HOSTED BY:

LCRA ENERGY • WATER • COMMUNITY SERVICES | AUSTIN ENERGY®

TXMAG

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

HOSTED BY:

BREAKFAST

SPONSORED BY:

ASPLUNDH®

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

HOSTED BY:

WELCOME!

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

HOSTED BY:

AGENDA Thursday, May 18 (Morning)

Breakfast and Registration – Oaks	**7:30 am – 8:30 am**
Welcome to Austin and Keynote Elton Richards, Austin Energy	**8:30 am – 9:00 am**
Opening Remarks – 2023 TXMAG Co-Chairs & Group Introductions Colby Gravatt, CenterPoint Michael Martin, Oncor Electric Delivery All Attendees	**9:00 am – 9:30 am**
Safety Message Chris Huff, LCRA	**9:30 am – 10:00 am**
Break	**10:00 am – 10:30 am**
TXMAG Meeting- Utility Members Only **Resource Procurement/Deployment Process** Colby Gravatt, CenterPoint Brittni Anderson, Oncor City of Brownsville Membership Presentation – Javier Martinez/Eli Alvarez, City of Brownsville	**10:30 am – 11:15 am**
AEIC (Association of Edison Illuminating Co.) Best Practice Update Brittni Anderson, Oncor	**11:15 am – 11:30 am**
Lunch – Oaks	**11:30 pm – 1:00 pm**

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

HOSTED BY:

AGENDA Thursday, May 18 (Afternoon)

2023 Hurricane Forecast & Weather Outlook Bob Rose – LCRA Meteorologist	**1:00 pm – 1:30 pm**
Emergency Restoration **Panel Moderator** – Colby Gravatt, CenterPoint **Winter Storm Mara** – Jeff Bradford and Craig Brooks, Austin Energy and Brittni Anderson, Oncor **Tornado Response** – Sean Cameron, CNP **Severe Wind / Thunderstorm March 2023** – Brittni Anderson, Oncor	**1:30 pm – 2:30 pm**
Break	**2:30 pm – 3:00pm**
TXMAG Working Teams & Recommendations/Opportunities Update Colby Gravatt – CenterPoint	**3:00pm – 3:15 pm**
Emergency Responses – Case Studies and Lessons Learned Mike Bianco – Black & Veatch	**3:15 pm – 3:45 pm**
NRE (National Response Event) Presentation Brittni Anderson – Oncor	**3:45 pm – 4:00 pm**
Wrap-Up/Roundtable for Day 1 Colby Gravatt – CenterPoint Brittni Anderson – Oncor	**4:00pm – 4:30 pm**
Reception – Oaks	**5:30pm – 7:00 pm**

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

HOSTED BY:

Welcome To Austin Keynote

Elton Richards
Austin Energy


Three Stooges Electric
Mutual Assistance Co

New Study Shows:

Power lines never come down with

Wireless Electricity

Empowering the Customer


OFF

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

HOSTED BY:

Thank You

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

HOSTED BY:

Opening Remarks – 2023 TXMAG Co-Chairs & Group Introductions

Colby Gravatt - CenterPoint
Brittni Anderson - Oncor
All Attendees

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

HOSTED BY:

Safety Message

Chris Huff

Safety Manager, LCRA

DISASTER PREPAREDNESS

Health & Safety Considerations

FOCUS ON SAFETY

Agenda

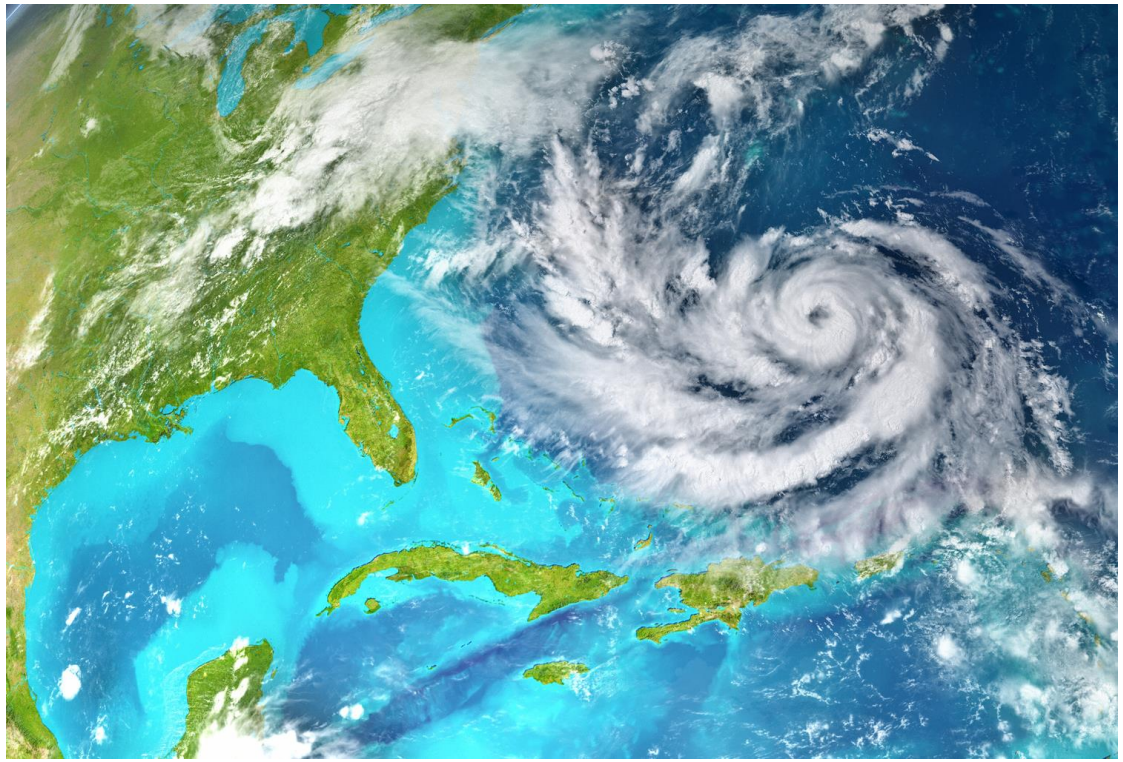
- Introduction
- Disasters in Texas
- Outage safety considerations
- Home safety storm prep

Disasters in Texas

Floods

The Entire state of Texas is at risk of floods during times of heavy rainfall. Flooding is the most common natural disaster in Texas.

Hurricanes



Texas is only 2nd to Florida in the average number of yearly hurricanes.

Wildfires

Due to drought conditions throughout the state, Texas is prone to wildfires. With an average of more than 900 incidents each year..

Tornadoes

Texas has the highest number of tornadoes than any other state; averaging 139 per year.

Outage Safety Considerations

Outage Safety Considerations

Increased risk for SIFs (serious injuries & fatalities) due to non-routine equipment repairs on unfamiliar and damaged systems

- Enforce pre-job briefings & safety stand down protocols
- Ensure that “ETRs” do not override job safety
- Consider sending more than the minimum required number of safety reps to all outages
- Create outage “help channels” for hard to restore situations

Outage Safety Considerations

Increased Human Error

- Monitor work times during outages to ensure workers don't exceed 16hrs
- Check in on crews periodically (assign a small team to this function)
- Encourage fatigue reporting by crews (it is ok to not feel well and request shorter workday)
- Ensure that workers families who are impacted by events are taken care of prior to approving workers for mutual assistance duties

Outage Safety Considerations

Backfeed Prevention

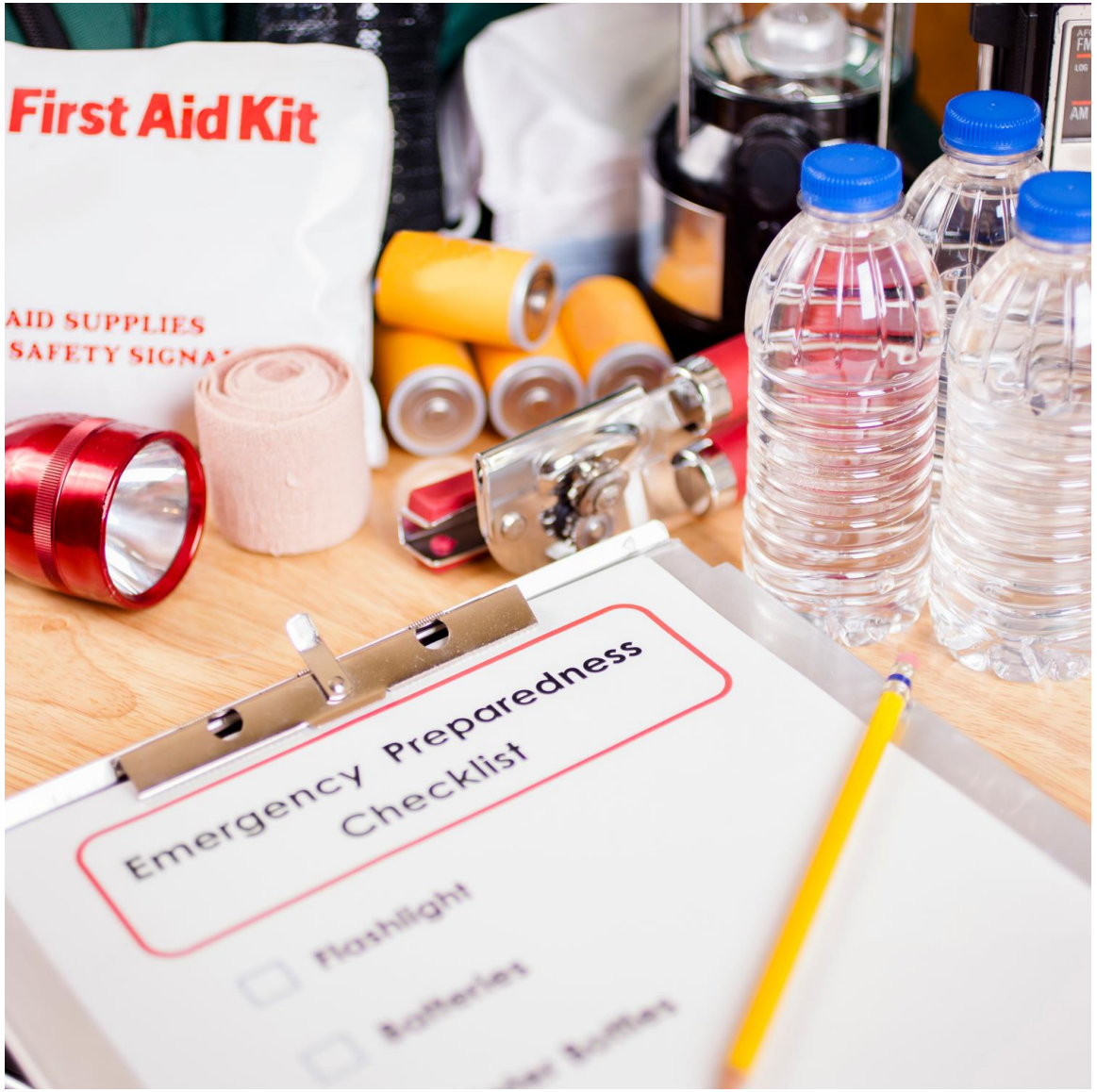
- Run community backfeed safety campaigns & messaging at the beginning of storm season
- Implement worker backfeed prevention safety training & messaging prior to storm season
- Ensure that outage workers have proper FR, PPE & rubber goods for outage work
- Perform PPE, rubber goods & FR clothing inspection on crews during outage

Outage Safety Considerations

911-Emergency Services Delays

- Hospitals in small towns/rural may not have power
- Calling 911 may take several tries due to cellphone service interruptions
- Ensure that workers take into consideration the nearest hospital and response time delays due to the outage and have a plan to treat potential injuries
- Ensure that workers participating in mutual response have up to date CPR/FA certifications
- Send additional first aid kits and supplies with workers supporting outage
- Send AED's to outage with crews
- Consider table top exercises involving worker injuries during outage

Preparing Your Home



Preparing Your Home

Outage Workers Home Safety Plans

- Workers need to ensure that their home is safe/secure prior to leaving
- Provide talking points for workers to share with their loved ones prior to leaving
  - Emphasize potential delays in communication during outage
  - Provide additional emergency numbers to call if can't contact family member working the outage

SAFETY

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

HOSTED BY:

BREAK

SPONSORED BY:

CENTER PHASE ENERGY

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

HOSTED BY:

AEIC (Association of Edison Illuminating Co.) Best Practice Update

Brittni Anderson
Oncor

AEIC Storm Team Best Practices

1. Scalable Storm Plans
2. Post Event Switching
3. Decentralize Operations
4. Transfer of Control
5. Developing and Maintaining ETRs
6. Communication Plan
7. Staging/Processing/Sites and Logistics Plan
8. Materials Acquisition and Delivery
9. Emergency Materials Management
10. Pre-Staging Best Practices
11. Storm Packets
12. Self-contained Storm Teams
13. Damage Assessment
14. Use of non T&D Personnel
15. Mobile Dispatch Technology
16. Road Clearing/Wires Down
17. On/Off System Support Resource Readiness
18. Communication wire / Fiber

Scalable Storm Plans

Storm Plans must be "Scalable" and flexible such that a utility can prepare and respond effectively to all hazards and magnitudes of system damage that might be encountered.

- **Be able to scale up to the worst case scenario.** Worse case should be considered half of customer base out of service at a minimum and crew needs are 10 to 15 times the normal workforce on the system
- **Maintain predefined levels with some definitions.**
  - Level of Decentralization needed for logistics (staging areas, lodging, material lay-down areas)
  - Level of Decentralization needed for Operations (multiple control centers, additional personnel, field dispatching, transfer of control)
  - Appropriate communication strategy
  - Involvement of non-operating personnel
- **Prediction or early assessment methodology for level of activation - Very Important to Recognize "early warning signs" and react with appropriate level of response.**
  - Utilize or develop a method or program for predicting outages and system damage and resource requirements for an anticipated event
  - Use historical information in the development of the storm plan to help define the necessary levels of response and trigger points and resource requirements. Some information that could be used is: Type of Event, Number of Outages, Number of Substations/Path of Prior Storms/ Circuits Out, Initial Number of Cases of Trouble, Manpower utilized, Length of Restoration

Post Event Switching

Immediately utilize all qualified switching and crew personnel to patrol locked out feeders to a point, open line switches and re-energize substation breaker

- Isolate damaged facilities and alternately feed sections of line to pick up as many customers as possible prior to beginning system repairs.
- Don’t tie up lineman on replacing infrastructure immediately following the event.
- Train non-operating personnel to take over wire sitting duties (if required) such that all operating personnel remain available to perform switching.

Remove all non-switching related duties from system operators such that their sole focus is safe, effective switching

Decentralize Operations

- **When possible, shift system operations and dispatching to satellite locations (local operating centers, subs or staging areas). The operational decisions for the area assigned can be made more efficiently and can remove the bottleneck from a central operations center**
- **Personnel in charge of the restoration responsibilities at these satellite locations should assume responsibility for prioritizing and dispatching work assignments to damage assessors and line crews, updating the OMS, and controlling the switching for these areas**

  - This helps host utilities assign work to mutual assistance resources much more efficiently. Decentralizing operations into smaller operations centers can help reduce restoration times as mutual assistance crews will be able to focus more time restoring power and less time waiting for a central operations center to dispatch work or switching instructions.

  - Not doing this creates a bottleneck during a major event.

Transfer of Control

Have established electrical system operating procedures in place to allow for turning over control of a substation, feeder or area to self-contained storm teams from another utilities to manage restoration efforts in specified areas

- Transferring control will significantly reduce delays by allowing these storm teams to perform their own damage assessment, switching and dispatching of work without waiting on the host utility personnel to become available. This frees up the host utility to better allocate its personnel to support contract crews or other smaller storm teams.
- Transferring control can further help to improve communications between the self-contained storm teams and the host utility. It reduces confusion, allows a greater sense of ownership and reduces workload on system operators. It also allows for more timely and accurate Estimated Times of Restoration (ETRs).

Developing and Maintaining ETRs

Non-Major Storm – ETRs automatically assigned by OMS system

- Distribution Control/Operations Center monitors and manages outages and default ETR until dispatched to crew.
- Crew assesses outage and determines if ETR can be met
- If the ETR can't be met, crew provides updated ETR
- Distribution Control/Operations Center manages new ETR & request status prior to ETR expiring
- Complete order when service restored

Major Storm – Default ETR is turned off or over ridden

- Communicate to customers that we are assessing damage and will provide an ETR upon completion of the damage assessment
- Develop ETR strategy with the following targets: Provide ETR as soon as have sufficient information, System ETR within 24 hours of end of storm - Use data from past events, current storm information, initial damage assessment, and ETR estimation tools to establish system ETR, Circuit/feeder level ETR - 48 hours to 72 hours depending on extent of damage, Device/customer level ETR – when crews assigned and detailed ETR is available
- Incident Command/Storm Director approves System ETR before communicating
- Storm plans include roles responsible for updating OMS and monitoring ETR status relative to goals

Communication Plan

- **Address needs and set expectations of all internal and external stakeholders throughout the entire course of the event. The message needs to be Consistent, Proactive, and Visual**
- **ETR must be timely, accurate, updated and more granular with time**
- **Defined Protocol for Formal Status Updates – After 24 hours give an overall timeframe for ETR, After 48 hours give an ETR by circuit/feeder level, After 72 hours give an ETR by local area**
- **Encompass all levels of organization in the Communication Plan**
  - Corporate - Consistent Message - Information/Data comes from one centralized source, Proactive Stance on Message - Shape the Message, Information out prior to event to show Preparatory Steps
  - Emergency Operating Center - Establishing/Strengthening Relationships w/ local EOCs, Provide the information for Regional/State Message for picture of damage and restoration process, Defined Protocol for Formal Status Updates
  - Field Operation - ETR's - timely, accurate and updated, more granular w/ time, wire down/priority communication
- **Provide daily updates to all employees (including field workers) that is consistent with external message**
- **Utilize all forms of communication channels**
- **Establish/Strengthen Relationships at local level and have individuals assigned to Key Contacts – PSC, Governor's office, Legislative Leaders, County, Municipal Officials, State EMA/FEMA, State Patrol, etc.**
- **Have a Communication Plan Outside of the Event to update City and County officials and Media Representatives on Utility's Emergency Preparedness Plan**

Staging/Processing Sites and Logistics Plan

Create a blueprint for multiple sites in strategic locations

- Determine capacity of site
- Locate in the proximity of the storm damage
- Allow for smooth traffic flow - Preprint directional signs to facilitate entrance/exit
- Communications ability (T1 Line, cell, internet, radio, etc)
- Adequate parking
- Ensure proper security
- Fueling at night

Have plans in place for all logistics needs

- Organize, document, train and practice for all logistics needs..
- Document, contract and prioritize:
  - Housing (Hotels, Brick & Mortar, Sleeper Trailers, Tents)
  - Food (Catering, Restaurants, Box lunches, etc)
- Set up multiple sites and times for safety briefings, badging, etc
- Provide adequate staffing to facilitate processing and on-site needs.
- Daily communications with site management with updates on needs, resources, outage & safety updates, etc
- Utilize busing to transport crews to and from hotels

Material Acquisition and Delivery

- Have Vendor Agreements/Contracts in Place for Storm Stock prior to the event.
  - Impractical to maintain sufficient inventory for major storms.
- Have vendors deliver directly to Staging Sites and Job Sites
- Have Pre-made Storm Kits on Hand and material trailers with basic materials stored and ready to dispatch.
- Have a Material Substitution List
- Materials Mutual Assistance (not used for blue-sky day events)
- When shortages are predicted, request material needs via Mutual Assistance quickly. Allow some flexibility in matching materials to your specs. Make timely and very specific request via mutual assistance.
- Have teams (Material Runners) ready to deliver major materials (transformers, poles, etc) to job sites before restoration teams arrive on site. This will reduce idle wait time and travel of crews and increase crew productivity.

Emergency Materials Management

- Currently the vast majority of storm material requested during an emergency event and/or extreme temperature event is procured on a per ticket basis which can lead to timely restorations.

  Current State

  - Once a work order has been created, crews are assigned to the respective materials
  - Crews deliver materials to be installed on site during repair/replacement
  - Crews make repairs/replacements and haul off old or damaged equipment which can cause unnecessary time delay for future WO ETORs.

  Ideal State– Crews sole focus is to make repairs!!

  - Upon event creation, crews will dispatch to WO location while “runners” or “hot shots” gather material for the respective WO.
  - Once on site, hot shots will drop off material and haul off any old/damaged material from site.
  - While assigned WO crews are making repairs, hot shots are already en-route to next WO location so that material is on site prior to crew arrival.

  Future State

  - Electronic tracking of all materials per work order
  - GPS tracking of materials to give better ETA which will in turn drive ETOR
  - RFID Scan of all materials prior to departure and scan upon arrival to prevent missing material during transit.

Prior to having crews enroute to your service territory for prestaging the following items are recommended to be identified and stood up:

- Identify alternative routes due to changing weather predictions/conditions including any emergency declarations
- Identify and secure sites for mobilization of pre-staged crews prior to the decision to stand up
- Hotels and parking sites should meet weather event impact levels (CAT 5 hotel, equipment impact)
- Identify the type of crews for prestaging (refer to resource typing sheet) post RAMPUP matching and allocation call
- Pre-identified areas for onboarding (reduce the bottleneck) with the ability to convey to responding crews:
  - Where they will be sleeping
  - Where they will get their next meal
  - Contact information of the host utility
- Contingency planning around accommodations (lodging and food)
- Set up a regular communication cadence with responding utilities for responding crews (scheduling and coordinating show up times and locations)
- Use resource management tool (ex. MARC, Storm Manager, ARCOS) to inbound crews and proactively communicate crew destination/staging area
- Reference “Pandemic Best Practices”
- Verify that crews identified for prestaging have been sent a safety orientation that can be **taken prior to their arrival**

Storm Packets

- Work assignments / packets should be prepared by night team (9pm – 6am)
- Include: outage info, feeder map, directions to jobsite/staging site, clearance/switching orders, ground placements, switch locations/alternate feeds, established work location/boundaries, damage assessment forms.
- May be Electronic or Paper
- Need to have a continuous workflow to minimize downtime of evaluators and crews waiting on work. Crew and evaluator leaders can immediately pick up their packet and move to the assigned feeder or area.
- Distribute to Crew Coordinator at beginning of work day

Self-contained Storm Teams

Responding utility

- Send advanced team ahead of crews to evaluate conditions, meet with local leadership
- Storm team may include Supervision, Crews, Troublemen, Evaluators, Fleet, IT, Security, Logistics Support, Storm Command Trailer, Supply Chain, Safety logistics, Administrative Support, Pole Setting Crews, Vegetation Crews

Host utility

- Communicate with sending utility to define makeup of team immediately following mutual assistance call. Clarify terminology, define work/safety practices, worker capabilities, bargaining unit issues, unique characteristics of geography of host utility
- Assign self-contained teams to specific geographic areas
- Utilize GPS kit, tracking devices, common website that displays GPS locations

****Reference "Crew Support Levels" within the appendix section of this presentation ****

Damage Assessment

Perform initial assessment to determine severity of the damage

- Use visual sampling for initial, quick assessment and compare to data from past events to help determine resource needs as soon as possible .

Comprehensive assessment while resources are in route

- This will allow restoration assignments to be available once crews arrive at the staging site. This prevents delays in getting crews to the job sites.

Provide incoming resources with a list of terminology, symbols, and definitions.

Utilize technology – have a plan in place to capture storm assessment data:

- This may include the use of laptops, smart phones, tablets, UAS teams.
- Tie into OMS, touch screens and drop down menus, produce work packets (paper or electronic), maps on storage devices and/or cloud storage for mutual aid teams, GPS, review compatibility with MA partners, mobile printers).

Backup plan to manually capture damage assessment data if technology is unavailable (cell phones, internet).

Use of non-T & D Personnel

Ensure all company employees have pre-defined storm roles and are trained prior to event to serve as:

- Damage Assessors / Drivers
- Foreign Crew Escorts
- Line Crew Assistance
- Material Delivery
- Wire Down Guard
- Logistics Coordinator / Meal Delivery
- Call Backs
- Family Assistance

This will increase the manpower available for restoration and increase efficiencies

Mobile Dispatch Technology

- Allow field employees to input create/dispatch and close-out jobs.
- Evaluate technology compatibility with Mutual Assistance partners.
- During large events, equip Guides leading MA teams with a computer (and maybe printer) to update OMS, print jobs, etc.
- Paper packets should always be available as a backup in case of communications issues.

**The use of Mobile Dispatch is especially helpful when completing single event jobs to help reduce the opportunity to miss these isolated trouble cases.

**Non-native crews seem to work better and are accustomed to paper job packages.

Road Clearing/Wires Down

- Have non-Operating personnel trained to address wires down.
- Have a process in place to work with City Crews, County Crews, Fire, Police, EOC's, and the Public for handling hazards
- Have Wire Down Reports in Outage Management System
- Process for Wires Down and Prioritization
  - Team previews field to identify if electric utility wire or telephone/cable.
  - Submits ticket for cut/clear OR places field sign indicating wire has been inspected and is telephone/cable
  - Types of employee – Evaluators, OH Pole Inspectors, Street Light Repairmen, Meter Mechanics, Meter Journeyman
- Conduct Annual Training

On/Off System Support - Resource Readiness

Host Utility - Prior and during the triggering of the mutual aid lever for storm support, identify what type of resources are needed and could potentially be utilized during a specific time during the restoration process

- Reference "Work Crew-Resource Type" within the appendix section of this presentation
- Reference "Support Team- Resource Type" within the appendix section of this presentation
- Reference "Crew Support Levels" within the appendix of this presentation
- Reference planning checklist for host utility within appendix of this presentation

Responding Utility – Identify resources that are available and proactively identify what level of crew support you can offer and what level of specialized support

- Reference "Work Crew-Resource Type" within the appendix section of this presentation
- Reference "Support Team- Resource Type" within the appendix section of this presentation
- Reference "Crew Support Levels" within the appendix of this presentation
- Reference planning checklist for responding utility within the appendix of this presentation

Communication Wire / Fiber

- Have electric representative liaison along with communications company liaison engaging early within the local or state EOC (Emergency Operations Center) for consistency, coordination, and line of sight during an event
- Look into possibly initiating joint locates when "cultivating" is needing to be performed due to damage assessment (replacing poles, URD wire, etc.)
- Understand the emergency one call locate procedures and resource needs due to identified damage.
- Have an internal and external communication process around wire down / damaged
  - Internal – communicate expectations around communication cable "clearing" up and making safe process
  - External – communicate process for wire down identification to appropriate stakeholders (power utility & communication)
  - Establish, at the local level, a communication path between the utility and comm. space for points of contact for expedited response when needed.

