

Proposed Mill Creek Wetland and Stream Restoration Project



Proposed Project Overview
November 18, 2021



**LOUISVILLE
PARKS
AND RECREATION**





Outline

Partner Introductions/
Background

Bennett Knox
Louisville Parks and
Recreation

Kentucky Stream & Wetland
Restoration Program Overview

Rob Lewis, PE
Kentucky Department of
Fish and Wildlife Resources

Proposed Mill Creek Wetland
and Stream Restoration Project

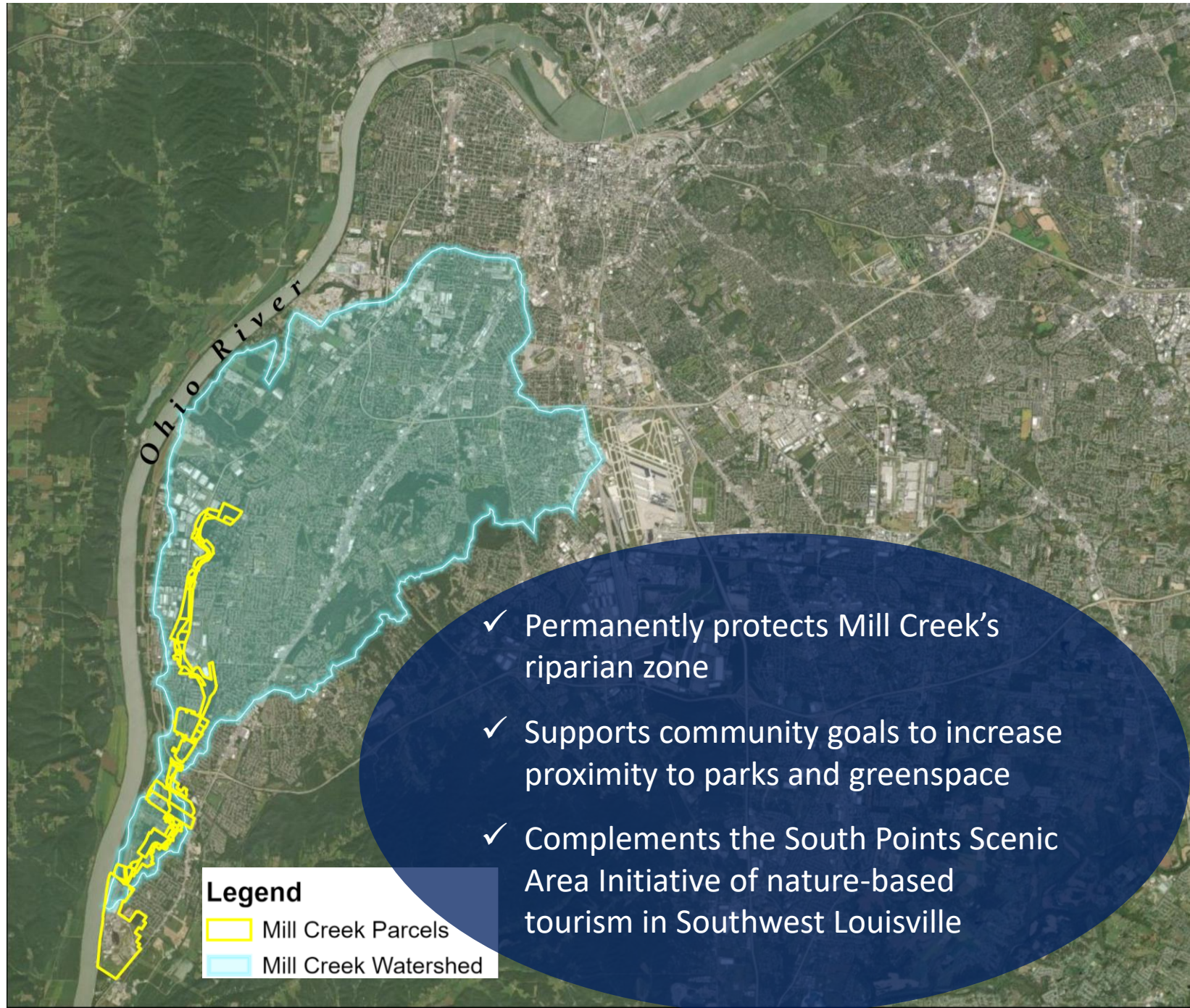
Bob Hawley, PhD, PE
Sustainable Streams LLC





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Mill Creek Project Partners



Legend

-  Mill Creek Parcels
-  Mill Creek Watershed

- ✓ Permanently protects Mill Creek's riparian zone
- ✓ Supports community goals to increase proximity to parks and greenspace
- ✓ Complements the South Points Scenic Area Initiative of nature-based tourism in Southwest Louisville

Kentucky Stream and Wetland Restoration Program

(Fees-In-Lieu-Of Mitigation or FILO)

Overview



FILO Main Points

The Corps of Engineers requires land developers to mitigate for losses of stream and wetland habitat. Developers can buy mitigation credits from FILO.

The FILO program restores, enhances, and/or preserves aquatic habitat in streams and wetlands.

- ◆ Established in 2002
- ◆ 100% self funded
- ◆ Uses no license dollars or state tax dollars
- ◆ Corps of Engineers has authority over the program and use of its funding (Federal Clean Water Act and KRS 150.255)



