

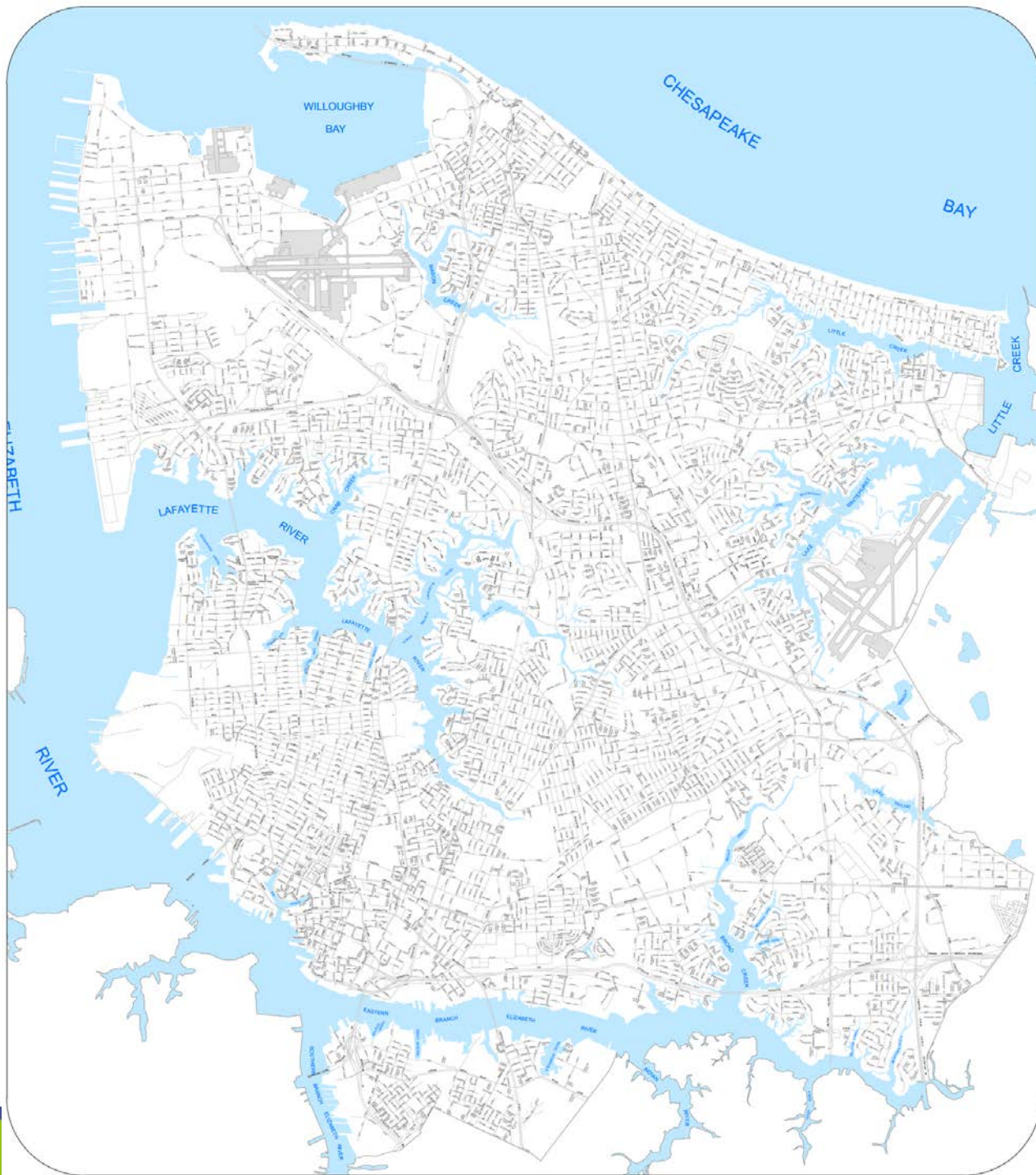
Resilience in Norfolk

WEDA 2018 – Engineering with Nature

