

An aerial photograph of a river flowing through a deep, forested canyon. The river is a vibrant blue-green color, contrasting with the dark, rocky riverbed and the lush green trees on the surrounding cliffs. The perspective is from directly above, looking down at the water as it winds through the gorge.

# **SOUTH BRANCH PLUM CREEK 319 IMPLEMENTATION PROJECTS**

Development, Implementation, and Conservation

**GET STARTED →**

PRESENTED BY **MARISA MATLIN**

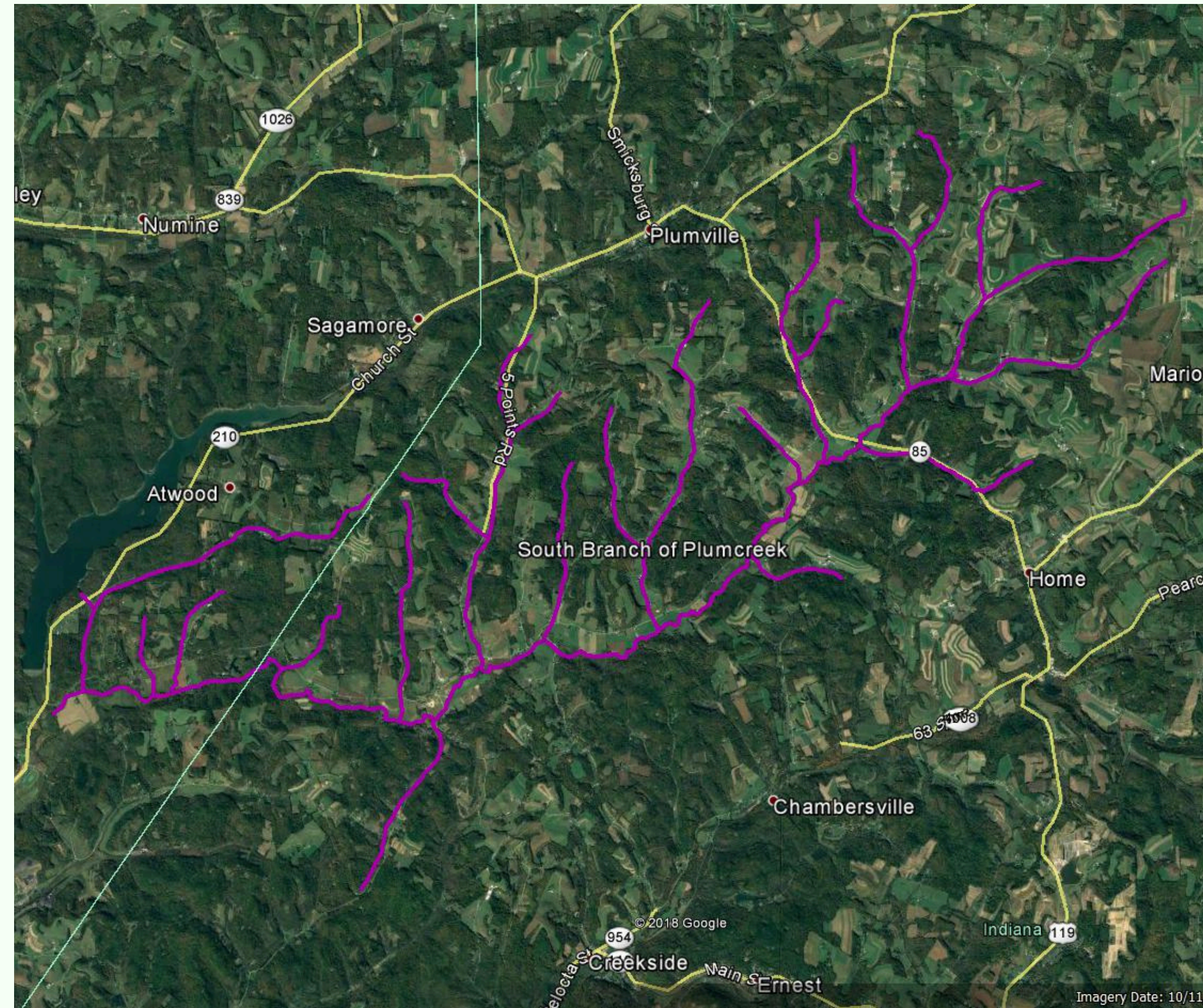
DATE **MAY 28, 2025**



# South Branch Plum Creek WIP History

The South Branch Plum Creek (SBPC) is the largest tributary to Crooked Creek