

# **Evaluating and Explaining Local Emergency Management Policies in Ontario**

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## Introduction

Canadian communities are vulnerable to a wide range of hazards—floods, tornadoes, train derailments, chemical spills, and so on—which occasionally trigger major emergencies that require a government response. Sometimes, emergencies cause such severe social and economic impacts that they become disasters, such as the ice storm that struck eastern Ontario, southern Quebec and parts of the Atlantic provinces in January of 1998, causing 28 deaths, over 900 injuries and at least \$5 billion in losses (Kerry et al., 1999; Lecomte et al., 1998).

Recently, Hurricane Katrina and other international events have raised questions about Canada's ability to manage major emergencies and disasters (Badelt, 2005; Canada, 2004). While much attention has been focussed on federal and provincial activities, there has been comparatively little interest in the efforts of local governments, despite the fact that they bear the primary responsibility for public safety in communities (Kuban, 1996). This paper discusses early findings of an ongoing research project concerned with local government policy-making in the field of emergency management. The research is intended to identify factors that shape local policy choices and to explain variation in the quality of local emergency management programs.

## Emergency Management and Local Government

*Emergency management* refers to a range of practices designed to deal with emergencies or disasters (Ontario, 2004). It involves policy-making in four areas: mitigation, preparedness, response, and recovery (Petak, 1985). *Mitigation* policies are those designed to prevent emergencies or to reduce their impact; for example, providing education to residents about the hazards they face equips them to take protective actions (Waugh, Jr. and Hy, 1990). *Preparedness* policies involve measures to increase a community's capability to respond effectively to emergencies (McEntire and Myers, 2004: 141). For example, training can be provided to municipal employees to prepare them for emergency-related duties, and exercises can be conducted to test emergency plans and procedures. *Response* policies are those pertaining to the provision of assistance to victims during and immediately after an emergency (Petak, 1985). Examples include designating emergency shelter facilities and developing procedures for evacuation. Finally, *recovery* policies address issues related to community recuperation after a disaster, such as debris management and psychological counselling (Petak and Atkisson, 1982).

Emergency management in Canada follows a "bottom-up" organizational design (Waugh, Jr., 1996: 347). Although most types of emergencies fall under provincial jurisdiction, the primary legal and political responsibility for emergency management is delegated to local governments (Scanlon, 1995). The federal and provincial governments provide support to municipalities when a disaster occurs, but it is local governments that are ultimately responsible for public safety within their jurisdiction (Kuban, 1996).

There are practical reasons for this. First, it is local officials who respond in the critical early hours of a community emergency. How effectively a local government performs response functions depends on the quality of its emergency planning before a hazard event (Herman, 1982). Second, there is considerable variation in the types of hazards and vulnerabilities that communities face, and this demands locally-designed emergency management solutions (Cigler,

1988b). Given their detailed knowledge of community circumstances, it is argued, local governments are best able to identify hazards, assess risks, and design appropriate policies in response (Newkirk, 2001).

The problem, however, is that many local governments tend to neglect emergency management (Wolensky and Wolensky, 1990). Analyses of events such as the 1997 Red River flood in Manitoba (Haque, 2000), the 1998 ice storm in Ontario and Quebec (Purcell and Fyfe, 1998) and the 2003 wildfires in British Columbia (British Columbia, 2004) document persistent problems with local emergency management and reveal considerable variation in efforts from one community to the next. In a recent Canada-wide assessment, fewer than half of the municipalities surveyed were sufficiently prepared for even a minor emergency (Canada, 2004).

Local politicians have few incentives to allocate resources to emergency management. Many of the factors that drive policy-making in other areas seem to be weak or absent in this policy field. First, since hazard events are rare, and because the timing, location and magnitude of future hazard events are uncertain, the likelihood of a disaster in any given community seems remote (Lindell and Prater, 2003). As such, local governments perceive no need for anything beyond a basic capability to respond to everyday emergencies, such as house fires or car accidents.

Second, citizens generally perceive a low probability of loss associated with hazards (Larsson and Enander, 1997; Tierney et al., 2001) and thus do not demand increased levels of service for emergency management (Prater and Lindell, 2000). Without the push of citizen demands, there is no political impetus for local politicians to prioritize emergency management, when it is weighed against other competing agenda items (Wright and Rossi, 1981).

Third, because insurers and other levels of government bear most of the financial costs of recovery after a disaster, local governments have weak economic incentives to invest in measures that might prevent or reduce losses (Wamsley and Schroeder, 1996). Although there are often residual costs associated with local emergencies, these are usually insufficient to prompt stronger emergency management efforts, because public officials and citizens tend to underestimate the probability that a similar event could happen again (Cigler, 1988a: 43-44).

## **Research Agenda**

What factors impel a local government to formulate and implement policies for emergency management? What explains variation in emergency management programs among different jurisdictions? These questions are addressed through a comparative analysis of emergency management in six Ontario municipalities. Following a “comparable-cases strategy” (Lijphart, 1975), similar communities were selected so as to minimize the number of factors that might be hypothesized as determinants of variation in the dependent variable. The cases were matched by size: two of them are relatively large (London and Windsor), two are medium-sized (Brantford and Sarnia), and two are relatively small (St. Thomas and Stratford). They are all single-tier jurisdictions, so each can be expected to carry the full responsibility for emergency management within its borders, without necessarily sharing functions with a regional authority.

Since they are all located in the same geographic region, the risk profiles of the communities are reasonably similar, at least with respect to natural hazards (Hewitt and Burton, 1971).

