

CEI NEWS

Flood Management



CEI Takes Part in Fluvial Geomorphology Task Force

In August 2011, Tropical Storm Irene brought devastating floods to the Northeastern US, with severe impacts on an untold number of private properties, roads, culverts, bridges, and other utilities. This flooding event - while particularly severe - is but one example of the increasingly frequent and severe flood events that have occurred in recent years in the region. These events have focused public attention on the vulnerability of private property and public infrastructure to the power of rivers and streams when they overtop onto their flood plains or overtax stream crossing structures.



Rivers and streams in Massachusetts are continually undergoing change. Sometimes this change is natural and occurs gradually. However, more often the change is induced by human activity, resulting in rivers and streams adjusting to impacts imposed by this activity on channels, floodplains, and watersheds.



Understanding the natural processes that govern the shape and alignment of a stream, its current condition, and how its condition may change as a result of human impacts is essential to making sound decisions about land uses and management activities that affect and are affected by the stream. Fluvial Geomorphology is the study of the physical nature of streams and rivers, and is the underlying science needed to inform decisions on how to manage these resources and their floodplains.

While Massachusetts has strong regulations governing the activities that affect rivers and flood plains, it lacks the scientific database and unified protocols for applying fluvial geomorphic principles to decisions about these activities. In the Fall of 2012, CEI was invited to take part in a workshop of interested environmental professionals, including state and federal agencies, environmental stakeholder organizations, and other consultants active in river restoration, flood mitigation, stream crossing design, and environmental permitting. The purpose of this workshop was to assess the need for developing a strong, science-based methodology for making decisions that affect rivers and floodplains.

As the direct result of this meeting, the group initiated the creation of a Fluvial Geomorphology Methodology (FGM) Task Force to explore the development of fluvial geomorphology assessment protocol for Massachusetts. Initial participants on the task force include individuals from the MA Fish and Game Division of Ecological Restoration, MA Department of Environmental Protection,



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MA Department of Transportation, UMass, Natural Resources Conservation Service and others. CEI also is now represented on this Task Force.

The FGM Task Force was formed to develop a strategy to implement FGM in Massachusetts and to develop a prototype river management plan. Additionally, the group will provide feedback to select partners in developing projects and obtaining supporting funding to develop prototype river management plans and further explore the development of suitable assessment/planning methodology for use in Massachusetts.

For additional information about CEI and our river and stream related services please contact David Nyman, P.E., at 508.281.5160 dnyman@ceiengineers.com