Pond Creek Watershed-based Plan Initial Stakeholder Meeting

August 23, 2018
6:00 PM

Agenda

I. Welcome and Introductions

II. Watershed Basics

III. Overview of Pond Creek Watershed

IV. Elements of a Successful Watershed-based Plan

V. Future Plan Involvement

VI. Discussion

Greater Egypt Regional Planning and Development Commission

Tyler Carpenter
GIS & Environmental Planning Manager

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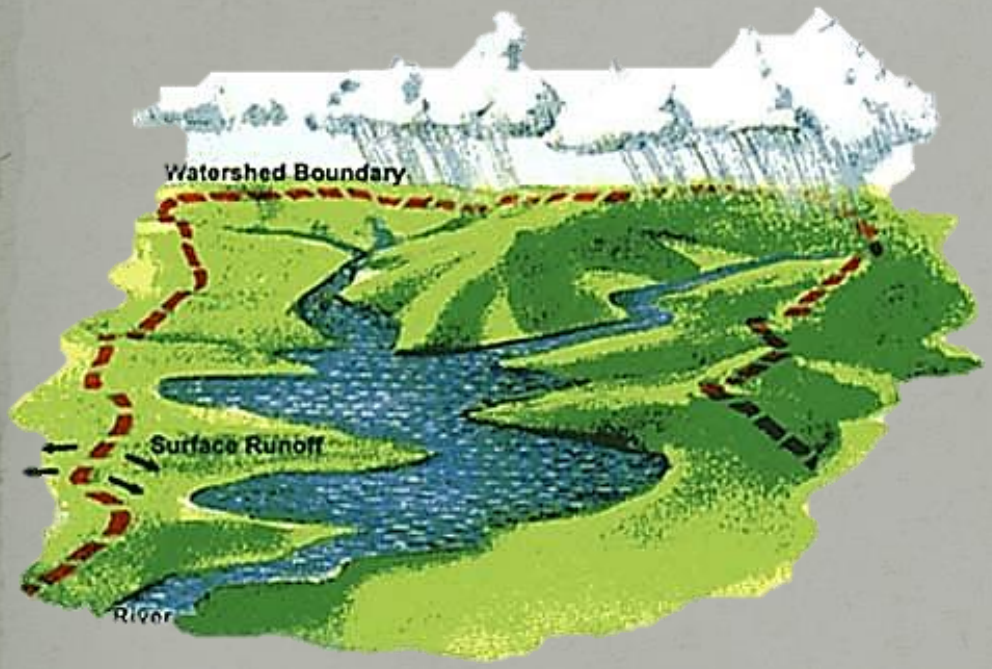
Regional Planner

Illinois Environmental Protection Agency

<u>IEPA- 604(b) Program</u>

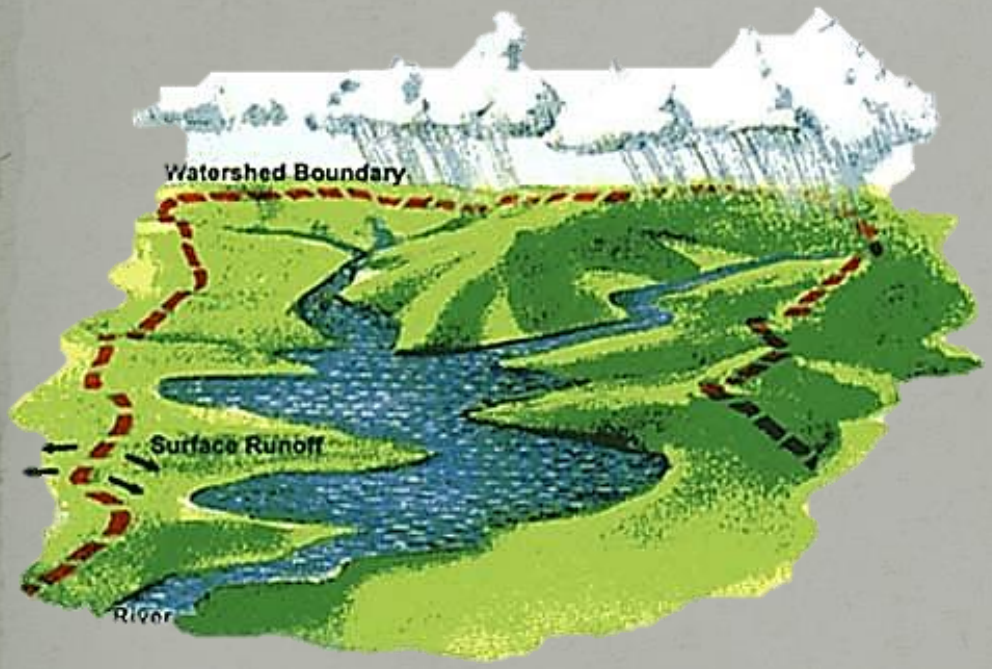
- Water Quality Management Planning Grant
- Greater Egypt's 604(b) grants include:
  - watershed-based planning
  - coordinating the Volunteer Lake Monitoring Program (VLMP)
  - stormwater management educational materials

Watershed Basics



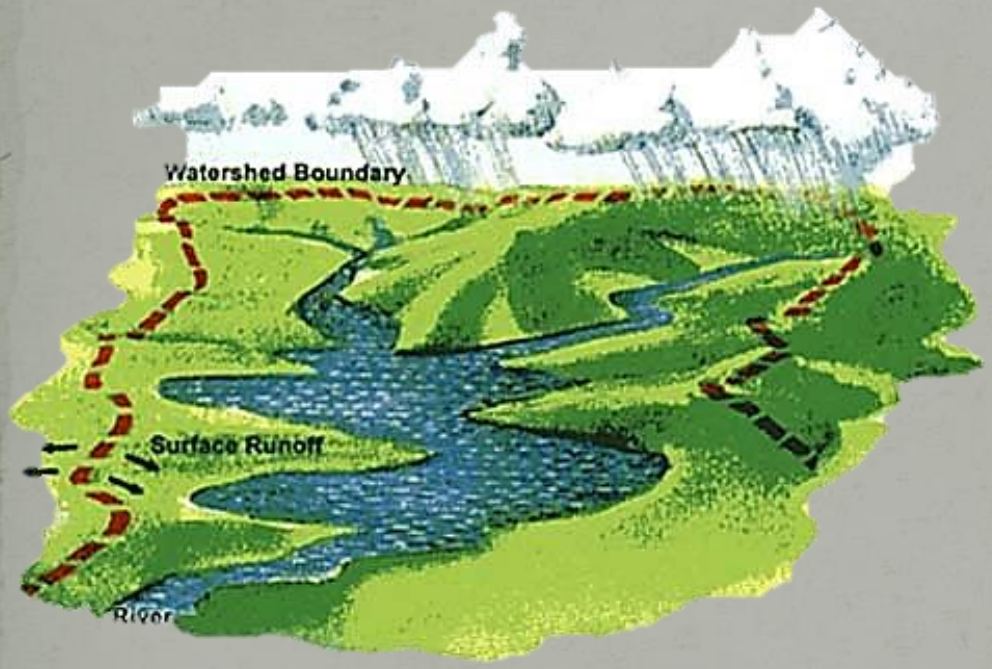
- What constitutes a watershed?
- What are the components of a watershed?

What is a Watershed?



- An area of land where all of the runoff flows to a common waterbody
- Boundaries are generally the highest points
- Watersheds can vary in size

Watershed Components



- Surface Water
  - Creeks, Lakes, Wetlands
- Riparian Areas
  - Plants along banks
- Uplands
  - Steep terrain
- Groundwater
  - Bedrock, Sand and Gravel

Hydrologic Unit Code (HUC)

