New Maps, Now What?

Updated Coastal Flood Hazard Information for Southern Georgia
- Risk MAP Project Team
  - FEMA Region IV
  - BakerAECOM, FEMA Mapping Partner
  - GA DNR (CTP)

<table>
<thead>
<tr>
<th>NEFL Coastal Counties</th>
<th>Georgia Counties</th>
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<tbody>
<tr>
<td>Duval</td>
<td>Bryan</td>
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<td>Flagler</td>
<td>Camden</td>
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<td>Nassau</td>
<td>Chatham</td>
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<td>St. Johns</td>
<td>Glynn</td>
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<td>Volusia</td>
<td>Liberty</td>
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<td>McIntosh</td>
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<th>Georgia Counties</th>
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<tr>
<td>Clay</td>
<td>Brantley</td>
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<tr>
<td>Putnam</td>
<td>Charlton</td>
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<td>Effingham</td>
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<td></td>
<td>Long</td>
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<td>Wayne</td>
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Overview

- Need for New Study and Maps
- Storm Surge Modeling
- Overland Wave Hazards—Starting Wave Conditions
- Floodplain Mapping
- A Move to Mitigation
Need for New Study and Maps

- Effective study based on outdated hurricane modeling (20 to 40+ yrs old)
  - Flood risk changes over time
  - Significant development in project area
  - Advances in coastal flood modeling methods and guidance

- Improvement in Geographic Information Systems technology improves map accuracy
  - LiDAR
  - Aerial Imagery
Starting Wave Conditions

- WHAFIS and Wave Runup Calculations require input wave parameters
- 2D SWAN Model results used as input
  - Average of wave heights that co-occur during maximum water elevations for storms with surges similar to 1% conditions
  - Associated average wave periods
  - Wave direction available for sheltered waters considerations
Starting Wave Conditions, Ocean

- **Wave Growth Theory**—Locally generated seas have shorter wave periods and steeper waves than swell.

- **Modeled Storms**
  - 0.2% SWEL storms pass nearer than 1% storms
  - 0.2% storms = wind seas
  - 1% storms = more energy from swell
  - Reasonable for 0.2% period to be shorter than 1%

<table>
<thead>
<tr>
<th>Wave Parameter</th>
<th>Comparison of 0.2% to 1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wave Height</td>
<td>Larger</td>
</tr>
<tr>
<td>Wave Period</td>
<td>Shorter</td>
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</tbody>
</table>

![Wave Parameter Comparison Graph]

![Wave Height and Period Graph]
Starting Wave Conditions, Sheltered

- 2D SWAN model
- Wave direction during peak surge considered
  - Waves propagating onshore → waves modeled
  - Waves propagating along/offshore → surge only
Limit of Moderate Wave Action (LiMWA)

- Defines Coastal A Zone (1.5-ft wave height contour)
- Continuous Lines Reduce Ambiguity
  - *Shown on FIRM = T* for all segments where LiMWA technically bounds the CAZ
  - *Shown on FIRM = F* for segments that are created for continuity, but do not meet the criteria for mapped LiMWAs
Mapping

- Work maps
- Changes Since Last FIRM
- Depth Grids
A MOVE TO MITIGATION
A Move To Mitigation

- Georgia is going to utilize the new depth grids to create more accurate HAZUS runs
- GEMA Director Terry Lunn and staff are giving a detailed presentation on HAZUS Thursday at 10:30 - Concurrent Session F1
The Importance of Mitigation

- The Risk MAP process places a strong emphasis on community engagement and partnerships – much more so than Map Mod and previous approaches.

- But like mitigation, more can always be done and efforts are most successful when they complement one another!
State Support At Resilience Meeting

- Talking it out…
- GA is highly engaged – raising mitigation actions that might have been overlooked, discussing possible funding sources, and providing straightforward tools to help prioritize and plan
Glynn County, GA

- Participates in CRS
- Provides their Board of Commissioners with a thorough annual report on flooding issues, mitigation actions, and recommendations – published online
- Developed a comprehensive Flood Mitigation Plan in 2010 and heavily incorporate that plan into zoning/planning documents as well as the main hazard mitigation plan
- Publishes easy to use, but detailed online viewers related to flooding, maps, storm surge, and elevation.
- Finalized a countywide drainage basin study to improve understanding of hydrology
Camden County, GA

- Entered CRS program in 2012 – Currently assisting other communities to join
- Recently held Elevation Certificate class for diverse audiences
- Annual flood outreach included in utility bills
- Currently single-jurisdiction hazard mitigation plans to become unified multi-jurisdictional, incorporating new maps
- USACE partnership to further study two rivers to create flood warning systems, address repetitive loss areas, and improve forecast accuracy
A Mitigation Minute…

- New maps and technology allow communities to engage like never before
- Not just maps, they communicate information
- Incorporate that information into all local plans
- Decision makers and the public at large need to have a single place to go for information and deserve an honest appraisal of conditions
- Public outreach is an incredible tool for local governments – but utilize partnerships! You’re not alone
The Takeaways

- Resources exist in many forms and are all around you
- Partnerships are critical
- Don’t be afraid to ask for help! You’re a single person…look to other departments, communities, businesses, cooperating technical partners, professional contractors, States, and Federal resources
- A meter of mitigation will provide miles of results
Questions and Follow Up

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