

Kinkaid Creek Watershed-based Plan Initial Stakeholder Meeting

November 17, 2020
6:00 PM



Agenda

- I. Welcome and Introductions
- II. Watershed Basics
- III. Overview of the Planning Area
- IV. Elements of a Successful Watershed-based Plan
- V. Future Plan Involvement
- VI. Discussion

Greater Egypt Regional Planning and Development Commission

Tyler Carpenter

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Planner

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Planner



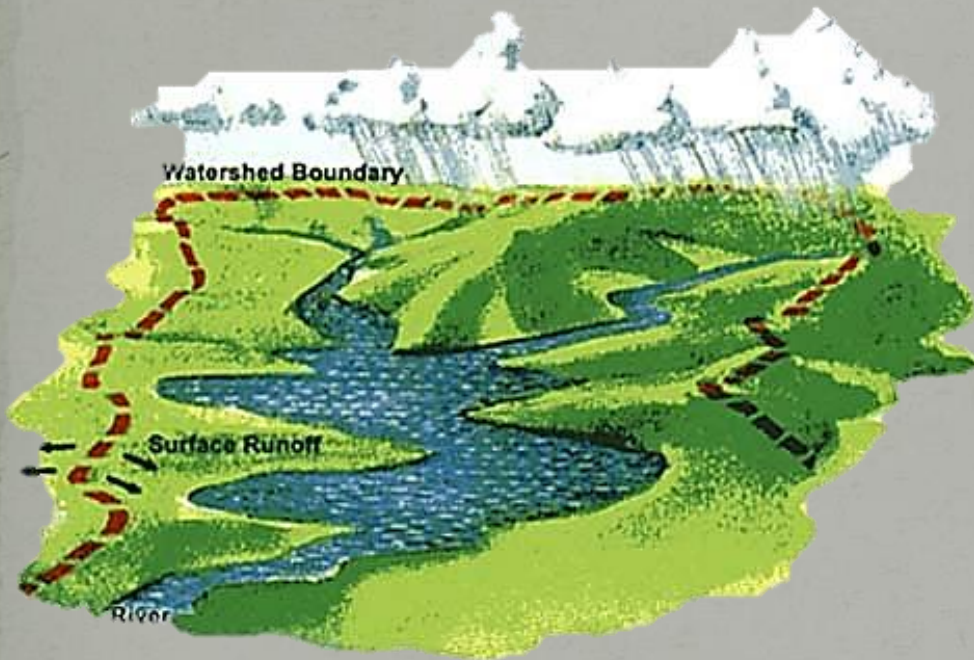
Illinois Environmental Protection Agency

IEPA- 604(b) Program



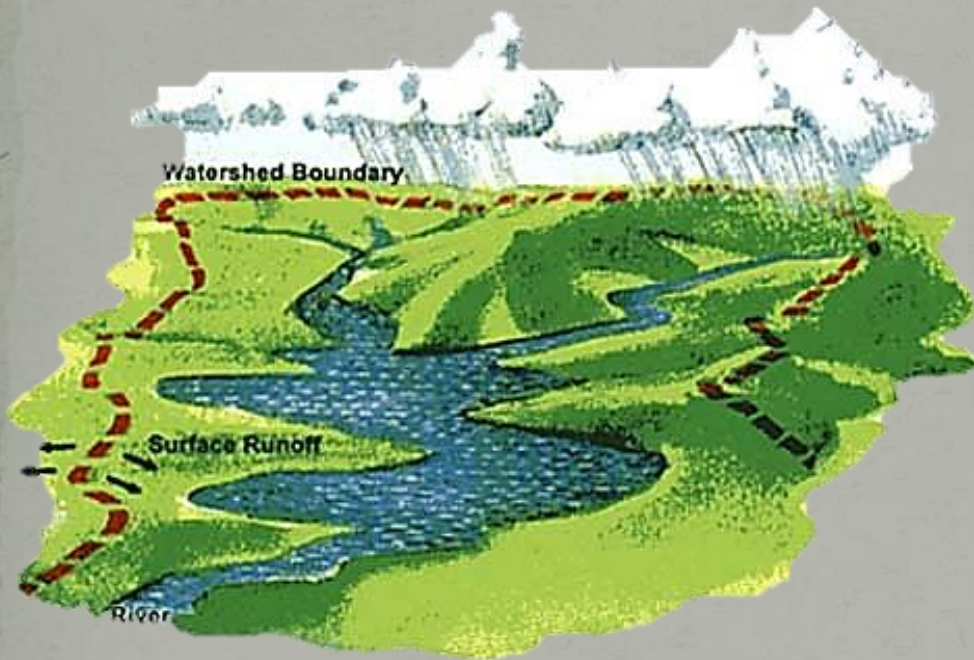
- Water Quality Management Planning Grant
- Greater Egypt's 604(b) grants include:
 - watershed-based planning
 - coordinating the Volunteer Lake Monitoring Program (VLMP)
 - stormwater management & educational materials

Watershed Basics



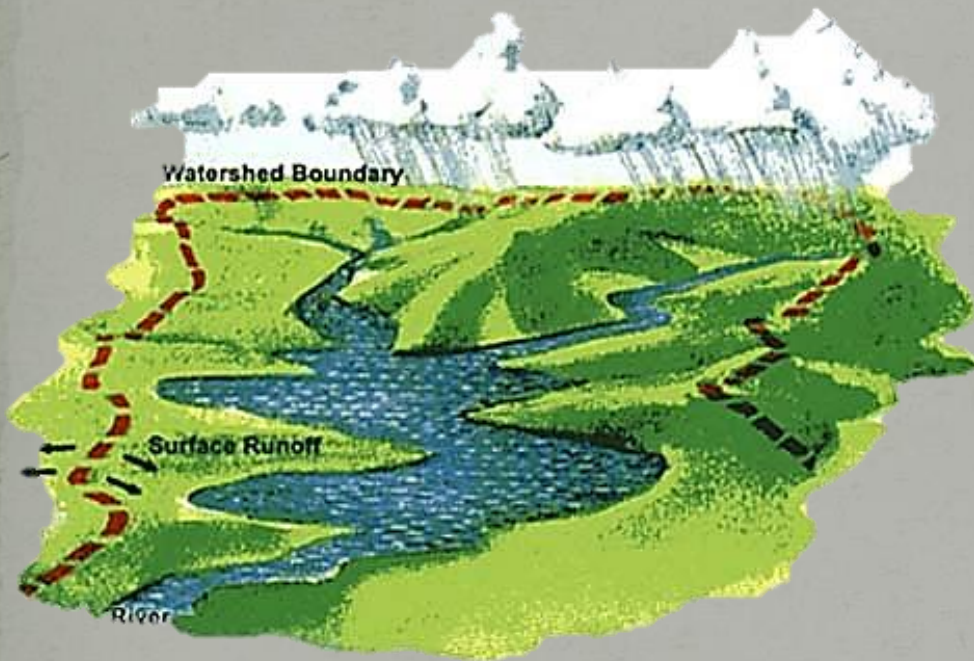
- What constitutes a watershed?
- What are the components of a watershed?

