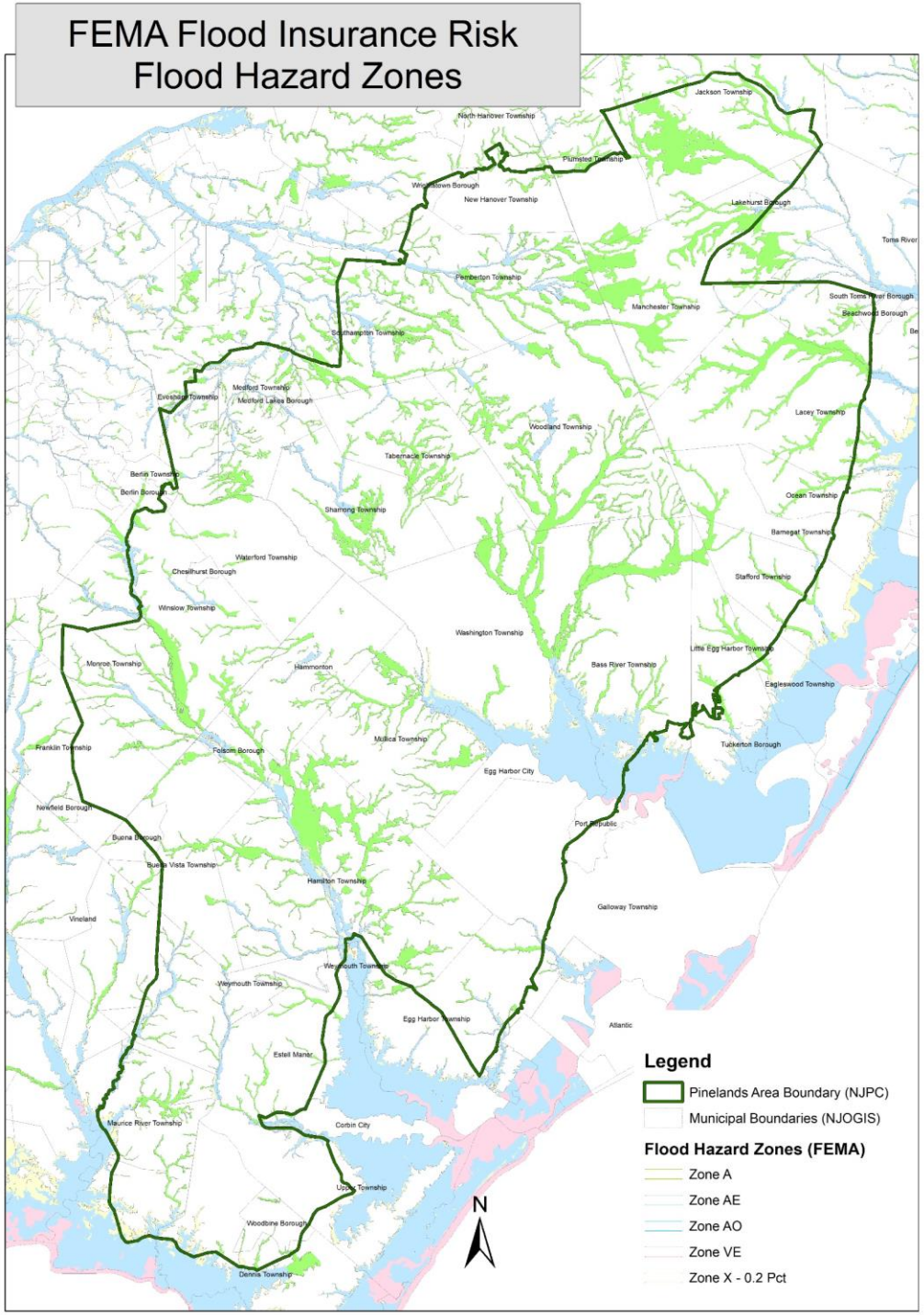
Estimating Risk of Flooding from Sea Level Rise