## Measuring the Quality of Local Emergency Management Programs

The quality of a local emergency management program can be conceptually defined as *the extent to which a local government has formulated and implemented policies to prepare for emergencies, to mitigate their impacts, to ensure an effective emergency response, and to facilitate community recovery*. As this definition implies, the concern here is with local “policy output” (Simeon, 1976). Comparative policy studies have been frequently criticized for employing narrow indicators to measure policy output—usually the level of public expenditure in a particular area (Blomquist, 1999; Jacob and Lipsky, 1968; Munns, 1975). Thus the challenge for this study was to identify multiple output indicators (Ostrom, 1999), while ensuring that only those that are meaningful for the policy area were selected (Boyne, 1985).

To this end, existing literature was reviewed to identify the elements of an ideal local emergency management program. The resulting 26 policy outputs were operationalized as dichotomous indicators (adoption vs. non-adoption) and combined into an additive index, providing a baseline against which local programs could be measured (see Table 1). Although all of the index items contribute to a community’s capability to manage major emergencies and disasters, some of the program elements are arguably more important than others. As such, nine items<sup>1</sup> are assigned a weight of 2.0, to reflect their particular importance relative to the others. These were singled out through consultation with local emergency managers and based on the frequency with which they are mentioned in emergency management literature.

## Explaining Local Emergency Management Program Quality

Based on existing emergency management literature and the findings of other public policy studies, it is hypothesized that the quality of a local program is influenced by five factors.

**1. Pressure from other levels of government.** It has been suggested that pressure from other levels of government is required to impel local governments to devote more attention to emergency management (Scanlon et al., 1976: 58; Tierney et al., 2001: 205). Specifically, Cigler (1988b) proposes that central governments should make certain local emergency management policies mandatory. Because of their subordinate constitutional status, municipal governments are strongly influenced by legislative prerogatives passed down by provincial governments. Ontario is a useful context in which to explore this relationship, since recent legislation has significantly altered what is expected of local governments regarding emergency management.

Until recently, emergency management was largely left to the discretion of local governments. Provincial legislation—the Emergency Plans Act—was permissive and contained few specific requirements (Ontario, 1990). Lacking a strong legislative instrument, regional

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<sup>1</sup> These are: mitigation plan; emergency response plan; annual review of the plan; hazard identification and risk assessment; disaster exercise; critical infrastructure plan; emergency operations centre; incident management system; and continuity of operations plan.

representatives of Emergency Management Ontario (EMO) struggled to “sell” emergency management to local elected officials, who were reluctant to commit scarce resources (Richer, 2006, in-person interview).

The massive ice storm that struck eastern Ontario in 1998 prompted 66 municipal emergencies and revealed considerable variation in local response capabilities (Kerry et al., 1999; Purcell and Fyfe, 1998). Seeking to improve local emergency management, EMO officials subsequently drafted the Emergency Management Act—legislation that would impose mandatory requirements for local governments (Ontario, 2002; Morton and Pirie, 2003).

According to an Ontario civil servant involved at the time, the Harris government sensed that the political climate in 2000 was not amenable to a mandate of this sort, and chose not to proceed with the Act immediately (Confidential, 2006, in-person interview). The terrorist attacks of September 11, 2001 revived the idea, and the Act was passed in November of 2002. As Table 1 indicates, ten of the index items are now mandatory under the Act. Set out in regulations (Ontario, 2004a), these items constitute the “Essential Program”, the first of three implementation phases planned by EMO (Ontario, 2004b). Regulations for the next two phases—the “Enhanced Program” and the “Comprehensive Program”—are being drafted.

*Proposition<sub>1</sub>: The quality of a local government’s emergency management program is influenced by the pressure exerted by the provincial government.*

Although the Act might appear to be the most important determinant of local policy activity, its influence is expected to vary from one community to another. First, it is important to note that top-down mandates of this sort have a poor record of local implementation (Hill and Hupe, 2002; Mazmanian and Sabatier, 1981). Given that local officials generally appear disinterested in emergency management, the likelihood that the Act will be implemented as hoped is diminished by the fact that it contains neither penalties for non-compliance (May and Burby, 1996) nor financial incentives to entice local officials to cooperate (Cimitile et al., 1997). Second, some communities might attract greater provincial attention than others, because of their population or hazard exposure, for example. Finally, it appears that while some communities are struggling to meet the first phase of implementation, other communities have been able to easily comply with and even surpass the requirements (Richer, 2006, in-person interview). This suggests that factors other than the presence of the Emergency Management Act are at work.

**2. Emergency experience.** It is often suggested that a “triggering mechanism” or “catalyst” is required to jumpstart the policy process (Gerston, 1997: 22). Many scholars emphasize the role played by sudden, dramatic events in drawing attention to particular issues and linking them to government agendas (Baumgartner and Jones, 1993; Cobb and Elder, 1983; Kingdon, 1984). In his theory of the “issue-attention cycle”, for example, Downs (1972) posits that issues often remain in a “pre-problem stage” until a “dramatic series of events” reveals undesirable social conditions, causing public alarm. Similarly, Kingdon (1984) refers to a “focusing event” as the catalyst which pulls an issue from relative obscurity and opens a “policy window” through which problems can rapidly enter the government policy agenda. According to Birkland (1998), a focusing event is a relatively rare occurrence that suddenly and rapidly

attracts attention to a problem and, because it causes harm or reveals the possibility of future harm, signals the need for corrective action.

