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Relocation of At-Risk Communities

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A detailed historical map of the Virginia coastal region, showing a network of rivers, roads, and settlements. The map is oriented vertically, with the coastline on the right side. The text is centered in a white box over the map.

Adaptation Policy

Relocation Questions and Strategies

Resilient Settlement and Productive Aquatic Landscapes

Framing Long Term Development Strategies

For Virginia's Coastal Communities

A Seed Grant Supported by the Resilience Initiative, UVA

UVA Resilience Institute

UVA School of Architecture

- Graduate Landscape
- Graduate Architecture

UVA School of Engineering

UVA Environmental Sciences

UVA Institute of Environmental Negotiation (IEN)

with

William & Mary Law School - Virginia Coastal Policy Center

Old Dominion University – Virginia Sea Grant

City of Portsmouth

Wetlands Watch

USACE

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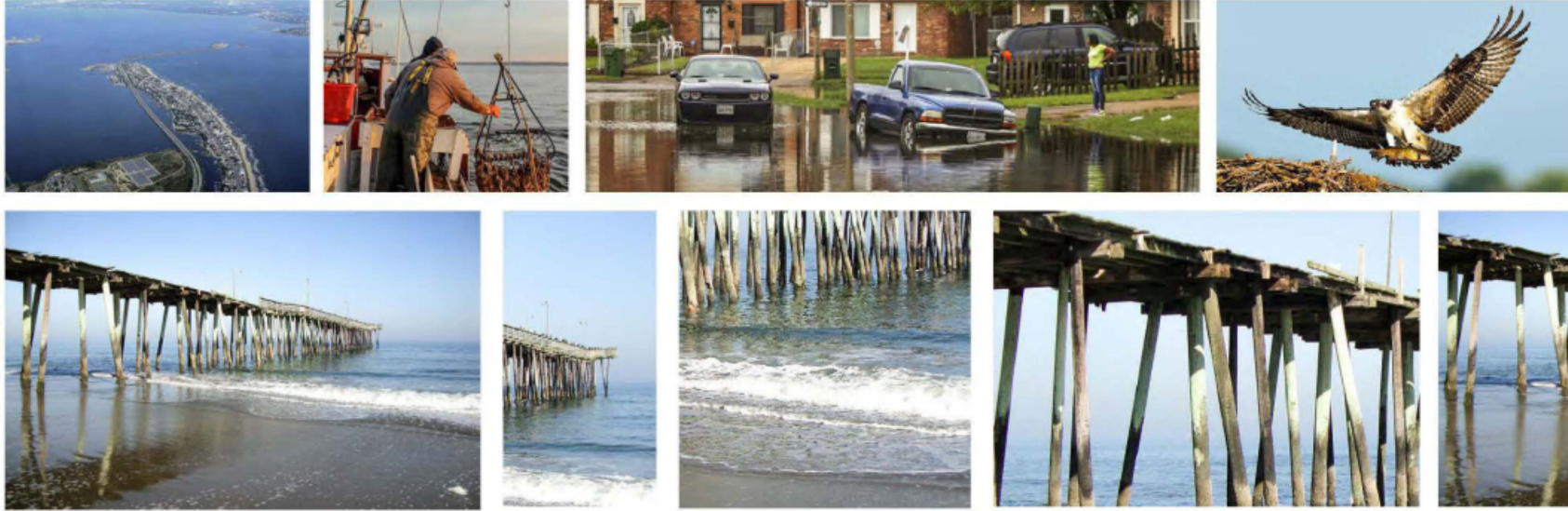
Michelle Hamor

What are the urban, social, and ecosystem dynamics of guided relocation and an expanding productive aquatic zone?

- I. Initiate a conversation leading to consensus and action.
- II. Create a hybrid coastal edge for defense and productive wetlands and aquaculture.
- III. Frame phased strategies for relocation in place, nearby, and in a remote location.

The laws of property and exchange have emerged from the history of how we have viewed and valued nature. In almost every respect, these impede the transformation of settlement structure and concepts of ownership, usership, and sharing implied by the dynamics of relocation.

(adapted from After Nature, Jed Purdy)



COMMUNITY RELOCATION IN THE FACE OF RECURRING INUNDATION

A Preliminary Framework

A Collaboration Of

UVA School of Architecture
UVA Institute for Environmental Negotiation
ODU Virginia sea Grant Climate Adaptation and Resilience Program

RAFT – Resilience and Adaptation Workshop Feasibility Tool

(Institute of Environmental Negotiation, Tanya Denckla-Cobb, Director)

- Improve measure and improve resilience to flooding while remaining economically and socially viable
- Identify stakeholder leaders. Build participation capacity. Engage local governments to implement adaptive actions.
- Create hazard mitigation plan, build resilience into storage and supply chains
- RAFT assessment workshops by the community and academic collaborative.
- Implementation

Transformation of Shoreline Edge and Tidal Zone Ecosystems

- 3, 6, 8 foot SLR data (US National Climate Assessment, 2008)
- What living structure will mitigate SLR hazards and create productive aquaculture?
- Shoreline zone consist of different types of levees, wetlands and foreland elements.
- After remediation, shoreline zone ecosystems are managed as a productive aquascape.