How FILO Works

DEVELOPMENT
CAUSE LOSSES OF
STREAMS

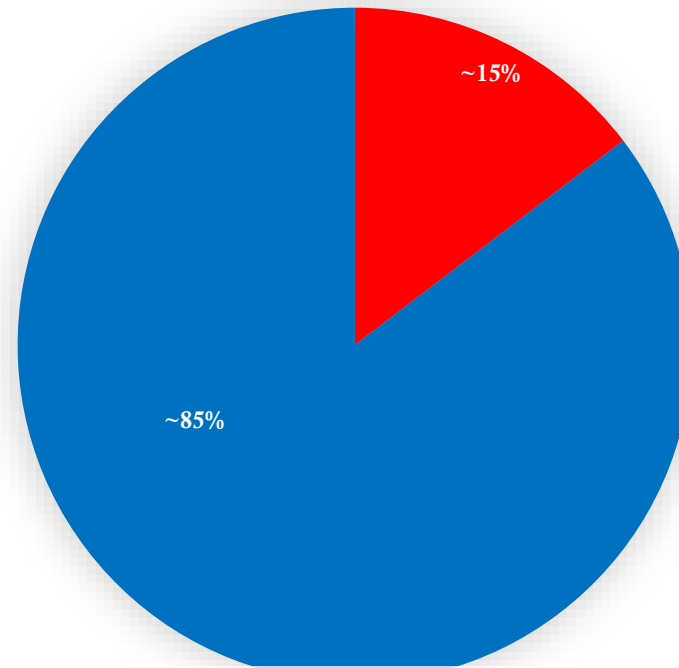


FILO FUNDS MITIGATION
PROJECTS TO COMPENSATE
FOR LOSSES



The FILO capital budget for projects is a pre-approved “pool” in the state budget, FY22 is \$65M.

FILO Fund Balance \$158M



- Unallocated Project Funds
- Allocated Project Funds





Kentucky Wetland and Stream Mitigation Program Staff and Service Areas

- Program Coordination/Engineering and Design
Rob Lewis (502-564-5277)
- Monitoring and Compliance
Bethany Mulhall (502-564-5237)
Jessica East (502-564-1638)
- Potential Site Investigation and Early Project Development
Tom Van Arsdall (502-564-5251)
Kristy Stroud (502-782-5839)
Jason Curry (502-892-4408)
- Habitat Improvement and Project Maintenance
Tom Burberry (502-564-5205)
Mitchell Boles (502-564-5160)
- Internal Policy Analyst
Clifford Scott (502-564-5101)
- Contracts and Construction
Jessie Boles (502-564-5262)

● Northern Kentucky Area

● Lower Kentucky River Service Area

● Lower Licking River Service Area

● Upper Licking River Service Area

● Big Sandy River Service Area

● Salt River Service Area

● Green River Service Area

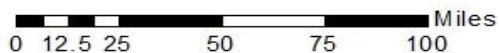
● Upper Kentucky River Service Area

● Purchase Service Area

● Lower Cumberland River Service Area

● Upper Cumberland River Service Area

STREAM TEAM



Feb 2020



What is the Commission's role in FILO?

- ◆ The Commission must approve land acquisition for the Dept.
- ◆ Land or easement acquisition is a federal regulatory requirement.
- ◆ The Commission has provided blanket approval for FILO projects with easements.
- ◆ The Commission approves fee simple acquisitions individually in executive session.



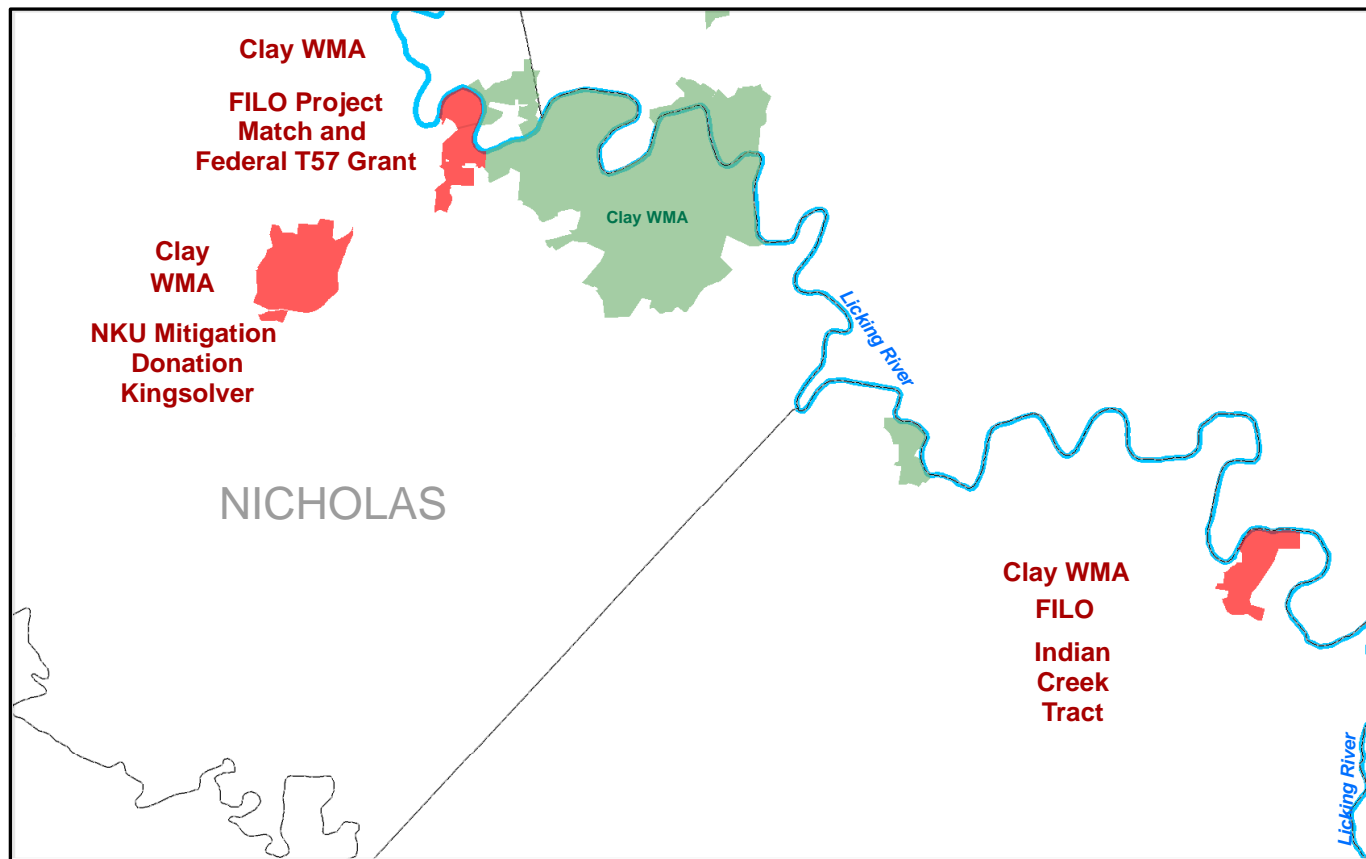
What are the benefits of FILO?

