Coast Smart and Resiliency
Using 100 year + 3 feet

MAFSM Spring Conference

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Maryland Department of the Environment
100 year + 3 feet - What is It?

Data Layer Tied to (Coastal) 100 year + 3 ft floodplain elevations that illustrates:

- Risk via Vertical Proximity to Floodplain
- Increased Community Awareness Outside FP
- Resiliency / Use 1 and 2 Above to Consider Need for Insurance (NC / Texas / and LA)
- Promote Adoption of Higher Standards
- Indication of Future Limits of FP when Sea-Level Increases by 3 feet
100 year + 3 feet – Why Necessary?

Consistency / Coordination / Integration

- Screening Layer for Evaluating Resiliency on State Projects
- State Revising Coast Smart Council Guidelines
- Opportunity to Coordinate State Coast Smart Process to State and Local FEMA Regulations!
- Promote Awareness and Adoption of Higher Standards
- Address Future Conditions of Floodplain Elevations / Assumes 1 to 1 or (sic) 3 to 3 on Sea Level Rise
Brief History of Coast Smart Council

- Maryland Coast Smart Council, established by the Maryland General Assembly in 2014 for the purposes of adopting specific Coast Smart siting and design criteria to address impacts associated with sea level rise and coastal flooding on future capital projects.

- Maryland HB 615: Coast Smart Council Law | Adaptation ...

- May 05, 2014 · The Coast Smart Council law ensures Maryland follows standards to make safe and fiscally-wise investments when building or updating State agency structures located in vulnerable coastal areas. The law does not affect schools, roads or local government projects, only structures built by State agencies.
Make up of Coast Smart Council

- DNR Secretary Chair
- DNR, MDE, MEMA, Dept. of General Services, MDoT, Dept. of Planning, Critical Area Commission, UMCES, State Treasurer, Local Government Rep., Public and Nonprofit Group Rep. (ESLC), and Others…
Coast Smart Council ... Reduce Risk & Increase Resiliency

- **Existing / Current CS - Guidelines Use:**
  - FEMA Regulations (for Electrical and Mechanical)
  - Freeboard (2 foot Governors EO in 2012)
  - **Category 2 Storm Surge (passed in 2018) / 3 feet**

- **Current guidelines Are Undergoing an Update**
  - Replace the Category 2 Requirement with a 100 year + 3 foot layer
State and Local Building Codes Related to Floodplain Regulations Only Apply in the FEMA Floodplain / So - Resiliency Only in FP
Floodplain Regulations Are Adopted via a Community’s Floodplain Ordinance
(State does not enforce building codes !)
Which means Everything Stops at the Edge of the Floodplain!
Do We Have Any Data that Suggests Storms Don’t Stop at FEMA Limits? (Hurricane Storm Surge Maps Beyond FP)
Category 1: Blue / Cat. 2: Yellow
Category 3: Orange / Cat 4: Red

Caution: Elevation Data used for FEMA Maps, Local DEMs, and NOAA Data – May Not Match Data Sources
But, trends do matter – Storms Do Not Read Maps or Stop at a Floodplain Boundary ....
State & Many Communities Have Enacted a Freeboard as a Factor of Safety

Community Floodplain Codes
• Higher Standards – 1, 2, or 3 foot (Freeboard)

And / By Default ...

Resiliency!
Since, Most Floodplain Regulations Stop at FEMA Limit!

How Can You Address Resiliency Outside the Floodplain? ...

(Historically) Higher Standards
The State of Maryland has the same idea – Higher Standards Offer Protection

- Governor’s 2012 Executive Order that Requires a 2-foot Freeboard for State Buildings in a Floodplain
  * 3 foot for critical facility
Coast Smart Standards Also Include...

Additional Coast Smart Guideline were passed in 2018...

- **Category 2 Storm Surge Requirement:** Elevate State Buildings 3 foot above the ground anywhere in a Category 2 Storm Surge Area

- **Update in 2020 Determined Cat. 2 Criteria Created Issues** with Identifying What Elevation to Use, Not Easily to Follow, and the Process Was Not Tied to FEMA Regs. & Elevations that State Agencies and Locals Already Use and are Familiar With. Impacts Screening, Design, and Siting Guidelines
Proposed Updates for 2020 Coast Smart Guidelines Include...

