



2021 WINTER STORM URI AFTER-ACTION REVIEW

FINDINGS REPORT

CITY OF AUSTIN & TRAVIS COUNTY



A NOTE FROM THE DIRECTOR OF HSEM AND CHIEF OF TCOEM

This After-Action Report (AAR) and Improvement Plan (IP) is an examination of the preparation, planning, and response to the February 2021 series of winter and ice storms, commonly referred to as Winter Storm Uri.

Winter Storm Uri had a statewide and regional impact, affecting nearly every part of the City of Austin and Travis County. It undermined infrastructure, caused undue suffering, and resulted in tragic loss of life. At the same time, the storm revealed resilience. Community groups, neighbors, businesses, and governments mobilized to provide food, water, and services.

The report documents areas of strong performance on the part of the community, City and County departments, as well as 132 recommendations for improvement. These recommendations are a call to action to better prepare for winter storms and the forecasted impacts of the climate crisis.

In particular, the report underscores the role of the whole community and need for equity in government services. The report was prepared by the office of Homeland Security and Emergency Management (HSEM) at the request of Austin City Council and in cooperation with Travis County. The report examines City and County response, recovery, and preparedness.

The report includes this Findings Report, the detailed Technical Report, and Improvement Plan.



REPORT DEVELOPMENT PROCESS

STEP 1: DATA COLLECTION AND REVIEW

- Documentation from the Winter Storm Uri response was collected, reviewed, and analyzed.
- The Project Leadership Team collected and analyzed **100+ documents** pertaining to Winter Storm Uri and the City and County response operations.
- The data from this review provided necessary background and contextual information used when conducting stakeholder interviews.

STEP 3: AFTER-ACTION SURVEY

- The Project Leadership Team designed and disseminated an after-action survey to all stakeholders involved in the response to Winter Storm Uri. The survey received **191 responses**.
- The after-action survey was designed to capture additional details about the Winter Storm Uri response.

STEP 5: AAR REVIEW AND FINALIZATION

- Following the Project Leadership Team and Project Committee review of the AAR/IP, the AAR/IP was finalized.

STEP 2: AFTER-ACTION REVIEWS

- A series of after-action interviews were facilitated with a comprehensive group of stakeholders involved with the response to Winter Storm Uri.
- The Project Leadership Team conducted **72 meetings with 190 individuals**. Responses are organized into the following areas of analysis:

Areas of Analysis

- Food,
- Water,
- Shelter,
- Medical,
- Transportation, and
- Leadership and Coordination.

STEP 4: DATA ANALYSIS AND AAR DRAFTING

- The information gathered during the interviews and surveys was analyzed to develop initial draft observations of the AAR/IP.
- This draft was presented to the Project Leadership Team, Project Committee, and the Planning Committee for review at the AAR Conference.

WINTER STORM URI: IMPACTS



6° F

record low temperature



50,000 meals

distributed by community partners



120,000 shelf-stable meals

distributed by Austin-Travis County



7 days

under a Boil Water Notice



164 hours

of freezing temperatures

254

counties in Texas were under
a disaster declaration



40%

of Austin Energy
customers lost power



6.4" Snow

breaking record for
consecutive days of
snow on the ground
in Austin



\$195 billion

in damages



2,449

calls to AFD reporting
broken pipes



739



traffic accidents
responded to by AFD

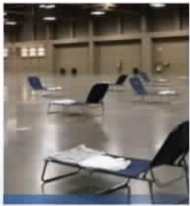
TIMELINE OF EVENTS

This timeline outlines the events that occurred for 2021 Winter Storm Uri. This timeline provides an overarching view of the events, additional details of the timeline of events can be found in the full 2021 Winter Weather Storm Uri After-Action Report.




FEBRUARY 2021

FEBRUARY 11



-  Winter Storm impacts begin, temperatures 32° F. City departments warn public of potential storm effects.
-  Cold Weather Sheltering Plan activated.



FEBRUARY 14



-  Austin and Travis County declare a local State of Disaster.
-  ERCOT calls for load shedding on Feb. 15 and reduction in power usage through Feb 18.
-  Palmer Events Center reaches the reduced capacity per COVID-19 guidelines.

FEBRUARY 17

-  Boil Water Notices issued, and EOC proceeds to order 1 millions gallons of water.
-  Two hospitals lose boiler heater systems.




