

Geographic Overview

Case Study: Establishing Ohio's ILF Credit Prices

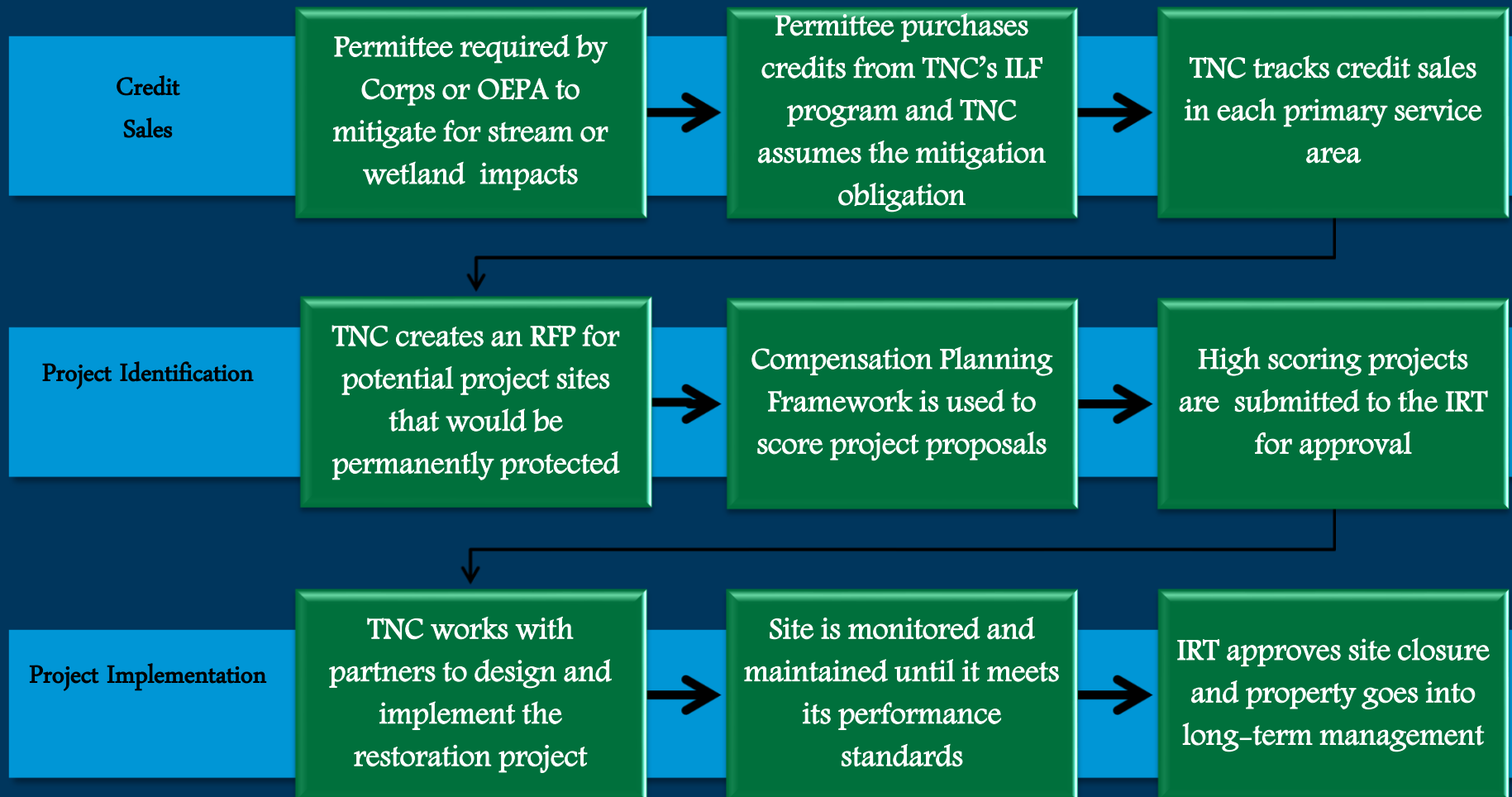


Full Cost Accounting

2008 Mitigation Rule § 332.8(o)(5)(ii)

- In-lieu fee programs - the cost per unit of credit must be based on full cost accounting

In-Lieu-Fee Mitigation Process



Full Cost Accounting

- Site selection (identification and assessment of ecologically appropriate stream and wetland restoration and protection opportunities), development of concept plans, managing credit sale transactions, annual reporting, accounting, program related meetings, expenses for day-to-day management,
- Expenses for land or property interest acquisition, project planning and design, construction, plant materials, labor, legal fees, monitoring, remediation or adaptive management activities, long-term management,
- Program contingency costs, financial assurances

FULL COST ACCOUNTING: Cost Determination

	Project Specific Costs						
	Administration	Property Acquisition	Pre-Construction Design	Construction	Monitoring and Maintenance	Stewardship Endowment	Program Contingency
Components	<ul style="list-style-type: none"> • Strategic planning • Watershed planning • Quality assurance • Research and development • Adaptive management • Contract management • Account management, budgeting and accounting • Reporting to regulators and stakeholders • Database management • Site identification • Concept plan development 	<ul style="list-style-type: none"> • Purchase land or conservation easement • Land survey • Legal fees for title search, title recording, etc. • Environmental assessment • Baseline documentation report • If needed - subordination of mineral rights or risk analysis 	<ul style="list-style-type: none"> • Administer RFP • Feasibility analysis • Watershed assessment • Reach analysis • Reference analysis • Topographic study • Floodplain management study • Final design • Mitigation plan • Permitting • Cultural resource assessment • Endangered species avoidance and/or mitigation 	<ul style="list-style-type: none"> • Administer RFP • Supervision of construction • Mobilization of equipment and personnel • Earthwork (clearing, and topsoil stockpile, excavation, cut and fill, grading, installation of structures, erosion /water control) • Revegetation • Invasive species control • As-built documents, record drawings • Financial Assurances & Project contingency (18% construction costs) 	<ul style="list-style-type: none"> • 10 years of monitoring • Maintenance of stream and wetland structures, boundaries, riparian vegetation, repairs 	<ul style="list-style-type: none"> • Determined by the size of the property, the type of Site Protection Instrument, the specific long-term management needs, the stewardship needs of the owner/holder of the Site Protection Instrument, annual cost estimates to meet the various needs, inflationary adjustments, and other contingencies 	<ul style="list-style-type: none"> • Used to fund unanticipated program or project expenses • Or to implement supplemental or advance mitigation projects
Cost	8-15% of credit cost	County specific land costs + legal fees	~20% of Construction Costs	Determined by the project specific amounts of restoration, enhancement, and preservation	Monitoring ~\$15k/year + project specific invasive species control needs	20% of purchase price + project specific long-term management needs	5% of credit cost