• **2020 Update Would Establish an Elevation By Linking Guidelines to FEMA standards that State Agencies and Locals Already Use**

• **Replace the Category 2 Storm Surge definition with a 100 year + 3 foot Requirement for All State Funded Projects Above $ 500 K**

• **Note: 100 + 3 limit was virtually identical to Category 2 limit**
Coming July 2020 / Or Soon After ...

Coast Smart
Existing Conditions

- Land
- Sea Level
- FEMA 100 year Floodplain

- FEMA Base Flood Elevation (BFE)
- Sea Level
Current Tools:
Plan View of FEMA Floodplain
Current Tools:
Profile View of FEMA Floodplain
Which means we (State and Locals) currently only regulate land in the FEMA floodplain (yellow arrows).
State and Many Communities / Have a Freeboard Requirement of (1, 2, or 3 feet)
Building Requirements Or Higher Standards / State Or Local Codes:
Buildings Elevated Above Freeboard

Coast Smart
Vertical Increase
- Land
- Sea Level
- FEMA 100 year Floodplain
- 100 year + 3ft

FEMA Base Flood Elevation (BFE)

Sea Level

3 ft Vertical Extent
How Consistent Are These Regs?
Proposed in 2020... State Projects (Identify and Look Beyond the Floodplain)
Currently Creating CRAB Diagrams
StoryMap, and 100 year + 3 layer
(All in Production...)

State will use CRAB for State Projects / Locals
Can Use CRAB Boundary to Illustrate and
Demonstrate Resiliency

Note: No Local Requirement to Regulate CRAB
State Coast Smart Guidelines: Address Resiliency on State Funded Construction in Wider CRAB Area

State will use CRAB for State Projects / Locals Can Use CRAB Boundary to Illustrate and Demonstrate Resiliency Without Regulating It
State Coast Smart Guidelines: Address Resiliency on State Funded Construction in Wider CRAB Area

State will use CRAB for State Projects / Locals Can Use CRAB Boundary to Illustrate and Demonstrate Resiliency / No Regulatory Req.
What are Benefits of Using CRAB ... If a Community Chooses to Regulate It
What are Benefits of Using CRAB ... 
Lower Flood Insurance (Now and Later)
What are Benefits of Using CRAB ... Better Community Bond Rating
What are Benefits of Using CRAB ...
Consistency With FP Regulations (In +Out)

Coast Smart
Climate Ready Action Boundary (CRAB)
- Land
- Sea Level
- FEMA 100 year Floodplain
- 100 year + 3ft

New BFE + 3ft
FEMA Base Flood Elevation (BFE)
Sea Level
3 ft Vertical Extent
What are Benefits of Using CRAB ...
Safer More Resilient Community

Coast Smart
Climate Ready Action Boundary (CRAB)
- Land
- Sea Level
- FEMA 100 year Floodplain
- 100 year + 3ft

New BFE + 3ft
FEMA Base Flood Elevation (BFE)
Sea Level
3 ft Vertical Extent
NFIP Still Recommends Flood Insurance !!!
What Does the CRAB Look Like In Plan View on a Map ... (Currently In Production)
Current View of CRAB Available at...

Story Map

https://storymaps.arcgis.com/stories/bd1ab6827c77457a9c6aec5ca1eb4af2
Story Map View of CRAB

Anne Arundel County - Coastal Neighborhood - Aerial Map

Click the arrow on the right to explore data layers
Story Map View of CRAB
Story Map View of CRAB
Story Map View of CRAB
Story Map View of CRAB
<table>
<thead>
<tr>
<th>County</th>
<th># of Buildings in the floodplain (All A zones &amp; V zones in 100 year effective floodplain within the county)</th>
<th># of Buildings in Freeboard +3</th>
<th>Additional Buildings captured as a result of the Freeboard +3 Analysis</th>
<th>% increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anne Arundel</td>
<td>2,738</td>
<td>9,160</td>
<td>6,422</td>
<td>235%</td>
</tr>
<tr>
<td>Talbot</td>
<td>1,305</td>
<td>6,913</td>
<td>5,608</td>
<td>430%</td>
</tr>
</tbody>
</table>
Schedule

• Coast Smart Regs Targeted for July 1, 2020 (But More Likely by Fall)

• Coastal 100 year + 3 completed by July 1st

• Deliver Product for Coast Smart Screening to DNR and State Agencies (if needed)

• Complete QA / QC by mid July

• Complete Edits / Establish Web Site for Hosting / and Publish Public Facing Data by mid August
Questions / Comments / Suggestions..

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