

Wharf Infrastructure Resiliency Improvements



Hingham Harbor Development Committee

Presented by:



BEALS+THOMAS

October 18, 2017

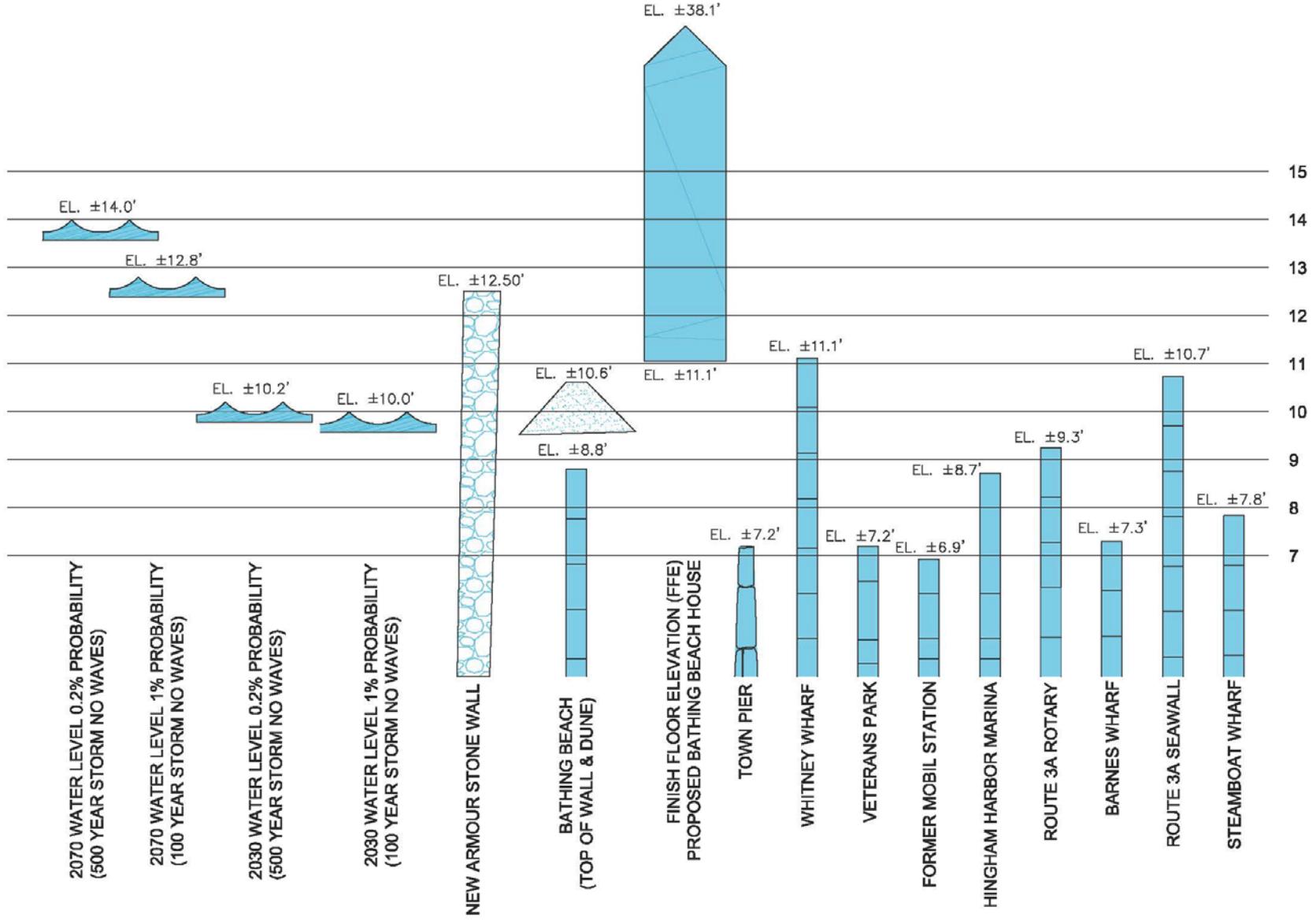
Factors in Narrowing Design Direction

- Town established 2030 future forecast as design criteria
 - Focus on narrowing range of critical flood elevations
- Town's tolerance for flood frequency and resulting damage
 - Loss of service of critical infrastructure
 - Cost of repairs
- Extent of aesthetic impacts
- Cost of improvements