FEBRUARY 21




-  11 water distribution sites begin operating.
-  Austin State of Emergency lifted.



FEBRUARY 26





-  Palmer Events Center has no overnight residents. Transition to recovery operations.

FEBRUARY 12

-  State of Texas issues Disaster Declaration.
-  A/TC EOC, already operating COVID-19 operations, activates winter storm response.
-  Palmer Events Center opens Feb. 13 at 10 a.m. as warming center.






FEBRUARY 16

-  Recorded low temperature in Austin of 6° F.
-  Palmer Events Center reaches extended capacity of 500 people.
-  More than 40% of Austin Energy customers without power.
-  Austin's drinking water system begins experiencing operational storm impacts.





FEBRUARY 19

-  Federal Disaster Declaration issued.
-  900 meals are distributed.
-  96% of Austin residents have power restored.




FEBRUARY 22

-  Daily high temperature of 76° F.
-  Boil Water Notices lifted Feb 22-23.

MARCH 2021

MARCH 12

-  A/TC EOC demobilizes winter storm operations, sustains COVID-19 response.

TOWARDS A MORE RESILIENT COMMUNITY

The overall objective of the AAR and IP is to help establish a more resilient community, one that is better able to withstand the impact of extreme weather and storms. To this end, the 132 recommendations in the IP were developed to address areas for improvement and a whole community approach. They are designed to be specific, measurable, actionable and implemented according to deadline. They were refined in consultation with City and County departments, and subject matter experts.

Each of the recommendations are aligned to one of five key **Resilience Outcomes**. The outcomes are listed below.



The **Resilience Outcomes** presented support current community priorities and objectives: They closely align with the strategic outcomes in the **City of Austin Strategic Direction 2023** and the **Travis County Vision, Mission and Goals**. Those are presented directly below.

AUSTIN STRATEGIC DIRECTION 2023

Strategic Vision

Austin is a beacon of sustainability, social equity and economic opportunity; where diversity and creativity are celebrated; where community needs, and values are recognized; where leadership comes from its citizens and where the necessities of life are affordable and accessible to all.

Strategic Outcomes

- Economic Opportunity & Affordability
- Mobility
- Safety
- Health & Environment
- Culture & Lifelong Learning
- Government That Works For All

TRAVIS COUNTY VISION & GOALS

County Vision

Travis County is an innovative, vibrant community that preserves diverse cultural heritage and natural resources.

Strategic Outcomes

- Promote community resilience in daily living and in times of emergency
- Promote the well-being of our residents through social, economic, and health and safety initiatives
- Ensure the public safety and peaceful resolution of conflicts through the justice system and other public processes
- Preserve and protect our environment and natural resources through responsible land stewardship
- Empower the public through civic engagement and collaboration
- Foster transportation mobility and accessibility

ESSENTIAL ACTIONS FOR CITY & COUNTY LEADERSHIP

The AAR and IP include 132 recommended actions. Each action is assigned a deadline and a primary City or County department to coordinate implementation. The actions outlined below are the highest priority subset for City and County leadership of the 132 recommended actions. They should be implemented as part of a whole community approach.

01 COMMUNITY ENGAGEMENT

The actions of community groups proved essential during the winter storm. At the same time, there were significant gaps in implementation and coordination between government, elected officials, and community response operations.

What actions should be taken?

- Implement best practices for utilizing community-based organizations in emergency response operations.
- Revise disaster planning documents with planning considerations for additional non-profits, the private sector, and other relevant community-based service delivery organizations.
- Codify roles and responsibilities during emergencies between the City, County, community-based organizations, and private companies, and contingencies when organizations are not available.

02 EQUITY

The storm disproportionately impacted vulnerable populations. Departments worked to address needs. But there were gaps in planning and operations for unhoused, elderly, lower-income residents, and other vulnerable populations.

What actions should be taken?

- Evaluate, develop, and implement a policy that requires the provision of the equitable availability and distribution of goods and services in a disaster.
- Include provisions in planning documents across all City and County departments that address the needs of vulnerable populations during emergencies.
- Codify the role of the Austin Equity Office in Emergency Operations Center operations and emergency and continuity of operation plans.

03 STAFFING

Staff and volunteer shortages hindered operations. City and County departments do not have adequate staffing models for multiple-response operations. Support agencies could not provide volunteers due to COVID-19.

What actions should be taken?

