



Flood Control Project Revamps Communities

Full Mitigation Best Practice Story

Jackson County, Missouri

Kansas City, MO – In 1864, Brush Creek flowed through the middle of the area known as the Battle of Westport, the biggest battle of the American Civil War west of the Mississippi River. The site is present-day Kansas City. Today the creek is the focus of a different battle: to keep floodwaters at bay, to protect area citizens, and to enrich contiguous communities. Brush Creek, located 5 miles south of downtown Kansas City, meanders 6.5 miles across Kansas City from the Kansas state line on the west to the Blue River on the east. It lies at the center of residential neighborhoods, commercial areas, educational, cultural, and research institutions.



“When the Brush Creek channel was first built in the 1930s, everything on the southern edge of Kansas City was rural and farmland. The water control system was built to handle water under those circumstances. Everything in the area changed as growth and development occurred. Water flow increased dramatically,” said Kent Myers, program manager at U.S. Army Corps of Engineers (USACE), Kansas City District.

In 1977, storms and heavy rains caused flash flooding as Brush Creek quickly spilled its bounds into surrounding roadways and residential and commercial districts. The storm caused an estimated \$66 million in property damages, and 12 people were killed at nearby Country Club Plaza. Shops and restaurants in this upscale outdoor shopping mall were filled with more than 5 feet of floodwaters.

As a first-line strategy following the catastrophe, Kansas City petitioned the USACE to help reduce flood hazard problems. As the USACE implemented environmental assessments and planned construction designs to control flooding, the city’s Parks and Recreation Department developed companion plans to enhance nearby communities and beautify the adjacent linear park that runs parallel to the creek. Kansas City’s Public Works Department, Water Services Department, city planners, consultants, community leaders, and citizens joined the flood control planning team. This collaboration formed Brush Creek Flood Control and Beautification Initiative in the early 1980s.

In 1987, Kansas City passed a \$51 million bond issue, the Cleaver Plan, introduced by then Kansas City Councilman Emanuel Cleaver, now Congressman. The plan helped to fund the flood control and beautification projects. Known as America’s first outdoor shopping mall, the affluent Country Club Plaza and adjoining Plaza Reach were the first areas revamped following the introduction of the Cleaver Plan. While the USACE constructed channel improvements, the city undertook the replacement of several bridges along Brush Creek that restricted waterflow during heavy rain storms. Flood control works progressed eastward to include the nearby Paseo intersection and the Lake of Enshriners, which extends up Brush Creek as a result of a city-built dam. “The [USACE] identified justification for the project to initiate at Country Club Plaza and nearby districts based on an economic impact analysis,” added Karin Jacoby, division manager of the Water Services Department, Kansas City.

By the time the 1998 storms hit, mitigation work adjacent to the Plaza was complete. Heavy rains caused extreme flooding along Brush Creek. Some areas were hit with more than 5 feet of floodwaters. Seven of the eight people killed were swept off Prospect Avenue Bridge as rushing waters pounded the vicinity. The Plaza was spared. “Brush Creek was still a very serious flood threat. We put together a plan for channel and bridge improvements along the creek, including those at Prospect,” explained Jacoby. “The first flood control construction following the 1998 deadly storms was at nearby Woodland Avenue where the roadway [Brush Creek Boulevard] is very close to the creek.”

The City of Kansas City applied for and received funds from Missouri’s State Emergency Management Agency (SEMA) through the Hazard Mitigation Grant Program (HMGP) of the Federal Emergency Management Agency (FEMA). The nearly \$8 million in HMGP funds allowed the city to realign a section of the channel, stabilize the creek banks at Woodland Avenue, and remove the constriction of the Woodland Avenue Bridge. A portion of the HMGP funds were also utilized to improve the channel, reinforce the banks, and replace the bridge at Prospect Avenue. HMGP funds are designed to assist State and local communities with implementing long-term mitigation measures. Funds are awarded on a cost-share basis – 75 percent Federal; 25 percent non-Federal – with the Missouri SEMA administering the funds. Kansas City voters renewed a sales tax for capital improvements in 1998 to fund much-needed enhancements and flood control.

Mitigation is working. In areas where efforts have been taken to address and reduce flood risks, the outcome is clear as subsequent storms of equal proportions swelled Brush Creek. The creek drains a 29-mile area using channels that vary in size from 72 feet to more than 150 feet wide and from 3 feet to 18 feet deep.

According to the USACE, the flood-protection projects completed between 1990 and 1998 saved an estimated \$283 million in damages that the 1993 and 1998 storms would have caused. Officials in Kansas City recognize that flood hazards exist in other areas along the creek and have projected more than \$52 million for additional flood-control projects at eight other sites. A priority is to revitalize blighted Troost Avenue, known to many as a socio-economic and racial divide.

“The community feels that the Troost Avenue Bridge needs to be a signature bridge, not a slab,” explained Carol Grimaldi, executive director of Brush Creek Community Partners. “Our goal is to break down the barriers and create an open and attractive area where people want to come.”

Of the \$112,385,000 already applied to the Brush Creek Flood Control and Beautification projects, the city of Kansas City funded \$73,125,000. A combination of numerous State and Federal grants provided the remaining \$39,260,000. Contributors included SEMA, Missouri Department of Transportation, USACE, the U.S. Housing and Urban Development Community Development Block Grant Program, and FEMA.

It is widely recognized in Kansas City that the success of the Brush Creek Flood Control and Beautification projects is a result of the extraordinary cooperation among the various groups and contributing partners, including Federal, State, and local agencies, as well as private and nonprofit organizations.

“Investment of local and public funds to reduce the hazard of flooding to the area has resulted in over \$1 billion in private development along the creek,” said Mark McHenry, Director of Parks and Recreation for Kansas City. “Beautification and enhancement features of the six completed projects along Brush Creek include lakes, pedestrian and bicycle ways, fountains, landscaping lighting, fiesta boat rides, recreational sites, an expanding cultural corridor of attractions, educational and commercial institutions, and more.”

As Kansas City works to complete flood control and beautification projects along the creek, its water control system is improved, communities are safer, revitalized, and enriched. Brush Creek is a growing local asset, and Kansas City is winning the battle against flooding.

Activity/Project Location

Geographical Area: **Single County in a State**

FEMA Region: **Region VII**

State: **Missouri**

County: **Jackson County**

City/Community: **Kansas City**

Key Activity/Project Information

Sector: **Public**

Hazard Type: **Flooding**

Activity/Project Type: **Flood Control**

Activity/Project Start Date: **02/1998**

Activity/Project End Date: **Ongoing**

Funding Source: **Hazard Mitigation Grant Program (HMGP); Local Sources; Other Federal Agencies (OFA)**

Application/Project Number: **UNKNOWN**

Activity/Project Economic Analysis

Cost: **\$164,000,000.00 (Estimated)**

Non FEMA Cost:

Activity/Project Disaster Information

Mitigation Resulted From Federal
Disaster? **Unknown**

Value Tested By Disaster? **Yes**

Tested By Federal Disaster #: **No Federal Disaster specified**

Year First Tested: **1999**

Repetitive Loss Property? **No**

Reference URLs

No URLs were submitted

Main Points

No Main Points were entered.



Brush Creek flood control



A view of Prospect Bridge over Brush Creek



One of the first bridges constructed as part of the Beautification Initiative.