



Monitoring Storm Tide and Flooding from Hurricane Isaac along the Gulf Coast of the United States, September 2012

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USGS Isaac Response

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Isaac— By The Numbers

As of 09/07/2012 1230 EST

Alabama						
	WL	WV	BP	RDG	Sensor Total	Ind HWM
Total	13	2	10	1	26	0
Recovered	13	2	10	1	26	-
Surveyed	13	2	-	1	16+10BP=26	0
Posted	12	2	10	1	25	0
Approved	7	2	5	0	14	0
Mississippi						
	WL	WV	BP	RDG	Sensor Total	Ind HWM
Total	56	4	22	7	89	26
Recovered	47	3+1 Lost	19	7	73	-
Surveyed	47	3+1 Lost	-	7	54+19BP=73	26
Posted	47	4	19	7	77	26
Approved	34	2	16	0	52	12
Louisiana						
	WL	WV	BP	RDG	Sensor Total	Ind HWM
Total	41	0	23	10	74	50
Recovered	29	0	18	9	56	-
Surveyed	29	0	-	10	39+18BP=57	50
Posted	28	0	18	10	56	50
Approved	10	0	5	0	15	33
Total						
	WL	WV	BP	RDG	Sensor Total	Ind HWM
Total	110	6	55	18	189	76
Recovered	89	5+1 Lost	47	17	153	-
Surveyed	89	5+1 Lost	-	13	102+47BP=155	75
Posted	87	6	47	18	158	75
Approved	51	4	26	0	81	45



Isaac—Timeline

Ninth named storm of
the 2012 season

First U.S. hurricane
landfall of season

Cat 1 storm forecast,
but large probability for
storm surge in AL, MS
and LA



Isaac—Timeline

Saturday, August 24th

- Cat 1 track south of FL
- Started internal discussions of potential deployment
- AL & MS WSCs deploy small cadre of sensors
- FEMA is contacted

Sunday, August 24th

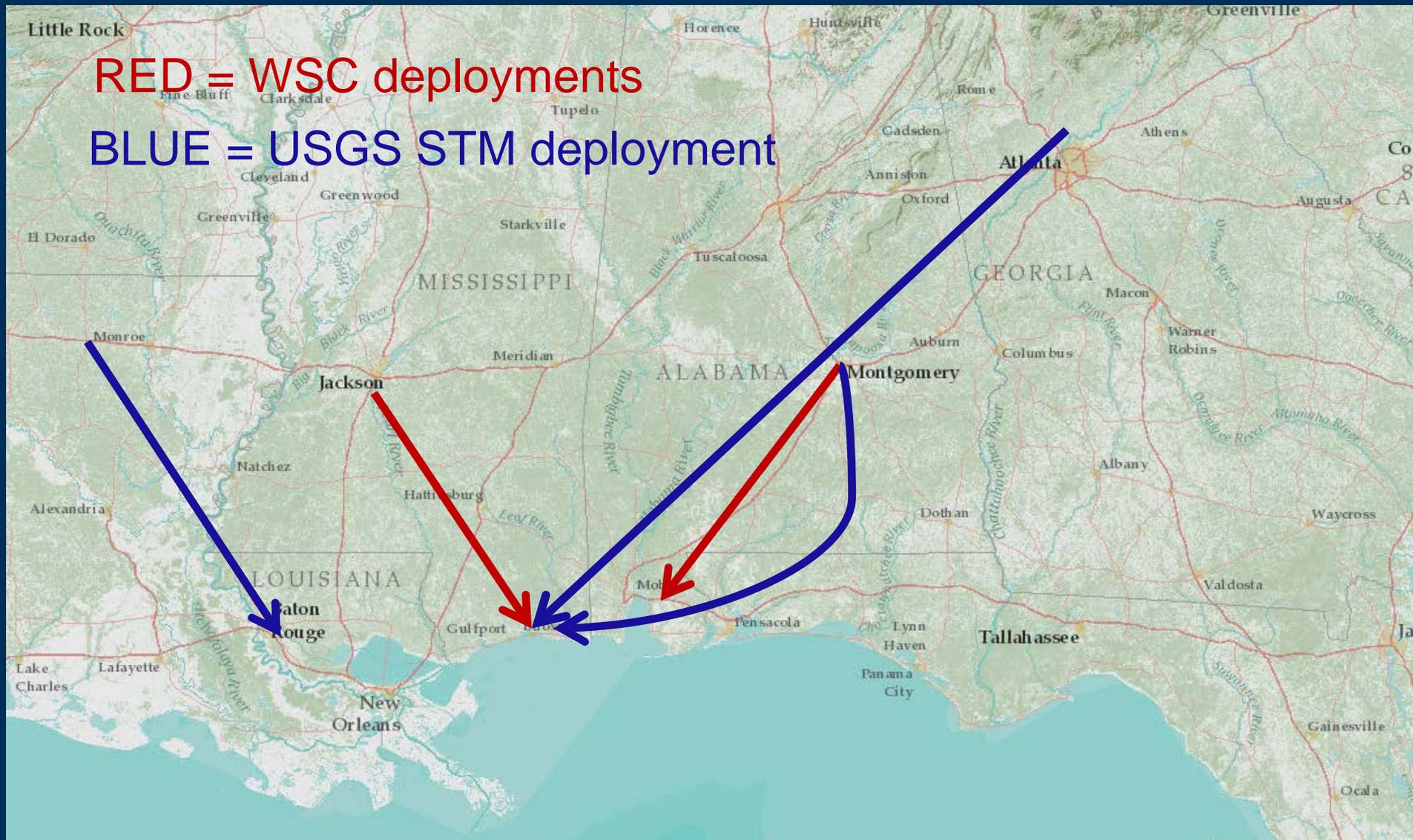
- USGS consults with NHC and NOS
- Due to track and surge forecasts, decision is made to deploy at 11:30 am ET
- GaWSC team preps and deploys to Biloxi, MS
- FEMA discussions ongoing



