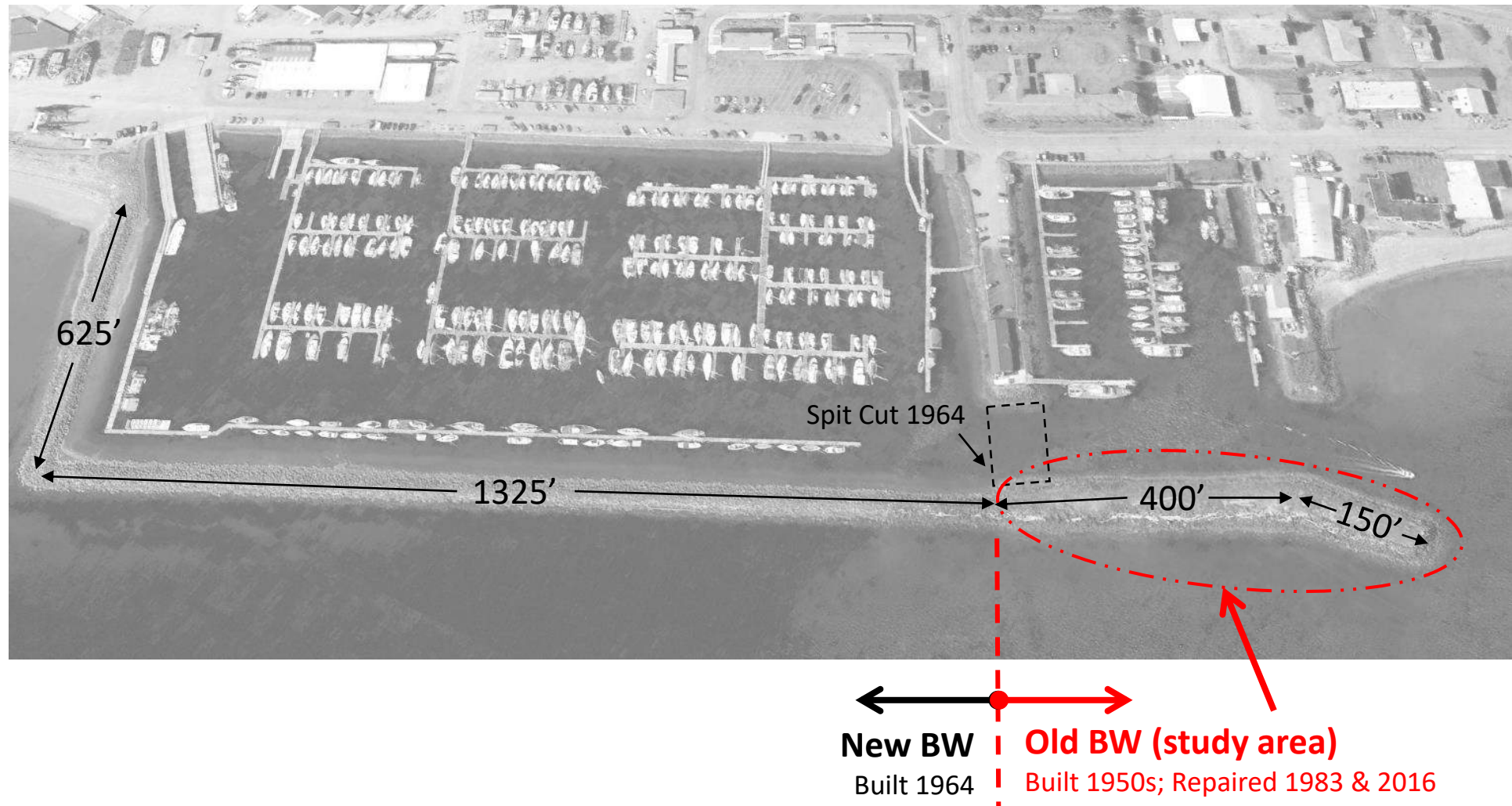


# Boat Haven Breakwaters (BWs)



# History of Breakwaters (BWs)

## Boat Haven Marina

- 1950s – Old BW constructed
- 1964 – New BW constructed, spit cut
- 1983 – Repair work on Old BW, designed by R.A. Leach
- 2012 – Repair, date not certain (presence of granite stone)
- 2016 – Winter storm results in damage
- 2016 – Port completes Condition Assessment of Boat Haven BW
- 2017 – Complete repair on a portion of the Old BW
- 2018 – Winter storm results in damage
- 2019 – Repair portion of the Old BW suspended until permitting complete
- 2022 – Permits in hand, repair work may resume

