PORTSMOUTH'S HISTORIC DISTRICT AND SEA LEVEL RISE

Local Advisory Committee Meeting 1 | August 31, 2017

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LAC MEETING 3 - OUTLINE

Mapping Update

- Risk Map
- Cultural Values Map
- Monetary Values Map
- Historic Values Map

Discussion of Adaptation Strategy Areas

- South End
- Downtown
- South Mill Pond
- North Mill Pond

Next Steps

LAC MEETING 3

GEI Consulting Engineers and Scientists

0 250 500 1,000 1,500 2,000 Feet

N

Risk Map
DRAFT

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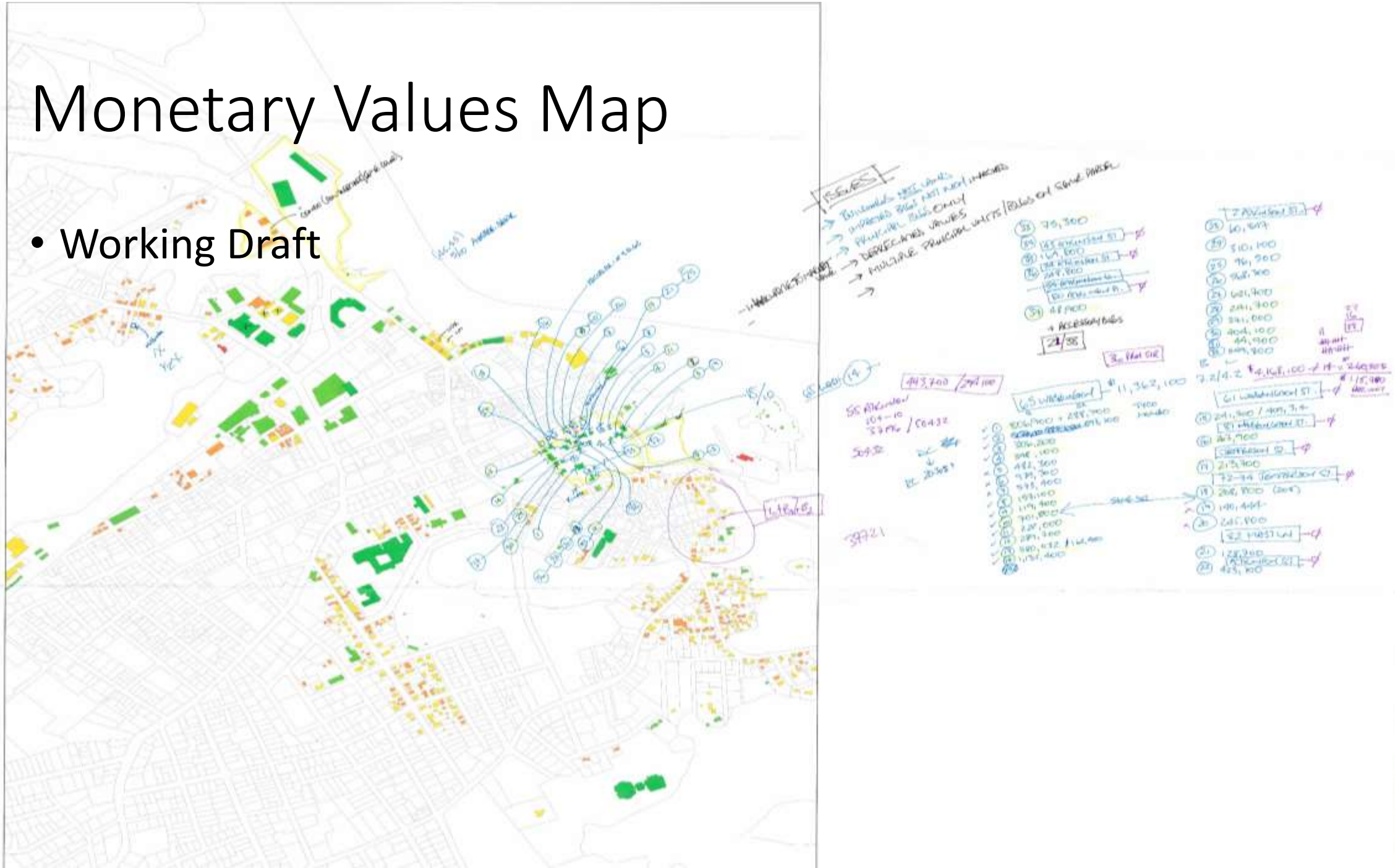
Monetary Values Map