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
 - Natural area 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-Kaskaskia-Meramec	0714
Basin	3	6	10,596	352	Upper Mississippi-Meramec	071401
Subbasin	4	8	700	2,149	Big Muddy	07140106
Watershed	5	10	227	22,000	Kinkaid Creek	0714010611
Subwatershed	6	12	40	160,000	Little Kinkaid Creek-Kinkaid Creek	071401061101
					Kinkaid Lake-Kinkaid Creek	071401061102

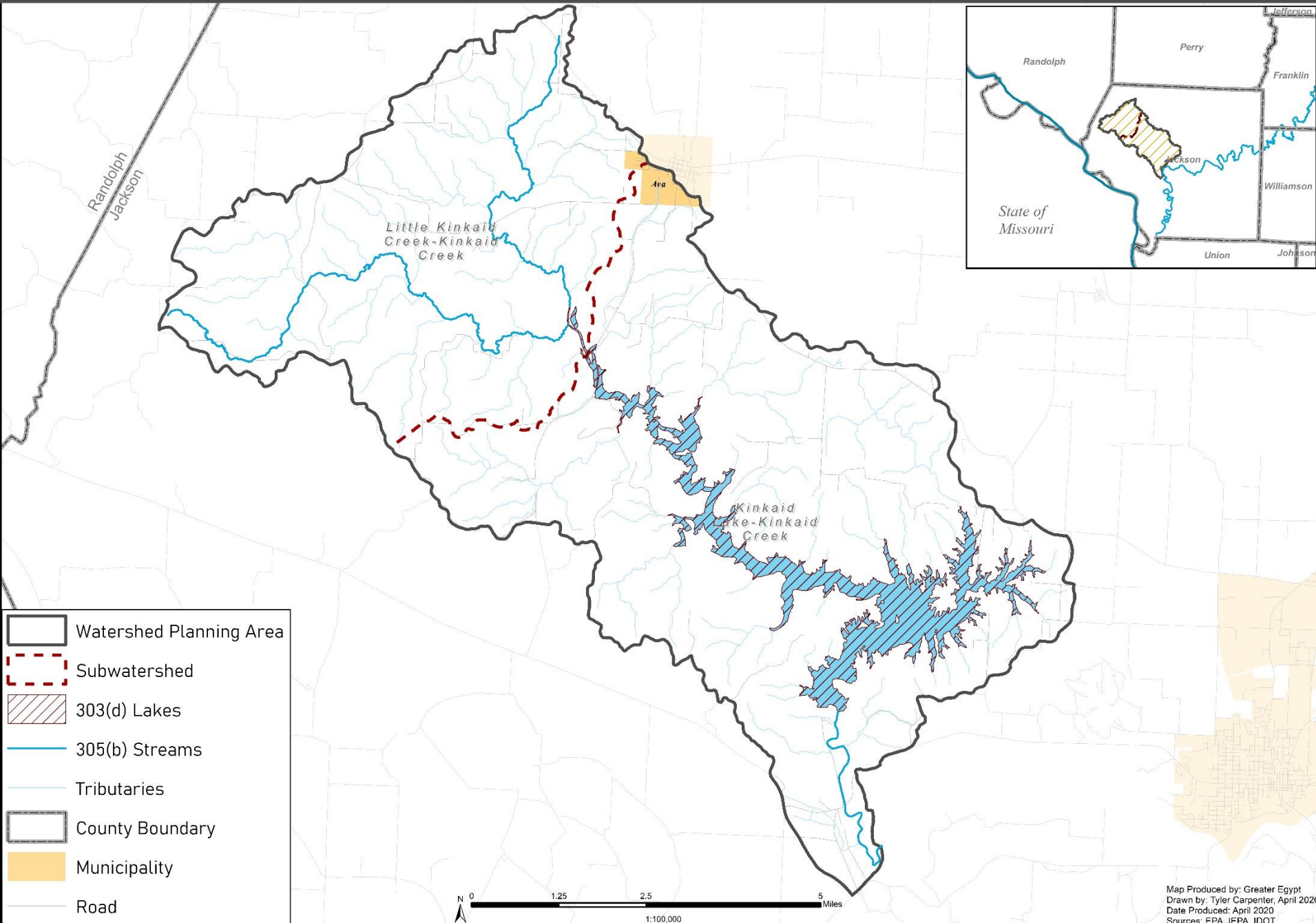
Water Resource Regions



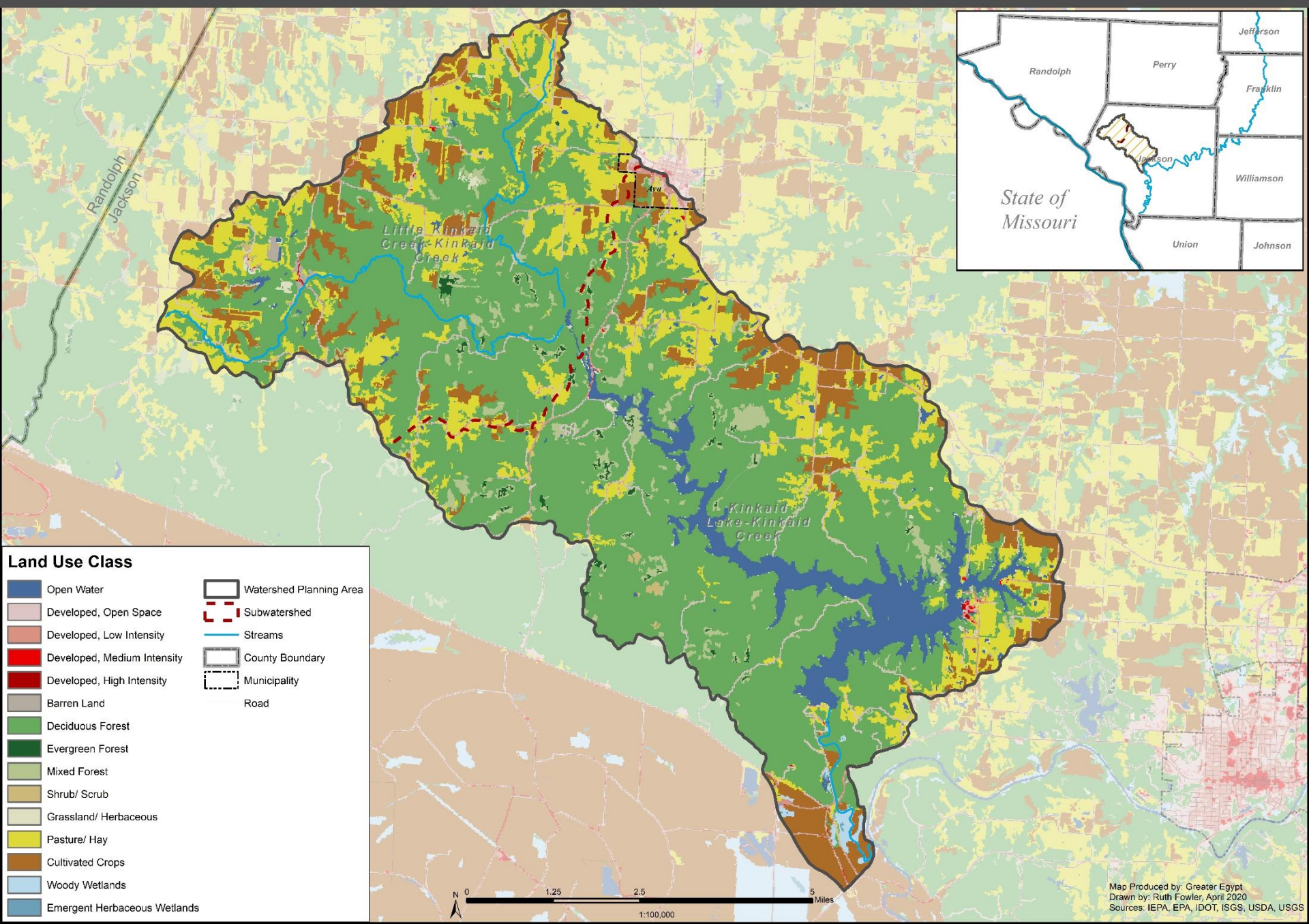
Kinkaid Creek Watershed

- 41,225 acres, or 64 square miles
- Located in Jackson County
- Two separate HUC 12 watersheds:
 - Little Kinkaid Creek-Kinkaid Creek
 - 15,534
 - Kinkaid Lake-Kinkaid Creek
 - 25,708
- Municipalities include:
 - Ava






















Kinkaid Creek Watershed - Planning Area