- ◆ The program is beneficial for development, conservation, and regulatory interests
 - ◆ Developers get quicker regulatory approval and are relieved of complex permit compliance
 - ◆ The Dept. uses the funds for stream and wetland habitat projects at no cost to license holders
 - ◆ Regulatory agencies gain assurances
- ◆ Projects address erosion and siltation, leading causes of impairment to KY waters
- ◆ Streams and wetlands restored at no cost to landowners or hunting/fishing license holders
- ◆ FILO properties opened as WMA's: 11,000 ac acquired, 6,800 ac are open as WMA's
- ◆ FILO can be used as matching dollars, leveraging federal grants for other Dept. projects
- ◆ FILO projects create jobs, re-investing dollars into Kentucky's companies and economy



FILO Funded WMA's and Additions

Example:
FILO
Additions
at Clay
WMA



Selected Project Photos

Below: Stream with degraded habitat, severe erosion causing downstream pollution.



Below: Stable stream with high habitat value and no erosion after restoration.



FILO Salt Lick Creek Project, Bath County



Eroding banks (above); stable stream banks and in-stream habitat restored by the FILO program (right)





FILO Big Farm Project, Clay WMA-Indian Ck tract:

Photos of restored Indian Creek (above) and tributary (left).



FILO Hatchery Creek Project Photos





FILO projects put engineering and construction companies to work

Numerous private companies, workers and equipment employed at a restoration site in Owen County

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Sustainable Streams, LLC
Kentucky Department of Fish & Wildlife Resources
Kentucky Finance Cabinet



Mill Creek Project Partners



*Existing channelized Mill Creek
at Greenwood Rd.*

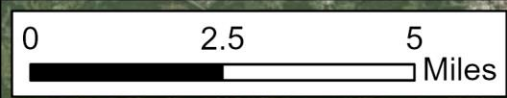
Alternative Vision:

1,000-acre park

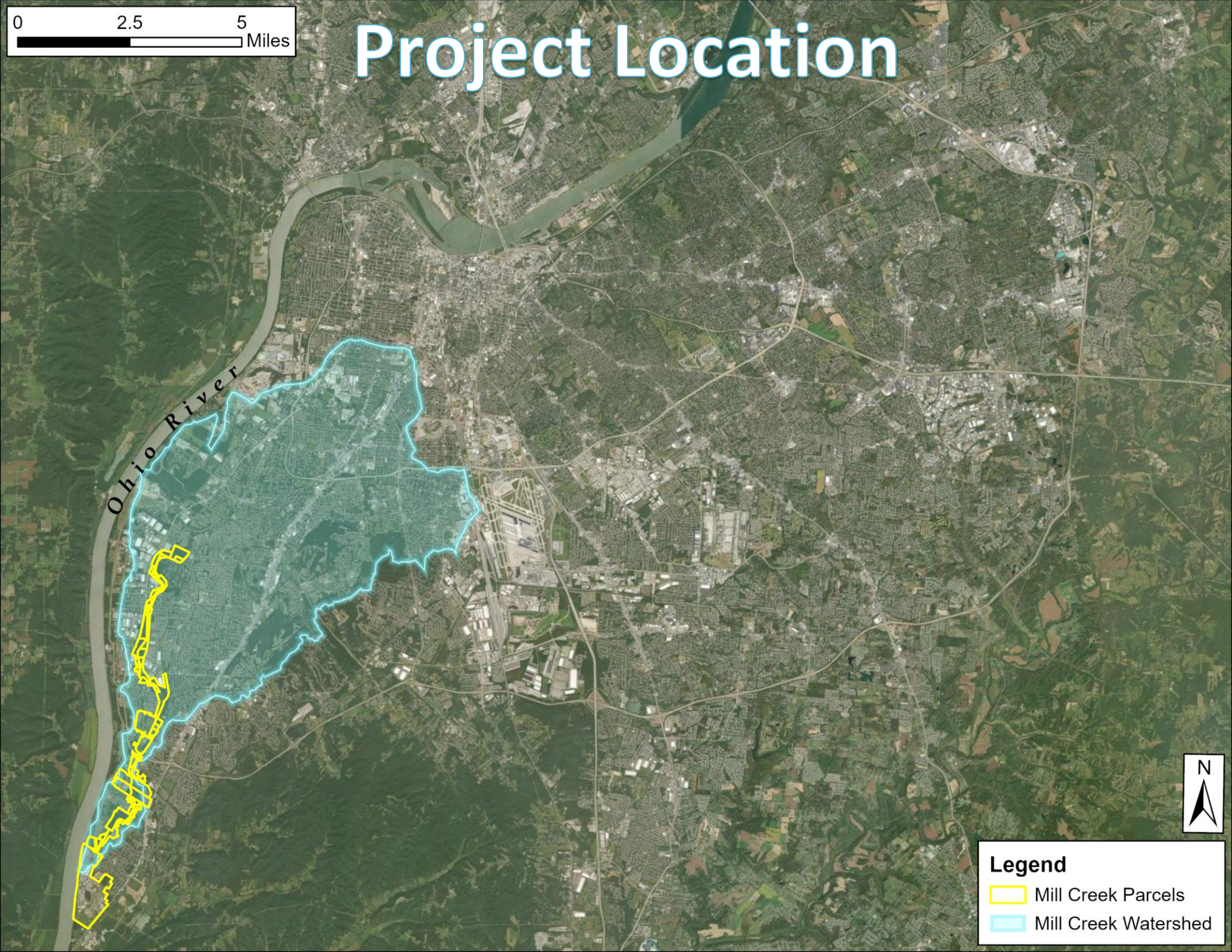
***along ~8 miles of the
Mill Creek corridor***



