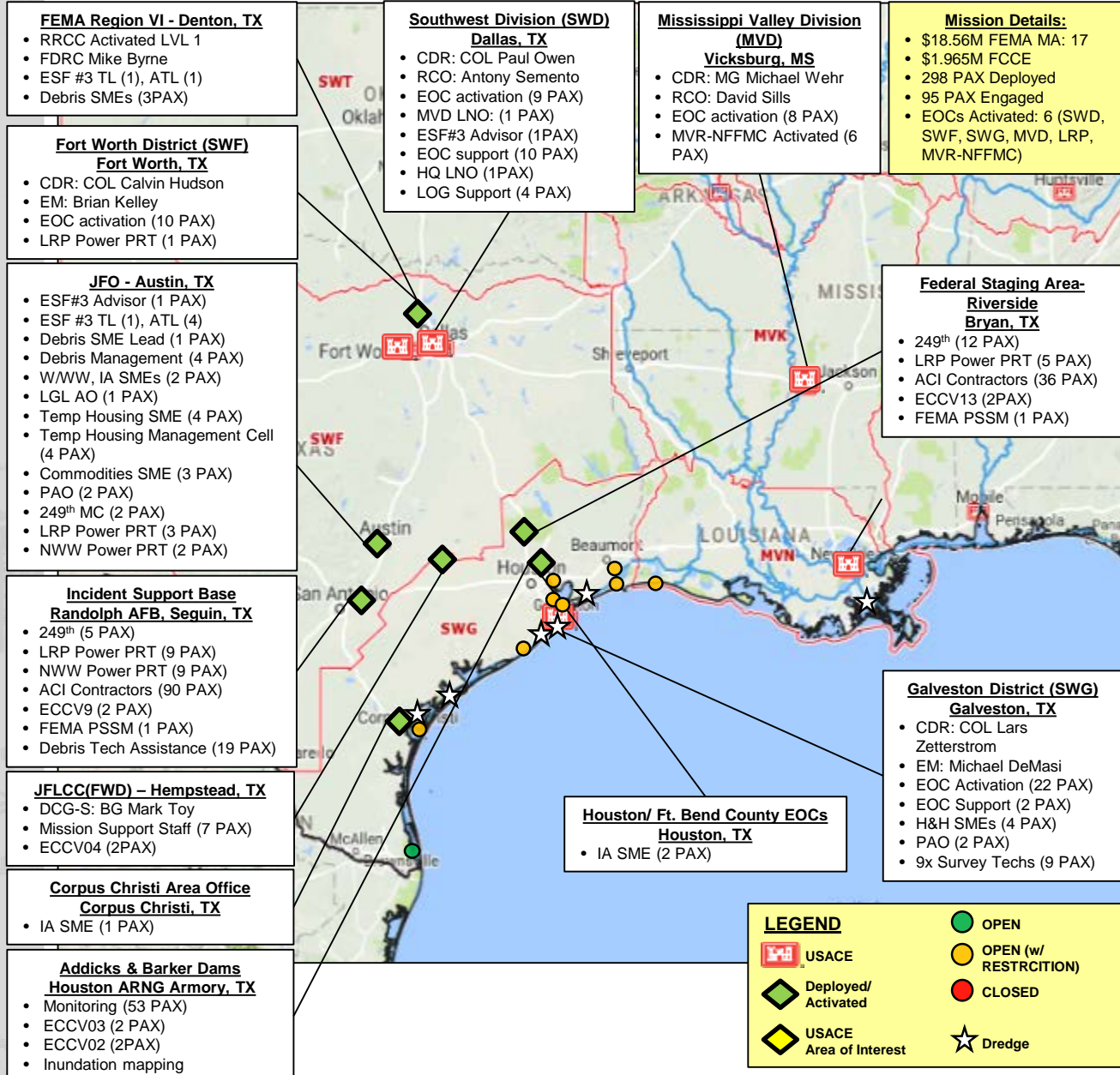


# Hurricane Harvey (SWD/MVD)



**BLUF:** USACE has 3 Divisions and 4 Districts continuing to support federal response to impacted areas from Hurricane Harvey with 298 USACE personnel deployed to key response nodes and 95 C2 personnel manning key command nodes. USACE has received 17 FEMA MAs (\$18.56M).

### LINES OF EFFORT:

#### 1. PUBLIC AFFAIRS AND STRATEGIC OUTREACH

- USACE continues to garner positive-neutral sentiments, but downstream residents are beginning to ask for water receding timelines and when they might be able to return to their homes
- Debris SME Lead, Mr. Eddie Leblanc, conducted an on-camera Interview with HLN at the JFO

#### 2. ADDICKS AND BARKER RESERVOIRS

- Performing as designed, retained over 125 Billion gallons of water has been retained since 25 AUG
- 24-Hour on-site monitoring and assessment (53 PAX), ECCV03 & ECCV02 (4PAX)
- Addicks - Current level: 104.56' as of 0400 EDT 06SEP17 (flanking has ceased)
- Barker – Current level: 97.20' as of 0400 EDT 06SEP17 (water out of homes upstream)
- Controlled releases from the dams continue to assure the safest possible functioning of the dams

#### 3. NAVIGATION

- As of 05 2030 SEP17: The ports of Texas City, Galveston, Isabel and Brownsville are open with no restrictions. All other ports are open with restrictions
- 20 survey vessels are surveying the GIWW with an expected completion date of 06 SEP
- Surveys were completed for the Neches entrance channel to Beaumont on 05 SEP, Survey data under review to determine draft restrictions and dredging requirements
- USACE currently has 6 dredges (USACE contracted) available, 5 actively dredging at Galveston, Freeport, Texas City Aransas Bay and Corpus Christi.

