DUNLAP LAKE
PROPERTY OWNER'S ASSOCIATION

The Dunlap Lake Property Owner's Association Master Plan

Dedicated to the financial, physical, and recreational value of Dunlap Lake for the benefit of its members and the larger Edwardsville community.

July 2020

Acknowledgments

DLPOA Board

2021 Expirations (Elected 2018)
Eric Ham
Andy Leek
Craig Louer
Andrew Reznack
Roy Wehling

2022 Expirations (Elected 2019)
Doug Carney
Robert Cahn
Ernest Lee Frea
Michael Watts
Greg Brumitt (elected 2020)

2023 Expirations (Elected 2020)
Toby Heddinghaus
Donna Polinske
Josh Schumacher
James Taylor
Richard Welle

Management Support

Association Manager
C. Green & Associates, Inc.
Carolyn Green, CMCA, President

Financial Management
Community Property Management (CPM)

Planning process & document & prepared for
Dunlap Lake Property Owner's Association
PO Box 5, Edwardsville, IL
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https://www.dunlaplake.org

Adopted on July 27, 2020
Dunlap Lake Property Owner's Association

Prepared by **HeartLands Conservancy**

www.HeartLandsConservancy.org

2020 Committees

Comprised of DLPOA Board Members unless otherwise noted.

V = non-board volunteer

2020 DLPOA Board Officers | Executive Committee

President - Mchael Watts
Vice President - James Taylor
Secretary - Craig Louer
Treasurer - Robert Cahn

Building:

The Building Committee reviews all building plans, issues permits, makes recommendations to the Board regarding variance requests and maintains applicable records.

Andy Leek - Chair
Barb Freeland - V
Toby Heddinghaus

Common Area Maintenance:

The DLPOA owns 19 common areas scattered around the lake. The Common Area Maintenance Committee is responsible for the maintenance and upkeep of the areas including grass cutting, tree trimming/removal, and shoreline protection. It also determines the location and works with the building committee to issue permits for docks on commons areas.

Lee Frea - chair
Greg Brumitt
Josh Schumacher
Andy Leek
Ryan Beevers - V
Helpers-Patrick Hill, Tim Pickle, Eric Ham
Andrew Reznack Justin Range
Rick Welle - 840 Maintenance Coordinator

Communications:

Communications Committee manages and maintains the association's website and Facebook pages.

Toby Heddinghaus- chair
Ryan Beevers - Website V
Eric Ham
Rick Welle
Donna Polinske

Dam & Maintenance:

The Dam and Maintenance Committee monitors and maintains the dam including mowing, riprap, dam integrity, exercising the gate, working with the Corps of Engineers, permitting and dropping the lake on 5-year intervals (on years that end in 1 and 6), and as necessary to freeze out invasive plant life.

Mike Watts - Chair
Lee Frea
Roy Wehling

Finance:

The Finance Committee oversees the finances of the DLPOA.

Bob Cahn - Chair
Rick Welle
Jim Taylor

Fish & Wildlife:

The Fish and Wildlife Committee monitors the fish population and makes recommendations regarding stocking, etc. Oversees purchasing and stocking of the fish and trapping when absolutely necessary. Coordinates Fishing Derby and Tournament.

Doug Carney - Chair
Jim Taylor
Walt Heck
Andrew Reznack

Legal:

The Legal Committee works with the attorney on lawsuits and other legal matters and disputes.

Mike Watts – Ex Officio
Donna Polinske – Chair
Josh Schumacher

Meetings, Elections, & Social Events:

The committee manages meeting logistics: procures space, set up, notices, access, etc. for monthly board meetings, the annual meeting, the holiday social and any other social events and activities the Board may decide to hold including fireworks. Manages the annual election of new board members including formulating and disseminating the ballot, counting the votes, and determining the election results. Does the same for any other elections, referendums, etc.

Andrew Reznack - Chair
Peg Flach - V
Judy McClew - V
Wendy Wilke - V
Diane LaBlanc - V
Tracey Schwieger - V

Restrictions:

The Restrictions Committee is responsible for enforcement of the association restrictions including monitoring, notifying and taking any subsequently required actions to bring about compliance. Monitors and enforces shoreline maintenance regulations including removal of trees and limbs from the lake. Reviews the restrictions and makes recommendations for changes. Maintains applicable records.

Roy Wehling - Chair
Craig Louer
Donna Polinske
Josh Schumacher

Safety:

The Safety Committee manages access to the lake including the issuance of boat stickers and maintenance of related records, the Barnett boat ramp, works with Restrictions Committee or authorities to deal with unauthorized or illegal water craft. Also, enforces restrictions regarding boat and motor sizes, numbers, operations, etc. Conducts fish and water testing and works with water quality issues.

Eric Ham - Chair
Doug Carney
Ryan Beevers - V
Brett Egger - V

Silt & Erosion:

The Silt and Erosion Committee is responsible for the formulation and implementation of a plan to remove silt from the lake.

Craig Louer - Chair
Lee Frea
Andrew Reznack
Andy Leek
Mike Watts
Roy Wehling
Alan Ortbals - V

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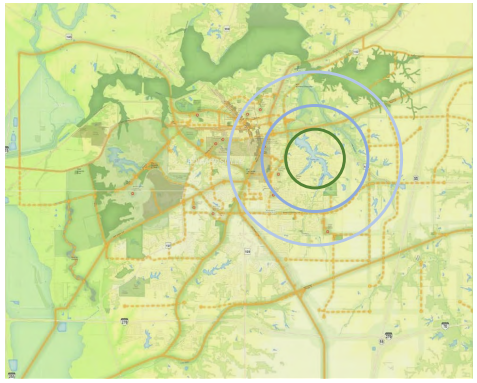
Executive Summary



The DLPOA Master Plan

In 1936, Orie T. Dunlap revealed the vision of this lake community. Dunlap Lake was created with hopes it would live on within the ownership and in the care of its residents.

In 1952, the Dunlap Lake Property Owner's Association (DLPOA) was created to fulfill that mission, charged to maintain the lake and make it safe and enjoyable for their residents to experience an active outdoor lifestyle not available to most urban residents.

The responsibility is great. However, people have come from all over the nation to be part of this neighborhood. The heart of the community - a lake with fingers of land and water intertwining - is a memorable landscape that keeps generations of families here and coming back.

In order to meet both the original vision and the ongoing responsibility, the Board and the Association have been dedicated to addressing the needs of the community and lake. They believe a more comprehensive approach is beneficial to seek funding and lay the groundwork for future successes.

To address this, the Board sought assistance in the form of a master plan to provide resources, guidance and gather consensus from the Board and members on moving forward with these responsibilities as a group.

In this plan the team was asked to seek information, comments, and feedback, on five key topics:

- Infrastructure (dam, spillway, and dewatering facility);
- Sedimentation, silt basin, and dewatering proposal;
- Shoreline stabilization;
- Common areas, maintenance, and off-lake access; and
- Inflow of stormwater management to the lake.

After two workshops and a resident survey, the vision and goals were developed to provide greater overall guidance. Themed recommendations were developed based on best practices for easier completion. Additionally, implementation phases were developed, potential funding sources and partners were included.

Throughout the plan, resources for information, guidance, and links are included to help accomplish tasks and achieve success.

Now is the time

The master plan provides the DLPOA Board, and the residents - the Association as a whole - an understanding of where the community stands now and where it should be in 15 to 20 years. It lays a strong foundation to build upon for generations.

Everyone of the DLPOA is working together to build this plan by

- reconnecting them to the lake, its health and quality of life;
- growing support and respect for each other and community;
- sharing the joy of lake living; and
- caring for the lake, its infrastructure, the amenities and landscape surrounding it.

In addition to all of these factors. this means also addressing required maintenance and upgrades of all features, stormwater issues of all scales, and the sediment and silt that is steadily increasing.

Working together and collaborating with partners,the Dunlap community will be successful in retaining resilient lake infrastructure, caring for a healthier lake for active and passive recreation, and sustaining the quality of life and desirability of Dunlap Lake.

A Vision for Success, Together

As part of a long history - over eight decades of families, homes, picnics, fishing, boating, and celebrated generations of lake life - the Dunlap Lake Property Owners Association (DLPOA) and its members will continue to succeed in protecting and caring for their greatest asset, Dunlap Lake. It is time to challenge one another to accept that with these community benefits, comes the responsibilities of stewardship.

The covenant of the Association brings together the interests and goals of all its members. Home ownership here means shared ownership of the 138-acre lake and all the DLPOA owned properties. This stewardship is done in honor of those who cared for it in the past - and to provide stewardship for those who will care for it in the future.

Dunlap Lake, although private, provides a valuable public service as a stormwater reservoir for part of the city, township, county, and watershed. Building a strong collaboration between these entities to leverage resources is crucial and possible. A committed partnership can be built on an investment in the community-at-large through sustained maintenance providing longevity and resiliency to the stormwater system.

This plan proposes collaboration with public and private entities to further forge a path to success. DLPOA has had strong support from the broader community in the past. In this age of multilayered jurisdictions and complexity of resources, public/private partnerships should be explored to ensure the success of this plan.

The DLPOA can achieve success while simultaneously providing equitable access for all its members, strengthening the infrastructure, and shaping the landscape for all residents to enjoy the lake life, now and in the future.

Goals

The following goals guide a diverse, multipurposed, environmentally sound future for all association-owned properties, Dunlap Lake and neighborhood.

The Dunlap Lake Property Owner's Association Master Plan

- Will **provide access and amenities for the private lake for all** its residents and their guests, while enhancing the beauty and natural resource integrity of the city and region.
- Will demonstrate **safe, strong environmental stewardship through the care and maintenance** of the lake, its environs, and applying best management practices for stormwater, water quality, habitat, and native landscape beautification initiatives.
- Will embrace the **principles of sustainability and resiliency, and will** preserve and maintain the built and natural systems of the lake.
- Will **protect the lake and creeks, including shorelines**, wetlands, high infiltration areas, and associated vegetative buffers to maintain high water quality, manage water quantity and sustain recreation.
- Will foster the **vibrant, healthy, and active lifestyle** of Dunlap lake and the community.
- Will provide a variety of passive and active recreation uses, and outdoor venues for neighbors to come together for special events, holidays, and **gatherings to celebrate the Dunlap Lake life**.

And, in so doing, the Association will:

Be well-managed, maintained, governed, and financed based **an equitable partnership between the residents of Dunlap Lake, the DLPOA Board, and other partners** as needed.

Address the needs of all property owners, residents, DLPOA employees, and volunteers with transparency, respect, honesty, dignity, and fairness.

Promote principles of **stewardship, shared responsibility, and volunteerism** among the residents and their DLPOA to govern implementation and management of this plan.

Themes

- Lake Connectivity for All Residents
- Sustainability & Resilience
- Best Management Practices
- Blue & Green Infrastructure
- Vibrant, Healthy, & Active Lifestyle
- Celebrating Lake Life
- Partnerships
- Equity
- Stewardship

Lake Connectivity

Priorities:

Passive recreation

Safe access to parks and trails

Crossings at major intersections

Share-the-road signs for bicycles

Clarify guest privileges

Key Recommendations:

- Walking paths in all common areas
- Replace goat-path connections with permeable paved paths
- Respect for adjacent properties

Sustainability & Resilience

Priorities:

Dam maintenance

Remove silt

Sediment settlement area

Dewatering basin

Spillway widening & repair

Key Recommendations:

- Finish engineering for projects
- Update dredging plan
- Investigate positive uses for dredge materials
- Consider combinations of all funding options and phasing
- Improve water & air quality

Best Management Practices

Priorities:

Flooding & drainage

City-wide advocacy

Shoreline easements

Invasive plant removal

Capture sediment & stormwater

Key Recommendations:

- Provide BMP guidelines and resources on website
- Support residential-scale initiatives
- Develop common areas initiatives
- Develop active and passive water aeration methods

Blue & Green Infrastructure

Priorities:

Shoreline stabilization

Stream and culvert erosion

Slow stormwater runoff

Reforestation plan

Conservation easements

Key Recommendations:

- Prioritize “green” stormwater management approaches.
- Improve stormwater management
- Increase biodiversity
- Shoreline habitat
- Encourage use of native plantings
- Wetland restoration

Healthy & Active Lifestyle

Priorities:

Develop individual common area plans and phases

Opportunities for gathering

Interpretive & educational initiatives

Formalize volunteer/friends group

Special & recreational events

Key Recommendations:

- Kayak & canoe stands/launch area
- Support resident athletic clubs
- Life safety signage
- Support complete streets

Celebrating Lake Life

Priorities:

New revenue sources

Dock design standards

Preserve green and water viewsheds

Fundraisers

Consider common area marina(s)/slips

Key Recommendations:

- Support 4-season activities
- Continue existing events
- Consider DLPOA music events
- Consider seasonal pop-up businesses

Partnerships

Priorities:

City partnership on stormwater

Share master plan

Grant opportunities

Master naturalist & gardeners

Philanthropy for the lake

Update emergency plan

Key Recommendations:

- Seek multiple funding sources for implementation of priorities
- City, township, county, & state as partners
- Grant partnerships & work groups
- Work with adjacent HOAs on stormwater and environmental projects

Equity & Stewardship

Priorities:

Financial health

Equitable assessments

Review restrictions

Implementation committee

Boat & dock policies

Key Recommendations:

- Continue Zoom meeting access
- Re-brand the term “Restrictions” of DLPOA Covenants/Regulations
- Review and implement new dock & wait-list policies
- Consider multiple methods to assist annual and special assessments

Implementation

Putting the plan into action will require a targeted,and phased strategy that sets priorities for the most urgent maintenance, repair, and improvements. Most importantly, residents will be best served by leveraging partnerships. Therefore, a list of potential collaborators is included. This strategy will serve as a resource for the Board, staff, and partners as initiatives move forward.

The implementation will ultimately be dependent upon agreement between the DLPOA and leaders. An Implementation Committee will engage partners, review top priorities, and identify funding strategies and immediate opportunities.

This plan serves as a living document, a workbook for the Implementation Committee and Board. It has been broken into Phases for ease of use and strategy considering known factors. Therefore, it should be reviewed frequently for new opportunities.

Longer-term phases should be reviewed every 2 years to adjust for fiscal changes, infrastructure needs, and environmental priorities.

Priorities for Implementation

Long Term Projects & Action Items

Throughout the entire process key projects were identified, large and small. The primary projects that the majority of the residents and board want addressed. They are willing to work on solutions both, fiscal and engineering, in order to proceed. Most importantly these include the lake infrastructure and the silting in of the lake.

Secondly residents want to ensure a clear and equitable method of managing docks and lake access.

Lastly, the health of the lake at all scales ranks highly in priorities.

Further detail may be found in the master plan document. This is a list of the top projects and action items to begin working on immediately.

As mentioned, the culmination of opportunity, funding, and ability to physically complete the project often need to align in order to successfully implement all the projects.

Often the timeline varies from expectations. If the timing, monies, and ability to complete a project, the board should seize the opportunity no matter what phase it was slated to be in, if it deemed to be a clear priority.

Implementation Phases:

Early Action & On-Going Items

Early action items, or rather “low hanging fruit,” projects and tasks are identified in the plan.

Some recommendations have a common or regional level of priority should be sought by and implemented by the city or county. For example, a few linkages/crossings to neighborhood amenities across road rights-of-ways.

Phase 1: Years 0 to 5

These are needs to be addressed and worked on as soon as possible as funding or partners become available. Preparation for this phase begins now.

Phase 2: Years 6 to 10

These initiatives are planned early to ensure their viability when opportunities arise. Preparation for this phase begins in year 4 and should be reviewed every 2 years thereafter.

Phase 3: Years 10 to 20

Building on the earlier phases, this phase includes repeating cycles of maintenance and further revision of ongoing initiatives, and review of this plan. Preparation for this phase begins with a review in year 6 and should be reviewed every 2 years thereafter.

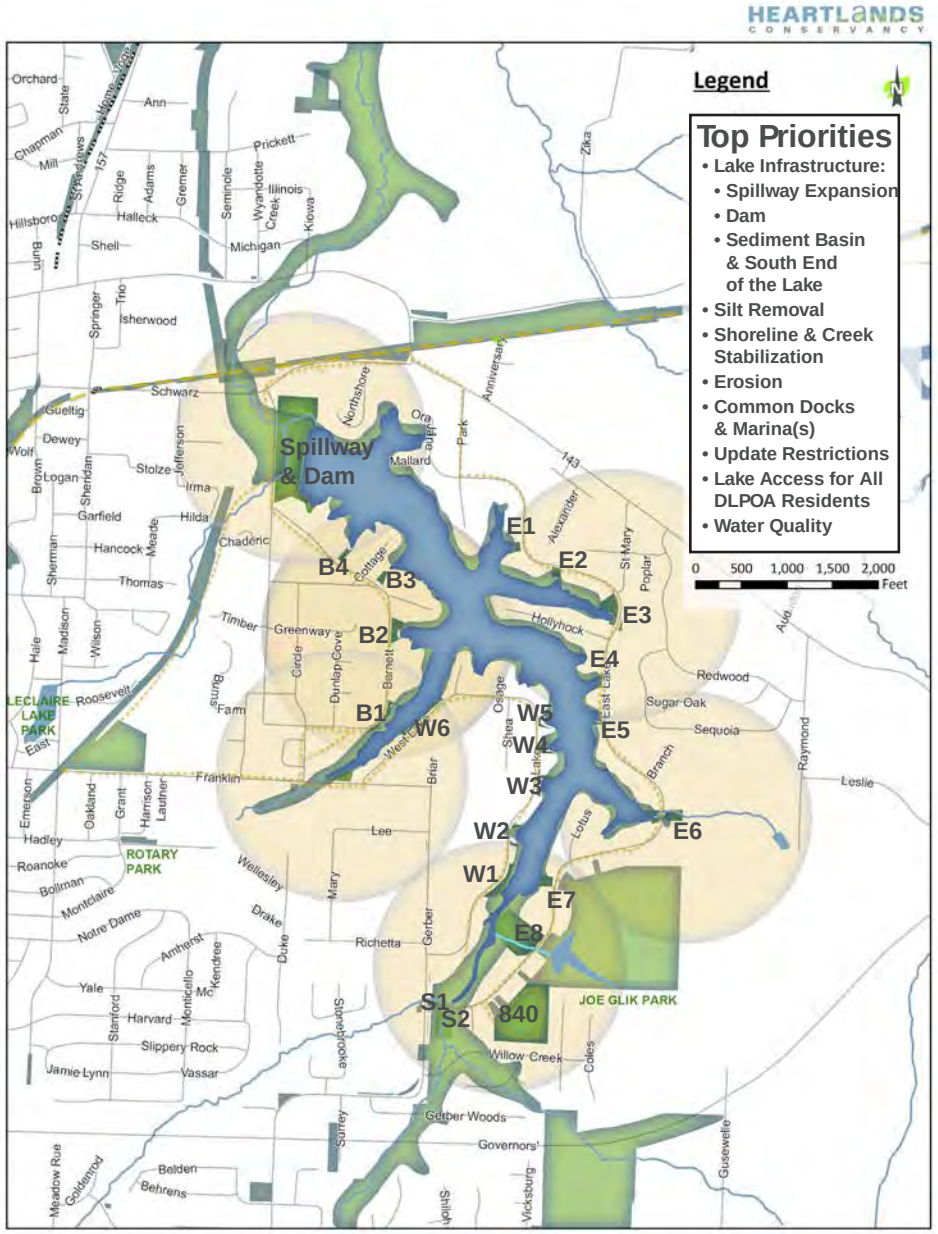
Funding

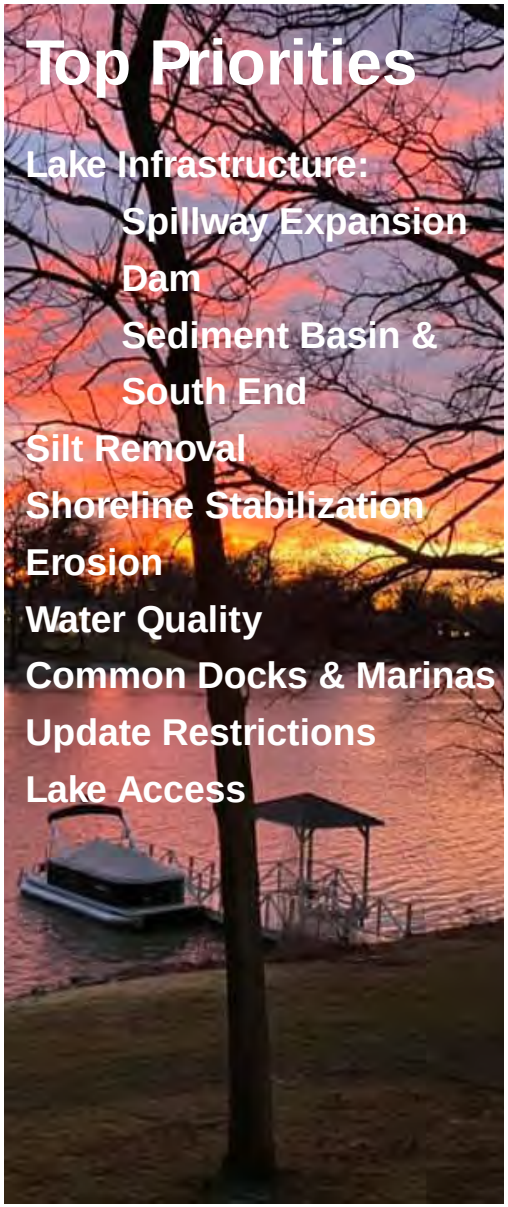
For a community the size of Dunlap Lake there are significant infrastructure management needs and improvement costs. It is imperative to increase funding opportunities and sources. These include grants, loans, partners in cost-sharing, donations, loans, assessments, and Special Service/ Assessment District options.

Funding for projects involving recreation, stormwater management, and environmental stewardship can come from a variety of sources. Most of the funds are available to public agencies and not private entities alone, which will require partnerships. Funding sources and matches vary depending on the program and the objective of the funding source.

Using a variety of funders will reduce the local share and will leverage the most dollars. Maximizing the impact of local share investments and protecting local value will be critical elements in implementation. However, if public partners are combined with DLPOA, a not-for-profit, leveraging of resources becomes more desirable to funders.

It is imperative that every grant cycle or funding opportunity be met with enthusiastic applications. By meeting these deadlines, collaborating with cooperating agencies and partners, the burden of implementation will be fundamentally lightened financially.





Master Plan Introduction

The master plan addresses the following priorities:

- Inventory existing common area conditions, issues, and opportunities.
- Review recommendations on proposed improvements to lake maintenance and projects concerning sedimentation, silt, erosion control, and maintenance.
- Consider docks, accessibility, marinas, and other amenities.
- Review opportunities to partner with the other stakeholders (city, county, etc.), and adjacent Home Owner Association(s) for a regional approach to stormwater.

Background & Purpose

The purpose of this master plan is to describe and illustrate the overall vision for Dunlap Lake and its community, a privately developed neighborhood in the City of Edwardsville, Illinois. This plan will enable the Dunlap Lake Property Owner's Association (DLPOA/Association), the Board, and residents to make informed decisions about future needs of the lake, the infrastructure, and enhancements for the common areas.

The plan was developed to address the growing urgency for the lake's maintenance, and sustainability, as well as the residents' ever-increasing needs and access to the lake. The plan capitalizes on the existing assets of the area and provides a framework of best management practices, and supports access for all residents to continue the vibrancy of Dunlap Lake.

The implementation of this plan is the responsibility of the Association and will be led by the DLPOA Board. The plan highly encourages public/private partnerships to increase the sustainability of the lake. The recommendations and improvements outlined in this document require careful coordination so that DLPOA members may continue their role as stewards for the lake and provide a healthy and active community.

Funding for this plan was provided by the Dunlap Lake Property Owner's Association. The study included site analysis, site visits, stakeholder interviews, and work sessions with the DLPOA Board and the residents.

Reports and studies completed by Heartlands Conservancy (HeartLands/HLC) for Madison County, the City of Edwardsville, and the regional Green Infrastructure Framework Plan were all used to capitalize and leverage information as it pertains to the project area.

This includes archived data and documents and Geographic Information Systems (GIS) technology. GIS uses spatial information (maps) combined with database capabilities to store, display and analyze layers of information. All of the data used in this analysis is available from public resources. For more information on the GIS data used in this analysis, please contact HeartLands Conservancy.

Project Objective

The objective was to develop a master plan addressing the needs and desires for the lake, its infrastructure, and properties owned and maintained by the Association. It outlines a long-range vision for residents and the Association as well as an implementation and funding strategy that suggests priority projects over the short, medium, and long-terms.

Plan Organization

The plan provides summary maps of the watershed, lake, and common areas including physical attributes, challenges, and natural resources. These help to identify potential future needs.

The vision and goals provide the desired state of Dunlap Lake at the end of a twenty-year time frame. These were developed based on a series of meetings with the Board and residents.

The framework provides the organizational themes that guide the master plan while taking into account the larger watershed, natural resources, constraints, and opportunities.

The plan addresses the themed recommendations for the area at a watershed, citywide, and the Dunlap Lake neighborhood level. All the themed components of this master plan build upon the established framework, vision, and goals. Priority projects and recommendations are developed for each theme at this scale.

The master plan concludes with a detailed implementation strategy, which includes recommended phasing, funding strategies with partnerships, and grant opportunities.

Development of the Plan

To satisfy the aspirations of this fast-paced study of four months, a phased process was developed, beginning with a data collection effort of existing materials from the DLPOA, It was then supplemented by field surveys that analyzed the study area for challenges and opportunities. Simultaneously, the Project Team began intensive research to find and document a series of best practices and case studies from comparable communities who have successfully dealt with issues similar to those addressed within this study. Much of the larger contextual analysis was performed during the Madison County Stormwater Commission's Indian-Cahokia Creek Watershed planning effort, also completed by HeartLands Conservancy. This provided additional input, given many residents participated in the public meetings, worksessions, and surveys.

As research continued, goals emerged. Participation by the Board and residents brought many issues and ideas to the table. The participation used community events and meetings as milestones: DLPOA Board workshop and monthly updates and the DLPOA Annual Meeting. The residents' participation was the key to the process.

Additional methods were used to gather more information on individual levels: individual and group site visits, interviews, an online survey for residents and property owners, as well as input from the management of DLPOA and the Communication and Common Areas Committees.

During these interactions, the community shared perceptions of the opportunities and challenges of the area and their vision for the future of Dunlap Lake, their common areas, and their aspirations for the DLPOA. The enclosed recommendations reflect these as well as the opportunities to embrace best management practices for the communal resources and organizational strategies that may assist their implementation.

This plan should be used as a tool to continue the legacy and build upon the foundations of the Dunlap Lake community for future generations.

The residents and DLPOA must continue to advocate for the health and sustainability of the watershed as a whole, as well as Dunlap Lake's role within it. To champion this effort, DLPOA should seek the acceptance or adoption from adjacent HOAs and public partners, such as the City of Edwardsville and Madison County, to form a public/private alliance for stormwater management and sustainable solutions at all scales.

Introduction: Engagement

Project Timeline

January

- Collection & review of existing materials, data, and studies
- Begin analysis of existing conditions and site visits
- January 27 DLPOA Board Meeting: **Workshop #1**

February

- Analysis of existing conditions
- Stakeholder interviews
- February 20 DLPOA Annual Meeting with **Workshop #2:** Interactive exhibits & work boards
- February 24 DLPOA Board Meeting
- **Survey released** to all residents via online or paper copy

March - Stay at home order (SAHO)

- Develop draft framework, materials. and recommendations.
- March 30 DLPOA Board Meeting: Master Plan Update - Zoom

April - SAHO order extended

- April 24 Common Area Committee & HLC site visits
- April 27 DLPOA Board Meeting: Master Plan Update - Zoom

May - SAHO order through end of month

- May 1st Meeting with Common Area Committee
- May 26 DLPOA Board Meeting: Master Plan Update
- Final Draft Materials and deliverables to be presented to the DLPOA Manager.

Stakeholder Engagement:

Workshop 1

January 27, 2020
with DLPOA Board

Board members, HLC staff members, and residents/guests were present at the DLPOA building on East Lake Drive.

Team members explained their roles in the project as well as the project's objective, scope of services, and project timeline. This finalized the process for workshop 2, and conducted an information-finding and visioning work session. The workshop was primarily a dialogue with those present on issues and ideas that had been explored in the past and, to some degree, what lessons had been learned. Opportunities, potential future constraints, and past projects were discussed at great length.

The work boards are begin on page 13.

Workshop 2

February 20, 2020
with DLPOA Board & Residents

Executive committee, board members, HLC staff members, and close to 100 residents were present at the Moose Lodge in Edwardsville, Illinois.

The workshop was held in conjunction with the DLPOA Residents' Annual Meeting. After the official meeting and elections, President Mike Watts introduced the project to the audience. Mary Vandervord, HeartLands Conservancy President and CEO introduced the project team, discussed the benefits of master plans, and provided the workshop instructions.

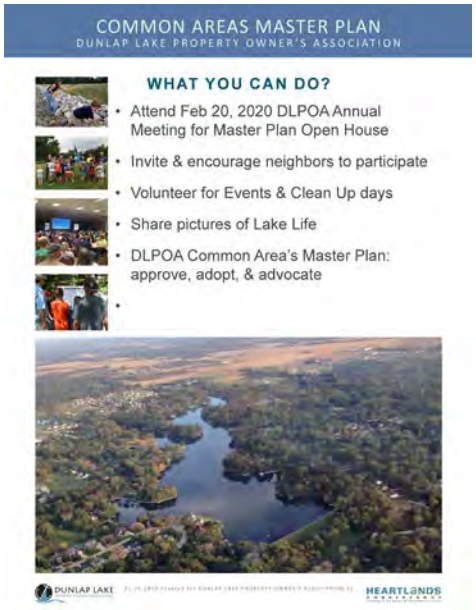
People were given the opportunity to move through 3 stations:

- Station 1 Visioning and Goals;
- Station 2 Amenities and Lake Access;
- Station 3 Marina, Docks, and Boats with Funding and Education/Outreach Opportunities.

At each station the residents could mark their response, or interact with a team member to discuss the project. Supporting documentation and exhibits were available: the analysis to date, the Indian-Cahokia Creek Watershed plan, best management practices for individual residents, etc.

The collected answers on the boards are on pages 14 and 15. The complete set of boards are in the appendices. The DLPOA Board meeting minutes January through May 2020 reflect project updates and discussions. A summary video was made by the Board of the February meeting.

Dunlap Lake Owned Parcels



COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

WHY A MASTER PLAN?

- The Common Area Master Plan will define a vision and provide a framework for the community to address how all Dunlap Lake residents (present and future) can better enjoy, maintain, and manage Dunlap Lake.
- The Master Plan will clearly define the issues, opportunities, and constraints heard from the community and through analysis.
- Participation from community residents is critical to creating a feasible, long-term vision and plan for the common areas of Dunlap Lake. Residents will have many opportunities to provide information and feedback through surveys, meetings, and materials.
- The Master Plan will contain multiple options, actions, and potential projects, as well as explore additional partners and sources. An implementation and funding strategy will also be included to assist in identifying potential funding sources, assisting the association with decision-making and priorities, and help residents understand the issues and plans for the community over the next 10 years.

Together we can...

