



Exhibit A

Lake Decatur Watershed Management Plan

Phase II

- SCOPE OF SERVICES & BUDGET -

Northwater Consulting

September 24, 2020

Exhibit A

PHASE 2 – Watershed Initiative Development

Phase II Period: October 1, 2020 through September 2021 (12-months)

Phase 2 Expected Tasks	Description
<p>Task 2.1. Nine Element¹ Watershed Plan and 319 Application – Bluffs Watershed</p> <p>¹Nine minimum elements for planning are defined by the Environmental Protection Agency that make the plan eligible for grant funds</p>	<ul style="list-style-type: none"> • Complete watershed plan. • Apply for section 319 implementation grant for Bluffs subwatershed.
<p>Task 2.2. City Property Assessment and Planning</p>	<ul style="list-style-type: none"> • Continued support in assessment, planning and management of the dewatering basin. • Assessment of City-controlled properties and development of a plan to capitalize on opportunities to improve water quality. • Support the City in developing guidelines and by-laws for lakeshore property transactions.
<p>Task 2.3. United States Department of Agriculture (USDA) Regional Conservation Partnership Program (RCPP) Planning and Negotiations</p>	<ul style="list-style-type: none"> • Complete the process of coordinating with partners and submitting RCPP grant application. • Should the RCPP grant be awarded, lead the negotiations and further development of the scope of work. • Finalize the grant agreement and notice to proceed.
<p>Task 2.4. Advancement of Special Projects and Initiatives</p>	<ul style="list-style-type: none"> • Phase I identified special projects and initiatives that warrant special attention and advancement due to the potentially significant water quality benefits and RCPP leveraging opportunities.
<p>Task 2.5. Monitoring Program</p>	<ul style="list-style-type: none"> • Coordinate with the Illinois State Water Survey (ISWS) regarding monitoring at three stations (Sangamon at Cisco bridge, Sand Creek, Friends Creek). • Design and install automatic monitoring station at Cisco Bridge in partnership with NGRRC. To be completed after RCPP award notice.

Phase 2 Expected Tasks	Description
	<ul style="list-style-type: none"> • Perform storm-event sampling at three stations and baseline monitoring of potential BMP sites. • Manage database. • Lake sediment monitoring plan, with first bathymetry survey to occur fall 2021.
Task 2.6. General Consulting	<ul style="list-style-type: none"> • Budget for general consulting for out of scope services that may be necessary.

Task 2.1. Nine Element Watershed Plan and 319 Application – Bluffs Watershed

A nine-element watershed plan will be completed for the Lake Decatur Bluffs watershed. This is a strategic subwatershed identified under Phase I and most of City owned property is within.

Based on Illinois State Water Survey (ISWS) literature, the Bluffs subwatershed is the highest sediment contributor per unit area in the watershed.

Completing the plan will identify hot spots and specific project locations that can be incorporated into a 319-implementation grant. This application will be submitted in 2021, as the watershed will be eligible for funds and specific projects will be defined. Elements of the plan have been compiled under Phase I including a windshield and lake bank survey, preliminary data mining, landowner outreach, and 25% of a custom landuse map layer. The plan will serve to guide RCPP implementation efforts and time spent used to aid the Champaign County Soil and Water Conservation District meet match requirements for a current Illinois EPA Section 319 grant.



Figure 1 - EPA Nine Elements

This task will include the following:

1. Complete data mining.
2. Complete additional field work and develop custom map layers.
3. Complete watershed characterization and inventory.
4. Identify causes and sources of pollution.
5. Pollution load modeling and analysis.
6. Establish nutrient and sediment reduction targets.
7. Field/property specific management practices.
8. Load reduction calculations.
9. Identification of critical areas & hot spots – prioritize based on nutrient and sediment reductions achieved.
10. Education and outreach component consistent with RCPP strategy.
11. Cost estimates and milestones.
12. 319 implementation grant application.
13. General coordination.

The 5-year strategy will outline additional subwatershed planning priorities in subsequent phases. Our approach is to develop a series of individual plans that guide and support immediate implementation needs and critical geographic areas rather than an overarching watershed plan for the entire Lake Decatur Watershed.

Task 2.2. Lake Development Ordinances

Development, modifications and alterations along the shoreline of Lake Decatur and its contributing waterways impacts water quality, infrastructure, and the efficacy to manage and maintain the lake as a drinking water supply and recreational resource in a cost effective manner.

This task will recommend programmatic actions and suggested language for ordinances, easements and other restrictions that will aim towards protecting the lake and water resources as it pertains to City-owned properties sold or leased, and private properties subject to alterations, rezoning, improvements, and permits that require City approval.

