

2018 SAME NOVA Post

U. S. Coast Guard Civil Engineering

Managing by Disaster

4 January 2018

Chief of Civil Engineering | CAPT John Healy



Mission Support





Managing by Disaster



- Recent Coast Guard Hurricane History
- What's the Design Strategy?
- Summer 2017
 - Harvey Response
 - Irma Damage
 - Maria Damage
- Is there money to rebuild?
- Is there money to rebuild for resiliency?

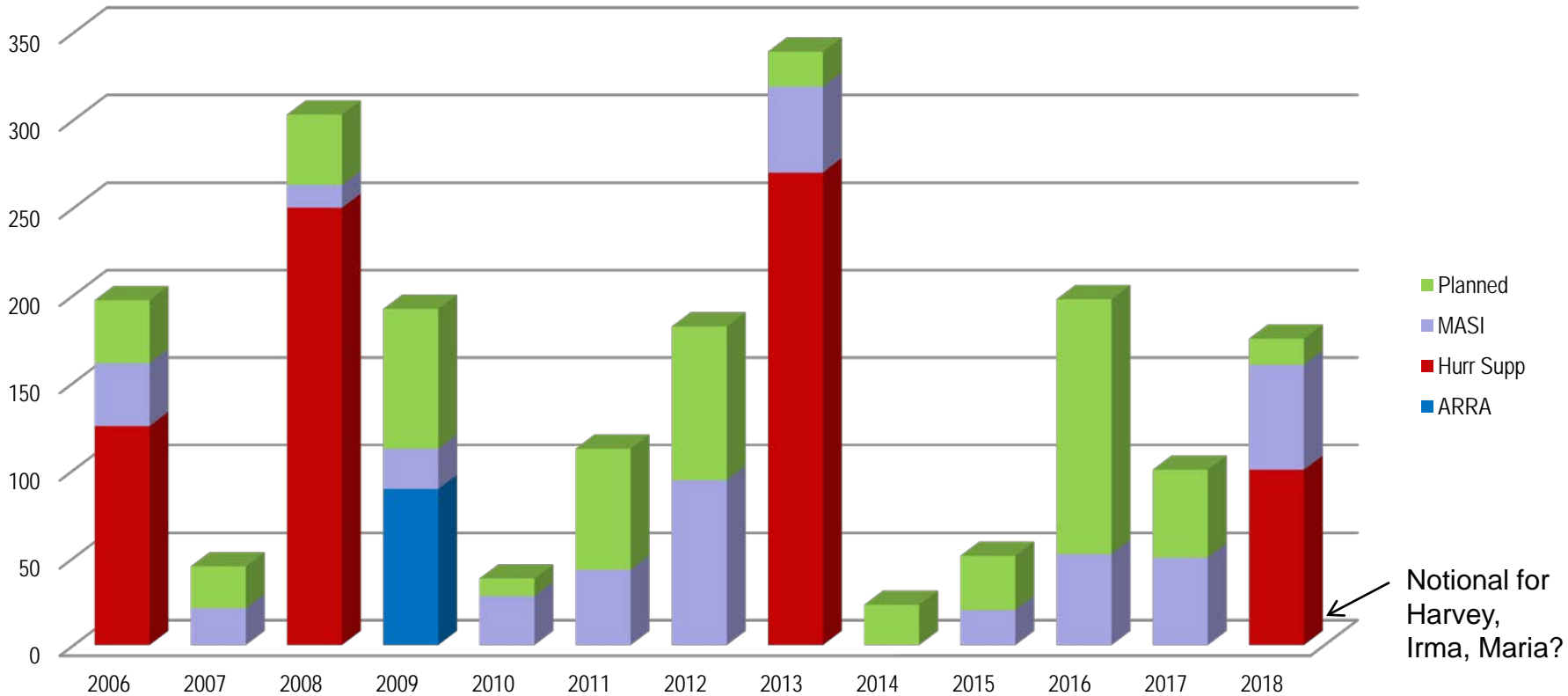




AC&I Historical Funding



Historical CG Shore AC&I Funding*



* Equivalent to DOD MILCON

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STATION SABINE: Destroyed by Hurricane IK CAT IV