Portsmouth
Marine Terminal

Naval Hospital

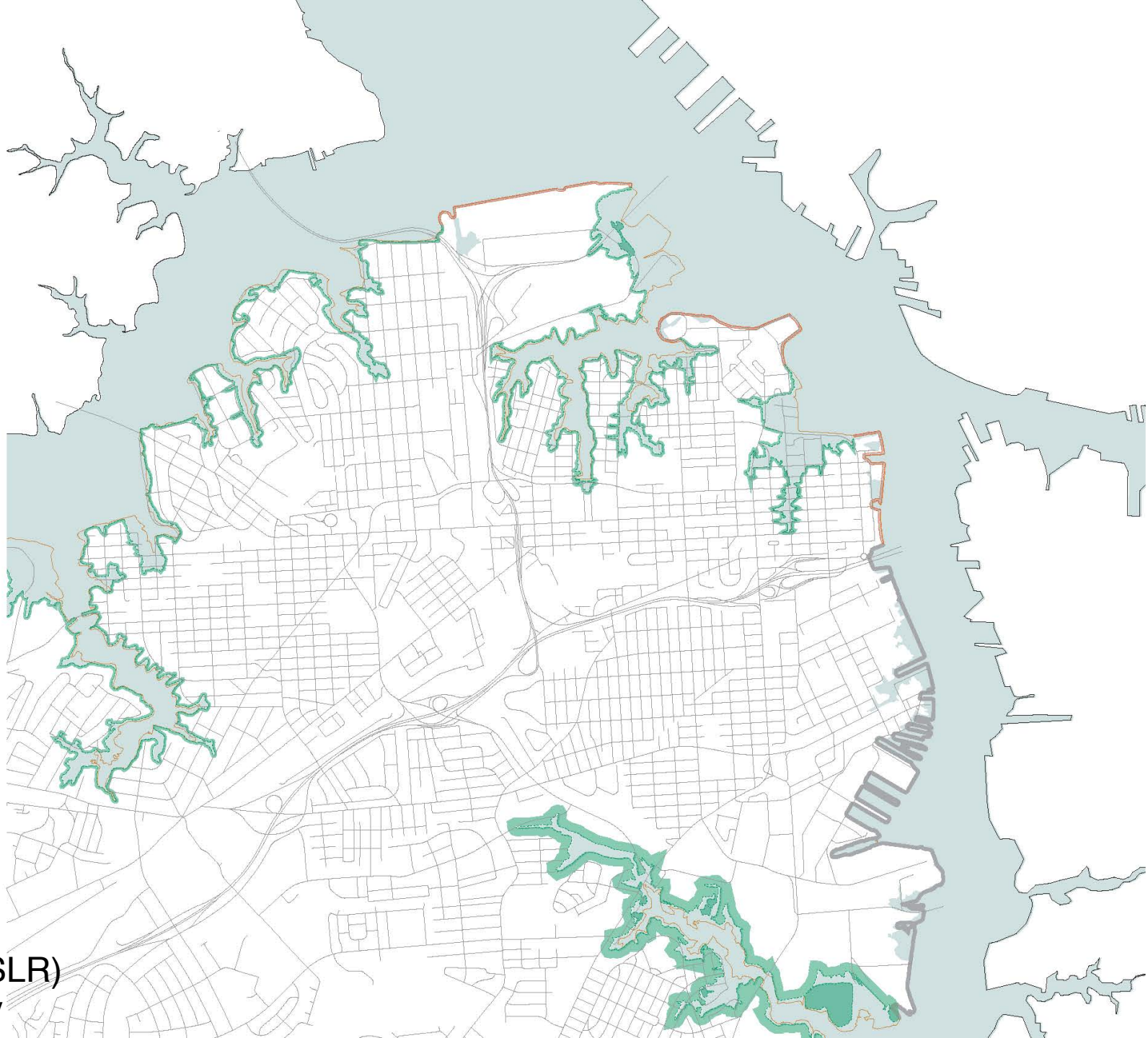
Port Norfolk

Shea
Terrace

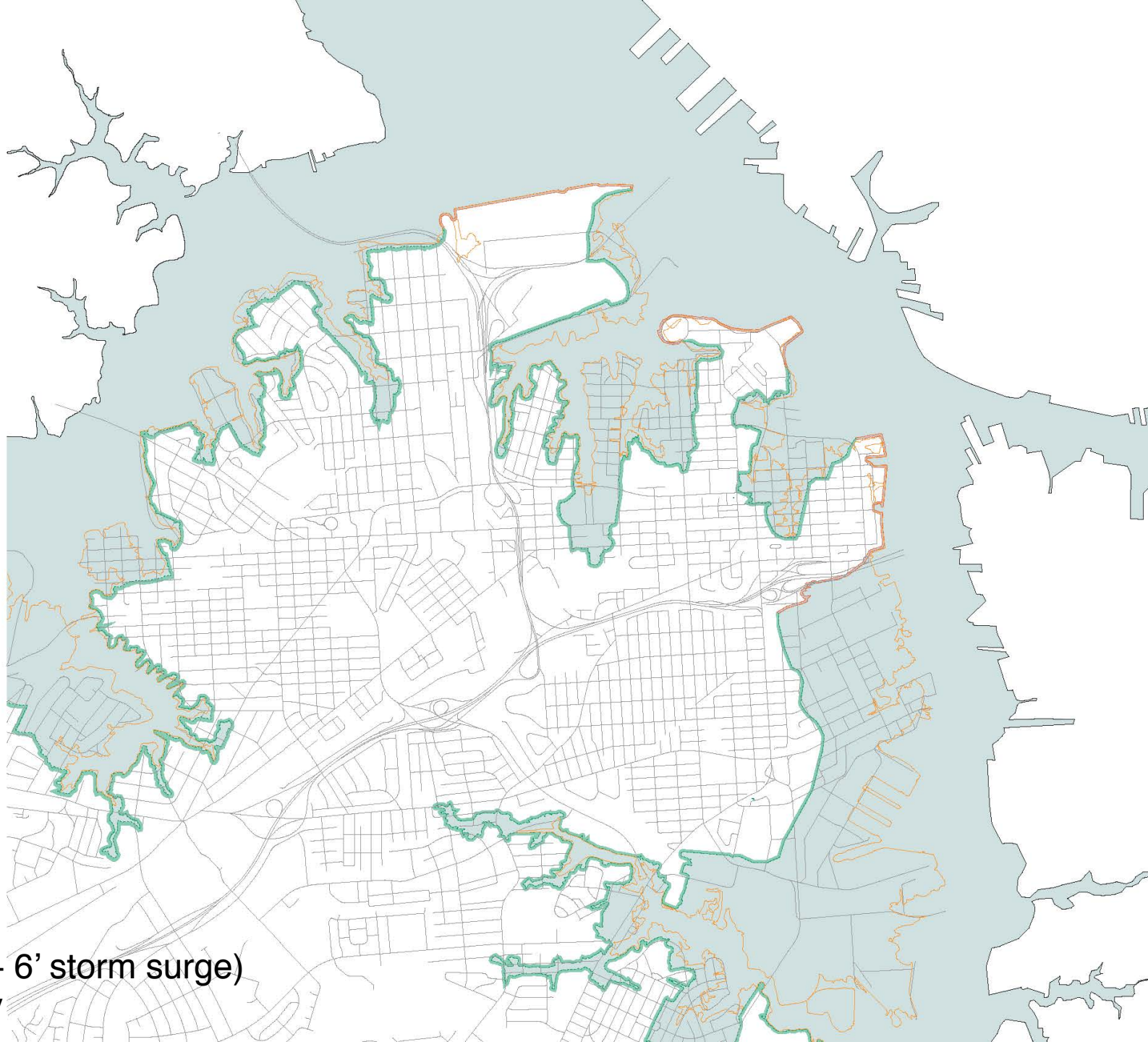
Downtown

Constitution-
Jamestown

Naval Shipyard

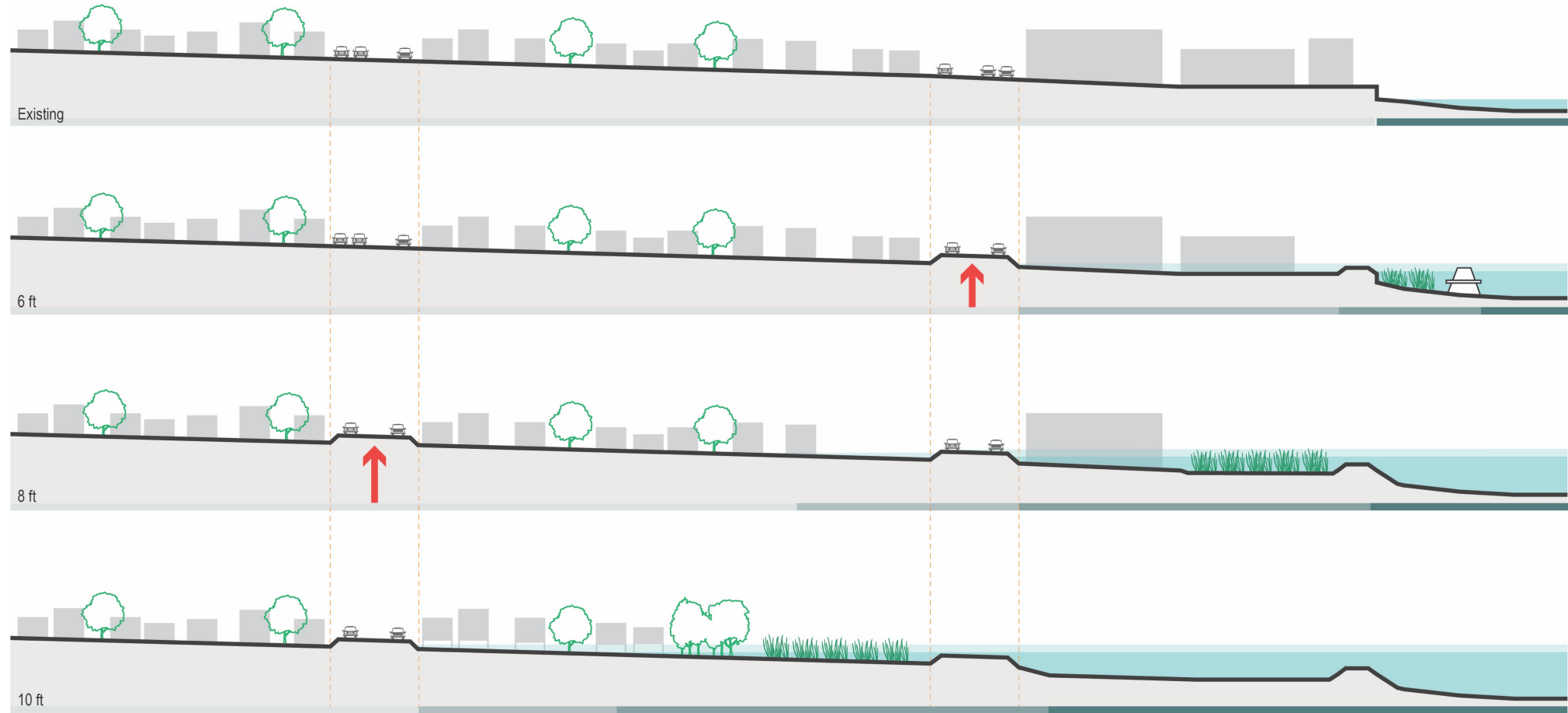


6' of Storm Surge (SLR)
based on topography only



8' flooding (2' SLR + 6' storm surge)
based on topography only

Raised roads (dikes) as SLR and storm surge mediation



Parcel Division and Relocation

Stage 1: Relocate in place by altering parcel structure (Shea Terrace) - suburban

