



**Monday, April 29, 2019
5:30 PM
City Council Chamber**

CITY COUNCIL AGENDA

I. Call to Order

1. Roll Call
2. Pledge of Allegiance

II. Study Session: Study Sessions are less formal meetings of the City Council called to discuss broad policy themes and obtain input from the governing body about proposals and initiatives that are still being developed. No formal votes are taken at Study Sessions, and no informal directions expressed at Study Sessions bind the City Council, or its individual members, to vote in a certain manner at a future City Council meeting. The Mayor will accept public comments at different times on the agenda topics below as council and staff discussions proceed. Members of the public should limit their remarks to three (3) minutes, unless granted additional time by the council.

1. Preparing for the 2020 Census: Annexation Policies, Eliminating Double Taxation and Improving Tax/Service Equity
2. Management of the Lake Decatur Watershed: Strategies to Improve Water Quality, and Lake Stewardship Options Concerning Water Recreation, Reduction of Agricultural Pollution, and Siltation Control

III. Adjournment

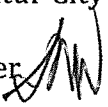
SUBJECT: Preparing for the 2020 Census: Annexation Policies, Eliminating Double Taxation and Improving Tax/Service Equity

ATTACHMENTS:

Description	Type
Memo to Mayor and City Council Members	Cover Memo
Supporting Documentation	Backup Material

April 26, 2019

TO: Mayor Moore Wolfe & Decatur City Council Members

FROM: Scot Wrighton, City Manager 

RE: Council Study Session – 2020 Census Preparation; Annexation Plans;
Potential Elimination of Dual Response Zones

The results of the 2020 Census will have a direct impact on the city's budget, and on the budgets of numerous other organizations that provide services to Decatur residents. From 2022 to 2032, the results of the 2020 census will be used to distribute more than \$675 **billion** in federal money throughout the U.S. for local funding to programs like food stamps, the National School Lunch Program, and the Children's Health Insurance Program (CHIP). Census figures will also be used to distribute some Medicaid programs, WIC, the Supplemental Nutrition Assistance Program (SNAP), the Low Income Home Energy Assistance Program (LIHEAP), Head Start funds and many highway construction funds. The Census Bureau has estimated that for **each** person undercounted in the 2020 Census, approximately \$1,800 in federal funding will be lost to the local community **every year**.

Additionally, the State of Illinois distributes local allotments of state income taxes, motor fuel taxes, State Use Tax, and personal property replacement taxes—all on a basis of the official city population, as certified every ten years by the U.S. Census Bureau. These Illinois-distributed revenues currently total \$171.54 per person per year. Since the last census in 2010, the city of Decatur has received these State funds based on a population count of 76,122—despite the fact that more recent Census Bureau estimates peg Decatur's population closer to 70,000. Based on current distributions from the State, for every 1000-person reduction in the Decatur census total, the city will lose \$171,540 per year. In other words, if the city's population declines by 5000, it will reduce State funding by \$857,700 **per year**. So the Decennial Census mandated by the U.S. Constitution is not just about reapportioning legislative districts based on shifting population. A significantly lower 2020 census number for Decatur will directly impact the city's General Fund, and its street improvement budget. So it is extremely important that the city of Decatur take steps to ensure a complete count of the 2020 Census, and that—where possible—the city's boundaries are enlarged through annexation to include more people before the start of the enumeration process.

Additional annexation will also increase the city's property tax revenues because it will increase the base without increasing the tax rate (estimated at \$200,000/year).

So what steps can the city take to properly count as many people as possible in the upcoming census, and thereby maximize State and Federal funds to Decatur for the next decade? There are at least five strategies that could be pursued:

1. Create a “Complete Count Committee” that: disseminates information to the public about the importance of the census; publicizes that the individual and identifying data collected is not only confidential, but remains sealed for 72 years; works with local census bureau teams to count students, shut-ins, the homeless, senior living facilities and other under-counted populations; assists the Census Bureau in conducting nonresponse follow-ups, etc.
2. Require that property owners who have signed agreements to annex into the city in the past, in exchange for connections to the city’s water system, follow-through with annexation, or be disconnected from the city’s water system, in accordance with the terms of their agreements.
3. Annex into the city all properties that are fully surrounded by the city limits, and are less than 60 acres in size, as allowed by State law, and (if necessary) without the property owner’s permission.
4. Offer special incentives for additional voluntary annexation; but these incentives should only be available for annexations completed in 2019.
5. In the future, change the water service agreement documentation so that it includes execution by the property owner of a pre-annexation petition and agreement. This should enable the city to initiate annexation proceedings immediately upon the property becoming contiguous with the city’s corporate boundary, with no further need to obtain additional signatures. In some cases, however, this may not be effective, especially if there is an intervening change in property ownership; so an alternative policy approach would be to simply decline to allow water connections unless an annexation corridor/connection can be established that makes the property contiguous.

Despite how it usually helps the city of Decatur as a whole, annexation is sometimes resisted by property owners, because it results in property tax increases, and because in some locations, annexation into the city of Decatur can result in double taxation for fire services, if the city annexes into adjoining fire protection districts. Property annexed into the city of Decatur is automatically annexed to the Decatur Park District as well. But new city annexations are **not** automatically included in the Sanitary District of Decatur unless the annexed property is, or wishes to be, connected to the municipal sanitary sewer collection system. Annexation reduces customers’ water bills by half.

Those opposed to annexation may also object to the possibility of double taxation—and the City Council should be prepared to correct this inequity. Dual response fire service zones, and double taxation for fire services, are created when the city annexes property that is inside a pre-existing fire district, and where a petition for disconnection from the fire district is not filed, and/or when objections are filed by a fire protection district. In the absence of any filings by fire districts, the properties are supposed to be automatically disconnected. However, the city’s research

indicates that automatic disconnection has not always occurred—further complicating the processes and steps required to fix the situation. The status quo has evolved and worsened over the space of many years. While I believe that Decatur’s collective future good is advanced by annexing as many parcels as reasonably possible now, it is also time to correct the long-standing inequity of dual response and double taxation.

To correct this tax inequity, the city can initiate legal action to disconnect properties from the fire protection district, or enter into agreements with adjoining fire protection districts for the orderly and negotiated disconnection of these double-taxed parcels. In cases where a fire protection district has outstanding bonds, property owners may be required to pay a portion of the fire protection district’s tax required for bonded debt retirement—but only until the debt instrument is paid off. The locations of dual response and double taxation are illustrated on the attached maps. The overlaps and double taxation affect the following fire protection districts:

1. Long Creek Fire Protection District
2. Argenta-Oreana Fire Protection District
3. Harristown Fire Protection District
4. South Wheatland Fire Protection District
5. Hickory Point Fire Protection District
6. Warrensburg Fire Protection District

Staff estimates that deploying all of the above strategies could add 400 to 500 homes, businesses and developable tracts to the city.

Increased service costs associated with annexation are almost entirely confined to Public Works. Increases in public safety costs are most associated with significant increases in response times; and the proposed annexation areas will not noticeably increase response times because of their close proximity to areas already in the city, currently served by the Fire and Police Departments.

POLICY QUESTIONS FOR THE COUNCIL:

- a) Should the city take aggressive steps to make sure all Decatur residents are counted in 2020; if so, which strategies (the five listed above on page 2 of this memo; or others?)?
- b) Should the city begin gradually eliminating dual fire response, and tax and service overlaps in the interests of achieving greater tax equity?

The 2020 Census and Confidentiality

Your responses to the 2020 Census are safe, secure, and protected by federal law. Your answers can only be used to produce statistics—they cannot be used against you in any way. By law, all responses to U.S. Census Bureau household and business surveys are kept completely confidential.

Respond to the 2020 Census to shape the future.

Responding to the census helps communities get the funding they need and helps businesses make data-driven decisions that grow the economy. Census data impact our daily lives, informing important decisions about funding for services and infrastructure in your community, including health care, senior centers, jobs, political representation, roads, schools, and businesses. More than \$675 billion in federal funding flows back to states and local communities each year based on census data.



Your census responses are safe and secure.

The Census Bureau is required by law to protect any personal information we collect and keep it strictly confidential. The Census Bureau can only use your answers to produce statistics. In fact, every Census Bureau employee takes an oath to protect your personal information for life. Your answers cannot be used for law enforcement purposes or to determine your personal eligibility for government benefits.

By law, your responses cannot be used against you.

By law, your census responses cannot be used against you by any government agency or court in any way—not by the Federal Bureau of Investigation (FBI), not by the Central Intelligence Agency (CIA), not by the Department of Homeland Security (DHS), and not by U.S. Immigration and Customs Enforcement (ICE). The law requires the Census Bureau to keep your information confidential and use your responses only to produce statistics.



The law is clear—no personal information can be shared.

Under Title 13 of the U.S. Code, the Census Bureau cannot release any identifiable information about individuals, households, or businesses, even to law enforcement agencies.

The law states that the information collected may only be used for statistical purposes and no other purpose.

To support historical research, Title 44 of the U.S. Code allows the National Archives and Records Administration to release census records only after 72 years.

All Census Bureau staff take a lifetime oath to protect your personal information, and any violation comes with a penalty of up to \$250,000 and/or up to 5 years in prison.

There are no exceptions.

The law requires the Census Bureau to keep everyone's information confidential. By law, your responses cannot be used against you by any government agency or court in any way. The Census Bureau will not share an individual's responses with immigration enforcement agencies, law enforcement agencies, or allow that information to be used to determine eligibility for government benefits. Title 13 makes it very clear that the data we collect can only be used for statistical purposes—we cannot allow it to be used for anything else, including law enforcement.

It's your choice: you can respond securely online, by mail, or by phone.

You will have the option of responding online, by mail, or by phone. Households that don't respond in one of these ways will be visited by a census taker to collect the information in person. Regardless of how you respond, your personal information is protected by law.

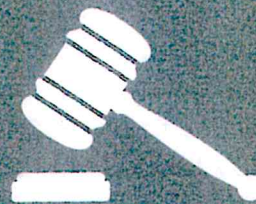
Your online responses are safe from hacking and other cyberthreats.

The Census Bureau takes strong precautions to keep online responses secure. All data submitted online are encrypted to protect personal privacy, and our cybersecurity program meets the highest and most recent standards for protecting personal information. Once the data are received, they are no longer online. From the moment the Census Bureau collects responses, our focus and legal obligation is to keep them safe.

We are committed to confidentiality.

At the U.S. Census Bureau, we are absolutely committed to keeping your responses confidential. This commitment means it is safe to provide your answers and know that they will only be used to paint a statistical portrait of our nation and communities.

Learn more about the Census Bureau's data protection and privacy program at www.census.gov/privacy.



Laws protecting personal census information have withstood challenges.

In 1982, the U.S. Supreme Court confirmed that even addresses are confidential and cannot be disclosed through legal discovery or the Freedom of Information Act (FOIA). In 2010, the U.S. Justice Department determined that the Patriot Act does not override the law that protects the confidentiality of individual census responses. No court of law can subpoena census responses.

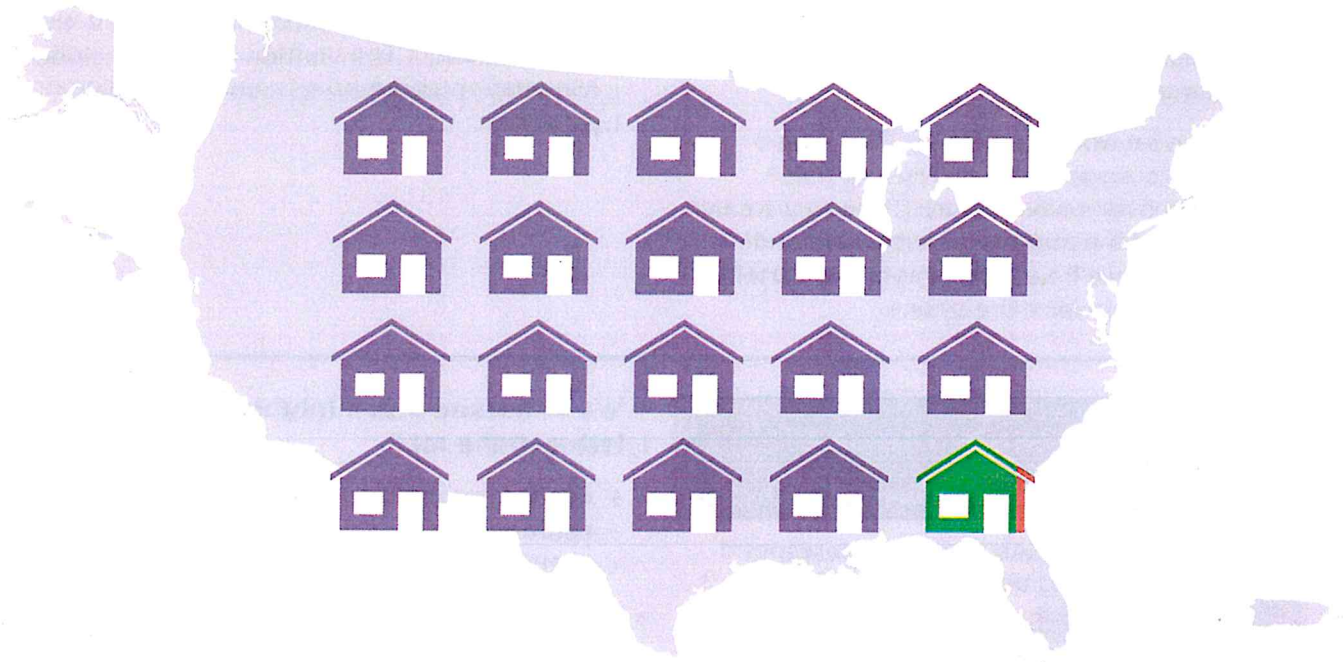
How the 2020 Census will invite everyone to respond



Every household will have the option of responding online, by mail, or by phone.

Nearly every household will receive an invitation to participate in the 2020 Census from either a postal worker or a census worker.

 **95%** of households will receive their census invitation in the mail.



 **Almost 5%** of households will receive their census invitation when a census taker drops it off. In these areas, the majority of households may not receive mail at their home's physical location (like households that use PO boxes or areas recently affected by natural disasters).

 **Less than 1%** of households will be counted in person by a census taker, instead of being invited to respond on their own. We do this in very remote areas like parts of northern Maine, remote Alaska, and in select American Indian areas that ask to be counted in person.

Note: We have special procedures to count people who don't live in households, such as students living in university housing or people experiencing homelessness.

How the 2020 Census will invite everyone to respond



What to Expect in the Mail

When it's time to respond, most households will receive an invitation in the mail.

Every household will have the option of responding online, by mail, or by phone.

Depending on how likely your area is to respond online, you'll receive either an invitation encouraging you to respond online or an invitation along with a paper questionnaire.

Letter Invitation

- Most areas of the country are likely to respond online, so most households will receive a letter asking you to go online to complete the census questionnaire.
- We plan on working with the U.S. Postal Service to stagger the delivery of these invitations over several days. This way we can spread out the number of users responding online, and we'll be able to serve you better if you need help over the phone.

Letter Invitation and Paper Questionnaire

- Areas that are less likely to respond online will receive a paper questionnaire along with their invitation. The invitation will also include information about how to respond online or by phone.

WHAT WE WILL SEND IN THE MAIL	
On or between	You'll receive:
March 12-20	An invitation to respond online to the 2020 Census. (Some households will also receive paper questionnaires.)
March 16-24	A reminder letter.
	If you haven't responded yet:
March 26-April 3	A reminder postcard.
April 8-16	A reminder letter and paper questionnaire.
April 20-27	A final reminder postcard before we follow up in person.

We understand you might miss our initial letter in the mail.

- Every household that hasn't already responded will receive reminders and will eventually receive a paper questionnaire.
- It doesn't matter which initial invitation you get or how you get it—we will follow up in person with all households that don't respond.

Counting Young Children in the 2020 Census

Counting everyone once, only once, and in the right place

An estimated 5 percent of kids under the age of 5 weren't counted in the 2010 Census. That's about 1 million young children, the highest of any age group.

We need your help closing this gap in the 2020 Census. Here's what our research tells us about why young children are missed and what you can do to help make sure they are counted.



Common situations where young children aren't counted

How you can help?