Work Crew - Resource Type

Type	Description	What they can do	Comments
1	Handle end-to-end Distribution Work Crews	Feeders, Set Poles/Wire (any size), Troubleshooting, one/two man trouble tickets	Determine whether OH, UG or both
2	Heavy Distribution Crews	Feeders, Set Poles/Wire (any size)	Crews not able to break down into service work
3	Service / Secondary Crews	Secondary / Drops	Doesn't require primary qualification
4	Network Crews	Troubleshooting/Remediation	Are they able to perform OH service work (trucks/ladders)? Require Liaison?
5	Underground Crews	Troubleshooting/Remediation	Are they able to perform OH service work?
6	Substation Crews	Issue Remediation	Substation specific
7	Transmission Crews	Line Section Only	Transmission specific. Do they have proper tools to perform distribution work if requested?
8	Vegetation Management	Ensure lines are clear ahead of work	First wave after isolation
9	Field Service Reps	Customer contact/meter touch/wire sitters	Work isolated to the meter
10	Grounding Crews (2man metering)	Ground for VM crews	Often work with Veg Mgmt
11	Wire Watcher Crew	Onsite resource for making sure wire down remains safe	Before and during event

Support Team – Resource Type

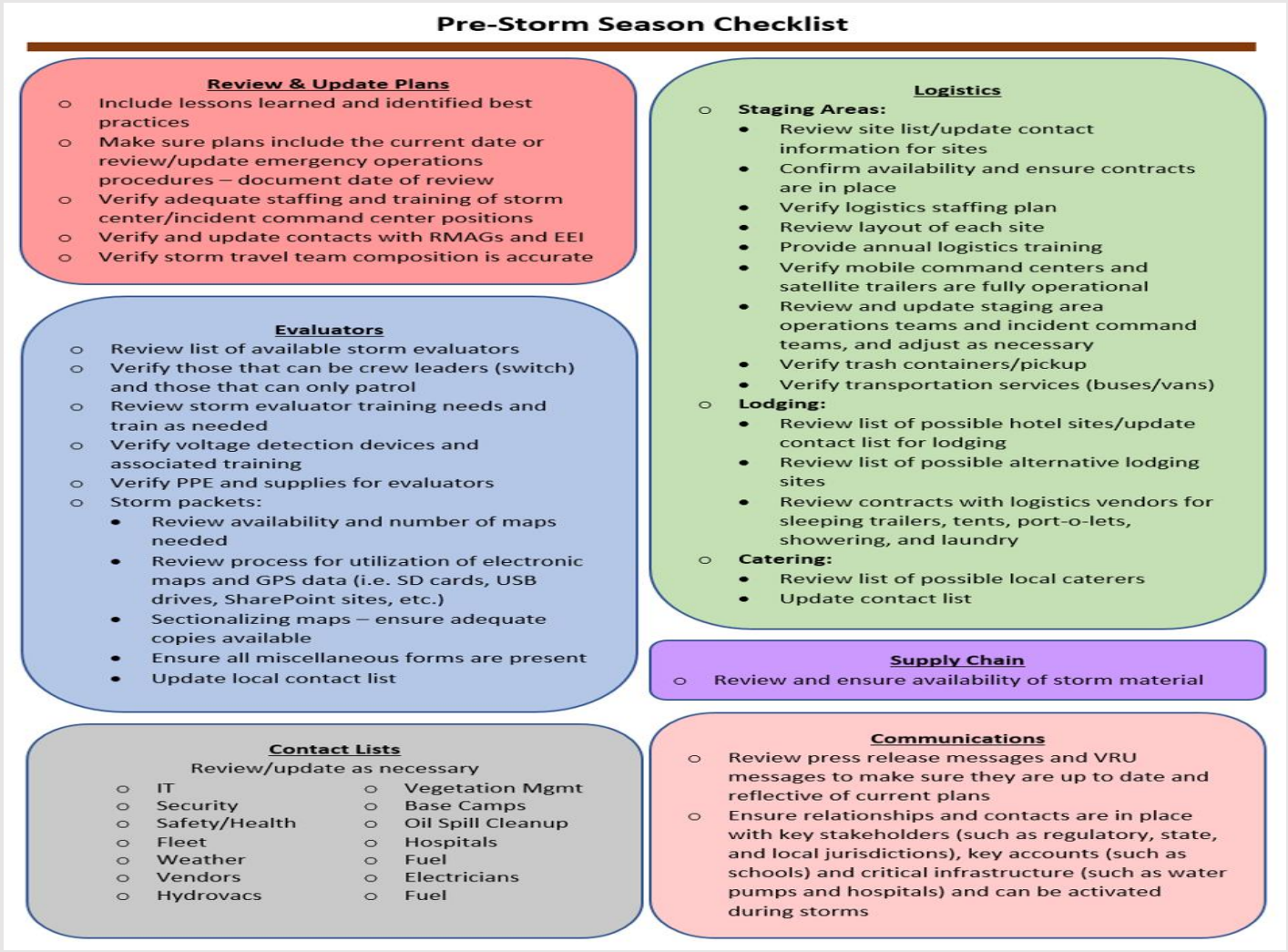
Type	Description	What they can do	Comments
1S	Incident Management Team (IMT)	Manages event	IC, OSC, PSC, PIO, Safety - ex: can run staging sites & coordinate work
2S	Management Team	Oversees crews	
3S	Logistics - site	Oversees staging sites	
3SA	Logistics - other	Material/agency coordination/virtual assistance	
4S	Damage Assessment	Determine field damage	
5S	Air Operations	UAS/Helicopter/Fixed wing use	
6S	IT/Telecom/Test Engineers	Communication support, work with fiber (splicing)	
7S	System Operations Control	Control/assist with dispatching and switching	
8S	Virtual Operations Support	Back office support	Ex: Complete using SAP if access
9S	Call Center Support	Provide assistance with incoming customer calls	
10S	Vegetation Mgmt Support	Foresters - organizing Veg Mgmt crews	Often work next to Ops
11S	Civil Crew Mgmt	Pole digging, Hydrovac	
12S	Contract Line Crew Coordinator	Coordinate work of Line Crews	

Crew Support Levels

Resources	Level 1 Base	Level 2 Enhanced	Level 3 Self-Contained
Crews/Supervisors/Safety	X	X	X
Logistics Support: Traditional (Restaurant & Hotels)		X *	X *
Logistics Support: Non-Traditional (Catering & Sleeper Trailers, Bathroom/Showers)			X *
Fleet (Mechanic / Tires)	X	X	X
Security		X	X
Damage Assessment		X	X
Manage Staging Area			X

* Ensure good communication to prevent acquiring duplicate resources

Pre-Storm Season Checklist



Pre-Storm Season Checklist

Review & Update Plans

- Include lessons learned and identified best practices
- Make sure plans include the current date or review/update emergency operations procedures – document date of review
- Verify adequate staffing and training of storm center/incident command center positions
- Verify and update contacts with RMAGs and EEI
- Verify storm travel team composition is accurate

Evaluators

- Review list of available storm evaluators
- Verify those that can be crew leaders (switch) and those that can only patrol
- Review storm evaluator training needs and train as needed
- Verify voltage detection devices and associated training
- Verify PPE and supplies for evaluators
- Storm packets:
  - Review availability and number of maps needed
  - Review process for utilization of electronic maps and GPS data (i.e. SD cards, USB drives, SharePoint sites, etc.)
  - Sectionalizing maps – ensure adequate copies available
  - Ensure all miscellaneous forms are present
  - Update local contact list

Contact Lists

Review/update as necessary

- IT
- Security
- Safety/Health
- Fleet
- Weather
- Vendors
- Hydrovacs
- Vegetation Mgmt
- Base Camps
- Oil Spill Cleanup
- Hospitals
- Fuel
- Electricians
- Fuel

Logistics

- **Staging Areas:**
  - Review site list/update contact information for sites
  - Confirm availability and ensure contracts are in place
  - Verify logistics staffing plan
  - Review layout of each site
  - Provide annual logistics training
  - Verify mobile command centers and satellite trailers are fully operational
  - Review and update staging area operations teams and incident command teams, and adjust as necessary
  - Verify trash containers/pickup
  - Verify transportation services (buses/vans)
- **Lodging:**
  - Review list of possible hotel sites/update contact list for lodging
  - Review list of possible alternative lodging sites
  - Review contracts with logistics vendors for sleeping trailers, tents, port-o-lets, showering, and laundry
- **Catering:**
  - Review list of possible local caterers
  - Update contact list

Supply Chain

- Review and ensure availability of storm material

Communications

- Review press release messages and VRU messages to make sure they are up to date and reflective of current plans
- Ensure relationships and contacts are in place with key stakeholders (such as regulatory, state, and local jurisdictions), key accounts (such as schools) and critical infrastructure (such as water pumps and hospitals) and can be activated during storms

Planning Checklist for Mutual Assistance

In the event a mutual aid lever is pulled by a utility then the following questions shall be asked from the host and responding utility. In an effort to achieve "right crew, right allocation" the responding utility questions should be asked prior to allocation of resources. These questions serve as a planning lever for safe, effective, and efficient service restoration

Host Utility

- What type of line skills will you be sending (ex. Journeyman, apprentice, or both)
- What type of equipment are you bringing?
- What type of work can you do (ex. Construction, service work, or both)
- Where are you coming from?
- What is the anticipated arrival time?
- Can your group be split up?
- Are you a Level 3 self-contained team?
- Housing information, what are the total count of employees and support, are there any females?
- Who is the primary contract person (ex. Name, phone number, e-mail)

Planning Checklist for Mutual Assistance Cont'd

Responding Utility

- Where will the safety orientation be located?
- What is our destination? Are there any emergency declarations or other documents that may be needed for travel to the location?
- Who is our point of contact?
- Will security personnel be provided?
- Do you need any special equipment (**refer to the specialized equipment list within appendix of this deck**)
- Do you have/need any damage Assessors? Do you have a need for management teams to manage contractors or staging sites?
- Is food and lodging in place? We will need to be self-contained level 3?
- What type of work do you plan for us to perform? Will there be significant "rear lot" work? Any non-common distribution voltages such as 34.5 KV?
- What are the weather and road conditions like?

AEIC Specialized Equipment List																	
	Swamp Machine/ Marsh Master	Air Boats	Drones	Mini Backyard Derrick	Mobile Command Center	Mobile Satellite Comm Trailers	Dozier	Tracked Digger Derricks	Tracked Aerial Buckets	Backhoe	Fuel Tanker	Generators	Rock Drilling Machine	Mats and Matting Crew (mats are utilized in marshy areas as a temporary roadway for equipment)	Rope Gun (For river crossings/mountain terrain)	Wire Tensionors	Mobile Subs
AEP Energy, Inc.																	
Alabama Power Company	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X
AmerenIllinois	X		X	X			X	X		X							
Ameren Missouri	X			X	X		X			X							
CenterPoint Energy	X		X	X		X	X	X	X	X		X		X		X	
Commonwealth Edison			X		X	X				X					X		
Consolidated Edison				X	X	X				X		X				X	
Consumers Energy																	
CPS Energy			X	X	X		X	X	X	X	X						
Dominion Energy, Inc.	X			X	X					X					X		
DTE Energy Co.			X	X	X	X	X			X	X	X	X	X			
Eversource Energy																	
FirstEnergy Corp.				X	X		X			X			X	X	X		
Florida Power & Light Company	X		X	X	X	X		X	X	X	X	X	X	X		X	X
Georgia Power			X	X	X	X					X						
Georgia Transmission Corp																	
Hawaiian Electric Industries, Inc.			X	X						X	X	X			X	X	
Jacksonville Electric Authority			X	X			X			X		X					
LG&E and KU Services Company				X	X					X							
Minnesota Power	X			X				X	X	X							
NIPSCO	X			X				X		X						X	
Oklahoma Gas & Electric	X			X			X			X				X		X	
Oncor Electric Delivery				X	X	X		X	X			X	X		X	X	X
Pacific Gas and Electric Company																	
PPL Electric Utilities			X	X			X			X		X				X	X
Southern California Edison			X	X	X	X	X	X			X	X				X	X
We Energies																	
Xcel Energy Inc	X		X	X		X	X			X	X			X			

OTHER EQUIPMENT:
Helicopters - heavy lift for material, crew transport, etc.
Snow Cats - Various snow equipment
Road Graders
Large capacity equipment trailers
Water Guns (for cleaning transmission insulators)
Water Trucks
Shelter Tents, **Sleeper Trailers**, **Shower Facilities**; **Washer Facilities**

Logistics Specialized Equipment

AEIC Logistics Equipment List									
	Sleeper Units	Shower Units	Portable Restrooms	Mobile Command Center	Forte Command Units	Mobile Satellite Communications Trailers	Generators	Fuel Tanker	Fuel Bobtail
Alabama Power				2	2	7	X	2	4
AmerenIllinois						X			
Ameren Missouri				2			*		
CenterPoint Energy						X	X		
Commonwealth Edison Company				X		X			
Consolidated Edison				X		X	X		
CPS Energy				X				X	
Dominion Energy, Inc.				1				5	
DTE Energy Co.				X		X	X	X	
FirstEnergy Corp.				2		1			
Florida Power & Light Company	63			4	49	X	17	3 tractors/10 trailers	5
Georgia Power				2		3		3	3
Hawaiian Electric Industries, Inc.							X	X	
LG&E and KU Services Company				X					
Mississippi Power				1					
Oncor Electric Delivery				X		X	X		
PPL Electric Utilities				1			28		
Southern California Edison				1		X	X	X	1
*Tampa Electric Co				1	10		3	1	
Xcel Energy Inc				X		X			

X = from specialized equipment list /spreadsheet posted on 5-2018	*Tampa Electric
	35' truck mounted command unit
	16' X 16' FORTS, self contained with 12kW Diesel gen sets
	1-300kW, 2-150kW generators
	1- 1000 gal fuel tanker
	- an off-road articulating digger derrick designed to minimize its environmental footprint, a.k.a.'Predator'
	- 6 WD amphibious ATV's, a.k.a. 'ARGO's (manufacturer)
	Ameren MO.
	Ameren does not own large generators but do maintain contracts with local vendors
	GA Power
	Has access to sleeper units and shower units through vendor
	Dominion
	Fuel tankers are currently outfitted for oil. Can be retrofitted for fuel quickly at a small cost.

Glossary

Bird Dog / Guide – Host liaison, switchman, Foreign Crew Coordinator, etc.

DCC / DOC – Distribution Control or Operating Center

Derrick – Production digger truck

DMS – Distribution Management System (outage/switching management application)

ADMS – Advanced Distribution Management System

AMI/AMS- Automated Metering Infrastructure, System

EMA – Emergency Management Agency (state or local)

ETR – Estimated Time of Restoration

Groundman / Helper – Entry level crew position

HydroVac – Vacuum truck or trailer

ICS – Incident Command System (structure for managing event)

IMT – Incident Management Team

- Incident Commander – Provides overall direction for IMT
- Planning Section Chief – Prepares plan for restoration effort
- Operation Section Chief – Manages work of crews and evaluators
- Logistics Section Chief – Coordinates housing, food, fuel and material

Material Handler – Bucket truck with lifting capability

Non-traditional Housing – Community or Gov. buildings w/cots, dorms, sleeper trailers, tents w/cots, etc.

OMS – Outage Management System

Glossary Cont’d

PUC / PSC – Public Utilities / Public Service Commission

RMAG – Regional Mutual Assistance Group (non profit org to facilitate mutual assistance requests)

SCADA – Supervisory Control and Data Acquisition (remotely operates sub and line devices)

Service Truck – Usually 30’ – 35’ bucket truck or pickup

Storm Kit – Preassembled commonly used material

TCC – Transmission Control Center

Wire Guards / Sitters – Where mandated, personnel that stands by downed conductors

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

HOSTED BY:

LUNCH

SPONSORED BY:

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

HOSTED BY:

S.E.R.T.

Swadley's Emergency Relief Team presentation

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

HOSTED BY:

2023 Hurricane Forecast & Weather Outlook

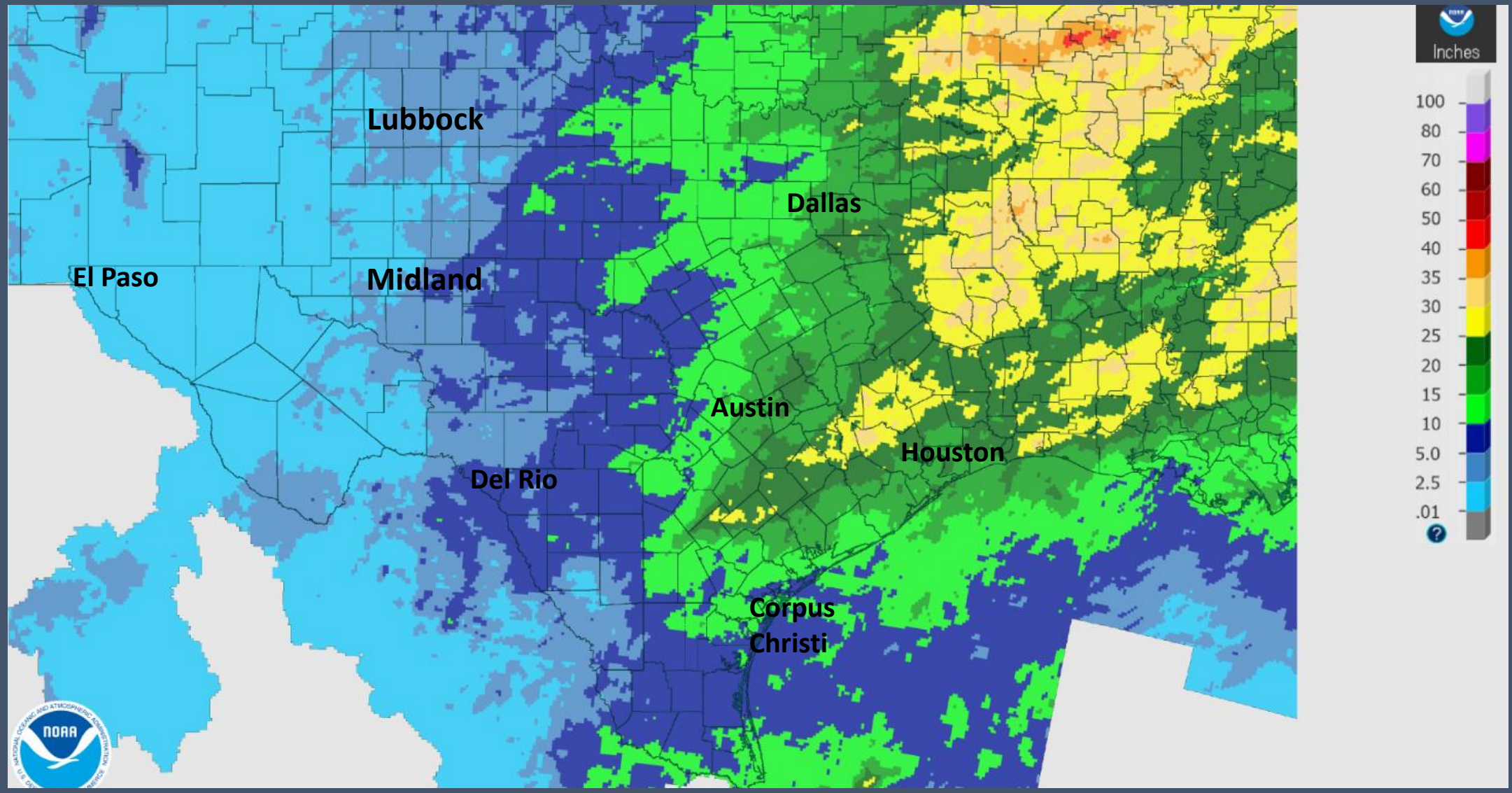
Bob Rose
LCRA Meteorologist

Summer and Hurricane Outlook

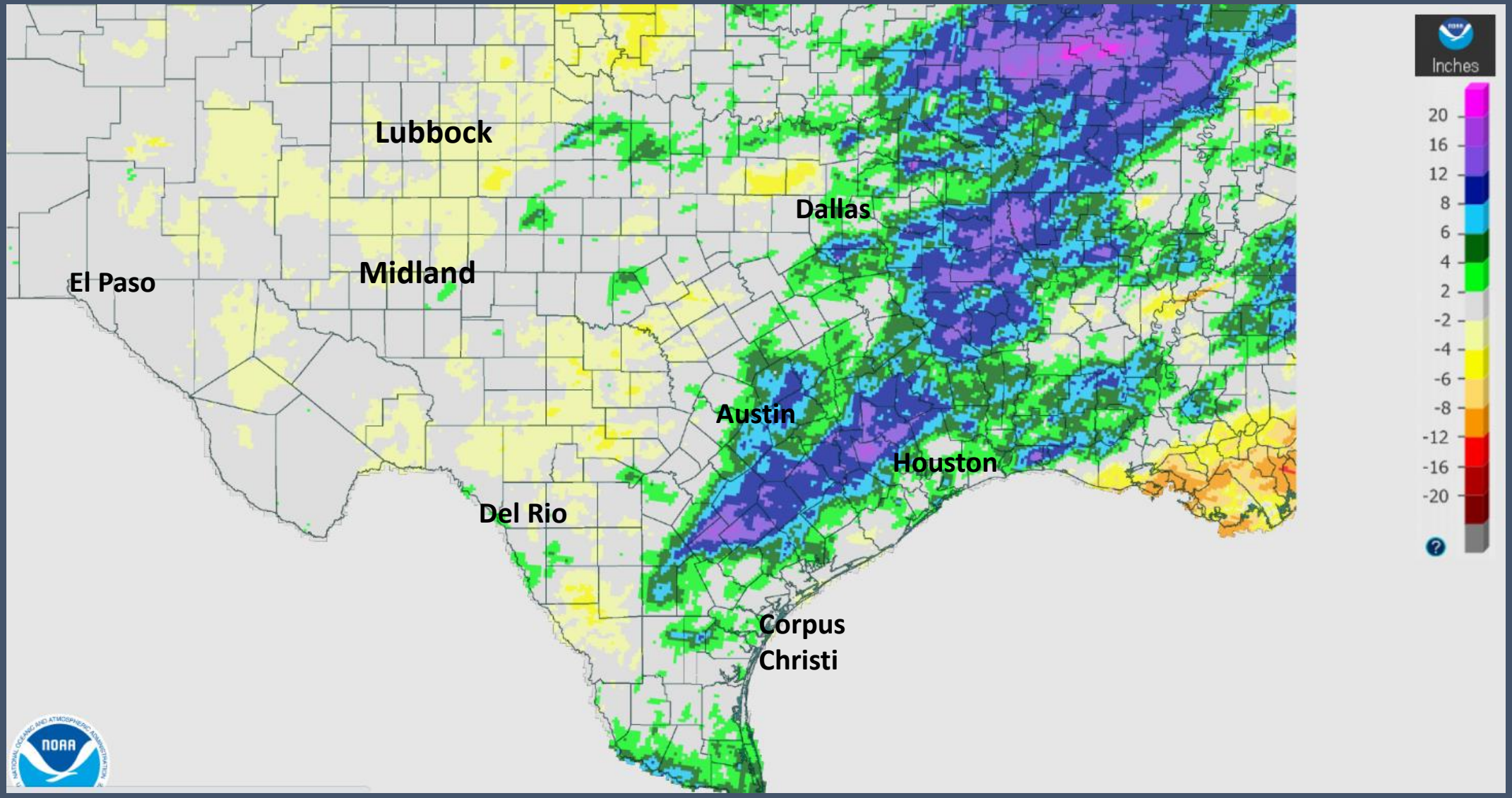
Texas Mutual Assistance Group Conference

May 18, 2023

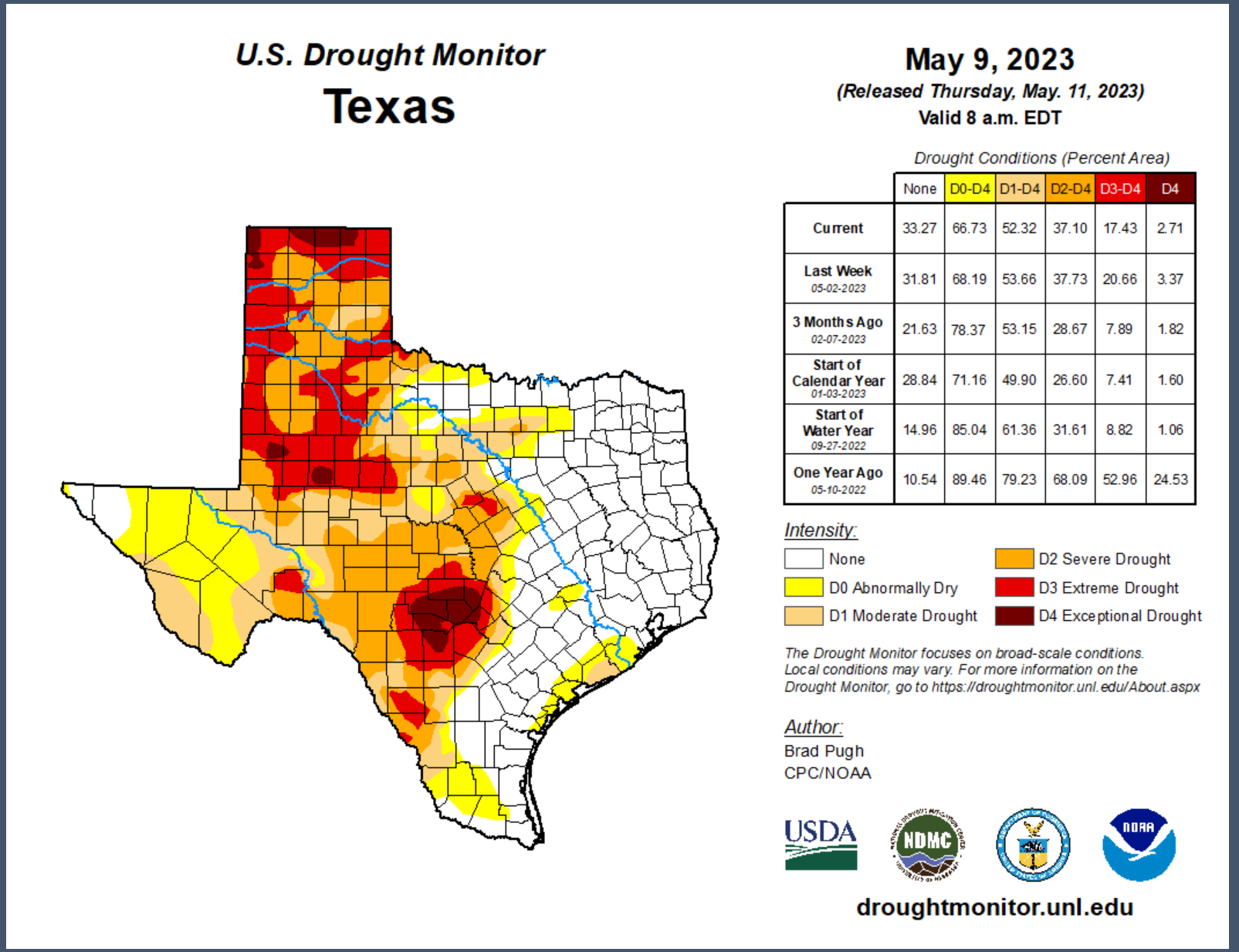
Rainfall Year to Date



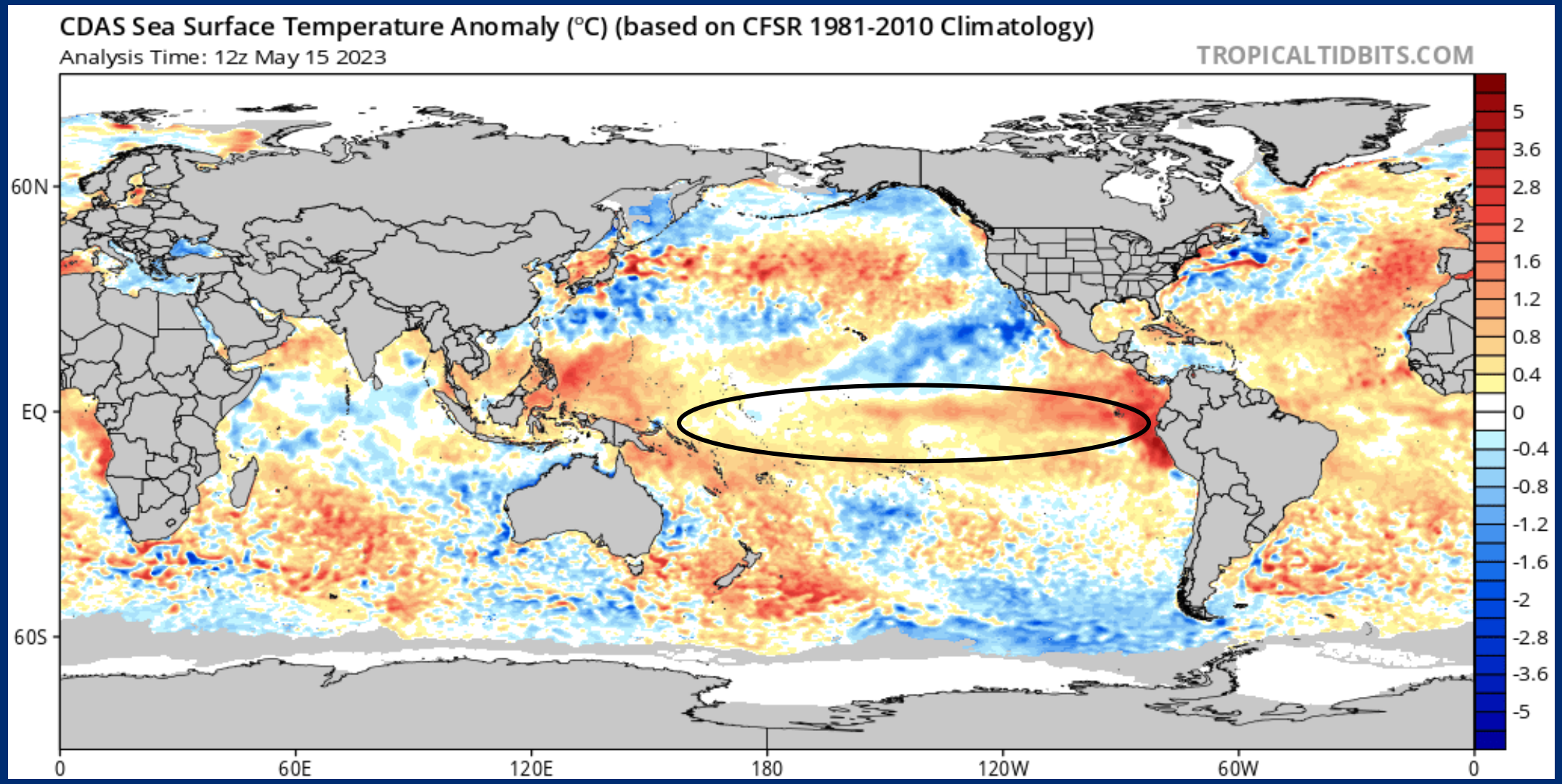
Rainfall Departure from Normal- Year to Date