LUCIS Committee

January 20, 2021

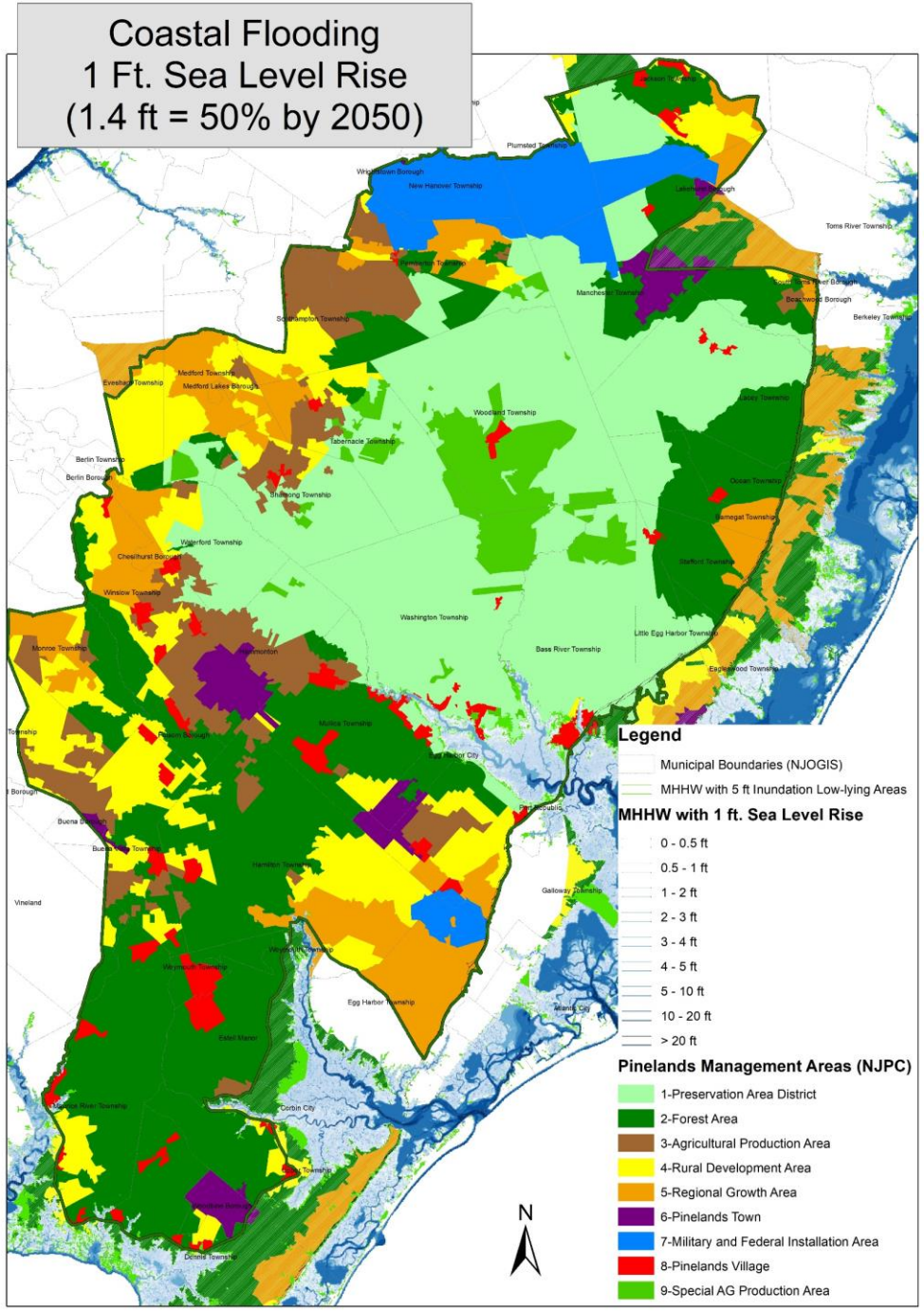
NJ Flood Mapper

- To evaluate hazards from sea level rise and storm surge
- Three maps provided in this presentation:
  - Current Federal Emergency Management Flood Insurance Risk Map (FIRM) Flood Hazard Zones
  - Sea Level Rise of 1.4 feet has a 50% chance of occurring by the year 2050 (map depicts 1-foot SLR)
  - SLR combined with storm surge for Total Water Inundation of 5.3 feet (map depicts 5-foot flood)



