

CLIMATE CHANGE & NATIONAL SECURITY VIRGINIA PERSPECTIVE



Photo: Skip Stiles

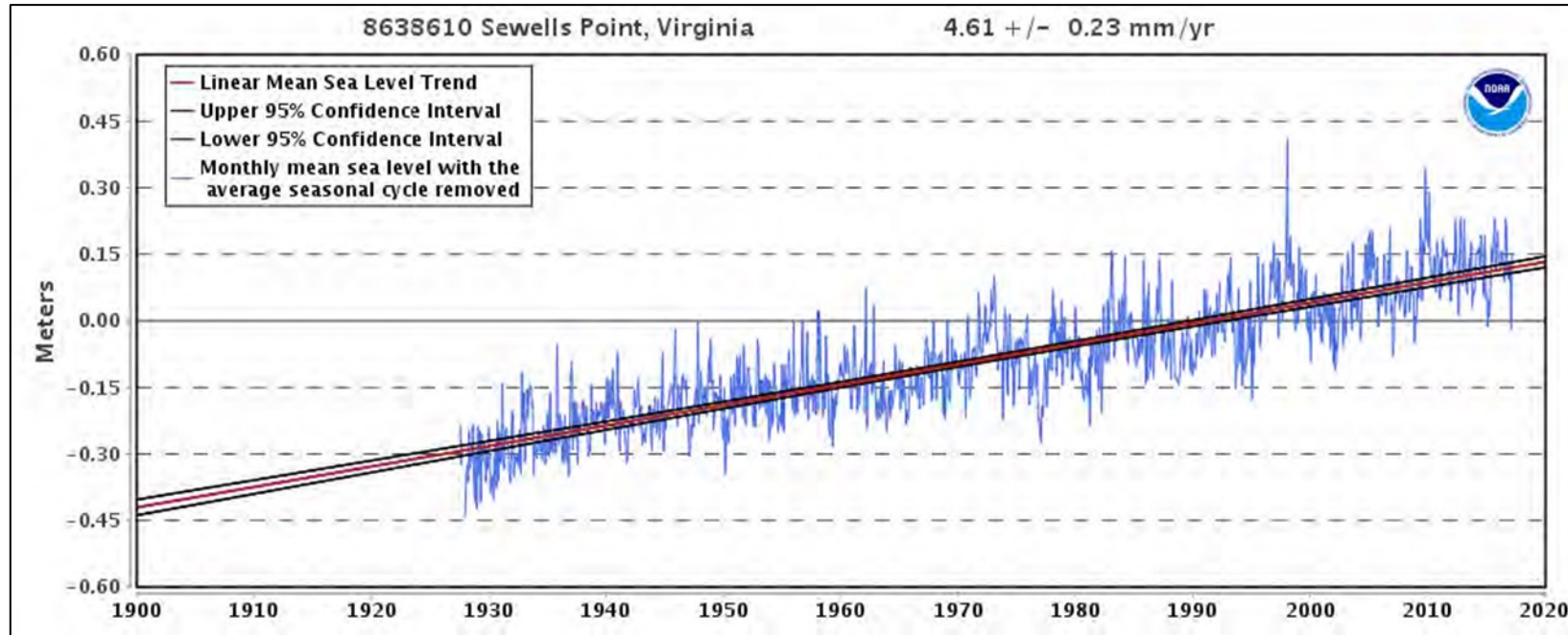
WETLANDS WATCH



We work where land, communities, and water meet to conserve nature in a changing climate

