# Doing more of what doesn't work is \_\_\_\_?

EPA's recommended "fixes" for Lake Erie are warmed-over H2Ohio programs that reduce nitrogen and silt but not <u>Dissolved Phosphorus</u> that fuels algal blooms

# Result?

- Good money after bad
- No accountability for polluters
- Lake Erie keeps getting worse

Following are 32 excerpts from Ohio EPA's TMDLs drafted in response to the federal lawsuits filed by the Environmental Law and Policy Center on behalf of Advocates for a Clean Lake Erie (now Lake Erie Advocates) in 2017 and 2018, showing that decadesold management practices that failed to improve Lake Erie are same ones OEPA uses to draft its TMDLs.



# 32 Ohio EPA TMDL excerpts for Western Lake Erie Watershed

Compiled November, 2021

#### Sixmile Creek-Auglaize River HUC-12 phosphorus reduction goals within the watershed.

 Table 12: Estimated Nutrient Loading Reductions from Each Objective

Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)
1	Nutrient Management (Planning and Implementation)a	7,550	4,430	2,880
2	Cover Crops	7,400	980	640
3	Drainage Water Management Structures	1,350	620	400
4	Grassed Waterwaysb	1,350	630	410
5	Blind Inletsc	80	50	30
6	Filter Strips/Buffers (of at least 35 ft.)d	100	80	50
7	Wetlands e	3,500f	1,840	1,190
TOTAL		21,330*	8,630	5,600

#### Yankee Run-St. Mary's River

Agricultural BMP	Agricultural Lands (Critical Area #3)		Priority Area 'A'			Priority Area 'B'			
	No. of Candidate BMPs	Total size <sup>a</sup>	Treated area <sup>b</sup>	No. of Candidate BMPs	Total size ª	Treated area <sup>ь</sup>	No. of Candidate BMPs	Total size ª	Treated area <sup>b</sup>
Length-Based BMPs									
Contour buffer strip	31	7		0			23	5	
Grassed waterway	779	74		70	7		452	49	
Saturated buffer	283°	92	7,521	93 <sup>d</sup>	31	3,290	202 <sup>e</sup>	65	4,706
Area-Based BMPs									
Controlled drainage	634	10,766	10,766	75	1,124	1,124	418	7,029	7,029
Edge of field bioreactor	215	51	10,315	26	6	1,160	106	26	5,256
Nutrient removal wetland	12	35 (105) <sup>f</sup>	2,930	2	3 (6) <sup>g</sup>	319	10	32 (99) <sup>h</sup>	2,610
WASCOB	60	54	581	9	7	51	36	35	418

#### **Blierdofer Ditch**

No summary table included.

Recommendations are two-stage ditches, cover crops and wetland construction. From page 44:

"How will the effectiveness of this project in addressing the NPS impairment be measured? Mercer SWCD will design and verify installation of the wetland and two stage ditch. It is generally unrealistic to monitor load reduction from individual agricultural practices; however, ambient monitoring is conducted throughout the WLEB by organizations such as OEPA, NOAA, and Heidelberg University. These entities will continue long term monitoring on various tributaries in the Maumee basin to track load reduction trends."

# Town of Willshire-St. Mary's River

Table 45	ACDE -		Ohio Anniouthural	I anda	(antitional and	- #0)
Table 15.	ACPFI	esuits for	Onio Agricultural	Lands	(critical are	a#Z)

Agricultural BMP	Agricultural Parcels (Critical Area #3)			Priority Area 'A'			Priority Area 'B'		
	No. of Candidate BMPs	Total size ª	Treated area <sup>b</sup>	No. of Candidate BMPs	Total size <sup>a</sup>	Treated area <sup>⊾</sup>	No. of Candidate BMPs	Total size ª	Treated area <sup>⊾</sup>
Length-Based BMPs									
Contour buffer strip									
Grassed waterway	152	16		28	4		114	13	
Saturated buffer	73°	24	1,549	30 <sup>d</sup>	10	651	50°	16	1,064
Area-Based BMPs									
Controlled drainage	115	1,815	1,815	25	490	490	80	1,409	1,409
Edge of field bioreactor	43	11	2,259	7	2	483	21	6	1,127
Nutrient removal wetland	3	11 (28) <sup>f</sup>	642	0	0	0	3	11 (28) <sup>f</sup>	642
WASCOB	11	10	139	2	<1	5	6	4	71

