

# An Alternative Approach to a Traditional Total Maximum Daily Load (TMDL)

Leveraging local efforts to address water quality  
impairments

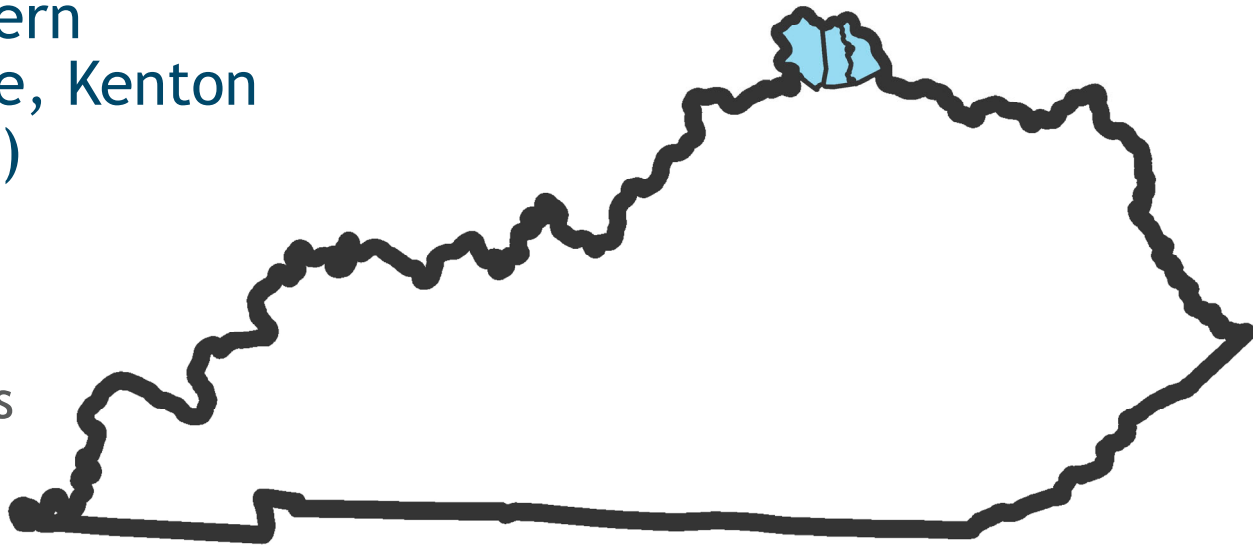
Brooke Shireman, SD1

2023

  
**INDIANAPOLIS**  
FIVE CITIES PLUS

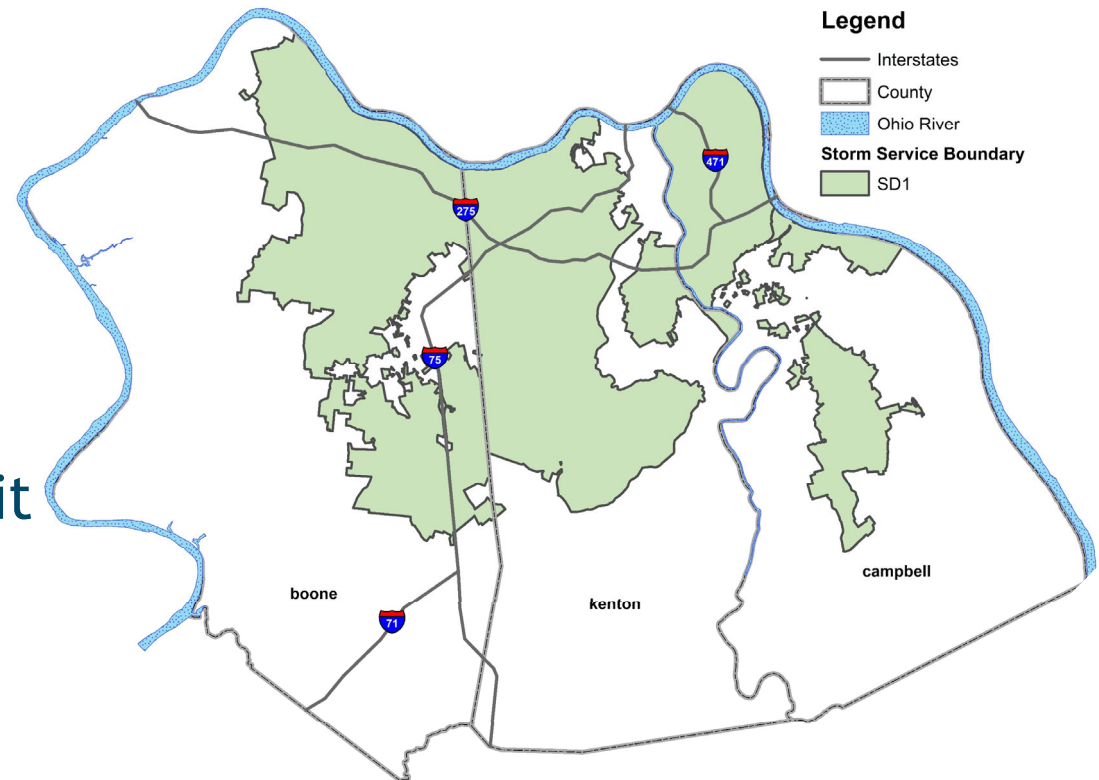
# Sanitation District No.1 of Northern Kentucky (SD1)

