

Winter Storm Mara Restoration and Recovery

Jackie Sargent

Austin Energy General Manager

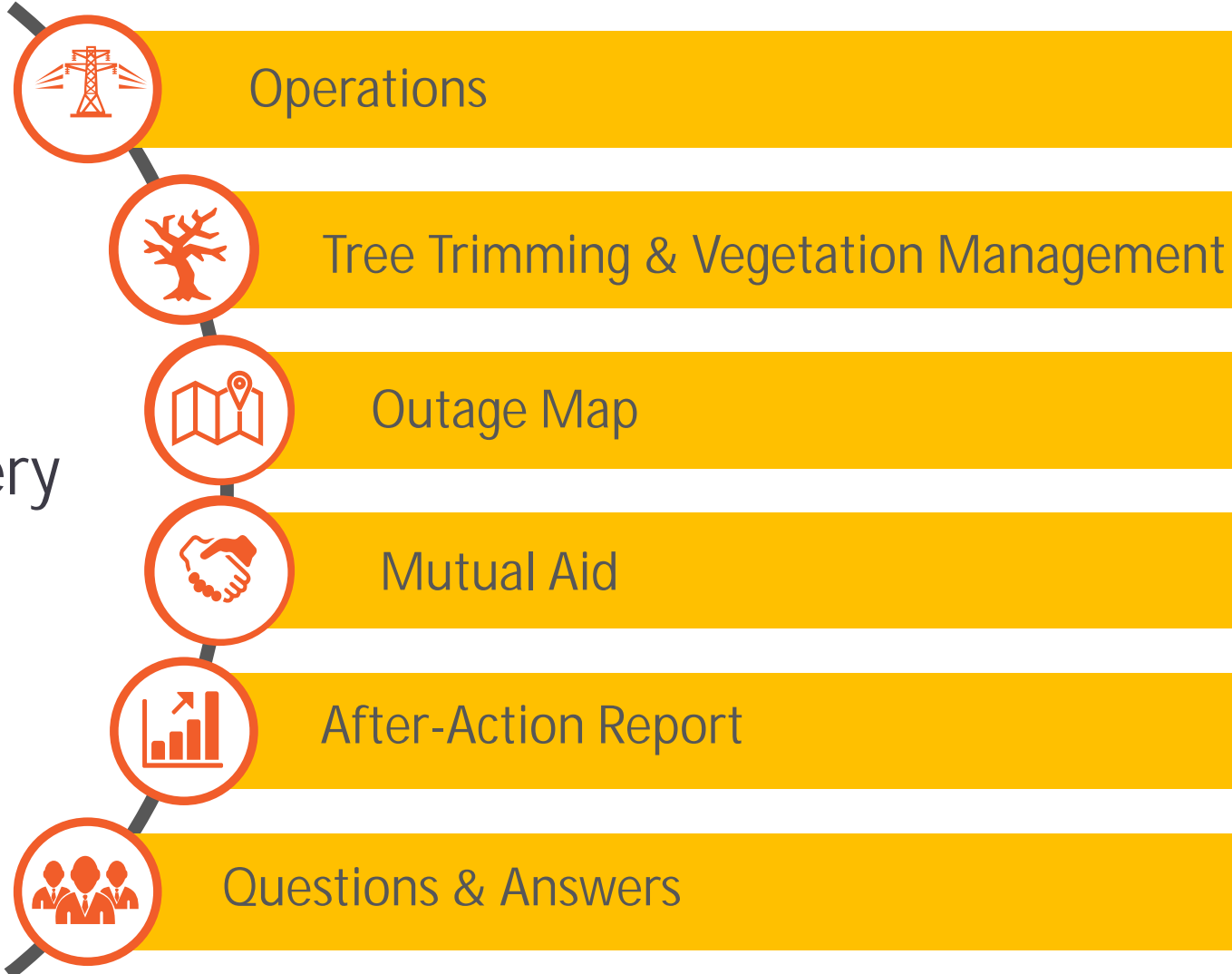


February 21, 2023

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Agenda

Winter Storm Mara Restoration and Recovery



Timeline and Operations Impacts

Stuart Reilly

Interim Deputy General Manager
and Chief Operating Officer



Winter Storm Uri



An ERCOT grid emergency.

Insufficient power generation to meet customer demand.

ERCOT directed utilities to shut down power to customers in order to prevent a collapse of the ERCOT grid.

Restoration depended on ERCOT permission.

Winter Storm Mara



A natural disaster with a record amount of freezing rain and ice accumulation.

Ice caused trees, limbs, communications infrastructure, wires, and poles to sag or snap causing additional damage.

Hurricane level damage.

Power restoration efforts were labor intensive and required rebuilding these lines.

In both winter storms, huge amounts of customers experienced power outages for days at a time.



