

Crediting Adaptation Strategies through the National Flood Insurance Program's Community Rating System Coordinator's Manual

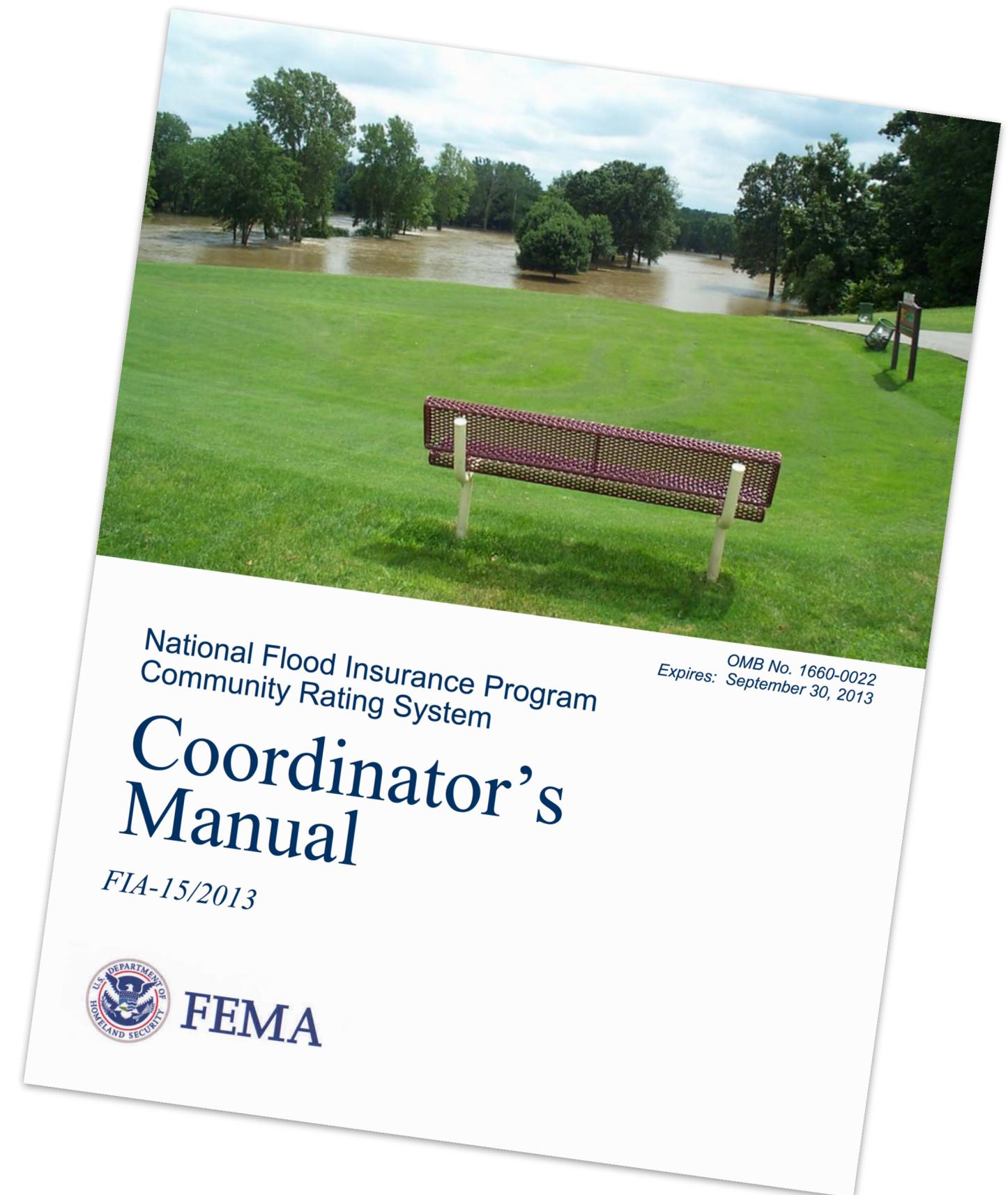
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- CRS program goals:
 - reduced flood damage to insurable property
 - better actuarial data and expanded policy base
 - improved floodplain management
- property owners pay lower flood insurance premiums when communities complete CRS activities