- Identify a hydrologic feature (watershed)
- Six levels of HUC

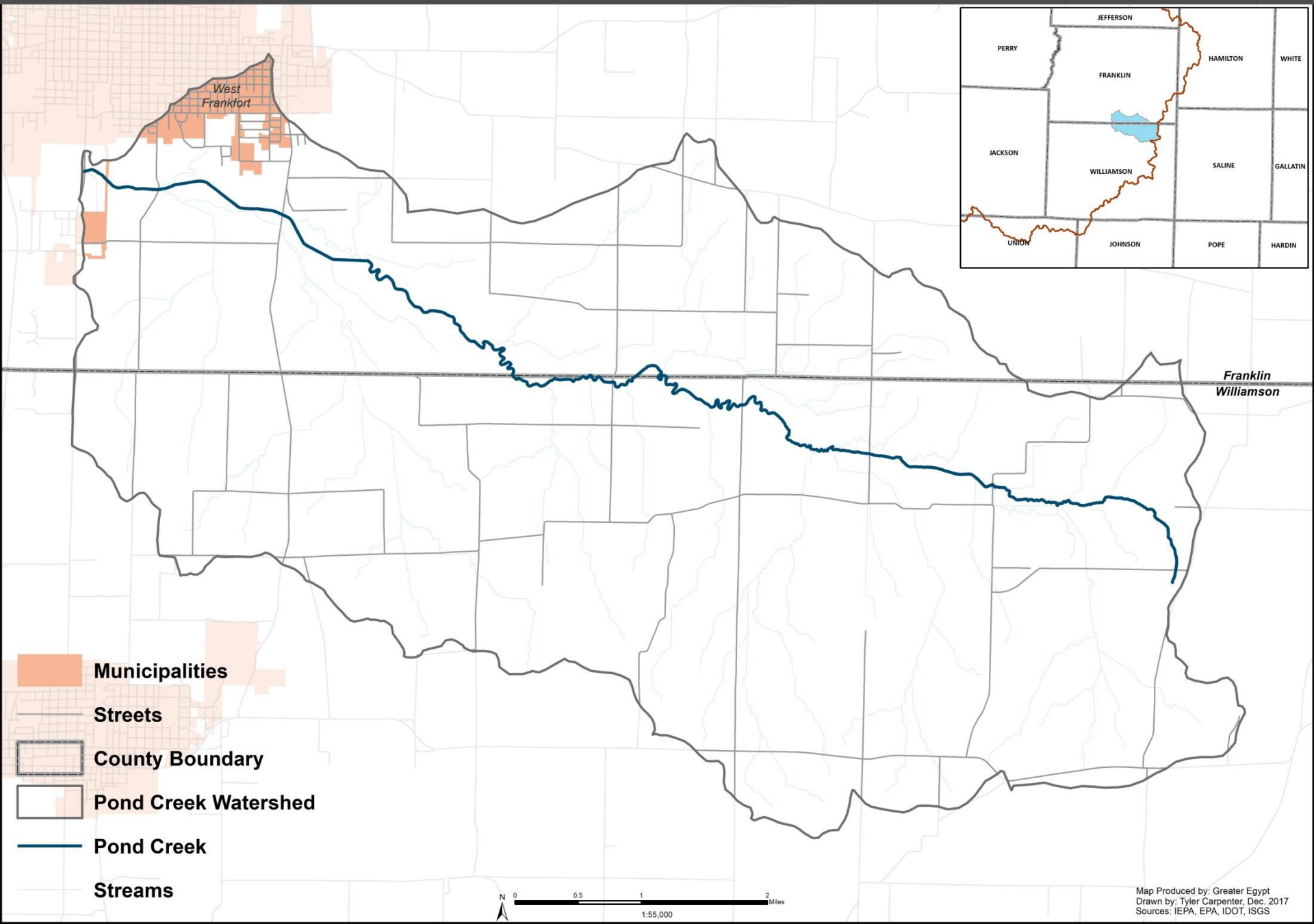
Name	Level	Digits	Average size (square miles)	Number of HUCs (approximate)	Name	Code (HUC)
Region	1	2	177,560	21	Upper Mississippi	07
Subregion	2	4	16,800	222	Upper Mississippi-Kaskasia-Meramec	0714
Basin	3	6	10,596	352	Upper Mississippi-Meramec	070401
Subbasin	4	8	700	2,149	Big Muddy	07140106
Watershed	5	10	227	22,000	Pond Creek	0714010605
Subwatershed	6	12	40	160,000	Pond Creek	071401060501

Pond Creek Watershed

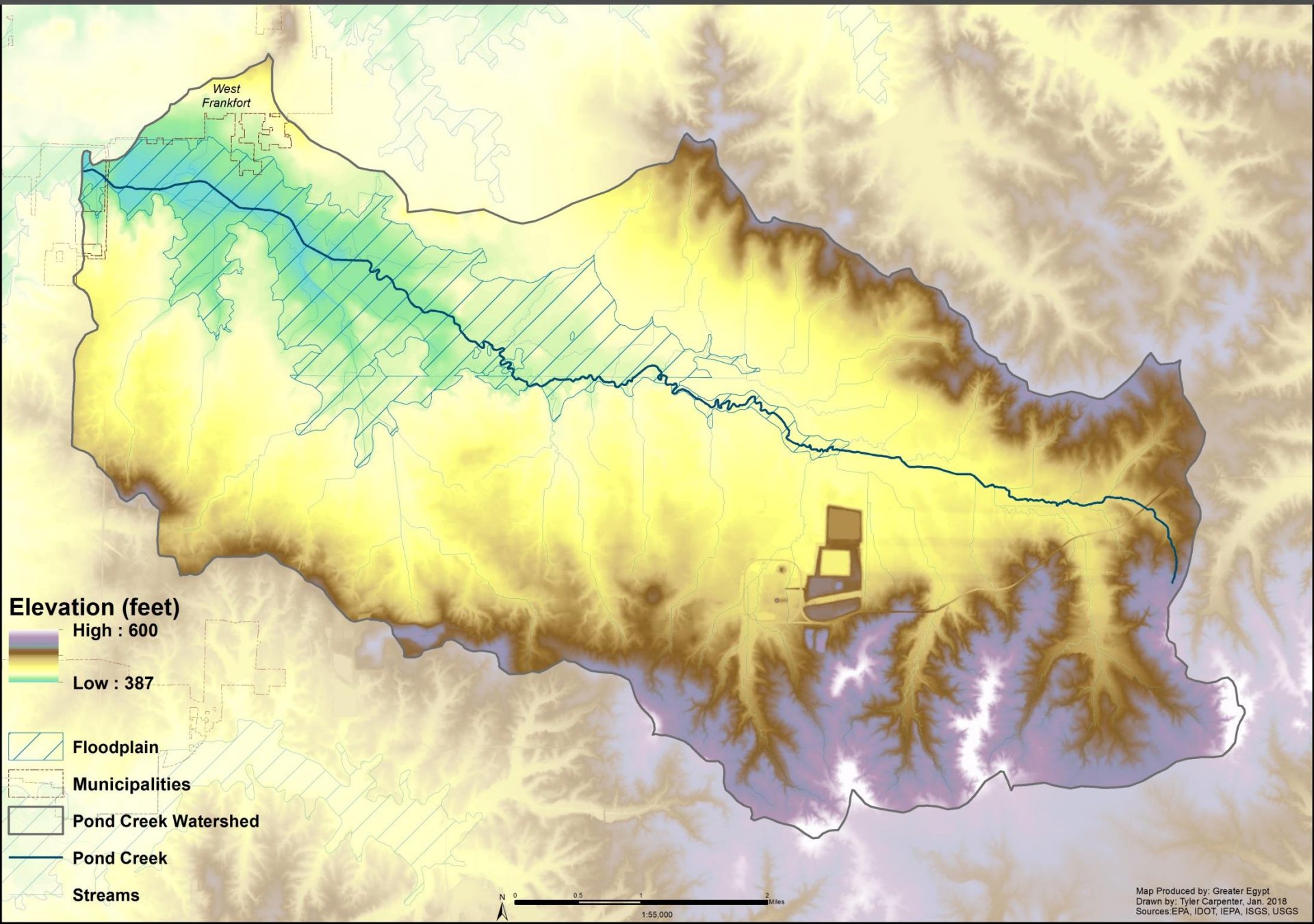
Quick Facts:

- 21,192 acres, or 33 square miles
- Located in Franklin and Williamson Counties
  - 32.7 % Franklin County
  - 67.3 % Williamson County
- Pond Creek runs 12.04 miles in a northwesterly direction
- West Frankfort is the only municipality in the watershed
- Detailed information can be found in the watershed inventory and assessment