- Identify a shared vision for Dunlap Lake's Common Areas
- Determine the most important priorities for lake users and residents
- Identify key projects and priorities that will make Dunlap Lake safer, accessible, and more enjoyable

- **Initial project ideas include:**
  - South end silt basin
  - More access to use and to the lake
  - Docks, micro-marinas, and slips
  - Amenities for residents for common areas
  - Dredging & maintenance initiatives
  - Shoreline improvements and stabilization
  - De-watering facility at 840 East Lake Drive
  - Rain gardens, catch basins and other strategies on commons areas
  - Inflow and upstream improvements
  - Education & informational seminars for residents
  - Micro-grant opportunities for individual home owners' properties

DUNLAP LAKE [illegible] HEARTLANDS CONSERVANCY

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

VISIONING & GOALS IN POST-ITS

- **Do YOU agree with the original vision for Dunlap Lake to provide recreation in an more urban setting?**
- **Write a key word that describes the ideal future for the common areas?**
- **What are key action words that energize this future?**
- **What are key initiatives, projects & policies that you feel embodies this future?**
- **Words to describe "How to sustain the engineering life of the lake, dam, water quality, and quality of life of the residents"?**

DUNLAP LAKE [illegible] HEARTLANDS CONSERVANCY

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

YOUR PRIORITIES IN POST-ITS

- **What are your priorities for the community?**
- **What is your greatest concern for the community?**
- **What is your biggest goal for the community?**
- **What is your favorite thing about the community?**
- **How would you like to help the community?**

DUNLAP LAKE [illegible] HEARTLANDS CONSERVANCY

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

WHERE IS YOUR BOAT?

PLEASE MARK WHERE YOU KEEP YOUR BOAT

DUNLAP LAKE [illegible] HEARTLANDS CONSERVANCY

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

INDIAN CAHOKIA CREEK WATERSHED

DUNLAP LAKE [illegible] HEARTLANDS CONSERVANCY

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

INDIAN CAHOKIA CREEK WATERSHED PLAN: DUNLAP LAKE

What is a watershed?

A watershed is an area of land that drains into a common waterbody. Think of it like a bathtub: when a drop of water hits anywhere in the tub, it eventually finds its way to the drain (the lowest point). Healthy watersheds mean that people have clean drinking water, flooding in appropriate locations, thriving wildlife, and recreation opportunities.

The Indian-Cahokia Creek Watershed Plan

The Madison County Stormwater Management Plan sets county-wide policies to address drainage and provides recommendations for each watershed in the County based on individual watershed plans. The **Indian-Cahokia Creek Watershed Plan** was commissioned by Madison County in 2015 to promote a healthy, functioning watershed. The planning process involved surveys, public meetings, technical analysis, and recommendations formed by a technical advisory committee and a stakeholder committee. The plan is a voluntary document that provides guidance to governments and residents on flood reduction and water quality in the Indian-Cahokia Creek Watershed. The document can be found the Madison County Planning and Development website.

Dunlap Lake Siltation & Water Quality Problem

Description of Problem: Dunlap Lake is a 138-acre private lake surrounded by homes on the east side of Edwardsville. The lake is managed by an active Property Owners Association (POA). The lake was created in 1939 by damming Mooney Creek. The two major issues at Dunlap Lake are that it is filling up with silt (i.e., reducing storage capacity and increasing flood risk), and that it has water quality problems, such as algae blooms and high fecal coliform levels.

Severe erosion exists south of the lake, which contributes large amounts of sediment to the lake. Besides sediment, other water quality concerns are the nutrients (e.g., phosphorus, nitrogen) that cause algae blooms—including at least one instance of a harmful algal bloom in the lake. Also, human and animal waste has led to high fecal coliform measurements, and trash in the lake has degraded water quality.

The Dunlap Lake POA is concerned about the safety of the earthen dam, noting that the amount and velocity at which water enters the lake has increased. Riprap has been added to the dam to support it. There is an emergency plan for if the dam is ever breached.

Possible Solutions: Increase detention upstream, reduce streambank erosion upstream, reduce chemical fertilizer use upstream, and dredge the lake.

DUNLAP LAKE [illegible] HEARTLANDS CONSERVANCY

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

DOCKS, SLIPS, & ACCESS

- Docks are a cost in the DLPOA Capital Plan. Please answer the following questions with a mark as a reply next to the answer you choose.
- Put a dot on the map in a commons area where you would like to have a dock.
- Put a dot on the map where your boat currently is located.

- **Is a discussion about docks, slips, and lake access important to you?**

YES	
MAYBE	
NO	

- **Should the DLPOA Association make policy changes for docks on association-owned land?**

YES	
MAYBE	
NO	

- **Do you have a dock?**

YES	
wait-listed	
NO	
NO but I would rent	
I don't want one	

- **If yes, do you like its location?**

YES	
NO	

DUNLAP LAKE [illegible] HEARTLANDS CONSERVANCY

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

DOCKS, SLIPS, & ACCESS

	QUESTIONS	YES	NO
1	I am okay with individual residents building docks on association-owned land and leaving upkeep at the resident's discretion		
2	I would like to see association be more proactive on requiring residents to remove docks that are in serious disrepair		
3	I think the association should build additional association-owned docks in high-traffic areas. Right now there is only one.		
4	I think the Association should move towards owning and managing docks on common areas if a plan were devised so they would be self-funding		
	• Because of liability		
	• Because of limited space		
	• Because of financial management		
	• Other (write on sticky notes)		
5	I do not think the Association should move towards owning and managing docks on commons areas		
	• Because of liability		
	• Because of limited space		
	• Other (write on sticky notes)		
6	I have not thought about the current situation being a problem.		
7	Other thoughts on how the Association should address the fact there are residents who have been waiting for years to get dock space in high-traffic areas?		
	• Lottery		
	• Private rental, but registered with Association		
	• Other (write on sticky notes)		
8	Would you use a small boat stand if there were more stands and launch pads (for jon boats, kayaks, canoes)?		

DUNLAP LAKE [illegible] HEARTLANDS CONSERVANCY

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

ISSUES & IDEAS PRIORITIES

	ISSUES	Low	Med	High
1	Erosion & smaller tributary contributions of stormwater			
2	Access to lake edge & common areas			
3	Silting issues & maintenance			
4	More trail linkages			
5	Need more boat slips			
6	Access to water inputs			
7	Need or number of types of amenities			
8	Maintenance: frequency			
9	Invasive plant species			
10	Algae blooms			
11	Dam maintenance			
12	Dredging & maintenance			
13	other			
14	other			
15	other			
16	other			
17	other			

	IDEAS	Low	Med	High
1	Small marina for multiple boat slips			
2	Increase amenities for all ages and users			
3	Lake improvements: silt removal			
4	Lake improvements: dam maintenance			
5	Increase biodiversity, native plantings, & riparian edges			
6	Encourage active and passive recreation			
7	Provide multiple appropriate and layered uses for common areas			
8	Add green infrastructure through the neighborhood and on common areas to slow, capture, absorb, and retain stormwater.			
9	De-watering project			
10	Link areas programmatically			
11	other			
12	other			
13	other			
14	other			

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COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

DUNLAP LAKE COMMON AREAS

• Please list issues, ideas, or amenities for the various common areas.

	• East Lake		• West Lake
	• East Lake		• West Lake
	• East Lake		• West Lake
	• East Lake		• West Lake
	• East Lake		• West Lake
	• East Lake		• Barnet Rd
	• East Lake		• Barnet Rd
	• Creek entering Lake		• Barnet Rd
	• West Lake		• Barnet Rd
	• West Lake		• Barnet Rd
			• Barnet Rd

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COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

INDIAN CAHOKIA CREEK WATERSHED

YOU can take action!

The cumulative actions of individuals and communities across the watershed can make a big difference in the health of people, wildlife, and the environment. If you would like to help promote healthy water quality and reduce flooding in the watershed, there are several ways to get involved.

If YOU are a Homeowner:

You can contact HeartLands Conservancy about the Conservation@ Home program, which offers guidance in designing your yard for wildlife and stormwater management. Find out more at https://www.heartlandsconservancy.org/conservationhome.php.

If YOU live next to a creek, stream, pond, or lake:

You can protect the trees that grow on its banks - and plant more! This will prevent soil erosion and make pleasant, shady habitat for aquatic creatures. Find out more at https://greatriversgreenway.org/design-guidelines/environmental/streambank-planting/.

If YOU are a Landowner, Farmer, or Land Manager:

You can make planting decisions that improve soil health and water quality. The Madison County Soil and Water Conservation District (SWCD) can provide assistance on topics including fertilizers, tillage, seed mixes, cover crops, crop rotation, woodland improvement, erosion control, and more. Find out more by contacting madisoncoswcd@gmail.com or calling 618-656-7300 ext. 3.

If YOU want to learn more:

If you are interested in **learning more about water health**, you can join Illinois RiverWatch to volunteer to assess stream health using citizen science. This program, locally based out of the National Great Rivers Research and Education Center in East Alton, trains people to measure flow and collect aquatic insects in their neighborhood streams, and then interpret the results to find out how healthy the stream is. Find out more at http://www.ngrrec.org/Riverwatch/.

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COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

HOW YOU CAN HELP!

- Fill out the Survey for the Common Areas Master Plan
- Invite & encourage neighbors to participate in events
- DLPOA Common Area's Master Plan: approve, adopt, & advocate
- Participate in programs, community beautification & stormwater management efforts
- Use native plants & remove invasive plants
- Volunteer for events & clean up days
- Stay informed, and attend seminars/educational sessions
- Volunteer & join committees for Implementation

DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION Created by HEARTLANDS CONSERVANCY

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

AMENITIES

What do you want to use on the common areas & around the lake in the future?

• Please choose your top 3 uses or activities in each column.

	Amenities	Yes	No
1	Seating & Benches		
2	Picnic Tables		
3	Shade Structure(s)		
4	More Trail Linkages		
5	Public Boat Slips		
6	Kayak Launch		
7	Walking Paths		
8	Fishing Supply & Dock		
9	Equipment Rental		
10	Motor Repair Hut		
11	Nature Interpretation		
12	Fishing		
13	Fire Pits		
14	Grills		
15	Connect to Glik Park		
16	Other (Write Ideas)		
17	no amenties needed		

DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION Created by HEARTLANDS CONSERVANCY

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

ACTIVITIES & RECREATION

How do you currently use or want to use the lake & common areas in the future?

• Please choose your top 3 uses or activities in each column.

	Activitiy	Current Use	Future Use
1	Walking		
2	Kayaking		
3	Canoeing		
4	Motor Boat		
5	Don't use/ don't want to use lake		
6	Bird Watching		
7	Swimming		
8	4th of July		
9	Special Events		
10	Playing		
11	Relaxing		
12	Fishing		
13	Bon fires		
14	Picnic		
15	Grilling		
16	Storing Boat		
17	Other (write)		

DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION Created by HEARTLANDS CONSERVANCY

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

PLAN & PROJECTS FUNDING

• Please put a mark next to the options you agree with to fund capital projects, as well as beautification, recreation, & stormwater BMP projects.

- **Explore Public/Partnerships Limited to maintenace, management or particular projects**
  - YES
  - NO
- **Explore Low Interest Loans**
  - YES
  - NO
- **Explore Large & Small Grants**
  - YES
  - NO
- **Explore SSA with County/City of Edwardsville**
  - YES
  - NO
- **Explore Stepped Increase in Annual Fees**
  - YES
  - NO
- **Set up Endowment for Future Maintenance**
  - YES
  - NO
- **Explore Revenue Streams Large & Small**
  - YES
  - NO

DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION Created by HEARTLANDS CONSERVANCY

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

EDUCATIONAL SEMINARS

• Please put a mark or your name if you would like to attend a session on any of these topics or suggest others.

- **DLPOA Finance & Capital Plan Seminar**
  - YES
  - MAYBE
  - NO
- **Lake & Dam: Silting, Dredging, & Technical Informational Seminar**
  - YES
  - MAYBE
  - NO
- **The Water's Edge: Lake Ecology, Native Landcape & Water/Erosion Management**
  - YES
  - MAYBE
  - NO
- **Conservation@Home & Your Own Yard Seminar**
  - YES
  - MAYBE
  - NO
- **Volunteering to Leverage Cost-savings**
  - YES

DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION Created by HEARTLANDS CONSERVANCY

Public Survey Summary

Completed March 2020
for all Dunlap Lake Property Owners

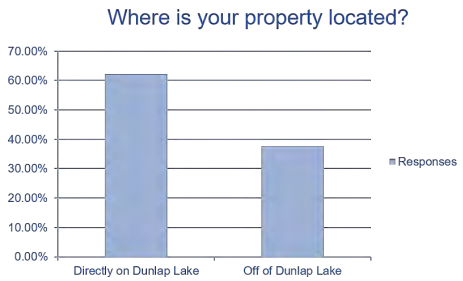
Members of the DLPOA community had the opportunity to share their opinions about the future of Dunlap Lake and their common areas through an online survey posted to the website and social media channels.

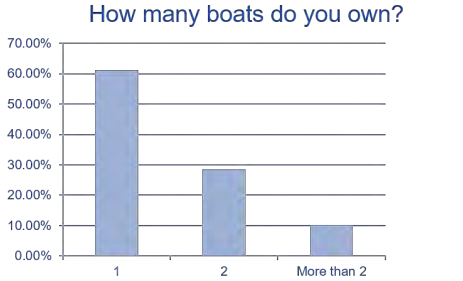
DLPOA emails and social media encouraged residents to complete the online survey on Survey Monkey via mobile device or a computer, or a paper copy could be picked up or emailed from the DLPOA Manager.

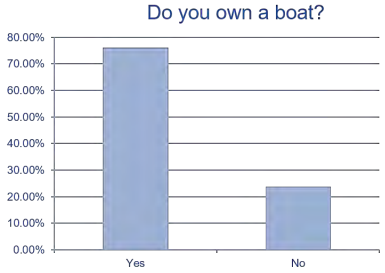
One hundred thirty-one (131) people participated, providing specific input from residents.

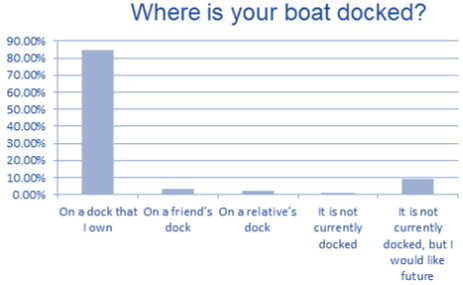
Not all answered every question. Many added written comments to individual questions. The survey participants had a greater off-lake to on-lake ratio than the in-person workshops. Therefore the results are more finely tuned to lake access, docks, boats, and priorities.

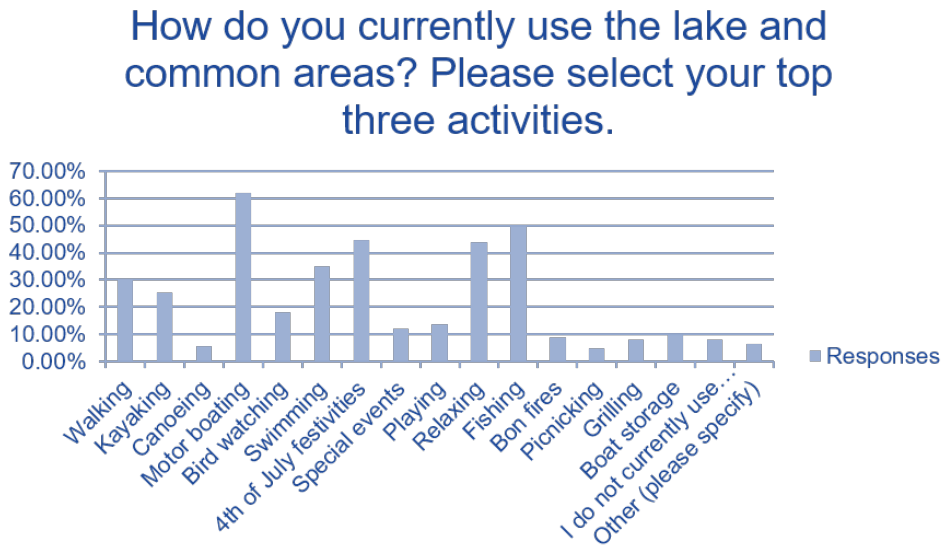
See Survey Summary on pages 10 through 13, and throughout the document. For results recorded in the full survey report please see the appendix.

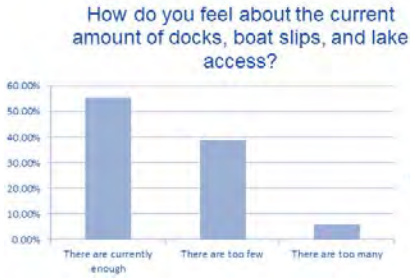


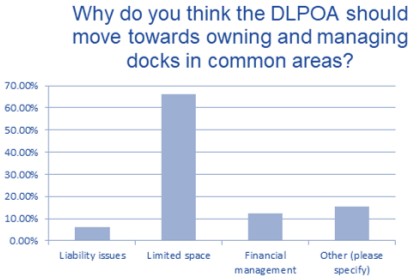


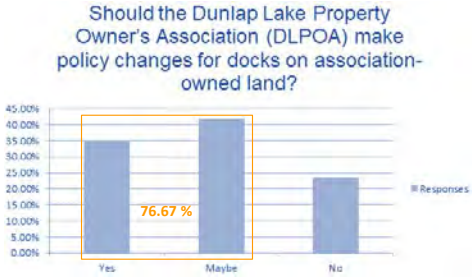


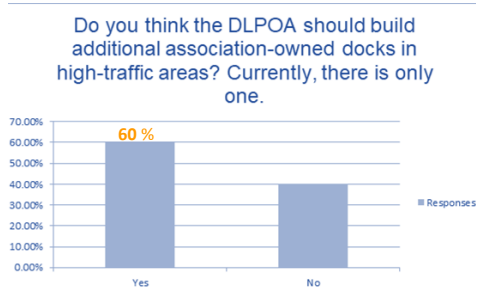


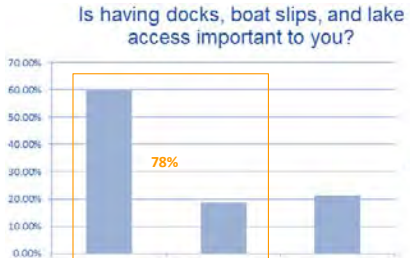


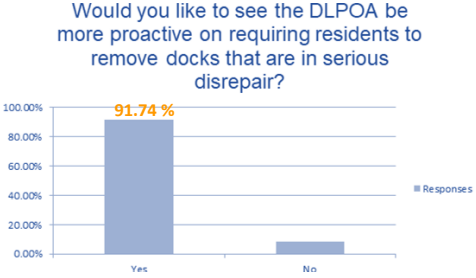

How do you feel about the current amount of docks, boat slips, and lake access?
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
There are currently enough
There are too few
There are too many

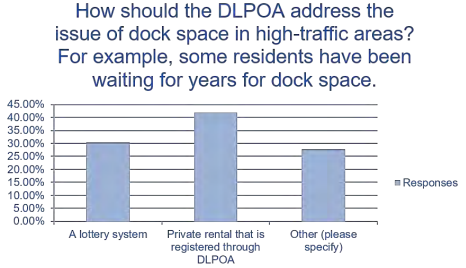

Why do you think the DLPOA should move towards owning and managing docks in common areas?
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
Liability issues
Limited space
Financial management
Other (please specify)

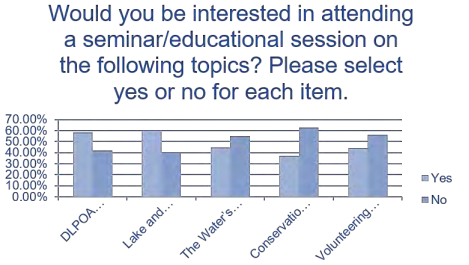

Should the Dunlap Lake Property Owner's Association (DLPOA) make policy changes for docks on association-owned land?
45.00%
40.00%
35.00%
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
76.67 %
Yes
Maybe
No
Responses

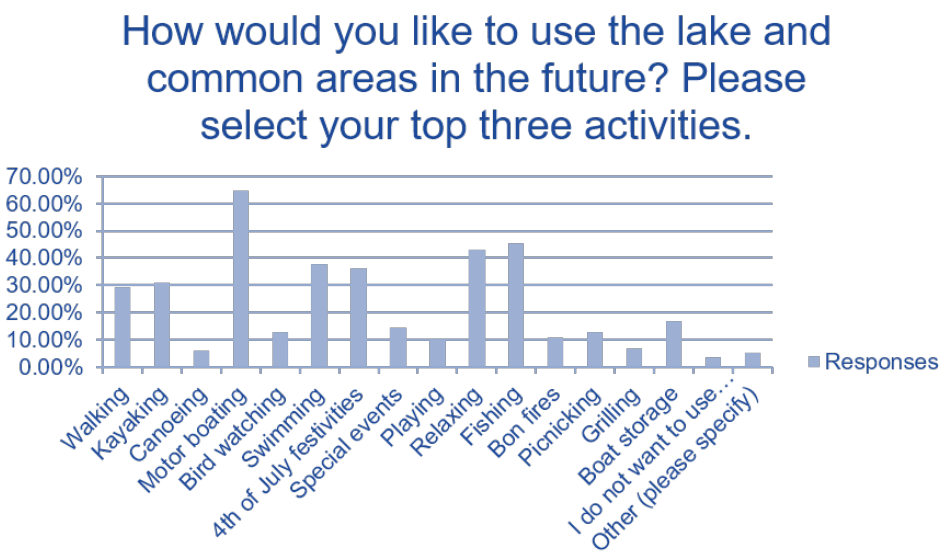

Do you think the DLPOA should build additional association-owned docks in high-traffic areas? Currently, there is only one.
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
60 %
Yes
No
Responses

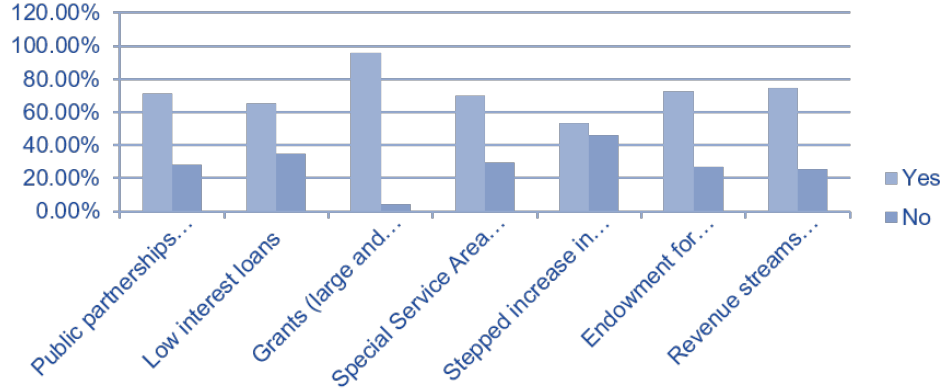

Is having docks, boat slips, and lake access important to you?
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
78%


Would you like to see the DLPOA be more proactive on requiring residents to remove docks that are in serious disrepair?
100.00%
80.00%
60.00%
40.00%
20.00%
0.00%
91.74 %
Yes
No
Responses

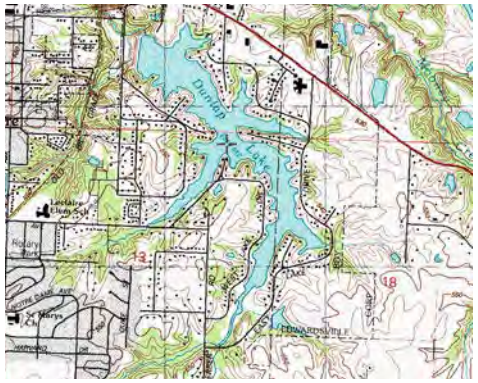

How should the DLPOA address the issue of dock space in high-traffic areas? For example, some residents have been waiting for years for dock space.
45.00%
40.00%
35.00%
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
A lottery system
Private rental that is registered through DLPOA
Other (please specify)
Responses


Would you be interested in attending a seminar/educational session on the following topics? Please select yes or no for each item.
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
DLPOA...
Lake and...
The Water's...
Conservatio...
Volunteering...
Yes
No


How would you like to use the lake and common areas in the future? Please select your top three activities.
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
Walking
Kayaking
Canoeing
Motor boating
Bird watching
Swimming
4th of July festivities
Special events
Playing
Relaxing
Fishing
Bon fires
Picnicking
Grilling
Boat storage
I do not want to use...
Other (please specify)
Responses


Should the planning team explore the following projects/funding opportunities? Please select yes or no for each item.
120.00%
100.00%
80.00%
60.00%
40.00%
20.00%
0.00%
Public partnerships...
Low interest loans
Grants (large and...
Special Service Area...
Stepped increase in...
Endowment for...
Revenue streams...
Yes
No

Dunlap Lake: Yesterday & Today



LECLAIRE, ILL., OWNED BY N. O. NELSON MFG. CO.

Overview

Often the history of how and why a community began ties the future to the foundations of its original vision. The project team assembled pieces of this history to provide insight on the DLPOA original governance, mission, and the vision for Dunlap Lake within the context of Edwardsville. The most intriguing snapshots are included below.

Edwardsville and Governors

Edwardsville has always been innovative and forward thinking. It is a county seat, seen as a vital area for civic and industry leaders. Sitting on the bluff with a strong connection to the river, innovation, education, rail, and fertile soil, it was platted for strong growth and a diverse economy. Leadership in economy, civics, and business have remained strong since its inception.

Edwardsville was incorporated in 1818, making it the third oldest city in Illinois. The first settler was Thomas Kirkpatrick who came in 1805, laid out a community and served as the Justice of the Peace. He named the community after his friend Ninian Edwards, who was territorial governor of Illinois at the time. (Illinois became a state in 1818.)

The city has cultivated five Illinois governors: the city's namesake Ninian Edwards, the territorial governor in 1809 and later served as governor from 1826-1830; Edward Coles, elected in 1822 and a strong opponent of slavery; John Reynolds, governor 1830-1834; Thomas Ford, governor from 1842-1846; and Charles Deneen, governor from 1909-1913. They have been honored by the thoroughfare, Governors Parkway, which fuels the continued growth in the city.

Two visionary developments that were originally outside city limits, the Village of Leclaire and Dunlap Lake, have been incorporated into the city.

N.O. Nelson and Leclaire

In 1890, preceding Dunlap Lake development, industrialist N.O. Nelson chose a tract of land just south of Edwardsville to locate his plumbing manufacturing company. Nelson was a visionary and is considered to be a renaissance man, years ahead of his time. He created a model "Utopian" village called Leclaire, where workers had their own home, access to schools, parks, lectures, recreation, and employment.

Nelson believed in profit-sharing and all employees had a stake in the company. Listed in 1979, the Leclaire Historic District was one of Madison County, Illinois' earliest large National Register districts. It sits due west of Dunlap Lake.

Orie T. Dunlap and the Dunlap Lake Development

In 1936, Orie Dunlap, an innovator in his own right in infrastructure and road construction, began to actualize his dream for a created lake with a neighborhood surrounding it. His vision was to provide clean air and water and recreation with all the benefits of Edwardsville's vibrant city life and amenities.

The timeline on the next page outlines the birth, construction, and further development of Dunlap Lake.

Dunlap Lake Today

For more than 80 years, the Dunlap residents have created "Lake Life" in an urban oasis. The 138-acre private lake is just east of downtown Edwardsville. The community thrives as a private residential district where residents can swim, fish, and boat. Typically, fishing tournaments are held for adults and children. Dunlap Lake also holds social events, such as holiday socials, boat parades, bonfires, and shared meals, i.e., the chicken dinner.

This plan acts as a touchstone of this lake community's input. It showcases both resident desires and the need to maintain the health and safety of the lake as an part of the watershed system for the community.


Orie T. Dunlap


Summer Recreation


Skating on the Lake


Winter Recreation

Dunlap Lake Timeline

- **Oct 1, 1936** Orie T. Dunlap, owner of Madison Construction Company, purchased a parcel of land outside Edwardsville from George Foehrkolb **to create a private lake subdivision, a "dream" Orie Dunlap had always had.**
- **Apr 1938** Dunlap purchased a second parcel of land from Edward Barnet. It was a total of 42 acres to form the lake itself.
- **Nov 1940** Phase 1 of construction began, Madison Construction Company equipment used in building the project.
- **May 1941** Phase 1 completed. No roads were built due to rations and limits on construction materials, including road oil during World War II.
- **1942** Rainwater filled Dunlap Lake within 1 year. It was originally estimated to take 2-3 years to fill it.
- **1943** Record-breaking Flood, Fear of Dam Failure: nearly 40 inches of rainfall in only 12 days, Edwardsville Sewer Reduction Plant was inundated and went off-line. Wabash Railroad station, with tracks 3ft-4ft higher than the sewer plant, has track inundated with water, rail service is suspended. **"The dam at the Dunlap lake of 125 acres has been carefully watched for several days and club members worked until 10 o'clock Monday night to increase drainage facilities at the spillway. The opening was extended and sandbagged and the level of the water was reduced about one foot during the night. The water was about five feet over the top of the drain during most of Monday. Breaking of the dam would have sent about 400,000,000 more gallons of water into the flooded Cahokia Creek bottoms."**
- **April 1946** Roads were begun in the subdivision, surveys initiated.
- **Dec 21 1946** Plat recorded with Madison County. Dunlap begins selling the 526 lots. 252 of these lots were along the 15 miles of lakefront. [Note: some have been consolidated]
- **1950** The Dunlap Lake Property Owner's Association (DLPOA) was formed. Road maintenance was major concern, so assessed **"of 1 cent per square footage of the lot, per property owner to maintain roads and lake. Funds used for dam repair, roads, moss control, and general improvement."**
- **Mar 1952** DLPOA - Dunlap Lake Property Owner Association was incorporated.
- **Nov 1954** Orie T. Dunlap dies, his four children inherit the property.
- **1977** Residents approved annexation to the City of Edwardsville so that federal and state grants could be obtained for construction of a sewer system. At least 96 septic systems were leaking and the resulting pollution threatened to make the lake unusable. "Eventually, the lake would have been destroyed." Grants provided 75 percent of the cost of the sewer system. Property owners paid for the remainder of the sewer costs and financed a water system through connection fees and surcharges.
- **Feb 1985** - Dunlap Lake Association started a newsletter so all association members would be better informed.
- **1990s** Lake was dredged.
- **Mar 2015** The ballots were cast and the property at 840 E Lake Drive was purchased from the City of Edwardsville.

1927 Map including Dunlap Lake

Orie T. Dunlap, Contractor

Orie T. Dunlap, contractor and engineer, Edwardsville, was born in St. Louis, Mo., on September 6, 1870, being a son of John H. and Martha E. (Moore) Dunlap. After receiving the rudiments of his education in the public school, he completed the same at Washington University, St. Louis, from which he graduated in 1895. After leaving school, he took employment with the St. Louis Press Brick Company, with which he remained five years, becoming manager of the business, as also of the construction department.

In April, 1898, Mr. Dunlap enlisted in Company F, 16th United States Regulars, for the war with Spain. He was wounded in both hands in the battle of Santiago, Cuba, and was honorably discharged at the close of the war.

In 1903, he came to Edwardsville to live, and, in that year, organized the Banner Clay Works, of which he became manager. This position, however, he resigned in the following year in order to begin in his present line of business, but he is still a director of the Banner Clay Works.