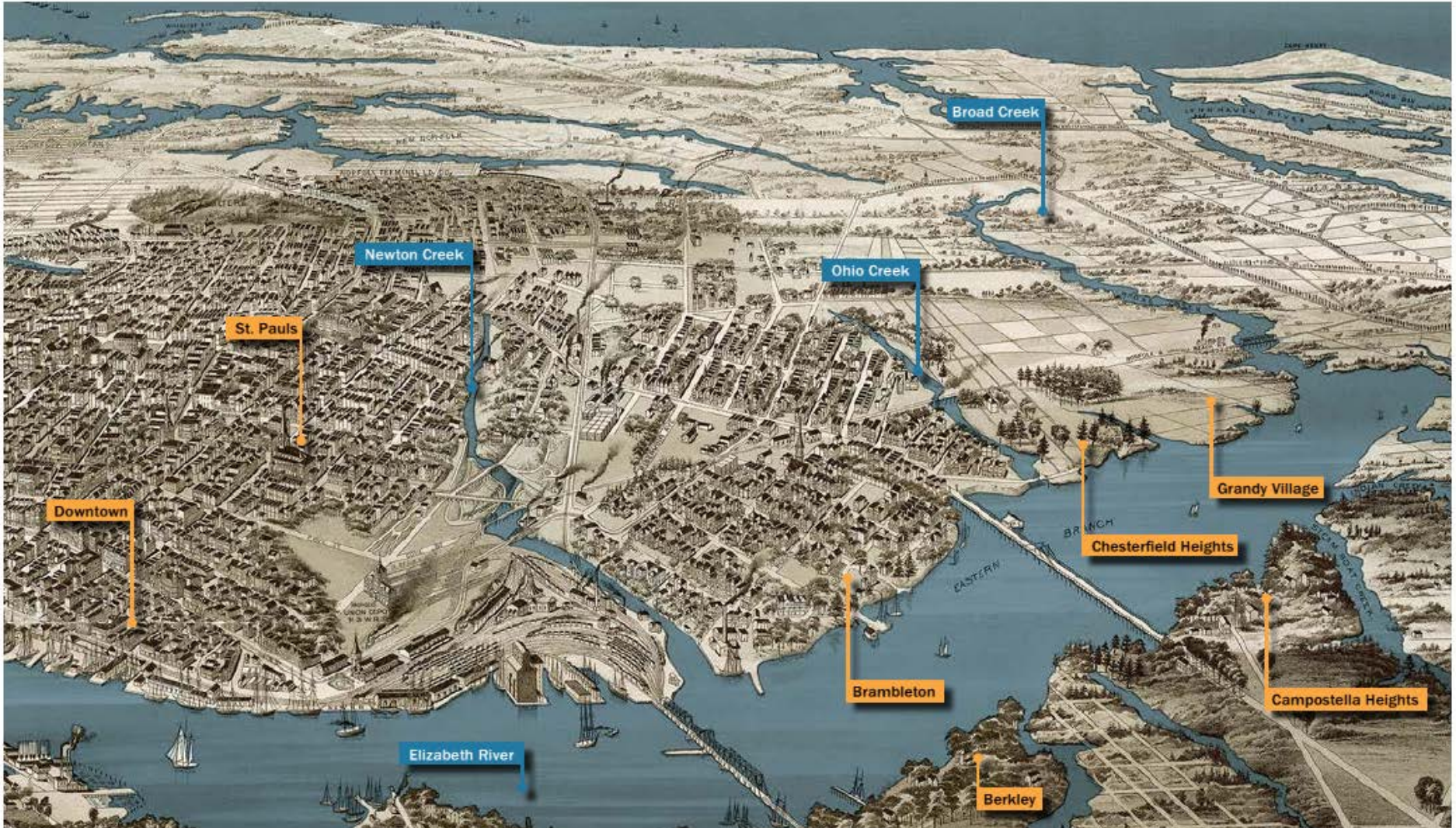
Resiliency Planning for Extreme Storms and Sea Level Rise