In this policy area, emergencies and disasters are the focusing events. Emergencies increase public awareness of emergency management and attract the attention of policy-makers (Berke et al., 1993; Rubin and Popkin, 1993). This heightened awareness temporarily raises the salience of emergency management, creating a window of opportunity for policy change (Henstra, 2003; Johnson et al., 2005; Solecki and Michaels, 1994). In some cases, a disaster might cause local officials to question the adequacy of the community's emergency planning. In other cases, affected residents might demand that their local government do more to prepare for similar, future events.

*Proposition<sub>2</sub>: The quality of a local government's emergency management program will be higher in communities that have had more experience with emergencies.*

Policy windows are fleeting and close quickly if policy-makers feel that the problem has been resolved, if the attention-focusing conditions change, or if another pressing issue hijacks the agenda. Although it creates an opportunity, in itself a policy window does not guarantee that a focusing event will lead to policy change; a "policy entrepreneur" is often required to sustain interest in the issue and to push it through the appropriate channels.

**3. Policy entrepreneur.** Within the literature on agenda-setting and policy formulation, special attention is paid to the role of individuals who wield particular influence in the policy-making process (Baumgartner and Jones, 1993; Kingdon, 1984; Mintrom, 1997). These *policy entrepreneurs* (Kingdon, 1984) are distinguished from other actors by their willingness to invest their own resources, such as their time, expertise and reputation, to promote their preferred policy ideas and to seek policy change (Mintrom and Vergari, 1996).

Emergency management research frequently refers to individuals who play particularly active roles in the policy process, and who could be considered policy entrepreneurs. For example, Lavell (1994) describes the efforts of a hospital director who was instrumental in securing seismic upgrading for facilities in Costa Rica. Olson and Olson (1994) describe the mayor's entrepreneurial leadership in promoting seismic retrofitting following a 1975 earthquake in Oroville, California. Examining municipal mitigation policies in California, Wood (2001) concludes that policy entrepreneurs can have a significant influence on local policy choices.

*Proposition<sub>3</sub>: The quality of a local government's emergency management program will be higher in communities where there is a policy entrepreneur.*

**4. Support among senior officials.** Emergency management is influenced by the level of support exhibited by a community's top decision-makers. Comparing various jurisdictions, Scanlon (1990; 1996) asserts that communities in which the mayor provides active support for emergency planning tend to do more to prepare for emergencies than those in which mayoral support is weaker. A community's chief administrative officer (CAO) or city manager also appears to play an important role in determining the relative importance attributed to emergency

management (Sutphen and Bott, 1990). According to Kartez and Kelley (1988), the normative support that a CAO attaches to emergency planning influences local managers' perceptions of the feasibility of emergency management policies and practices.

*Proposition 4: The quality of a local government's emergency management program will be higher in communities where there is support among senior officials.*

**5. Policy capacity.** Developing, implementing and maintaining a community emergency management program demands considerable technical skills, financial resources and human capital (Cigler, 1988b). As Waugh, Jr. (1990: 221) suggests, however, it is "very questionable whether local governments have the capacity to design, administer, and finance such programs without considerable technical and financial assistance."

There is considerable research which generally addresses capacity as it pertains to local governments (for example, Collinge and Leach, 1995; Gargan, 1981; Mead, 1986). At its most basic level, a local government's capacity means "its ability to do what it wants to do" (Gargan, 1981: 652). More specifically, however, capacity can refer to a local government's capability to produce policy outputs in response to a problem or set of problems (Lehan, 1975). This is congruent with the way the term is used in recent research; for example, capacity refers to a local government's capability to make policies to protect groundwater sources (de Loë et al., 2002), to respond to climate change (Robinson and Gore, 2005), or to establish environmental protection measures (Press and Balch, 2002).

In order to make informed emergency management policy choices, a local government must first be able to anticipate the community's needs in this area (Buckle, 1999). In any given community, there is some underlying risk of a major emergency or disaster. The extent of this risk is believed to be a function of two factors: (1) the hazards to which the community is exposed; and (2) the vulnerability of the community to the pressures these hazards might exert (McEntire, 2001; Paton and Johnson, 2001). Thus in order to design a program that corresponds with the community's needs, local policy-makers require a sufficient analytic capability to assess the level of risk and to decide how much attention—and how much money—should be allocated to emergency management in order to reduce this risk (Waugh, Jr., 1999).

Another element of a local government's capacity is its ability to attract resources—tax revenues, intergovernmental transfers, personnel, information, and so on—which are required to "produce" policy outputs (Honadle, 1986: 16-17). Financial resources have often been found to be a primary determinant of local outputs in other policy areas (for example, see Dye and Gray, 1980). Recent assessments of emergency management practices in Canadian communities suggest that the scarce resources of smaller municipalities constrain their policy choices in this area (Canada, 2004; Global Change Strategies International, 2004).

Some financial resources are available from other levels of government. Since 1980, the Government of Canada has administered the Joint Emergency Preparedness Program (JEPP), which offers funding to support local emergency management activities such as training and exercises, or to purchase response-related equipment. Ottawa allocates about \$5 million annually

to this program (PSEPC, 2005). Not all local governments pursue these funds, however, and many complain that the available funds are too limited, that the waiting period is too long, and that the application process is too cumbersome (Canada, 2004).

In order to have a high-quality emergency management program, local governments require sufficient human capital to develop, implement and maintain policies. A basic indicator of a community's administrative capacity is whether the local emergency manager occupies a full-time position, or is a part-time or existing employee with other responsibilities. Another indicator concerns human resources: how many employees are allocated to the emergency management function? Other indicators pertain to the professional expertise of the emergency management coordinator: has the emergency manager received formal education or training beyond the basic courses required by EMO? Is the emergency manager a member of the Ontario Association of Emergency Managers, or a similar professional body?