#### 4. TEMPORARY HOUSING

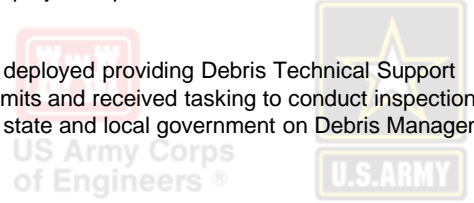
- 2x FEMA Mission Assignments (\$1.48M)
- Temporary Housing SME deployed to JFO coordinating with USACE and FEMA HQ on USACE Housing Support Plan
- FEMA is planning for installation of 4,000 MHUs and 9K-10K travel trailers, and construction of another 5,000 homes.
- USACE will employ a mission manager at each FEMA Branch Office with a staff of 40 Technical Monitors, 6 Contracting Officer Representatives and 116 QA Representatives
- Work on site layouts to begin shortly

#### 5. TEMPORARY EMERGENCY POWER

- \$8.2M FEMA Mission Assignment (MA)
- 249<sup>th</sup> EN (19 PAX), LRP Power PRT (17 PAX), NWW PRT (11 PAX), ACI (126 PAX), 2x ECCV (4 PAX) deployed to response nodes
- 67 Pre-Install Inspections Requested, 66 Pre-Install Inspections complete, 44 Generator Installs Complete, 9 Generator De-Installs complete
- Total of 190 Generators from FEMA /DLA in the area of operations
- Local public utilities coming back online, demobilization of temporary power assets expected; TFTEP implementing demobilization plan based on current and projected power restoration estimations

#### 6. DEBRIS MANAGEMENT

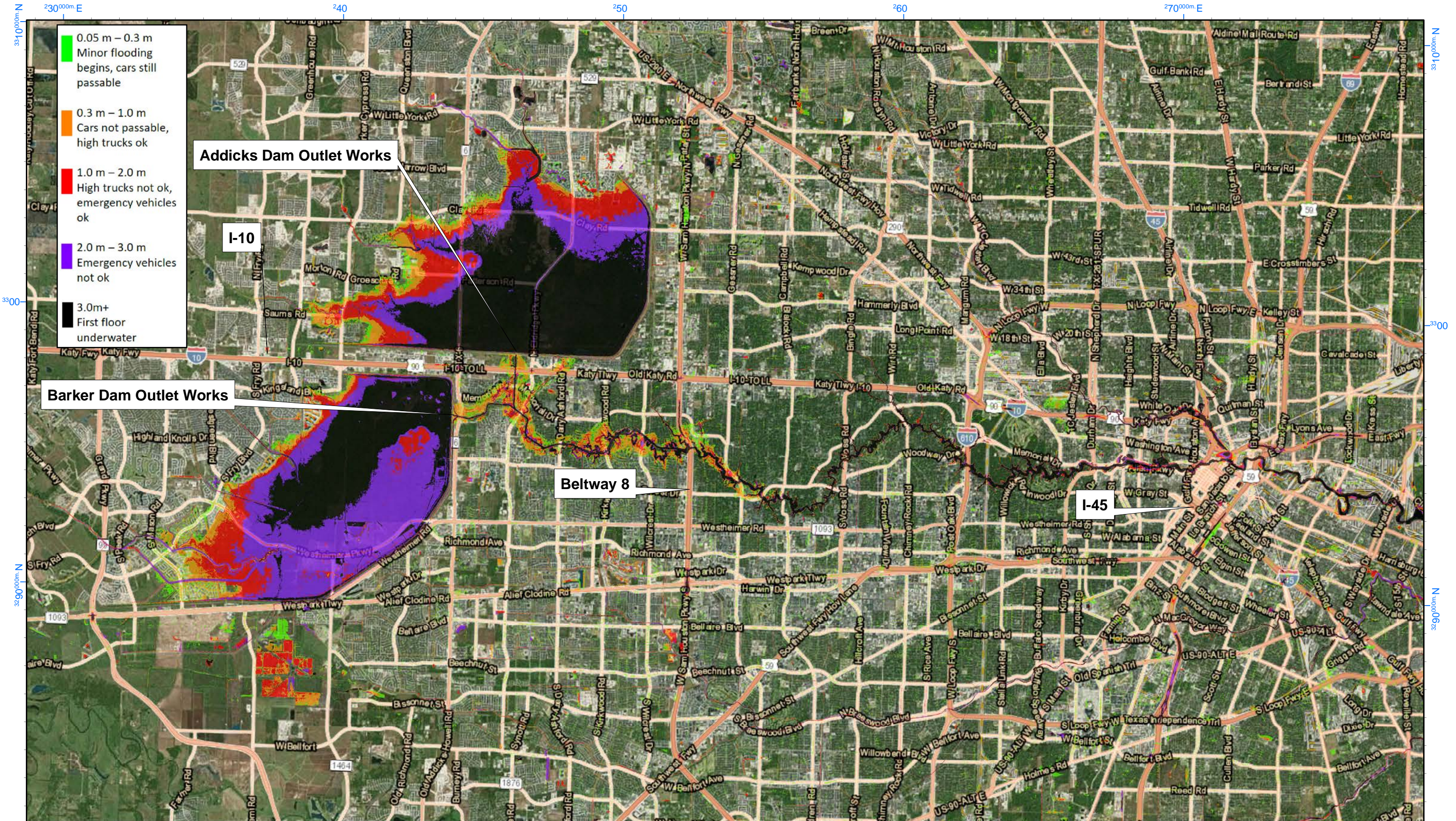
- 2x FEMA Mission Assignments (\$4.15M)
- 25 PAX and a Debris Management Team are currently deployed providing Debris Technical Support
- Canvassed area around Barker and Addicks for flood limits and received tasking to conduct inspections.
- USACE Debris SMEs to coordinate with FEMA IMATs, state and local government on Debris Management strategies





# Tropical Storm Harvey - Houston Trafficability Inundation Map

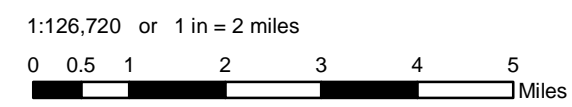
1400 hrs 3 September 2017  
Predicted Flood Depth



- 0.05 m – 0.3 m  
Minor flooding begins, cars still passable
- 0.3 m – 1.0 m  
Cars not passable, high trucks ok
- 1.0 m – 2.0 m  
High trucks not ok, emergency vehicles ok
- 2.0 m – 3.0 m  
Emergency vehicles not ok
- 3.0m+  
First floor underwater