Coastal and Riverine Flood Insurance Risk Map – Flood Hazard Zones

Current mapping available from Federal Emergency Management Administration



Sea Level Rise 2050

Moderate Emissions

50% Chance of Exceeding

1.4 Feet mapped as 1 Ft Inundation

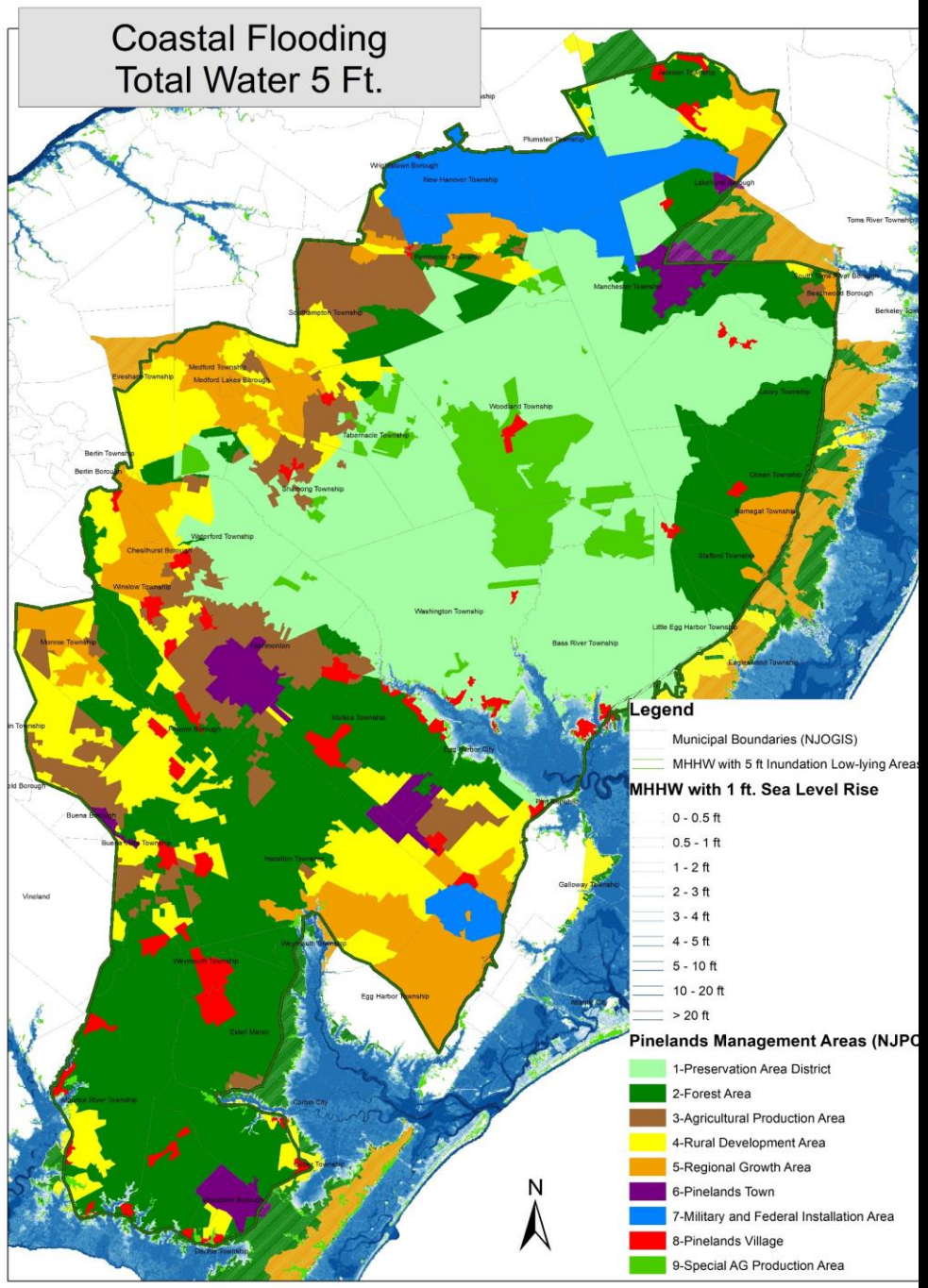
Total Water Levels Tool - Total Water Level Summary

Tide Gauge: *Atlantic City, NJ*
Emission Scenario: *Moderate emissions*
Timeframe: *2050 Planning Horizon*
SLR Estimate: *Approximately a 50% Chance of Exceeding - 1.4 ft.*
Flood Event: *[10/31/1991] The Perfect Storm - 3.9 ft. above MHHW*

Total Water Level Estimate: 5.3 ft.
Total Water Level Estimate Mapper: 5 ft.

Results - The resultant Total Water Level is rounded to the nearest whole foot. The TWL inundation map represents ‘still water‘, which reflects the astronomical tide, the storm surge, and limited wave setup caused by breaking waves.

The Total Water Level does not portray wave runup, the movement of water up a slope. Therefore, the inundation mapping more closely corresponds to FEMA’s Still Water Flood Elevations (SWEL), not the Base Flood Elevation (BFE). **Therefore, this analysis could under-represent the amount of inundation, as the calculations do not consider wave velocity and other dynamic effects from storms.**



Sea Level Rise 2050 Combined with Storm Surge Comparable to "the Perfect Storm

1.4 ft SLR
3.86 ft storm surge
5.3 - foot inundation mapped as 5 feet by FloodMapper.Org