- Regional Wastewater and Storm Water Utility for Northern Kentucky Region (Boone, Kenton and Campbell Counties)
- Wastewater
  - Over 340,000 customers
- Storm Water
  - Over 270,000 customers



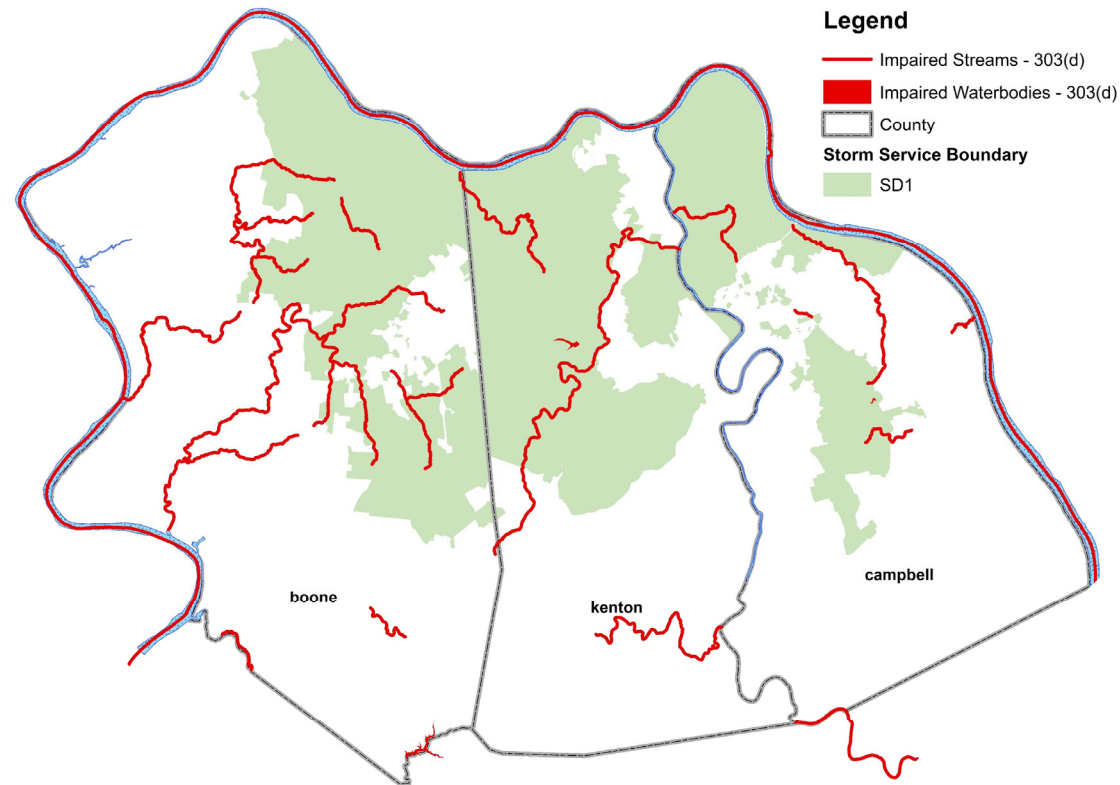
# SD1 Storm Water Service Area

- Operates, Maintains and Improves Public MS4
  - ~440 Miles of pipe
  - ~33,000 structures
- Oversees MS4 Phase II Permit Compliance
  - 28 co-permittee cities
  - Designated MS4 area of unincorporated counties



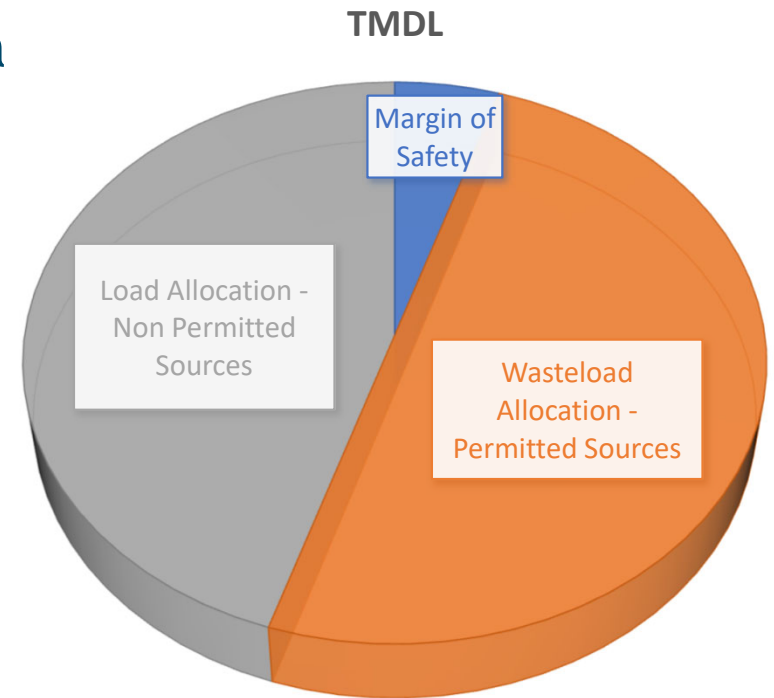
# 303(d) Listed Impaired Waters

- Multiple stream segments listed as impaired within the SD1 service area
- Impaired for:
  - Warm water aquatic habitat (WAH)
  - Primary contact recreation (PCR)



# Proposed TMDL Development

- Total Maximum Daily Loads (TMDLs) are a requirement of the Clean Water Act.
- States must identify waters that are impaired and develop a TMDL for those impairments.
- A TMDL Report is a water quality restoration plan that describes how pollutant loads can be reduced to meet water quality standards.