- Working Draft



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Consulting Engineers and Scientists

0 250 500 1,000 1,500 2,000 Feet

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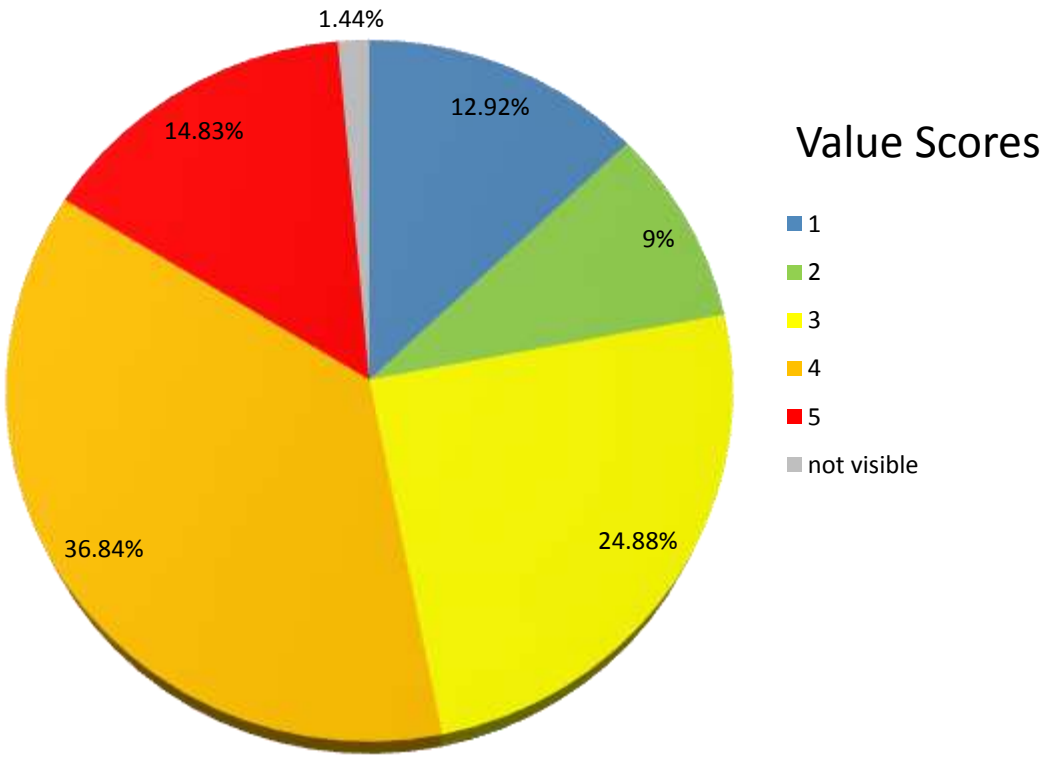
Historic Survey Map
DRAFT

Historic Valuation in the NRHP District



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Historic Valuation in the NRHP District

- Valuation Score 5
  - Retains all aspects of integrity
  - Very little or no alterations or modern materials
  - Historically sensitive restoration and/or renovation

Historic Valuation in the NRHP District

- Valuation Score 4
  - Retains nearly all aspects of integrity
  - Very few alterations
  - Only minor use of modern building materials
  - Historically sensitive restoration and/or renovation

Historic Valuation in the NRHP District

- Valuation Score 3
  - Retains some aspects of integrity
  - Large or significant alterations
  - Additions
  - Use of modern building materials and/or partial loss of original materials
  - Still retains some historic characteristics

Historic Valuation in the NRHP District

- Valuation Score 2
  - Retains very few aspects of integrity
  - Large or significant alterations
  - Additions, especially on the main facade
  - Use of modern building materials and loss of majority of original materials
  - Retains very few historic features

Historic Valuation in the NRHP District

- Valuation Score 1
  - Not of historic age
  - Retains almost no historic/original building materials
  - Major additions and/or alterations
  - No longer exhibits historic features

Historic Valuation in the NRHP District

ADAPTATION STRATEGIES

ADAPTATION STRATEGIES

- Do nothing
- Fortify
- Accommodate
- Relocate

FORTIFY

Pea Patch Island, DE (Delaware River)