STA Sabine:: Surveyed Hurricane Harvey CAT IV



OPBAT GREAT INAGUA: Destroyed by Hurricane Ike CAT IV



OPBAT GREAT INAGUA:: Surveyed Hurricane Matthew (CAT III and Hurricane Irma Cat IV





Superstorm Sandy Building Resiliency



Building 5 STA NY



BMF STA Atlantic City



MMB Sandy Hook

Rendering STA Sandy Hook MMB

Waterline

Rendering STA NY MPB



Rendering STA Atlantic City BMF





After Hurricanes KATRINA, IKE, and SANDY, the USCG used one of three choices to establish siting plans for damaged facilities:

- (1) Defend against the weather elements
- (2) Abandon the current location and relocate to higher elevation
- (3) Adapt the facilities to be more resilient



Sandy Hook, NJ





Primary Resiliency Features



- Flood Elevation
- Wind Resistance
- Material Selection
- Emergency Power





Wind Design Considerations



All 15 USCG Facilities addressed Wind Design	Coast Guard Specified:
3 projects	Design Wind Speeds
3 projects	Design Occupancy Categories
6 projects	Design Wind Speeds AND Occupancy Categories
3 Projects	Project to be Designed IAW ASCE 7 & IBC



BEST PRACTICE: Reduces unnecessary costs and avoids confusion with minimum design requirements.





Flood Elevation Design Considerations



Only 8 USCG Facilities addressed Flood Elevation	Coast Guard specified:
4 projects	Critical floors above 100 year flood plain
3 projects	1 to 2 ft above 500 year flood plain*
1 project	"Minimize damage"

** Due to anticipation of Executive Order 13690*





Construction Material Selection



- Standing Seam Metal Roofs
- Exterior weather barrier & sealants with flashing systems
- Roll down/ Bahama shutters
- Masonry/concrete exteriors



Roof Damage
Cape May, NJ



New Standing Seam Roof Atlantic City, NJ





Emergency (EM) Power Requirements



# of Facilities	Installed GENSET System Powers	Temporary GENSET connection Powers	Type
6	Vital Loads Only	n/a	Type 1
4	Vital Loads Only	All Loads	Type 2
5	All Loads	n/a	Type 3



BEST PRACTICE: Minimizes size of installed GENSET & reduces onsite fuel storage while allowing support for vital loads with the option of full power generation.

- Relocate primary transformers, switch gear, emergency generators, fuel tank, HVAC and electronics to protected areas.
- Strategies include placement on elevated pads / platforms or installing on first elevated floor above the 500 yr floodplain.





Summary



- When impractical to build above flood zone, ground floor designed to survive flood effects.
- Storage for first floor equipment integrated into 2nd floor layout.
- Resilient features incorporated to expedite post-storm recovery.
- Future command & control facilities be built to the ASCE/IBC Risk Category IV standards.





Hurricane Harvey



Hurricane Harvey brought devastating flooding, strong winds, and substantial storm surge to the coast of Texas from August 25th through the early afternoon hours of August 29th , 2017. The storm washed out major roads, destroyed waterfront properties, knocked out power for 3.4 million people and resulted in 63 reported deaths.