- Commission an analysis to evaluate appropriate staffing levels to respond to disasters of increased frequency, intensity, and complexity.
- Continue to resource alternative staffing schemes, such as a reserve team, stand-by roster, mandatory reassignments.
- Require mandatory training of City and County staff in disaster response operations.

04 INFRASTRUCTURE

The storm caused outages in water, power, communication, and transportation infrastructure. These outages had additional, or cascading, impacts, on community, emergency, and medical services. These were not envisioned or accounted for in planning.

What actions should be taken?

- Revise planning assumptions to always account for multiple-hazard events with cascading impacts and infrastructure failure.
- Investigate in collaboration with key stakeholders the potential for adding resilient water infrastructure for hospitals, City, and County facilities deemed critical and essential during emergencies.
- Identify a list of shelters with durable infrastructure, including heating, ventilation, air conditioning, spaces to accommodate large groups, backup power, and water.

05 MASS CARE

The lack of comprehensive planning hindered coordination, service delivery, and implementation of sheltering, feeding, water distribution, and other components of mass care, as defined by the Federal Emergency Management Agency (FEMA). There were gaps in staffing, services, and other aspects of the response operations.

What actions should be taken?

- Revise and establish a comprehensive and scalable mass care plan, building on current planning.
- Develop a comprehensive operational disaster feeding plan, also building on current planning.
- Include specific and comprehensive provisions on sheltering operations within revised mass care planning.

06 PREPAREDNESS

Many in the community were unprepared for the storm, understandable given its unprecedented impacts. Personal preparedness and a whole community approach is essential to plan for and respond to an event with wide impacts.

What actions should be taken?

- Emphasize strategies for personal preparedness, resilience, & fostering social connections to increase self-reliance.
- Identify and implement evidence-based or best practice programs for personal preparedness in supporting City and County staff to fulfill job functions.
- Identify programs, resources and approaches to improve or encourage community resilience and risk reduction.

FOCUSING ON THESE ESSENTIAL ACTIONS WILL RESULT IN IMPROVED OUTCOMES FOR THE COMMUNITY.

For more information on what you can do to support community resilience, please visit:

[Austin, Texas – Homeland Security & Emergency Management](#)

| [Travis County, TX Emergency Preparedness](#)

KEY INCIDENT CHALLENGE: FOOD ACCESS

SUMMARY OF FINDINGS

Winter Storm Uri had a disproportionate impact on individuals that lack access to appropriate and nutritious food. Residents with greater resources were generally able to sustain access to food, especially if they had personal transportation and had strong social connections with neighbors and local familial networks who could provide support. The disruption in food supply chains, closure of grocery stores, hazardous road conditions, and other factors created additional barriers, worsening underlying food insecurity. Community-based organizations and individuals mobilized to meet unmet needs, as did City and County departments. But there were significant gaps in planning, response coordination, and staffing.

SUCCESSES



Community Resilience



Adaptivity



Community Support

CHALLENGES



Community Engagement



Supply Chain Failure



Coordination

TOWARDS A MORE RESILIENT COMMUNITY

The Winter Storm Uri AAR promotes a transition to a more resilient City and County. Recommendations in this report to improve outcomes include:



SUSTAINABLE COMMUNITY WELLNESS

Provide temporary sheltering during the disaster that promotes the health and environment of the community.



FUNCTIONAL GOVERNMENT

Provide adequate community services that are responsive to community lifelines and the health and well-being of the community.

ESSENTIAL ACTIONS

- Develop a comprehensive disaster feeding plan.
- Integrate a Food Access Leadership Team in planning and preparedness activities.
- Revise disaster planning documents with consideration for non-profits, private sector, key community-based groups.

ESSENTIAL OUTCOMES

- Adequate nutrition will be provided for the whole community during emergency response incidents.
- Stakeholders will be well coordinated across incident response.
- Food supplies will be better accessed for future emergencies such that supply chain failures have less impact on food security.
- The community will understand the role of the City and County in meeting needs during a disaster.