FORTIFY

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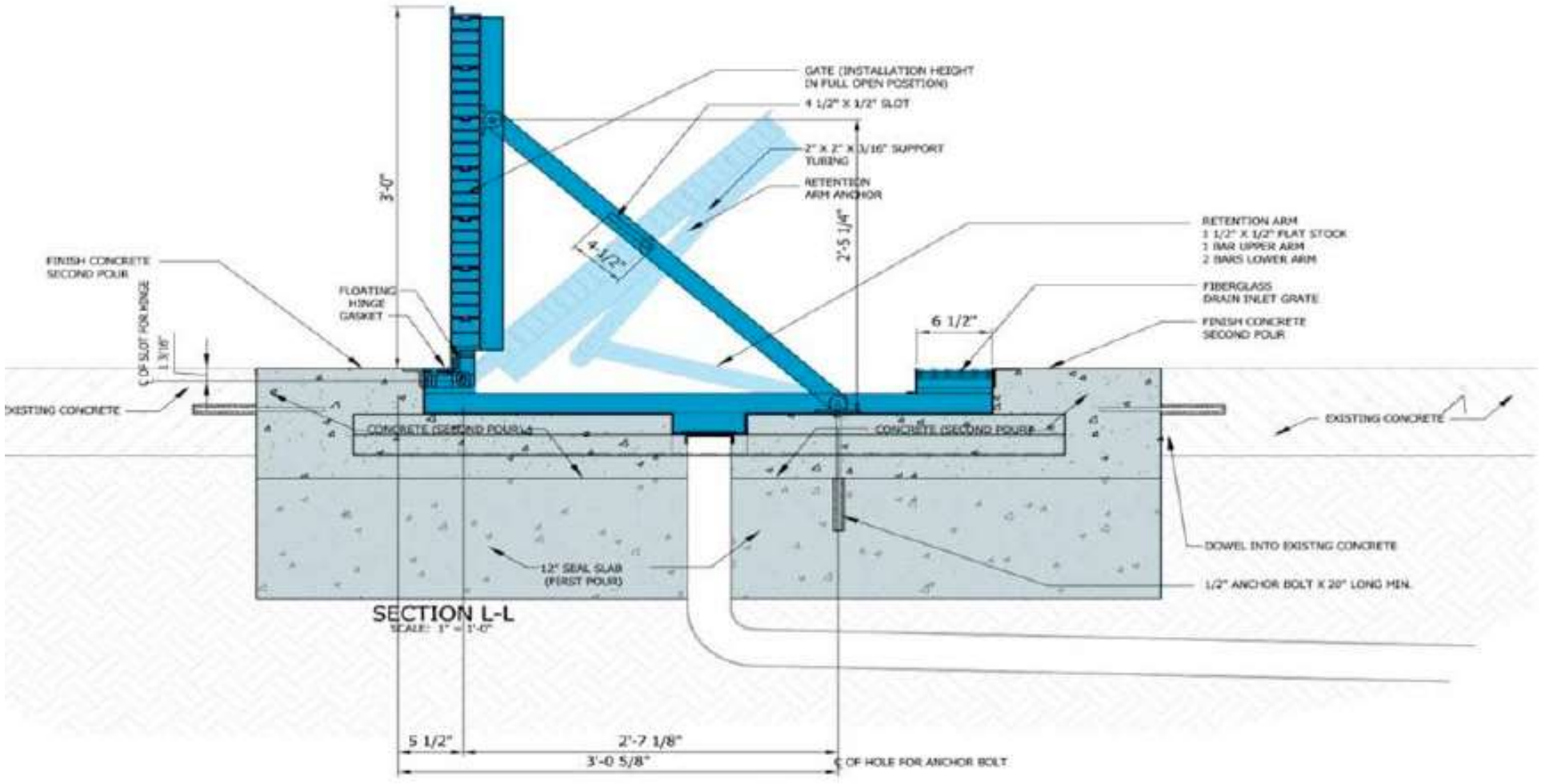
FORTIFY



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FORTIFY

FORITFY

FORTIFY

Floodwalls with removable aluminum or steel gates.
Cologne, Germany (Rhine).