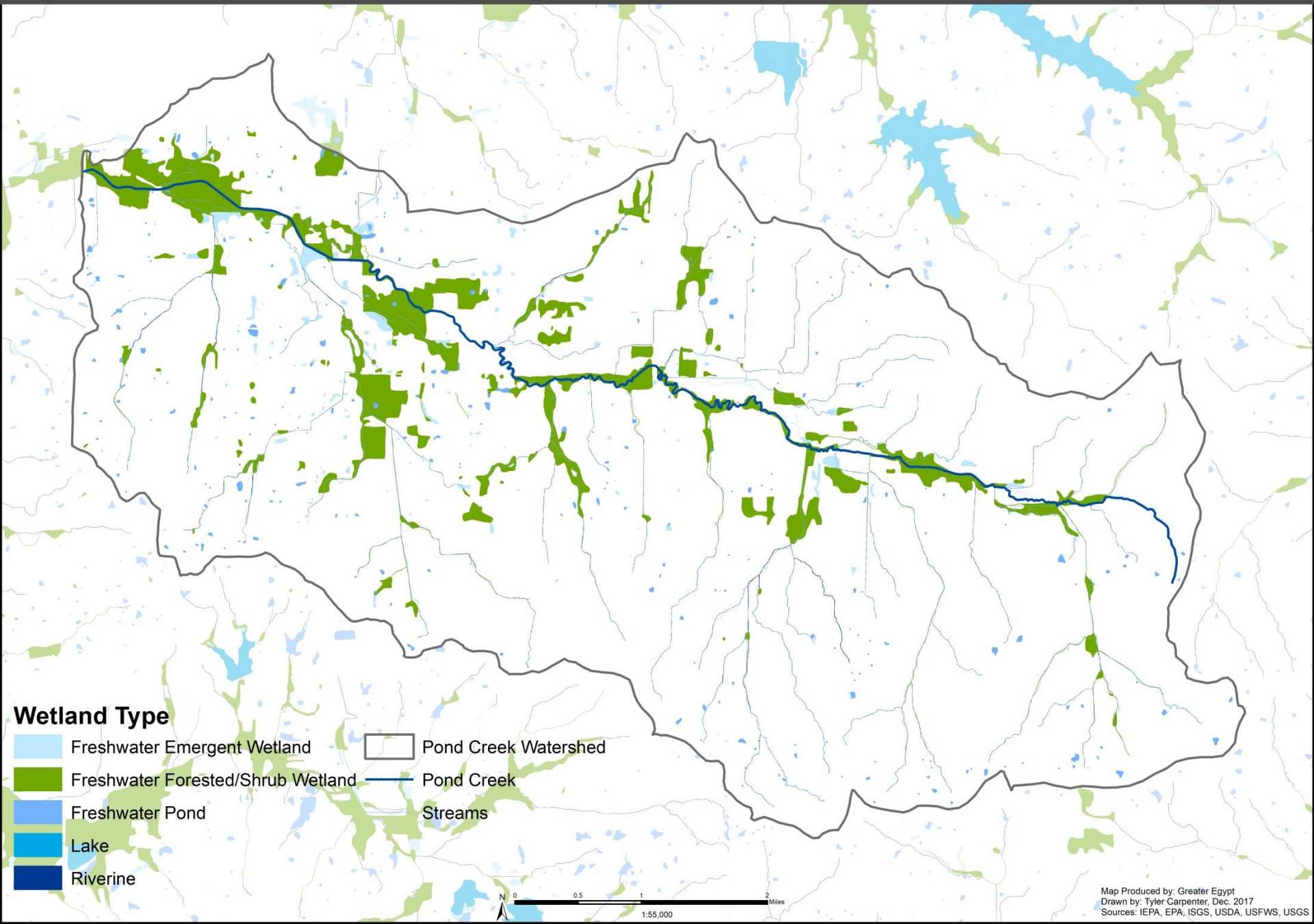
Pond Creek Watershed - Planning Area



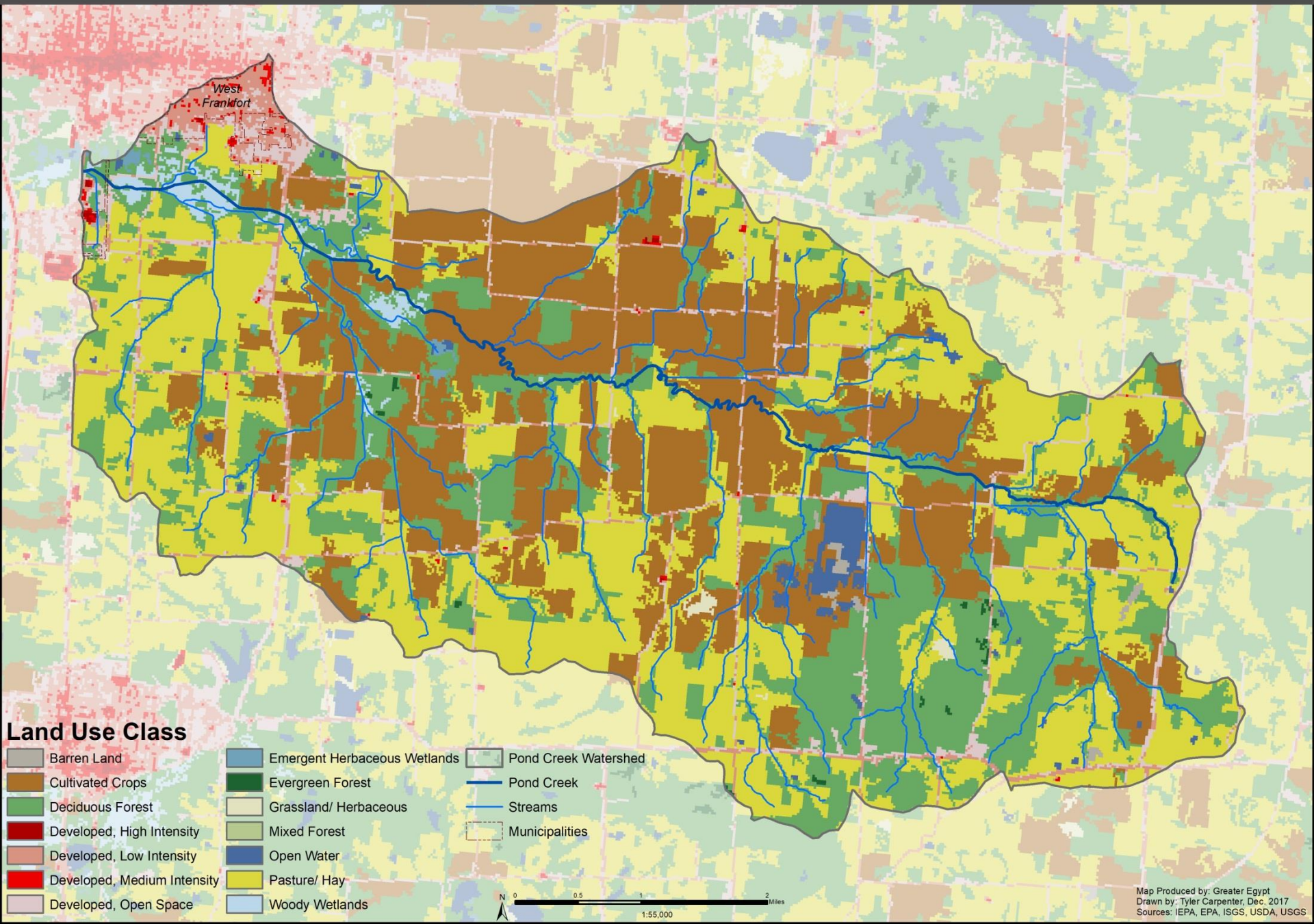
Pond Creek Watershed - Elevation and Floodplain



