



Hazard Reduction & Recovery Center

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“Using Photography to Assess Housing Damage & Rebuilding Progress for Disaster Recovery Planning”

By Michelle Meyer & Marccus Hendricks. 2018.

U.S. communities rarely plan for recovery after a disaster, but planners have the skills to help communities redevelop. Collecting photographic data can add on or even replace common methods of assessing damage and rebuilding.

The man-made environment changes quickly after a disaster and observations can be different from one day to the next. Photos communicate progress and shortcomings to funders, the general public and organizations that work together on rebuilding.

Currently, there is no accepted affordable and structured method for providing planners with suitable and timely information about the early damages and rebuilding over time. This study developed a simple, cost-effective and measurable method which allows different communities to efficiently and fairly plan for housing and community recovery after natural and technological disasters using effective tools for collecting the data that they need.

Findings

The study uses the 2013 fertilizer facility explosion of West city as a case study to develop, test and improve a method for assisting planners with recovery after both natural and technological disasters. The method offers information that’s easy to understand and combines property damage scores into available community GIS and other data, creating maps that communicate both initial damage and the recovery progress.

The study finds that the method developed can provide efficient assessments of damage and rebuilding in technological disasters. This damage assessment approach is more accurate and identified less damage and greater rebuilding after the disaster than the county property tax reappraisals that it was compared with. This method also improves on suggested methods of collecting data on damage and rebuilding.

Implications

Taking carefully organized photographs while using a constant and unified method of examining damage and recovery over time is a key element in recovery planning. The methodology from the study can be used by planners, city officials and other organizations to collect accurate, accessible data. Recovery planning can then be used to put together funding applications, identify unmet needs and opportunities for improving the built environment, make sure the distribution of resources is fair, increase openness, and communicate progress to the public. Planners can use the data to begin zoning changes or require building code changes that reduce hazard risk and support resiliency in future disasters.

“The postdisaster built environment changes rapidly; observations made one day may not be replicable a day later. Taking photographs, carefully cataloging them, and using a consistent and coherent method of assessing damage and recovery over time is a critical element in recovery planning. Photos communicate progress and, conversely, unmet need to funders, organizations collaborating on rebuilding, and the general public.”