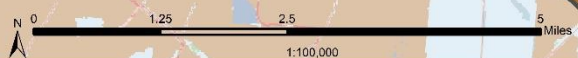


Kinkaid Creek Watershed - Land Use



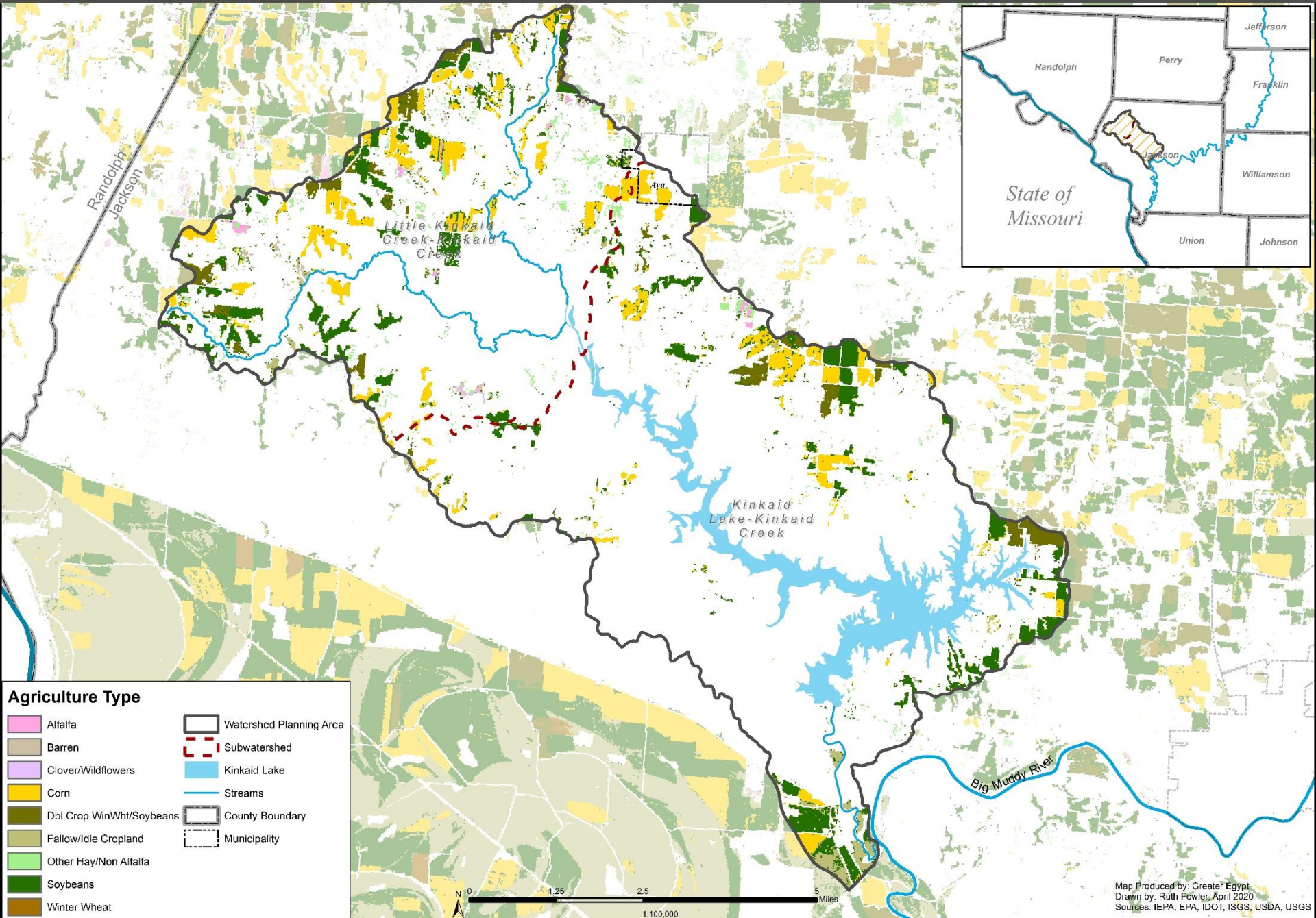
Land Use Class

- | | | | |
|--|------------------------------|---|-------------------------|
|  | Open Water |  | Watershed Planning Area |
|  | Developed, Open Space |  | Subwatershed |
|  | Developed, Low Intensity |  | Streams |
|  | Developed, Medium Intensity |  | County Boundary |
|  | Developed, High Intensity |  | Municipality |
|  | Barren Land |  | Road |
|  | Deciduous Forest | | |
|  | Evergreen Forest | | |
|  | Mixed Forest | | |
|  | Shrub/ Scrub | | |
|  | Grassland/ Herbaceous | | |
|  | Pasture/ Hay | | |
|  | Cultivated Crops | | |
|  | Woody Wetlands | | |
|  | Emergent Herbaceous Wetlands | | |



Map Produced by: Greater Egypt
 Drawn by: Ruth Fowler, April 2020
 Sources: IEPA, EPA, IDOT, ISGS, USDA, USGS