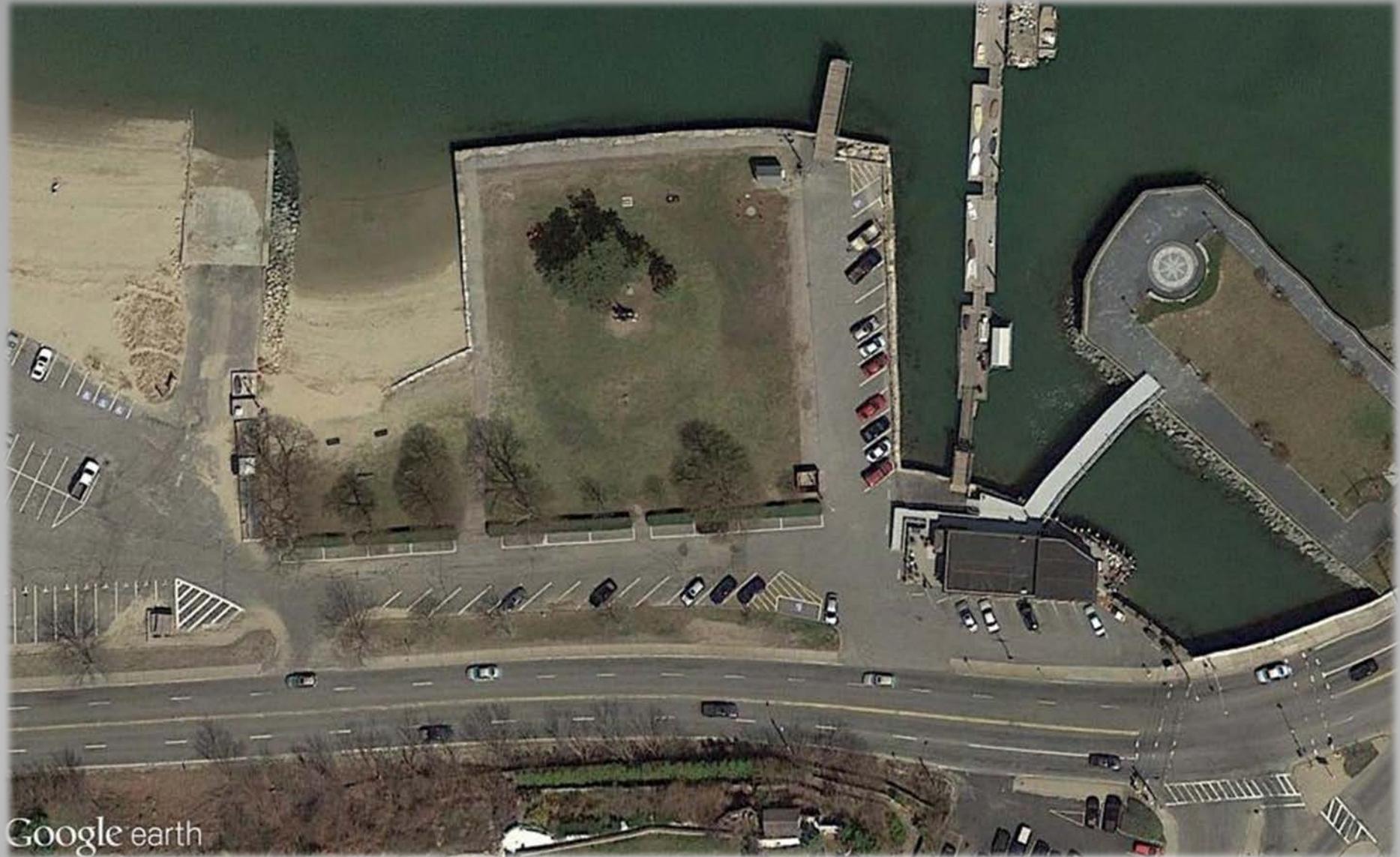
Subsurface Investigations

- January, September and October 2017 field work at Town Pier, Barnes Wharf
 - Geotechnical Soil Borings
 - Test Pits
- Veteran's Park East / Former Mobile Station
 - Fall 2017 Schedule





