

OPPORTUNITIES FOR REGULATORY RESPONSE

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REGULATORY RESPONSE

RECAP OF ISSUES IN TAMPA (TOP 5?)

- ☐ Open space and government land primarily impacted in near-future
- ☐ Clustered private lands impacted
- ☐ Problems with hardened shorelines and habitat migration
- ☐ Subsurface hydrology issues
- ☐ Increased flooding hazard and flood insurance

REGULATORY RESPONSE



HOW ARE OTHER PLACES APPROACHING THE ISSUES OF SEA LEVEL RISE (THROUGH POLICY)?

Charlestown's long-term climate resilient waterfront strategy.

IMAGE FROM COASTAL RESILIENCE SOLUTIONS FOR EAST BOSTON AND CHARLESTOWN

REGULATORY RESPONSE

WHAT STRATEGIES ARE ALREADY IN PLACE?

REGULATORY RESPONSE

REGULATORY DOCUMENTS

- ☐ The Comprehensive Plan
 - ☐ The Code of Ordinances, mostly Building + Land Development Codes
 - ☐ Stormwater Technical Standards Manual, for Public and Private
 - ☐ Local Building Code Amendments
 - ☐ The Transportation Technical Manual
 - ☐ The Local Mitigation Strategy
 - ☐ The Post-Disaster Redevelopment Plan
 - ☐ The Environmental Protection Commission in Hillsborough County
 - ☐ Regional Water Management District policies and guidelines
-
- ☐ Also, in Florida, Statewide mandates such as those found under Chapter 163, Intergovernmental Programs, which regulates policy such as Peril of Flood

REGULATORY RESPONSE

EXAMPLES

REGULATORY RESPONSE

COMMIT TO PLANNING AND PERMITTING TOWARD FUTURE SEA-LEVEL AND GROUNDWATER HEIGHT SCENARIOS (COMPREHENSIVE PLAN)

- ☐ Guarantee life-expectancy of projects
- ☐ Reduce risk for future tax payers

CONSIDER SECONDARY IMPACTS OF SEA-LEVEL RISE (COMPREHENSIVE PLAN)

- ☐ Hurricane storm surge and drainage issues are will be increased
- ☐ In addition to the impact to property and structures, there are environmental and social issues to address

REGULATORY RESPONSE

MAPPING AND INVENTORY OF SUSCEPTIBLE INFRASTRUCTURE

(COMPREHENSIVE PLAN)

- ☐ Publicly owned utilities, infrastructures and buildings
- ☐ Coastal shoreline protection

REGULATORY RESPONSE

MAPPING AND INVENTORY OF SUSCEPTIBLE INFRASTRUCTURE

(COMPREHENSIVE PLAN)

- Publicly owned utilities, infrastructures and buildings
- Coastal shoreline protection

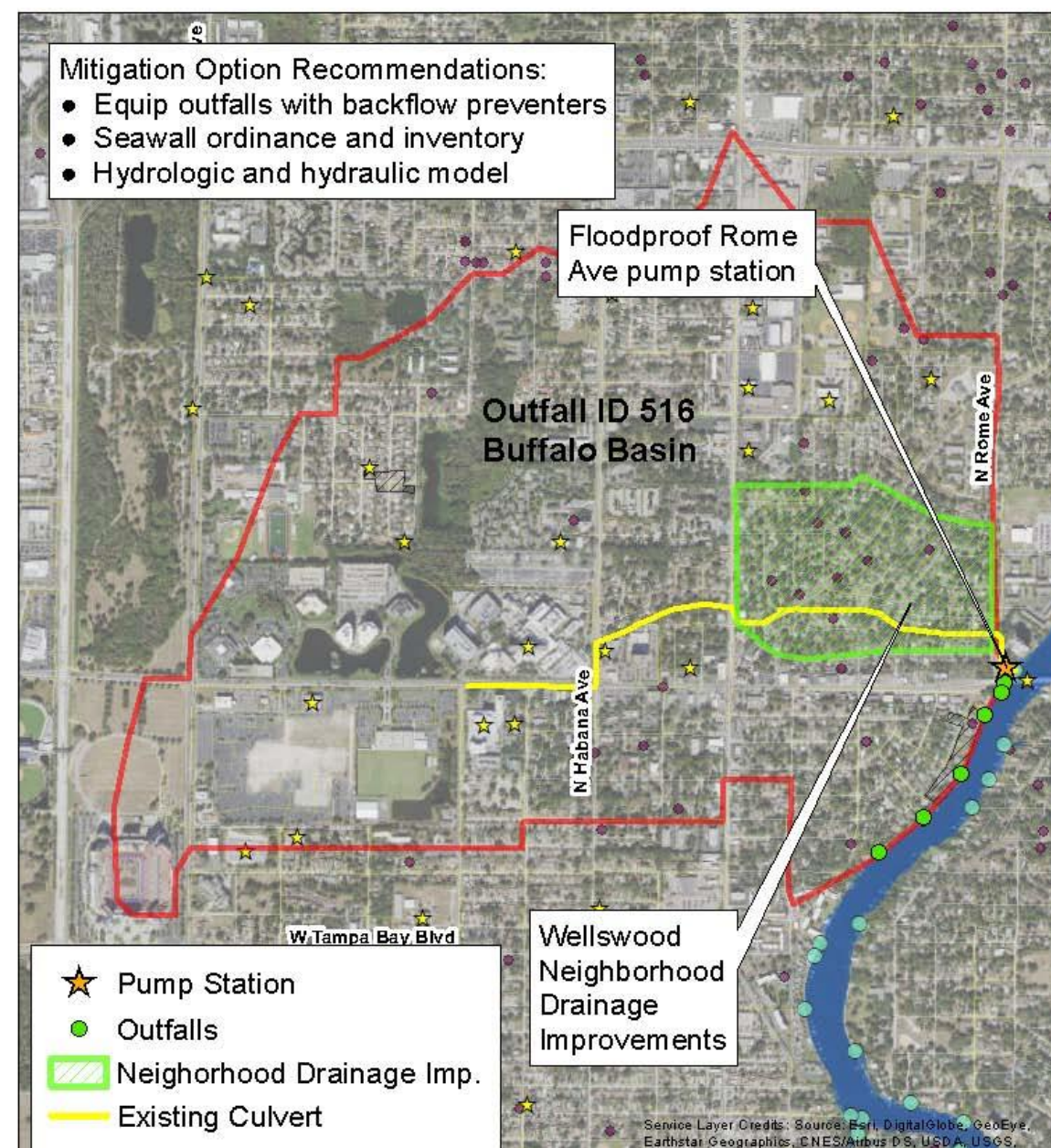


IMAGE FROM CITY OF TAMPA

SEA LEVEL RISE VULNERABILITY ANALYSIS AND RESILIENCY STRATEGY REPORT

[HTTPS://WWW.TAMPA.GOV/SPECIAL-PUBS/SEA-LEVEL-RISE-VULNERABILITY-ANALYSIS-AND-RESILIENCY-STRATEGY-REPORT](https://www.tampa.gov/special-pubs/sea-level-rise-vulnerability-analysis-and-resiliency-strategy-report)

REGULATORY RESPONSE

DEVELOP FLEXIBLE COASTLINE SPACE (COMPREHENSIVE PLAN)

- ☐ Allows for habitat migration
- ☐ Reduces wave action and erosion
- ☐ Allows for adaptation depending on future scenarios
- ☐ Equity of coastal access
- ☐ Value to adjacent properties

