

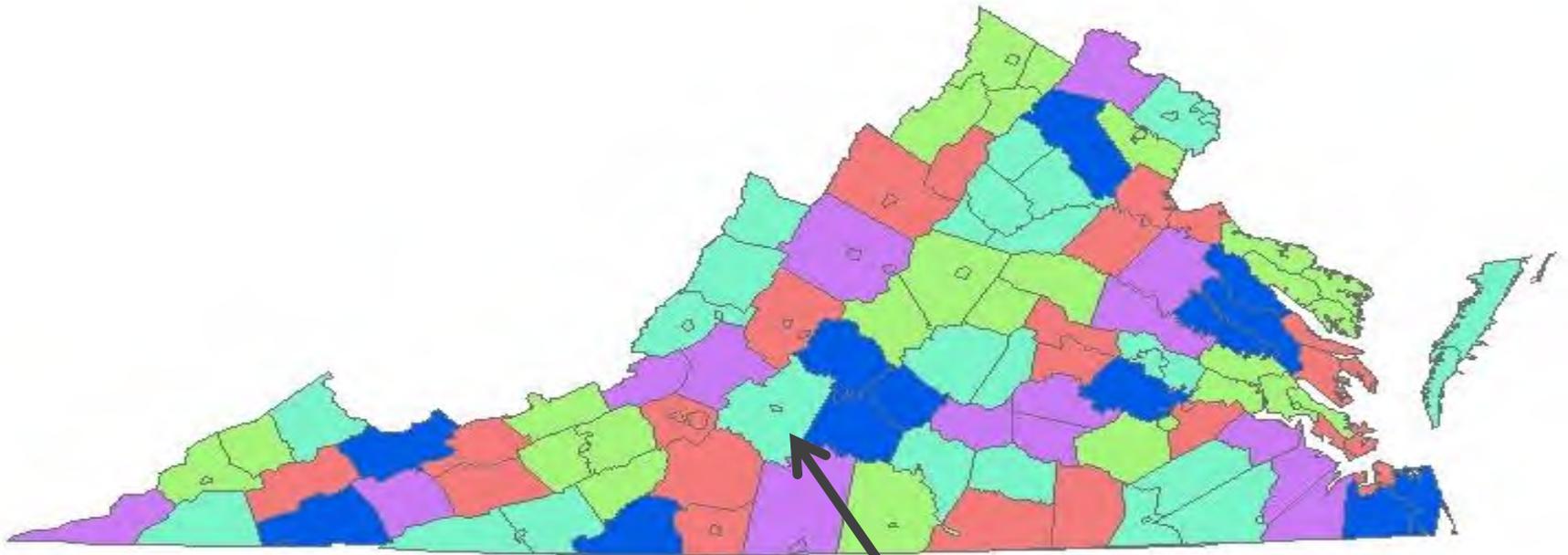


# Big Otter River TMDL Implementation Plan "Beginning to the End"

Peaks of Otter  
Soil & Water Conservation District

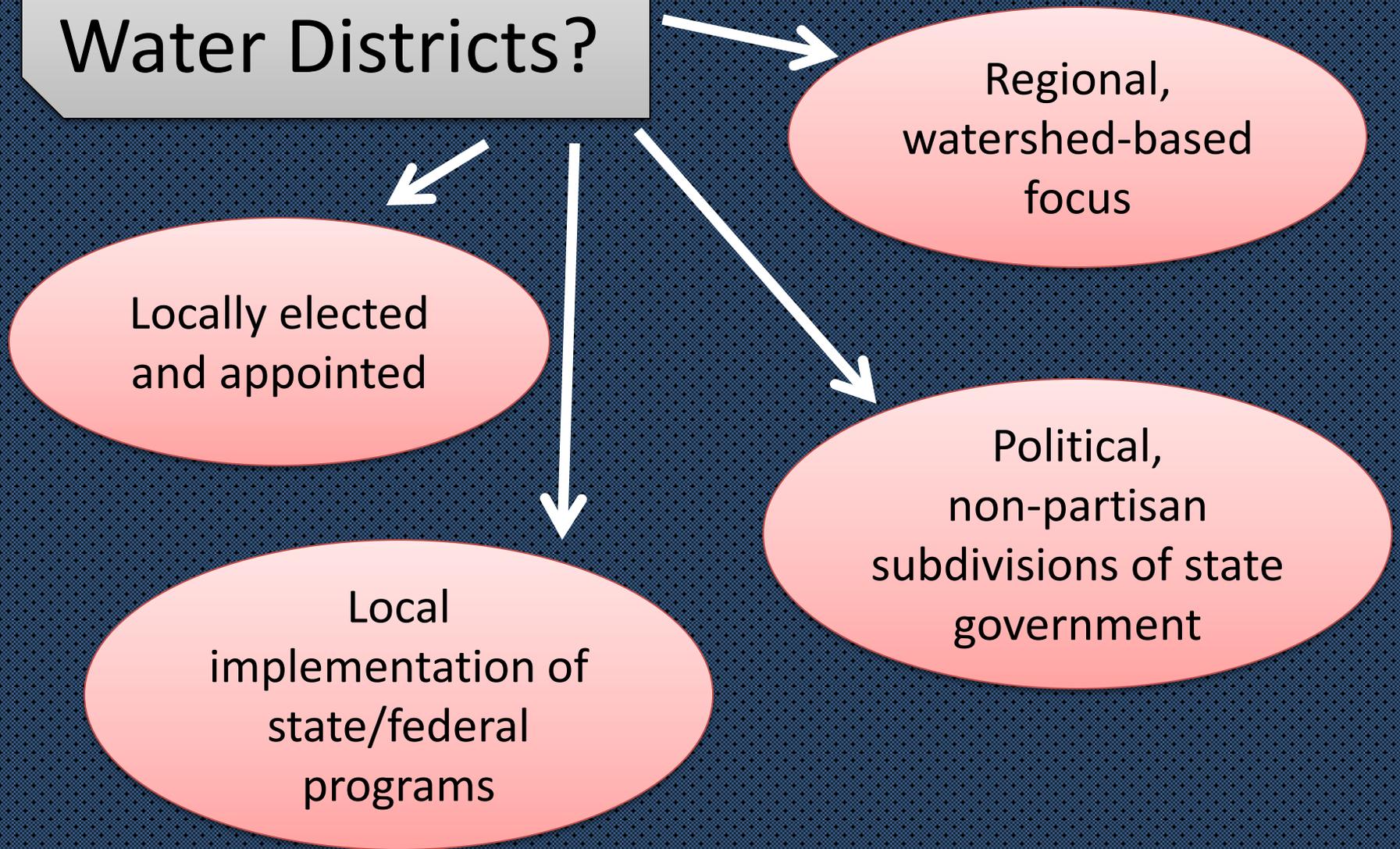
This project received funding from the Environmental Protection Agency's Section 319 Nonpoint Source Implementation Grant Program at the Virginia Department of Conservation and Recreation (DCR) via various grants over the period of September 2006 – January 2013

# Virginia's 47 Soil & Water Conservation Districts



Peaks of Otter SWCD

# What are Soil & Water Districts?



# District Directors Provide Leadership

- Elected from each locality served by the SWCD
  - ✓ Corey Crompton and Roger Bollinger from Bedford City
  - ✓ Richard Chaffin and Gary Reynolds from Bedford County
- Appointed by SWCD Board of Directors
  - ✓ Scott Baker, County Extension Agent
  - ✓ Tommy Watson
- Associates appointed by Board (no limit)
  - ✓ Homer Bauserman, Denzil Barker, John R. Dixon, Keith Tuck, and Todd Kready
- Committees – SWCD directors and staff

# The Peaks of Otter SWCD

## ~ Mission ~

To use available technical, financial and educational resources and coordinate them so that they meet the needs of the local citizens for conservation of soil, water, and related resources.