# **Twentyseven Mile Creek**

Table 11. ACPF results for the Twentyseven Mile Creek WAU

Agricultural BMP	No. of BMPs	Total size (miles or acres)	Treated area (acres)
Length-Based BMPs			
Contour buffer strip	11	2	
Grassed waterway	476	45	
Saturated buffer	180 ª	59	6,011
Area-Based BMPs			
Controlled drainage	384	6,645	6,645
Edge of field bioreactor	136	33	6,596
Nutrient removal wetland	3 °	8 (17) <sup>b</sup>	668
WASCOB	33	30	526

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#### **Platter Creek**

4.1 Critical Area #1 Project and Implementation Strategy Overview Table

	Table 20: Platter Creek HUC-12 (04100005 02 06) — Critical Area #1							
Goal	Objective	Project #	Project Title (EPA Criteria g)	Lead Organization (EPA criteria d)	Time Frame (EPA Criteria f)	Estimated Cost (EPA Criteria d)	Potential/Actual Funding Source (EPA Criteria d)	
			Urban Sedim	ent and Nutrient Redu	ction Strategies			
			Altered Strea	m and Habitat Restor	ation Strategies			
			Agricultural I	Nonpoint Source Redu	ction Strategies			
1	1	1	Agricultural BMPs – Cover Crops	Defiance SWCD	Short (1-3 yrs)	\$82,500	H2Ohio, GLC, NRCS-USDA CRP, EQIP	
1	2	2	Agricultural BMPs – Grassed Waterways	Defiance SWCD	Short (1-3 yrs)	\$33,000	Ohio EPA §319, GLRI, H2Ohio, GLC, NRCS-USDA CRP,EQIP	
1	3	3	Agricultural BMPs –Drainage Water Management Structures	Defiance SWCD	Short (1-3 yrs)	\$11,000	Ohio EPA §319, GLRI, H2Ohio, GLC, NRCS-USDA CRP, EQIP	
1	4	4	Agricultural BMPs – Nutrient Management (Soil Testing and Variable Rate Technology (VRT) Implementation)	Defiance SWCD	Short (1-3 yrs)	\$9,100	Ohio EPA §319, GLRI, H2Ohio, GLC, NRCS-USDA CRP, EQIP	
1	5	5	Agricultural BMPs – Subsurface Injection (Equipment and Implementation)	Defiance SWCD	Short (1-3 yrs)	\$300,000	GLRI, H2Ohio, GLC	

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# Flat Run-Tiffin River

Table 8: Critical Area #1 Project and Implementation Strategy Overview Table

			FLAT RU	IN (HUC-12) (0410000	6 03 03) — Critica	al Area #1	
Goal	Objective	Project #	Project Title (EPA Criteria g)	Lead Organization (EPA criteria d)	Time Frame (EPA Criteria f)	Estimated Cost (EPA Criteria d)	Potential/Actual Funding Source (EPA Criteria d)
			Urban S	ediment and Nutrient R	eduction Strategie	s	
			Altered	Stream and Habitat Res	toration Strategie	s	-
			Agricult	ural Nonpoint Source R	eduction Strategie	s	-
1	1, 2, 3, 4	1	Agriculture BMP-In-field improvements: Cover Crops, Grassed Waterway, Drainage Management, NM Plans	Fulton /Williams SWCD	Short (1-3 yrs)	\$186,000	Ohio EPA §319, GLRI, H2Ohio, GLC, NRCS-USDA CRP, EQIP
1	5	-	Agricultural BMPs – Subsurface Injection (Equipment and Implementation)	Fulton /Williams SWCD	Medium	\$300,000	GLRI, H2Ohio, GLC
1	6	-	Agricultural BMPs-Edge-of- Field; buffers, filters, wetlands	Fulton/ Williams SWCD	Medium		NRCS-USDA CRP, EQIP, H2Ohio, GLRI
1	1, 2, 3	2	Western Fulton Phosphorus & Sediment Reduction (Brush, Deer, Flat & Stag)	Fulton SWCD	Short (1-3 yrs)	\$288,356 FUNDED	
1	2, 3, 4	5	Sauder Village BMPs at Demo Farm	Sauder Village	Short (1-3 years)	\$20,000	NRCS, H2Ohio

