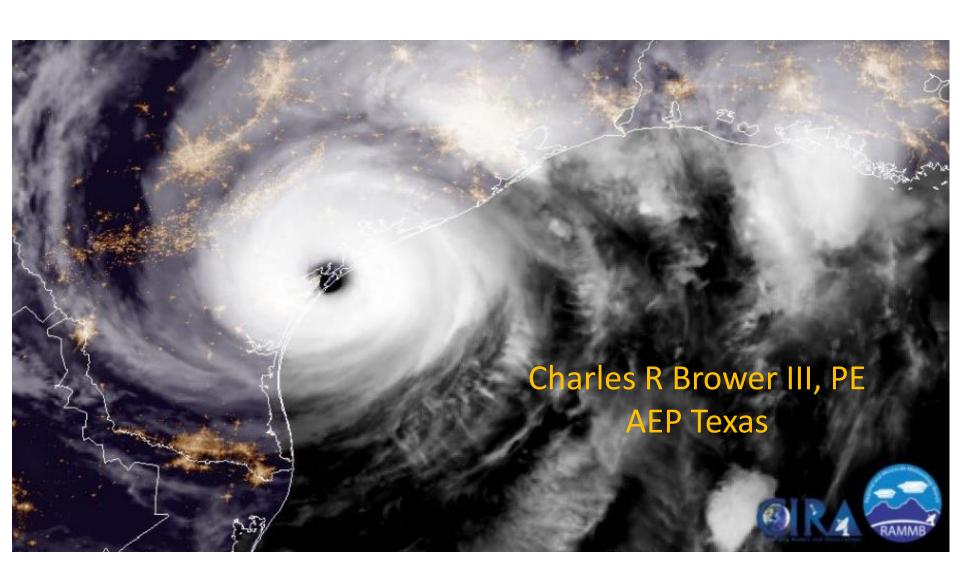


Hurricane Harvey - 2017





Hurricane Harvey Statistics

- Last Category 4 hurricane to hit Texas Carla 1961
- From Tropical Depression to a major hurricane in 40 hours
- 145 MPH Peak Wind Gust Rockport
- 12.5 foot Storm Surge Port Aransas
- 71% Customers outaged in Corpus Christi District

0 5 10

20

30

40



Hurricane Harvey Statistics

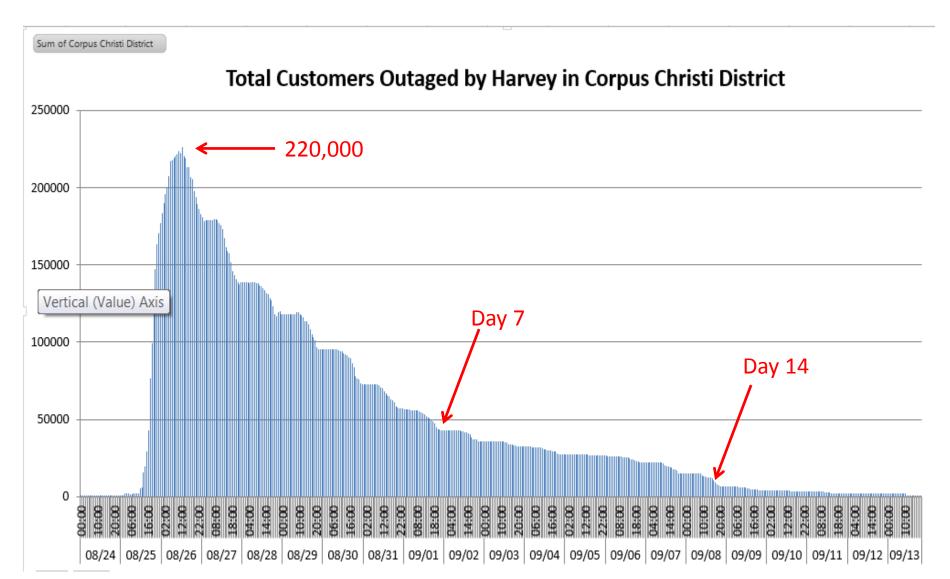
Source: NOAA/NWS *Information in the images below are preliminary*

