



## Lake Decatur Watershed Management Plan

### **Phase I – Baseline Assessment & Five-Year Strategy**

**March 2020 – September 2020**

#### **Executive Briefing**

### Summary of Activities

1. Through Phase I we have learned a significant amount about the watershed and its diverse stakeholder base. This has allowed for strongly informed strategies, new partnerships, and clarity on roles and responsibilities.
2. A pathway has been cleared to secure financial resources to enable impactful and long-term watershed planning and implementation that compound and leverage City and partner investments.
3. An Illinois EPA Section 319 grant application was submitted in August 2020 seeking \$150,000 to: (i) construct four on-the-ground projects in the watershed, (ii) update the Friend's Creek watershed plan so that it is eligible to receive future grants, and (iii) develop new subwatershed plans for Sand Creek, Wildcat Creek, and Willow Branch.
  - a. The implementation projects will reduce sediment and nitrogen loading by 415 tons/year and 827 lbs/year, respectively.
  - b. Portion of the grant award will be applied towards the consultant contracts with Northwater (Phase III).
4. A United States Department of Agriculture Regional Conservation Partnership Program (RCPP) grant application is in development and due November 4.
  - a. The grant is 50-50, so partner contributions are matched by the federal grant.
  - b. The City has received nearly 20 partner support and contribution commitments. Approximately \$10M+ of partner contributions (including City expenditures) or match is expected.
  - c. Approximately \$10M federal funds will be requested, for a total grant program of \$20M over a 5-year period.
  - d. The Illinois Farm Bureau is a key partner contributing in-kind services, cash and is lobbying on behalf the City's RCPP application.

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- e. City budgets, staff time and spending towards anything related to lake / watershed management will be used as match and double the efficacy of investments.
  - f. The City is still working with Northwater and partners to finalize details of the RCPP application and the application will be submitted during Phase II.
- 5. A monitoring program has been defined in partnership with the Illinois State Water Survey (ISWS) and National Great Rivers Research and Education Center (NGRREC) to quantify sediment and nitrate delivery to the lake, track sediment accumulation rates, and evaluate the benefits of watershed investments over time.
  - a. Bi-weekly monitoring for sediment, nitrate and flow at three stations in the watershed will be done in partnership with ISWS, and shall commence upon notice to proceed for Phase II.
  - b. Partnership with NGRREC to install continuous real-time sensors for nitrate, flow, turbidity, and other water quality parameters on the Sangamon River at the Cisco bridge will be delayed until notice of RCPP award. Expenditures after RCPP award notice will allow for match.
- 6. Lake bathymetry and sediment accumulation monitoring plan is in development and will be completed in Phase II after review of GLDD and Chastain data from the post-dredging surveys.
  - a. The first round of baseline lake bathymetry / sediment accumulation monitoring is planned for the beginning of Phase III (Fall 2021).

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## Detail by Task

### Task 1.1: Stakeholder Engagement & Audit

1. A strategy is in development for Lake Decatur watershed planning and management that will result in substantial outside investment and measurable improvements to water quality and sedimentation.
  - a. Engaged and initiated partnerships with stakeholders throughout the watershed across 7 counties (See Table 1).
    - i. Farm Bureaus and agencies.
    - ii. Industry and private sector (ADM, Tate & Lyle etc.).
    - iii. Private landowners (Howard Buffet, Jimmy Johns etc).
    - iv. Universities / colleges (L&C, University of Illinois).
    - v. Illinois State Water Survey.
  - b. We have inventoried projects, programs, and initiatives throughout the watershed and at the State and Federal levels, many of which are complementary to City goals and objectives.
    - i. These investments can be used to leverage funding and bring more money into the watershed.
    - ii. Duplicated efforts and investments are being avoided through improved collaboration and alignment.
    - iii. Identified unique funding opportunities and forged relationships with key decision makers.
  - c. We have assessed current City arrangements and policies to identify opportunities for grant leveraging, enhancements to lake and watershed activities and City owned crop ground and coordinated with and provided guidance to the City and Macon County SWCD on the current employment and cost-share contract.

**Table 1 - Stakeholder/Partner Engagement Summary**

Type	Organization	Category	Organization
Landowners	Private landowners/Farmers		The Nature Conservancy
National Government	United States Department of Natural Resource Conservation	Non-Governmental Organization	Iowa Agricultural Water Alliance
	US Army Corps of Engineers		Ecosystem Services Market Consortium
	Champaign County SWCD		Illinois Lake Management Association
	DeWitt County SWCD		Topflight Grain Cooperative
	McLean County SWCD		Illinois Fertilizer & Chemical Association
	Piatt County SWCD		Illinois Nutrient Research & Education Council
	Ford County SWCD		Illinois Sustainable Ag Partnership
	Macon County SWCD		American Farmland Trust (AFT)
	Shelby County SWCD		Agricultural Watershed Institute
	Macon County Conservation District		Property Management
	Macon County	State Government	Hancock Agricultural Investment Group
	City of Decatur		Illinois Department of Natural Resources
City of Monticello	Illinois State Water Survey		
Decatur Park District	Illinois Environmental Protection Agency		
Decatur Sanitary District		Illinois Corn Growers Association	
		Illinois Farm Bureau	