#### **Brush Creek**

Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)
1	Nutrient Management (Planning and Implementation through Soil Testing and VRT) <sup>a</sup>	13,500	3,610	2,350
2	Cover Crops	11,000	710	460
3	Drainage Water Management Structures	1,300	270	180
4	Blind Inlets <sup>b</sup>	350	200	130
5	Grassed Waterways <sup>c</sup>	4,700	1,280	830
6	Erosion Control Structures <sup>d</sup>	3,400	1,590	1,030
7	Filter Strips/Buffers (of at least 50 ft) <sup>e</sup>	3,800	1,460	950
8	Wetlands <sup>f</sup>	8,750 <sup>8</sup>	4,600	2,990
9	Exclusion Fencing	50	200	130
10	Manure Mgmt. Structures <sup>h</sup>			
	TOTAL	46,850*	13,920	9,050

Table 17: Estimated Spring Nutrient Loading Reductions from Each Objective

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4, (USEPA, 2019))

# Sims Run-Auglaize River

Table 12:	Estimated Nutrient Loading Reductions from Each Objective
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Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)
1	Nutrient Management (Planning and Implementation) <sup>a</sup>	9,200	4,180	2,720
2	Cover Crops	9,000	1,010	660
3	Drainage Water Management Structures	1,600	520	340
4	Grassed Waterways <sup>b</sup>	1,300	550	360
5	Erosion Control Structures <sup>c</sup>	300	240	150
6	Filter Strips/Buffers (of at least 35 ft.) <sup>d</sup>	700	460	300
7	Wetlands and/or Water Retention Basins <sup>e</sup>	3,250 <sup>f</sup>	1,710	1,110
	TOTAL	25,350*	8,670	5,640

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4 (USEPA, 2019))

# Sixmile Creek-Auglaize River

Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)
1	Nutrient Management (Planning and Implementation) <sup>a</sup>	7,550	4,430	2,880
2	Cover Crops	7,400	980	640
3	Drainage Water Management Structures	1,350	620	400
4	Grassed Waterways <sup>b</sup>	1,350	630	410
5	Blind Inlets <sup>c</sup>	80	50	30
6	Filter Strips/Buffers (of at least 35 ft.) <sup>d</sup>	100	80	50
7	Wetlands <sup>e</sup>	3,500 <sup>f</sup>	1,840	1,190
	TOTAL	21,330*	8,630	5,600

Table 12: Estimated Nutrient Loading Reductions from Each Objective

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4 (USEPA, 2019b))

# Upper Hog Creek

Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (Ibs)	Estimated Spring Phosphorus Load Reduction (Ibs)				
1	Blind Inlets <sup>a</sup>	400	260	170				
2	Drainage Water Management Structures	400	140	90				
3	Grassed Waterways <sup>b</sup>	300	100	65				
4	Cover Crops	4,000	440	285				
5	Nutrient Management (Planning and Implementation through Soil Testing and VRT) <sup>c</sup>	7,500	3,300	2,145				
6	Wetlands <sup>d</sup>	750 <sup>e</sup>	390	255				
7	Two-Stage Ditch	120	70	45				
	TOTAL	13,470*	4,700	3,055				

