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# SECURING COMMUNITY INFRASTRUCTURE: CONSIDERATIONS FOR PLANNING

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## Abstract

In the post September 11th world, senior levels of governments are showing an expanded and urgent interest in securing critical infrastructure. However, most critical infrastructure that ensures viable economy and society in cities results from planning, decisions and actions at the lowest (local) level of government. In large part lower level government input is not being built into the senior level policy studies. As a consequence, important national level policy development may be missing important considerations critical to local areas and in particular may not sufficiently include proposals for enabling legislation or provision of adequate resources for local governments. This paper explores local planning considerations for developing secure infrastructure at the local level.

## Introduction

A quick consideration of disasters involving infrastructure and communities generally reveals that the major impacts, response, and rebuilding is primarily the concern of the local government administration. Certainly theirs is the challenge of the first response and securing lives and property in a crisis. (Office of the President, 2003, p. 19) Most countries have institutional and legal arrangements in place for senior governments to come to the aid (and in many cases, assume command of) local communities in the event of significant disasters. While senior government aid does assist citizens, businesses, and local governments assume some degree of recovery, it is unusual if the aid is more than partial assistance. In the long run, full recovery is dependent upon the local government, its tax base, and the degree and quality of pre disaster mitigation. It is for this reason that after a major disaster many citizens and businesses leave the local area and the municipal government has to struggle for years to rebuild and rejuvenate the community.

Thus, local governments and their planners clearly have a vested interest in avoiding serious disaster impacts in their community. And yet, local planners often have not had a strong role in ensuring the community sets up legislation and procedures to minimize risk (Newkirk, 1999, 2002a,c.) In part, this is due to existing definitions of power and authority between the various levels of government and resource capacity. In this discussion we consider the matter of local planners being engaged with securing community infrastructure broadly defined to include: energy and utilities (electrical and nuclear power), communications (telecommunications, cyber communications, broadcasting), services (financial and health), transportation (air, rail, marine, surface), safety (nuclear, search and rescue, emergency services), and governance (facilities, services, assets). (See OCIPEP2002b, p.3) It is important to recognize that governments themselves have little direct ownership and operation of most infrastructures (Office of the President 2003, p. x); Canada (OCIPEP 2002b, p. 3) estimates that 80 to 90% of all infrastructures is owned and operated by the private sector. Thus local planner influence may first be limited to the planning and approvals stage.

Canada and the United States now express national level interest in preserving critical infrastructure and key assets (Office of the President, 2003, OCIPEP 2002a) but so far, little has been achieved to engage local governments in this important task. We review the current discussion in both countries and provide some suggestions for necessary action.

## Securing Critical Infrastructure in Canada

Even before the September 11th disaster in the USA, Canada had been reviewing issues associated with the protection of critical infrastructure and exploring possible mitigation policy development. A major stimulus for this came from some very costly natural disasters that saw both the insurance industry and governments assuming large and unanticipated expenses to recover infrastructure and deal with business and private losses (Newkirk, 2001a). These expenditures left the insurance industry with significant underwriting losses and governments having to delay, suspend or cancel selected programs to cover the unanticipated scale of disaster assistance costs. Newkirk (2001a) argues that natural disaster costs had escalated rapidly to the point that they were not financially sustainable. It was a natural consequence that a partnership to explore the issues formed between the Institute for Catastrophic Loss Reduction of the Insurance Bureau of Canada (the representative of all major insurance companies in Canada) and the federal government (initially with Emergency Preparedness Canada.)

A series of national workshops held in 1998-99 across Canada developed a series of working paper reports and led to the initial proposals for the federal government to establish OCIPEP the Office of Critical Infrastructure Protection and Emergency Preparedness. (see OCIPEP (2002a) It is notable that mitigation was identified as a very important aspect of this initiative by the reports to the federal government from the series of regional workshops (See EPC, 1998) Although the report emphasized concerns with naturally cause disasters, it emphasized the need to reduce long term vulnerability by addressing prevention. It made strong note that local action is the most effective but that local areas needed capacity and funding support through cost sharing programs. It particularly noted that land use planning should be mor focused on risk identification and management and called upon the federal government to take leadership in establishing guidelines and information.

