

Lessons Learned from the Buffalo Blizzard: Recommendations for Strengthening Preparedness and Recovery Efforts

Executive Summary

In December 2022, the City of Buffalo in Erie County, New York experienced a “generational storm” that claimed the lives of 31 residents and brought activity to a standstill for nearly a week. While the city is no stranger to snowstorms, several factors made this particular blizzard uniquely challenging. Hurricane-force winds of up to 80 miles per hour brought whiteout conditions and 15-foot high snowdrifts, wind chill temperatures dipped to 30 degrees below zero Fahrenheit, and the blizzard lasted longer than any prior storm below 5,000 feet of elevation in continental U.S. history.

To compound the dire situation, the blizzard hit Buffalo during the Christmas season, when many residents had travel plans and some essential workers were already away for the holidays. Employees who remained local were asked to sacrifice their holiday time to serve in extraordinary conditions that resulted in 46 deaths countywide.

Without question, the storm had serious adverse effects on the city’s infrastructure, businesses, and residents. Taking a proactive approach, Buffalo Mayor Byron Brown sought expertise on how to better prepare for future blizzards of this magnitude. He commissioned the NYU Wagner School to conduct an analysis of the storm’s impacts and to identify actionable solutions aimed at improving preparation and recovery, and reducing loss of life and property in the future.

A research team of nine individuals and additional advisors (a full list of study participants appears on page 2) focused on and investigated four primary areas of impact:

- **Roads:** How disastrous road conditions and insufficient snow removal resources impeded the storm response and recovery
- **Utilities:** How power losses affected residents and city operations
- **Communications:** How warnings and emergency messages were communicated to the public
- **Equity:** How the storm exacerbated existing inequities in the city of Buffalo

During the course of our study, the research team interviewed more than 30 stakeholders representing city and state government, community organizations, emergency responders, utility providers, and business owners. We collected and analyzed data and documents from a variety of sources including the City of Buffalo, National Grid, local and national media, and social media. We also reviewed the historical context of Buffalo's 1977 blizzard, the last "generational storm" with parallels to the December 2022 event. To help the city bolster its preparedness, response, and recovery efforts going forward, we identified relevant solutions and systems that have been tested and implemented elsewhere and could be considered for Buffalo.

The following key priorities emerged from our research:

- **Physical assets.** The city's emergency vehicle fleet, storage capabilities, and warming centers did not meet the demands that responding to this once-in-a-generation storm required.
- **Electrical power.** Because of failures in the electrical network, managed by National Grid, approximately 20,000 customers and key City facilities, including fire houses and the Department of Public Works facility, lost power at some point during the storm, some for up to four days.
- **Public communications.** Many people remained uninformed despite travel bans and stay-at-home orders. The city relied heavily on television and radio announcements and non-specific warnings, and not enough residents had enrolled in text message alert systems.
- **Existing equity issues.** While the snow hit all of Buffalo hard, the blizzard's impact was felt hardest in neighborhoods that endure persistent economic hardships and resource limitations. Of the 31 individuals who died within the City of Buffalo, 20 were people of color - disproportionate for the city's demographics. Some residents ventured out mid-storm for food and medicines because they were not in a financial position to stock up ahead of time.

In addition, snowstorms do not respect political boundaries. Optimal response required continual coordination between the City, County and State. This was challenging during the storm.

Despite these significant challenges, **aspects of Buffalo’s response were highly successful and demonstrated resourcefulness and bravery under immense pressure.**

To address the challenges identified through our research, our team developed a set of recommendations for consideration by Mayor Brown and the City of Buffalo. These recommendations encompass changes that can be enacted as soon as next storm season (Winter 2023-24), as well as larger systemic changes aimed at upgrading preparation and recovery in the long term while minimizing the risk of loss of life, injury, and damage. We also include steps to harness the city’s unique and highly successful 311 program.

Our recommendations are organized around five strategies for change (see the Recommendations and Proposed Solutions section of this report for a detailed discussion). A summary of key steps for each strategy follows.

The research team was asked to review the response to an unprecedented storm that occurred over a holiday. As such, the report should not be read as a suggestion of negligent conduct by any of the respondents or government officials, many of whom were heroic in a time of crisis. To the extent that words such as “inadequate” or “insufficient” appear in the report, the intent is the literal meaning; in other words, a given action or resource was not able to counter a particular circumstance.

We make recommendations for improving preparation, but we recognize that since resources are limited, appropriate planning must balance the costs and benefits of all preparedness actions in light of the probability that they will be needed. We do not undertake any such balancing of costs and benefits in this report.

1. Bolstering physical assets for greater efficiency, protection, and nimble operations

- Build two new Department of Public Works (DPW) facilities: a replacement for the aging Broadway Barns facility as well as a Traffic Management Center, both of which are essential ingredients for responding effectively to emergencies and everyday needs.
- Develop an Emergency Operations Center within the City of Buffalo, helmed by the new Emergency Manager, to coordinate inter-departmental efforts, situational awareness, and physical assets. Continuous training of staff for emergency management preparedness, especially through inter-governmental tabletop exercises, is key.

2. **Partnering with regional, state and federal agencies, as well as the private and non-profit sectors, to realize the City's immediate and long term needs.**
 - Strengthen partnerships to address immediate needs, such as access plans for electrical infrastructure in storms, and longer-term improvements, including upgrading housing stock.
 - Building on the success of the city's 311's outreach efforts, develop and maintain a strong network among residents, community groups, and government resources for partnership during extreme events and for meeting everyday needs.
3. **Creating and maintaining clear and consistent public communications**
 - Convey the potential dangers of the storm using all available traditional and social media channels, by deploying physical signage in high-traffic areas, and by utilizing the Wireless Emergency Alert system to ensure that emergency notifications reach the majority of Buffalonians.
4. **Addressing systemic challenges that hinder resilience, including impacts on under-resourced neighborhoods and residents and mobility-linked hindrances**
 - Evaluate aging housing stock and power infrastructure, and develop a plan to revitalize outdated infrastructure with the investment of county, state, federal and private sector resources, to help ensure that residents remain protected and warm.

In addition, Buffalo can maximize the use of data and technology for heightened situational awareness, partner coordination, and more efficient emergency response procedures. Upgraded technologies can be used to share status data and weather reports among first responder dispatchers, the Traffic Management Center, power and telecommunications providers, and 311 operators.

A true strength of the City of Buffalo is that it lives up to its nickname, "The City of Good Neighbors." Its residents are a testament to the city's resilience and caring nature. Our research team encourages the city to lean into this strength and utilize its tight-knit communities to better prepare local residents for future weather crises, and to foster even more effective mutual assistance. This report provides a roadmap for helping the city make meaningful progress.