Table 12: Estimated Spring Nutrient Loading Reductions from Each Objective

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4, (USEPA, 2019))

# **Middle Hog Creek**

Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)	
1	Blind Inlets <sup>a</sup>	400	250	160	
2	Drainage Water Management Structures	400	140	90	
3	Grassed Waterways <sup>b</sup>	300	90	60	
4	Cover Crops	5,000	550	360	
5	Nutrient Management (Planning and Implementation through Soil Testing and VRT) <sup>c</sup>	10,500	4,620	3,000	
6	Wetlands <sup>d</sup>	1,250 <sup>e</sup>	660	430	
7	Two-Stage Ditch	160	40	25	
	TOTAL 18,010* 6,350 4,125				

#### Table 13: Estimated Spring Nutrient Loading Reductions from Each Objective

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4, (USEPA, 2019b))

# Little Hog Creek

#### Table 13: Estimated Spring Nutrient Loading Reductions from Each Objective

Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)
1	Cover Crops	3,000	330	220
2	Drainage Water Management	100	30	20
3	Nutrient Management (Planning and Implementation through Soil Testing and VRT) <sup>a</sup>	3,000	1,320	860
4	Grassed Waterways <sup>b</sup>	500	170	110
5	Wetlands <sup>c</sup>	1,000 <sup>d</sup>	530	340
6	Two-Stage Ditch	60	40	30
	TOTAL	7,660	2,420	1,580

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4, (USEPA, 2019b))

#### Lower Hog Creek

#### Table 12: Estimated Spring Nutrient Loading Reductions from Each Objective

Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)
1	Blind Inlets <sup>a</sup>	120	80	50
2	Drainage Water Management Structures	200	70	50
3	Grassed Waterways <sup>b</sup>	500	180	120
4	Cover Crops	6,000	720	470
5	Nutrient Management (Planning and Implementation through Soil Testing & VRT) <sup>c</sup>	6,000	2,640	1,720
6	Wetlands <sup>d</sup>	1,000 <sup>e</sup>	530	350
7	Two-Stage Ditch	120	30	20
TOTAL		13,940*	4,250	2,780

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4, (USEPA, 2019))

#### **Honey Run**

Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)
1	Nutrient Management (Planning and Implementation) <sup>a</sup>	4,000	1,820	1,180
2	Cover Crops	3,200	390	250
3	Drainage Water Management Structures	700	250	160
4	Grassed Waterways <sup>b</sup>	500	240	150
5	Wetlands <sup>c</sup>	1,625 <sup>d</sup>	850	560
	TOTAL	10,025*	3,550	2,300

Table 12: Estimated Nutrient Loading Reductions from Each Objective

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4 (USEPA, 2019)

#### **Dry Fork-Little Auglaize River**

Table 15: Estimated Nutrient Loading Reductions from Each Objective				
Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)
1	Blind Inlets <sup>a</sup>	370	380	250
2	Filter Strips/Buffers/Floodplain Management (of at least 35 ft.) <sup>b</sup>	1,150	760	490
3	Drainage Water Management Structures	320	140	90
4	Grassed Waterways <sup>c</sup>	500	220	140
5	Nutrient Management (Planning and Implementation through Soil Testing and VRT) <sup>d</sup>	7,000	3,930	2,550
6	Cover Crops	2,500	280	180
7	Subsurface Application	550	200	130
8	Wetlands <sup>e</sup> and/or Water Retention Basins/Areas	1,500	790	510
	TOTAL	13,890	6,700	4,340

Table 15: Estimated Nutrient Loading Reductions from Each Objective

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4 (USEPA, 2019b))

#### Table 1: NPDES-Permitted Facilities in the Dry Fork-Little Auglaize River HUC-12

Facility Name	Permit Number	Receiving Waterbody
C. M. Estates, LLC	2PY00043*CD	Unnamed Tributary to the Auglaize River
Delphos County Club	2PR00157*CD	Little Auglaize River
Village of Middle Point WWTP	2PA00022*KD	Little Auglaize River
Village of Ottoville WWTP	2PA00002*KD	Unnamed Tributary to the Little Auglaize River