The **child splits time between two homes.**

The child lives or stays with **another family or with another relative such as a grandparent.**

- Emphasize that the census counts **everyone where they live** and sleep most of the time, even if the living arrangement is temporary or the parents of the child do not live there.
- If the child truly spends equal amounts of time between two homes, count them where they stayed on **Census Day, April 1**. Coordinate with the other parent or caregiver, if possible, so the child is not counted at both homes.
- If it's not clear where the child lives or sleeps most of the time, count them where they stayed on Census Day, April 1.



The child lives in a **lower income household.**

- Explain to service providers and families that responding to the census helps determine **\$675 billion in local funding** for programs such as food stamps (also called the Supplemental Nutritional Assistance Program or SNAP), the National School Lunch Program, and the Children's Health Insurance Program (CHIP). When children are missed in the census, these programs miss out on funding that is based on the number of children counted.



The child lives in a household with **young parents or a young, single mom.**

- Explain that filling out the census yourself, on your own schedule, is easier than having to respond when a census worker knocks on your door. Remind these households that the form should **only take about 10 minutes** to fill out and can be done online or over the phone, in addition to mailing it back.
- Encourage moms with young children to ask other household members to count them and their children on the form if others live in the household.



The child is a **newborn.**

- Emphasize that parents should **include babies** on census forms, even if they are still in the hospital on April 1.
- **Encourage facilities** providing services to newborns to remind parents about the importance of counting their children on the census form.
- Highlight the fact that the census form only takes about 10 minutes to complete, and parents can **fill it out online or over the phone in addition to paper** at a time that works best for them.

Common situations where young children aren't counted

How you can help?



The child lives in a household that is **large, multigenerational, or includes extended or multiple families.**

- Remind the person filling out the form to count all children, including nonrelatives and children with no other place to live, even if they are only living at the address temporarily on April 1.
- Spread the word that the census **counts all people living or staying** at an address, not just the person or family who owns or rents the property.



The child lives in a household that **rents or recently moved.**

- Encourage renters and recent movers to complete their census forms **online or over the phone**, right away. That way they don't need to worry about paper forms getting lost in the move.
- **Focus efforts** on multiunit buildings that are likely to have renters.



The child lives in a household where they're **not supposed to be**, for one reason or another.

- Please explain to those that have children living in places where they aren't allowed (for example, grandparents in a seniors-only residence that have a grandchild living with them, a family with more people, including children, than the lease allows) that they should include the children because the **Census Bureau does not share information** so it can't be used against them.
- Emphasize the Census Bureau's legal commitment to keep census **responses confidential**.
- Explain that the Census Bureau **will never share information** with immigration enforcement agencies like Immigration and Customs Enforcement (ICE), law enforcement agencies like the police or Federal Bureau of Investigation (FBI), or allow this information to be used to determine eligibility for government benefits.



The child lives in a **non-English or limited-English speaking** household.

- **Conduct outreach** and create resources in non-English languages that highlight the importance of counting young children.
- **Encourage non-English speakers to self-respond** to the census and let them know that for the 2020 Census, the online form and telephone line will be available in 13 languages, including English. Language guides will be available in 59 languages other than English.

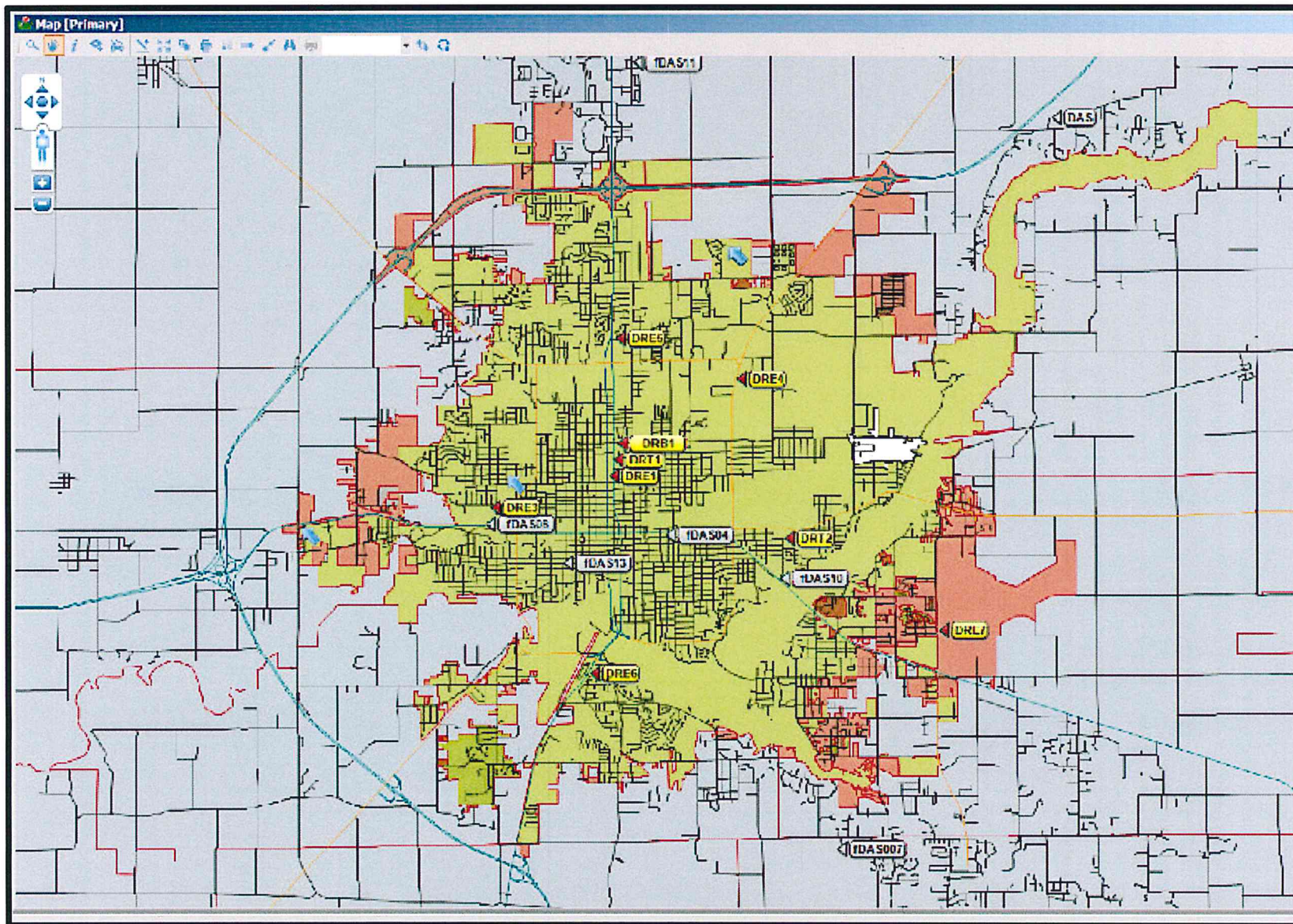


The child lives in a household of **recent immigrants or foreign-born adults.**

- Work with community members to conduct outreach in neighborhoods with recent immigrants. **Focus efforts** on the **community's gathering places** like local grocery stores, places of worship, and small restaurants.
- Emphasize the **Census Bureau's legal commitment** to keep census responses confidential. Explain that the Census Bureau will never share information with immigration enforcement agencies like Immigration and Customs Enforcement (ICE), law enforcement agencies like the police or Federal Bureau of Investigation (FBI), or allow this information to be used to determine eligibility for government benefits.



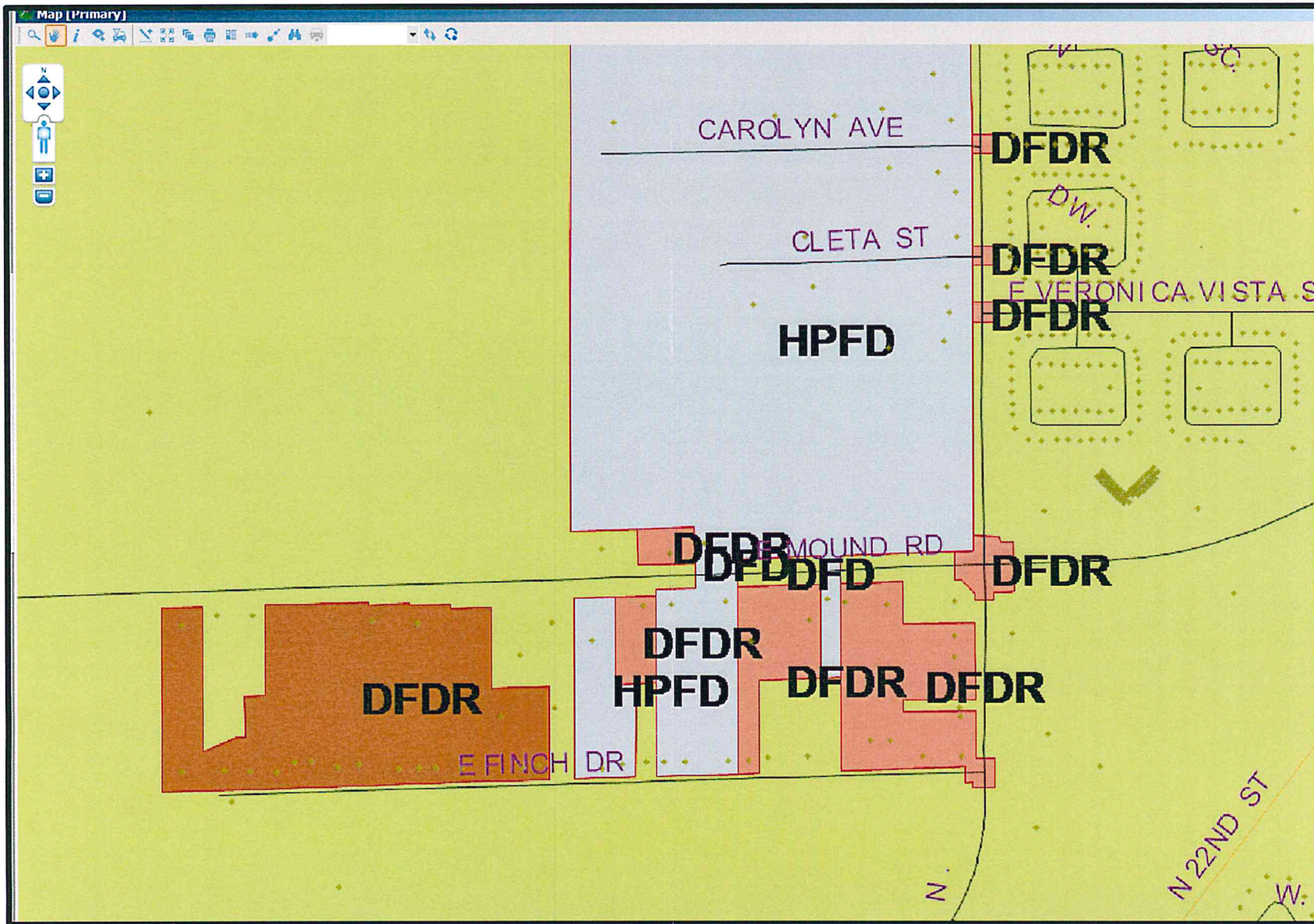
City of Decatur Dual Response Fire Territory

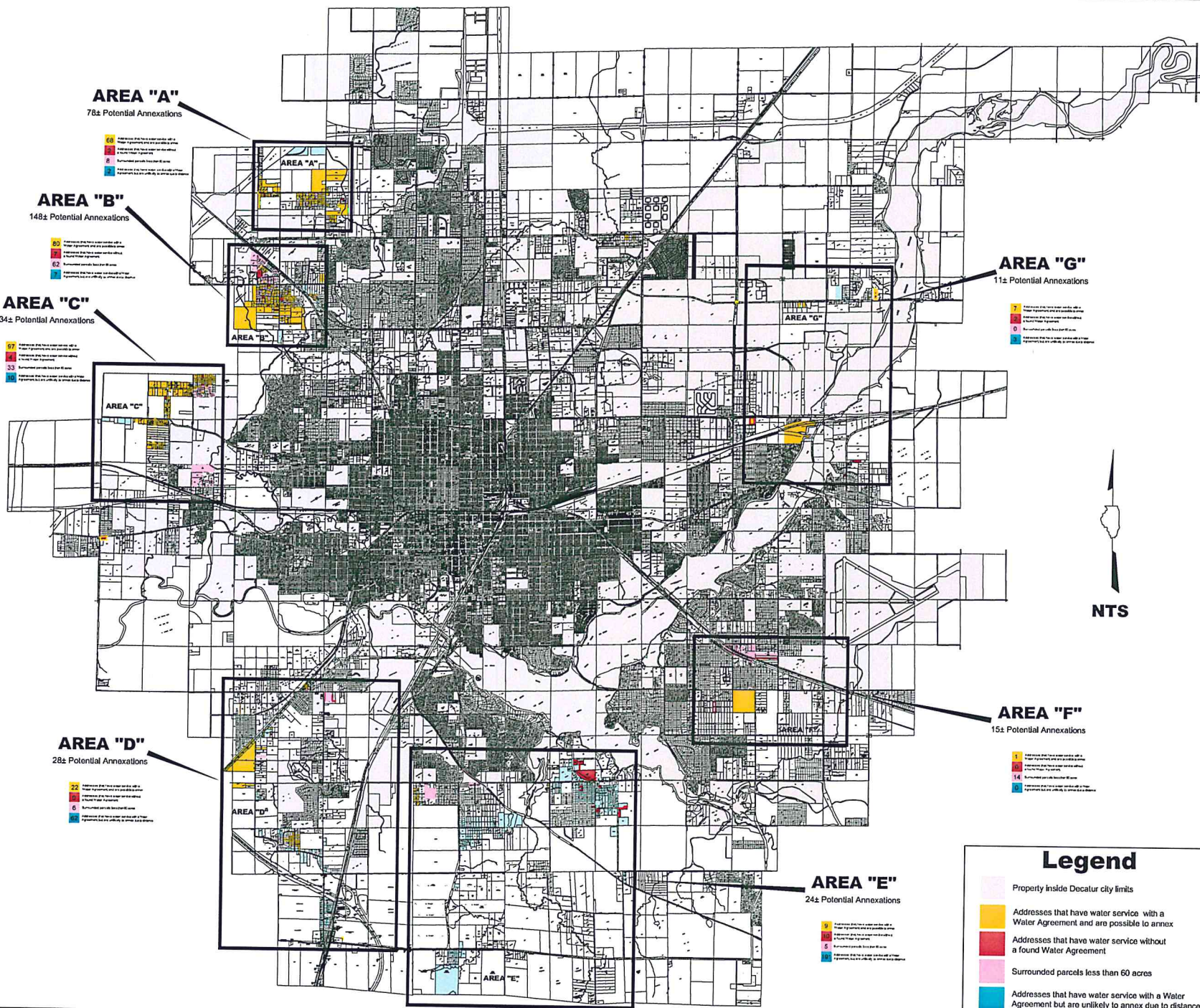


Green is City fire only, Orange is City fire and Volunteer fire (Dual).



City of Decatur Dual Response Fire Territory





POTENTIAL ANNEXATIONS MAP

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CITY OF DECATUR
ENGINEERING DIVISION

DRAWN BY: CHRIS MAUZY - Revised 7/16 RDD

SHEET
1

WATER SERVICE AGREEMENT

For and in consideration of the undertakings and covenants set out herein, it is agreed by and between the Owner(s) of the premises described at paragraph 8 hereof, and which person or persons are signatory hereto, ("Owner"), and THE CITY OF DECATUR, ILLINOIS, ("City"), as follows:

1. The provisions of this Agreement, and the installation, operation and use of the water service authorized hereby, are expressly made subject to all applicable provisions of codes, ordinances, rules and regulations of City, and Owner agrees to comply therewith.

2. After completion of the construction of a water main by the City in the street or roadway adjacent to the premises described herein, and upon obtaining a tapping permit in the customary manner followed by the City for premises within its corporate limits, Owner may tap said water main of City and connect a water service thereto to furnish residential service only to said premises.

3. Said tap, connection and service shall be made and installed by a licensed plumber.

4. The water furnished by City shall only be used for domestic purposes and only upon the premises described herein.

5. At such time as said premises become contiguous to the corporate limits of City, the then owner of said premises shall, within ninety (90) days after receiving notice from City thereof, petition to annex the same to the City. If a petition is not received within the time period, or the property is not annexed as a result of the petition, water service will be immediately terminated without further notice.

