

## II. FEEDBACK FROM THE FIELD

### PRE-FLOOD/POST-FLOOD MITIGATION PLANNING: THE MANITOU SPRINGS, COLORADO CASE

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#### Introduction

This report spanned the years of 1985-1986. Four topics are discussed: 1) the community; 2) the research process and project goals; 3) four emergent issues; and, 4) project contributions.

#### The Community

Manitou Springs is located at the base of Pikes Peak, immediately west of Colorado Springs. The year-round population is approximately 4500 people. During the summer thousands of tourists come and stay in Manitou Springs to enjoy its amenities and proximity to Pikes Peak and other attractions of the Rocky Mountain region.

Land use in Manitou Springs is constrained by the geography. The town is located along the channels of Fountain, Ruxton, Waldo, Beckers Lane, Williams, and Sutherland Creeks. Much of the remainder of the town sits on steep slopes above the floodplain. There is very little land available for development that does not face one of these hazards. Consequently, downtown Manitou Springs is built along the creeks and the floodplain is nearly fully developed. Shops, hotels, homes, and restaurants sit astride or are built partially in the floodway.

The community has had limited experience with flooding in recent memory although serious floods have occurred in

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This project was funded by the Federal Emergency Management Agency.

the past 75 years. Manitou Springs has a floodplain ordinance and is a member of the regular phase of the National Flood Insurance program but only 32 policies are maintained.

A large portion of Manitou Springs is recognized as a national historic district. There are 850 buildings located in the main historic district, and over 150 of these are in the floodplain.

#### The Research Process and Project Goals

The research effort was a joint process developed among the Federal Emergency Management Agency, Manitou Springs local government, the Colorado Division of Disaster Emergency Services, the Center for Community Development and Design, and the Department of Geography and Environmental Studies research team. Manitou Springs officials recognized the need to effectively enforce floodplain regulations and develop a plan to reduce flood hazard vulnerability. State and federal agencies were aware of the constraints facing Manitou Springs including topography, low level of public awareness, economic dependence on tourism, historic nature of the town, and the need for economic development.

The project had three goals:

1. to develop contingency planning for Manitou Springs which can be implemented now, before a flood;
2. to establish guidelines for Manitou Springs to have on hand for planning following a flood to insure that future damage potential is reduced; and,
3. to design a methodology for possible application elsewhere in the United States for pre and pre/post flood hazard mitigation.

Basically, the methodology consisted of bringing the most effective and innovative plans from around the United States to the attention of Manitou Springs. These flood hazard mitigation strategies and funding prospects for each option were reviewed and recommendations for adoption and implementation in Manitou Springs were studied. In light of the fact that public awareness is essential to the implementation process, a slide/tape presentation of the likely effects of a 100-year flash flood in Manitou Springs was prepared for ongoing public education.

#### Four Emergent Issues

Key issues which emerged are conflicts between historic preservation and wise floodplain management; reliance on tourism and the large number of visitors during flash flood season; interaction among the various actors involved in wise flood hazard mitigation including local residents, local commercial interests, the state officials and federal agencies and, the essential role of public awareness. Each of these is discussed individually below.

#### Historic Preservation

Research shows that Manitou Springs has dealt with contradictory policy regarding historic buildings. The Federal government awarded funds to Manitou Springs for restoring the historic quality of the downtown area; but, at the same time, prohibited spending the money because the buildings were located in the floodplain.

#### Tourism

Manitou Springs depends on tourism for its economic base. One concern consistently raised by community members was the fear that preparedness planning might discourage tourism. Our findings indicated this fear was unfounded. As an example, Estes Park suffered the equivalent of a 500-year flood in 1982 due to a dam break. Within a week the town's tourism exceeded pre-flood levels. In fact, Estes Park is the only Colorado community in 1982 to post an increase in tourist dollars during that summer month. A well-prepared community is more attractive than one that is ill-prepared.

#### Multi-Agency Task Force

We worked with a dedicated team of individuals who devoted many hours responding to our questions and providing valuable technical advice in all phases of the project. This integrated mission of flood hazard mitigation will carry on beyond the completion of this particular research effort. The fact that Manitou Springs is closely linked with various agencies involved in flood hazard mitigation in the region, state and nation should improve chances for obtaining funds to speed implementation of the recommendations.

### Public Awareness

A scenario with an accompanying slide/tape presentation was developed in two parts: with present level of preparedness and with a better prepared response and warning capability. Remarkable reductions in loss of life and property damage are found in the second scenario. Clearly, the public awareness message is that awareness saves lives. No funding is required to have a much better prepared community. Residents, business owners, motel owners, and tourists can be informed of the potential benefits of being aware and can be knowledgeable of appropriate actions in the event of a flash flood or flash flood warning.

### Project Contributions

The Manitou Springs Flood Hazard Mitigation Plan made three distinct contributions. First, it assisted the community of Manitou Springs, Colorado by suggesting flood hazard mitigation strategies based on the experience of communities elsewhere in the United States. It provided an in-depth description of the city's flood history and local economic base and developed a detailed scenario of present vulnerability to the flood threat. An extensive literature review revealed how other communities with similar conditions have successfully reduced flood loss potential through warning systems, land acquisition schemes, structural flood control measures, and increased public awareness. Three characteristics which distinguish Manitou Springs from other communities are a heavy reliance on tourism as an economic base, a lack of buildable lots which are not in the floodplain or on steep hillsides, and a large percentage of historic buildings. Also, topography makes some structural projects difficult or impossible.

Second, the report provided guidelines for post-flood contingency planning for Manitou Springs, prior to a flood occurrence. Consequently, when there is a flood, local officials will have a lead on wise recovery and reconstruction planning which will reduce future potential losses.

Finally, the report suggested a methodology for post-flood planning in anticipation of floods. Research shows that post-disaster decisions must be made quickly. In addition, current legislation stipulates that disaster aid is contingent on adequate mitigation planning for reducing the

threat from future events. Therefore, if local planners have a vision for community improvement, there is greater likelihood of reducing vulnerability to subsequent floods. We anticipate this methodology has applicability in other communities as well.

The strategy presented in the report takes the local political, economic and physical realities into account, acknowledging factors which restrict such adjustments as changing the floodplain into a greenbelt or channelizing a stream. It also recognizes the opportunity a flood disaster presents for long term hazard reduction. In effect, this pre-flood/post-flood planning and implementation of steps to mitigate the hazard assures that Manitou Springs will be much less vulnerable in terms of lives lost and property damaged from a future floods.