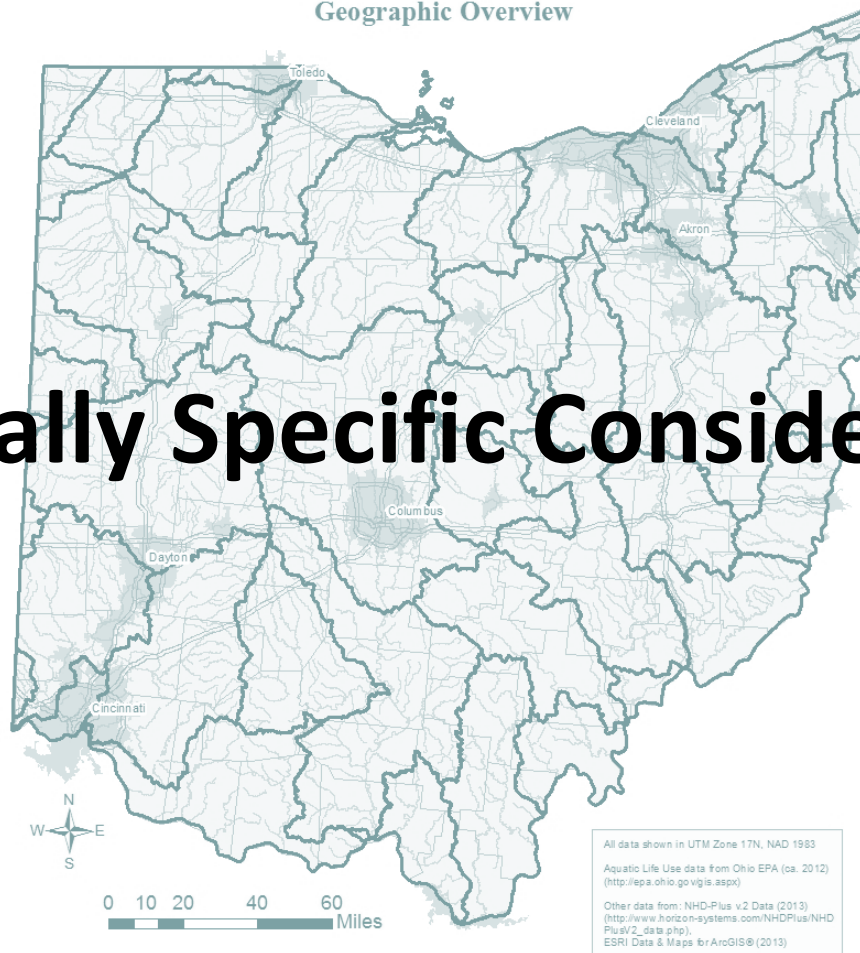
FULL COST ACCOUNTING: Cost Determination

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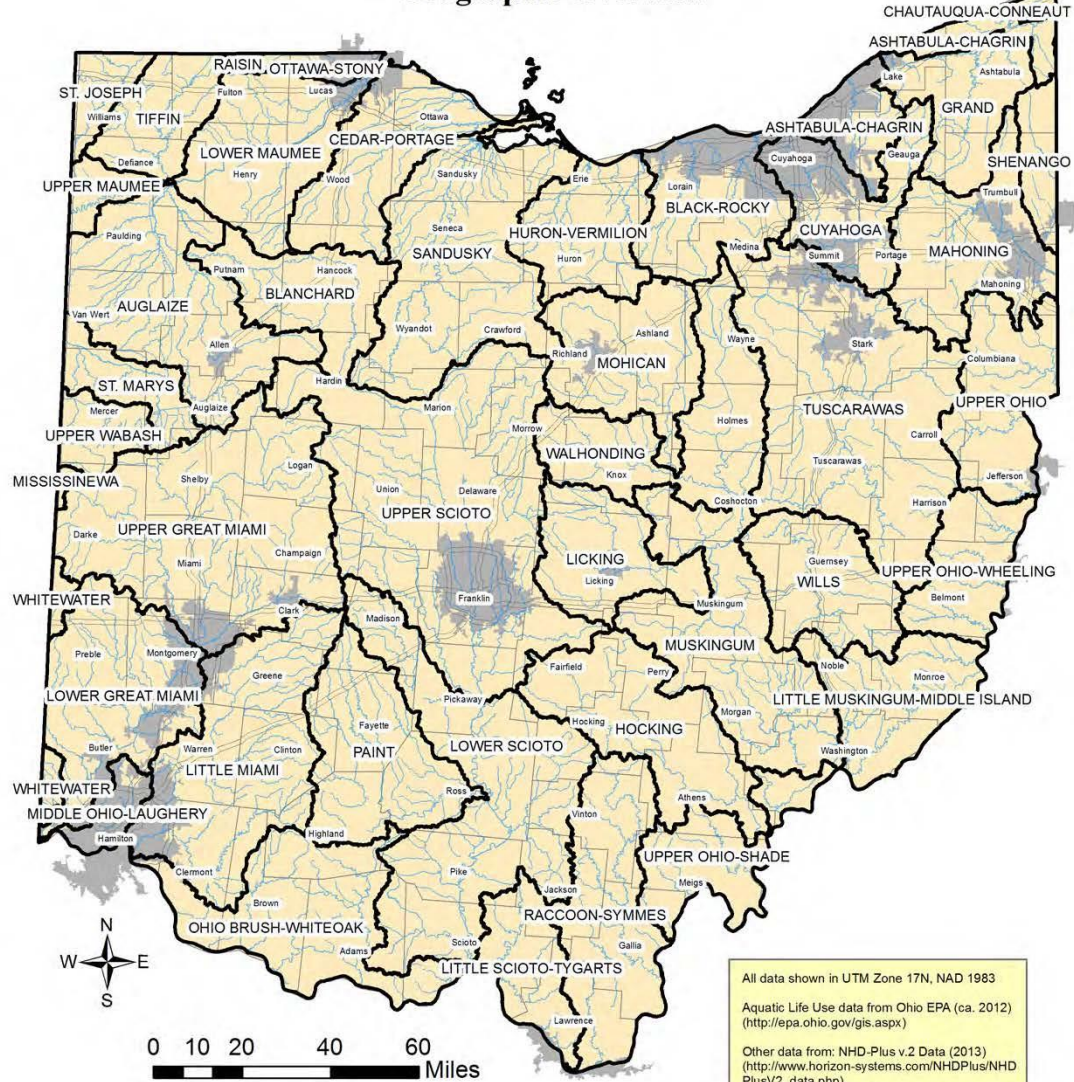
Estimating Future Costs!