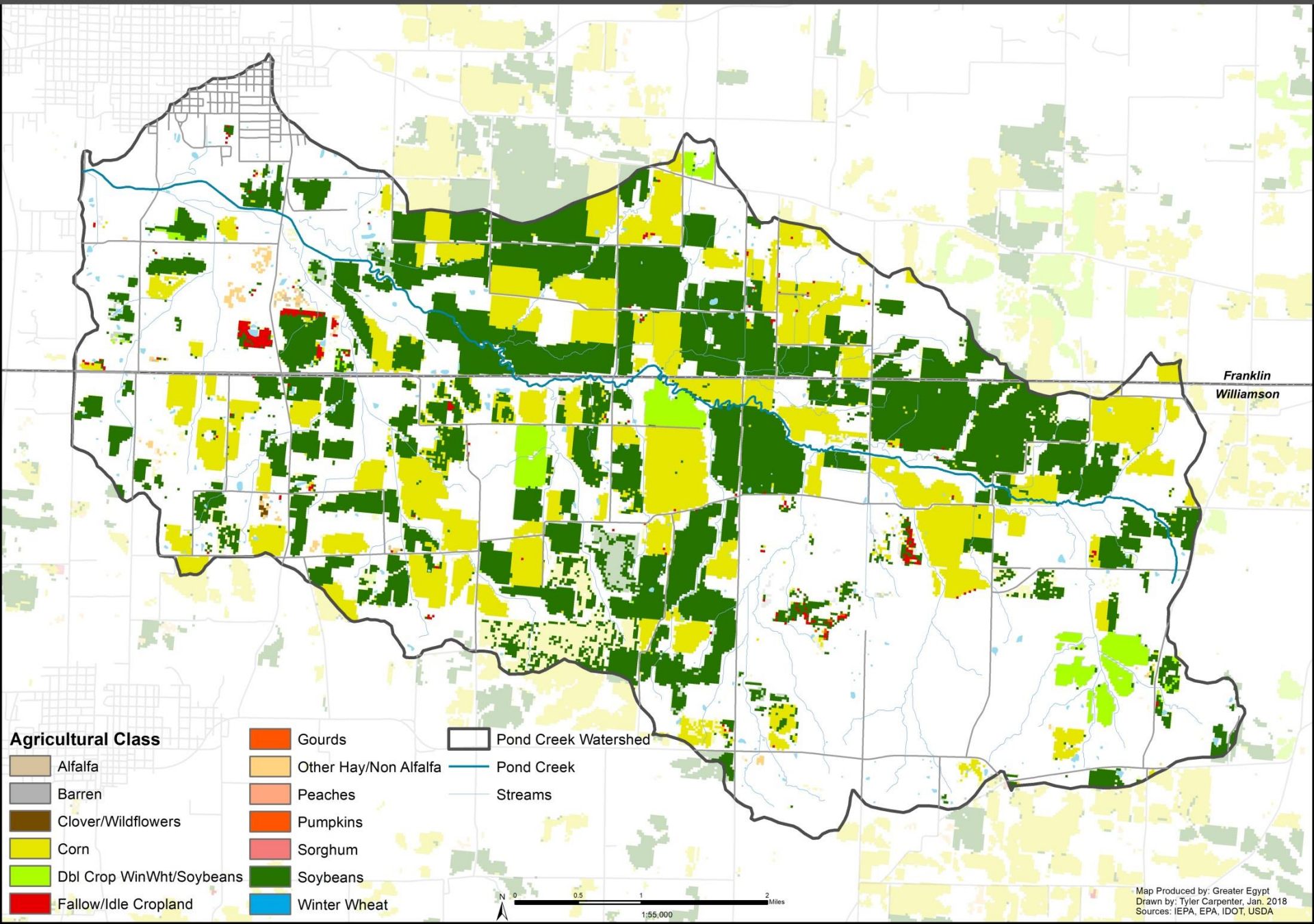
Pond Creek Watershed - Wetlands



Pond Creek Watershed - Land Use

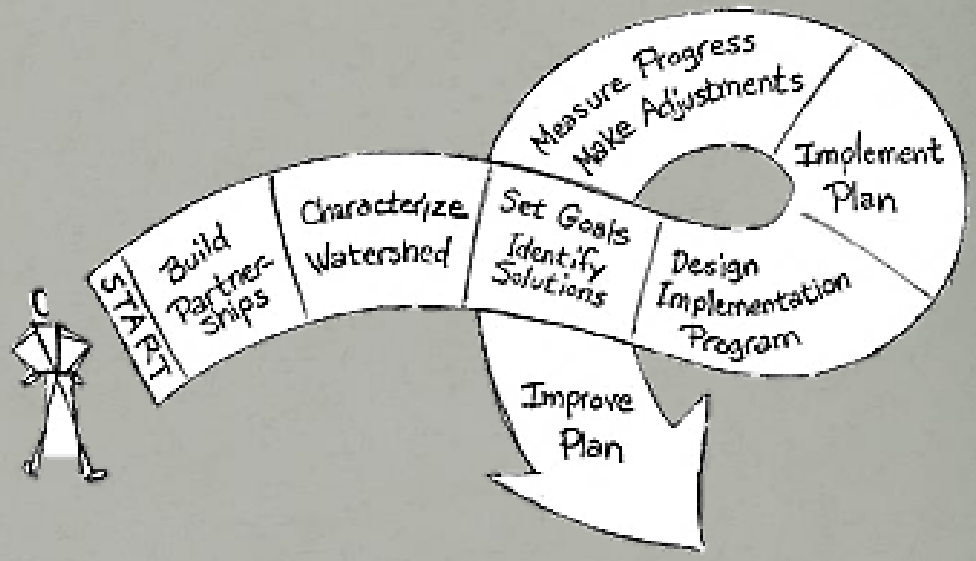


Pond Creek Watershed - Agriculture



Watershed-based Planning

- Summarizes the overall condition of the watershed
- Provides a framework to restore water quality in impaired waters
- Protects water quality in other waters adversely affected or threatened by point source and non-point source pollution



Types of Water Quality Pollution

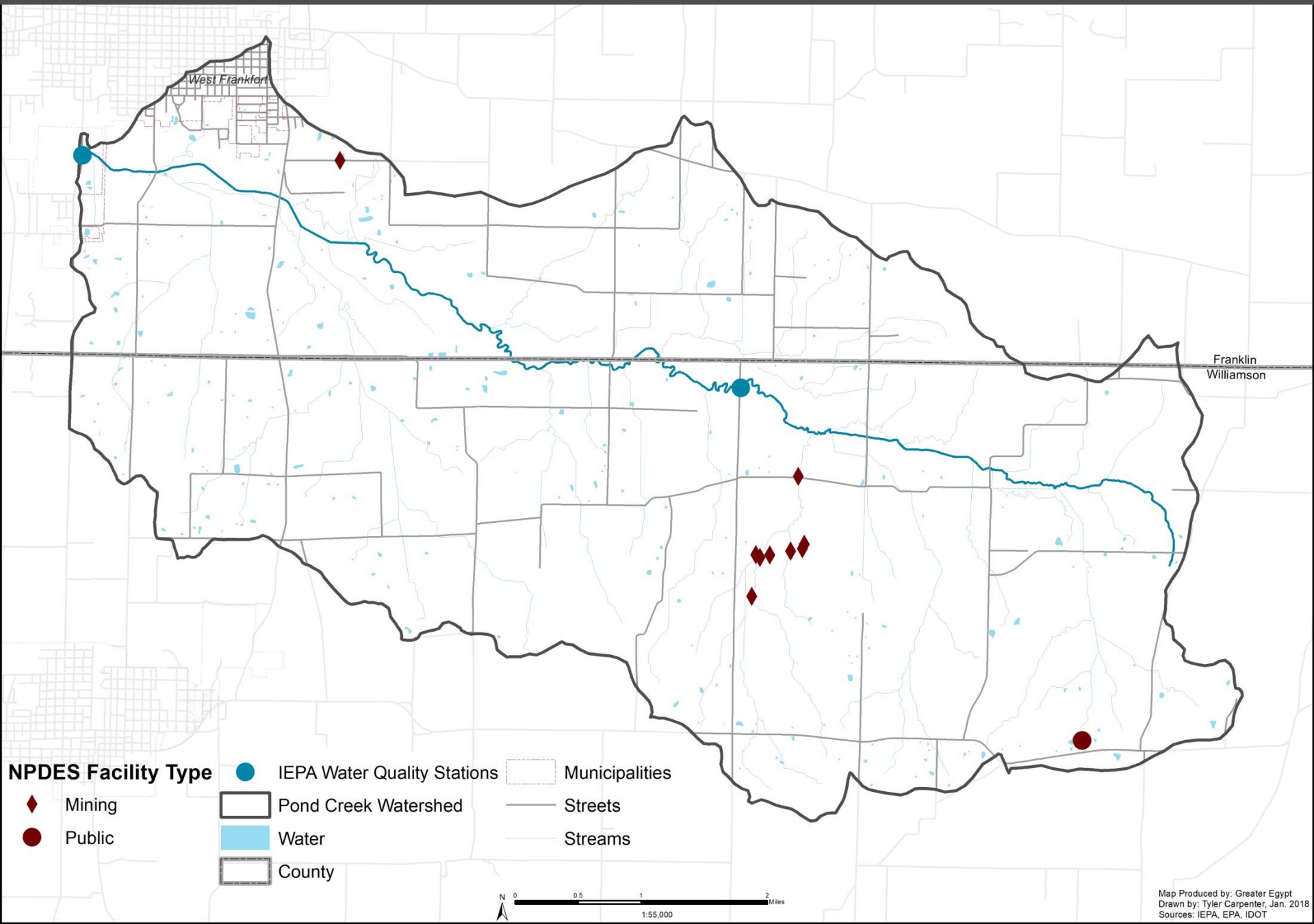
Point Source

- Domestic WTP
- Industrial WTP
- Combined Sewer Overflows
- Sanitary Sewer Overflows
- Mine Discharges
- Landfills

Nonpoint Source

- Urban Runoff
- Golf courses
- Crop Production
- Livestock Grazing
- Erosion
- Failing Septic Systems

Pond Creek Watershed - NPDES Facilities



Why Develop a Watershed-based Plan?

Benefits can include:

- Reduction of pollution on surface and groundwater
- Restoration of water bodies to a healthy state
- Conservation of farmland
- Partnerships and collaboration among stakeholders
- Support of sustainable communities and economic growth
- Prevention and reduction of flooding

Elements of a Successful Watershed-based Plan

Collaboration of Stakeholders

- Stakeholder-supported approach to improving and protecting water resources
- Stakeholders can include representatives from local government, conservation groups, businesses, landowners, etc.
- The success of a watershed-based plan is dependent on the involvement of the stakeholders

Nine Elements of a Watershed-based Plan

1.) Identify causes and sources of water pollution and estimate existing pollutant loads

2.) Set water quality goals and load reduction targets to achieve those goals, and estimate load reductions expected from recommended management measures

3.) Describe the management measures needed to achieve load reductions targets

4.) Describe the technical and financial assistance and relevant authorities needed to implement the plan

5.) Enhance public understanding through outreach measures

Nine Elements of a Watershed-based Plan

6.) Provide a schedule for implementing the management measures identified in the plan

7.) Identify interim, measurable milestones fro determining whether management measures are being implemented on schedule