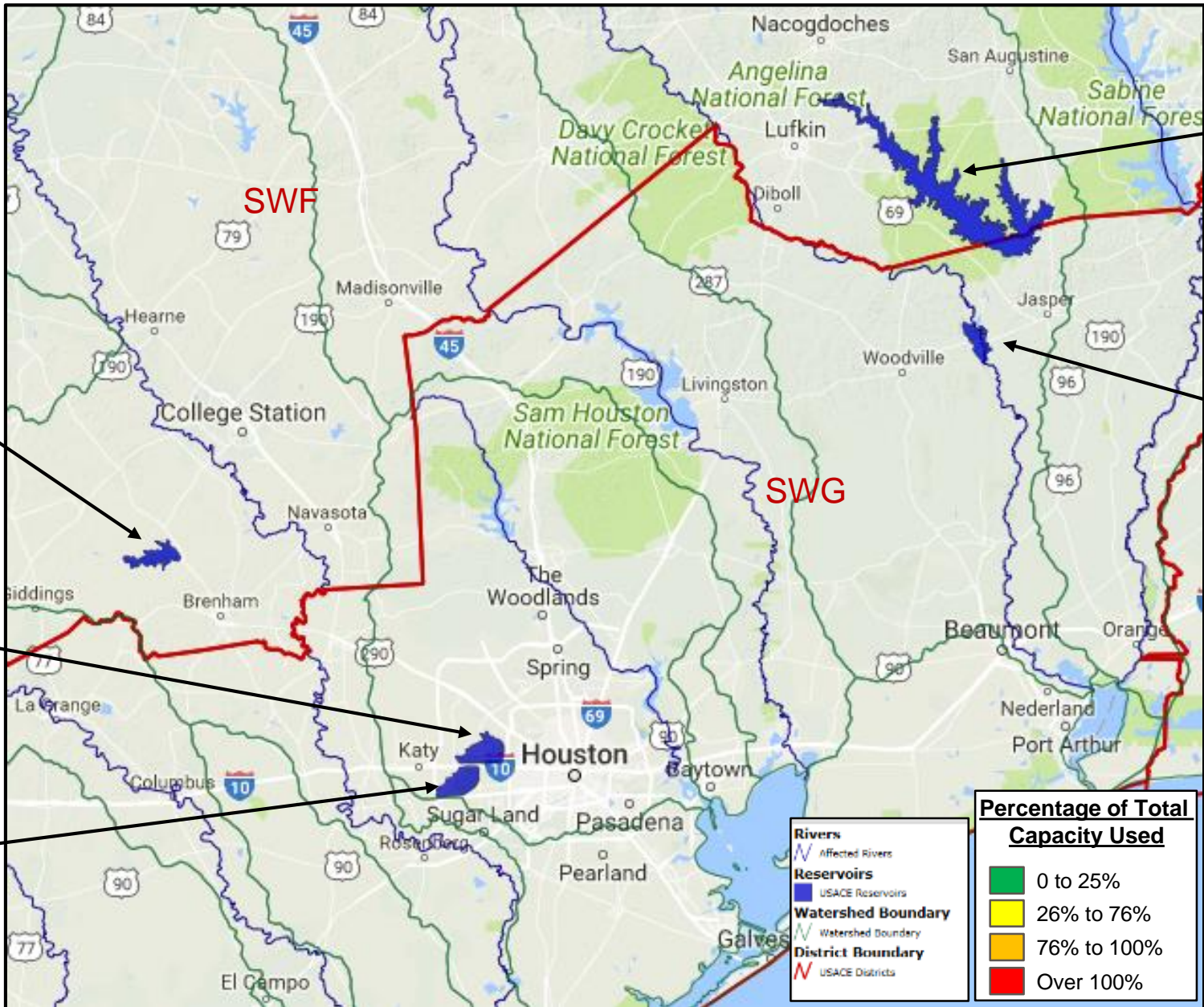
- Estimated Depth**
- |                                                                                                                                                               |                                                                                                                                                              |                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <span style="display: inline-block; width: 15px; height: 15px; background-color: #FFFFFF; border: 1px solid black; margin-right: 5px;"></span> 0 m - 0.05 m   | <span style="display: inline-block; width: 15px; height: 15px; background-color: #FFA500; border: 1px solid black; margin-right: 5px;"></span> 0.3 m - 1.0 m | <span style="display: inline-block; width: 15px; height: 15px; background-color: #800080; border: 1px solid black; margin-right: 5px;"></span> 2.0 m - 3.0 m |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: #90EE90; border: 1px solid black; margin-right: 5px;"></span> 0.05 m - 0.3 m | <span style="display: inline-block; width: 15px; height: 15px; background-color: #FF0000; border: 1px solid black; margin-right: 5px;"></span> 1.0 m - 2.0 m | <span style="display: inline-block; width: 15px; height: 15px; background-color: #000000; border: 1px solid black; margin-right: 5px;"></span> 3.0m+         |

**MAP NOTES:** NWS river stage forecast for 3 September combined with 2 September afternoon USACE reservoir release schedule.



U.S. Army Corps of Engineers  
Kansas City District  
Tropical Storm Harvey  
USNG Grid Zone 15

# Hurricane Harvey – Status of Affected Corps Reservoirs



**Somerville Lake**  
 Current Elev: 254.92' ↑  
 Top of FP: 258'  
 Release: 0 cfs  
 Status: Rising

**Addicks**  
 Current Elev: 107.06' ↓  
 Top of FP: 108'  
 Release: 7,000 cfs  
 Status: Falling

**Barker**  
 Current Elev: 99.28' ↓  
 Top of FP: 104'  
 Release: 6,300 cfs  
 Status: Falling

**Sam Rayburn**  
 Current Elev: 167.27' ↑  
 Top of FP: 173'  
 Release: 8,600 cfs  
 Status: Rising

**B.A. Steinhagen  
 (Town Bluff)**  
 Current Elev: 82.12' ↓  
 Top of FP: 85'  
 Release: 41,000 cfs  
 Status: Falling

