

Reassessing Levees

September 22, 2008

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The topic of levees has become an important national issue in the past several years. The aftermath of Hurricane Katrina in 2005 was harrowing, and with Ike, Gustav, Hanna and Ivan offering fresh images of widespread flooding, those who have not yet endured such a catastrophe are scrambling to make sure they never do.

Businesses and homes that lie within potential flood zones are facing critical issues that must be resolved. The Army Corps of Engineers and the Federal Emergency Management Agency have established a certification process that gives accreditation to those levees that indicate they can withstand a 100-year storm. Levees that demonstrate this capability and complete a stringent accreditation process become eligible for federal assistance should a disaster such as Katrina strike their community.

Under a FEMA program to modernize its flood maps, the Corps of Engineers is taking a closer look at flood zones to determine the necessity of redefining them. Based on the levee assessments that have been completed along the Connecticut River, the flood zones within the cities of Hartford and East Hartford may be redrawn. If this takes place, businesses and homeowners may be required to purchase flood insurance, if they don't already own it. In Hartford alone, 20 percent of the city might need new flood insurance, an area representing \$2 billion in property at risk.

This raises two big questions.

- First, what will it cost for flood insurance if a parcel is included within remapped zones?
- Second, are we protected by the structures of our levees as they exist today?

The Corps of Engineers inspects the nation's levees annually, and it is turning a critical eye toward those that require repairs. Those levees and dams that fall short of the certified level of protection are placed on a provisional status and given written notice to pursue accreditation or lose federal assistance. Approximately 130 levees across the nation have been placed on provisional notice.

A provisionally accredited levee is defined as one that has historically been known to withstand a 100-year storm, but now requires maintenance or repairs to comply with FEMA standards. These levees must undergo an engineering assessment and then complete the certification application, a process that can take between 18 months and two years.

Levee owners, mostly municipalities, that seek accreditation, typically contract with engineers from the municipal staff, an independent engineering firm or the Corps of Engineers. The engineers analyze the stability, seepage and embankment of the levee to determine the potential protection level.

Engineers use a flood of record to measure the levee's level of protection against the damage caused by a known catastrophic historical flood and then base their evaluation on the results of their testing. For the Hartford area, the flood of record is one that occurred in 1936. It has been categorized as a 750-year event.

As part of this evaluation, the engineers would look at the historical data of buried stream channels and any other criteria that might affect the integrity of the levee. To evaluate the engineering properties, they would drill into the levee and take a core sample of the structure. They would also look at the land side hydrology and hydraulics. Once the evaluation is complete, deficiency repairs would have to be performed before the certification process could begin.

Taxpayers and private levee owners may ask themselves if it's worth pursuing this lengthy and expensive process, since the cost can reach into the millions of dollars. But it's important to remember that after Hurricane Katrina, several billions of dollars were dispersed. Owners who do not seek accreditation and either lose or fail to obtain federal insurance may find themselves facing a substantially more expensive dilemma.

In light of the devastation caused by major floods in recent years, there is no reason to believe the Hartford area is exempt from natural disaster. It's worth the several million dollar investment in proactive activities now in order to avoid several billions of dollars in property damage in the wake of a future devastating flood.

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