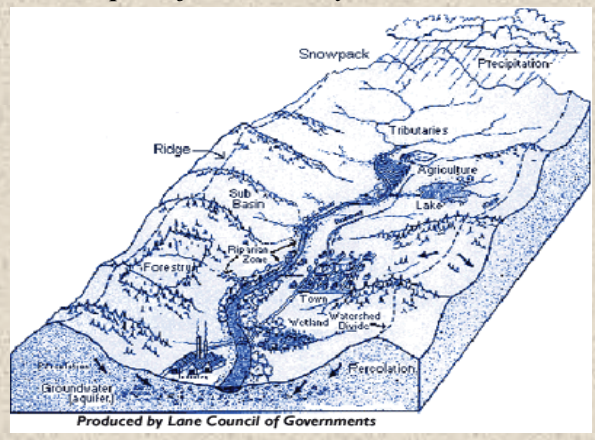
What is a watershed?

Watersheds, or basins, are an area of land that drains rainfall, and sediments that rainwater carries, to a common point on a river or creek. The picture below shows a watershed.

John Wesley Powell described them as "that area of land, a bounded hydrologic system, within which all living things are inextricably linked by the common water course and where, as humans settled, simple logic demanded they become ***part of a community***."



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Consider a single project…

All of our Nation's water resource project sites are in watersheds. Projects are frequently some type of infrastructure, built for a single purpose. Examples include wells, piping systems for supplying water or removing wastewater or stormwater, locks and dams for navigation, multipurpose reservoirs, and channelization projects and levees. Some projects may be defined by activities on broad areas of land. Since all of these projects can affect watershed processes, leaders are increasingly concerned with considering the big picture, the cumulative effects to our shared watersheds, **prior to investing tax dollars.**

How can you help?

Read about watershed policies. Be involved in public meetings. Realize that developing studies to help leadership make good decisions takes some time and willingness to consider problems that may be miles away from you.

For more information

Brush Creek Basin, Feasibility Phase website

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

Watershed Plans EC 1105-2-411, 15 Jan 2010.

Hearing on Comprehensive Watershed Management and Planning, House Committee on Transportation & Infrastructure, 23 Jun 2008.

Five Pilot Watershed Studies, Energy & Water Development Appropriations Act of 2006, PL 109-103.

Planning in a Collaborative Environment EC 1105-2-409, 31 May 2005.

Policy Guidance Letter #61, Application of Watershed Perspective to Corps of Engineers Civil Works Programs and Activities, 27 Jan 1999.

Policy Guidance Letter #52, Floodplain Management Plans, 8 Dec 1997.

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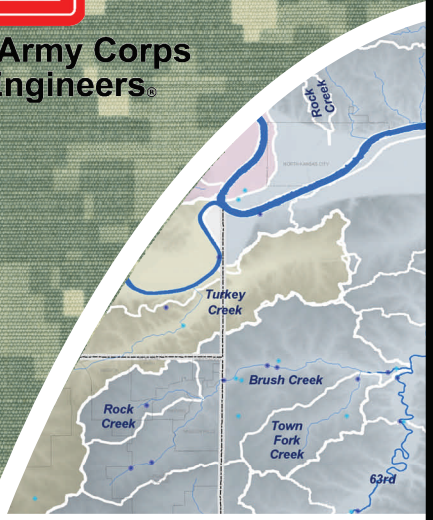


BRUSH CREEK BASIN

WATERSHED PLANNING

KANSAS CITY DISTRICT

Systems Approach?

The word 'system' is not as scary or complicated as you might think. Your home has a system of pipes, your car has a system of mechanical parts. We do our best to describe them, and we have experts that help, like plumbers and mechanics. A **systems approach** considers the state of all the pipes, or the whole car. Using the systems approach, community planners find better solutions that

- consider the long-term,
- are more sustainable for the community, and
- are the most effective way to spend money.

A watershed is also a system, including many water resources like upland prairies, bodies of water, forests, wetlands, and the places we live and work.

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 preventing loss of life.

Like a puzzle, a watershed is made up of many pieces.

Watershed management plans consider the many varying concerns of all stakeholders. The pieces are held by a variety of federal, state and local entities. Addressing these concerns takes time and effort, as the technical tools and issues must fit together. Puzzle pieces include ideas, issues and concepts:

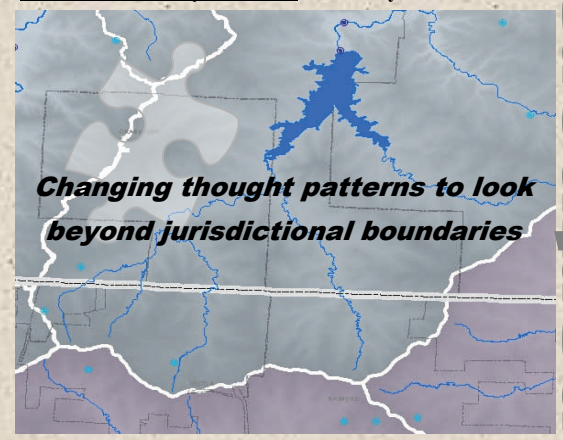
- Water **quantity**: including flood damages and loss of life due to flooding.
- Water **quality**: the environment is a piece, too.
- **Processes**: another puzzle piece, includes technical processes that identify and prioritize projects, and processes for making policies that guide the community to a common vision.
- **Partnerships**: a piece about leveraging funds, collaborating, and helping communities that face few or no staff resources to do more.

Watershed Planning

- Seeks sustainable water resources management
- Integrates water and related land management
- Considers future demands while integrating existing projects
- Coordinates planning and management
- Promotes cooperation among government agencies at all levels
- Encourages public participation
- Evaluates monetary and non-monetary trade offs
- Establishes interdisciplinary teams
- Applies adaptive management as changing conditions or objectives occur

What is being done to encourage watershed planning?

The U.S. Army Corps of Engineers supports improving collaboration, leveraging resources and capabilities, and using authorities of a wide range of stakeholders to address watershed problems and opportunities in a holistic manner. No single agency has all the puzzle pieces, although working together helps find the best solutions. Cost sharing incentives exist for watershed plans, where 75% of the cost may be federal but **locally** lead.



partnerships

Cost Effective Solutions for Urban Watersheds

Like watersheds covering many states, the smaller urban watersheds also face complicated problems. Multiple cities, private land, space constraints. In addition, planning for sustainable urban watersheds must look at and compare land management measures used upstream to the project features in stream corridors in downstream reaches. Multipurpose projects can benefit those living and working near these projects in the long-term, 50 to 100 years out. Consideration must also be given to effective redevelopment efforts, whether best management practices that may improve water quality upstream, or stream corridor rehabilitation downstream. A process must be coordinated that identifies the most effective features and activities. This includes ecosystem models that help show outputs from the measures proposed in the watershed.

SUSTAINABILITY