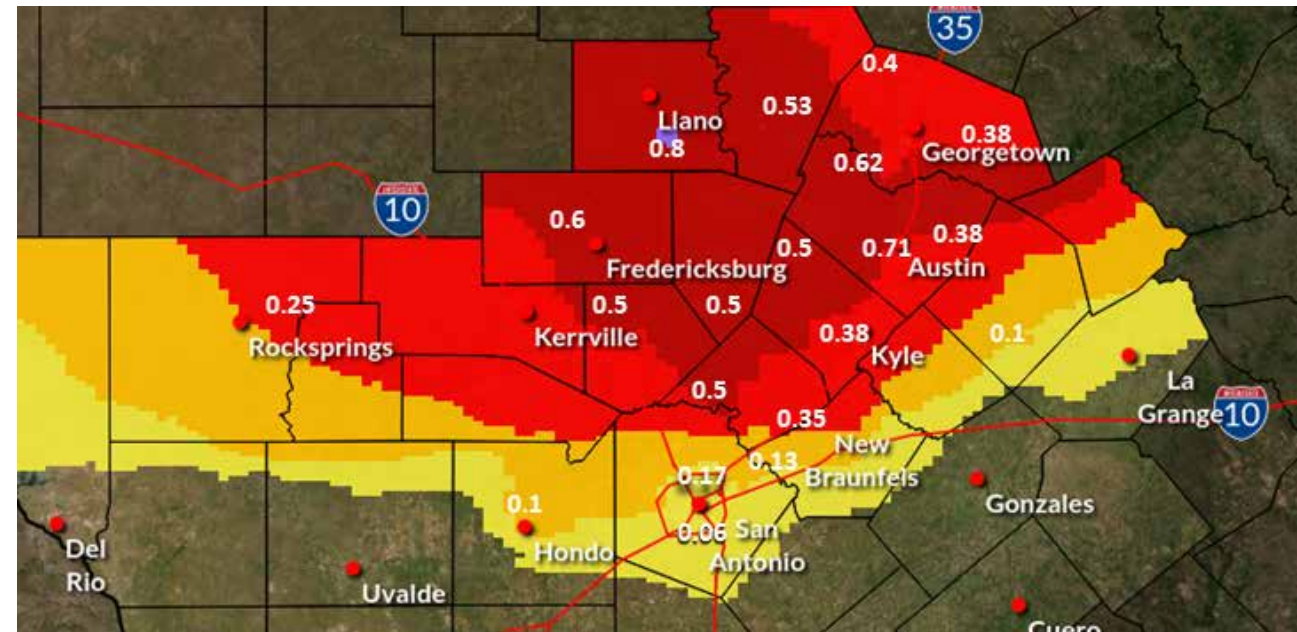
Winter Storm Mara

Weather Summary

- **SUN 1/29** - Western Travis County could see 0.10 inch 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.