(Source: Individual NPDES Permits Interactive Map (OEPA, 2019a))

# **Upper Jennings Creek**

Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)
1	Nutrient Management (Planning and Implementation through Soil Testing & VRT) <sup>a</sup>	10,300	4,680	3,040
2	Cover Crops/Conservation Crop Rotation	7,700	870	570
3	Drainage Water Management Structures	3,800	1,340	870
4	Grassed Waterways <sup>b</sup>	900	380	250
5	Wetlands <sup>c</sup>	3,750 <sup>d</sup>	1,970	1,280
TOTAL		26,450*	9,240	6,010

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4 (USEPA, 2019))

#### Lower Jennings Creek

Table 14. Estimated Spring Nutrient Loading Reductions from Lach Objective				
Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)
1	Nutrient Management (Planning and Implementation) <sup>a</sup>	6,900	4,050	2,640
2	Cover Crops	4,150	550	360
3	Drainage Water Management Structures	1,700	780	500
4	Grassed Waterways <sup>b</sup>	850	400	260
5	Blind Inlets <sup>c</sup>	160	100	60
6	Filter Strips/Buffers (of at least 35 ft.) <sup>d</sup>	200	160	100
7	Wetlands <sup>e</sup>	3,750 <sup>f</sup>	1,970	1,280
	TOTAL	17,710*	8,010	5,200

Table 14: Estimated Spring Nutrient Loading Reductions from Each Objective

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4 (USEPA, 2019b))

## **Big Run-Auglaize River**

Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)
1	Blind Inlets <sup>a</sup>	300	320	210
2	Filter Strips/Buffers/Floodplain Management (of at least 35 ft.) <sup>b</sup>	900	620	400
3	Drainage Water Management Structures	250	110	70
4	Grassed Waterways <sup>c</sup>	400	190	120
5	Nutrient Management (Planning and Implementation through Soil Testing and VRT) <sup>d</sup>	4,500	2,520	1,640
6	Cover Crops	2,000	240	160
7	Wetlands <sup>e</sup> and/or Water Retention Basins/Areas	1,250 <sup>f</sup>	660	430
	TOTAL	8,600	4,660	3,030

Table 13: Estimated Nutrient Loading Reductions from Each Objective

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4 (USEPA, 2019b))

#### Lapp Ditch-Auglaize River

Table 13: Estimated Nutrient Loading Reductions from Each Objective

Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (Ibs)
1	Blind Inlets <sup>a</sup>	200	210	140
2	Filter Strips/Buffers/Floodplain Management (of at least 35 ft.) <sup>b</sup>	400	280	180
3	Drainage Water Management Structures	300	130	80
4	Grassed Waterways <sup>c</sup>	200	90	60
5	Nutrient Management (Planning and Implementation through Soil Testing and VRT) <sup>d</sup>	2,000	1,120	730
6	Cover Crops	1,500	180	120
7	Wetlands <sup>e</sup> and/or Water Retention Basins/Areas	1,875 <sup>f</sup>	980	640
	TOTAL	6,475	2,990	1,950

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4 (USEPA, 2019b))

#### **Prairie Creek**

Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)
1	Blind Inlets <sup>a</sup>	220	240	160
2	Filter Strips/Buffers/Floodplain Management (of at least 35 ft.) <sup>b</sup>	950	680	440
3	Drainage Water Management Structures	220	100	60
4	Grassed Waterways <sup>c</sup>	300	150	100
5	Nutrient Management (Planning and Implementation through Soil Testing and VRT) <sup>d</sup>	1,700	950	620
6	Cover Crops	1,700	200	130
7	Subsurface Application	550	210	140
8	Wetlands <sup>e</sup> and/or Water Retention Basins/Areas	1,250 <sup>f</sup>	660	430
	TOTAL	6,890	3,190	2,080

Table 13: Estimated Nutrient Loading Reductions from Each Objective

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4 (USEPA, 2019))