Stage 2: Relocate nearby on higher ground (Port Norfolk) – medium density

Stage 3: Relocate to nearest high ground – (Constitution) – urban density



Hull Creek

Elizabeth River

Portsmouth
Marine Terminals

Bruce Johnson
Memorial Park

Detroit St

Virginia Ave

PORT NORFOLK

Surf St

Hartford St

Hartford St

Mt Vernon Ave

Virginia Ave

WEST PARK
VIEW

PARK VIEW

Woman's Club
of Portsmouth

Hartford St

Maryview
Park

Bon Secours Maryview
Medical Center

High St

London Blvd

Oak Grove Cemetery

London Blvd

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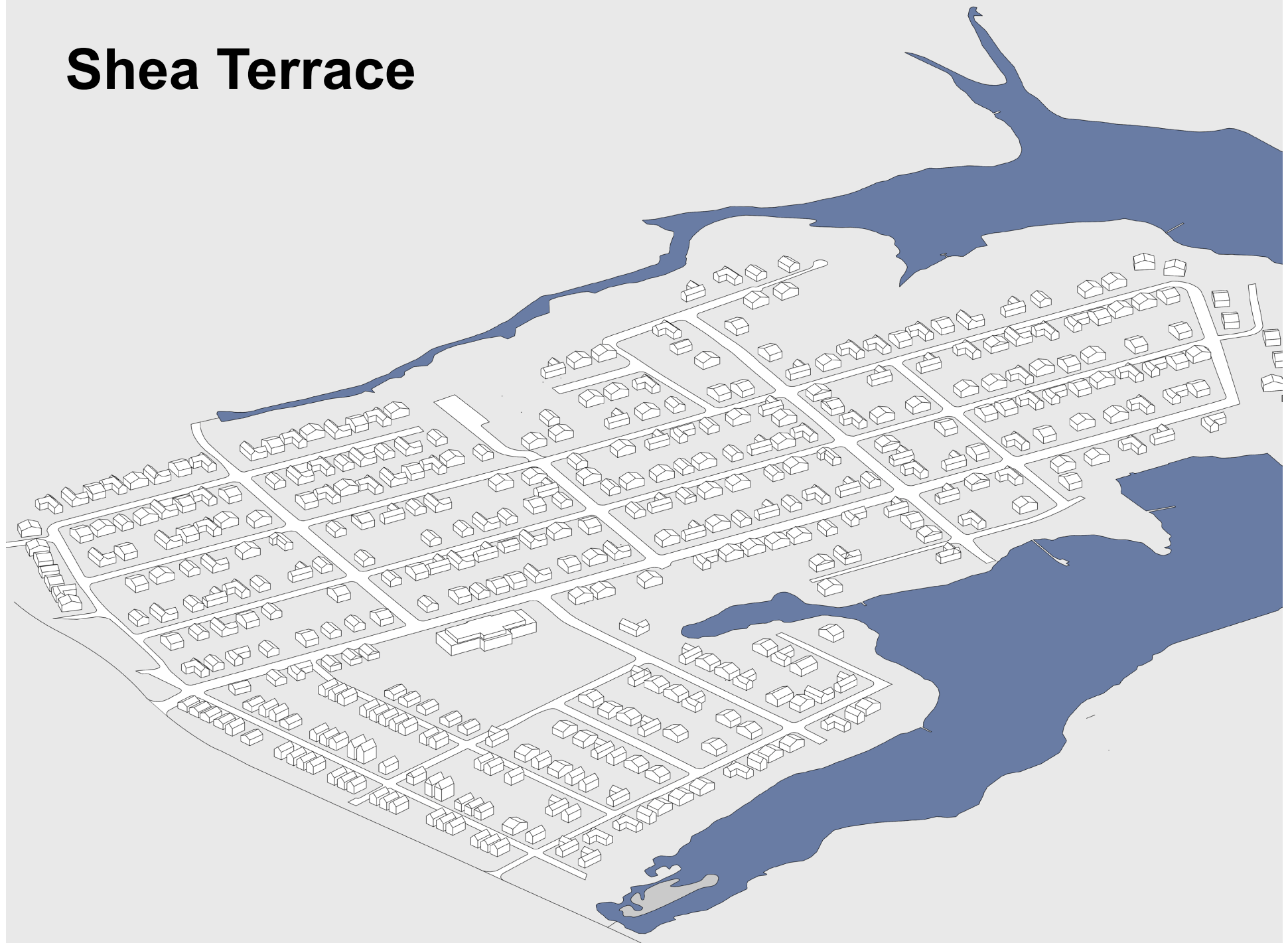
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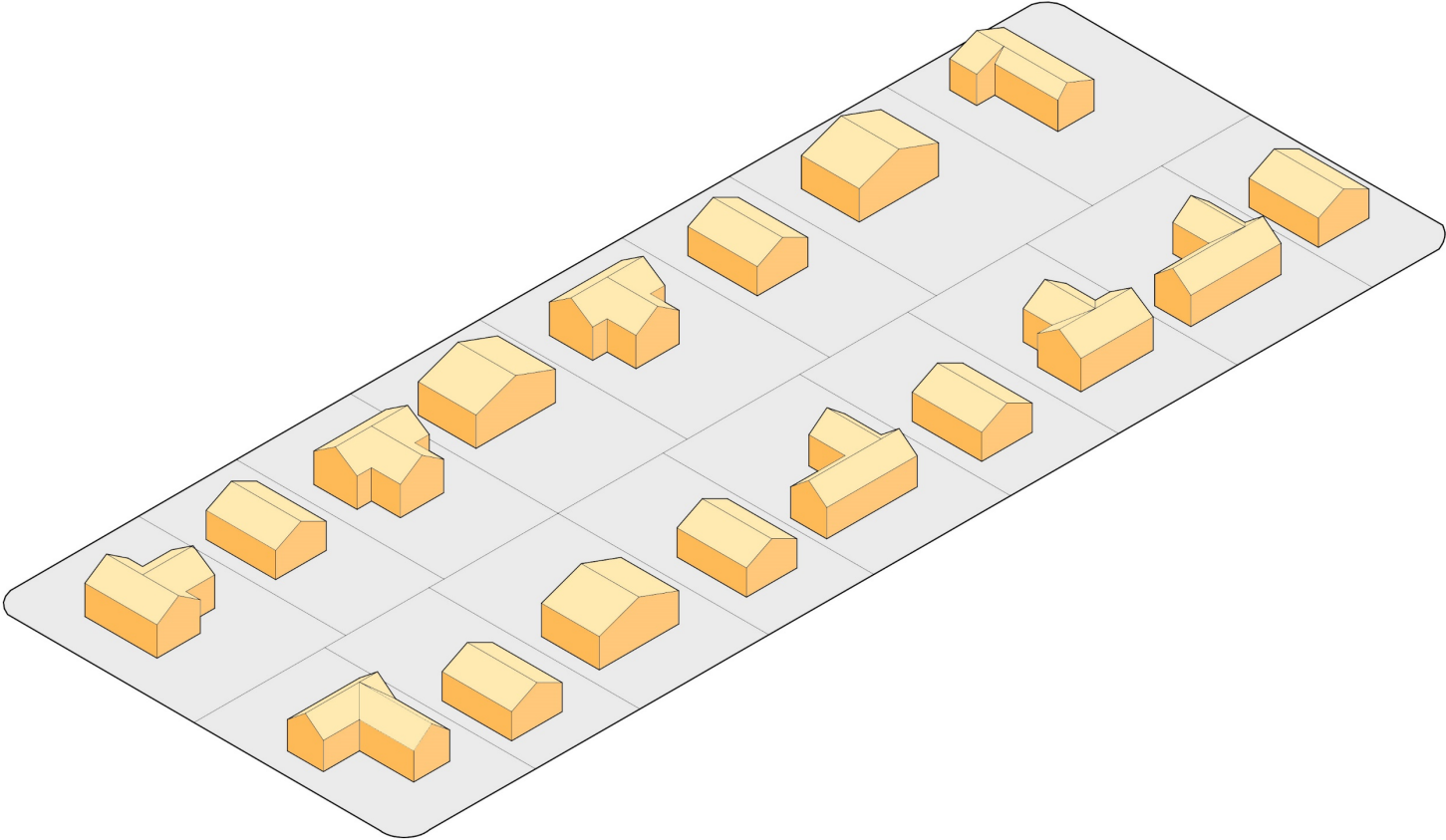
High St