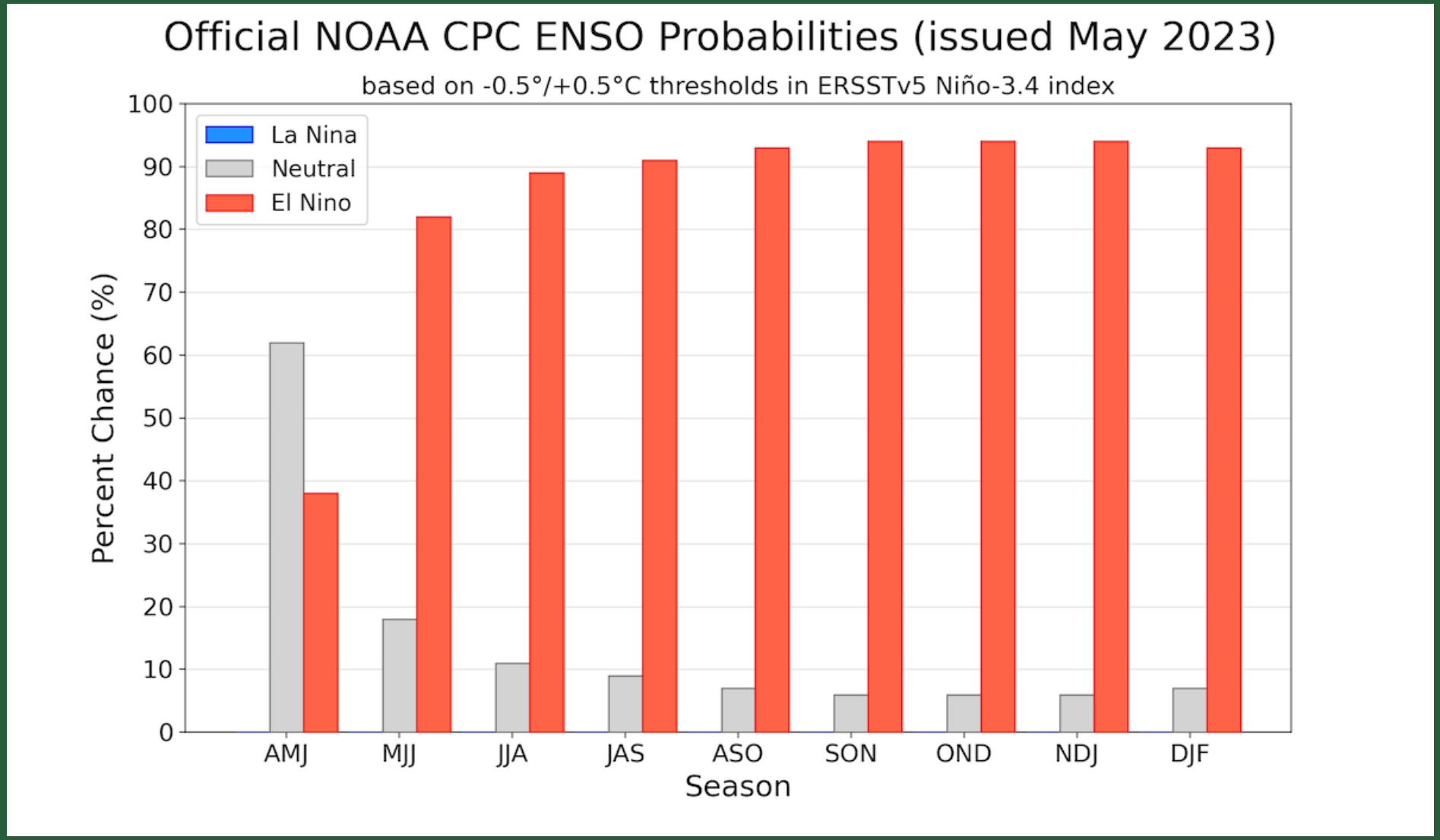
U.S. Drought Monitor



May 2023: A Neutral Pacific is in Place



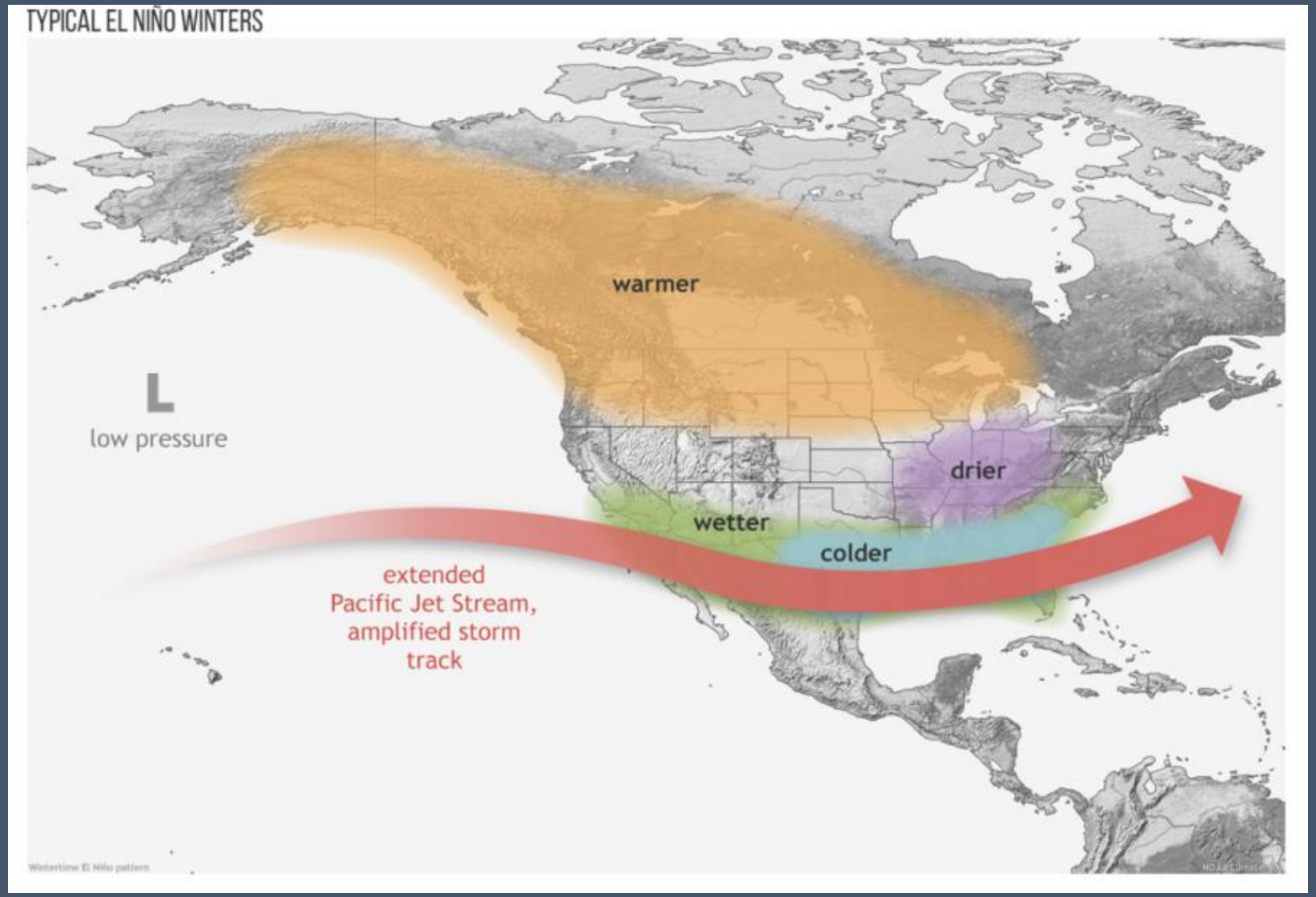
Increased Odds for El Niño to develop this summer



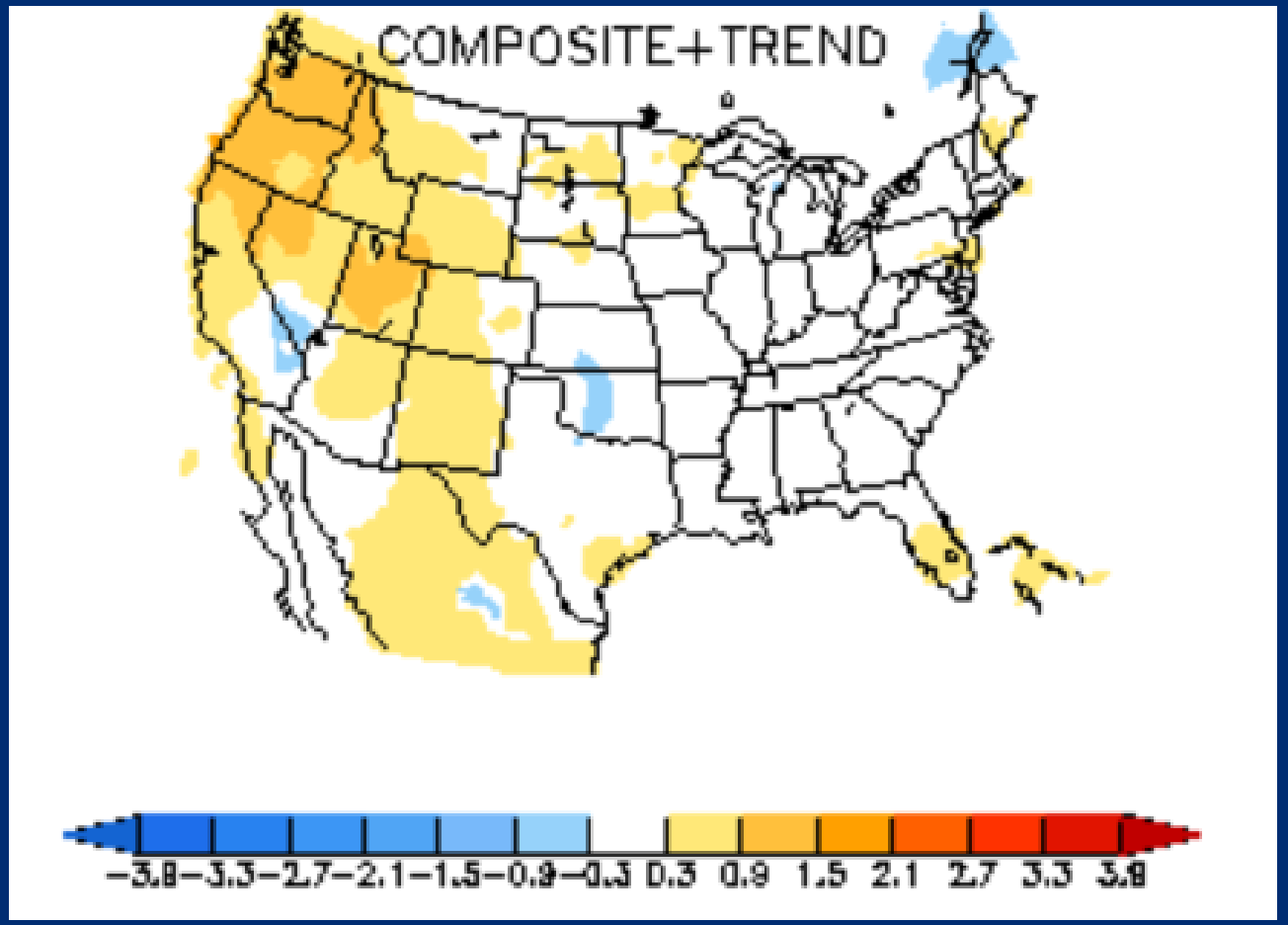
The Climate Prediction Center's Projection for El Niño

- There is an 80 percent chance for at least a moderate El Niño
- There is a ~55 percent chance for a strong El Niño
- There is a ~25% chance of an event greater than 2.0 degrees C

Typical Fall/Wintertime El Niño Pattern

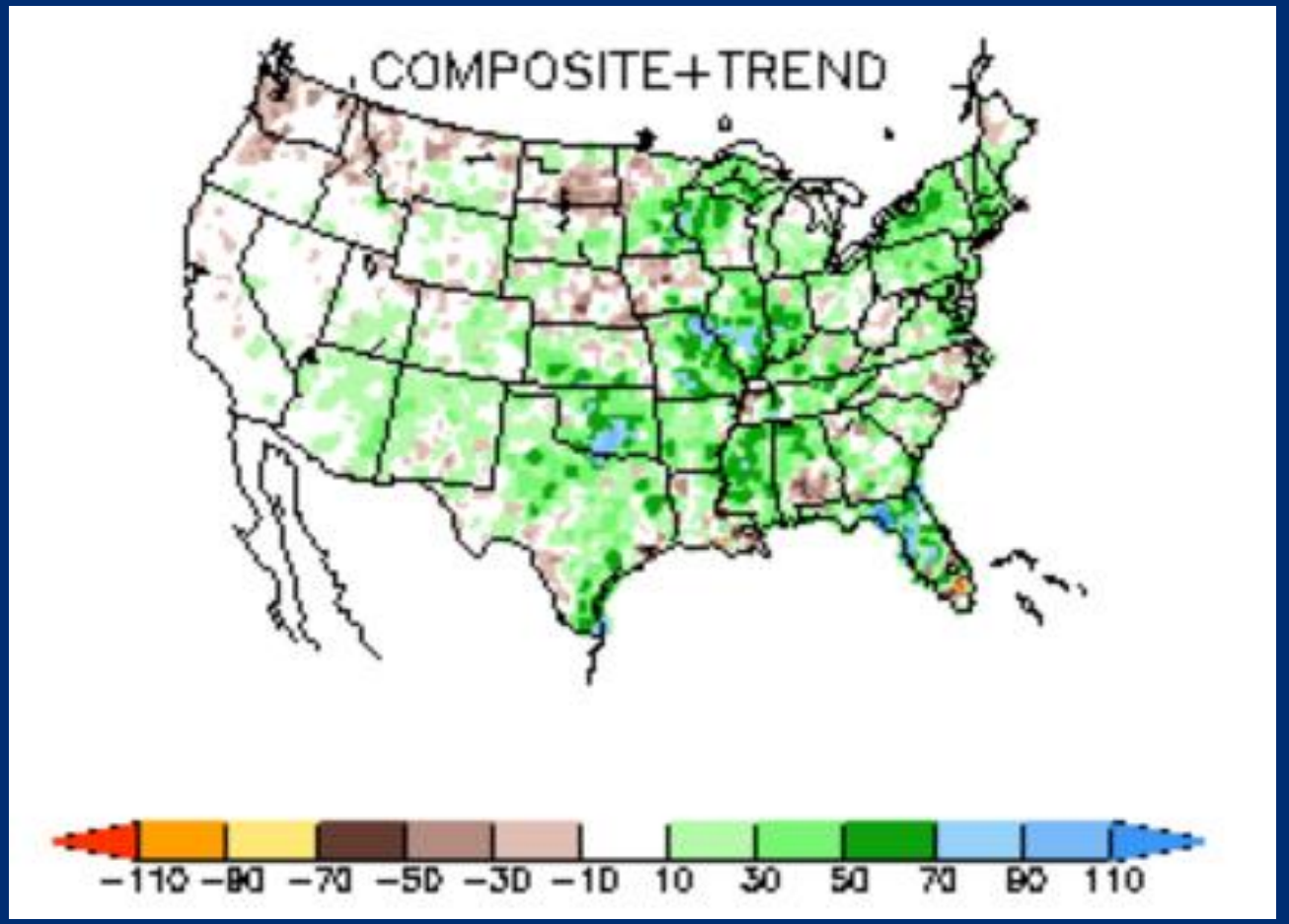


El Nino’s Influence on Summer Temperatures

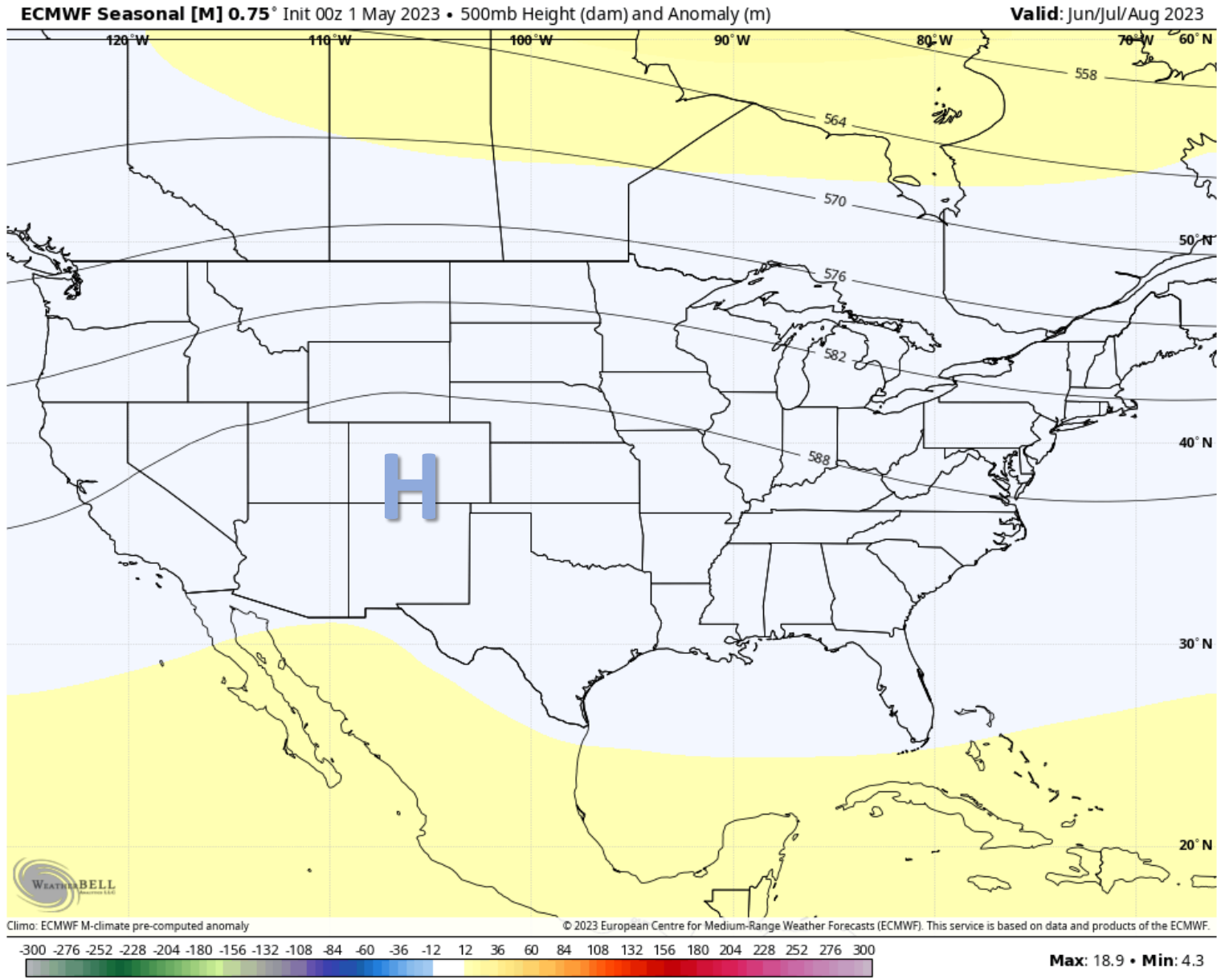


1951 1953 1957 1958 1963 1965 1968 1972 1982 1987 1991 1997 2002 2004 2015)

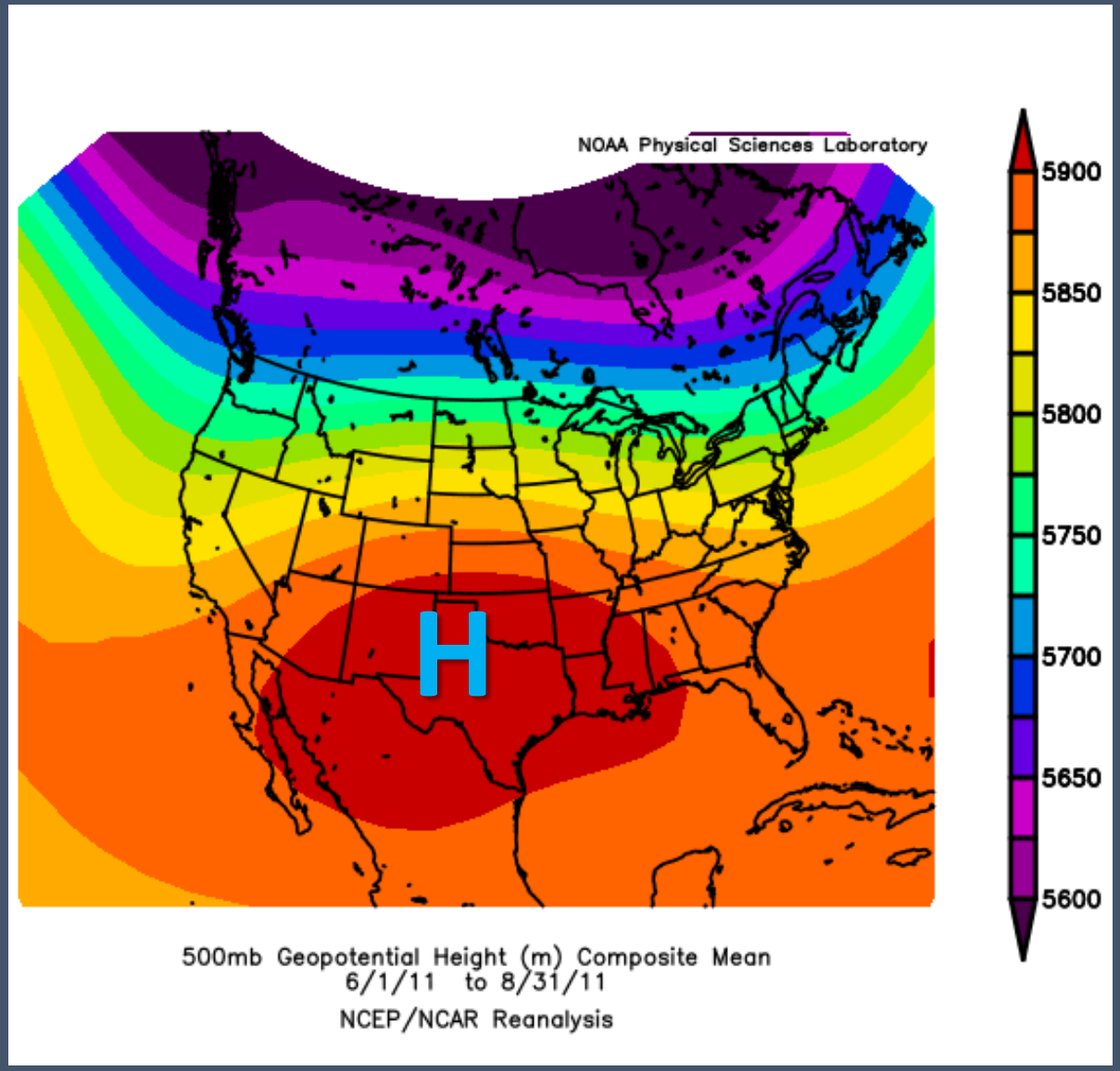
El Nino’s Influence on Summer Rainfall



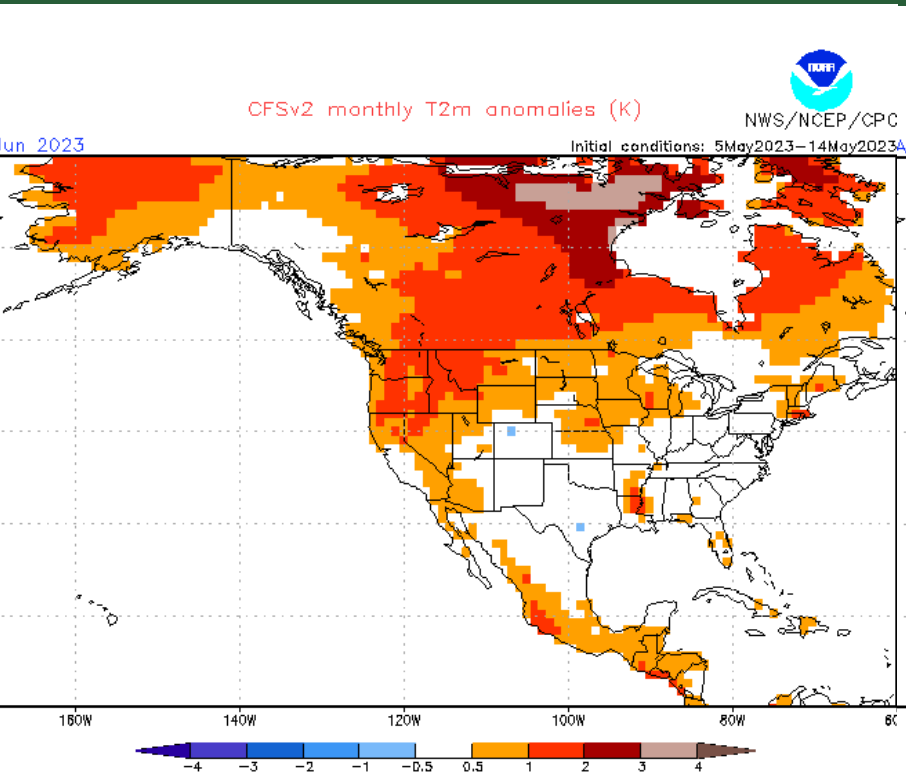
1951 1953 1957 1958 1963 1965 1968 1972 1982 1987 1991 1997 2002 2004 2015)


ECMWF Seasonal [M] 0.75° Init 00z 1 May 2023 • 500mb Height (dam) and Anomaly (m)
Valid: Jun/Jul/Aug 2023
120°W
110°W
100°W
90°W
80°W
70°W
60°N
50°N
40°N
30°N
20°N
558
564
570
576
582
588
H
Climo: ECMWF M-climate pre-computed anomaly
© 2023 European Centre for Medium-Range Weather Forecasts (ECMWF). This service is based on data and products of the ECMWF.
-300 -276 -252 -228 -204 -180 -156 -132 -108 -84 -60 -36 -12 12 36 60 84 108 132 156 180 204 228 252 276 300
Max: 18.9 • Min: 4.3