**Percentage of Total Capacity Used**

- 0 to 25%
- 26% to 76%
- 76% to 100%
- Over 100%

**Rivers**  
 Affected Rivers

**Reservoirs**  
 USACE Reservoirs

**Watershed Boundary**  
 Watershed Boundary

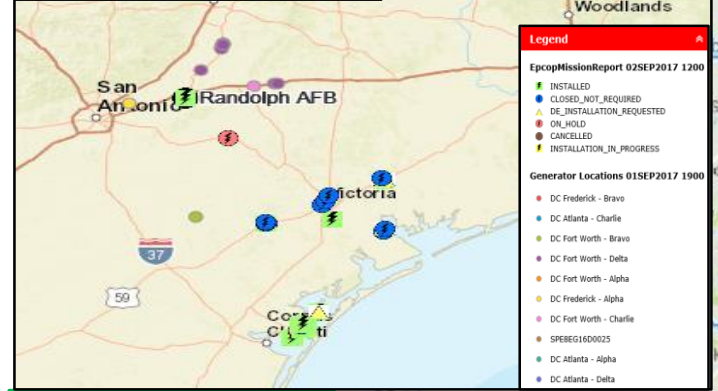
**District Boundary**  
 USACE Districts



# Hurricane Harvey Power COP

**Mission Details:**

- \$8.2M FEMA (1 Post-Dec MA)
- Type II response posture
- C Company: 17 PAX Deployed
- HHC: 3 PAX Deployed



**TFTEP  
Pittsburgh, PA**

- 249th: 3 SM
- FEMA LNO: 1 CIV
- TFTEP: 5 CIV

**HQUSACE  
Washington D.C.**

**NRCC  
Washington D.C.**

**249th Prime Power BN HQ  
Fort Bevoir, VA**

**MVM  
Memphis, TN**

- Power PRT on ALERT

## Task Force Temporary Emergency Power

**Current Operations**

- MA total \$8.2M through 16 Sep 17
- NWW PRT personnel arrived at ISB
- 56 generators moving from DC Frederick to FSA Riverside; 46 of 62 gens moved from ISB to FSA
- ACI increased to support ISB and FSA
- 249th positioned PIITs to support ISB and FSA
- 1 PAX arrived from 249th Ft. Belvoir to FSA Riverside

**Future Operations 24-48 Hours**

- Fueling, maintenance, and repair of installed generators
- Action Officer anticipating Houston's power requirements
- Final 4 PAX from NWW PRT arrive to Randolph ISB (ETA 021800SEP17 CDT)
- NWW & LRP complete transition to ISB and FSB
- SAS Power PRT on Alert status

**Anticipated Operations**

- TBD – Start of new assessments post flood
- TBD – Develop transition plan

**Concerns**

- Zero generator requests for Houston

**State EOC  
Austin, TX**

- 249th: 2 SM
- LRP Power PRT: 3 CIV
- NWW: 2 CIV

**Incident Support Base (ISB)  
Randolph AFB, TX**

- 249th: 5 SM
- LRP Power PRT 9 CIV
- NWW PRT: 5 CIV
- ACI Contractors 90 CIV
- ECCV9 2 CIV
- FEMA PSSM: 1 CIV



**Forward Staging Area-Riverside  
Bryan, TX**

- LRP: 5 CIV
- 249th: 12 SM
- ACI: 35 CIV
- ECCV13 (2PAX)
- FEMA PSSM: 1 CIV

**Galveston District (SWG)  
Galveston, TX**

- LRP Power PRT: 1 Civ

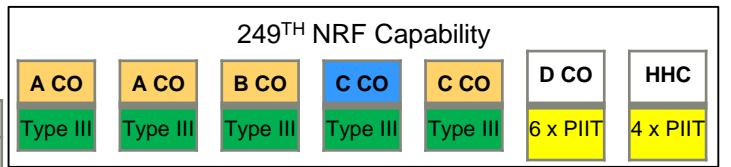
- 1: 11x DLA & 7x FEMA gens >800kW, 114x FEMA gens <800kW
- 2: 70% of FEMA's CONUS inventory of generators >800kW are in TX
- 3: 4 generators NMC (2x voltage regulator, 1x fuel injector, 1x fuel sensor, 1x fuel leak)

Mission Data	
Assessments Requested	59
Preinstall Inspections Complete*	59
Assessments Cancelled & Closed/Not Required	16
Installs In Progress	0
Installs Complete	38
Generator Delinstalls	1

Resources		
PRT+SME	LRP (III+)	18 PAX
PRT	NWW (III-)	7 PAX
249th	C Co (III)	20 PAX
ACI Contractor	IAP (III+)	125 PAX
Generators <sub>1,2,3</sub>	FEMA+DLA	134 gens
ECCV #9 & 13	DTOS	4 PAX

**LEGEND**

- MA Received – Occupied
- MA on ALERT
- MA Cancelled
- Other Key Nodes
- ISB Occupied