and was identified in the PA's 2006 Integrated Water Quality Monitoring and Assessment Report as being impaired by siltation primarily by agriculture. Despite this, the stream is designated as one of the county's few High Quality Cold Water Fisheries (HQ-CWF).

In 2008, the Crooked Creek Watershed Association (CrCWA) partnered with the District to develop a WIP for this watershed.





# DEVELOPMENT

## STEP 1:

- Used the Sediment TMDL the PADEP Southwest Regional Office development in 2006.



## STEP 2:

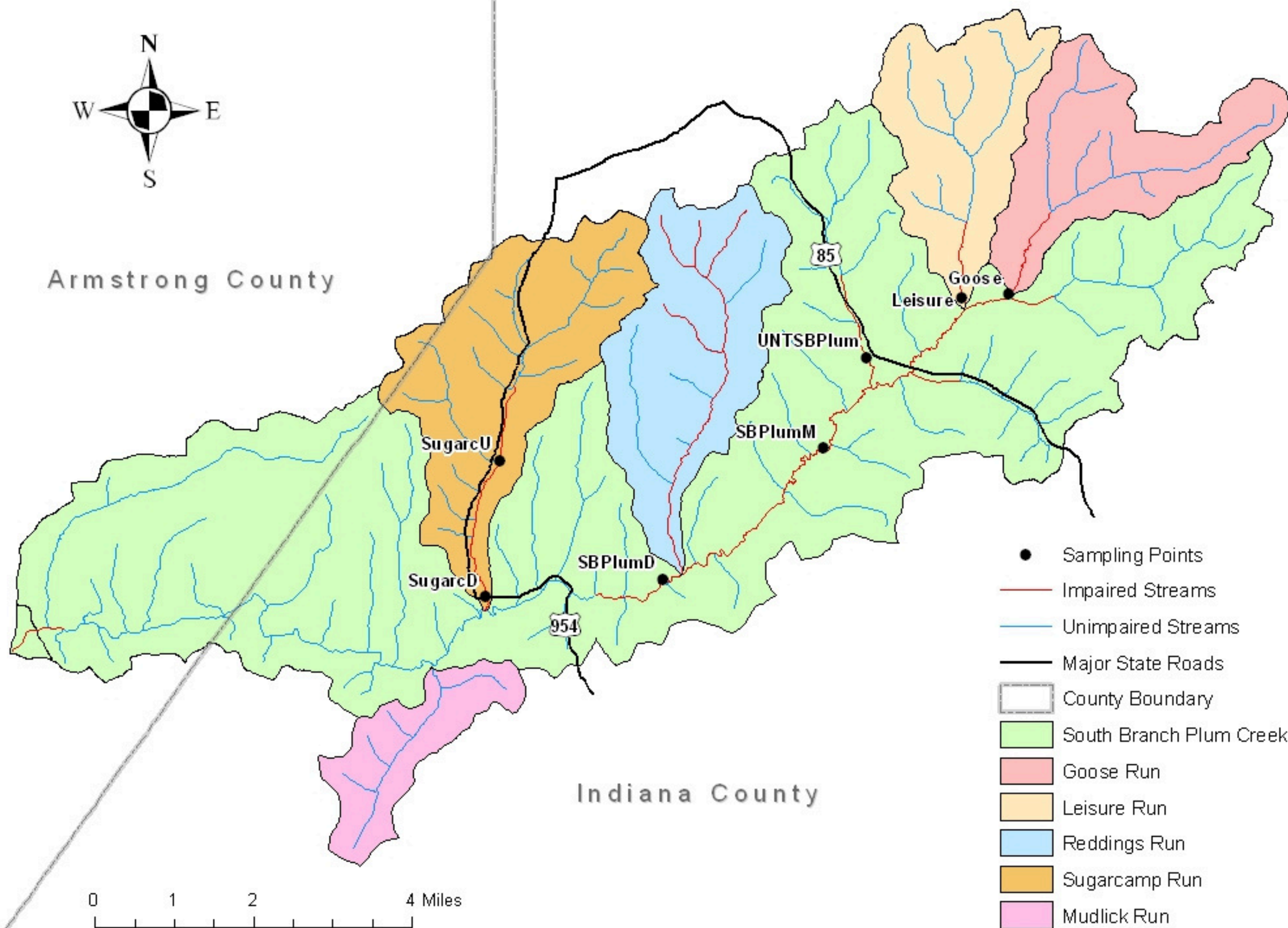
- Collected and compiled information from existing studies and previously published plans.