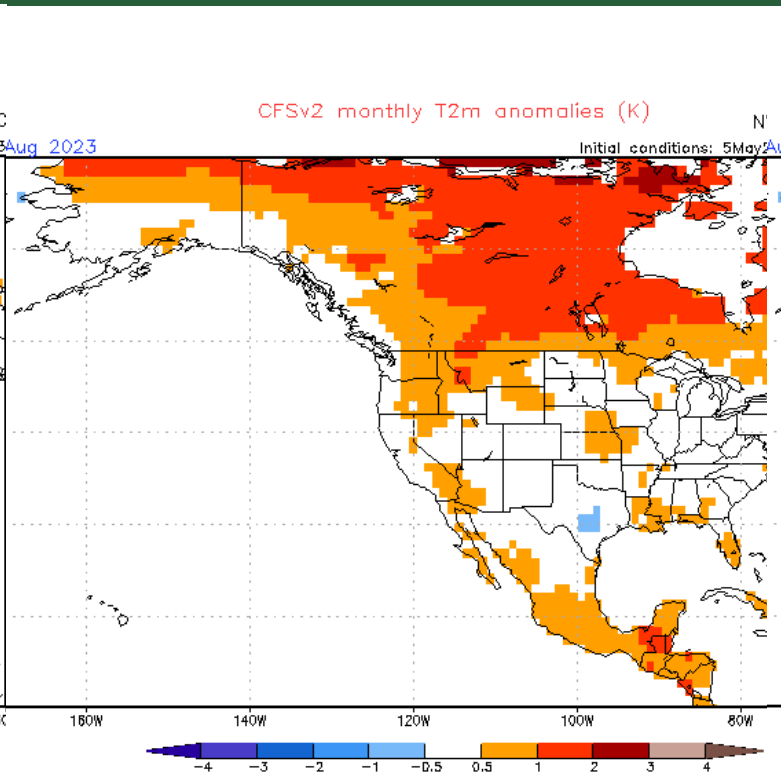
The Summer 2021 Heat Dome



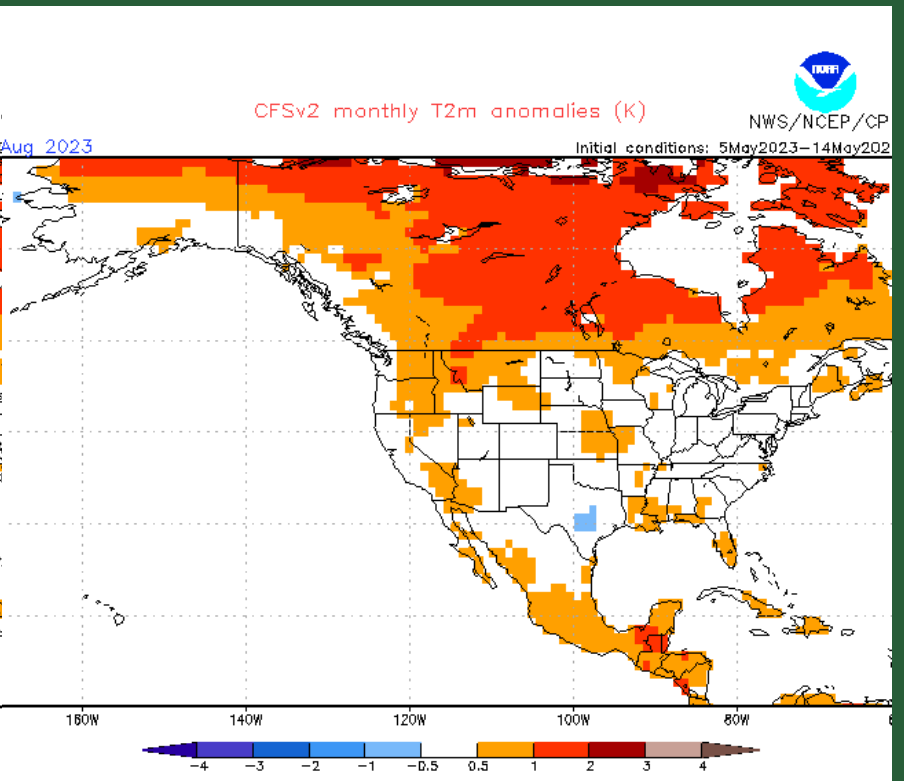
Summer Temperature Outlook – CFS Model



June

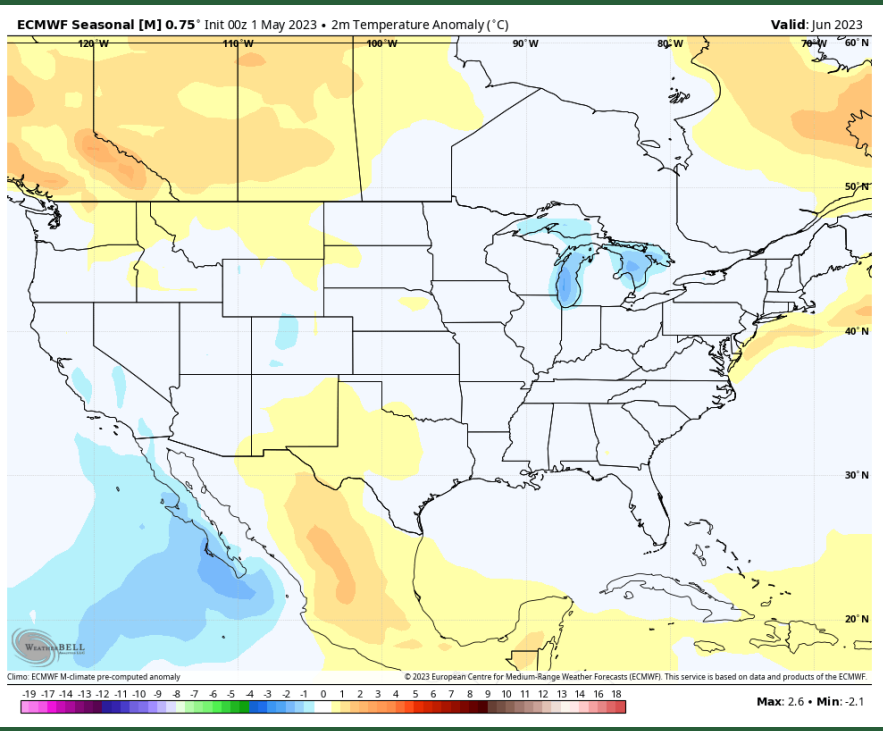


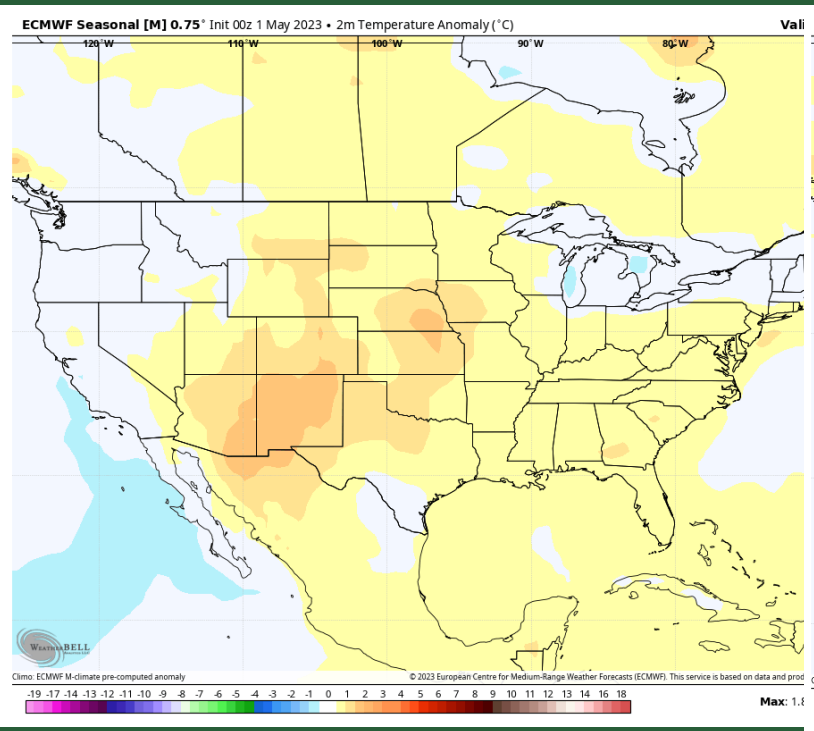
July

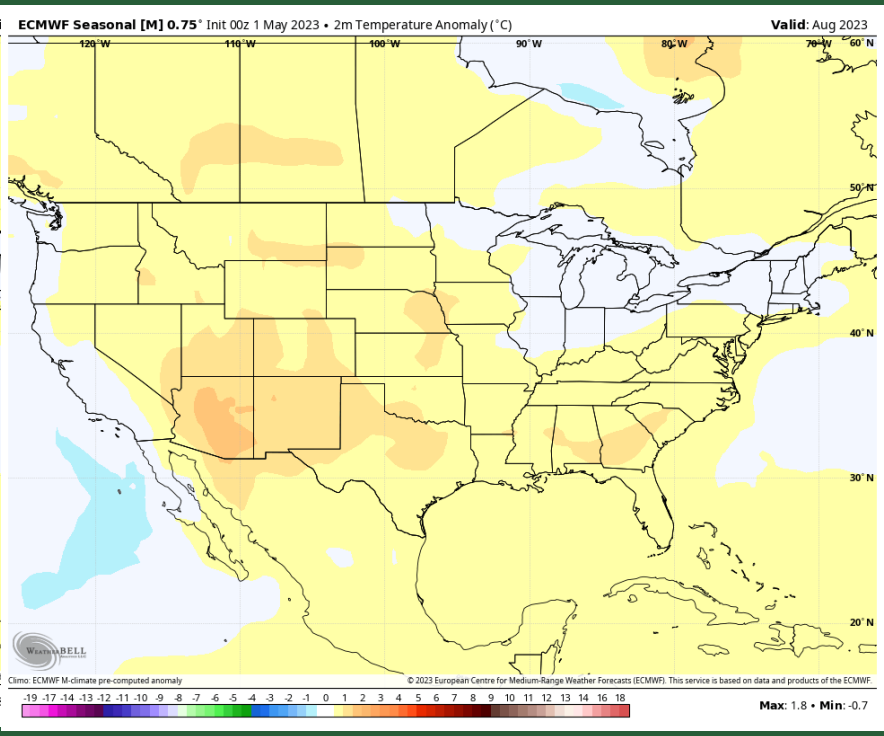


August

Summer Temperature Outlook – European Model

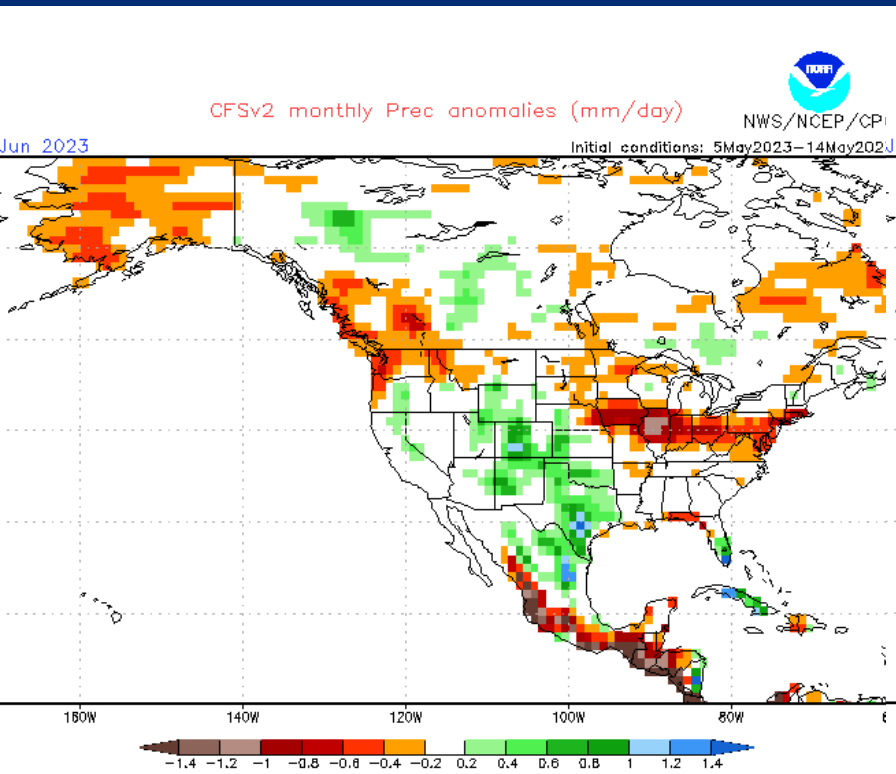




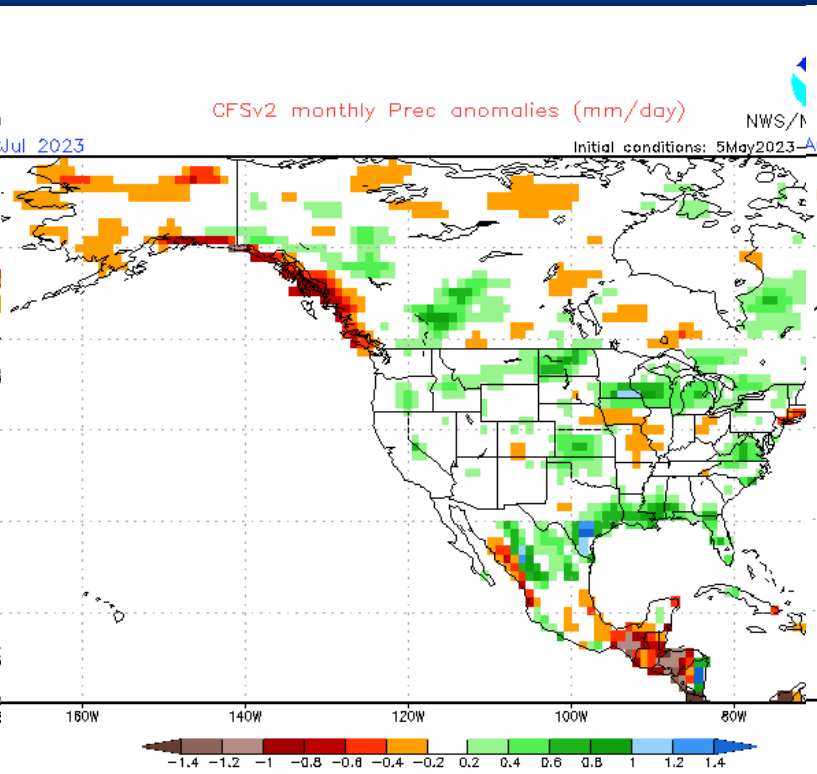


June **July** **August**

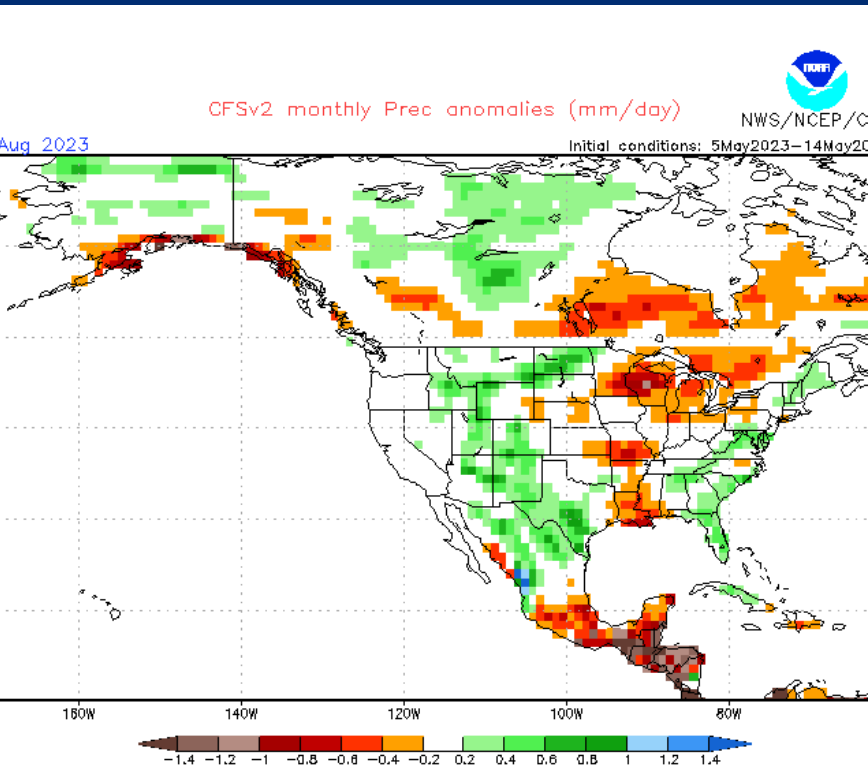
Summer Rainfall Outlook—CFS Model



June

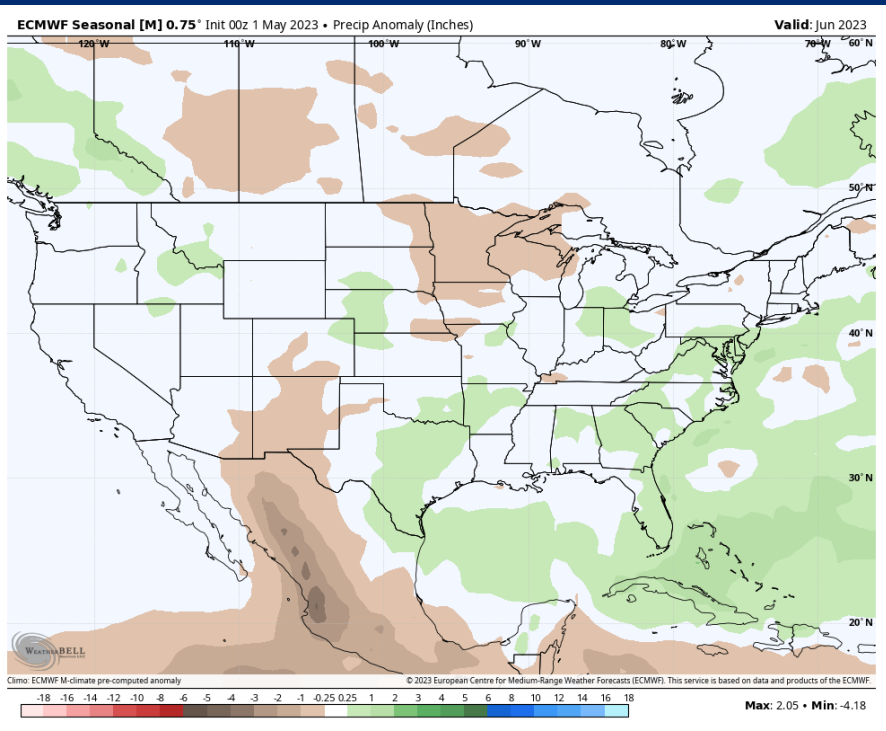


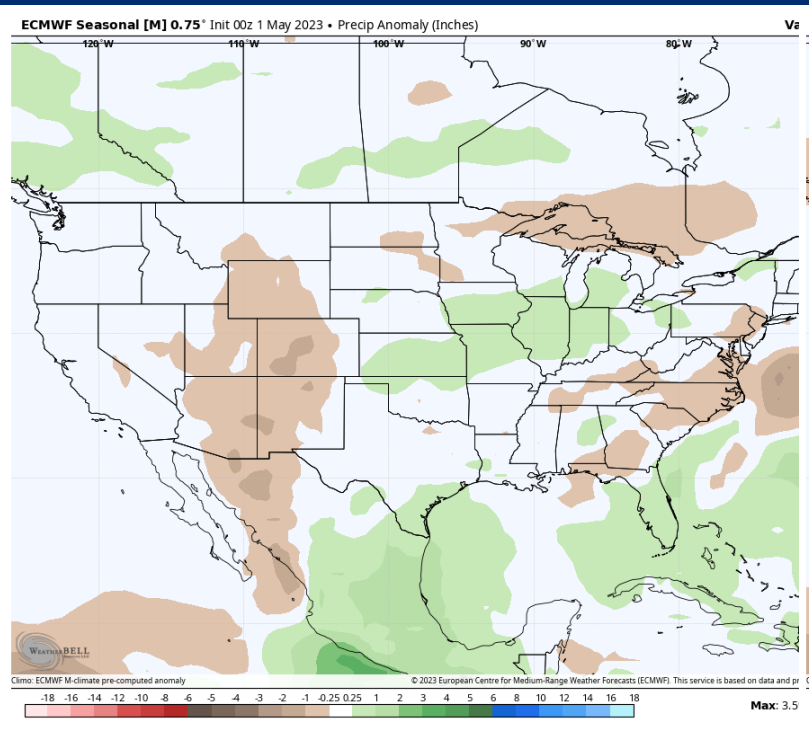
July

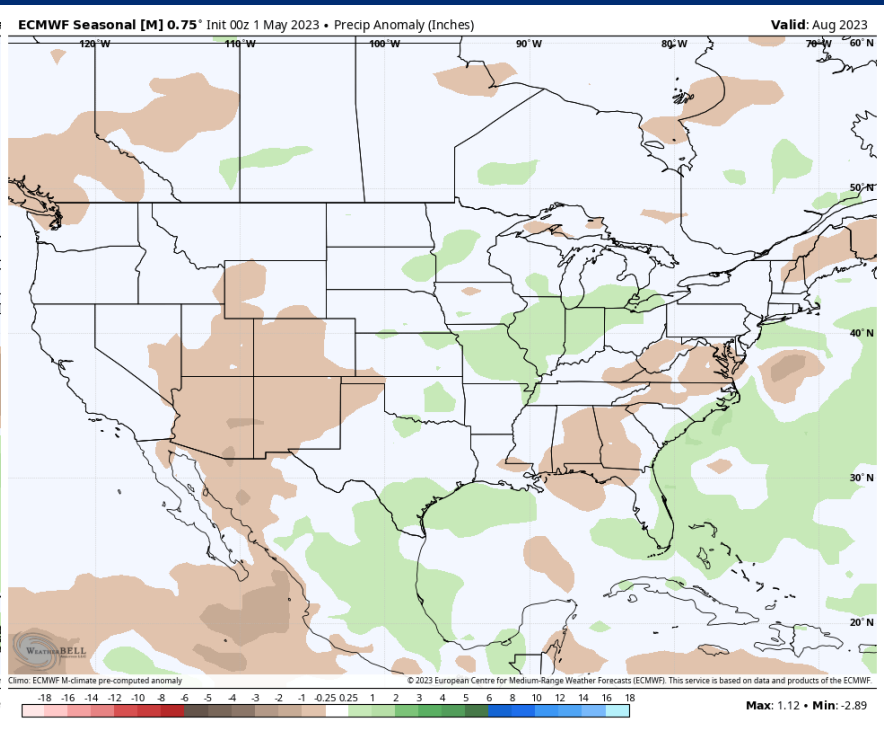


August

Summer Rainfall Outlook – European Model

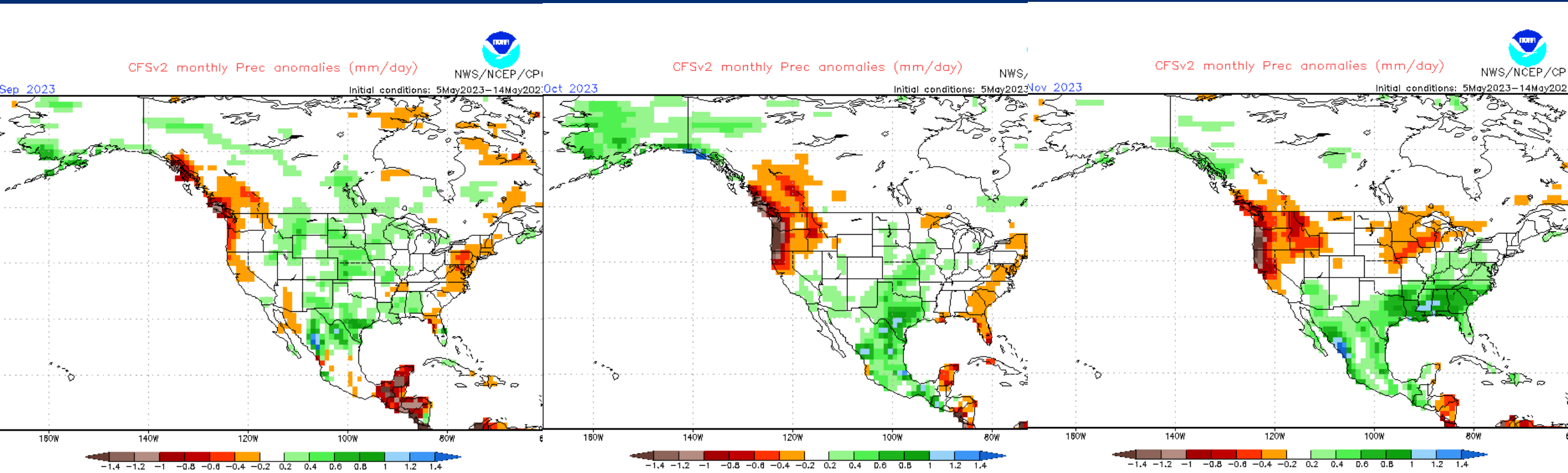






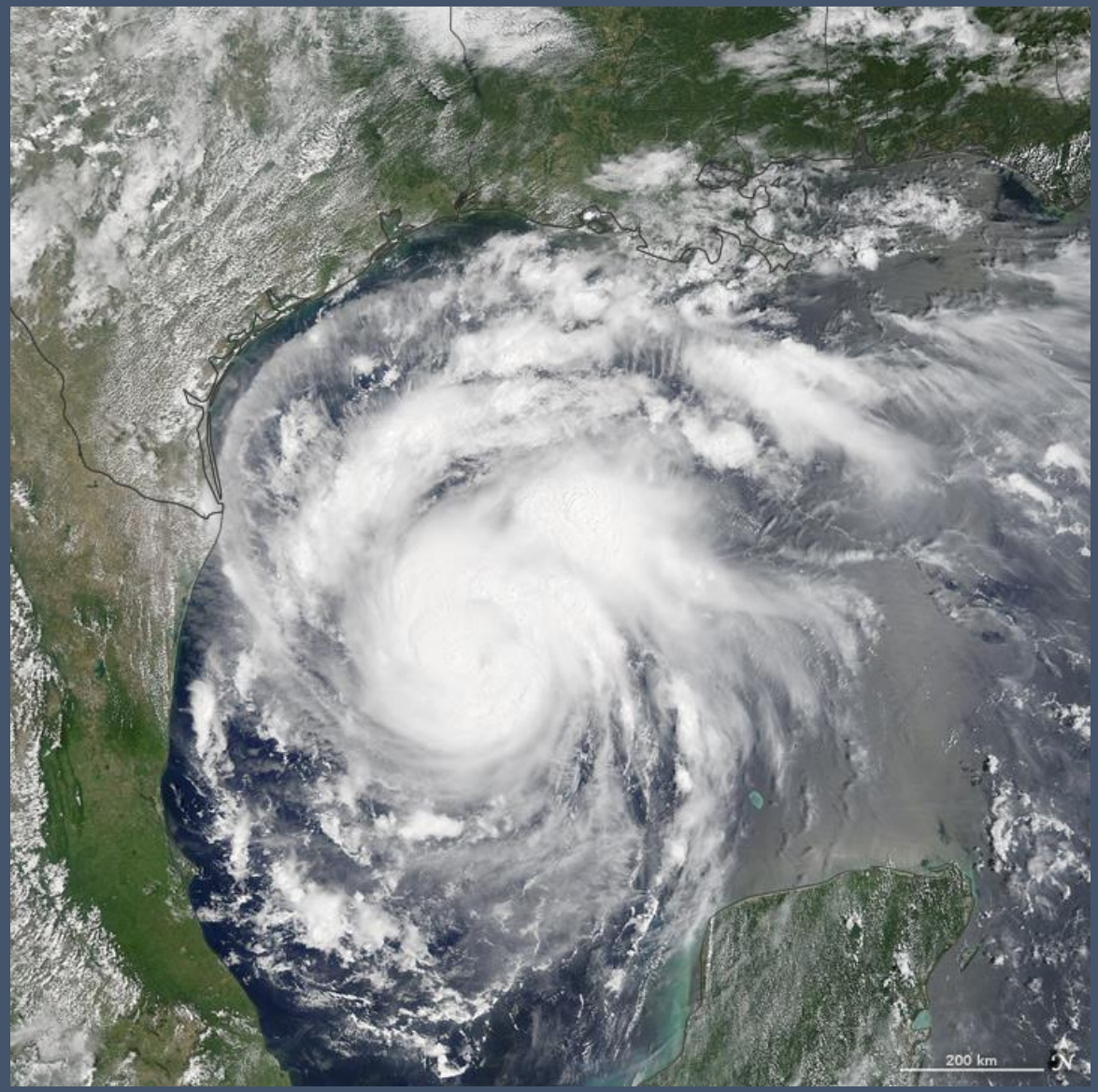
June **July** **August**

Autumn Rainfall Outlook—CFS Model

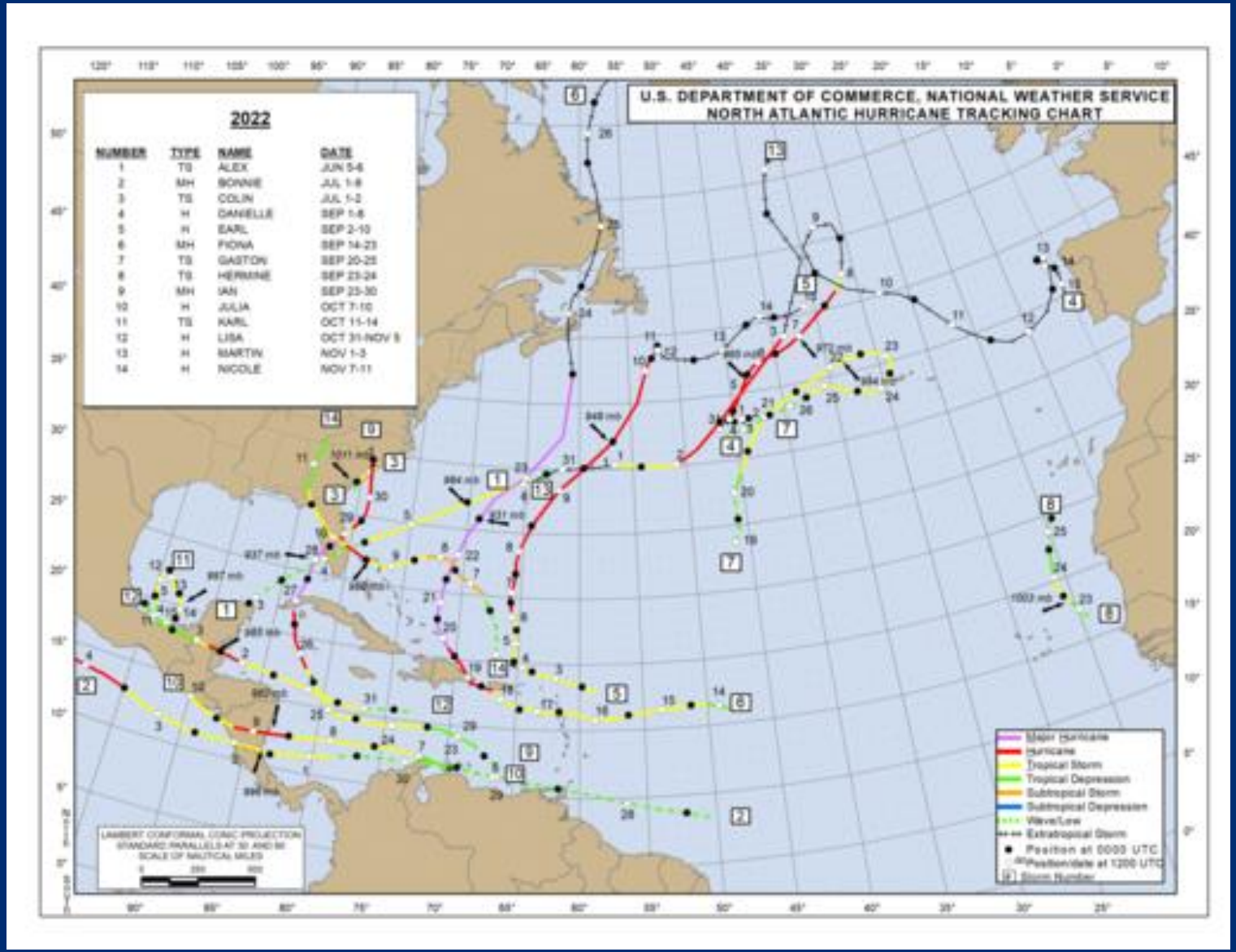


June **July** **August**

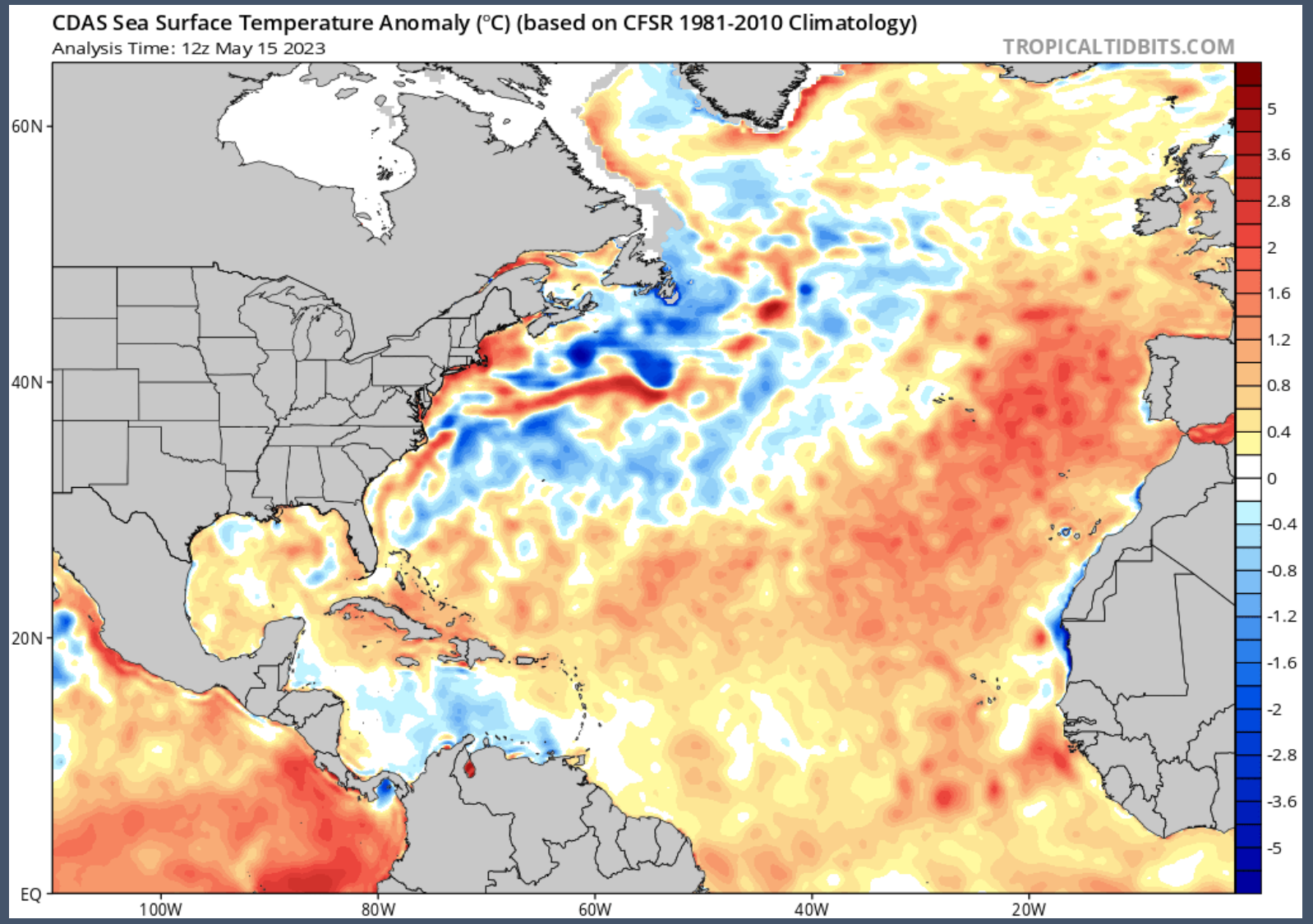
Hurricane Season 2023



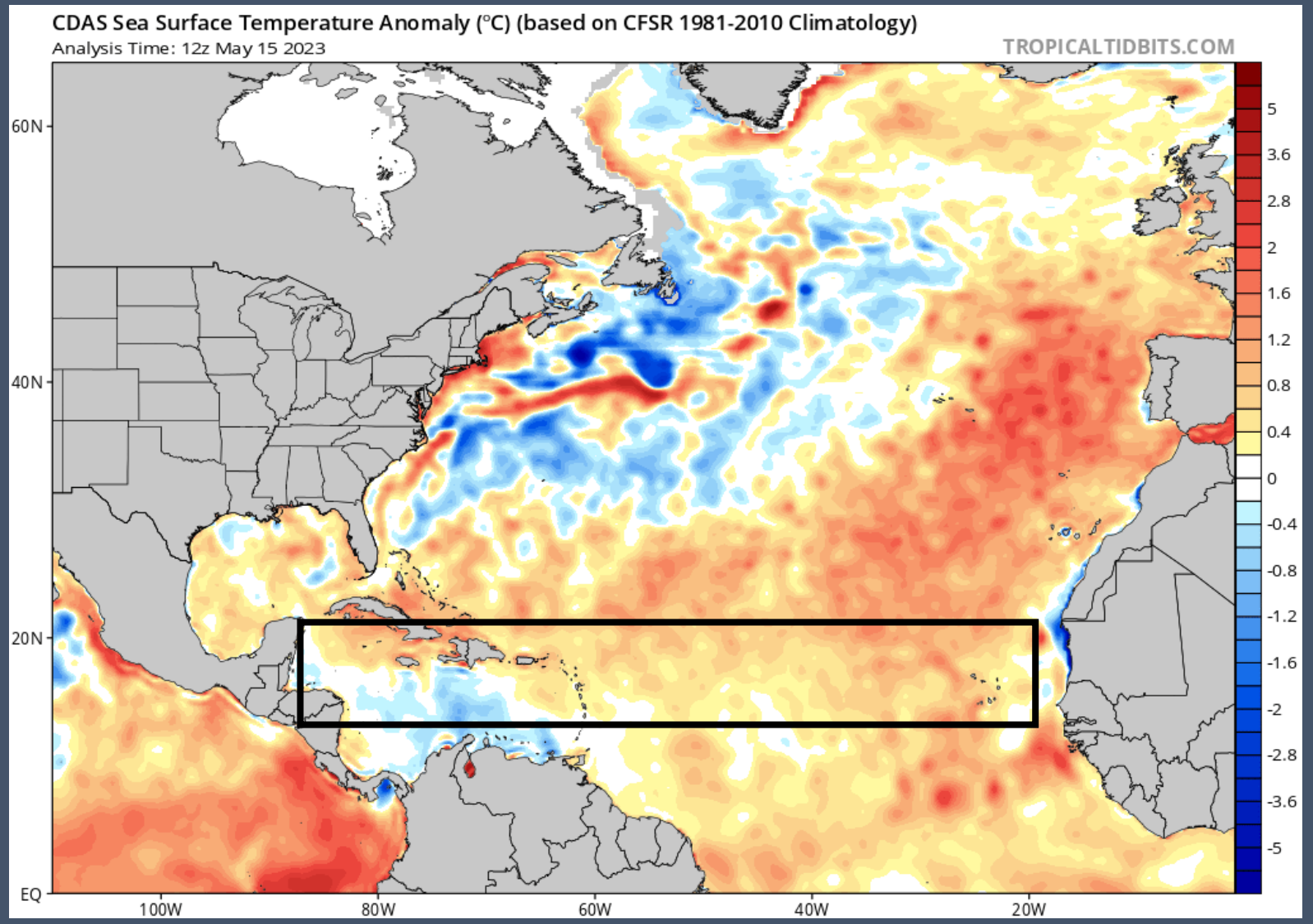
2022 Atlantic Hurricane Season



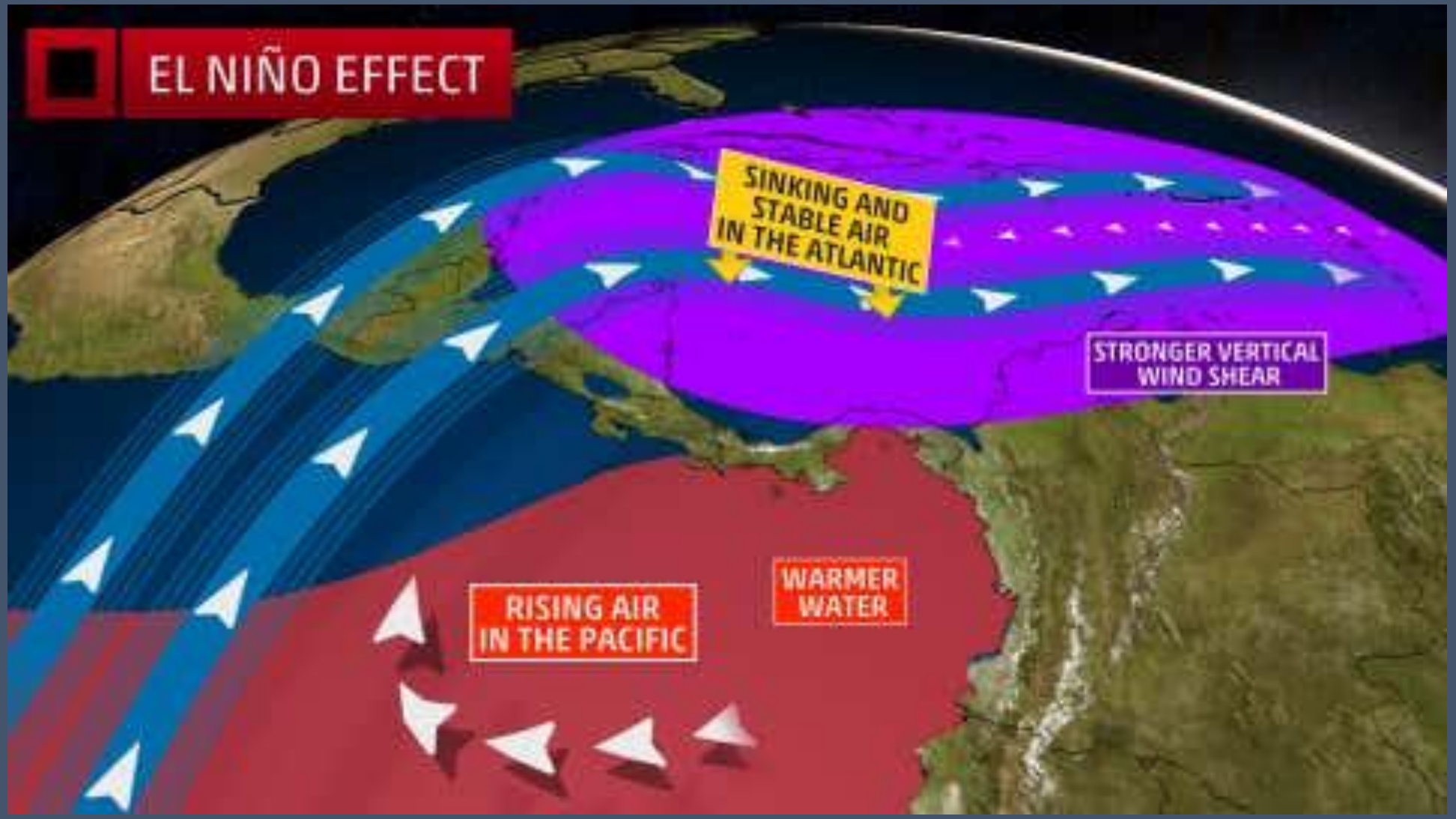
Latest Sea Surface Temperature Anomaly Map



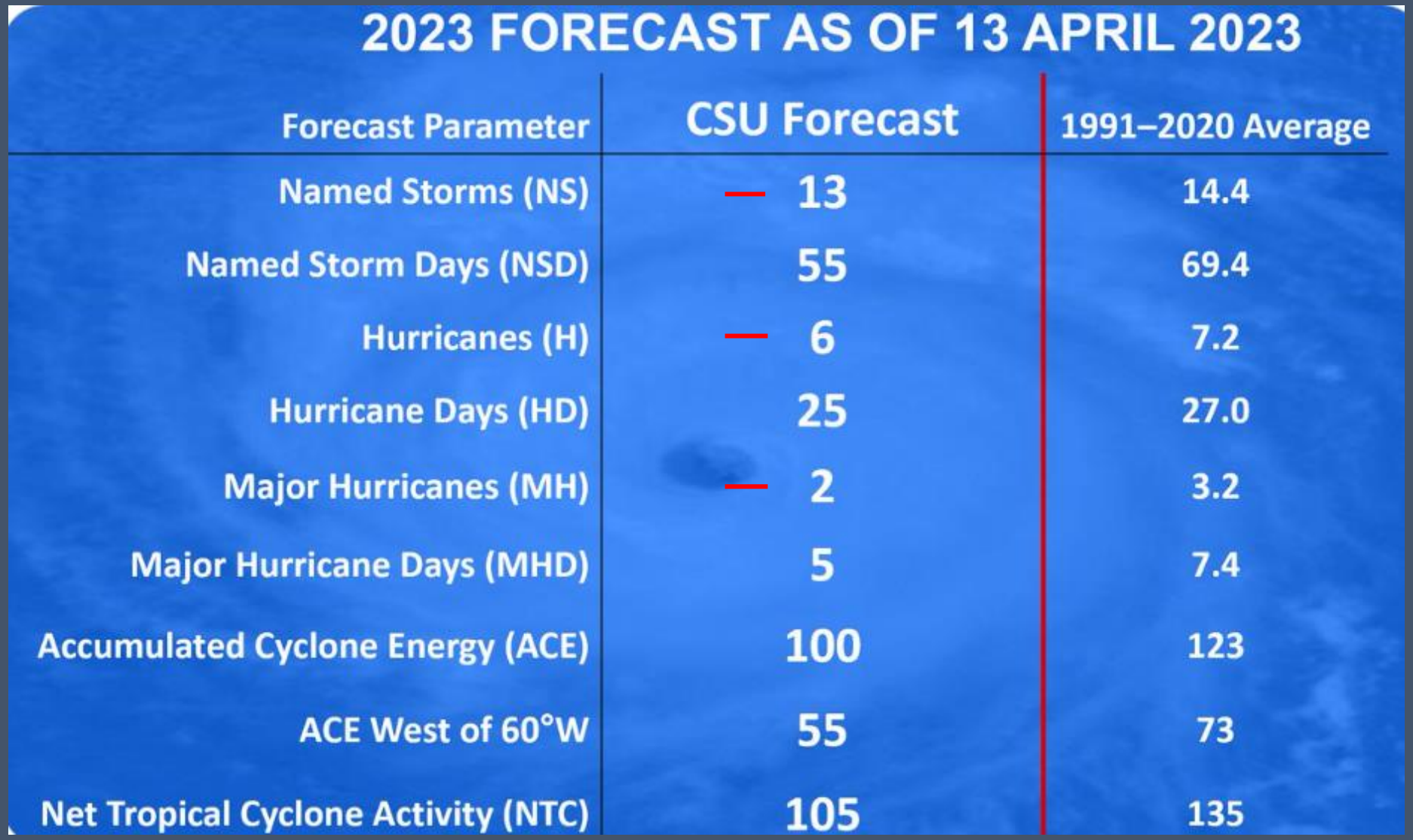
Latest Sea Surface Temperature Anomaly Map



Increased Wind Shear with El Niño



Colorado State April Outlook



Summer/Hurricane Season Outlook

- Strong odds El Niño will develop this summer and persist into the upcoming winter
- Near-normal to slightly above-normal rainfall this summer