*Proposition<sub>5</sub>: The quality of a local government's emergency management program will be higher in communities with a more robust policy capacity.*

Although it is premature to draw any broad conclusions regarding the influences on local emergency management policy, the following sections discuss preliminary findings from the two small cities in the comparison.

## **Emergency management in St. Thomas, Ontario**

St. Thomas is located about 30 kilometres south of London and has a population of approximately 33,000. The city covers a land area of about 32 km<sup>2</sup>, with a population density of 1,031 persons per square kilometre. Demographically, residents of St. Thomas have a median age of 37.2 years, and a median household income of \$45,500. 65 per cent of the local housing stock is owner-occupied, and the average value of these homes is about \$127,000 (Statistics Canada, 2001a).

City officials are aware of the hazards that might threaten the community. Two likely hazards cited by interviewees are a severe ice storm—believed to be a major threat to the city's power grid—and a train derailment, which could cause the release of hazardous chemicals (Ormerod, 2005, in-person interview; Payler, 2006, in-person interview). Moreover, recent experiences have temporarily spurred interest in emergency management, including a significant flood risk due to heavy upstream rainfall in 2004 ("Flood Risk Passes", 2004), and the 2003 Ontario power blackout, which caused some minor concerns (Jiggins, 2003).

Nevertheless, St. Thomas has had very little experience with emergencies. The local government has never had to declare a state of emergency, or to request outside assistance in order to contain a hazard event. A search of the Canadian Disaster Database—a record of major emergencies and disasters since 1900, which is maintained by Public Safety and Emergency Preparedness Canada—yields no results for St. Thomas (PSEPC, 2006). None of the interviewees could recall a major incident in the city's history that might have caused officials to rethink the quality of emergency planning.



None of the interviewees could identify an advocate of emergency management who might be considered a policy entrepreneur. Citizens generally show little interest in emergency management. According to Major Payler of the St. Thomas-Elgin Salvation Army, public information sessions about emergency planning are lucky to attract a few dozen people (2006, in-person interview). He suggests that the rarity of emergencies has made people complacent: despite a number of potentially-serious hazards facing the community, people simply do not believe that a disaster will happen.

It is a similar story among the city's business community. Neither elected officials nor city staff could recall a single inquiry from a local business regarding emergency management, and there is no evidence that business owners demand increased levels of service in this area. Companies do not assess the quality of emergency management in deciding whether to locate to St. Thomas, despite the fact that many are emphasizing the importance of wider "quality-of-life" factors (Hammersley, 2006, in-person interview).

Although there is no articulated demand for emergency management, officials nevertheless perceive that there is an "unwritten expectation" that the city should be prepared for an emergency (Graves, 2006, in-person interview). However, the relative importance of emergency management is reduced by the many competing issues that city personnel must contend with every day. Formulating policies for emergency management requires visioning possible hazards and planning strategies to deal with their impacts. Preoccupied with current problems that require immediate solutions, city staff have little time for this deep thinking about 'what if' scenarios (Graves, 2006, in-person interview).

Elected officials also appear to be preoccupied with other issues. In particular, a number of high-profile personnel problems that occurred shortly after the Emergency Management Act was passed have distracted attention from many important policy files, including emergency planning (McCallum, 2006, telephone interview). In September 2003, for example, then-mayor Peter Ostojic resigned his post and was immediately hired as the supervisor of properties, an appointment which many perceived to be inappropriate (McCallum, 2004a). A month later, the city treasurer was suspended amid allegations that he sexually harassed employees, and he was terminated a short time later (Matyas, 2004). In January of 2004, two more senior administrators—the human resources director and the chief administrative officer—were also terminated for reasons that have not been made public (Van Brenk, 2004).

Recently, St. Thomas adopted a rather unusual administrative structure. Instead of hiring a new CAO, a "City Management Board" was created, composed of the mayor, city clerk, and eight department heads (McCallum, 2004b). According to the mayor, the members of this body do not discuss emergency management (Kohler, 2006, in-person interview). As such, there is nobody with broad administrative authority who oversees policy development for emergency management. The only mechanism by which the city council monitors the status of the emergency management program is a three-person Emergency Measures Committee, which includes an Alderman, the fire chief and the city clerk.

Before 2003, St. Thomas' emergency management policies were developed by an employee at the county level, and there was no municipal official directly responsible for this

portfolio in the city (Dunn, 2006, telephone interview). In March of 2003, the regional EMO officer briefed St. Thomas city council regarding their responsibilities under the Emergency Management Act, including the need to appoint a Community Emergency Management Coordinator (CEMC). In response, then-CAO Roy Main approached the police and fire departments, seeking an individual to take on the CEMC role. It was eventually assigned to the fire department, where it was delegated to the training officer, Ray Ormerod (St. Thomas, 2003).

The timing of this appointment was poor. In 2001, a major fire at an apartment complex killed one resident and a 20-year veteran firefighter, Captain Dennis Redman. In response to allegations that proper protocols were breached, and demands from Redman's family for a formal investigation, a coroner's inquest was ordered to probe the events surrounding the deaths and to examine fire response procedures in St. Thomas (Fleury, 2002b). After hearing evidence, the inquest's jury recommended that the city hire eight additional firefighters by July of 2004 (Fleury, 2002a). City council endorsed the recommendations and moved up the implementation date for the new hires to January.