6. This agreement shall terminate upon the failure by Owner to comply with any provision hereof or with any applicable provision of City Code, ordinances, rules or regulations, or upon the annexation of said premises to the City, and may be terminated by either party upon six (6) months notice by certified mail to the City, or to _____ if to the Owner.

7. This Agreement is intended for the benefit of said premises as well as the current owner and occupant thereof and to said end shall be binding upon and inure to the benefits of said owner and his successors in title.

8. The premises referred to herein, and to which the terms, conditions and provisions of this Agreement apply, are legally described as follows:

Dated this _____ day of _____, 20_____.

SIGNED:

Owner (Signature)

Owner (Signature)

Owner (Printed)

Owner (Printed)

Address: _____

THE CITY OF DECATUR, ILLINOIS

MAYOR

ATTEST:

CITY CLERK

SUBJECT: Management of the Lake Decatur Watershed: Strategies to Improve Water Quality, and Lake Stewardship Options Concerning Water Recreation, Reduction of Agricultural Pollution, and Siltation Control

ATTACHMENTS:

Description	Type
Memo to Mayor and City Council Members	Cover Memo
Supporting Documentation	Backup Material

April 25, 2019

TO: Mayor Moore Wolfe & Decatur City Council Members

FROM: Scot Wrighton, City Manager
Matt Newell, Director of Public Works
Keith Alexander, Water Services Manager

RE: Council Study Session – Management & Stewardship of Lake Decatur and the Lake Decatur Watershed (Sangamon River upstream from Decatur)

The city spent \$90+ million, in its five-year Lake Decatur dredging project. The total cost comes to \$160 million when interest fees and debt service costs are added. The city's water customers will be paying for this project for many years. So it is timely for the City Council to evaluate strategies for maintaining water quality and reducing the build-up of fertilizer-laden silt and sediment that—if not sufficiently abated—will contribute to expensive and premature dredging operations in the future, as well as degradation of water quality.

The purpose of conducting a City Council study session on this topic is to evaluate and eventually select options and strategies for: 1) reducing siltation/sediment into Lake Decatur in the future, as well as reducing agricultural fertilizers [chiefly nitrates and phosphorus] carried by Sangamon River, Big Creek, Long Creek, Finley Creek and Sand Creek waters and the sediment from these waterways; and 2) proactively improving Lake Decatur water quality in ways **not** directly related to sediment levels (recreation and marine fuel management, storm and sanitary sewer planning, lake edge conservation practices, etc.).

BACKGROUND

Because the city has almost no control over upstream land uses, Lake Decatur has historically had major problems with siltation and agricultural pollution, since the end of World War Two. Consequently, the lake often has excessive nitrate levels from agricultural runoff. The 925 square mile Lake Decatur watershed is located in 7 counties in east central Illinois. 768 square miles (83%) of the watershed is used for row crop production—principally corn and soybeans. The City has sponsored water quality improvement programs in the watershed since the 1940s, with only limited results.

SILTATION & DREDGING

Last December, the city's contractor completed the dredging of Lake Decatur and of sediment deposited in basins from the three biggest tributaries flowing into the lake: the Sangamon River, Sand Creek and Big Creek basins. When heavy spring rains wash soil into these tributaries, the water slows down when reaching the

sediment trap dams installed during the dredging project, allowing some heavier soil particles to collect upstream from the dams. The upstream areas of the dams were originally estimated to fill up every 10–20 years depending on the severity of spring rainfall events. City staff plans to check these areas every 2 years to determine how fast they are filling up. The Basin 6 dam, which was created first approximately 15 years ago, was recently checked and had a slight amount of sediment in it. When these areas are close to being filled up, they will have to be dredged again to maintain their effectiveness. It is anticipated that Geotubes (large tube shaped fabric bags) could be used to store the dredged sediment instead of reusing the City's Oakley Sediment Basin. Maps showing the location of sediment traps and their basins are attached.

Since the mid 1980s, the City has had agreements with the Macon County Soil & Water Conservation District (MCSWCD) to work with farmers to keep soil and crop nutrients on farm land instead of flowing into Lake Decatur. The agency also provides urban soil and water conservation services to the City and other Macon County communities. This year the City will provide up to \$161,969 for these services. MCSWCD works closely with the USDA Natural Resources Conservation Service, Illinois Department of Agriculture, Illinois Environmental Protection Agency and the Piatt County Soil & Water Conservation District.

From 2003 to 2018, the City also had agreements with the Agricultural Watershed Institute (AWI) for research and public education, including nutrient management, beneficial use of dredged sediment, and advancement of biomass crops for energy and water quality. Last year the City provided up to \$62,500 for these services. From 2009 to 2013, \$229,640 was provided to AWI by the City to develop an economic market for biomass/perennial crops in the lake's watershed including both producers and consumers. With very little market advancement and adoption by farmers in 2017 and 2018, the city's Public Works Department management recommended that AWI funding for biomass/perennial crops be discontinued.

Other watershed improvement organizations the City and MCSWCD work with include the Illinois Sustainable Agriculture Partnership, the University of Illinois Extension Service, Precision Conservation Management, Soil Health Partnership, Heart of the Sangamon River Ecosystem Partnership, Illinois Fertilizer & Chemical Association, Illinois Council on Best Management Practices, Macon County and Piatt County Farm Bureaus, and the Illinois State Water Survey. Recently, the city has also discussed potential future partnerships with the Macon County Conservation District. This potential partnership could be useful if the city wishes to be more proactive in reducing lake edge erosion and/or creating up-river wetlands.

The Lake Decatur watershed is currently one of six in the State prioritized to receive nutrient reduction programs and funds. Recent watershed grants obtained include:

- IEPA Section 319 Friends Creek Watershed Planning
- IEPA Section 319 Big & Long Creek TMDL Plan Implementation
- IEPA Section 319 Piatt Co. BMP Implementation
- IDOA Cover Crop and Soil Health Initiative
- NSF Innovations at the Nexus of Food, Energy and Water Systems
- USDA Multifunctional Perennial Cropping Systems
- USDA Regional Conservation Partnership Program

Despite years of work, numerous grants, several partnerships and collaborations, siltation levels entering Lake Decatur remain high.

I. City Council Options

- A. Continue, discontinue or increase funding for the Macon County Soil & Water Conservation District
- B. Continue, discontinue or increase funding for the Agricultural Watershed Institute
- C. Study the potential benefits of creating additional or replacement partnerships leading to reductions in fertilizer runoff, erosion control, less siltation, as well as lower nitrates and phosphorus in the lake
- D. Pursue completely different and alternative strategies, such as wetlands development, or regulatory reform.

In evaluating its options, it is recommended that the City Council direct its financial resources to those partnerships and projects that will result in the greatest siltation prevention. Slowing the accumulation of silt will simultaneously reduce nitrate and phosphorus levels in the lake.

REGULATORY STRATEGIES

The Illinois Nutrient Loss Reduction Strategy (Illinois NLRS or “the strategy”) is the framework for using science, technology, and industry experience to assess and reduce nutrient loss to Illinois surface waters and the Gulf of Mexico. The strategy directs efforts to reduce nutrients from point and non-point sources in a coordinated, primarily voluntary, and cost-effective manner. Nutrient loss and runoff is a major threat to water quality in Illinois. State and local efforts over the decades to control nutrients have yielded some positive results, but new and expanded strategies are needed to secure significant improvement of surface water health throughout Illinois and the Mississippi River Basin. The Illinois NLRS builds upon existing programs to optimize nutrient loss reduction while promoting increased collaboration, research, and innovation among the private sector, academia, non-profits, wastewater agencies, and State and local government. It does not call for new regulations, nor does it upset the artificial point/non-point source dichotomy. This historic approach has been mostly implemented statewide by the

Illinois Environmental Protection Agency (IEPA), the Illinois Department of Agriculture, the Illinois NLRs Policy Working Group, and its committees. The strategy includes best management practices for reducing nutrient loads from wastewater treatment plants and urban and agricultural runoff. Recommended activities have targeted the State's most critical watersheds and are based on the latest science and best-available technology. The Lake Decatur watershed is one of the targeted watersheds. The strategy also calls for still more collaboration between State and Federal agencies, cities, non-profits, and technical experts on issues such as water quality monitoring, funding, and outreach.

What the IEPA strategy cannot overcome, however, is an artificial regulatory distinction between so-called "point" and "non-point" pollution sources. "Point" sources are from pipes and other collected discharges emerging from an identifiable conduit (e.g., from a sewer pipe). In this dichotomy, agricultural runoff is classified as "non-point" because it does not flow from readily identifiable pipes and conduits. In fact, this is government fiction, because much agricultural runoff comes through drainage tiles and deliberately installed swales. In fact, farm drainage tiles are specifically exempted from pollution regulation. So the greatest source of surface water pollution into Lake Decatur is not regulated by the Clean Water Act, because USEPA regulations define it as "non-point." The IEPA could regulate beyond the scope of the U.S. Clean Water Act, but they have, so far, not done so.

Changing USDA and USEPA policies that give a pass to agricultural fertilizer runoff would be impossible, despite the impact on Lake Decatur of these current policies. However, since the IEPA has already designated Lake Decatur a priority basin for implementing nutrient reduction programs, and receiving funding for the same, requesting that the State use the Upper Sangamon River basin as an area to test-out more aggressive regulations designed to arrest silt build-up, slow field runoff, plant alternative cash crops, experiment with hybrid CRP plans, etc. could affect through regulation what years of best management practices, and soil, crop buffer and water conservation practices, have failed to do.

II. City Council Options

- A. Meet with Federal officials to discuss support for a Lake Decatur/Upper Sangamon regulatory test project area that reduces so-called "non-point" agricultural fertilizer runoff.
- B. Meet with State officials to discuss support for a Lake Decatur/Upper Sangamon regulatory test project area that reduces so-called "non-point" agricultural fertilizer runoff.
- C. Postpone any discussion of regulatory reform until other alternative strategies are exhausted.

PHOSPHORUS & NITRATES

Nitrate and phosphorus in surface water comes principally from agricultural fertilizer runoff. Lake Decatur does not have elevated levels of phosphorus; and phosphorus does not impact the City's ability to produce drinking water. Phosphorus will, however, become a problem for the Sanitary District of Decatur in the near future, based on new regulatory standards promulgated by the IEPA. Meeting these new regulatory standards will require capital expenditures by the Sanitary District of Decatur, likely resulting in sewer rate increases. There are also new (though still emerging) technologies that could make it possible to remove and repurpose phosphorus from the water when it is drawn out for other purposes.

Lake Decatur, at times, experiences elevated levels of nitrate-nitrogen and turbidity (primarily soil particles with small amounts of algae, plant and animal particles) which impact the City's ability to produce good drinking water. The Federal and State standard for nitrate-nitrogen in drinking water is 10 mg/l, or less. The City's nitrate reduction facility is designed to process up to 16 million gallons of water per day (although the daily capacity of the South Water Treatment Plant exceeds 18 million gallons per day). During peak agricultural runoff periods, the nitrate levels in Lake Decatur can approach 15 mg/l. The city's nitrate treatment process brings this below 10 mg/l, usually to 8.5 mg/l or less. For about six months year, usually August to January, the lake's nitrate level can be 5 mg/l or less, so the treated drinking water nitrate level is also 5 mg/l or less.

Although there is no legal requirement that the city treat to 5 mg/l of nitrate (the regulation requires 10 mg/l), Councilman Horn has suggested there are public health benefits associated with treating to 5 mg/l. He requested that the city estimate the cost of treating nitrates to 5 mg/l. From 2013 to 2017 the city's nitrate reduction facility was operated for an average of 66 days annually. The annual operating cost per day was \$1,902 plus electricity. If the facility was operated for 6 months each year, the additional annual operating cost is estimated to be \$221,000 plus electricity and increased equipment depreciation costs, because the facility would be used three times more than it has been in the past. Depending on actual electric usage and equipment wear-and-tear, the cost to ensure a nitrate level below 5 mg/l **almost** every day could approach \$275,000. If the actual days of nitrate system operation are less than 180, and/or the quantity of siltation reduction into the watershed simultaneously reduces nitrate levels, then this cost will be less. At present, and despite use of the city's nitrate reduction equipment, there are still a few days when the lake's nitrate levels could theoretically be so high that it would not be possible to keep the treated level below 5 mg/l. Staff has not estimated the cost of capital equipment to ensure that the nitrate level never goes above 5 mg/l—only what can be accomplished with existing equipment.

When Lake Decatur has high turbidity levels, more water purification chemicals need to be used at the South Water Treatment Plant, and the plant's filters must be backwashed (cleaned) more often, both of which add to operating expenses. High

turbidity (suspended solids) levels reflect both siltation in the lake. In some cases, turbidity can come from churning of water from strong wind and waves, recreation and other uses. Staff reports that this has not been a serious issue in Decatur.

III. City Council Options

- A. Continue maintaining a maximum nitrate level of 10 mg/l in the City's drinking water.
- B. Lower the maximum nitrate level to 5 mg/l in the City's drinking water when technically possible, with existing equipment, at an additional cost.

FINANCING THE MANAGEMENT OF LAKE DECATUR

Attachments include a listing of budgeted lake expenses attributable to maintenance of water quality and watershed management, and lake expenses attributable to providing recreation on the lake. Although there is a degree of subjectivity involved in determining what is a marine recreation expense, and what is a water quality/watershed expense, it is clear that the city's water fund heavily subsidizes marine recreation expenses. In other words, revenue from boat, dock, waterfowl hunting permits, citations, and other recreational/leisure lake use fees does not cover the cost of lake patrol, lake use enforcement, trash removal, barge deliveries, boat towing services, buoy placement, fishing tournament support, lakeside restroom services, and other marine recreation oversight.

Water quality and watershed management costs include the Macon County Soil & Water Conservation District agreement, Agricultural Watershed Institute agreement, up-river basin management, testing fees, annual tree and brush removal contract, motor vehicle and workboat expenses, shoreline erosion control, mowing, and associated staffing and equipment expenses.

In 2018 it was estimated that Lake Services Division recreational services expenditures were \$420,077 (43% of total expenditures) and \$556,591 for non-recreational services (57% of total expenditures).

The 2018 recreational services revenue totaled \$203,762 (only 48.5% of the recreational services expenditures). City water customers are subsidizing about 51.5% of the City's recreational services whether they use the lake or not. If only five percent (5%) of the cost of dredging the lake accrues to recreational benefits (\$8 million is 5% of \$160 million) then the subsidy of lake recreation services by the water rate payers is even greater.

IV. City Council Options

- A. Continue subsidizing lake recreation costs from the Water Fund, payable by all water rate payers, at current levels.

- B. Reduce the amount of the Water Fund subsidy of lake recreation costs, retaining the subsidy at a lower level, offset by modest increases in recreation-related lake/water use fees.
- C. Eliminate the Water Fund subsidy of lake recreation services, but do so gradually over a five-year period (or alternative period acceptable to council) so that water recreation fee increases are gradually implemented.
- D. Establish a special service area (SSA) tax applied to land adjoining the lake to pay for ongoing lake recreation services and lake-related capital expenses.

At present, revenue from water recreation fees, permits, etc. are deposited to the city's General Fund. Making recreation management services self-supporting will impact the General Fund—which is why any strategy to correct the funding inequity should be addressed gradually.

FUEL SALES ON THE LAKE

The handling of marine fuels on and near Lake Decatur should always be carefully supervised, because fuel spillage into the lake impacts water quality and increases the city's water treatment costs. Historically, boat-fueling facilities on Lake Decatur have been owned and operated by the Decatur Park District since 1989. In 2015 & 2016, marine fuel sales averaged 5,108 gallons annually, and sold for \$3.99/gallon. Daily sales averaged 48 gallons during the boating season (May through September). Fuel sales generated a profit for the Park District of just \$2,020.

In 2017, sales were about 2,000 gallons, priced at over \$4/gallon. Sales were less in 2018, and the hours of operation were reduced. In March 2018, Jay Billingsley (local gas station owner) met with Park District and City to discuss privatizing sales. At that time, Billingsley determined that an insufficient quantity of fuel had been sold for him to be successful as a contract fuel retailer, even if he sold marine fuel for \$5/gallon. In March of 2019 the Park District announced that they wanted to end fuel sales at the lake, as part of their plans to demolish the former restaurant next to the fuel pump and clear and clean the area behind the new amphitheater, while keeping the gas dock, pump, underground storage tank and adjacent restrooms. The city requested that the Park District postpone action until the city could evaluate the situation in the context of the City Council's larger discussions around water quality, watershed management and water recreation services.