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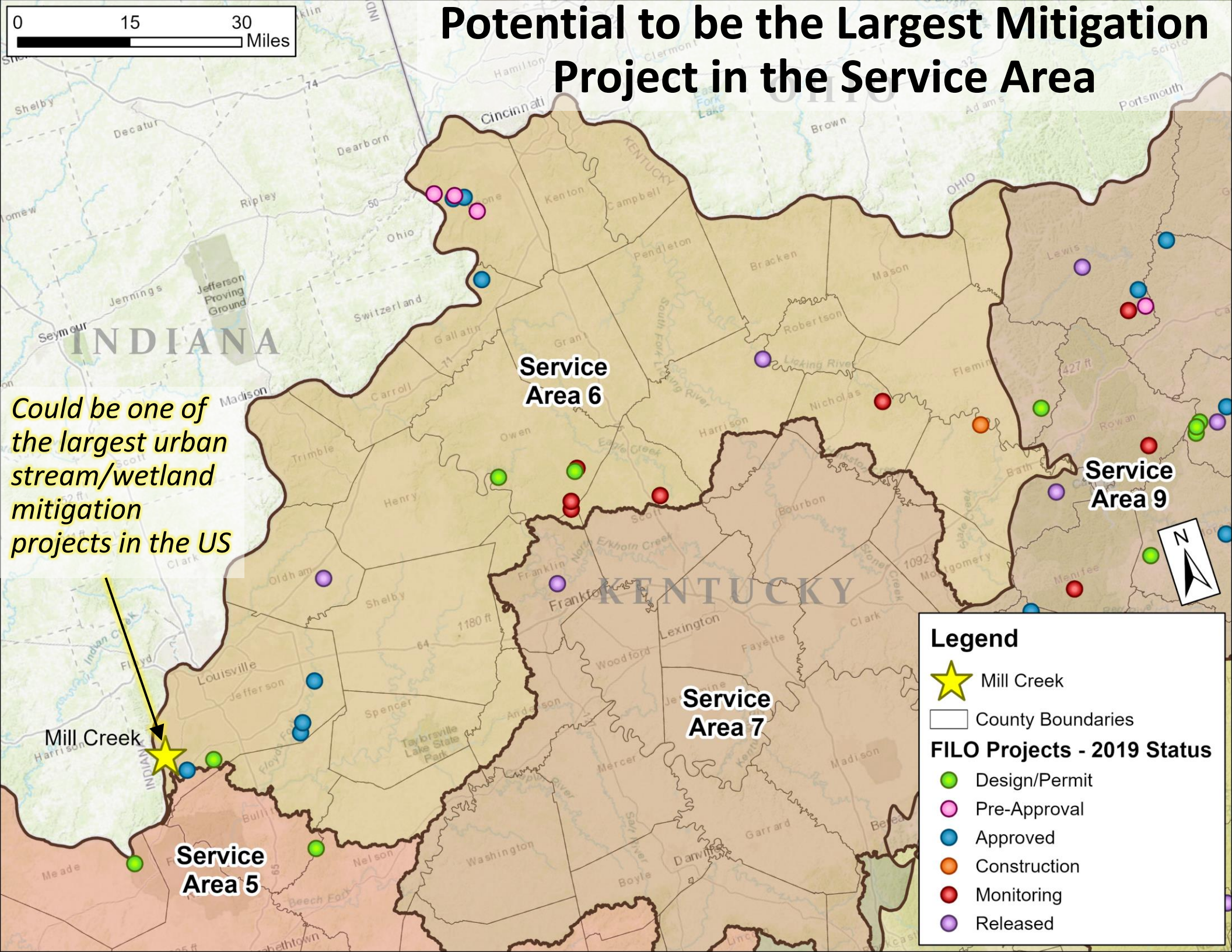
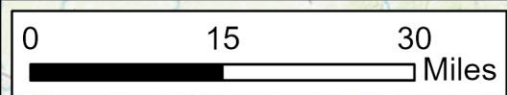
Project Location