Storm Track

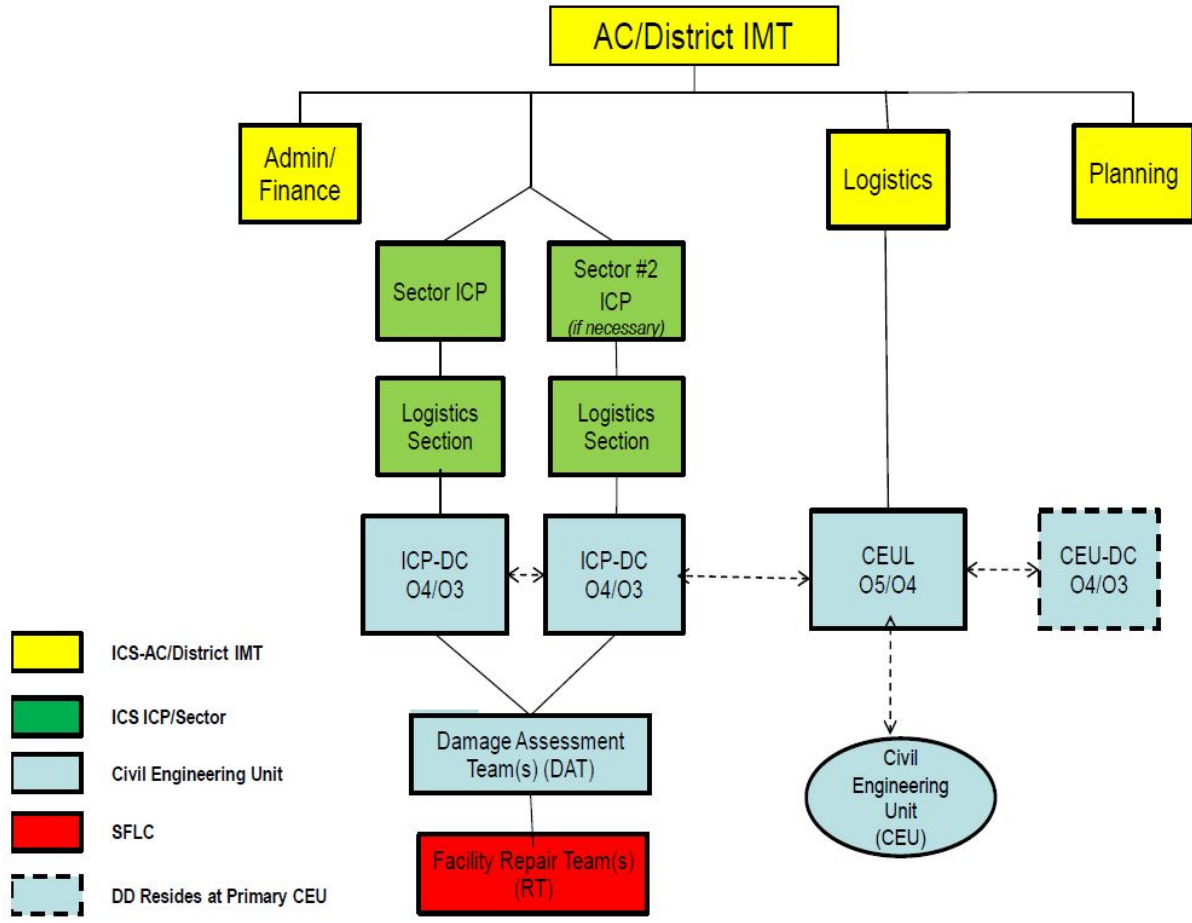


Station Port Aransas Boathouse





Command & Control

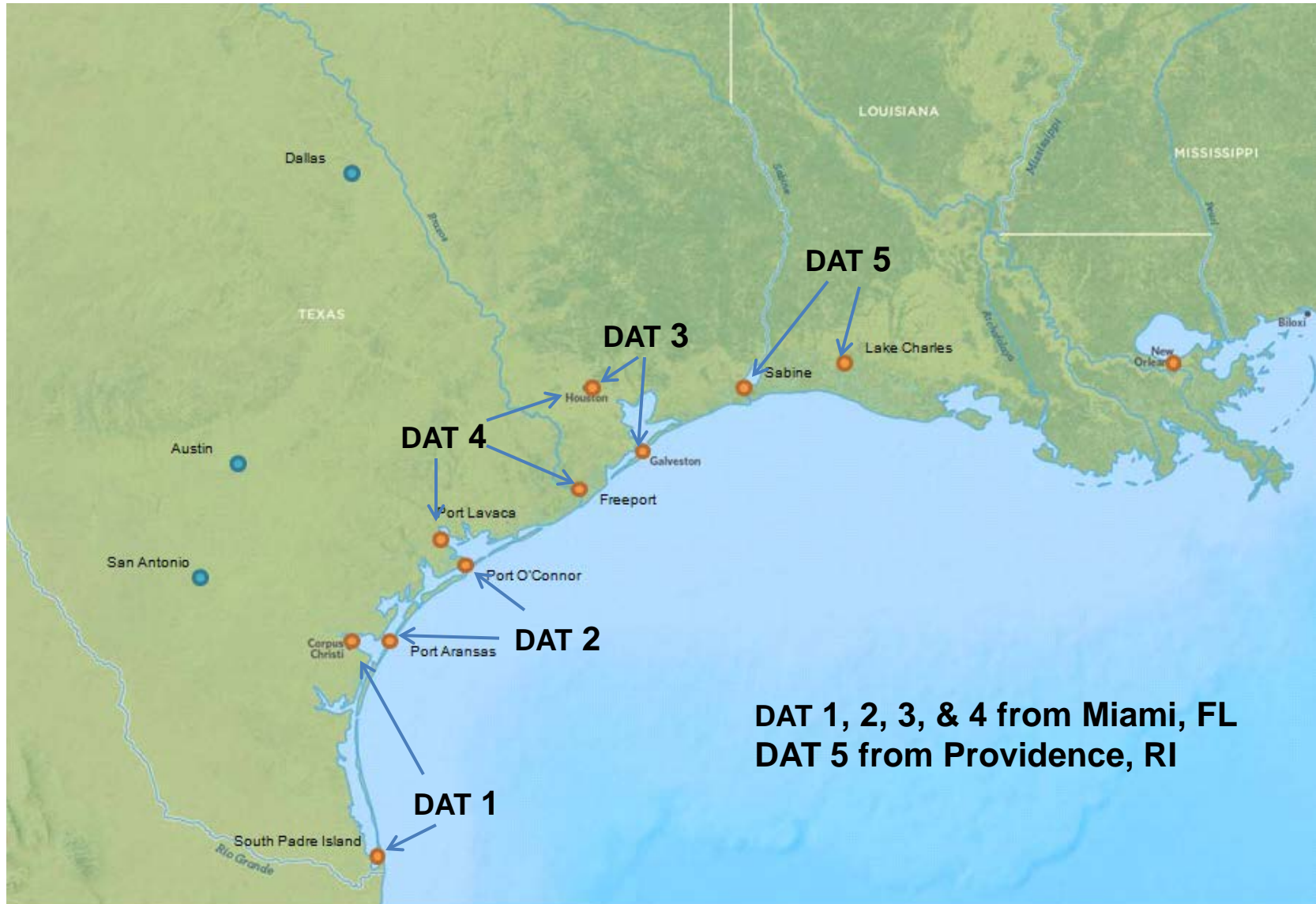


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Hurricane Harvey Pre-Deployment (Day 1)



Hurricane Harvey DAT Team Locations



Hurricane Harvey Repair Team Response





Harvey Damage



Corpus Christi - Roof membrane peeled back numerous locations.





Harvey Damage



Port Aransas – Boat House Destroyed



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Harvey Damage



Port O'Connor – Roof Lifted off and loose columns

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Harvey Damage