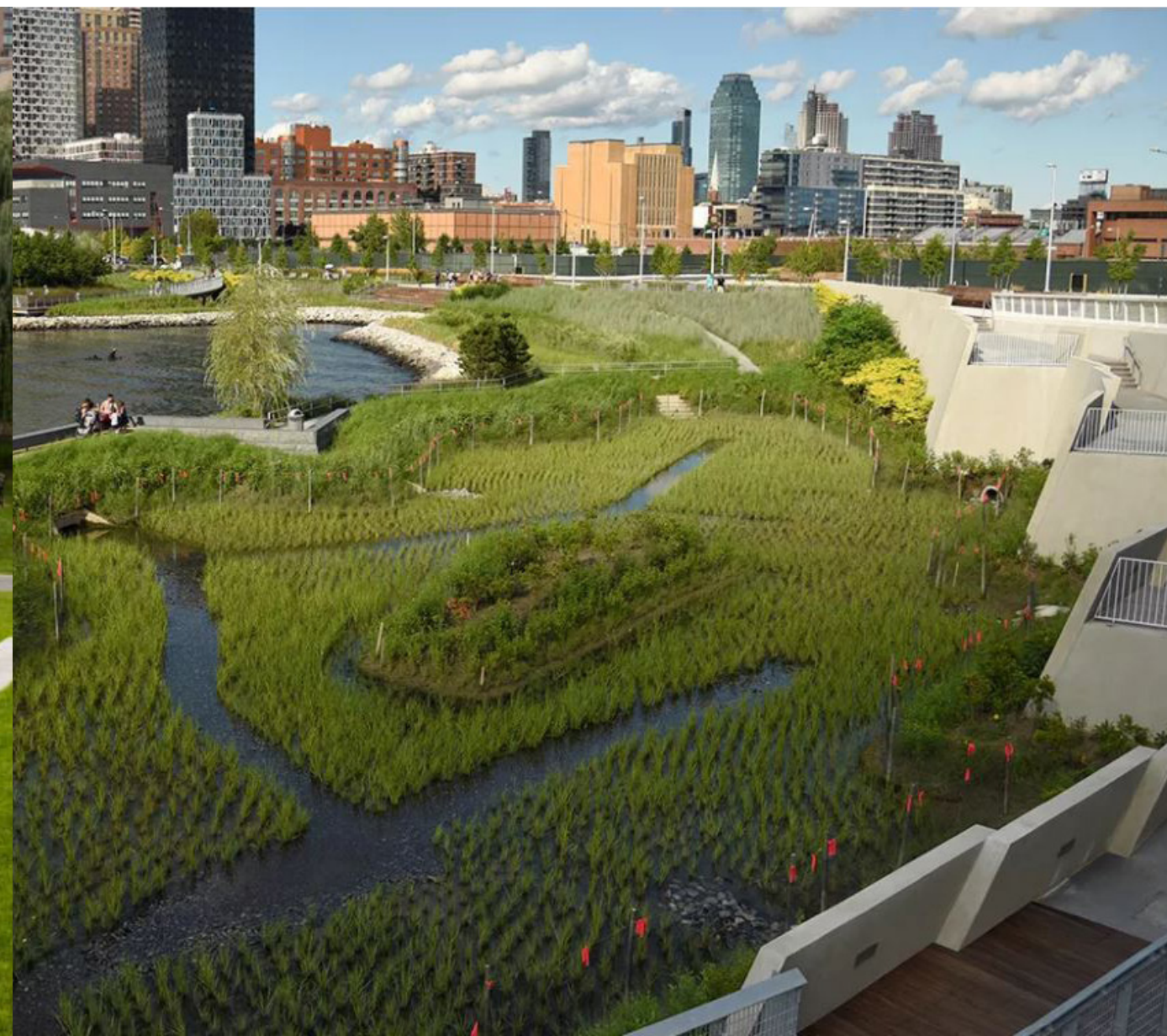
DRAWINGS FROM COASTAL RESILIENCE SOLUTIONS FOR
EAST BOSTON AND CHARLESTOWN



REGULATORY RESPONSE

DEVELOP FLEXIBLE COASTLINE SPACE (COMPREHENSIVE PLAN)

IMAGES OF HUNTER POINT SOUTH PARK



REGULATORY RESPONSE

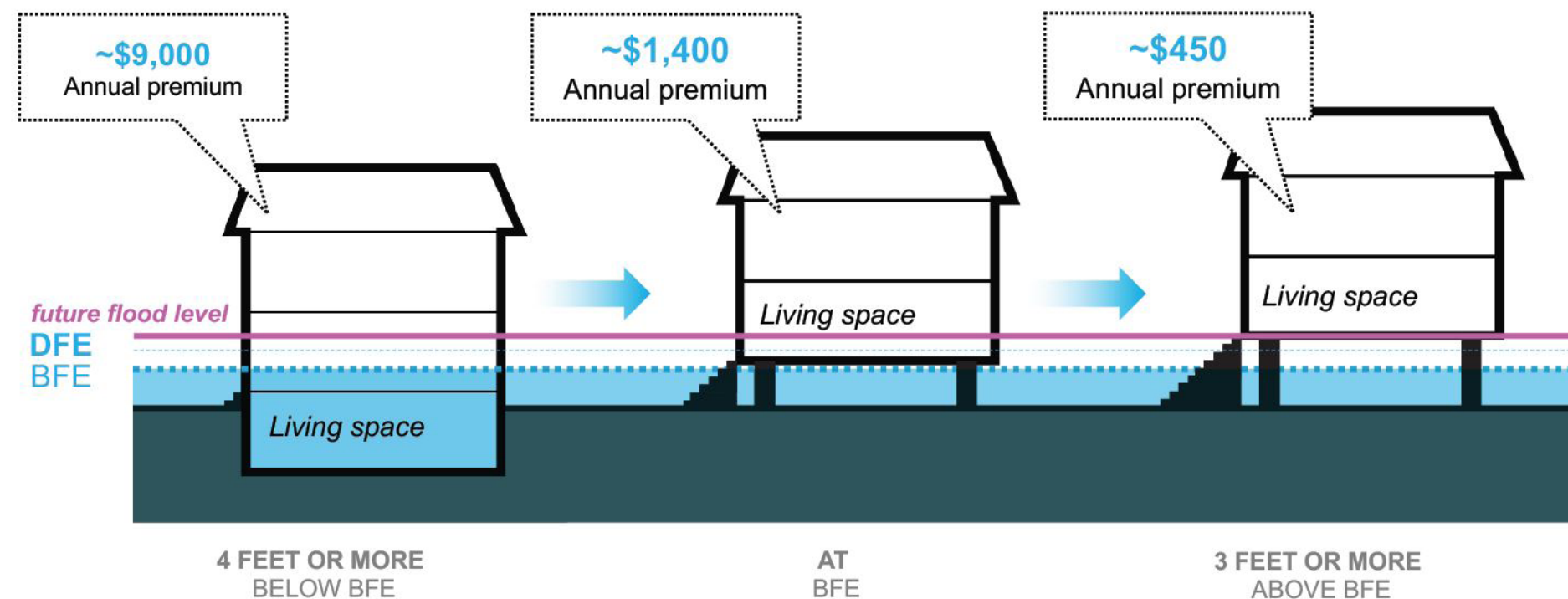
CREATE OVERLAY ZONES (LAND DEVELOPMENT CODE, COMPREHENSIVE PLAN)

- Existing: FEMA Flood Insurance Rate Map zones
- Zones V, A, Coastal A (also a velocity zone), X