Hurricane Harvey Peak Wind Gusts - Aug 25-29, 2017 Gonzales Wilson Wharton DeWitt Brazoria Jackson Victoria Matagorda Karnes 83 85 Victoria 88 Goliad Wind Gusts (mph) Calhoun Port 39-73 (TS) O'Connor 102 ___ 74-95 (Cat 1) Bee 96-110 (Cat 2) 103 106 Live Oak = 111-129 (Cat 3) 130-156 (Cat 4) Corpus Hurricane wind 132 Christi Jim Wells gusts are 124 Nueces 86 highlighted in blue. NO ATMOSPHI NOAA 74 Brooks Produced by Michael Buchanan, NWS Corpus Christi

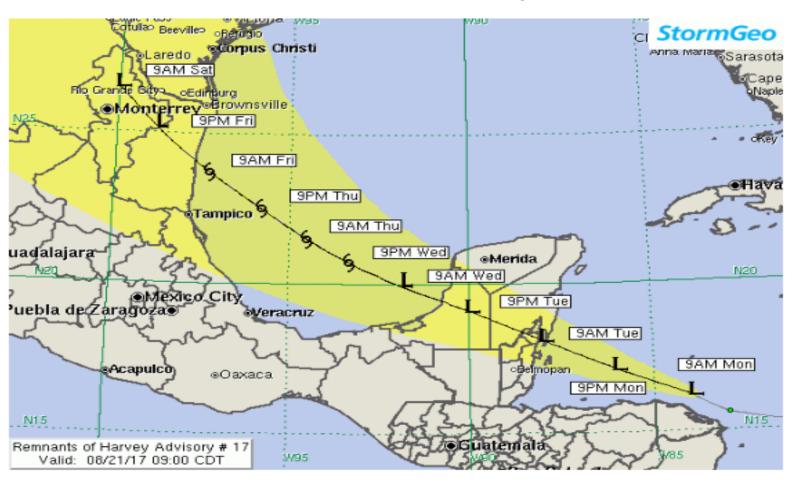
Source: Post Tropical Cyclone Reports from NWS WFOs CRP, BRO, EWX, and HGX



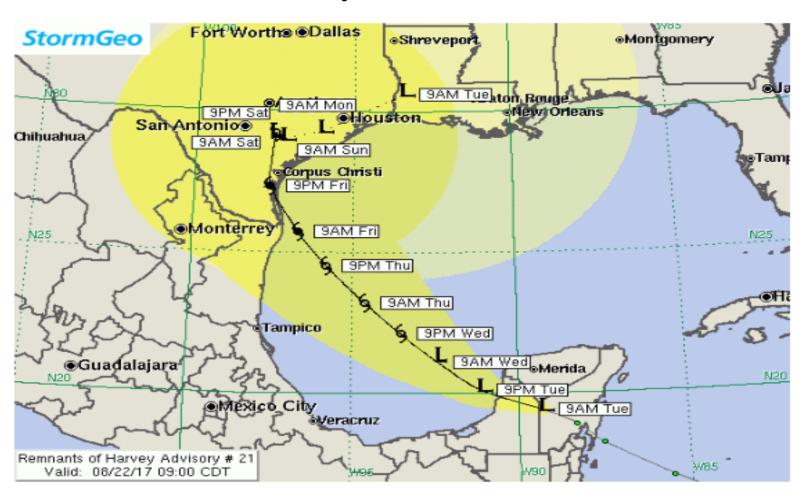
Hurricane Harvey Statistics



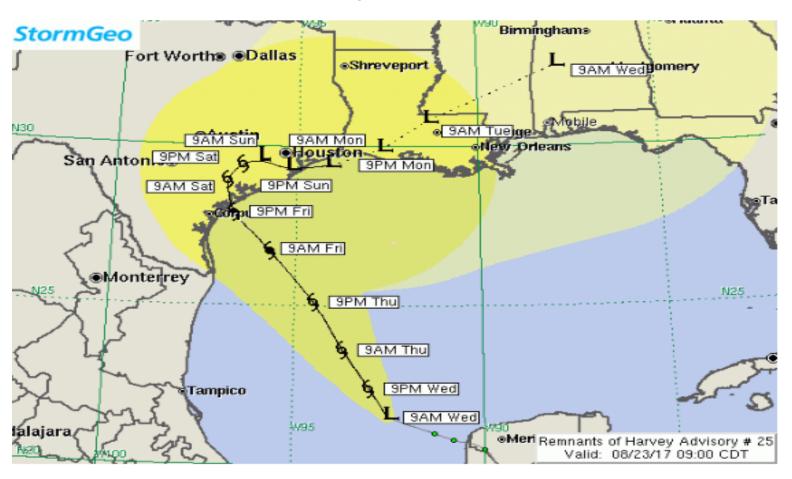
Aug 21 – Four Days before Landfall – Northern Mexico – Tropical Storm