Geographic Overview

Regionally Specific Considerations



Geographic Overview



All data shown in UTM Zone 17N, NAD 1983
 Aquatic Life Use data from Ohio EPA (ca. 2012)
 (<http://epa.ohio.gov/gis.aspx>)
 Other data from: NHD-Plus v.2 Data (2013)
 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_data.php),
 ESRI Data & Maps for ArcGIS® (2013)

Information To Gather

- **Contributing Factors**

- **Credit Methodology**
- **Performance standards**
- **Buffer widths**
- **Monitoring period**
- **Mineral rights**
- **Property values**

Policies

Geography

Ohio Policies

- Ohio Regulations
- Ohio's Credit Methodology

Table 11-2 identifies the potential credit ratio for each mitigation type and respective activity level.

Table 11-2. Suggested Credit Ratios

MITIGATION TYPE	ACTIVITY LEVEL	CREDIT RATIO
1. Restoration/Enhancement Efforts	1	
	2	
	3	
	4	
2. Preservation Note: All preservation must comply with 33CFR332.3(h)	1	
	2	
3. Buffer Work Only	Re-establishment	
	Rehabilitation	
4. Extra Buffer	Re-establishment	
	Rehabilitation	
	Preservation	

Table 2. Credit ranges based on action proposed at the bank

Type	Credits	Areas > 50 m from Wetland Boundaries	Notes
Wetland Re-establishment	*Up to 1:1	N/A	Preferred
Wetland Rehabilitation	Up to 1:2	N/A	No up-front release
Wetland Establishment	Up to 1:1	N/A	Not the preferred method/up-front may be reduced
Wetland Preservation	Generally 1:10 Up to 1:4	N/A	Looking for higher quality areas & demonstrated threat
Buffer-restoration	Generally 1:4 within 50m	May be considered for 1:10	
Buffer rehabilitation	Up to 1:4 within 50m	May be considered for 1:10	
Buffer preservation	Generally 1:10	Considered if ecologically compelling reason	Looking for higher quality areas