IMAGES FROM ONLINE FEMA FLOOD MAP



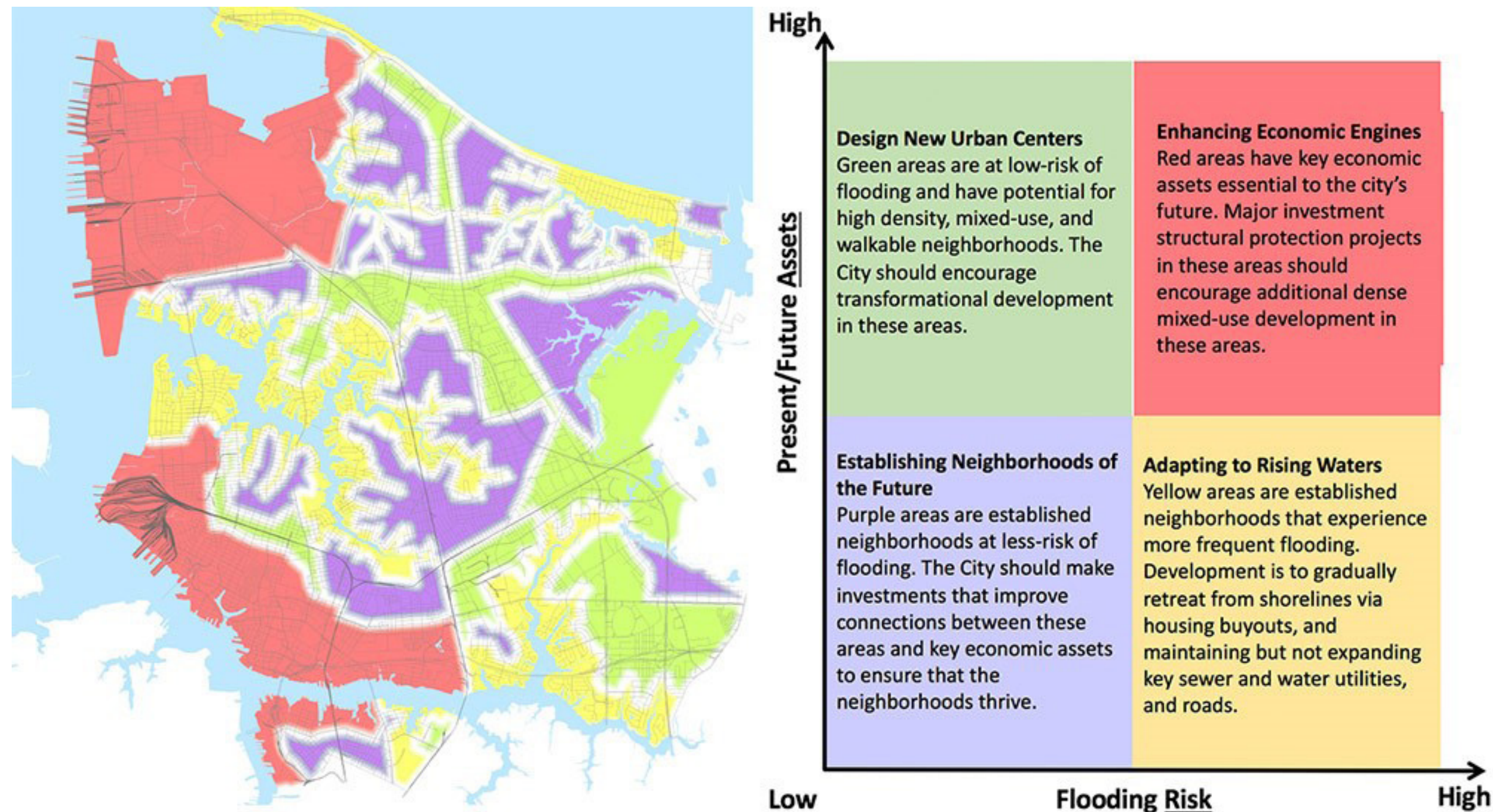
IMAGE FROM NEW YORK CITY 'ZONING FOR COASTAL FLOOD RESILIENCY'



REGULATORY RESPONSE

CREATE OVERLAY ZONES (COMPREHENSIVE PLAN)

- Norfolk divided the city into 4 planning zones



REGULATORY RESPONSE

CREATE OVERLAY ZONES (LAND DEVELOPMENT CODE, COMPREHENSIVE PLAN)

From Thomas Ankersen, University of Florida (and others)

https://www.law.ufl.edu/_pdf/academics/centers-clinics/clinics/conservation/sea_level_rise.pdf

- ☐ A Protection Zone
- ☐ An Accommodation Zone
- ☐ A Managed Relocation Zone

REGULATORY RESPONSE

CREATE OVERLAY ZONES (LAND DEVELOPMENT CODE, COMPREHENSIVE PLAN)

□ Can associate other stipulations, tax incentives, funding sources and disclosure policies with agreed upon planning and land development overlay zone



USES:
YEAR 2100 HIGH SCENARIO (66")
PLUS 1% FLOOD EVENT (42") FOR A
TOTAL OF 108" ABOVE TODAY'S AVERAGE HIGH TIDE

IMAGE FROM SAN FRANCISCO PLANNING

[HTTPS://SFPLANNING.ORG/SEA-LEVEL-RISE-ACTION-PLAN#VULNERABILITY-ZONE](https://sfplanning.org/sea-level-rise-action-plan#vulnerability-zone)

REGULATORY RESPONSE

IN TAMPA, WE CURRENTLY HAVE:

- ☐ 5 Planning Districts (Central Tampa, Westshore, University, New Tampa and South Tampa)
- ☐ Zoning Districts (Single Family, Commercial, Office...)
- ☐ Special Zoning Districts (Municipal Airport, Ybor City...)
- ☐ Overlays (In the Central Business District there is a Waterfront Overlay, the Riverwalk Overlay...)
- ☐ Flood Overlays (The Coastal High Hazard Zone, Redlined Property)
- ☐ Community Redevelopment Areas (CRAs, such as Central Park, Drew Park, East Tampa...)

REGULATORY RESPONSE

CONSIDER BUILDING HEIGHT (BOTTOM AND TOP)

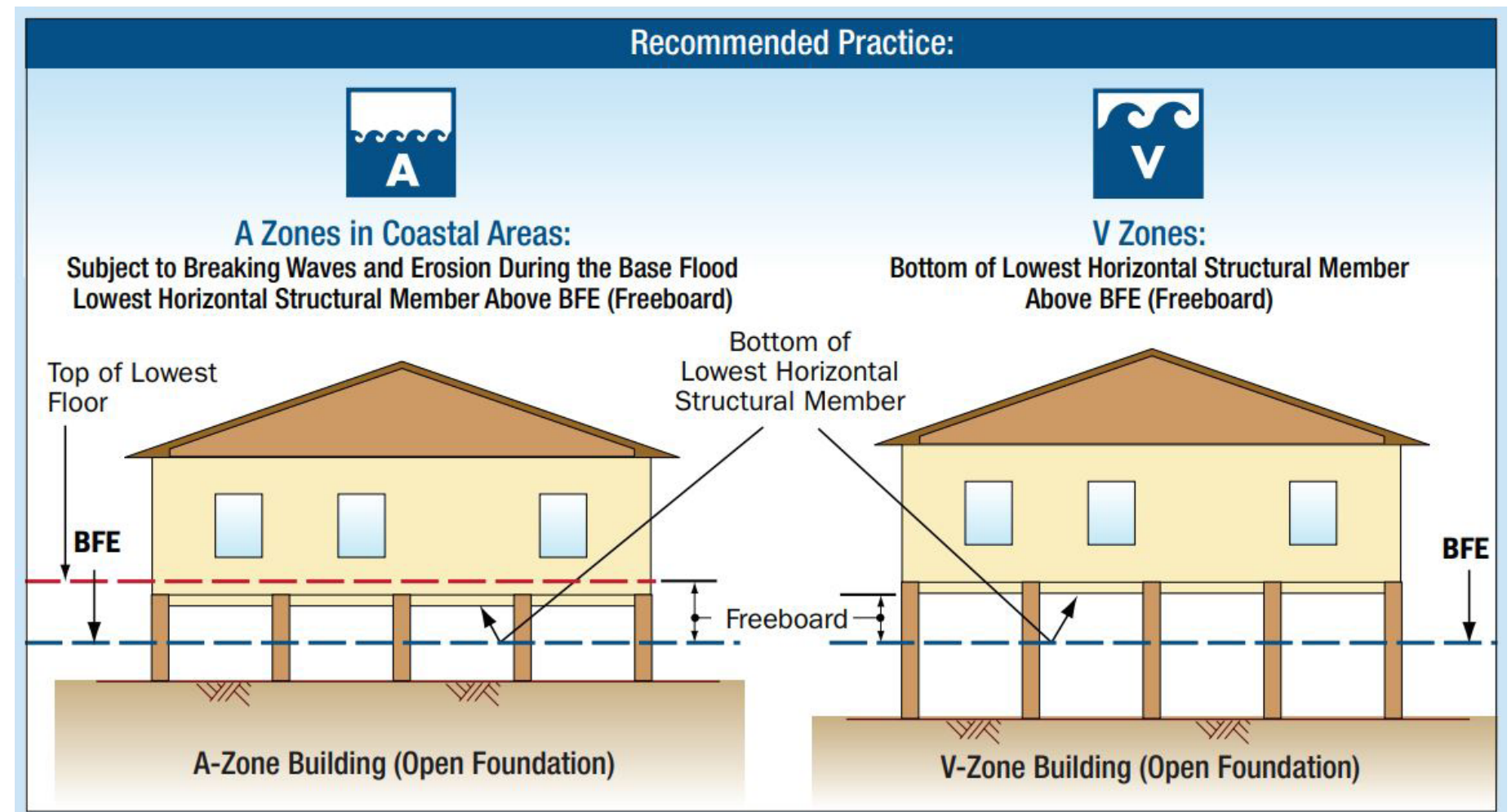
(LAND DEVELOPMENT CODE, BUILDING CODE)