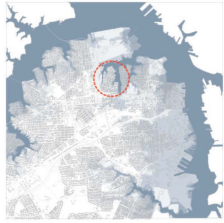
High St

Shea Terrace



Typical Shea Terrace Block



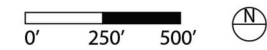


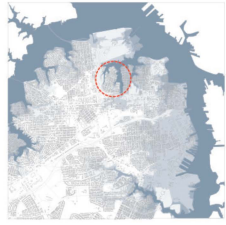
Foreland Protection Wall Stage I

Frequent Inundation Zone

Infrequent Inundation

Dike





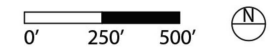
--- Foreland Protection Wall Stage II

— Foreland Protection Wall Stage II

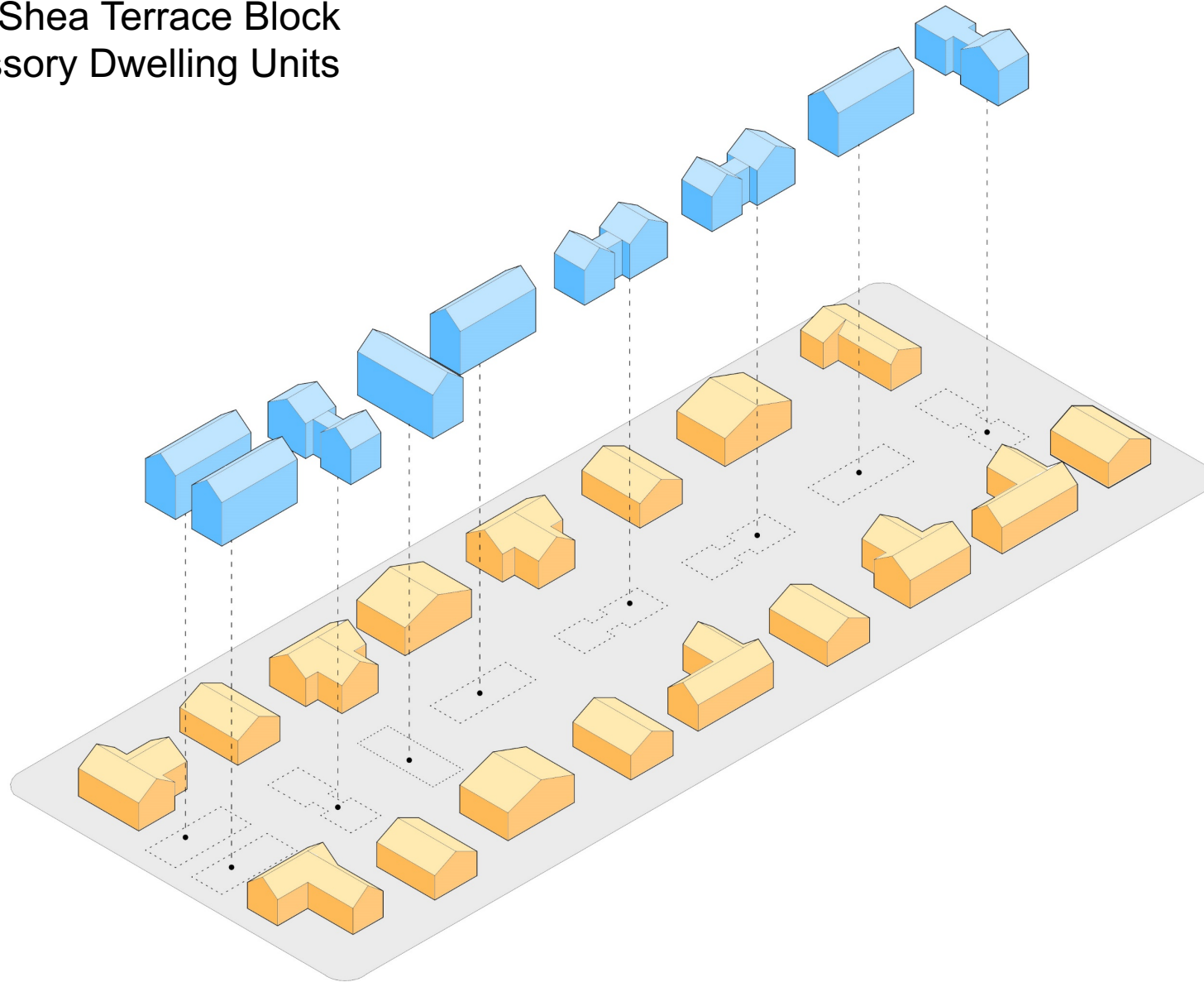
■ Frequent Inundation Zone

▨ Infrequent Inundation

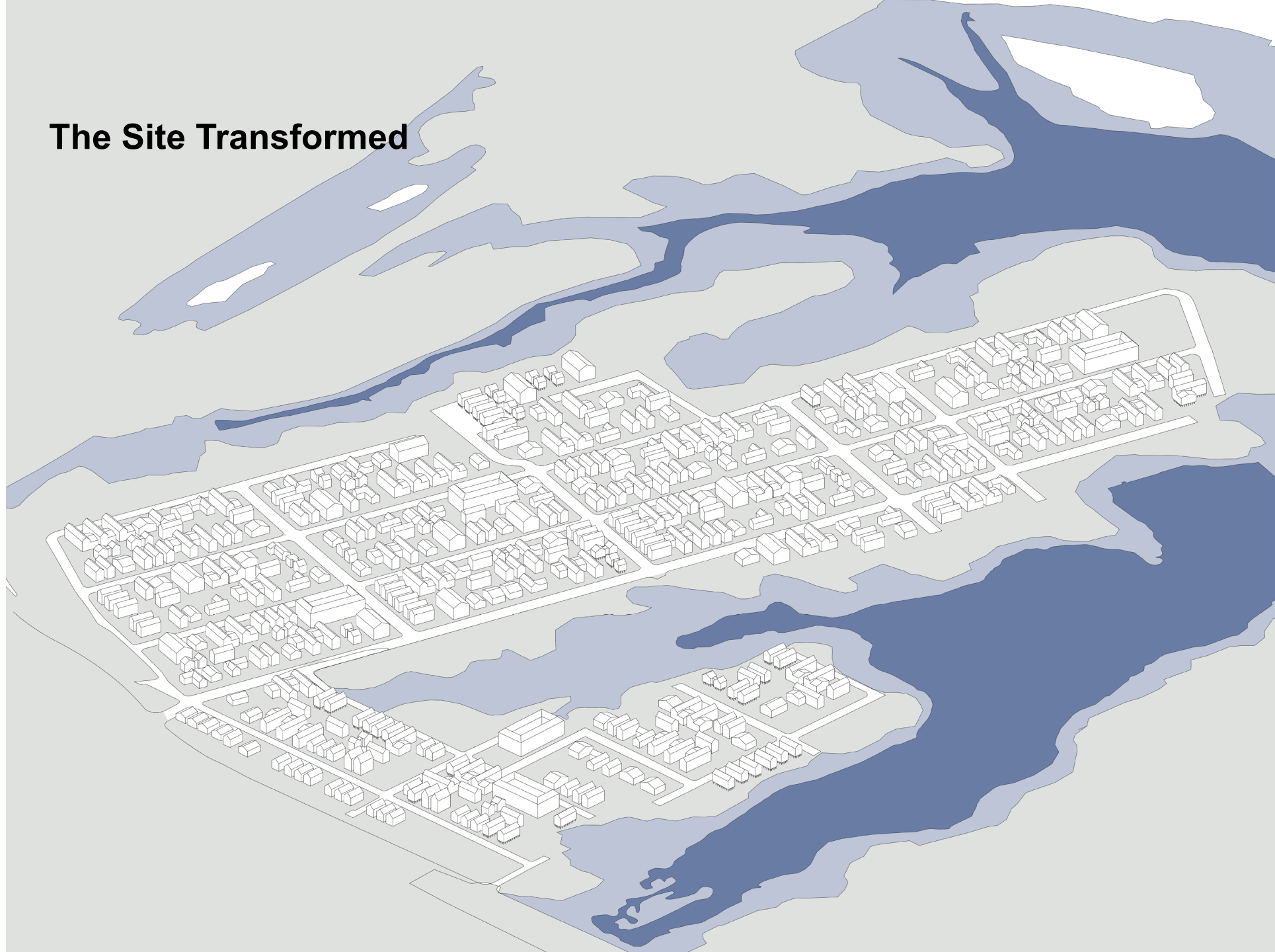
— Dike



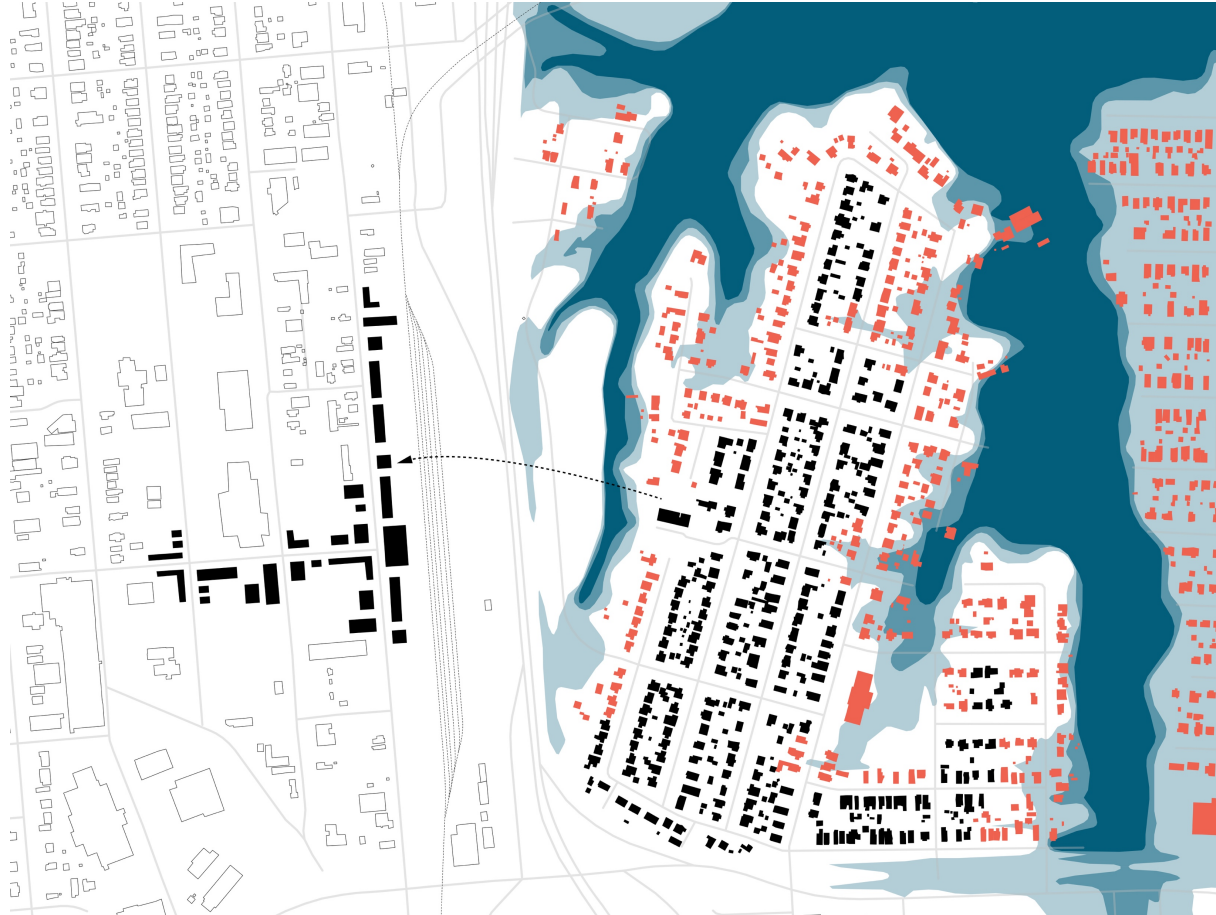
Typical Shea Terrace Block
+ Accessory Dwelling Units