## STEP 3:

- Worked with partnering agencies and began field assessments, sampling events, and visual assessments.



# South Branch Plum Creek Watershed





# Results

## Total Sediment vs. Future Sediment Loads

	Sediment Load (lbs)		
Sub-watershed	Existing	Future	% Reduction
Goose Run	871401	203740	76.6
Leisure Run	997437	398316	60.1
Mainstem/UNTs	7921535	4396490	44.5
Reddings Run	1877512	822401	56.2
Sugarcamp Run	1717039	631390	63.2
Mudlick Run	356141	77134	78.3
Totals	13741065	6529471	52.5

### Visual Assessment

01

- Discovered amount of row crops diminished.
- Large 200-cow dairy farm ceased operation.
- Most animal ag exists in the sub watershed or upper reaches of the mainstem.

### BMPs Used

02

- Cover Crops
- Strip Cropping/Contour Farming
- Conservation Plan
- Nutrient Management
- Grazing Plan
- Ag Land Retirement

### Cost

03

- \$7,840,862.03 is the total scenario cost





## Watershed Priority Ranks

1. Mainstem Headwaters (upstream of Leisure Run), Goose Run & Leisure Run
2. Mainstem & UNTs 46636 & 46643
3. Reddings Run
4. Sugarcamp Run
5. Mainstem (downstream of Sugarcamp Run), & Mudlick Run

# Implementation Priorities





**Phase 1**

**2011 – 2013**

**Phas 2**

**2013 – 2017**

**Phase 3**

**2017 – 2020**

**Phase 4**

**2020 – 2022**

**Phase 5**

**2020 – 2025**



# Phase 1

1

## Township Road Work

Completed on unpaved roads in the headwaters of the watershed.

- Hill, Ox Hill, Whitesell, Knapko, McMillen, and Potts.
- 1.32 miles of road were modified with crosspipes, culverts, underdrain, and road profile



Road Names	Total Ft of Road w/ E&S Controls	Surface Stabilization	Crosspipes	Water Control Structures	Other
Hill, Ox Hill, Whitesell	5000	4800	24	0	replaced 48' stream culvert
Knapko, McMillen	1300	1100	1	2	N/A
Potts	700	700	0	0	N/A
<b>Total</b>	<b>7000</b>	<b>6600</b>	<b>25</b>	<b>2</b>	



# Phase 1 (cont.)

## 2

### Agriculture Work

Completed on farms with well-known operators

- Common Practices were stream bank fencing, watering systems, dry ponds, and stream crossings.