V. City Council Options for retail gas sales at Lake Decatur

- A. Outsource fuel sales to a full-service marina operator who would also be authorized to provide boat repair services, slip and dock rentals, operate a convenience store, sell fishing supplies and other marina related services.
- B. Allow the Park District to end retail fuel sales at the lake.
- C. The City and/or Park District could upgrade current fueling facilities by applying for Boat Access Area Development Program financial assistance

through the Illinois Department of Natural Resources, and thereafter operate continued retail fuel sales. This program is competitive, and there is no guarantee of receiving any assistance. Without a grant, the city would face a capital expense of at least \$60,000 to install equipment for its own sales.

- D. Have the City and the Park District share any profit or loss from continuing fuel sale services as they have been in the past, until such time as an outsourced marina operator can be identified and operational at the lake. The Park District recently indicated their willingness to do this, although the details of a cost sharing memorandum have not been negotiated.

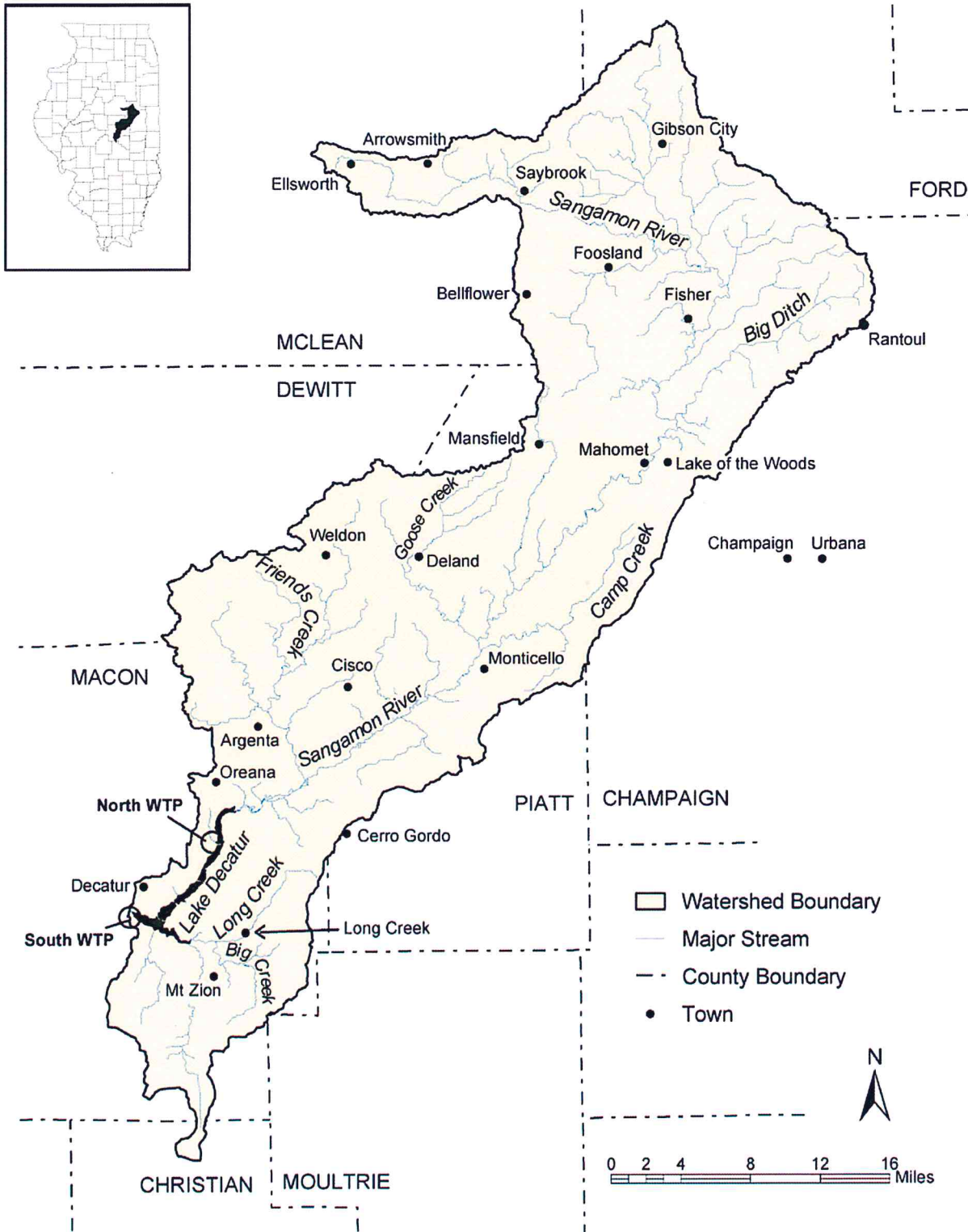
In evaluating these options, the City Council should take into consideration that:

1. Approximately 70% of boaters currently purchase gas off the lake, at a much lower cost, and many boats are trailered to and from the lake.
2. The area by the Lake Office where a city-run retail fuel pump would be located is highly congested with boat hoists, courtesy docks, other docks and boat ramps.
3. Liability is a concern if a City employee spills gas on or into a privately owned boat. State law prohibits boat operators from pumping their own fuel at retail marine facilities.
4. The cost estimate to install a new retail gas pump with credit card payment is \$60K.
5. The possibility exists that City staff, while engaged in pumping gas, could be called away to respond to an emergency assistance call elsewhere on the lake.
6. To avoid diverting lake patrol manpower to fuel sale supervision, the city would require additional seasonal employees, at an estimated cost of \$15,000 per year.
7. It will likely require at least two years to recruit, secure, negotiate with, and complete marina fit-outs for an outsourced marina operator.
8. Ending fuel sales will likely result in an increased (but unknown) quantity of fuel spilled into the lake.

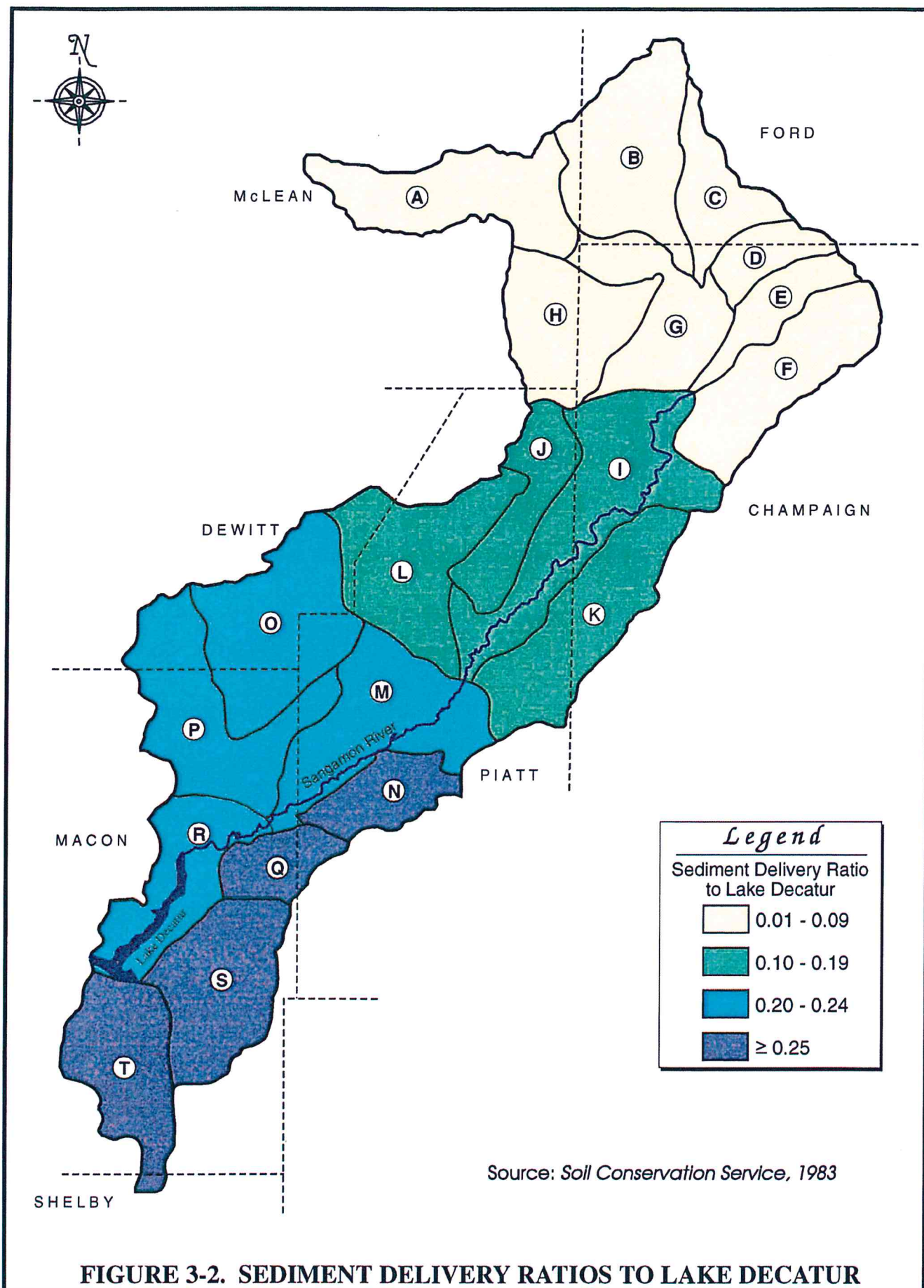
It is recommended that the City Council:

- Approve a mixture of options I.A, I.B, I.C and I.D, depending on funding
- Approve options II.A and II.B
- Conduct additional analysis before making a decision on options III.A & III.B
- Approve option IV.C
- Approve option V.D

Representatives of AWI, the MCSWCD, the Park District, the Macon County Conservation District, and others, are expected to be in attendance at the Monday study session, and some of these hope to address the City Council on one or more of the topics to be discussed.