Town Pier – Initial Focus

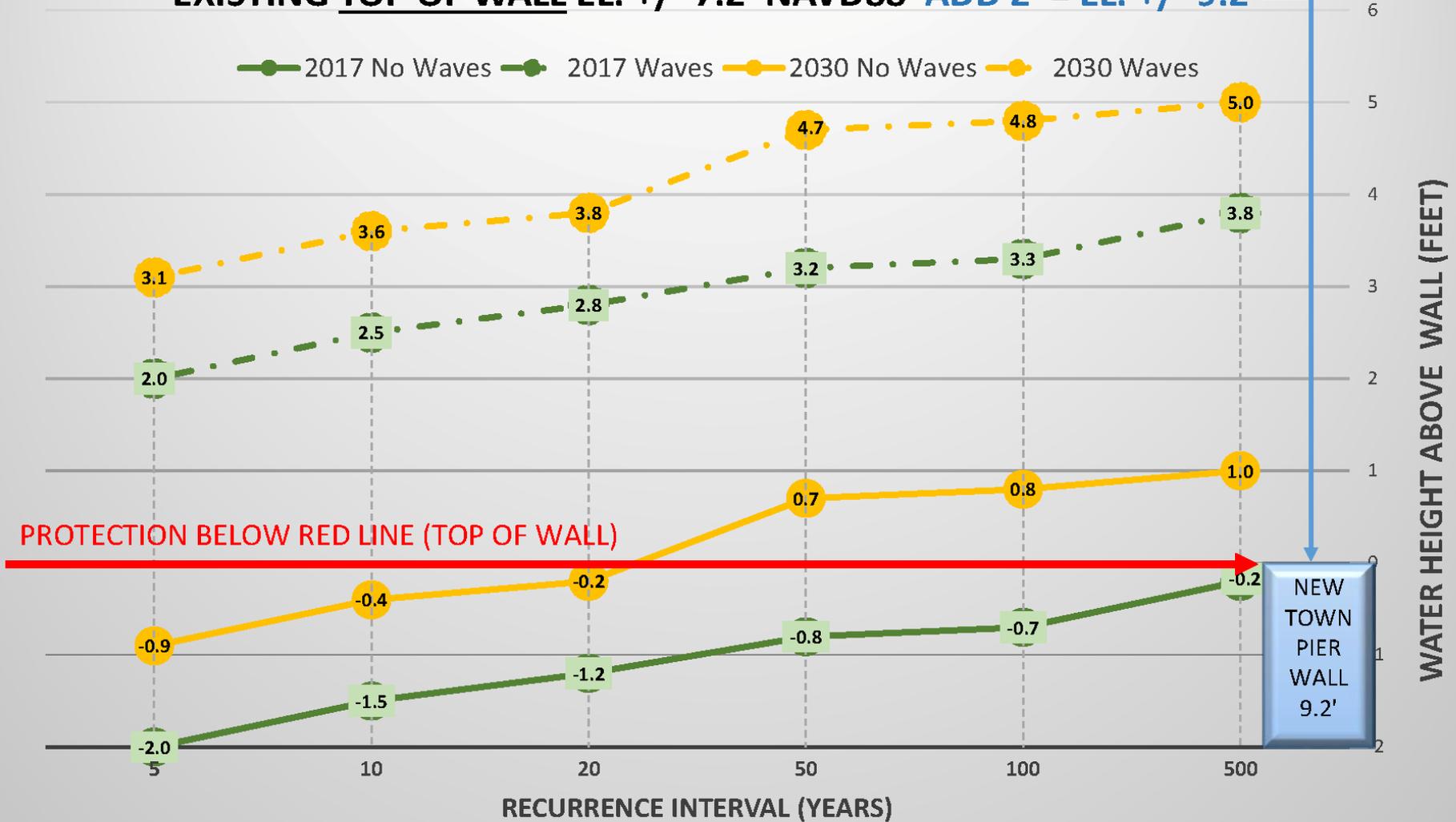


Google earth

TOWN PIER

2 Foot Increase in Wall Height (Existing and 2030)

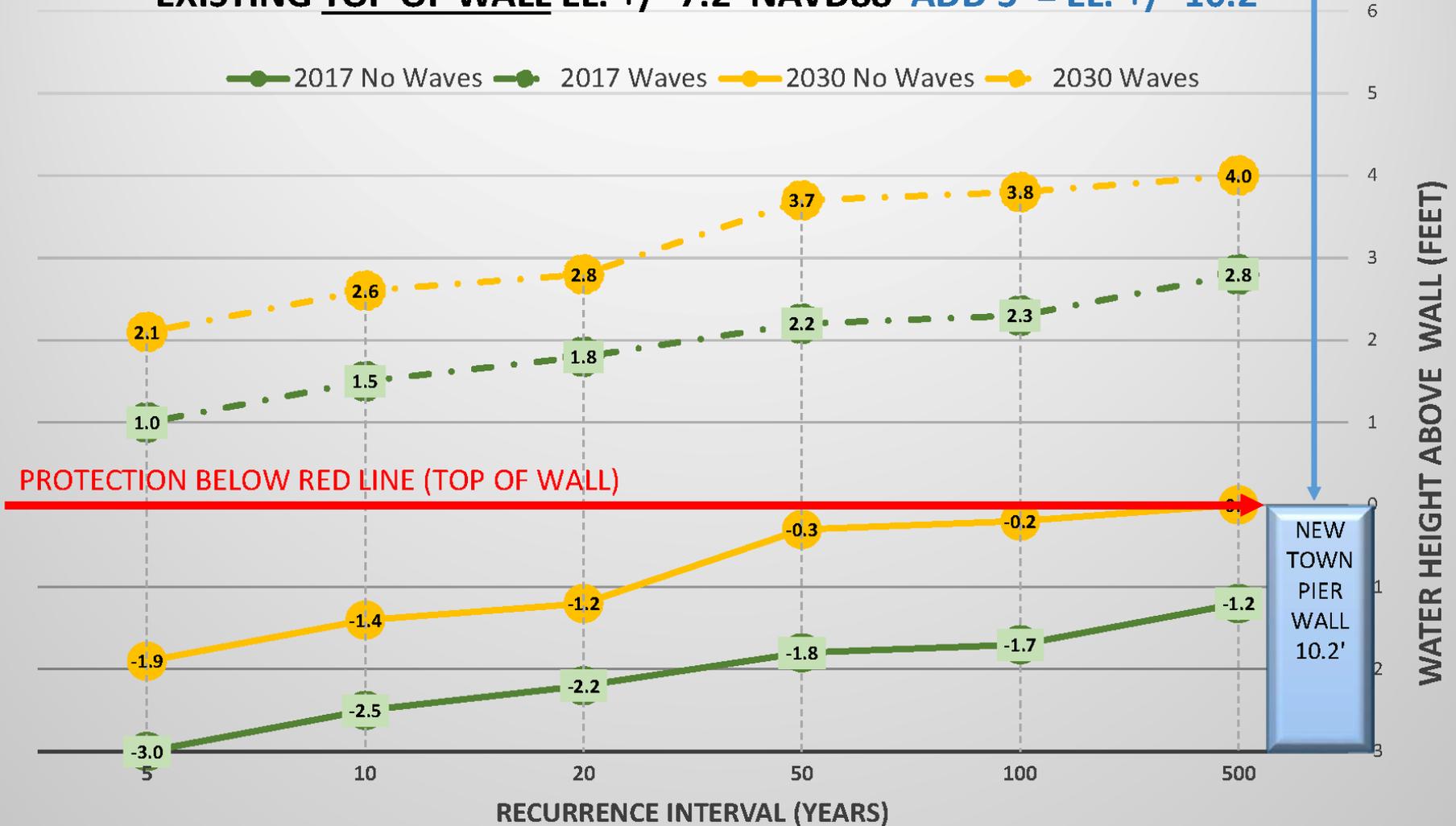
EXISTING TOP OF WALL EL. +/- 7.2' NAVD88 ADD 2' = EL. +/- 9.2'