Tasks will include:

1. Delineation of shoreline protection areas and narrative in the lake/watershed context regarding background and justification for proposed ordinances and restrictions.
2. Bylaw and policy review of others, including the Lake Springfield Land Use Plan.
3. Prepare recommendations and propose suggested language for ordinances, easements and restrictions that protect the shoreline and enable more effective management of Lake Decatur.
4. The Bluffs watershed plan shall integrate these recommendations, having these recommendations integrated into a plan will strengthen the policies.

Task 2.3. RCPP Planning & Negotiations

Northwater anticipates an RCPP application and program totaling approximately **\$20M** dollars of combined federal dollars and partner contributions. There is a 50-50 match requirement, so approximately \$10M of partner and City contributions will allow for \$10M of federal funding.

Northwater is currently working with the City to determine the match value of all City activities related to the lake and watershed, this includes staff time, expenditures related to lake management, Northwater contracts, payments to Macon County SWCD etc. We do not anticipate the RCPP program to cost the City significantly more than what is already allocated and being spent on lake and watershed efforts. The RCPP allows us to leverage those expenditures and investments to access more funding for the watershed.

It is anticipated that over twenty public and private entities will be involved in the execution of the RCPP. An effort of this size will require upfront attention and partner coordination to ensure early action on-the-ground. If awarded, negotiations with the USDA will be required in June/July 2020.

Activities will include:

1. Finalize RCPP application and submit on behalf of the City.
2. Partner coordination.
3. Develop partner and contribution tracking methods and procedures.
4. Secure final partner contribution commitments upon RCPP award notification.
5. Negotiate final RCPP agreement in coordination with the City.
6. Oversee Macon County SWCD contract, develop task lists and responsibilities for RCPP.
 - a. Restructure current cost-share program to align with 5-year strategy and RCPP.
 - b. Restructure current education and outreach efforts to align with the 5-year strategy and RCPP.
7. Conduct strategic one-on-one landowner outreach to forward the RCPP and other implementation efforts.

Task 2.4. Advancement of Special Projects and Initiatives

Phase I identified special projects and initiatives that warrant special attention and advancement due to the potentially significant benefits to the lake and watershed and their ability to leverage other state and federal funds. These projects include:

1. Treatment wetland and erosion control, DeWitt well field.
2. High priority bluffs watershed ravines.
3. Upper lake floating wetland systems for nitrate and sediment reductions.
4. Carbon and water quality trading pilot program as an additional source of revenue.
5. Assessment and development of sediment dewatering basin to forward opportunities that generate revenue for watershed improvements and grant “match.”

- a. Production agriculture.
- b. Specialty/organic crops.
- c. Conservation and innovation.
- d. Marketing and outreach initiatives (i.e. locally sourced products).

This task includes advancing these project opportunities through coordinating with the City, stakeholders, landowners, regulators, and the private sector. Research and prefeasibility analysis will be performed on relevant projects to further evaluate the opportunities, benefits, weaknesses, and costs. Northwater will also outline funding strategies that minimize implementation costs to the City.

Task 2.5. Monitoring Program

The monitoring program during Phase II includes:

1. Direct and manage all monitoring efforts and maintain/manage a database.
2. Establishment of 3 flow and water quality monitoring stations in the watershed. Locations include, (i) Sangamon River IL 32, (ii) Friends Creek, (iii) Big/Long Creek, and (iv) Sand Creek. This monitoring is being done bi-weekly in partnership with the ISWS. Northwater shall perform storm-event sampling, targeting 3 to 4 storm events per year. City to perform laboratory analysis for the storm-event samples but not the ISWS bi-weekly samples.
3. Design and commission sensor network on the Sangamon River at the IL 32 bridge. To include river stage, nitrate sensor, turbidity sensor and temperature/conductivity logger. This work will be done in partnership with the National Great Rivers Research and Education Center (NGRREC). This system will not be procured and installed until after notice of RCPP award.
4. Baseline water quality and flow monitoring at two potential BMP sites. The City to perform laboratory analysis.
5. A lake bathymetry and sediment accumulation monitoring plan will be memorialized shortly after Phase II notice to proceed. The first bathymetry survey is proposed in the fall of 2021 under Phase III. Bathymetry and sediment accumulation monitoring in the lake is not included in Northwater's watershed management budget projections.