Getting to know the CRS: commonly used terms

| term | explained |
|-------------|---|
| activity | one of the nineteen actions for which the CRS program credits local governments |
| element | a sub-action within an activity |
| 300 series | activities related to public information |
| 400 series | activities related to mapping and regulations |
| 500 series | activities related to flood damage reduction |

CRS classes and premium discounts

| CRS Class | Credits | Premium reduction | |
|-----------|-----------------|-------------------|--------------|
| | | In SFHA | Outside SFHA |
| 1 | 4,500 and above | 45% | 10% |
| 2 | 4,000 to 4,499 | 40% | 10% |
| 3 | 3,500 to 3,999 | 35% | 10% |
| 4 | 3,000 to 3,499 | 30% | 10% |
| 5 | 2,500 to 2,999 | 25% | 10% |
| 6 | 2,000 to 2,499 | 20% | 10% |
| 7 | 1,500 to 1,999 | 15% | 5% |
| 8 | 1,000 to 1,499 | 10% | 5% |
| 9 | 500 to 999 | 5% | 5% |
| 10 | 0 to 499 | 0 | 0 |

CRS recent changes

- credit for mapping areas of future flooding due to sea level rise
- credit for notifying property buyers of sea level rise
- credit for regulatory map based on future conditions
- Class 4 rating or higher requires minimized increases in future flooding
- Class 1 rating requires flood elevations that reflect future conditions

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A Resource for Florida's Local Governments



Prepared by University of Florida, Levin College of Law, Conservation Clinic in Partnership with
Florida Department of Economic Opportunity



Why Sea Level Rise Matters in Florida



- Florida's coastal counties contributed over \$584 billion in gross regional product to Florida's economy in 2010, or 79% of the state's economy.
- As of 2010, over 75 percent of the state's population resides in the 35 coastal counties that occupy only 57 percent of the land.
- These coastal counties represent a built-environment and infrastructure worth \$2 trillion in 2010 and estimated to be \$3 trillion by 2030.

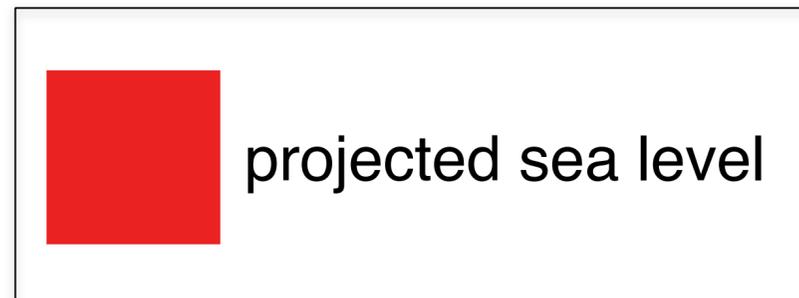


[D]evelopment decisions that are being made today are committing public and private capital to land use patterns and associated infrastructure and facilities with design lives that reach well into the period of time when the impacts of sea level rise will be felt.”

