INTEGRATED WATERSHED PLANNING

Feasibility Phase

The goal of a feasibility phase is to determine the federal interest in sharing the cost to build one of the alternatives, and this is written in a report. This work is a congressionally authorized feasibility study, jointly sponsored by the U.S. Army Corps of Engineers (USACE) Civil Works program, Johnson County (JOCO), KS, the City of Kansas City, MO (KCMO), and with the support of the area's metropolitan planning organization, the Mid-America Regional Council (MARC). The Brush Creek Basin has 30 square miles of urban land requiring coordination on water resource issues across many boundaries. The effort enables collaborative development of integrated watershed planning products, coordinated across the 18 cities in the basin.

The area is known for the many fountains. The historic Neptune Fountain symbolically represents the three focus points of the study and the USACE mission areas that carry the study: Watershed planning, ecosystem restoration and flood risk management.

Authorized Purposes

Ecosystem Restoration

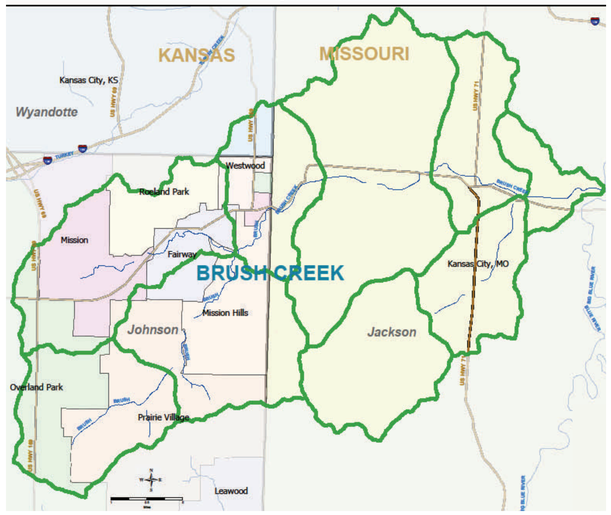
Ecosystem restoration is one of the primary missions of the Civil Works program. The purpose of Civil Works ecosystem restoration activities is to restore significant ecosystem function, structure, and dynamic processes that have been degraded. Ecosystem restoration efforts involve a comprehensive examination of the problems contributing to the system degradation, and the development of alternative means for their solution. The intent of restoration is to partially or fully reestablish the attributes of a naturalistic, functioning, and self-regulating system.

Flood Risk Management

Every year floods sweep through communities across the Unites States taking lives, destroying property, shutting down businesses, harming the environment and causing millions of dollars in damages. Nearly 94 million acres of land in the United States are at risk for flooding. It is impossible to prevent all floods but it is possible to prevent some and to limit the impact of those that do occur.

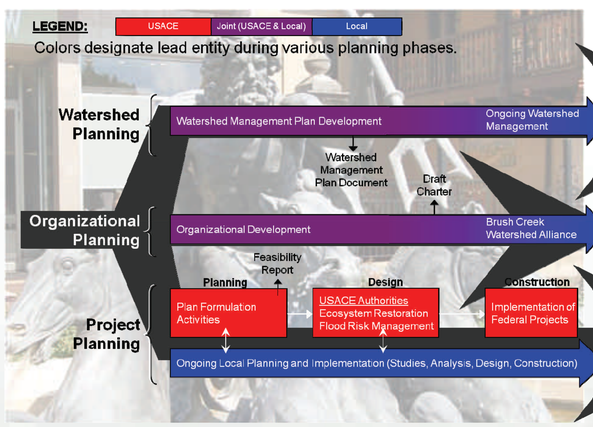
One of the primary missions of the USACE Civil Works program is flood risk management. Through effective planning, forecasting and preparation the USACE is working to help communities prevent floods where possible and significantly reduce the loss of lives and the economic and environmental impact when they do occur. The USACE also is involved in flood emergency response efforts.

Brush Creek Basin, Kansas and Missouri



Study Focus Points

The sponsors are focused on three watershed planning products, and this is known as the **Three-Prong Approach**, which the Brush Creek Coordinating Committee developed. One product will be a **Watershed Management Plan**. Another will be the development and facilitation of a future **Organizational Framework** for the local entities that can be used to implement the watershed management plan. For the USACE, a feasibility report will be produced, documenting **Project Sites**, whether just locally funded or jointly funded with a Federal cost share. Together, these three points are like the tip of a trident.



Project Sites

Project sites have been noted where the best opportunities have been identified for improving the environment at locations throughout the watershed. The most appropriate features and activities, which are both considered measures within the alternatives, will vary. Each project site faces unique circumstances, the values of stakeholders near those sites and the way these measures produce the most effective output to achieve watershed objectives. Planners will form the alternatives after considering public feedback about acceptable features and activities for each of the project sites.

The study will also look at activities, or management measures, whether better managing floods or improving the environmental quality. Such activities, may include policies, operation and maintenance practices, codes, ordinances, and guidance plans.