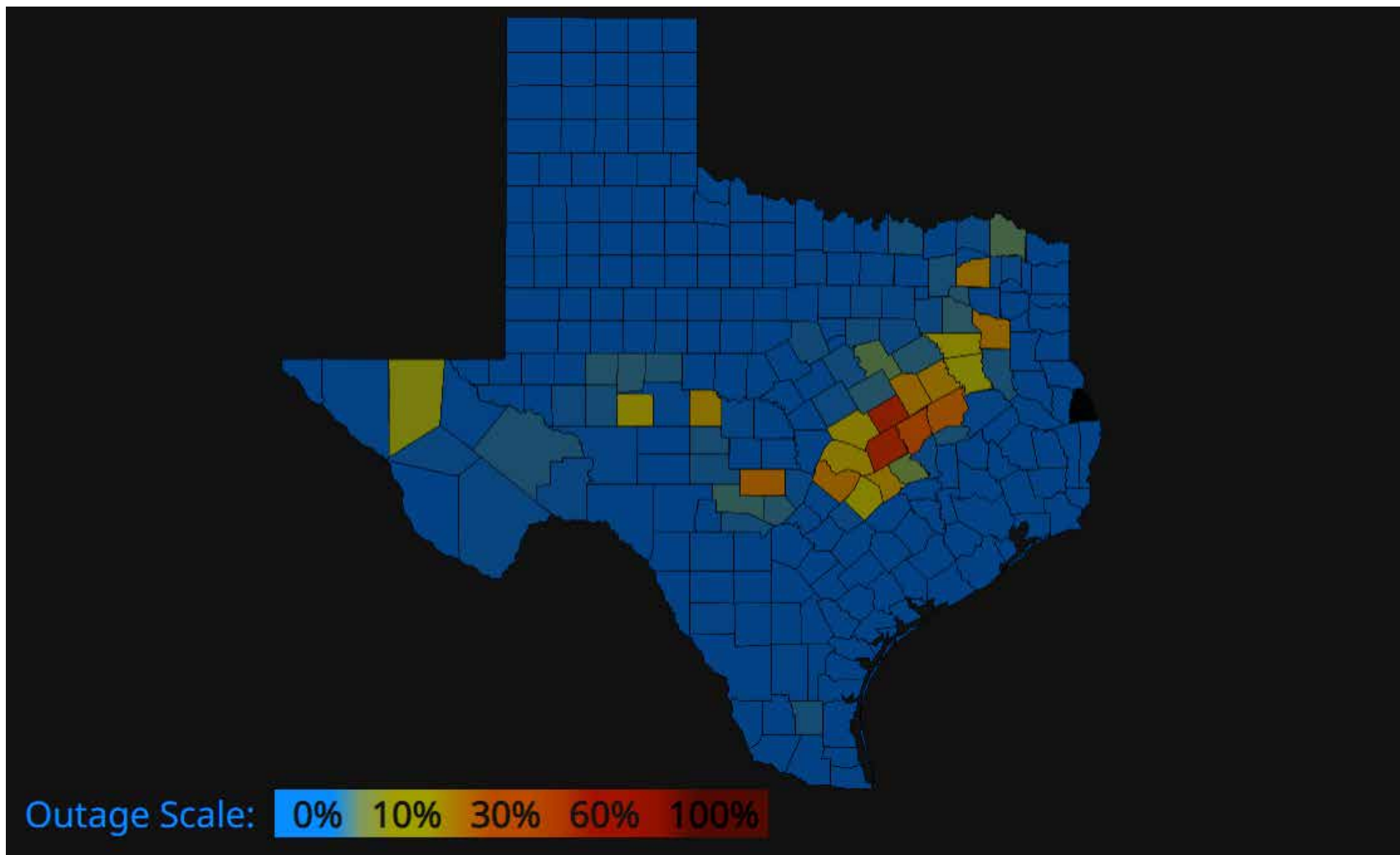


National weather service forecast issued Jan 30, 2023

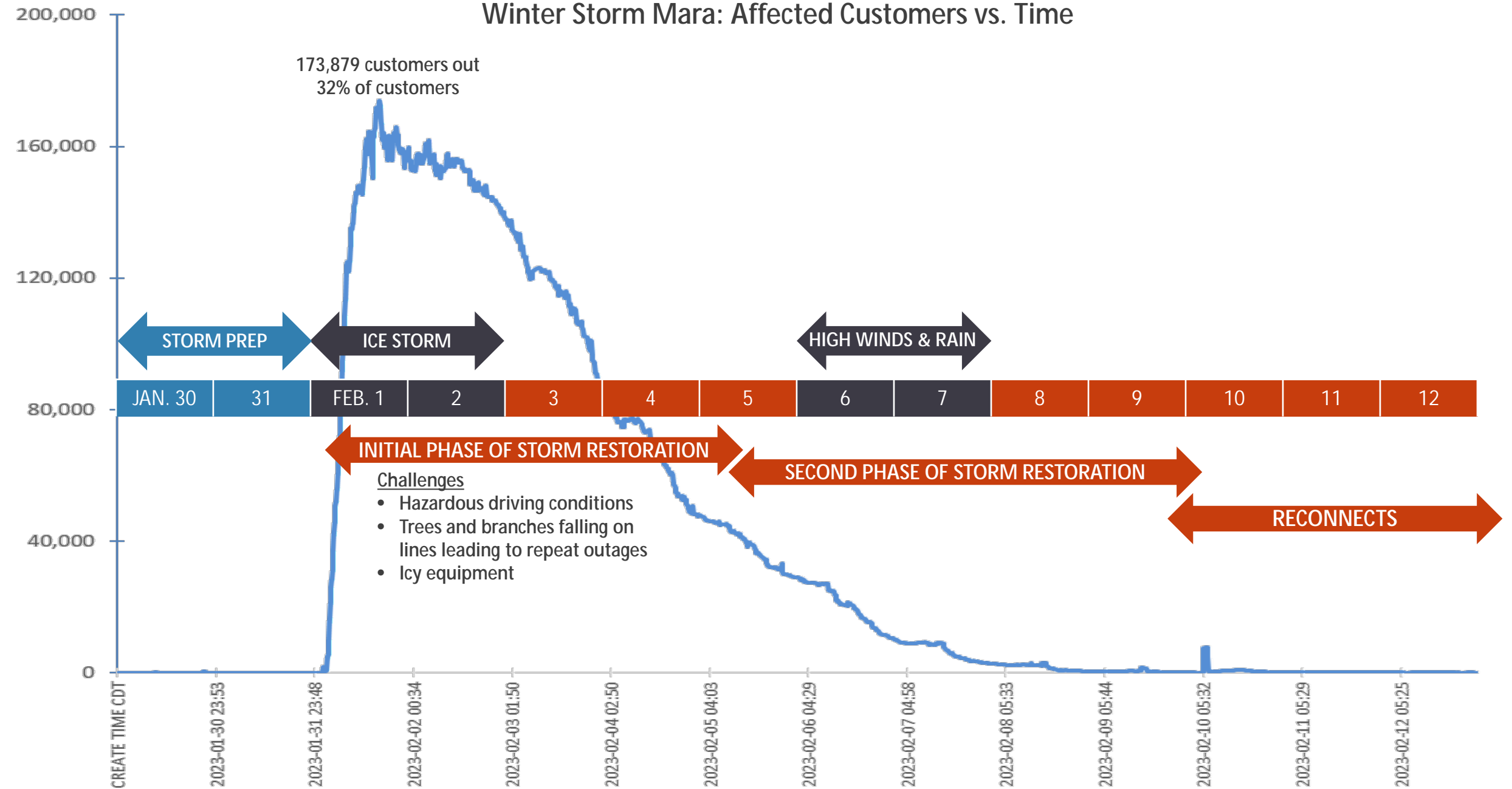


Ice accumulation Jan 31 – Feb 2, 2023

Ice Storm Power Outages in Texas: Feb 2, 2023



Winter Storm Mara: Affected Customers vs. Time



*Customers who are able to receive power

Phase 1: Restoration Challenges

Hazardous road conditions, icy equipment

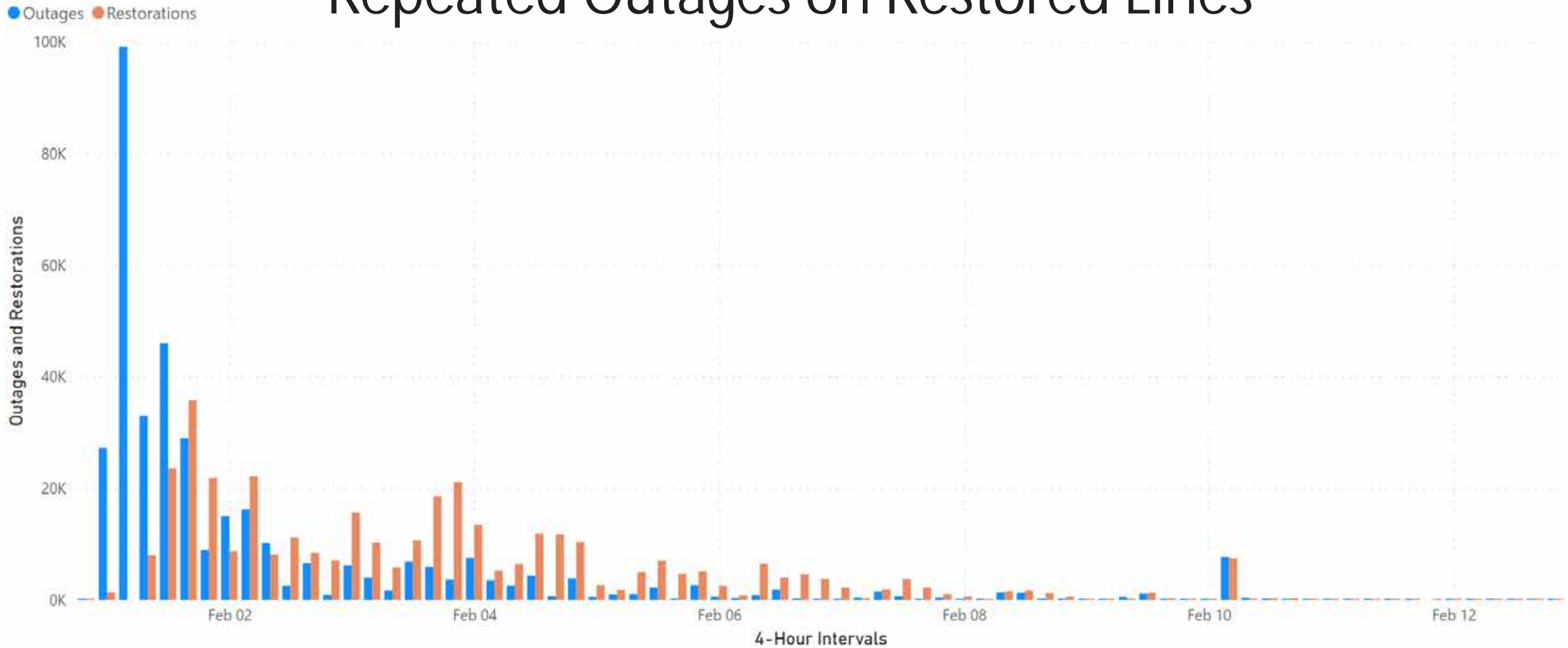


Restoration Efforts



Phase 1: Restoration Challenges

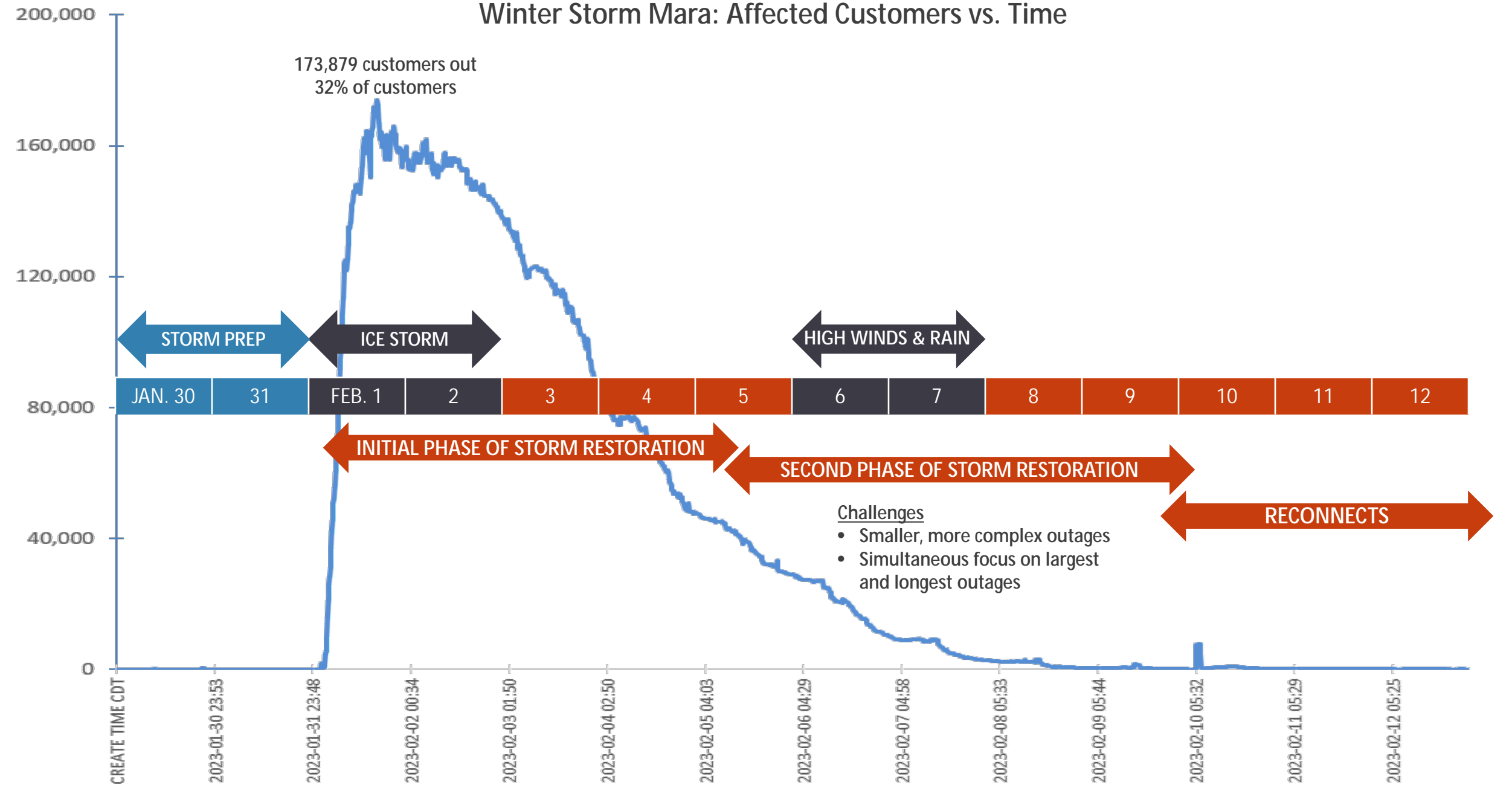
Repeated Outages on Restored Lines



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



Winter Storm Mara: Affected Customers vs. Time



*Customers who are able to receive power

Phase 2: Restoration Challenges

Smaller, more complex restoration process

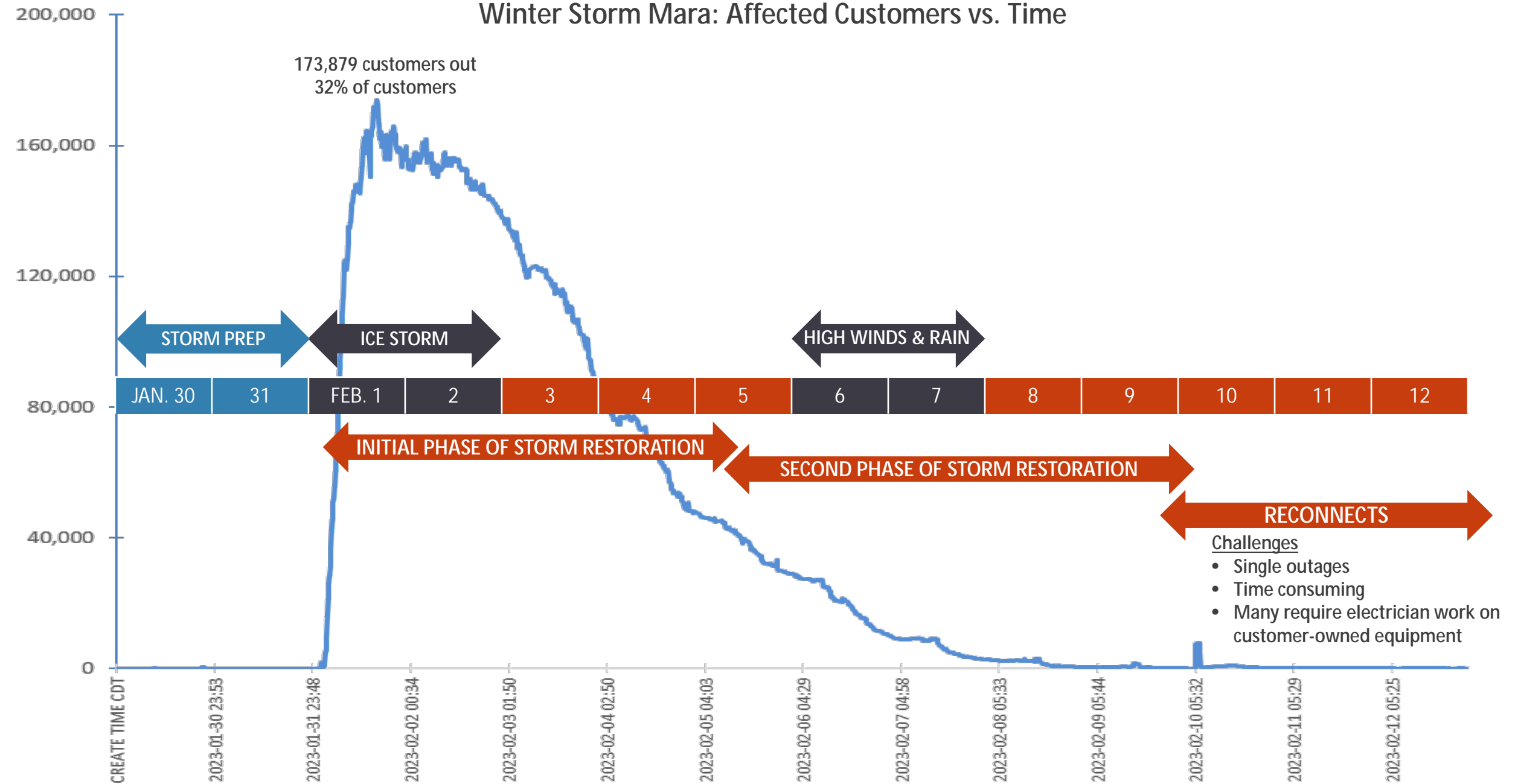


Phase 2: Restoration Challenges

Smaller, more complex restoration process



Winter Storm Mara: Affected Customers vs. Time



*Customers who are able to receive power

Phase 3: Restoration Challenges

Damage to customer-owned or maintained equipment



Tree Trimming and Vegetation Management

Elton Richards

Vice President, Electric System Field Operations



Storm Response for Trimming Customer Trees



Customer Tree Trimming Cycles and Practices



Tree Trimming Factors

- Tree species and time of year
- Oak wilt: tree trimming restrictions February - June
- Bird habitats: no trimming allowed March – August
- Circuit: we trim trees along a circuit from beginning to end on maintenance schedules
- Line fuses, customer ticket requests: we trim trees along a line fuse section or area identified in a ticket request

By the Numbers