Isaac—Timeline

RED = WSC deployments

BLUE = USGS STM deployment



Isaac—Timeline

Monday, August 27th

- USGS crews from GA, AL, MS, and LA begin deployment of sensors and RDGs
- Deploy locations shown on Mapper

Tuesday, August 28th

- Provide RDG info to NOAA NHC
- USGS crews complete deployment mid-afternoon
- Irene still Cat 1 but slowed
- Receive verbal approval for FEMA for mission taskings around 7 pm
- Crews return to Ruston & Mobile to ride out storm



Photo by Micael Spooneybarger /Reuters



Photo by Michael Appleton for NY Times

Isaac—Timeline

LANDFALL!

Tuesday, August 28th

Plaquemines/Lafourche
Parishes, LA

7:45 pm ET

80 mph winds

Cat 1



Isaac—Timeline

Wednesday/Thursday

- Storm stalls in south LA
- Field crews rest
- Field crews upload paperwork & photos to ATL
- Crew prep for recovery

Friday, August 31st

- GaWSC crews begin recovery in MS
- LaWSC travel to NOLA
- Crews survey with RTN GPS
- Elevation data begins displaying on Mapper



Photos by Carolyn Cole for LA Times



Isaac—Timeline

Saturday, September 1st

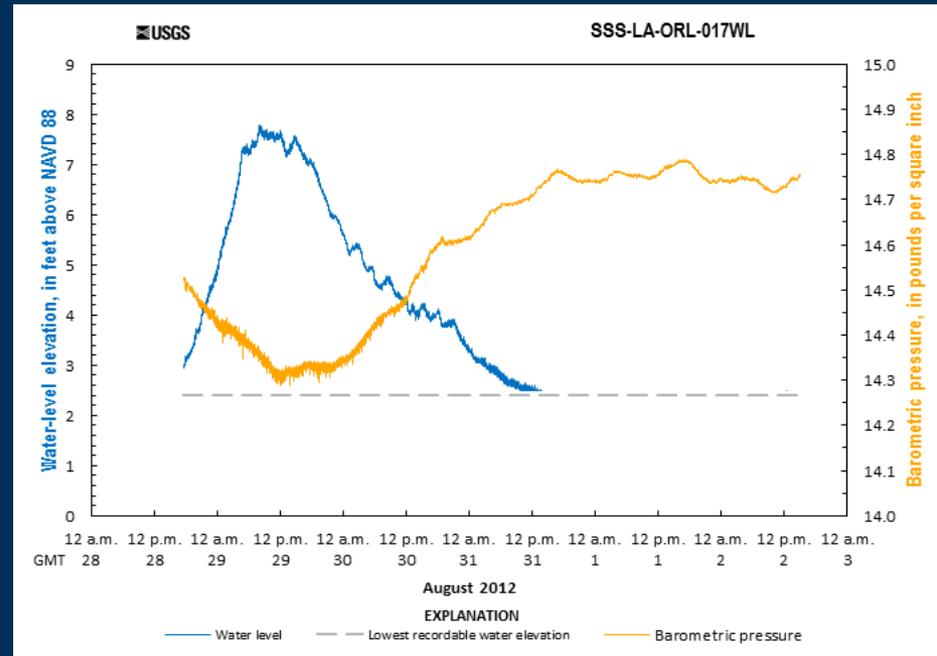
- LaWSC crews begin recovery near NOLA
- Plaquemines Parish and LaPlace hardest hit
- MS sensor recovery ongoing

Sunday, September 2nd

- Recovery in full gear

Monday, September 3rd

- Focus on independent HWMs in MS & LA
- ~80% of sensors showing elevation data on Mapper