June 26, 2018

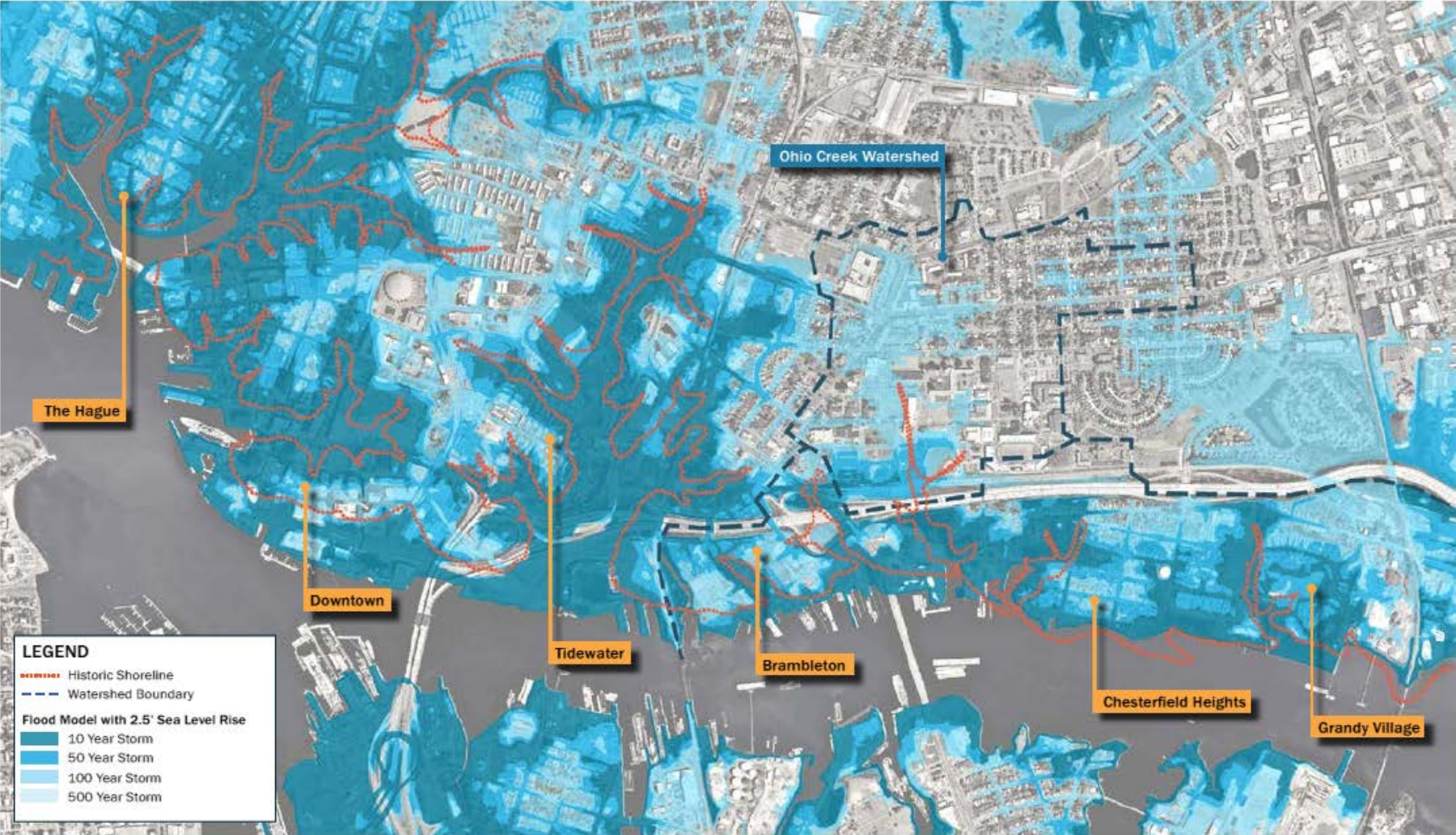




Historic Shorelines and Neighborhoods



Historic Shorelines and Future Flooding Threat



A photograph of a city skyline with various buildings, including a prominent glass skyscraper, under a blue sky with light clouds.

Resilience

Resilience is the capacity of individuals, communities and systems to **survive**, **adapt** and **grow** in the face of stress and shocks and even transform when conditions require it.





Norfolk's Resilience Strategy

Norfolk's Resilience Goals

- Goal 1: Design the coastal community of the future
- Goal 2: Create economic opportunity by advancing efforts to grow existing and new industry sectors
- Goal 3: Advance initiatives to connect communities, deconcentrate poverty, and strengthen neighborhoods



Milan * New York City * Quito
 Melbourne * Boston * Bangalore
 Rotterdam * Athens * Paris
 Dakar * Juarez * Phnom Penh
 Thessaloniki * Norfolk, Virginia
 Medellín * Bangkok * Rio de
 Janeiro * Barcelona * Los Angeles
 Rome * Chicago * Da Nang * New
 Orleans * Cali * Kigali * Huangshi
 Singapore * Mexico City * Lisbon
 Santiago de los Caballeros * San
 Francisco * Belgrade * Ramallah
 Glasgow * Montreal * Mandalay
 Accra * Jacksonville * London
 Toyama * Ashkelon * El Paso
 Dallas * Jacksonville * Pittsburgh
 San Juan * Durban * Semarang
 Sydney * Amman * Vejle * Enugu
 Porto Alegre * Surat * Santiago,
 Metropolitan Region * Deyang
 Wellington City * St. Louis * Byblos
 Arusha * Christchurch * Tulsa
 Chennai * Oakland * Bristol
 Santa Fe * Berkeley * Boulder