Trimming cycle involves planning work along **2,400+** miles.

Each year, **hundreds** of miles of power lines are scheduled for tree trimming or removal on **9,000 – 12,000** properties.

Standard Clearances

Fast-growing species: 15 feet
(Ligustrum, China Berry, Hackberry, Pecan)

Slow-growing species: 10 feet
(Cedar, Cedar Elm, Juniper, Live Oak)



Three contractors help with tree trimming across the service area:
Asplundh, Davey Tree and Wright.

Environmental Trimming Limitations

Month	Trimming Schedule
January	Regular Trimming
February	Oak Wilt Season
March	Oak Wilt Season/Bird Habitat Preservation
April	Oak Wilt Season/Bird Habitat Preservation
May	Oak Wilt Season/Bird Habitat Preservation
June	Oak Wilt Season/Bird Habitat Preservation
July	Bird Habitat Preservation
August	Bird Habitat Preservation
September	Regular Trimming
October	Regular Trimming
November	Regular Trimming
December	Regular Trimming

Non-Oak tree work continues on all planned circuits. Learn more about the spread and prevention of oak wilt at: <https://austintexas.gov/page/oak-wilt>



Customer Tree Trimming Prioritization

Areas at risk of wildfire

- Collaborate with Austin Fire Department
- Identified wildfire risk areas

Underperforming circuits

- Historical outages performance (complete circuit)
- High number of repeated customer outages (isolated circuit sections)

Scheduled vegetation cycle

- Based on last trim cycle



Sample High-Level Visual Perspective



Before - 2019



After - 2021

Customer Tree Trimming History 2022-2023

2022

- Number of circuits trimmed: **21**
- Total circuits trimmed to meet industry standard: **62**
- Number of circuit miles: **149**
- Number of crews conducting work: **40-45**