# Is there a different option?

## TMDL Alternative (5-Alt Plan)

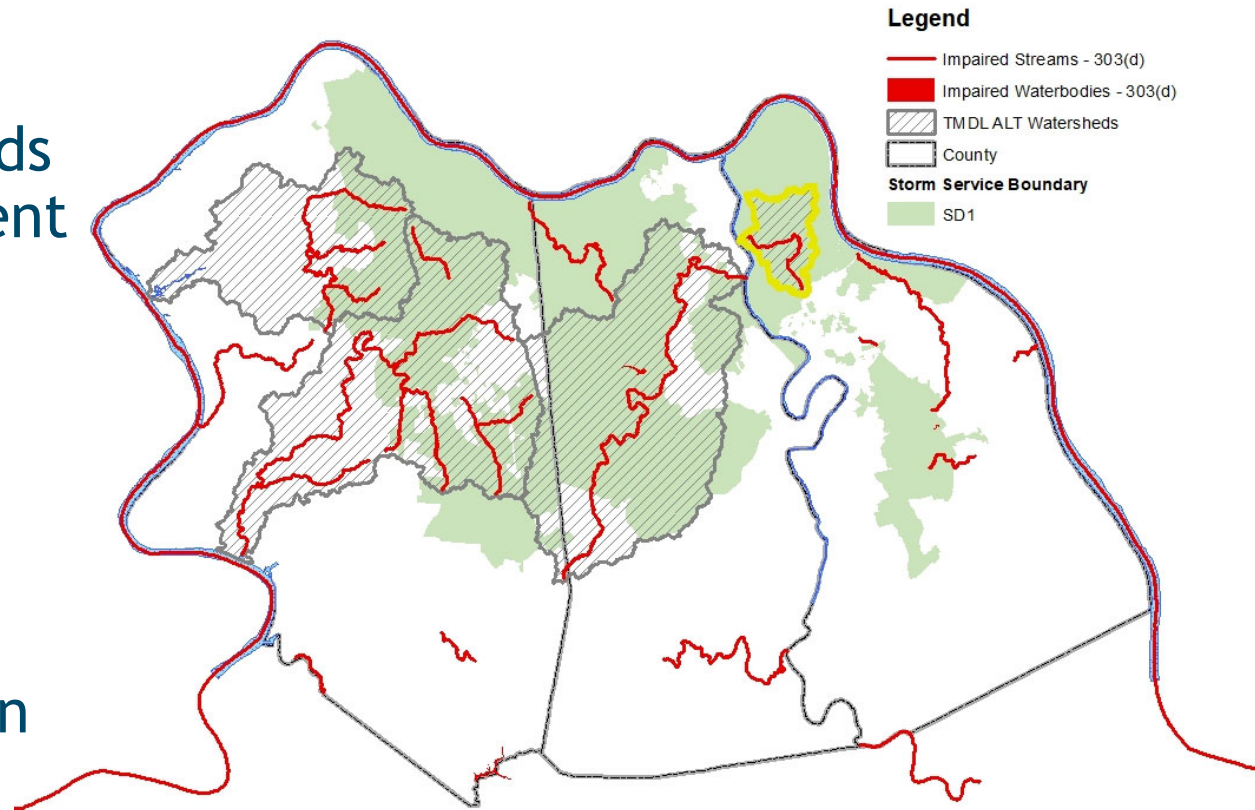
- Emerging tool
- Near-term plan with a schedule and milestones more immediately beneficial or practicable to achieving WQS than a TMDL
- EPA accepts the plan
- On Kentucky's 303(d) list (with low priority for TMDL)

## Category 4b Plan

- Long-standing tool
- Impaired waters with other pollution control requirements stringent enough to achieve WQS within a reasonable period of time
- EPA approves the plans
- Delisted from Kentucky's 303(d) list (no TMDL required)