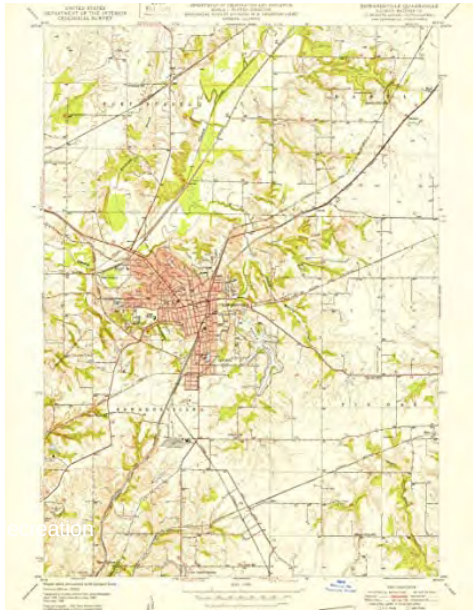
Mr. Dunlap makes a specialty of municipal work, including street paving, sewering and water works. By him the first streets in Edwardsville, Collinsville, Granite City and Madison were constructed. This work speaks for itself, being of unusual excellence both in workmanship and material, and of the many miles of street that have been constructed by Mr. Dunlap, no part has failed to come up to the contract or to give satisfaction. He was also the contractor for the outlet sewer of East St. Louis.

Rapid construction in concrete, granitoid, brick paving, re-inforced concrete, railroad work, sewers, and water works is his specialty, and he has filled contracts of this kind in all parts of southern Illinois. In fact, he is a most successful young business man, owns considerable property in Edwardsville, and is highly esteemed in commercial and other circles.

He was married in St. Louis, 1900, to Miss Clara Bockstruck, and he is the father of Helen A. and Robert B. Dunlap.

Always active in politics, his leanings are strongly republican. He is a Knight of Pythias, a member of the Royal Arcanum, and a veteran of the Spanish-American war.

Orie T. Dunlap.



Location

1950s Dunlap Lake

Early Years at Dunlap Lake

Summary of Analysis: Indian Cahokia Creek Watershed

What is a Watershed?

A watershed is an area of land that drains into a common water body. Think of it like a bathtub: when a drop of water hits anywhere in the tub, it eventually finds its way to the drain (the lowest point). Healthy watersheds mean that people have clean drinking water, flooding in appropriate locations, thriving wildlife, and recreation opportunities.

Indian-Cahokia Creek Watershed (ICC) Plan

The Madison County Stormwater Management Plan sets county-wide policies to address drainage and provides recommendations for each watershed in the County based on individual watershed plans. The ICC Watershed Plan was commissioned by Madison County in 2015 to promote a healthy, functioning watershed. The planning process involved surveys, public meetings, technical analysis, and recommendations formed by a technical advisory committee and a stakeholder committee. The plan is a voluntary document that provides guidance to governments and residents on flood reduction and water quality in the ICC Watershed. The document can be found on the Madison County Planning and Development website: https://www.co.madison.il.us/departments/planning_and_development/stormwater_management_and_watershed_plans.php

Key Watershed Issues

Through the ICC Watershed Plan and its research, the following issues were identified, which were supported in this planning process. Using the watershed scale to begin the analysis for Dunlap Lake is the first and largest scale the DLPOA will study at this time.

Flooding

- **Prevalent flooding, within and outside floodplains**
- **Undersized stormwater infrastructure**
- **High water table/groundwater**
- **Large areas of impervious cover**
- **Logjams and beavers**
- **Sediment deposition:** Dredging in Dunlap Lake and Holiday Lake, as well as countless detention basins, is needed to maintain water storage capacity. Dredging can be very expensive.
- **Dam and spillway maintenance**: The dams and spillways at Holiday Lake and Dunlap Lake require costly ongoing maintenance to prevent failure.
- **Backflow preventer maintenance**

Water Quality

Drinking water source protection: Communities such as Edwardsville, and many individuals in the unincorporated county, use well water as their water supply.

- **Total Suspended Solids (TSS)**
- **Soil erosion** contributes large amounts of sediments to streams and waterways.
  - From streambanks, stream channels, and lake shorelines: Many residents in the watershed have had yards collapse into a stream because of bank and channel erosion. Logjams can exacerbate the problem, causing scouring and bank collapse.
  - From farmland: Valuable topsoil often erodes from the land when the soil is exposed.
  - From construction sites: Improperly stored earth at construction sites is highly prone to erosion.
- **Sediment** is highly prevalent in streams and runoff throughout the watershed. When soil erodes from the landscape, it ends up as sediment and silt in streams. The soil carries other pollutants such as phosphorus, iron, and manganese with it. When sediment is deposited in streams and detention basins, it forces the water levels upwards, which can lead to flooding.
- **Pollutants**
  - Phosphorus is carried into waterways. It often comes from agricultural fertilizer or lawn fertilizer. It can lead to harmful algae blooms.
  - Iron is found in high levels in certain local soils. It can be toxic to aquatic plants and animals.
  - Chloride application and storage of road salt is a concern, increasing treatment costs and are harmful to aquatic life in waterways.
  - Researchers have advised to only catch and release fish.

- Low levels of mercury in a large bass in Dunlap Lake by Southern Illinois University Edwardsville (SIUE) researchers. Residents have been encouraged to catch and release fish.
- **Low Dissolved Oxygen** levels in water cannot support aquatic life. Low dissolved oxygen levels are often a result of algae growth that uses up oxygen in the water, which is caused by high levels of nutrients such as nitrogen and phosphorus.
- **Sewage contamination from private systems**
- **Infiltration into/out of aging pipes:** Some pipes in Edwardsville are over 100 years old. Sewage can leak out of sewer pipes, and groundwater leak into water supply pipes.
- **Livestock waste management**
- **Litter and dumping**
- **Algae blooms and fish die-outs** in streams and lakes, including Dunlap Lake and Holiday Lake, occur as a result of excess amounts of fertilizer in the water.
- **Changes to stream velocity and lack of stream-side (riparian) vegetation:** Indian Creek, Cahokia Creek, and the Cahokia Diversion Channel are listed on the 2018 303(d) List for these impairments.

Land Cover and Development Issues

- **Aged planned development:** Many older developments in the watersheds did not include adequate drainage infrastructure, which has exacerbated water quality and flooding issues.
- **Poorly planned development:** New development often increases the speed of stormwater runoff and does not provide for long-term maintenance of drainage infrastructure, even if it meets local building and stormwater requirements.

Habitat Issues

- **Poor riparian condition:** The area either side of a stream is known as the riparian area. This area is considered to be in poor condition when there is not enough vegetation to support the streambanks and provide shade to the stream. These conditions are also important for wildlife.
- **Invasive species** crowd out native species such as plants that protect streambanks from erosion.
- **Unprotected habitat for endangered species:** Where their native habitat is not preserved, threatened and endangered species cannot be expected to thrive over the long term.

Organizational Needs/Issues

- Lack of detention basin maintenance: Detention basins are often not being maintained/dredged to maintain their sediment storage and water storage capacities.
- **Lack of code enforcement:** In some cases, municipal stormwater, development, subdivision, and floodplain codes are not being fully enforced.
- **Lack of funding:** Funding from government entities and other groups is often needed to maintain and expand stormwater infrastructure and improve water quality.
- **Need for strong partnerships:** A network of partner organizations/ groups is needed to make large strides towards addressing flooding and other issues in the watersheds.

Information and Outreach Issues

- **Need for communication and collaboration.** Communication about funding and technical resources is sometimes lacking between potential partners.
- **Need for continued outreach to key stakeholders and residents.** A large group of landowners and other key stakeholders working together is needed to make progress towards addressing flooding and other issues, especially those in the same subwatershed as the DLPOA.

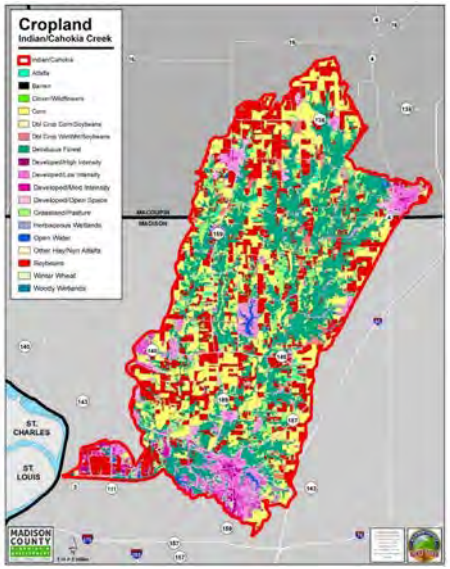
ICC Watershed Constraints that involve Dunlap Lake

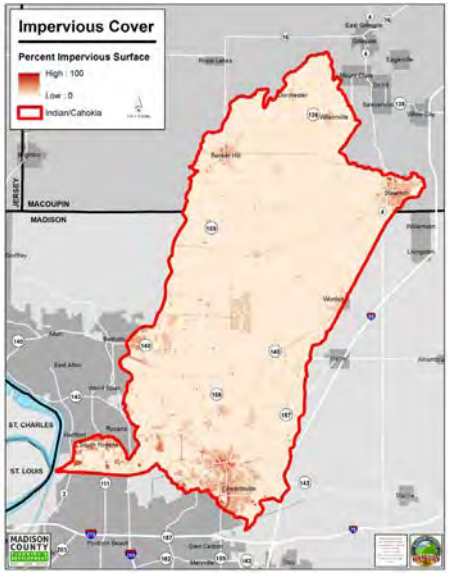
- **Increase of stormwater in volume and frequency.**
- **Less absorption and storage for stormwater available due to concentrated development.**
- **Decrease in tree canopy and forest land.**
- **Increased nutrient, pollutants, and waste in water.**
- **Aging infrastructure: dam and spillway.**
- **Aging sewer and stormwater infrastructure.**
- **Aging systems on private property.**
- **Increase of sediment, silt, and suspended solids.**
- **Decrease in beneficial ecosystem factors.**
- **Increase in flood frequency.**
- **Increase in herbicide and pesticides.**
- **Infrequent funding opportunities.**
- **Increase in invasive flora and fauna.**

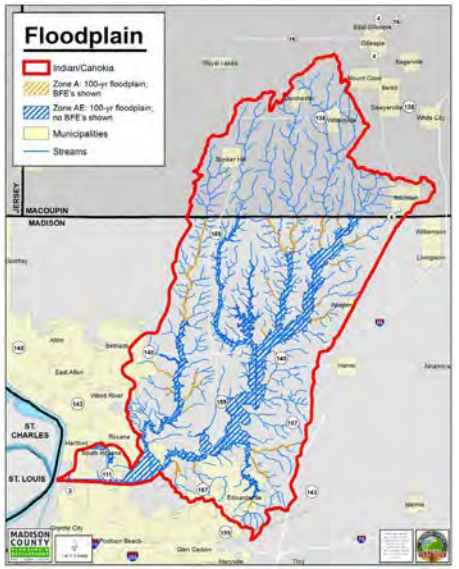
ICC Watershed Opportunities that involve Dunlap Lake

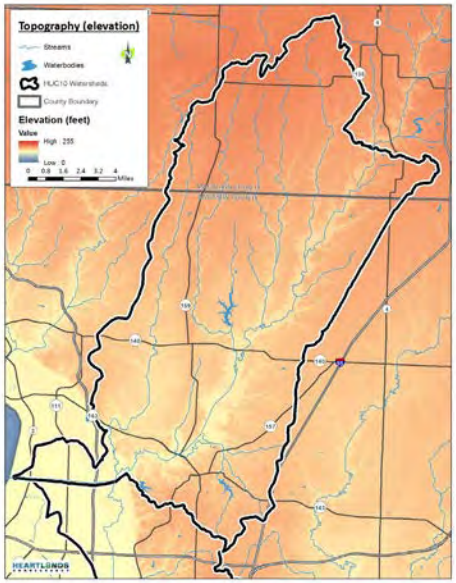
- **Form beneficial relationship with collaborative partners and cooperating agencies.**
- **Leverage and layer projects to benefit DLPOA community as well as watershed.**
- **Develop a resilient community-wide plan for the longevity of the lake and its systems - dam, spillway, and health of the water.**
- **Increase the biodiversity of lake.**
- **Increase flood and storm resiliency.**
- **Build community stewardship for lake.**

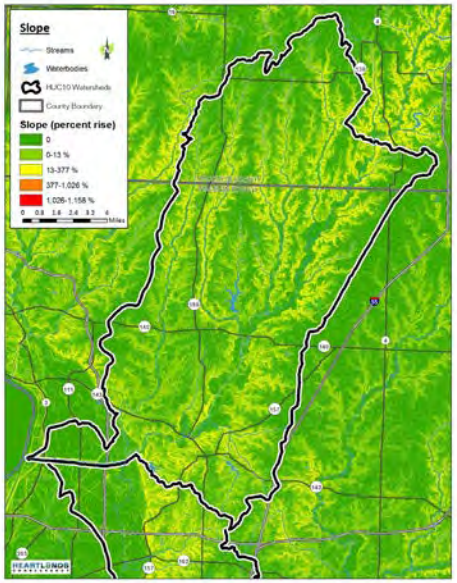

Land Use/Land Cover
Indian/Cahokia Creek
Open Water
Rural Grassland
Low Density Urban
Medium/High Density Urban
Barren
Forest
Agriculture
Wetland
1 in = 3 miles
JERSEY
MACOUPIN
MADISON
ST. CHARLES
ST. LOUIS
MADISON COUNTY

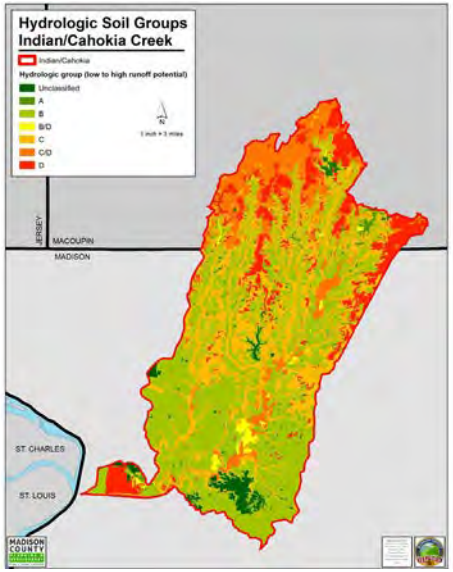

Cropland
Indian/Cahokia Creek
Indian/Cahokia
Alfalfa
Barren
Clover/Wildflowers
Corn
Developed/High Intensity
Developed/Low Intensity
Developed/Med Intensity
Developed/Open Space
Grassland/Pasture
Herbaceous Wetlands
Open Water
Other Hay/Non Alfalfa
Soybeans
Winter Wheat
Woody Wetlands
MACOUPIN
MADISON
ST. CHARLES
ST. LOUIS
MADISON COUNTY

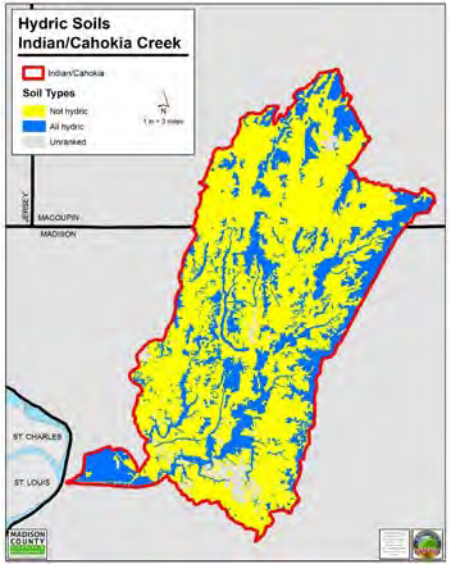

Impervious Cover
Percent Impervious Surface
High : 100
Low : 0
Indian/Cahokia
JERSEY
MACOUPIN
MADISON
ST. CHARLES
ST. LOUIS
MADISON COUNTY

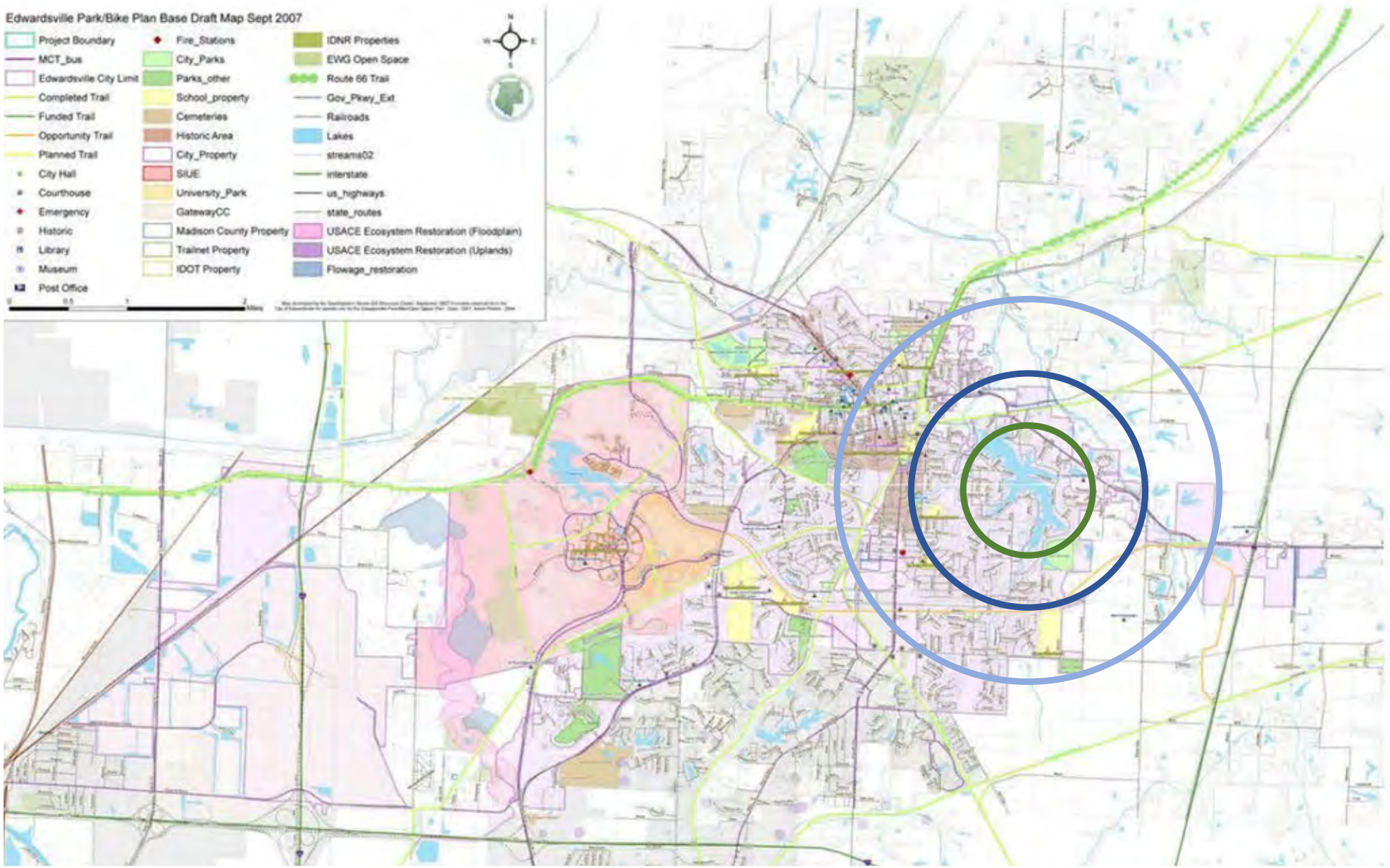

Floodplain
Indian/Cahokia
Zone A: 100-yr floodplain; BFE's shown
Zone AE: 100-yr floodplain; no BFE's shown
Municipalities
Streams
JERSEY
MACOUPIN
MADISON
ST. CHARLES
ST. LOUIS
MADISON COUNTY


Topography (elevation)
Streams
Waterbodies
HUC10 Watersheds
County Boundary
Elevation (feet)
Value
High : 255
Low : 0
HEARTLANDS

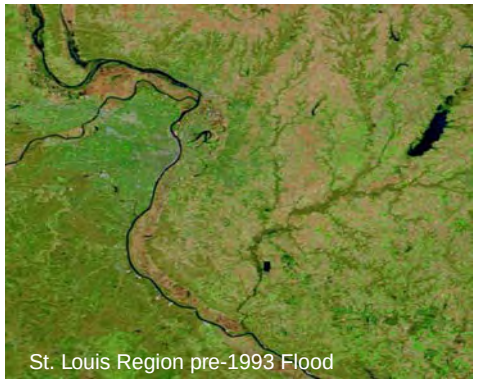

Slope
Streams
Waterbodies
HUC10 Watersheds
County Boundary
Slope (percent rise)
0
0-13 %
13-377 %
377-1,026 %
1,026-1,158 %
HEARTLANDS


Hydrologic Soil Groups
Indian/Cahokia Creek
Indian/Cahokia
Hydrologic group (low to high runoff potential)
Unclassified
A
B
B/D
C
C/D
D
1 inch = 3 miles
JERSEY
MACOUPIN
MADISON
ST. CHARLES
ST. LOUIS
MADISON COUNTY


Hydric Soils
Indian/Cahokia Creek
Indian/Cahokia
Soil Types
Not hydric
All hydric
Unranked
1 in = 3 miles
JERSEY
MACOUPIN
MADISON
ST. CHARLES
ST. LOUIS
MADISON COUNTY


Edwardsville Park/Bike Plan Base Draft Map Sept 2007
Project Boundary
MCT_bus
Edwardsville City Limit
Completed Trail
Funded Trail
Opportunity Trail
Planned Trail
City Hall
Courthouse
Emergency
Historic
Library
Museum
Post Office
Fire_Stations
City_Parks
Parks_other
School_property
Cemeteries
Historic Area
City_Property
SIUE
University_Park
GatewayCC
Madison County Property
Trailnet Property
IDOT Property
IDNR Properties
EWG Open Space
Route 66 Trail
Gov_Pkwy_Ext
Railroads
Lakes
streams02
interstate
us_highways
state_routes
USACE Ecosystem Restoration (Floodplain)
USACE Ecosystem Restoration (Uplands)
Flowage_restoration
N
W
E
S
0
0.5
1
2
Miles

Summary of Analysis Dunlap Lake & Neighborhood


St. Louis Region pre-1993 Flood


St. Louis Region during the 1993 Flood


South End of Dunlap Lake with Silt

Lake Overview

Dunlap Lake was created in 1939 by damming Mooney Creek with an earthen dam 700 ft long and 30ft high. The lake is surrounded by homes, common areas, and Association properties that house critical lake management infrastructure.

There are three major issues at Dunlap Lake. The first is the critical maintenance that must be completed to meet the standards of the Illinois Department of Natural Resource (IDNR) dam and spillway inspections and regulations. The DLPOA is concerned about the safety of the earthen dam, noting that the amount and velocity at which water enters the lake has increased. Rip-rap has been added to the dam to support it. There is an emergency plan in place in case the dam is ever breached.

The other major issues are that the lake is filling up with silt (i.e., reducing storage capacity and increasing flood risk), and that the lake has water quality problems, which can lead to potential problems, such as algae blooms.

Severe erosion exists south of the lake, which contributes large amounts of sediment to the lake. Besides sediment, other water quality concerns are the nutrients (e.g., phosphorus, nitrogen) that cause algae blooms— including at least one instance of a harmful algal bloom in the lake. Also, runoff pollutants, waste, herbicides, and pesticides have degraded water quality.

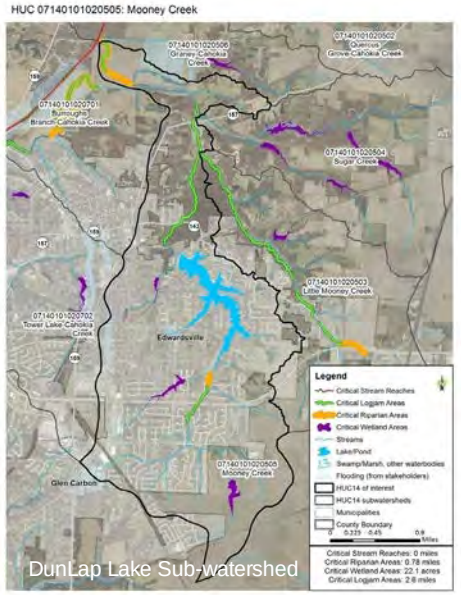
It has been reported that approximately 20,000 cubic yards of silt and sediments have been added to the lake over the last 15 years. The problem with the sediment entering Dunlap Lake is that it is very fine-textured subsoil with fine clay particles from farmland upstream. Those particles do not settle out in streams; they only start to settle when they reach the lake (and even then not all will settle out).

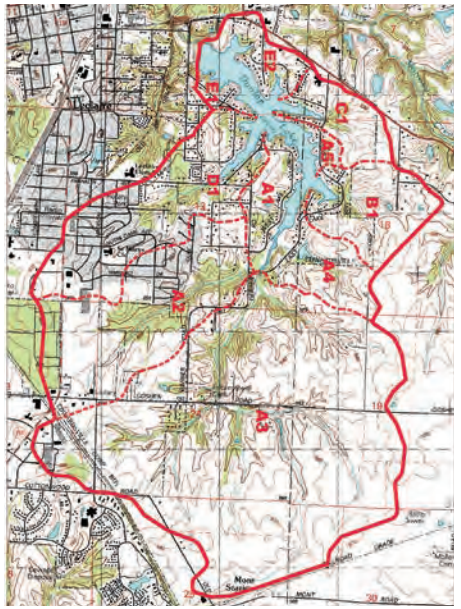
For more detailed problems and solutions please review the Madison County Indian-Cahokia Creek (ICC) Watershed Plan.

These reports along with this plan should be used as a basis to partner with city, county, and adjacent HOAs in the larger context area to leverage solutions, resources, projects, and funds. Suggestions of partners, and funding opportunities are found Implementation Strategy section of this plan and in the resources.

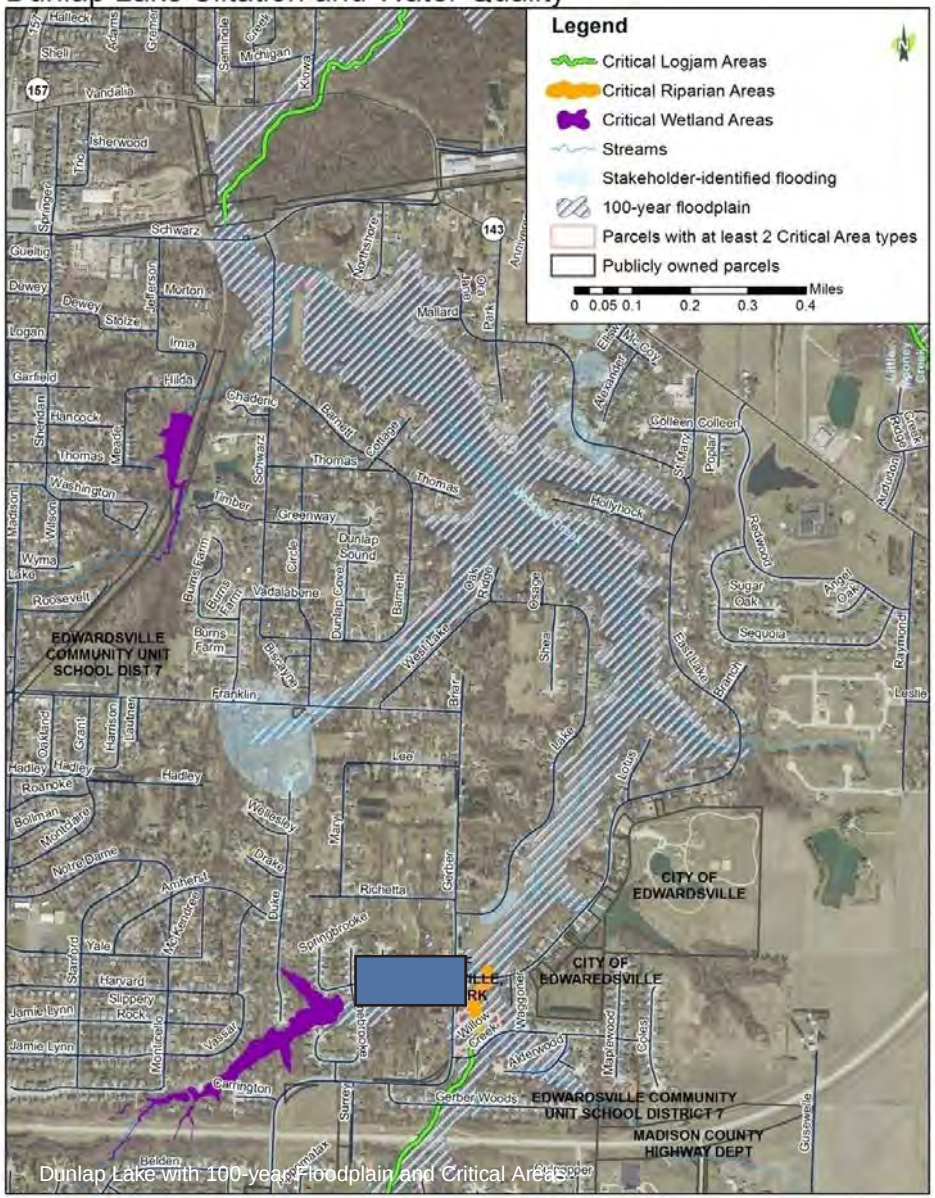
Further detail may be found in the later sections paired with recommendations.

The DLPOA, its committees and the engineers hired to help navigate the options all agree that this issue is a high priority for the lake. It is also important to mention that this initiative was determined to be a high priority project with the board and residents.





Dunlap Lake Siltation and Water Quality



Dunlap Lake with 100-year Floodplain and Critical Areas

Dunlap Lake & Neighborhood Constraints:

- Increase of stormwater in volume and frequency. Increased flooding.
- Deferred dam updates.
- Narrow spillway. Needs widening.
- Increase of sediment, silt and suspended solids: No place to put removed materials.
- Increased nutrient, pollutants, and waste in lake and property runoff. Increase in herbicide and pesticides. Poor water quality more frequent.
- Aging infrastructure: dam, silo, and spillway.
- Aging sewer and stormwater infrastructure
- Aging common and private docks.
- Lake of native beneficial plantings in general: lack of riparian/shoreline plantings.
- Rip-rap is go-to shoreline practice.
- Logjams upstream in Mooney Creek.
- Lack of wetland or marsh area.
- Steep slopes and undulating topography.
- Increase in invasive species.
- Decreased and aging tree canopy.
- Unnamed streams/culvert erosion.
- No funding cost-share program.
- Increase in shoreline and topsoil erosion.
- Increased ponding in common areas.
- Unmarked intersections crossings and Rules and regulations unclear.
- Maintenance costs for mowing, rip-rap.

Indian-Cahokia Creek Subwatershed HUC 071401020505 (pictured left):

Mooney Creek - Edwardsville area

This fish-shaped subwatershed drains the eastern portion of Edwardsville and is predominately urban. Illinois State Routes 157, 159, and 143 run through it.

Area: 3,964 acres
Named streams: Mooney Creek
Counties: Madison
Municipalities: Edwardsville and Glen Carbon
Townships: Edwardsville, Pin Oak

Critical Logjam Areas: 13,947 feet (2.6 miles) of Critical Logjam Area was identified in areas along Mooney Creek in the subwatershed.

Critical Stream Reaches: No Critical Stream Reaches were identified.

Critical Riparian Areas: 4,094 feet (0.78 miles) of Critical Riparian Areas were identified in two locations along Mooney Creek: one in an agricultural area of the northwestern portion, and the other in an urban area of the southern portion of the subwatershed.