(budget allows for 60)

2023 Planned

- Number of circuits: **44**
- Number of circuit miles: **218**
- Number of crews conducting work: **40-45**
(budget allows for 60)
- Planning for **20** additional crews upon completion of new contract



Current Tree Trimming Notification Process

Neighborhood Association and HOA process

- Certified letter or email sent (10) ten days prior to property notification
- Two weeks after the vegetation work plan is prepared at each property
- Affected trees are marked with green (trimming) or pink (removal) ribbons

If a property owner is not home

- Work plan is left on a door hanger
- Includes a callback number for a return visit
- Crews will commence work if no response to the vegetation work plan

If we do not hear back from the property owner for tree removals

- Non-Contact Process begins if not reached after a reasonable effort
- One property visit, unless vacant or otherwise specified by Austin Energy
- At least one phone/fax attempt after 6pm
- No response, trees will only be trimmed on the vegetation work plan

If a homeowner refuses trimming

- Sent a certified letter detailing the work plan and work is performed



The form is titled "SORRY WE MISSED YOU" and includes a section for "WORK TYPE", "DATE", "AE REP.", and "PHONE". It contains text explaining that Austin Energy will be in the neighborhood soon to prune and/or remove trees that are too close to distribution electric lines and equipment. It also includes a section for "YOUR OPTIONS AS AN AUSTIN ENERGY CUSTOMER" with several bullet points. At the bottom, there are three diagrams illustrating tree trimming techniques: "STEPS TO THE PROPER COLLAR CUT", "SIDE TRIM", and "THROUGH TRIM".