STAT Houston ...Fared well; minor roof damage



STA Houston Boathouse – High water levels and intrusion into the boat house.





Hurricane Irma



Hurricane Irma brought devastating flooding, strong winds, and substantial storm surge to the Eastern Caribbean and Florida from Sept 6th through the early morning hours of September 11th, 2017. The storm washed out major roads, destroyed waterfront properties, knocked out power for 7 million people and resulted in 37 reported deaths.



Storm Track



USCG Punt Team performing Search and Rescue Mission for Irma Response





Irma Damage



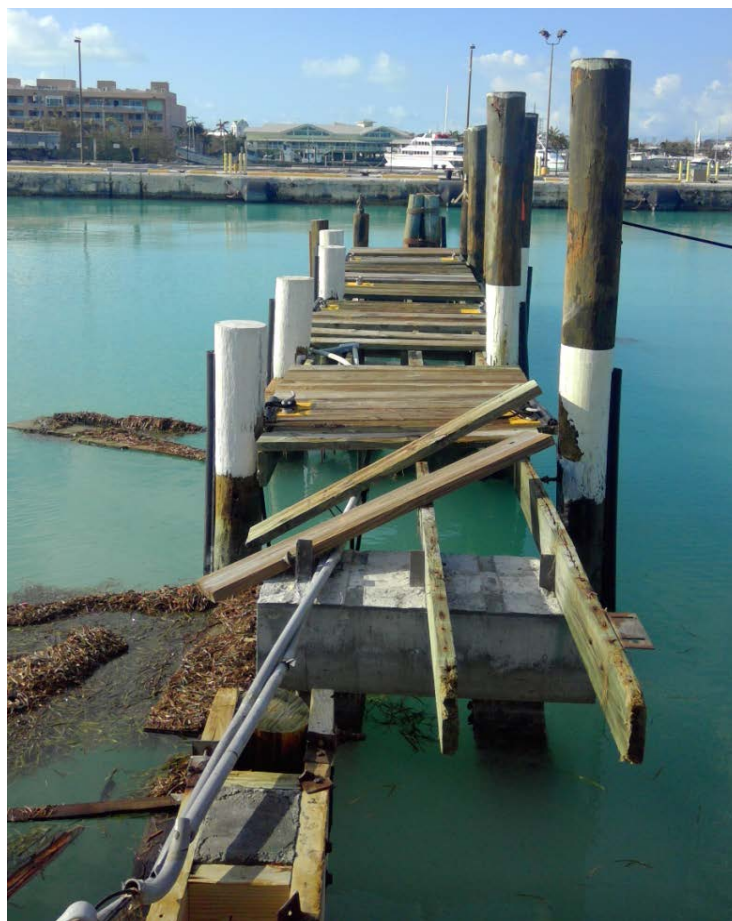
Key West – High water level and wind damage