Critical Wetland Areas: 22.1 acres of Critical Wetland Areas were identified. Two of the areas were in urban locations, and the third was in an agricultural area in the southern portion of the subwatershed.

Flooding locations were identified by stakeholders in the eastern-central portion of the subwatershed.

Dam, spillway, and sediment issues in Dunlap Lake were identified by residents.

Summary of Challenges & Opportunities

These challenges and opportunities were developed from information collected at the interviews, Board meetings, workshops, resident surveys, and review of DLPOA materials. They are grouped by subject matter, but are not in any particular order of priority.

Lake & DLPOA Access

Challenges:

- Unmarked crossings and lanes.
- Need more regulatory signage.
- Unclear rules on “guest privileges”.
- Most requests at the smallest common areas
- Off-lake resident access is restricted to assigned area.
- Concern over public access to private lake after improvements.
- Public trespassing (perceived and real).

Opportunities:

- Walking paths in all common areas
- Replace goat-paths with accessible paved trails.
- Clarify guest privileges/access.
- Develop Guest Pass Program.
- Support complete streets ordinance.
- Support city to upgrade crossings.
- Access fee for a slips in future marinas.
- Connect to trails.
- Address accessibility where possible.

Stormwater

Challenges:

- Poor lake water quality.
- Increase in volume and speed of stormwater
- Increase in flooding events
- Poor drainage in low areas
- Lack of regular dredging strategy
- Increase/build-up of sediment and silt
- Loss of quality tree canopy
- Lack of quality systems to capture, filter, or absorb stormwater
- Potential lead deep in silt.
- Increase of development in the watershed causing more run-off.

Opportunities:

- Prioritize “green” stormwater management approaches.
- Retain, filter, absorb, and slow stormwater runoff.
- Develop BMP guidelines.
- Support and develop beneficial landscape guidelines.
- Update herbicide and pesticide restrictions.
- Include beautification projects with as many native plantings and green infrastructure features as possible.
- Support residential tree planting.
- Continue regular testing for lake water quality.
- Support shoreline buffer strips
- Use parkways to moderate erosion.
- Increase beautification through green infrastructure and beneficial plantings.
- Increase trees for future canopy on and around all DLPOA properties.

Infrastructure

Challenges:

- No foreseeable federal repair funding due to DLPOA private ownership.
- Residents do not see infrastructure repairs as a responsibility.
- Potential for liability, litigation, or state liens if there is infrastructure failure.
- Updated standards and regulations
- Spillway is undersized.
- IDNR regulates private infrastructure.
- Understanding of technical details.
- Not enough space for all sediment material once it is removed from lake.

Opportunities:

- Complete spillway expansion.
- Seek partners to begin deferred updates, capital maintenance, and repairs to lake infrastructure.
- Update dredging plan and phasing.
- Investigate positive uses for dredge materials once removed from lake.
- Consider combinations of all funding options: loans, grants, etc.
- Explain to residents that eliminating liability, risk of life loss, and emergency failure repair, or state mandated lien due to required repairs - is beneficial to property values and equity.
- Develop an infrastructure maintenance plan and endowment fund.
- Develop detailed Capital 5-year Plan
- Maintained infrastructure - increases in property values.
- Consider wetland restoration as part of stormwater infrastructure.

Lake & Streams

Challenges:

- Lake shoreline destabilization
- Increased stream and culvert erosion
- Unnamed streams/culverts eroding
- Steep banks and turfed edges
- Private property stream, slope, and shoreline erosion
- Invasive species on land and in water
- Poor shoreline/riparian flora
- Dumping of fish and animal waste.
- Poor water quality as runoff into lake contains heavy metals and toxins
- Lake is getting shallower from sediment and silt.
- Persistent logjams upstream - including those caused by dumping large items, wildlife, rain events, flooding, etc.

Opportunities:

- Consider all methods of keeping stormwater, sediment, silt, and trash out of lake to begin with tools, wetlands, riparian, etc.
- Consider other methods than rip rap for shoreline stabilization.
- Preserve green and water viewsheds.
- Have more trash cleanups.
- Increase biodiverse, high-quality shoreline habitat.
- Begin process to name constant streams. Once named they can receive public funding for larger interventions.
- Support beneficial wildlife
- Develop active and passive water aeration methods. Consider creating water features as water storage: riffled wider tributaries, stone edged shoreline, cascades, etc.

DLPOA Properties

Challenges:

- Various sizes and capacity of areas
- No detailed plans for common areas
- No formal DLPOA gathering space
- Lack of interpretive and regulatory signage
- Shorelines in poor quality.
- Invasive Plants
- Varied topography
- Floodplain and floodway boundaries
- Investigate deed restrictions
- Private docks on DLPOA common grounds
- Board needs better capital plans for common areas
- Infrastructure on properties is DLPOA's responsibility.

Opportunities:

- Remove or amend all extraneous or convoluted liability issues.
- Develop detailed plans on properties.
- Clarify "access", "use", and amend "assignment" of common areas especially for off-lake members.
- Study private dock structures on DLPOA properties.
- Amend to define common areas for DLPOA provided amenities only.
- Consider new uses for parkways.
- Develop modes of care and schedule for maintenance for all properties to increase efficiency.
- Develop incentive/disincentives for private docks on key common areas.
- Consider special assessment per area.
- Grow more volunteer days and city/ county cleanup assistance.

Dock & Other Amenities

Challenges:

- No additional revenue sources
- No common area marina(s)
- No design standards or guidelines
- Unclear ownership of private docks and/or history of transfers
- The selling private dock structures on DLPOA properties.
- Many docks are old or not well maintained.
- Inefficient layout of docks and slips
- Not all docks are used
- Getting old dock owners to transition.
- No incentive/disincentive to repair, maintain, or move docks.

Opportunities:

- Continue and expand existing events.
- Consider Seasonal pop-up businesses
- Develop design guidelines and maintenance standards.
- Develop shared dock agreement for private docks on private property.
- Review and implement new dock and wait-list policies for all residents.
- Require that all docks and boats be registered and meet maintenance standards and design guidelines.
- Develop marina condo models.
- New marina slips: off-lake residents get priority for slips in the marina.
- Marina members to pay an annual slip fee, much like a slip in Carlyle Lake or Alton Marina.
- Collect ownership documentation of all structures on lake shoreline.
- Sunset unused common area docks.

Partnerships

Challenges:

- DLPOA has been trying to do it alone.
- Unable to leverage others resources
- No partnership agreements with adjacent HOAs.
- No shared equipment with others.
- No regular maintenance arrangement with City or County.
- Streets are public and snow routes.
- No philanthropy group for the lake.
- Update emergency plan.
- No seasonal vendors

Opportunities:

- Create "Dunlap Friends Society" as tax deductible philanthropy 501c(3).
- Encourage fees for use or volunteer hours to count towards grants.
- Residents must register a shared-dock agreement with the DLPOA.
- Adoption of plan with city and county.
- Seek multiple funding sources Collaborate with City, County, & State as on-going partners.
- Conduct fundraisers of all scales.
- Work with adjacent HOAs on stormwater and environmental projects.
- Coordinate update with the Madison County's Hazard Mitigation Plan.
- Support county and city ordinances affecting stormwater issues.
- Continue to work with City/IDNR/ County on all regulatory needs.
- Develop multiple new DLPOA revenue sources
- Consider vendor and revenue sources.
- Encourage partnership with Master Naturalist and Gardeners.

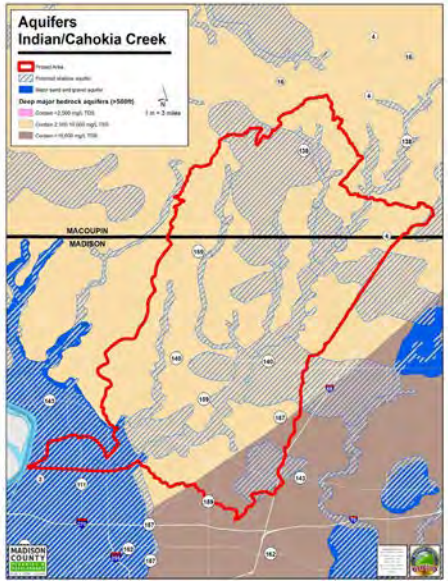
Governance & Fiscal

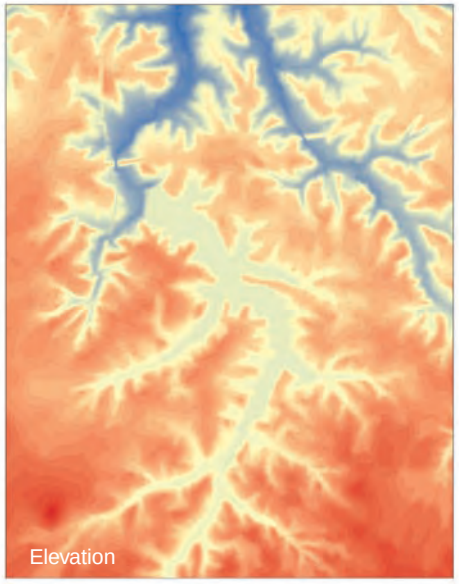
Challenges:

- Fear of DLPOA assessments
- Capacity for funding maintenance, repairs, infrastructure, improvements, and beautification.
- Governance with unclear policies.
- Residents are only willing to invest in the lake if there is equity return.
- DLPOA has been unsuccessful in passing a vote for required maintenance, repairs, etc.
- Perception that residents can "opt in and out" of the DLPOA.
- The annual assessments have not increased in proportion with the costs of maintaining the Association's infrastructure.

Opportunities:

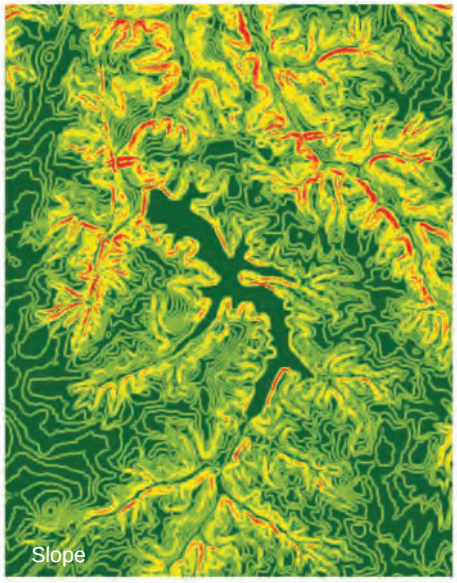
- Remain in good standing to seek funding opportunities
- Amend governance document to address current needs; amend outdated policies; and accept master plan recommendations
- Continue Zoom meeting access
- Post all plans and studies online
- Develop equitable fee structure and formulas to be developed that can sustain the true costs of the DLPOA's responsibilities.
- Develop new agreement templates.
- Review definitions of what each budget covers: annual maintenance, operating budget, capital improvements, and add infrastructure repair and maintenance endowment.

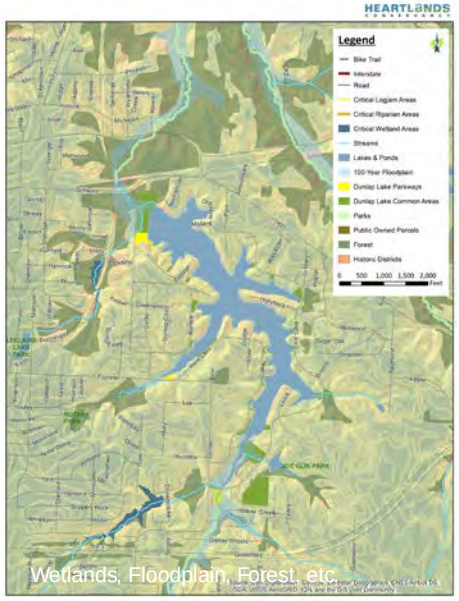

Aquifers
Indian/Cahokia Creek
MACOUPIN
MADISON


Elevation

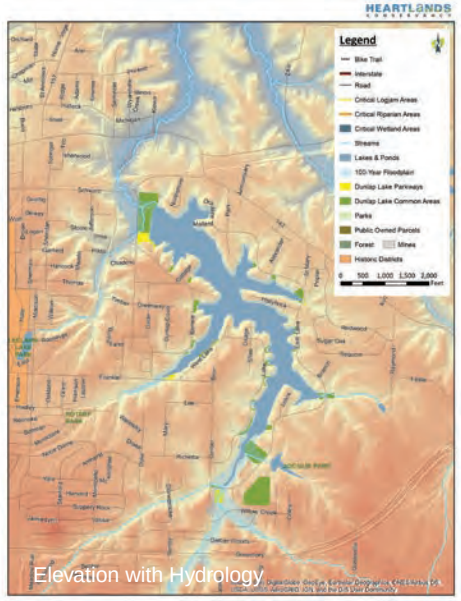

Geomorphology


HEARTLANDS
Legend
Historic District, Public Lands, and Trails


Slope


HEARTLANDS
Legend
Wetlands, Floodplain, Forest, etc.


HEARTLANDS
Legend
Hydrology, Streams, Lake, & Floodplain

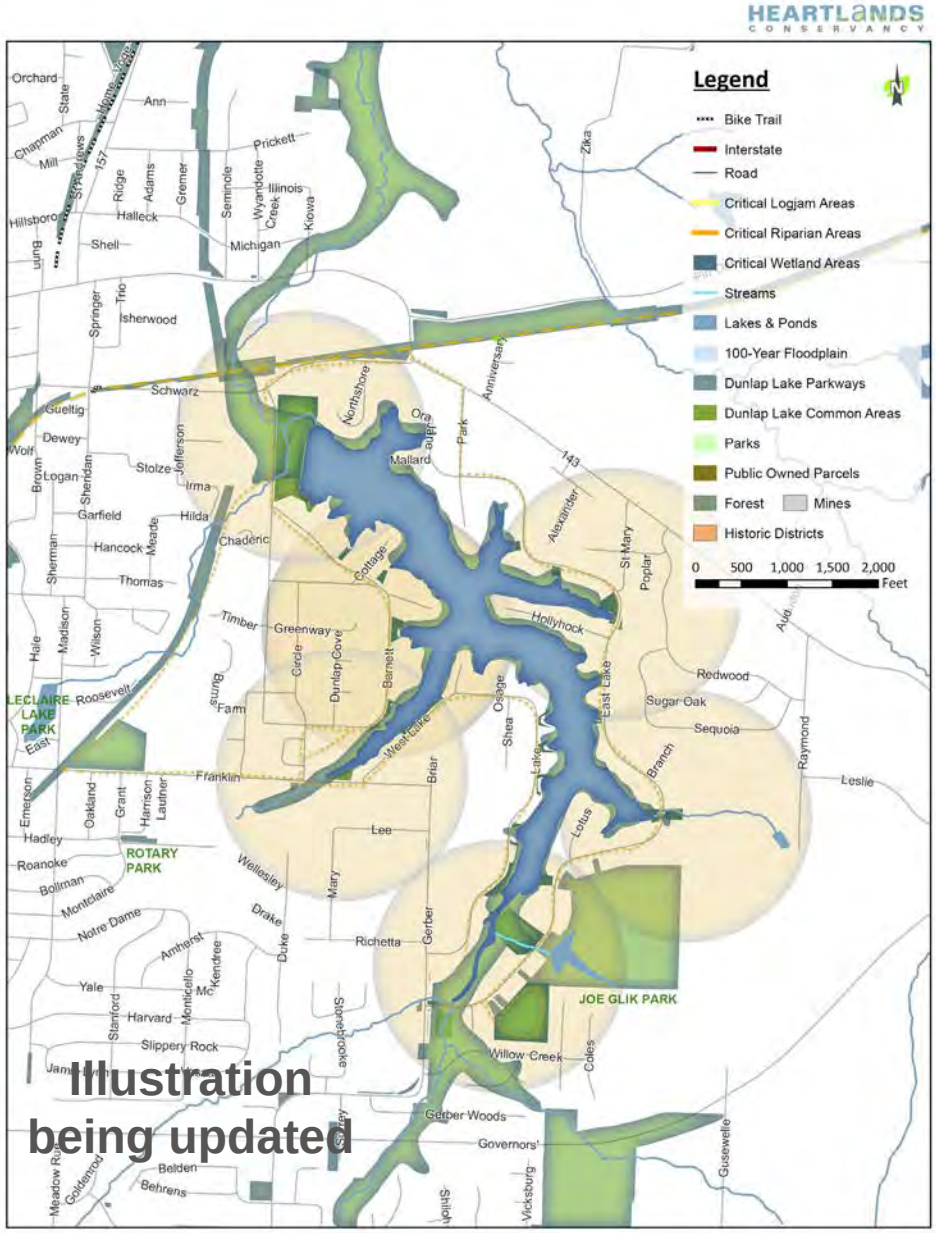

HEARTLANDS
Legend
Elevation with Hydrology


Dunlap Lake Owned Parcels
Legend
Dunlap Lake Owned Parcels
DLPOA Owned Properties


HEARTLANDS CONSERVANCY
Legend
Bike Trail
Interstate
Road
Critical Logjam Areas
Critical Riparian Areas
Critical Wetland Areas
Streams
Lakes & Ponds
100-Year Floodplain
Dunlap Lake Parkways
Dunlap Lake Common Areas
Parks
Public Owned Parcels
Forest
Historic Districts
Bike Trails, Parks, & DLPOA Properties


HEARTLANDS CONSERVANCY
Legend
Logjam, Wetlands, Floodplain & Properties


HEARTLANDS CONSERVANCY
Legend
Review of Ownership


HEARTLANDS CONSERVANCY
Legend
Bike Trail
Interstate
Road
Critical Logjam Areas
Critical Riparian Areas
Critical Wetland Areas
Streams
Lakes & Ponds
100-Year Floodplain
Dunlap Lake Parkways
Dunlap Lake Common Areas
Parks
Public Owned Parcels
Forest
Mines
Historic Districts
0 500 1,000 1,500 2,000 Feet
ROTARY PARK
JOE GLIK PARK
LECLAIRE LAKE PARK East
Illustration being updated

Vision

The vision and a series of goals provide a greater overall guidance on the site specific manner in which to realize this plan. These were developed through meetings listening to the DLPOA board and residents.

The goals in this plan are intended to be broad, inclusive statements that are not time specific, and serve to guide the policies and direction of the Dunlap Lake Property Owner's Association Master Plan. The themed recommendations that follow, when completed, will serve to achieve this community vision.

Vision

Dunlap Lake is the focal point of our community and we all share the responsibility of maintaining it. We will build upon the community's original legacy and preserve the lake's character and environs, offering abundant recreational amenities for our residents.

The Dunlap Lake Property Owner's Association, as steward of both natural and financial resources, works to give access to all members and to maintain Dunlap Lake as a safe, inviting community.

Goals

The following goals guide a diverse, multipurposed, environmentally sound future for all association-owned properties, Dunlap Lake and neighborhood.

The Dunlap Lake Property Owner's Association Master Plan

- Will **provide access and amenities for the private lake for all** its residents and their guests, while enhancing the beauty and natural resource integrity of the city and region.
- Will demonstrate **safe, strong environmental stewardship through the care and maintenance** of the lake, its environs, and applying best management practices for stormwater, water quality, habitat, and native landscape beautification initiatives.
- Will embrace the **principles of sustainability and resiliency, and will** preserve and maintain the built and natural systems of the lake.
- Will **protect the lake and creeks, including shorelines**, wetlands, high infiltration areas, and associated vegetative buffers to maintain high water quality, manage water quantity and sustain recreation.
- Will foster the **vibrant, healthy, and active lifestyle** of Dunlap lake and the community.
- Will provide a variety of passive and active recreation uses, and outdoor venues for neighbors to come together for special events, holidays, and **gatherings to celebrate the Dunlap Lake life**.

And, in so doing, the Association will:

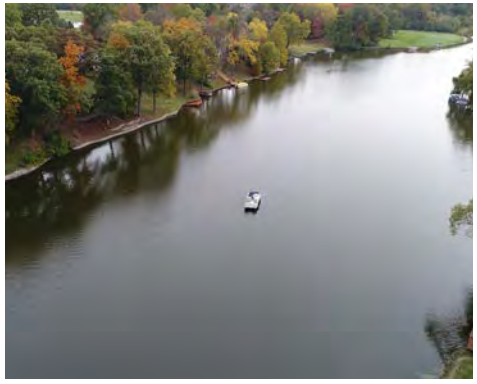
Be well-managed, maintained, governed, and financed based **an equitable partnership between the residents of Dunlap Lake, the DLPOA Board, and other partners** as needed.

Address the needs of all property owners, residents, DLPOA employees, and volunteers with transparency, respect, honesty, dignity, and fairness.

Promote principles of **stewardship, shared responsibility, and volunteerism** among the residents and their DLPOA to govern implementation and management of this plan.

Correlation of Goals and Themes of Priorities and Recommendations

Context & Themes



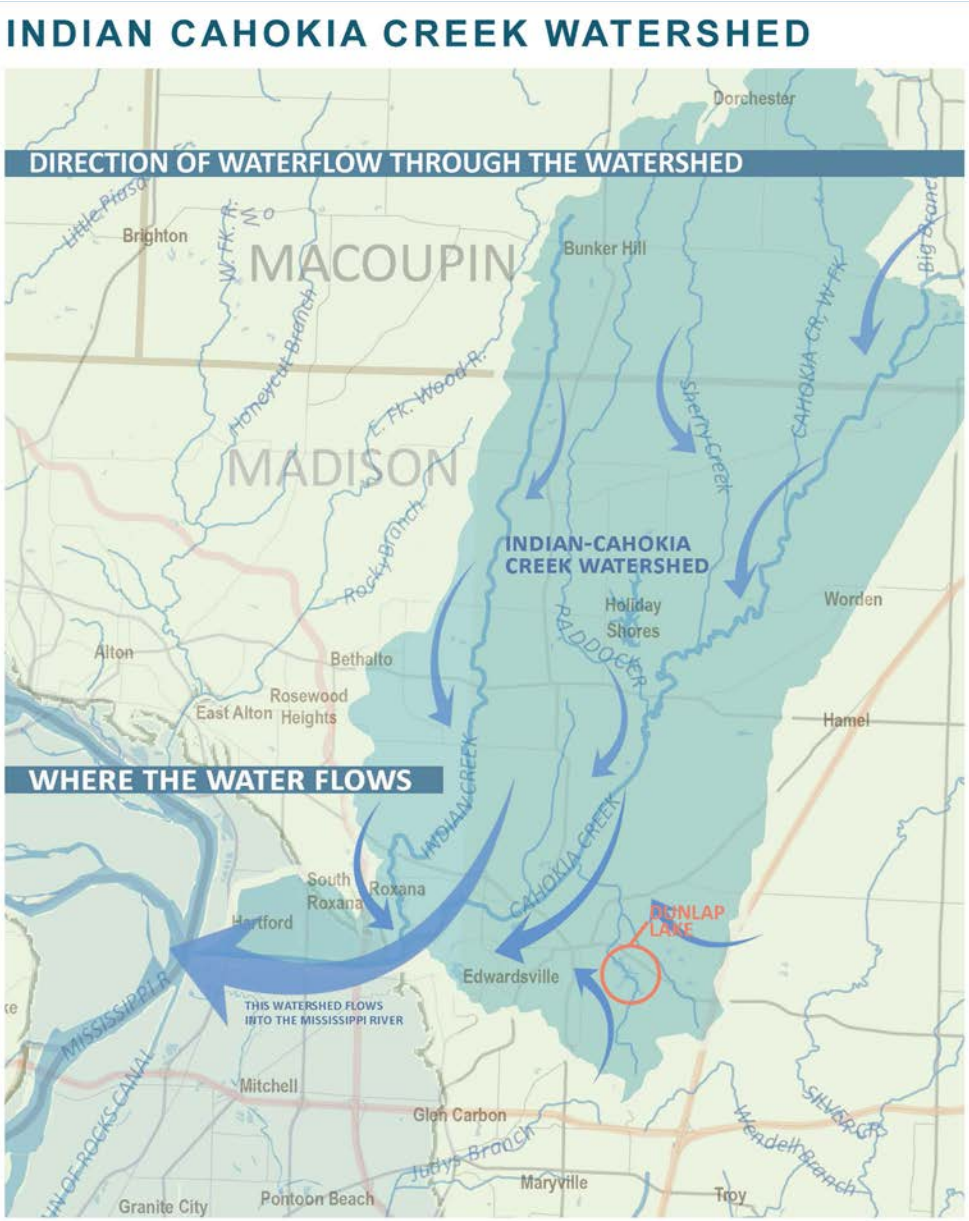
Overview

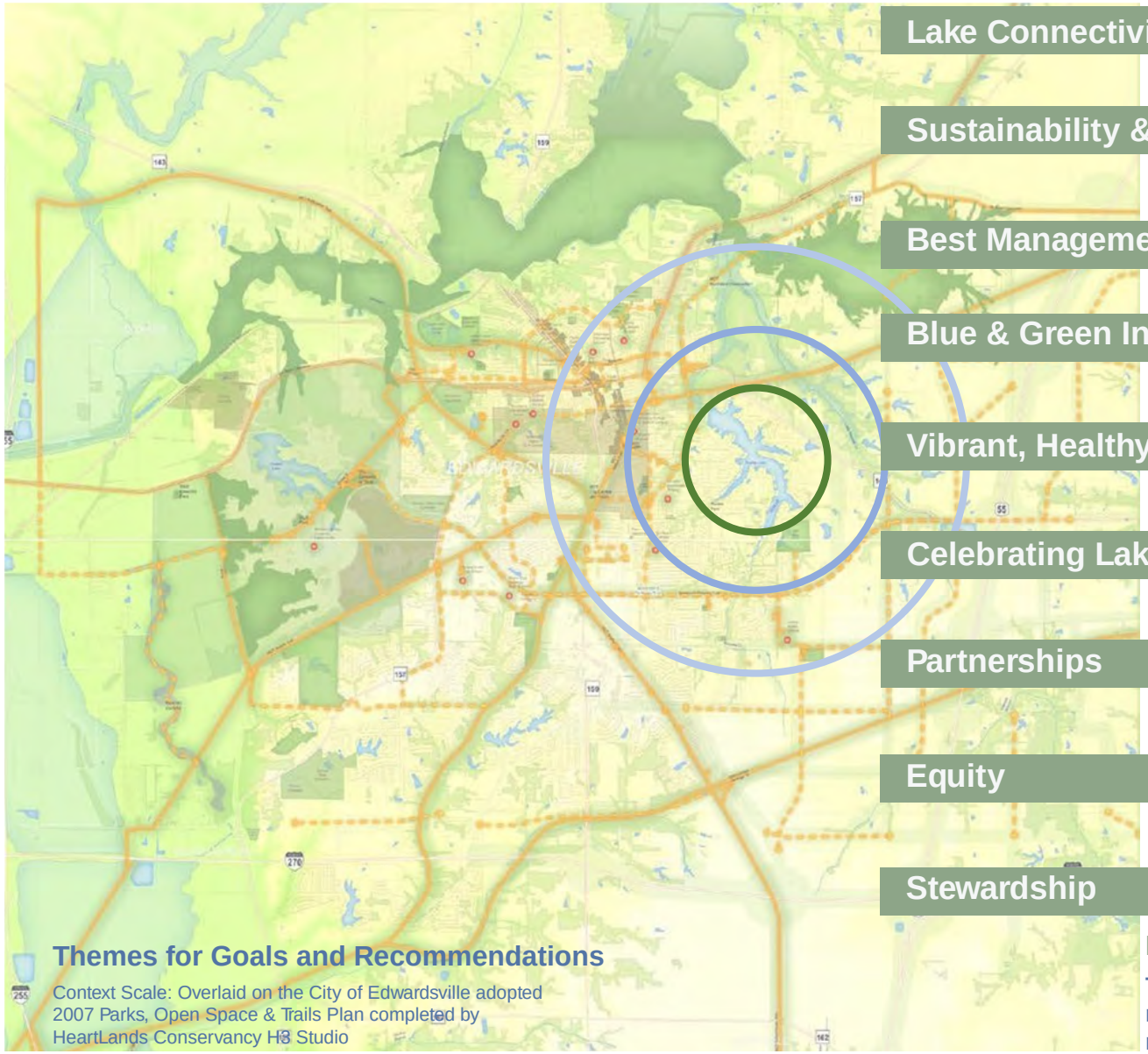
Within the southern boundary of the Indian-Cahokia Creek Watershed, Dunlap Lake was created by damming Mooney Creek in 1939. The stormwater run-off into the lake and creek contribute to two major issues at the lake are that it is filling up with silt (i.e., reducing storage capacity and increasing flood risk), and that it has water quality problems, such as algal blooms and high fecal coliform levels.

These issues are exacerbated by the changes in land use that have occurred over the last 80 years. With more impervious surfaces (e.g. asphalt, concrete)within the watershed, the stormwater is less able to be absorbed during rainfall. The more stormwater runoff, the higher the speed and moving nutrients and silt into culverts, streams, and eventually the lake.

Therefore, there will be 3 scales of recommendations:

- **Contextual scale - for the larger context of adjacent partners;**
- **Dunlap Lake and DLPOA properties; and**
- **Best management practices for individual projects or properties.**





Themes for Goals and Recommendations

Context Scale: Overlaid on the City of Edwardsville adopted 2007 Parks, Open Space & Trails Plan completed by HeartLands Conservancy H3 Studio

- Lake Connectivity for All Residents
- Sustainability & Resilience
- Best Management Practices
- Blue & Green Infrastructure
- Vibrant, Healthy, & Active Lifestyle
- Celebrating Lake Life
- Partnerships
- Equity
- Stewardship

Dunlap Lake | Neighborhood | Citywide

Themes in relation to the contextual scale as the recommendations and best management practices relate to the scale within the watershed.

Master Plan Priorities & Recommendations

Overview

Recommendations are structured to build upon existing investments and efforts by the DLPOA. Recommendations are specific statements that provide guidance for planning, development, management, and decision-making processes. The recommendations were compiled to complement and reflect current operations, planning, procedures, and practices. They provide best-practice priorities culminated from case studies, data, and research on the topics of green infrastructure, stormwater management, natural resource planning, conservation and sustainability practices, recreation and trails, natural resource areas, operations and maintenance, partnerships, and management. Many of these overlap and will be clarified by the more detailed efforts that are developed.

All properties are currently managed and maintained by and through the DLPOA and their contractors. In general, it is recommended that an Implementation Committee (more detail later) and Common Areas Committee (with assistance from partners) complete detailed plans, maintenance, and management.

Ready? Set. Action!

Sample action verbs that precede each recommendation are defined below for reference as it pertains to DLPOA responsibility level:

Consider | Continue | Develop | Complete | Investigate | Establish | Provide | Conduct | Protect | Amend

It is the responsibility of DLPOA to conceptualize, create, fund-raise, operate, manage, or implement. This implies that other partners will support aspects that relate to their stated mission and goals.

Facilitate | Foster | Partner | Grow

It is the responsibility of DLPOA to bring the necessary parties together and start the process, program, or project. Others will implement after the project or program is conceptualized.

Encourage | Support | Assist | Advocate | Connect

Others have the responsibility and DLPOA is a vocal supporter. Support can be organizational, technical, marketing, or financial.

Overall Recommendations

In the following pages, key projects and recommendations are organized by themes as they correspond to the vision and goals.

To provide an overall foundation for those, general recommendations for over-arching policies and programs have been selected.