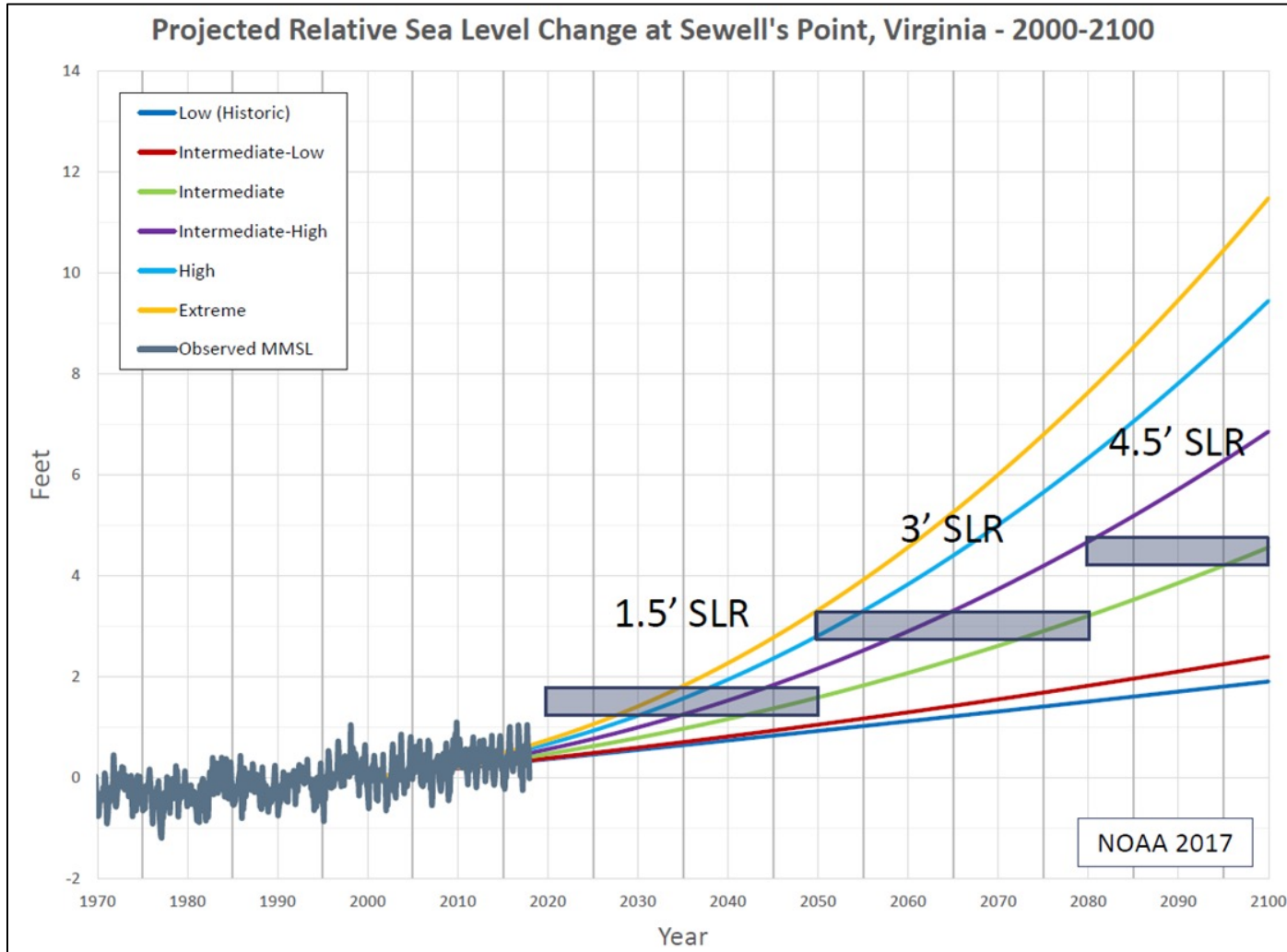


HISTORICAL SEA LEVEL RISE: NORFOLK VA

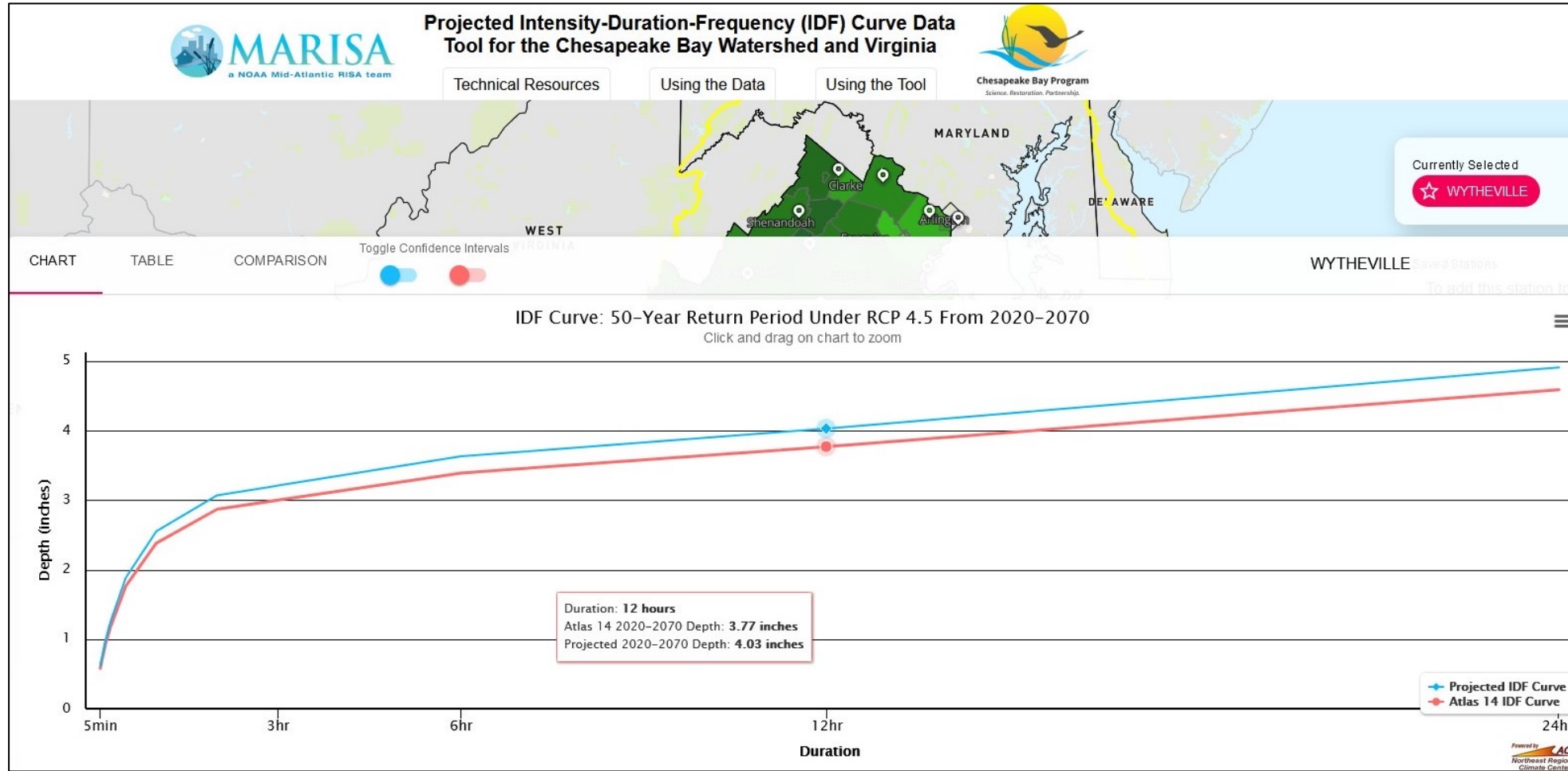


Mean sea level trend = 4.42 millimeters/year
1.45 feet/century = highest rate of relative SLR on Atlantic Coast