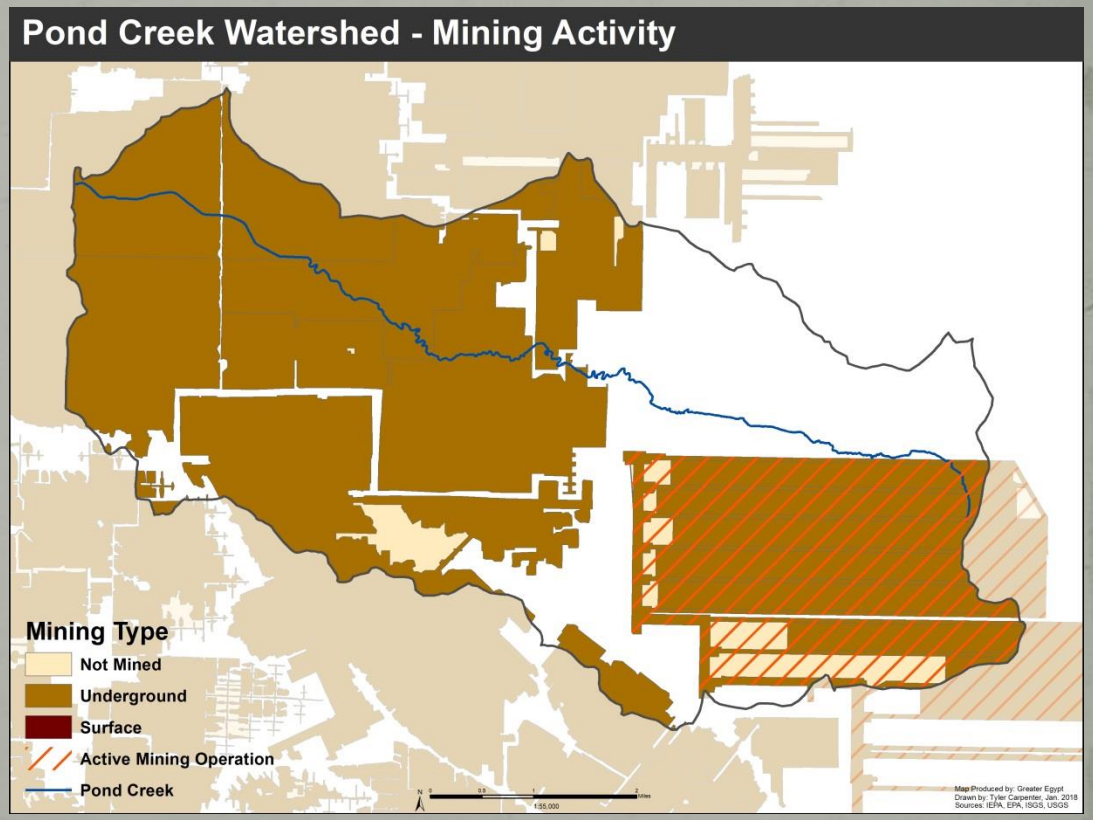
8.) Identify interim benchmarks to measure progress in meeting water quality goals and load reduction targets

9.) Describe a monitoring component

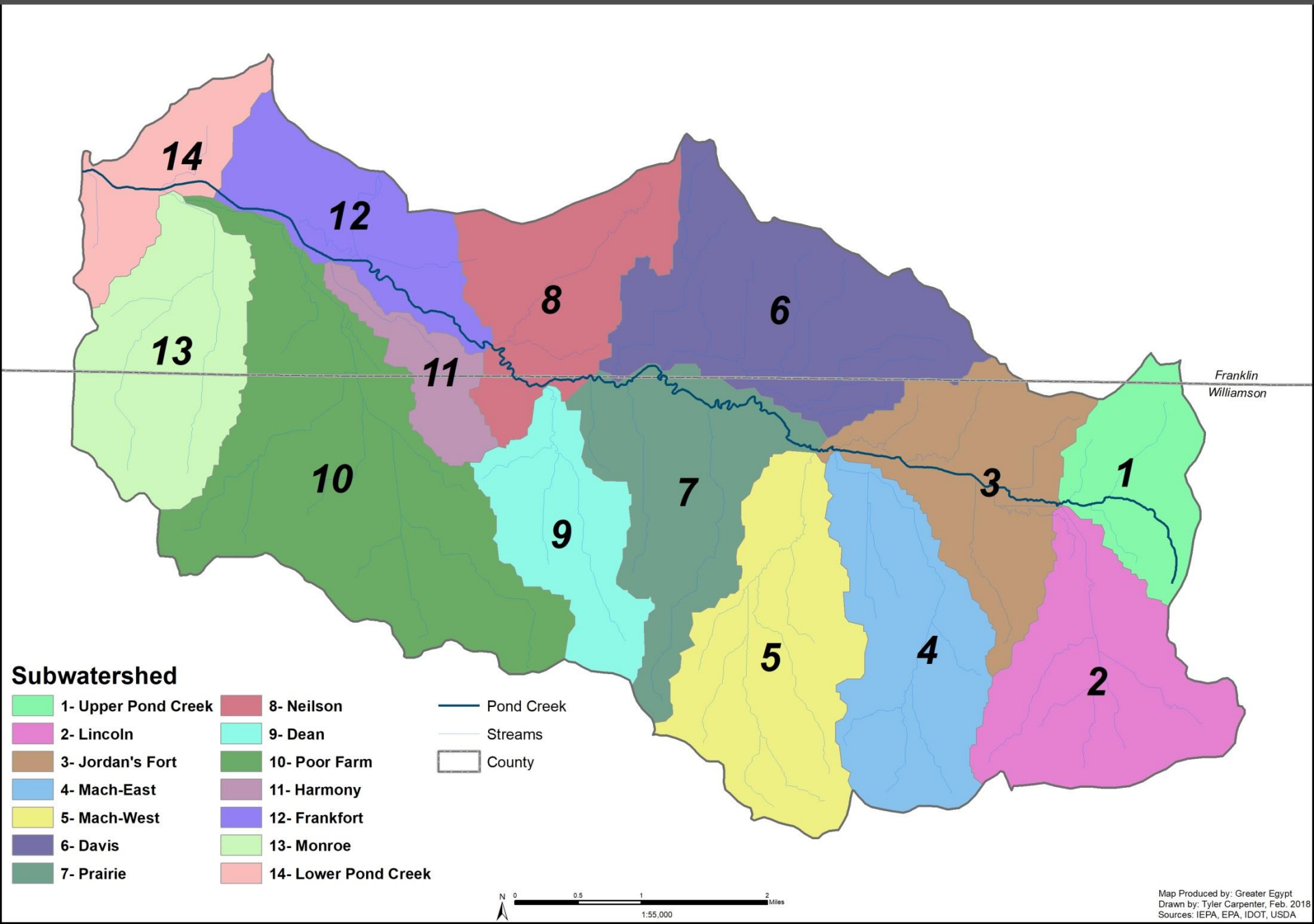
1.) Identify Causes and Sources of Water Pollution and Estimate Existing Pollutant Loads

Watershed Resource Inventory

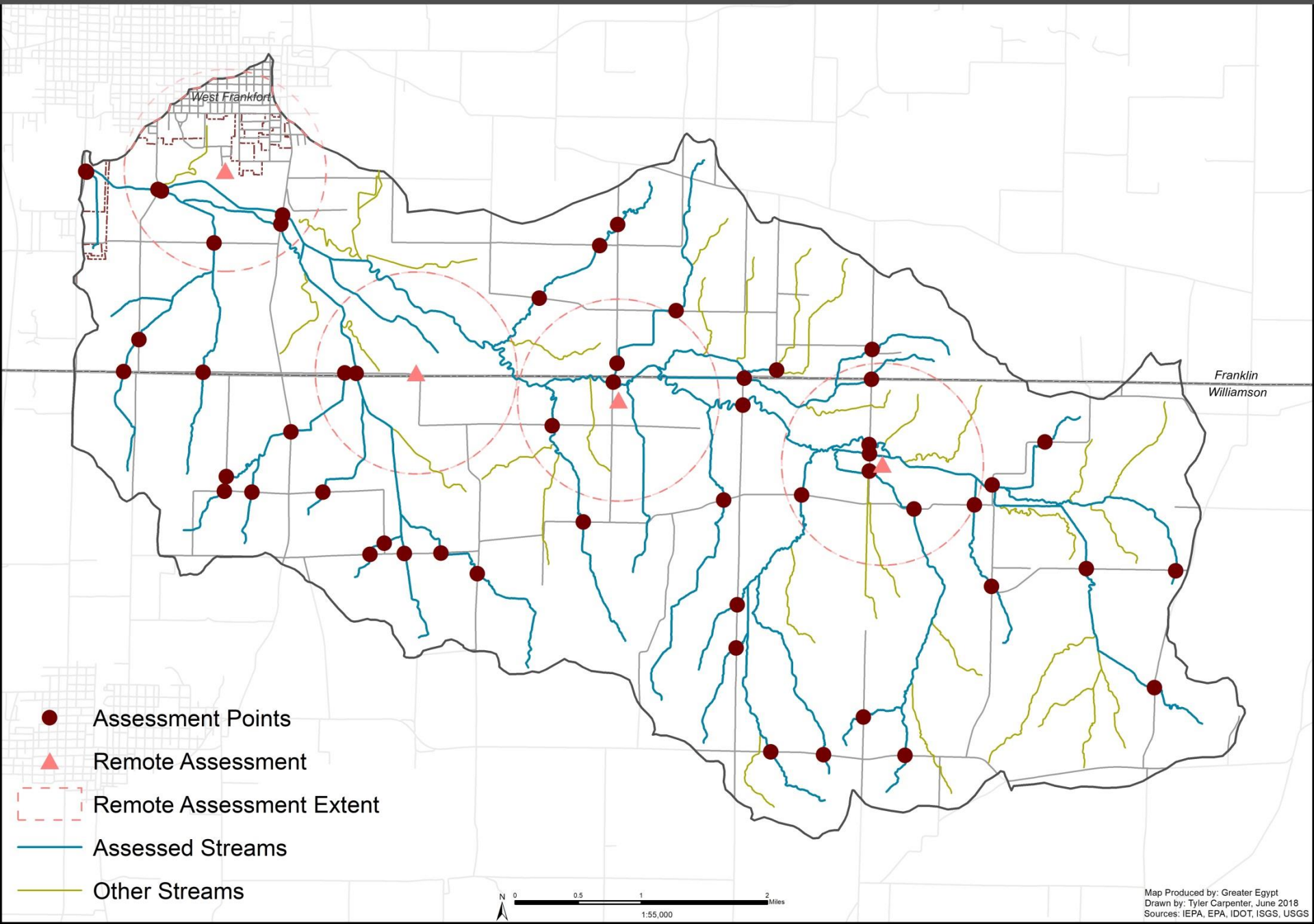
- Documentation of existing conditions in the watershed and subwatersheds
- Inventory and assessment of components such as: geographic boundaries, land use, and drainage
- Field assessment of erosion, riparian areas, and channelization