- Existing: FEMA Flood Insurance Rate Map and the Florida Building Code

IMAGES FROM ONLINE FEMA FLOOD MAP



IMAGES FROM FEMA, HOMEBUILDER'S GUIDE TO COASTAL CONSTRUCTION (2010)

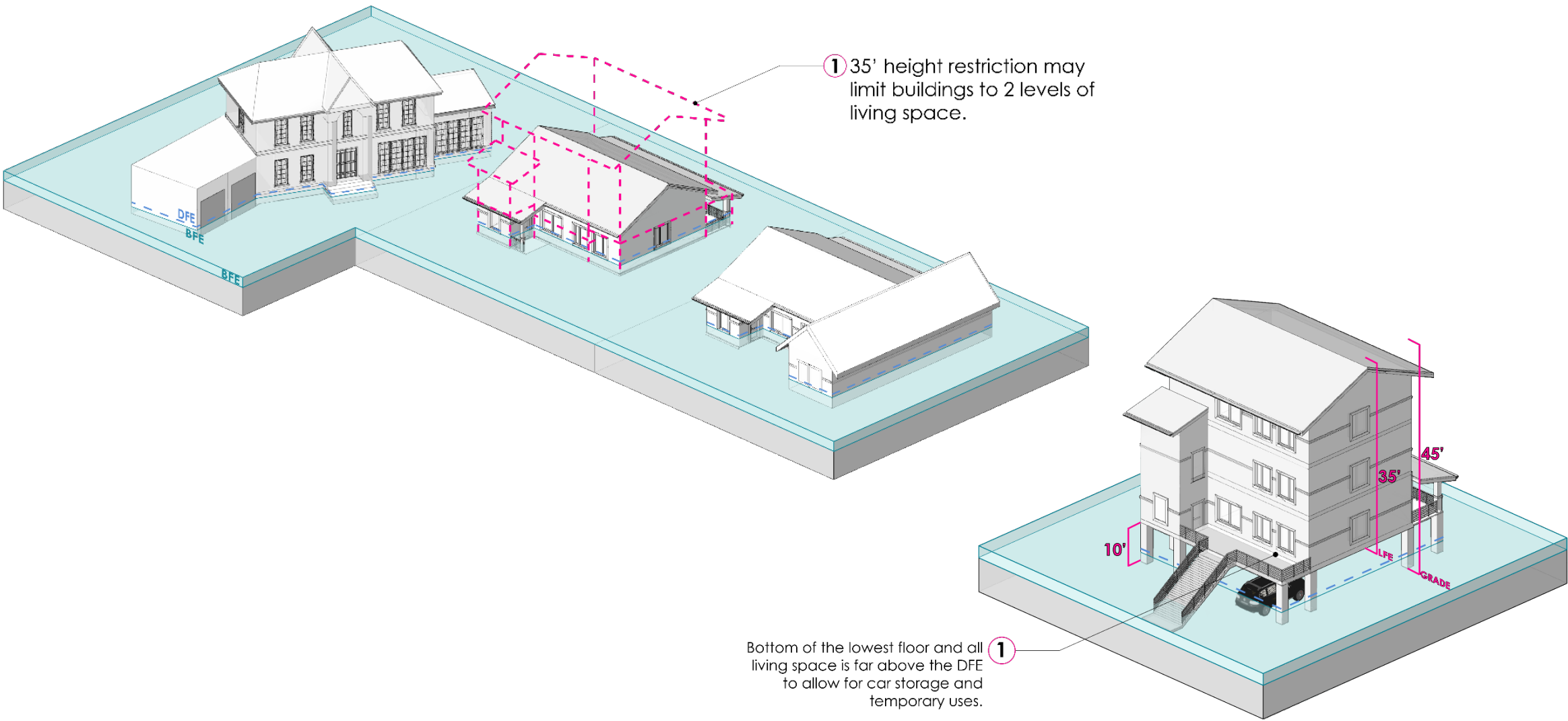


REGULATORY RESPONSE

CONSIDER BUILDING HEIGHT (BOTTOM AND TOP)

(LAND DEVELOPMENT CODE, BUILDING CODE)

Existing: Tampa building height maximums and associated codes



District	Maximum Height (ft.) ¹
RS-150	35
RS-100	35
RS-75	35
RS-60	35
RS-50	35
RM-12	35
RM-16	35
RM-18	35
RM-24	60 ²
RM-35	120 ³
RM-50	200 ³
RM-75	n/a ⁵
RO	35
RO-1	35

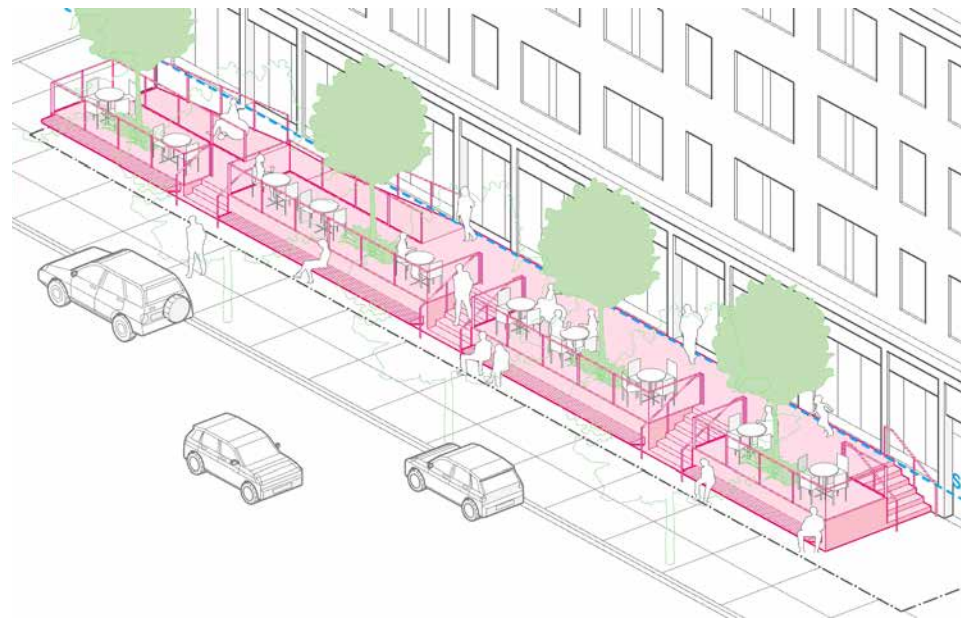
REGULATORY RESPONSE

DESIGN GUIDELINES (LAND DEVELOPMENT CODE)

- Integrate raised structures and maintain human scale

Exterior Circulation and Activated Deck

For walkways fronting restaurant or retail spaces, seating areas can activate the elevated areas, contributing to a lively streetscape.



Exterior Circulation for Small-scale Residential Structures

When carefully designed to integrate with context, porches, stair railings, and screens can contribute to the human scale for sidewalk-facing areas.