FUTURE SEA LEVEL RISE: NORFOLK VA



RAINFALL INCREASING: ~18% SINCE 2006



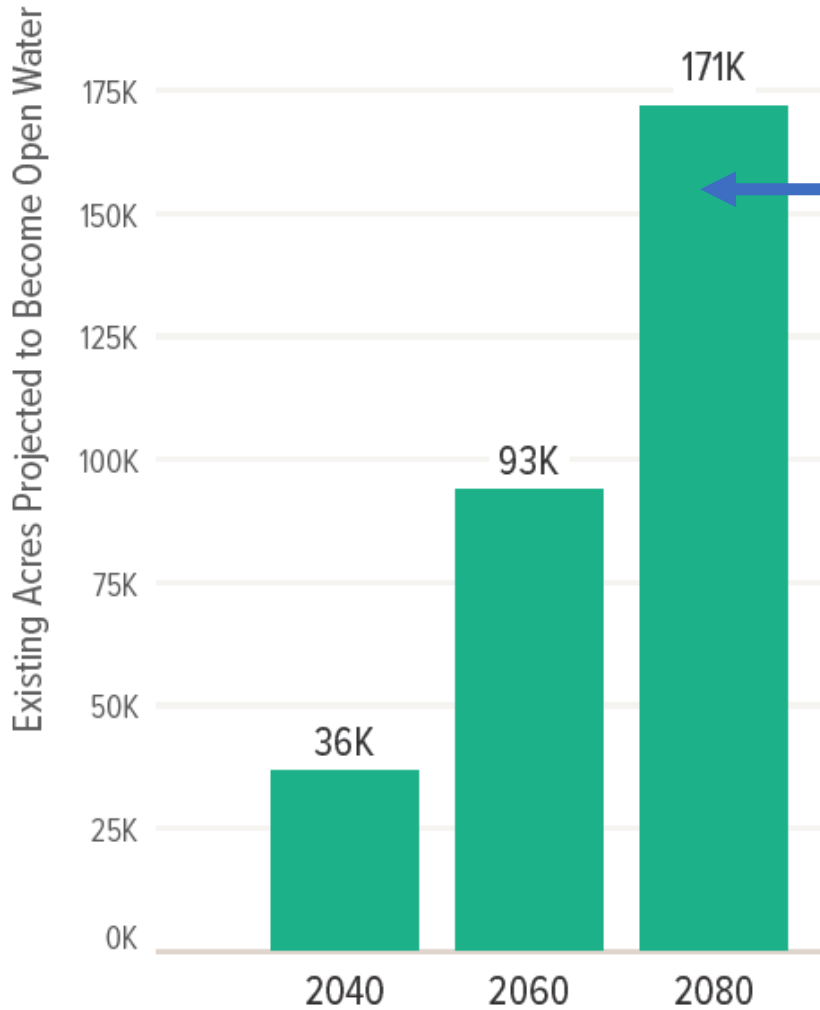
Source: MARISA

PROJECTED IMPACTS



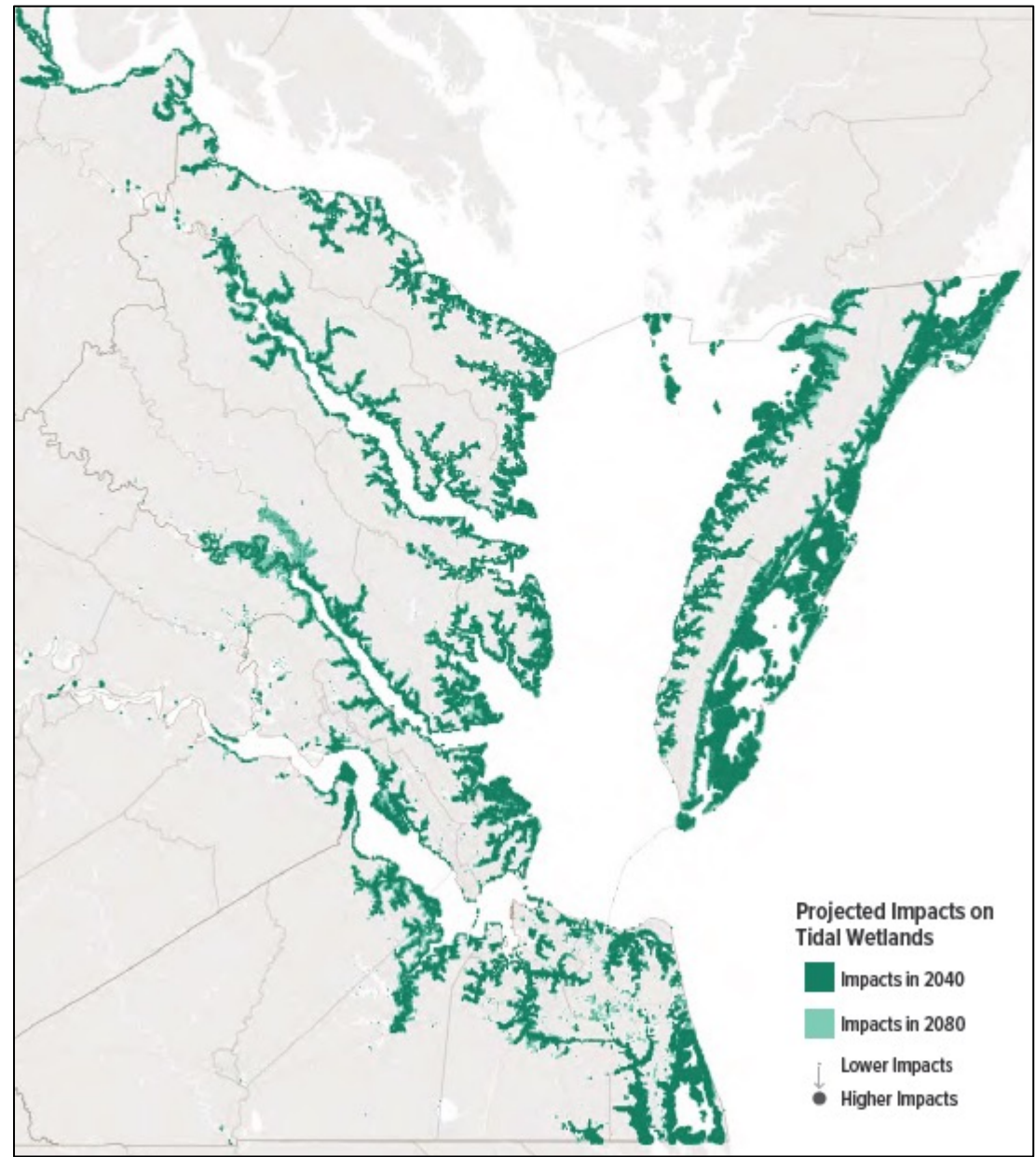
Tidal Wetland Habitat Loss

Relative to habitat in 2020



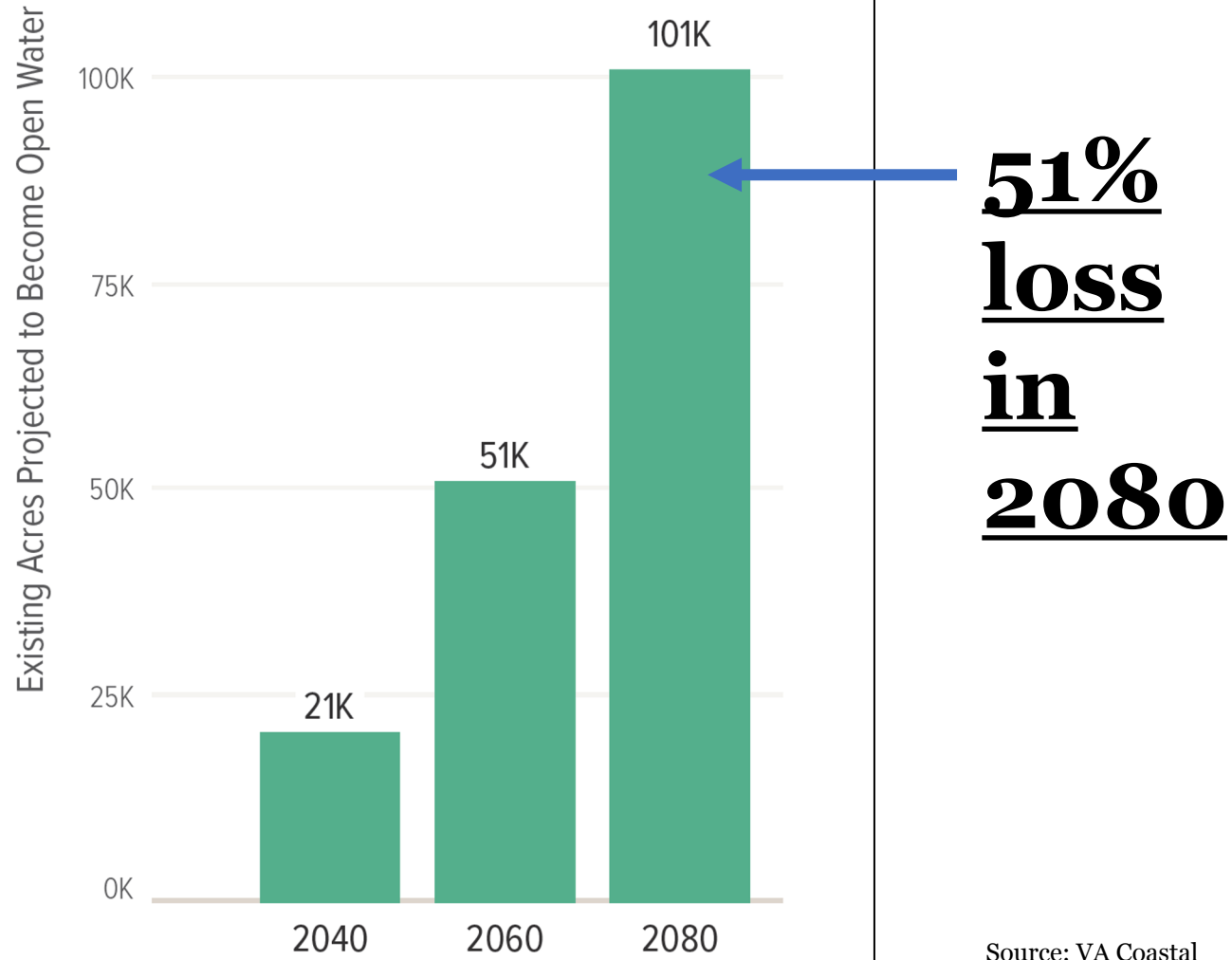
89%
loss
in
2080

Source: VA Coastal Resilience Master Plan