Legend

- Mill Creek Parcels
- Mill Creek Watershed

Potential to be the Largest Mitigation Project in the Service Area



Could be one of the largest urban stream/wetland mitigation projects in the US

Mill Creek

Service Area 5

Service Area 6

Service Area 7

Service Area 9

Legend

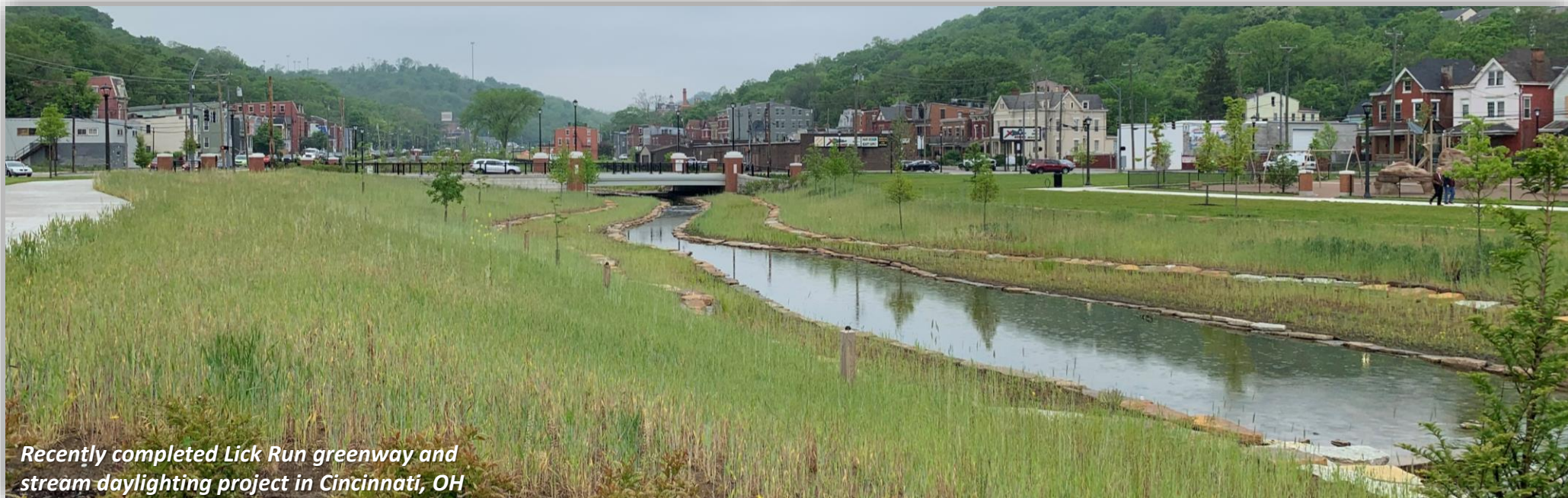
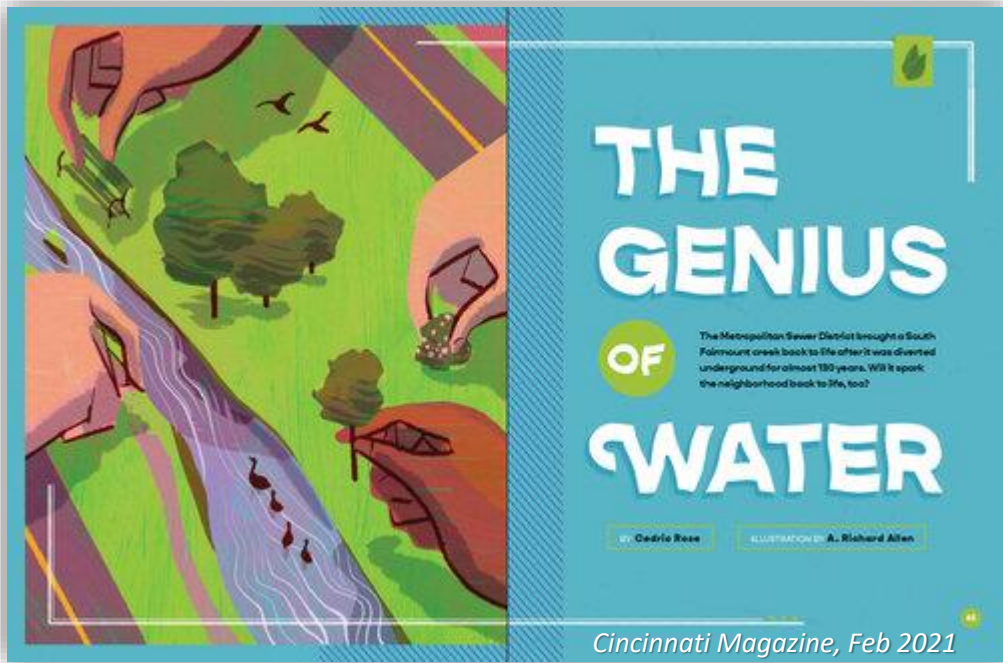
★ Mill Creek

□ County Boundaries

FILO Projects - 2019 Status

- Design/Permit
- Pre-Approval
- Approved
- Construction
- Monitoring
- Released

Increasing Trend in Urban Stream Revitalization



Mill Creek Needs



The Existing Channels Provide Little Ecological or Community Value



North of Ashby Ln.



South of Trade Port Dr. Looking Downstream.



South of Johnstontown Rd. Looking Upstream.



Sun Valley Golf Course. Looking Upstream.

Proposed Mill Creek Project

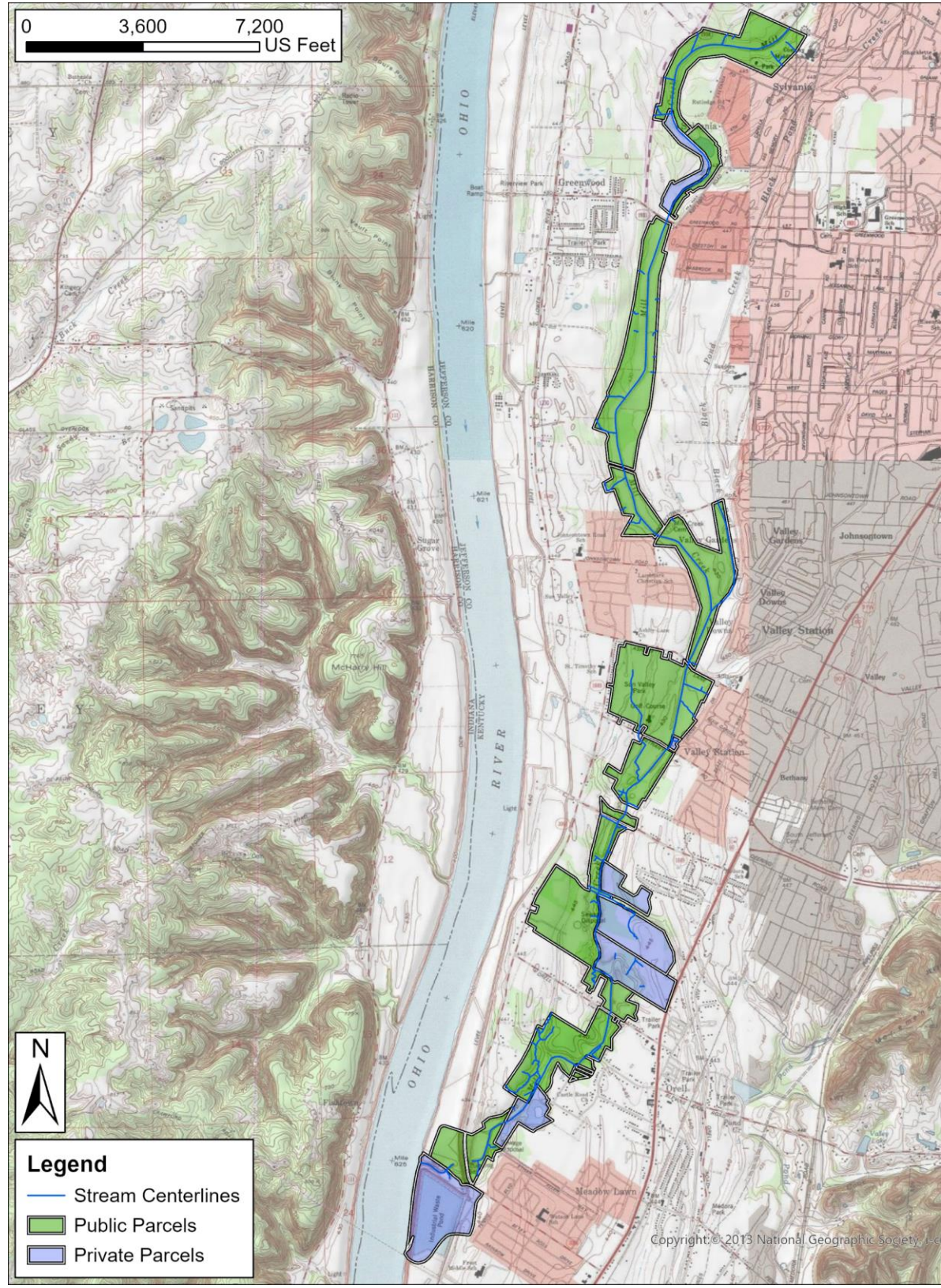
>1,000 acres of public parcels along ~8 miles of Mill Creek corridor

