

May 2022 Severe Weather Event

After Action Review

2023

The Office of Emergency Management



Table of Contents

Acknowledgement.....	3
Introduction	5
Background.....	5
Purpose	6
Approach and Methodology	6
Response and Recovery Facts	8
Findings	9
Successes	9
Lessons Observed	9
Recommendations.....	10
Preparedness	10
Response	12
Communications	13
Appendix A. Event Timeline	15
Appendix B. Summary of Recommendations	16
References.....	18



Acknowledgement

This report is based on the knowledge, experience, and insights of City employees that were directly involved in coordinating response and recovery efforts for the May 2022 'derecho' storm. The Office of Emergency Management (OEM) would like to thank all participants who provided input for their openness and commitment to continuous improvement. The After-Action Review stands as a testament to the individuals that demonstrated resourcefulness, compassion, and resilience in the response to this devastating event.





“Despite the widespread impacts, we mobilized quickly and helped a broad range of people in need.”

**Anonymous
EOC Operations Group**



Introduction

Background

On May 21, 2022, at approximately 3:30 pm, the city of Ottawa experienced a powerful thunderstorm that swept across the city with extreme winds that collapsed trees and hydro poles, damaged facilities and homes, and disrupted power to more than 180,000 Hydro Ottawa customers. It was later described by meteorologists as a historic 'derecho', and one of the most impactful thunderstorms in Canadian history that tracked through southeastern Ontario and into parts of southern Quebec.

Most of the weather stations along the path of the storm recorded wind gusts near or above 100 km/h, with several severe downbursts that had windspeeds reach up to 190 km/h (The Northern Tornadoes Project, 2023). Although the storm included hail and torrential downpour, the main damage caused was from wind. The Insurance Bureau of Canada ranks this event as the sixth largest in terms of insured losses in Canadian history and a reminder of the increasing risk climate change poses to communities across Canada (Derecho Storm Ranks 6th Largest Insured Loss Event in Canadian History, 2023).

In the immediate aftermath, first responders focused on life safety actions that included helping individuals that may have been injured from storm debris or trapped in their homes by downed power lines. The City's Emergency Operations Centre (EOC) was mobilized to centrally coordinate City services to ensure a comprehensive response. This was completed by supporting hydro companies with their power restoration operations, mobilizing emergency reception centres and their supporting services (e.g., access to charging stations, showers, etc.), providing emergency food services to vulnerable residents, conducting wellness visits, and launching an unprecedented debris management initiative aimed at clearing roads and parks, collecting organic waste/spoiled food, and removing damaged trees, among other activities.

From the outset, a key priority for the City was to provide accurate and timely information to residents, visitors, businesses and elected officials on response and recovery activities. The City's Public Information and Media Relations team dedicated a large staff contingent to work directly with the City's EOC to ensure that this outreach occurred through multiple channels, including through City media availabilities, which were broadcast by local radio stations.

Although Hydro Ottawa restored power to all customers by June 5, 2022, the extent of the storm's damage was such that the City had to continue its debris management work for many more months afterwards. Responsibility for this was transferred from the EOC to the Public Works Department on June 6, 2022.



A full timeline of the events of the emergency response can be found in Appendix A.

Purpose

The purpose of this review is to assess the efficiency and effectiveness of the City's emergency management response and recovery processes, procedures, capabilities, and framework in support of the May 2022 severe weather 'derecho' event. It focuses on identifying and documenting strengths, areas for improvement and gaps in existing emergency preparedness and response capabilities.

The findings contained with this report will serve to assist the City with identifying actions that need to be implemented immediately to ensure better preparation for future situations, and longer-term actions that are needed to strengthen and enhance the resiliency of the City's Emergency Management Program (EMP).

Approach and Methodology

During an emergency, the City's response is directed by the EOC Control Group, which comprises the senior leadership of all of the City departments, as well as the heads of the City's emergency services and the three Boards (i.e., Ottawa Police Service, Ottawa Public Health and Ottawa Public Library). The EOC Control Group is the policy authority. Their direction is implemented by the EOC Operations Group.

The City's Emergency Management Program identifies the following response escalation levels:

- Normal Operations (the state of the City prior to the 'derecho' storm passing through)
- Monitoring
- Enhanced Operations
- Activated Operations
- State of Emergency

The After Action Review (AAR) examined the City's EOC Operations Group and EOC Control Group activities and actions in response to the May storm. More specifically, the review covered the period from when the city entered into an "Enhanced" Operations posture on May 21, 2022, its quick escalation to "Activated" Operations on May 22 (once the full extent of the storm's damage had been assessed), until the city deescalated to "Monitoring" on June 06, 2022, and transitioned recovery functions to the Public Works Department. Although there were numerous organizations that provided support to the response, this review did not include



the actions taken by hydro agencies, telecommunications companies, non-governmental organizations, or other external stakeholders.

The AAR focused on the following three emergency management-specific objectives:

A. Preparedness:

The City's actions and activities prior to the incident to ensure an effective response.

B. Response:

The City's ability to manage and coordinate actions and activities, through the EOC during and after the incident.

C. Communication:

External and internal communication during and after the situation.

The OEM, with assistance from an external consultant, used a multi-phased approach, combining different methods to understand what happened during the response. The main phases were as follows:

- Review and analysis of the City's relevant Emergency Management documents.
- Interview of key stakeholders from the EOC Control Group and EOC Operations Group.
- Development, distribution, and analysis of an online web-based survey. This survey was distributed to approximately 97 individuals, of which 56 participants completed and returned feedback. The online surveys comprised various types of questions including rating scale, multiple choice and open-ended.
- Data analysis and compilation of results to identify common themes and similarities in observations.

OEM staff who conducted the review and prepared this report have extensive experience, background, and training in emergency management and response. As mentioned previously, the City also leveraged the subject matter expertise of an independent consultant throughout the review. We appreciate the support and guidance provided by the consultant team members whose knowledge and work were greatly appreciated.



Response and Recovery Facts

- The EOC was mobilized and activated for 17 days to coordinate response and recovery efforts.
- 98 individuals were involved in the EOC Operations Group and more than 1,000+ City staff and employees from partner organizations were involved in ground operations.
- Over 250 metric tonnes of organic waste was collected (equal to the weight of 16 school buses).
- 1,800 trees were removed from the City's right-of-way.
- 67,000 cubic metres (m³) of wood chips were created from downed trees (equal to filling 27 Olympic size pools).
- In the peak aftermath of the storm, there were 700 intersections without power.
- 240 webpage updates were made to the storm emergency page on Ottawa.ca.
- The City had 66,582 pageviews on the storm emergency web page.
- 158 Twitter posts were made by the City per language (and 110 Facebook posts per language).
- The 'Clean up the Capital: After the Storm' volunteer initiative had 86 projects registered, with 301 participants.
- The City's non-governmental organization (NGO) partner, Samaritan's Purse, assisted individuals with debris removal and storm clean up.
- Within four days of the storm (May 25), the EOC had opened 24 emergency reception centres across the city for residents to access washrooms/showers, charge electronic devices, and get meals or drinking water.
- Thousands of wellness visits were conducted by the City and partners.
- The EOC and community partners helped to serve an estimated 67,000 meals to residents in need over 10 days throughout the city.



Findings

This report represents an analysis and compilation of the observations, perspectives and feedback collected from city employees involved in response and recovery efforts. The findings are grouped into the categories of “successes” and “lessons observed.”

Successes

Considering the size of the geographic area impacted, speed of the storm, and scope of the damage, the overall impression was that the City performed well, and that response and recovery was effective. Key common themes that worked well and should be considered for future responses include:

- The City’s Emergency Management Program (EMP) has supporting documentation, processes, and procedures that provide a solid framework to guide emergency response and recovery activities.
- The knowledge and experience of City staff specific to emergency management has greatly increased over the last few years as a result of various local emergencies, which contributed to an efficient and effective City response.
- The rapid and skilled response from first responders supported individuals in need and helped save lives.
- The City works to continuously improve its public communications activities, which resulted in a strong communications strategy that provided timely and accurate information to residents through various modes.

Lessons Observed

Despite the effectiveness of the City’s response and recovery efforts, this review – as expected and intended - identified areas for improvement that can be applied to ensure better preparedness for future emergencies. The intent of an AAR is not to place blame or assign fault for any shortcomings, but rather to serve as an opportunity to learn from experiences and build upon those challenges that were identified. The main themes in the lessons from the response are:

- The need to build internal capacity through training and exercise so that even more city staff are able to fill key emergency response roles.



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- That formal protocols would be beneficial for emergency community supports, such as wellness visits, food security, and volunteer management.
 - The need to update and enhance public education and awareness programs related to emergency preparedness for residents and community organizations.
 - The importance of maintaining a formal communications and collaboration network with external partners, who form part of the overall emergency management eco-system within the City of Ottawa.
 - That the City should continue to improve upon (external) emergency management communication methods, as well as to continue to promote (internally) the Council Liaison role.

Recommendations

Based on the successes and lessons observed, this report resulted in eight (8) recommendations for improvement across the three (3) emergency management-specific objectives. Below are the recommendations that arose from this review.

Preparedness

The City's Emergency Management Program (EMP) has comprehensive and detailed supporting documents, such as the Municipal Emergency Plan and the Recovery Guide, that provide a solid foundation for organizing a city-wide response to situations like the May 2022 severe weather event. Furthermore, roles and responsibilities are well-documented and understood. The City reviews and updates these documents annually and should continue to do so to ensure that the lessons observed following any emergency are captured and fed into a continual improvement process.

Recommendation #1: Continue to ensure the City's Emergency Management Program documents are evaluated and revised on an annual basis.

The City has mobilized its Emergency Operations Centre (EOC) on multiple occasions over the past several years. EOC staffing, however, primarily consists of the same individuals fulfilling key functions due to their possessing a high-level of expertise in emergency response. While this contributed to an overall successful coordination of the City's response during the May 2022 storm, it also created a situation whereby staff worked long hours and did not have proper rest periods, if any, between shifts. Related to the City's reliance on a small group of qualified EOC-experienced staff is a lack of depth in certain EOC functions (e.g., EOC Section



Chiefs). Role-based training would be beneficial to build capacity in this regard. In general, more training, as well as the use of more situation-based exercises (including tabletop discussions), would help City staff better prepare for emergencies.

Recommendation #2: Build greater depth in emergency response capacity by:

- Identifying individuals across the City capable of fulfilling certain EOC functions and providing them with additional training, such as role-based training.
- Providing newly trained individuals with less EM experience the opportunity to shadow and learn from more experienced staff during emergencies.
- Conducting exercises for operational staff to practice their roles and responsibilities during simulated situations.

The May 2022 severe weather event was unprecedented in that it caused city-wide impacts, whereas previous emergencies, such as the 2017 and 2019 floods, and the 2018 tornadoes, were more localized in nature. Due to factors such as climate change, the City of Ottawa can expect to see more frequent severe weather events. It is therefore critical to enhance awareness, preparation, and planning for situations at both the individual/household and community/business levels.

Recommendation #3: Update and enhance public education and awareness related to emergency preparedness at both the individual and community levels by:

- Reviewing and updating the “Are you Ready?” information on the City’s website.
- Assisting and supporting community groups with the development of their own emergency management plans, including related to business or service continuity.



Response

Given the magnitude of power outages across the city during the May 2022 storm, it was important for the EOC to ensure that essential social services were coordinated to support people's basic needs of food, shelter, and medical assistance. The EOC worked with social services partners to mobilize an emergency food security task force and also coordinated wellness visits so that at-risk/vulnerable residents had the information and assistance (e.g., proper medical supports) they required. The EOC recognized some challenges with the mobilization and coordination of these services, which could be improved by establishing formal frameworks and/or response protocols. Additionally, it was noted that external agencies proved to be valuable partners that should continue to be leveraged. The EOC also noticed a strong desire on the part of residents to volunteer their services. While the City coordinated various volunteer debris clean-up initiatives, the AAR found that volunteers could have been engaged more broadly.

Recommendation #4: Review and develop a more structured approach or formal response protocols for the activation of the following EOC services:

- A. Emergency Food Services
- B. Wellness Visits
- C. Volunteer Management

Through the documentation review phase of the AAR, it was noted that there are existing Memorandums of Understanding (MOUs) with external agencies that are either out-of-date and/or could be improved to better define objectives and expectations during a response activation. During the May 2022 storm, the City relied on existing MOUs with external agencies to support emergency food services, but due to high city-wide demand, these entities were often strained or overwhelmed. In some cases, expectations related to cost-recovery were not as clear as they could have been. It would be beneficial to review and update existing MOUs to reflect the lessons observed from the May 2022 storm.

Recommendation #5: Review existing MOUs with external agencies to ensure they are updated and enhanced to further define service agreements during an emergency.



Just as the COVID-19 pandemic had an impact on the frequency and nature of communications between employees working remotely, so too did it impact the relationship and frequency of communications between the City and some of its external partners. This led to some EOC staff searching for contacts during the May 2022 emergency to share and collect information (e.g., school boards, telecommunications providers, etc.), which were outdated or incorrect in some instances. The result was slight delays in operational coordination. It will be important for the City to regularly review its external relationship/information sharing network to ensure proper collaboration and support before, during and after an emergency.

Recommendation #6: Establish and develop a formal public private partnership (P3) network through sustained outreach to enhance the City's external collaborations related to preparedness, response, and recovery.

Communications

Public communications play a large role in building and maintaining public confidence during an emergency. While the City was not the primary source of information updates on power restoration timeframes, the EOC did ensure that accurate and timely information was available and accessible to all residents. This included providing information to residents, visitors, elected officials and businesses on any potential impacts to City services, and where and how to obtain recovery support services. When possible, the City should communicate the areas of responsibility during an emergency to ensure that the public and elected officials understand where to get the information they need. The City should also continue to enhance its ability to reach residents during prolonged power outages.

Recommendation #7: Continue to improve communications to residents, visitors, elected officials and businesses by:

- Providing awareness on organizational responsibilities during multi-agency emergency response.
- Identifying ways to enhance the City's outreach activities during prolonged power outages.

The Council Liaison Officer is responsible for supporting elected officials when the EOC is mobilized. It was observed that, during the May 2022 storm, the EOC Council Liaison Officer played an important role in providing a single point of contact for elected officials. Staff did note,

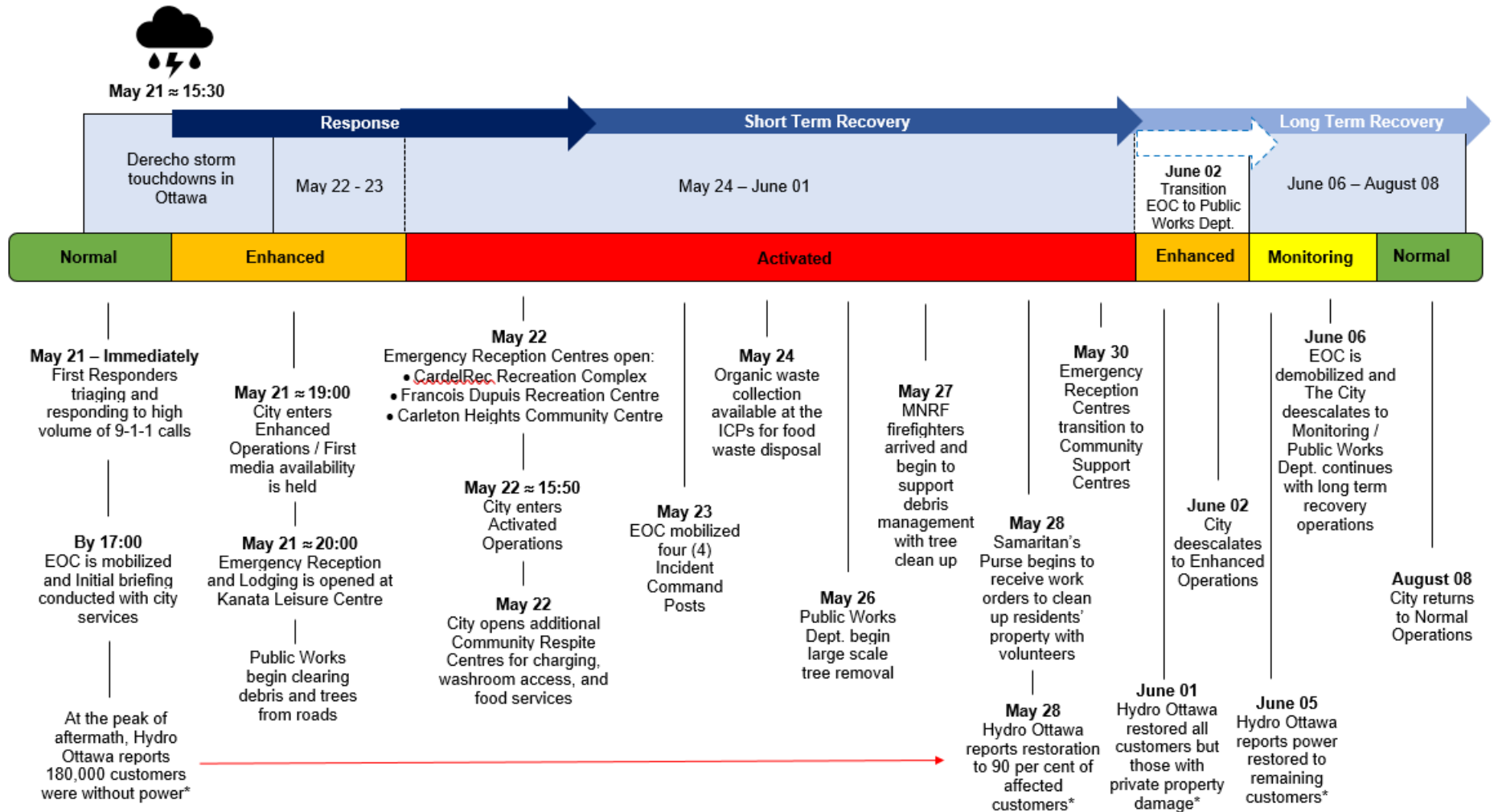


however, that some elected officials continued to bypass the function and go directly to senior staff in specific services for requests or to obtain information. This made it difficult for the EOC to track city-wide impacts and coordinate responses, and occasionally resulted in some duplication of efforts.

Recommendation #8: Continue to promote and provide guidance to Elected Officials and their staff on the use and benefits of the Council Liaison role during an emergency.



Appendix A. Event Timeline



*Hydro Ottawa releases its After the Storm report. (2023 06 20).

Retrieved from HydroOttawa Holding Inc.: <https://powerasone.ca/hydro-ottawa-releases-its-after-the-storm-report/>



Appendix B. Summary of Recommendations

#	Theme	Recommendations
1	Preparation	Continue to ensure the City's Emergency Management Program documents are evaluated and revised on an annual basis.
2	Preparation	Build greater depth in emergency response capacity by: <ul style="list-style-type: none"> - Identifying individuals across the City capable of fulfilling certain EOC functions and providing them with additional training, such as role-based training. - Providing newly trained individuals with less EM experience the opportunity to shadow and learn from more experienced staff during emergencies. - Conducting exercises for operational staff to practice their roles and responsibilities during simulated situations.
3	Preparation	Update and enhance public education and awareness related to emergency preparedness at both the individual and community levels by: <ul style="list-style-type: none"> - Reviewing and updating the "Are you Ready?" information on the City's website. - Assisting and supporting community groups with the development of their own emergency management plans, including related to business or service continuity.
4	Response	Review and develop a more structured approach or formal response protocols for the activation of the following EOC services: <ul style="list-style-type: none"> A. Emergency Food Services B. Wellness Visits C. Volunteer Management
5	Response	Review existing MOUs with external agencies to ensure they are updated and enhanced to further define service agreements during an emergency.
6	Response	Establish and develop a formal public private partnership (P3) network through sustained outreach to enhance the City's external collaborations related to preparedness, response, and recovery.

7	Communications	Continue to improve communications to residents, visitors, elected officials and businesses by: <ul style="list-style-type: none">- Providing awareness on organizational responsibilities during multi-agency emergency response.- Identifying ways to enhance the City's outreach activities during prolonged power outages.
8	Communications	Continue to promote and provide guidance to Elected Officials and their staff on the use and benefits of the Council Liaison role during an emergency.

References

- Derecho Storm Ranks 6th Largest Insured Loss Event in Canadian History. (2023, 02 16). Retrieved from Insurance Bureau of Canada: <http://www.ibc.ca/on/resources/media-centre/media-releases/derecho-storm-ranks-6th-largest-insured-loss-event-in-canadian-history>
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