Kinkaid Creek Watershed - Agriculture



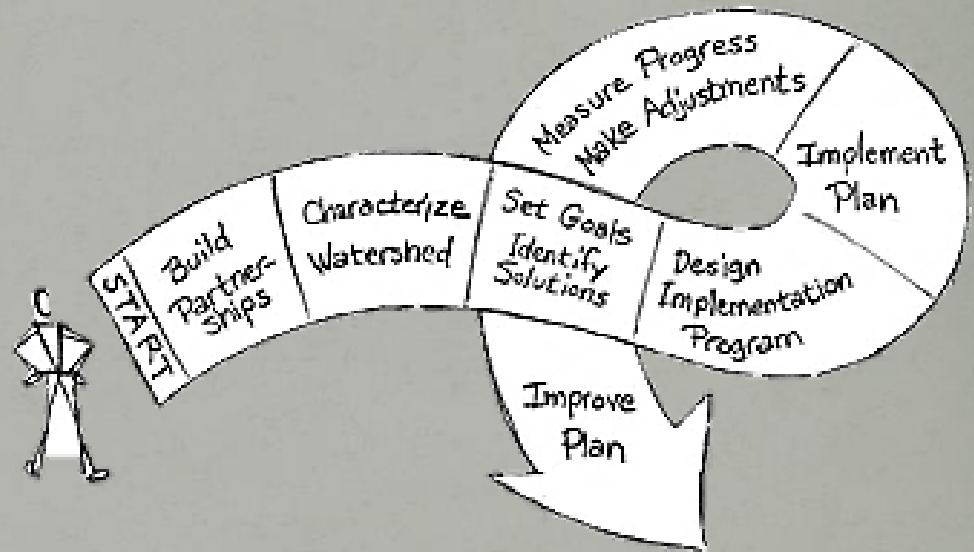
Agriculture Type

Alfalfa	Watershed Planning Area
Barren	Subwatershed
Clover/Wildflowers	Kinkaid Lake
Corn	Streams
Dbl Crop WinWht/Soybeans	County Boundary
Fallow/Idle Cropland	Municipality
Other Hay/Non Alfalfa	
Soybeans	
Winter Wheat	

Map Produced by: Greater Egypt
 Drawn by: Ruth Fowler, April 2020
 Sources: IEPA, EPA, IDOT, ISGS, USDA, USGS

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
- Allows for funding of water quality projects through EPA 319 Program



Types of Water Quality Pollution

Point Source

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

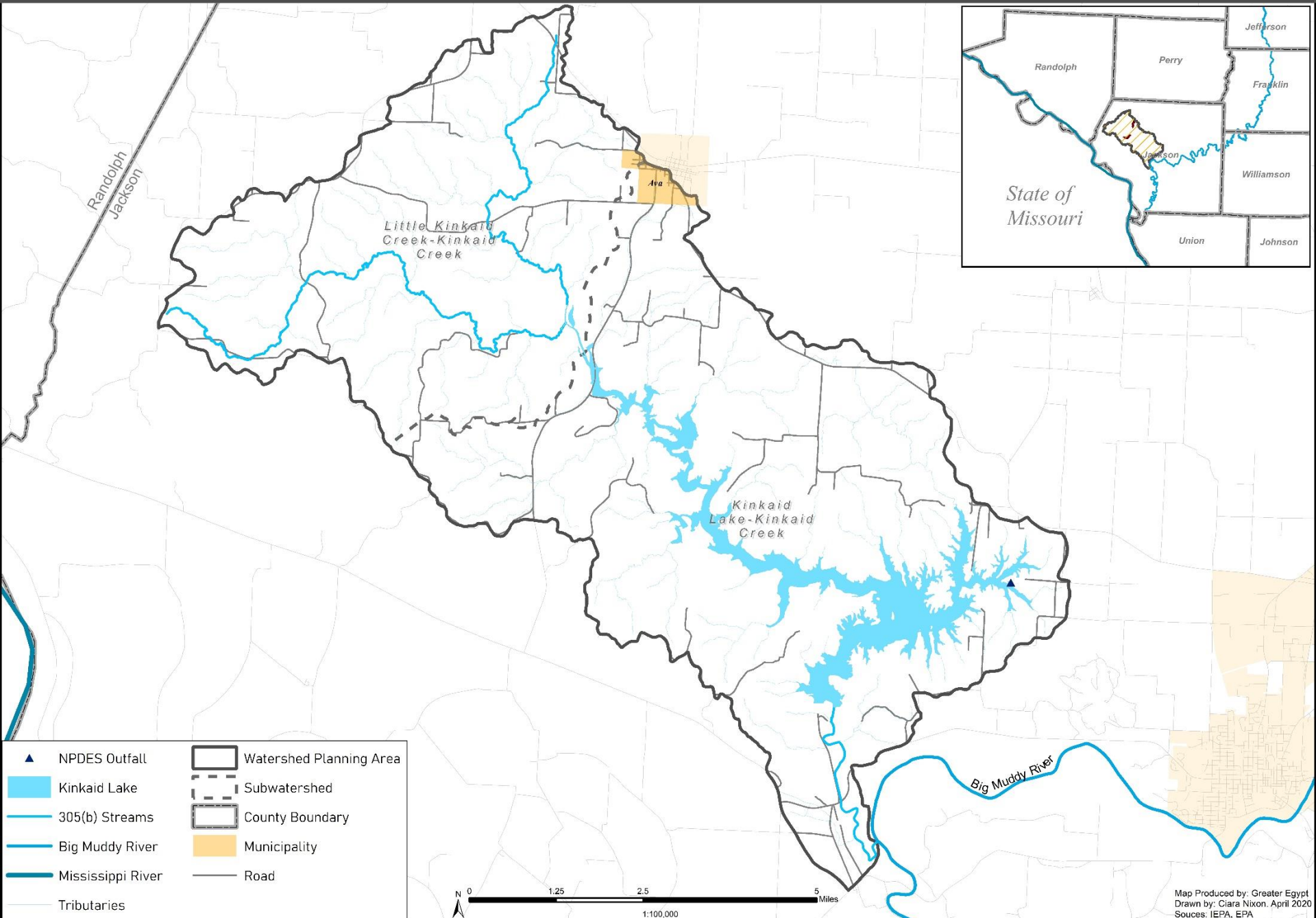


Nonpoint Source

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



Kinkaid Creek Watershed Planning Area - NPDES Outfall Location



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
- Funding for various management measures
- Ten-year Plans

