



Risk MAP Success Story: Clackamas County, Oregon: Can Risk MAP Turn on a Dime?

Background and Issue

As part of a cooperative study between FEMA and the Oregon Department of Geology and Mineral Industries, a reach of the Sandy River located in Clackamas County was slated to be studied using detailed methods during the summer of 2012.

Among the central concerns local officials had regarding the Sandy was the river's propensity for flooding and subsequent stream bank erosion, undermining roads and structures along the river in some cases. As a result of the erosion threat, property owners adjacent to the stream had begun to stabilize and fortify the stream's banks. However, the impact and effectiveness of these efforts along the streams banks were unknown.

Information on the river's speed and depth during flooding events was critically needed as soon as possible. However, because the river is inaccessible much of the year, the work window for the river was extremely limited.

Approach

In the original scope of the project, the detailed portion of the study would not have begun until after the summer work window had closed on the river for 2012. Following discussions with the county, it became clear that changes needed to be made to the project's scope of work if any meaningful results were to be completed before the start of the 2013 building season. As a result of these discussions, changes were made to the project's scope to allow an immediate start on work using Light Detection and Ranging (LiDAR), a remote sensing technology used to determine elevation, and previously available bridge data in order to produce a Limited Detailed Study (LDS) for the Clackamas reach of the Sandy River. When completed, this LDS would provide the county with depth and velocity grids for the river.

Impact

Through this cooperative Risk MAP effort, Clackamas County received valuable information on both the short term (velocity) and long term (channel migration) behavior of the stream for use in mitigation and planning needs. Risk MAP's emphasis on regular and constructive communication with communities within a study watershed enabled the identification of the need to adjust the scope of work and to meet the data needs of the county as soon as possible, gaining an entire year of mitigation and planning time for local officials.

Following the gathering and processing of other data, such as channel survey cross sections, the LDS can be used to create a fully Detailed Study for this reach of the Sandy River. Because an initial base model is required before merging in the additional survey data, additional costs to prepare the model were minor. However, because the LDS could be used as the base model for the subsequent detailed study, duplication of work and unnecessary costs were kept to a minimum.

More immediately, the county was able to use the final results of the LDS, which while not adequate for regulatory use, could be used for mitigation and identification of high risk areas.

These watershed efforts exemplify the Risk MAP program mission: collaborative process, quality data, mitigation planning and action, leading to risk reduction.

Risk MAP Project Phases

Beginning in the earlier stages of any Discovery project, FEMA consults with local officials and others to determine what needs the community may have regarding flooding and its associated risks. These discussions and research may highlight needs or requirements not envisioned in the original scope of work for a project. Risk MAP's Scoping Phase is designed to explore the needs of the community prior to committing FEMA, the community, and other partners (such as the state), to particular mitigation or mapping projects.

Risk MAP is designed to be flexible and relevant to the needs of the community. While the LDS was not part of the original scope, its inclusion and timely delivery provided a valuable tool for Clackamas County. The depth and velocity grid products produced for the county were invaluable for local planning, mitigation, and risk identification.

This success story is relevant to the Risk MAP project phases listed below. Find more Risk MAP Success Stories organized by project phase.

- Project Planning
- Data and Product Development
- Flood Risk Products