Exhibit A

Budget

A.1 – Phase I – IV: Budget Summary & Projections

A.2 – Phase II Budget

Exhibit A.1

BUDGET PROJECTIONS, PHASE 2 - 4: LAKE DECATUR WATERSHED MANAGEMENT

	Period of Phase	Original Budget Estimate	Projected Actual	Difference	Difference (%)
Phase 1: Baseline Assessment & Five-Year Strategy	03/2020 - 09/2020	\$190,442.00	\$140,100.00	(\$50,342.00)	-26%
Phase 2: Watershed Plan Development & Monitoring	10/2020 - 09/2021	\$192,524.00	\$299,463.22	\$106,939.22	56%
Phase 3a: Scope TBD*	10/2021 - 9/2022	\$267,443.00	\$225,000.00	(\$42,443.00)	-16%
Phase 3b: Lake Bathymetry Survey & Mapping**	10/2021 - 9/2022	Not in Original RFP	\$150,000.00	\$150,000.00	100%
Phase 4: Scope TBD*	10/2022 - 12/2023	\$172,879.00	\$155,000.00	(\$17,879.00)	-10%
Totals		\$823,288.00	\$969,563.22	\$146,275.22	17.8%

* scope and fees dependent on USDA RCPP and IEPA 319 grant results
 ** additional task requested by City, not included in original RFP and budget

Budgetary Numbers for Optional Supplemental Activities	Estimated Cost	
A1: Engineering Studies For Infrastructure Projects	\$100,000.00	Possible structures or low-flow dams
A2: 2023-2024 Watershed Management / Implementation Consulting	\$110,000.00	to be supplemented with grant funds
A3: SWAMM Online System	\$95,000.00	Online system for collaboration / tracking
A4: 2023-2024 Monitoring	\$110,000.00	25-55k / year estimate
A5: Five-Year Monitoring Analysis & Report	\$40,000.00	Study of monitoring data
	\$455,000.00	Optional Supplemental Activities

Exhibit A.2

Lake Decatur Watershed Management Phase II: October 2020 - September 2021

	Principal	Sr. Engineer / Scientist	Engineer / Scientist II	Environmental Scientist / GIS Analyst I	Environmental Technician / GIS Analyst
Hours					
Task 2.1: Nine Element Plan and 319 Application	200	48	80	320	200
Task 2.2: Lake Development Ordinances	50	10	0	45	40
Task 2.3: USDA RCPP Planning and Negotiations	110	0	24	40	12
Task 2.4: Advancement of Special Projects and Initiatives	110	60	0	40	0
Task 2.5: Monitoring Program	120	60	0	192	8
Task 2.6: General Consulting	60	0	0	0	0

Direct Labor					
Task 2.1: Nine Element Plan and 319 Application	\$11,058.00	\$2,088.00	\$2,976.00	\$8,678.40	\$3,230.00
Task 2.2: Lake Development Ordinances	\$2,764.50	\$435.00	\$0.00	\$1,220.40	\$646.00
Task 2.3: USDA RCPP Planning and Negotiations	\$6,081.90	\$0.00	\$892.80	\$1,084.80	\$193.80
Task 2.4: Advancement of Special Projects and Initiatives	\$6,081.90	\$2,610.00	\$0.00	\$1,084.80	\$0.00
Task 2.5: Monitoring Program	\$6,634.80	\$2,610.00	\$0.00	\$5,207.04	\$129.20
Task 2.6: General Consulting	\$3,317.40	\$0.00	\$0.00	\$0.00	\$0.00

Direct Costs (Subs, mileage, equipment, etc.)	ODCs	Subconsultant #1	Subconsultant #2	Subcontractors	10%	Total
Task 2.1: Nine Element Plan and 319 Application	\$1,080.00	\$0.00	\$0.00	\$0.00	\$108.00	\$1,188.00
Task 2.2: Lake Development Ordinances	\$820.00	\$0.00	\$0.00	\$0.00	\$82.00	\$902.00
Task 2.3: USDA RCPP Planning and Negotiations	\$960.00	\$0.00	\$0.00	\$0.00	\$96.00	\$1,056.00
Task 2.4: Advancement of Special Projects and Initiatives	\$820.00	\$10,000.00	\$0.00	\$0.00	\$1,082.00	\$11,902.00
Task 2.5: Monitoring Program	\$15,000.00	\$55,000.00	\$0.00	\$0.00	\$7,000.00	\$77,000.00
Task 2.6: General Consulting	\$310.00	\$0.00	\$0.00	\$0.00	\$31.00	\$341.00

Phase II Total	Direct Labor	Estimated Labor	DC & Supplies/ Equipment	Estimated Cost
Task 2.1: Nine Element Plan and 319 Application	\$28,030.40	\$84,091.20	\$1,188.00	\$85,279.20
Task 2.2: Lake Development Ordinances	\$5,065.90	\$15,197.70	\$902.00	\$16,099.70
Task 2.3: USDA RCPP Planning and Negotiations	\$8,253.30	\$24,759.90	\$1,056.00	\$25,815.90
Task 2.4: Advancement of Special Projects and Initiatives	\$9,776.70	\$29,330.10	\$11,902.00	\$41,232.10
Task 2.5: Monitoring Program	\$14,581.04	\$43,743.12	\$77,000.00	\$120,743.12
Task 2.6: General Consulting	\$3,317.40	\$9,952.20	\$341.00	\$10,293.20
			Total	\$299,463.22