Isaac—Timeline

Tuesday, September 4th

- First set GaWSC crews return home
- Second set GaWSC crews mop up remaining sensors and remove RDGs
- LaWSC crews finish recovery and return home

Wednesday, September 5th

- Second set GaWSC crews return home

Thursday, September 6th

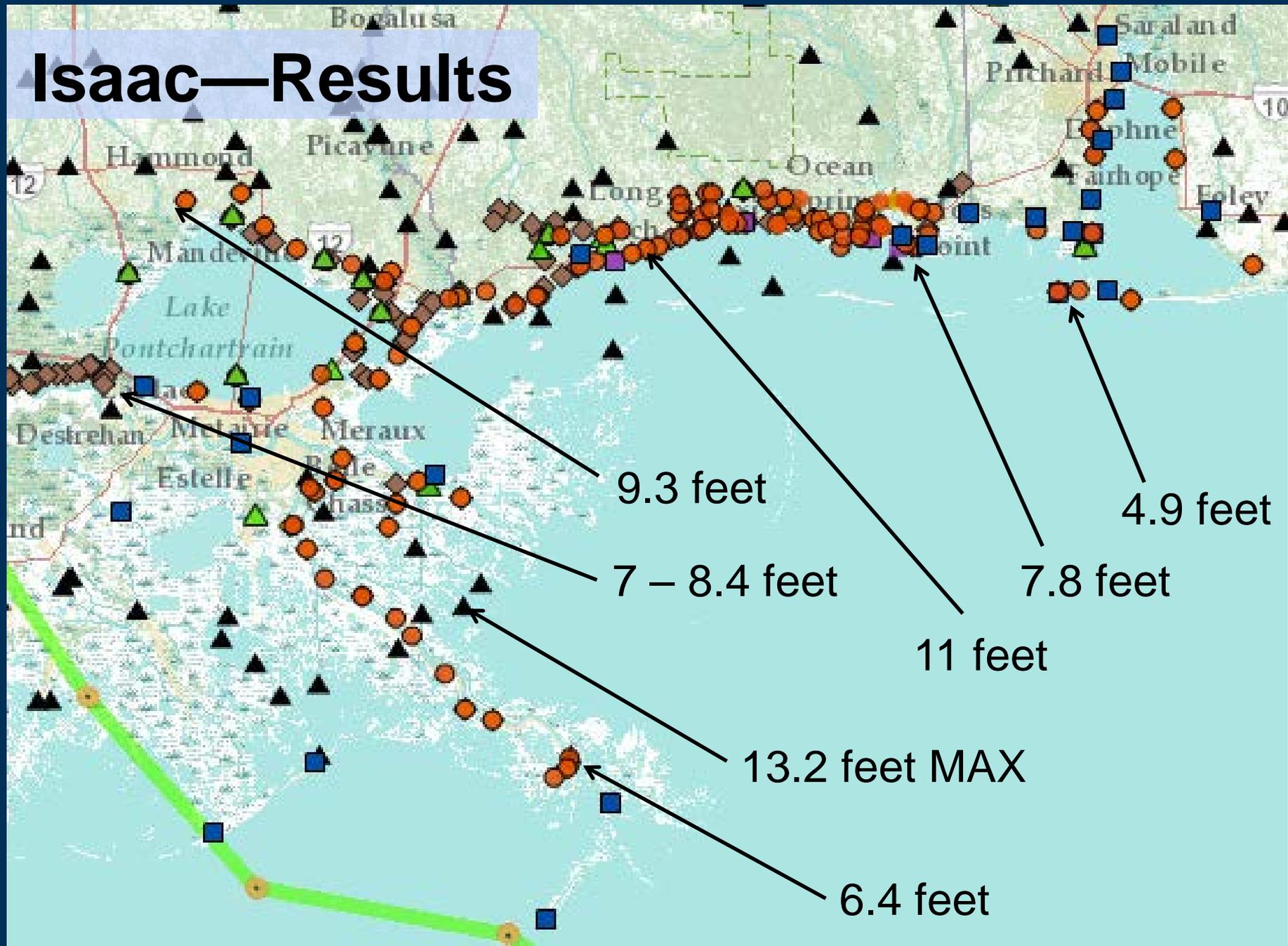
- >90% of surveyed data on Mapper



Isaac—Collaboration

- Four USGS WSCs (2 STM centers) involved
- Pre-storm calls with NHC and NOS using hurricane and surge forecast products
- Pre-storm communication with FEMA to secure mission assignments
- Daily deployment coordination calls
- Daily USGS storm team calls
- Coordination with local cooperators, including NWS offices
- Coordination with USACE New Orleans and Mobile
- Communication with security agencies