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

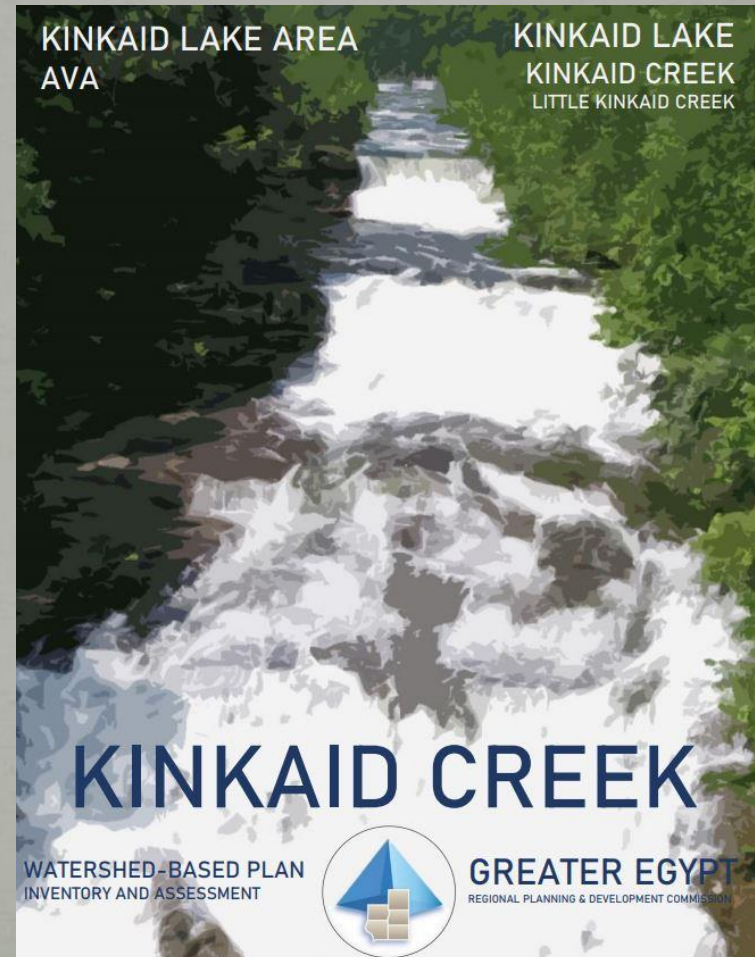
- 6.) Provide a schedule for implementing the management measures identified in the plan
- 7.) Identify interim, measurable milestones for determining whether management measures are being implemented on schedule
- 8.) Identify interim benchmarks to measure progress in meeting water quality goals and load reduction targets
- 9.) Describe a monitoring component

Nine Elements of a Watershed-based Plan

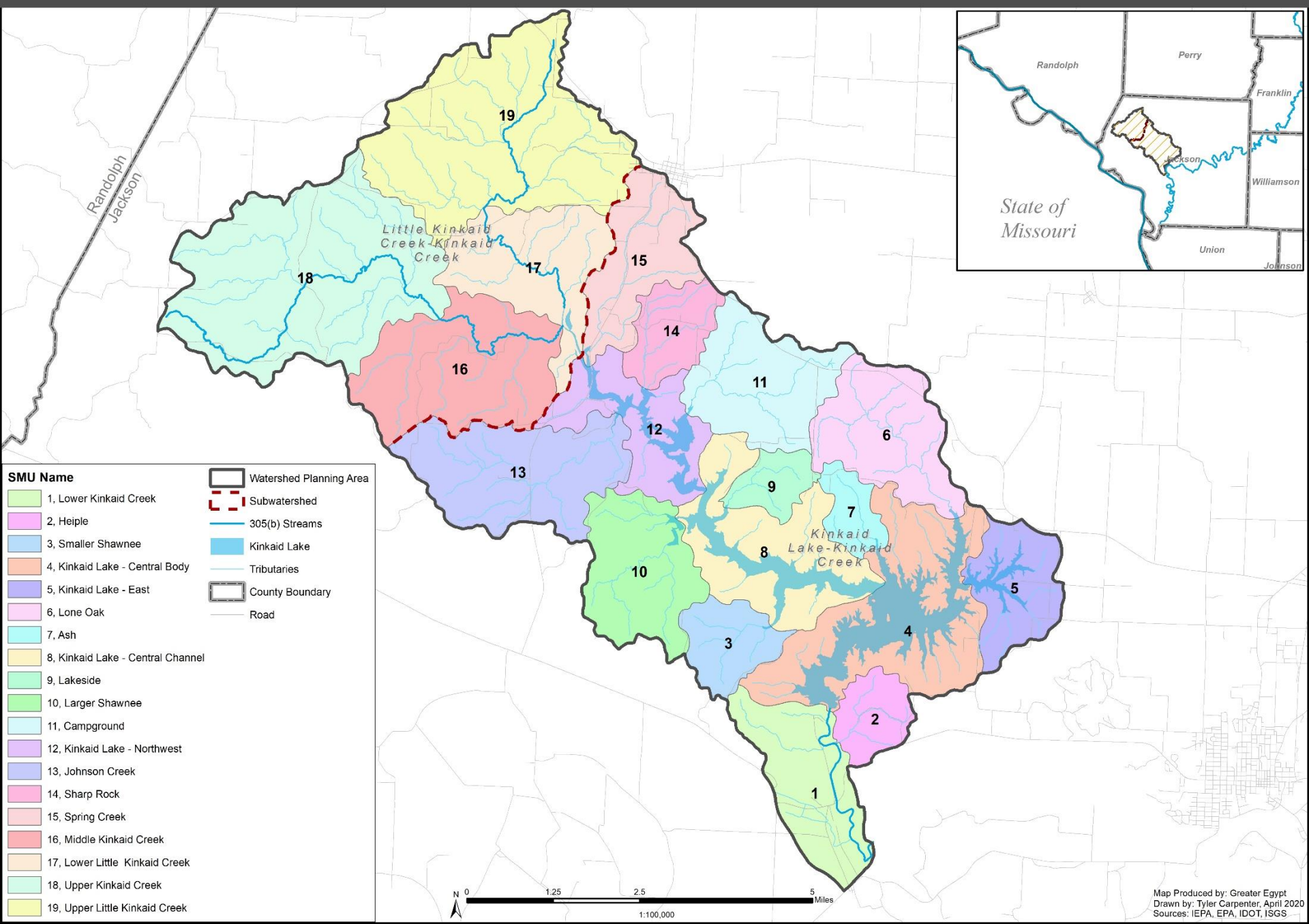
1.) Identify Causes and Sources of Water Pollution and Estimate Existing Pollutant Loads

