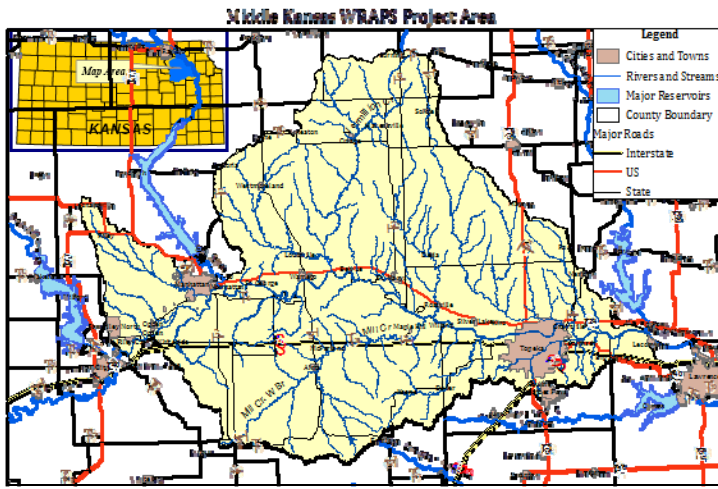




Middle Kansas WRAPS 9 Element Plan Overview

The overall goal of the Middle Kansas WRAPS 9 Element Plan is to provide a blueprint of protection and restoration strategies and activities to protect and restore surface waters in the Middle Kansas WRAPS Project Area.



The primary pollutant concern of this watershed's streams and rivers is bacteria, which is present in human and animal waste. Approximately 76% of the impaired stream/river segments within the Middle Kansas WRAPS are impaired by bacteria.

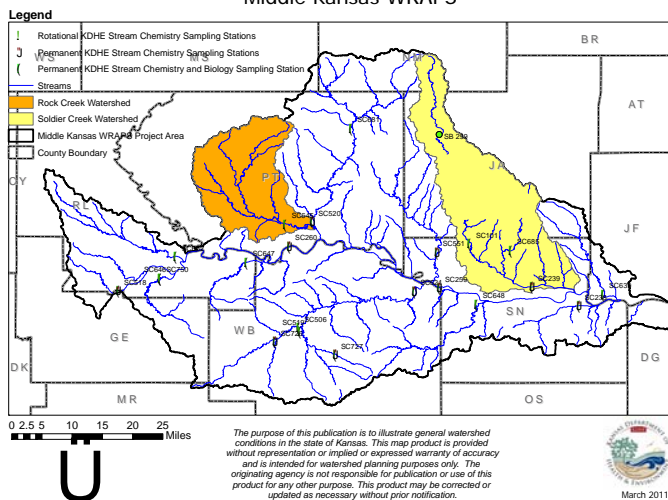
Bacteria are naturally occurring single celled microorganisms. There are numerous types of bacteria; some are good, while others are bad. Water supplies contaminated with manure contain *E-coli* and may have other disease-causing microorganisms such as *Cryptosporidium* and *Giardia*.

Stream TMDLs within Middle Kansas WRAPS Project Area		
Water Segment	TMDL Pollutant	Priority
Kansas River at Topeka	Ammonia	High
Kansas River at Topeka	Fecal Coliform Bacteria	Medium
Kansas River below Topeka	Biology	Medium
Kansas River below Topeka	Fecal Coliform Bacteria	Medium
Kansas River near Wamego	Fecal Coliform Bacteria	Medium
Mill Creek	Fecal Coliform Bacteria	High
Upper Soldier Creek	Biology Sediment	High
Rock Creek	E.coli bacteria	High
Vermillion Creek	Fecal Coliform Bacteria	High
Wildcat Creek	Fecal Coliform Bacteria	High
Wildcat Creek	Fecal Coliform Bacteria	High

Impairments to be Addressed

- Bacteria on Rock Creek
- Biology on Upper Soldier Creek

Current KDHE Monitoring Stations in Middle Kansas WRAPS



Priority Areas for Rock Creek

- The priority areas for the Rock Creek Watershed include Upper Rock Creek, and Middle Rock Creek, which are depicted as the orange-colored watershed on the adjacent map.