Policies and Programs:

- Establish Implementation Committee.
- Advocate for the acceptance/adoption of the plan at the city and county levels.
- Protect and enhance lake, common areas, Association-owned properties, and infrastructure supporting the goals of this plan.
- Amend DLPOA governance documents and restrictions to reflect the recommendations.
- Coordinate with residents, property owners, partners, adjacent HOAs, county, city and park districts to strategically provide partnerships in education, fiscal resources, natural resource protection, and infrastructure maintenance responsibilities for the lake and stormwater that drains into it.
- Encourage the coordinated planning and implementation of stormwater, watershed plans, transportation, and infrastructure initiatives.

- Develop and incrementally implement proposed projects identified and leverage for safety, environmental, livability, and economic benefits.
- Continue to partner with the city, not-for-profits, universities, institutions, and organizations in order to be included in further watershed-based plans and updates in the region.
- Incorporate conservation, green infrastructure, and sustainability criteria in DLPOA restrictions and to
- Protect lake health, community resilience, natural, scenic, and environmental areas when making land use and decisions.
- Connect and support walking and biking amenities, linking economic centers, jobs, schools, leisure activities, and food resources to the community.
- Collaborate, partner, and leverage resources for the procurement, maintenance, endowment, and future implementation.
- Encourage residents to adopt residential best practices for green infrastructure on their property and support those at the neighborhood scale.
- Evaluate city/county zoning, subdivision, and landscaping codes to ensure that DLPOA provisions do not discourage or prevent or inhibit designs, installation, or well-maintained enivironmentally-forward initiatives that directly or indirectly improve water quality and prevent stormwater runoff, erosion, or nutrient flow.
- Support and incorporate stormwater, flood prevention, and green infrastructure policies into municipal, county, and park district land use plans and ordinances.
- Strengthen collaborative beneficial partnerships.
- Partner with city and county to improve residents' understanding and knowledge base of best management practices.
- Develop a DLPOA Education and Outreach Strategy and materials to continue to inform individuals.
- Develop a "Friends" organization to provide on-going volunteer, fundraising, and other forms of assistance and beautification efforts.
- Engage Master Gardeners and Master Naturalists to help install and maintain BMPs in landscape and develop particular maintenance guidelines.
- Continue to develop staff/volunteer group that is reflective of necessary technical and management expertise.
- Continue to update website, social media, and newsletters.

Priorities & Key Recommendations by Theme

Lake Connectivity

Priorities:

Passive Recreation

Safe Access to Parks and Trails

Share-the Road signage for Bicycles

Clarify Guest Privileges

Key Recommendations:

Walking Paths in All Common Areas

Replace Worn Goat-path Connections with Permeable Paved Paths

Respect for Adjacent Properties

Crossings at Major Intersections

Sustainability & Resilience

Priorities:

Fix the Infrastructure: Dam and Silo Required Maintenance

Spillway Expansion

Remove Silt

Sediment Settlement Area

Dewatering Basin

Improve Water & Air Quality

Key Recommendations:

Begin Deferred Projects

Update Dredging Plan

Investigate Uses for Dredge Materials

Consider all funding options

Best Management Practices (BMPs)

Priorities:

Flooding & Drainage

City-wide Advocacy

Capture Sediment & Stormwater

Key Recommendations:

Provide BMP resources on website

Support Residential-Scale Initiatives

Develop Common Areas Initiatives

Develop Active and Passive Water Aeration Methods

Invasive Plant Removal

Shoreline Easements

Blue & Green Infrastructure

Priorities:

Shoreline Stabilization

Stream and Culvert Erosion

Slow Stormwater Runoff

Reforestation Plan

Conservation Easements

Improve Stormwater Management

Increase Biodiversity

Key Recommendations:

Prioritize Green Stormwater Management Approaches

Shoreline Habitat

Encourage use of Native Plantings

Wetland Restoration

Vibrant, Healthy, & Active Lifestyle

Priorities:

Develop Individual Common Areas Plans and Phases

Opportunities for Gathering

Interpretive & Education

Special & Recreational Events

Key Recommendations:

Kayak & Canoe Stands

Support Resident Athletic Clubs

Life Safety Signage

Support Complete Streets

Formalize Volunteer/Friends Group

Celebrating Lake Life

Priorities:

New Revenue Sources

Common Area Marina(s)

Dock Design Standards

Preserve Green and Lake Viewsheds

Fundraiser & Naming Rights

Key Recommendations:

Support Four-season Activities

Continue Existing Events

Consider DLPOA Music Events

Consider Seasonal pop-up Businesses

Consider using Joe Glik Park for large festivals and fundraisers

Partnerships

Priorities:

City Partnership in Watershed

Grant Opportunities

Master Naturalist and Gardeners

Philanthropy for the Lake

Update Emergency Plan with County

Key Recommendations:

Seek multiple funding sources for implementation of priorities

City, County, & State as Partners

Grant Committees as working groups

Work with adjacent HOAs on Stormwater and Environmental Projects

Equity & Stewardship

Priorities:

Financial Health

Equitable Assessments

Review Restrictions

Implementation Committee

Boat & Dock Policies

Key Recommendations:

Continue Zoom meeting access

Post Master Plan on Website

Re-brand the term “Restrictions” of DLPOA Covenants/Regulations

Review and implement new dock & wait-list policies for all residents

Consider multiple methods to assist annual and special assessments

Lake Connectivity

Priorities:

Passive Recreation

Safe Access to Parks and Trails

Share-the-Road Signs for Bicycles

Clarify Guest Privileges

Key Recommendations:

Walking paths in all common areas

Replace goat-path connections with pervious paved paths

Respect for adjacent properties

Crossings at major intersections

Update water access restrictions

Overview

The Dunlap Lake community is a planned neighborhood with a property owners' association, with public streets, rights-of-ways, and city snow routes. There are almost no sidewalks due to the development-era characteristics. The residential streets are narrow and mostly unmarked. Intersections are often wide without marked crosswalks. A few arterial roads feed into the neighborhood with higher speed limits due to their character and traffic counts.

During the residents' annual meeting and in the surveys for this planning process, residents expressed interests in walking paths, sidewalks, and biking. While not a top priority, they were of high interest. Given the highly valued walkability of Edwardsville in general, recommendations to improve the connectivity and safety of the Dunlap Lake neighborhood are included.

The original character, width, and layout of the neighborhood streets make it too costly and narrow for the addition of sidewalks. However, this plan acknowledges that connections for walking and biking are important and are considered as part the framework of this plan.

Recommendations

Through inter-jurisdictional cooperation, the DLPOA can achieve a 20-year implementation timeline. Given that in this category most will be implemented by others, it is important to begin conversations early, so that when opportunities for funding arise, the projects are practically shovel-ready with the neighborhood's approval. Below is a breakdown of short to long term goals for implementing pedestrian and bicycle-based initiatives.

Highest Priority:

Additional Intersections and Crossings: Using engineering judgment and treatments from the ADA, IDOT BDE, NACTO, and AASHTO guides to finalize appropriate facilities, a few key places should be improved for the safety of pedestrians, active walkers, runners, and bicyclists:

- At MCT Trails access points
- At arterial intersections
- At crossings where two DLPOA properties, or parking access for a common area lie across a street from a common area. These may occur as a mid-block crossing or at the intersection of the nearest street if less than 25 feet away.
- When making changes consider ADA accessibility and permeable paving.

Short Term

- Contact city and county partners to share this plan.
- Assign a Bicycle and Pedestrian liaison to the city to assist with implementation.
- Advocate for an updated Complete Streets Ordinance for the city, if needed.
- Support the city and IDOT to improve intersection crossings along major roads particularly at 143.
- Support improving crosswalks under the city's jurisdiction.
- Consider and develop pervious paved walking paths and connections on larger common areas, replacing 'goat paths' - worn volunteer paths.
- Work with engineers to refine walking paths in DLPOA common areas where needed for recreation or ADA accessibility.
- Support to safe connections and access to MCT trails in the region.
- Include walking and bicycling safety information in websites, newsletter or social media.
- Work with city to support and encourage Safe Routes to School Programs.
- Establish parent-led walking 'school buses' where parents meet kids at specific stops along their route and escort them to school safely.

Medium Term

- Work with the city to update their trails plan to include a Bike/ Pedestrian planning update. Create a website portal to collect information about walkability and accessibility in the neighborhood including the common areas.
- Support and talk with local legislators about the condition and safety of access to recreational trail corridors. Emphasize the increased benefit trails bring to the region, in terms of promoting active living and health.
- Assist the city with identification of any right-of-way that might be needed or repaired to implement the recommended connections.
- Begin discussions with the city to create a strategy for resurfacing to include crosswalk markings, updated maintenance, and sidewalks (where possible in the future). Busy streets may require a minimum of paint and signs. Incorporate these improvements into the city and/or county capital improvement schedule so they may be installed at the same time the roads are resurfaced.
- Offer to host bicycle education sessions for residents through the City's Parks & Recreation Department.
- Host or sponsor Walk (or Bike) to School Days to local schools.
- Increase the amount of bike parking in common areas. Consider them as art or character-defining opportunities.

Long Term

- Consider and support potential locations for future trailhead and connecting to regional and city trails. Trailheads can provide amenities such as; safe crossing, benches, bike parking, trail map, bicycle fix station, restrooms, and a shady spot to rest.
- Assist city in seeking a Walk Friendly and a Bicycling Friendly Community Designation
- Consider parkways as potential access points, shared dock options, or conservation easements for riparian plantings to assist in stormwater management or other BMPs.
- Consider using FEMA's updated floodplain maps to create voluntary conservation easements and buffers on common areas, parkways, and residents as a voluntary program.

On-Going

- Support and assist if needed, city or county applications for grants for right-of-way improvements, engineering, and construction.
- Include walking path and connections in all new plans of associated-own properties.
- Update water access restrictions.

MCT Trailhead at Schwarz Road


Proposed Crossing Signal at MCT Trailhead

Sustainability & Resilience

Sustainability & Resilience

Priorities:

Fix the Infrastructure Dam Required Maintenance

Spillway Expansion

Remove Silt

Sediment Settlement Area

Dewatering Basin

Improve Water & Air Quality

Key Recommendations:

Begin Deferred Projects

Update Dredging Plan

Investigate Positive Uses for Dredged & Dried Materials

Consider Combinations of all Funding Options and Phasing

Overview

Infrastructure of the Lake MUST be addressed, immediately. It is not a choice, but a HOW and WHEN determination. The DLPOA-owned properties include not only common areas for recreational access, and parkways, but restricted parcels that site the necessary infrastructure of the lake.

The infrastructure is critical for the safety of the community-at-large, especially downstream, and for the Dunlap Lake neighborhood. It is imperative that these are repaired and maintained on an ongoing basis for the health, safety, and liability of the DLPOA and its residents. Hypothetically, if an agency such as IDNR mandates the repairs and the agency proceeds to do them, this results in the DLPOA membership being required to reimburse the State and agency or otherwise face liens.

Therefore, to be proactive and to address the responsibilities of caring for the infrastructure and maintenance of the lake, due to increasing costs every year, it is best to develop a plan of action for the critical pieces of infrastructure and include partnership building to leverage funding and maintenance resources. The end result will be a more resilient lake infrastructure, a healthier lake for active and passive recreation, and more sustainable lake ecology.

The quality of life and desirability of Dunlap Lake will only benefit – thus leading to successful completion of this master plan.

Recommendations

The infrastructure for the lake and stormwater is the most important responsibility of the DLPOA membership and highest priority for this master plan. It is imperative to work with IDNR to meet the requirements they have put forth. This includes, but may not be limited, to the information in this section.

This infrastructure (dam, spillway, gate, lake, shoreline, and properties) all belongs to the individual residents (private residences) or the DLPOA membership. To state this clearly - that means they are privately held. They are not public. Therefore they do not qualify for public funding or federal dam grants, etc.

The following recommendations address this responsibility.

Highest Priority:

- Develop immediate funding strategies for spillway and dam using partners, resources and opportunities presented in this plan.
- Consider combinations of all funding options: loans, grants, special assessment areas, etc.
- Seek partners to begin deferred updates, capital maintenance and repairs to lake infrastructure, include but not limited to dam, gates, spillway, sediment and silt strategies, weirs, inputs, and Mooney Creek.
  - Meet with City of Edwardsville Public Works Director, Planning Director, and Mayor.
  - Meet with Madison County Stormwater Coordinator.
- Presentation on the Dunlap Lake dam and spillway by IDNR.
- Explain to residents that infrastructural maintenance is not optional. It is the responsibility of the DLPOA, of which they are a member. Eliminating liability, risk of life loss, and emergency failure repair, or state mandated lien due to required repairs is beneficial to property values and their equity.

Short Term

- Engineering studies, plans, and costs should be updated. A range of costs may be determined with the older costs and the annual increase by using www.usinflationcalculator.com.
- Continue to request Design/Build bids for infrastructure projects.
- Complete spillway expansion.
- Presentation on sediment and silt by engineering team and Committee.
- Update dredging plan and phasing.
- Work with upstream neighbors.

- Complete plans to 100% shovel ready for projects to take advantage of economic development and infrastructure state funds.
- Review all projects to include BMPs to increase water quality, lake health, and active/passive recreation potential.
- Develop funding strategies for sediment silt strategies (Phase 3 and 4 in this section) using partners, resources, and opportunities presented in this plan.
- Investigate revenue producing and positive uses for dredge materials once removed from lake, as well as hardwood to be removed from sites.
- Install secondary dam gate.
- Support all levels of stormwater interventions to keep runoff, sediment, nutrients, and large debris out of the lake.
- Consider State assistance and partnering with city or county when necessary.
- Work with downstream stakeholders on resiliency plans and emergency plan notifications.
- Review the phased dredging plan.

Medium Term

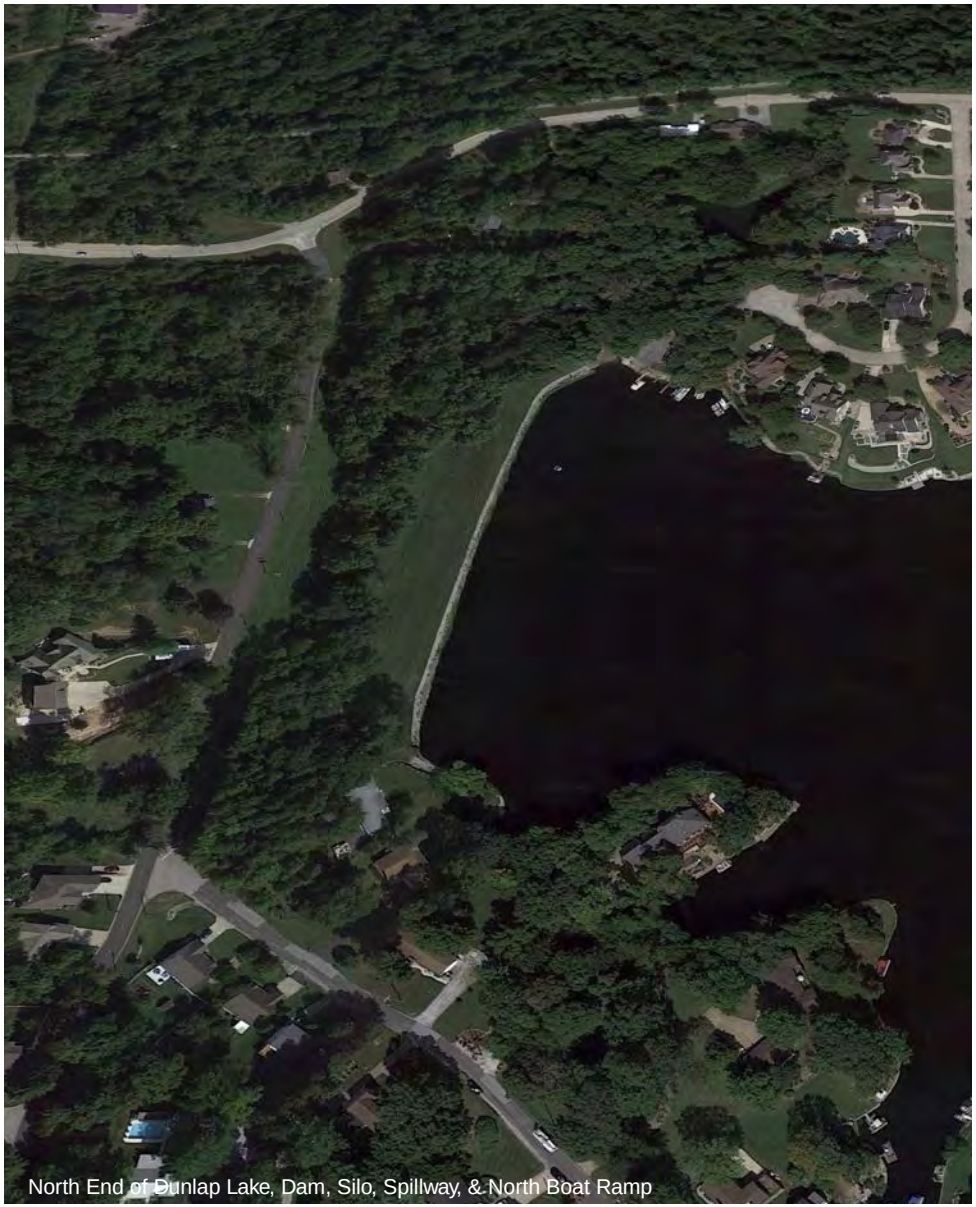
- Consider wetland restoration as part of stormwater infrastructure.
- Maintain infrastructure and increase in property values.
- Supplement assessments with continued grant applications, partnership resources, and seeking of revenue resources.
- Develop long-term sustainable sediment strategies.

Long Term

- Consider public management partnership for infrastructure and sediment.
- Consider turning the dam to a public entity to ensure long-term maintenance funding is available.

Ongoing

- Continue the coordination with city, county, IDNR, EPA, and USACE on health and safety of the lake, dam, and spillway.
- Continue required inspections.
- Increase shoreline inspections of vegetation, dying trees, and docks.
- Increase shoreline stabilization.
- Increase dock maintenance inspections to alleviate boats or items becoming dislodged and hitting dam, spillway, gate, etc.
- Continue scheduled maintenance.
- Continue cleanups of dam, rip rap, trash, large debris, and logjams.
- Continue to update safety and emergency plans
- Develop detailed revolving maintenance endowment.



North End of Dunlap Lake, Dam, Silo, Spillway, & North Boat Ramp

South End Silt

As described by the DLPOA Engineers by HDR/CWI,

"...excessive sedimentation has occurred in Dunlap Lake throughout its lifetime and has facilitated the need to initiate sediment management measures in order to restore and protect the lake and its resources. In addition to sediment removal being required to restore preexisting conditions, several sediment control options have been considered to trap and isolate future sediment loadings in the south end of the lake where 70 percent of the watershed enters the lake."

For the North End:

"I do want to go on record that our property and neighboring property owners to the north along E. Schwarz St. (1120, 1124 & 1128 E. Schwarz St.) have indicated that they would be willing to have silt retained in their yards (under the right conditions) to help the Dunlap Lake dredging process. Past and present Board members should be aware of this potential site(s) for silt."

-Keith Moran
4 N. Shore Drive.

Our lake is filling up with dirt/silt.

The DLPOA, its committees and the engineers hired to help navigate the options all agree that this issue is a high priority for the lake. This initiative was determined to be a high priority project with the board and residents as well. The chosen solution deals with the build up of the sediment and silt in the lake at the south end. It also provides a partial solution for the material. However, it **does not** prevent further silt and sediment. This will continue to accumulate from the natural flow of the watershed and the ever increasing storm events.

If we do this, then what? Will this fix it? Can we help prevent it in the future?

Further actions and recommendations at all scales must occur concurrently and coincide to help minimize additional sediment, silt, and nutrient flow into the lake. Recommendations in this plan will help identify ways individuals as well as the Association can advocate and participate in the ongoing health of the lake. Every step in the right direction helps. Partnering with the city, as well as others upstream and downstream will begin to grow this effort to protect Dunlap lake for the residents and the watershed for the community-at-large.

What do we do now? How do we remove it?

The Association and committee members were tasked with working on pragmatic and practical solutions with the engineers over many years. They met with members of the DLPOA, the Madison County SWCD and NRCS, along with the USACE in order to discuss potential alternatives.

The chosen strategy and most prudent for consideration involves two phases: 1- construction of a silt capture/retention area, along with the excavation of the silt; and 2 - the construction of a "dewatering area" for the removed silt/materials.

The project is outlined later in two parts, or phases for explanation purposes. The actual phasing of construction will be determined by multiple milestones aligning, including the alignment of funding opportunities.

This project will be located at the south end of the lake at the entry point of Mooney Creek and another small "unnamed" creek. It will also be along an area to dewater the slurry from the lake and 840 East Lake Drive.

See appendix for videos showing silt and sediment.

See the projects and phases on the following pages.

Continued repairs, updates and maintenance to meet all regulations for IDNR

There are a few major issues that affect Dunlap Lake's functional use as a recreational lake and stormwater reservoir resource:

- silting in (i.e., reducing storage capacity and increasing flood risk);
- stormwater and rain events are increasing;
- aging infrastructure; and
- water quality and erosion problems.

The lake has slowly been filling with sediment and silt over time, as sediment carried into the lake by tributaries is deposited. With more frequent rain events, this happens more frequently with greater deposits. The area's topography can often exacerbate the severe erosion south of the lake where streambanks are 25 to 30 feet high in places, which contributes large amounts of sediment to the lake.

Besides sediment, other water quality concerns are trash/debris and the nutrients (e.g., phosphorus, nitrogen) that cause algae blooms—including at least one instance of a harmful algal bloom (HAB) in the lake.

The dam is inspected often. Cleanups, repairs, and maintenance are taken seriously and completed as necessary. However, this is an old dam and does

not meet regulations or specifications if it were to be built today. The Dunlap Lake residents are concerned about the safety of the original earthen dam, noting that the amount and velocity at which water enters the lake has increased. Rip-rap has been added to the dam to support it.

An emergency plan exists for if the dam is ever breached. To alleviate upstream flood concerns, the lake level can be lowered before extremely heavy storms, but the lake's capacity is shrinking; and stormwater velocity and volume is increasing. Large debris at high velocity impacting the dam and spillway cause concern.

A secondary gate mechanism to lower the lake level is necessary, and desired, as a more suitable modern method of controlling the water level. The first - older gate would be left in place as a backup system.

The 100-year floodplain covers the lake and extends up the lake's banks. These areas should be considered for conservation easement and planted with riparian and shoreline plantings to benefit the stormwater strategies.

Neighborhoods upstream of the lake experience road flooding and basement flooding at times. When Willow Creek Road flooded in the past, it removed access to ~89 homes. This flooding was reported to DLPOA and the Madison County Stormwater Coordinator.

Flood Survey (2015): Three parcels in the immediate watershed of the lake returned the Flood Survey (Stonebrooke Drive, Springbrooke Drive, and Roanoke Drive). The flooding caused stress, resulted in partial loss of access to the properties, and required time off work to clean up. The Stonebrooke Drive respondent reported being flooded 10 to 49 times over the last 10 years, or more than once a year on average.

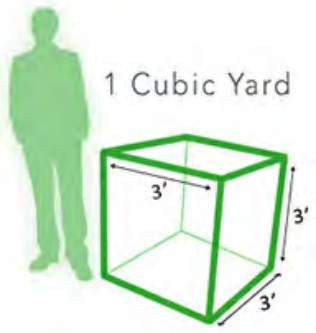
Critical Areas: A Critical Riparian Area (with poor riparian condition) was identified where a tributary to the lake crosses East Lake Road. There is sparse or absent vegetation and eroded streambanks at these locations.

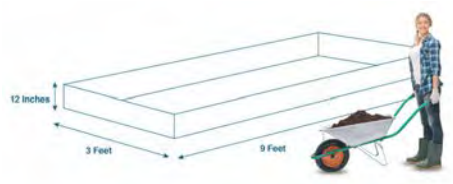
There is also a Critical Wetland Area (an area where wetland would be well suited) west of Stonebrooke Drive.

Proposed Solutions:

- complete repairs, updates, and continued maintenance to infrastructure;
- increase detention upstream;
- increase riparian and wetlands areas;
- reduce streambank erosion upstream;
- reduce chemical fertilizer use upstream; and
- dredge the lake.


South End Silt





How BIG is a cubic yard sediment or silt?

If you dig up a flower bed that is 9 feet long, 3 feet wide and 12 inches deep, you will have one cubic yard of dirt. This is how it breaks down:

3 feet equals 1 yard, so 9 feet equals 3 total yards in length.
The width of 3 feet equals 1 yard.
The height/depth is 12 inches (1 foot), which equals one-third of a yard. Multiplying the three dimensions, length, width and height/depth, will give you the total cubic yardage of your debris. In this example, 3 yards x 1 yard x 1/3 yard = 1 cubic yard of dirt.

Other visuals:

20 cubic yard dumpster: Equivalent to about 110-130 33-gallon trash bags, 6 pickup truck loads or 180-270 wheelbarrow loads.
1000 of these dumpsters

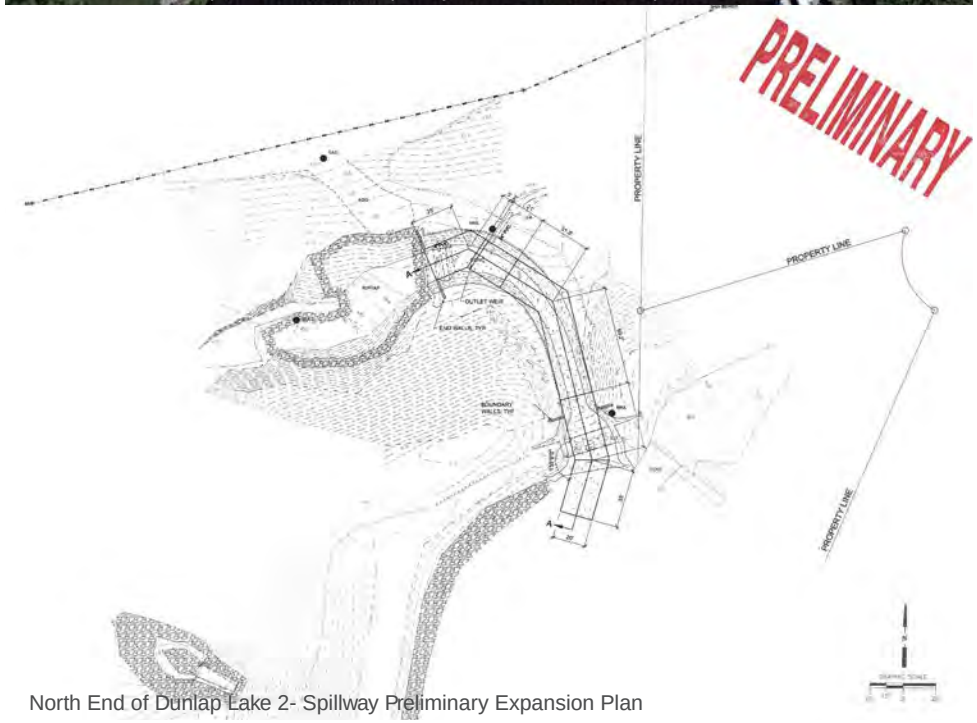
30 cubic yard dumpster: Equivalent to about 170-190 33-gallon trash bags, 9 pickup truck loads or 270-405 wheelbarrow loads.

40 cubic yard dumpster: Equivalent to about 230-250 33-gallon trash bags, 12 pickup truck loads or 360-540 wheelbarrow loads.
so 20,000 cub yards equals 500 of these dumpsters

The weight of a cubic yard depends entirely on the materials you are disposing of. For reference, the following lists the approximate weight of one cubic yard of common materials:

- 1 cubic yard of mulch weighs about 1,000 pounds, depending on dryness.
- 1 cubic yard of soil weighs roughly 2,200 pounds.
- 1 cubic yard of sand, gravel or stone can weigh more than 3,000 pounds.
- 1 cubic yard of concrete or asphalt weighs about 4,000 pounds.

North End of Dunlap Lake, 1-Dam, 2-Spillway, & 3-North Boat Ramp



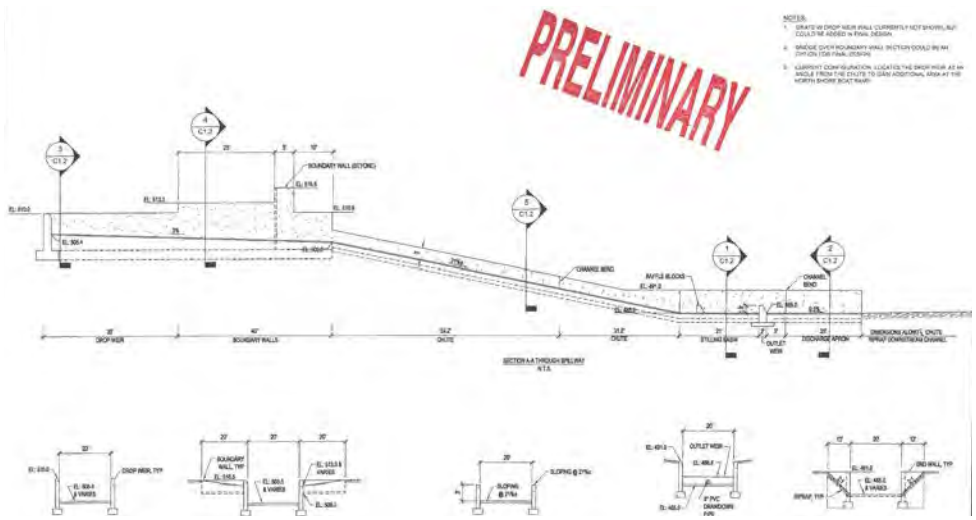
North End of Dunlap Lake 2- Spillway Preliminary Expansion Plan

Expand the spillway to meet the standards for the amount of water and its velocity.

This project must move forward immediately, and it is the responsibility of the DLPOA membership to complete it. IDNR has recommended and mandated the expansion of the Dunlap dam spillway. This would increase current opening of the spillway from its existing 35 feet to 96 feet to handle the increased volume and velocity of the water flow.

The site is landlocked, which hinders to open the mouth of the spillway to 96 feet. Hurst-Rosche Engineers, who are familiar with the dam from inspections, designed a solution that would satisfy the state requirements as close as possible. It is a drop weir approach that would allow a 90+ feet opening to release the water.

The plans need to be updated to also include a new gate in the wall of the drop weir to allow an updated and secondary method to lower the lake that is much safer than the current setup. Considerations of exact placement must address the location of the adjacent boat ramp. IDNR will be consulted to clarify the requirements, exact size, and angle of the drop weir needs to be finalized. New cost estimates will be identified at this stage in order to arrange funding and to send bid packages out.



North End of Dunlap Lake 2- Spillway Preliminary Expansion Section & Details

Develop the silt capture/ retention area to address current needs and future procedures.

The selected silt capture area is located just north of East Lake Drive where Mooney Creek enters the lake and south of a narrow area of the lake just to the north of that entry. The determined area needed is approximately 3.5 acres.

This phase of the project will involve removing the excess sediment, widening the banks to create a larger capture area and constructing a berm and weir to narrow the outlet of water in the lake.. A designated contractor will use a cutter head dredge barge and slurry system to remove the silt, which will be “dewatered” or allowed to dry out in a drying pond at 840 East Lake Drive.