Public Parcels

- 64,321 feet of streams
- 154 acres of wetlands

Private Parcels

- 15,128 feet of streams
- 23 acres of wetlands



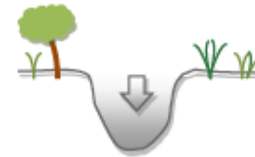
Restoration Project Will Help Arrest Chronic Erosion



Mill Creek at Orell Rd.



Stage 1 – Equilibrium



Stage 2– Incision



Stage 3 – Widening



Stage 4– Aggradation



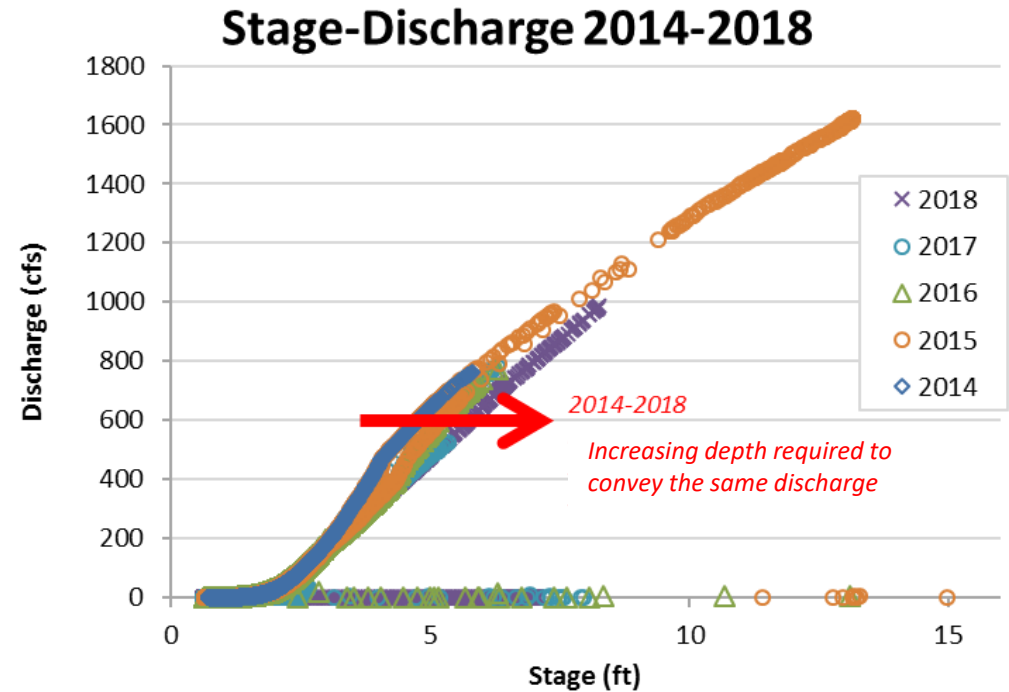
Stage 5 – Equilibrium

- A channelized floodway undergoing both erosion (widening) and sedimentation (aggradation)

Channel Evolution Model (CEM) adapted from Schumm et al. (1984) and Hawley et al. (2012)

More Sustainable Approach for Flood Control

- USGS gage data document reduced flow conveyance capacity (associated with sedimentation)



Channel Evolution Model (CEM) adapted from Schumm et al. (1984) and Hawley et al. (2012)

Stream Mitigation Project Will Build on MSD Investments in Improved Water Quality

25 new sewer collection projects since the late 1990s

Need an outside investment to improve habitat

Good/Fair Water Quality

Poor Habitat

- Fecal coliform (*good*)
- Dissolved Oxygen (*good/fair*)
- Nitrate (*good*)
- Total Kjeldahl Nitrogen (*fair*)
- Total Phosphorus (*good*)
- Total Suspended Solids (*fair*)
- Algal Diatom Bioassessment Index (*good*)

- Habitat (*poor*)
- Fish (*poor*)
- Macroinvertebrates (*poor*)

