

## Attachment H: Mitigation Planning Case Studies

### Case Study (Visual 4.9): Happy Trails in St. George, Utah

When the Quail Creek Dam breached on New Year's Eve 1989, it led to a disaster in southwestern Utah that not only changed the course of the Virgin River, but also the City of St. George.

The meandering river and unstable soil make development along the Virgin River very dangerous. Before the disaster, City of St. George officials understood the danger, but faced great opposition from developers and citizens who did not believe that flooding dangers existed.

After the disaster, the City's goal was to acquire land along the river and create a recreational amenity while at the same time moving people away from the river for their own safety.

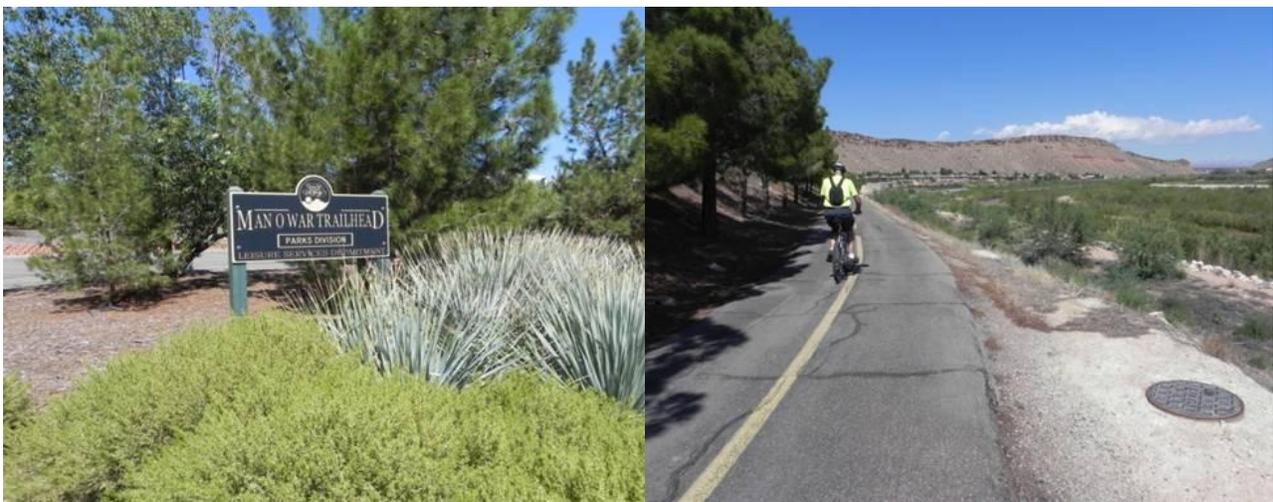
To accomplish the goal, the City Council first tried to pass an ordinance that would have prevented further development along the river; it failed in a 3-2 vote. But in 1990, a small planning group began to advocate for developing an 8-mile walking trail along the river.

Hazard Mitigation Grant Program (HMGP) funds were used to acquire property along the badly damaged banks of the Virgin River. This was the first time FEMA had ever awarded such a grant to a community.

The City of St. George now has a very popular trail system that has expanded to 43 miles. The trails provide recreational benefits and have created economic opportunities for the community. The open space along the trail provides environmental benefits such as nesting areas for endangered species of birds and fish. The trail is also used as a service road for a City sewer line and for access to undeveloped areas for fire protection.

The initial HMGP grant was for \$57,000; eventually a total of \$155,000 in HMGP funds was used for the project. The City more than matched the HMGP grants by donating land valued at approximately \$400,000 for the project.

The trail system is used by cyclists, equestrians, joggers, and walkers. Social organizations and volunteers provide landscaping services.



### Case Study (Visual 4.10): Safer Schools in Wichita, Kansas

On May 3, 1999, tornadoes struck Wichita, Kansas, and two schools were severely damaged. Luckily, the storms occurred after school hours and children were not present.

After the May 3 tornadoes, The Kansas Division of Emergency Management, along with the Kansas Hazard Mitigation Team, determined that the best use of mitigation funds would be to construct tornado shelters in Kansas schools.

Subsequently, the Wichita Public School District also decided that shelters should be included in new school construction and renovation.

The Wichita District took the initiative to educate both individuals and organizations, including:

- The legislature and school boards on the benefits of funding school shelter projects
- Local school and building officials on the structural, logistical, and human requirements for successful shelters
- The private sector, such as architects and engineers, on the design and construction of shelters
- School staff on maintaining shelters and establishing and practicing emergency procedures
- Students on understanding the hazards posed by severe wind events and knowing where and how to seek shelter

The success of this school shelter program is based largely on the foresight of the Wichita Public School District and the cooperative efforts of school district officials, the State of Kansas, the private sector, and the Federal Government. Their combined efforts have enabled the design and construction of economical, attractive shelters that make efficient use of valuable school space while providing for the safety and comfort of students.