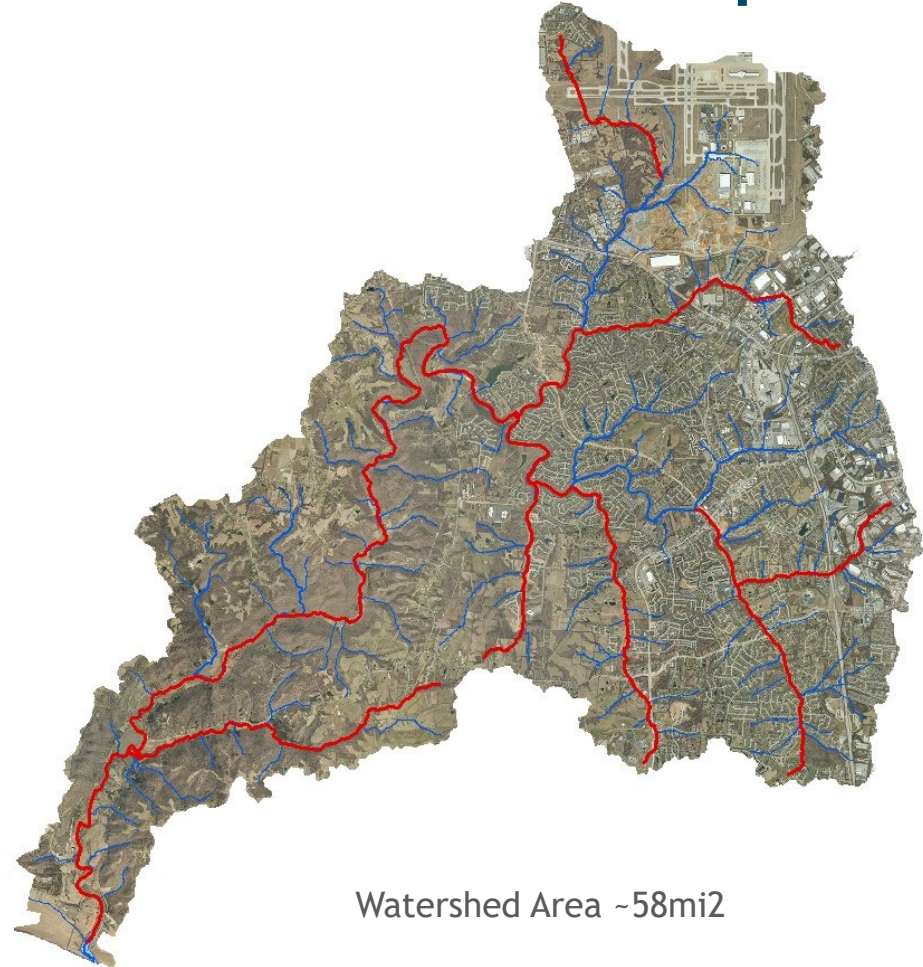
# TMDL Alternatives

- Selected four watersheds for TMDL Alt development
  - Woolper Creek
  - Gunpowder Creek
  - Banklick Creek
  - Threemile Creek
- Areas have ongoing and planned implementation to address impairments



# Gunpowder Creek - TMDL Alt Development

- Boone County Conservation District and SD1 developed TMDL Alt Plan (2017)
  - Existing 319(h) funded watershed plan (2009)
  - Existing Watershed Characterization Report (2009)
  - Developed a supplement to address the PCR impairment
  - Included data analysis since the watershed plan
- Kentucky Division of Water approval and EPA R4 acceptance of the plan as a TMDL Alternative - Feb 2018
- TMDL Alternative covers both PCR and WAH 303(d) listed segments