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Elevate

Designing for Flood Levels Above the BFE

HOME BUILDER'S GUIDE TO COASTAL CONSTRUCTION Technical Fact Sheet No. 1.6

Purpose: *To recommend design and construction practices that reduce the likelihood of flood damage in the event that flood levels exceed the Base Flood Elevation (BFE).*

Key Issues

- BFEs are established at a flood level, including wave effects, that has a 1-percent chance of being equaled or exceeded in any given year, also known as the 100-year flood or base flood. Floods more severe and less frequent than the 1-percent flood can occur in any year.
- Flood levels during some recent storms have exceeded BFEs depicted on the Flood Insurance Rate Maps (FIRMs), sometimes by several feet. In many communities, flooding extended inland, well beyond the 100-year floodplain (Special Flood Hazard Area [SFHA]) shown on the FIRM (see Figure 1).
- Flood damage increases rapidly once the elevation of the flood extends above the lowest floor of a building, especially in areas subject to coastal waves. In V Zones, a coastal flood with a wave crest 3 to 4 feet above the bottom of the floor beam (approximately 1 to 2 feet above the walking surface of the floor) will be sufficient to substantially damage or destroy most light-frame residential and commercial construction (see Figure 2).
- There are design and construction practices that can eliminate or minimize damage to buildings when flood levels exceed the BFE. **The most common approach is to add freeboard to the design (i.e., to elevate the building higher than required by the FIRM).** This practice is outlined in American Society of Civil Engineers (ASCE) 24-05, *Flood Resistant Design and Construction*.
- There are other benefits of designing for flood levels above the BFE: reduced building damage and maintenance, longer building life, reduced flood insurance premiums, reduced period of time in which the building occupants may need to be displaced in the event of a flood disaster (and need for temporary shelter and assistance), reduced job loss, and increased retention of tax base.
- The cost of adding freeboard at the time of home construction is modest, and reduced flood insurance premiums will usually recover the freeboard cost in a few years' time.

Figure 1. Bridge City, Texas, homes were flooded during Hurricane Ike, even though they were constructed outside the SFHA and in Zone B. The flood level was approximately 4' above the closest BFE.

Figure 2. Bolivar Peninsula, Texas, V Zone house constructed with the lowest floor (bottom of floor beam) at the BFE (dashed line). The estimated wave crest level during Hurricane Ike (solid line) was 3' to 4' above the BFE at this location.

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P.A. Slovinsky, MGS

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Floodproof

Designing for Flood Levels Above the BFE

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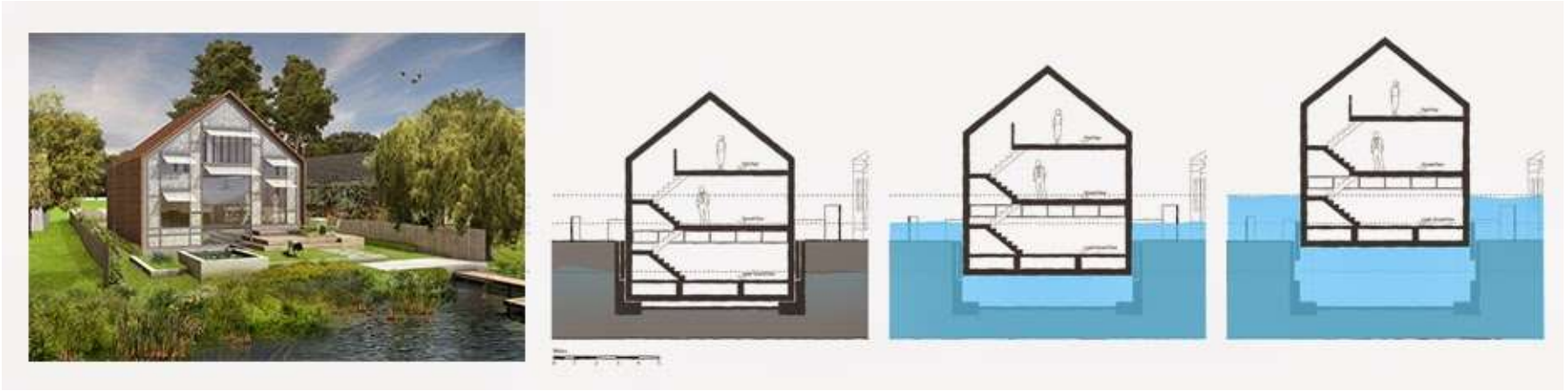

Amphibious House and concept from the Netherlands

http://2.bp.blogspot.com/-01SCbuZ7Moo/U7GJZAlrK1I/AAAAAAAAArI/enn8MOe3tQk/s1600/106-%5B6%5D-baca-floating+concept+2.jpg

P.A. Slovinsky, MGS

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Factor Architecten

Houses sit on hollow concrete foundations attached to six iron piers.
Posts between houses are guides to keep homes in place as they glide up and down.