-Robert E. Deyle, Katherine C. Bailey, and Anthony Matheny

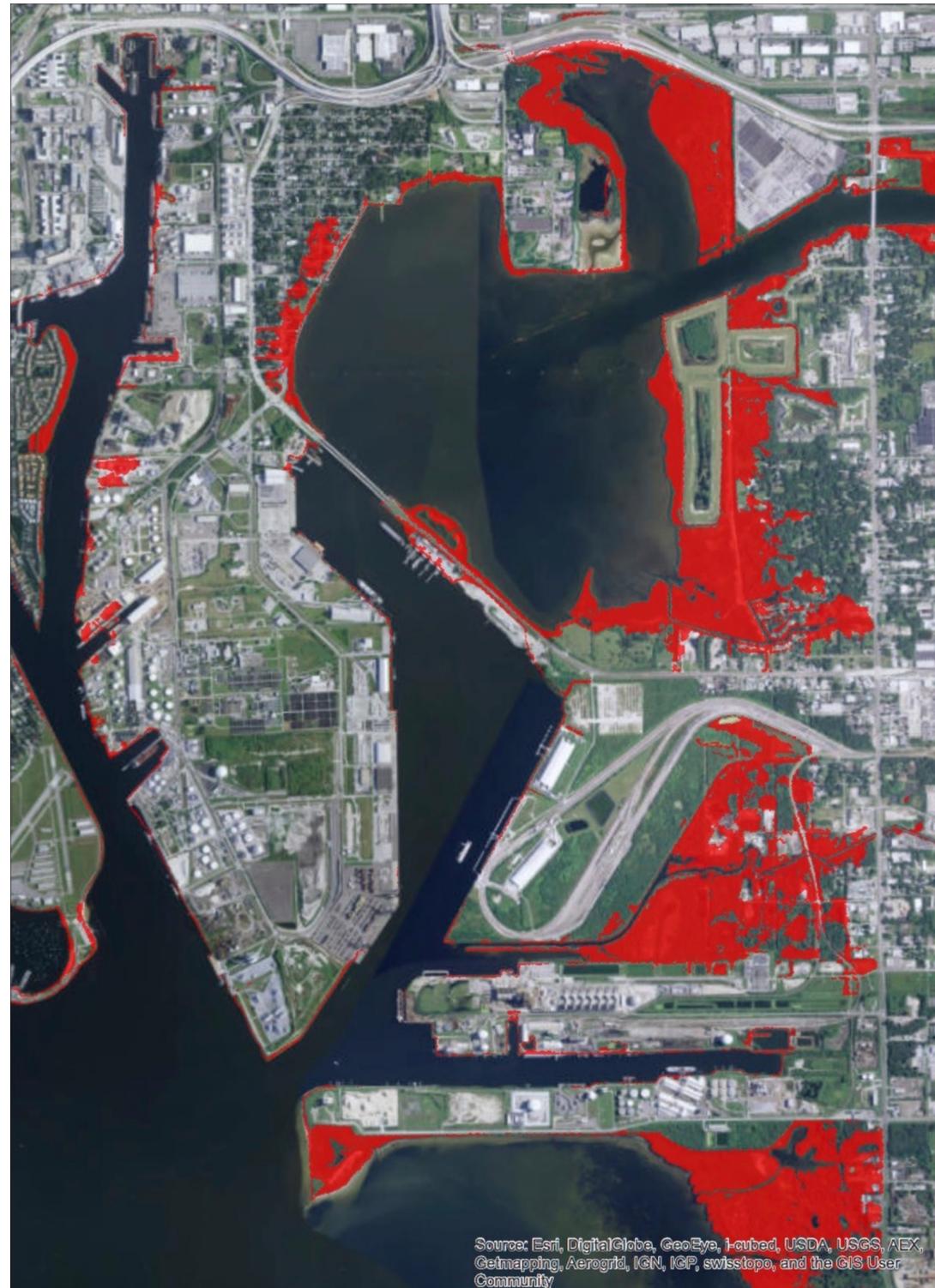
Utilizing Sea Level Rise Projection Tools Impacts to Port Tampa Bay

Tampa Map:
2080 Sea Level Rise - 4 Feet
USACE High Projection
St. Petersburg Tide Gauge
Mean Sea Level



Map created by University of Florida GeoPlan Center using GIS Data from the Sea Level Rise Scenario Sketch Planning Tool