Isaac—Results



Irene – Isaac Comparison

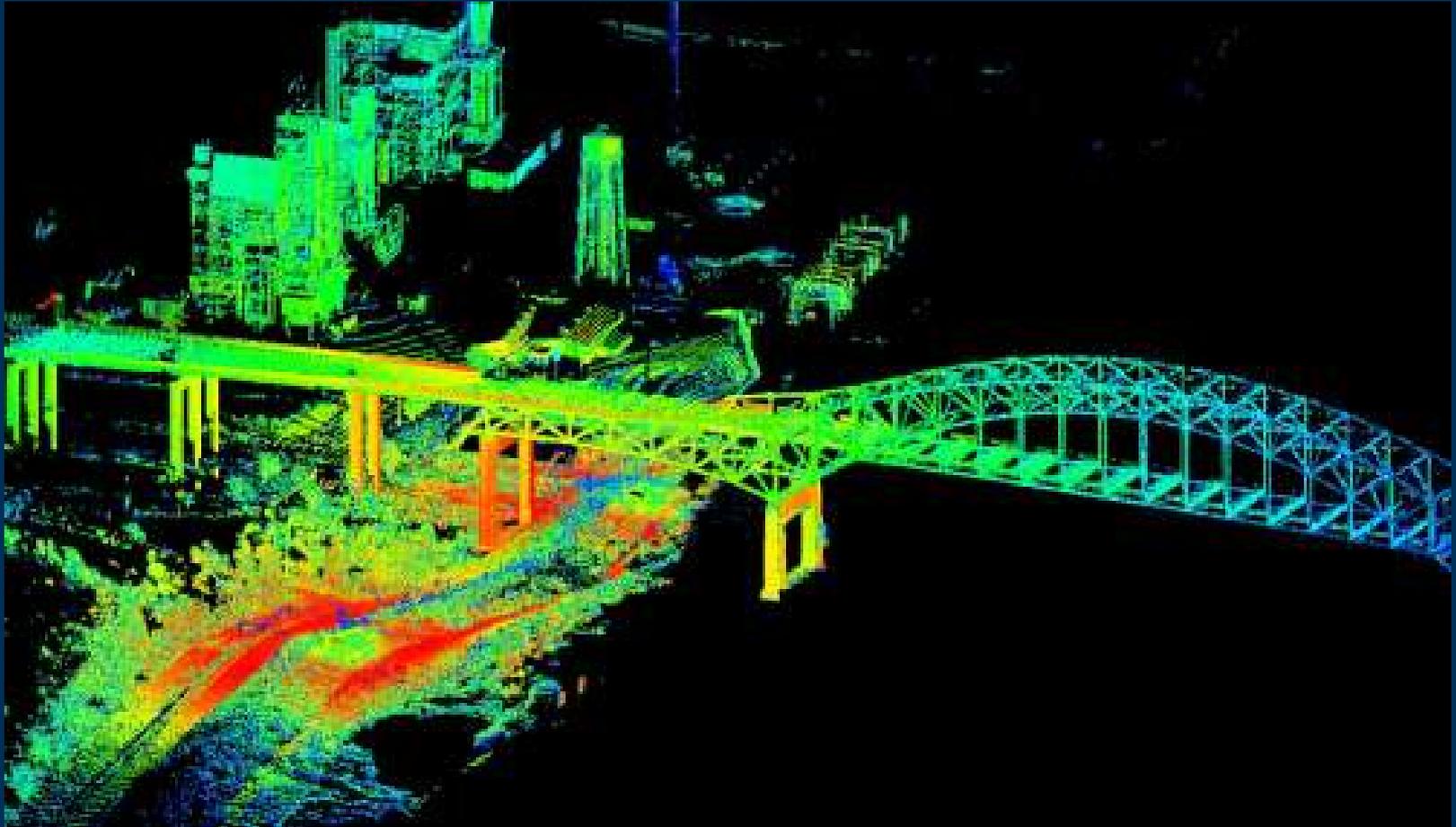
	IRENE	ISAAC
WSCs involved	12+	4
STN sensors total	287	189
Water Level	202	110
RDGs	8	18
Barometric Pressure	75	55
HWMs	137	76
First sites on Mapper after landfall	+5 days	-1 days
First elevation data on Mapper after landfall	+21 days	+2.5 days
% sites with elevation data on Mapper after 7 days of landfall	0 %	>90%

Aerial Oblique Photography

- USGS St. Pete Coastal & Marine Science Center
- Dauphin Island, AL (shown)
- Chandeleur Islands, LA



Terrestrial LiDAR possibilities



What's next...?

- **Collect sensors/HWMs in Plaquemines Parish**
- **Continue to verify/approve data**
- **Review processes and products for improvements**
- **Test new Short-Term Network Application**
- **Continue development of VHF real-time instruments**

Questions?

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