TOWN PIER

3 Foot Increase in Wall Height (Existing and 2030)

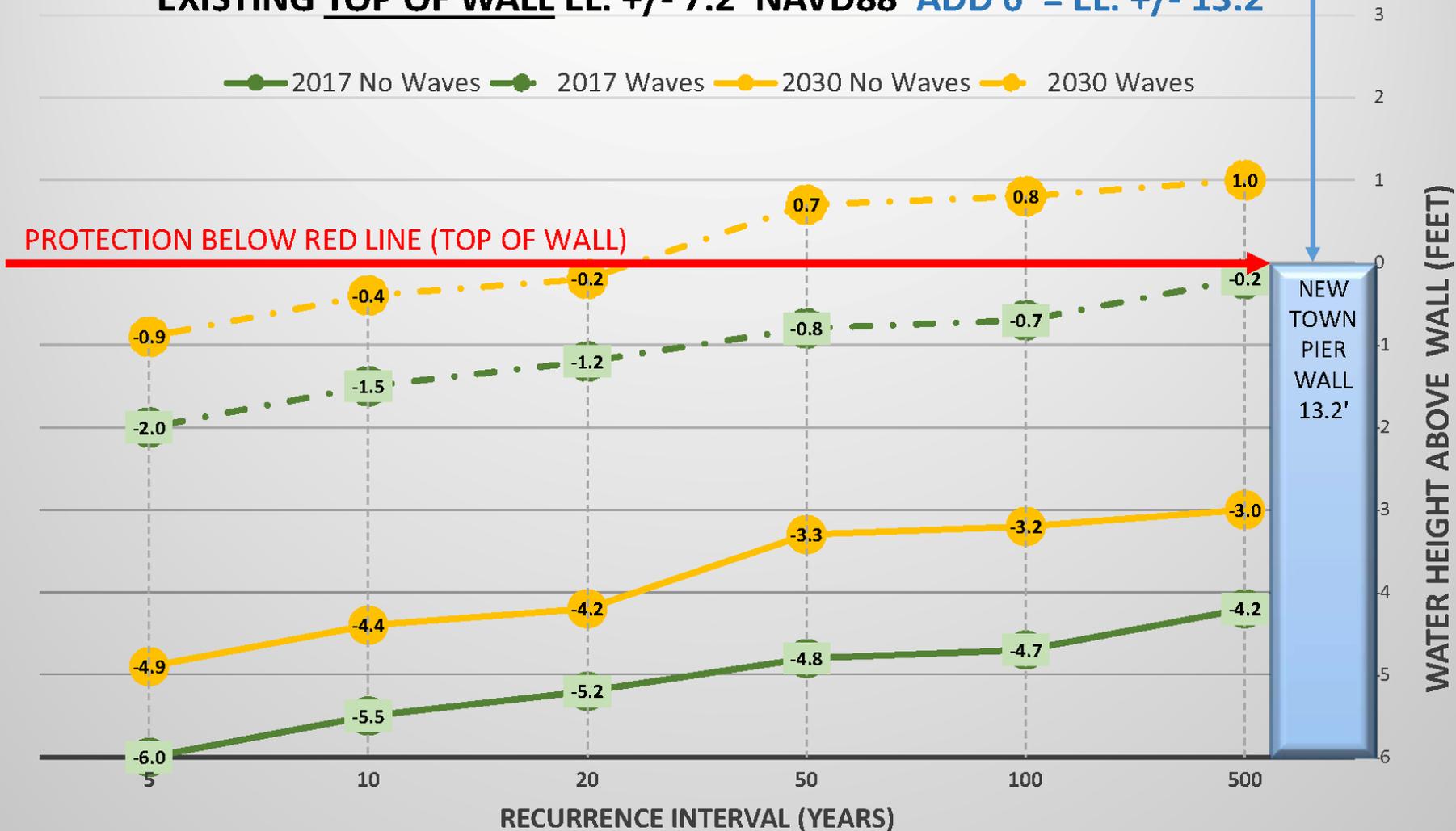
EXISTING TOP OF WALL EL. +/- 7.2' NAVD88 ADD 3' = EL. +/- 10.2'