- A trend toward above-normal rainfall predicted for the fall
- Summer temperatures not as extreme as last summer
- Summer temperatures to average around 1 degrees above normal
- Slightly below normal hurricane activity this summer
- Gulf of Mexico a wildcard as far as storm development

bob.rose@lcra.org

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

HOSTED BY:

Emergency Restoration

Panel Moderator – Colby Gravatt
CenterPoint

Winter Storm Mara
Jeff Bradford and Craig Brooks - Austin Energy
Brittni Anderson - Oncor

Tornado Response
Sean Cameron CNP

Severe Wind / Thunderstorm March 2023
Brittni Anderson – Oncor

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

HOSTED BY:

Winter Storm Mara

Restoration and Recovery

Craig Brooks
Director; Electric System Field Operations South

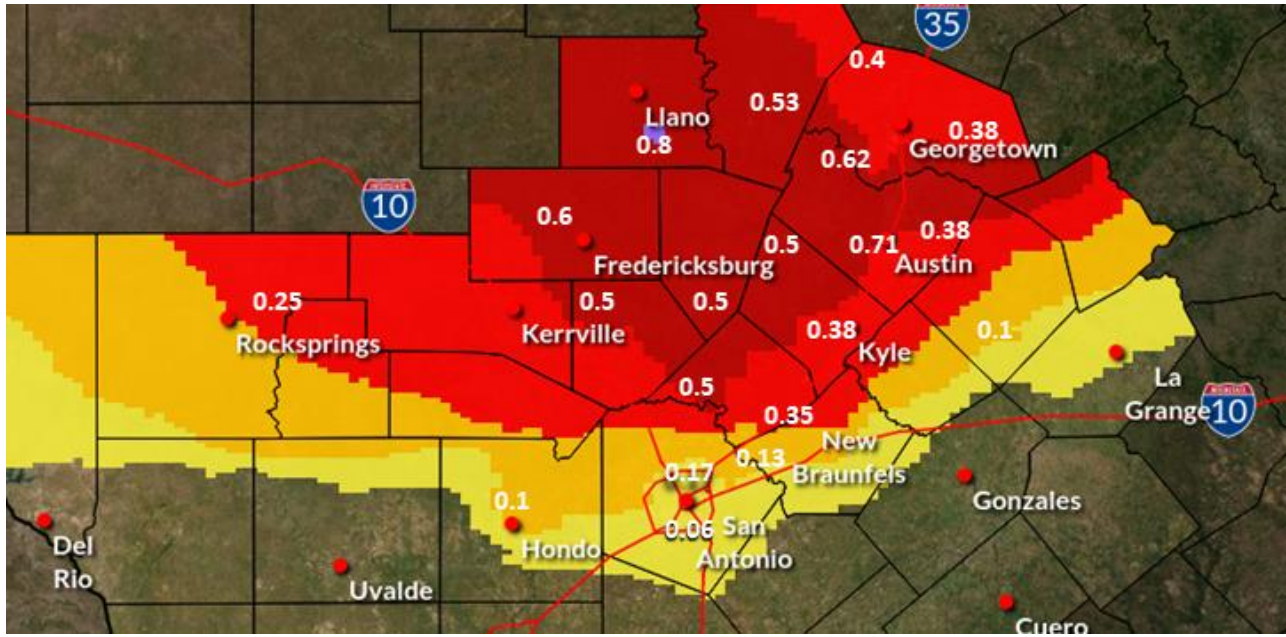
Jeffery W. Bradford
Director; Electric System Field Operations North

Winter Storm Mara

Weather Summary

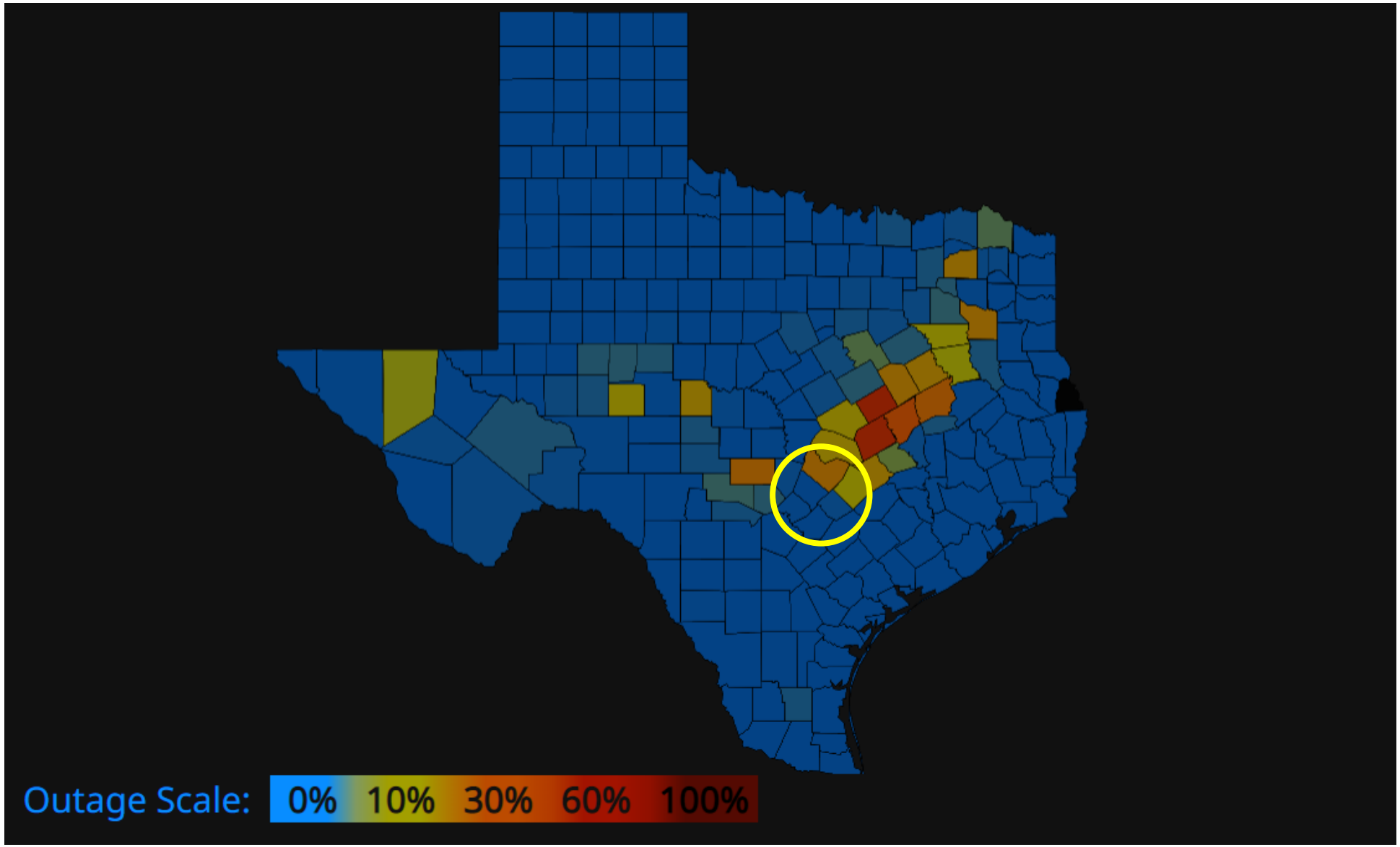
- **SUN 1/29** - Western Travis County could see 0.1” ice accumulation, but downtown Austin would not see winter impacts
- **MON 1/30** – ¼” to ½” ice accumulation possible
- Austin Energy conducted regular Weather Situational awareness calls, Additional AE crews called in
- **TUES 1/31** – ½” ice accumulation possible mostly north and west of Austin area
- Zero power outages, Austin Energy activates its Incident Command Structure
- **WEDS 2/1 – THURS 2/2 –** Actual ice accumulation reaches 0.71” in Central Austin, worst ice storm in Austin history