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



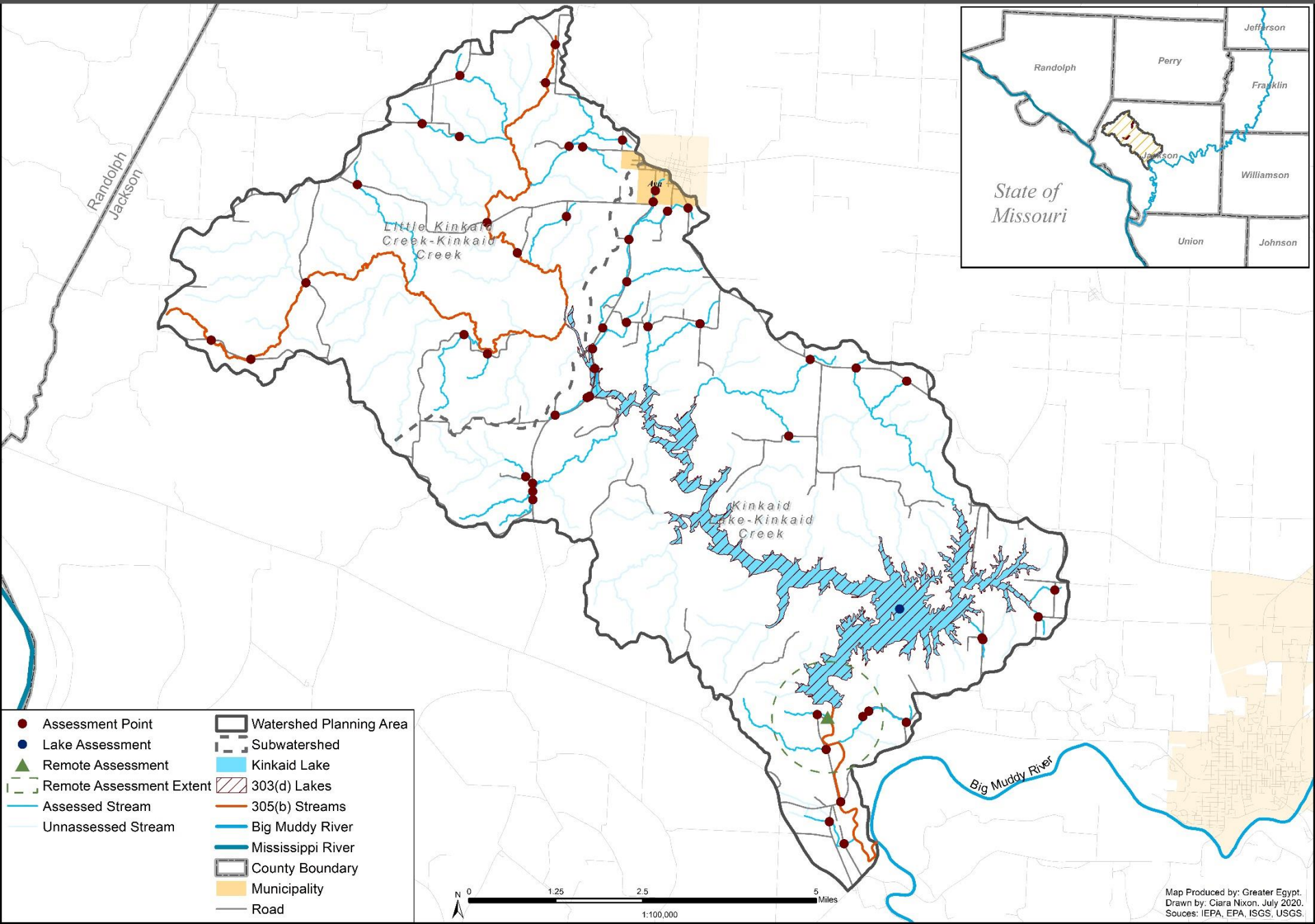
Kinkaid Creek Watershed - Subwatershed Management Units



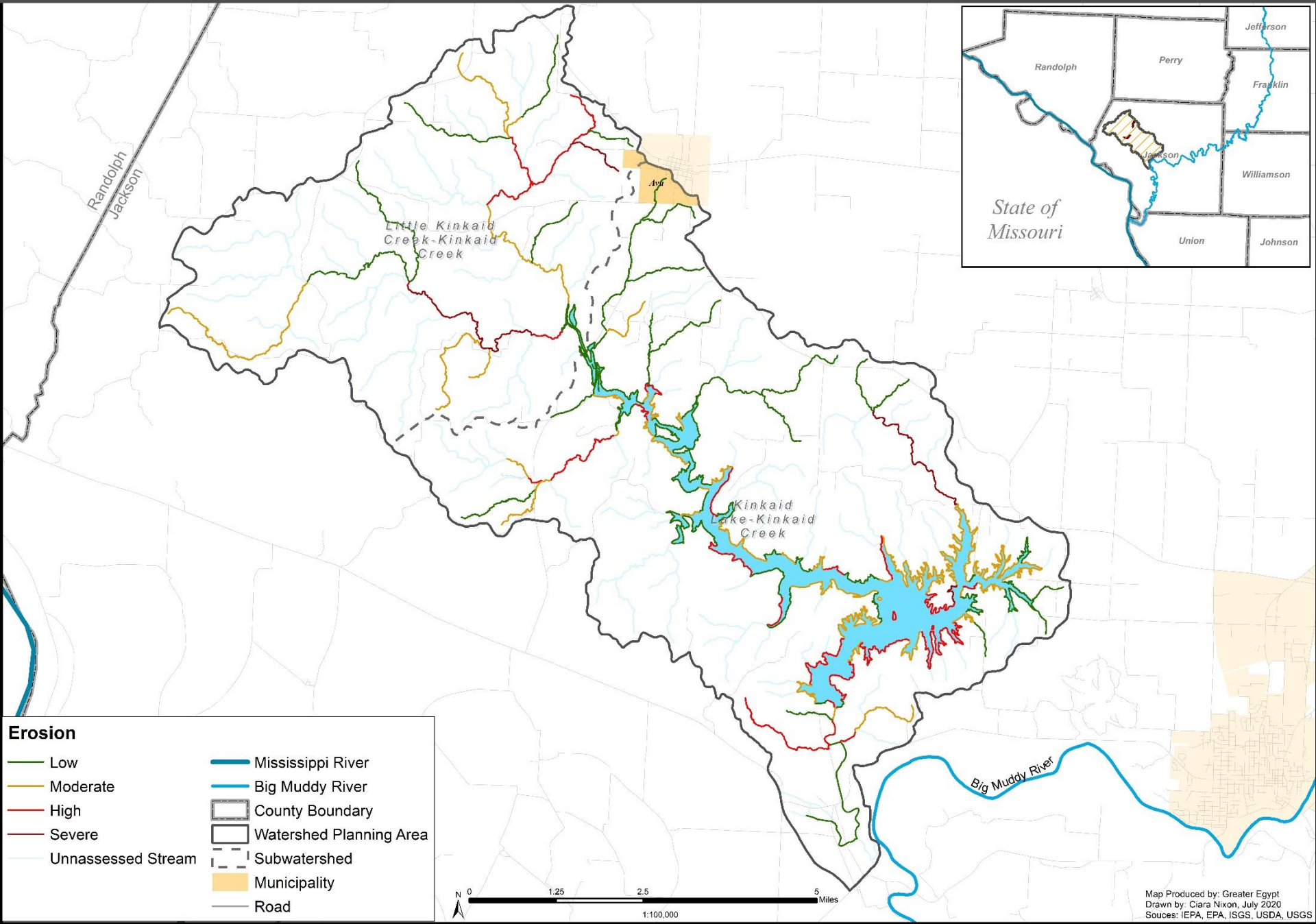
- SMU Name**
- 1, Lower Kinkaid Creek
 - 2, Heiple
 - 3, Smaller Shawnee
 - 4, Kinkaid Lake - Central Body
 - 5, Kinkaid Lake - East
 - 6, Lone Oak
 - 7, Ash
 - 8, Kinkaid Lake - Central Channel
 - 9, Lakeside
 - 10, Larger Shawnee
 - 11, Campground
 - 12, Kinkaid Lake - Northwest
 - 13, Johnson Creek
 - 14, Sharp Rock
 - 15, Spring Creek
 - 16, Middle Kinkaid Creek
 - 17, Lower Little Kinkaid Creek
 - 18, Upper Kinkaid Creek
 - 19, Upper Little Kinkaid Creek

- Watershed Planning Area
- Subwatershed
- 305(b) Streams
- Kinkaid Lake
- Tributaries
- County Boundary
- Road