Tool available at <http://sls.geoplan.ufl.edu/>



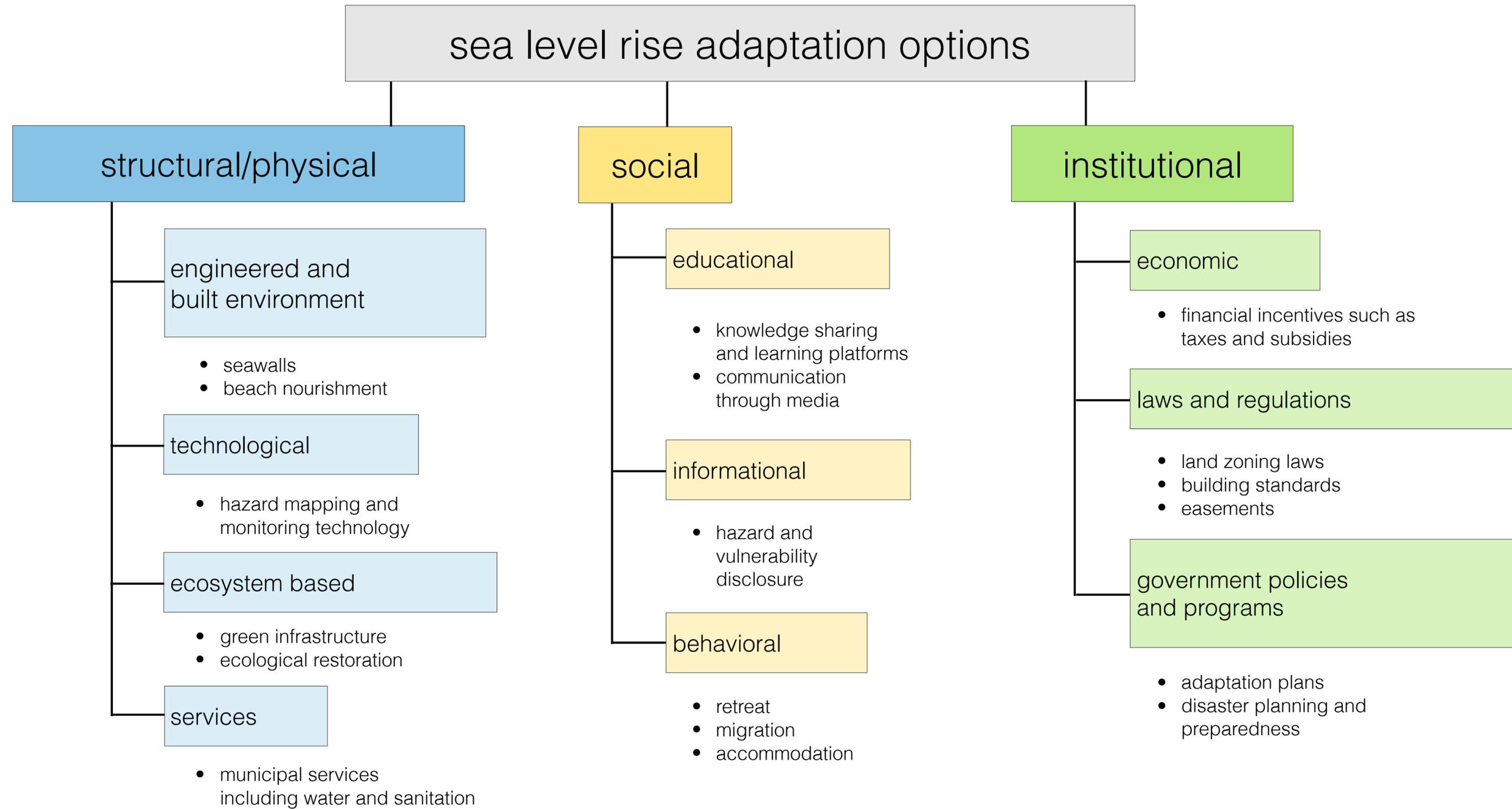
Organizing adaptation options

Retreat,
Accommodation \neq
&
Protection

300 series activities related to public information

400 series activities related to mapping and regulations

500 series activities related to flood damage reduction



What actions are both creditable CRS activities and sea level rise adaptation strategies?