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Irma Damage



Key West – Pier washed out from storm surge



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Irma Damage



Marathon – Interior water damage to housing from the roof



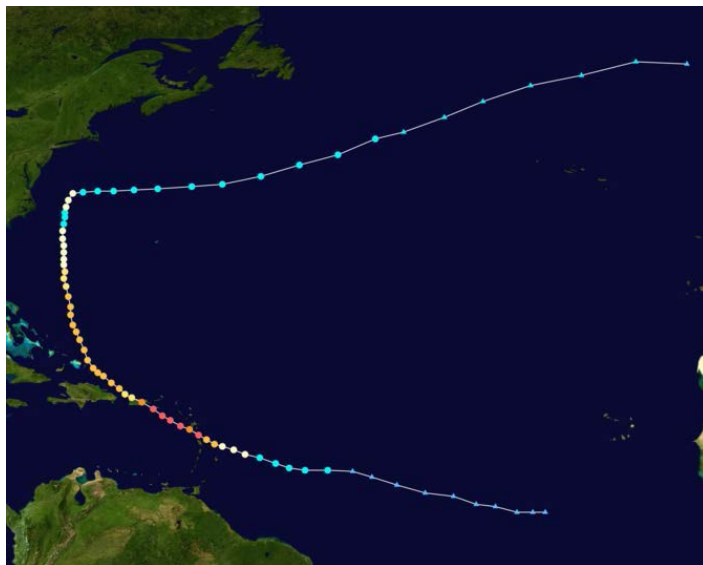
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Hurricane Maria



Hurricane Maria brought devastating flooding, strong winds, and substantial storm surge to Puerto Rico and the Eastern Caribbean from September 19th through September 22nd, 2017. The storm resulted in 68 reported deaths and Puerto Rico was left entirely without electric power, its electrical grid having been effectively totally destroyed.



Maria Storm Track



Coast Guard personnel survey the damage to an oil dock after Hurricane Maria passed through the area in San Juan



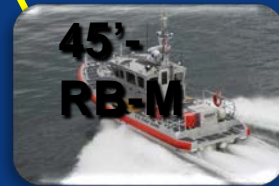
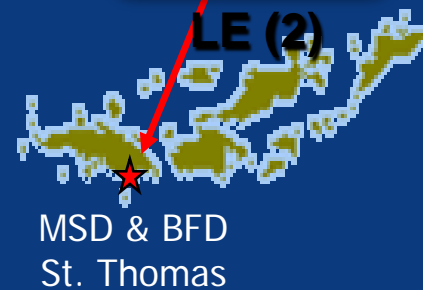
SECTOR SAN JUAN FORCES



ASSET LOCATION



(4)





Sector San Juan



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Bayamon Housing



Bayamon Housing – Roof vent damage causing mold growth from water intrusion





Timeline



25 – 29 Aug: Hurricane Harvey

06-11 Sep: Hurricane Irma

19- 22 Sep: Hurricane Maria

04 Oct: OMB asks Agencies (including DHS) to provide Hurricane Supplemental costs estimates by 25 Oct. Guidance says “directly related to damage”.