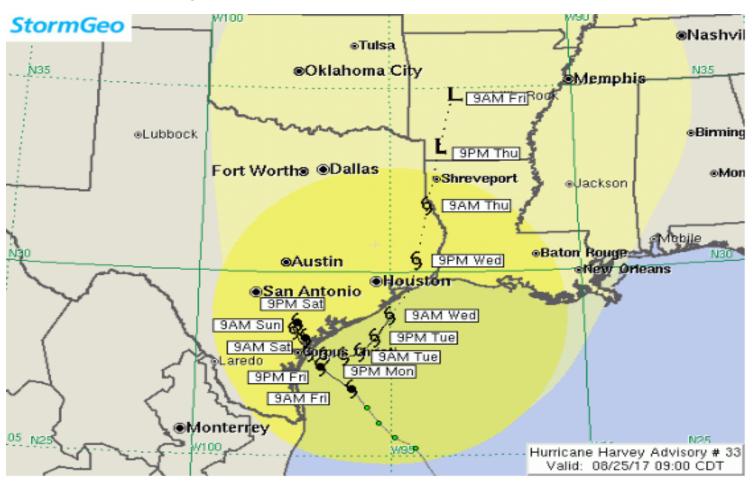
Aug 22 – Three Days before Landfall – South of Corpus Christi – Cat 1



Aug 23 – Two Days before Landfall – North of Corpus Christi – Cat 1



Aug 24 – Day before Landfall – Corpus Christi – Cat 2



Aug 25 – Day of Landfall – Port Aransas – Cat 3



Hurricane Harvey Actual Track





Other Participants in the Restoration Effort

AEP Ohio Disaster Resource Group Pike Electric
AEP Appalachian Power Empire District Plaska

AEP Indiana Michigan Power Evers Electric Powerline Services
AEP Kentucky Power Excel Energy Power Secure

AEP Rentucky Power Excel Energy Power Secure
AEP Public Service Company of Oklahoma Great Southwestern ProForce

AEP Southwestern Electric Power Company
5 Star
Hargrave Power Inc.
Higher Power
QUALITY POWER LINE
Quanta Utility Services

Ameren Illinois Hugo Garcia Electric Quantum Hargrove
Ameren Missouri INTREN Inc. R&J Environmental

Asplundh Irby Construction RS Electric Utility Services
Associated Diversified Services J F Electric Inc. Safety Management Group (S)

Associated Diversified Services J F Electric Inc. Safety Management Group (SMG)

Austin Energy James Power Line SAM Flight Operations

B&B Utility Contractors

Kansas City Power & Light

Service Electric Company

Lawis Tree Service

SEC. Southern Floatric Comp

BBC Electric Lewis Tree Service SEC - Southern Electric Corp.
BHI Energy LineTec Storm Services

Base Logistics Louisville Gas & Electric - Kentucky Utilities Sumter Utilities

Bird Electric LPE, Inc. Sun Coast Resources

Bison Electric Mammoth SUN TECH ELECTRICAL CANFER MasTec T&D Solutions LLC

Centerpoint Mesa Line Services Tech Serv Consulting

Chain Electric Company MYR Group Texas New Mexico Power

City Public Service OG&E Electric Services UC Synergetic

CT Drilling & Construction Oncor Electric Delivery Westar

Davey Resource Group One Source Restoration Willbros T&D Services

Davey Tree Company

One Source T&D

William E Groves Construction Inc.

Davey free Company One Source feeb with an E Groves Construction

David H. Elliot Company Par Electrical Contractors Wright Tree Services

Also, many thanks to Midwest Mutual assistance Group, Texas Mutual Assistance Group and Southeastern Electric Exchange



Restoration Challenges





To address these challenges, specialized equipment and technology, such as drones, ATVs, pictometry and helicopters were utilized during the assessment and restoration efforts.



Transmission Line Damage

345kV line structures down





Substation Damage

Tatton 69-12kV substation – Approximately 15 Miles to Gulf





Distribution Damage





Thanks

Questions?