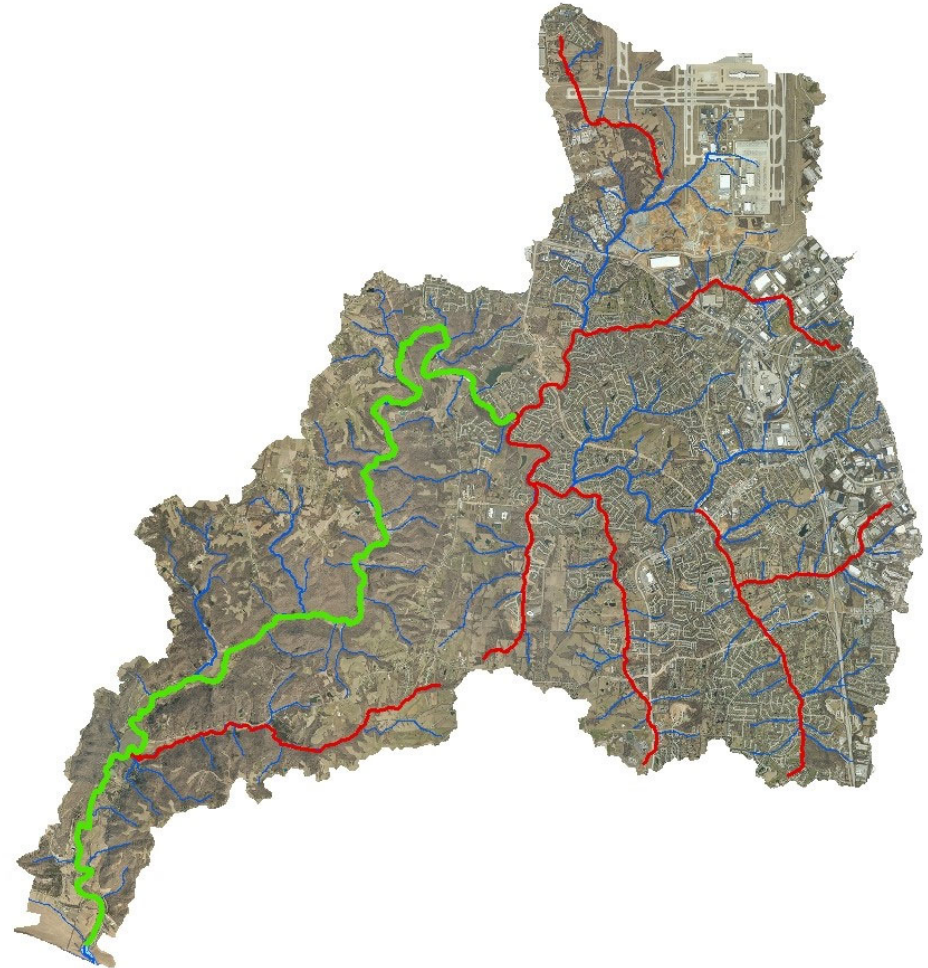


Watershed Area ~58mi<sup>2</sup>



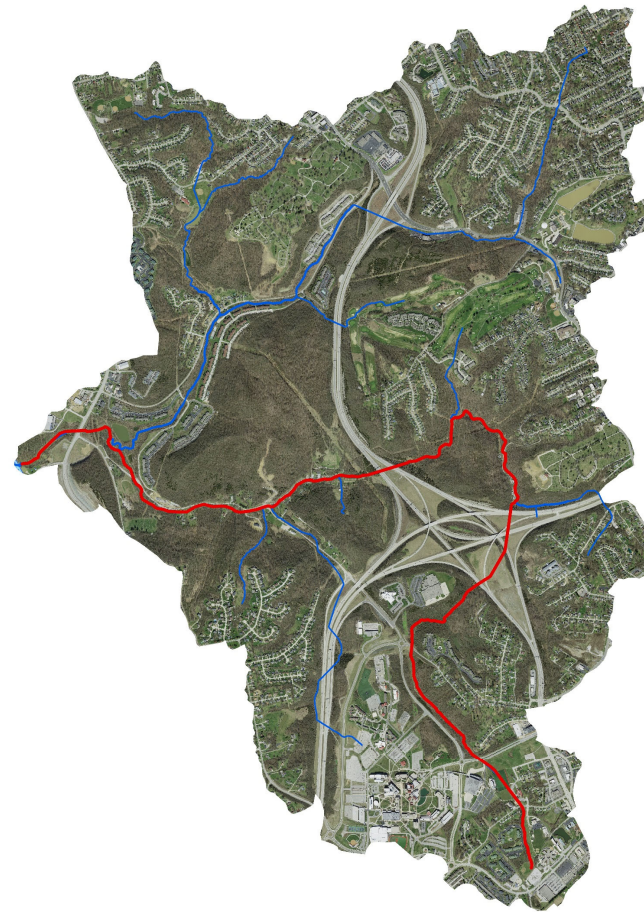
# Gunpowder Creek - Implementation

- **Sanitary Improvements**
  - Clean H2O40
  - Removal of failing septic tanks
  - Ongoing O&M improvements
- **Storm Water Improvements**
  - Detention basin retrofits
  - MS4 permit implementation
- **Additional Boone County Conservation District Efforts**
  - Land acquisition and stream restoration
  - NRCS/ State cost-share agriculture projects
  - Education and outreach
- **2018/2020 Segment Delisting**
  - Fully Supports Warm Water Aquatic Habitat (WAH)



# Threemile Creek - TMDL Alt Development

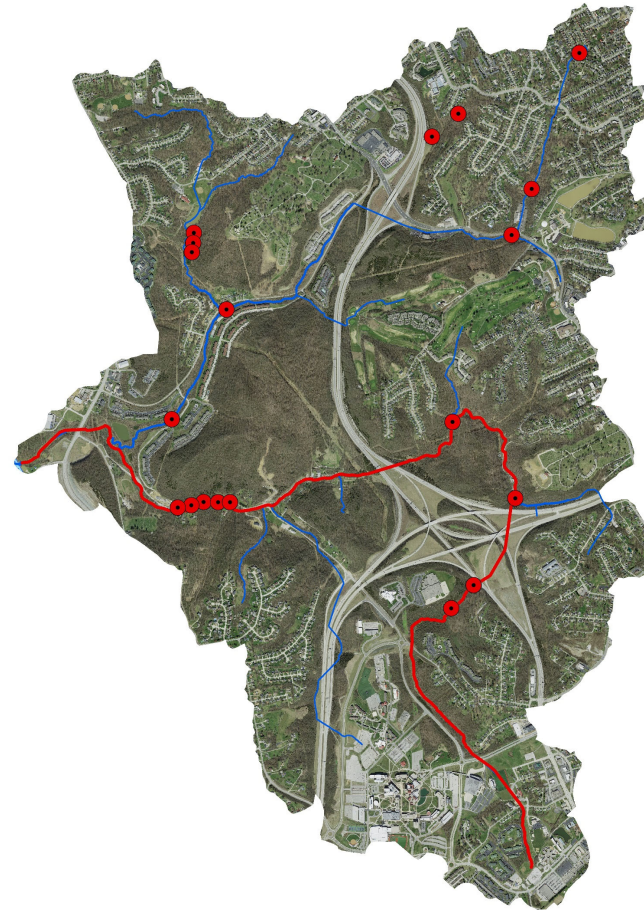
- SD1 developed a Primary Contract Recreation TMDL Alternative Plan (2020)
  - Existing Watershed Characterization Report (2009)
  - Used the Updated Watershed Plan and Clean H2O40 projects for the Consent Decree
  - Included updated data analysis
- Kentucky Division of Water approval and EPA R4 acceptance of the plans as a TMDL Alternative - Dec 2022
- TMDL Alternative currently covers PCR listed segments with plans to expand for the WAH segments in the future