As such, shortly after Ormerod was assigned the CEMC portfolio, he and the rest of the fire department were struggling to implement the inquest's recommendations, which required training several new firefighters and reacquainting existing staff with the department's operational guidelines (McCallum, 2003). Given the high priority that both the city council and his direct superiors placed on implementing the inquest's recommendations, Ormerod perceived that his emergency management portfolio would be a secondary consideration (Ormerod, 2005, in-person interview).

The CEMC's job is complicated by other factors as well. First, when he was assigned the role, Ormerod did not receive any specific instructions, except for a general mandate to "make the city compliant with the Act". Second, no resources were allocated to facilitate policy development. There is no support staff and, aside from a small sum (approximately \$1,000) in the fire department budget that is supposed to be earmarked for emergency planning, no funds have been allocated for this purpose (Ormerod, 2006, in-person interview).

St. Thomas has applied for and received some federal funds under the Joint Emergency Preparedness Program, and these have been used to purchase a generator for the fire hall, which is the city's secondary emergency operations centre. However, in the little time that Ormerod has available for emergency planning, he is finding it impossible to dedicate the rather substantial time that is required to submit JEPP applications.

Scarce resources have clearly limited the city's emergency management policy capacity. For example, although he is aware of many professional development and networking opportunities such as emergency management conferences, Ormerod has neither the time nor the budget to attend them. He does not have access to technologies required for robust hazard identification and risk assessment, and relies heavily on the few materials that are provided by the provincial government (Ormerod, 2006, in-person interview).

Current emergency management policy activity in St. Thomas appears to be driven almost entirely by the Emergency Management Act, and opinions among interviewees

unanimously corroborated this point. Before the Act, there was little policy activity in this area and those policies that did exist were cobbled together as necessary, borne out of “common sense community planning” (Graves, 2006, in-person interview). Although the city’s political leaders perceive neither tangible benefits nor penalties associated with the Act, they concede that they are now obligated to put certain elements in place and expect to be evaluated on their performance (Kohler, 2006, in-person interview; Turvey, 2006, in-person interview). While they appear to grudgingly accept this responsibility, they suggest they are committed to implementing the Act as a matter of “due diligence” (Ormerod, 2006, in-person interview).

This commitment appears to vary in response to provincial pressure, however. After major events such as the Toronto SARS crisis in 2002 and the power blackout of 2003, communications from provincial officials regarding the implementation of the Emergency Management Act expressed a sense of urgency (Ormerod, 2006, in-person interview). More recently, however, city officials have sensed less urgency attached to the Act, perhaps because the time elapsed since the last major disaster has permitted other issues to assume a higher priority on the provincial policy agenda (Graves, 2006, in-person interview).

It is not entirely surprising, then, that St. Thomas’ emergency management program scores rather low on the quality index. The city has adopted 10 of the 26 policies: nine of these are required under the Emergency Management Act, and seven were adopted since the Act came into effect. Specifically, prior to the Act, St. Thomas had established an emergency operations centre, written an emergency plan, and reviewed and updated this plan annually. Since the Act, the local government has passed a by-law adopting the emergency plan, formed an Emergency Management Program Committee, conducted a Hazard Identification and Risk Assessment, and identified critical infrastructure systems. Training is now provided annually to municipal employees and an annual exercise is planned and executed to test response capabilities. A Memorandum of Understanding has been negotiated with the local branch of the Canadian Red Cross, which will provide shelter services in the event of an emergency evacuation.

## **Emergency management in Stratford, Ontario**

Located about 30 kilometres northwest of London, Stratford has a population of approximately 30,000. With a land area of about 22 square kilometres, the city has a population density of 1,354 persons per square kilometre. The median age of Stratford residents is 37.2 years, and median household income is about \$47,900. 66 per cent of the local housing stock is owner-occupied, and the average dwelling has a value of \$160,500 (Statistics Canada, 2001b).

Although Stratford has not declared an emergency in the last decade, there have been several hazard events in recent years. Two of these—flooding in 2002 and a contaminated water crisis in 2005—have been particularly significant for the city’s emergency management.

*Flood.* In July of 2002, a large volume of rain fell on the city in a three-hour period, overwhelming sewer infrastructure and causing widespread flooding (“Stratford Lobbies for Flood Relief Aid”, 2002). Water and raw sewage inundated the basements of hundreds of homes, causing damages estimated at \$10 million (Shypula, 2002). After the event, the city council quickly initiated a study to examine ways to prevent or reduce future flooding problems (Czekaj,

2002), and by November had paid out over \$1.2 million in compensation to affected residents (O'Connor, 2002a). Despite these measures, however, lawyers representing about 450 homeowners launched a class action lawsuit, claiming that the city's negligence was responsible for the flood damages (O'Connor, 2002b). They argued that engineering reports indicating weaknesses in sewer infrastructure, as well as less severe flooding in the same areas in 2000 and 2001, proved that city officials were aware of the flood risk, but failed to take reasonable steps to prevent future flooding (Shypula, 2005a). The case is currently before the courts.

The 2002 flood provided some valuable lessons. Despite the large number of people affected by the flood, the Mayor decided not to declare an emergency, or to convene the city's Community Control Group<sup>2</sup>. One official involved at the time opined that the mayor was seeking to avoid potential criticism, or the perception that the government had lost control of the situation (Confidential, 2006, in-person interview). Reflecting on the event, CAO Ron Shaw is confident that the flood response and recovery was directed effectively from city hall, but suggests that, in hindsight, a state of emergency should have been declared. Doing so would have formalized the response process: for example, it would have incorporated an assessment of the lessons learned and an official report (Shaw, 2006, in-person interview). The event also forced city officials to seriously consider measures to prevent or mitigate flooding in the future.