Kinkaid Creek Watershed Planning Area - Assessed Waterbodies



Kinkaid Creek Watershed Planning Area - Extent of Erosion



Erosion

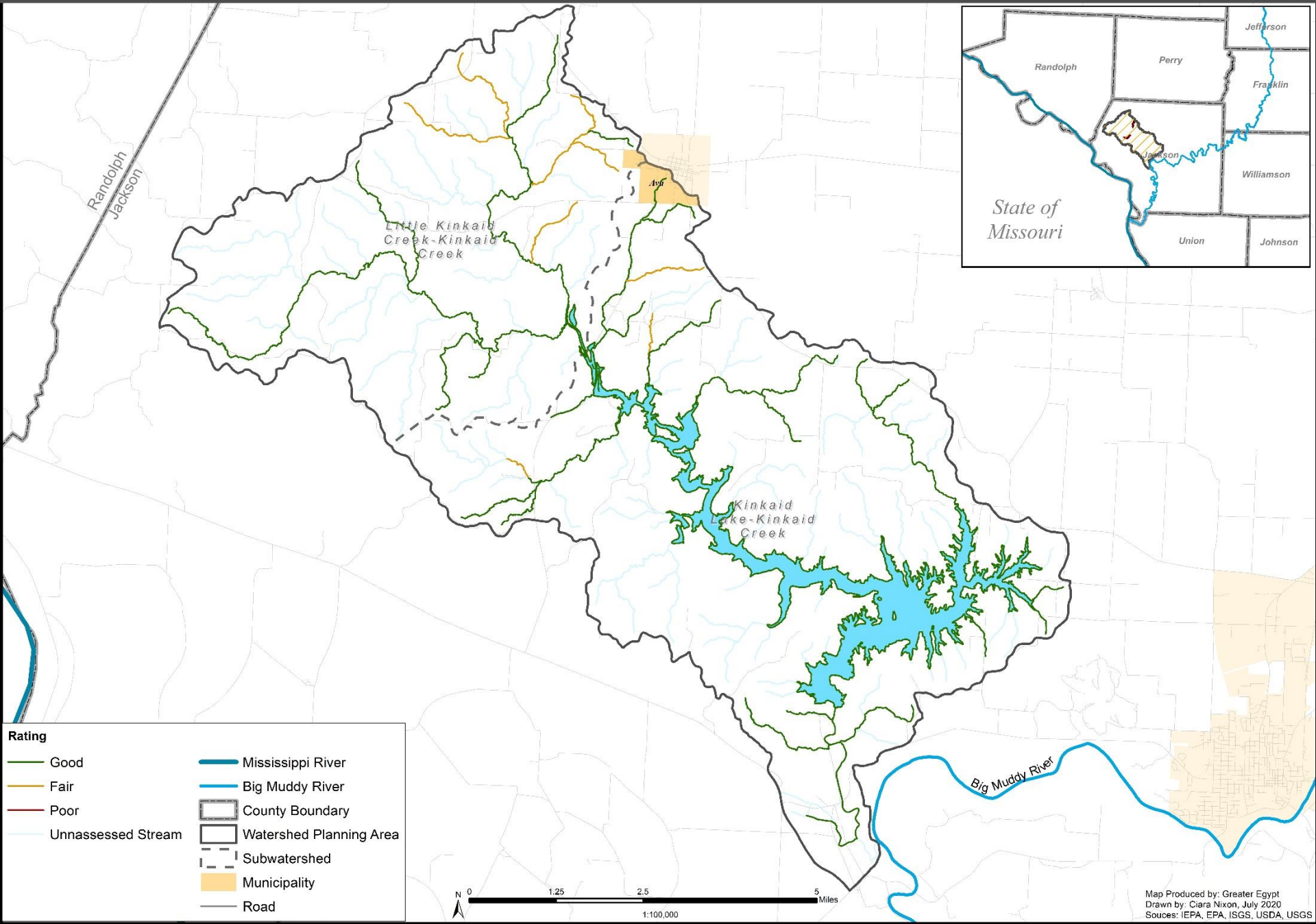
- Low
- Moderate
- High
- Severe
- Unassessed Stream
- Mississippi River
- Big Muddy River
- County Boundary
- Watershed Planning Area
- Subwatershed
- Municipality
- Road