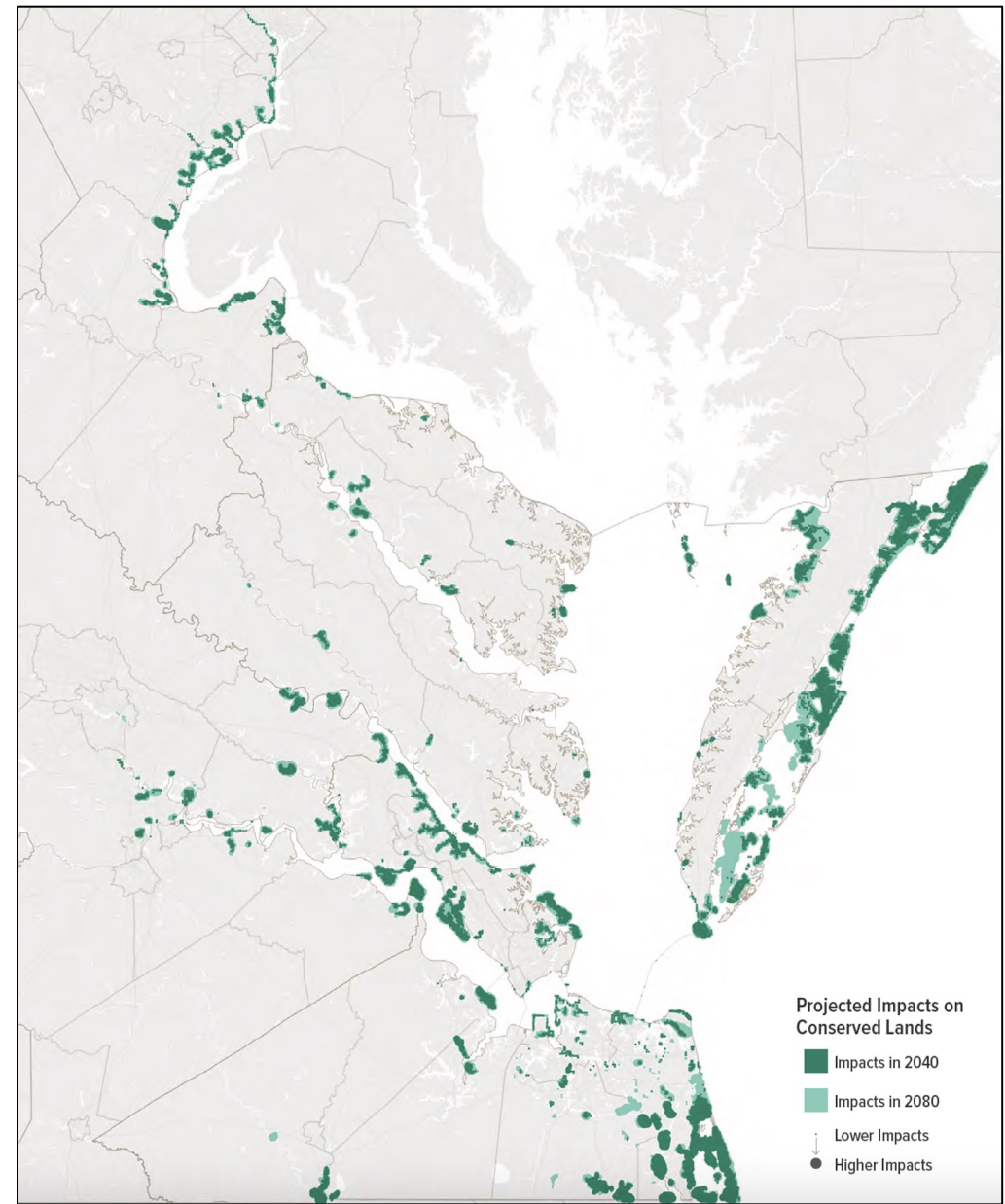


Upland Habitat Loss

Relative to habitat in 2020



Source: VA Coastal Resilience Master Plan



PROJECTED IMPACTS: 2080



Photo: Mary-Carson Stiff

- Number of buildings exposed to an extreme coastal flood: 140,000 → 340,000 (150% increase)
- Residents exposed to major flooding: Nearly 1 Million
- Annualized flood damages: increase by from \$0.4 B → \$5.1 B (1,300% increase)