16 Oct: CG Supplemental due to DHS. For shore projects, asks for ~\$300M in repairs and ~\$475M for resilient projects.

25 Oct: DHS Supplement Request to OMB. Supports repairs and some resiliency

16 Nov: OMB passes \$44B supplement requests to Speaker Ryan. Supports no CG resiliency projects

18 Dec: House Bill H.R. 4667: Supports \$81B package, including ~\$300M of repairs and some resiliency projects.

XX Jan: Senate.....

XX Jan: President signs.....





Homeland
Security

National Multiple Award Construction Contracts (NMACCs)

United States
Coast Guard



- **REPROCUREMENT: HSCG47-16-R-3EFK01**
 - *Using FAR 36.6 Design-Build Two Phase Source Selection Procedures; Unrestricted.*
 - *Original Solicitation, HSCG47-16-R-3EFK01 was issued 21 July 2016.*
 - *Phase II proposals received 22 August 2017.*
 - *Anticipated award first quarter of calendar year 2018..*
 - *Previous contracts expired May 2017. Spend on previous contracts thru January 2017 \$675.21M.*



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Regional Multiple Award Construction Contracts (RMACCs) DHS Wide

United States
Coast Guard



- ***Reprocurement: HSCG50-16-R-CGRMAC***
 - *Using FAR 36.6 Design-Build Two Phase Source Selection Procedures.*
 - *Solicitation HSCG50-16-R-CGRMAC was issued 20 July 2016.*
 - *Phase Two proceeding for six of nine regions. Remaining three regions Phase One evaluation is ongoing.*
 - *Site visit for the seed project will take place during Phase Two.*
 - *Anticipate awards 1st quarter of calendar year 2018.*



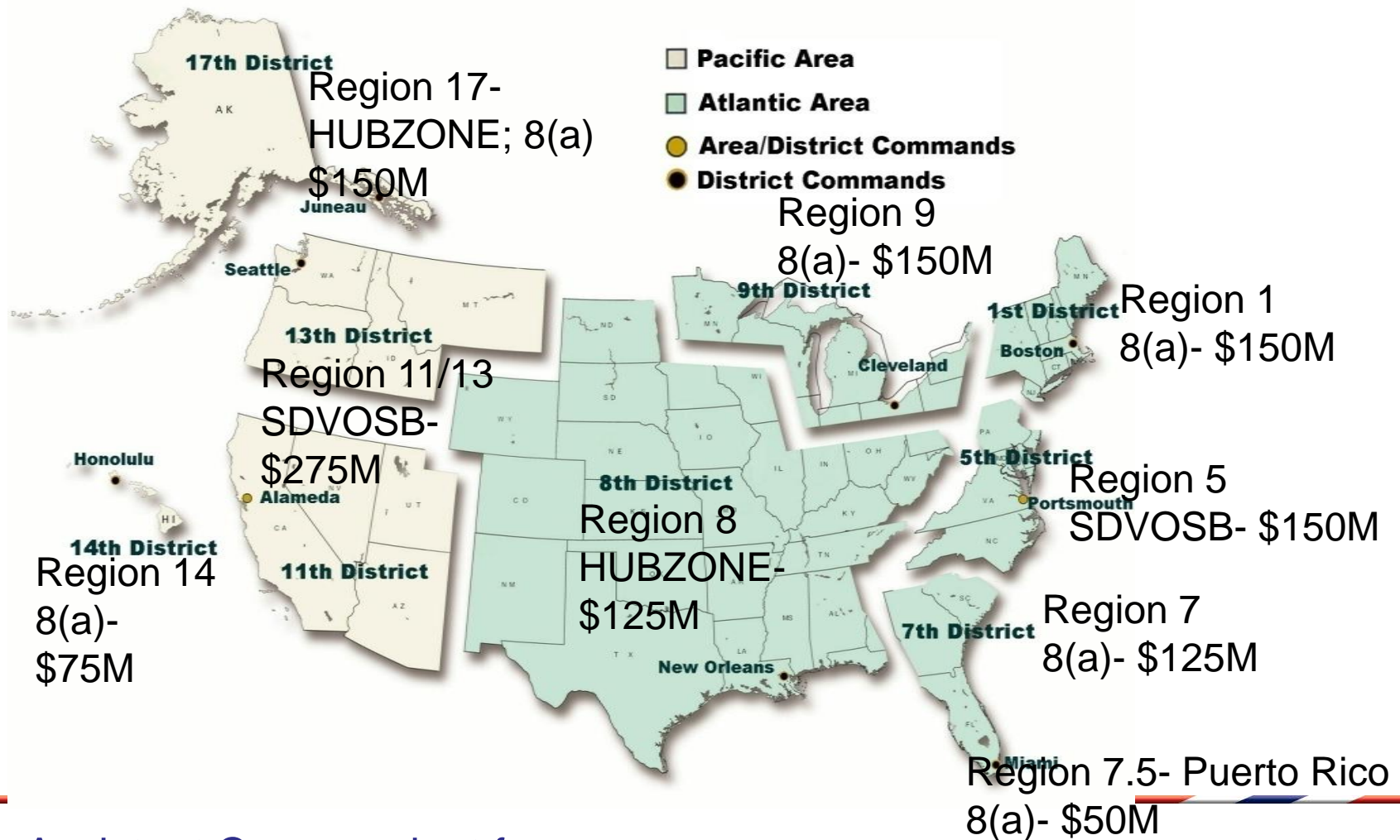
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Homeland Security