Note that spaces below the SLR-DFE are nonhabitable and uses are limited to parking, access, and storage. Residential structures cannot use dry floodproofing.

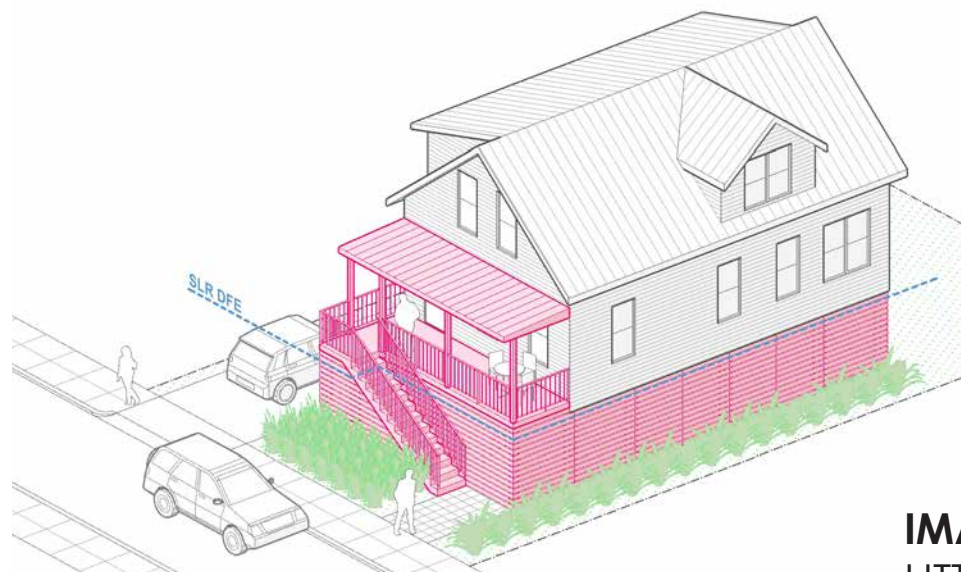


IMAGE FROM BOSTON PLANNING AND DEVELOPMENT AGENCY
[HTTP://WWW.BOSTONPLANS.ORG/GETATTACHMENT/D1114318-1B95-487C-BC36-682F8594E8B2](http://www.bostonplans.org/getattachment/D1114318-1B95-487C-BC36-682F8594E8B2)

REGULATORY RESPONSE

EXPAND BUILDING ENVELOPE FOR SMALL LOTS (LAND DEVELOPMENT CODE)

- Encourage buildings to expand horizontally, to not be tall and narrow
- Allow them to encroach into side lot buffer space



2013 Flood Text
Underlying envelope



Zoning for Coastal Flood Resiliency
Cottage envelope

IMAGE FROM NYC PLANNING

ZONING FOR COASTAL FLOOD RESILIENCY

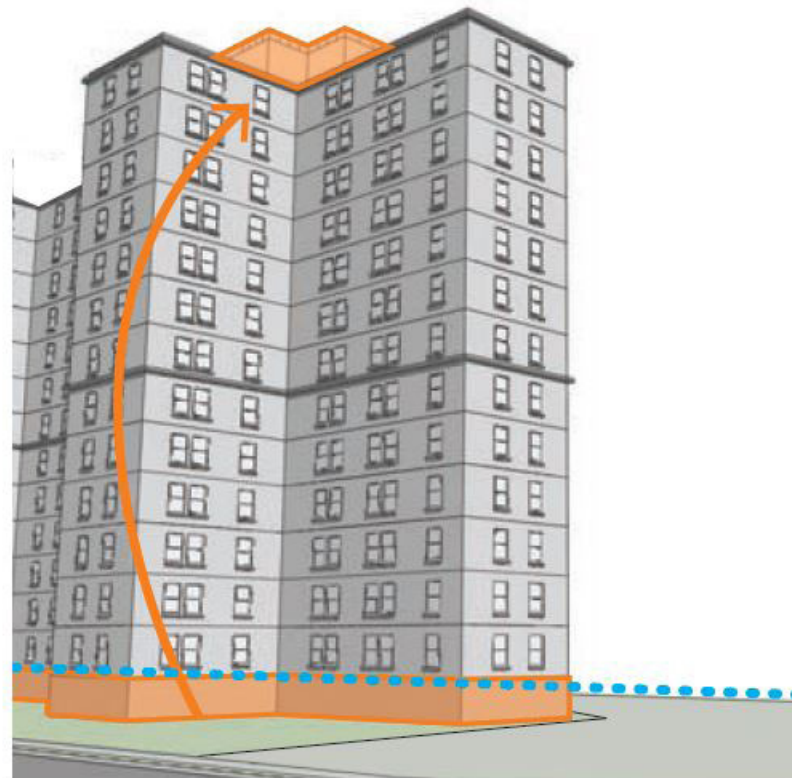
[HTTPS://WWW1.NYC.GOV/ASSETS/PLANNING/DOWNLOAD/PDF/PLANS-STUD-IES/FLOOD-RESILIENCY-UPDATE/ZONING-FOR-FLOOD-RESILIENCY.PDF](https://www1.nyc.gov/assets/planning/download/pdf/plans-studies/flood-resiliency-update/zoning-for-flood-resiliency.pdf)

REGULATORY RESPONSE

PROVIDE FLEXIBILITY FOR LOCATION OF UTILITY SPACE

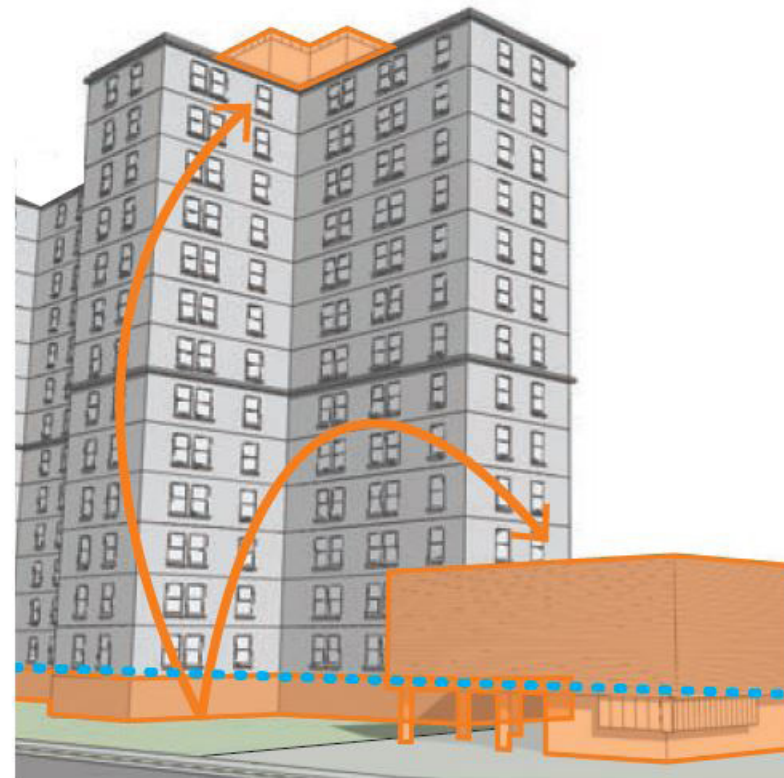
(LAND DEVELOPMENT CODE)

- Do not count against for mechanical equipment or utilities that are raised or internalized



2013 Flood Text

Additional flexibility with permitted obstructions facilitate mechanical equipment to be relocated to the roof of buildings



Zoning for Coastal Flood Resiliency

Additional flexibility to facilitate mechanical, electrical and plumbing equipment to be placed on the roof or in a separate structure



Zoning for Coastal Flood Resiliency

Floor area can be exempted to facilitate the placement of important equipment/spaces above the BFE within small mezzanines

IMAGE FROM NYC PLANNING

ZONING FOR COASTAL FLOOD RESILIENCY

[HTTPS://WWW1.NYC.GOV/ASSETS/PLANNING/DOWNLOAD/PDF/PLANS-STUDIES/FLOOD-RESILIENCY-UPDATE/ZONING-FOR-FLOOD-RESILIENCY.PDF](https://www1.nyc.gov/assets/planning/download/pdf/plans-studies/flood-resiliency-update/zoning-for-flood-resiliency.pdf)

REGULATORY RESPONSE

EXPAND APPLICABILITY OF OPTIONAL RULES, SO THAT PROPERTY OWNERS CAN BUILD TOWARD FUTURE CONDITIONS (LAND DEVELOPMENT CODE)

- Extend building flexibility from the most immediately vulnerable zones



from Zoning for Coastal Flood Resiliency (NYC)

<https://www1.nyc.gov/assets/planning/download/pdf/plans-studies/flood-resiliency-update/proposal-slides.pdf>

REGULATORY RESPONSE

ESTABLISH (EROSION BASED) SETBACKS (LAND DEVELOPMENT CODE)

- ☐ Accommodate for future conditions
- ☐ Use historic erosion rates



Tampa

Section 27-156

(General provisions are included in table 4-2.)