Source: VA Coastal
Resilience Master Plan

PROJECTED IMPACTS: 2080



Miles of roadways exposed to chronic coastal flooding will increase from 500 miles to nearly 2,800 miles → **460% increase**

Source: VA Coastal Resilience Master Plan

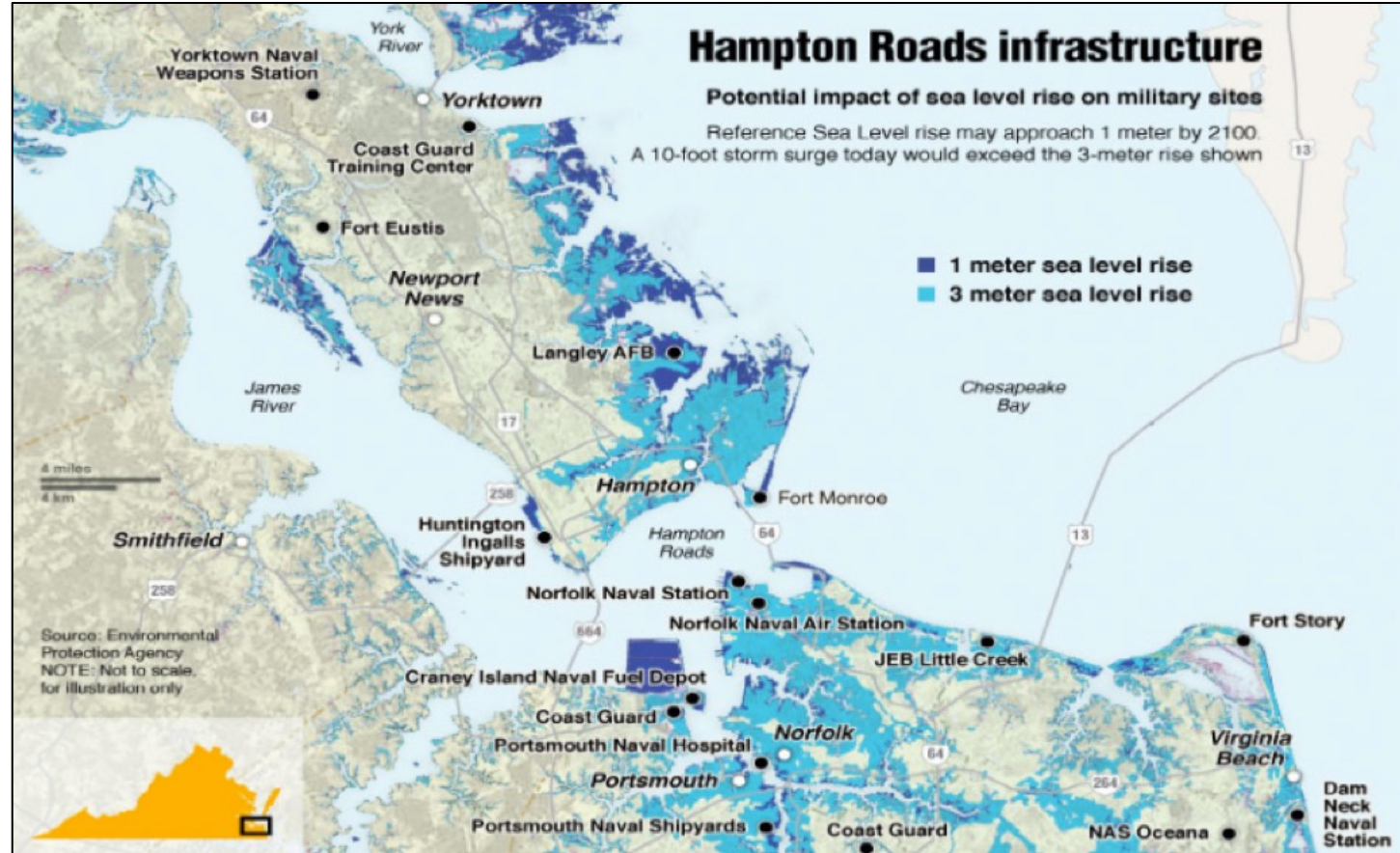
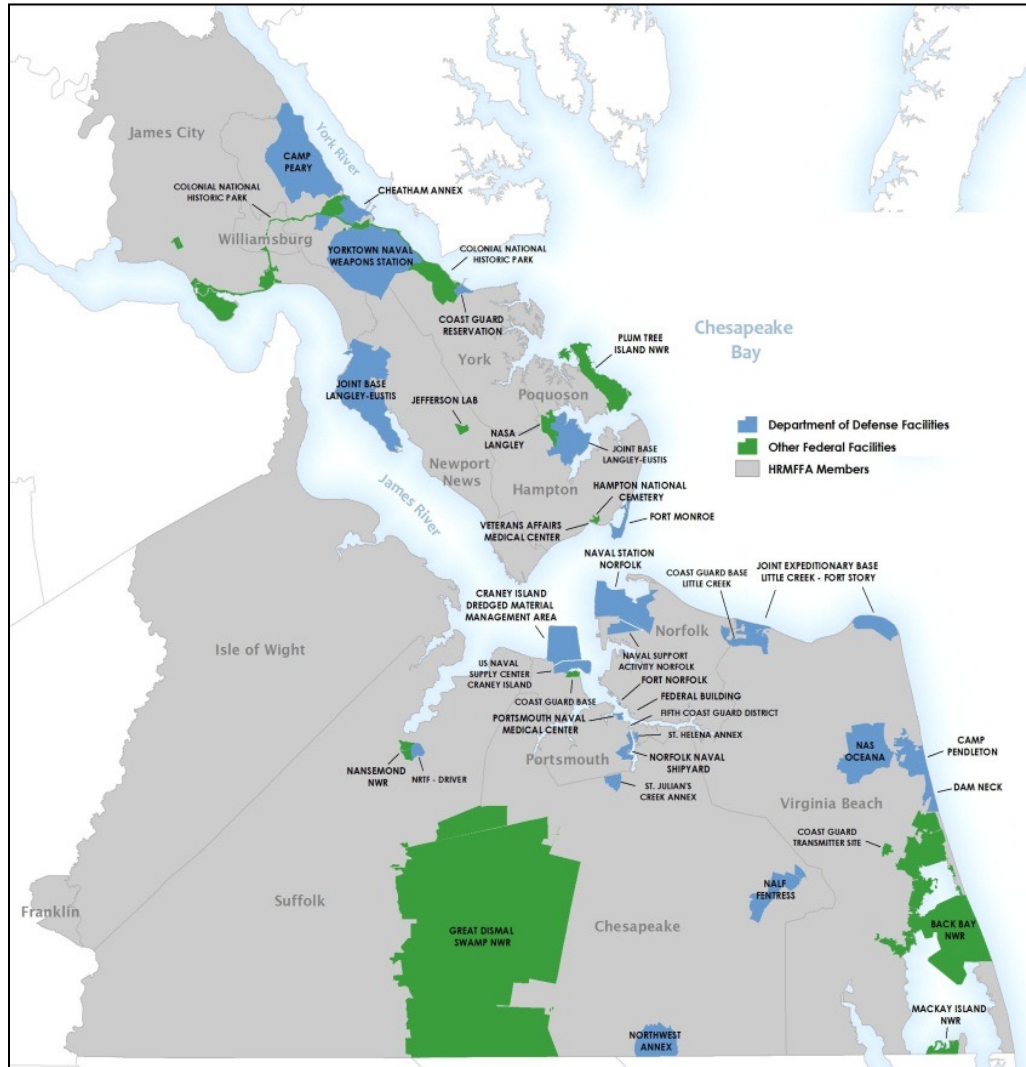
NATIONAL SECURITY IMPACTS