The Wichita Public School District set an example for implementing a school shelter program, and other Kansas counties and school districts are following the District's lead. School shelters are planned in Butler, Labette, Reno, Sedgwick, and Sumner Counties. In 2012, the State had another 59 grant applications for over \$40 million that have been approved.



## Case Study (Visual 4.11): City of Colorado Springs, Colorado: Cedar Heights Neighborhood

Cedar Heights is a neighborhood of more than 220 homes spread out on a hillside that rises just west of the City of Colorado Springs, Colorado. The neighborhood is in an area designated by the City's Firewise program as the Red Zone.

The Waldo Canyon Fire was a forest fire that started northwest of Colorado Springs on June 23, 2012, and was declared contained on July 10, 2012. The fire caused the evacuation of over 32,000 residents and destroyed 346 homes. This wildfire was the most expensive fire in Colorado State history, with insurance claims totaling more than \$352.6 million. It was also the most destructive fire in Colorado State history as measured by the number of homes destroyed, eclipsing the previous record-holding fire, the High Park Fire. As of the time of the Waldo Canyon Fire, Cedar Heights had received over \$1.6 million in



mitigation funding. The value of the homes saved in the Cedar Heights neighborhood, thanks to their mitigation efforts, was over \$70 million.

The *Pre-Disaster Mitigation Plan for Colorado Springs, Colorado* (originally approved in 2005 and updated in 2010) identifies the Cedar Heights neighborhood as being located in the Wildland-Urban Interface. The plan includes actions for reducing the wildfire risk, such as continuing to develop programs and allocate resources for the reduction of fuels in potential wildfire areas. This includes continuing an educational Firewise program and providing resources that can be used to reduce natural fuels.

Cedar Heights Homeowners Association (HOA) joined the City of Colorado Spring's Firewise Program in 2002, agreeing to conduct an annual chipping program and replacing roofs and exteriors with less combustible materials. In 2007 they started a 3-year project, using FEMA Pre-Disaster Mitigation funds, with the City fire department acting as the subgrantee, to clear the brush from 100 acres of park land and 50 acres of community property adjacent to homes and along an emergency

evacuation route. The HOA was able to claim their ongoing Firewise activities as their "sweat equity" to meet the 25 percent matching funds required by the grant program.

The City has received similar grants partly because of the fire risk it faces, but also because citizens here have been willing to do their share in the mitigation work. In its grant subapplications, the City outlines the specific areas it will target with the funds. The City contracts the mitigation work to be done on public lands, but the grants require that homeowners and homeowners associations match 25 percent of the funds, either with actual dollars or manual labor on their own property. The fire department tracks what work homeowners do to cut back trees and brush from houses and calculates the match.

## Case Study (Visual 4.12): Comprehensive Planning in Rock Springs, Wyoming

The City of Rock Springs is a 16-square-mile community with a population of 23,036 located in Sweetwater County in central Wyoming.

Sweetwater County was struggling to complete a multi-jurisdictional plan that would include the City of Rock Springs. The City fire chief decided the City should complete its own local mitigation plan as a chapter in the County's Master Plan. Although the City Planner did not see a connection between hazard mitigation plans and master plans, the fire chief convinced her.

It took the community 4 years to have enough funds to update its mitigation plan. No FEMA funds were used. They hired a consultant that claimed to have experience with both types of plans, but they were disappointed with the result and ended up completing the mitigation plan on their own.

Now the City Planner believes the hazard mitigation plan and master plan really do fit together. She noted the following benefits of incorporating mitigation into the Master Plan:

- Greater awareness: Planners and local decision-makers including members of the City Council gained an understanding of hazard mitigation.
- Integrated approach: The vulnerability discussions regarding wildfire and flooding in the mitigation chapter are directly connected to the environmental and housing chapters.
- Efficient use of resources: Costs were reduced by combining the two public participatory processes, and the City will experience this cost savings again when the plan is updated.

The cover of the Hazard Mitigation Chapter of the Master Plan says:

*“Hazard mitigation planning is an essential component of emergency management. This Hazard Mitigation Plan allows us to examine potential hazards and develop a strategy to reduce the impacts of those hazards, thereby affording a better allocation of resources and providing a higher level of protection for our community. By including the Hazard Mitigation Plan as part of the City’s 2012 Master Plan, the City has shown its commitment to a comprehensive approach to planning.”*

- Lyle Armstrong, Rock Springs Fire Chief

The City Planner who managed the Master Plan update said:

*“Hazard mitigation planning is not something to be done in isolation; it’s part of the overall vision for a healthy, safe community; it belongs as part of the master plan.”*