Stratford's current mayor, Dan Mathieson, defeated former mayor Karen Haslam in October of 2003. It is widely perceived that Haslam's defeat was due in part to her controversial decision to proceed with a planned vacation that started a few days after the 2002 flood. Then a city councillor and the deputy mayor, Mathieson provided political direction for the response and recovery efforts during Haslam's absence (Smith, 2003). This became a political liability for Haslam during the mayoral race, as the two squared off on the issue (O'Connor, 2003b). Responding to public opinion, Mathieson promised that if elected he would make sewer upgrades a central policy priority. Since the flood, city officials have been debating various options for stormwater management, and mechanisms to get citizen feedback on possible solutions have been established.

*Water crisis.* On March 7, 2005, a backflow preventer failed at a local car wash, introducing approximately five gallons of detergent into the city's water distribution system (Perth District Health Unit, 2005b). When it was discovered, city officials acted quickly to warn residents that a boil-water advisory had been issued (Perth District Health Unit, 2005a). Although a state of emergency was not declared, the water crisis was an opportunity for the local government to implement response procedures, and a chance to identify planning strengths and weaknesses. Specifically, the event demonstrated the value of having a general planning framework for emergency management, one that is flexible enough to adapt to emergencies of varying nature and scale (Shaw, 2006, in-person interview).

In light of the city's experiences in handling the two events discussed above, Mayor Mathieson is a strong supporter of emergency management. He suggests, however, that much of the success of the city's response to the water crisis was owed to the network of personal

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<sup>2</sup> The Community Control Group is a group of officials named in the emergency response plan who are responsible for directing emergency response efforts. It includes, for example, the CEMC, Mayor, CAO, Police Chief, Fire Chief, Medical Officer of Health, and others.

contacts that he, other councillors, and senior city staff were able to draw upon to take action quickly. Given that these resources could have been mobilized without a formal emergency plan, he questions whether a city like Stratford needs the kind of comprehensive program that the Government of Ontario envisions for the final implementation stage of the Emergency Management Act (Mathieson, 2006, in-person interview).

Stratford's emergency management program is buoyed by strong support from the city's CAO, Ron Shaw. For many years, it was Shaw who spearheaded emergency management, writing and updating emergency plans, arranging response resources, and keeping the council up to date on the status of the city's emergency planning (Stratford 1999a; 2001). Shaw's interest in emergency management stems partly from personal experience: he was a university student living in Mississauga at the time of a major train derailment in 1979, which spilled toxic chemicals and required the evacuation of over 200,000 people (Scanlon, 1996). As a volunteer with the Red Cross, Shaw observed first-hand the operational difficulties involved in responding to a major emergency. He recognized that, since it is impossible to predict all possible events, an emergency plan should provide a broad framework for crisis decision-making (Shaw, 2006, in-person interview).

Shaw has played an entrepreneurial role in shaping the city's emergency management, drawing on his resources as the administrative head of government to keep emergency planning on the local agenda. In particular, he has used high-profile hazards to promote emergency management. In 1999, for example, Shaw recommended that the city's "Y2K" planning be focussed on general emergency management, so that efforts would have a lasting value beyond the turn of the millennium (Stratford, 1999b). Shaw was also instrumental in launching Stratford's emergency public education strategy (discussed below), establishing a policy permitting city employees to leave work to participate in volunteer disaster services with the Canadian Red Cross (Stratford, 2002a), and implementing improvements to emergency management based on lessons from the 2002 flood (Stratford, 2002b). Through Shaw's efforts, the city's emergency management policies were in good shape by the time the Emergency Management Act was passed in 2002.

Outside of the local government, there is apparently little interest in emergency management. Interviewees unanimously reported that citizens do not demand emergency management. The local Red Cross branch has trouble finding and retaining emergency response volunteers for its disaster services programs (MacGrandles, 2006, in-person interview). Despite the fact that 1,000 homes were affected by the 2002 flood, only 10 residents showed up at a meeting a few months later to hear the city's proposed flood control options (Cudworth, 2002). Only four attended a similar meeting in August 2003 (O'Connor, 2003a). As in St. Thomas, interest in emergency management among Stratford's business community is also minimal.

Stratford has experienced some difficulties related to capacity. One early challenge concerned the selection of the Community Emergency Management Coordinator. Several options were considered in the months leading up to the Emergency Management Act, and there seemed to be a consensus that someone would be hired specifically for this role (Stratford, 2003b). This idea was rejected later, however, because EMO area representative Rick Peters

assured city officials that the requirements would only be formidable in the first year, and that in other communities the CEMC role was assigned to fire department staff (Stratford, 2003c).

Authorized by city council to appoint the city's Coordinator (Stratford, 2003a), CAO Shaw assigned the role to then-Fire Chief Jim Clements, who subsequently delegated the responsibilities to the Deputy Chief, Rick Young. Fire officials clearly resented the added workload associated with the CEMC duties. A 2004 management report to city council stated:

This position requires that the Fire Department and, more specifically our Deputy Chief spend many hours of time and energy to ensure our City meets the mandated requirements for emergency planning. This, in turn, takes away from the Fire Department's ability to maintain a high level of service to the public (Buxton, 2004).