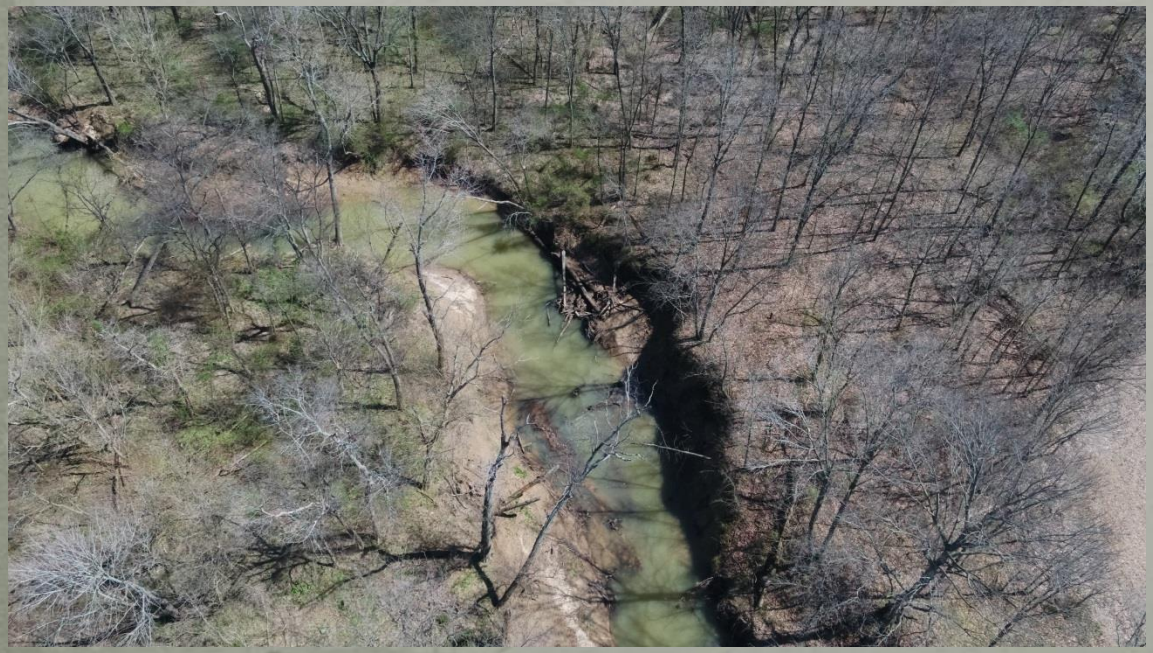


Pond Creek Watershed - Subwatersheds

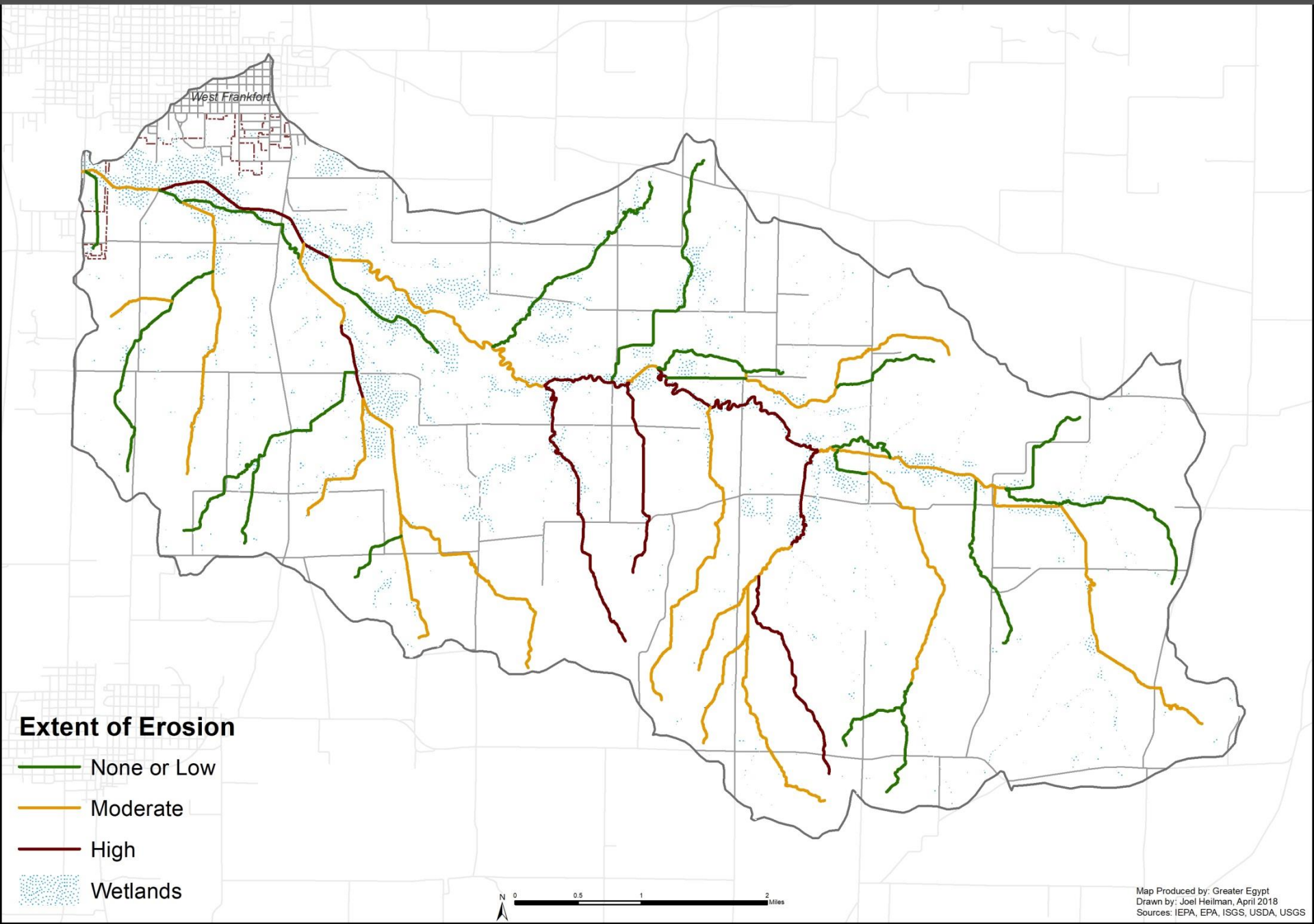


Pond Creek Watershed - Assessed Streams

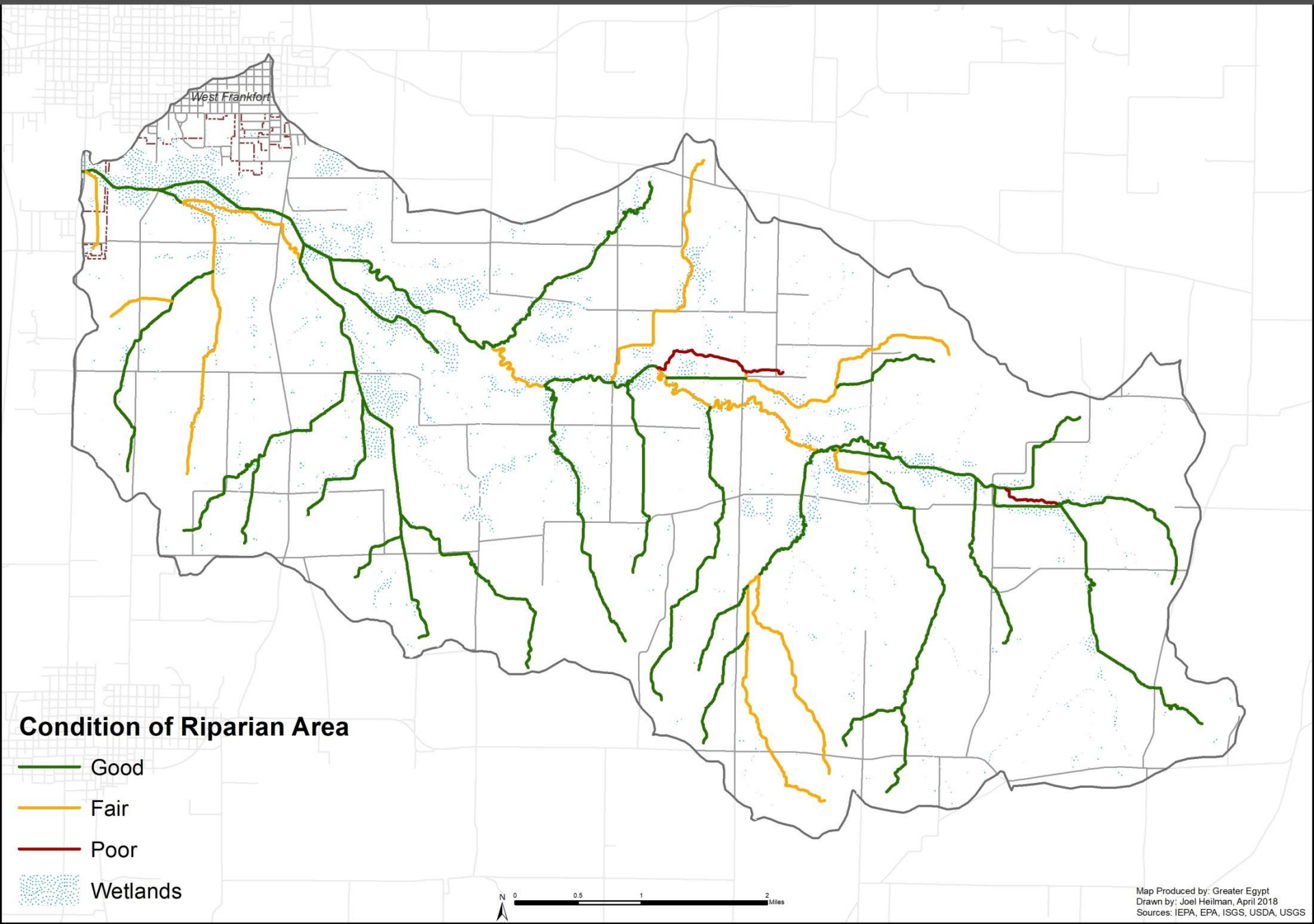




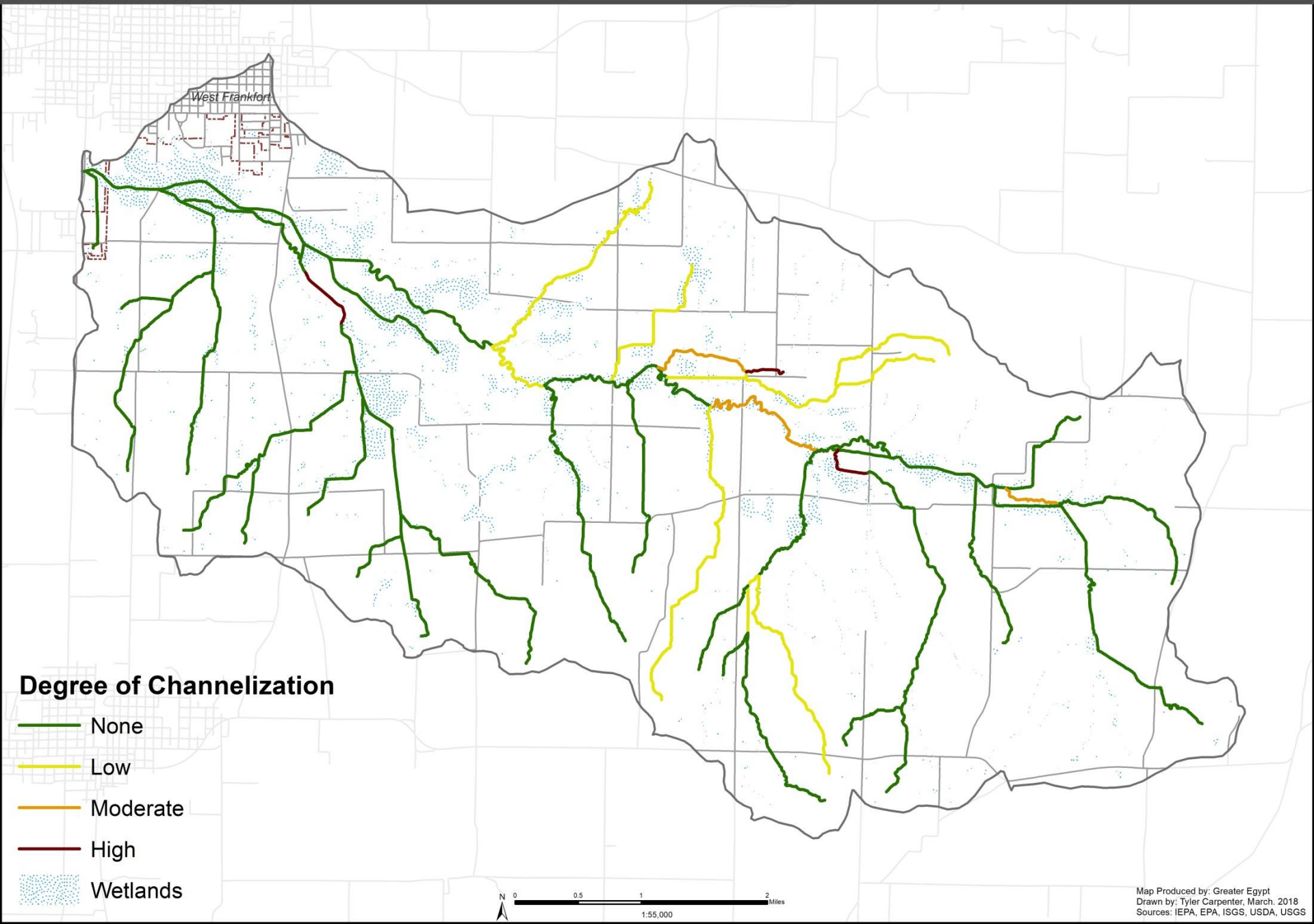
Pond Creek Watershed - Extent of Erosion



Pond Creek Watershed - Condition of Riparian Area



Pond Creek Watershed - Degree of Channelization



Estimated Pollutant Loads

Source	N Load (lb/yr)	Percent of Total Load	P Load (lb/yr)	Percent of Total Load	Sediment Load (tons/yr)	Percent of Total Load
Urban	13226.85	5.89%	2044.62	4.67%	303.61	1.14%
Cropland	88475.27	39.37%	25491.76	58.21%	15854.41	59.69%
Pastureland	81533.71	36.28%	9785.49	22.34%	3700.06	13.93%
Forest & Grassland	2510.17	1.12%	1183.70	2.70%	193.97	0.73%
Streambank	10415.90	4.63%	4010.12	9.16%	6509.94	24.51%
Total	**224751.35**		**43793.88**		**26561.99**	

2.) Set Water Quality Goals and Load Reduction Targets

Goals could:

- Achieve water quality standards and total maximum daily loads for specific pollutants
- Base nutrient reduction goals off of the IL Nutrient Loss Reduction Strategy
- Identify load reduction targets for specific nutrients/ pollutants

Waterbody	Causes of Impairment	Possible Sources of Impairment
Pond Creek	**Alteration in stream-side or littoral vegetative covers, Chloride, Dissolved Oxygen, Sedimentation/ Siltation, Changes in stream depth and velocity patterns, Loss of instream cover**	Channelization
		Impacts from abandoned mine lands (inactive)
		Loss of Riparian Habitat
		Streambank Modifications/ Destabilization
		Unknown Source
		Crop Productions
		Agriculture
		Urban Runoff/ Storm Sewers

IL Nutrient Loss Reduction Strategy (ILNLRS)

- Collaborative effort between IEPA, IL Dept. of Agriculture, and the IL NLRS Policy Working Group and subcommittees

- Develop strategies and promote best management practices (BMP) for nutrient runoff

- Goals include: **25% reduction in phosphorus load (2025)**

  15% reduction in nitrate-nitrogen load (2025)