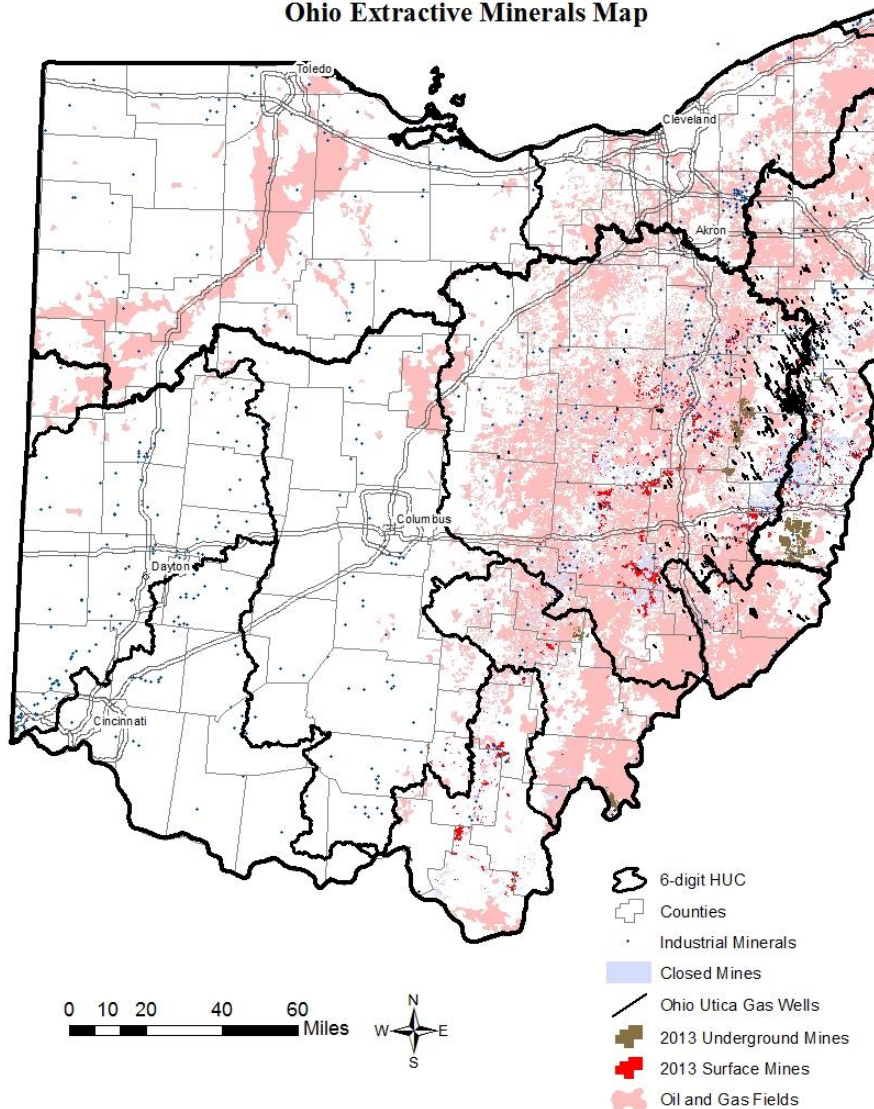
Ohio Policies

- **Ohio Regulations**
 - **Performance Standards**
 - **164 foot buffer protection**
 - **10 years of monitoring and invasive control efforts**
 - **Less than 5% invasive species cover**
 - **400 native trees and shrubs per acre**

