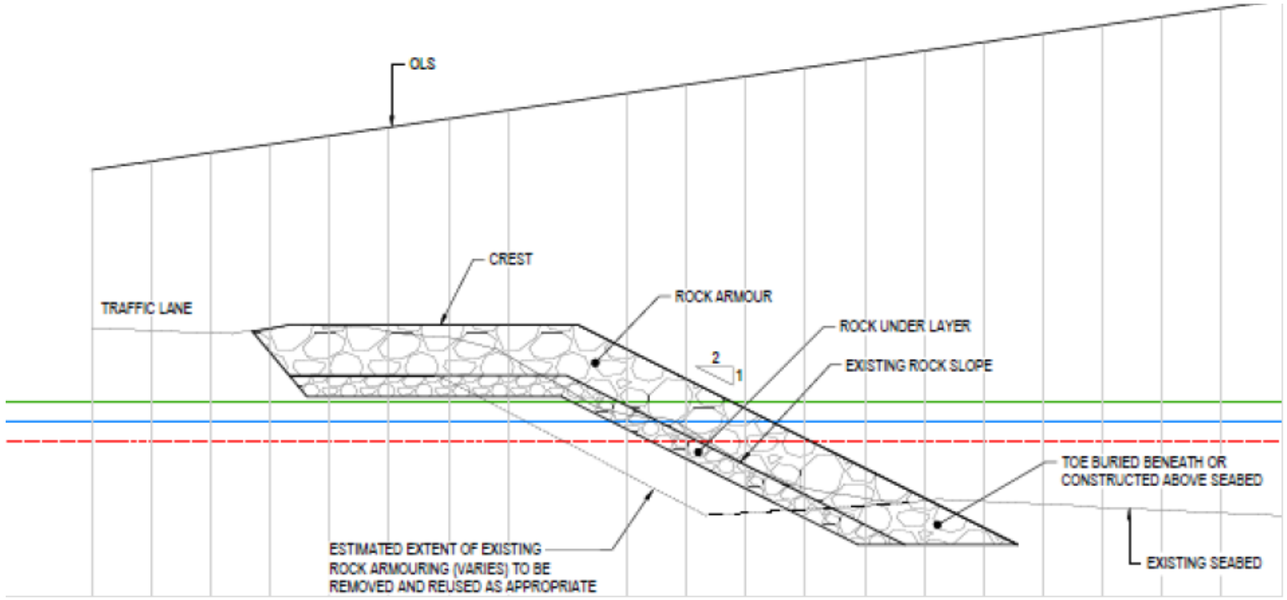
Monitor and manage

Western Seawall options

Rock overlay

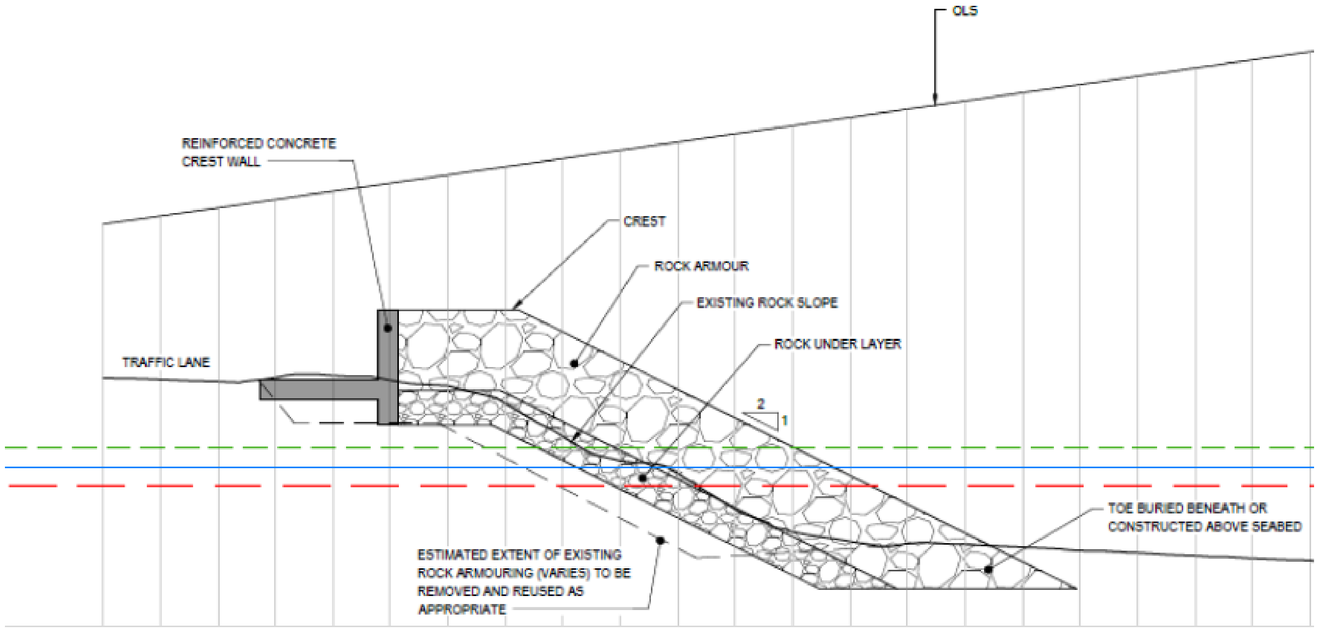


Rebuild and armour (low crest)



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?