To further complicate matters, Chief Clement retired as of July 2005, leaving Young to wear three hats: acting chief, deputy chief, and CEMC. As a result, Stratford's administrative capacity has been weak over the last year, and this has hurt the city's performance. Young is now the fire chief, and the CEMC position has recently been delegated to the new Deputy Chief.

Stratford's fiscal capacity for emergency management is more robust. City council has allocated \$10,000 annually to facilitate the development of the emergency management program, and these funds are part of CAO Shaw's budget. City officials have also successfully pursued money under the JEPP program; for example, JEPP funding was awarded to the city for emergency communications equipment in 1998, to update the social services emergency plan in 2003, and to purchase emergency generators in 2004.

Shortly after the Emergency Management Act was passed, city officials were advised that they would be expected to implement the Essential level requirements by April of 2004, the Enhanced Program by 2005, and the Comprehensive Program by 2006 (Stratford, 2003c). Given the tight deadline, work was underway quickly to augment existing policies. Since the province's initial implementation schedule has been abandoned, however, interviewees report that the urgency which characterized the period immediately after the Act was passed has subsided (Shaw, 2006, in-person interview; Young, 2006, in-person interview).

Stratford has implemented 14 of the 26 policies in the index and thus scores slightly higher than St. Thomas. Although most of the city's policies correspond with Essential level requirements, others move beyond the minimum criteria. For instance, in addition to its emergency response plan, Stratford has developed a separate plan and strategy for emergency social services. In April 2004, the Canadian Red Cross was contracted for \$10,000 to develop an emergency social services plan for the community (Stratford, 2004a). Based on the plan, a Memorandum of Understanding was signed in December 2004, under which the Canadian Red Cross will manage emergency shelters in Perth County at an annual cost of \$10,000, which is shared among the partner municipalities (Stratford, 2004b).

Second, although not required under the Essential level, Stratford has implemented a public education component as part of its emergency management program. "Get Emergency Fit" is a newsprint flyer that informs citizens about hazards facing the community and what they can do to protect themselves and their property. Originally published in 1999 to inform people

about risks associated with the “Y2K bug”, it has since been reprinted and distributed to enhance the community’s emergency management program (Young, 2006, in-person interview).

Other policy options have also been considered. One concerned the city’s participation in an EMO initiative to establish Community Emergency Response Volunteer (CERV) teams<sup>3</sup>. Although some provincial funding was available to establish CERV units, it was decided that the program would exceed the city’s administrative capacity. Furthermore, due to the low number of emergency events that the city experiences, it was believed that it would be difficult to keep volunteers interested in the program (Young, 2006, in-person interview).

A second policy discussion concerned the need for a hazard warning system. During the 2005 water crisis, city officials had to quickly mobilize personnel to warn people house by house not to use the water. Reflecting on this experience, it was observed that it would be useful to have a central system to notify residents of such hazards, and several options were debated (Shypula, 2005b). However, in a survey after the crisis, 70 per cent of residents reported that they had heard about the hazard through “word of mouth”, and nearly all said that this method provided sufficient information to be safe during the emergency (O’Connor, 2005). As such, the idea of a dedicated warning system was rejected and replaced with a general emergency communications plan, which has been written and is currently under a final review.

## Conclusions

Although additional case studies are required to sort out the relative influence of the various factors on local emergency management, findings from the first two cases provide some support for the propositions outlined above.

*Provincial pressure.* In both communities, local officials have sensed a reduction in the urgency attached to the Emergency Management Act. The strong language used by EMO officials in communicating municipal obligations under the Act has been toned down, and local governments appear to have wider discretion and flexibility in finding ways to meet the Essential program requirements. Regulations that would flesh out the Enhanced and Comprehensive programs were promised but have not been forthcoming, and local officials interpret this as evidence that the provincial government has moved on to other policy priorities. Since the province’s original implementation schedule appears to have been abandoned, there is little reason for local governments to move beyond the Essential requirements.

*Emergency experience.* As might be intuitively expected, the level of experience that a community has in dealing with emergencies appears to influence the relative priority that local officials assign to emergency management. In St. Thomas, for example, the potential hazards are known and the possibility of a disaster is acknowledged, but because the probability that one will actually occur seems so low, this knowledge is insufficient to spur action. By revealing weaknesses in existing plans and procedures, emergencies appear to raise interest in strengthening emergency management policies. Such changes are not self-implementing, however; leadership is required to bring people together to define problems, discuss possible

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<sup>3</sup> This is Ontario’s version of Community Emergency Response Teams (CERTs)—item 11 in the policy index.

solutions, and decide how much change is warranted. This is the role that Emergency Management Ontario envisions for the Community Emergency Management Coordinator, but this leadership could also come from other senior officials, as demonstrated by Stratford's chief administrative officer.

*Political support.* Although elected officials in St. Thomas claim to be committed to emergency management, this has not translated into the concrete inputs required to design and implement a high-quality program. By contrast, emergency management in Stratford has been endorsed by the political leadership through an enduring budgetary commitment. While the amount allocated to emergency management is modest, it nevertheless indicates that emergency management is a policy priority.

*Policy entrepreneur.* In both communities, no individual outside the local government could be identified as a champion of emergency management policy. While some people in the cities have a greater interest in emergency management than others, none are vocal proponents, demanding greater local government efforts in this area. The entrepreneurial behaviour of Stratford's CAO seems to have been an important factor in the development of emergency management in that community, a finding consistent with those in other emergency management studies (Kartez and Kelley, 1988; Wood, 2001) and in research on local policy entrepreneurs (Schneider and Teske, 1992). It is too early to draw conclusions about the relative importance of the CAO to emergency management policy-making, however, since nobody occupies this position in St. Thomas.