# Water Quality and TMDLs

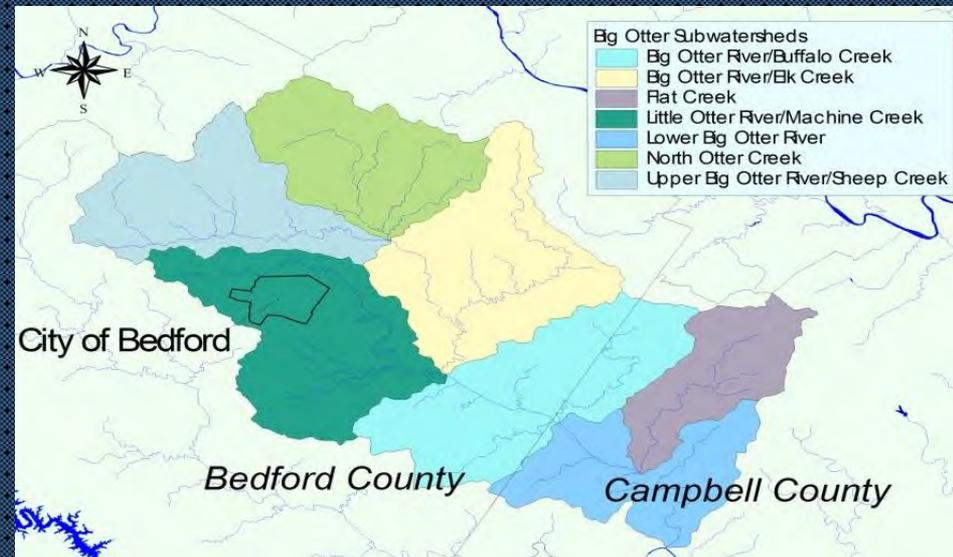
A Total Maximum Daily Load or TMDL describes the amount of pollution a stream can receive and still meet federal and state water quality standards. A TMDL Study identifies kinds and sources of pollution and a TMDL Implementation Plan maps out ways to restore water quality. The Big Otter Watershed is impaired due to fecal coliform bacteria and sediment.

# Big Otter Watershed and TMDL History

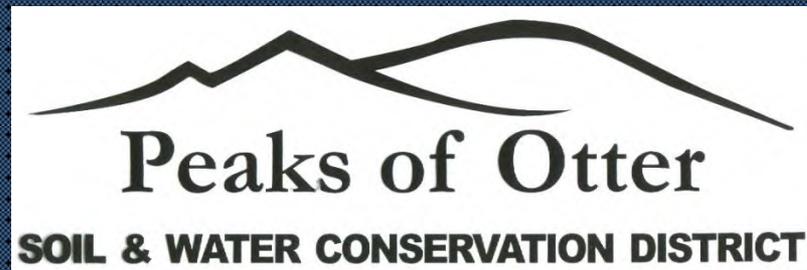
- Department of Environmental Quality
  - Performed TMDL Stream Study
  - Initiated watershed planning
  - Established restoration guidelines
- Department of Conservation & Recreation
  - Provides cost-share funds through grants
  - Manages Implementation Plan through SWCDs
  - Monitors progress of Best Management Practices

# Issue

- Department of Environmental Quality
  - Total Maximum Daily Load (TMDL)
  - Nature of Impairment – Fecal Coliform (Bacteria Loading)
  - Source
    - Waste from warm blooded animals
      - Domestic Animals
      - Wildlife
      - Human