The integrated effort and partnerships are the success of this bi-state study. This effort will address the need to recommend a locally lead organizational framework, establish a watershed management plan, and form alternatives for construction projects consistent with that watershed management plan. Building projects may or may not involve the USACE. The study will provide a cost effectiveness analysis of the projects that best meet the watershed goals and objectives established by the Brush Creek Coordinating Committee.

For more information

Brush Creek Basin, Feasibility Phase website

www.nwk.usace.army.mil/projects/BrushCreek

Our local sponsors

Johnson County, KS website

http://stormwater.jocogov.org

Kansas City, MO website

www.kcmo.org/CKCMO/Depts/WaterServices/index.htm

Partnerships

Brush Creek Coordinating Committee website

www.brushcreekwatershed.com

Mid-America Regional Council website

www.marc.org

BUILDING STRONG

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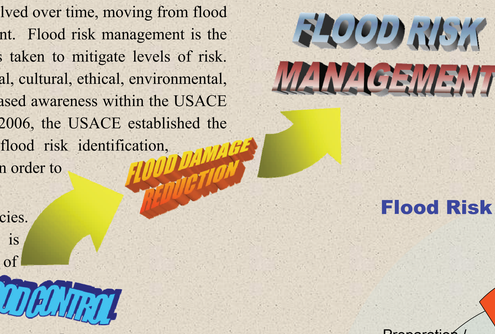
Evolution of Flood Risk Management

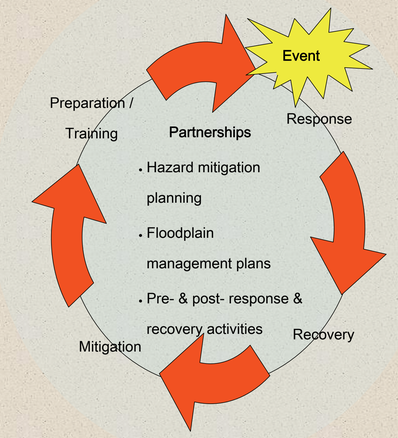
Since the enactment of the Flood Control Act of 1917, the USACE has played a significant Federal role in managing flood risk nationwide. However, the USACE mission and its implementation has evolved over time, moving from flood control to flood damage reduction and now, most recently, to flood risk management. Flood risk management is the process of identifying, evaluating, selecting, implementing and monitoring actions taken to mitigate levels of risk. Scientifically sound, cost-effective, integrated actions are taken to reduce risks. Social, cultural, ethical, environmental, political and legal considerations are accounted for in the process. There is an increased awareness within the USACE that more needs to be done to assess, manage and communicate flood risks. In 2006, the USACE established the National Flood Risk Management Program in order to advance the goals of flood risk identification, communication, response, and management services across all levels of government in order to save lives and reduce property damage in the event of floods and coastal storms.

Managing flood risks is a shared responsibility between federal, state and local agencies. Communicating these risks is an all-the-time effort, and the importance of this is emphasized by the flood cycle shown at the right. Without a constant effort, the risk of flooding is easily forgotten.

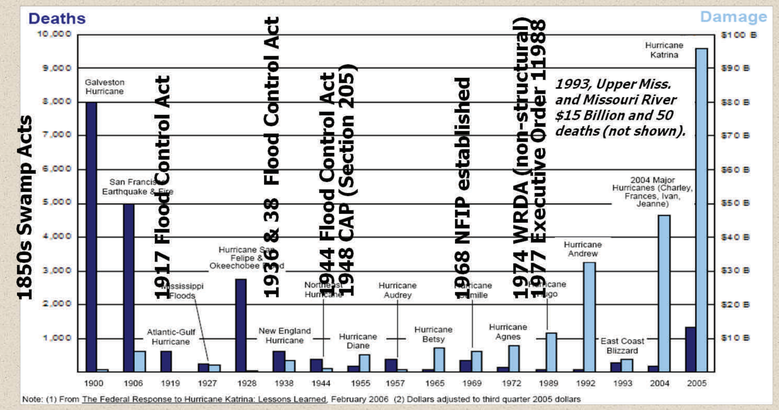


US Army Corps of Engineers®

Flood Risk Management Cycle

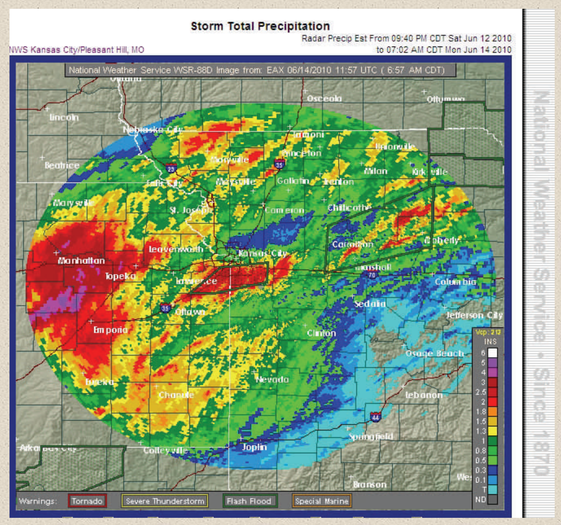


History of Reacting To Floods



History shows the cost of flood damages continue to rise and affect the Nation's sustainability.