AUSTIN ENERGY

SORRY WE MISSED YOU
(If you are not the property owner, please read, then give this important notice to the owner.)

We will be in your neighborhood soon to prune and/or remove trees on your property which are too close to the distribution electric lines and equipment.

Trees growing into or close to the distribution electric lines and equipment are one of the major causes of power outages and can be a serious safety hazard. To maintain safe and reliable electrical service for all of our customers, Austin Energy uses qualified line clearance contractors with special training to prune and remove trees from the power lines. This service is provided free of charge to our customers and can only be performed by qualified line clearance workers.

The trees on your property have been assessed and a work plan is attached that outlines the proposed work. All tree work will be completed to professional arboriculture standards and Austin Energy line clearance specifications and the work will be reviewed by a professional from Austin Energy's forestry section.

YOUR OPTIONS AS AN AUSTIN ENERGY CUSTOMER

- Please call the number in the top right corner of this card to arrange for an on-site meeting with a contractor representative to review the proposed tree work.
- You may request an on-site meeting with an Austin Energy employee to discuss the proposed tree work.
- You may have a third party present during these meetings.
- You may request modifications to the proposed tree work.
- If the proposed plan calls for tree removals on your property, you may request that trees not be removed.
- You may request to be present when the tree work is performed.
- You will receive a written work plan documenting the proposed work on your property, if one is not attached.
- You may request pricing on electric system modifications to minimize or reduce tree work.
- You may request a replacement tree. For more information, visit our Web site at austinenenergy.com/go/trees.

The illustrations below indicate the type of clearance that is generally required to remove tree limbs that are too close to power lines or equipment. If you have any questions, please call the number in the top right corner between 7:30 AM - 3:30 PM, Monday through Friday.

STEPS TO THE PROPER COLLAR CUT **SIDE TRIM** **THROUGH TRIM**

Thank You.

Outage Map

Greg Flay

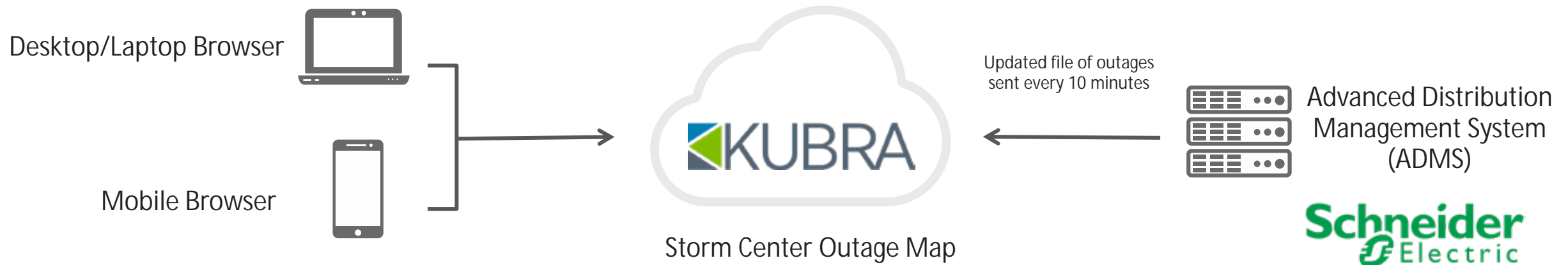
Vice President, Technology and Data



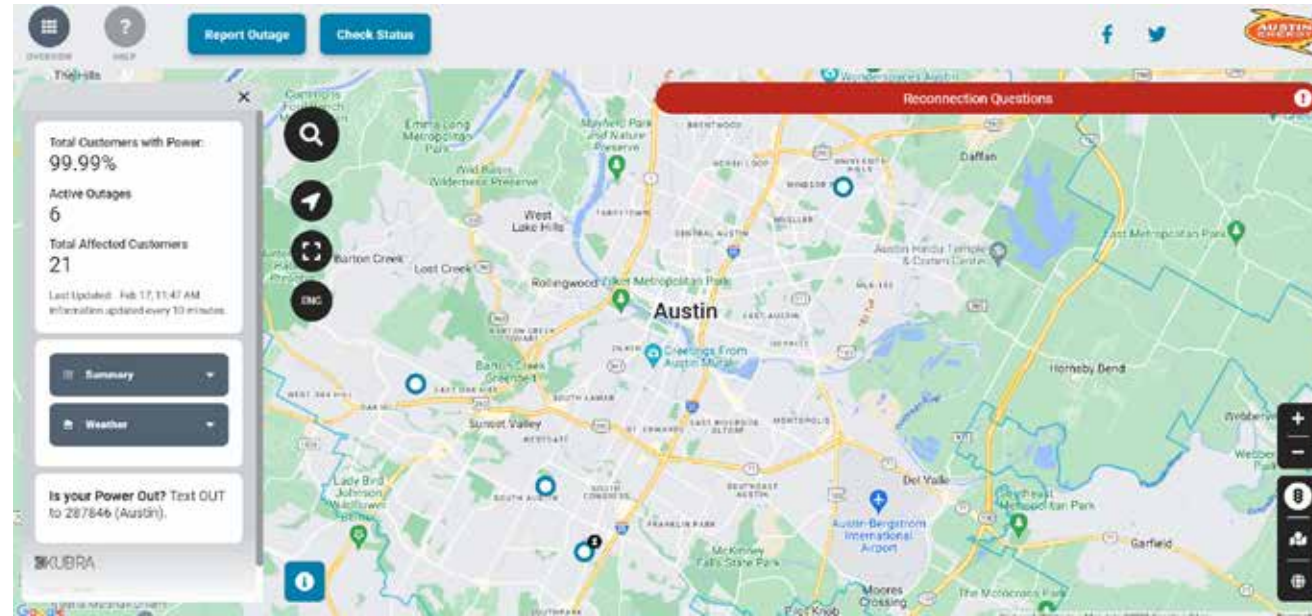
Key Customer Questions

1. Does Austin Energy know that my power is off?
2. When will my power be restored?

How Does the Outage Map Receive Information?