The Site Transformed



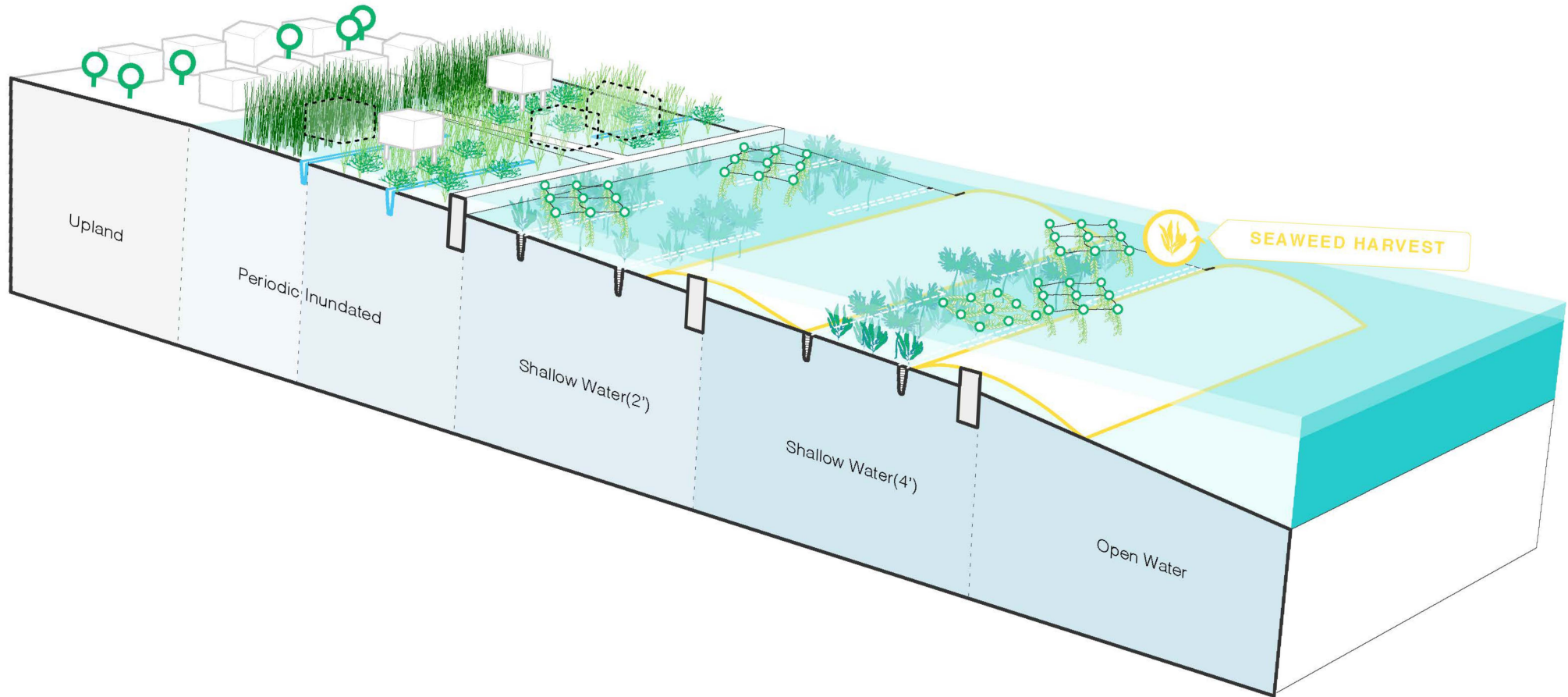
Relocating nearby: Shea Terrace and West Park View residents move to a new urban neighborhood in a former industrial area of Port Norfolk (phase 1).



Conclusion: **Assumptions:**

- Ownership, valuation, and methods of transferring land will change. Alternatives to ownership.
- Scary SLR maps: maps based on topography; they do not allow for kerbs, swales etc. 6' storm surges will occur before substantial SLR. Our 6' diagrams stand for storm surge flooding; our 8' diagram stands for 2-3' SLR and 5-6' storm surge.
- Repetitive flooding will bring a qualitative change in values and foster coherent communities.

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Regulated Tidal Exchange