*Capacity.* The cases provide at least some evidence that the relative quality of a community's emergency management program is influenced by local policy capacity. For those charged with formulating emergency management policies, resources such as money, personnel, information and technology, permit greater flexibility in policy design and expand the range of feasible policy choices. In both communities, administrative capacity is weakened by the fact that the CEMC duties have been assigned to someone with existing responsibilities. Not surprisingly, these individuals are finding it difficult to keep up with their dual roles.

It is notable that almost all of the emergency management policies adopted in the two communities are clustered within two of the sub-areas—preparedness and response—while little attention has been paid to mitigation and recovery. This is consistent with other research: despite the fact that local governments must play a central role in the long-term recovery process, recovery policies are frequently neglected (LaPlante, 1988; Rubin, 1991). Close proximity to hazards and access to tools such as land use regulation and building code enforcement place local governments in a strategic position to implement mitigation policies (Prater and Lindell, 2000; Newkirk, 2001). However, given that the probability of a disaster is low, and since most recovery costs are covered by insurance and disaster assistance programs at other levels of government, local governments have little motivation to implement loss reduction measures. After a disaster, the recovery period provides an excellent opportunity to implement mitigation policies (Nigg, 1996), but strong local leadership, adaptive local solutions and sufficient political support are required to develop, implement, and maintain these policies (Reddy, 2000). Focusing on preparedness and response is common among local governments, and failure to address mitigation is characteristic of governments generally (Henstra and McBean, 2005).



## **Next steps**

The next phase of research will focus on emergency management in large and mid-sized cities. Larger cities face more complex emergency management challenges than smaller communities, but also tend to have a greater fiscal and administrative capacity to develop and implement policies in this area (Godschalk, 2003; Mills et al., 2001; Mitchell, 1999). Replicating the research protocol across six municipalities should provide the empirical data necessary to identify the dominant factors influencing local emergency management.

The findings of the research will improve our understanding of policy-making in this field, which has received only limited research attention in Canada. Secondly, it will add to the growing body of Canadian scholarship on the politics of the local policy process. Finally, it will provide practical information for policy-makers who seek to design better emergency management policies.

**TABLE 1**

**QUALITY OF EMERGENCY MANAGEMENT PROGRAM**

<b>Output</b>	<b>Description</b>	<b>EMA<sup>1</sup></b>	<b>Possible</b>	<b>St. Thomas</b>	<b>Stratford</b>
<i>Mitigation</i>					
01. Mitigation strategy	The local government has formulated a mitigation plan	N	2	0	0
02. Warning system	The local government has a system to warn residents about impending hazard events	N	1	0	0
03. Public education	The local government provides emergency management education to the public	N	1	0	1
<i>Preparedness</i>					
04. Emergency response plan	The local government has created an emergency response plan	Y	2	2	2
05. Emergency plan review	The local government reviews the emergency response plan annually	Y	2	2	2
06. Emergency legislation	The local government has passed a by-law to adopt the emergency plan	Y	1	1	1
07. Program committee	The local government has formed a community emergency management program committee	Y	1	1	1
08. HIRA	The local government has conducted a hazard identification and risk assessment	Y	2	2	2
09. Training	The local government provides emergency management training to public officials	Y	1	1	1
10. Exercises	The local government has participated in a disaster simulation exercise in the last two years	Y	2	2	2
11. CERTs	The local government has formed Community Emergency Response Teams	N	1	0	0
12. Mutual aid	The local government has established a mutual aid agreement with another jurisdiction	N	1	0	0
13. Critical infrastructure	The local government has identified critical infrastructure systems in the community	Y	2	2	2
<i>Response</i>					
14. Emergency operations centre	The local government has established an emergency operations centre	Y	2	2	2
15. Incident Management System	The local government has implemented an incident management system	N	2	0	0
16. Evacuation plan	The local government has planned for evacuation of residents	N	1	0	1
17. Emergency shelter	The local government has planned for emergency sheltering needs	N	1	1	1
18. Search and rescue	The local government has planned for post-emergency search and rescue	N	1	0	0
19. Volunteer coordination	The local government has planned for the coordination of emergent volunteers	N	1	0	1
20. Emergency communications	The local government has planned for emergency communications	Y	1	0	1
<i>Recovery</i>					
21. Continuity of operations plan	The local government has planned for the continuity of essential operations	N	2	0	0
22. Recovery plan	The local government has formulated a community recovery plan	N	1	0	0
23. Damage assessment	The local government has planned for post-emergency damage assessment	N	1	0	0
24. Debris management	The local government has planned for post-emergency debris management	N	1	0	0
25. Local business continuity	The local government has incorporated the continuity of local businesses in emergency planning	N	1	0	0
26. Rehabilitation	The local government has planned for psychological counseling and rehabilitation	N	1	0	0
<b>Score</b>			<b>35</b>	<b>16</b>	<b>20</b>

<sup>1</sup> Items required under the Emergency Management Act

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Dunn, Karen. Former Emergency Planner, Elgin County, March 20, 2006.

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Hammersley, Bob. President and CEO, St. Thomas & District Chamber of Commerce, March 7, 2006.

Kohler, Jeff. Mayor, City of St. Thomas, February 23, 2006.

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MacGrandles, Kelly. Disaster Services Coordinator, Stratford Red Cross, March 31, 2006.

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