

# Citizen Participation in Flood Reduction Planning

## *Lessons from Peterborough, Ontario after 5 years*

The people of Peterborough, Ontario would prefer to be less familiar with flooded basements, property, and roads. The city has suffered a number of floods throughout its history, and in recent years was hit by two significant flood events within 25 months. As a result, a lot has changed in how decisions are made in the city, not least of all the processes of making planning, engineering, and public works decisions.

It has now been more than five years since Peterborough's latest major flood event, and it is worth looking back on the extensive planning efforts that were made by the City of Peterborough to begin action to reduce future flood losses. Citizen participation was emphasized as an important element of these model efforts, and many strengths and a few opportunities for improvement can be found upon examination of how the public was involved in the planning process. Valuable lessons can be taken from these experiences that may well be applied to other municipal decision-making processes.

### Heavy Summer Rainfall Events

On June 11, 2002, Peterborough was struck by a severe summer storm that generated more than 70 mm of rain in a 24-hour period. The rainfall caused extensive flooding in low-lying areas of the city, damaging several residential and commercial properties due to overland flooding and sewer backup. In the months after the storm, the heavy rainfall was estimated to be a one in 100-year event, and

perhaps with this long return period in mind, nothing much was done to increase the city's resilience to flooding.

On July 14, 2004, a weather system stalled above Peterborough and produced a severe storm that generated 230 mm of rain in 24 hours. An astounding 87 mm of rain fell in one hour during the peak of the storm. Many Peterborough residents awoke the next morning to find their streets, yards, and basements flooded. An estimated 6,000 to 8,000 properties were affected by flood damage. Direct physical damages to private and public property exceeded \$100 million. A state of emergency was declared by the City of Peterborough after the storm, and stayed in effect for 15 days. This heavy rainfall event was estimated by some to be a one in 290-year event, although it is practically impossible to put an accurate figure on such a rainfall.

Citizens in Peterborough were devastated by the enormous impact of this second flood in just 25 months. Many residents and business owners had just recovered from damages caused by the 2002 event, and they considered it unacceptable to suffer more flood damages. The weeks and months after the July 2004 flood were a difficult and emotional time for many members of the community, and many people directed their anger and frustration at the city for not being adequately prepared for such an event. Citizens demanded that, this time, the city take action to reduce future flood losses.

### Flood Reduction Planning

The city responded to the demands of the community by initiating efforts to discover the causes of the July 2004 flood damage and to determine the steps that should be taken to reduce future potential flood damage. The city commissioned a private consulting firm to conduct a study and create a master plan that would address these issues. The study commenced in August 2004, and eight months later the Flood Reduction Master Plan (FRMP) was re-




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leased. The FRMP was to serve as a master plan to guide decision making for flood reduction actions in the future. Citizen participation was emphasized as an important element of the study and planning processes. The local knowledge, experience, and interest to reduce future flood losses that existed within the community were used to inform the study, and to influence planning and decision making.

The value of citizen participation in planning and disaster management is widely acknowledged by academics and practitioners alike. The inclusion of citizen participation demands greater time and resources dedicated to the planning process, but generally results in better plans, as well as decisions that are more reflective of the needs of the community. Some minimum level of participation is required for most municipal planning exercises in Canada, but the flood reduction planning process in Peterborough exceeded that minimum to the benefit of the final plan.

Citizen participation was integrated into the FRMP process in several ways. The most intensive method of incorporating public input was achieved by inviting residents to share their experiences and opinions at public information meetings hosted by the consultant and city staff. Two rounds of meetings were held in each of the city's five municipal wards, for a total of 10 public meetings. The first round of meetings was held in late September 2004, approximately two months after the flood. Each of the 10 public information meetings used a variety of participation techniques, in order to cater to different preferences and personalities in the community and maximize the amount of information gained. These techniques included a drop-in time for one-on-one education and sharing of personal experiences with project team members, completion of a basement flooding survey, a formal presentation by the consulting firm's staff, and a formal question and answer period. An impressive 600 citizens participated in the first round of five public meetings. During the second round of meetings, the consultant presented the findings of the study and proposed the FRMP to the public.

## Lessons Learned

Given the clarity that hindsight affords, a number of observations can be made about citizen participation in flood reduction planning efforts in Peterborough. The FRMP process was a very strong planning process in terms of involving public input.