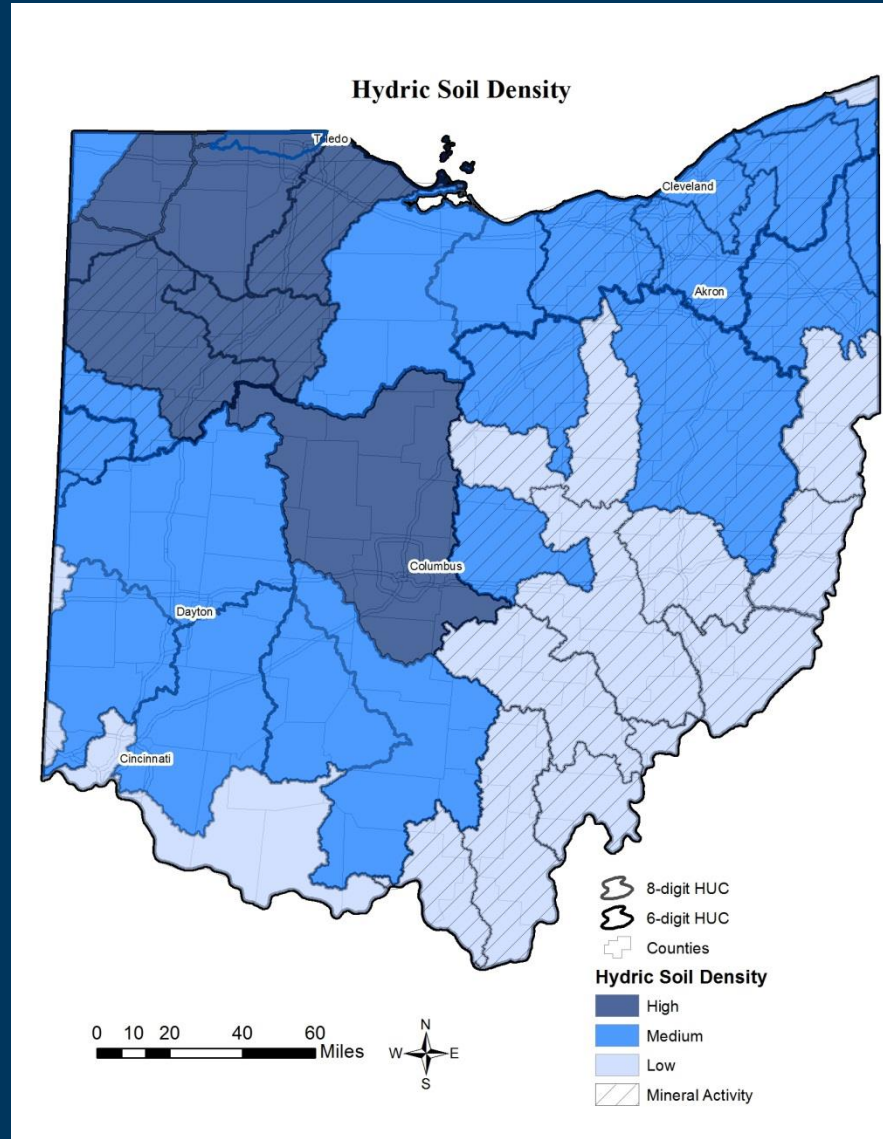
Ohio Geography

Mineral Rights

Ohio Extractive Minerals Map

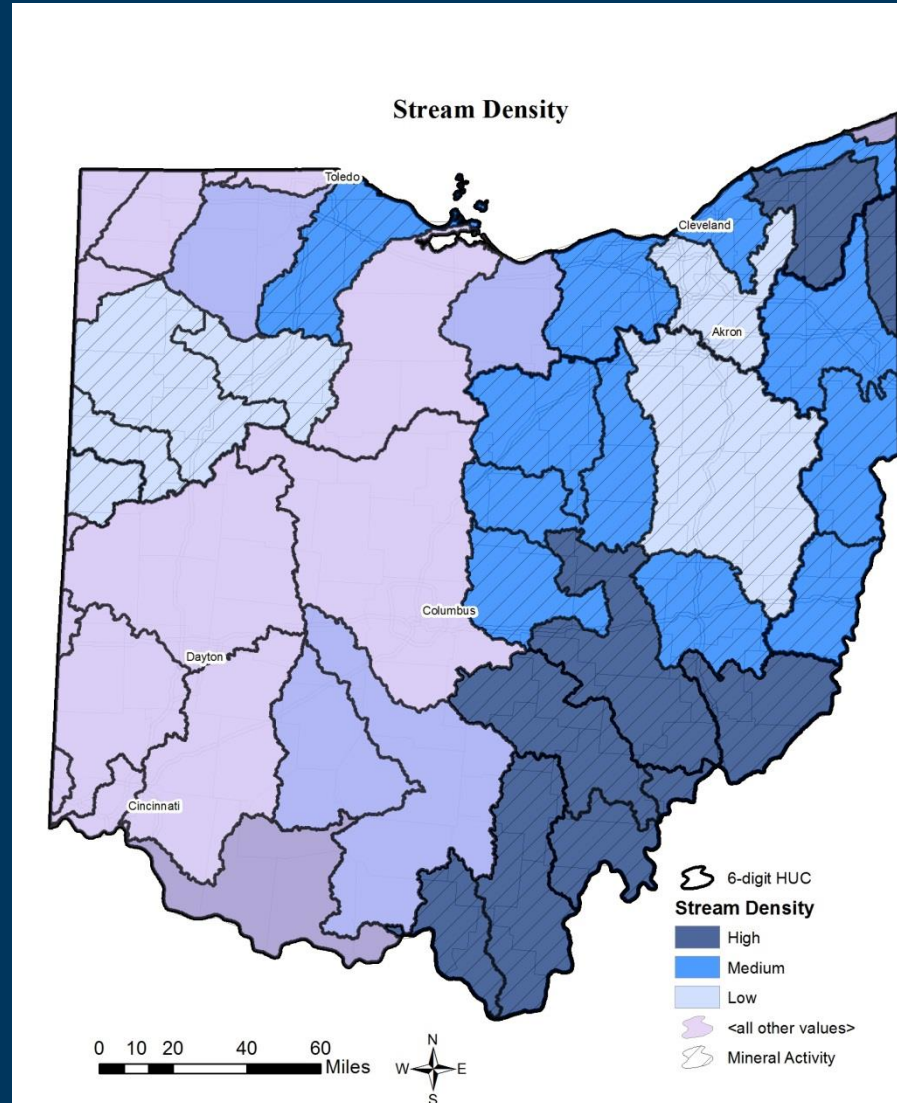


Hydric Density



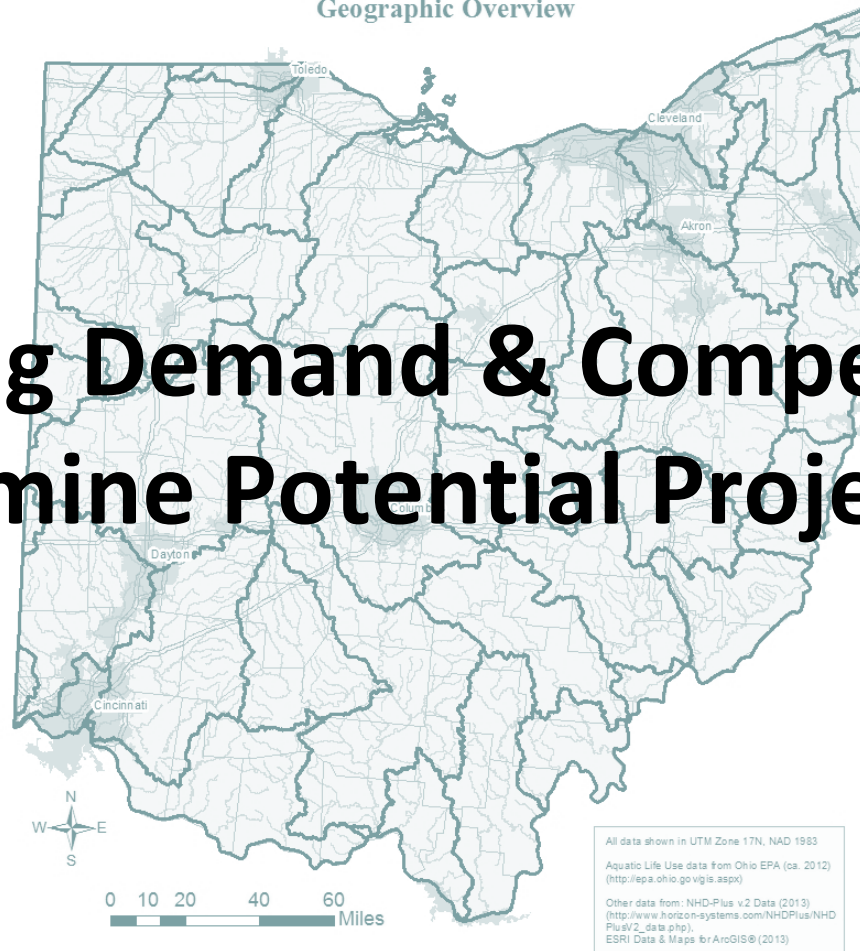
Ohio Geography

Stream Density



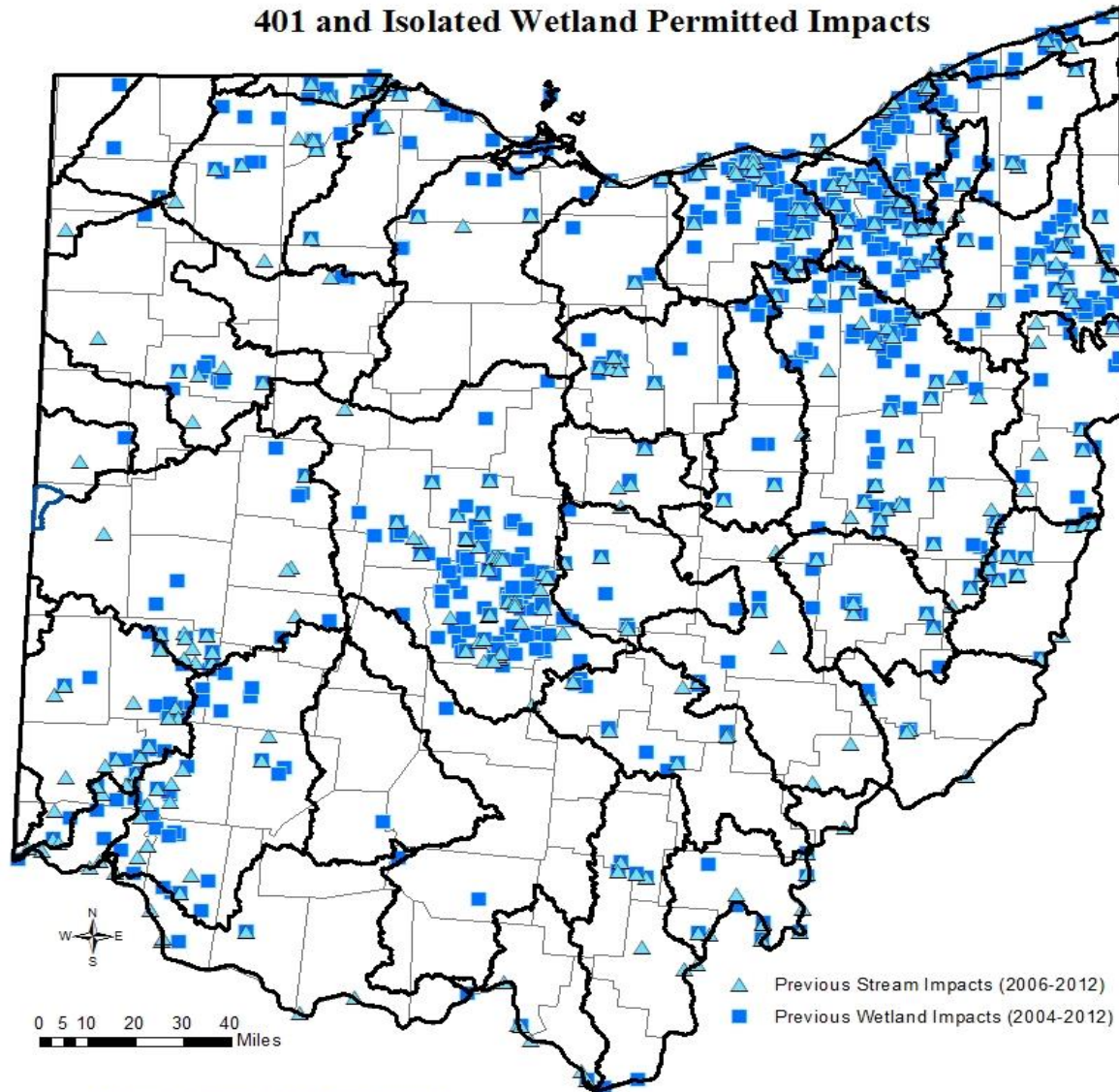
Geographic Overview

Assessing Demand & Competition to Determine Potential Project Size



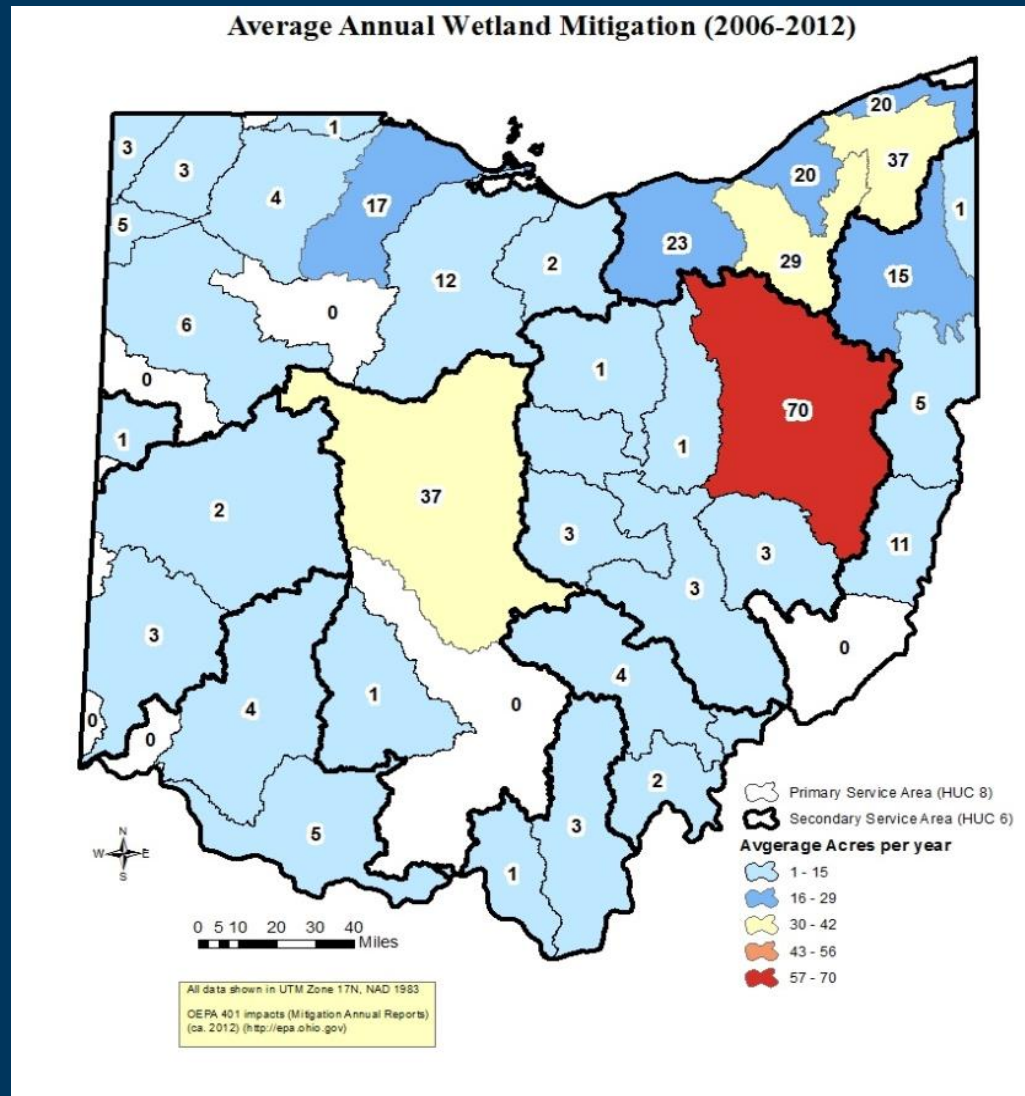
Ohio EPA Mitigation Tracking