National weather service forecast issued Jan 30, 2023

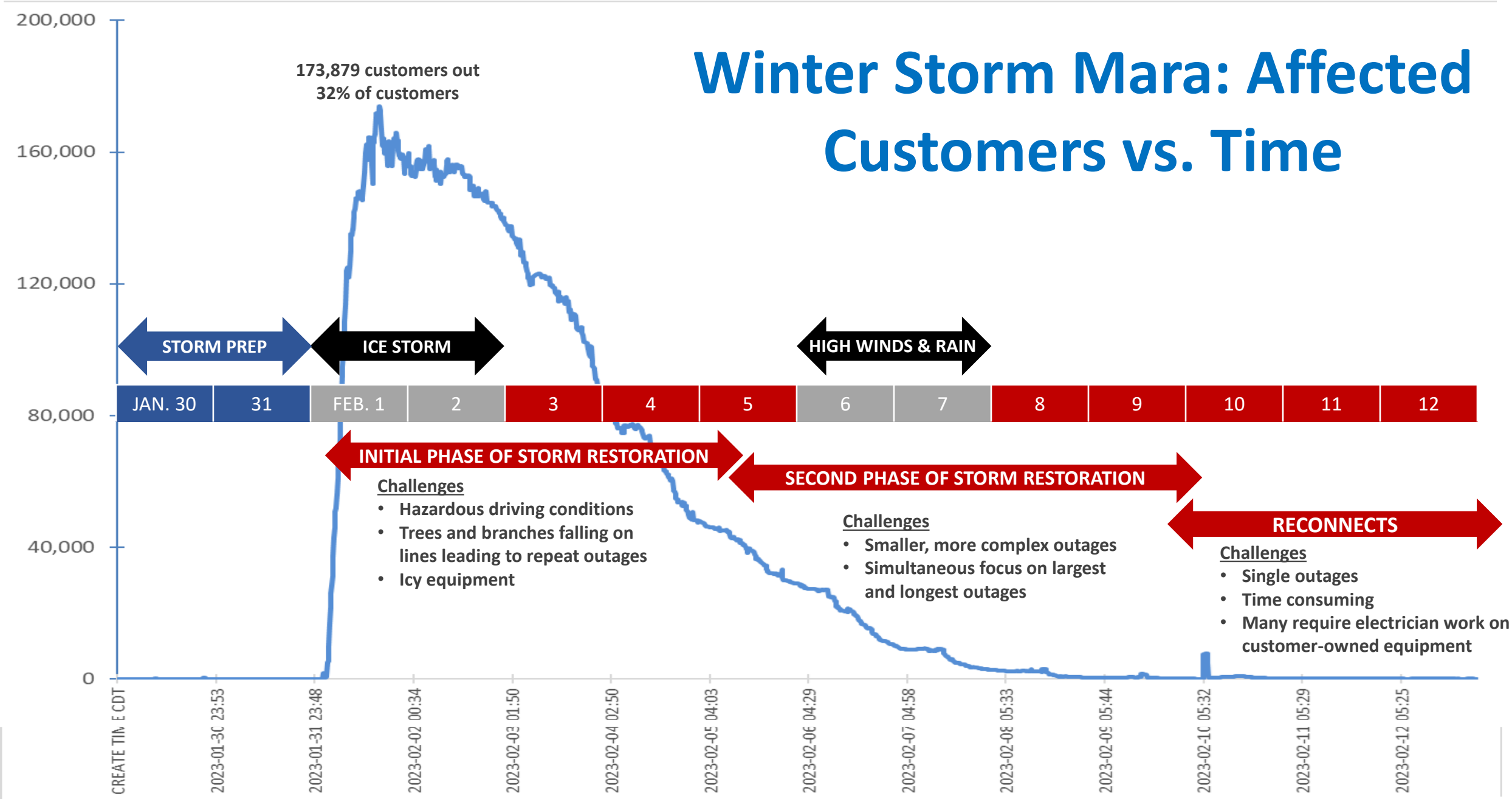


Ice accumulation Jan 31 – Feb 2, 2023

Ice Storm Power Outages in Texas: Feb 2, 2023

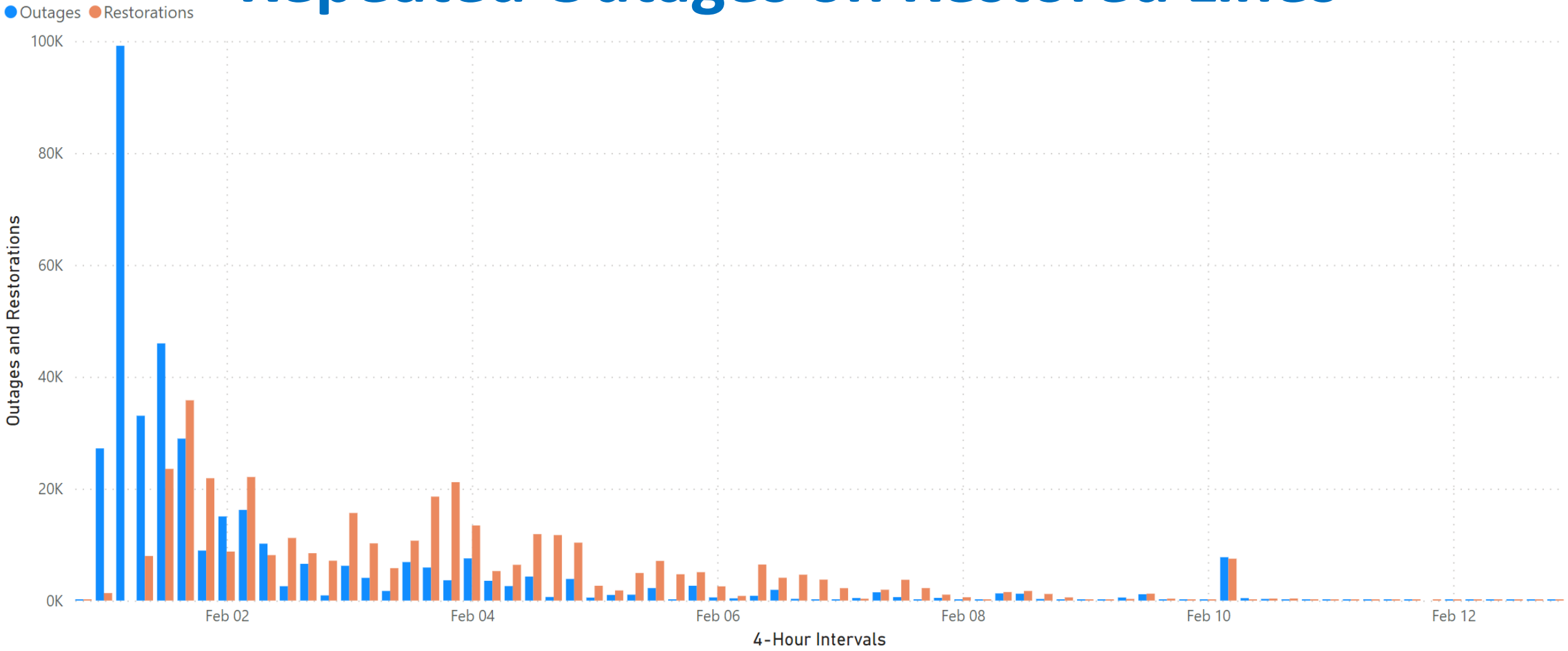


Winter Storm Mara: Affected Customers vs. Time



*Customers who are able to receive power

Restoration Challenges
Repeated Outages on Restored Lines



AE Customer 4-Hour Interval Outages/Restorations
Winter Ice Storm Mara - 2023

Hazardous Road Conditions

Uprooted Trees and Extensive Damage to Limbs

Heavy Icing on Wires and Equipment

Some Poles Could Not Withstand the Forces

Mara Brought Down Comms Tower and Power Lines:

2402 Waymaker Way

Junction Pole Replacement:

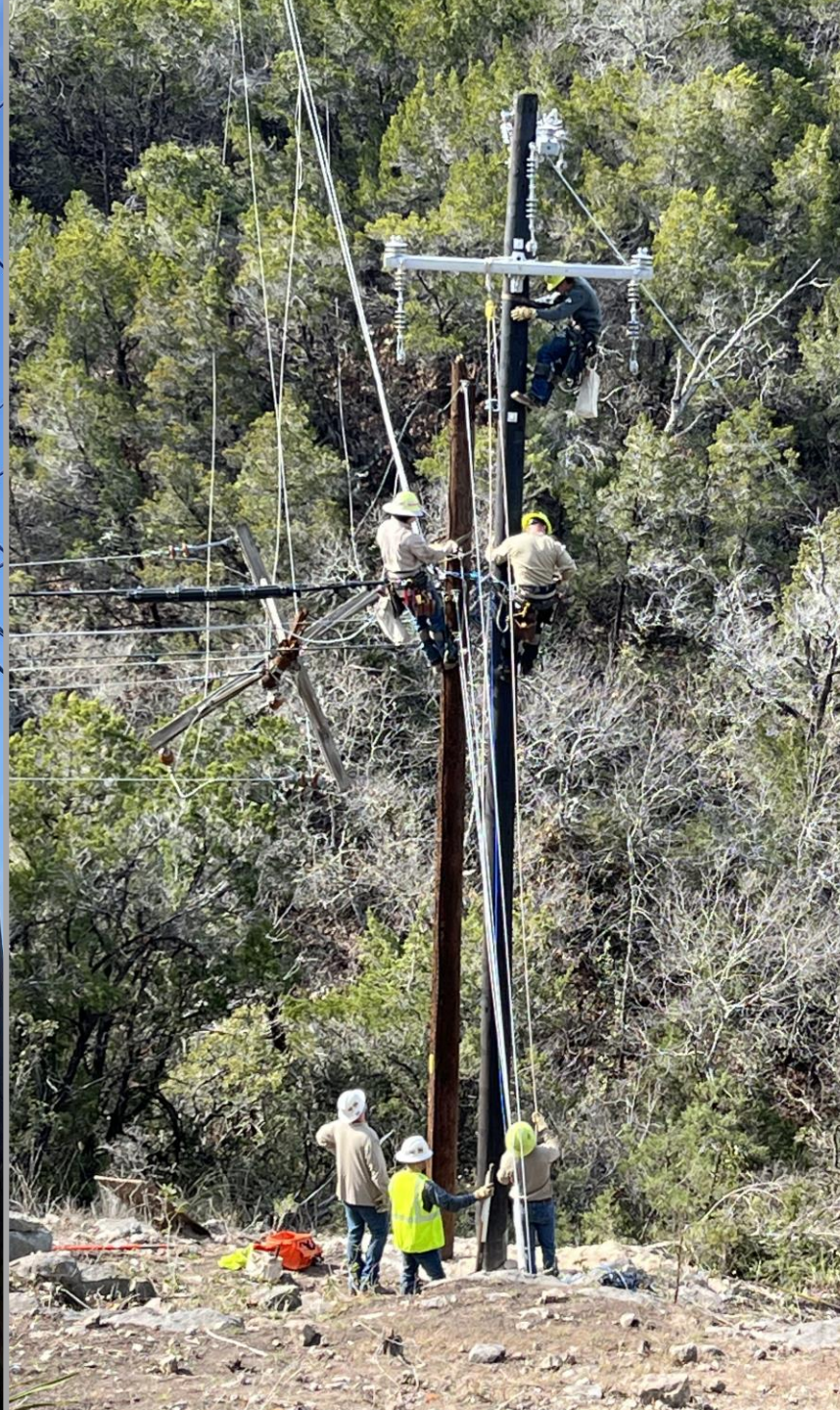
1165 Airport Blvd.

Steep Terrain Required Crews to Hand-Carry Pole:

409 Skyline Drive

Helicopter Needed to Set Pole:

15002 Julie Lane



Mutual Aid Efforts for Winter Storm Mara

Types of Mutual Aid

Utility crews – often established through industry groups, utilities provide qualified personnel and supplemental equipment

Contract crews – Independent companies, not tied to any one electric system

By the Numbers

New Braunfels Utilities – 7 personnel

Renegade – 16 personnel

CenterPoint Energy – 70 personnel

Bird Electric – 59 personnel

CPS Energy – 48 personnel

MP Technologies – 40 personnel

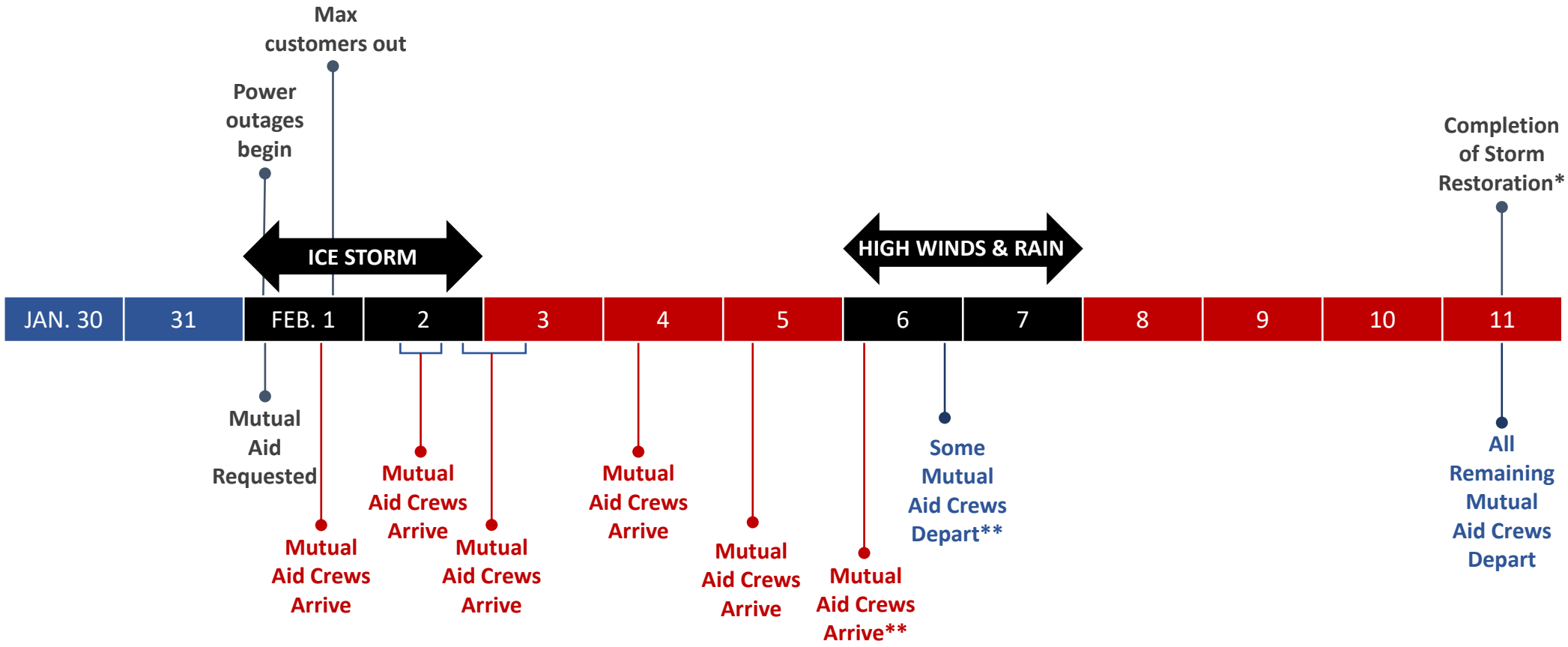
Tempest Energy – 205 personnel

Service Center

Leveraging outside crews requires space for daily briefings, heavy equipment staging, and other logistical needs

Mutual Aid Timeline

Austin Energy requested support as soon as outages began



*For customers who are able to safely receive power

**Increased contract company personnel when utility personnel needed to return to their home utility in anticipation of Feb. 7 weather

Mutual Aid Equipment

Photo: CenterPoint Energy, one of seven supporting entities, ready to deploy resources to help Austin Energy restore power.

Mutual Aid at Work

Materials Used for Mara Restoration

4,026 issues of materials

Materials issued during Winter Storm Mara:	Units issued March 2023
Wood Poles	84
Pole mounted transformers	40
Pad mounted transformers	9
Fault Indicators 1/0 to 500 MCM	59
Fault Indicators 1/0 to 795	44
Fiberglass poles	4
Air Switch 15kv Top Mount	2
Recloser 1PH 15KV	1
Total Items issued	4,026
Total Cost of Material Issuances	$661,311

Customer Driven. Community Focused.SM

TXMAG

TEXAS MUTUAL ASSISTANCE GROUP

CONFERENCE 2023

HOSTED BY:

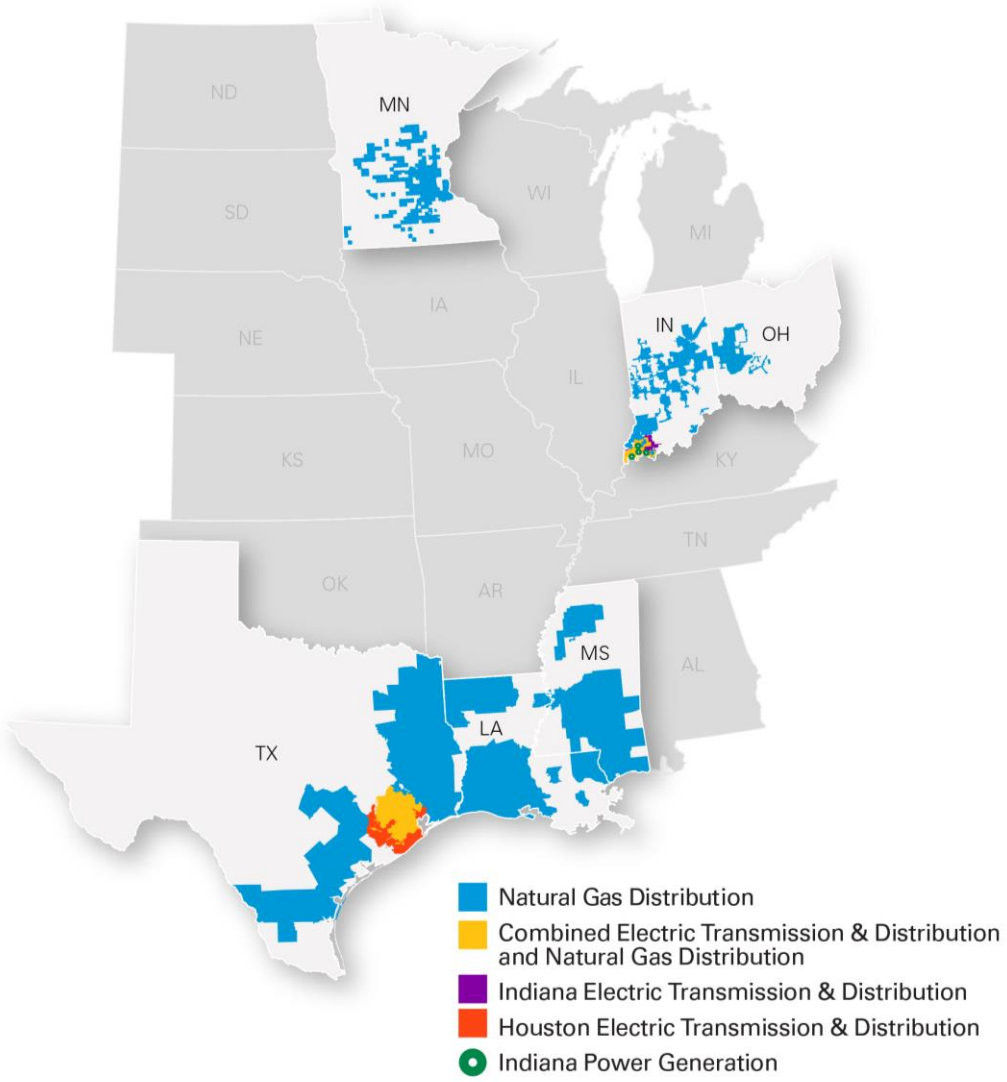
LCRA ENERGY • WATER • COMMUNITY SERVICES

AUSTIN ENERGY

CenterPoint Energy's EF3 Tornado in southeast Houston Response and Restoration

Presenter name

Date



Electric Transmission & Distribution and Power Generation

approximately

2.9 million

METERED CUSTOMERS

2 states

Natural Gas Distribution

approximately

4.3 million

METERED CUSTOMERS

6 states

Competitive Energy Businesses

Project activity in more than

20 states

As of December 31, 2022

- Our Electric and Natural Gas businesses each has an Emergency Operations Plan (EOP)
- Annual drill to test our emergency response
- Coordinate our EOP with state and local officials
- Work with a mutual assistance network that allows us to provide/receive assistance to/from other utilities across the country following natural disasters
  - On average, CenterPoint Energy sends linemen 4-6 times per year to help other utilities restore power
- Contracts for fuel, lodging and materials are executed in advance so we're ready if a storm strikes

- On Jan. 24, 2023, a tornado touched down near El Franco Lee Park east of Brookside Village. A near-continuous path of damage extended east-northeast, then northeast from there, across portions of southeast Houston, Pasadena, Deer Park and Baytown.
- The National Weather Service classified the tornado as an EF3.
- The tornado reached maximum speeds of **140 mph** and traveled **18 miles** before dissipating, with a maximum path width of **0.66 miles**.
- According to a National Oceanic and Atmospheric Administration database of recorded tornadoes, it is the strongest tornado to strike Harris County since an EF3 tornado developed in La Porte, Texas in March 2002.
- Since 1950, there have only been 10 tornadoes in Harris County, including this one, that were measured as an F3, EF3 or above.

Restoration Execution

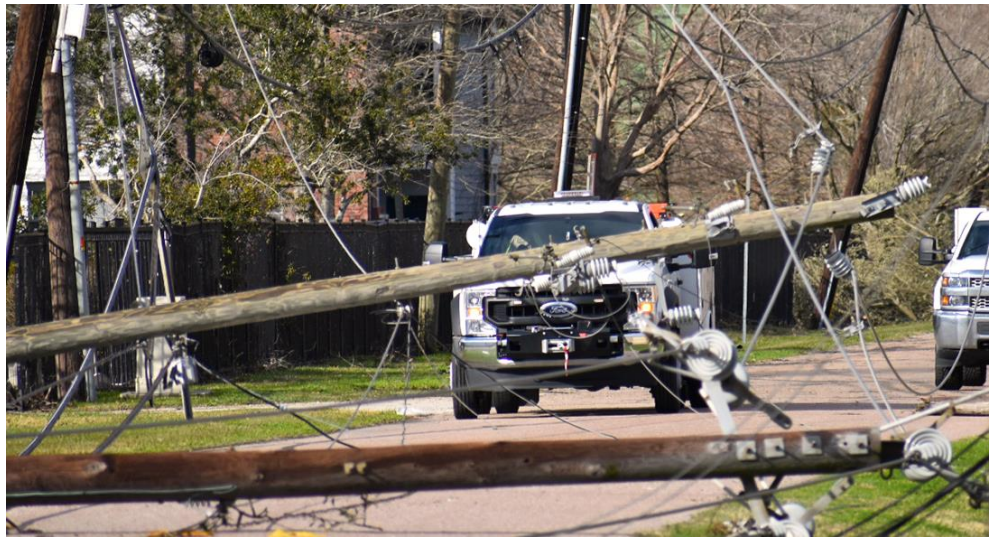
Restore Power Safely and Efficiently

1. Restore service to key facilities vital to public safety, health and welfare and secure downed power lines
2. Repair major lines and fuses that restore power to greatest number of customers in least amount of time
3. Repair transformers, which typically serve about 10 customers
4. Repair individual electric drops to homes

120

- Helicopters helped to assess the damage and evaluate work conditions
  - More than **4 locations** were tracked using **2 helicopters in partnership with the City of Deer Park and Pasadena**
  - Enabled real-time situational awareness, accelerating restoration assessments
  - Allowed us to efficiently direct crews to accessible locations
  - Infrared capabilities helped identify equipment that needed further inspection

- Mobile data on each crew kept outage management efficient
- Ability to use **Power Alert Service (PAS)** to keep customers informe
  - AMS meters provide outage information that enables our predictive analytics engine to supply data to PAS and IVR systems, ultimately allowing for better, more detailed customer updates
- Mobile Generator in Deer Park
  - While crews worked on making repairs to safely restore power to impacted customers, CenterPoint Energy used one 5 MW unit to power two adjacent schools in Deer Park, making school re-openings possible within days of a devastating tornado.



- **119** total electric circuits locked out and **549** total electric fuses out
- **28.49** SAIDI minutes with **207,547** customers impacted
- **77,613,139** total minutes out over **3** days

- **1** staging site
- **5760** total hours worked during event (48 hours per employee)
- **120** off-system D-Line FTEs were completely self-contained

- 2,225 total restorations
- **4** safety orientations and **268** crew safety observations

Safety Forward

- Responded to **70** natural gas emergency orders
- **24** miles of natural gas main and **2,063** services assessed for damage
- Approximately **318** crossings inspected of which **1** required remediation
- Virtually assessed **9** stations

- **~16,096** calls to the call center
  - **7,382** Electric Calls
  - **8,714** Natural Gas Calls
- **23%** were answered by agents with IVR handling the remainder
- **120,000** outage notifications delivered through Power Alert Service (PAS)
- Nearly **2,300** new PAS enrollments
- More than **227,000** customers reached via blast messaging

Pre-storm messaging

- Shared forecast, safety reminders and links on where to check for the most up-to-date outage info
- Key message posted in Spanish

Point-of-view from the field

- Embedded a member of the Utility Marketing team with field crews to capture impactful photos and video of damage to reflect the challenging conditions and the scope of restoration activities
- Posting in near real-time demonstrated the severity of restoration challenges while conveying authenticity and transparency in communications

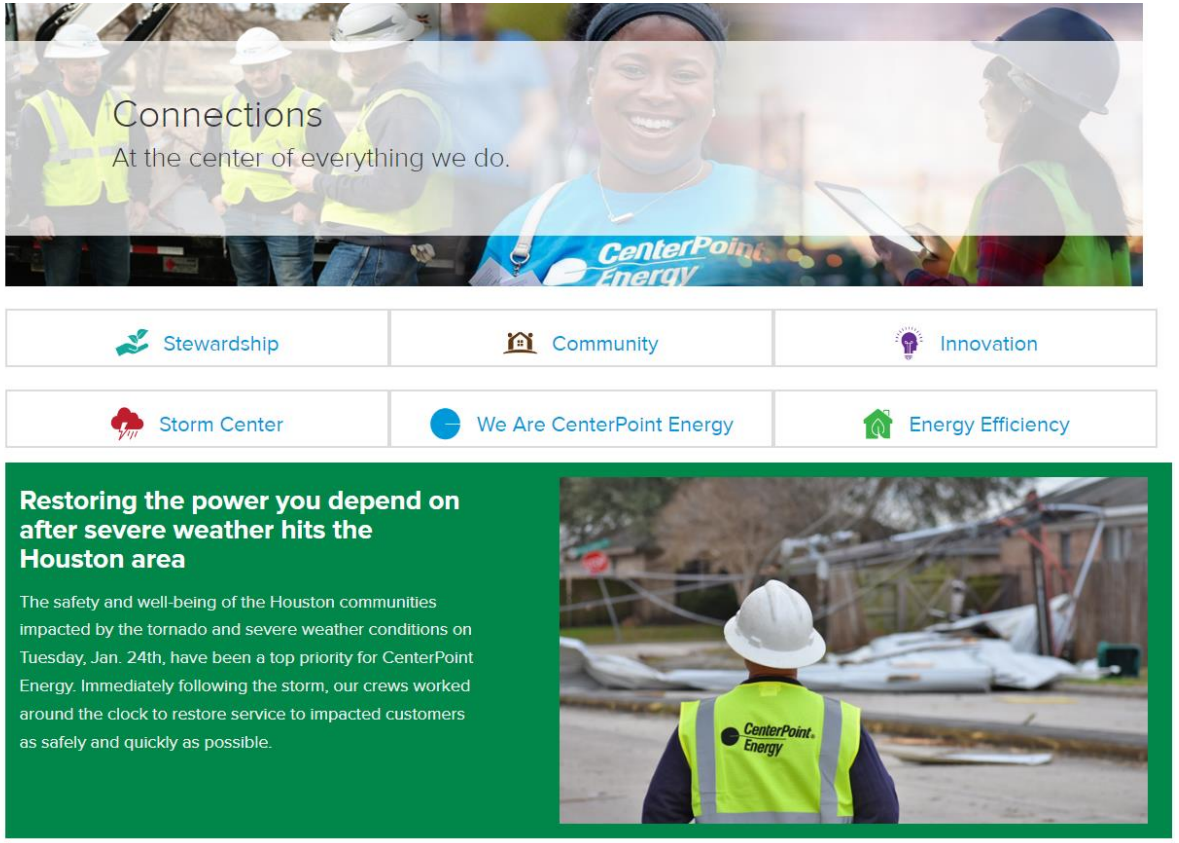
Post-storm messaging

- Shared safety tips, reminders to check customer-owned equipment and a recap of efforts as the event winded down, including community support events and coverage of mobile generation deployment

Measuring the impact in numbers

- **22** Facebook messages reached over **84,000 people** and were shared 229 times
- **31** Twitter messages **had 132,290 impressions** and were retweeted 266 times, **including by the media and city officials**
- **2** LinkedIn posts had **30,317 impressions** and 682 likes
- **6** Localized Nextdoor posts yielded **169,406 impressions**

- **1,010,745** visits to CenterPointEnergy.com (1/24-1/29)
- After the tornado hit on Jan. 24, web traffic was more than **432%** higher than average
- **115,967** visits to Outage Center page
- **784,723** page views to Outage Tracker



The CenterPoint Energy Foundation contributed $50,000 to the following organizations:

Salvation Army
- Hot meal distribution and shelter placement assistance in Pasadena and Deer Park

Baker Ripley Pasadena Campus
- Food and tarp distribution in Pasadena and Deer Park

Clothed by Faith
- Serving clothing needs for students in Deer Park, Pasadena, and Goose Creek ISD