*100% of reaches (~80,000 ft) have **RBP of poor***



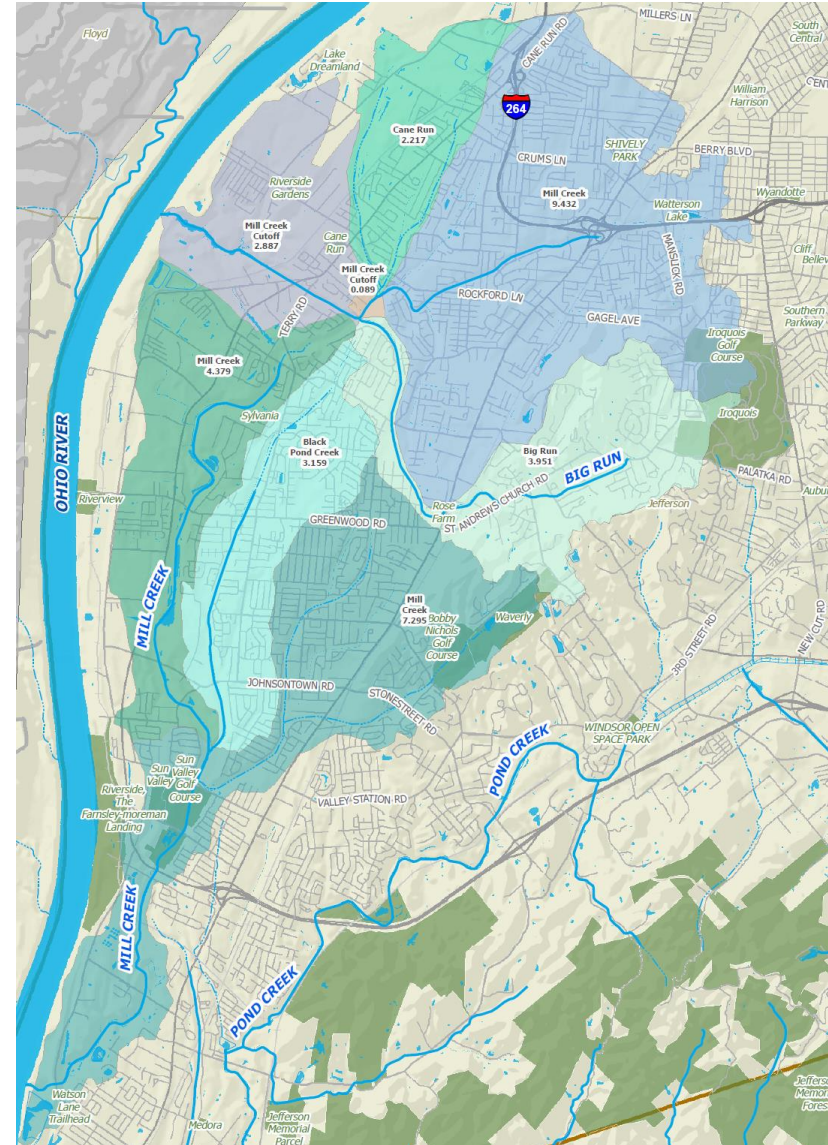
Goal of the Clean Water Act is to restore the chemical, physical, and biological integrity of our nation's streams.

The Potential FILO Project has already Helped to Facilitate Additional Outside Funding

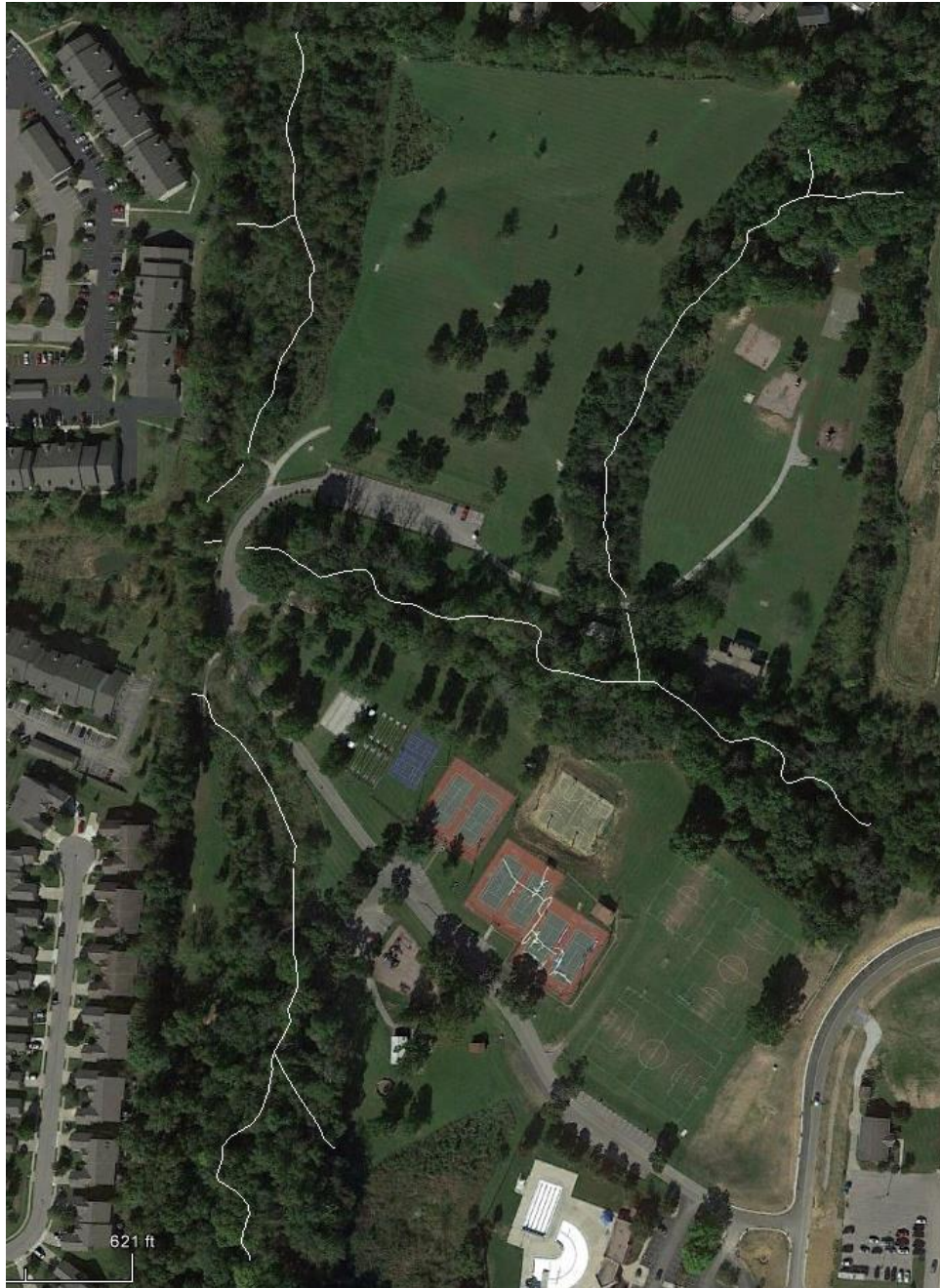


Ky Div. of Water § 319 Grant

- ✓ Application selected; contract negotiation underway
- ✓ Will include:
 - ✓ Water quality data collection
 - ✓ Community engagement
 - ✓ Watershed Plan development
- ✓ Focus on community outreach and equity
- ✓ An EPA-approved Watershed Plan will facilitate eligibility for additional implementation funding