Rank	State	Defense Spending (billions)
1	Virginia	\$62.7
2	Texas	\$58.0
3	California	\$56.2
4	Florida	\$30.2
5	New York	\$28.1
6	Maryland	\$26.4
7	Connecticut	\$22.3
8	Pennsylvania	\$17.9
9	Massachusetts	\$15.2
10	Arizona	\$15.0

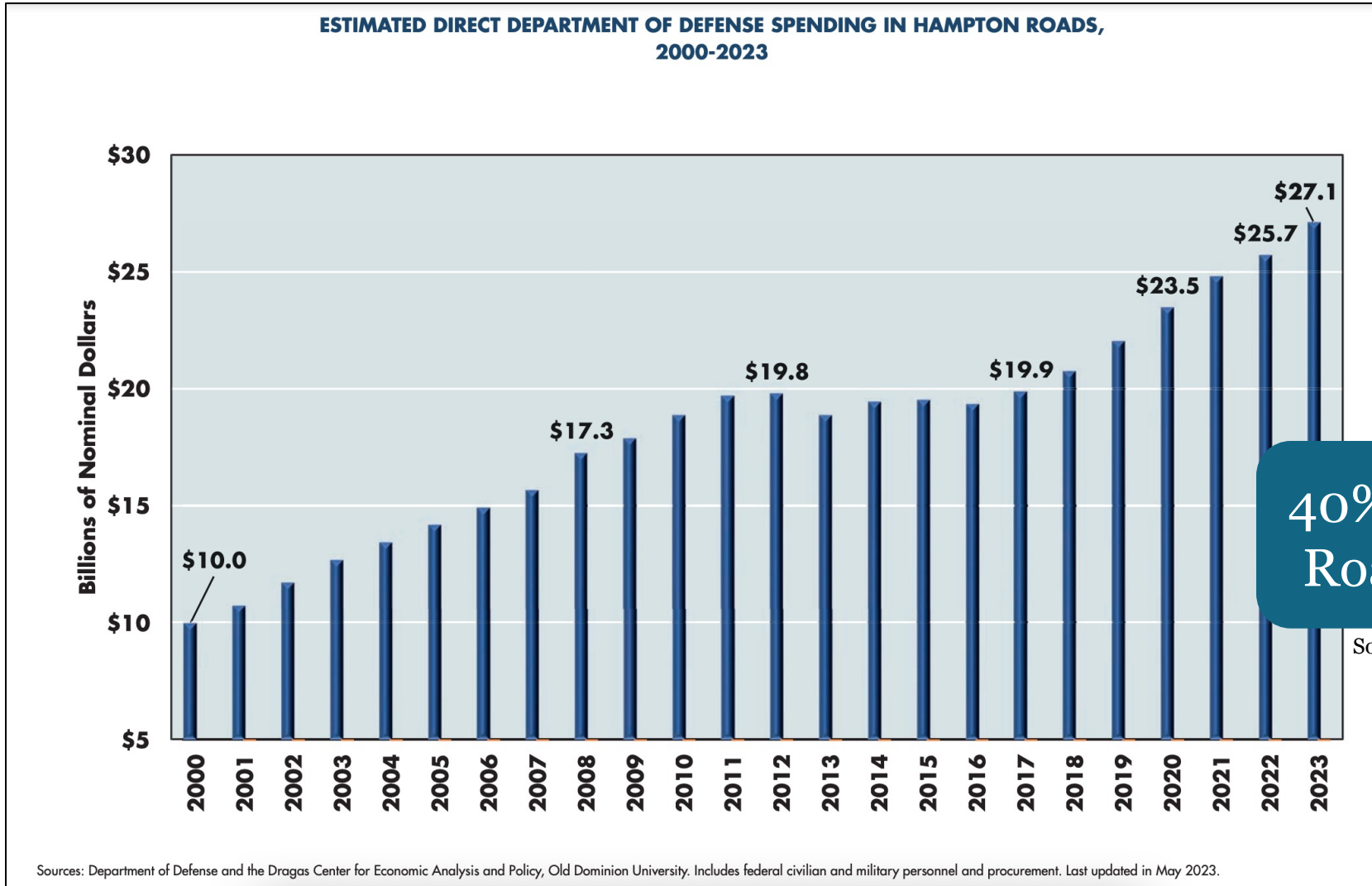
10% of VA's GDP!