This phase is summarized in the following steps:

- Give authorization for engineers to complete final design plans for all phases.
- Final vote of Board and residents, as necessary.
- Consider any amendments to plan at this time.
- Consider adding a walking path around perimeter.
- Consider adding interpretive signs.
- Consider small wetland filtering pathway.
- Consider planting perimeter with native pollinator seeds for low maintenance.
- Submit plans for final and formal review to parties as necessary: USACE, NRCS, City of Edwardsville (planning and public works departments), Madison County, and financing authorities.
- Construction would begin with the hydraulic dredging of the current capture area (estimated 26,000 cubic yards removed)
- Once all “loose” material has been removed, the lake level can be dropped to allow for continued excavation of silt materials and the excavation of some of the shoreline.
- The contractor will continue the mechanical excavation of additional shoreline areas (an additional 20,000 cubic yards removed, which essentially doubles the surface area of the current retention area).
- Additional material will be removed north of berm and weir until dewatering area is at capacity -- approximately 14,000 cubic yards.
- This increases the efficiency of retaining material in the capture area.
- Newly excavated shoreline would be stabilized using approved Army

Sediment Survey Plan

South End of Dunlap Lake Sediment Basin Area (inset shows De-watering Area @ 840 as well)

South End: Proposed Sediment Basin Area & De-watering Area, See video for more.

Corps approved materials and design (erosion membrane/fabric and riprap or "seawall")

- A berm and weir structure would be constructed on the lake at the northern end of the capture area to allow a slow flow into the lake, but allow for boat traffic out of the retention area by residents whose property immediately abuts the proposed capture area.
- Silt fences and material grates would be installed at entry points of Mooney Creek and the smaller tributary.

Developing a sustainable method for a sediment basin - a dewatering area.

After reviewing options and strategies for silt and sediment removal, DLPOA and engineers determined that a passive technology was the most cost effective method of dealing with the excavated sediment and silt from the lake, as well as an affordable option that could remain in place and be used for on-going maintenance. This slurry - a mix of water and solid materials from the excavation - will be located at a nearby site from the silt retention area , described in the previous section.

The method most suitable and affordable for DLPOA is 'passive dewatering'. In the simplest terms, dewatering is the removal of liquids from a sludge slurry. This simple (or passive) technology uses gravity and instead of mechanical means to separate water from the materials excavated in a constructed area called a 'settlement pond' where the water filters down and out back to the lake. What remains is the dried-out silt and solid sediment materials that were excavated. This material can then be removed as a byproduct, sold, or given away for various uses. The most prudent site available is at the south end of the lake is the 6 acre tract of land immediately adjacent to Dunlap Lake, 840 East Lake Drive.

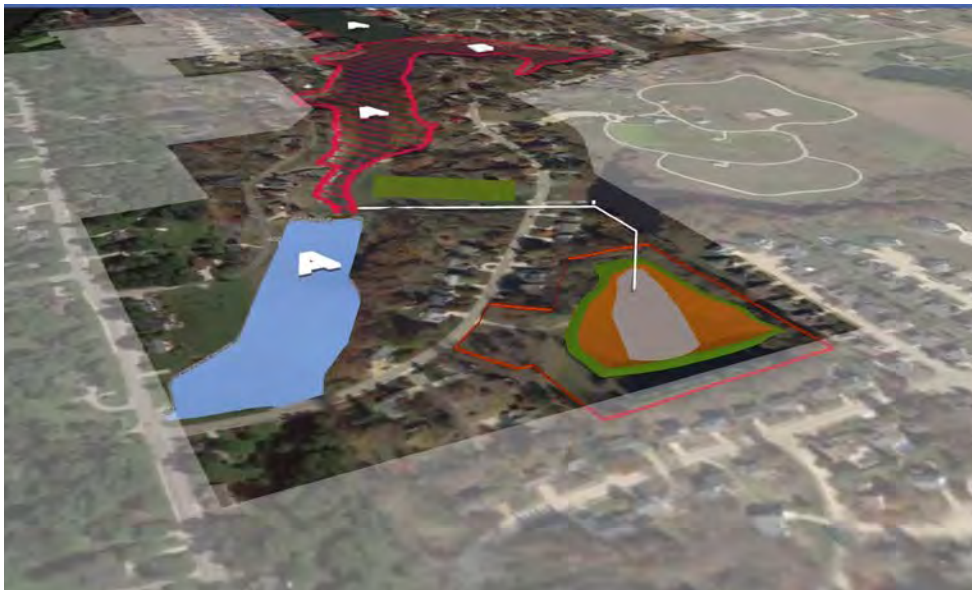
Engineers have estimated, using the change in lake bed elevation from 2005 through present, that 2,000 cubic yd/year of sediment are entering the lake from Mooney Creek and the smaller unnamed creek. This amount of sediment will continue to enter the lake and it will likely increase due to more frequent heavier rain events and expanding impervious surfaces. By constructing the capture area and dewatering facility, this material can be contained to a small area, removed and drained in a cost effective manner.

This phase is summarized in the following steps:

- Give authorization for engineers to complete plans for all phases. Currently at 70%.
- Final vote of Board and residents, as necessary.

- Consider any amendments to plan at this time:
  - Save any healthy heritage trees on site.
  - Consider adding a walking loop path around perimeter of 6 acre site.
  - Consider adding an interpretive sign about the dewatering process.
  - Consider planting perimeter with native pollinator seeds for low maintenance.
  - Submit plans for final and formal review to parties as necessary: USACE, NRCS, City of Edwardsville (planning and public works departments), Madison County, and financing authorities.
  - Apply for demolition and construction permits with necessary agencies and city.
  - Site clearing and construction preparation.
  - Remove two structures (the house and detached garage).
  - Investigate selling the house as is and for moving off site only.
  - Investigate selling house for materials.
  - Investigate donating house for Fire Department to practice exercises.
  - Remove some vegetation (trees and brush).
  - Secure site with a perimeter fence.
  - Excavate “the dewatering pond” with a 50,000 cu yd capacity.
- Install and connect drainage system:
  - Slurry “input” from dredge barge would be via a permanently installed pipe that would go from Lake owned property through a permanently installed culvert underneath East Lake Drive and into the dewatering pond.
  - Filtered water would return to the lake across DLPOA-owned land into a city owned adjacent lake overflow and under existing piping back to DLPOA owned property and into the lake.
  - Construct a settlement pond, including pond walls lined and seeded. The “pond” allows pumped slurry to de-water, with the filtered water returning to Dunlap Lake. This system is called a passive “Dewatering Facility”. It is not a mechanized infrastructure project or a water treatment plant.)
  - Remove dried material. This area can be “cleaned out” and reused for future retention area maintenance and material removal.
  - Investigate reuse or resale of removed materials from creating basin, dredging lake, or dried materials after de-watering.


Proposed De-watering Area @ 840 East Lake



Best Management Practices (BMPs)

Best Management Practices (BMPs)

Priorities:

Flooding & Drainage

City-wide Advocacy

Capture Sediment & Stormwater

Key Recommendations:

Provide BMP guidelines and resources on website

Support Residential-scale Initiatives

Develop Common Areas Initiatives

Develop active and passive water aeration methods

Invasive Plant Removal

Shoreline Easements

Overview

There are many ways to improve water quality and reduce flood impacts in the Indian-Cahokia Creek Watershed, Dunlap Lake and its streams, and on individual owner's properties. Best Management Practices (BMPs) are presented for all scales for DLPOA and adjacent partners. Working with the county and city will ensure a successful implementation and potential funding of these initiatives.

This list is a sample of possible actions, preventive and policy-based, and not a comprehensive list. More resources can be found by following the links, reviewing recommendations in other themes, and using the appendices.

Recommendations

These recommendations should be implemented as soon as feasible, on a case-by-case basis. Often these initiatives can be funded through specific grants, especially if there is an demonstration or education component. Any project that moves forward in this plan should have BMPs as part of it.

- Develop biodiverse landscape plans for all common areas using beneficial native plants.
- Develop Landscape Guidelines for common areas and residential properties.
- Provide resources online on DLPOA website and educational posts on social media.
- Work with volunteers and city to remove logjams in Mooney Creek corridor, especially south of East Lake Drive.
- Lead by example. Begin to install BMPs on Common Areas.
- Work with an arborist-guided tree maintenance contractor.
- Develop invasive plant removal program.
- Develop re-tree/reforestation campaign in conjunction with the results of the city's tree survey.
- Use landscaping to slow and absorb water and capture sediment and pollutants.
- Install planted buffer strips, pollinator buffers, and grass waterways to slow, absorb, and filter stormwater.
- Work with contractors who are familiar with best management practices.
- Maintain these areas as prescribed by the resource. Once installed and thriving, they should lower maintenance costs.
- Where possible use vegetation and BMPs rather than rip-rap on the shoreline, if possible and sustainable.

Context Area of Dunlap Lake

Protection, Restoration, and Management of Natural Areas

Conserving, restoring, and managing open spaces (whether public or private), particularly natural areas, are particularly useful ways to reduce negative impacts to water quality and flooding.

Communities and counties can protect steep slopes, wetlands, and riparian areas through their comprehensive plans, ordinances, and subdivision/HOA regulations.

In addition, natural areas often provide excellent recreation areas for hiking, walking, wildlife observation, biking, and paddling.

These efforts should be kept as connected or reconnected to other open space areas to encouraged habitat corridors and areas to absorb water, and improve water and air quality. They also provide areas to cool the area to help prevent a rise in temperature in the lake and the waters that flow into it.


Logjam Removal


Green Infrastructure BMP


Riparian Edge


Timber Stand Management

Preventive and Policy-based Actions: Watershed Scale

Logjam Removal

Logjams are a natural occurrence and can provide beneficial habitat for fish and wildlife by allowing sediment to be deposited into the floodplain. However, logjams can also have negative consequences; they can increase the impacts of flooding by causing water to back up and over the banks. Logjam removal should only be performed after a thorough inspection.

Volunteers in conjunction with municipal workers can often remove logjams approved by the city. This includes trash and large dumped item cleanup. If beavers or wildlife have caused the jam, consider calling wildlife rescue groups.

The American Fisheries Society published the “Stream Obstruction Removal Guidelines” to determine what types of logjams should be removed. https://www.fws.gov/southeast/pdf/guidelines/stream-obstruction-removal-guidelines.pdf

Stormwater (Green) Infrastructure

Stormwater infrastructure does not typically have a dedicated source of funding like sewer or water infrastructure.

Possible solutions for financing stormwater infrastructure (including green infrastructure) and management include a stormwater utility, property or sales taxes, special assessment districts, municipal bonds and state grants, and low interest loans through the state/federal revolving funds.

Likewise, storm drains of all types require regular maintenance and cleaning to prevent clogging and backflow.

Work with city and county for maintenance and to use the most up to date beneficial specifications to slow the velocity and volume of water. Consider retrofitting any structure to match new regulations or beneficial practices in practice with the state and county. For more information on detention basin maintenance, partner with the city. Consider incentives for updates.

Natural Resource Conservation Policies, such as Riparian Area (Streamside) Vegetation Policies

A riparian buffer is an undisturbed, naturally vegetated strip of land adjacent to a body of water (typically a stream). Among their many benefits, riparian buffers improve water quality, reduce erosion, store floodwater, and provide habitat for wildlife. A riparian buffer ordinance protects a riparian area from clear-cutting, new development, and other disturbances and promotes planting new native plants and trees.

These beneficial buffers can be constructed and/or restored. Native plantings are highly encouraged. Invasive species need to be removed to allow for the deep roots of the native plantings to grow deep and help in stabilization.

HeartLands Conservancy has developed a model riparian buffer ordinance that communities can adopt. Email info@heartlandsconservancy.org.

Timber Stand Improvement (TSI)

TSI, when compared with gardening, is like weeding and pruning to let vegetables or flowers flourish. TSI involves periodic cutting in an immature stand of trees to stimulate growth. The best way to determine if a forested area is suitable for TSI is to have a professional forester or arborist assess the stand. TSI is different than “timber harvesting,” which involves harvesting mature trees for sale or use. TSI helps native trees thrive, which in turn helps absorb stormwater more effectively.

The Illinois Department of Natural Resources provides a directory of Professional Consulting Foresters that can assess forests for TSI potential and other management objectives.

https://www.dnr.illinois.gov/conservation/Forestry/Pages/default.aspx

On the DLPOA properties, an arborist can assist. Invasive species removal is key for success.

WASCOB Character Image

Example of Septic Issues

Grassed Waterways

On-the-Ground Actions for Adjacent Farmers, Residents, Homeowners, and Property Owners

Water and Sediment Control Basins (WASCOB)

Water and Sediment Control Basins (WASCOBs) are earthen basins constructed to trap sediment and water. The basins help prevent sediment from reaching streams and reduce gully erosion.

The Madison County Soil and Water Conservation District and Natural Resource Conservation Service have information about WASCOBs.

Sewer or Septic System Maintenance

Although public sewers are the city's responsibility, residents need to watch for leaks at their laterals or other connections. In addition to watching sewer inlets, residential systems and connections, regular maintenance is very important:

1) Failing septic systems are expensive to replace or repair, and improper maintenance is the most common cause of system failure. Preventative maintenance costs very little in comparison to the cost of a new system.

2) When septic systems fail or sewer pipes leak, untreated human waste is released into yards and the environment.

Any contact with untreated human waste can pose a significant risk to a person's health and the community's health. It can also contaminate drinking water wells and affect the water quality of lake, causing damage to aquatic life. As waste continues to percolate or move downstream, it continues to spread risks.

Grassed Waterways

Grassed waterways are broad, shallow, shaped channels designed to carry rainwater across an area without causing soil erosion. The grass cover and root system in the waterway slows the water flow and protects the channel from eroding. These should be designed to accept the volume and slow the velocity of that amount of water. Choosing the correct grass is helpful in its success.

This is a viable solution for many erosion problems if installed correctly. These can be used at many scales: farms, fields, streams, redesign of culverts, slopes, etc.

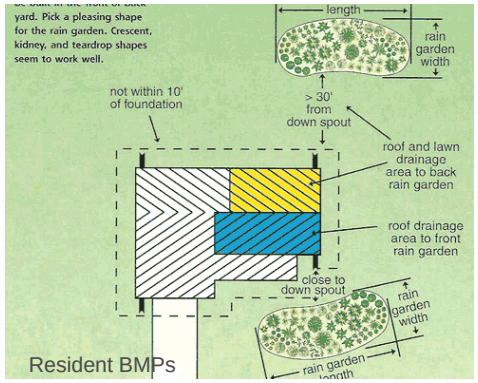
HeartLands Conservancy can provide information for residents. Additionally, the Madison County Soil and Water Conservation District and Natural Resource Conservation Service can connect individuals with information about grassed waterways.

Management Methods for Farmers

In the watershed, the resources and services that farmers provide are important. Conserving their top soil and fields in a healthy and sustainable manner should be supported. Many methods are traditional and passed down through generations. To help prevent their soil from becoming sediment and silt further downstream, landscape methods pictured above help retain topsoil and nutrients in their fields, reducing runoff into adjacent properties and streams.

In addition, farmers use Nutrient Management Plans to address manure disposal and manage fertilizer. The goal is to supply plants with the ideal amount of nutrients, minimize runoff, and improve soil condition.

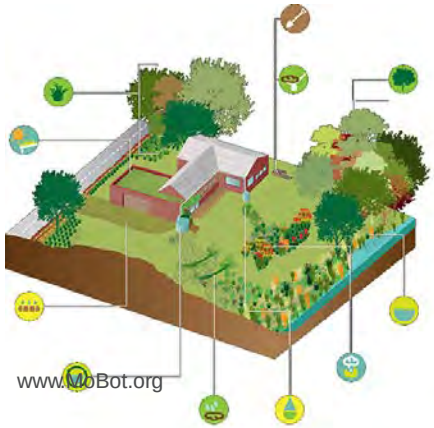
The Madison County Soil and Water Conservation District can assist farmers with resources for landscape methods, as well as pollinator buffers, and other materials including Nutrient Management Plans.



Resident BMPs


Invasive Plant Removal


Volunteers and Native Plantings


www.MoBot.org

On-The-Ground Actions for Actions for Residents, Homeowners, and Property Owners

Flood Reduction Strategies

Basement flooding is typically caused by improper placement of the house, site grading, sewer backup, and infiltration through basement walls.

Possible solutions for homeowners include regrading the site, adding drain tile, downspout disconnection and extension, incorporating rain gardens, and reducing impervious pavement (e.g., asphalt) in the yard. Each home will have a different need and solution.

HeartLands Conservancy has developed a quick resource guide on green infrastructure solutions that can be implemented on single properties to reduce basement flooding: https://www.heartlandsconservancy.org/cmsb/uploads/thinking-outside-the-pipe_2016_small.pdf

Invasive Species Removal

Invasive species are one of the greatest threats to natural resources in Illinois. Invasive species are plants or animals that are not native to our area and are likely to cause harm to the environment and the economy. They can cause native plants and animals to die by taking away food sources, preying on native species, and carrying diseases. Invasive plants often have shallow root systems compared to our native species. When invasive plants choke out the native plants, it can cause erosion problems.

In the Indian-Cahokia Creek Watershed, underbrush including private yards, bush honeysuckle, winter creeper, Japanese honeysuckle, autumn olive, mimosa, and tree of heaven are some of the most common invasive species.

Native Plantings

Removing invasive plants and replacing them with native species can significantly improve environmental health and reduce erosion and a healthier environment.

Many garden centers sell invasive species for landscaping as exotic species, foundation plants, or fast growing shrubs and trees.

Select and request native plantings, seeds, and trees. They will provide a stronger, resilient, and more drought-resistant landscape for your enjoyment, as well as for birds and pollinators.

HeartLands Conservancy and the Illinois Department of Natural Resources have significant resources regarding invasive species.

www.HeartLandsConservancy.org

https://www.dnr.illinois.gov/education/Pages/ExoticsHome.aspx

Rainscaping

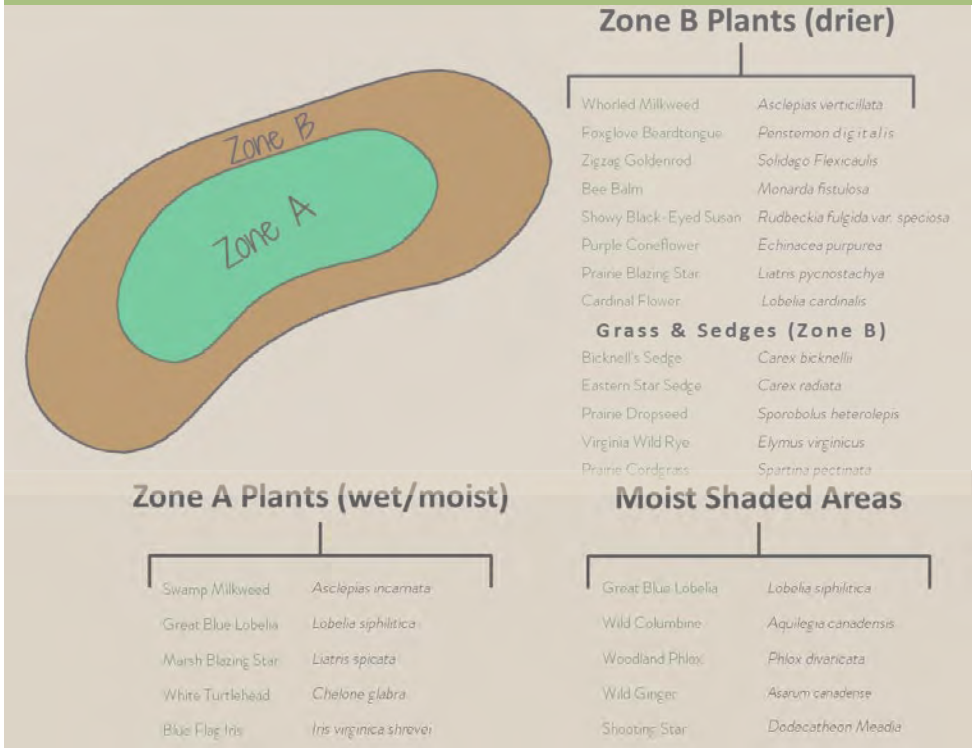
Rainscaping is any combination of plantings, water features, catch basins, permeable pavement, and other activities that manage stormwater as close as possible to where it falls, rather than moving it someplace else. In addition to rain gardens and bioswales, a diverse landscape that includes trees, shrubs, perennials, mulch, and amended soils intercepts and disperses rain as it falls, and allows more water absorption into the soil and by plants. Yards can be landscaped for both beauty and function. Address specific water issues such as erosion, wet areas of the yard and difficult-to-mow places, while positively impacting and area streams and lake.

Using devices to collect rain water to store, slowing release, or recycle is also beneficial. On the following pages are images of various examples of each. Visit Madison County, HeartLands Conservancy, or Missouri Botanical Garden for resources.

Rain Garden Character Image


Rain Garden Character Image

On-the-Ground Actions for Rain Gardens and Rainscaping




Rain Garden Character Image


Rain Garden Construction


Rain Water Collection in Rain Barrels


Rain Garden Character Image


Rain Garden Character Image

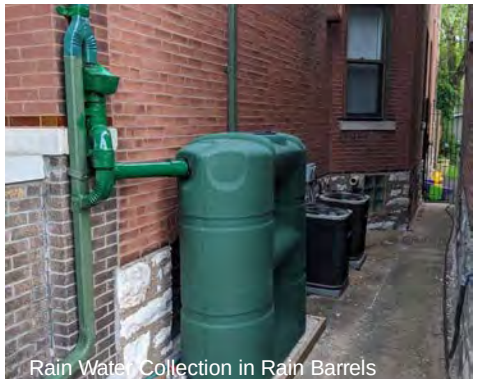

Rain Garden Character Image


Rain Garden Character Image


Rain Garden Character Image


Rain Garden Character Image


Rain Garden Character Image


Rain Water Collection in Rain Barrels


Rain Water Collection & Rain Garden


Rain Garden Character Image


Rain Garden Character Image

Blue & Green Infrastructure

Blue & Green Infrastructure

Priorities:

Shoreline Stabilization

Stream and Culvert Erosion

Slow Stormwater Runoff

Reforestation Plan

Conservation Easements

Improve Stormwater Management

Increase Biodiversity

Key Recommendations:

Prioritize “green” stormwater management approaches.

Shoreline Habitat

Encourage use of Native Plantings

Wetland Restoration

Overview

All water carrying tributaries and the lake are considered blue infrastructure. All green infrastructure pertains to individual methods of storm management, BMPs mentioned earlier in the plan, greenways, open space, natural areas, parks, and non-agricultural fields.

Using green infrastructure instead of sewer system or channelized culverts to manage stormwater is not only a cost effective method to reduce flooding and erosion, but it also cleans the water, takes stress off of the sewer and water treatment infrastructure, lowers maintenance costs, can provide recreation space, and is often a beautiful amenity.

Green infrastructure allows water to slow, filter, and absorb into the soil. Potential partners have been working with green infrastructure for decades and have excellent track records of pulling in various funding sources to plan, design, and install these solutions.

It is very difficult and expensive to attempt to acquire land for greenspace and infrastructure after development has occurred. Large parcels are almost impossible to acquire in a developed area. Purchases of land for any initiatives have been and should continue to be secured well before a crisis or lack of space for the needs of the community.

Fortunately, the DLPOA has been proactive in preserving common areas, parkways, and identifying and acquiring advantageous parcels for future infrastructure necessary for stormwater and sediment management.

The overall benefit, ecologically, economically, and through quality of life statistics, will outweigh and overshadow the financial costs. It is more fiscally responsible to invest, maintain, and conserve lands for the future in order to provide primary infrastructure and healthy environments. Additionally this supports access and the health of the lake, and active lifestyles for residents.

Recommendations

This set off recommendations seeks builds upon the other themes, especially Best Management Practice and Sustainability and Resilience.

Highest Priority:

- Preserve shorelines, riparian, and wetland areas to combat erosion, to control sediment and silt, to improve water quality, and to slow stormwater runoff.
- Consider widening and decreasing culverts to prevent erosion. Allow the water to sheet flow over the plantings. This would slow the velocity, filter, and eventually help absorption.
- Support installation of BMPs initiatives on residents’ private properties, especially if single or group of properties are adjacent to common areas and parkways.

Short Term

- Support and develop beneficial landscape guidelines, including more street trees and shoreline trees. Update herbicide and pesticide restrictions.
- Prioritize green stormwater management approaches. Consider other methods than rip-rap for shoreline stabilization. Increase biodiverse, high-quality shoreline habitat.
- Develop active and passive water aeration methods. Consider creating water features as water storage: riffled wider tributaries, stone edged shoreline, cascades, etc.
- Include beautification projects with as many native plantings and green infrastructure features as possible.
- Build partnerships with the SWCD, County, and NRCS to work with adjacent landowners and HOAs on stormwater BMPs on their land.
- Increase trees for future canopy. Use tree plantings (e.g., street trees), to decrease and filter stormwater, reduce air temperatures, provide pleasing aesthetics.

Medium Term

- Support riparian plantings, shoreline buffers, and filter strips.
- Use parkways to moderate erosion.
- Consider “turf removal” or “No Mow Initiatives”.
- Encourage beneficial, non-invasive aquatic plantings.

Long Term

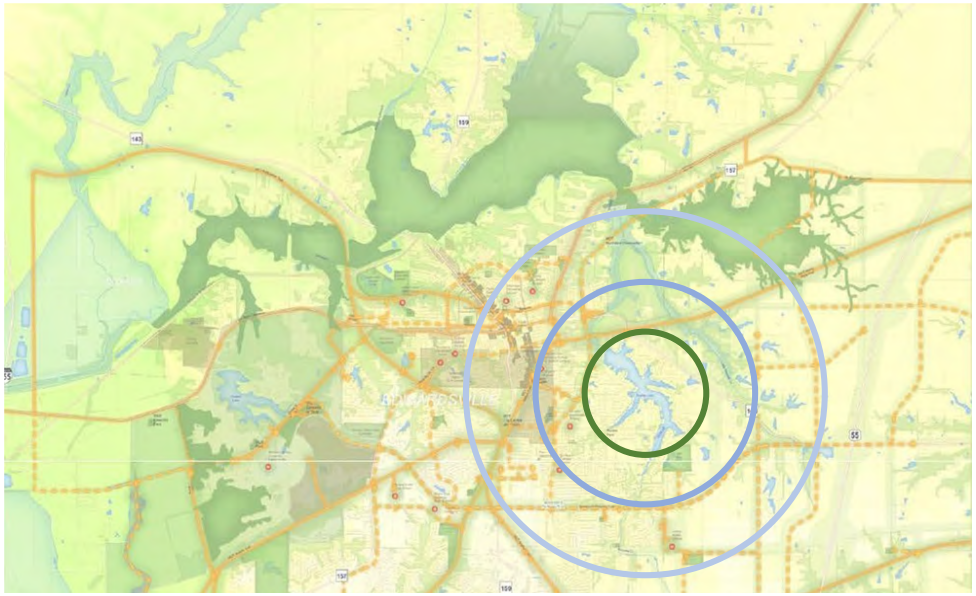
- Review new funding sources and city/county green infrastructure ordinances to improve infrastructure.
- Increase trees for future canopy on and around all DLPOA properties.
- Begin process to name constant streams. Once named they can receive public funding for larger interventions.

On-going

- Increase beautification through green infrastructure and beneficial plantings.
- Support city-wide green infrastructure usage.
- Support beneficial wildlife.
- Retain, filter, absorb, and slow stormwater runoff through:
  - Bioswales, also known as vegetated swales, which increase infiltration and delay stormwater surges during heavy rainfall.
  - Pervious pavement, which allows infiltration of stormwater into a below-ground storage area through holes in the pavement.
  - Rain gardens, which temporarily store and infiltrate rain water, significantly slowing the flow of water, improving water quality, and providing wildlife food and habitat.
  - Rainwater collection and reuse, using rain barrels or cisterns.
  - Single property flood reduction strategies, which differ from property to property, based on the sources of flooding and appropriate flood reduction strategies.
- Consider all methods of keeping stormwater, sediment, silt, and trash out the lake.
  - Stormwater system maintenance and expansion, which is crucial for the efficient conveyance of stormwater.
  - Lake and stream dredging, which removes sediment from the waterbody and reduces the risk of flooding.
  - Logjam removal, which removes debris from the stream channel, reducing scouring in the stream channel and the risk of floods overtopping the channel.
  - Shoreline stabilization, which reduces bank erosion along lake shores.
  - Streambank and channel restoration, which includes stabilization and grade control structures. These reduce erosion and, in some cases, provide flood storage.

When examined from a wellness perspective, environmentally friendly landscaping supports a holistic view of wellness. The ways we use and manage our residential landscapes can support our physical health, our emotional resilience, and our intellectual pursuits. By recognizing the benefits of incorporating native plants and alternate landscaping options, we will allow this movement to reach new audiences.

- Kelly Cartwright, Ph.D.




Dredging and Stabilization


Wetlands


Shoreline Stabilization


Shoreline Stabilization

On-the-Ground Actions for Streams, Ponds, and Lakes

Stream and Lake Dredging

Periodically, sediment will accumulate in ponds to the point that they become too shallow to effectively capture water. At this point, sediment needs to be removed using a technique called dredging. If other best management practices are working well in the watershed, sediment removal may only be needed every 10 to 20 years.

Although sediment must be tested prior to removal, it can usually be disposed of in a landfill, sold, or spread on land and reseeded. Occasionally a permit is needed for dredging.

Dunlap Lake has been recommended by several agencies, planning initiatives and reports for regular dredging.

Ponds and Wetlands

Wetlands are among the most effective ways to remove pollution from stormwater and can also help with flood control. Wetlands also provide critical wildlife habitat for a variety of species, particularly waterfowl. Native plants on the edge of ponds and wetlands help protect against erosion, provide habitat, and reduce nuisance animals, such as Canada Geese.

Wetlands may be existing, seasonal, in need of restoration, or may be constructed if conditions are suitable.

HeartLands Conservancy has a resource about wetlands at https://www.heartlandsconservancy.org/cmsb/uploads/liquid-assets_web.pdf

Shoreline and Streambank Stabilization and Channel Restoration

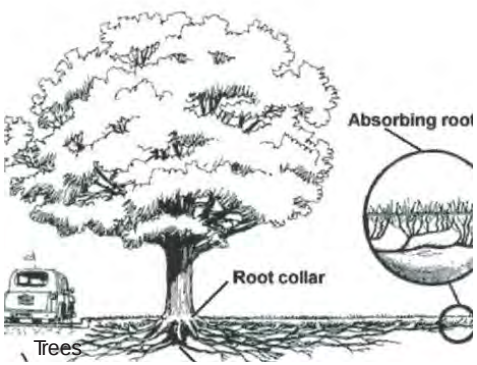
There are several different ways to stabilize eroding streams and shorelines. Some methods include stonetoe protection (installing large rocks at the base of the stream or shore), two-stage channels, and structures (typically made of rock) that slow the flow of water to prevent further erosion.

In particular areas, shoreline planting buffers can stabilize areas of concern as well as slowing stormwater into the lake. This will also help with collect sediments, and foreign objects, filter water, and provide areas for beneficial wildlife.

Contact the city, Madison County Planning and Development Stormwater Coordinator or HeartLands Conservancy to assess options and contractors for stream bank and shoreline stabilization.


Shoreline Stabilization


Detention Basin



Trees


Bioswale

On-the-Ground Actions for Communities, Subdivisions, and Businesses

Detention Basins

A detention basin is an excavated area installed near streams to protect neighborhoods against flooding and erosion by storing water and slowly releasing it. They are especially effective during large storms reducing the effects of flash flooding. Detention basins require regular maintenance, which is typically the responsibility of a homeowners association (HOA). Using native grasses and sedges results in less maintenance, creates better habitat for wildlife, and furthers reduces erosion. Pollinator buffers may be added for additional benefits.