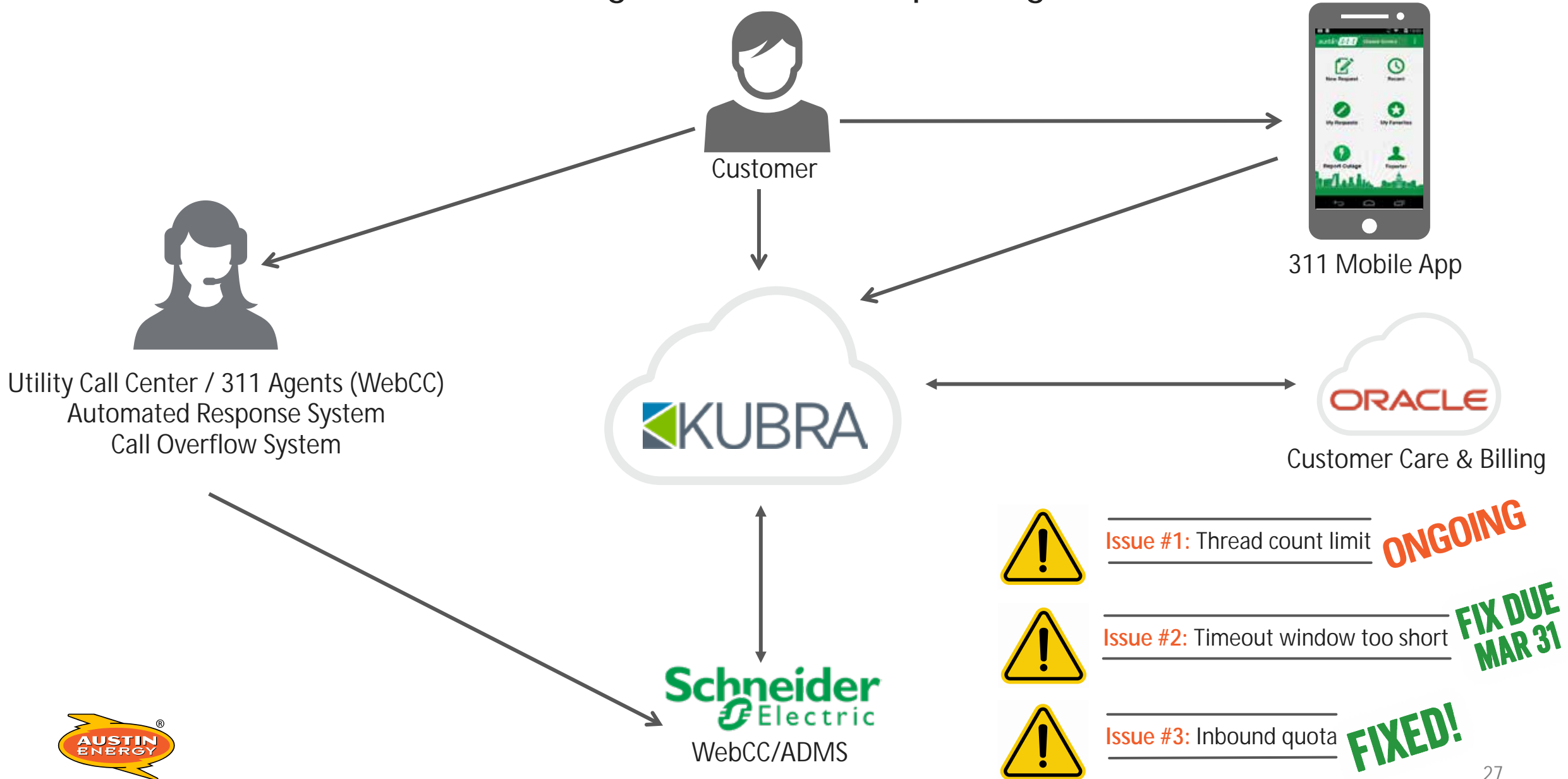
Additional Insight



- For larger outages, KUBRA has logic to place the icon **close to the middle** of that area.
- We do not show outages at an **individual house level** on the map for security reasons.
- Customers may be part of a **"nested outage"** – when a large issue is fixed, but a different issue closer to the home is causing an outage.
- Estimated times of restoration (ETRs) are **suspended** during "storm mode", so they do not appear on the map.
- In the past, we've represented large outages as **polygons** but have removed these based on customer feedback.
- We **hide the legend** by default as it hides other map information.