| category | subcategory | adaptation strategy | Public Information Activities (300 series) | Mapping and Regulations (400 series) | Flood Damage Reduction (500 series) | CRS Coastal Erosion Manual |
|---------------------|----------------------------------|--|--|--------------------------------------|-------------------------------------|----------------------------|
| structural/physical | engineered and built environment | beach nourishment | | | | |
| | | hard stabilization (e.g., seawalls) | | | | |
| | | increase stormwater storage | | | ✓ | |
| | ecosystem-based | land acquisition | | | | ✓ |
| | | living shoreline | | | ✓ | |
| | | oyster reef restoration | | | | ✓ |
| social | educational | knowledge sharing and learning platforms | | | | |
| | | outreach projects | | | | |
| | Informational | elevation certificates | ✓ | ✓ | | |
| | | hazard and vulnerability mapping | | | ✓ | |
| | | infrastructure inventory | ✓ | | | |
| | | public information campaign | | | | |
| | real estate disclosures | | | | | |
| institutional | economic | adaptation financing | | | | |
| | laws and regulations | extended planning horizon | | | | |
| | | low impact development standards | | | | |
| | | low intensity zoning | | | | |
| | | riparian/littoral buffers | | | | |
| | | rolling conservation easement | | | | |
| | | government policies and programs | adaptation action area | | | |

Public Information Activities (300 series)

- 302.a. Counting Buildings
- 310 Elevation Certificates
- 311.a. Elevation Certificates...
- 322.c. Other flood problems not shown on the FIRM
- 322.e. Special flood-related hazards
- 322.g. Natural floodplain functions
- 331.a. Activity Description
- 332.b. Flood Response Preparations
- 332.c. Program for Public Information
- 332.d. Stakeholder delivery
- 342.b. Other Disclosure requirements
- 342.d. Disclosure of other hazards
- 345 Related Activities under the CRS
- 352.b. Locally Pertinent Documents
- 352.c. Flood protection website
- 361.a. Activity Description
- 362.b. Protection advice provided after a site visit
- 362.c. Financial assistance advice
- 365 Related Activities under the CRS
- 370 Flood Insurance Promotion

Mapping and Regulations (400 series)

- 403.c. Making an Impact Adjustment Map
- 411.a. Activity Description
- 412 Elements
- 412.b. Leverage
- 412.d. Higher Study Standards
- 420 Open Space Preservation
- 422.a. open space preservation
- 422.e. Open space incentives
- 422.g. Natural shoreline protection
- 432.a. Development limitations
- 432.b. Freeboard
- 432.i. Local drainage protection
- 452.a. Stormwater management regulations
- 452.a.(3) Low-impact development
- 452.b. Watershed master plan

Flood Damage Reduction (500 series)

- 510 Floodplain Management Planning
- 512.a. Floodplain management planning
- 512.b. Repetitive loss area analysis
- 512.c. Natural floodplains functions plan
- 542.f. Coastal erosion protection maintenance

CRS Coastal Erosion Manual

- 410CE Additional Flood Data for Coastal Erosion...
- 430CE Higher Regulatory Standards

institutional — government policies and programs

adaptation action area

- an adaptation action area is a comprehensive plan designation for areas that are vulnerable to sea level rise allowed by Florida Statutes § 163.3177(6)(g)10.
- plans prioritized funding for infrastructure and adaptation planning
- Activity 510, Floodplain Management Planning
 - credits developing a plan to reduce flood hazard
 - points available for identifying “areas likely to be flooded and flood problems that are likely to get worse in the future as a result of ... climate change or sea level rise” (See, CRS Manual at 510-15.)
- Section 432.m. credits novel or higher regulatory approaches and standards

structural/physical

engineered and built environment

beach nourishment

- beach nourishment is replacing sand lost through longshore drift or erosion from sources outside of the eroding beach
- beach nourishment provides protection from storm events
- Section 542.f. credits beach nourishment

structural/physical — ecosystem based

land acquisition

- prioritizing land acquisition based on capacity to absorb floodwaters or support coastal ecosystem migration
- 430CE credits removing threatened structures prone to coastal erosion
- Section 422.c. credits restoring developed properties to their undeveloped, natural state and for having requisition parcels in a natural floodplains protection plan
- 410CE credits regulations that prohibit new buildings, and restoration of existing buildings, in the 30-year erosion area

structural/physical — ecosystem based

oyster reef restoration

- oysters protect shorelines by limiting wave action that causes beach erosion
- oysters also
 - filter nutrients, fine sediments and toxins from water
 - support economically and ecologically valuable fisheries
- CRS Manual provides no credit for oyster reef restoration. However,
 - 430CE credits prohibition of hardened structure
 - Activity 322.g. credits mapping areas that should be protected because of natural floodplain functions