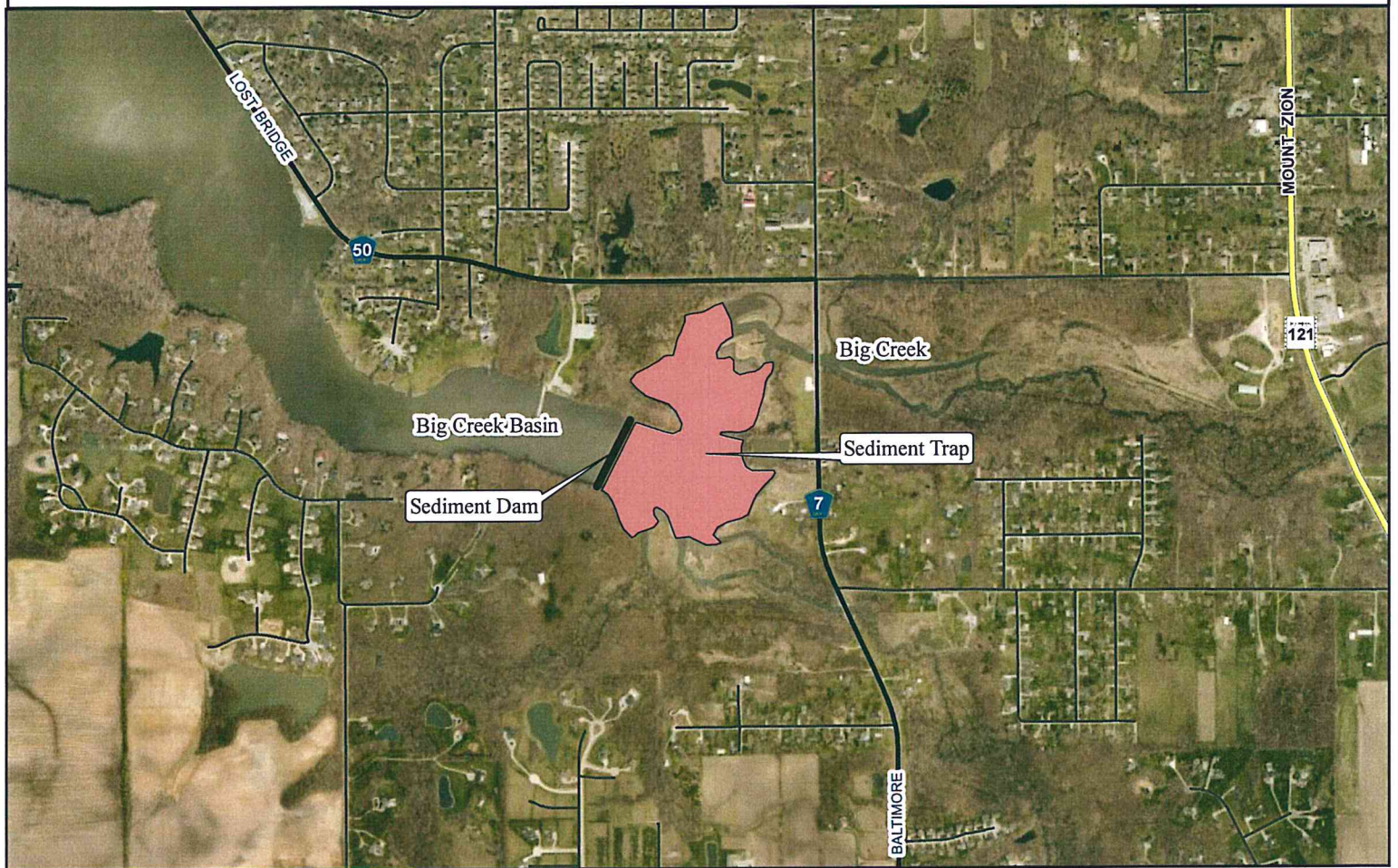


LAKE DECATUR WATERSHED



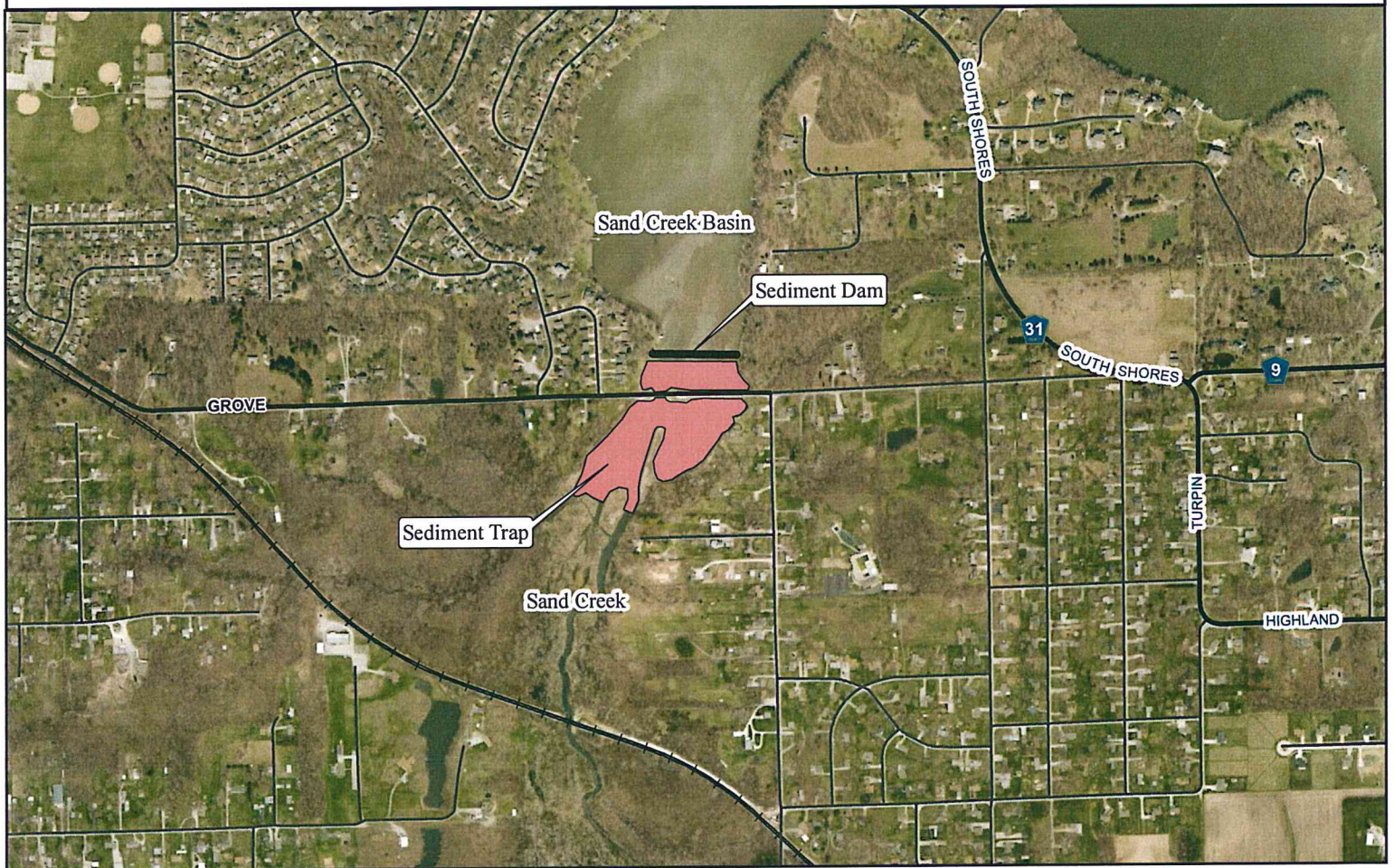


City of Decatur
Lake Decatur Dredging Project
Big Creek Basin Sediment Dam



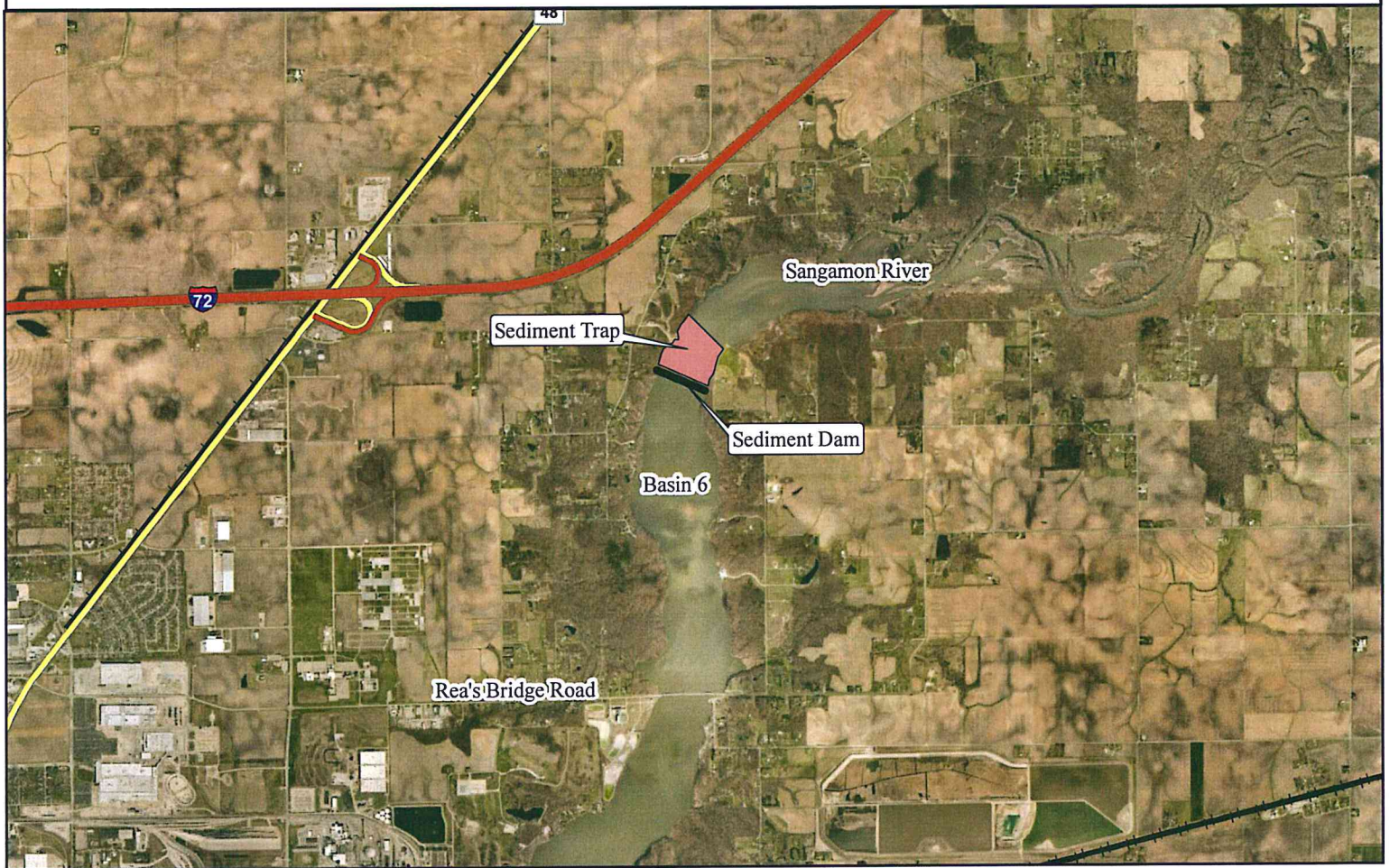


City of Decatur
Lake Decatur Dredging Project
Sand Creek Basin Sediment Dam





City of Decatur
Lake Decatur Dredging Project
Basin 6 Sediment Dam



TO: Honorable Mayor, Julie Moore Wolfe
FROM: Natalie Misner, Watershed Specialist
DATE: January 15, 2018
SUBJECT: FY18 Annual Report
PERIOD: January 1, 2018 – December 31, 2018

City of Decatur Lake Decatur Watershed Protection Program



Better Reflections through Soil Conservation

CC: Councilman Bill Faber
Councilman David Horn
Councilman Chuck Kuhle
Councilwoman Lisa Gregory
Councilman Pat McDaniel
Councilwoman Dana Ray
Mr. Billy Tyus, Interim City Manager
Mr. Matt Newell, Public Works Director
Mr. Keith Alexander, Water Production Manager

Cost-Share Programs:

The SWCD serves as the administrator for several cost-share programs within Macon County and the Lake Decatur Watershed. Support for the cost-share funding comes from city, state and federal sources. Applications for these programs are accepted throughout the year and often originate from technical assistance calls. Applications are ranked in the spring of each year and each project is typically given two years to be implemented. The tables below break down the activities that have occurred in the different cost-share programs during the 2018 Fiscal Year.

Lake Decatur Watershed Program

The Lake Decatur Watershed Program is supported through funding allocated by the City of Decatur. Each fiscal year the City of Decatur allocates \$25,000 toward conservation practices that reduce sediment and nutrient loading into the Lake Decatur Watershed. Approved projects are reimbursed up to 60% of their total cost. Several FY16 and FY17 projects were completed during FY18 in addition to funding two new projects: one grassed waterway with 158 acres affected and one sediment basin with 12.5 acres affected.

Practice	Affected Acres	Activity in Reporting Period	FY Funding	Cost Share Provided	Located in Lake Decatur Watershed?
Grassed Waterway	146	Paid	FY16	\$4,184.28	Yes
Grade Stab. Str.	552	Installed/Paid	FY16	\$5,250.00	Yes
Grassed Waterway	1,130	Paid	FY16	\$11,302.22	Yes
Grassed Waterway	12.1	Paid	FY16	\$1,180.78	Yes
Stream Stab.	10	Installed/Paid	FY17	\$4,030.00	Yes
Sediment Basin	196	Allocated	FY17	\$20,970.00	Yes
Grassed Waterway	158	Allocated	FY18	\$9,418.80	Yes
Sediment Basin	12.5	Allocated	FY18	\$14,889.30	Yes

Partners for Conservation Program

Funding for the Partners for Conservation Program comes from the Illinois Department of Agriculture. Funding for PFC varies from year to year with participants receiving up to 60% reimbursement. Over the last year the SWCD wrapped up several FY17 projects and received \$7,500 for FY18 which funded one grassed waterway with 45 acres benefitted.

Practice	Affected Acres	Activity in Reporting Period	FY Funding	Cost Share Provided	Located in Lake Decatur Watershed?
Grassed Waterway	1,433	Installed/Paid	FY17	\$5,509.20	No
Grassed Waterway	42	Installed/Paid	FY17	\$4,941.39	No
Grassed Waterway	183	Installed/Paid	FY17	\$5,046.60	Yes
Grassed Waterway	19	Installed/Paid	FY17	\$3,204.74	No
Grassed Waterway	45	Allocated	FY18	\$7,350.00	Yes

Streambank Stabilization and Restoration Program

The SSRP is funded through the IDOA but was no money was awarded to the SWCD for FY18. No work occurred during this reporting period.

Regional Conservation Partnership Program

In 2015 the USDA awarded the Macon County SWCD \$500,000 of NRCS funding to be utilized over five years. The awarded funds have been used to implement BMPs in the Sangamon River Watershed under the “BMP Implementation for Nutrient and Sediment Loss Reduction in Macon County, Illinois”. For FY18, the fourth year of implementation grant, a total of \$130,094.00 was obligated which affected 519 acres of land. Practices installed on those acres included terrace/tile systems, no-till land management and cover crops.

Watershed Activities:

MS4 Agreement:

The City of Decatur, the Villages of Forsyth and Mt. Zion, and Macon County joined together and signed a Memorandum of Understanding (MOU) with the SWCD to implement stormwater management on behalf of the MS4s. This allows for a consistently applied set of standards regarding Best Management Practices (BMPs), construction site inspections for the Land Disturbance Permit program, and inspection of detention basins. During FY18, 29 land disturbance permits were taken out with 20 occurring within the Lake Decatur Watershed.

Oakley Township Sediment Basin Advisory Committee:

The SWCD Watershed Specialist serves as a technical resource for the committee. The committee meets on a quarterly basis.

Illinois Environmental Protection Agency (IEPA) Construction Site Inspection Program:

A total of 16 construction sites with IEPA National Pollution Discharge Elimination System (NPDES) permits, 6 within the Lake Decatur Watershed in Macon County. The SWCD provides educational assistance to the developers and contractors, making sure erosion and sediment controls are installed and performing properly at each site.

Technical Assistance:

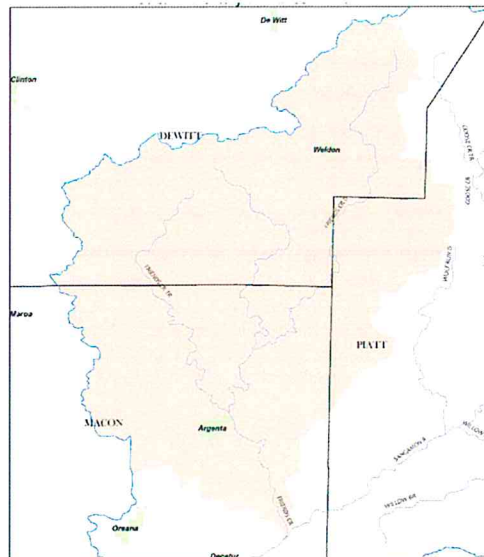
The Soil and Water Conservation District staff are available to answer questions regarding soil erosion and flood water concerns in Macon County and the Lake Decatur Watershed. During FY18, SWCD staff responded to 39 technical assistance requests. Assistance requests included questions regarding sediment basin installation and maintenance, stream bank erosion and head-cutting, managing native animals (beavers), and program availability. Often these requests require site visits and lead to cost-share program application submittals.

Grants:

IEPA 319 Grant: Friends Creek Watershed Planning

In 2017, the Illinois Environmental Protection Agency awarded the Macon County SWCD \$120,672.00 to assist in the development of a watershed-based plan for the Friends Creek Watershed. Development of the plan includes stakeholder involvement to identify watershed priorities, locate potential sites for improvement, and model the effects of implementing those practices. Having an approved plan will increase the likelihood of receiving future federal funds to implement the practices noted in the plan. During FY18 the following activities were accomplished:

- 4 stakeholder meetings
- 1 watershed-wide cover crop survey
- 2,500 BMP survey mailers sent to landowners/tenants
- \$29,443.94 of in-kind match from the SWCD and its partners (City of Decatur, U of I Extension, Agricultural Watershed Institute, Macon County Conservation District, Precision Conservation Management, Association of Illinois Soil and Water Conservation Districts, Dewitt County SWCD, Piatt County SWCD, and the Heart of the Sangamon River Ecosystem Partnership).
- Initiated a subcontract to complete the watershed-based plan



IEPA 319 Grant: Big & Long Creek Implementation Grant

The Macon County SWCD has been awarded an implementation grant for the Big & Long Creek Subwatersheds. With successful securing of suitable projects and agreement execution, a total of \$205,083.00 will become available through state financial assistance and in-kind match to implement a variety of BMPs within the two subwatersheds.

FY18 has had ups and downs for this grant. Due to the length of time that has passed since the original grant application, several landowners that had planned on implementing the projects backed out. Reasons provided for no longer being interested included change in land ownership and changes in commodity prices affecting overall financial positioning. Efforts to find replacement projects proved to be a struggle. At the recommendation of the IEPA grant manager, the Macon County Conservation District was contacted to inquire about additional BMPs that might be needed at the Fort Daniel Conservation Area. With some coordination, it looks that there may be viable projects with the MCCD. These will be added to the remaining original projects. Coordination between the SWCD, IEPA and MCCD will continue into FY19.

Public Education Programs:

Education is provided to the general public, including adults and children, on soil and water conservation issues, careers in conservation, stormwater management, and erosion and sediment control. This year, the following education programs were held:

<i>Date</i>	<i>Name of Event</i>	<i>Program Presented</i>	<i>People in Attendance</i>
1/11/2018	Lady Landowners	Women in Agriculture	28
2/14/2018	Contractors Meeting	Pipeline Awareness & Safety	17
3/1/2018	Annual SWCD Meeting	Cover Crops-Mike Ward	30
3/10-11/2018	Decatur Lawn & Garden Show	MS4 Work, Rain gardens	1000+
4/21/2018	Festival of Spring	Rain Gardens/ Composting/Fertilizers/EnviroScape	200
5/1-3/2018	Agucation	Conservation Jeopardy	600
5/7-9/2018	Birding in cover crops	Grassland Bird Id Workshop & Field Day	14
5/10/2018	Lady Landowners	Cover Crop Management	32
6/13/2018	Friends Creek Watershed Stakeholder Meeting	Streambank survey results, transect survey results, nutrient modeling results, riparian survey results	17
7/12/2018	Lady Landowners	Tour of ADM	30
7/12/2018	Strip Till Field Day	Mechanics of Strip Till & demonstrations	90
7/31/2018	Habitat Conservation Connection	Connections between wildlife habitat and in-field agriculture conservation	32
8/30/2018	Pond Demo	Plant & Fish ID, Pond Maintenance	60
9/19/2018	Friends Creek Watershed Stakeholder Meeting	Agricultural and Urban BMPs	11
9/20/2018	Lady Landowners	Tour of IDOA	54
10/8/2018	Friends Creek Watershed Stakeholder Meeting	Modeling of existing conditions and best-case scenarios.	12
11/10/2018	Sangamon Watershed Celebration	EnviroScape demonstration	25
11/13/2018	Community Environmental Council Meeting	Heart of the Sangamon River Ecosystem Partnership	20
<i>Total Reached in FY18</i>			<i>2,272</i>

Other Roles and Responsibilities:

In addition to the programs detailed above, the SWCD staff serve in the following capacities during the year:

- Assist Macon County Lady Landowners by maintaining their membership list and assisting with meeting notification
- Participate in the Heart of the Sangamon River Ecosystem Partnership meetings
- Hold biannual fish sale
- Participate in external training events to stay current in issues related to soil health, erosion control, and conservation.

Closing Comments:

We have included the FY18 financial report for the year ending on December 31, 2018 with this report. If you would like more detailed financial information, you may request a copy of our CPA completed annual audit which we submit to the Illinois Department of Agriculture.

The staff and Board of Directors of the District thank the City for its continued support of our conservation efforts within the Lake Decatur Watershed. We truly could not accomplish what we do without your support, both financial and institutional. We would like to invite members of the City Council to visit us at the USDA Service Center at 3342 N President Howard Brown Blvd, Decatur, Illinois 62521. We also can arrange personal tours of our watershed projects. If you have any questions, please call us at 217-877-5670, extension 3, or contact us by email at natalie@maconcountyswcd.com.