Kinkaid Creek Watershed Planning Area - Riparian and Littoral Condition



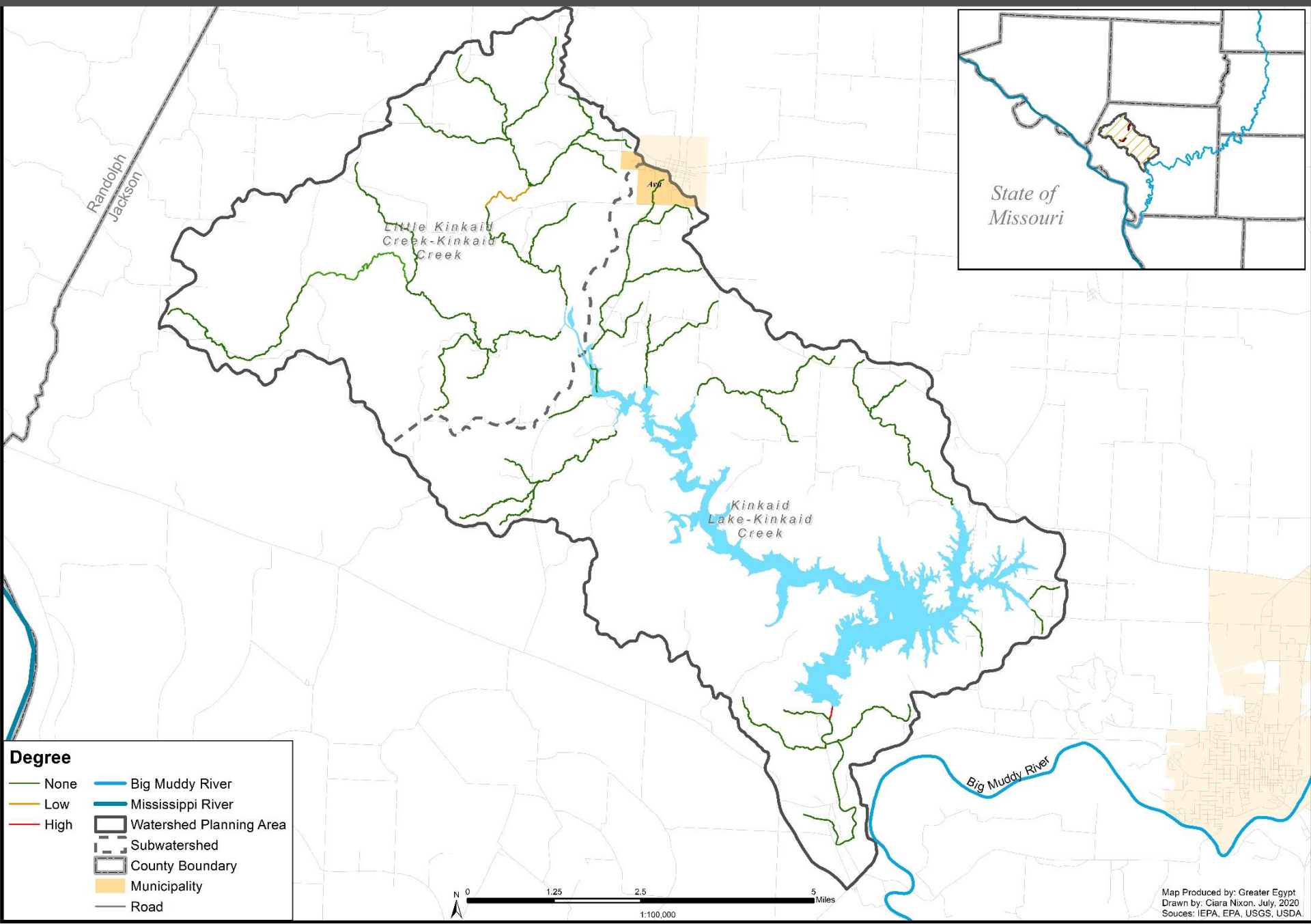
Rating

- Good
- Fair
- Poor
- Unassessed Stream

Legend

- Mississippi River
- Big Muddy River
- County Boundary
- Watershed Planning Area
- Subwatershed
- Municipality
- Road

Kinkaid Creek Watershed Planning Area - Degree of Channelization



Nine Elements of a Watershed-based Plan

Estimated Pollutant Loads

Source	N Load (lb/yr)	Percent of Total Load	P Load (lb/yr)	Percent of Total Load	Sediment Load (t/yr)	Percent of Total Load
Urban	11,832.86	5.95%	1,820.87	4.39%	271.96	0.77%
Cropland	43,772.39	22.02%	13,645.37	32.90%	9,265.99	26.36%
Pastureland	46,777.47	23.54%	6,789.55	16.37%	3,307.70	9.41%
Forest	7,370.98	3.71%	3,352.98	8.08%	903.57	2.57%
Streambank	34,245.29	17.23%	13,184.43	31.79%	21,405.91	60.89%
Groundwater	54,740.79	27.54%	2,681.41	6.47%	0.00	0.00%
Total	198,739.78	-	41,474.60	-	35,155.12	-

Nine Elements of a Watershed-based Plan

2.) Set Water Quality Goals and Load Reduction Targets

- 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	Assessment Unit ID	Size	Causes of Impairment(s)	Sources of Impairment(s)
Kinkaid Lake	IL_RNC	3,475 ac	Mercury	Atmospheric Deposition-Toxics, Source Unknown
Little Kinkaid Creek	IL_NBA	16.9 mi	N/A	N/A
Kinkaid Creek	IL_NB	9.66 mi	N/A	N/A
Kinkaid Creek	IL_NB-01	3.38 mi	N/A	N/A

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 should:

- Identify best management practices (BMP) to achieve water quality objectives and load reduction targets
- Identify priority areas and practices



Nine Elements of a Watershed-based Plan

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
<ul style="list-style-type: none"> • 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.
<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • 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.
<ul style="list-style-type: none"> • 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

Nine Elements of a Watershed-based Plan

5.) Enhance Public Understanding Through Outreach Measures

Measures could include:

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

You Can Manage Stormwater!
Small changes can have a big impact on stormwater runoff

Around the Home	Lawn and Garden	Garage and Driveway
Dispose of household chemicals properly by recycling or taking them to a designated collection facility or recycling.	Properly dispose of pet waste by flushing in toilet or emptying in a receptacle. Pet waste contains bacteria and other nutrients that can end up in storm drains.	Use a car wash instead of washing your vehicle in the driveway. Alternatively, you can wash it in the yard where the water will infiltrate the lawn.
If you are on a septic system, follow the guidelines for routine maintenance. The EPA recommends pumping every three to five years.	Rake grass clippings and other yard debris to compost or mulch. In some municipalities, you can also arrange a collection rather than sweeping it into the street.	Maintain your vehicle to prevent leaks. If you notice a spill or leak, use sand or cat litter to absorb the liquid rather than rinsing it into the driveway and street.
Maintain discarded pool water on your property or by sanitary sewer. Do not backwash into the street or directly into storm drain.	Apply fertilizers and pesticides at recommended levels. Do not overwater lawn as this could lead to the chemicals running off of lawn.	Store vehicle fluids and oils properly. Like household chemicals, if you have unused fluids, dispose of properly by taking them to a designated recycling facility.
Rain barrels capture rainwater from rooftops. This alleviates overflow into storm drains. This water can also be stored and used on lawns or gardens.	If your property adjoins a waterbody, allow some growth between your yard and the bank. This creates a vegetative buffer that filters nutrient runoff.	Education and information is also an important component of stormwater management. Stenciling on or near storm drains raises awareness of stormwater management.

Environmental Information
Various programs are available in our area for the collection of yard refuse and hazardous materials including spring/fall cleanups and collection drives. Please contact your local office for more information.

Cartersville City Hall (618) 985-2252	Carbondale Maintenance and Environmental Services (618) 457-3275
Herrin Public Works (618) 942-2255	Marion Street Department (618) 993-3487
Franklin-Williamson Bi-County Health Department Environmental Health (618) 993-8111	
Jackson County Health Department Environmental Health Division (618) 684-3143 (ext. 128)	

Recycling centers in our area also take in various items. Please call or visit their webpage to see what materials are accepted.

Cimco Recycling Carbondale: (618) 457-6319 Marion: (618) 998-1111 cimcoresources.com	Southern Recycling Center Carbondale: (618) 549-2880 southernrecyclingcenter.com
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Nine Elements of a Watershed-based Plan

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)
Outreach and Education	Educational Brochures for Stormwater Management	500	1000	1500
	Educational Brochures for Agricultural Management	500	1000	1500
	Electronics Drive	1	2	3
	Number of Litter Cleanup Days	3	6	9
	Public Meetings Held	4	10	14
	Agricultural Management Workshops Held	1	3	5
Reduce/Mitigate Flooding	Detention Basin	-	-	1
	Infiltration Basins	-	1	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 Period	Benchmark Reduction Target					
	Nitrogen (percent)	Nitrogen (lbs./ yr.)	Phosphorus (percent)	Phosphorus (lbs./yr.)	Sediment (percent)	Sediment (tons/yr.)
2 Year (Phase I)	-	-	-	-	-	-
6 Year (Phase II)	7%	13,911	10%	4,147	10%	3,515
10 Year (Phase III)	15%	29,810	25%	10,368	25%	8,788

Nine Elements of a Watershed-based Plan

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

Future Plan Involvement

Kinkaid Creek Watershed-based Plan				
Action	2020	2021		
	QTR 4	QTR1	QTR 2	QTR 3
Initial Stakeholders Meeting	11/17/2020			
Watershed Planning Elements Meeting				
Best Management Practices Meeting				
Implementation and Monitoring Strategy Meeting				
Final Meeting				
Draft Plan				6/1/2021
Final Plan				8/1/2021

Questions/Comments

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