Work with city and county to use the most up-to-date beneficial specifications to slow the velocity and volume of water if released into a drain. Consider retrofitting any drain to match new regulations or beneficial practices in partnership with the state and county. For detention basin retrofit, partner with city. Conduct annual inspections.

Street Trees

Street trees are planted in the public right-of-way, typically the area between the street and sidewalk or house. Street trees capture and filter rainwater, reduce air pollution, and increase property values.

The Madison County Soil and Water Conservation District holds an annual tree sale for native trees. The City of Edwardsville Beautification and Tree Commission also offers a Tree Planting Program that reimburses residents for half of the cost of purchasing and planting a tree each year in city limits.

Forest ReLeaf of Missouri offers trees for purchase for communities. See chart and resources for specific tree programs or contact HeartLands Conservancy.

Bioswales and Vegetative Swales

A bioswale is essentially a ditch or shallow depression designed to remove sediment and pollution from rainwater runoff. The gently sloping trough is filled with native vegetation, providing a path for water to run through slowly rather than rushing into the storm sewer, stream, or lake.

The plants and soil in the bioswale slow and clean the water before it enters the stream or ground. They are also attractive in community settings when maintained. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_029251.pdf

http://www.missouribotanicalgarden.org/sustainability/sustainability/sustainable-living/at-home/rainscaping-guide/vegetated-bioswales.aspx


Native Planting Rain Garden

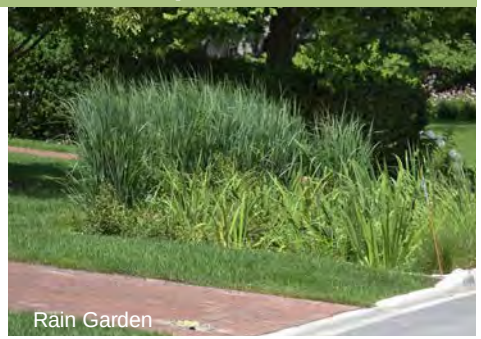

Native Planting Rain Garden


Native Planting Rain Garden


Native Planting Rain Garden

On-the-Ground Actions for Native Landscapes


Native Planting Buffer Strip


Rain Garden


Native Plantings Rain Garden


Native Planting Rain Garden

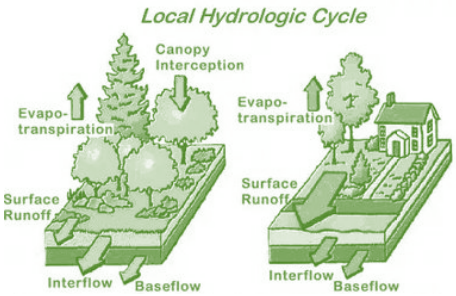

Native Planting Rain Garden


Native Planting Rain Garden

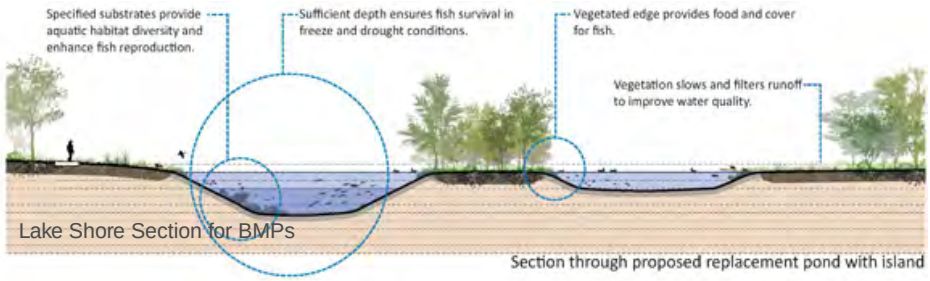

Shoreline Riparian


Native Riparian & Aquatic Planting


Existing



Comparison of Residential Use of BMPs



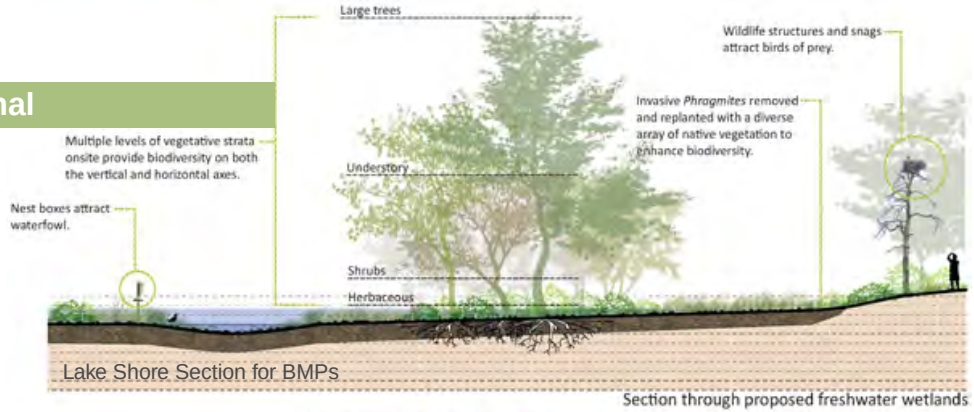
Sample: Biodiverse Landscape - Mulifunctional, Layered, Seasonal

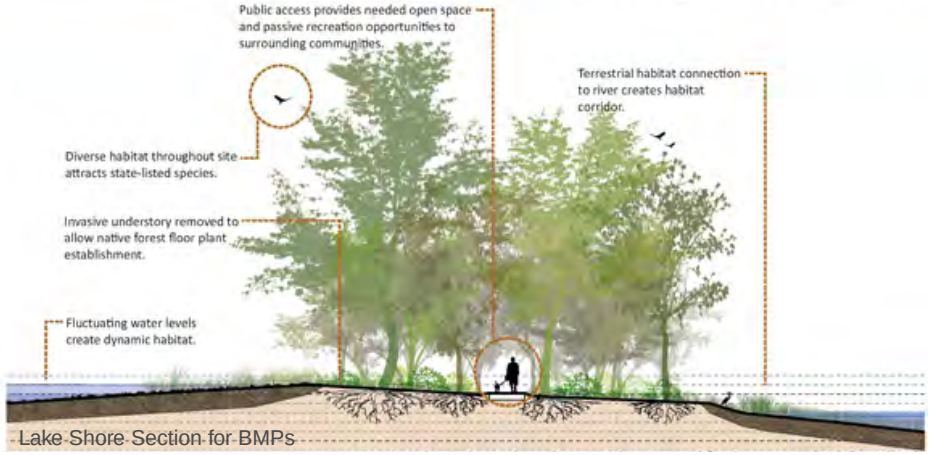

Winter Landscape


Spring Landscape


Summer Landscape


Autumn Landscape





Vibrant, Healthy, & Active Lifestyle

Vibrant, Healthy, & Active Lifestyle

Priorities:

Develop Individual Common Areas Plans and Phases

Opportunities for Gathering

Interpretive & Education

Formalize Volunteer/Friends Group

Special & Recreational Events

Key Recommendations:

Kayak/Canoe Stands/Launch Areas

Support Resident Athletic Clubs

Life Safety Signage

Support Complete Streets

Overview

By promoting healthy and active living, DLPOA will increase the quality of life for its residents of all ages and its community vibrancy. This way of life integrates opportunities for physical activity into daily routines.

The goal is to get at least 30 minutes of activity a day. This can be achieved in many different ways, from walking to school, or a friend's house, or gardening in a common area. Trails can also be used used to complete daily tasks like going to the corner store or to a meeting.

Active living is about creating healthy communities that have safe and convenient choices for people to walk, bike, boat, and be physically active on a daily basis. It also provides access to nature and amenities that are necessary to achieve this in a passive or active manner.

Inclusive spaces are important as well. These spaces allow for hobbies, nature-observation activities, meditation, yoga, and the creative and performing arts.

Lastly, an active and constantly learning atmosphere is beneficial for all ages. Engaging peoples hands and minds build community.

Recommendations in this section are meant to encourage a holistic approach to healthy and active living.

Recommendations

Highest Priority:

- Continue special events.
- Develop a "Friends" organization to provide on-going volunteer, fundraising, and other forms of assistance and beautification efforts.
- Engage and invite Master Gardeners and Master Naturalists to help install BMPs in landscape and develop particular maintenance guidelines and teach residents.
- Develop detailed plans including landscape, BMPs, amenities, accessibility, signage, and priority needs for each common area.

Short Term

- Install kayak and canoe stands with launch areas throughout the commons areas. Consider a "slip fee" for these in the future as revenue resource.
- Develop a DLPOA Education and Outreach Strategy and materials to continue to inform individuals.
- Foster ideas for new revenue-producing events, for example Big Shark Triathlon, creekside events in Maeystown, etc.
- Support 'share the road' signs for bicycles and pedestrians.
- Improve the residents' understanding, knowledge, and participation of best management practices for stormwater management.

Medium Term

- Develop a regulatory and interpretive signage master plan or guidelines.
- Consider art in common areas themed for the community.
- Develop "active lifestyle" relationships for brands, businesses, and vendors.

Long Term

- Improve multi-modal trailhead, crossing, trail right-of-ways beautification, and site improvement plan with MCT and City.
- Consider creating an large formal gathering space.

On-going

- Connect and support walking and bicycling amenities, linking economic centers, jobs, schools, and food resources to the community.
- Continue to develop staff/ volunteer group that is reflective of the necessary technical and management expertise.
- Continue to update website, social media, and newsletters.
- Support Complete Street Ordinances at the city and county levels.


Education & Outreach for Residents

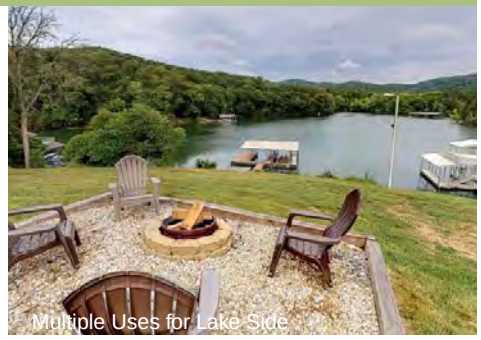

Seasonal Events


Fishing & Tournaments


Places for Gathering

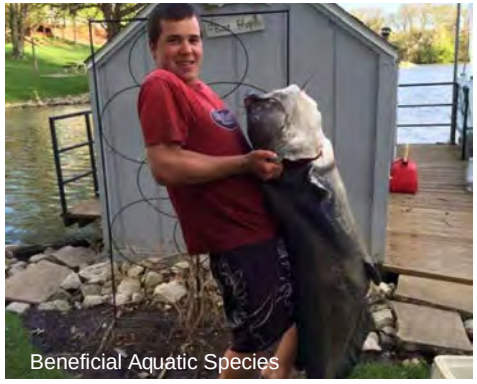
Continue to grow a vibrant, healthy, & active lake lifestyle


Leisure Boating


Multiple Uses for Lake Side


Interpretive Signage Character Image


Water Quality


Beneficial Aquatic Species


Special Events & Celebrations


Small Craft


Water Safety

Celebrating Lake Life

Celebrating Lake Life

Priorities:

New Revenue Sources

Common Area Marina(s)

Dock Design Standards

Preserve Green & Water Viewsheds

Fundraiser & Naming Rights

Key Recommendations:

Support Four-season activities

Continue Existing Events

Consider DLPOA Music Events

Consider Seasonal Pop-up Businesses

Consider using Joe Glik Park for Large Festivals and Fundraisers

Overview

Dunlap Lake residents have come to this unique community and its central character - the lake. With lush viewsheds and mature vegetation, the lake vista is inviting, scenic, and a welcoming landscape to call home.

Over 350 households share this common feature and many times a year come together to celebrate the Lake Life of Dunlap.

Neighbors have a long history of volunteering for the betterment of the community. Examples include the volunteer board, special events, celebrations, seasonal gatherings, bonfires, and tournaments. Volunteers continue to participate in the care, management, and maintenance of the community, as well.

Lake life is something to celebrate and cherish. To ensure it is sustained and grows in innovative ways, consider implementing these recommendations. As trends and new opportunities present themselves, they too should be considered.

Recommendations

Highest Priority:

- Develop detailed plans for all DLPOA properties and common areas to determine best use and revenue opportunities.
- Address access for off-lake residents.
- Modify DLPOA restrictions to accept recommendations as amendments or resolutions.
- Clarify “access”, “use”, and define/amend “assignment” of common areas especially for off-lake members.
- Develop design guidelines and maintenance standards for docks, shared docks, slips, and potential marinas.

Short Term

- Develop shared dock agreement for private docks on DLPOA Property.
- Develop shared dock agreement for private docks on private property.
- Review and implement new dock and wait-list policies for all residents.
- Require that all docks and boats are registered and meet maintenance standards and design guidelines.
- Consider seasonal pop-up businesses to provide services, rental, or goods.
- Clarify lake guest privileges/access.
- Develop a Guest Pass Program.
- Consider and develop multiple marina models, including marina condos with special assessments. Also, consider marina-slip leases: members pay upfront an annual slip fee, much like a slip in Holiday Shores, Carlyle Lake or Alton Marina. Put aside two slips: one for pull up and one for weekly/monthly rental.
- Consider offering greatest priority for the off-lake residents.

Medium Term

- Develop incentive/disincentives for private docks on key common areas.
- Consider termination clause for unused common area docks.

Long Term

- Consider seasonal or permanent revenue venues or events to support funds for endowment and annual maintenance. Seek opportunities to generate revenue either through management, ownership, or partnering with contractors, entrepreneurs, or other businesses.
  - Equipment rental
  - Motor repair & parts
  - Fishing supply & dock
  - Fishing license outlet
  - Shade structure (rental)
  - Boat slips
  - Kayak/canoe rental
  - Seasonal bait

On-going

- Collect ownership documentation of all structures on lake shoreline.
- Remove or amend all extraneous or convoluted liability issues: private docks on DLPOA property.
- Protect viewsheds of lake.
- Seek private donations. Consider naming rights of common areas, marinas, and amenities.


Special Events & Celebrations


Private Residence Slope Stabilization


Recreation


Wildlife

Character Images for Celebrating Lake Life


Marina , Dock, & Slip Options

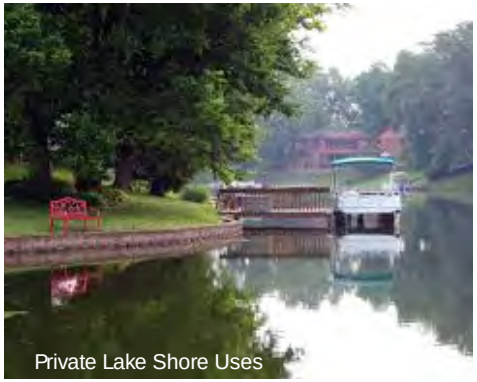

Private Shared Dock Slips


Lake & Landscape Viewsheds


Casual


Multi-generational


Marina Slip Options


Private Lake Shore Uses


Beneficial Wildlife Stocking

DLPOA Properties

Barnett Drive Commons Areas:

- **B1** – between 370 and 402 Barnett
- **B2** – between 304 and 332 Barnett
- **B3** – between 104 Cottage and 303 Thomas Terrace
- **B4** – between 146 & 148 Barnett

East Lake Drive Commons Areas:

- **E1** – from 369-409 East Lake
- **E2** – from 427-439 East Lake
- **E3** – from 471-103 East Lake
- **E4** – from 517-527 East Lake
- **E5** – from 537-553 East Lake (and lot across the street)
- **E6** – from 617-613 East Lake
- **E7** – from 715-719 East Lake
- **E8** – from 749-883 East Lake – East Lake 8 survey

West Lake Commons Areas:

- **W1** – from 510- 452 West Lake
- **W2** – from 452-442 West Lake
- **W3** – from 412-358 West lake
- **W4** – from 348-336 West Lake
- **W5** – from 336-324 West Lake
- **W6** – from 107-113 West Lake
- **S1** – corner of Gerber and East Lake Drive
- **S2** – back along the creek running through the culverts into the lake; and
- **840** – 840 East Lake Drive

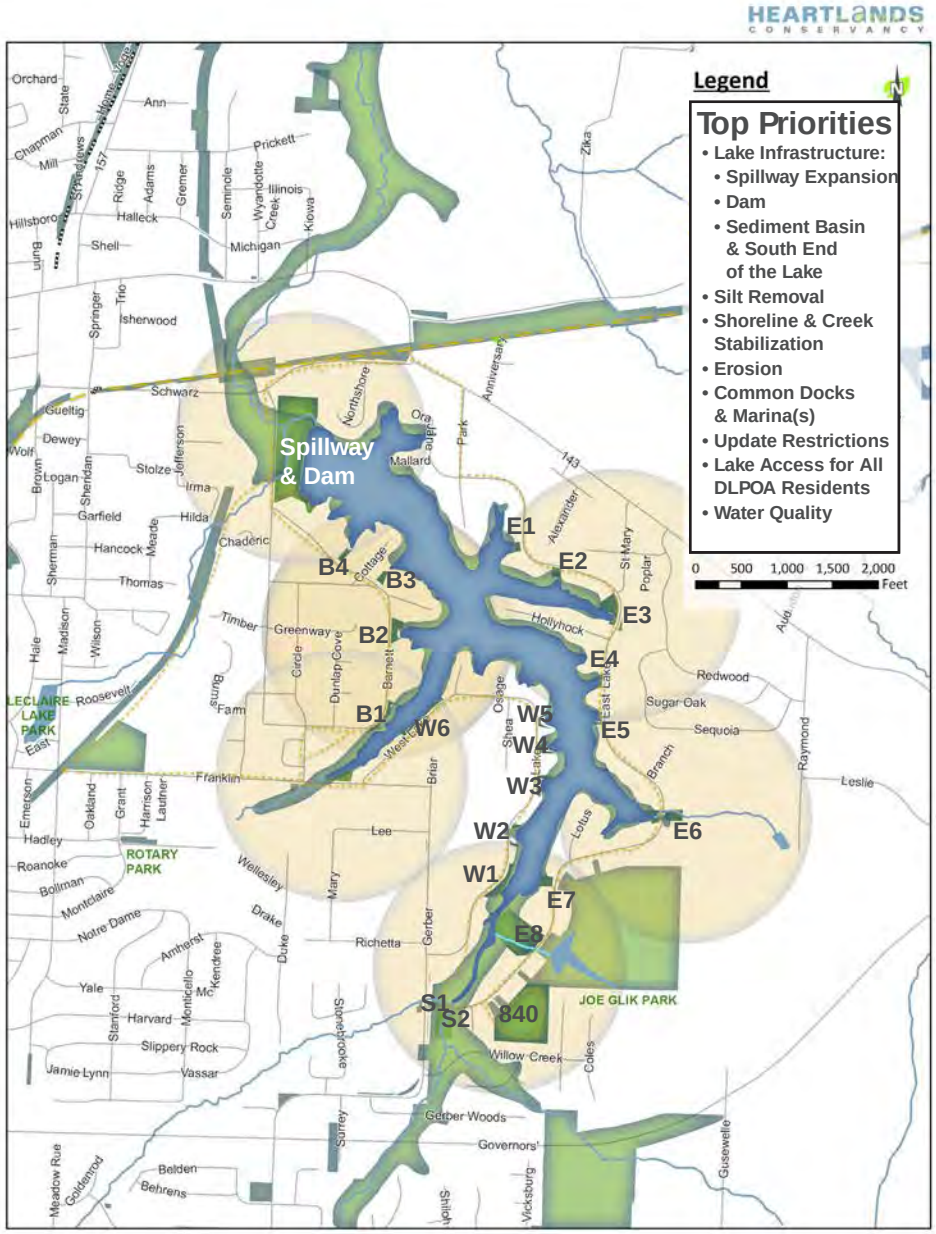
Recommendations for proposed projects for DLPOA Properties and Common Areas

This plan recommends the Implementation Committee precede with detailed planning of all DLPOA-owned properties.

The DLPOA Properties Chart to the far right proposes low, medium, and high priority for improvements, infrastructure needs, and maintenance tasks. These include needs and wants of the Association as outlined in the work sessions, resident survey, and this plan.

Identified tasks, priorities, and projects should be also be addressed in the aforementioned detailed master plans as well as amenities, landscape design, and detailed stormwater mitigation BMPs appropriate at each site.

After these detailed plans are completed, begin their concurrent implementation according to funding and priority, monitor and complete projects to determine compliance with this document's vision, goals, and recommendations.



DLPOA PROPERTIES Proposed: High Med Low (date of fix if known)	B1	B2	B3	B4	E1	E2	E3	E4	E5	E6	E7	E8	W1	W2	W3	W4	W5	W6	840 East Lake	S1	S2	Dam Spillway Area
2020 DLPOA Maintenance Priorities																						
Develop Detailed Master Plan for Area																						
Complete Engineering Review & Plans				wall								bridge										
Develop Detailed Future Marina/Dock Opt.																						
Revenue Venue Potential																						
Special Event Site																						
Seating &/or Picnic Facilities																						
Park and or Trail Connections																						
Crosswalk Needed																						
Rain Gardens/Planting buffer (shore or road)																						
Riparian Shoreline Plantings																						
Arborist Review Health of Trees																			heritage			
New Walking Paths																						
Consider Stone Beach and Small Launch																						
Shoreline Stabilization		2020		wall		2020					2019											
Additional Erosion Control		inflow				inflow																
Increase Tree Canopy (high & mid-canopy)																						
Remove Invasive Species			brush								2019											
Accessible Access Possible		no		no											no							
Add Kayak Stands & Launch (in progress)						2020				2020												
Add New Docks or Shared Dock w/Slips																						
Volunteer Opp: Debris, Invasives, Plant, etc																						
Signage - Regulatory, Interpretive, Map, Etc.																						
Bioswale or Buffer Strip																						
Potential Ideas (Bike Pking, Seats, Fishing, etc)			library				fishing			wetland					bike			habitat for fish	path			
Capture Water Runoff & Sediment				riffles							riffles											

Partnerships

Partnerships

Priorities:

City Partnership on Stormwater

Grant Opportunities

Master Naturalist & Gardeners

Philanthropy for the Lake

Update Emergency Plan

Key Recommendations:

Seek Multiple Funding Sources for implementation of Priorities

City, County, & State as Partners

Grant Committee Working Groups

Work with Adjacent HOAs on Stormwater Management Projects

Overview

Partnerships are vital for the ability to implement not only capital needs and infrastructure, but also elective improvements. Additionally partners in management, maintenance, and operations, could allow for more of the DLPOA's resources to be leveraged across the entire fiscal balance sheet.

This approach can begin internally and locally to provide an initial foundation. The DLPOA, City, and County can join in partnership to move many of the recommendations and funding opportunities forward.

The civic decision-makers are an important audience that can impact all the other audiences by controlling long-term regulatory actions and policy initiatives.

Recommendations

Building upon the foundation of key partners, other stakeholder and partners that can effect significant changes in watershed health, and who should be reached by outreach and education, include:

- Municipal staff, township staff, and elected officials
- Work with adjacent HOAs on stormwater and environmental projects.
- Developers, contractors, engineers, and architects of private residences
- Residents throughout the watershed, and particularly those up and downstream in the Mooney Creek subwatershed
- Adjacent farmers and resource groups: Farm Bureau, SWCD, USDA, and NRCS.

Highest Priority:

- Begin a DLPOA philanthropic group: Create "Dunlap Friends Society" as tax deductible 501c(3). Consider adopting the "Friends of Dunlap Lake" Facebook page.
- Champion the plan for adoption or acceptance with city and county.
- Meet every grant cycle or funding opportunity with enthusiastic applications. By meeting these deadlines, collaborating with cooperating agencies and partners, the financial burden will be lightened.

Short & Medium Term

- Embrace DLPOA volunteers as partners. Document the hours as contribution work-in-kind benefits for grants. Apply for joint grants were possible. Communicate volunteer impacts/hours spent to demonstrate commitment to other partners.
- Consider discussing infrastructure needs with Illinois General Assembly state senators and representatives

On-going

- Continue to work with City/IDNR/ County on all partnerships amd regulatory needs. Develop MOA/ MOUs as needed.
- Keep communication open among partners. Invite partners to Implementation Committee meetings.
- Keep web page updated.
- Engage new partners as needed.
- Encourage partnerships with Master Naturalist and Gardeners, especially those that live in the community,
- Get on list serves for HOAs, organizations, grant lists, etc.
- Continue to participate in stormwater and watershed planning conducted by city and county.
- Support partners' policies, programs and projects in line with this plan's vision, goals, and recommendations.
- Continue to engage agencies to work on recommendations with DLPOA committees.

Agencies & Partnering Roles

Several government entities at federal, state, and local levels have jurisdiction over watershed protection. They are instrumental in forming partnerships, funding opportunities, and project sharing.

This information may be found in the **Indian-Cahokia Creek Watershed Plan** for further investigation - as it may effect the approval process during the construction of the priority projects

Federal and State Entities

The U.S. Army Corps of Engineers (USACE) regulates wetlands through Section 404 of the Clean Water Act. Buffers or wetland mitigation are commonly required for developments that impact wetlands. USACE also regulates land development affecting water resources (rivers, streams, lakes, wetlands, and floodplains) when "Waters of the U.S." are involved, a category that includes any wetland or stream/river that is hydrologically connected to navigable waters. Counties also regulate wetlands and other aspects of stormwater management through county Stormwater Ordinances. (15)

The U.S. Fish and Wildlife Service (USFWS), Illinois Department of Natural Resources (IDNR), and Illinois Nature Preserves Commission (INPC) play a critical role in protecting high quality habitat and threatened and endangered species, often on land that contains wetlands, lakes, ponds, and streams.

The Illinois Environmental Protection Agency (IEPA) Bureau of Water regulates wastewater and stormwater discharges to streams, rivers, and lakes through the National Pollutant Discharge Elimination System (NPDES). The NPDES Phase I Stormwater Program applies to large and medium-sized Municipal Separate Storm Sewer Systems (MS4's), several industrial categories, and construction sites hydrologically disturbing five acres of land or more. The NPDES Phase II program covers additional MS4 categories, additional industrial coverage, and construction sites hydrologically disturbing more than one acre of land. Under the NPDES Phase II program, all municipalities with small, medium, and large MS4's are required to complete a series of Best Management Practices (BMPs) and measure goals for six minimum control measures, including public education and participation, illicit discharge detention, construction site runoff control, and pollution prevention. (16)

For construction sites over one acre in size, which are covered by the NPDES Phase II Program, the developer or owner must comply with all requirements including developing a Stormwater Pollution Prevention Plan (SWPPP) that shows how the site will be protected to control erosion and sedimentation and completing final stabilization of the site. Several municipalities and companies in the watershed have been issued NPDES permits by Illinois for stormwater discharges to MS4s.

The county Soil and Water Conservation Districts (SWCDs), under NRCS, influence watershed protection through soil and sediment control and pre- and post- development site inspections. They also provide technical assistance to regulatory agencies and the public.

Local Government

Madison County is primarily responsible for county and municipal-level government for watershed protection. The County Board oversees decisions and has the power to adopt, override, and alter policies and regulations. County departments, especially those with functions of planning, zoning, and development, help shape the policies enacted in the unincorporated areas. Local municipalities also have ordinances that address other natural resource issues, which can include conservation development, Special Service Area (SSA) or watershed protection fees, and native landscaping.

Land development in unincorporated Madison County is regulated by the Madison County Planning and Development Department. Madison County enforces floodplain development regulations in its Zoning Ordinance, construction and fill activities in its Fill Ordinance, future development in its Land Use Plan, regulations on new housing subdivisions in its Subdivision Ordinance, and stormwater management regulations in its Stormwater Ordinance. Madison County is also a member of the National Flood Insurance Program (NFIP). Madison County's Stormwater Ordinance regulates development activities which alter stormwater flows and enable the County to comply with National Pollutant Discharge Elimination System (NPDES) regulations. The ordinance requires several types of development activity proposed in the unincorporated area of the county to obtain a permit, including any land disturbing activities if the activity is within 25 feet of a river, lake, pond, stream, sinkhole, or wetland. Madison County Stormwater Commission is also in the process of adopting a Stormwater Plan, which will guide future stormwater management activities. The Madison County All-Hazard Mitigation Plan also includes a summary of planning documents in effect for the county and municipalities.

Edwardsville

Edwardsville has a Drainage Ordinance, is a member of the NFIP, and has passed a floodplain ordinance.

In general principle, the city is supportive of the ICC Watershed Plan and green infrastructure initiatives. The public works department and the planning department review updates to ordinances based on the state's practices of supporting bettering stormwater management. Given that Dunlap Lake operates as a stormwater reservoir for the southern end of the watershed, DLPOA should form an ongoing partnership in seeking funding and project opportunities with the city.

Equity & Stewardship

Equity & Stewardship

Priorities:

Financial Health

Equitable Assessments

Review Restrictions

Implementation Committee

Boat & Dock Policies

Key Recommendations:

Continue Zoom meeting access

Post Master Plan

Rebrand the term “Restrictions” of DLPOA Covenants/Regulations

Review and implement new dock & wait list policies for all residents

Consider multiple methods to assist annual and special assessments

Overview

New policies, programs, and projects are hard to administer. In smaller groups the success is often a balance of transparency of the policy administration and investing in the social capital put forth in implementing it. A way to bring about this success is a shared vision. However, with a lack of social capital or where it is scarce or neglected, implementing new policies can be very challenging. Therefore, it is imperative to think of new ways to be responsible and equitable.

Recommendations

Highest Priority:

- Establish an Implementation Committee to ensure ongoing momentum.
- Monitor and review projects to determine compliance with the master plan’s vision, goals, and recommendations.
- Collaborate, partner, and leverage resources for the procurement, maintenance, endowment, and future implementation of master plan projects.
- Remain in good fiscal standing to seek funding opportunities
- Amend governance documents to address current needs; amend outdated policies; and post final documents and changes online.

Short Term

- Consider continuing Zoom meeting access for residents.
- Post all plans, studies, project management timelines, and reports on the web site.
- Develop new agreement templates and make them available online.
- Review definitions of what each budget covers: annual maintenance, operating budget, capital improvements, and add infrastructure repair and maintenance endowment.
- Develop new revenue strategy.
- Develop ‘modes of care’ maintenance schedule for annual contractors for all DLPOA properties to increase efficiency and decrease costs.

Medium Term

- Consider equitable fee structure and formulas that can sustain the true costs of the DLPOA’s responsibilities.
- Consider implementing an annual access fee for a slip/dock on all common areas while dock policies are being amended.
- Consider non-acquisition techniques such as conservation easements, incentives, special assessment credits, and volunteer dedication as alternative methods towards fee-based initiatives.

Long Term

- Create succession plans for committees, chairs, and volunteer stewards through mentorship and record keeping.
- Ensure capital project plans and fiscal plan is updated and reviewed.
- Consider special assessment particular to common area and level of amenities offered.

On-going

- Support the cumulative actions of partners, stakeholders, and the public across the watershed to accomplish its goals and objectives.
- Conduct fundraisers of all scales.
- Coordinate update with the Madison County’s Hazard Mitigation Plan.
- Support county and city ordinances affecting stormwater issues. Grow more volunteer days and city/county cleanup assistance.
- Provide resident outreach, informational, and educational activities, which are vital for supporting a healthier community and lake.
- Develop a register for shared-dock agreements with the DLPOA.

DLPOA Board & Leadership

Supporting the shared vision on the health of the Dunlap Lake and sustaining the “Lake Life” should be the focus for the entire Association and the residents in implementing this plan and achieving success, together. The DLPOA Board has the responsibility to lead this effort for the membership.