United Way of Greater Baytown and Chambers County
- Supporting local community with restoration and resident support services

Pasadena Animal Shelter
- Shelter was destroyed by the tornado, and they worked to rehome animals while they rebuild their facility


Q
A

TXMAG

TEXAS MUTUAL ASSISTANCE GROUP

CONFERENCE 2023

HOSTED BY:

LCRA ENERGY • WATER • COMMUNITY SERVICES

AUSTIN ENERGY

ONCOR MARCH 2023 SEVERE STORMS

DSD23002: 03/02/2023 – 03/04/2023

Tues 2/28/23

NWS Severe Weather Daily Notices Begin for Severe Storm Threat

Wed 3/1/23

NWS Severe Weather and Internal Severe Weather Notices Ongoing

Thurs 3/2/23

Weather Notices Ongoing, Storm Impacts to Oncor's System

- 3:20 PM: DSD23002 Created to Capture Costs Associated with Incoming Severe Storm
- 5:00 PM: West TX Repair Center Open
- 5:45 PM: Storm Impacts to Oncor's System Begin – 15,187 outages
- 6:30 PM: TXMAG Mutual Assistance Request Made for 750 D-Line and 700 VM
- 6:50 PM: SEE Mutual Assistance Request Made for 700 D-Line and 700 VM
- 6:50 PM: EDOC Storm Mode, DES, MCK, MTN Storm Repair Center Open

Thurs 3/2/23 Storm Restoration

- 7:00 PM: Peak Outages at 291,638
- 7:00 PM: HOT Repair Center Open
- 7:20 PM: Texoma Repair Center Open
- 7:28 PM: SEC Activation Email Sent
- 8:17 PM: ABC and FWN Storm Desks Open
- 8:30 PM: SEE Mutual Assistance Call #1, D-Line Resources acquired from Dominion Energy SC, Dominion Energy VA/NC, OG&E, FP&L, and Florida Public Utilities, VM Contract Resources from Dominion Energy SC, and FP&L
- 10:00 PM: SEC Open

Fri 3/3/23

Ongoing Storm Restoration

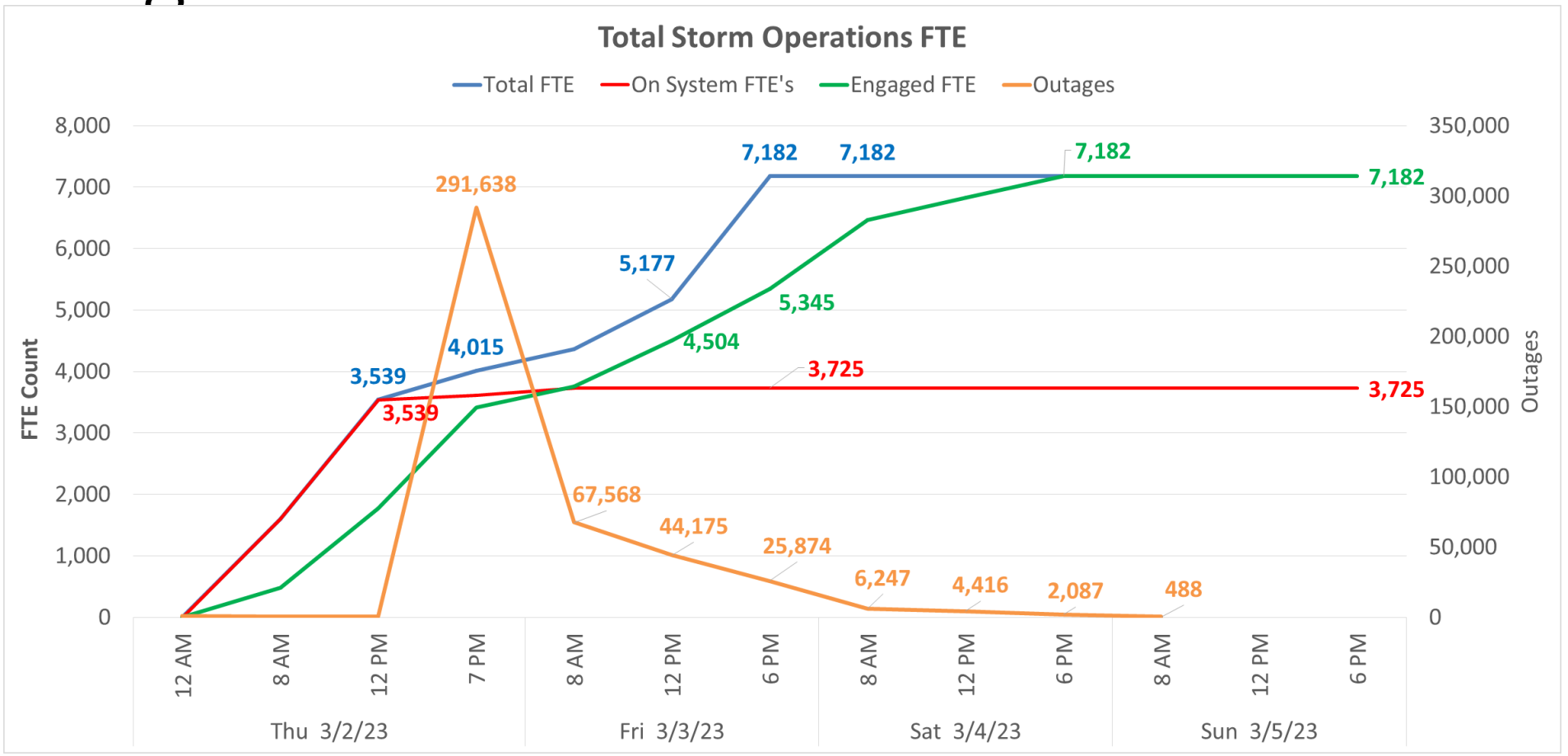
- 8:00 AM: Additional VM Resources Acquired from Cleco, CenterPoint, Dominion Energy SC, and FP&L
- 9:00 AM: SEC Call #1
- 9:45 AM: VM Contract Resources Acquired from AEP
- 3:00 PM: Additional D-Line Resources Acquired from CPS Energy
- 6:00 PM: SEC Call #2
- 6:11 PM: West TX Repair Center Closed, Back to Normal Operations
- 7:00 PM: SEC Closed
- 10:00 PM: DES, MCK, MTN Repair Centers Closed, Back to Normal Operations
- 11:40 PM: HOT District Repair Center Closed, Back to Normal Operations
- 11:50 PM: Texoma Repair Center Closed, Back to Normal Operations

Sat 3/4/23

Full Return to Normal Operations

- 8:00 AM: BMW Repair Center Closed, Back to Normal Operations
- 11:00 AM: All VM Mutual Assistance Resources Released
- 5:40 PM: EDOC Repair Center Closed, Back to Normal Operations
- 12:00 AM: All D-Line Mutual Assistance Resources Released

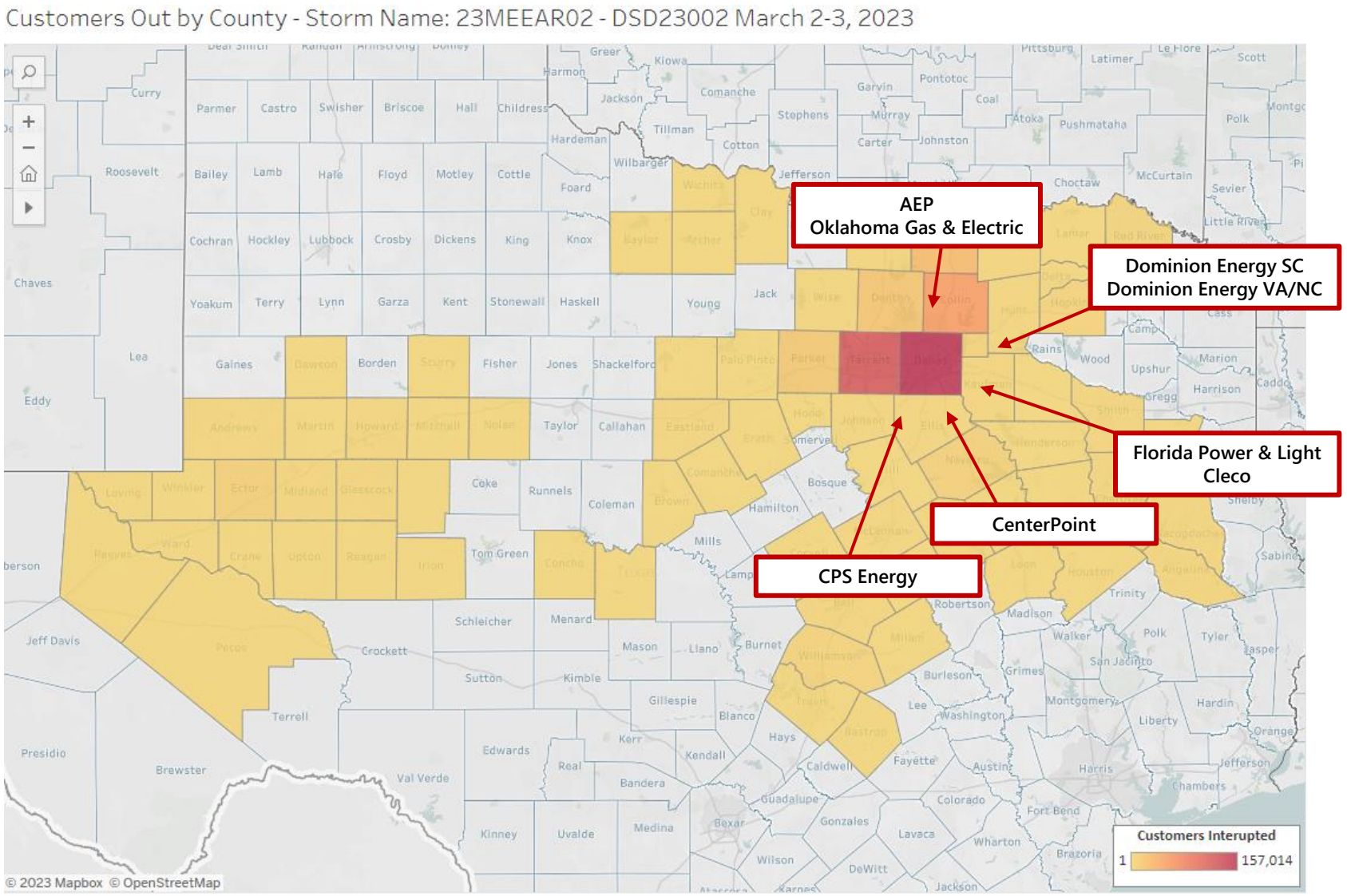
Storm Restoration Resource Timeline with Outages



Storm Restoration Resource Timeline

Distribution					Transmission			
	On System		Off System					
Type	Crews	FTE	Crews	FTE	Type	Oncor	Contract	Total
OH Contract Resources	169	760	71	355	Line and Sub	125	20	145
MA Contract Resources			166	833	**Transmission Total**	**125**	**20**	**145**
VM Contract Resources	397	1,389	249	871				
VM MA Resources	-	-	147	514				
DE and WDG	38	76	449	739				
Oncor	-	1,500			***On System Total***			***3,870***
FTE Sub Total		***3,725***		***3,312***	***Off System Total***			***3,312***
Distribution Total FTE		***7,037***			***Grand Total***			***7,182***

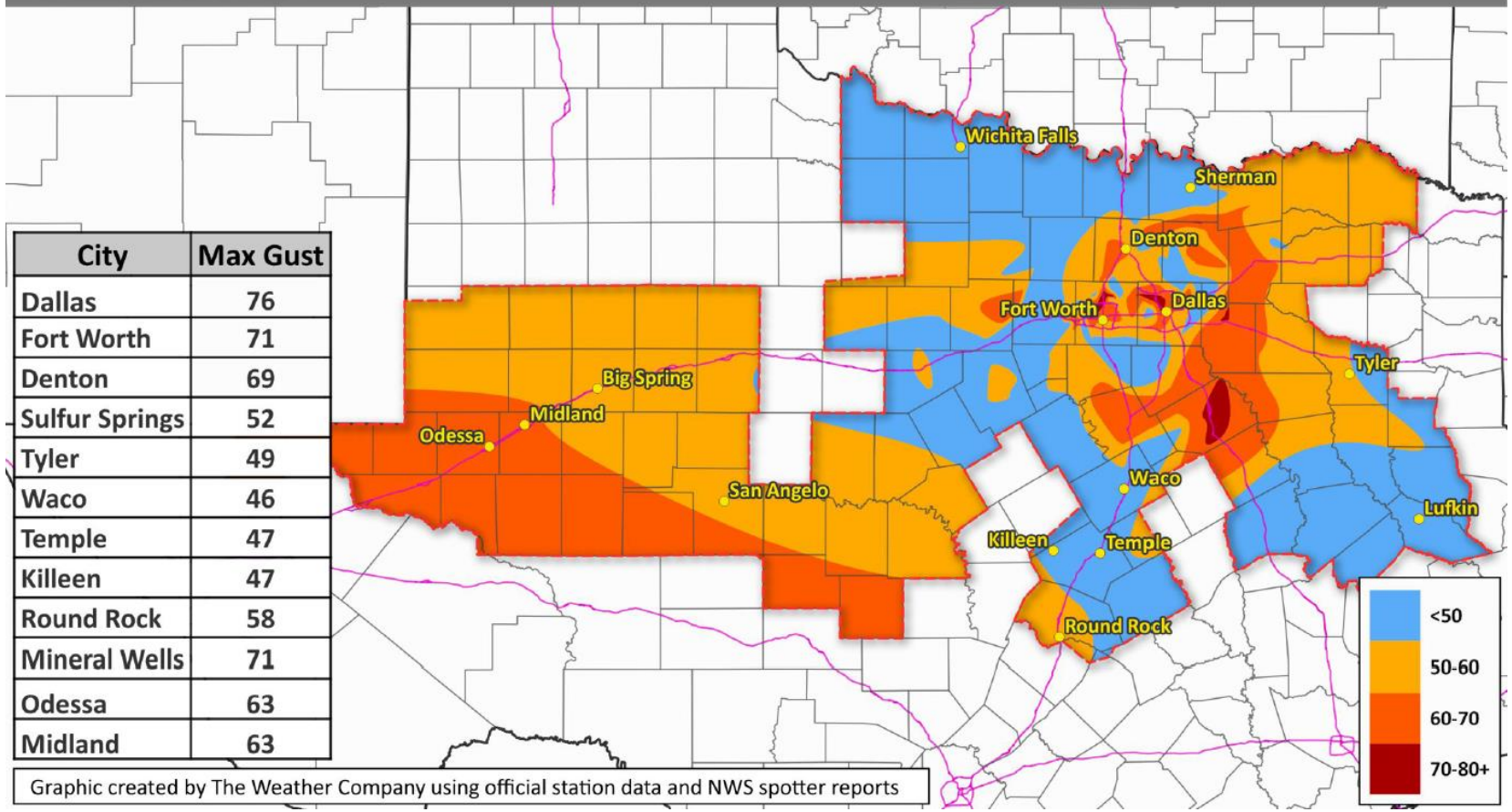
Restoration Response – Off System Assistance



Depicts all outages during the storm timeframe, by County.

Maximum Observed Wind Gusts (MPH)

Thursday March 2, 2023



City	Max Gust
Dallas	76
Fort Worth	71
Denton	69
Sulfur Springs	52
Tyler	49
Waco	46
Temple	47
Killeen	47
Round Rock	58
Mineral Wells	71
Odessa	63
Midland	63

Graphic created by The Weather Company using official station data and NWS spotter reports

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

HOSTED BY:

BREAK

SPONSORED BY:

VICTORY
POWERLINE SERVICES

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

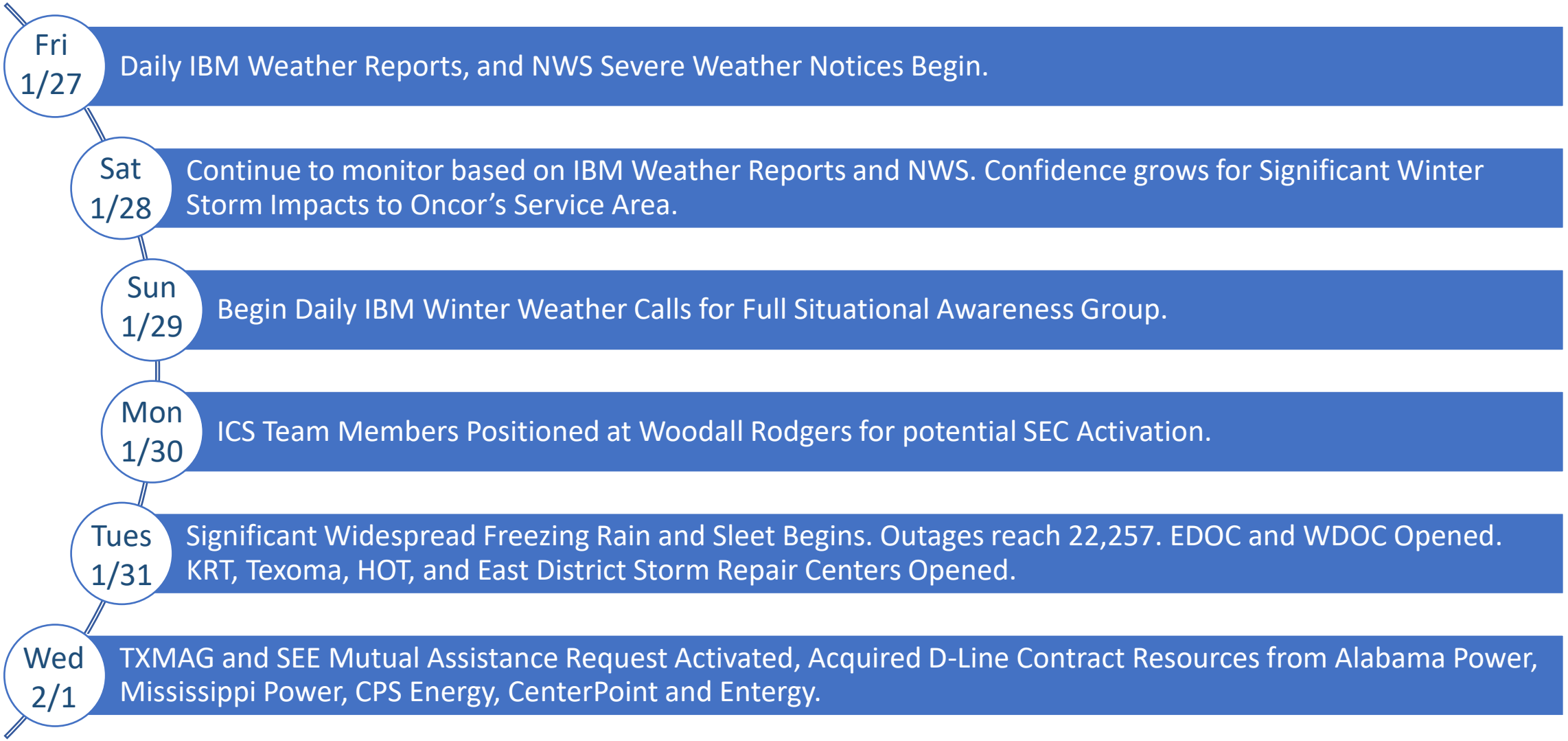
HOSTED BY:

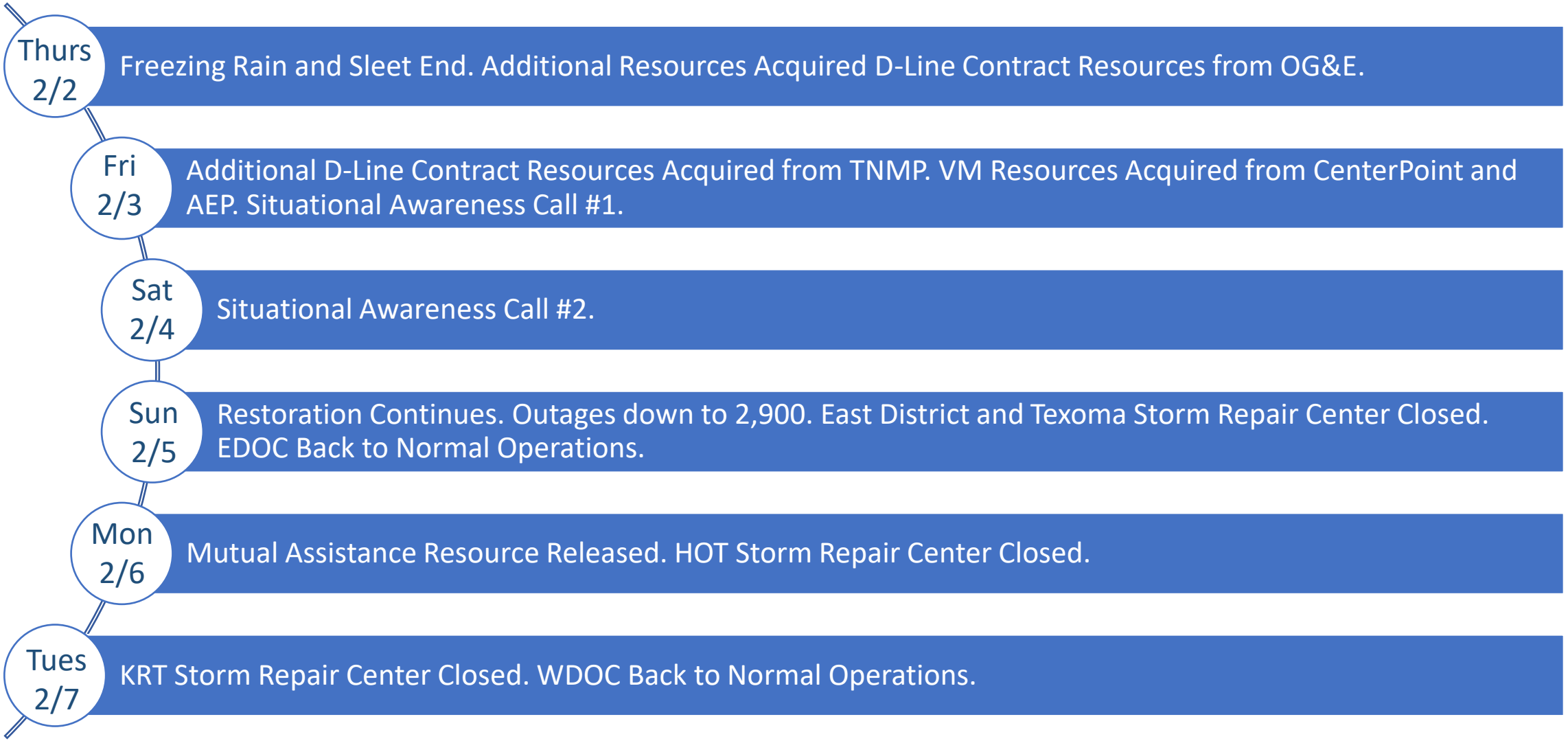
NRE (National Response Event) Presentation

Brittni Anderson
Oncor

ONCOR JANUARY 2023 WINTER STORM MARA

DSD23001

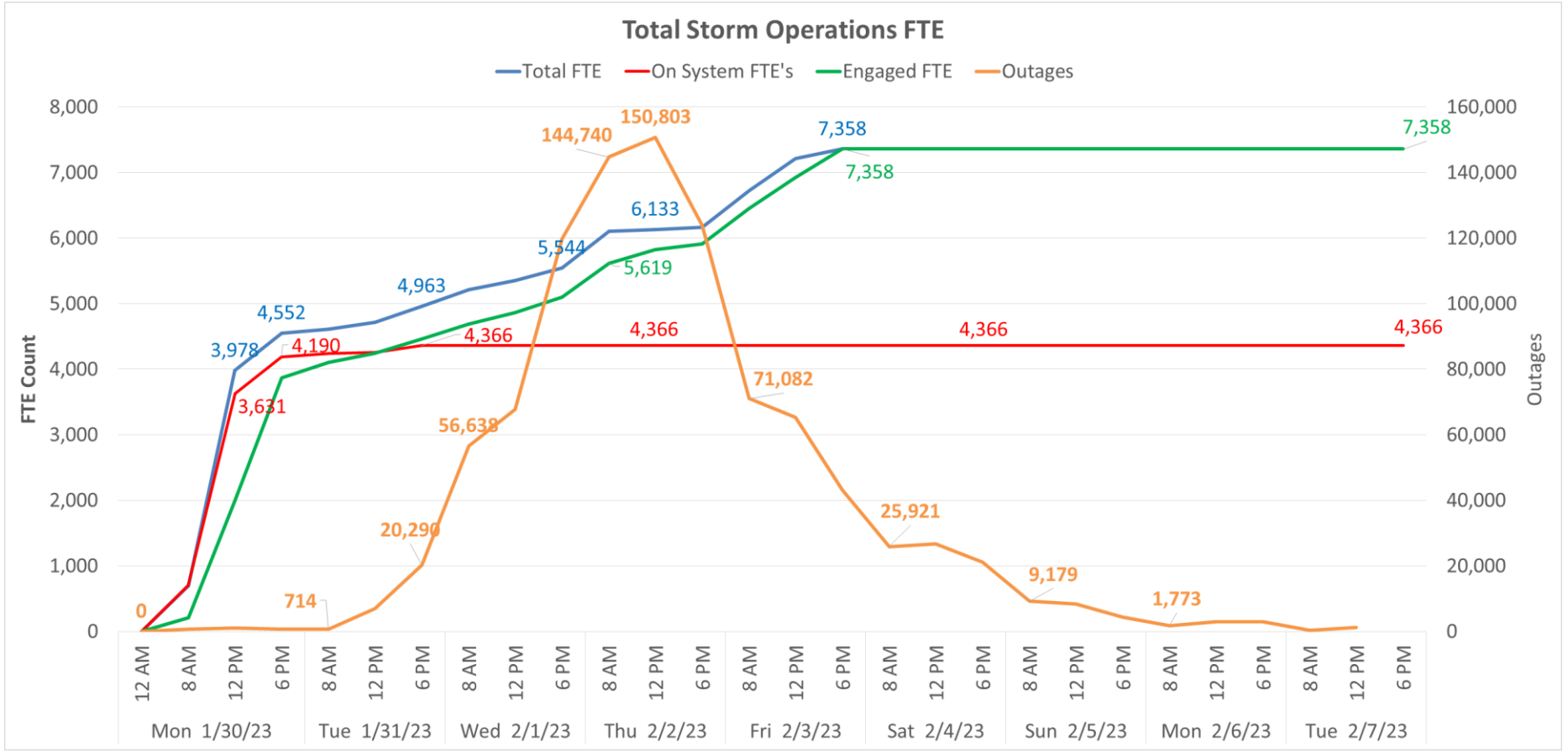

Fri 1/27
Daily IBM Weather Reports, and NWS Severe Weather Notices Begin.
Sat 1/28
Continue to monitor based on IBM Weather Reports and NWS. Confidence grows for Significant Winter Storm Impacts to Oncor's Service Area.
Sun 1/29
Begin Daily IBM Winter Weather Calls for Full Situational Awareness Group.
Mon 1/30
ICS Team Members Positioned at Woodall Rodgers for potential SEC Activation.
Tues 1/31
Significant Widespread Freezing Rain and Sleet Begins. Outages reach 22,257. EDOC and WDOC Opened. KRT, Texoma, HOT, and East District Storm Repair Centers Opened.
Wed 2/1
TXMAG and SEE Mutual Assistance Request Activated, Acquired D-Line Contract Resources from Alabama Power, Mississippi Power, CPS Energy, CenterPoint and Entergy.


Thurs 2/2
Freezing Rain and Sleet End. Additional Resources Acquired D-Line Contract Resources from OG&E.
Fri 2/3
Additional D-Line Contract Resources Acquired from TNMP. VM Resources Acquired from CenterPoint and AEP. Situational Awareness Call #1.
Sat 2/4
Situational Awareness Call #2.
Sun 2/5
Restoration Continues. Outages down to 2,900. East District and Texoma Storm Repair Center Closed. EDOC Back to Normal Operations.
Mon 2/6
Mutual Assistance Resource Released. HOT Storm Repair Center Closed.
Tues 2/7
KRT Storm Repair Center Closed. WDOC Back to Normal Operations.