Contract Renewal- RMACC (DHS-Wide)

United States Coast Guard



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Homeland
Security

Advice for Hurricane Recovery Work

United States
Coast Guard



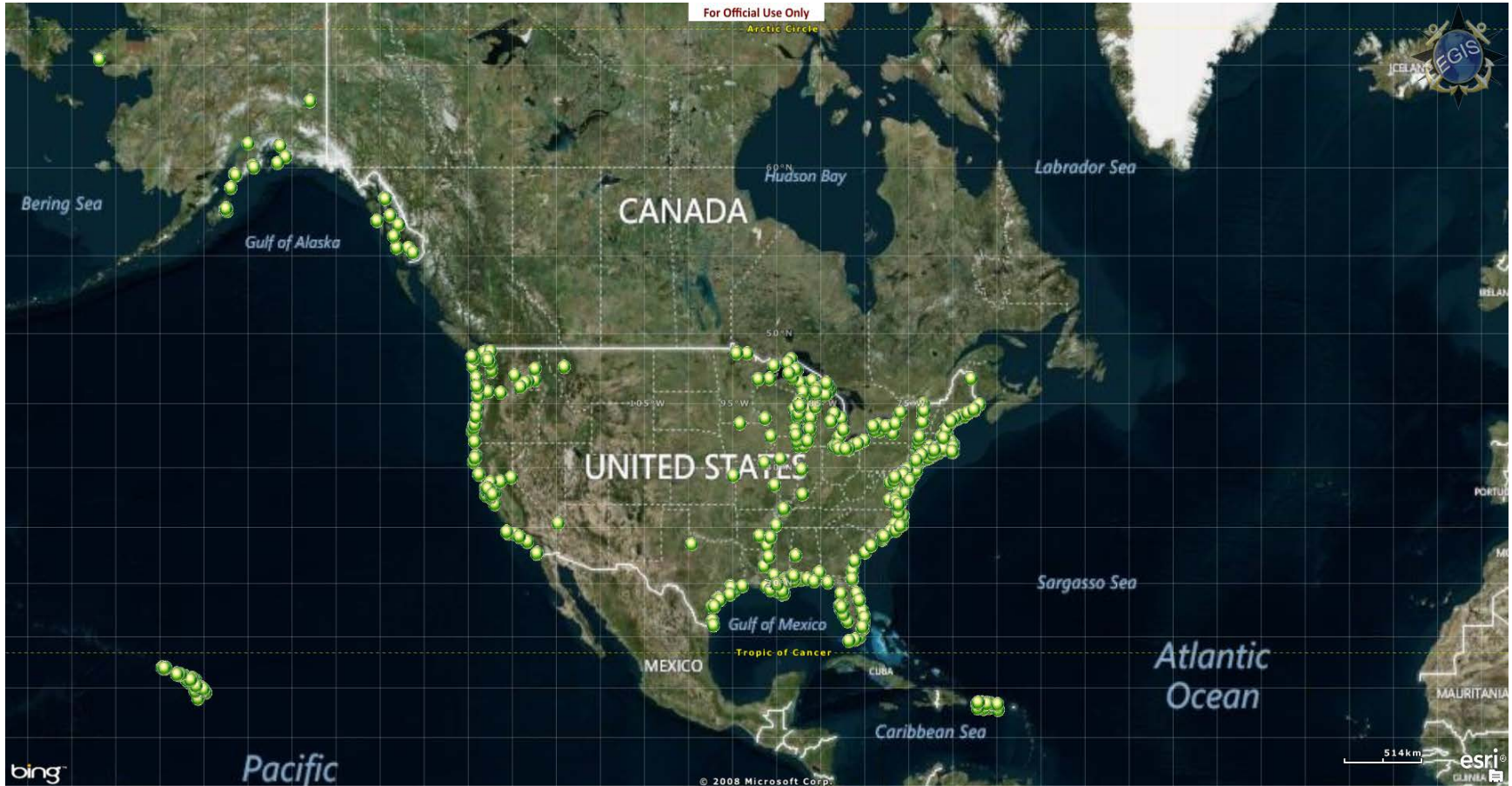
- Keep information accurate in SBA
- Monitor afps.dhs.gov