WIP Project #	Streambank Fencing (ft)	Streambank Stabilization (ft)	Stream Crossings	Spring Developments	Water Troughs	Water Control Structures	Other
4, 6, 15	4600	125	4	1	2	2	100' of roof runoff control
36	2200	0	1	0	0	0	3000' of perimeter fence
72	0*	0	0	1	1	1	
97	180	100	1	0	0	1	
<b>Total</b>	<b>6980</b>	<b>225</b>	<b>6</b>	<b>2</b>	<b>3</b>	<b>4</b>	
*streambank fence already installed by landowner							





## Estimated Load Reductions

**Sediment – 30.9 tons/year**

**Nitrogen – 59 lbs/year**

**Phosphorus – 17 lbs/year**





# Phase 2

1

## Agriculture Work

Focused efforts on implementing NRCS Grazing Plans and Nutrient Management Plans.

### BMPs Installed

Streambank Fencing - 1850 feet

Spring Developments - 1

Water Troughs - 8

Roof Runoff Control - 722 feet

Underground Outlet - 1027 feet

Access Road/Animal Trail/Walway - 2783 feet

Waste Storage Facility - 160 square yards

Heavy Use Area - 200 square yards

Pipeline - 9831 feet









# Phase 2

2

## Township Road Work

- Trusal
- Lutz
- Adamson
- Kettering

## BMPs Installed

Total Linear Feet of Road w/E&S Controls - 600 feet

Surface Stabilization - 600 feet

Cross Pipes - 29

Stream Crossing Improved - 6

**Stream Crossing Capacity's were increased between 77% - 300%**





# Phase 2

3

## Streambank Stabilization

Installed fish habitat structures along the mainstem & completed riparian buffer plantings in the headwaters.

WIP Project #	Streambank Stabilized (linear ft)	Riparian Buffered planted (acres)	Description
132	500	N/A	7 natural stream design stabilization structures installed
99	780	1	50 ft Forested Riparian Buffer planting on both sides of 450 ft section and on one side of ~330 ft section. Estimated erosion height of 3 ft.
149	880	1	Streambank fencing installed and a minimum of a 15ft. riparian buffer planted on each side of the stream. Estimated erosion height of 1 ft.
Total	500	2	





# Phase 3

1

## Agriculture Work

Focused strictly on developing and implementing grazing systems.

### BMPs Installed

Streambank Fencing - 2,205 feet

Fence - 13,850 feet

Stream Crossing - 1

Spring Developments - 1

Water Troughs - 14

Underground Outlet - 130 feet

Access Road/Animal Trail/Walway - 3,079 feet

Waste Storage Facility - 160 square yards

Heavy Use Area - 525 square yards

Pipeline - 4,092 feet





WIP Project Number	Sediment Reduction	Nitrogen Reduction	Phosphorous Reduction
#27	41,821.69 lb/yr	415.79 lb/yr	113.10 lb/yr
#63	12,068.10 lb/yr	14.99 lb/yr	6.61 lb/yr
Total	53,889.79 lb/yr	430.78 lb/yr	119.71 lb/yr



# Phase 4

1

## Streambank Stabilization

Focused on streambank stabilization & restoration.

- Was completed in 2023 with funds from 319 and ACAP.
- 5 cross vanes with root wads & 7 cross vanes were installed.
- Landowner continues to partner with other organizations to plant trees along the stream.
- Total stabilization to this section of the stream is 1,300 feet.

Holt Streambank Project	Sediment Reduction (Tons/Yr)	Nitrogen Reduction (Lbs/Yr)	Phosphorus Reduction (Lbs/Yr)
Before	2,415,619.10	33,319.60	4,223.30
After BMP Installation	2,400,861.70	33,235.40	4,202.00
Total Reductions	14,757.40	84.2	21.3







# Phase 5

1

## Agriculture Work

Focused strictly on developing and implementing grazing systems.

### BMPs Installed

Livestock Pipeline - 5,570 feet

Fence - 11,764 feet

Stream Crossing - 1

Spring Developments - 14

Water Troughs - 14

Heavy Use Area - 311 SY

Underground Outlet - 50 feet

Animal Trails/Walkways - 12 x 1200





# Future Plans



Currently, the District has applied for 319 funds to complete a new assessment of the watershed and revise the current plan.

Due to the area becoming more populated with the plain sect community, finding landowners to participate has become increasingly harder.