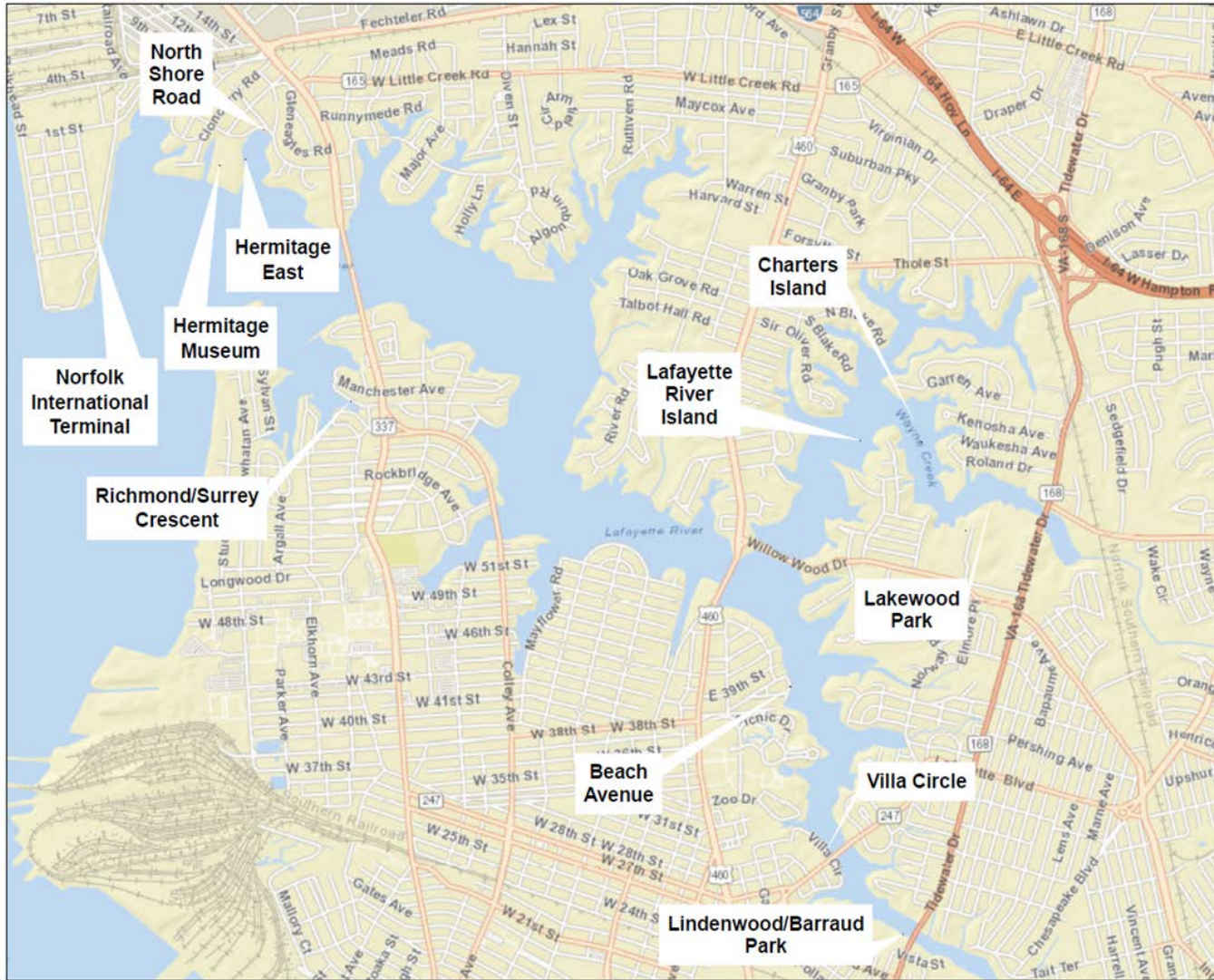


Work Underway

- NFWF Sandy Coastal Resiliency Grant \$4.6M
 - 11,500 lf of shoreline restoration
 - 3.34 acres of wetland creation
 - 1.44 acres of oyster reef creation
- USACE Norfolk Citywide Flood Risk Management Study Draft Feasibility Study
 - Study began February 2016
 - Chief's Report January 2019
- Joint Land Use Study—Sea Level Rise Impact
 - Study underway
- HUD-NDRC Implementation
 - Final Design Jan. 2019
 - Construction begins Spring 2019
 - Construction ends Spring 2022