Emergency Power (LRD)	LRP	MVM	NWW	POH	SAS	SPA	SWT
	D	A	D	5	7	4	6



US Army Corps of Engineers®



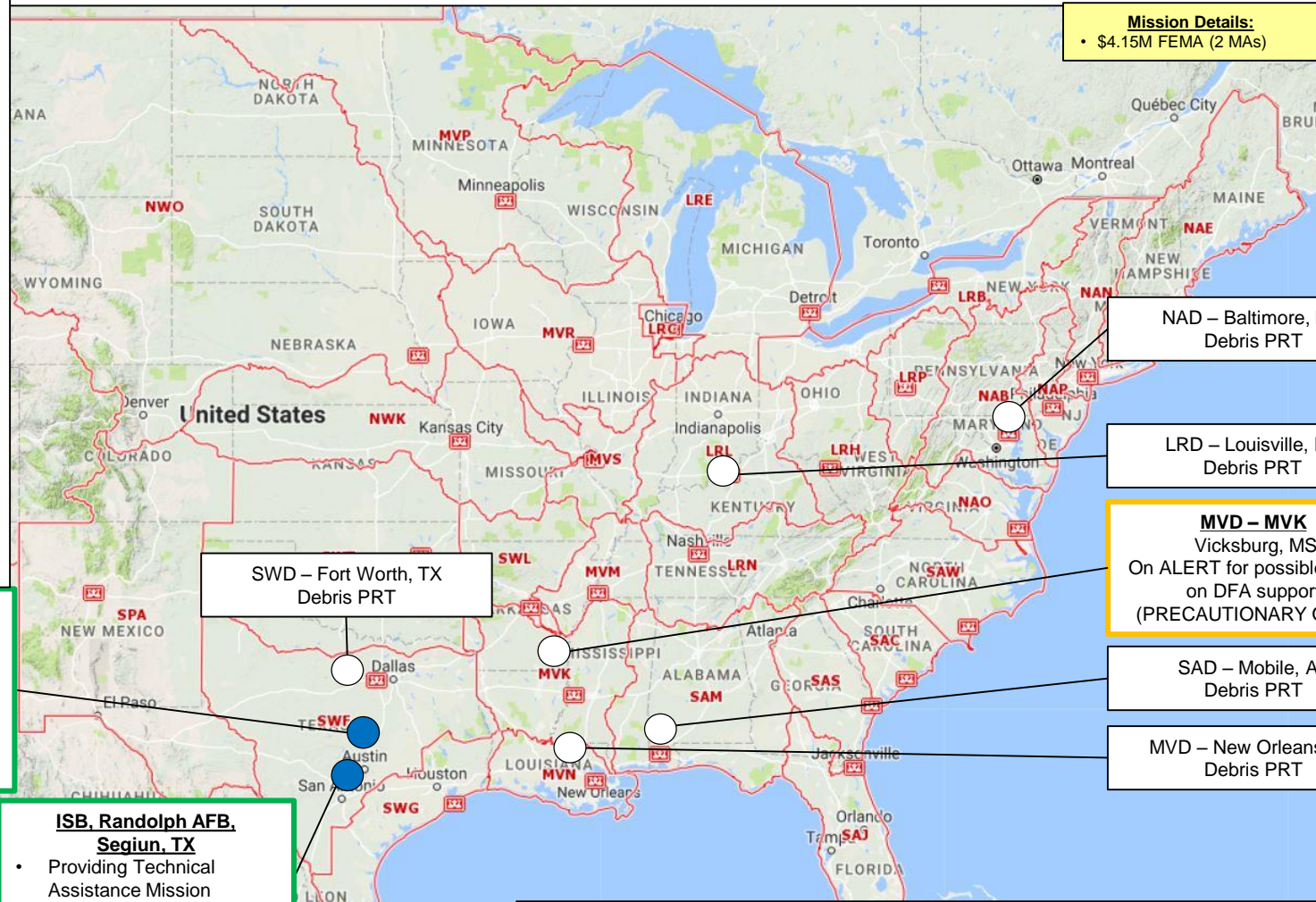
U.S. ARMY

# Hurricane Harvey Debris Management COP

Continued emphasis on Debris Management support to Texas continues to be a top planning priority at the FEMA nodes. Local city and state officials have begun movement developing contracts and planning their operations.

- SMEs: Eddie LeBlanc and Bo Ansley
- Debris SME/Oversight MA for \$4,050,000
- Verbal MA for \$107,500 – Debris Management Cell
- Debris SME Lead, Debris SME, and 6 Debris Team Members at the JFO; 18 additional team members en route
- City of Houston has a contract in place and plans to move forward with contractor, SMEs will continue to advise and assist with plans where necessary
- Will provide Debris Management guidance – individuals comprising PRT are SMEs in-training and will be truly valuable in assisting at the State EOC
- Canvassed area around Addicks and Barker in order to document flooding limits and received request to conduct inspections in Richmond and Rosenberg in the vicinity of the Brazos River
- MVK debris management team will arrive at the JFO in the next 24 hours.

**Mission Details:**  
• \$4.15M FEMA (2 MAs)



**SPD-SPK**  
Sacramento, CA  
**State EOC/JFO Austin, TX**

- Providing Technical Assistance Mission Assignment support
- Debris SME Lead, Debris SME, 6x Debris Team Members (8 PAX), 18 additional enroute

**ISB, Randolph AFB, Seguin, TX**

- Providing Technical Assistance Mission Assignment support
- Debris SMEs (4 PAX)

**LEGEND**

- MA Received – Occupied
- MA on ALERT
- MA Cancelled
- Other Key Nodes
- ISB Occupied
- PRT H/S Location

	LRD	MVD	NAD	NWD	POD	SAD	SPD	SWD	HQ
<b>Debris Removal (MVD)</b>	LRL 3	MVK A MVN 4	NAB 5			SAM 7	SPK A	SWF 6	



# Hurricane Harvey Temporary Housing COP

Continued emphasis on providing temporary housing support to Texas continues to be a top planning priority at the FEMA nodes. Still developing is the pilot construction management cell.

FEMA MA for Housing- Technical Monitors/CORs/SMS. All have been identified and will be on site Sunday, 03 SEPT 2017. The six person Management Cell for Group Site Design will arrive by 06 SEP 17.

**HAUL AND INSTALL:** USACE will employ a mission manager at each FEMA Branch Office with a staff of 38 Contracting Officer Representatives, Technical Monitors, and QA Supervisors and Representatives. Current estimate to support the haul and install mission is ~120 USACE personnel. The planning consideration being used for the haul and install mission is installation of 4,000 MHUs and 9,000-10,000 Travel Trailers. The estimate to complete this mission is 5 months.

**REPAIR/PERMANENT HOUSING CONSTRUCTION:** USACE supports the mission to repair 5,000 homes, and will employ a mission manager with area engineers embedded in all three FEMA Branch Offices. This mission requires over 300 USACE employees to include design and construction teams and includes employment of a USACE contract(s).

Three PRTs have been placed on alert for three possible missions:

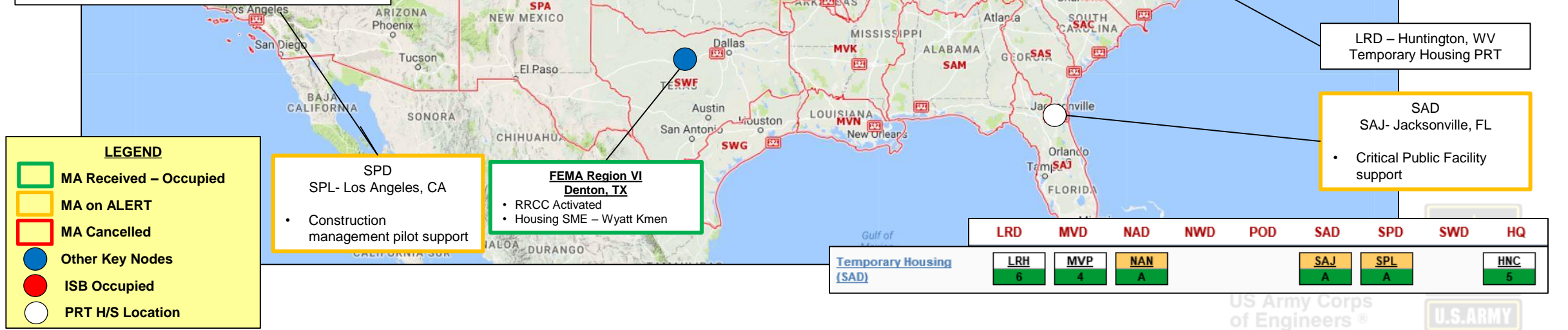
- SPL for construction management pilot support
- SAJ for Critical Public Facility support
- NAN for Site Design and Construction Support