Watershed Area ~6mi<sup>2</sup>

# Threemile Creek - Implementation

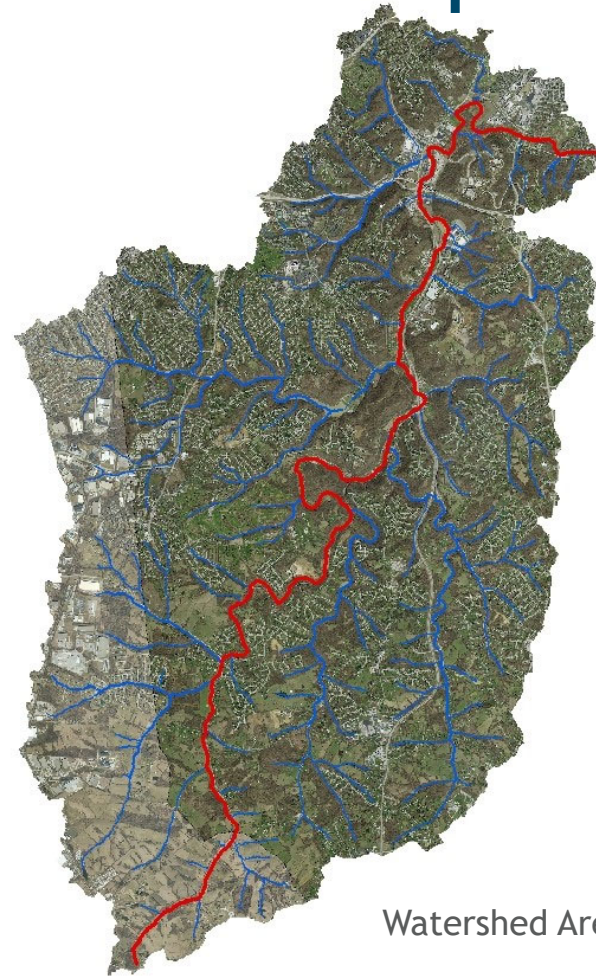
- Sanitary Improvements
  - Clean H2O40 - Eliminate 22 SSOs
  - Ongoing O&M improvements
- Storm Water Improvements
  - MS4 permit implementation
- Additional Efforts
  - Education and outreach





# Banklick Creek - TMDL Alt Development

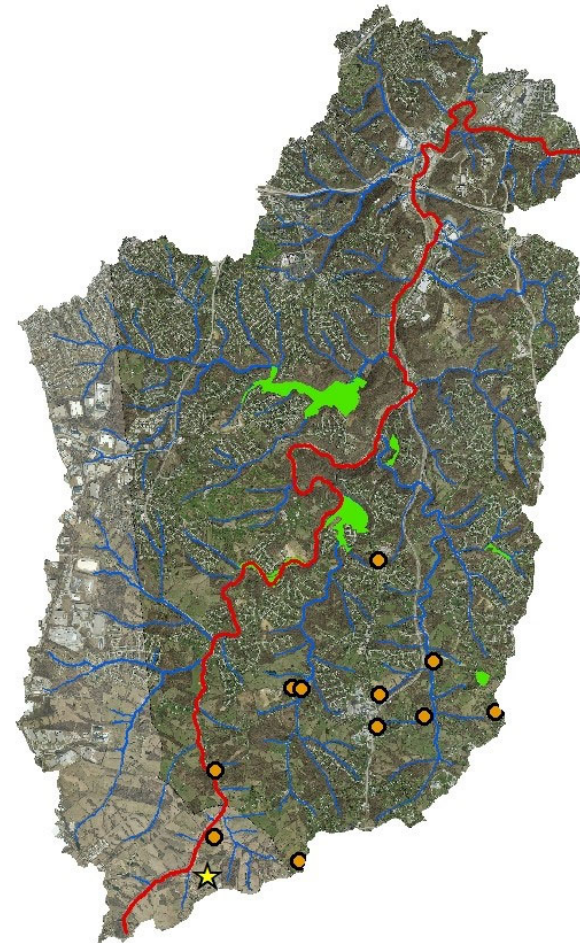
- Banklick Watershed Council and SD1 developed TMDL Alt Plan (2022)
  - 319(h) funded watershed plan (2009), Watershed Characterization Report (2009), Updated Watershed Plan and Clean H2O40 projects for the Consent Decree
  - Developed a PCR supplement, including updated data analysis
- Kentucky Division of Water reviewed first draft - April 2023
- Currently updating WAT model and will resubmit to KDOW in Fall 2023
- TMDL Alternative covers PCR 303(d) listed segments with plans to expand for the WAH segments in the future