CONTOURS ESTIMATED  
FROM USAGE PLANS

TOP OF BREAKWATER  
EL = 15.0±

SEE BREAKWATER  
SECTION PAGE 1

2+00  
1X2 STAKE  
ANGLE POINT  
3' LEFT

3+00  
1X2 STAKE

4+00  
1X2 STAKE

0+00  
1X2 STAKE

1+00  
1X2 STAKE

-0+80

-0+80

A

B

A

SAND CORE

BASELINE

A

B

A

A

A

50'  
PER SECTION  
A-A

100'  
PER SECTION  
A-A

80'  
PER SECTION  
A-A

280' ADD ROCK FACING  
PER SECTION B-B  
SLOPE REPAIR

160' NEW ROCK  
FACING (2012)

MHHW  
EL = 8.52  
MHW  
EL = 7.84

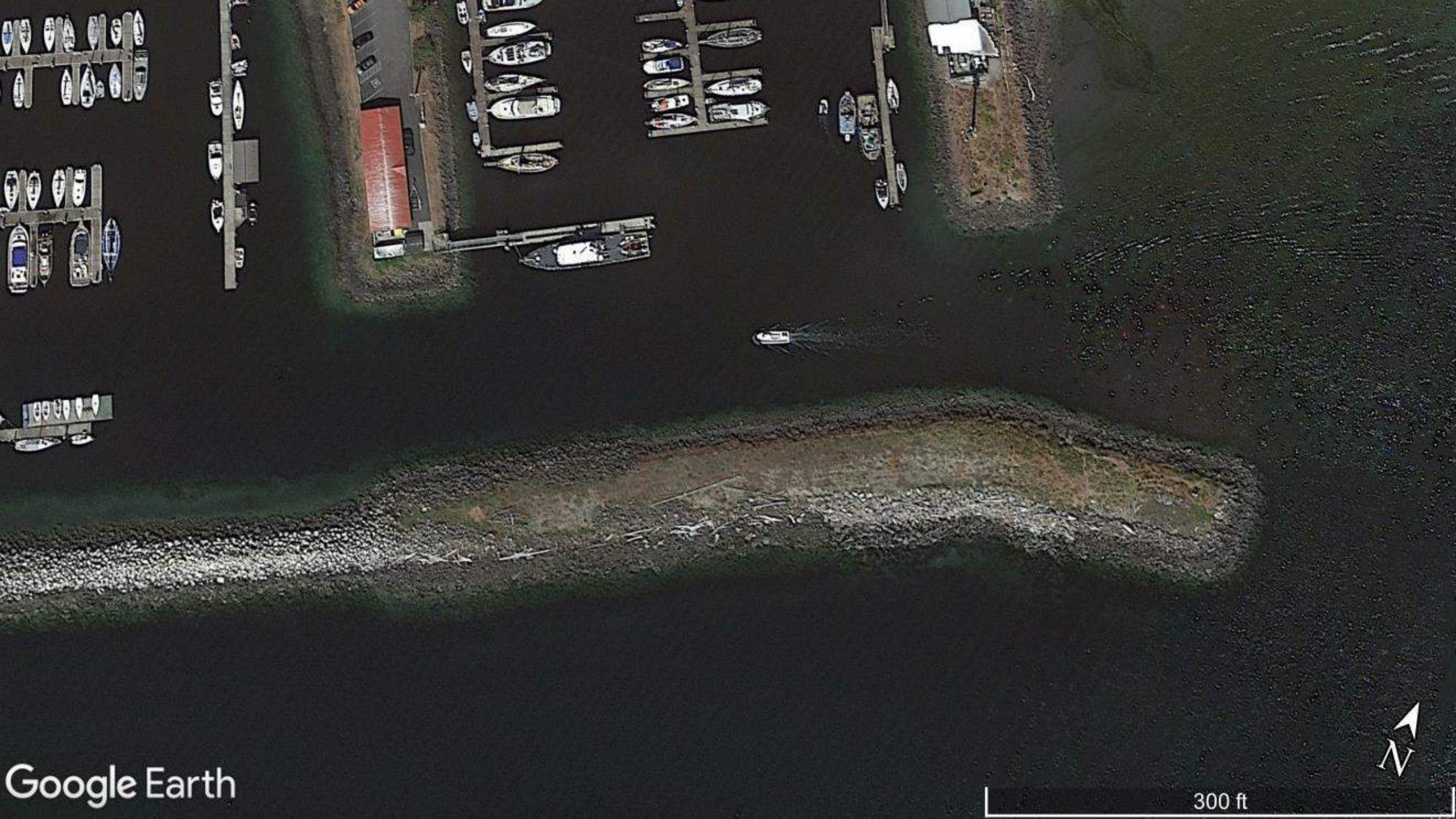
MSL  
EL = 4.99

NAVD88  
EL = 1.11

MLLW  
EL = 0.00

SAND CORE





Google Earth

300 ft









































# Old BW Rehabilitation Alternatives

- No Action
- Alt 1: Rehabilitation – Soil Improvements - \$3.4M
- Alt 2: Rehabilitation – Sheet Pile Wall - \$3.8M
- Alt 3: Partial Replacement - \$2.8M
- Alt 4: Full Replacement – \$6.0M