Setbacks for rear of lot varies between 0 to 20 feet, dependent on use and/or location. 20 feet is the maximum.

Section 27-286

Setbacks from wetlands is 15'

IMAGE FROM BING AERIALS

REGULATORY RESPONSE

ESTABLISH (EROSION BASED) SETBACKS (LAND DEVELOPMENT CODE)

☐ In North Carolina

(the annual coastal erosion rate) x (a planning period representing the economic lifetime of the coastal structure) + (an additional buffer)

REGULATORY RESPONSE

ESTABLISH SEA WALL STANDARDS (LAND DEVELOPMENT CODE, BUILDING CODE)

- ☐ Create build-to standards
- ☐ In Broward County structures must be at least 5 feet above NAVD88 (local mean sea level). The height applies to all new or substantially repaired or rehabilitated seawalls, banks and berms.
- ☐ Sea walls must be in good repair or face fines



IMAGE BY BRIAN COOK

REGULATORY RESPONSE

WORK TOWARD THE REMOVAL OF SEA WALLS

(LAND DEVELOPMENT CODE, BUILDING CODE, COMPREHENSIVE PLAN)

- Aids in habitat migration and ecosystem functionality



IMAGES BY BRIAN COOK

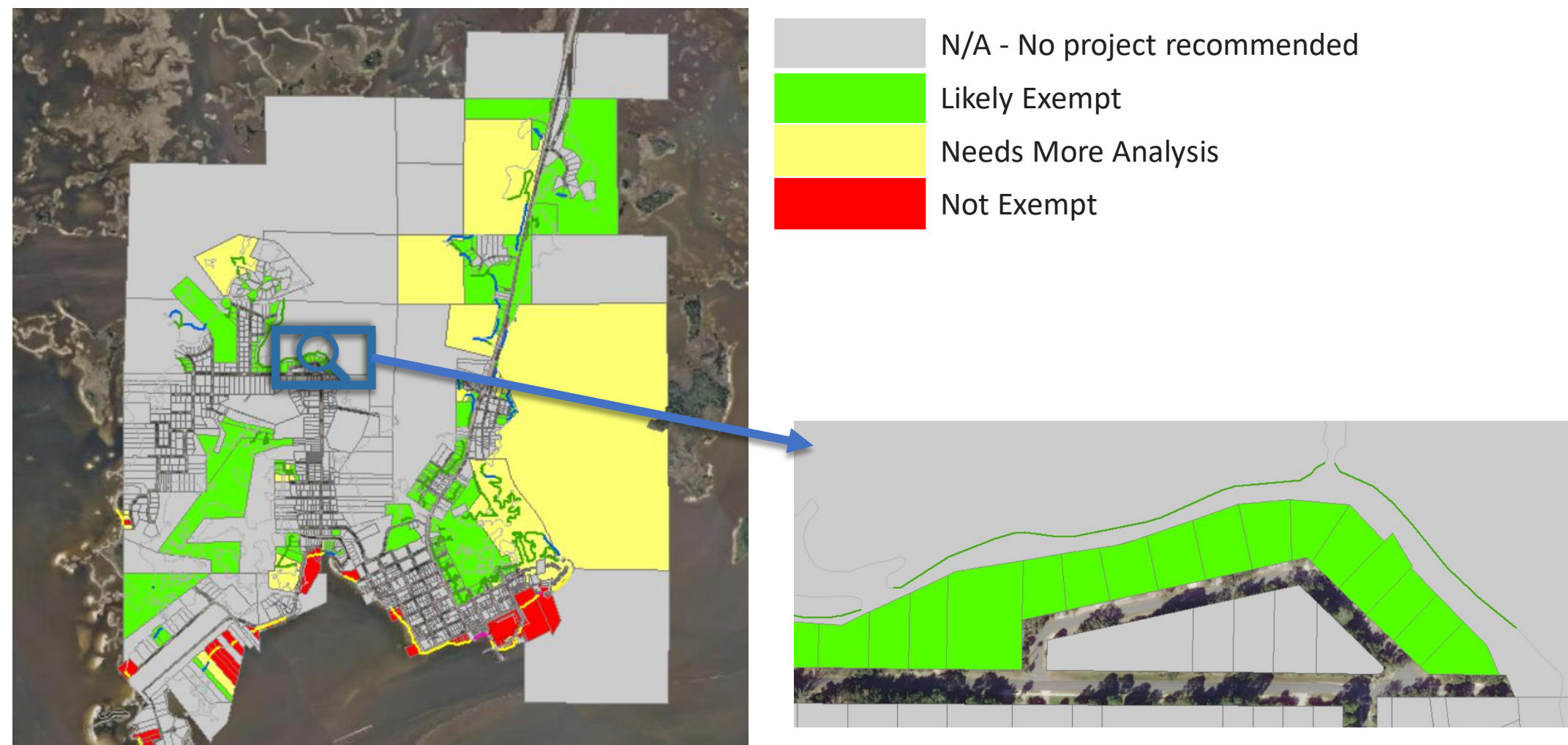
REGULATORY RESPONSE

INCREASING LIVING SHORELINES

(LAND DEVELOPMENT CODE, COMPREHENSIVE PLAN)

□ Cedar Key

Living Shoreline Suitability Model Results – Permitting Layer



[HTTPS://FLORIDADEP.GOV/SITES/DEFAULT/FILES/SAVANNA-BARRY-CEDAR-KEY-SHORELINE-MANAGEMENT-MASTER-PLAN.PDF](https://FLORIDADEP.GOV/SITES/DEFAULT/FILES/SAVANNA-BARRY-CEDAR-KEY-SHORELINE-MANAGEMENT-MASTER-PLAN.PDF)

REGULATORY RESPONSE

WORK TOWARD THE REMOVAL OF SEA WALLS

(COMPREHENSIVE PLAN)

□ Tampa: Coastal Management Element Policy 1.5.4

“The use of seawalls and rip rap to stabilize beach shoreline is prohibited unless it can be demonstrated that without it, beach erosion would pose serious threats to human life and property. Tampa City Council will make that determination based upon the analysis of an engineer.”