Priority Areas for Upper Soldier Creek

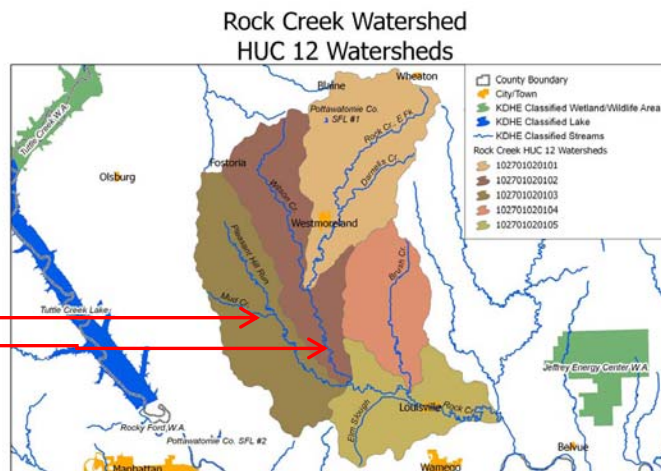
- The priority area for the Soldier Creek Watershed is depicted as the yellow-colored watershed on the adjacent map.

Best Management Practices and Load Reduction Goals

Best Management Practices (BMPs) to address bacteria, nutrients, and sediment in the watershed were chosen by the SLT based on local acceptance/adoption rate and amount of load reduction gained per dollar spent.

Bacteria /Phosphorus Reducing BMPs for the Rock Creek Watershed:

- Vegetative filter strip
- Relocate feeding sites
- Alternative (Off-Stream) watering system
- Relocate pasture feeding site
- Current Targeted HUC 12 Watersheds:
Middle Rock Creek Watershed →
- Upper Rock Creek Watershed →



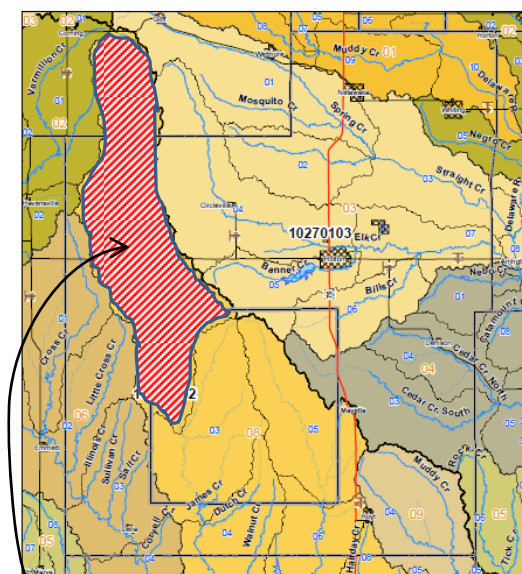
The purpose of this publication is to illustrate general watershed conditions in the state of Kansas. This map product is provided without representation or implied or expressed warranty of accuracy and is intended for watershed planning purposes only. The originating agency is not responsible for publication or use of this product for any other purpose. This product may be corrected or updated as necessary without prior notification.



There is no bacteria load reduction calculation at this time. The SLT decided to use phosphorous load reduction instead. The assumption is that if you are reducing phosphorous, lowered bacteria counts should be evident in water quality samples. The annual reduction goal for phosphorous is 3,827 lbs. and will be implemented over a ten year time frame.

Biology Reducing BMPs for Upper Soldier Creek:

- Vegetative buffer
- Grassed waterway
- No-Till
- Terraces
- Wetland creation
- Streambank stabilization
- Sediment basin



Soldier Creek Focus Area in Jackson County

The current estimated sediment load from nonpoint sources in the Middle Kansas Watershed is 27,900 tons per year according to the TMDL section of KDHE. **The total annual load reduction allocated to Middle Kansas Watershed needed to meet the sediment TMDL is 18,400 tons of sediment.** This is the amount of sediment that needs to be removed from the watershed and is the target of the BMP installations that will be placed in the watershed. These BMPs have been determined as feasible and approved by the SLT.