Three SMEs have also been identified to provide support:

- Overall Temp Housing support to include pilot **Construction Management Support:** Wyatt Kmen (**ARRIVED**)
- **Critical Public Facility** support: Tim Brown (**alerted – ON STANDBY**)
- **Site Design and Construction:** Jason Ritter (**alerted – ON STANDBY**)

**Mission Details:**

- \$1.215M FEMA MA
- 1 PAX Deployed
- Additional PAX to arrive 03 SEP 17



# Hurricane Harvey Navigation Restoration

**Port Status**

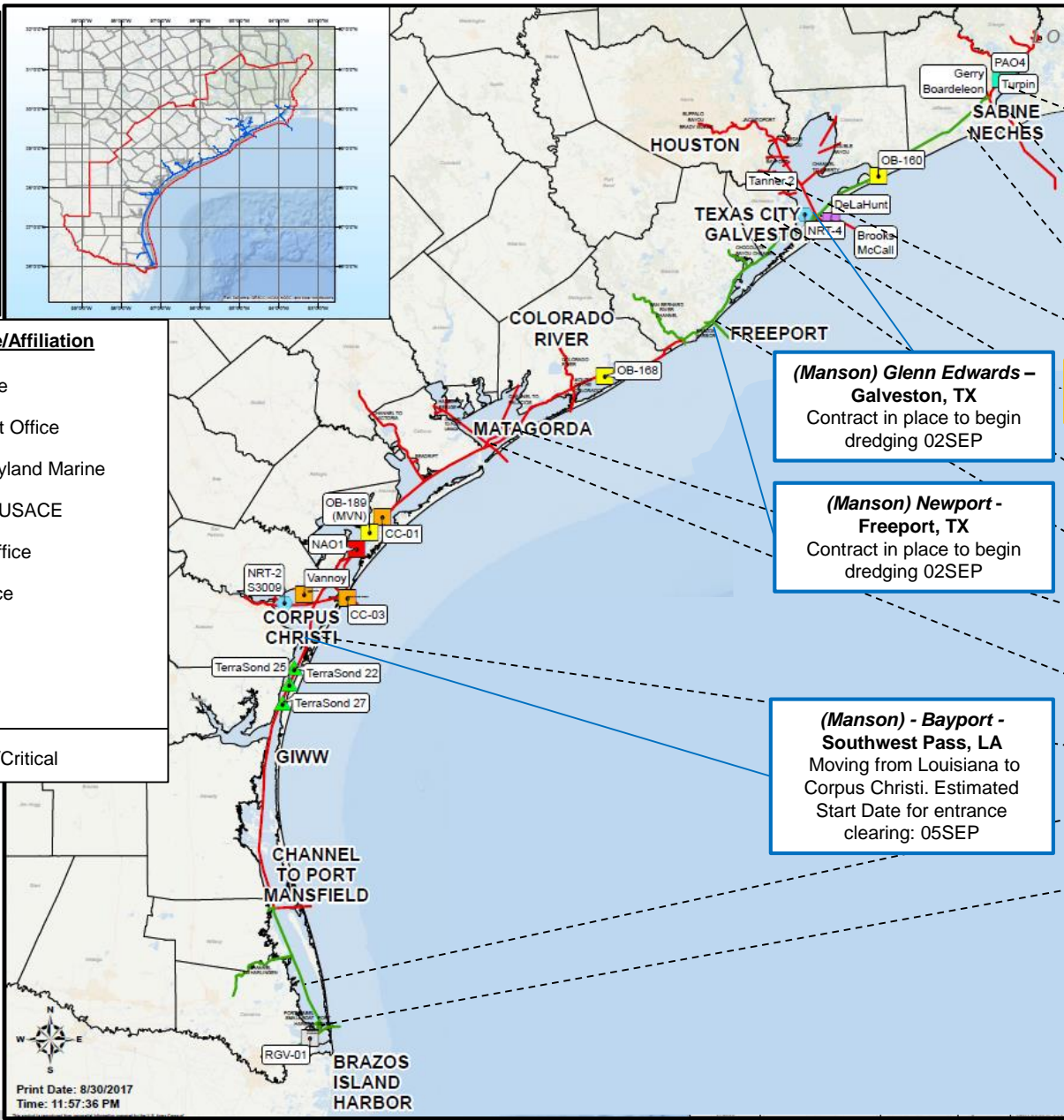
- OPEN
- OPEN w/ RESTRICTIONS
- CLOSED

**DREDGE**

- CONTRACTED
- AVAILABLE

**Survey Vessel: Office/Affiliation**

- Galveston District Office
- Corpus Christi Resident Office
- Galveston District – Bayland Marine
- New Orleans District – USACE
- Port Arthur Resident Office
- Rio Grande Valley Office
- Contractor
- NOAA
- Coast Guard Reported/Critical



- Lake Charles OPEN** restricted < 37' As of 012100SEP2017
- Beaumont OPEN** restricted < 30' As of 012100SEP2017
- Orange OPEN** restricted < 30' As of 012100SEP2017
- Arthur OPEN** restricted < 30' As of 012100SEP2017
- Houston OPEN** restricted < 37' As of 012100SEP2017
- Texas City OPEN** restricted < 37' As of 012100SEP2017
- Galveston OPEN** restricted < 37' As of 012100SEP2017
- Freeport OPEN** restricted < 33' As of 012100SEP2017
- Matagorda CLOSED** As of 012100SEP2017
- Victoria CLOSED** As of 012100SEP2017
- Corpus Christi OPEN** restricted < 43' As of 012100SEP2017
- Isabel OPEN** As of 012100SEP2017
- Brownsville OPEN** As of 012100SEP2017