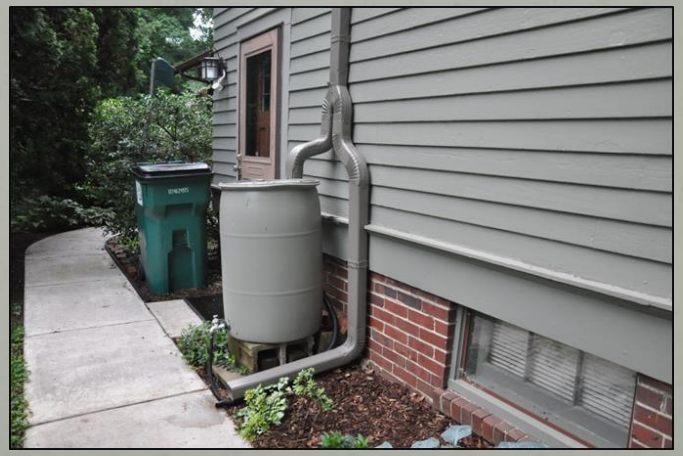
  Eventual goal is 45% for both nutrients

3.) Describe Management Measures Needed to Achieve Load Reduction Targets

Management measures include:

- Identifying best management practices (BMP) to achieve water quality objectives

- Identifying priority areas and practices



4.) Describe the Technical and Financial Assistance Needed to Implement the Plan

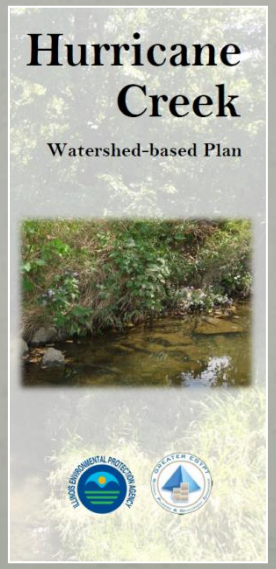
- EPA 319 Grants offer a 60 percent cost share
- Other funding sources can come from various state/ federal agencies:
  - USDA
  - IDNR
  - USFWS

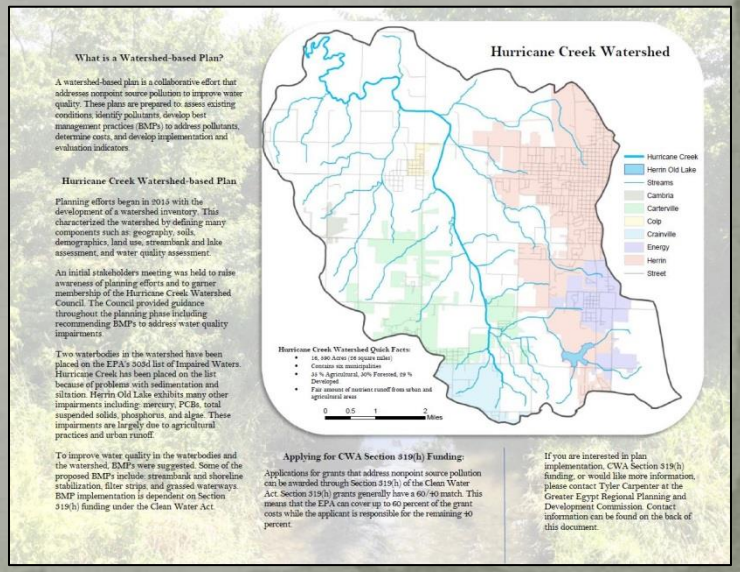
Best Management Practice	Funding Sources	Notes/Cost Share Rates
• Filter strips and riparian buffers • Dry dams (WASCBs) • Grass waterways • Terraces • Diversions • Wetland creation • Blind inlets and tile drainage management • Nutrient management • Cover crops	Illinois EPA – 319 program NRCS – EQIP program FSA – CRP program SWCD – CPP program USFWS – Acres for wildlife program IDNR/SWCD – CREP program IDNR – SWG program NRCS – WHIP program IDNR – Special Wildlife Funds Grants	CREP eligible acres must be in the 100-year floodplain and/or have cropped ground with an erodibility index of 8 or greater adjacent to riparian zones; must have cropping history as defined by the USDA. SWG program requires 50% state match and must address goals/species outlined in the State of Illinois Comprehensive Wildlife Plan. NRCS, FSA, and SWCD programs generally provide 60% cost-share, however, some special programs and practices can provide up to 90%. FSA, CREP and some NRCS programs also provide annual rental payments for taking ground out of production.
• Streambank/lake shore stabilization and in-stream grade control or other grade control	Illinois EPA – 319 Program SWCD – SSRP program NRCS – EQIP program	Illinois EPA 319 offers 60% cost share SSRP offers 75% cost share EQIP offers 60% cost share
• Wetland restoration and other habitat practices	Illinois EPA – 319 program NRCS – EQIP program NRCS – WRP program FSA – CRP program USFWS – Landowner Incentive Program IDNR/SWCD – CREP program IDNR – SWG program IDNR – Special Wildlife Funds Grants	WRP program – multiple/stringent eligibility requirements. NRCS, FSA, and SWCD programs provide a minimum of 60% cost-share, however, some special programs and practices can provide up to 90%. FSA, CREP and some NRCS programs also provide annual rental payments for taking ground out of production.
• Livestock/equestrian practices, including fencing, stream crossings, pasture management, watering systems etc.	Illinois EPA – 319 program NRCS – EQIP program IDNR – Forestry Development Act funding (FLEP)	FLEP is applicable to livestock fencing for woodlands. Livestock management recommendations outlined in this report that includes wetland and/or habitat restoration can be funded by other programs such as the US F&W – Landowner Incentive Program EQIP typically provides 60% cost-share

5.) Enhance Public Understanding Through Outreach Measures

Measures could include:

- Public meetings
- Informational pamphlets regarding watershed planning efforts
- Workshops
  - Stormwater management
  - Agricultural activities





6.) Construct an Implementation Schedule for Measures in the Plan

Schedule should include:

- Recommended BMP
- Information and Education components
- Monitoring component

Goal	Phase I		Phase II				Phase III			
	Short-term (2 yr)		Mid-term (3-6 yr)				Long-term (7-10 yr)			
	1	2	3	4	5	6	7	8	9	10
Establish watershed action council	X									
Hold public meetings to gain input	X	X	X							
Hold workshops to inform public on stormwater management		X		X		X		X		
Continue researching funding and technical assistance	X	X	X							
Select site-specific BMPs for preliminary designs	X	X	X							
Submit grant applications based on BMPs in plan		X	X	X	X	X	X	X		
Meet with landowners to review BMPs in plan		X	X	X	X	X				
Implement and execute BMPs			X	X	X	X	X	X	X	X
Monitor progress of implementation				X	X	X	X	X	X	X
Announce success of plan implementation					X	X	X	X	X	X
Evaluate Accomplishments					X	X	X	X	X	X

7.) Identify Milestones to Determine if Management Measure are Being Implemented on Schedule

Interim Measurable Milestones				
Goal	**Indicator**	**Short (2-year)**	**Mid (6-yr)**	**Long (10-yr)**
Address Impairments from Agricultural Practices/ Improve Water Quality	Linear Feet of Streambank Stabilized	-	7,000	14,000
	Agricultural Strips Created	-	6	12
	Acres Converting to Conservation Tillage	-	70	140
	Acres to Implement Cover Crops	-	70	140
	Grassed Waterways Created	-	5	10
	Acres of No Mow Pastures	150	300	600
	Riparian Buffers Created	-	1	2
	Stream Channel Sediment Reduction Channels Created	-	2	5
Improve Recreational Opportunities	Improve Ramp and Dock at Herrin Reservoir	-	-	1

8.) Identify Interim Benchmarks to Measure Progress in Meeting Water Quality Goals

Benchmarks should include:

- Load Reduction Targets of:
  - Nitrogen
  - Phosphorus
  - Sediment
  - Other pollutants

	Benchmark Reduction Target					
Benchmark Period	**Nitrogen (percent)**	**Nitrogen (lbs/ yr)**	**Phosphorus (percent)**	**Phosphorus (lbs/yr)**	**Sediment (percent)**	**Sediment (tons/yr)**
2 Year (Phase I)	-	-	-	-	-	-
6 Year (Phase II)	7	11527	10	2789	15	2359
10 Year (Phase III)	15	24701	25	6971	30	4718

9.) Describe a Monitoring Component

Recommends future assessment activities to be undertaken and can be designed to:

- Better identify potential causes and sources of pollution
- Assess BMP effectiveness
- Track and evaluate the effectiveness of plan implementation

Monitoring Component	Phase I		Phase II				Phase III			
	1	2	3	4	5	6	7	8	9	10
Ambient Lakes Monitoring Program	X					X				
Sediment Monitoring	X		X		X		X		X	
Volunteer Lake Monitoring Program	X	X	X	X	X	X	X	X	X	X
Watershed Basin Surveys		X					X			

Future Plan Involvement

Development of a Planning Committee

Should include individuals who…

Have authority to implement change:

- Mayors
- Wastewater Authorities
- Public Works
- County/ City Planners
- Health Departments
- State/ Federal Departments

Have local knowledge of the watershed:

- Water Departments
- Street Departments
- Landowners
- Businesses

Are impacted by water-related issues:

- City officials
- Businesses
- Landowners
  - Farmers

Discussion

Questions/Comments

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