Source: DOD, 2022 spending

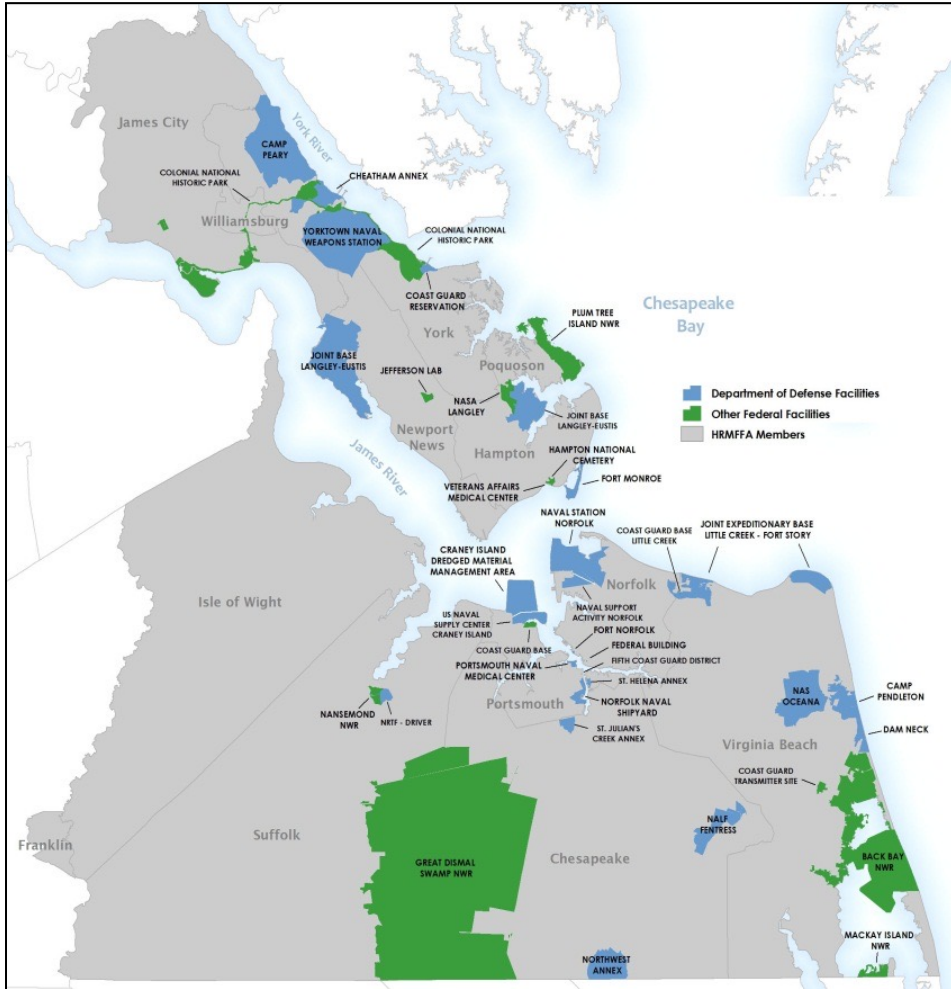
HAMPTON ROADS: 16+ BASES



INCREASING DOD SPENDING



WHAT HAPPENS OFF BASE?



- Every military branch represented
- 2nd most active-duty personnel in country (100,000+)
- Over 40,000 civilian personnel

Bases rely on off base utilities

*How do people get on and off base?
Where do people live? Go to school?*

Source: Repi.mil

TRANSPORTATION SYSTEM IMPACTS



AVAILABLE / SAFE HOUSING IMPACTS



Photo: Sahar Coston-Hardy, ASLA



Photo: Skip Stiles

EDUCATION SYSTEM IMPACTS



Source: The Virginian-Pilot

WHAT ARE WE DOING ABOUT IT? (STATE)

Assess the risk

- Coastal Resilience Master Plan (2021)

Plan for the risk

- Standard state-wide sea level rise planning scenario (NOAA intermediate high curve)