#### Wildcat Creek-Flatrock Creek

Table 15: Estimated Nutrient Loading Reductions from Each Objective

Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)
1	Nutrient Management (Planning and Implementation through Soil Testing and VRT) <sup>a</sup>	5,100	2,920	1,890
2	Cover Crops	10,000	1,050	680
3	Drainage Water Management Structures	1,100	490	320
4	Blind Inlets <sup>b</sup>	1,200	660	170
5	Grassed Waterways <sup>c</sup>	1,600	260	430
6	Subsurface Application	900	340	220
7	Filter Strips/Buffers (of at least 50 ft) <sup>d</sup>	4,200	2,670	1,730
8	Wetlands <sup>e</sup>	7,500 <sup>f</sup>	3,940	2,560
	TOTAL	31,600*	12,330	8,000

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4, (USEPA, 2019c))

## **Big Run-Flatrock Creek**

Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)
1	Nutrient Management (Planning and Implementation through Soil Testing and VRT) <sup>a</sup>	8,000	4,570	2,960
2	Cover Crops	6,000	630	410
3	Drainage Water Management Structures	1,700	750	490
4	Blind Inlets <sup>b</sup>	1,500	840	550
5	Grassed Waterways <sup>c</sup>	1,400	230	150
6	Subsurface Application	1,000	380	250
7	Filter Strips/Buffers (of at least 50 ft) <sup>d</sup>	5,500	3,520	2,290
8	Wetlands and/or Water Retention Basins <sup>e</sup>	5,000 <sup>f</sup>	2,630	1,700
	TOTAL	30,100*	13,550	8,800

Table 16: Estimated Nutrient Loading Reductions from Each Objective

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4, (USEPA, 2019c))

#### Little Flatrock Creek

Table 13: Estimated Nutrient Loading Reductions from Each Objective

Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)
1	Nutrient Management (Planning and Implementation through Soil Testing and VRT) <sup>a</sup>	3,500	1,990	1,300
2	Cover Crops	3,400	370	240
3	Drainage Water Management Structures	600	270	170
4	Blind Inlets <sup>b</sup>	550	330	210
5	Grassed Waterways <sup>c</sup>	850	170	110
6	Subsurface Application	400	150	100
7	Filter Strips/Buffers (of at least 50 ft) <sup>d</sup>	1,200	800	520
8	Wetlands and/or Water Retention Basins <sup>e</sup>	2,500 <sup>f</sup>	1,310	850
	TOTAL	13,000*	5,390	3,500

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4, (USEPA, 2019))

# **Sixmile Creek**

Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)
1	Nutrient Management (Planning and Implementation through Soil Testing and VRT) <sup>a</sup>	4,200	2,400	1,560
2	Cover Crops	4,000	430	280
3	Drainage Water Management Structures	850	380	250
4	Blind Inlets <sup>b</sup>	800	460	300
5	Grassed Waterways <sup>c</sup>	1,200	220	140
6	Subsurface Application	500	190	120
7	Filter Strips/Buffers (of at least 50 ft) <sup>d</sup>	3,200	2,090	1,360
8	Wetlands and/or Water Retention Basins <sup>e</sup>	3,500 <sup>f</sup>	1,840	1,200
	TOTAL	14,750*	8,010	5,210

Table 16: Estimated Nutrient Loading Reductions from Each Objective

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4, (USEPA, 2019))

# Eagle Creek-Auglaize River

Table 16: Estimated Spring Nutrient Loading Reductions from Each Objective

Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)
1	Nutrient Management (Planning and Implementation through Soil Testing and VRT) <sup>a</sup>	5,200	2,970	1,930
2	Cover Crops	4,800	510	330
3	Drainage Water Management Structures	1,000	440	290
4	Blind Inlets <sup>b</sup>	600	340	220
5	Grassed Waterways <sup>c</sup>	1,400	250	170
6	Subsurface Application	320	120	80
7	Filter Strips/Buffers (of at least 50 ft) <sup>d</sup>	1,600	1,040	670
8	Wetlands <sup>e</sup>	3,250 <sup>f</sup>	1,710	1,110
	TOTAL	18,170*	7,380	4,800