**(Manson) Glenn Edwards – Galveston, TX**  
Contract in place to begin dredging 02SEP

**(Manson) Newport - Freeport, TX**  
Contract in place to begin dredging 02SEP

**(Manson) - Bayport - Southwest Pass, LA**  
Moving from Louisiana to Corpus Christi. Estimated Start Date for entrance clearing: 05SEP

USACE Hopper Dredge McFarland – At port Philadelphia, PA Ready to Respond

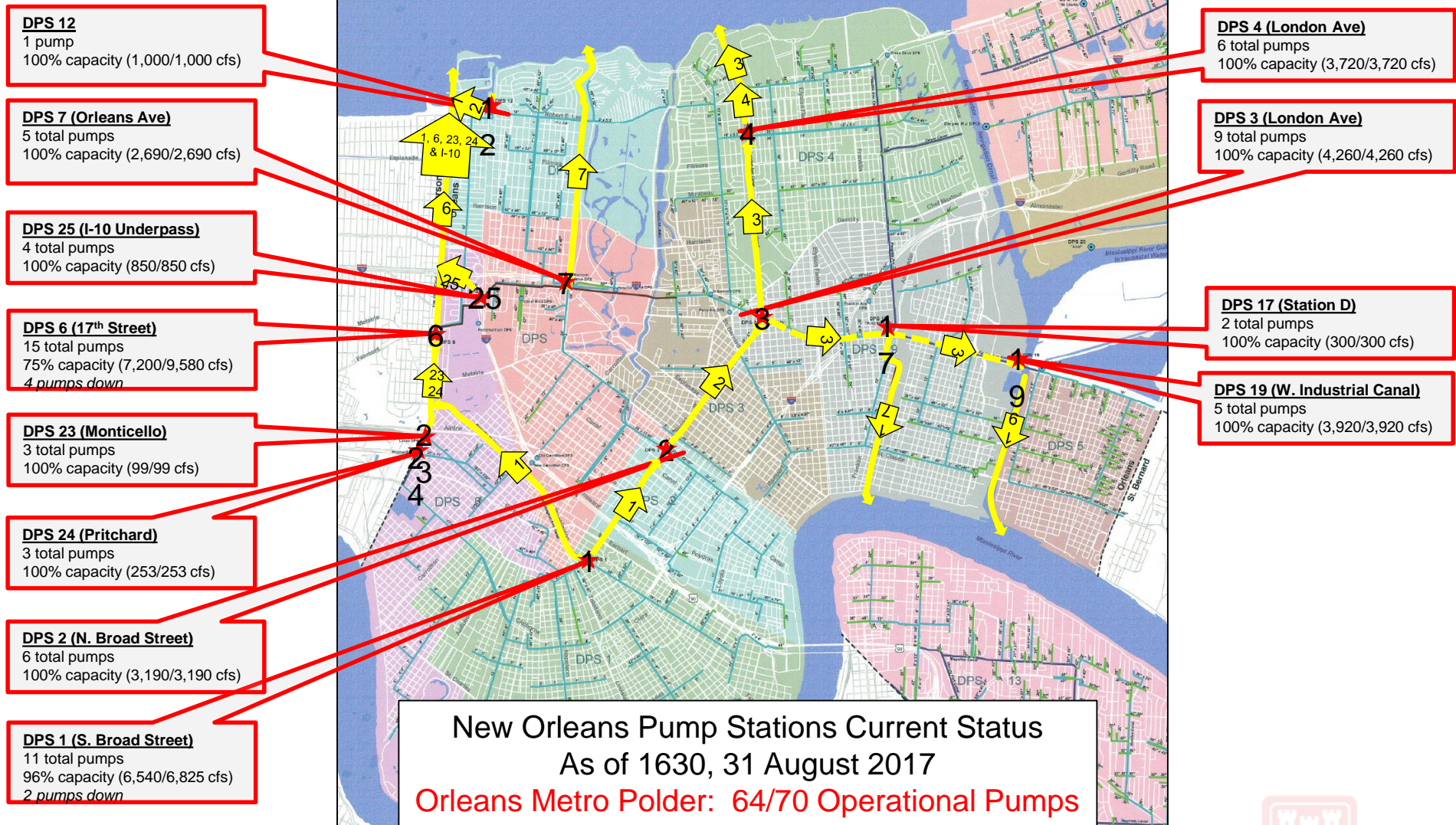
USACE Hopper Dredge Wheeler – At port New Orleans, LA Ready to Respond

- USACE Actions**
- Port Status based in part upon USCG 01 2100 SEP 2017 report
  - SWG is managing work of 23 hydro survey vessels (shown on map, color coded by office/affiliation)
  - Channel centerline and quarters (for depth) and side scan (for debris/obstructions) surveys are priority, more detailed surveys to follow
  - USACE 104' Debris Vessel M/V Snell (Wilmington District asset in area when Harvey hit) working Matagorda Bay, awaiting flows to subside to move to other work areas.
  - GIWW 60% surveyed, northern portion is in progress as conditions will allow
  - Severe currents slowing surveying and assessment of Sabine-Neches Waterway.
  - Decision on call out USACE Hopper Dredge Wheeler pending results of Sabine-Neches Waterway.