Board of Directors

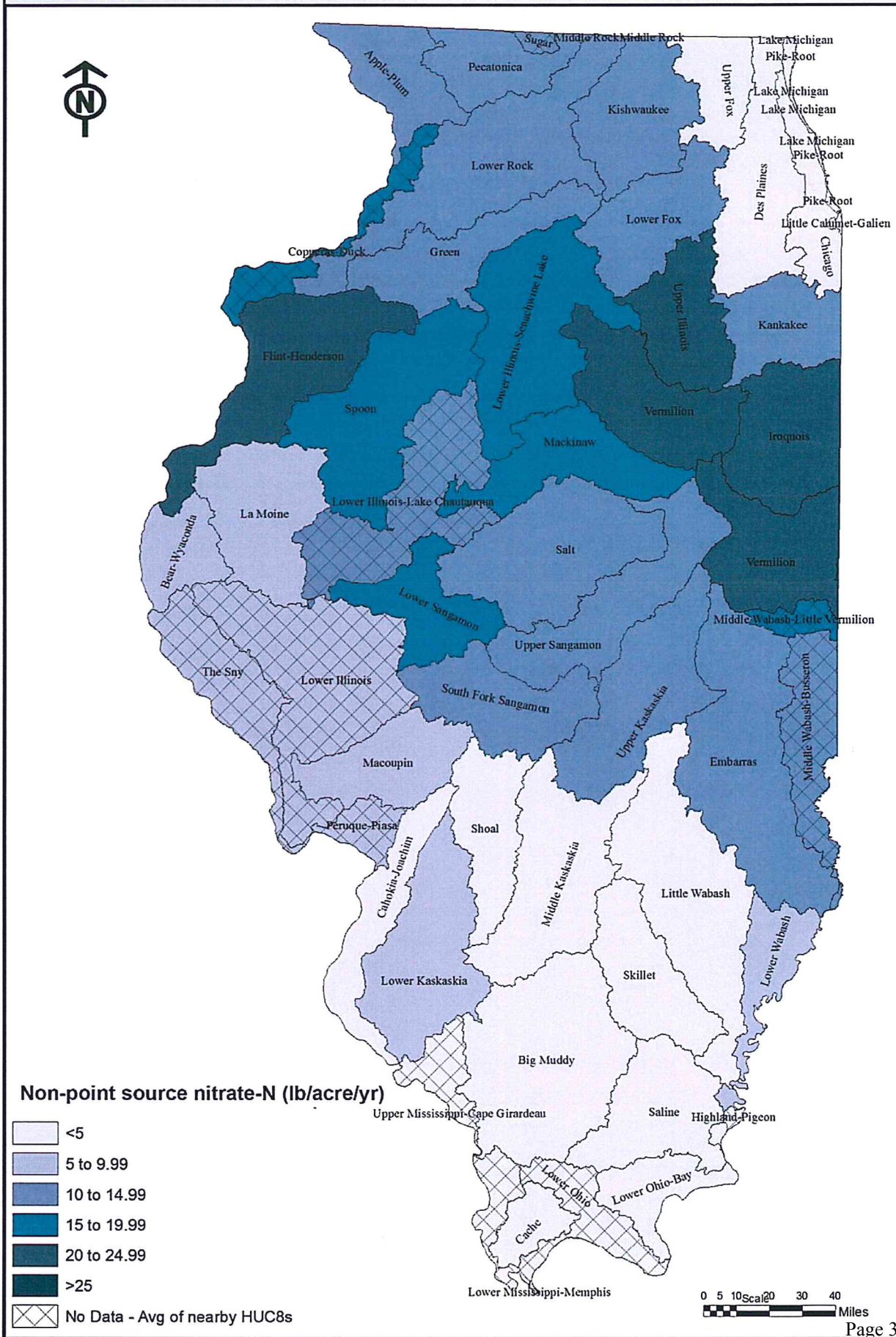
David Carr, Chairman
Eric Veech, Vice Chairman
Katie Sellmeyer, Secretary / Treasurer
Chase Brown, Director
Ross Ferrill, Director

Staff

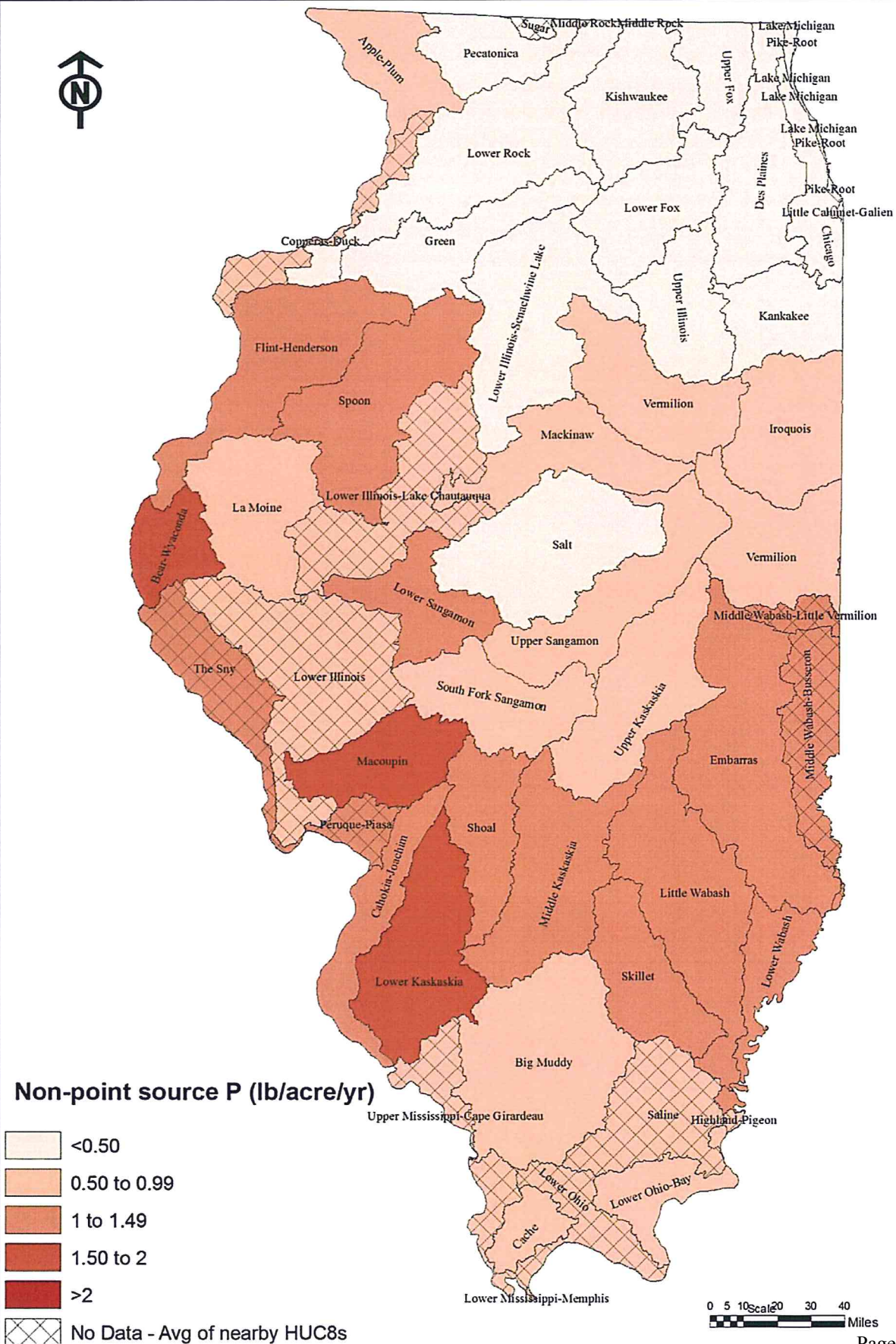
Manny Wei, Watershed Technician
Natalie Misner, Watershed Specialist
Angela Daily, Administrative Coordinator

FINANCIAL STATEMENT							
Lake Decatur Watershed Protection Program							
City Allocation for MCSWCD Vendor # 796							
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	12/31/2018		
	January 1 - March 31, 2018	April 1 - June 30, 2018	July 1 - September 30, 2018	October 1 - December 31, 2018	Total Invoiced to City		
Operational Expenses	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	FY ending 12/31/2018	Percent of Contract \$	
Salary Watershed Technician	14,615.00	\$ 9,052.50	\$ 9,480.00	\$ 12,223.77	\$ 45,371.27	30%	
Salary Watershed Specialist	6,962.03	\$ 7,788.26	\$ 9,837.41	\$ 9,329.78	\$ 33,917.48	22%	
1/3 Salary Administrative Coordinator	3,496.50	\$ 2,947.50	\$ 3,150.00	\$ 3,150.00	\$ 12,744.00	8%	
Payroll taxes	4,044.88	\$ 3,557.33	\$ 2,208.87	\$ 4,081.59	\$ 13,892.67	9%	
Benefits	1,394.78	\$ 1,200.00	\$ 965.09	\$ 1,342.79	\$ 4,902.66	3%	
BMP Implementation				\$ 25,000.00	\$ 25,000.00	100%	
Meetings and Training	97.38	\$ 375.95			\$ 473.33	0%	
Professional fees	460.81	\$ 121.15	\$ 166.79	\$ 439.52	\$ 1,188.27	1%	
Insurance		\$ 2,313.68	\$ 484.84		\$ 2,798.52	2%	
Outreach	239.18	\$ 475.14	\$ 662.11	\$ 257.10	\$ 1,633.53	1%	
Education		\$ 16.11	\$ 179.46	\$ 2,771.43	\$ 2,967.00	2%	
Internet	37.95	\$ 37.95	\$ 25.30	\$ 37.96	\$ 139.16	0%	
Truck/ Insurance	202.90	\$ 95.03	\$ 304.64	\$ 96.14	\$ 698.71	0%	
Office Equipment	99.88				\$ 99.88	0%	
Office Expenses	144.82	\$ 197.24	\$ 274.45	\$ 117.04	\$ 733.55	0%	
Postage	78.57	\$ 52.60	\$ 52.60	\$ 70.74	\$ 254.51	0%	
Total Expenses	31,874.68	\$ 28,230.44	\$ 27,791.56	\$ 58,917.86	\$ 146,814.54	97%	
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	YTD 2018		
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Total Invoiced to City	Percentage Complete	
Agreement Amount	\$ 151,969.00	\$ 120,094.32	\$ 91,863.88	\$ 64,072.32			
Total Invoiced to City	\$ 31,874.68	\$ 28,230.44	\$ 27,791.56	\$ 58,917.86	\$ 146,814.54	99%	
Agreement Balance	\$ 120,094.32	\$ 91,863.88	\$ 64,072.32	\$ 5,154.46			

HUC8 non-point source nitrate-N yield



HUC8 non-point source P yield





April 24, 2019

MEMORANDUM

To: Mayor Moore Wolfe, City Manager Wrighton, City Council Members
From: Steve John – Agricultural Watershed Institute
Subject: Information for April 29 Study Session; Request for continued City support

I am writing to provide information about the Agricultural Watershed Institute (AWI) and to request continued City support for our work on Lake Decatur watershed conservation including, but not limited to, work related to perennial crops. We appreciate inclusion of this topic on the April 29 study session agenda.

Since the 1980s, the City of Decatur has financially supported watershed conservation efforts by the Macon County Soil & Water Conservation District. AWI commends the City for that enduring and visionary support.

AWI was established in 2003 as a not-for-profit corporation. Its roots go back to 1988 when the *Decatur Advantage II* Community Strategic Plan recommended “creating an interdisciplinary Agricultural Watershed Institute for research and demonstration projects on erosion reduction, nutrient management, sediment removal and reuse, and other related subjects.” City support for AWI began in 2005 with project-specific agreements; in recent years, the City and AWI have had agreements for financial support not-to exceed \$62,500 per year (about \$5,200 per month) for watershed conservation activities.

AWI has always had both environmental and economic goals. The recommendation for AWI was in the section of the *Decatur Advantage II* Plan that was “devoted to job creation and the enhancement of the economic climate for the Decatur area.” The vision back then and to this day was that AWI would address water resource management issues in agricultural watersheds and identify innovative solutions that can be applied locally and throughout the Midwest.

The mission of AWI is to conduct research and educational programs on practices and policies that improve water quality, maintain or restore ecosystem health, and conserve and manage land and water resources in agricultural watersheds. Most of our educational programs and on-farm R&D projects have been conducted in the Lake Decatur watershed.

The City of Decatur has provided much-appreciated financial support for AWI’s watershed conservation work that we have been able to leverage with other grant sources. Other AWI funding has come mainly from foundations (Walton and Lumpkin) and government grants (USEPA and Illinois EPA). Since our most recent Walton Family Foundation grant ended in 2016, the \$62,500 we receive annually from the City has been AWI’s largest source of funding.

City support has enabled us to employ Tim McMahon as a full time watershed/biomass specialist and Dr. Greg McIsaac as a part-time water quality research scientist. Until 2018, the scope of City—AWI watershed agreements included landscape design concepts and market development for perennial biomass crops.

AWI has made significant progress on landscape design to maximize the environmental benefits of perennial crops. We developed innovative concepts to increase sediment and nutrient loss reduction per acre of perennial crops through crop selection, placement, and drainage system modifications. These concepts are included in approved TMDL Implementation Plans for two Lake Decatur subwatersheds that AWI prepared with funding from Illinois EPA and matching funds from the City of Decatur. A report by AWI and Prairie Rivers Network identified suitable sites, willing landowners, and preliminary designs. AWI is currently seeking funding and research partners for on-farm R&D to assess farmer acceptance, economic performance, and water quality benefits. That could lead to recognition and wide adoption of these new cropping systems, just as past AWI collaboration with U of I researchers and the drainage industry helped to establish bioreactors and saturated buffers as NRCS standard practices.

The 2016-17 City—AWI agreement included plans for a multi-state Perennial Biomass Initiative in conjunction with Green Lands Blue Waters (GLBW), a consortium of university scientists, nonprofits, and other partners focused on perennial crops for multiple benefits. Development of uses and markets for perennial crops is discussed in the attached proposal I wrote for the Initiative. It was endorsed by the GLBW Steering Committee in early 2018. However, City staff decided to no longer support our perennial crop work. At staff's direction, perennial crops were taken out of the scope of the 2018 City—AWI agreement. Despite the lack of City support, AWI and our GLBW partners have successfully launched the Perennial Biomass Initiative.

AWI considers our work on perennial crops to have significant potential to improve the environmental performance of agricultural landscapes in and beyond the Lake Decatur watershed. We further believe that, if AWI, our regional GLBW partners, and local business and academic partners can help to develop or expand markets for perennial crops, Decatur will benefit economically through market and enterprise development as envisioned when the *Decatur Advantage II* strategic plan first recommended AWI's creation.

From its beginning, AWI has been conceived as a “bridge organization” connecting researchers and stakeholders to identify and evaluate innovative ideas to enhance the environmental and economic performance of agricultural watersheds. We are succeeding. As one example, AWI is a subgrantee to U of I on an NSF grant for innovations at the food-energy-water nexus.

Accordingly, we respectfully request that the City enter into an agreement with AWI for watershed activities during the remainder of the 2019 calendar year including but not limited to outreach, R&D, and market development for perennial crops. We suggest that the agreement provide for financial support not-to-exceed \$5,200 per month and that the staff and Council reassess continued support for AWI's watershed work at the end of this year.

Two attachments are submitted with this memo to provide further justification for this request:

- Perennial Crops and Agricultural Innovation in the Lake Decatur Watershed (2 pages)
- Proposal for a Perennial Biomass Initiative (8 pages)



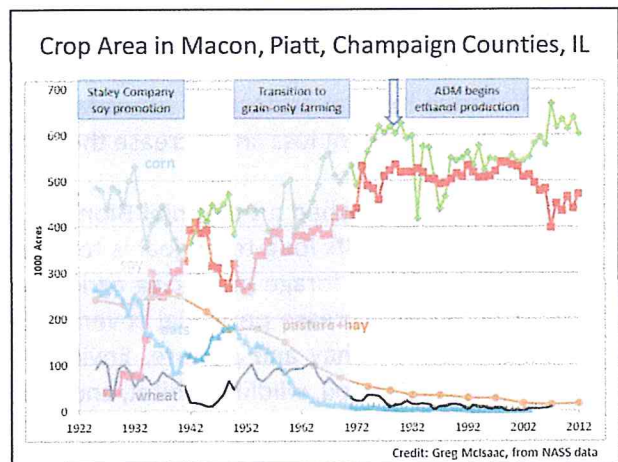
Perennial Crops and Agricultural Innovation in the Lake Decatur Watershed

Steve John, Agricultural Watershed Institute (AWI)
sfjohn@agwatershed.org – (217) 877-5640

Decatur-based businesses and Central Illinois farmers changed the agricultural landscape and economy in the 20th Century. Lessons from history show why and how local farmers, business and civic leaders, and scientists should collaborate for agricultural innovation in the 21st Century. AWI posits that perennial crops grown for multiple uses and benefits can enhance the environmental and economic performance of modern agriculture and that Central Illinois can once again be at the forefront of transformational change.