REGULATORY RESPONSE

INCREASING LIVING SHORELINES

(LAND DEVELOPMENT CODE, BUILDING CODE, COMPREHENSIVE PLAN)

- ☐ Increases ecosystem functionality and accretion
- ☐ Dissipates wave action



IMAGE FROM HILLSBOROUGH COUNTY

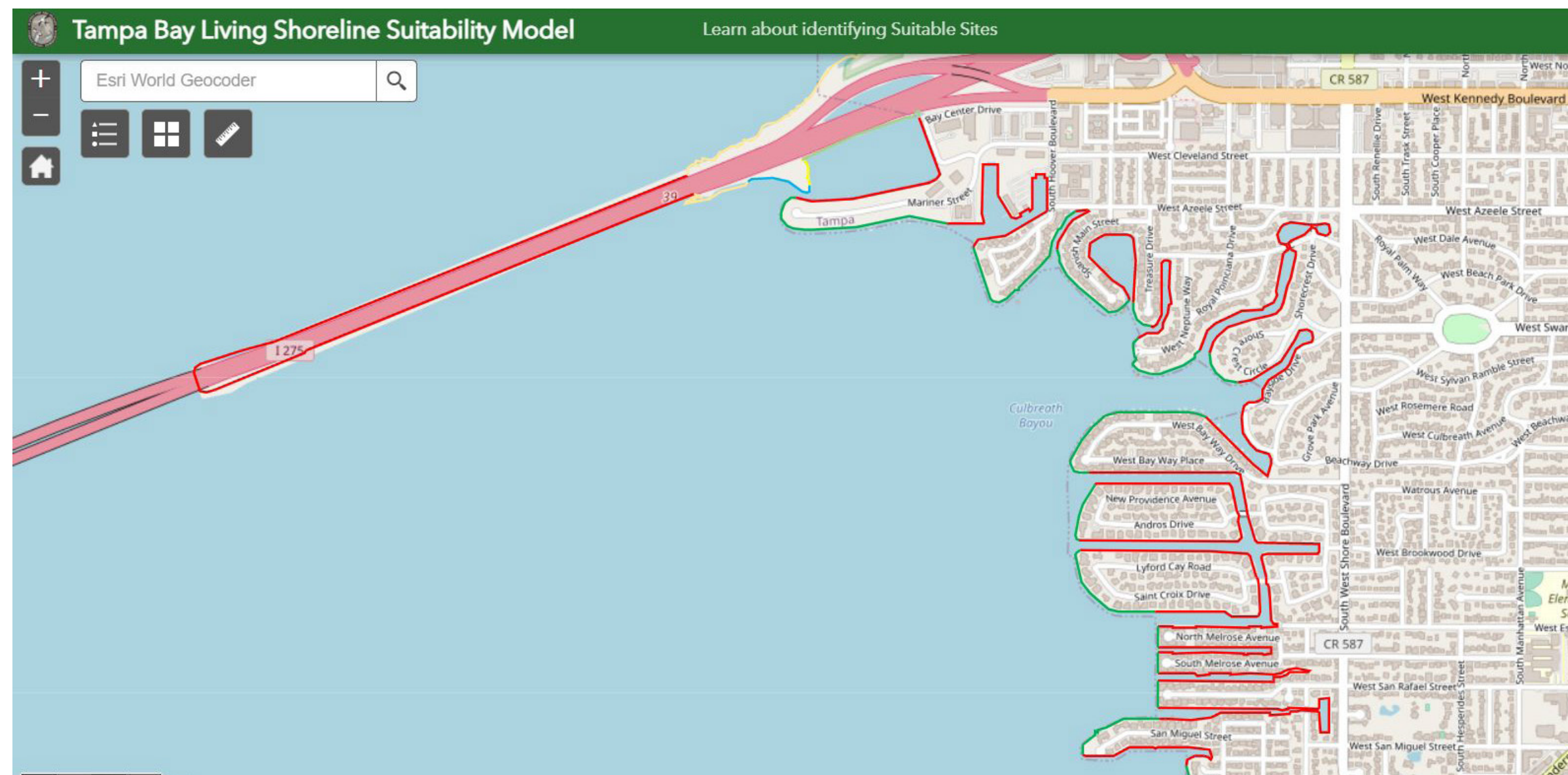
[HTTP://WWW.PLANHILLSBOROUGH.ORG/LIVING-SHORELINES-ENHANCED-SEAWALLS-IMPROVE-THE-HILLSBOROUGH-RIVER/](http://www.planhillsborough.org/living-shorelines-enhanced-seawalls-improve-the-hillsborough-river/)

REGULATORY RESPONSE

INCREASING LIVING SHORELINES

(LAND DEVELOPMENT CODE, BUILDING CODE, COMPREHENSIVE PLAN)

□ The Tampa Bay Living Shoreline Suitability Model



[HTTPS://MYFWC.MAPS.ARCGIS.COM/APPS/WEBAPPVIEWER/INDEX.HTML?ID=E4D76FA267DC4BAC97D407D20566AE42](https://myfwc.maps.arcgis.com/apps/webappviewer/index.html?id=E4D76FA267DC4BAC97D407D20566AE42)

REGULATORY RESPONSE

OPTIONS FOR MANAGED RELOCATION

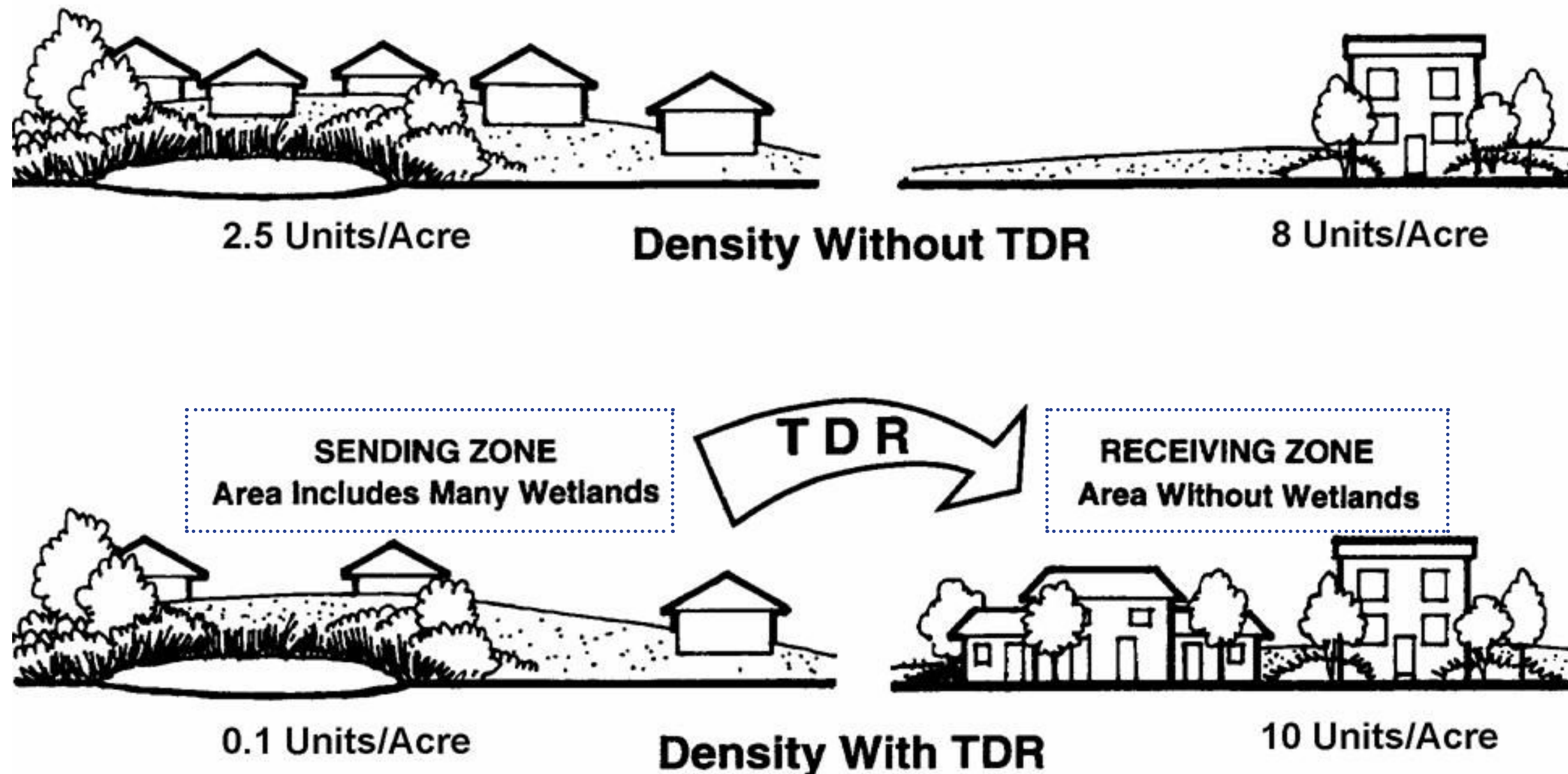
(LAND DEVELOPMENT CODE, COMPREHENSIVE PLAN)

- ☐ Planning and engagement is important
- ☐ Working within property rights

REGULATORY RESPONSE

TRANSFER OF DEVELOPMENT RIGHTS (LAND DEVELOPMENT CODE, COMPREHENSIVE PLAN)

- Incentivize development in non-vulnerable locations



REGULATORY RESPONSE

TRANSFER OF DEVELOPMENT RIGHTS (LAND DEVELOPMENT CODE, COMPREHENSIVE PLAN)

- Section 27-141 in Tampa Land Development Code defines Transfer of Development Rights (TDR), but locations are not defined and none have been utilized.
- Hillsborough County has a TDR program and map but it has not been used. See Carter and Burgess study in 2007.