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Type	Organization	Category	Organization
Foundation	Land Conservation Foundation	Trade Organization	Macon County Farm Bureau
	Howard Buffet Foundation		Shelby County Farm Bureau
Media	WAND TV		Ford/Iroquois Farm Bureau
	Now Decatur (radio)		McLean County Farm Bureau
University	University of Illinois / Allerton Park		DeWitt County Farm Bureau
	Lewis & Clark Community College		Piatt County Farm Bureau
Industry / Private Sector	Archer-Daniels-Midland (ADM)		Champaign County Farm Bureau
	United Prairie LLC		
	Door4 Brewing		
	Riggs Brewing		
	Decatur Brew Works		
	Anvil & Forge Brewing and Distilling		
	Landlocked Hops		
	DIGS Associates		
	Rovey Seed Company		
	Anuvia Plant Inspired Products		
	Tate & Lyle		
	Land O' Lakes (Truetera)		
	ManPlan Inc		
	Jimmy John's		
	Catipillar		
	Crop-Tech Consulting		
	Nutrien		
	Clarkson Grain Company		
	Growmark		
	Martin Ecosystems		
Regenerative Agriculture Consulting			

### Task 1.2: Data Mining & Initial Watershed Characterization

1. Acquired existing monitoring data from Illinois EPA, Illinois State Water Survey (ISWS), United States Geological Survey (USGS) and others such as and Lewis and Clark Community College.
2. Acquired and reviewed reports and studies/research throughout the watershed.
3. Acquired critical map data layers throughout the City and watershed.
4. Conducted a watershed windshield survey of the Bluffs subwatershed and portions of other subwatersheds. So far have nearly 1,000 GPS observations throughout the watershed to support planning and management.
5. Completed a lake shoreline erosion assessment and generated map layers.
6. 25% completion of a custom land use map layer for the Bluffs subwatershed.
7. Supported beneficial reuse planning related to the sedimentation basin in Oakley Township.

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### Task 1.3: Monitoring Plan

1. Thorough research and engagement with stakeholders, we learned from current and past monitoring efforts and associated data in the watershed to develop a focused and cost-effective monitoring plan.
2. The City's monitoring investment with the ISWS from 1993 – 2008 was instrumental in guiding a very focused monitoring plan.
3. Established partnerships with the ISWS and NGRREC to leverage their complementary programs already occurring in the watershed to save money and eliminate redundant efforts.
4. The monitoring plan includes the following:
  - a. Bi-weekly monitoring of nitrate, phosphorus, sediment and flow/river stage at three stations in the watershed in partnership with the ISWS (Sangamon River at Cisco bridge, Friend's Creek and Lost Creek. This captures approximately 75% of the watershed area.
    - i. The ISWS is already working bi-weekly in the watershed as part of a 5-year National Science Foundation (NSF) grant, so there is significant cost savings from this alignment.
    - ii. Northwater will monitor storms and perform monitoring at these stations to capture these events in different seasons.
  - b. A real-time monitoring station will be installed on the Upper Sangamon River at the Cisco bridge in partnership with NGRREC. This station will collect data for nitrate, turbidity, and river stage at 15-minute increments for at least a 5-year period. Based on analyses, this is the closest location to Lake Decatur that can provide representative data to estimate nitrate and sediment loads.
    - i. The commissioning of this station will be delayed until notice of the RCPP award, anticipated in the spring of 2021. This allows for this City expenditure to count as match and unlock more funding for implementation projects.
    - ii. NGRREC is already monitoring in upper Lake Decatur for the same parameters and using the same instrumentation proposed for the Cisco bridge site. There are significant cost savings in this partnership, plus the complementary monitoring data that NGRREC is collecting the lake will continue to be collected into the foreseeable future.
  - c. Two proposed BMP sites will be monitored starting in Phase II in order to collect baseline data. Flow, sediment, nitrate and phosphorus data will be collected during baseflow and storm-flow events in advance of the projects being constructed. Monitoring will continue after construction to monitor improvements.
    - i. Ravine near the airport in the Bluffs watershed.
    - ii. BMP at the DeWitt Wellfield site.

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### Task 1.4: Monitoring Setup and Commissioning

1. Monitoring setup and commissioning will occur under Phase II

### Task 1.5: Grant Applications

1. Illinois EPA Section 319 program.
  - a. Submitted August 1<sup>st</sup>, 2020.
  - b. \$250,000 total project cost, \$150,000 in federal funds.
  - c. City commitment to develop Bluffs watershed plan under Phase II prior to receipt of grant funds.
2. USDA-RCPP Grant
  - a. In progress, due November 4.
  - b. Anticipate a 20-million-dollar application – \$10M USDA funds combined with \$10M+ city/partner contributions.
  - c. This grant leverages partner and City funds already planned / allocated for the watershed and lake. For example, the \$1M annually paid by ADM to the City for lake management, allows us to unlock \$1M of USDA funding for projects to reduce sediment and nitrate.

### Task 1.6: Five-Year Strategy

1. Formalized key elements of the strategy.
  - a. Draft report 50% complete.
  - b. Designed to maximize external investments and optimize lake and watershed related expenditures.
2. Initiated a series of special projects with the potential to provide substantial value to the City, lake, and watershed.
  - a. City owned property guidelines and recommendations.
  - b. Carbon and water quality trading pilot program.
  - c. Development of the Sediment Dewatering Basin to generate revenue.
    - i. Specialty crops.
    - ii. Community/business engagement.
  - d. Beneficial use/retrofit of emergency water supply well site basin for tile nitrate removal.
  - e. Feasibility of large-scale floating wetlands at the upper end of the lake to trap sediment and reduce peak nitrate concentrations.