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Amphibious housing in Maasbommel, Netherlands, can rise 18’.

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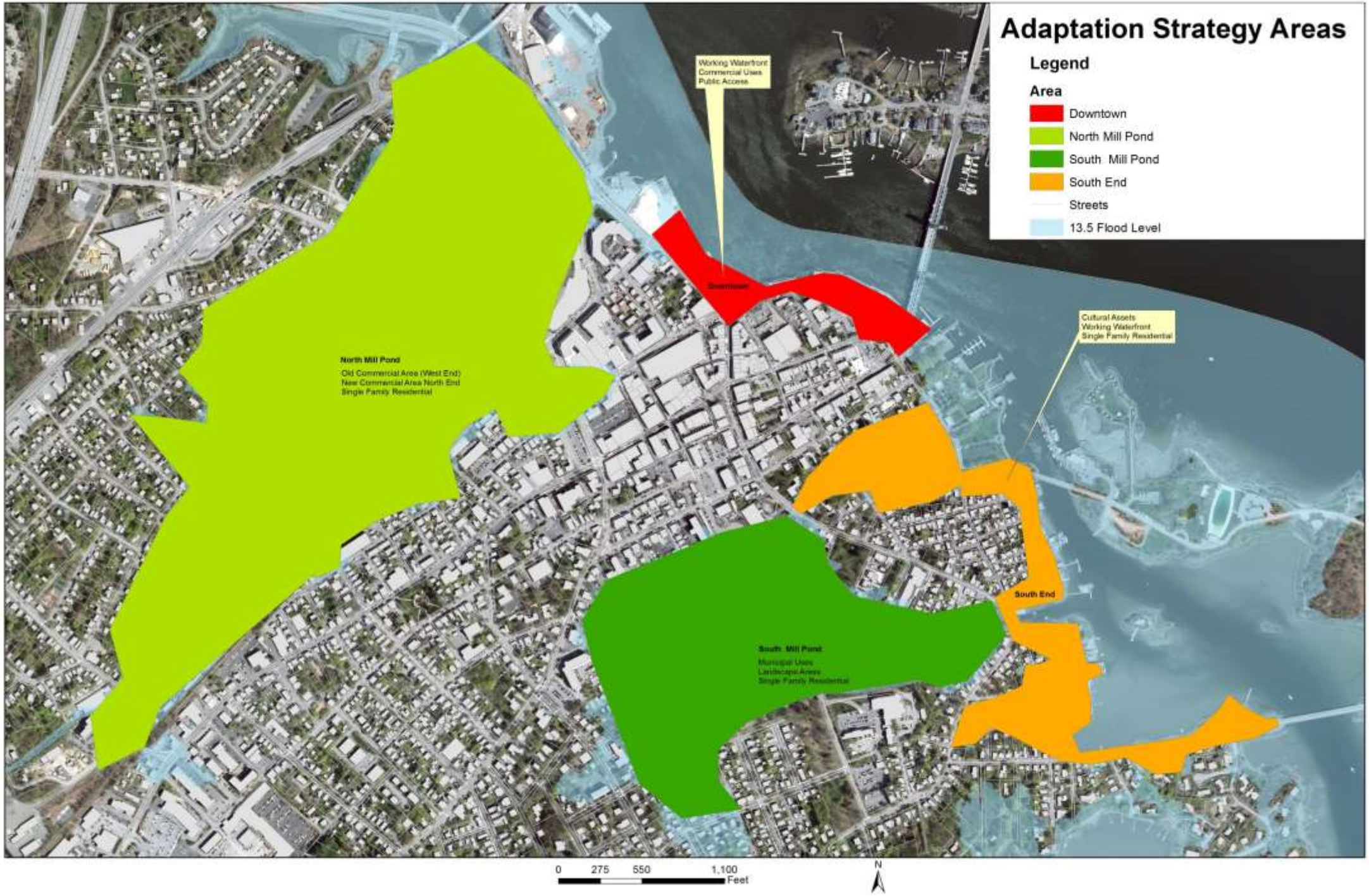

NEXT STEPS

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