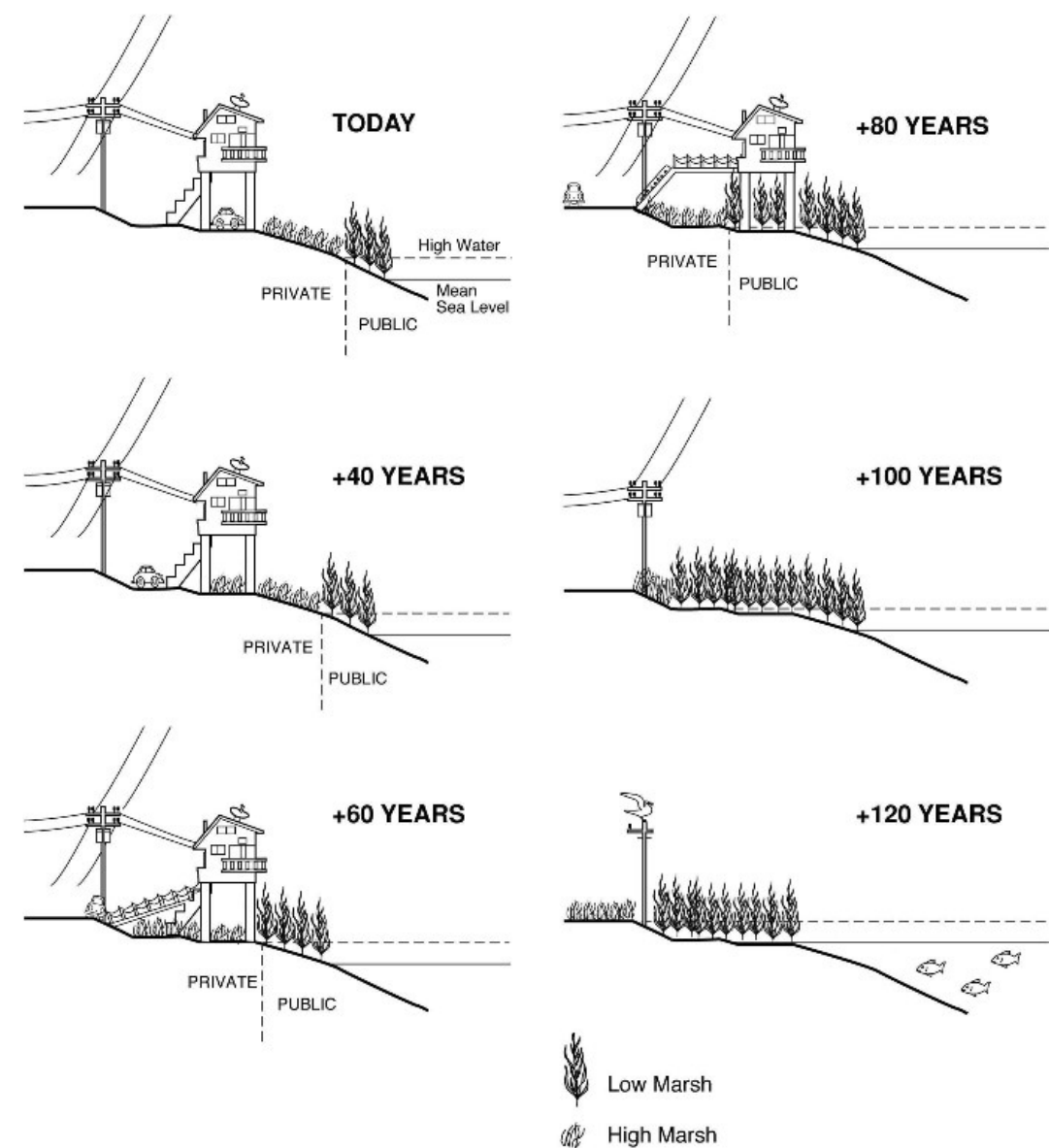
<https://www.hillsboroughcounty.org/library/hillsborough/media-center/documents/emergency-management/24--pdrp-transfer-of-development-rights.pdf>

REGULATORY RESPONSE

ROLLING EASEMENTS (LAND DEVELOPMENT CODE, COMPREHENSIVE PLAN)

<https://www.epa.gov/sites/production/files/documents/rollingeasementsprimer.pdf>

- ☐ Municipality purchases future land rights
- ☐ Must allow coastline to migrate
- ☐ Preserve for conservation or for future public access



REGULATORY RESPONSE

IMPACT FEES (LAND DEVELOPMENT CODE, COMPREHENSIVE PLAN)

- ☐ For coastal development projects that may create future infrastructure costs to the City, or that may continue to increase coastal vulnerabilities (with sea walls, wetland reduction...)

TAX INCENTIVES (LAND DEVELOPMENT CODE, COMP PLANNING)

- ☐ For developing out of the floodway, or in non-vulnerable locations

REGULATORY RESPONSE

REAL ESTATE DISCLOSURES (LAND DEVELOPMENT CODE, COMPREHENSIVE PLAN)

- ☐ For properties that have been impacted by flooding (State of Texas)
- ☐ If a property falls within an overly zone, whether from FEMA or otherwise (Pinellas County)

Broward County, Policy 2.21.7

[HTTPS://WWW.BROWARD.ORG/CLIMATE/PAGES/USACE.ASPX](https://www.broward.org/climate/pages/usace.aspx)

Owners must include:

“This real estate is located in a tidally influenced area. The owner may be required by county or municipal ordinance to meet minimum tidal flood barrier elevation standards during construction or substantial repair or substantial rehabilitation of seawalls, banks, berms, and similar infrastructure or when required to abate nuisance flooding.”

REGULATORY RESPONSE

CONFRONT GLOBAL WARMING (COMP PLANNING)

- Los Angeles (with the pLAn) has made this the central focus of their planning and economy

https://plan.lamayor.org/sites/default/files/pLAn_2019_final.pdf

- The St. Petersburg Integrated Sustainability Action Plan (ISAP) defines specific targets for emissions reduction

https://www.stpete.org/sustainability/docs/ISAP_%20Highlights_for%20Print_FINAL.pdf

REGULATORY RESPONSE

CREATING PROJECTS IN THE LOCAL MITIGATION STRATEGY (LMS)

- This document, created at the County level, defines vulnerabilities and includes a living project list to mitigate future hazards.

REGULATORY RESPONSE

TOOLS AND GUIDES

- Georgetown Climate Center

<https://www.georgetownclimate.org/adaptation/toolkits/managed-retreat-toolkit/regulatory-tools.html> AND https://www.georgetownclimate.org/files/report/Adaptation_Tool_Kit_SLR.pdf

- Adaptation Clearinghouse, by Georgetown Climate Center

<https://www.adaptationclearinghouse.org/>

- South East Florida Regional Climate Compact

<https://southeastfloridacclimatecompact.org/regional-climate-action-plan/>

- Thomas Ankersen, University of Florida

https://www.law.ufl.edu/_pdf/academics/centers-clinics/clinics/conservation/sea_level_rise.pdf

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