Flood risk management is a shared responsibility.



Understanding Your Flood Risk on Brush Creek

Your flood risk varies for property damage and loss of life. The level of risk is dependent on the location of your home or business in the Brush Creek watershed. The severity of rainfall is another major factor. Other parts of your risk from floodwaters include

- Depth
- Velocity
- Proximity of the population at risk
- Warning time
- Rate of rise

The Kansas City area experienced floods in 1977, 1993, 1998 and 2010. Any storm event can potentially have flood risk impacts. For example, the June 13-14, 2010 storm (graphic to the right) produced creek flow that came within a few feet of reaching Ward Parkway. This storm produced 3.15 inches of rain water in a 6 hour time period, which was estimated to be greater than a 50 percent chance (2-year) event. In addition, the storm water gage at Ward Parkway recorded that **the creek rose by more than 7 feet in one hour**.

The lessons from the history of flooding locally and across the Nation is that partnerships between federal, state and local agencies are important for addressing the risks. A variety of measures exist to reduce risk to the level that is acceptable to the public. The reality is that some areas will always have a residual risk, as demonstrated in the figure to the left.

Take the Flood Quiz!

Our stakeholders often do not realize the complexity of assessing flood hazards and the challenge of getting public understanding of the risks. Many things make predicting where the floodwaters will go difficult. See how well you understand the risks by taking the Flood Quiz (see handout). Or try the quiz developed by planners in Hancock County, Ohio (partially shown, below):

http://www.hancockrpc.org/survey.php?svy_id=25&preview=1

15. The Floodway is:

A. The same as the floodplain.
B. The portion of the river owned and maintained by the Army Corps of Engineers as a "navigable waterway".
C. The land area likely to experience flooding during heavy rain events.
D. An area of the river determined by an engineering formula to represent significant flow during a flood event.

Here's how others answered this question...	Response Percent
A	0.00%
B	0.00%
C	68.75%
D	31.25%

Your answer of "D" was correct.

Explanation:
Per Floodplain Management Study of Blanchard River and Riley Creek, Soil Conservation Service U.S. Dept. of Agriculture, Revised July 1990. "The regulatory floodway is not an actual channel, rather, it is the equivalent area required to convey the 100-year flood without increasing the water surface elevation more than 1.0 foot. Federally, no fill is permitted within the floodway boundary. Another purpose of the floodway in to identify that part of the floodplain where potential damage is the greatest, i.e., the velocity and depth of flooding are greatest.
Fema Floodway Information: click here

16. The term "100 Year Flood" means:

A. The number 100 represents an average area affected by floodwaters for all the floods which occured in the past 100-year interval.
B. There is a 1% chance of a 100-year flood being equaled or exceeded in any given year.
C. When a 100-year flood occurs it won't happen again for another 100 years.
D. There is a .1% chance of a 100-year flood occuring in any 10 year period.

Here's how others answered this question...	Response Percent
A	18.75%
B	25.00%
C	43.75%
D	12.50%

Your answer of "B" was correct.

Explanation:
This question points out the importance of proper terminology. The term "100-year flood" is used in an attempt to simplify the definition of a flood that statistically has a 1-percent chance of occurring in any given year. Likewise, the term "100-year storm" is used to define a rainfall event that statistically has this same 1-percent chance of occurring. In other words, over the course of 1 million years, these events would be expected to occur 10,000 times. But, just because it rained 10 inches in one day last year doesn't mean it can't rain 10 inches in one day again this year.
For more information: click here

17. Only structures within the 100 year floodplain are eligible to participate in the National Flood Insurance Program.

True
False

Here's how others answered this question...	Response Percent
True	25.00%
False	75.00%

Your answer of "False" was correct.

Explanation:
Facts and Myths of Flood Insurance click here

A watershed approach...

A watershed approach is hydrographically defined, geographically focused, inclusive of all stressors, involves all stakeholders, public and private, communities, and coordinating frameworks, addresses strategic, priority water resource goals by integrating programs, basing work on science, developing watershed management plans, and using adaptive management.

We use a systems approach in watershed planning efforts. The work is mindful of these systems: water resources, ecological, biological, storm sewer, wastewater, and transportation. The hope is to make better decisions by integrating planning efforts, eliminating duplication of efforts and better managing our shared resources in a watershed. This results in sustainable solutions, such as establishing communities that are resilient to floods, including mitigating property damages and reducing potential for loss of life.

BRUSH CREEK BASIN

KANSAS CITY DISTRICT