structural/physical — ecosystem based

living shoreline

- hardened structures—such as bulkheads, revetment, and seawalls—often increase the rate of erosion, remove the ability of the shoreline to carry out natural processes, and provide little habitat for estuarine species
- living shorelines use plants, sand and rock to protect shoreline and maintain habitat
- Activity 422.g. credits natural shoreline protection in two ways
 - requiring developers or public agencies to protect natural shorelines
 - restoring altered shoreline to natural shoreline functions
- Also,
 - 430CE credits prohibition of hardened structure
 - Section 322.g. credits mapping areas that should be protected because of natural floodplain functions

social

informational

program for public information

- CRS Manual Activity 330 credits providing public information that increases flood hazard awareness, motivates defensive action, encourages getting insured and protects natural floodplain functions.
- CRS Manual identifies six priority topics for communication (*See, CRS Manual Table 330-1.*)
- a community may consider additional topics, such as sea level rise, for additional credit

institutional — laws and regulations

voluntary rolling easement

- a rolling easement is a requirement—regulatory or otherwise—that property improvements give way to rising sea levels
- voluntary rolling easements are a private device to restrict property owner's ability to harden property against sea (i.e., to require retreat)
- 430CE provides credit for
 - removing threatened structures that are prone to coastal erosion
 - protection of large buildings from coastal erosion
 - setback regulations for accreting and rocky shorelines

institutional — laws and regulations

riparian/littoral buffers

- require development setbacks from riparian/littoral areas to accommodate sea level rise
- 410CE credits adoption of regulatory maps that shows areas expected to be affected by erosion over next 30 to 100 years and prohibits buildings and substantial improvements in these areas
- 430CE credits setback regulations for accreting and rocky shorelines
- Section 322.g. credits providing information about areas that should be protected for natural floodplain functions

institutional — laws and regulations

freeboard

- A freeboard requirement is a requirement that new buildings be elevated to higher than the base flood elevation. For example, a one foot freeboard requirement would require buildings to be built one foot above base flood elevation.
- Section 432.b. “Freeboard” grants communities credits for requiring that buildings be constructed higher than base flood elevation.
 - A freeboard requirement of one foot above base flood elevation when fill is prohibited is eligible for 120 points.
 - A freeboard requirement of two feet above base flood elevation when fill is prohibited is eligible for 280 points.
 - A freeboard requirement of three feet above base flood elevation when fill is prohibited is eligible for 500 points.

institutional — laws and regulations

increase stormwater storage

- Activity 452.a relates to regulations on private stormwater facility development
- 452.a(2) provides credit in three amounts depending on the storm event for which detention facilities are design:
 - lowest credit for storms less severe than a 10-year storm
 - medium credit for storms as severe as a 10-year to 100-year storm
 - maximum credit for storms as severe as a 100-year storm
- Some communities already increasing stormwater storage due to new numeric nutrient criteria under CWA TMDL

institutional — laws and regulations

extend planning horizon

- extended planning horizon for local Comprehensive Plan to anticipate effects of sea level rise
- Section 432.m. credits novel or higher regulatory approaches and standards

unlisted activity might earn credit

“An activity may deserve credit even if the Coordinator’s Manual does not include it. ... Communities are always welcome to request credit for alternate approaches or innovations that are not included in the Coordinator’s Manual.” (*See*, CRS Manual Section 113.d.)

Focus on cultural resources

How can Florida communities use the Community Rating System to better integrate cultural resources into hazard mitigation planning at the state and local level?



- Acquire cultural resources (Activity 420, Open Space Acquisition)
- Share information about flood risks to cultural resources (activity 330 Outreach Projects)
- Vulnerability and cultural resource mapping (Activity 410 Mapping)
- Historic building inventory (Section 302.a. allows impact adjustment)

- Financing adaptation of historic buildings (Activity 360)
- Extend planning horizon to account for climate change (Activity 410 Higher study standards)
- Create an adaptation action area which considers cultural resources (Activity 510 Floodplain management standards)

Questions?