KEY INCIDENT CHALLENGE: WATER

SUMMARY OF FINDINGS

The storm exposed vulnerabilities at multiple points in water distribution, including access to drinking water and sources for flushing toilets and hygiene. Low temperatures caused water mains to break, home and apartment complex pipes to rupture, and water loss resulting in storage and pressure failures. Hospitals lost access to water to supply boilers for heating. Community groups and elected officials mobilized to fill gaps. The City and County operated a community-wide distribution of drinking water. Austin Water purchased water totes, leased water tanker trucks, and deployed fire hydrant adapters to provide water. These efforts were hampered by road conditions, lack of pre-stocking supplies, coordination with food distribution, and shortfalls in targeting needs of vulnerable communities.

SUCCESSES



Resource Management



Community Support



Quick Thinking

CHALLENGES



Community Engagement



Supply Chain Failure



Equity of Response

TOWARDS A MORE RESILIENT COMMUNITY

The Winter Storm Uri AAR promotes a transition to a more resilient City and County. Recommendations in this report to improve outcomes include:



SUSTAINABLE COMMUNITY WELLNESS

Ensure the community has water resilience both in terms of quantity and quality.



FUNCTIONAL GOVERNMENT

Provide adequate community services that are responsive to community lifelines and the health and well-being of the community.

ESSENTIAL ACTIONS

- Develop practical solutions for increasing accessing to enough shelf-stable meals and water for 72-hours for targeted distribution.
- Investigate the potential for adding resilient water infrastructure to critical and essential facilities during emergencies.
- Strengthen and communicate ways the public can contribute to power and water conservation efforts during emergencies.

ESSENTIAL OUTCOMES

- The community will have greater access to potable water during an emergency response.
- Distribution of resources will better provide for vulnerable community members.
- The water system will be more resilient to future shocks and stressors.



KEY INCIDENT CHALLENGE: SHELTERING

SUMMARY OF FINDINGS

The City and County mobilized temporary overnight accommodations, or “warming centers,” and longer-term shelters. The sheltering operations assisted hundreds of unhoused and other residents affected by the storm’s impacts on utilities and infrastructure. Departmental staff worked tirelessly to provide services amidst significant obstacles in the breakdown of infrastructure. Community groups identified alternative housing and assisted vulnerable individuals in accessing shelter. At the same time, shelters lacked essential feeding services, medical and behavioral healthcare; experienced failures in infrastructure due to weather conditions; suffered shortcomings in coordination, availability and training of staff, and lacked sufficient planning in mass care.

SUCCESSES



Assessment of Needs



Quick Thinking



Adaptivity

CHALLENGES



Training



Provision of Services



Coordination

ESSENTIAL ACTIONS

- Include specific and comprehensive provisions on sheltering within the revised approach to mass care planning.
- Define explicitly the roles of City and County departments and that of community-based groups in addressing sheltering for vulnerable populations during emergency events.
- Identify a list of shelters with durable infrastructure.

ESSENTIAL OUTCOMES

- The City’s approach to mass care will be scalable to provide adequate food, water, and shelter to the whole community.
- Sheltering will be available and safe despite potential cascading impacts to the community.
- The City’s plan for sheltering will be adaptable to reflect the needs of the community and the unique nature of the disaster.

TOWARDS A MORE RESILIENT COMMUNITY

The Winter Storm Uri AAR promotes a transition to a more resilient City and County. Recommendations in this report to improve outcomes include:



SUSTAINABLE COMMUNITY WELLNESS

Provide temporary sheltering during the disaster that promotes the health and environment of the community.



FUNCTIONAL GOVERNMENT

Provide adequate community services that are responsive to community lifelines and the health and well-being of the community.



KEY INCIDENT CHALLENGE: MEDICAL

SUMMARY OF FINDINGS

The loss of power, water and access to transportation significantly impacted the availability of medical services. Water outages caused hospitals to relocate patients and affected boilers and heating. Icy and impassable roads reduced access to medical resources. Road conditions compounded difficulties transporting patients. Loss of residential power exposed vulnerabilities in electric-powered medical equipment. Sufficient medical and health services were not immediately available at shelters. The initial site for a medical shelter lacked durable infrastructure and had to be relocated. Hospitals and other medical facilities such as nursing homes and dialysis centers had contingency plans, but not for the duration and unprecedented impact of the storm.

SUCCESSES



Coordination



Adaptivity



Partnership

CHALLENGES



Community Resilience



Supply Chain Failure



Equipment

ESSENTIAL ACTIONS

- Develop early identification plans for winter weather to allow hospitals time to pre-stock resources.
- Investigate the potential for adding resilient water infrastructure to hospitals.
- Identify locations that can function as medical shelters.