NFWF Sandy Coastal Resiliency Grant Living Shoreline Projects



CITY OF NORFOLK, VA COASTAL STORM RISK MANAGEMENT

FEASIBILITY STUDY NORTH ATLANTIC COAST COMPREHENSIVE STUDY FOCUS AREA

37 27 200
37 2 200

255 0 163 13

5 0 63 12

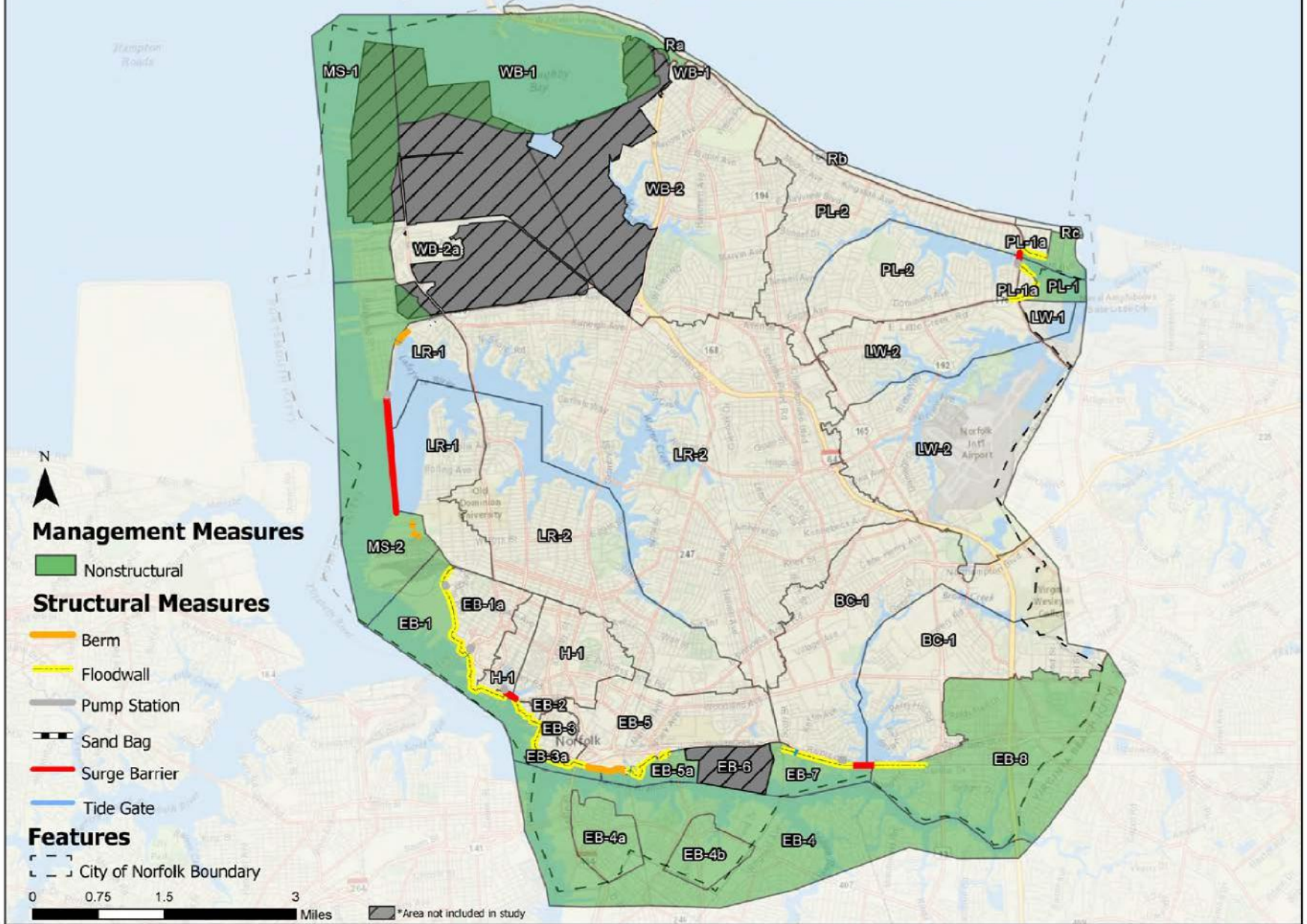
Col. Jason Kelly, PMP
District Engineer
Norfolk District, USACE
Agency Decision
Milestone March 12, 2018