Watershed Area ~58mi<sup>2</sup>

# Banklick Creek - Implementation

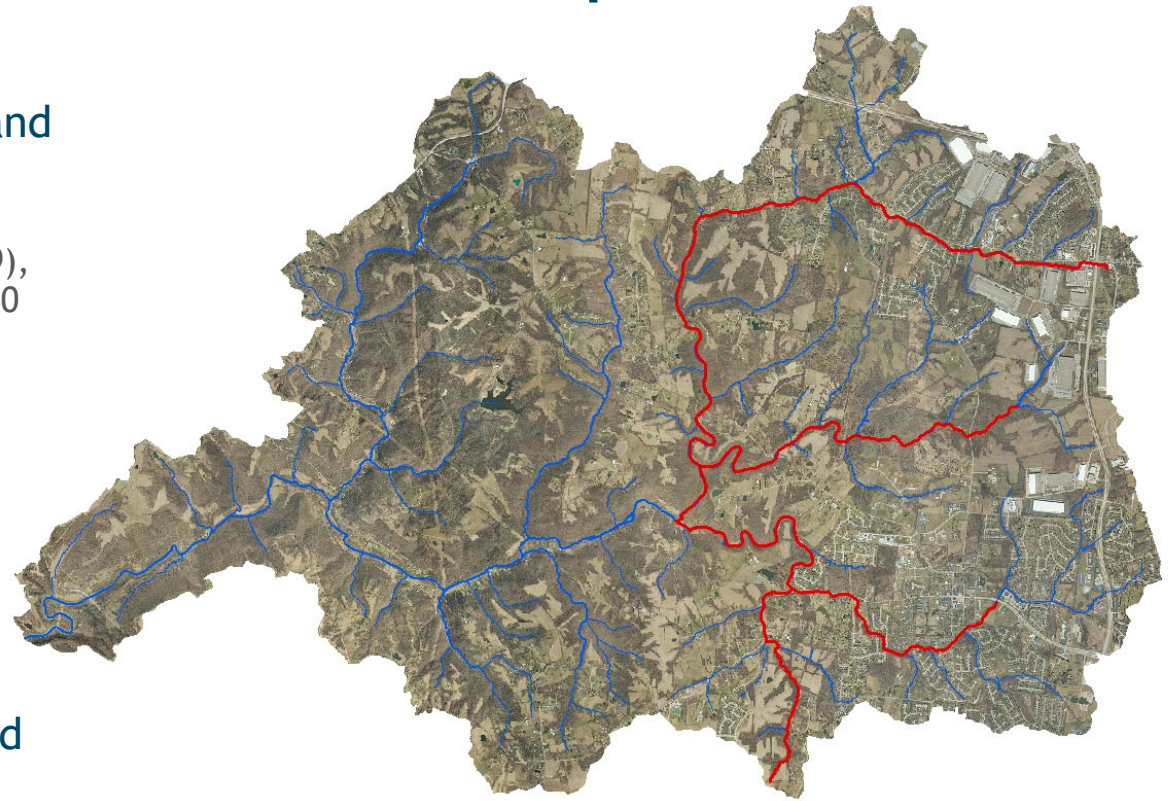
- **Sanitary Improvements**
  - Clean H2O40 - 3 CSOs and over 100 SSOs
  - Planned removal of failing septic tanks
  - Ongoing O&M improvements
- **Storm Water Improvements**
  - MS4 permit implementation
  - Detention basin retrofits
- **Additional Banklick Creek Watershed Council Efforts**
  - Land acquisition, green infrastructure and reforestation/riparian restoration
  - State cost-share agriculture projects
  - Septic cleanouts
  - Education and outreach





# Woolper Creek - TMDL Alt Development

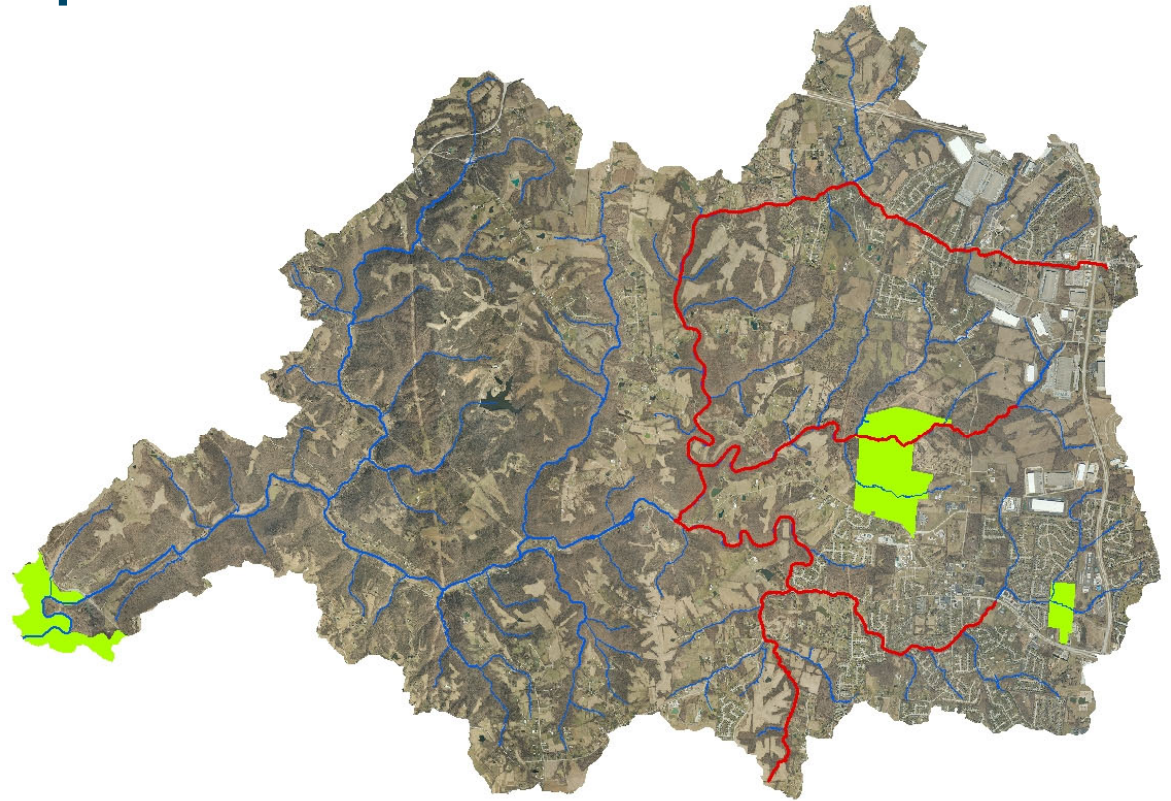
- Boone County Conservation District and SD1 developed TMDL Alt Plan (2022)
  - 319(h) funded watershed plan (2016), Watershed Characterization Report (2009), Updated Watershed Plan and Clean H2O40 projects for the Consent Decree
  - Developed a PCR supplement, including updated data analysis
- Submitted to Kentucky Division of Water - Dec 2022
- TMDL Alternative covers both PCR and WAH 303(d) listed segments