ESSENTIAL OUTCOMES

- All medical facilities will be prepared for emergency scenarios, including potential cascading impacts.
- Medical facilities will be more resilient to allow for continuity of care for patients and disaster community care.
- Hospitals will have access to needed medical supplies and will be less reliant on the supply chain during a disaster.
- Shelters will have access to needed medical supplies and will serve to reduce patient hospital loads.

TOWARDS A MORE RESILIENT COMMUNITY

The Winter Storm Uri AAR promotes a transition to a more resilient City and County. Recommendations in this report to improve outcomes include:



SUSTAINABLE COMMUNITY WELLNESS

Create a community that can provide continuity of care across a disaster scenario and react to the medical needs of the community due to the impacts of the disaster.



FUNCTIONAL GOVERNMENT

Provide adequate community services that are responsive to community lifelines and the health and well-being of the community.



KEY INCIDENT CHALLENGE: TRANSPORTATION

SUMMARY OF FINDINGS

Storm conditions created significant obstacles to transportation, access to workplaces, and provision of emergency services. EMS, fire and other emergency responders lacked necessary equipment to traverse snow and ice conditions. A shortage of all-wheel drive vehicles compounded challenges in accessing workplaces and service delivery. Numerous accidents were reported on interstate highways. Lack of transportation exacerbated impacts to other incident challenges such as access to sheltering and supply chain management. The community received support from the State for clearance of major roadways. Capital Metro provided vital transportation in coordination with key departments.

SUCCESSES



Preparedness



Adaptivity



Leadership

CHALLENGES



Equipment



Communication



Coordination

ESSENTIAL ACTIONS

- Identify cost-effective solutions for upgrading public safety vehicle fleet to function in various weather events.
- Develop a transportation plan for vulnerable populations
- Implement a revised roadway clearing plan for winter storms.
- Evaluate the government's inventory of snow and ice removal materials in the Austin-Travis County area.

ESSENTIAL OUTCOMES

- Local, State, and Federal agencies are well coordinated during future response incidents.
- Equipment for safe transportation during winter storm events will be identified for use during emergency events.
- Critical supply of inventory of snow and ice removal equipment will be created and maintained.

TOWARDS A MORE RESILIENT COMMUNITY

The Winter Storm Uri AAR promotes a transition to a more resilient City and County. Recommendations in this report to improve outcomes include:



MOBILITY

Supporting continuity of access to transportation across the City, County, and region to promote community, economic development, and well-being.



RESILIENT TRANSPORTATION

Provide adequate city and county services that are responsive to community lifelines and the health and well-being of the community.



KEY INCIDENT CHALLENGE: LEADERSHIP & COORDINATION

SUMMARY OF FINDINGS

City and County leadership sought to move expeditiously to provide life-sustaining services. These included activation of shelter and warming centers, coordinating medical operations and distribution of drinking water. They faced significant obstacles in loss of infrastructure, staffing shortfalls, and availability of volunteers. The sustained response to COVID-19 taxed limited resources. There were gaps in coordination with elected officials, community groups and between departments. Some elected officials said they set up services in response to shortfalls in departmental services. Many community members and groups were appreciative of departmental services, but critical of planning, preparedness and response.

SUCCESSES



Community Resilience



Adaptivity



Quick Thinking

CHALLENGES



Community Engagement



Preparation



Coordination

TOWARDS A MORE RESILIENT COMMUNITY

The Winter Storm Uri AAR promotes a transition to a more resilient City and County. Recommendations in this report to improve outcomes include:



COMMUNITY AND INFRASTRUCTURE PREPAREDNESS

Supporting the community to create a safe and inclusive City and County.



FUNCTIONAL GOVERNMENT

Provide adequate services that are responsive to community lifelines and the health and well-being of the community.

ESSENTIAL ACTIONS

- Commission an analysis to evaluate appropriate HSEM and TCOEM staffing levels.
- Provide training for elected officials on EOC operations and explicitly define their roles in disaster response operations.
- Implement communication strategies to increase public awareness of City and County services during disasters.

ESSENTIAL OUTCOMES

- The EOC will be adequately staffed for all emergency response and recovery needs, particularly when there are multiple disasters.
- Elected officials will understand and support emergency response operations.
- Non-governmental organizations (NGOs) will be supported by the EOC and will effectively coordinate with the EOC.