Soybeans were introduced in the U.S. as a forage crop by pioneering farmers like Charles Meharry who planted 19 acres on his family's Champaign County farm in 1909. With no commercial market for the beans, acreage grew slowly until 1921 when A.E. Staley announced plans for a soybean crushing plant in Decatur. Through the 1920s and '30s, soybean production grew dramatically and corn-soybean rotation became the norm. During this period, research agronomists developed higher-yielding soybean varieties and Staley and other grain processors developed many food and non-food uses and for the new crop.

After World War II, manufactured nitrogen fertilizer helped to give rise to the feedlot system. The **Haber-Bosch process** uses high temperature and pressure with catalysts to combine atmospheric nitrogen with hydrogen from methane to form ammonia. During the war, this process was used to manufacture explosives. When the nation returned to a peacetime economy, munitions plants were converted to make nitrogen fertilizers. With manure no longer necessary to fertilize corn, many farms shifted from mixed grain-livestock operations to grain-only production between 1950 and 1970. Pasture and hay acreage in Central Illinois declined significantly.



When ADM began producing **ethanol** from corn in Decatur in 1978, farming became a source of bioenergy. This new use for corn affected the agricultural economy but did not significantly change the landscape since by then most Central Illinois farmland was already used to grow corn and soybeans. The **corn—soy system** is highly productive but brings with it serious adverse impacts. The Lake Decatur dredging project illustrates the impact of erosion and sedimentation in a watershed without much vegetative cover to hold prairie and woodland soils in place.

Perennial plants live for at least three years, regenerating each spring from their roots, unlike annual plants that grow from seed and then die each year. In nature, trees, shrubs, and most herbaceous plants are perennial, but most agricultural crops are annual. AWI is one of the nonprofit organizations in the

Green Lands Blue Waters consortium (GLBW) which also includes university scientists and government and business partners. GLBW has a vision and strategy for perennial crops and cover crops to enhance the environmental performance of Midwestern agriculture.

The conservation benefits of perennial plants are well known. USDA's Conservation Reserve Program pays farmers to establish perennials for wildlife and soil conservation but usually does not allow harvesting or grazing. A key insight of GLBW is that **Multifunctional Perennial Cropping Systems** can provide soil, water, wildlife, and climate benefits comparable to CRP acreage and still produce harvested crops or grazed forage. Water quality plans for agricultural watersheds have focused on **Best Management Practices (BMPs)** to mitigate adverse impacts of annual row crops. Because they produce both agricultural goods and environmental services, perennial systems are an innovative approach to go beyond BMPs toward new agricultural systems that improve environmental outcomes.

For perennial systems to be economically viable, there must be uses and markets for the agricultural goods they produce. GLBW's **Perennial Forage** Working Group increases hay and pasture acreage in part by promoting grass-fed beef. **Agroforestry** systems of food-producing trees and shrubs, sometimes integrated with alley crops and livestock, are gaining popularity through the efforts of the nonprofit Savanna Institute. **Kernza™ perennial grain**, a perennial relative of wheat developed by plant breeders at The Land Institute, is being grown in Minnesota and used by local restaurants and craft brewers.

AWI is involved in GLBW's education and advocacy for perennial forage, grain, and woody polycultures but our main focus and major accomplishments are related to **perennial biomass crops** such as switchgrass, Miscanthus, and other grasses or trees grown for bioenergy or bioproducts. AWI plans for two Upper Sangamon subwatersheds are the first – and so far only – TMDL Implementation Plans approved by Illinois EPA that prescribe perennial crops as well as BMPs to achieve nutrient and sediment reduction. One of AWI's innovative concepts is combining selected perennial crops with drainage system modifications to treat surface or subsurface runoff from higher on the landscape in order to reduce sediment and nutrient loss and increase the water quality benefit of each acre converted to perennials.

In 2018, GLBW launched a **Perennial Biomass Initiative** directed by an initiative committee chaired by Steve John of AWI. Its long-term goal is to achieve 10 to 15 percent of Upper Midwest farm acreage in perennial crops and forage producing agricultural goods and ecosystem services. Landscape change on that scale would increase perennial coverage by roughly the same amount that the shift to grain-only farming decreased hay and pasture. Environmental benefits will include improved water quality and hydrology, healthy soil, wildlife habitat, and reduced greenhouse gas emissions.

A positive feature of the GLBW partnership is its **Theory of Change** for achieving its transformational vision. It emphasizes synergistic efforts among universities, farmers, nonprofits, industry and entrepreneurs, government, investors, and philanthropists. Three broad activities to increase adoption and enhance benefits of perennial and cover crops are R&D on perennial crop improvement; R&D on ecosystem services and policy incentives; and development of new and expanded uses, markets, and enterprises for the products of perennial-based farming systems.

In the 20th Century, innovative farmers and businesses changed the farm landscape with soybeans and the farm economy with corn ethanol. There is now an urgent need for wide adoption of multifunctional perennial systems to improve the environmental performance of agriculture. AWI and GLBW do not suggest this will be easy; we do believe it is achievable. An approach that combines perennial crop improvement, on-farm R&D, and market/policy development is well-designed and worthy of support.

Proposal for a Perennial Biomass Initiative

Prepared for submittal to the Green Lands Blue Waters Steering Committee
January 9, 2018

Introduction

Biomass has been one of the categories of Continuous Living Cover promoted by Green Lands Blue Waters (GLBW) since its formation. Due to the lack of markets for herbaceous biomass crops, little progress is being made to have Perennial Biomass Crops planted in prime row crop areas of the Upper Midwest. In recent years, GLBW's Perennial Biomass Working Group co-chaired by Steve John of the Agricultural Watershed Institute (AWI) and Linda Meschke of Rural Advantage (RA) has met infrequently. The biomass group has organized a breakout session at each GLBW annual conference. In 2014 AWI hosted the conference and the agenda featured several biomass-related sessions.

If robust biomass markets and enterprises develop and appropriate policy incentives are enacted, Perennial Biomass Crops could be widely adopted, resulting in major improvement in environmental performance of agricultural landscapes dominated by corn and soybean production. This is the kind of high-level change that GLBW aspires to achieve through multi-year partner-driven initiatives. GLBW is well-positioned to play a leading role in meeting the challenges and demonstrating the benefits of Perennial Biomass Crops. For a GLBW Perennial Biomass Initiative to succeed, we will need active participation of strategic partners from agribusiness, other industries, government, finance, and other sectors.

This Perennial Biomass Initiative proposal addresses:

- Perennial Biomass Crops grown for bioenergy, bio-based products, or animal feed plus ecosystem services including clean water, healthy soils, wildlife/pollinator habitat, and climate mitigation/adaptation;
- The value proposition for GLBW to undertake a Perennial Biomass Initiative, including obstacles to wide adoption of perennial biomass crops in prime row crop areas and how the GLBW theory of change can be instrumental in overcoming the obstacles;
- A broad conceptual outline for the proposed Initiative, highlighting the role of GLBW and strategic partners; and
- A Year 1 Work Plan for the proposed Initiative.

Perennial Biomass Crops and Multifunctional Agriculture

Multifunctional agriculture involving coproduction of agricultural goods and ecosystem services is central to GLBW's vision for transitioning to a new generation of agricultural systems that integrate more perennial plants into the farm landscape.

Perennial Biomass Crops are generally thought of primarily as feedstock for cellulosic bioenergy and bio-based products. It is worth noting that many herbaceous perennial crops can also be used for animal feed and that may be a pathway to large scale adoption. An historical lesson is relevant here: Soybeans were grown on Midwestern farms as a forage crop for more than a

decade (roughly 1909 to 1922) before an industrial market was established to buy soybeans for processing into a variety of feed, food, and non-food products.

There is a substantial body of research on ecosystem services associated with perennial crops, much of it conducted by Green Lands Blue Waters partners. Important new on-farm research at field-scale or watershed-scale can be performed as part of the proposed Initiative. Early markets for biomass crops, even small markets, can facilitate planting by innovator and early adopter farmers. For purposes of this proposal to the Steering Committee, a brief synopsis will suffice:

Water quality: Minnesota, Illinois, Iowa, and other Mississippi River Basin states have adopted and are implementing Nutrient Reduction Strategies to protect fresh water bodies and shrink the annual hypoxic zone in the northern Gulf of Mexico. Nutrient loss per acre of perennial crops is much less than loss per acre of annual crops. Strategic selection, placement, and management of perennial plants – in some cases, combined with drainage system modifications – can achieve nutrient loss reduction greater than the percentage of land conversion by removing or recovering nutrients carried by drainage water from higher landscape positions. In addition to nutrient loss reduction, perennial crops can significantly reduce sediment and pesticides in agricultural runoff.

Climate mitigation/adaptation and renewable energy: There is an urgent need for progress in the shift from fossil fuels to renewables, enhancement of the resilience of agriculture in response to climate change, and reduction of greenhouse gas emissions from agricultural lands and farm operations. Perennial biomass crops can provide quantifiable and monetizable benefits along these lines including, as one important example, reduction of nitrous oxide emissions. Deep-rooted perennials can improve drought tolerance and modulate the drainage hydrograph to reduce downstream flooding.

Soil health, wildlife, and biodiversity: Each time the Farm Bill comes up for renewal, innovative approaches to get more bang for the federal conservation buck are considered. Green Lands Blue Waters partners are leaders in landscape design for co-production of agricultural goods and ecosystem services. Without sufficiently large markets for biomass crops, such alternative future scenarios have yet to be implemented and evaluated on the ground at HUC-12 or larger scale. The proposed Initiative can provide real world tests of policy innovations designed to achieve the wildlife and soil conservation benefits of perennial vegetation while allowing biomass harvesting consistent with environmental objectives.

Theory of Change and GLBW Role

A positive feature of Green Lands Blue Waters' overall theory of change is its emphasis on cross-sector learning to help expand uses and markets for the products of Continuous Living Cover farming systems. GLBW promotes market and enterprise development as the path to landscape transformation and perennial-based multifunctional agriculture. In addition to markets for perennial crops, this is likely to include incentives for ecosystem services either through market mechanisms, such as water quality trading, or other policy mechanisms.

The Perennial Biomass Working Group has been unable to expand its core group of active individuals and organizations. Use of grass biomass for heat, power, or liquid biofuel has not taken off as many of us had hoped, due in large part to low prices of fossil fuels. Without bioenergy or bioproduct markets for herbaceous biomass, Working Group participation waned. Yet the nonprofits and researchers working on biomass have learned a lot about both challenges and opportunities and have discussed ways to overcome the challenges. During 2016 and 2017, Steve John met with many current and potential partners to explore ideas for a Perennial Biomass Initiative. This proposal reflects the conclusion that a Perennial Biomass Initiative has a critical role to play to achieve the wide adoption of perennial biomass crops that will result in enhancement of agriculture's triple bottom line – social, economic, and environmental outcomes.

Drawing on discussions among the Working Group members and input from potential partners, here are some key insights about why a Perennial Biomass Initiative at this time makes sense, why GLBW is uniquely suited to the challenge, and how a targeted focus on Perennial Biomass can contribute to positive transformational change on the agricultural landscape:

Biomass is the only type of Continuous Living Cover that has a federal mandate; GLBW engagement can help to ensure that this opportunity is not squandered. The Renewable Fuel Standard mandates increasing production of cellulosic biofuels. This could drive integration of perennial biomass crops. Or it could further lock in the corn—soybean system if the main feedstock is corn stover. By demonstrating ecosystem services from perennial biomass, the proposed Initiative can improve the likelihood that the RFS will enhance multifunctionality.

GLBW's structure as a consortium of scientists and nonprofits has advantages. Organizing around a shared vision is conducive to long-term initiatives with an adaptive implementation approach. In contrast to multiyear research projects, a mission-driven consortium does not start out with a defined scope, team, and budget; but it also does not have a fixed end date. University and NGO participants in the consortium will seek funds and partners as needed to achieve goals as the Initiative evolves. Success will attract support. The proposed Initiative will invite participation by members of the CenUSA Bioenergy team, which is wrapping up.

GLBW's Theory of Change makes it a natural ally and potential partner of entities in the supply chain, industrial processing, or end uses of perennial biomass. Initiatives are expected to engage with for-profit partners. The Initiative should not limit itself to heat, power, and biofuels. Biomass uses at industrial scale can range from animal feed products to a wide variety of bio-based chemicals and structural materials. GLBW-affiliated plant breeders can coordinate with industrial partners to improve crops for desired traits. An Initiative highlighting ecosystem services may attract mission-driven investors, making it more attractive to industry.

GLBW's multifunctional agriculture vision makes it a natural ally of innovative farmers seeking to diversify and improve environmental performance of their farms. The proposed Initiative will support farmers and landowners that already grow, or want to grow, perennial biomass crops. Success of these innovators will help to attract early adopters and provide positive stories for the Continuous Living Cover narrative. Small scale uses for perennial biomass include home/farm heating in addition to existing uses such as forage and bedding.

The proposed Perennial Biomass Initiative can promote adoption of other perennial crops. Crops grown for renewable energy or bio-based products have great potential to transform the agricultural landscape over the next decade or two. The biomass effort can and should support other types of perennial crops in various ways. As already noted, some warm-season grasses make good forage. Companies that engage with GLBW around biomass may become interested in perennial grains. Biomass crops include woody as well as herbaceous species, providing a link to agroforestry.

The proposed Perennial Biomass Initiative can play a constructive role in policy development and assessment. Ecosystem service payments or related mechanisms are expected to be important for economic viability of perennial biomass crops in prime row crop areas. GLBW members can conduct on-farm R&D to quantify benefits of perennial cropping systems. The Midwest Conservation Biomass Alliance (MCBA) is proposing to address biomass-related policy issues. The GLBW Initiative can participate in and support that effort.

Place-based nonprofits represent a unique advantage of GLBW as convener of the Perennial Biomass Initiative and other transformative efforts. GLBW members are well-suited to lead watershed or landscape scale projects. In addition to research on environmental benefits, experimental watersheds – or landlabs – can work with farmers to assess how perennial crops fit into their operation and with corporate partners to demonstrate and “de-risk” supply chain logistics and energy or industrial processing technologies. The Perennial Biomass Initiative should coordinate with and enhance the effectiveness of GLBW’s ongoing Watershed Initiative.

GLBW’s mission and commitment to multifunctional agriculture make it the logical entity to demonstrate climate-related benefits of perennial crops. To date, GLBW has focused mainly on water, soil, and wildlife benefits. The proposed Initiative will afford a great opportunity to work with the Coalition on Agricultural Greenhouse Gases and its member organizations on climate mitigation, adaptation, and resilience. The Initiative can foster wide adoption of perennial systems that provide renewable energy, reduce use of fossil fuels for agricultural and industrial production, and reduce greenhouse gas emissions from cropland.

Proposal for a 10- to 20-Year Initiative

A paper titled “Multifunctional Agriculture: A New Paradigm of Mixed Cropping” by Steve John and Greg McIsaac was published in the January 2017 issue of the journal *Solutions*. Attachment 1 is an excerpt from that paper outlining goals, actors, and actions for a 20-year landscape transformation based on perennial crops, with a link to the full paper. The outline is not intended as a formal work plan for the proposed Perennial Biomass Initiative; it does contain ideas for reference and possible implementation as the Initiative ramps up and evolves over time.

