Urban Resilience and Social Capital

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Resilience, the inherent ability within people and places for anticipating, managing, and safely overcoming system-wide shock in the event of energy loss, food shortages, waste build-up, excess or diminished water supply, catastrophic weather or geologic events, and other unanticipated natural or human-made disasters, is essential to the safety and continuing adaptability of urban areas highly dependent on external centralized sources for personal comfort and ongoing commercial undertakings.

Resilience relies on redundancy in technical supports along with environmental diversity but primarily depends on a community's social capital - a human capacity for mutual help in times of stress and panic.

Measuring community resilience begins with assessing the capacity of these three elements, namely:

- Distributed and site-specific technical support during system failure,
- Environmental diversity as a resource for mitigating climatic, water, and waste excesses, and
- Social capital as the collaborative ability of people to assist each other at times when centralized market forces and public agencies are overwhelmed by unanticipated stress.

We will begin this undertaking by examining, through a civil infrastructure and environmental lens, GTA communities reflecting a diversity of urban form and social character, namely:

- High density traditional downtown,
- Near downtown residential,
- Mid-town suburban and high rise,
- Regional suburban, and
- Small town suburban.

By determining the resilience capacity of these varying human living situations, we will be able to provide priority recommendations for enhanced technical redundancy owing to large civil infrastructure systems failure (water, waste and energy), as well as opportunities for increasing environmental diversity in times of calm, so that they can be drawn upon in times of stress. Of most significance in this process is the role of communities in both identifying existing resources but discovering unanticipated means of contributing to resilience capacity.

We will itemize the ways in which environmental diversity for instance already meets some needs but could be enhanced to address additional technical support roles temporarily unavailable, and we will list technical support resources that are essential for certain, or all, of these communities (i.e. power backup for persons living in high rise towers; communications tools necessary in the event of power failure or the unreliability or unavailability of information technology resources).

We will do the above by drawing upon our expertise in civil infrastructure, discreet building level systems, environmental management systems, neighbourhood level interpretation, and social geography for plotting the role of social capital in enhancing resiliency preparedness in the almost certain event of climatic and/or unanticipated occurrences.

We are a volunteer multi-disciplinary group of educators, researchers and professionals focused on the issue of resilience for Canada during a changing climate.