No doubt the report was instrumental in having EPC folded into the new OCIPEP. The organization was being established just as the terrorists struck New York and Washington and is in 24 hour a day operation. However in the intervening time, there has been little done to engage local planning agencies in securing infrastructure and engaging in infrastructure mitigation planning. This is due to the constitutional definition of powers and authority established by the constitutional, the training and guidance available to planners, local priorities, and to shortage of financial resources. Some provinces had left emergency planning as a low priority; local municipalities well allowed in law to develop an emergency plan but not required to have one. It took the terrorist attacks of September 11th to shock some provinces into action. Ontario, for example, immediately established a Commissioner and office of Public Safety and mandated in regulation that all municipalities now shall have an emergency plan that is "tested". While this is a good step forward, such plans are reactive mainly aimed at resource mobilization in the event of disaster

There are long standing agreement and arrangements in Canada for the various levels of government to deal with responding to emergencies, but there has been little significant achievement in dealing with pre disaster risk identification, risk management and disaster mitigation. The constitution assigns to the federal government specific responsibilities for national level security and finance, international trade and agreements, and national level authority over resources but cedes to provincial governments all residual powers and in particular operational management of safety, security, education, health, water supply, sewerage, and all matters pertaining to municipalities. Indeed, local governments are creatures

of their provincial government, and owe their continued existence their legal frameworks in which they operate to the will of the province. In this context the national government has no direct responsibility or input into the operations of local governments. This makes it excessively difficult for the national government to become directly involved with critical infrastructure at the local level. Indeed, there is a mandated federal role to assist provinces with funds and resources for major disaster response with little or no influence on the planning and preparation that might have mitigated against some of the impacts (Newkirk, 1999.) One may consider it a major step by the Canadian federal government to establish the OCIPEP.

OCIPEP tasked with monitoring physical and cyber threats on a 24 hour a day, 7 days a week as a central threat and incident information centre. Currently OCIPEP's activities have been primarily focused on monitoring and high level reaction to major domestic and world events. It is endeavoring to lead discussion with the view to building federal-provincial-local government and private sector cooperation toward the preservation of critical infrastructure. This is a laudable task but compromised by poorly organized power and authority relationships and appears to have put aside much of the earlier strong interest in pre disaster mitigation.

## Securing Critical Infrastructure in the United States

The United States has a long established set of programs and agencies to deal with disaster management. At the national level this was managed for many years by the Federal Emergency Management Agency FEMA. In contrast to the Canadian situation, FEMA was granted the mandate and financing to be more directly involved in disaster management and mitigation. Indeed one might characterize US disaster management and mitigation planning as far more top down than the situation in Canada that is clearly bottom up. FEMA and other national organizations have had a longer term involvement with encouraging local authorities to be engaged with disaster planning and mitigation. At times this has been achieved by denying federal benefits to areas that have not developed flood hazard land identification and management (Newkirk, 1999) and through shared cost programs to assist with local area planning and training costs. It is clear that the United States is further ahead with involving local area participation.

Before the events of September 11th FEMA had been reviewing the state of the US preparations for disaster management. FEMA (1997a) released a comprehensive study of multiple hazards that faced the United States. The report proved identification and risk assessment primarily of natural hazards (due to processes: weather, geologic, hydrologic, seismic, and technological.) It did not consider industrial and terrorist hazards or hazards specifically to infrastructure. It provided a brief discussion of HAZUS, a hazard risk assessment method; it is oriented to largely natural event and building risks. Although it suggested that risk assessment should be increased, its discussion of other possible risk assessment methods was very cursory. One is struck on reading the report detail that there is little or no discussion of the local role in risk assessment. That same year FEMA reported to the US Senate regarding state readiness to deal with disasters (FEMA, 1997b). This report concluded that all of the states demonstrated good capability to plan for and respond to disasters. This evaluation was conducted by reviewing state self study reports that responded to a number of FEMA specified requirements. While the overall review could be considered as positive, FEMA did note the following gaps: (1) there appeared to be a shortage of both physical and trained human resources for disaster response, and (2) there was not enough hazard identification and risk assessment being done at the local level. It is interesting in the light of later events that the report noted there was a significant need to (1) plan for responses to terrorism and (2) plan for mitigation. It noted the need to "build disaster resistant communities" and to that end recommended that new performance criteria be established to measure achievements in this direction.

