

## **Studies, What We Are Doing**

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### **1. Introduction**

The Texas General Land Office (GLO) is the state's agent for US Department of Housing and Urban Development (HUD) Community Development Block Grants for both Disaster Recovery and Disaster Mitigation. As part of these grants, we are allowed funds for conducting studies directed toward disaster recovery or mitigation. In the past the grants were smaller, and the studies focused on single, small-scale projects and the results, with the collected data, were often placed in a binder to gather dust on a shelf once the decision on whether or not to proceed on the project had been made. Since the Hurricane Harvey Disaster Recovery and 2015 floods, 2016 floods and Hurricane Harvey Mitigation grants provide a sufficient amount of funds, we can break this paradigm and conduct studies that have the potential for a game changing effect, both in Planning Tools, and Disaster Recovery Housing.

### **2. Objectives**

The Community Development and Revitalization Division (CDR) of the GLO mainly conducts studies for two purposes. To explore alternative and more resilient housing technologies that help us improve the homes that we build for qualified recipients and develop planning tools to help us better accomplish our mission and aide the state and local communities to better plan for disaster resiliency (planning for disaster response may be a bonus here). The objective is to harden the state so all disasters, not just flooding and wind, cause less damage enabling citizens and the communities to rapidly recover and to lessen, or at least slow down the growth of the cost of recovery.

### **3. Ongoing GLO Studies**

Our Housing Improvement studies focus on finding our recipients improved technologies to add value and resilience to the houses that we provide. All of our housing recipients are Low to Moderate Income (LMI) and have had a home they owned destroyed or significantly damaged by a disaster. Many studies have shown that LMI families suffer disproportionately from disasters. If we are going to replace or repair their homes, we want to do that in a manner that they are not severely victimized again. These studies focus on new, more resilient technologies and range from literature surveys to one that we will post this fall that includes destructive testing.

Our Planning tools studies mostly break down into two groups, assistance to local communities in funding their planning efforts and leveraging interagency cooperation and technology to develop an accurate model of disaster effects. We fund two categories of local studies. One is to assist in funding the development of Local Hazard Mitigation Plans which help communities identify and prioritize mitigation efforts and also make them eligible for FEMA mitigation project funding programs. The other category is a

first of its kind program that provides funds to develop land use plans, codes, and education for Low to Moderate Income Families pointed at making a community more resilient.

On the data and technology end of things we are working with numerous partners to gather disaster data, develop models to help in understanding how disasters happen, what can be done to mitigate them and to keep the data in a location where it accessible to researchers, communities, First Responders and Voluntary Organizations Active in Disasters. A key component of this is filling in the data and information gaps. For example, large parts of the state have no accurate flood mapping or even FEMA Flood Insurance Rate Maps, and thus have no information other than anecdotes to form a basis for disaster planning. This effort will lessen the cost of future studies, allow communities to make smarter decisions and lesson the effects of events.

#### **4. Lessons Learned So Far**

The following are some things that we have learned so far:

- Innovative Housing Solutions vary in acceptability by region and culture.
- There is not a single resilient housing solution. All must be vetted by acceptability, local suitability and a cost benefit type analysis.
- LMI Populations lose ground economically in a disaster.
- Resilient housing is not just flood resistance, but also wildfire, extreme temperature, high wind and the often-overlooked maintainability and can be regional.
- Large areas of the state (some of them urban) do not have flood mapping or other information on which to plan or make decisions.
- Disaster data is often “Deleted” after the event is closed out
- FIRM maps are not a good predictor of flood risk
- Building to an adequate code helps
- Don’t build in a “swamp” without elevating structures 3 feet about Base Flood Elevation
- What happens upstream (impermeable cover, rain events, effects downstream), we must plan wholistically, not specifically.
- Lots of disaster data and more importantly, information is out there. The problem is, it is often hard to find.
- This just scratches the surface; we have a lot more to learn.