Outage Status and Reporting



Current KUBRA Outage Map Clients



Mutual Aid

Lisa Martin

Vice President, Electric System Engineering
and Technical Services



Mutual Aid History



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



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



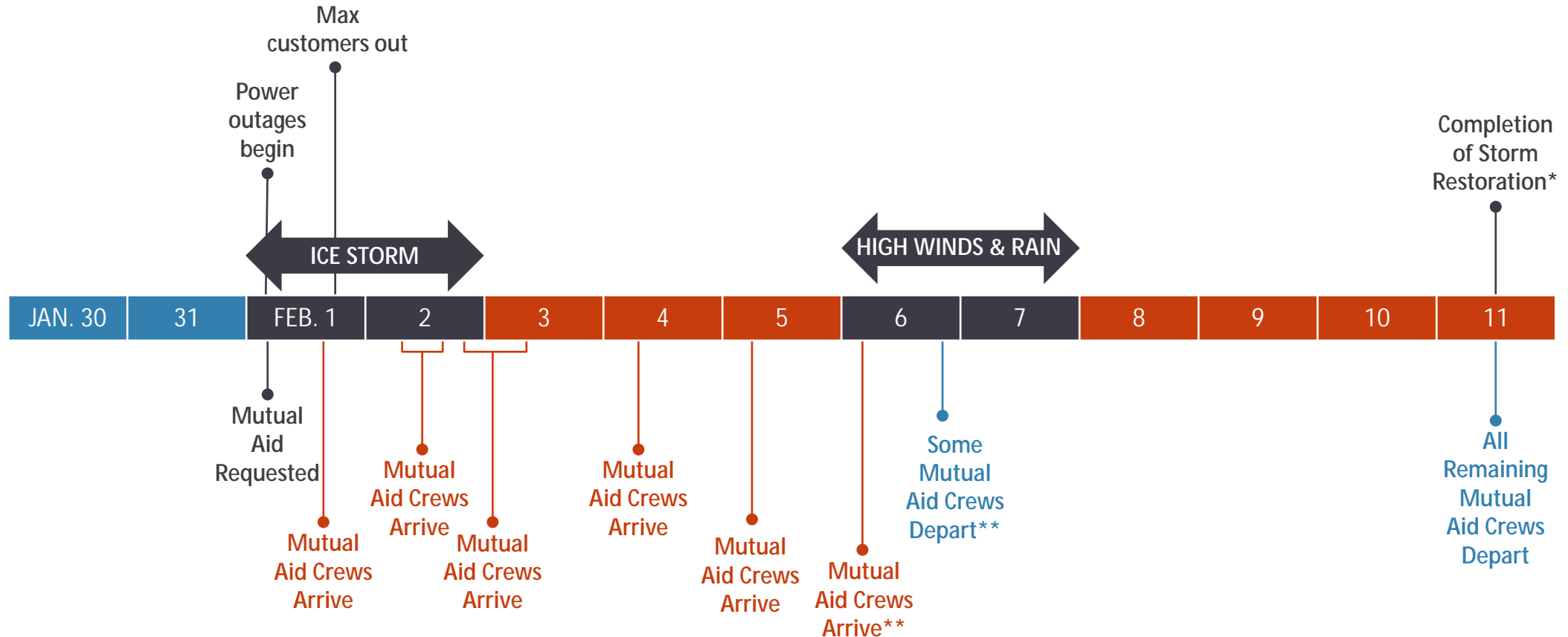
Service Center

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

TxDOT provided a facility for mutual aid staging grounds

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

Thank You



After-Action Report

Lisa Martin

Vice President, Electric System Engineering
and Technical Services



After-Action Review

Goals & Objectives

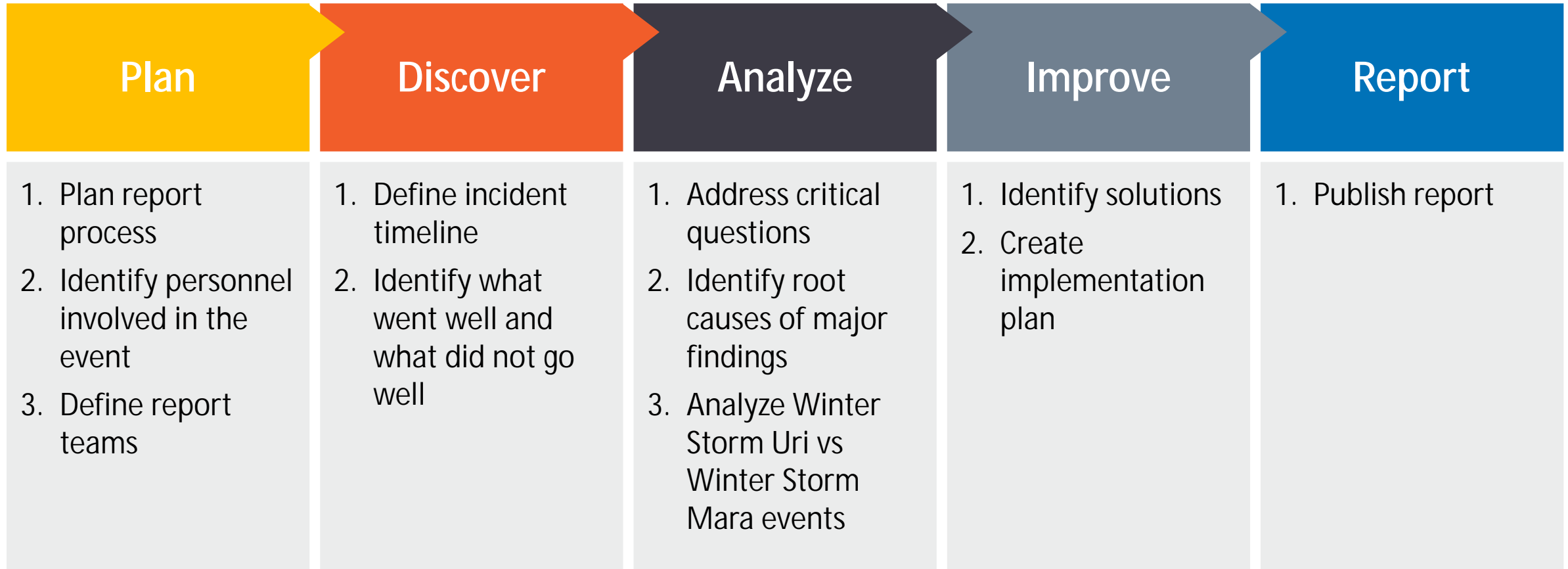
- Understand Austin Energy's actions as it relates to the winter storm event
- Identify the factors that contributed to process breakdowns
- Identify effective strategies for responding to similar incidents in the future

Key Focus Areas



Additional response areas and AE workgroups not listed here will be included in the After-Action Review

After-Action Review Approach



Questions?



**Customer Driven.
Community Focused.SM**