Land use change comparable in scale to the “big ratchet” that occurred when industrial nitrogen fixation enabled a shift to grain-only farming would bring perennial grasslands back to the level of pasture and hay acreage circa 1950. In Midwest corn—soy areas, that represents roughly 10 to 15 percent of farm acreage. That amount of change could do much to meet nutrient loss reduction targets, enhance soil health and biodiversity, and reduce greenhouse gas emissions. A

virtuous cycle with breakthroughs in use of biomass/forage crops plus advances in perennial grains and agroforestry could push the perennial—annual equilibrium point even higher. The proposed Perennial Biomass Initiative is projected to last 10 to 20 years with the goal of achieving a significant transformation of the agricultural landscape. As stated in Attachment 1:

The first ten years of the transition period are seen as a time to overcome technological challenges, explore agroecological synergies and trade-offs, demonstrate perennial farming systems at field and landscape scales, create supply chains and profitable enterprises at a range of scales, and adopt policies and programs to support the multifunctional agriculture paradigm. ... [B]y Year 10 the new paradigm should reach a tipping point beyond which increased adoption becomes self-sustaining and perennial crop acreage climbs in the S-curve characteristic of diffusion of innovations until a new annual—perennial equilibrium is reached.

Getting Started: Year 1 Work Plan

The GLBW Steering Committee envisions Initiatives as the framework for achieving transformational landscape change with much greater adoption of Continuous Living Cover farming systems. The section of the 2013 Steering Committee minutes in which guidelines for GLBW Initiatives were outlined is in Attachment 2.

This proposal for a Perennial Biomass Initiative was prepared in accordance with the initiative guidelines. Initiatives are to be “partner driven and Partner led [and] formally launched as Initiative Committees charged by the GLBW [Steering Committee].” The guidelines state that core support should come from participating organizations or the GLBW regional office. AWI proposes to provide the core support for the proposed Initiative, at least during Year 1 and possibly beyond. The GLBW office is requested to provide the level of staff support normally allotted to perennial biomass as a CLC category including, for example, maintaining a biomass section on the GLBW website.

The following activities will be undertaken by the Initiative Committee, AWI support staff, and Initiative participants during Year 1:

1. Complete formation of a Perennial Biomass Initiative Committee that will coordinate the overall Initiative and periodically report progress to the GLBW Steering Committee.
2. Elect a chair and vice-chair (or co-chairs) to lead the Committee.
3. Hold regular Initiative Committee conference calls monthly or bi-monthly and prepare minutes of these calls.
4. Hold at least one in-person meeting to flesh out the Initiative work plan, structure, and budget. This meeting is expected to be a 1- or 2-day workshop with invited participants.
5. Form Initiative subcommittees and recruit members that can help achieve Initiative goals. A tentative list of subcommittees is:
 - Perennial biomass crops: Ecosystem services of alternative production systems
 - Perennial biomass crops: Agronomy and breeding
 - Supply chain logistics
 - Uses and markets: small-to-medium start-up markets (heat, forage, bedding, etc.)

- Uses and markets: large scale markets (bio-based products, biofuels, animal feed)
 - Economics and policy
6. Establish arrangements for collaboration with the Midwest Perennial Forage Working Group, including education on crops suitable for forage and bioenergy use.
 7. Establish arrangements for collaboration with the Watershed Initiative, including opportunities for mutual assistance among NGOs and watersheds interested in biomass.
 8. Establish arrangements for collaboration for mutual benefit between GLBW and the Midwest Conservation Biomass Alliance which focuses on native grassland polycultures.
 9. Apply for at least one grant (e.g. USDA Conservation Innovative Grant) involving more than one Initiative member to demonstrate nutrient reduction benefits of biomass crops.
 10. In collaboration with EESI (Environmental and Energy Study Institute), plan and conduct a Capitol Hill briefing about the Initiative and its implications for farm/energy policy.
 11. Improve and maintain the Biomass section of the GLBW website with assistance of the central office staff.
 12. Other activities as identified and prioritized by the Initiative Committee.

The following individuals request Steering Committee approval of the proposed Green Lands Blue Waters Perennial Biomass Initiative and they agree to serve on the Initiative committee:

Ryan Anderson, Delta Institute

Wayne Anderson, Minnesota Pollution Control Agency (retired), GLBW Steering Committee member

Emily Heaton, Iowa State University, CenUSA Bioenergy collaborator

Stephen John, Agricultural Watershed Institute, GLBW Steering Committee member

Nicholas Jordan, University of Minnesota, former GLBW Steering Committee co-chair

Gregory McIsaac, University of Illinois (emeritus), Agricultural Watershed Institute, former GLBW Steering Committee member

Linda Meschke, Rural Advantage, GLBW Steering Committee member

Cristina Negri, Argonne National Laboratory

Eric Rund, producer, Champaign County, Illinois, Green Flame Energy

Scott Singer, producer, Defiance County, Ohio, former NRCS biologist

Carol Williams, Midwest Conservation Biomass Alliance

Attachment 1 – “The 20-Year Plan”, except from *Solutions Journal* paper

Excerpt from <https://www.thesolutionsjournal.com/article/multifunctional-agriculture-new-paradigm-mixed-cropping/>

The first ten years of the transition period are seen as a time to overcome technological challenges, explore agroecological synergies and trade-offs, demonstrate perennial farming systems at field and landscape scales, create supply chains and profitable enterprises at a range of scales, and adopt policies and programs to support the multifunctional agriculture paradigm.

Here are some broad-brush thoughts on goals, actors, and actions:

Years 1 to 5

Conduct R&D on multifunctional perennial crops and systems

- University, government, NGO, and corporate researchers continue and expand work to improve yield and other attributes of perennial biomass crops grown in monocultures or polycultures.
- Pioneering farmers collaborate with researchers and NGOs to demonstrate and evaluate on-farm performance of forage/bioenergy crops and modified drainage systems to achieve nutrient and GHG reduction, soil health, improved habitat, and other ecological benefits.
- With NGO and university assistance, producers implement local bioenergy demonstration projects to provide replicable models of Community Supported Energy, farmer-owned bioenergy cooperatives, and related business enterprises.

Make equipment available and increase market development

- Mission-driven business entities, with government and philanthropic support, develop equipment and systems to process and use grass biomass for small- to medium-scale heat or cogeneration.
- Large-scale cellulosic bioenergy enterprises partner with producers and other stakeholders to ensure that feedstock production meets sustainability standards.
- Innovative companies in the agricultural, energy, and manufacturing sectors assess opportunities to profit from production, processing, and use of PBCs for animal feed, bioenergy, and bioproducts.

Demonstrate integration of multifunctional systems with appropriate program and policy innovations

- Scientists and economists use research results to add new perennial cropping and naturalized drainage systems to models and include multifunctional agriculture scenarios in plans to achieve water quality, renewable energy, and climate-related objectives.
- With public, private, and philanthropic funding, watershed projects engage local stakeholders, researchers, NGOs, and business entities to serve as landlabs to test sustainable landscape design, biomass supply chains, energy conversion technologies, and policy innovations.

Years 6 to 10

Ramp up multifunctional perennial systems

- Research continues on improved perennial crops and polycultures for coproduction of bioenergy feedstock and ecosystem services.
- Multifunctional perennial crops and systems gain acceptance and begin to be widely promoted by universities, conservation agencies, and crop advisors.

Ramp up equipment, supply chains, markets, and enterprises

- Mission-driven businesses take the lead to improve equipment and supply chain logistics to use grass biomass and short rotation coppice woody biomass for heat and cogeneration.
- The number and visibility of CSEs, bioenergy cooperatives, and related enterprises increases.
- Growing numbers of large and small enterprises make use of PBCs for a variety of energy, animal feed, and bio-based product applications an integral part of their business model.
- More cellulosic biorefineries and related enterprises come on line, using perennial feedstocks and applying the principles of sustainable biomass production and landscape ecology.

Incorporate multifunctional agriculture into plans, programs, and policies

- Multifunctional agriculture landlabs continue to innovate to improve social, economic, and environmental outcomes and provide testing grounds for policy and program innovation.
- Knowledge gained from perennial biomass R&D is used to design programs and policies for inclusion in energy and agricultural legislation, implement state nutrient reduction strategies, and the U.S. nationally determined contribution under the Paris Agreement.

Years 10 to 20

Broadly, these years are seen as a period in which perennial-based multifunctional agriculture goes mainstream. If the action plan outlined above is successful, by Year 10 the new paradigm should reach a tipping point beyond which increased adoption becomes self-sustaining and perennial crop acreage climbs in the S-curve characteristic of diffusion of innovations until a new annual—perennial equilibrium is reached.

Attachment 2 – Excerpt from 2013 GLBW Steering Committee minutes

GLBW Initiatives

The Evaluation Report showed a split in the GLBW Partnership with about half those reviewed believing that, while the work of recent years was useful, we need to refocus or expand our work to target much higher-levels of change. GLBW “Initiatives” are the big pieces the Partnership will work on for the next few years to enable change at a high level, to promote systems level changes. The Working Groups can be framed as our early portfolio of Initiatives. The GLBW Watershed Task Force launched in 2012 has potential to be transformed into a new Initiative. Cropping systems, enterprise development, biomass enterprise development, natural capital, communications, and policy were floated as other possible initiatives. GLBW should only launch as many Initiatives as can be supported long-term.

The group identified possible components of a conceptual model for GLBW Initiatives:

- Initiatives are Partner driven and Partner led. They are formed around strengths and ongoing activities of the Partners. They add value to the member organizations. Anyone might suggest a new GLBW Initiative.
- They are formally launched as Initiative Committees charged by the GLBW Cmte. Each Initiative will include at least one sponsor on the GLBW Steering Cmte who will periodically report Initiative progress to the Steering Cmte.
- Initiative Committees should elect a Chair and Vice-Chair (or Co-Chairs) to lead the Committee. The Committees should recruit members from any organization; aim high, get the people who can most help move the initiative forward.
- Initiatives need to have a business model or theory of change (or theory of victory); and need to be transformative on a large scale. Initiatives are expected to be long-term – 5 to 20 years.
- Initiative Committees should meet periodically by conference call or in person. They should have a core operating budget to cover committee travel and meeting expenses (the “yeast”) and staff support to organize Committee meetings and prepare minutes. The core support should come from participating organizations (Partners or others) or the GLBW Regional Office.
- To implement activities, write papers, sponsor conferences, etc. the participating organizations or the GLBW Regional Office will need to identify and invest the needed resources. Any organization participating on an Initiative Committee might lead implementation of one or more activities, as agreed to by the Committee. Initiatives do not need to create new “projects.” As a first priority, they might make significant progress by connecting the work of participating organizations and helping to tell their collective stories.

We outlined criteria that might be included in a request for the Steering Cmte to consider endorsing a new Initiative:

- What are the goals and expected outcomes for the initiative? What is the Theory of Change (or Victory)?
- How would the initiative leaders make something happen?
- How would the initiative add value to GLBW? How would GLBW be involved?
- How will the initiative draw out more connections among groups?

Lake Initiated Revenue

	2018 Revenue			Issuance Cost to Department	
	Actual	Fund	Account	Finance	Lake
Boat Licenses	123,891	General	304306	16,329	7,931
Duck Blinds	924	General	305517	221	2,617
Pier Permits	76,112	General	304402	1,541	5,926
Lake Citations	2,835	Water	308899	198	1,873
	203,762			18,289	18,347

Water Dredging Debt

	<u>\$'s Million</u>	
GOB 2010B	29.0	
GOB 2014	37.3	
GOB 2015	34.7	
GOB 2016	33.6	
GOB 2018	25.5	
	160.1	Total Prin & Interest
	8.0	5% Recreation benefit from Dredge Initiative

Water Lake Budget Notes

Discussion with Keith Alexander, Matt Newell, Gregg Zientara & Donna Cobillas

General activities performed by the Lake Division:

	<u>% Recreation</u>
Erosion Control & Lake Debris	10%
Water Quality	-
Mowing & Trash Removal	50%
Snow & Ice Removal	-
Lake Patrol	95%
Summer Festival	100%
Fourth of July	100%
Other Activities	100%

Line item accounts were defined with the above catagories. The percentages were used to calculate an estimated recreation cost of the 2018 actual expense totalling \$420,077.

Water Lake Budget
Recreation vs. Lake Protection/Other

		<i>Recreation</i>		<i>Lake Prot/Other</i>		<i>2018</i>
		<i>%</i>	<i>Amount</i>	<i>%</i>	<i>Amount</i>	<i>Actual</i>
Personnel Expense						
80808021 - 409000	SALARIES	45%	104,766	55%	128,848	233,614
80808021 - 410100	OVERTIME	46%	3,683	54%	4,243	7,926
80808021 - 410200	TEMPORARY SALARIES	78%	47,744	22%	13,515	61,258
80808021 - 410500	PENSION CONTRIBUTION/FICA/Medic	51%	13,871	49%	13,583	27,454
80808021 - 410700	FICA/MEDICARE	51%	11,423	49%	11,185	22,608
80808021 - 411100	LIFE INSURANCE	45%	173	55%	211	384
80808021 - 411200	MEDICAL INSURANCE	45%	25,697	55%	31,503	57,200
80808021 - 411500	SERVICE RECOGNITION	45%	1,346	55%	1,654	3,000
Total:			<u>\$ 208,702</u>		<u>\$ 204,742</u>	<u>\$ 413,445</u>

Operating Expense

80808022 - 411300	TO EE BENEFETS-UNEMPLOYMENT	45%	113	55%	139	252
80808022 - 420200	PRINTING AND BINDING	74%	330	26%	116	445
80808022 - 421000	SERVICE TO MAINT BUILDINGS	55%	8,091	45%	6,594	14,685
80808022 - 421400	SERVICE- OTHER EQUIP	55%	2,523	45%	2,045	4,568
80808022 - 421700	SERV TO MAINT COMM EQUIP	55%	7,203	45%	5,826	13,029
80808022 - 421750	SERV TO MAINT RADIO EQUIP	55%	531	45%	429	960
80808022 - 423000	GENERAL FUND IT SERVICES	72%	37,619	28%	14,424	52,043
80808022 - 423100	ELECTRICITY	45%	4,117	55%	5,063	9,179
80808022 - 423200	NATUAL GAS	45%	987	55%	1,214	2,200
80808022 - 423300	TELEPHONE	72%	535	28%	205	740
80808022 - 424000	TRAINING SCHOOL EXPENSES	13%	58	87%	400	458
80808022 - 424100	CONFERENCES & TRAVEL	13%	13	87%	87	100
80808022 - 424300	MOTOR VEHICLE EXPENSES	41%	32,535	59%	47,601	80,136
80808022 - 424400	BOAT EXPENSES	73%	10,131	27%	3,751	13,883
80808022 - 424500	POSTAGE & MAIL SERVICES	65%	189	35%	103	292
80808022 - 428000	PROFESSIONAL SERVICES	0%	-	100%	170,413	170,413
80808022 - 428800	RENTAL-COPY MACHINE	45%	243	55%	298	541
80808022 - 429900	CONTRACTUAL SERVICES	55%	20,858	45%	16,876	37,734
80808022 - 430400	CLOTHING	95%	701	5%	37	738
80808022 - 430700	GENERAL SAFETY GEAR	55%	76	45%	61	137
80808022 - 430800	PERSONAL SAFETY GEAR	55%	69	45%	56	125
80808022 - 430900	CHEMICALS	50%	286	50%	286	572
80808022 - 431000	FUEL EXPENSE	45%	6,811	55%	8,376	15,187
80808022 - 431200	JANITORIAL SUPPLIES	55%	375	45%	303	678
80808022 - 431500	LICENSING SUPPLIES	87%	1,553	13%	232	1,785
80808022 - 431600	REGULATORY SUPPLIES	78%	1,585	22%	446	2,031
80808022 - 432000	MATERIALS - BUILDINGS	55%	281	45%	227	508
80808022 - 432800	MATERIALS - EQUIPMENT	55%	1,518	45%	1,224	2,742
80808022 - 434000	MINOR EQUIP & TOOLS	55%	374	45%	302	676
80808022 - 434500	OFFICE SUPPLIES	72%	102	28%	39	141
80808022 - 435700	EMPLOYEE RECOG SUPPLIES	45%	28	55%	35	63
80808022 - 436600	MATERIAL TO MAINT LAKE	10%	573	90%	5,157	5,730
80808022 - 438300	INV PURCHASE - GASOLINE	45%	5,205	55%	6,401	11,606
80808022 - 442300	RISK MANAGEMENT INSURANCE	55%	48,113	45%	38,839	86,952
80808022 - 449900	SMALL CAPITAL ITEMS	55%	649	45%	522	1,171
80808022 - 452000	OTHER EQUIPMENT	55%	17,000	45%	13,722	30,723
Total:			<u>\$ 211,374</u>		<u>\$ 351,849</u>	<u>\$ 563,223</u>

Lake Division Total: \$ 420,077 \$ 556,591 \$ 976,668