



# **Lake Decatur Watershed Management Plan**

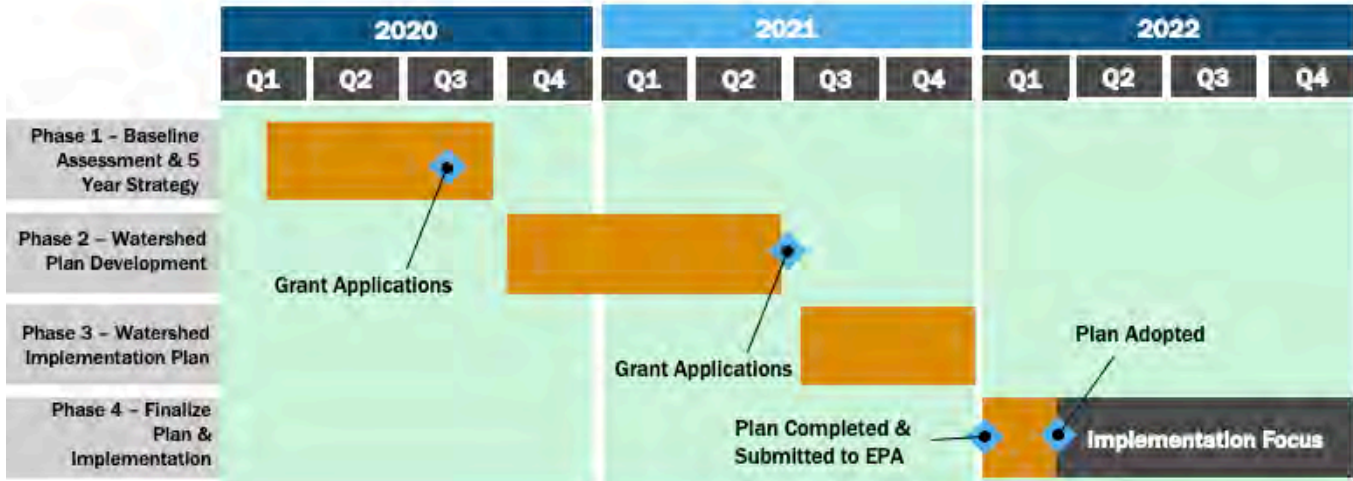
## **- SCOPE OF SERVICES -**

Northwater Consulting

February 13, 2020

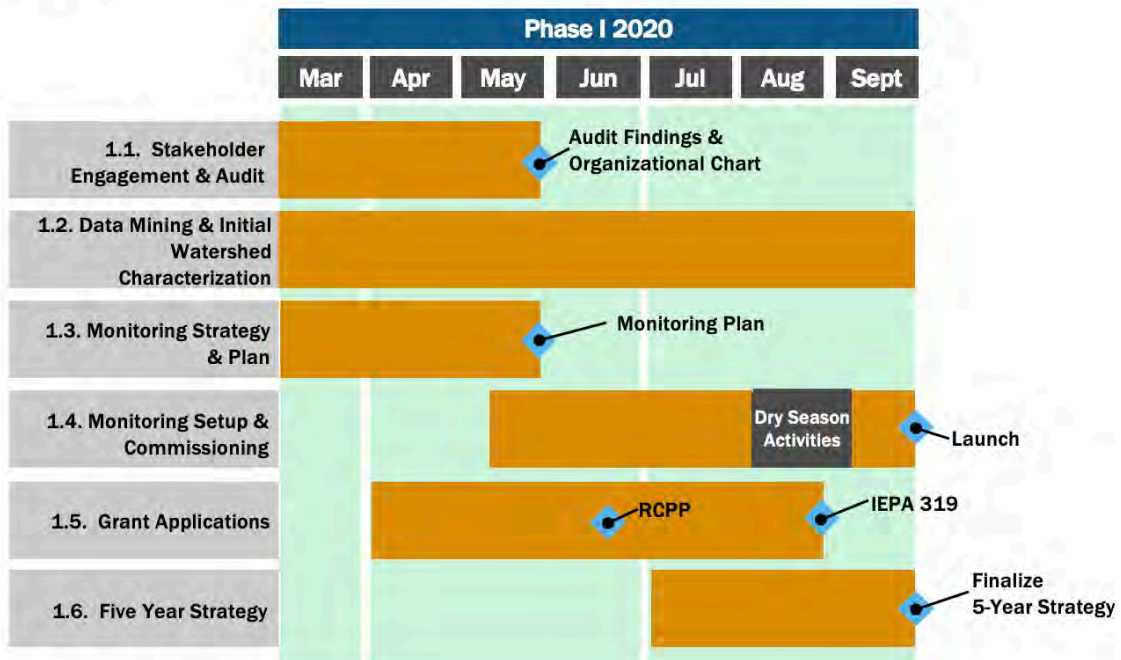
**PROJECT CHRONOGRAM**

Lake Decatur Watershed Management Plan



**PROJECT CHRONOGRAM**

Lake Decatur Watershed Management Plan Phase I



## SCOPE OF SERVICES

### PHASE 1 – Baseline Assessment & Five-Year Strategy

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#### Phase I Period: March through September 2020 (7-months)

##### **Task 1.1. Stakeholder Engagement & Audit**

In this task we will commence formal engagement with stakeholders to initiate the watershed planning process.

The following activities are planned:

- Introductions and a combination of conference call and in-person meetings with stakeholders as identified but not limited to those in Table 1 of the Northwater Statement of Qualifications/Proposal for Services.
- Conduct interviews with potential watershed partners to understand funding availability and needs, capacity, and technical capabilities related to participating in specific management tasks, including collaboration on a plan. Our goal this is to determine exactly how each can contribute, what resources they can leverage versus what they might need and their priorities as it relates to the watershed. From here we can determine if any current services can be performed by City staff, who to continue/discontinue working relationships, and what research linkages to pursue
- Conduct interviews with City staff to determine capabilities and capacity for assuming a more active role in watershed management.
- Development of an organizational chart and structure for watershed planning, management and implementation.
- Initial partner negotiations for roles and responsibilities.
- Requests for data, work product and information from stakeholders.
- Develop preliminary Lake Decatur Watershed Plan outline.

##### **Task 1.2. Data Mining & Initial Watershed Characterization**

In this task we will invest in compiling and synthesizing data and work product in order to support a preliminary understanding of the watershed. This step will support all subsequent tasks and phases of the contract and allow for the identification of data gaps that can be addressed with subsequent activities.

The following activities are planned:

- Data mining related to the lake and watershed from public, private, institutional and Non-Governmental Organization sources.
- Request data from current or past City consultants, as relevant.
- Synthesis of relevant datasets into formats to support analysis and data gaps analysis.
- Watershed reconnaissance and windshield survey.

- Data gaps analysis to guide data collection and monitoring priorities.
- Develop limited watershed characterization elements of the watershed plan.

### **Task 1.3. Monitoring Strategy & Plan**

For this task, Northwater will design a monitoring plan to address the City's objectives of estimating the input of sediment and nitrogen into Lake Decatur.

The following activities are planned:

- Review of current and past monitoring programs.
- Flow, sediment and nutrient analysis of subwatersheds, including Lake Decatur Bluffs subwatersheds.
- Assessment of relationships between Monticello United States Geological Survey gage and inflow to Lake Decatur.
- Meeting with Illinois State Water Survey, City of Decatur Public Works and others.
- Monitoring scope of work, budget and sampling plan

### **Task 1.4. Monitoring Setup & Commissioning**

The monitoring plan from task 1.3 will be executed and commissioned. While the specific details of the monitoring system are yet to be finalized, the following assumptions have been made with regards to the scope of work and budget:

- Installation of 3 to 4 flow and water quality monitoring stations in the watershed. Tentative locations currently being considered include, (i) Sangamon River at Oakley Road or IL 32, (ii) Friends Creek, (iii) Big/Long Creek, and (iv) Sand Creek.
- Optimization of current City-led monitoring at water intake.
- Initial snapshot monitoring / data collection at monitoring stations.
- The budget includes an estimate for equipment, hardware, sensors and infrastructure. It also includes a subcontractor budget that may be necessary to fabricate and/or install secure infrastructure at select stations.

This task does not include the regular monitoring, which will be included in subsequent phases. Monitoring / surveying of lake and sediment trap bathymetry are not included in this contract but can be led by Northwater if desired by the City.

### **Task 1.5. Grant Applications**

Northwater will lead the development of a Regional Conservation Partnership Program grant application and an Illinois Environmental Protection Agency 319 grant application on behalf of the City. The following activities will be included:

- Support City in seeking partner contributions and support letters.
- Determine appropriate grant applicant.
- Design a winnable grant project and vision in partnership with stakeholders.

- Participate in meeting with relevant agencies to discuss the plan to submit.
- Advance the detail of site-specific project and costs.
- Perform cursory modeling as necessary to roughly estimate load reduction estimates resulting from the proposed grant programs.
- Lead the development of the grant budget.
- Take the lead on writing, compiling and submitting the grant applications on behalf of the selected applicant.

#### **Task 1.6. Five Year Strategy**

Compile information gleaned from Tasks 1.1-1.5 to develop a five-year strategy. A succinct report and strategy document will be completed and submitted to the City and relevant watershed partners.

## PHASE 2 Preliminary Tasks – Watershed Plan Development

### Phase 2 Period: October 2020 – June 2021 (9-months)

Phase 2 tasks will be more specifically defined and detailed following the completion of Phase 1, a summary of the expected tasks are outlined below.

Phase 2 Expected Tasks	Description
Task 2.1. Monitoring Program	<ul style="list-style-type: none"> <li>• Nine months of continued monitoring per approved monitoring plan.</li> <li>• Quarterly data reports.</li> </ul>
Task 2.2. Watershed Coordination	<ul style="list-style-type: none"> <li>• Continued role serving as watershed coordinator on behalf of the City.</li> </ul>
Task 2.3. Watershed Characterization	<ul style="list-style-type: none"> <li>• Completion of the watershed characterization component of the 9-element plan.</li> </ul>
Task 2.4. Identify Causes and Sources of Pollution	<ul style="list-style-type: none"> <li>• Completion of the analysis of pollution sources and the required section of the 9-element plan.</li> </ul>
Task 2.5. Pollution Load Modeling and Analysis	<ul style="list-style-type: none"> <li>• Build and calibrate a generalized non-point source pollution load model using Spatial Watershed Assessment and Management Model (SWAMM). Selection of sub-basin(s) for more detailed modeling in subsequent phase. Writing the relevant section of the watershed plan.</li> </ul>
Task 2.6. Establish Load Reduction Targets	<ul style="list-style-type: none"> <li>• Establish load reduction targets/goals to achieve water quality objectives for Lake Decatur. Write the relevant section of the watershed plan.</li> </ul>
Task 2.7. Identification of Critical Areas & Hot Spots	<ul style="list-style-type: none"> <li>• Initial critical area and hotspot analysis and windshield survey verification. Write relevant section of the watershed plan.</li> </ul>
Task 2.8. 319 Grant Application	<ul style="list-style-type: none"> <li>• Northwater to lead the development and submittal of section 319 grant application on behalf of the City or other identified partner(s).</li> </ul>

## PHASE 3 Preliminary Tasks – Watershed Implementation Plan

### Phase 3 Period: July 2021 – December 2021 (6-months)

Phase 3 Expected Tasks	Description
Task 3.1. Monitoring Program	<ul style="list-style-type: none"> <li>Continued monitoring per approved monitoring plan.</li> <li>Quarterly data reports.</li> </ul>
Task 3.2. Watershed Coordination	<ul style="list-style-type: none"> <li>Continued role serving as watershed coordinator on behalf of the City.</li> </ul>
Task 3.3. Site Specific Action Plan	<ul style="list-style-type: none"> <li>Complete detailed modeling of priority sub-basin(s).</li> <li>Completion of site-specific action plan component at a scale and scope determined in subsequent phases.</li> </ul>
Task 3.4. Programmatic Action Plan	<ul style="list-style-type: none"> <li>Completion of site-specific action plan component at a scale and scope determined in subsequent phases.</li> </ul>
Task 3.5. Load Reduction Calculations	<ul style="list-style-type: none"> <li>Complete load reductions calculations where applicable using project locations identified in 3.3 and 3.4.</li> </ul>
Task 3.6. Education & Outreach Action Plan	<ul style="list-style-type: none"> <li>Work with watershed stakeholders to complete an education and outreach component of the plan. This will build from existing efforts in the watershed.</li> </ul>
Task 3.7. Cost Estimates & Financial Plan	<ul style="list-style-type: none"> <li>Develop reasonable cost estimates for plan implementation.</li> </ul>
Task 3.8. City Owned Property Management Plan	<ul style="list-style-type: none"> <li>Integrate city owned property management into plan and action items and develop cost estimates and calculate load reductions if applicable.</li> </ul>
Task 3.9. Sediment Reuse Evaluation	<ul style="list-style-type: none"> <li>Characterize dredged sediment and evaluate beneficial reuse and provide recommendations.</li> </ul>

## PHASE 4 Preliminary Tasks – Finalize Plan & Initiate Implementation

### Phase 4 Period: January 2022 – December 2022 (12-months)

Phase 4 Expected Tasks	Description
Task 4.1. Monitoring Program	<ul style="list-style-type: none"> <li>Continued monitoring per approved monitoring plan.</li> <li>Quarterly data reports.</li> </ul>
Task 4.2. Watershed Coordination	<ul style="list-style-type: none"> <li>Continued role serving as watershed coordinator on behalf of the City.</li> </ul>
Task 4.3. Plan Submittal and Comments	<ul style="list-style-type: none"> <li>Completion of draft 9-element plan. Address City and stakeholder comments</li> </ul>
Task 4.4. Plan Adoption	<ul style="list-style-type: none"> <li>Adopt plan and initiate priority implementation actions.</li> </ul>
Task 4.5. Grant Application	<ul style="list-style-type: none"> <li>Complete and submit grant application(s) for initial implementation activities.</li> </ul>
Task 4.6. Implementation Grant Management	<ul style="list-style-type: none"> <li>Manage priority implementation actions.</li> </ul>

### Optional Supplemental Activities

Phase 4 Tasks	Description
A1: Engineering and Feasibility for Infrastructure Projects	<ul style="list-style-type: none"> <li>Complete necessary engineering and permitting for large infrastructure projects</li> </ul>
A2: 2023 - 2024 Watershed Management and Implementation Consulting	<ul style="list-style-type: none"> <li>Continued serving watershed coordinator roles on behalf of the City.</li> </ul>
A3: SWAMM Online System	<ul style="list-style-type: none"> <li>Integrate plan components, existing practices and efforts into an online system to simplify coordination amongst watershed partners and City staff.</li> </ul>
A4: 2023-2024 Monitoring	<ul style="list-style-type: none"> <li>Continue monitoring.</li> </ul>
A5: 5-year Monitoring Analysis & Report	<ul style="list-style-type: none"> <li>Perform analysis and develop a report.</li> </ul>