Print Date: 8/30/2017  
Time: 11:57:36 PM



# Orleans Metro Polder Status



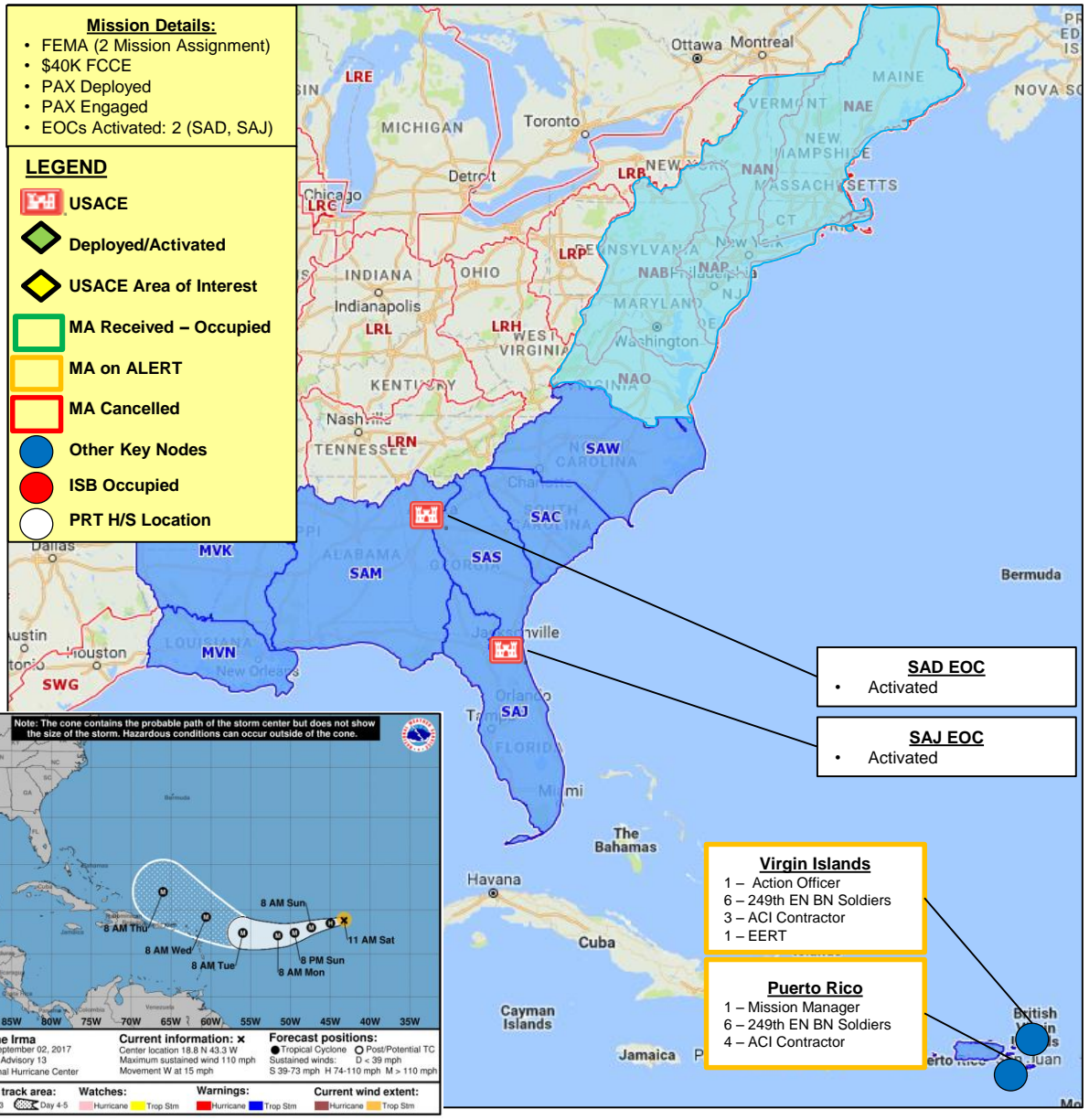
**New Orleans Pump Stations Current Status**  
 As of 1630, 31 August 2017  
**Orleans Metro Polder: 64/70 Operational Pumps**

Sources:  
 • City of New Orleans EOC, Mayor's Brief  
 • Sewerage and Water Board Rehab. Map (2008)





# HURRICANE IRMA



**BLUE:** Hurricane Irma is a westward moving storm system gaining in strength and projected to impact the east coast of the CONUS within the week. Exact impact locations and extents are still unable to be accurately projected at this time.

**SITUATION:** Hurricane Irma is located about 1,030 miles east of the Leeward Islands, moving just south of due west at about 14 mph with maximum sustained winds of 110 mph. Fluctuations in intensity will continue over the next few days as Irma is expected to reach the Lesser Antilles between 05 and 06 SEP. Upon landfall, Irma could cause dangerous wind, storm surge, and rainfall impacts.

- DECISION POINTS:**
- As IRMA continues its approach towards the Lesser Antilles we assess requirements for response efforts to Puerto Rico. Irma is expected to be a major hurricane when it approaches the Lesser Antilles early next week. By 03 SEP we should have projected impacts to make a decision on committing assets to response ICW FEMA.
  - By 05 or 06 SEP, spaghetti models will offer greater fidelity on the path of Irma and potential impacts to CONUS. IRMA could (1) continue its path West into the gulf, (2) turn north toward the Eastern seaboard, or (3) get pushed back into the Atlantic where cooler waters would diminish its intensity. At this point, we can make assessments of potential impacts and begin to make decisions on committing assets to response ICW FEMA.

- STRATEGIC PLANNING:**
- FEMA formed an IRMA planning team to identify resource needs, availability, and concerns.
  - FEMA's top 4 priorities are: Mass Care, Power/Water Restoration, Search/Rescue, and Debris Management
  - FEMA has a contract in place to move 70 generators from Puerto Rico to the US Virgin Islands if needed.
  - FEMA Mission Assignment (MA) for two Power Teams scheduled to deploy to Puerto Rico and Virgin Islands.
  - USACE participated in waterways and ports openings assessment at FEMA, coordinating with SAD.
  - SAD has prepositioned survey boat in Puerto Rico, prepared to deploy.
  - San Juan Harbor recently completed a dredging mission and will maintain a dredge in a protected position

- EARLY CONCERNS:**
- Diesel Supply to maintain power generation until grid is restored
  - ATL/TL cadre may be stretched depending on severity of impacts.
  - Housing PRTs especially may be stretched based on the Hurricane Harvey Housing response

- DIVISIONS:**
- SAD:**
- SAD and SAJ EOCs activated to Level II as of 01 SEP. Ongoing coordination w/ FEMA Region II & ESF-3.
  - SAD published a WARNO for Irma.
  - SAJ has identified ADVON to deploy to PR/VI lead by the SAD Deputy Commander.
  - SAS Power PRT alerted to support SAD AO
- MVD:**
- MVD is focused on support to SWD, and planning preparation for Hurricane IRMA and are in coordination with FEMA VI and FEMA LNO on future requirements.
  - MVM Power PRT alerted to support the US Virgin Islands and Puerto Rico.
- NAD**
- NAD has not activated any EOCs but remain in support of Harvey operations and are standing by for Irma.
  - NAD is participating in a FEMA Region coordination call to discuss the weekend strategy.