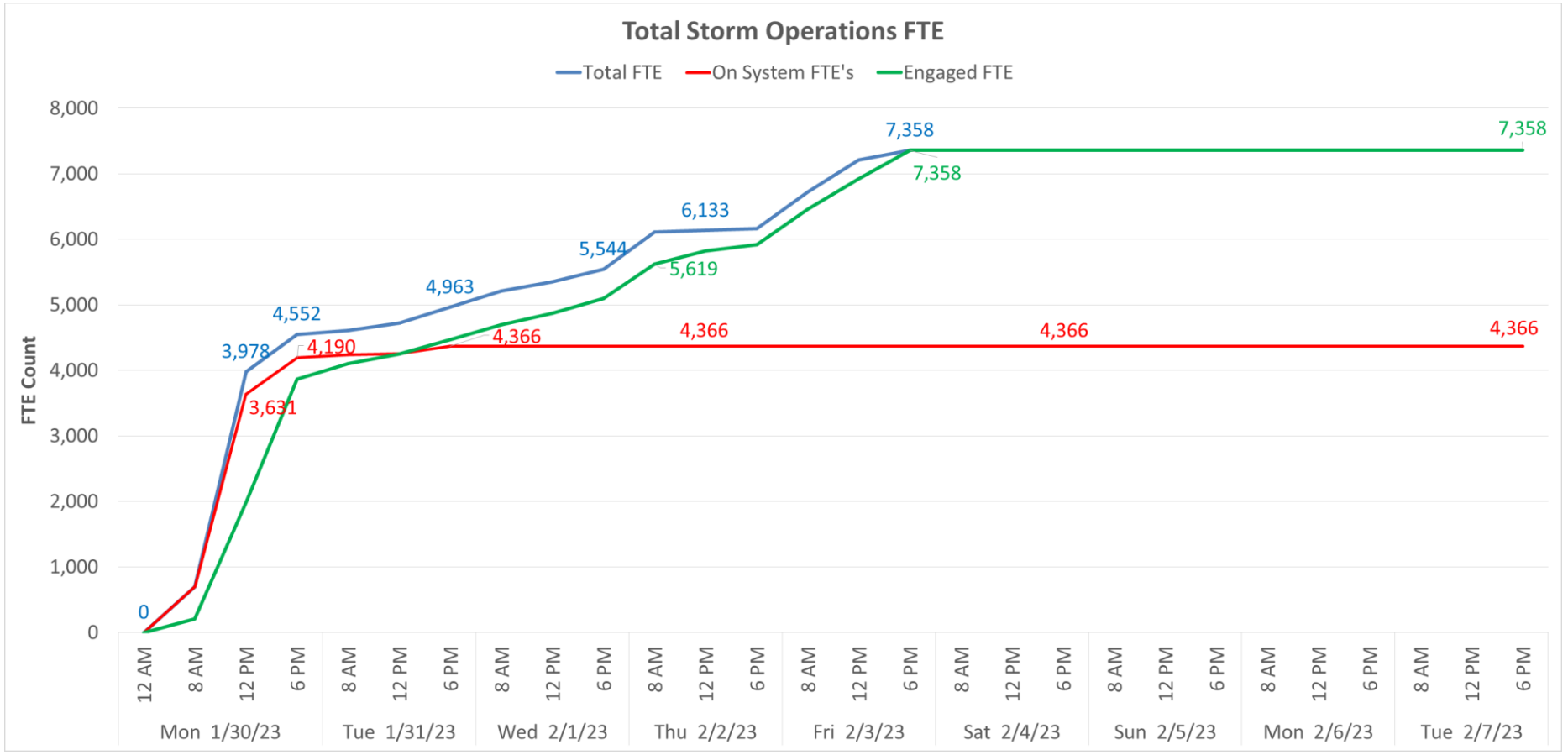
Storm Restoration Resources

Distribution					Transmission			
	On System		Off System					
Type	Crews	FTE	Crews	FTE	Type	Oncor	Contract	Total
OH Contract Resources	187	912	237	1,326	Line and Sub	300	-	300
UG Contract Resources	60	210	-	-	**Transmission Total**	**300**	**-**	**300**
VM Contract Resources	391	1,368	309	1,082				
DE and WDG	38	76	322	584	**Total Operations Support**			
Oncor	-	1,500	-	-	**Oncor**		***1,876***	
FTE Sub Total		***4,066***		***2,992***	**Contract**		***5,482***	
Distribution Total FTE		***7,058***			**Grand Total**		***7,358***	

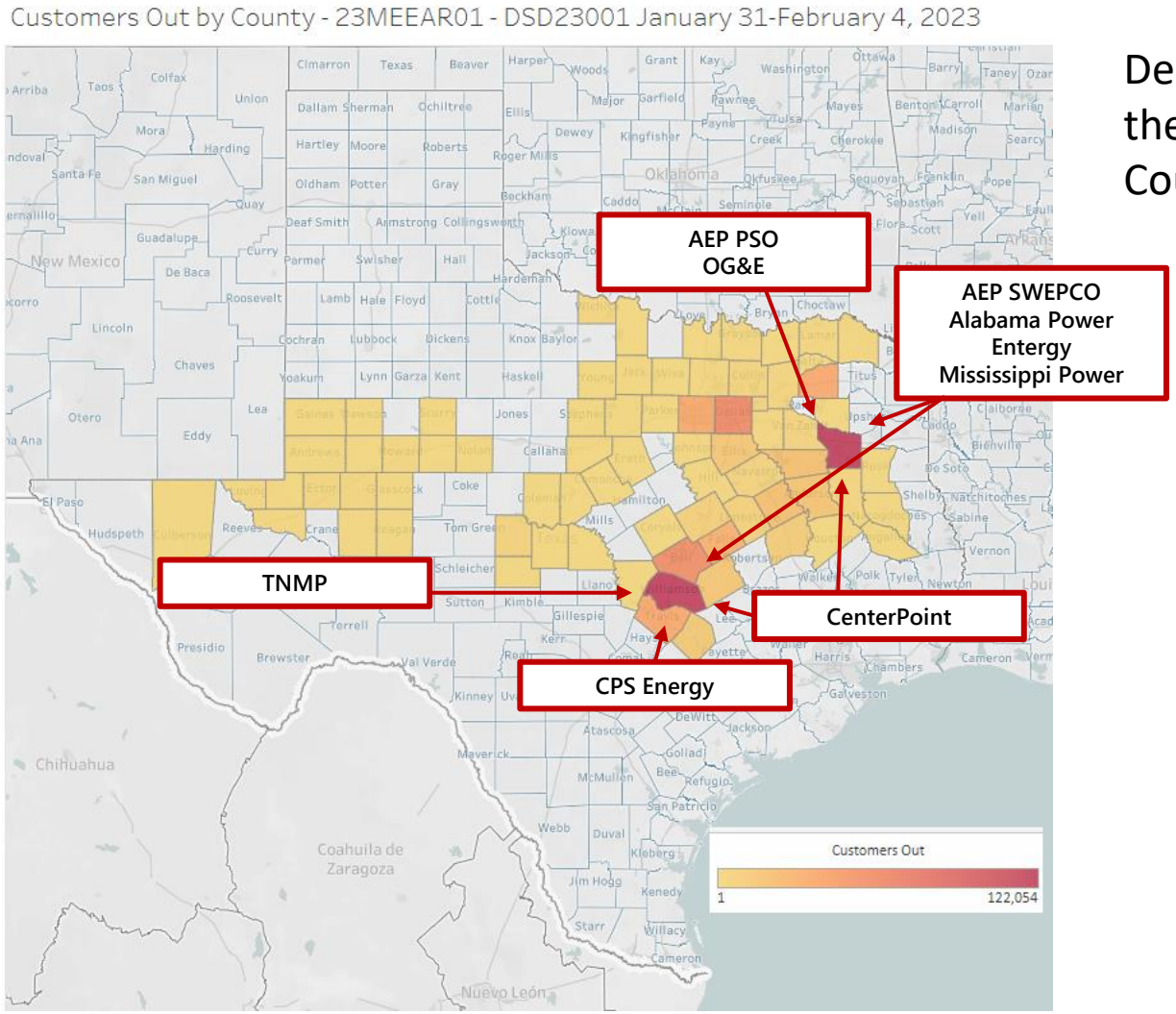
Storm Restoration Resource Timeline with Outages



Storm Restoration Resource Timeline

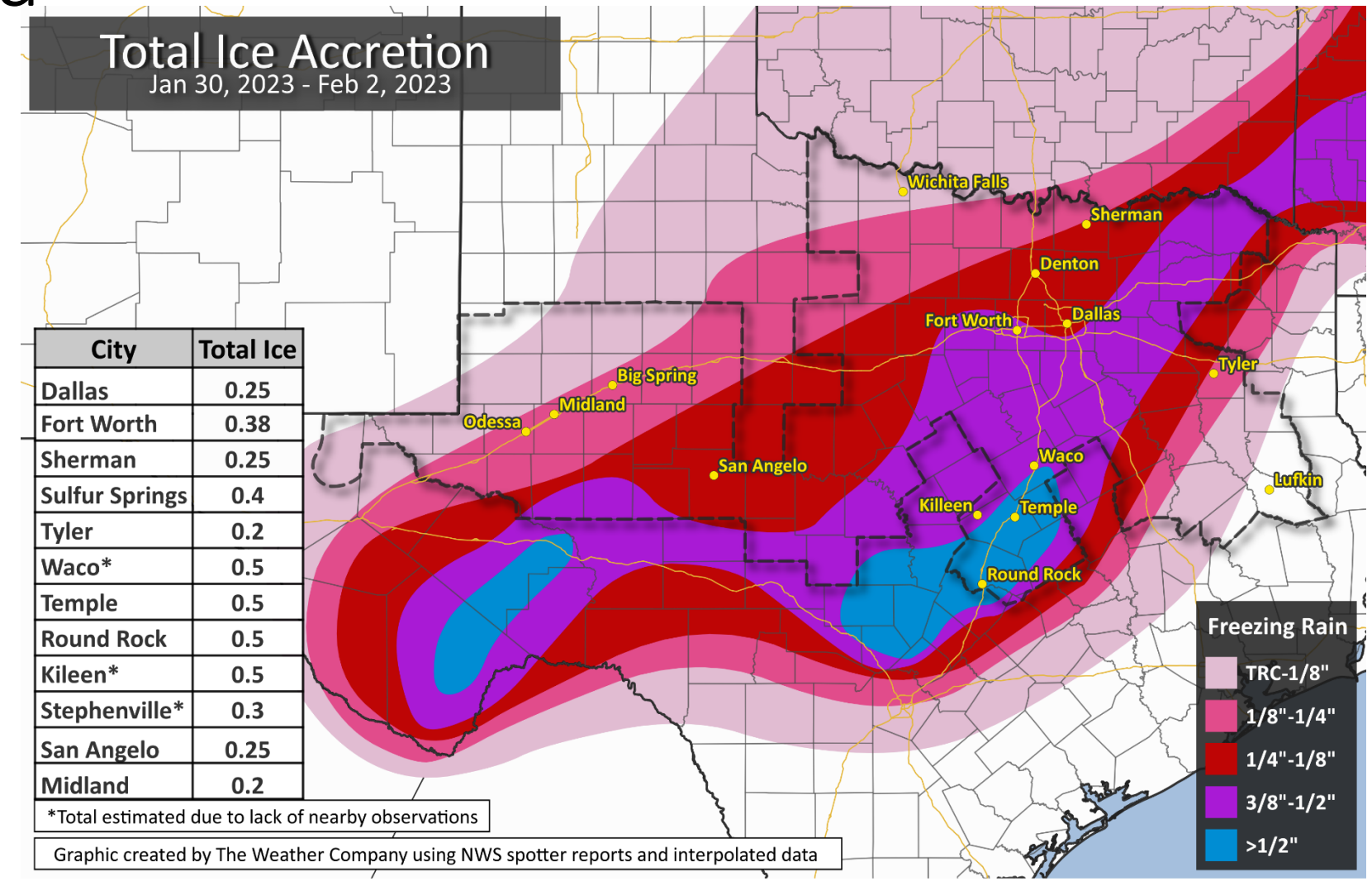


Restoration Response – Off System Assistance



Depicts all outages during the storm timeframe, by County.

Observed Ice Accretion within Oncor's Service Area



City	Total Ice
Dallas	0.25
Fort Worth	0.38
Sherman	0.25
Sulfur Springs	0.4
Tyler	0.2
Waco*	0.5
Temple	0.5
Round Rock	0.5
Kileen*	0.5
Stephenville*	0.3
San Angelo	0.25
Midland	0.2

*Total estimated due to lack of nearby observations

Graphic created by The Weather Company using NWS spotter reports and interpolated data

HOSTED BY:

LCRA ENERGY • WATER • COMMUNITY SERVICES | AUSTIN ENERGY®

TXMAG

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

BLACK & VEATCH

Storm Restoration:
Lessons Learned

Prepared for TxMAG

BIRD
A BLACK & VEATCH COMPANY

Company Overview

Bird Electric, a Black & Veatch Company

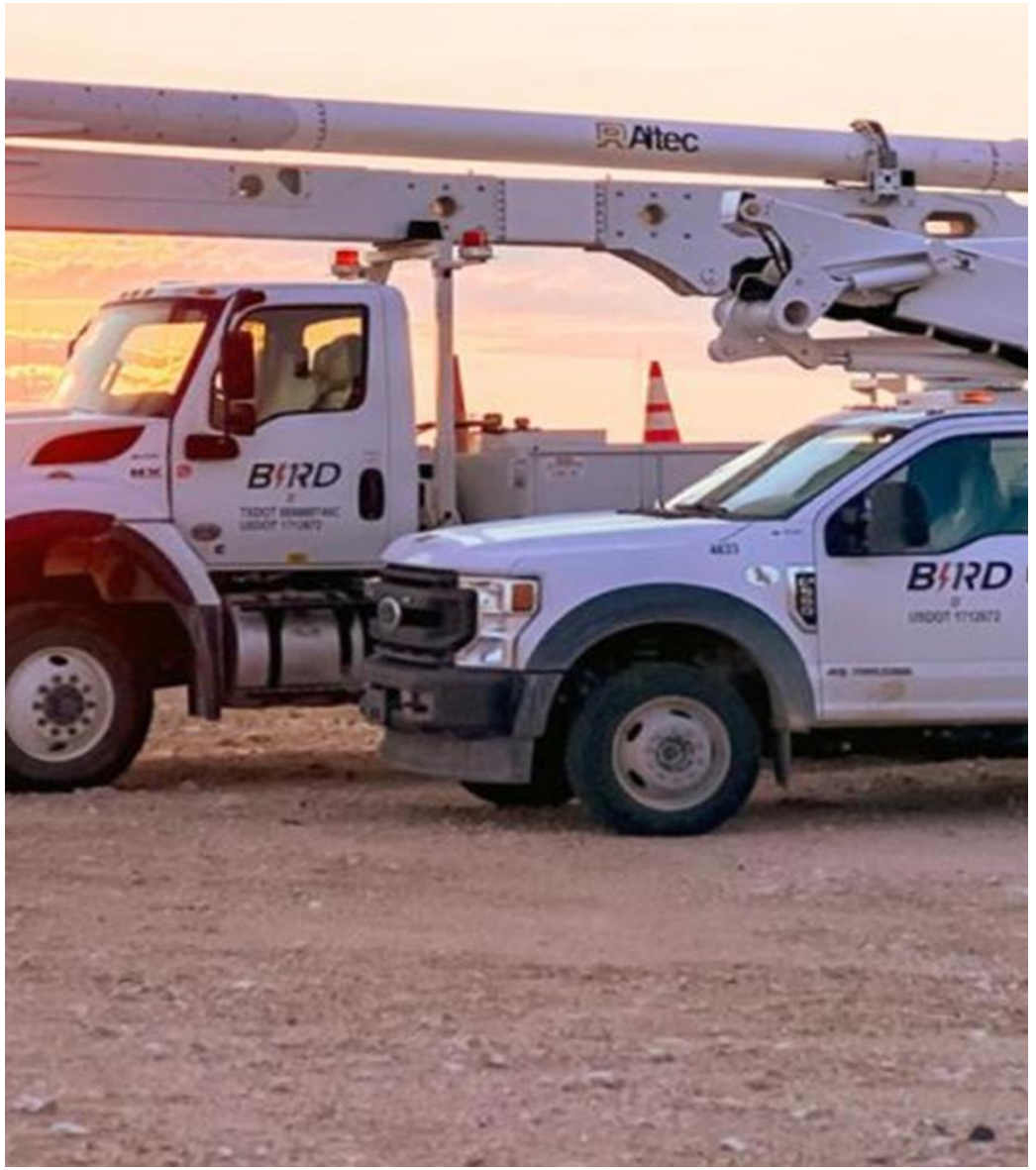
- **In May 2023, Bird Electric was acquired by Black & Veatch**

- Bird Electric builds on world-class capabilities and integrated solutions offerings at Black & Veatch
- Expands existing capabilities, staff resources (500+), and equipment
- Brings additional construction capabilities to a wider client base
- Enhances career and personal growth opportunities for our employees
- Combines key industry EPC talent to meet a significant demand in critical infrastructure

Bird Electric Overview

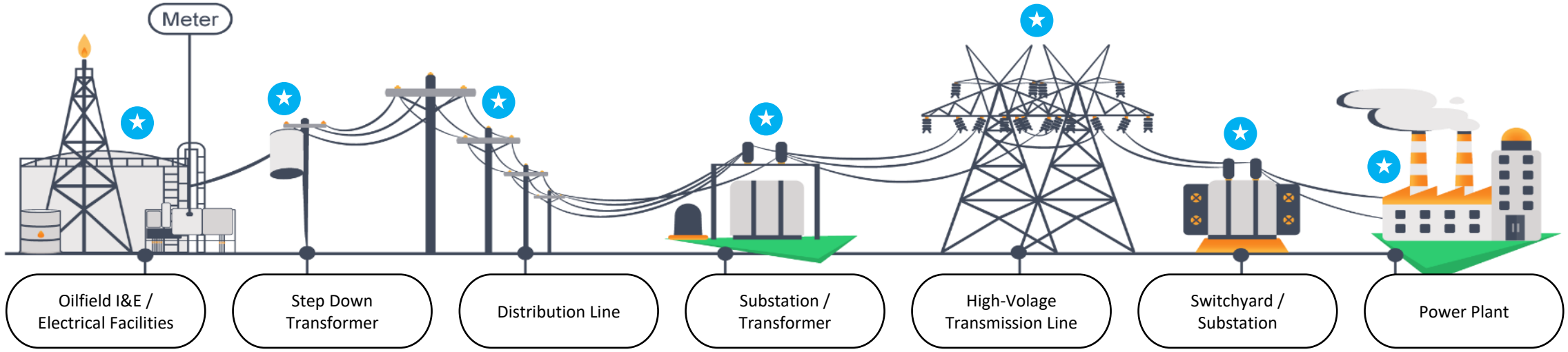
- Bird Electric is a full-service utility contractor and storm restoration solution provider with customers throughout the United States and the US territories.

- **Safe.** 0.73 EMR (2022)
- **Experienced.** Founded in 2004
- **Scalable.** 500+ employees with ability to scale through contractor networks
- **Nationwide.** Texas, Oklahoma, Arkansas, Kansas, Florida, Maryland, Mississippi, Alabama, New Mexico, California, North Carolina, New York, Detroit, Georgia, Iowa, US Virgin Islands, and Puerto Rico



- Bird Electric works across multiple touchpoints throughout the public/private electric grid including receiving demand for new construction, maintenance/repair/overhaul, removal and disposal of electrical infrastructure, and emergency power restoration.

Bird Electric Operation Touchpoints



2004 1st Hurricane
Hurricane Ivan &
Hurricane Katrina

20+

Hurricanes since 2004

50+ 2023 Storm Events

25+ Years

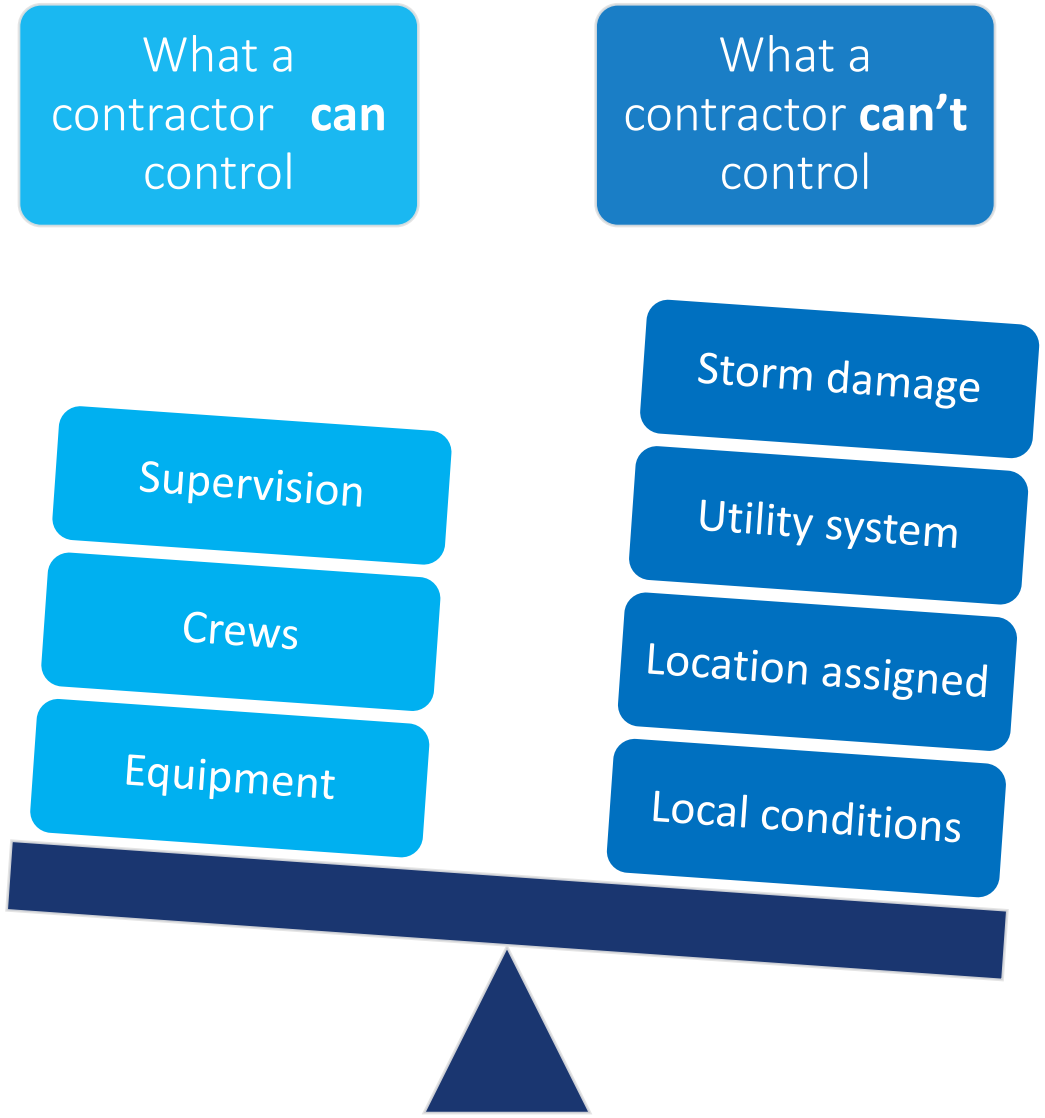
Average storm leadership experience

and

2,500+ Storm resources nationwide

Turnkey storm restoration offering

Winter Storm Mara Case Study and Lessons Learned


What a contractor **can** control
What a contractor **can't** control
Supervision
Crews
Equipment
Storm damage
Utility system
Location assigned
Local conditions

Case Study: Winter Storm Mara (Overview)

• Situation

- Winter Storm Mara had damaging impact on Utility causing over 150K systemwide outages
- Outages were widespread, impacting multiple utilities in the immediate and surrounding areas
- Bird Electric secured by utility as outside contractor to supplement their ongoing restoration efforts

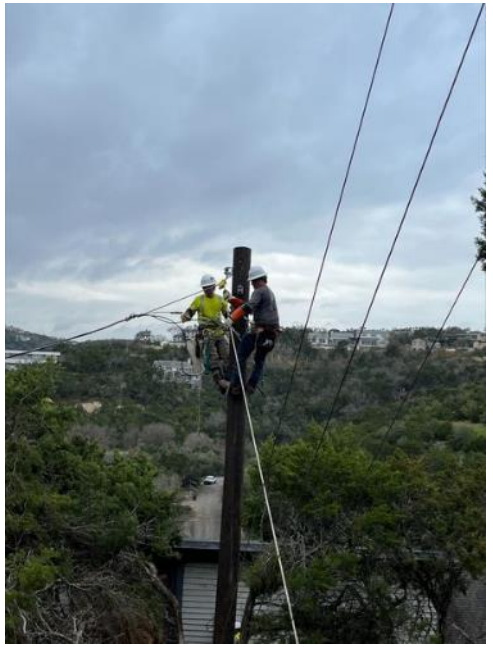
Challenge

- Outages at utility were unprecedented and post-storm conditions were not ideal for restoration (ice and fallen vegetation)
- Utility did not historically need to request external contractor support
- Coordination of vast number of outside resources led to logistics, staging, and assignment complications

Solution

- Bird Electric's extensive experience providing storm support during other outage events across the US proved useful
- Processes and procedures implemented by Bird Electric expedited crew onboarding
- Partnership between the utility and Bird Electric enabled safe and timely restoration of power

- Bird Electric was assigned to repair a pole in a hard-to-reach area on a steep hillside
- Since equipment could not be moved to the location safely, the team had to quickly plan how to set the pole without equipment
- The team hand-carried and manually replaced the damaged pole on the hillside
- After the pole was set, the linemen climbed the pole to install the new service



- ***Open communication between contractor and utility operations is critical for success***
- Coordination between contractor supervision and utility operations enable smooth, efficient and safe operations to better manage the “unknowns”
- Bird Electric’s seasoned field leadership (with an average 25+ years of field experience) work closely with utility operating leads to manage the work assignments and safely restore power to the community
- ***Advanced coordination of logistics allows for more efficient operations***
- Bird Electric’s leadership arrive before crew to identify logistic leads and confirm rosters and equipment to streamline check-in and onboarding
- Advance coordination also allows utility to properly manage “hotel room” assignment and equipment staging yards
- ***A point person should be assigned by both the utility and the contractor to manage issues***
- Issues are inevitable; assigning leads to manage the issue and communicate the resolution is important to ensure the overall focus remains on restoring power
- ***Feedback after the storm is important for continuous improvement***
- Feedback on what went well and areas for improvement can help both the utility and contractor work together more productively in the future

BLACK & VEATCH

Contact Us

Brian Bird	254-631-1662	brianbird@birdelectricinc.com
Delvin Kelly	214-562-7391	dkelly@birdelectricinc.com
Norman Engler	225-268-9072	nengler@birdelectricinc.com
Mike Bianco	916-812-7715	biancomd@bv.com
Nathan Egge	913-522-3988	eggen@bv.com

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

HOSTED BY:

RECEPTION

SPONSORED BY:

QUANTA SERVICES

TEXAS MUTUAL ASSISTANCE GROUP
CONFERENCE 2023

HOSTED BY: LCRA ENERGY • WATER • COMMUNITY SERVICES | AUSTIN ENERGY

AGENDA Friday, May 19

Breakfast – Oaks	**7:30 am – 8:30 am**
Safety Message Wendy Ellen, Austin Energy	**8:30 am – 9:00 am**
LCRA's Resiliency Program Belle Bybel, LCRA	**8:30 am – 9:00 am**
T&D Contractor Panel Discussion **Moderator** – Colby Gravatt, CenterPoint Energy Quanta – Tim Stearman or Brian Travis Frontline Power – Clint King Davey Trees – Brandon Freemen Trees LLC – Mike English	**9:00 am – 10:00 am**
Break/Door Prizes	**10:00 am – 10:30 am**
Cyber & Physical Security Threats Keith Parry and Ravindra Lakamraju, LCRA	**10:30 am – 11:00 am**
TXMAG Roundtable/Closing Remarks **TXMAG Future/Membership/2024 Conference Location** Colby Gravatt, CenterPoint Michael Martin, Oncor	**11:00 am – 11:30 am**
Adjourn – Thank you for attending!	**11:30 am**

THANK YOU SPONSORS!

TEXAS MUTUAL ASSISTANCE GROUP

CONFERENCE 2023

HOSTED BY: