Emergency Management and the August 14th, 2003 Blackout

by

Brenda L. Murphy, Ph.D.
Wilfrid Laurier University
Brantford Campus

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For further information please contact:
Institute for Catastrophic Loss Reduction
20 Richmond Street East, Suite 210
Toronto, Canada M5C 2R9
Tel: (416) 364-8677
Fax: (416) 364-5889

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1.0 INTRODUCTION

On August 14th, 2003, fifty million Canadian and American citizens were left without electricity in some cases for over 48 hours. In Ontario alone, over 9 million people were affected. The source of the power outage was a series of problems with an Ohio-based energy corporation, First Energy. A joint Canada-United States task force was set up to investigate the electricity outage and recommend improvements to the electricity management system. (Their final report is available at www.nrcan-rncan.gc.ca/media/docs/final/finalrep_e.htm).

This report outlines the results of a 1203 person, general population survey conducted in February 2004 regarding Ontario residents' emergency management perspectives and activities pertaining to the August 14th, 2003 electricity blackout. The report also outlines the extent to which the community type (e.g. city/town-village/rural) influences emergency management at the household level. The results are considered reliable at the 95% confidence level, (+/- 2.8%). The Blackout event is a unique opportunity to study individual and household capacities to deal with emergencies since it is rare for risk events to simultaneously affect such a large geographical area. More typically, disaster research must rely on geographically isolated case studies, where the local situation and results are not necessarily typical of the broader context. The limitation of studying the Blackout is that while the event affected a large geographical area, the actual impact on most areas was relatively minor – virtually no infrastructure was damaged and few, if any people were killed or hurt during the event. Thus, the strongest results provided in this report are related to understanding people's pre-existing emergency coping strategies and community patterns. The impacts summarized here would be more typical of a more minor emergency event, not a major disaster. Nevertheless, the report is important because it points to key emergency management concerns regarding the extent to which Ontario residents are prepared for any kind of risk event – from small to large scale.

After providing some background on emergency management, the results of the study are outlined. The final section then delineates the implications of these findings and provides recommendations regarding increasing the resiliency of Ontario's citizens to emergencies and disasters. Due to the broad nature of this study these results will generally be widely applicable to many developed world contexts, across a range of community sizes, particularly in North America.

2.0 BACKGROUND

Emergency management consists of the activities, plans, resources and skills employed to prepare and protect people and their property from emergencies and disasters. Emergency management is typically divided into a proactive and a reactive phase. The proactive phase consists of mitigation and emergency preparedness, while the latter revolves around response and recovery. Mitigation involves taking steps to identify and reduce the potential impacts of any threats. Emergency preparedness pertains to undertaking plans and activities designed to increase coping capacity should an emergency or disaster occur. The response and recovery aspects of emergency management are related to how an emergency or disaster is initially handled and the return of the affected area to a pre-risk event state. Within emergency management, there is anecdotal evidence to suggest that rural places may take such management more seriously since it is thought that more remote locations engenders self-reliance. This report assesses the extent to which this is true for Ontario residents.

In both the proactive and reactive phases, the capacity to adequately reduce risks or to cope with emergencies and disasters is dependent on a variety of essential players, including individuals, households and municipalities, as well as provincial and federal government authorities. In Canada, generally speaking, it is up to municipalities and their residents to be prepared for emergencies and disasters. Provincial and federal government assistance is only provided in situations where local coping capacity is overwhelmed – in these situations a state of emergency is often declared by the municipality. It is typically acknowledged, for the reactive phase that at the outset of a disaster, individuals, households, and communities should be able to sustain themselves for up to 72 hours. It may take that long before official disaster responders, such as fire, ambulance, police, the Red Cross, and so on can reach disaster victims. This may be the case due to the destruction of infrastructure and communications that often result from a major disaster event. Therefore, in the proactive phase, effective emergency management requires that residents are as prepared as possible to cope with any hazard event and should work toward reducing their personal and local-level vulnerability to risk events. For Canadians, proactive strategies can entail such things as purchasing household insurance, having an emergency preparedness kit organized and learning more about emergency management including such things as basic first aid training and understanding what they should do in case of a major disaster. In this report, the extent to which proactive strategies were in place prior to the Blackout are outlined, as well as the reported financial and other impacts incurred during the reactive phase.

This report also focuses specifically on households and suggests that these small groups, often consisting of families, tend to have extensive inter-relationships with other families as well as a variety of networks within their local area. Beyond financial or personal capacities, these inter-relationships often result in an additional set of social resources upon which residents can rely during a risk event. This set of resources, called social capital, acknowledges that in addition to various kinds of official response, people rely on networks of family, friends, neighbours and community associations to help them get through a crisis. Indeed, when an emergency or disaster occurs, the first people to respond are almost always nearby residents and the victims themselves. This report assesses whether or not these types of social resources were important during the Blackout.

3.0 STUDY RESULTS

The telephone survey was administered to 1203 respondents in Ontario during the month of February 2004. The survey was conducted by Venture Research, located in Vancouver, British Columbia. All respondents were affected by the Blackout in that they experienced a power failure in their usual place of residence (see Table 1). Most respondents were without power less than 48 hours. Socio-demographically, approximately 52% of the respondents were women, 48% were men and they represented all segments of the age, income and education levels. Sixty-eight percent of residents indicated that they were from urban areas, 21% from small towns or villages and 11% from rural areas.

Table 1: Length of Time Without Electricity	
Less Than 12 hours	30%
12-24 Hours	43%
25-48 Hours	21%
More Than 48 Hours	5%
Don't Know	1%
Total	100%

3.1 Proactive Emergency Management

The first part of the results focuses on emergency preparedness, one of the key components of the proactive phase of emergency management. The survey asked people if they had put together an emergency preparedness (EP) kit with several items such as a flashlight with fresh batteries, a 3 day supply of canned food and water, a portable, battery operated radio, extra supply of important medicines and a small amount of cash (Figure 1). Notice that respondents were more likely to have on hand a flashlight, cash and canned food. Assessment of the community context indicates that the change from urban to town-village and then to rural space, leads to a very slight increase (approximately 5% overall) in whether or not respondents had these supplies on hand. When we asked if these supplies had been gathered together into an EP kit, only 13% of respondents indicated that they had assembled such a kit. Again, there were slight differences among community types, with respondents in rural spaces more often reporting that they had assembled an EP kit. We asked respondents why they had not assembled an emergency kit. The most prevalent responses were that 1) respondents did not think it was important, 2) they didn't think they would ever need

Figure 1: EP Kit Items

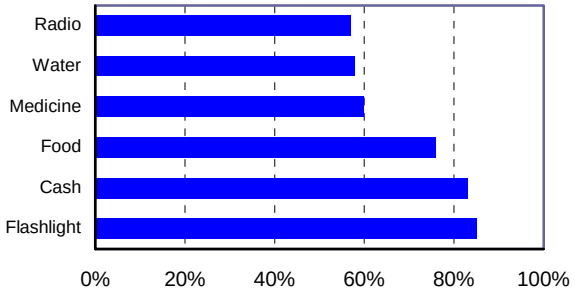
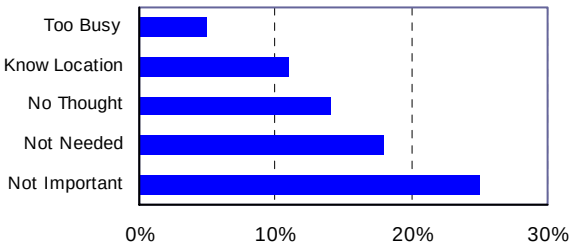


Figure 2: Why EP Kit Not Assembled



one, 3) it never occurred to them to put one together, 4) respondents knew where these various items were in their home, and 5) they were too busy (see Figure 2). The pattern across community type was identical.

We also asked respondents whether on not they would like more information about emergency preparedness (EP). Only 38% indicated that they would like more information. People in rural areas were a bit *less* likely to respond that they would like more EP information. Of those who were interested in EP information, the main sources of information that respondents were most likely to consult included the internet, official organizations (e.g. fire, Red Cross) and the newspaper (Figure 3). The same general trend was noted across community types, although official organisations were far more important sources of information for rural respondents (Rural 50%, City 34%, Town-village 26%).

Figure 3: Main Sources of EP Information

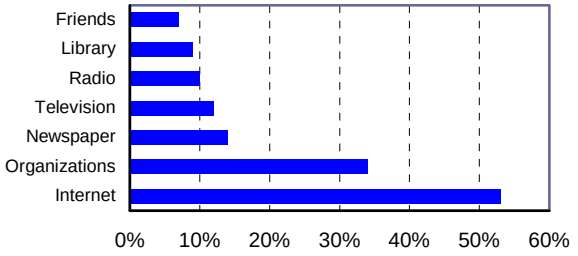
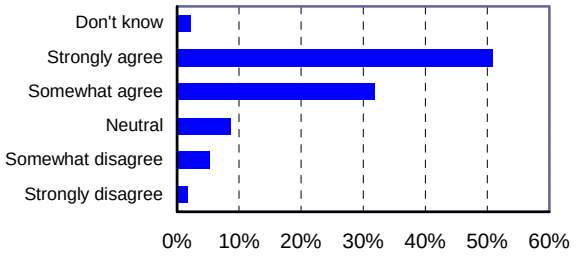
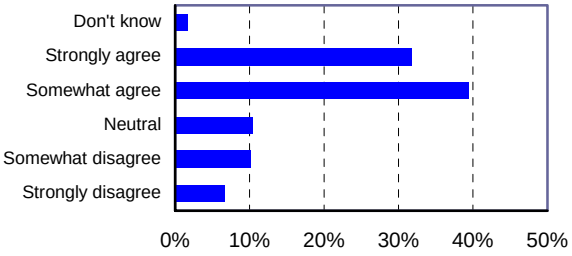


Figure 4: Provincial/Local Governments Should Do More EP



In terms of responsibility for emergency preparedness activities, we asked respondents to rate the extent to which they agreed with the following statements: 1) The provincial and local governments should do more to effectively prepare communities for emergencies and 2) Individuals and families should be most responsible for preparing communities for emergencies (Figures 4 and 5). Respondents indicated that while governments could do more to help prepare communities, they also recognized that households have primary responsibility to make sure they are prepared to cope with emergencies and disasters. In terms of community types the pattern was similar.

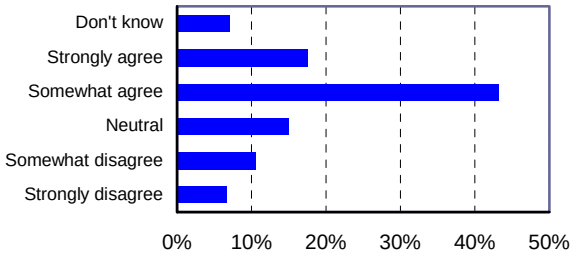
Fig 5: Individuals/Families should be most responsible for EP



3.2 Reactive Emergency Management

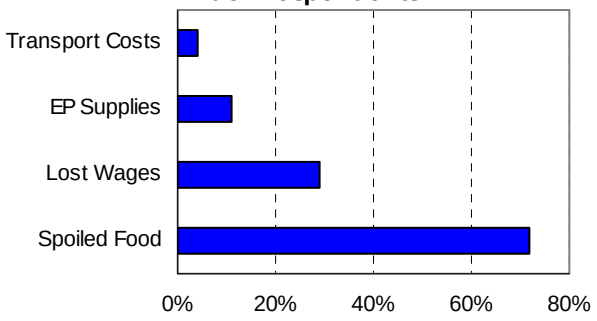
The survey also asked questions regarding respondent views on the effectiveness of the government response to the Blackout and how they were affected. It asked to what extent respondents agreed with the following statement - In your area the local government response to the blackout was efficient and effective (Figure 6). Across the province, sixty percent of respondents agreed with the statement, while 18% disagreed and 15% were undecided. This is a relatively positive result, but leaves room for improvement.

Figure 6: Local Government Response - Effective



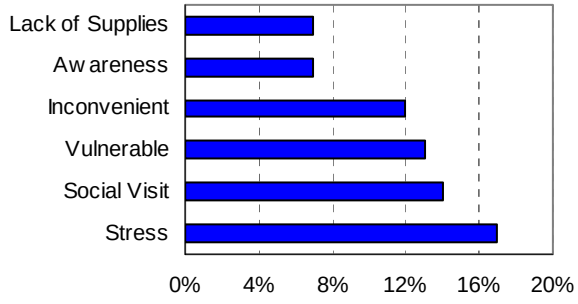
We asked specifically about financial and other types of impacts. Thirty percent of respondents indicated that they had incurred some financial impact as a result of the Blackout. Of those that incurred financial costs, approximately 40% stated that their costs were under $500 and less than 5% said that they submitted an insurance claim to cover the costs. The main types of financial losses incurred included spoiled food, lost wages, the purchase of emergency supplies and transportation costs (Figure 7).

Figure 7: Types of Financial Costs, % of Respondents



In addition to financial concerns, sixty-two percent of respondents noted that they experienced other types of impacts, both positive and negative. These included increased stress, feeling vulnerable due to lack of lighting, enjoying the opportunity to visit with family and friends, general inconvenience (e.g. lack of air conditioning, inability to study), increased awareness of the need for emergency preparedness as well as our dependence on electricity and, finally, lack of supplies such as food, gasoline and water (Figure 8). It is also interesting to note that virtually none of the respondents reported any increase in violence or vandalism in their homes or neighbourhoods. Among community types, the pattern was similar across all of these impacts.

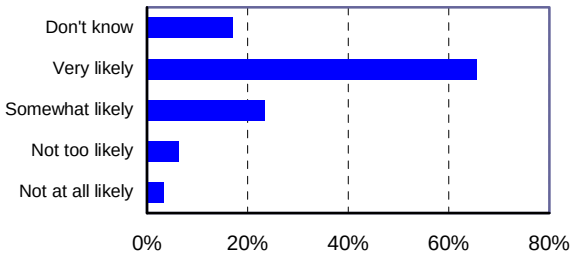
Figure 8: Other Costs



3.3 Emergency Management and Social Resources

Finally, the survey asked about the social networks that existed within the respondents' communities that could be useful in times of crisis. We first asked respondents the degree to which they felt that their neighbours would pitch in and help in a disaster situation. Eighty-nine percent stated that it was somewhat or very likely that their neighbours would provide assistance (Figure 9). This is quite remarkable considering that far more respondents were from urban areas, where it is often suggested that people do not know their neighbours and have few social networks in their immediate locale. However, a closer examination of the data reveals that the pattern was different among community types, with more rural respondents agreeing with this statement (Table 2).

Figure 9: Neighbour Helpfulness if Crisis Occurred



More specifically, we also enquired about whether or not help was given or received during the Blackout and the type of assistance involved. Thirty-seven percent of respondents indicated that they provided assistance during the Blackout to neighbours, family, friends, organisations (both first response and community groups) and to people they did not know (Figure 10). The type of assistance that was provided included checking on people to make sure they were safe, providing family oriented help such as cooking and babysitting, providing emergency supplies,

Figure 10: Respondent Provision of Assistance

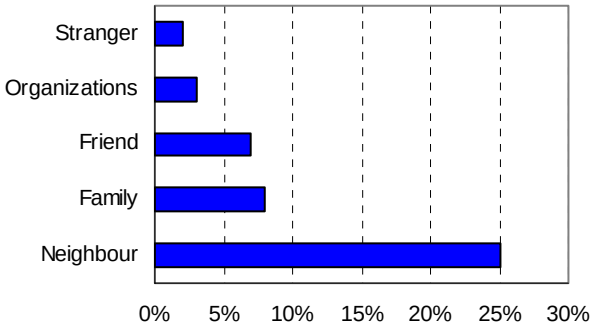


Table 2: Neighbour Helpfulness During Disasters
Chi-square significant, p=.001

	City	Town-Village	Rural
Not at all likely	4%	2%	0%
Not too likely	7%	5%	4%
Somewhat likely	26%	20%	14%
Very likely	61%	72%	79%
Don't know	2%	1%	3%
Total	100%	100%	100%

helping with transportation, assisting needy people who were sick, injured or elderly and providing advice or information (Figure 11). Conversely, respondents were also asked if they received any assistance during the Blackout. Only 14% of respondents indicated that they received any assistance. This is not surprising considering that for most people the Blackout did not cause any serious damage or injuries. The source of assistance and types are very similar to the respondent provision of assistance (Figures 12 and 13). Interestingly, these numbers suggest that people were more likely to offer assistance rather than to receive it. The results also confirm that even in more minor crises, people rely on family, neighbours and friends to help them get through the event. Among community types the pattern of assistance provided was similar, with one exception. Twenty-eight percent of rural respondents were more likely to share a generator with their neighbours, as compared to none of the town-village respondents and only 5% of the city respondents.

Figure 11: Assistance Provided by Respondents

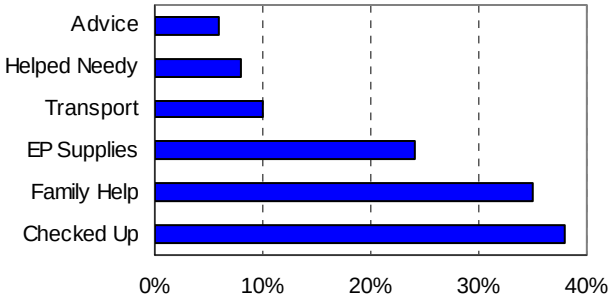


Figure 12: Source of Assistance Recieved By Respondnets

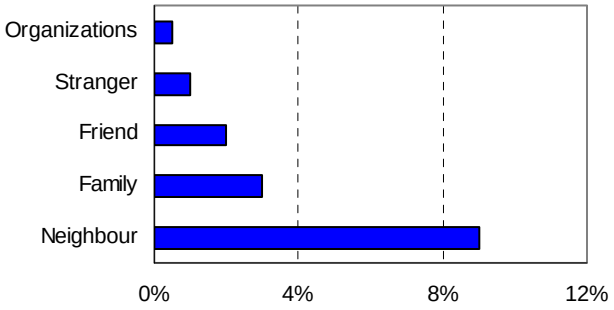
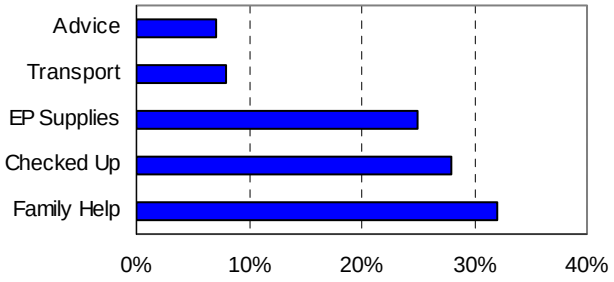


Figure 13: Type of Assistance Respondents Recieved



4.0 CONCLUSIONS AND RECOMMENDATIONS

The data in this report, focused on the 2003 Blackout, point to a number of important conclusions.

1) Ontario residents are not well prepared for emergencies and disasters.

First, regarding proactive emergency management, generally speaking Ontario residents were aware that households share a significant part of the responsibility for emergency preparedness. Despite this fact, most had the constituents of an emergency preparedness (EP) kit, but had not assembled them into a kit. Many respondents reported that they did not think they were important or needed. This is problematic because in a disaster situation, perhaps with little or no warning, the resultant chaos may prevent people from finding the needed items. Further, by a 2-1 ratio, respondents indicated that they were not interested in information about emergency preparedness. Taken together, these trends suggest that emergency preparedness is not a high priority for most people; local, provincial and federal agency emergency management personnel who are charged with informing and motivating the public face a daunting uphill challenge. Perhaps one approach for managers might be to preface information about EP with real world examples that demonstrate the relevance of such preparedness. EP could also be taught in the primary school system; as occurred with environmental awareness – it is sometimes children who can be the catalyst for change within their households.

2) Information about emergency preparedness must be provided via multiple sources and delivery methods.

Second, when asked which sources they would consult if they were interested in more information about EP, respondents outlined a wide variety of sources, particularly the internet, official organisations and the media. This reliance on the internet, which seems to be continuously increasing, implies that all agencies involved with emergency management, either governmental or NGOs (e.g. Red Cross, ICLR), should have easy to understand EP information available on their websites. The information should also be readily available on the site and not buried in an obscure subdirectory. However, many people in Canada, particularly those most at risk such as the elderly, poor, non-English speakers or the handicapped, may not have access to the internet. This means that it is important to provide EP information through a wide variety of sources, both written and oral and in several languages.

3) Especially in quiet, non-crisis periods, all levels of government must continue to contribute to, and upgrade, their proactive emergency management.

Although respondents recognized their role in emergency preparedness, they also maintained that both local and provincial governments should do more to effectively prepare communities for emergencies. This could include better support for small communities as they struggle to develop and test their emergency plans; more support for communities when they attempt to mitigate known hazards or to implement public education; support for emergency management initiatives among institutions and businesses such as long-term care facilities, schools, universities, corporations, shopping centres and research institutes; and, initiatives aimed at reducing the social vulnerability of those most at risk in a disaster (e.g. poor, elderly handicapped). Unfortunately, these priorities are often moved ‘to the back burner’ when

government budgets are tight or if the government of the day prefers tax breaks and scaled back government services. Instead, we wait for a disaster to strike to remind us why emergency management is so important. This knee-jerk, reactive approach must be avoided if we are to protect people and their property from harm. One important opportunity to ensure continuing interest in emergency management and to increase our resilience to emergencies and disasters is to support government agencies and research institutes. These include such organisations as the federal-level Office of Critical Infrastructure Protection and Emergency Preparedness (OCIPEP), the provincial-level Emergency Management Ontario (EMO) the centre that helped fund this study, the Institute for Catastrophic Loss Reduction (ICLR) and other groups such as the Canadian Center for Emergency Preparedness.

4) People involved in a crisis situation are both victims and responders. One of the resources they use in a crisis is their social network of relationships.

a) The Blackout did not lead to any severe financial losses or other costs. Nevertheless people did what they could to help their neighbours, family, friends and even strangers. Respondents indicated that they were more than twice as likely to help others rather than to receive assistance. The stereotype victim is often seen as hapless and panicky. In disaster after disaster, research results indicate that this is simply not the case. A more common trend in the aftermath of a disaster is for the victims themselves and other people who may be nearby (e.g. neighbours) to respond in the best way they can with the resources that are available. This tendency is often not recognized by emergency managers; the victims and other volunteers should be more fully integrated into planning for the response to crisis events.
b) Further, as these respondents noted, one of the key resources that people use to help them get through a crisis is their social networks of family, friends and neighbours. Even in a less serious emergency, like the Blackout, people checked up on those who were important to them and provided whatever assistance they could. To a lesser extent, they also provided assistance to strangers. Therefore, part of developing communities that are resilient in the face of emergencies and disasters must involve opportunities for individuals, families and organisations to develop relationships and bonds. For instance, sponsoring neighbourhood groups or easy access to community facilities, not only provides for immediate social or recreational needs it also fosters longer-term community cohesion that can be called upon in emergency situations.

5) All Ontario residents need to improve their emergency preparedness.

When comparing urban, town-village and rural spaces, these results show that at least in terms of assembling an EP kit and interest in EP information, rural residents were not very different from other Ontario residents. They were, however, more likely to have access to an electricity generator. This is somewhat indicative of the self-reliance often associated with rural areas. However, this research did not establish any clear community pattern related to emergency preparedness except in terms of the social resources available. In this case, more rural respondents felt that their neighbours would pitch in and help during a crisis. Further, it is also important to note that a significant percentage of town-village and urban residents also believed that their neighbours would provide assistance. This positive trend is a great start that should now be supplemented with the skills and knowledge that are needed to make that assistance more effective.