TOWN PIER

6 Foot Increase in Wall Height (Existing and 2030)

EXISTING TOP OF WALL EL. +/- 7.2' NAVD88 ADD 6' = EL. +/- 13.2'



Possible Design Alternatives

- Wall repairs and modest increase in wall height
 - 6- to 7-foot increase in wall height at Town Pier is not realistic given aesthetic impacts
- Landward flood protection options
 - Offset wall
 - Retaining wall along harborwalk
 - Modular and/or temporary barriers
 - Not feasible at all wall locations
- Wall repairs
 - Independent of final resiliency design options

APPROXIMATE KLIENFELDER SUGGESTED
HIGH WATER (WITH WAVES) EL. 14.5'

CURRENT FEMA HIGH WATER
(100YR WITH WAVES) EL. 12.0'

KLIENFELDER SUGGESTED HIGH
WATER (NO WAVES) EL. 10.2'

CURRENT FEMA HIGH WATER
(100YR NO WAVES) EL. 9.7'

AHTL EL. 6.9'

MHW EL. 4.3'

MLW EL. -5.2'

CURRENT FEMA HIGH WATER
(100YR NO WAVES) EL. 11.0'

IRON HORSE PARK

PARKING

OTIS
STREET

Town Pier (West)



APPROXIMATE KLIENFELDER SUGGESTED
HIGH WATER (WITH WAVES) EL. 14.5'

CURRENT FEMA HIGH WATER
(100YR WITH WAVES) EL. 14.0'

KLIENFELDER SUGGESTED HIGH
WATER (NO WAVES) EL. 10.2'

AHTL EL. 6.9'

MHW EL. 4.3'

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CURRENT FEMA HIGH WATER
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CURRENT FEMA HIGH WATER (100YR NO WAVES) EL. 9.7'

PARKING

OTIS
STREET

Town Pier (East)



Importance of Aesthetics



Critical Design Direction

- Select design elevation meeting Town's criteria
 - Determine solution that balances flood protection, aesthetics and cost
 - Increase flood protection from sea level rise and storm surge
 - Retains character of existing waterfront
- Further and more detailed alternatives to be prepared based on direction

Key Steps in Moving Forward

- HDC to recommend critical design elevation to Selectmen and B+T (wall height increase)
- B+T to develop design based on recommended elevation with alternatives involving type of construction, cost, and aesthetics
- HDC and Town Engineer to identify preferred alternative recommendation
- HDC to present recommendation to Advisory Committee
- HDC to present recommendation to Board of Selectmen for vote

Coastal Grant Opportunities

- Seaport Economic Council
 - Grants awarded up to \$1 Million
 - Town must provide 20% match of Grant Funds
 - For consideration at Seaport investment meeting in January 2018, applications are due November 1, 2017.
 - (August 2018 deadline for May 2019 Meeting)

--- Coastal Infrastructure Resiliency Survey
--- Waterfront Action Plan

Bath House
Armor Stone Wall

Bathing Beach
Stabilization

Wharf Infrastructure
Resiliency Improvements

Whitney Wharf
Pedestrian Bridge

