Watershed Planning and Ecosystem Restoration

The U.S. Army Corps of Engineers (USACE) is interested in using a watershed approach when looking for solutions to water resource problems under the USACE's ecosystem restoration mission. The 38 USACE Districts use watersheds to define their boundaries very similar to many of the countries in Europe, who learned to resolve water conflicts with that approach in the past. Today, USACE districts, such as the Kansas City District, continue to use the watershed approach.

USACE can lead or simply be a participant in watershed studies. Although Brush Creek is authorized as simply a multi-purpose study, studies authorized specifically as watershed studies are eligible for a 75% federal cost share.

Other USACE projects involving watershed planning are listed below, and the first two are similar, based on size and degree of urbanization, to the Brush Creek Basin study.

- Upper Turkey Creek
- Anacostia Watershed Restoration Plan, (Baltimore District, USACE)
- Missouri River Authorized Purposes Study
- Missouri River Recovery

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

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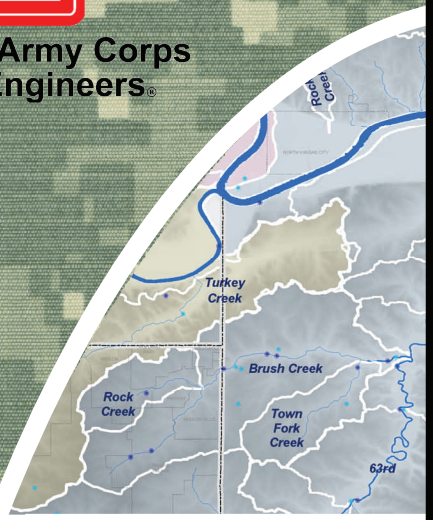
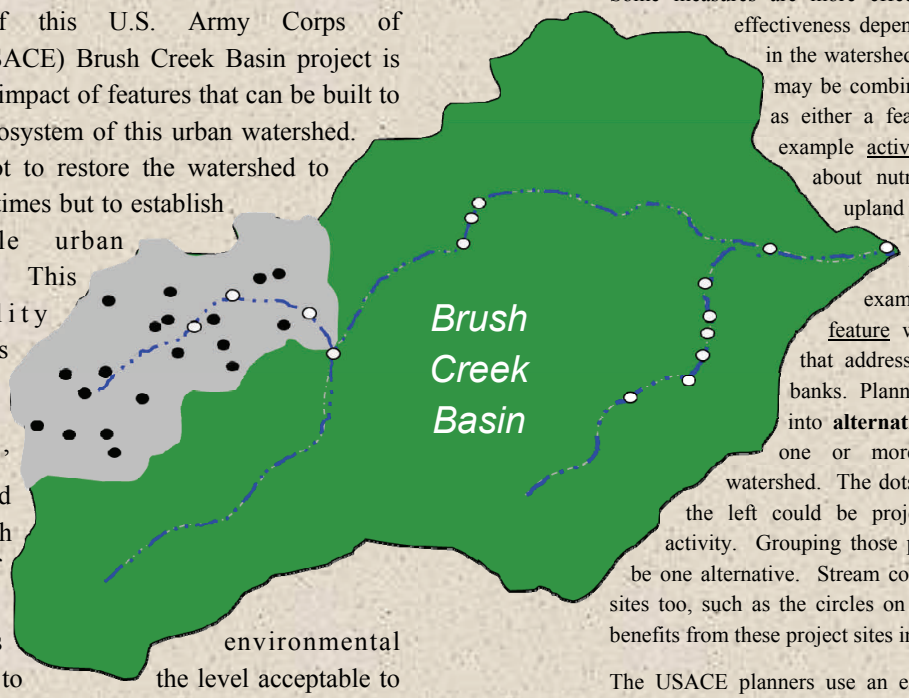


BRUSH CREEK BASIN
ECOSYSTEM RESTORATION

KANSAS CITY DISTRICT

Environmental Quality

The goal of this U.S. Army Corps of Engineers' (USACE) Brush Creek Basin project is to evaluate the impact of features that can be built to improve the ecosystem of this urban watershed. The goal is not to restore the watershed to pre-settlement times but to establish a sustainable urban watershed. This sustainability includes balancing the needs of our communities' homes and businesses, with the types of green solutions that address environmental degradation to the level acceptable to the people living in these communities. The USACE is working closely with local experts to prioritize measures using a watershed approach. Measures may be activities promoting green solutions, or best management practices (BMPs), in upland areas, or planting native plants and building bank stabilization features in stream corridors. Both types of project sites have measures that affect the ecological habitat.

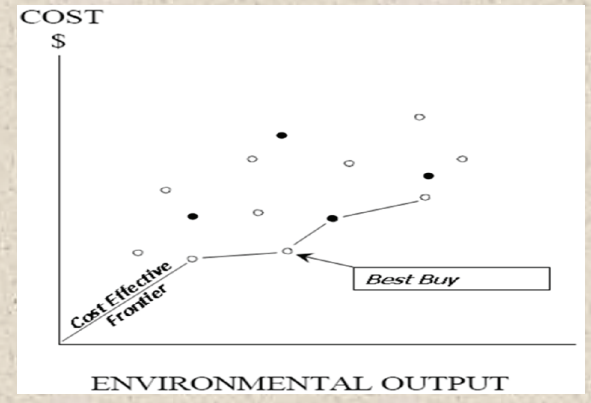


But which type of restoration is most cost effective for the communities and meets the goals of this watershed?

Ecosystem Output

Some measures are more effective than others. Their effectiveness depends on they offer, location in the watershed, and how these measures may be combined. **Measures** are defined as either a feature or an activity. An example activity may be an ordinance about nutrients or pollutants from upland areas that affect water quality downstream in the watershed. Another example of a measure may be a feature within the stream corridor that addresses the erosion of stream banks. Planners form various measures into **alternatives**, which can represent one or more project sites in the watershed. The dots on the watershed map at the left could be project sites affected by an activity. Grouping those project sites together may be one alternative. Stream corridors could have project sites too, such as the circles on the map. The watershed benefits from these project sites in different ways.

The USACE planners use an ecosystem index model to evaluate the output from proposed measures. Input from the experts of the Brush Creek Coordinating Committee established an index model for Brush Creek called the Urban Watershed Integrity Model. This model will establish the environmental **output** values, similar to the dots and circles representing alternatives in the graph below. This allows the planners to find the best buy alternatives, which may be selected to receive federal dollars for construction.

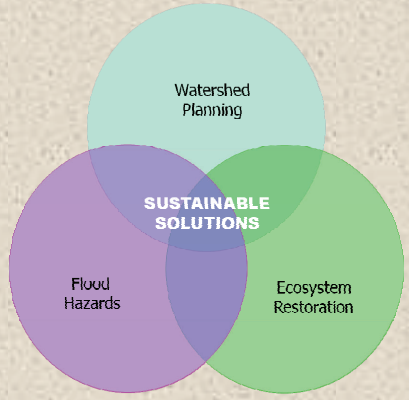


Project Sites

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 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 look at measures with a multi-objective nexus, whether better managing floods or improving the environmental quality. Project sites with upland features will be implemented by the local communities, not the USACE. Activities, including policies, operation and maintenance practices, codes, ordinances, and guidance plans may be watershed management plan elements.

Multi-Objective Nexus



The integrated effort and partnerships are one success of this integrated, 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.

Visit these USACE websites for more information about the USACE ecosystem restoration mission:

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

http://el.erdc.usace.army.mil/ecocx/