**Strengths** – A detailed review finds that the planning process had many strengths when compared to the standards set in the hazards literature and to planning programs undertaken in other cities. These strengths included:

- ▶ incorporating citizen participation very early in the planning process, which satisfied citizen demand for action and was important in extracting valuable information held by citizens with intimate, first-hand knowledge of the flood;

- ▶ contracting a private consulting firm to conduct the study and giving the firm freedom in creating the plan, thus depoliticizing the planning process;
- ▶ hiring additional specialized media relations and meeting facilitation consultants, who applied their unique experience and skill sets to keep the public better informed of the process and successfully involved during the meetings; and
- ▶ employing several different participation techniques within the public information meetings, thereby maximizing opportunities for citizen involvement.

**Areas for improvement** – The planning process had two apparent areas that left room for improvement, and we can learn at least as much from such opportunities as we can from the outright successes.

First, in the months following the 2004 flood, many citizens were eligible to receive financial assistance in recovering from property damage caused by flooding and sewer backup by the city's Flood Relief Committee. This committee distributed financial assistance provided by fundraising efforts and Ontario's Disaster Relief Assistance Program (ODRAP) to those citizens who qualified for the program. ODRAP (like other forms of financial assistance in other provinces) provides an opportunity for the provincial government to be involved in helping citizens recover from a disaster by giving them a portion of the monetary value of their damaged essential items (up to 90 percent in Ontario).

Each stage throughout the process of distributing this financial assistance required that eligible citizens have contact with members of the Flood Relief Committee. However, citizens receiving ODRAP payments were not formally asked for their input on the FRMP study. Indeed, there was no direct link between the work of the committee and the FRMP project team. This should be considered a missed opportunity. Although it may be asking a lot of flood victims to be concerned about planning issues when more pressing challenges obviously exist, these citizens hold valuable information and have a vested interest in planning decisions. They have been through unknown hardship; as a result, however, they have an intimate knowledge of the flood event, and may have some unique ideas for preventing losses in the future. Taking advantage of the person-to-person interaction necessary to distribute and receive government financial assistance to garner citizen participation in a planning program can benefit decision making by injecting valuable knowledge and personal experience.

A second opportunity for improvement arises from the fact that "targeting" was not used to its maximum potential as a strategy to generate citizen participation. Targeting, in this case, refers to actively seeking out citizen participation in the planning process. The FRMP process employed one type of targeting, called geographic targeting, very effectively by holding two public meetings in each political

ward in the city. This strategy helped the planning process by allowing location-specific information to be gathered from participants who knew each area best and by limiting attendance to a reasonable level at each meeting. However, this process may not have allowed for a complete reflection of needs within the community.

The planning process did not adequately target specific sectors of the population, such as those with special interests or specific needs. This type of targeting is known as “social” targeting, and should be considered as important as geographic targeting. It is well documented in the planning literature that the interests of all members of a community should be represented in decision making, regardless of economic or social stature. Groups of citizens with interests and needs that differ from the rest of the population may represent a relatively large portion of the community.

In Peterborough, those living in rental housing units were some of the citizens most severely affected by flood damage. As lower-income members of a community are often those who live in rented housing, community groups that represent the low-income population in Peterborough would have been able to provide a renter’s perspective on flood reduction decisions if consulted during the planning process. Utilizing social targeting in the FRMP process would have taken more time and resources, both of which

are always limited, but would have allowed decision making to be more completely informed.

## Model Process Sets Foundation for Future Action

It has now been five years since the July 2004 flood event in Peterborough. The extensive damage sustained during the flood was devastating to the community, but is hardly unique in Canada. Other Canadian cities have suffered urban flooding that is much worse. The flood reduction planning efforts that have been undertaken in Peterborough since the flood stand out, however, as a model of best practices for proactive planning to reduce future flood losses. The City of Peterborough continues to seek citizen input in ongoing flood reduction planning efforts and has completed many public infrastructure improvement projects to date.

We can take valuable lessons from both the many successes and few opportunities for improvement in the citizen participation elements of Peterborough’s flood reduction planning process, and apply these lessons to planning and other decision-making processes in municipalities across Canada. Especially in planning for hazard mitigation, using effective citizen participation strategies to maximize the value of public input can help us to better understand the risks we face and improve municipal decisions to reflect them. [MW](#)

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