So we observe that the FEMA reports identify the same kind of general concern identified by EPC Canada – there needs to be more local involvement in risk identification and mitigation.

The terrorist events of September 11th led to a significant shift in focus and response by the US administration. The new Department of Homeland Security was established absorbing FEMA and a large number of US government agencies and programs. Clearly the focus has shifted strongly to dealing with terrorism and on protecting critical infrastructure and key assets. This is articulated in detail in the report "The Physical Protection of Critical Infrastructures and Key Assets" (Office of the President, 2003) just released in February. The sectors of concern are very similar to the ones identified in Canada's OCIPEP reports. However the background theme running all through the US report is quite different from the Canadian. The entire document seems to be focused on responding to threats to infrastructure from terrorists. It is understandable that this threat area should be increased in priority, but it seems to this author that there is still need to address other significant threats to infrastructure as well.

The report observes that the sectors exposed to risk are broad based and there is discussion of each of the key sectors. It also concludes that the most effected areas are those local to the disaster and that the local area will have to provide the first response and suitable facilities – and presumably eventual local recovery as well. To this end it suggests that new standards are required to guide state and local governments. It also recognizes that the states must organize to coordinate planning and preparedness of the local areas but observes there is a lack of local resources (Office of the President, 2003, p.19) The key principles are identified as follows: 1. Assure public safety, public confidence, and services; 2. Establish responsibility and accountability; 3. Encourage and facilitate partnering among all levels of government and industry; 4. Encourage market solutions wherever possible and compensate for market failure with focused government intervention; 5. Facilitate meaningful information exchange; 6. Foster international cooperation; 7. Develop technologies and expertise to combat terrorist threats; and 8. Safeguard privacy and constitutional freedoms. Each of these principles is discussed in some detail in the report.

The report does not discuss in any detail the need for local risk analysis and management although it says it should be done. The emphasis on "market solutions" makes on wonder how this will ensure that local authorities will obtain the resources to respond appropriately.

## Discussion Summary

Some comparisons have been made in the discussions above; some overall points are worth some emphasis:

It is clear that Canada and the United States see the need to make infrastructure secure. There is quite a difference in focus of current interests and the way the two countries are able to organize to address the key issues. However, both show a substantial emphasis on responding or being prepared to respond to disaster. There is not enough emphasis on risk management and prevention.

Both countries clearly identify that the major impacts, vulnerabilities, responses and potential to mitigate against disaster are at the local area. Both agree that local authorities have insufficient human and physical resources and that there is a shortage of funding at the local level. While there is talk about building partnerships between all levels of governments and the private sector, there is no indication of how this might be done or on what time table.

In general there seems to be an understanding that it is important to embark upon local community infrastructure (and other) vulnerability and risk analysis to be followed up by

planning to mitigate against these risks. However, neither seem to have proposals to carry this forward into implementation.

## Action Required

Both federal governments need to develop shared programs to address the deficit in local capacity for risk assessment. This is a complex task; it needs financial support.

Both sets of government reports note the need to provide guidelines and information for use by regional and local governments. Specific programs need to be initiated to provide such information along with detailed "best practices" information to guide planning practitioners.

The two governments need to engage the several professional associations that represent planners and responders in developing information and training resources. It is a concern that the two sets of government reports did not recognize that these professional organizations might be valuable in addressing the current challenges.

There is a particular need for "in career" education on Risk Identification, Risk Assessment, and Risk Management (including certification provision) to be made available for local and regional planners. This should be a high priority for both countries. Without the trained human resources, it will not be possible to develop the planning and programs needed to properly secure community infrastructure and thereby help to make our communities disaster resistant.

## Author Bigraphy

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