401 and Isolated Wetland Permitted Impacts



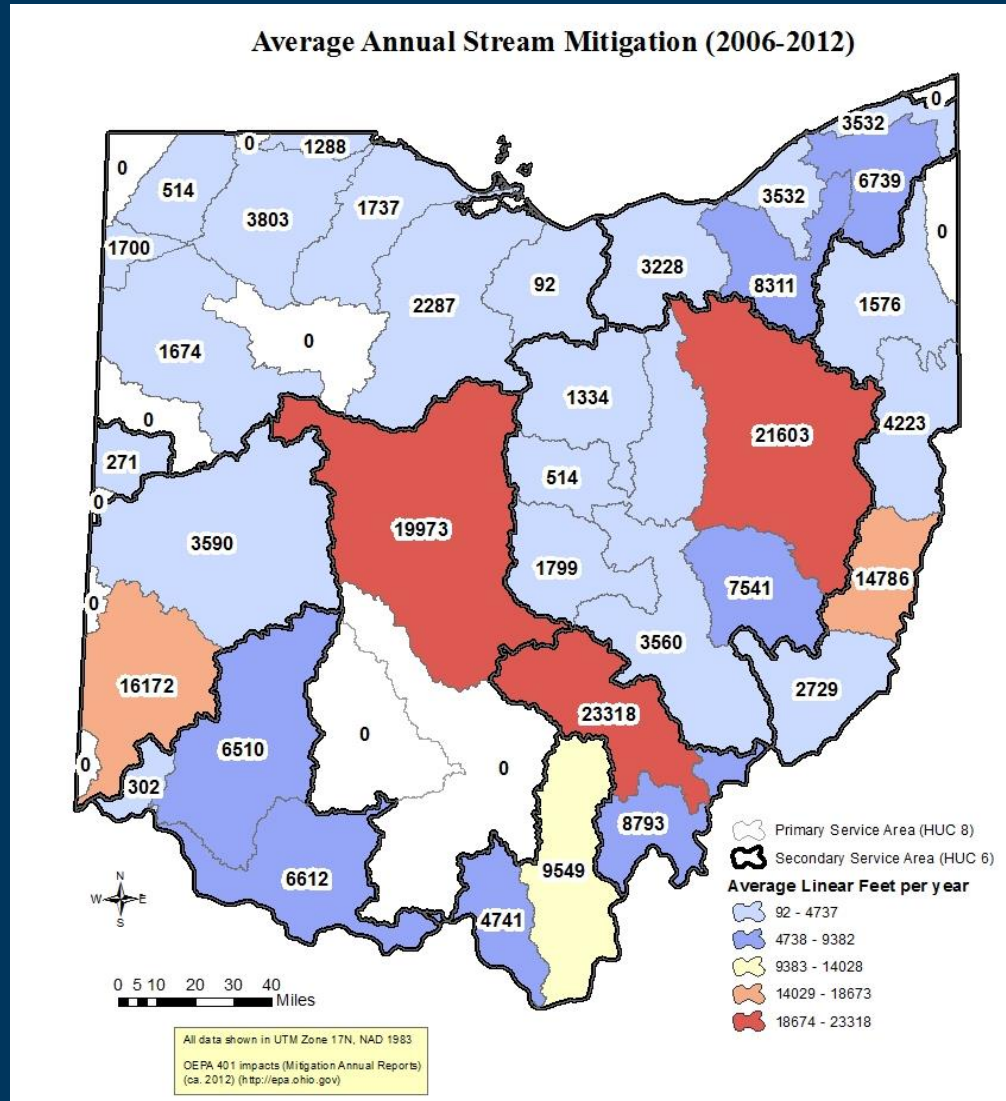
All data shown in UTM Zone 17N, NAD 1983

Past Wetland Mitigation



Ohio's Contributing Factors

Past Stream Mitigation



Information To Gather

- **Sources:**
 - **IRT Requirements and Policies**
 - **GIS**
 - **Past Experience – Existing ILF programs**
 - **Research**
 - **Case studies, articles, government reports**
 - **Consultant Costs**

(use caution with pre-2008 information)

Service Area Matrix

Service Area Name	Property costs (High, Medium, Low)	Severed Mineral Rights	Low stream activity	Low wetland activity	Small Watershed (<500 miles ²)	Wetland Density (H, M, or L)	Hydric Soil Density	Stream Density (H, M, or L)	stream mit avg	wet mit avg	Wetland Bank service Area	Other mit cover
	M	trace	Y	Y		H	H	L	1288	1	1	M
	M	none	Y	Y	Y	M	H	L	0	0		L
	L	trace	Y	Y	Y	H	M	M	0	3		L
	M	moderate high	Y	Y	Y	M	L	L	0	0		L
	L	none	Y		Y	M	M	M	1700	5		L