US Army Corps
of Engineers®



Alternative 4D (TSP/NED) Combination Plan with NIT SSB



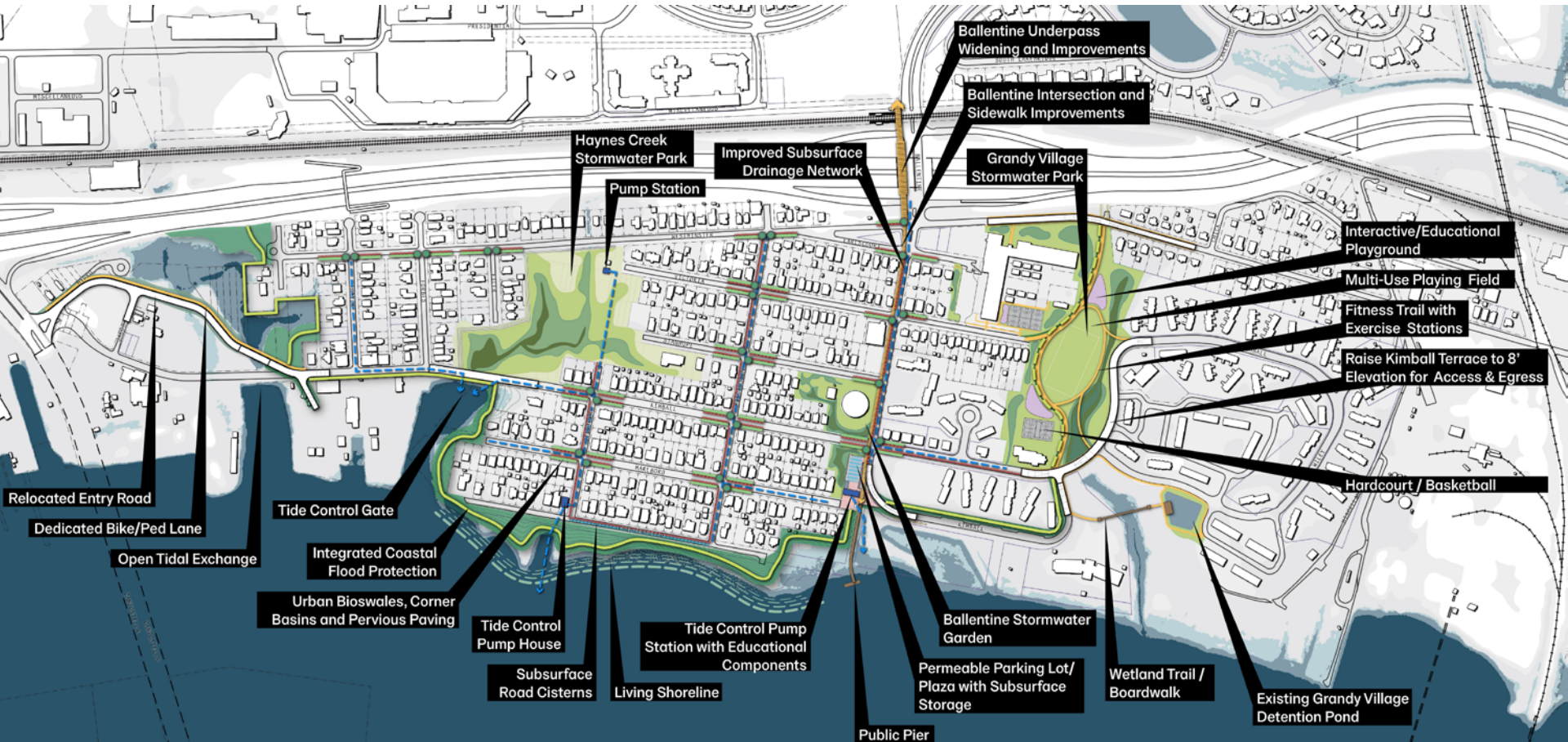
Designing the Coastal Community of the Future

Ohio Creek Watershed--\$115M

Coastal Resilience Accelerator--\$5M



NDRC Ohio Creek



QUESTIONS?

THANK YOU!

Scott A. Smith, PE, LS
Coastal Resiliency Manager

