

Modeling and Mapping Laveggio River Hazards



With the help of 2-dimensional flood models, EBP ascertained the risks of flooding that are presented by the Laveggio River for the municipalities of Mendrisio and Riva San Vital. The results of EBP's investigation include flow-depth, intensity and hazard maps.

Just before it flows into Lake Lugano, the Laveggio River presents a hazard for numerous industrial and residential zones in Mendrisio and Riva San Vital. In the interest of providing an up-to-date planning instrument to the two municipalities, the Ticino Department of Territory commissioned the renewal of their respective flood-risk maps.

Our Approach

EBP updated the relevant hydrological data for the Laveggio River and gathered information relating to earlier flood patterns and anticipated flood scenarios from various representatives of the two municipalities, including fire department representatives. We used this information to develop a two-dimensional flooding model for the watercourse and the bordering valley floor. We then calibrated the model with the help of data drawn from a flood in the year 2002 and subjected the modeled flood zones to a plausibility test in the framework of an extensive site inspection.

Technical Report and Various Maps

We completed the assignment by drafting a technical report and various maps, including intensity maps for HQ30, HQ100, HQ300 and EHQ, a hazard map, a protection-deficit map and a

Client

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parameter map. We then developed a geodata model on the basis of the results.

Throughout the project, we placed great value on coordinating all of our work with the municipalities and the Department of Territory. We also carefully documented all of our results. The resulting hydrological model can be used in the context of subsequent flood-control and river-recovery projects. In addition to this, we were able to raise awareness of the value of hazard mapping within the municipalities.