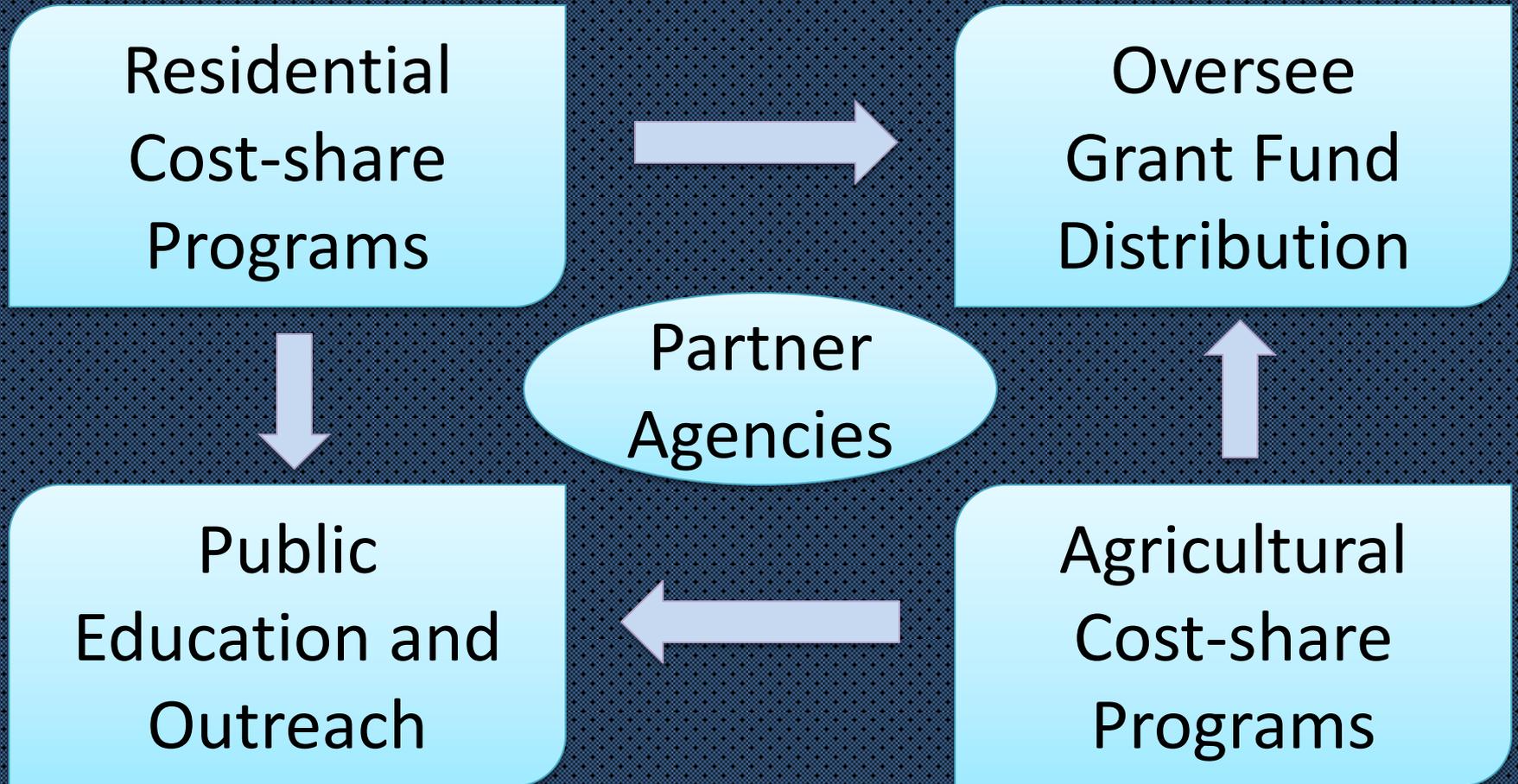


# Implementation Plan Overview



- Soil and Water Conservation Districts
  - Manage the Implementation Plan
    - Approve projects based on environmental impact
    - Oversee the grant fund distribution
  - Monitor the watershed
    - Perform spot checks of completed projects
    - Actively monitor the impacts of the BMPs installed through water monitoring

# SWCD Roles & TMDL Implementation Plan



# What an Implementation Plan Means



# Agricultural Program Overview

- Apply with the SWCD
- Site inspected by SWCD to better understand what the land owner wants to achieve and also determine what cost-share the landowner qualifies for.
- Cost-share calculation
  - Cost estimate
  - Eligibility forms
  - Engineering designs
- District Board approval
- Installation
- Sign offs and payout