Numerous Kentucky FILO Projects in Public Parks

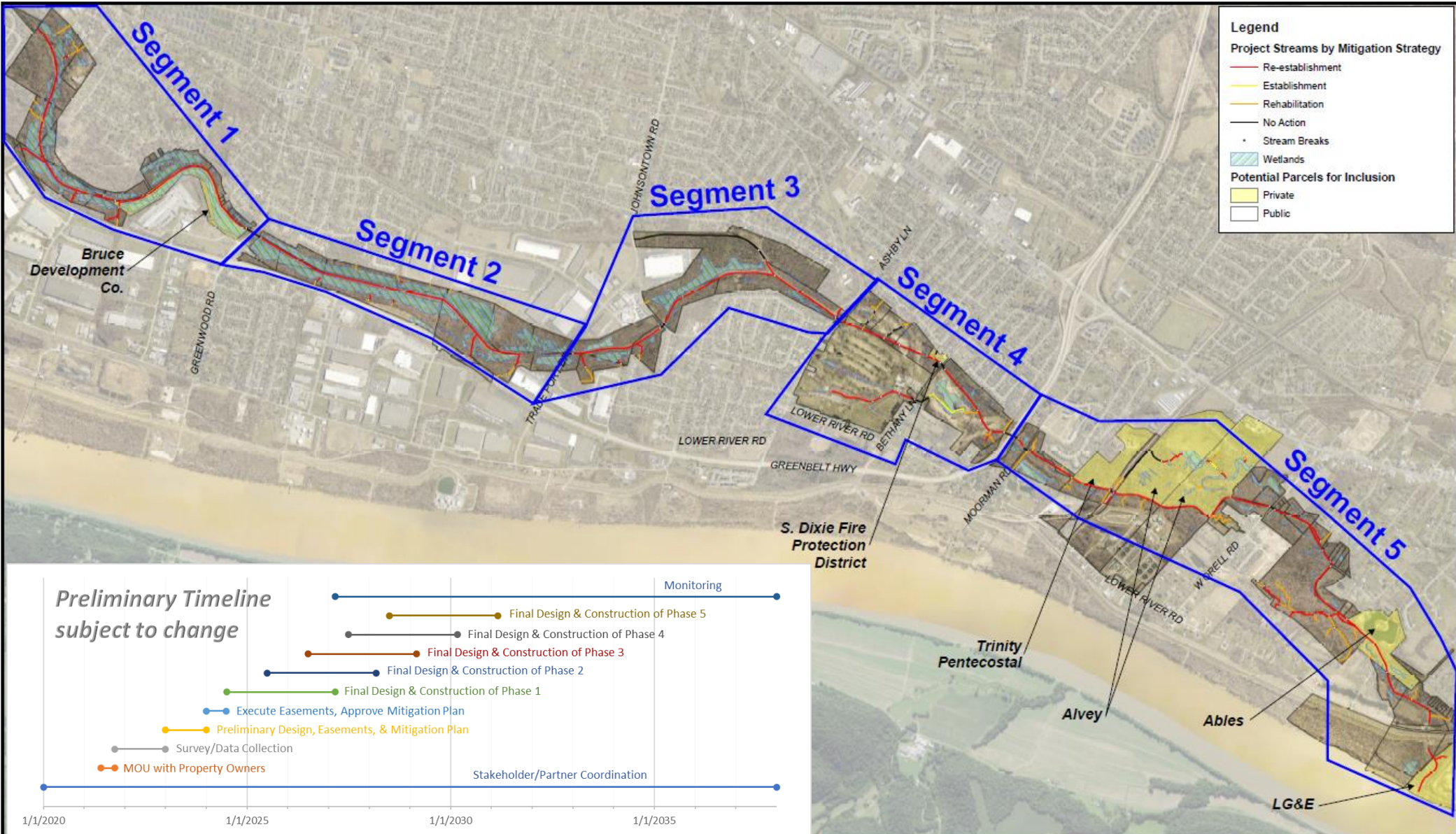


- Boone Woods Park (Boone Co. Parks)
- Blue Spring Creek (Lake Barkley State Park)
- Cove Spring (Frankfort)
- Various N KY projects under development

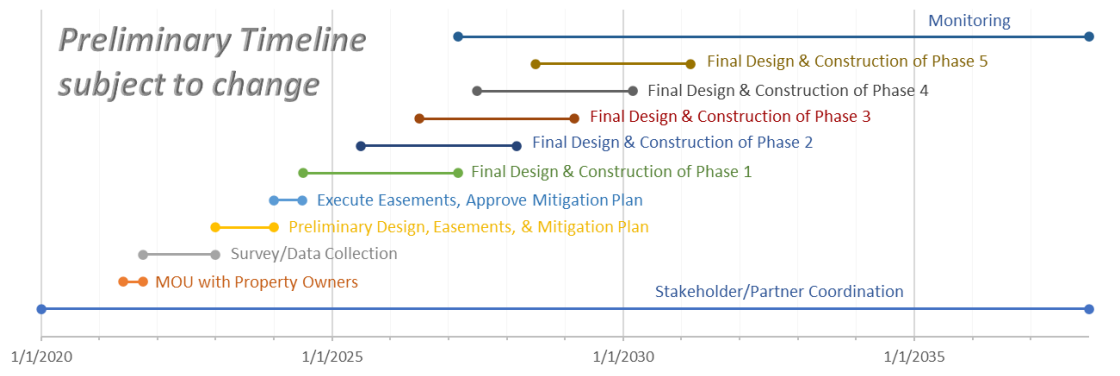


Next Steps

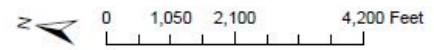
- 1) Property Owner Outreach
- 2) Community Engagement



Preliminary Timeline subject to change



CORRIDOR OVERVIEW MAP



Thank You



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