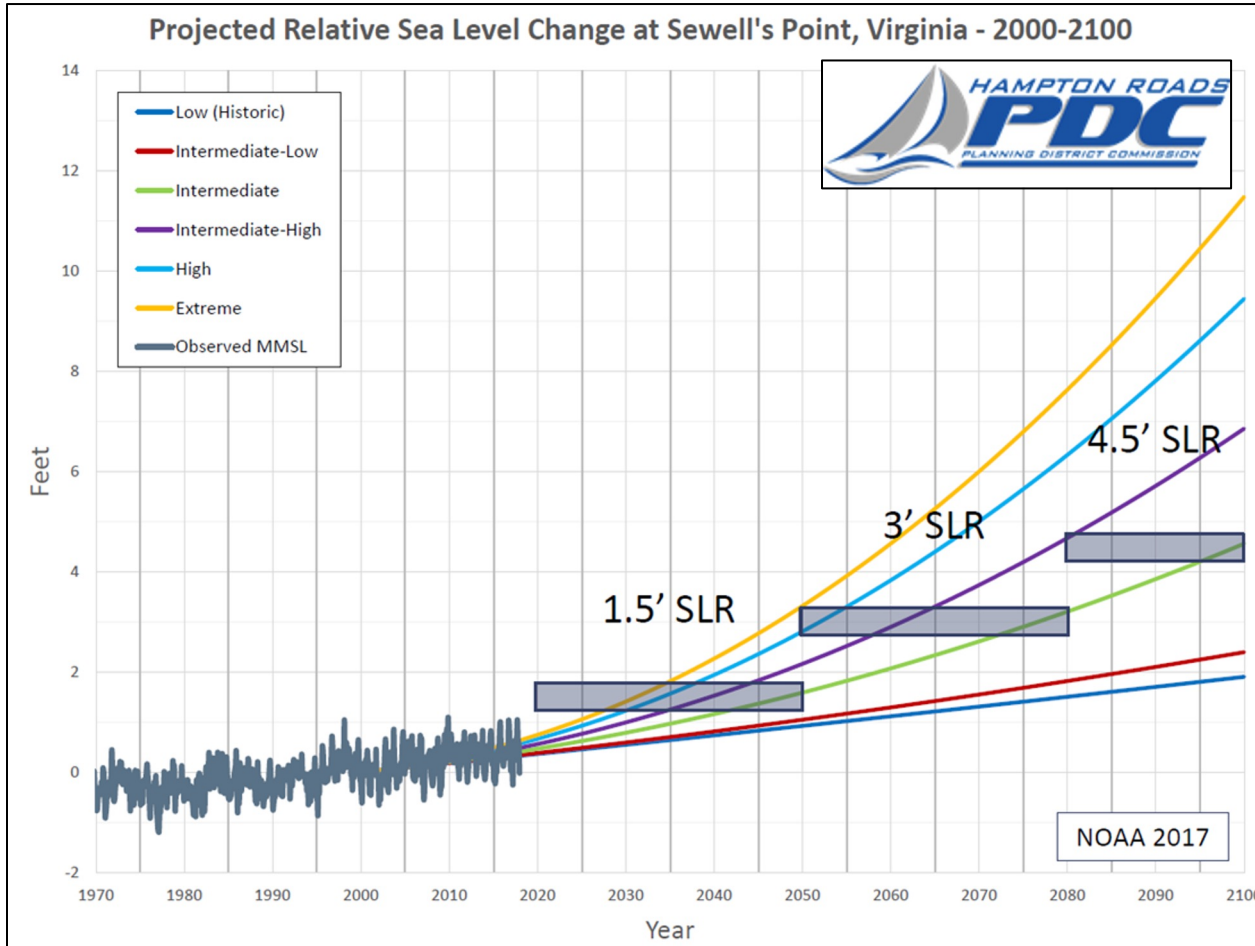
Protect against the impacts

- Freeboard requirements for state buildings in both flood and sea level rise inundation zones
- Climate change engineering design standards for roads and bridges
- Sea level rise included in shoreline & septic regulations

Reduce AND pay for the impacts

- Regional Greenhouse Gas Initiative (RGGI): 45% of each auction into new Community Flood Preparedness Fund → \$150M in local government pre-disaster grants → 6:1 benefit

WHAT ARE WE DOING ABOUT IT? (REGION)



FIGHT THE FLOOD
MIDDLE PENINSULA

WHAT ARE WE DOING ABOUT IT? (LOCAL)

Assess the risk

- NOAA's Atlas 14 data too old, VA Beach paid for new study → 20% increase rainfall

Plan for the risk

- All Hampton Roads comprehensive plans must include strategies for sea level rise adaptation → plan updates currently underway
- Long term planning (Norfolk Vision 2100)
- Locality resilience planning underway to get state funding

Protect against the impacts

- “Higher standards” in land use, zoning, and regulation (ex: freeboard requirements)
- Home elevations, buyouts, special district zoning, restrictive development

Pay for the impacts

- VA Beach passed \$567M resilience bond for sea level rise adaptation projects

MILITARY + LOCAL PARTNERSHIPS

Joint Land Use Studies

Portsmouth-Chesapeake (2021)

Norfolk-VA Beach (2019)

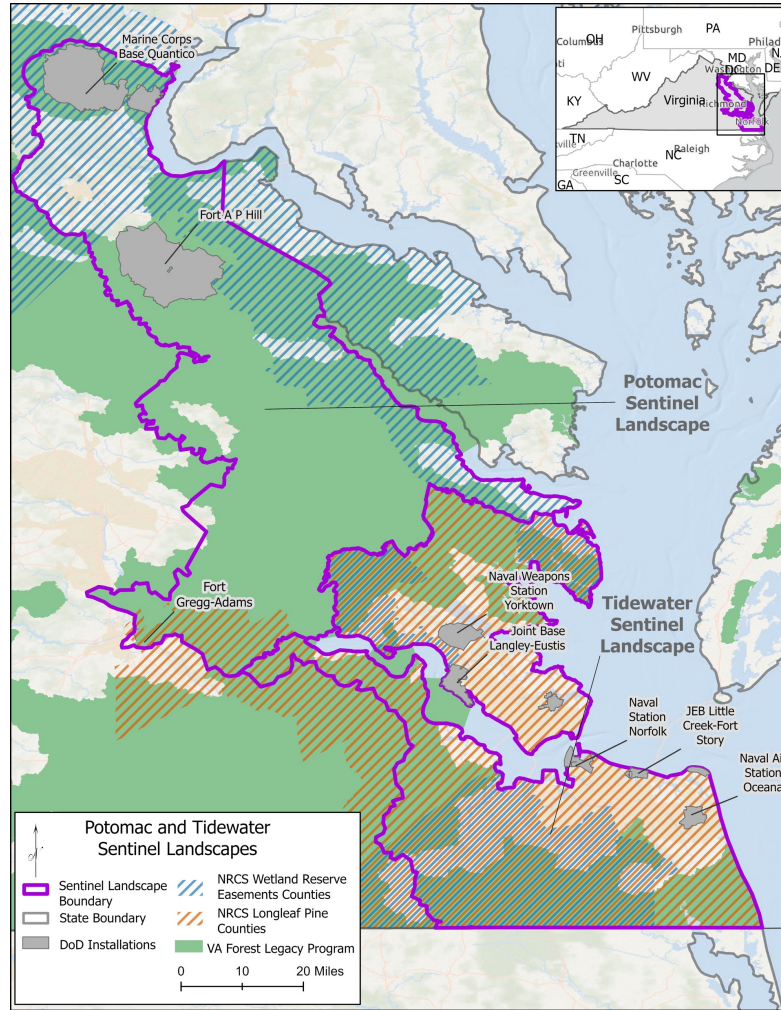
Hampton-Langley Air Force Base (2018)

Fort Eustis (NN, JCC, YC) (2018)

Accomack (2015)



SENTINEL LANDSCAPES - VA SECURITY CORRIDOR



SAFEGUARDING NATIONAL SECURITY

Localities are on the front lines and weary – they need support

- Support state planning efforts and adaptation standards
- Coordinate off base planning AND investments
- Align federal standards with local/regional standards, if higher
- Help localities and community groups access money – simplify grants

THANK YOU



Photo: Mary-Carson Stiff