# Before Project



# After Project



# Before Project



# After Project



# Before Project



# Before Project



# After Project



# After Project



# Before Project

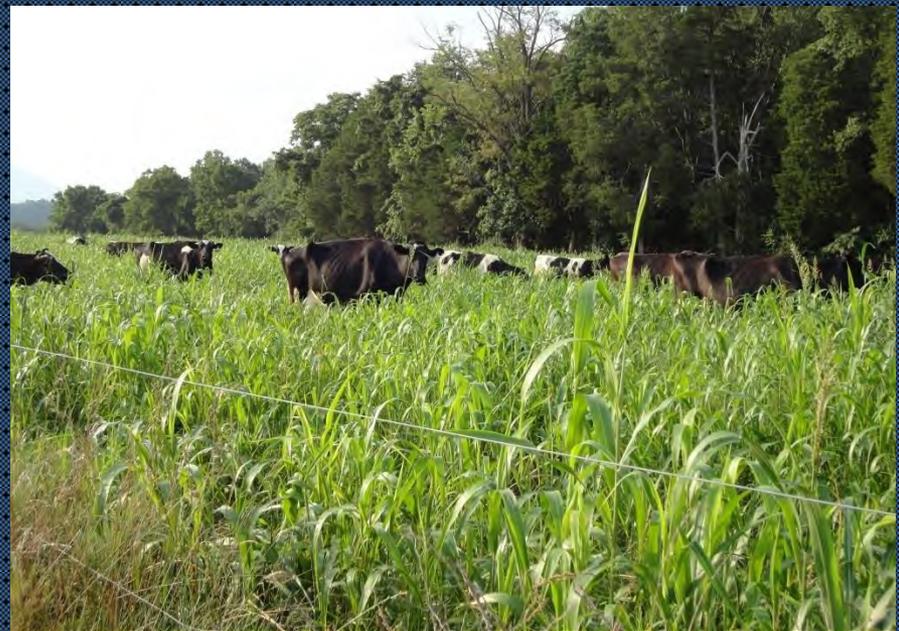


# Before Project



# After Project





## Installed Rotational Grazing Systems

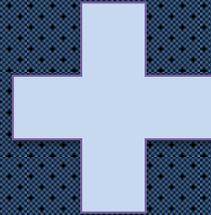


# Water System During Installation



# Agricultural Best Management Practices Benefits to Landowners

Improved surface and groundwater quality, improved wildlife habitat, and cleaner water for recreational uses



Improved farm productivity, reduced livestock health problems, and preservation of land productivity

# Residential Implementation Plan

- The Numbers

– Estimated unsewered homes	10,835
– Estimated failing septic systems	2,328
– Estimated straight pipes	25

- Cost-share practices

- Pump out of septic tank
- Connect to sewer system
- Repair or replace failing septic system
  - Standard gravity system
  - Alternative septic systems

# Program Overview

- Health Department key player
  - Permits
  - Inspections
- Apply with the SWCD
  - Family income documents
  - Contractor estimates
  - Health Dept. permit
- Cost-share calculation
  - Family income – sliding scale from 50% - 75%
- District Board approval
- Installation
- Sign offs and payout

# Outhouse Used by Residence With no Indoor Plumbing



# Completed RB-4P



# Completed RB-5 System



# RB-5 Re-Seeding



# The Numbers

(September 12, 2006-February 28, 2013)

## **Educational Activities:**

- 31 residential educational activities were conducted
- 28 agricultural educational activities were conducted
- Educational activities included workshops on rain barrels and septic systems, farm tours, presentations, direct mailings, newspaper advertisements, press releases, TMDL customer appreciation dinner, and radio advertising

# The Numbers

(September 12, 2006-February 28, 2013)

## **Agricultural TMDL :**

- 43 LE-1T
- 3 LE-2T
- 42 SL-6
- 5 SL-6T
- 1 SL-11
- \$1,697,123.90 cost
- \$1,282,394.63 cost-share
- 43.39 mi. of stream bank protected from 3,476 livestock

## **Residential TMDL :**

- 27 RB-1
- 7 RB-2
- 27 RB-3
- 74 RB-4
- 16 RB-4P
- 7 RB-5
- \$874,902.12 cost
- \$470,335.74 cost-share

# Major Accomplishments

(includes TMDL, State, and federal programs)

- Goal of 88.6 miles stream protection after year 5  
Actual – 89.4 miles stream protection after 6+ years
- Goal of 6,036 animals excluded after year 5  
Actual – 6,297 animals excluded after 6+ years
- Estimated \$622,900 for 136 septic systems after year 5  
Actual \$1.02 million for 147 septic systems

# Conclusion

- We are seeing water quality improvement as a result of the Soil and Water Conservation District's efforts and willingness of property owners to participate. We will continue our work with other grant funding options to be a positive contributor to the overall health of Virginia's watersheds.

# Happy Ending