Projected Cost/Revenue Balance Statement

Project Budget Estimate				TNC projected Cost %	WV Cost %	NC Cost %
Hypothetical	\$ per Unit					
Paid for through the 15% Administrative Fee	OWDA fund management fee (0.35%)	\$ 13,230	OWDA's fee is 0.35% of credit cost	10%	15%	4.0%
	Pre-Project					
	Stakeholder Outreach					
	RFP for potential sites					
	Site Identification					
	Preliminary Site Evaluation					
	Site Selection					
	Landowner Negotiations					
	Purchase agreement or conservation easement dra	\$ 70,000	Costs estimated from KY experience			
	Option to purchase		\$483,770 remains from admin fee for program administration			
Concept Plan						
Stream Assessments						
Preliminary Design						
Report Writing						
Agency Visit						
Paid for through the Remaining Credit Fee	Property Acquisition		160 acres	18%	12%	3.6%
	Conservation Easement or Land Purchase	\$ 640,000	=(total If / 75 If/acre)*\$3000/acre			
	Property Re-sale (negative cost)	-				
	Appraisal					
	Property Survey	\$ 32,000	5% of purchase price			
	Title Search					
	Final Site Protection Instrument	\$ 5,000	Costs estimated from Terry Siedel			
	Pre-Construction Design and Permitting			0%	10%	14.3%
	Project Management					
	SHPO Coordination incl CR Subcontract					
	Biological Assessment incl ES surveys					
	Bat Mitigation					
	Bat tree removal					
	Other ES mitigation					
	Engineering Subcontract					
	Contractor Selection					
	Final Design	328,057	20% of construction (Estimated from Ohio consultants)			
	Mitigation Plan Preparation and Submittal					
	Water Quality Certification Permit & Fee					
	Local Permits & Fees					
Corps Permit						
Construction and Implementation				44%	50%	60.6%
Construction						
Re-establishment	\$ 1,224,000	@\$170/lf for 60% of lf (Estimated from Ohio consultants)				
Rehabilitation	\$ 72,000	@\$30/lf for 20% of lf (estimated from KY experience)				
Riparian Buffer Habitat Enhancement	\$ 123,967	(total lf * 150ft buffer)/(43,560 square ft/acre) = acres buffer @ \$3000/acre (estimated from KY experience)				
Project Contingency	\$ 61,200	5% of construction costs (estimated from KY experience)				
Financial Assurances	\$ 97,920	Performance bond @ 8% of construction costs (obtained from Ohio consultants and research)				
Construction Oversight	\$ 61,200	5% construction costs (estimated from Ohio consultants and research)				
10-Year Maintenance & Monitoring				3%	8%	15.5%
As-Built Report and Annual Reports 1/3/5/7/9/10						
CA and channel monitoring - annual						
Cross section survey - 1/5						
Stream habitat monitoring	\$ 72,000	\$12K/per monitoring year (estimate provided by OH consultants)				
Riparian vegetation monitoring - 1/3/5/7/9						
Interim Reports 2/4/6/8	\$ 12,000					
Invasives - annual control	\$ 13,950	intensive years 0-3, low intensity years 4-10 (estimated from KY experience)				
Stewardship Endowment				7%	5%	10.8%
Land Protection Endowment	\$ 128,000	20% purchase price				
Long-term Management	\$ 128,000	20% purchase price				
Program Contingency = 5% credit fee	\$ 189,000			5%	0%	0.0%
TOTAL:	\$ 3,271,524					
SUMMARY:						
Credits Generated	12600	=60% lf @ 1:1 ratio (restoration) + 20% lf @ 1:2 ratio (enhancement) + 20% lf @ 1:10 ratio (preservation) + buffer re-establishment @ 1:4 + extra buffer preservation @ 1:20				
Linear Feet	12000					
Cost per credit	\$300					
Credit Sales	\$3,780,000					
15% admin	\$567,000					
Project Costs	\$3,271,524					
Total Costs	\$3,768,524					

Projected Cost/Revenue Balance Statement

Stream Project Budget

Variables	
Stream Density (lf/acre) (High=50, Medium=35, 20 Low=20)	
2000 Linear Feet	
\$1,000 Cost per acre	
60% Amount of stream restoration	
20% Amount of stream enhancement	
20% Amount of stream preservation	
15% Administration Fee	
Severed Mineral Rights (extra \$0 costs=\$3000/acre)	

		\$ per Unit
	Fund management fee (0.35%)	\$
Pre-Project		
	Stakeholder Outreach	
	RFP for potential sites	
	Site Identification	
	Preliminary Site Evaluation	
	Site Selection	
	Landowner Negotiations	
	Purchase agreement or conservation easement draft	\$
	Option to purchase	
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	Agency Visit	

Projected Cost/Revenue Balance Statement

Property Acquisition		
Conservation Easement or Land Purchase	\$	
Property Re-sale (negative cost)		
Appraisal		
Property Survey	\$	
Title Search		
Severed Minerals Extra costs	\$	
Final Site Protection Instrument	\$	
Pre-Construction Design and Permitting		
Project Management		
SHPO Coordination incl CR Subcontract		
Biological Assessment incl ES surveys		
Bat Mitigation		
Bat tree removal		
Other ES mitigation		
Engineering Subcontract	\$	
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Construction and Implementation		
Construction		
Re-establishment	\$	
Rehabilitation	\$	
Riparian Buffer Habitat Enhancement	\$	
Project Contingency	\$	
Financial Assurances	\$	
Construction Oversight	\$	
10-Year Maintenance & Monitoring		
As-Built Report and Annual Reports		
1/3/5/7/9/10		
CA and channel monitoring - annual	\$	
Cross section survey - 1/5		
Stream habitat monitoring		
Riparian vegetation monitoring - 1/3/5/7/9		

Projected Cost/Revenue Balance Statement

SUMMARY:

Credits Generated	
Cost per credit	\$
Credit Sales	\$
Admin	\$
Project Costs	\$
Total Costs	\$

Costs (per foot) may be affected by project size because each project contains fixed costs imbedded in each expense component for which economies of scale can be realized

Cost savings would be found if wetland and stream restoration are combined in one project

FULL COST ACCOUNTING: Cost Determination

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Thanks!



Devin Schenk

dschenk@tnc.org

The Nature Conservancy

Ohio Field Office

6375 Riverside Drive, Suite 100

Dublin, Ohio 43017