

Developing Frameworks to Support Resiliency Assessments

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Abstract— There are a number of ongoing efforts to develop approaches and methodologies to make cities and regions more resilient to disruptive events. Two examples are the Rockefeller Foundation’s 100 Resilient Cities Centennial Challenge and the United Nation’s Hyogo Framework for Action. In the first, the focus is on making 100 cities from around the world more resilient at the city level and the second is on making countries more resilient to natural disasters and climate change.

In general, the effort to make a city or country more resilient must start with an assessment of the basic state of the conditions in the community. These assessments must include evaluations of the critical “lifeline” physical, organizational, and human landscape infrastructures. Once an initial state is assessed, one can then do assessments of the range of disruptive events you want to be resilient to and the desired end state.

In this Position Paper, we will argue that there is no “one size fits all” solution to how these assessments should be made. We shall also argue that the individual critical infrastructures cannot be decoupled from the organizational and human landscape infrastructure elements for which they are linked. We shall discuss how the context of the system or community being assessed will drive the requirements for an assessment framework and provide recommendations on some “best practices” on how to develop efficient, contest driven resilience assessment frameworks.

Introduction - Building strong, resilient communities is critical to ensuring that communities can respond to the inevitable perturbative effects of the array of threats facing them, whether natural or man-made. For the purposes of this position paper, we are taking a very broad view of what constitutes a “community” – assuming that it can be represented at variable spatial scales and complexity. Figure 1 is a highly idealized representation of a resilient community and the systems that are critical in its operation and interdependencies.

Figure 1 also shows the characteristics that contribute to a resilient community. One can find in the literature different terms for the characteristics that make up a “resilient community,” but they basically all relate to being able to meet

the basic needs of a community, having the will to improve conditions, providing the means to make improvements, and provide a secure environment in order to sustain conditions.



Fig. 1. Conceptual View of a Resilient Community and the Systems Impacting it.

In this Position Paper, we will discuss the requirements needed to perform assessments of the roles critical infrastructure plays in contributing to community resilience. We shall present examples from a set of existing assessment tools that are being used to assess resiliency to natural disasters and climate change. We shall address the argument that there is not “one size fits all” solution and that the context of the location and the nature of the disruptive event are critical factors that must be considered.

Keywords—*Resiliency, assessment frameworks, community, critical infrastructure*