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4, (USEPA, 2019b))

# Upper Eagle Creek

Table 3.3: Estimated Nutrient Loading Reduction from Each Objective						
Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)		
1	Grassed Waterway	500	245	102		
2	Nutrient Management Plans	4,000	4,400	1,830		
3	Cover Crops	6,000	2,400	1,000		
4	Conservation Tillage	6,000	4,200	1,747		
5	Phosphorus Filters	500	190	80		
6	Water Controlled Structure	200	250	104		
Total 16,200* 11,685 4,863						

# Howard Run-Blanchard River

Table 3.8: Estimated Nutrient Loading Reduction from Each Objective Critical						
Area 2						
Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)		
1	Water Controlled Structure	100	66	66		
2	Phosphorus Filters	400	152	64		
3	Nutrient Management Plans	1,400	1,540	635		
5	Cover Crops	4,400	2,200	902		
6	Conservation Tillage	4,400	1,320	545		
Total 10,205* 5,278 2,212						

# Pike Run

Table 3.3: Estimated Nutrient Loading Reduction from Each Objective					
Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)	
1	Grassed Waterway	500	245	102	
2	Nutrient Management Plans	4,000	4,400	1,830	
3	Cover Crops	6,000	2,400	1,000	
4	Conservation Tillage	6,000	4,200	1,747	
5	Phosphorus Filters	500	190	80	
6	Water Controlled Structure	200	250	104	
	Total	16,200*	4,863	4,863	
and the second					

## Little Black Creek

Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)
1	Grassed Waterways <sup>a</sup>	1,100	450	320
2	Drainage Water Management Structures and Saturated Buffers	500	280	140
3	Nutrient Management (Planning and Implementation) <sup>b</sup>	11,000	6,600	2,750
4	Wetlands <sup>c</sup>	4,375 <sup>d</sup>	2,300	1,490
5	Cover Crops	9,900	1,490	900
TOTAL		26,975*	11,120	5,600

Table 12: Estimated Nutrient Loading Reductions from Each Objective

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4 (USEPA, 2019))

#### Black Creek

#### No summary table provided.

Recommendations in narrative are grassed waterways, nutrient management plans, cover crops, etc.

#### From page 34:

"How will the effectiveness of this project in addressing the NPS impairment be measured? Mercer SWCD will verify installation of all BMPs. It is generally unrealistic to monitor load reduction from individual agricultural practices; however, ambient monitoring is conducted throughout the WLEB by organizations such

as OEPA, NOAA, and Heidelberg University. These entities will continue long term monitoring on various tributaries in the Maumee basin to track load reduction trends."

# Town of Oakwood

Objective Number	Best Management Practice	Total Acreage Treated	Estimated Annual Phosphorus Load Reduction (lbs)	Estimated Spring Phosphorus Load Reduction (lbs)
1	Blind Inlets <sup>a</sup>	310	340	220
2	Filter Strips/Buffers/Floodplain Management (of at least 35 ft.) <sup>b</sup>	1,110	780	500
3	Drainage Water Management Structures	280	120	80
4	Grassed Waterways <sup>c</sup>	395	200	130
5	Nutrient Management (Planning and Implementation through Soil Testing and VRT) <sup>d</sup>	2,800	1,570	1,020
6	Cover Crops	2,420	290	190
7	Subsurface Application	550	200	130
8	Wetlands <sup>e</sup> and/or Water Retention Basins/Areas	2,000 <sup>f</sup>	1,050	680
	TOTAL	9,865	4,550	2,950

#### Table 14: Estimated Nutrient Loading Reductions from Each Objective

(Source Model: Spreadsheet Tool for Estimating Pollutant Loads (STEPL), Version 4.4 (USEPA, 2019b))