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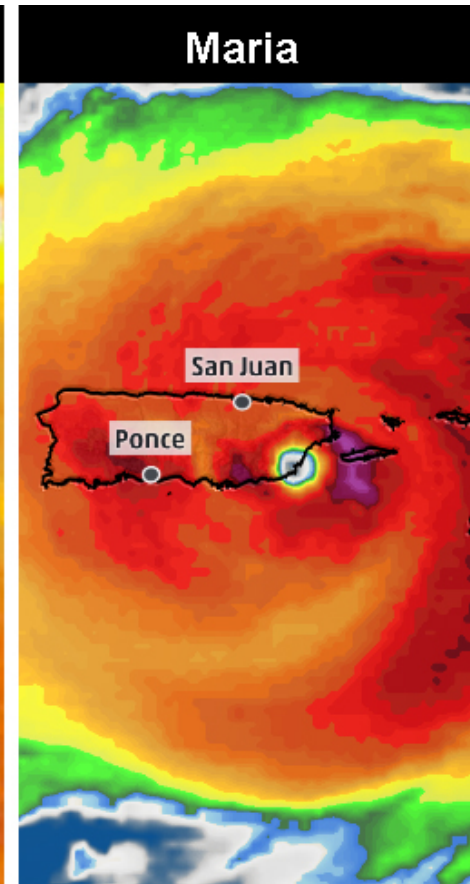
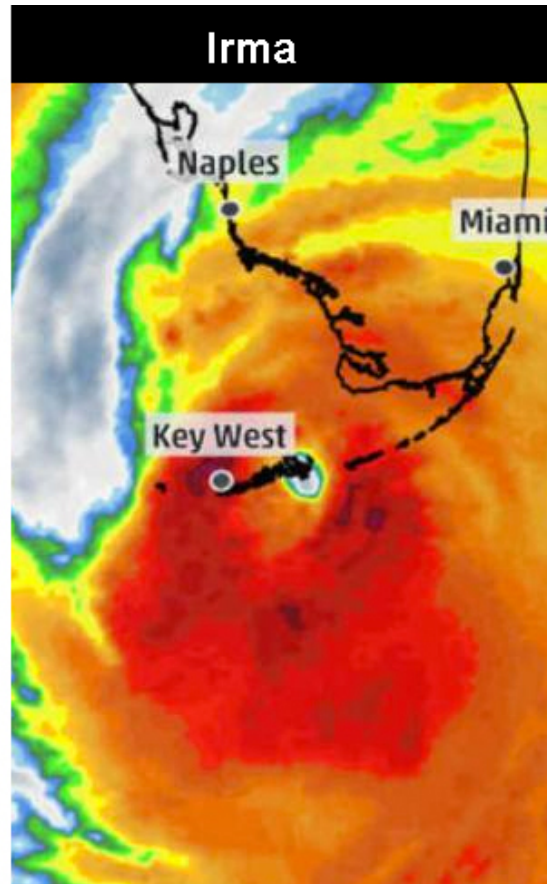
USCG Shore Footprint



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Questions?



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