Watershed Area ~33mi<sup>2</sup>

# Woolper Creek - Implementation

- **Sanitary Improvements**
  - Clean H2O40
  - Ongoing O&M improvements
- **Storm Water Improvements**
  - Detention basin retrofits
  - MS4 permit implementation
- **Additional Boone County Conservation District Efforts**
  - Land acquisition and stream restoration
  - NRCS/ State cost-share agriculture projects
  - Education and outreach



# Next Steps

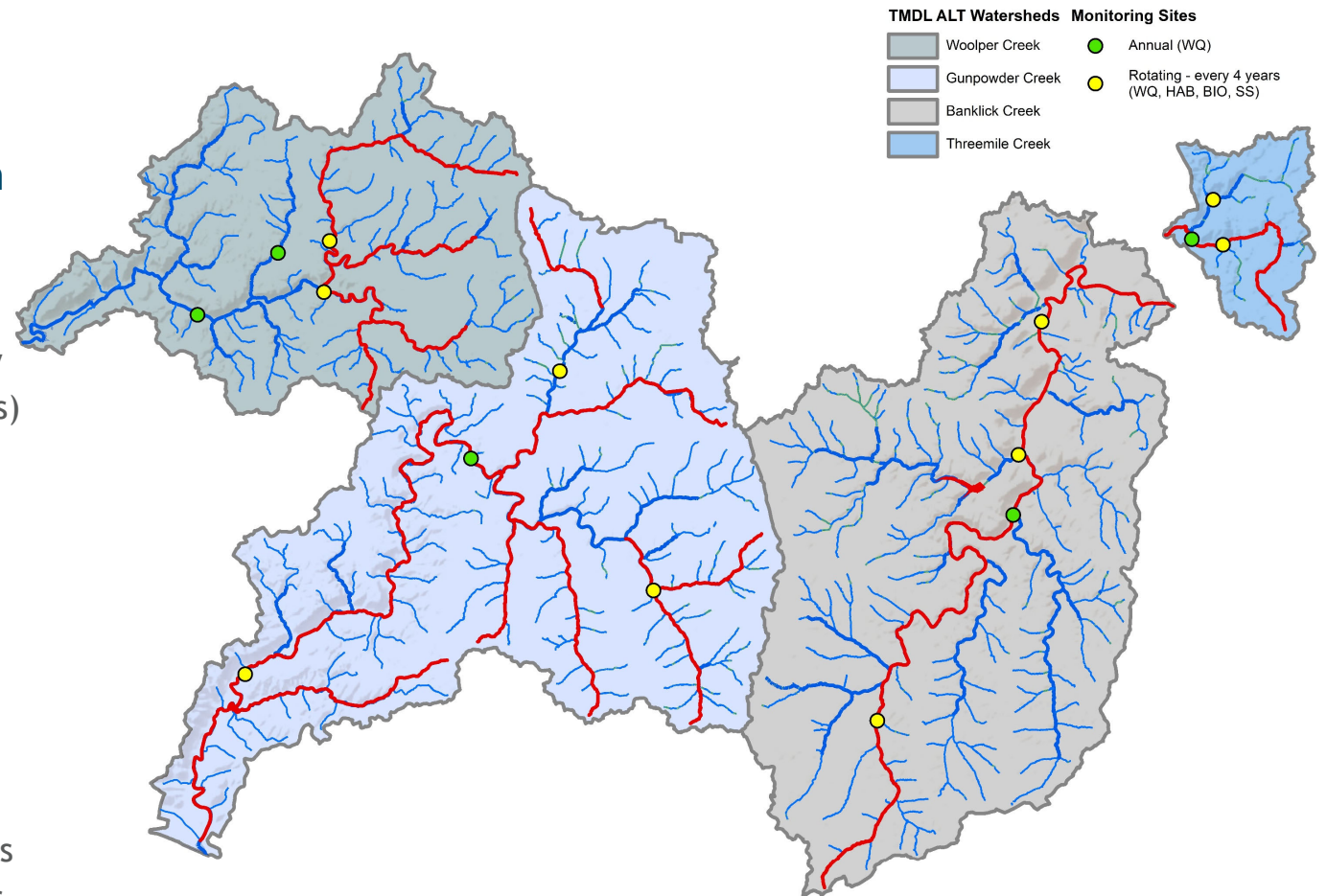
- Continued Implementation

- Monitoring

- Annual Sites - Water Quality
- Rotating Sites (every 4 years)
  - Water Quality
  - Biology
  - Habitat
  - Stream Stability

- Reporting

- Every 2 years
- Build on existing efforts
  - MS4 Annual Report
  - Consent Decree Reports
  - Watershed Assessments



# Questions?

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