To ensure success, the DLPOA Board should continue to take the following actions:

Build Political Will:

Keep membership, city, county, civic leaders and elected officials informed. Generate a relationship and an agreement of commitment to the health and safety of the Lake as a regional resource. Develop and support policies at all levels that support this effort.

Involve the Residents and Stakeholders:

Shared advocacy comes from mutual trust and involvement. Continue to be involved and share with the implementation and development of regulations, projects, and policies. The continued involvement makes the benefits clearer to those affected by the changes, and utilizes their knowledge.

Be Equitable:

It is most important in any community to develop and be sustainable in their commitment to policies, partners, and projects, that those who are under-represented also be involved, listened to, and worked for. This may include those with ability limitations, health issues, those with low access to amenities, recreation, financial resources, or ability to participate in many forms. Transparency of the implementation process is paramount, both internally and externally.

Ensure Administrative Sustainability:

This pertains to all those who physically and fiscally care for the future of the Dunlap Lake community: The Association, the Board, and those contractors and community individuals who assist in these efforts. The strains are eased by working towards a common goal and maintaining a conducive environment in which to accomplish it.

It is also critical to nourish a structure that preserves institutional knowledge of the past and the ability to bring on new leadership. Any innovative ways to continue the progress of these efforts and sustain it should be shared.

Often a sense of daunting tasks, perceived lack of resources and social capital leads to an overwhelming desire to relax enforcement, management, maintenance, and engagement.

For the ability for those listed above to perform and want to stay involved, knowledge and tasks must be shared. Otherwise, the policies and progress may deteriorate.

To prevent weak implementation or enforcement ensure the following:

- Provide correct equipment, knowledge and training to those charged with leadership or enforcement roles, whether Board member, contractor, or resident.
- Provide clear and direct policies or leadership/administrative authority.
- No resistance. This can be achieved by improved understanding of benefits through information distribution, involvement, and continued engagement.
- Clear shared goals or communication in the priority in implementing these goals.

Actively Work toward Policy Integration:

Communication is not simply a matter of periodically informing partners. It is necessary to have continued dialog with the city and county. Together DLPOA can work towards common and overlapping goals to leverage resources and exponentially improve results and outcomes of initiatives.

Open dialog opportunities can be identified and implemented in a timely manner. This can be accomplished in:

- All phases of administration, maintenance, and improvements;
- Development of policies, ordinances, regulations;
- and retrofitting of existing public works infrastructure initiative in streets, stormwater, urban forestry and parks.

Implementation Strategy

Overview

Continuous improvement requires a feeling of ownership and pride, not just the celebration of success. Therefore, the community should set a high priority on improvements supporting infrastructure investment consistent with the goals of DLPOA. This first step encourages volunteerism, donations, private improvements, public fiscal support, and reinvestment.

This plan is an ambitious vision encompassing a 138-acre lake, over 350 private residences, and 19 association-owned properties nestled in the thriving city of Edwardsville. The plan combines capital infrastructure projects, policy amendments, management shifts, amenity improvements, and maintenance expenditures. It is not meant to be daunting, but rather a road map to move forward through key actions to care for, sustain, and support Dunlap Lake and its community.

The Implementation Strategy outlines these actions and phases so that the DLPOA may work the city, county and other partners to orchestrate this plan in a coordinated way and to maximize the value of each investment and overcome difficulties with support.

Leveraging the impact of local share investments, opportunities, and protecting local value will be critical elements in implementation. However, the successful implementation ultimately will be dependent upon consensus within the DLPOA and leaders to see this vision through to completion.

The visioning process for this plan spans 15-20 years, perhaps longer for some of the initiatives. Anticipating trends, looking for opportunities, monitoring implementation and development, and evaluating and adjusting the vision and plan are all part of taking ownership of the plan.

The key to a successful implementation is for the DLPOA and its partners to be proactive utilizing their available knowledge, resources, and tools. Most importantly is to commit and dedicate the necessary financial resources to create a collaborative entity led by DLPOA, an Implementation Committee (defined later). Implementation of the master plan should be supported through public/private partnerships as well as by:

- retaining DLPOA membership support and interest;
- raising funds from public (federal, state, and local) and private sources (residents, business owners, developers); and
- managing projects and DLPOA properties paired with the goals.

Implementation Leadership

The Board and the broader DLPOA membership need dedicated assistance in the implementation of the master plan. Implementation Committee should be established to:

- assist and lead the implementation of this plan;
- ensure that the intentions are met and goals are achieved; and
- inform the membership of the progress.

The first task of the Implementation Committee needs to focus on moving quickly from planning to action to capitalize on the strong interest and participation developed during the planning process.

The first step is to work with other DLPOA committees to develop a series of funding partnerships and voluntary programs. These need to be developed and nurtured in order to not only leverage any funds, but also to solicit increased participation by the surrounding community and partners in support of the plan.

Recommendation to establish an Implementation Committee

To ensure ongoing momentum, this Plan recommends the best practice of establishing an Implementation Committee.

The objective of this committee would be to assist the DLPOA to begin, monitor and complete projects to determine compliance with the vision, goals, and recommendations.

Proposed Responsibilities

- Monitor implementation of and compliance with the Master Plan and provide ongoing input regarding recommendations and priority projects.
- Reviewing significant modifications to the plan or its projects and initiatives, including those made by the city, county, outside agencies and other partners.
- Advocate and keep the DLPOA membership informed and advised of matters relating to the Master Plan.
- The Committee should be authorized to take projects and initiatives directly to the entire board when appropriate or necessary.
- The Committee should not be authorized and should not have power to amend or change the Master Plan, but may recommend actions, revisions, or priority shifts to the Master Plan for consideration to the entire Board.

Proposed Implementation Committee Members

The proposed membership on this Committee will include representation of the DLPOA Board, residents, and knowledgeable professionals as defined below.

The Committee membership should be representative of the following up to a maximum of 15 members. The following may serve as voting members:

- Co-chairs: the Communications Chair and Common Areas Chair
- All Common Area committee members
- All Committee Chairs
- Non-voting Ex Officio Members:
  - DLPOA Manager
  - District Alder-person
  - Member appointed by Madison County Chair/Planning Director from Madison County Stormwater Staff
  - Member appointed by Mayor and/or the Director of Public Works of Edwardsville

Including all appointed members, three shall be appointed initially for a term of one year, three for a term of two years, four for terms of three years each, and remaining for terms of four years each. All members thereafter shall be appointed for terms of four years each. The term of all ex-officio members shall correspond to their respective official terms.

Proposed Operating Principles

The Implementation Committee shall meet as often as it deems necessary, to review, discuss and approve projects which are consistent with the goals and recommendations of this plan. The Implementation Committee shall establish timeframes for review procedures in order to ensure that the project approval process does not unduly slow the implementation of the Master Plan, or miss opportunities in funding, partnerships, or proper maintenance and management. The Implementation Committee approves initiatives that then go to the full board for approval.

Projects to be reviewed include major priority projects that are both privately financed and public/private partnership financed.

In general, all projects will be brought to the full DLPOA Board by the committee once a source of funding has been identified and a project prospectus developed.

The Board will review the proposed project at this prospectus stage and provide written comments back to the Implementation Committee.

If necessary, the Board will have a final opportunity to review and provide written comments on the proposed project at 90% design and the Manager with appropriate chairs will submit the project for final approval by City, County, or State departments and agencies as necessary.

At each step of the process, the Implementation Committee may seek DLPOA Board and/or membership input if deemed necessary.

Prioritization

According to the public surveys and the annual meeting, residents felt these priorities were applicable. Please note, that "low priority" did not necessarily correlate with "not wanted". These may be accomplished at all three scales: private residences, Dunlap Lake and neighborhood, and City-wide (within the watershed, adjacent HOAs, and adjacent land uses).

High priority

- Silting issues
- Adding green infrastructure to improve stormwater management
- Removing silt
- Dam maintenance
- Dredging maintenance
- Erosion and stormwater
- Invasive plant species
- Preventing algae blooms

Medium Priority

- Access to lake edge/common areas
- Frequency of lake maintenance
- Increasing biodiversity, native plants, and riparian edges
- Creating a sediment removal and de-watering project

Low Priority

- Need for more trail linkages
- Need for more boat slips
- Access to water inputs
- Need for amenities
- Creating a small marina for multiple boat slips
- Increasing amenities for all ages and users
- Encouraging active and passive recreation
- Linking areas programatically

Implementation Phases

This phasing strategy prioritizes infrastructure needs, capital improvements, maintenance, desired projects, required policy needs, and tasks.

This phasing is a strategic recommendation and does not prohibit existing, additional, or future projects, programs, or opportunities from occurring outside specified phases.

It also targets ways to maximize incremental funding opportunities and leverage potential collaboration and partnerships.

The following Funding Strategy identifies potential sources of funding in more detail that can be used to implement the plan for DLPOA, their partners, and private property owners. Sources and requirements often change and should always be investigated further when they are pursued. Because some funding sources are more restricted than others, the plan aligns many with specific uses. Some sources require match and may identify areas in which gap financing may be needed. As projects move forward, it is best to layer and leverage sources in order to meet the gaps and requirements, as well as maximize DLPOA resources.

What to Focus on First

In this section, there is a breakdown of short to long term efforts. The projects were determined based on the general level of priority determined by the DLPOA, interest, the existing/potential funding sources and the potential for volunteer work.

In several categories, there are several "low hanging fruit" projects identified in the plan or that may arise during any given phase. These should be completed as the opportunities and ability arise.

Projects and tasks should be completed as soon as funding and resources are available, especially for all infrastructure and maintenance projects and tasks.

Projects and tasks can be combined with ongoing efforts as they already occur. For example, plan calls for an updated management and maintenance plan to be developed by the DLPOA as one of the initial implementation tasks. In addition to the current practices, the management and maintenance plan will need to take into account future projects, newly adopted BMPs, modes of care, and steps needed to progress the plan in the common areas, parkways, and lake, including facilities, amenities, and shoreline.

Phases

This action plan should apply to DLPOA, the city, county, stakeholders, and partners, and collaborating agencies. It is divided into 4 phases:

Phase 1: Years 0 to 5

These are include opportunities and needs to be addressed and worked on as soon as soon as possible in order to complete as funding or partners become available. Preparation for this phase begins now with an emphasis on ongoing tasks, early action items, and initiating a strong start.

Phase 2: Years 6 to 10

These initiatives are detailed and planned now. The fiscal planning also begins to ensure their viability when the opportunities do arise. Preparation for this phase begins in year 3 and should be reviewed every 2 years thereafter.

Phase 3: Years 10 to 20

Building on the earlier phases, this phase also includes repeating cycles of maintenance and further revision of on-going initiatives, and review of this plan. Preparation is for this phase begins with a review in year 6 and should be reviewed every 2 years thereafter.

On-Going

These items are in addition to tasks, which include current operations, and management tasks not listed here, and continued maintenance.

Phase 1: Year 0 to 5

The following projects and tasks need to be addressed as soon as possible be prepared for opportunities:

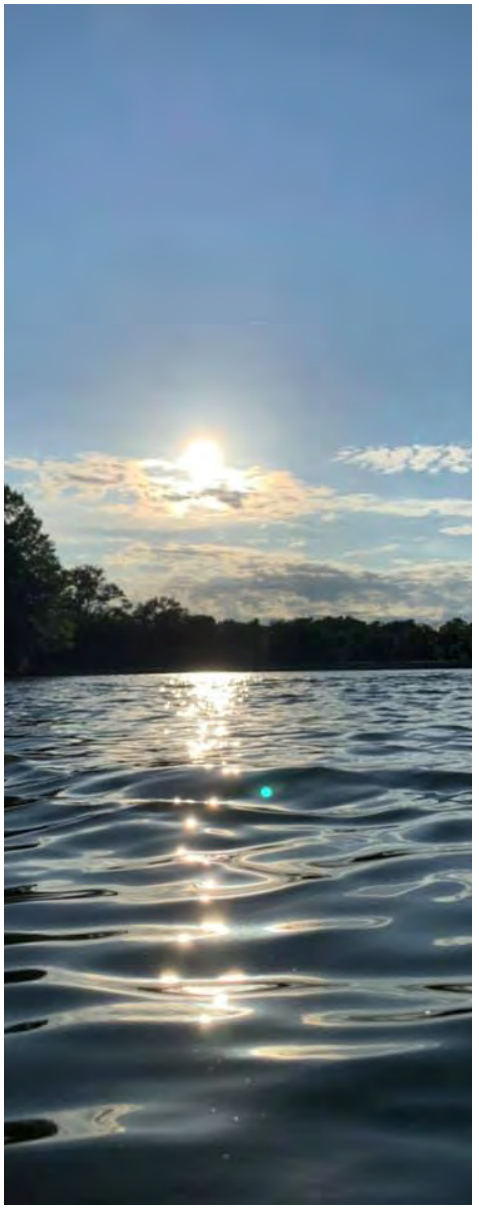
Initial Next Steps & Priorities

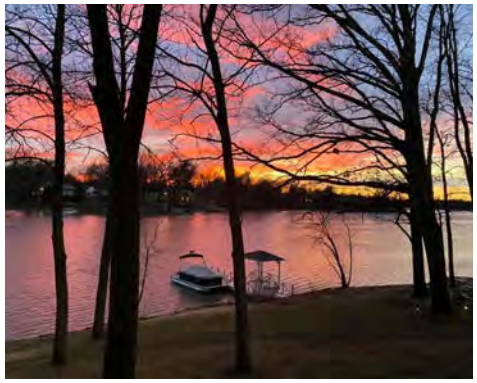
- Distribute master plan to membership. Educate DLPOA members on priority projects - which are mandatory and those that are optional.
- Advocate for the acceptance and adoption of master plan by the city and county.
- Appoint the Implementation Committee. Develop detailed project management with detailed tasks and milestones for plan. Continue to update.
- Continue plan distribution and coalition building with IDNR, city, and county staff.
- Identify initial and immediate funding opportunities. Begin reaching to funding sources. Form partnerships and work group for grant application.
- Develop master plan marketing and fundraising materials.
- Re-engage engineers for infrastructure projects. Update Preliminary engineering plan for spillway, dam needs, and costs for sediment and dewatering areas.
- Determine and secure DLPOA funding match for grants, including investigating all funding streams.
- Identify other sources of funding that will be needed from public and private sources and should include additional grants, assessments, loans, donations, and services/volunteerism.
- Implement high priority infrastructure projects phases: dam and spillway.
- Address transparency: continue board meetings on Zoom, approve and post minutes in a timely manner.
- Schedule and host seminar/ educational sessions. Begin educational programs via Zoom on the following topics:
  - Dlpoa Finances & Capital Plan
  - IDNR Presentation On The Lake, Dam, & Spillway
  - Silting, Dredging, & Technical Information
  - The Water's Edge: Lake Ecology, Native Landscape & Water/Erosion Management
  - Dlpoa Plan & Priority Projects
  - Conservation In Your Own Yard
  - Lake Life Demonstrations & Volunteering
- Develop detailed master plans, landscape, and future dock plans for each common area and Association-owned properties with the priorities set forth in this plan.

Phase 1: Years 0 to 5 Priorities

Short Term Priorities

- Continue all efforts from the previous list if not complete.
- Work with partners to develop detailed plans for dredging the lake, the best use for removed materials, and dredging maintenance plan.
- Formalize philanthropic group (The Olie Dunlap Lake Society/ Friends of Dunlap Lake, etc.) to receive donations.
- Develop a revolving financial capital infrastructure and improvements plan in five year cycles.
- Work with City Staff on installing shed WPA-style stormwater management structures with Public Works and Planning Departments.
- Consider formal Public/Private Partnership(s) with City, County, and State. Develop particular partners for priority projects. Seek to incorporate these improvements into the city capital improvement schedule.
- Strengthen and grow volunteer programs and events, including self-guided volunteer days. Create a Master Gardener and Master Naturalist group.
- Seek state legislative support for watershed scale initiatives.
- Develop dock standards and design guidelines with vendor, city, and





- engineer at 3 scales: single dock, shared slip dock, and marina style.
- Install demonstration areas of BMPs: Brute Broom, rain gardens, riparian edge, and shoreline buffer strip.
- Support and assist city- and county-led stormwater management solutions: increase detention upstream, reduce stream bank erosion upstream, and reduce chemical fertilizer use upstream.
- Develop dredging plan and priority areas at the south end.
- Develop reforestation and beautification plan with partners and volunteers.
- Review and update Operations, Management and Maintenance Plan with modes of care scenarios. Consider annual contracts for landscape, tree planting/care, and maintenance.
- Implement passive stormwater management BMPs on all DLPOA properties.
- Consider additional amendments to the DLPOA governance documents, by-laws and restrictions.
- Support and identify any right-of-way that might be needed to implement the recommended facilities.
- Begin working with city and state to improve intersection crossings along major roads particularly.

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- Support and identify any right-of-way that might be needed to implement the recommended facilities.
- Begin working with city and state to improve intersection crossings along major roads particularly.
- Identify immediate initial funding sources and opportunities through the potential EPA 319 and ICC Watershed Plan for applicable priority projects.
- Develop and implement additional revenue sources.
- Consider replacement of aging common docks with new typologies.
- Develop procedure to remove private docks from DLPOA properties to alleviate liability issues.
- Encourage and support improvement of beneficial and biodiverse habitat plant, tree, and fish species and habitat.
- Consider additional revenue resources for DLPOA, including seasonal retail sales on DLPOA properties, shoreline, and on the water.
- Increase regulations and education regarding chemical fertilizer use.
- Increase filtration, sediment capture and detention upstream through use of BMPs at south end of lake.
- Reduce stream bank erosion upstream through BMPs on private residences, steep banks, creeks, streams, DLPOA properties, and shoreline.

Phase 2: Year 6 to 10

Medium Term Priorities

- Continue all efforts from the previous phases if not complete.
- Work with engineers and appropriate agencies to refine planned projects.
- Update remaining engineering plans and costs for capital improvements and infrastructure.
- Improve and expand Association website, resources, and portal.
- Consider future increases in the annual assessment or for special assessments for the improvements or maintenance of the lake, the dam, the spillway, common areas and parkways.
- Continue discussions with the City to create sign strategy for share the road, pedestrian crossings, mid-block crossings, and future sidewalks at large common areas sidewalks.
- Support high priority pedestrian crossings and connections to trails and Joe Glik Park.
- Connect with local legislators about the condition and safety of the crossing to the MCT Trail. Emphasize the increased benefit the trail linkage, in terms of promoting health and safe access to schools, jobs, and amenities.
- Support and seek funding streams for pedestrians, bicycles, and accessibility to link common areas to and across road right-of-ways.
- Support applications for grants for right-of-way amenities, and facility implementation.
- Remove all private property off of DLPOA owned properties due to issues of liability and management.

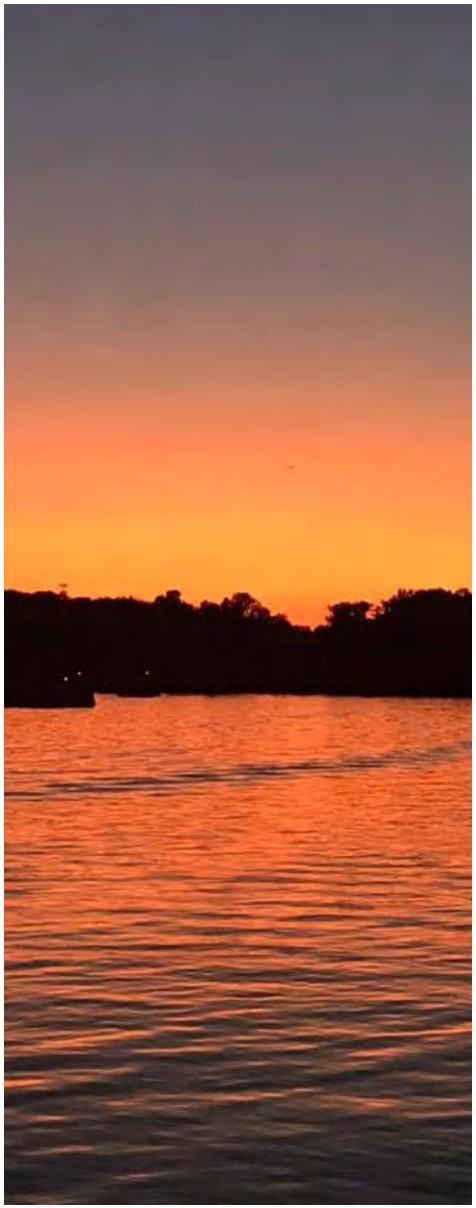
Phase 3: Year 10 to 20

Long Term Priorities

- Celebrate Centennial Anniversary of the Dunlap Lake Community
- Continue all efforts from the previous phases if not complete.
- Complete all Infrastructure upgrades.
- Continue management and maintenance responsibilities. avoid deferred maintenance.
- Continue to seek funding from all sources to further the plan's implementation.
- Complete the removal of all private property off of DLPOA owned properties due to issues of liability and management.

On-Going

- Continue communications with partners, membership, and Implementation Committee meetings as frequently as necessary to keep opportunities open.
- Review plan and phasing for updates, amendments, and opportunities.
- Continue to seek funding from all sources to further the plan's implementation.
- Continue to apply for grants for green infrastructure, water quality, erosion prevention, stormwater improvements, engineering, and construction.
- Work with engineers and appropriate departments and agencies to refine planned future projects.
- Consider seasonal retail sales on DLPOA properties, shoreline, and on the water.
- Continue and increase number of special events.
- Review revolving financial capital infrastructure and improvements plan in five year cycles.
- Review projects for layering of amenities, green infrastructure, native landscape, wetland restoration, and stormwater BMPs.
- Review and propose changes if needed to related city ordinances, restrictions, and policies.
- Increase resident involvement and volunteer days, including self-guided volunteer days.
- Monitor new developments, adjacent HOAs, and I-55 Corridor Phase Two Study and implementation for cohesion to BMPs and stormwater management within the watershed.
- Celebrate accomplishments!



Funding Strategy

The DLPOA Residents supported the following funding opportunities for implementing key projects, recommendations and priorities.

- **95.58%** Support of Applying for Grants (Large and Small)
- **74.76%** Support for Developing Revenue Streams (Large and Small)
- **72.90%** Support for developing Endowment for Future Maintenance
- **71.56%** Support Public Partnerships Relating to Maintenance and Management.
- **70.19%** Support Special Service Area (SSA) with Madison County and/or City of Edwardsville
- **65.05%** Support for Exploring Low Interest Loans
- **53.70%** Support Stepped Increase in Annual Fees

Overview

This funding strategy will serve as a tool for the DLPOA Board, members, and staff, and the partners over the near term to move forward. It is a dynamic and living document. The agencies, organizations, and foundations referenced are frequently affected by policy change, economic shifts, and depletion or change in funding sources. Therefore, it is important to investigate each source of funds, the regulations, and the required outcomes prior to seeking the funds.

Funding for projects can come from a variety of sources: donations, fundraising, loans, assessments, ordinances, and grants (local, state, and federal agencies), foundations, environmental organizations, and financial entities. In the survey, the DLPOA members overwhelmingly supported finding multiple sources in order to move forward.

To implement this plan, (even completing just the IDNR mandatory upgrades/repairs), seeking funding options is a necessary and vital step towards success and managing the DLPOA membership's responsibilities.

Some key projects are significant infrastructure costs for a community the size of Dunlap Lake. However costs grow due to inflation, risks, liability, and in the worst case, if emergency repairs and services are needed.

Funding will often determine or shift the order of projects purely due to availability of options and mandated restrictions on the funds received.

Costs

It is not part of the scope of this planning process to assemble costs or bids for implementation. However, as the DLPOA moves forward, proposed projects should be reviewed for cost effective strategies, such as design/build bids, multiple bids, or have engineers recalculate their previous costs. This is especially important for the dam, spillway, sediment and dewatering areas. Several opinions of probable cost for these key infrastructure projects were provided throughout the years. Escalation must be considered when the projects move forward through funding options, as well as when or if they are deferred.

This plan recommends seeking new detailed bids in preparation of finding funding for crucial infrastructure projects. In the mean time, to understand the magnitude of potential increases, adjust for inflation to 2020/2021 dollars by using the conversion rates given at www.usinflationcalculator.com.

For stormwater management and green infrastructure initiatives, features may be estimated for an opinion of probable cost through an additional valuable resource: the Green Values National Stormwater Management Calculator, available online at http://greenvalues.cnt.org/national/cost_detail.php. This site includes information on construction costs, maintenance costs, and component lifespan.

Funding with Support

Most of the funds are available to public agencies and not private entities alone and require a local match. Each notice of funding opportunity (NOFO) will outline the eligible entities. These grant/bond funds can only be used for capital projects or components. **With rare exception most grant funds are not available for use for routine or deferred maintenance, or for general operating funds and past debts.**

However, if public partners are combined with DLPOA, a not-for-profit, leveraging resources becomes more desirable to funders. Funding sources and matches vary depending on the program and the objective of the funding source. It is recommended to use a variety of funders to reduce the local share and to leverage the most dollars possible.

Working with the city and county departments is beneficial on all funding options. Communication and collaboration are imperative. It is beneficial to invite them into the adoption and implementation process early. Allow time for each department and their staff to seek and receive the proper approval according to their individual processes.

Successful implementation of the plan will require strategic targeting and phased implementation of the most critical projects and most urgent improvements. Most importantly, in order not to bear the full weight of the costs, the DLPOA is best served by leveraging these partnerships to generate the maximum funds and resources available. Therefore, a list of collaborators outlined in the upcoming pages.

Work to be performed by others within the proposed scope of work in a grant application can count as a fiscal match where appropriate.

Funding Recommendations

- **Investigate grants.** This includes grants for infrastructure, capital improvements, programs, BMPs, and amenities. These often require cash expenditures upfront for match; or are reimbursable after work is complete. These take a tremendous amount of effort and are not guaranteed to be successful. Often funds are reallocated in budget shortfalls or emergencies,
- **Investigate public/private partnerships** for infrastructure and improvements, including and relating to maintenance and management. This means the city, county, state, and others may participate in conjunction with DLPOA per an agreed upon arrangement TBD.
- **Explore low interest loans** which offered from public agencies as well as credit unions, and financial institutions. Often the urgency of capital infrastructure projects benefit from low interest loans instead accruing more deferred maintenance, while collecting monies - risking liability and risk - and potentially a higher final cost.
- Approach city and county to begin discussions on creating Special Service Area (SSA) with the county and/or City of Edwardsville for the subwatersheds that drains into the lake and the streams that drain into it.
- Consider and develop an equitable stepped increase in annual fees to meet DLPOA responsibilities, needs and desired improvements as feasible.
- Develop a fiscal plan to an emergency fund with an ongoing endowment towards future infrastructure maintenance.
- Investigate and consider revenue streams (large and small).
- Community fundraising campaigns (big and small) involving residents to promote involvement: fishing derbies, social media campaigns, letters, donor signs, donor boardwalk slats, etc.
- Approach private donors
- Develop Fundraising Campaign
- Seek donations and grants in order to leverage DLPOA Assessments. Review the list of the possible partnerships/sources that may be used or collaborated with for funding the master plan.
- Develop “marketing materials” to have ready for funding opportunities such as inquiries from donors or partners, “shovel ready” opportunities, legislative or partner meetings, etc. It is critical to have portions of materials for applications ready for submission. This plan can also be provided as an attachment to most applications.
- Review each project for funding opportunities on a regular basis.
- Subscribe to Grants.gov, East West Gateway’s weekly email briefings to watch for applicable grants for which to partner.
- Make sure all not-for-profit and financial statements are up to date and in good standing for seeking grants and financing.
- Keep detailed and accurate records once grants are received for required grant reports.
- Document volunteer and work in-kind opportunities
- Apply for 319 grants either solely or in conjunction with others for large stormwater management improvements.
- Support residents to apply together for grants to alleviate fiscal responsibility on the entire DLPOA.

Funding Strategy: Grants & Opportunities

Grant, Funding& Partners

The following funding sources are available for watershed and stormwater management efforts. All the sources listed here are linked to one or more of the issues identified in and practices recommended for this watershed. These funding sources are summarized in the tables in this section. (All pedestrian, trails, and biking funding for connections and projects are listed later.)

- For DLPOA, the following funding resources were compiled based on the following assumptions:
- The Lake will remain private
- The Dam will remain private and in ownership of the DLPOA with regulatory oversight by IDNR. Thus, any federal dam programs cannot be sought after.
- Partnerships in implementation of this plan are necessary, especially the city and county.
- The DLPOA is open in the application of green infrastructure and passive mechanisms to manage sediment and stormwater.
- The city and county support BMPs in their jurisdictions in policy, practice, and future projects.

Unique Opportunities

Some immediate or revolving funding sources to investigate for Rebuilding and Reopening Illinois in relation to 2020 Events:

2020 Illinois Fast Track Grants - The Fast Track grants program is one of a number of economic assistance initiatives designed by DCEO to mitigate the economic impact of the pandemic—with relief programs making more than $100 million available to Illinois communities in response to COVID-19. Fast-Track projects must meet shovel-ready criteria, as well as the minority business participation requirements of the State of Illinois' Business Enterprise Program: https://bit.ly/2xqjOad

Green Infrastructure Grants Opportunity (GIGO) - In the past these grants have been made available to local units of government and other organizations to demonstrate green infrastructure best management practices to control stormwater runoff for water quality protection in Illinois. Acres of permeable pavement parking lots and alleys and riparian zones and rain gardens are techniques now in place to help restore, mimic, or enhance natural hydrology to protect and improve local water quality. It has been rumored that this program was going to be reopened in the new budget. However, given the pandemic and state's loss of income this source should be investigated prior to proceeding.

This grant is in support of stormwater and improvements through green infrastructure initiatives e.g. rain gardens, buffers, bioswales. DLPOA would partner with the city and county to apply. It best to contact people in person. As the site has not been updated in quite some time as this is being written. https://www2.illinois.gov/epa/topics/grants-loans/water-financial-assistance/Pages/igig.aspx

The IEPA Lake Education Assistance Program (LEAP) is part of an education initiative offered by the Illinois EPA. The Lake Education Assistance Program is currently suspended. Due to the suspension of the program, applications received by the Illinois EPA are not being processed at this time. Please check back for future updates. LEAP funds are available to all school children for grades from kindergarten through graduate school. Funds are also available to not-for-profit organizations, such as lake associations, scouting groups, parks, and communities.

The IEPA provides funding for approximately one hundred lake and lake watershed related educational field trips, seminars/workshops, projects, and activities per fiscal year. Projects and activities must have stated goals and involve the enhanced lake/lake watershed education of teachers, students, organizations and/or the community. Funding will be in the form of reimbursement of documented costs incurred, and can be applied to such items as educational materials, scientific equipment, substitute teacher payment, buses/drivers, seminars, workshops, software, and visual materials. The maximum award per school and/or organization is $500 per application period. https://www2.illinois.gov/epa/topics/water-quality/surface-water/Pages/leap.aspx

Special Service Areas (Districts) DLPOA should work with the city and county to consider a special assessment to the Association to fund the deferred maintenance (sediment and silt removal) infrastructure updates to code, and capital projects (dewatering basin). Generally, this is a technique that may have to be put on a ballot and voted by the public. Consult with city and county staff.

Illinois General Assembly Bill/ Grant The Board should review a legislative map first to see who and where the district lines are drawn. This could be used to their advantage particularly in an area where there is a tough election for the local state representative or senator. Federal letters of support may assist this effort.

To iterate, the dam is a private dam on a private lake with no public access. A strategic point to make is that it is a reservoir for stormwater for all those who reside in this subwatershed of the Indian Cahokia Creek Watershed. It benefits the DLPOA and many others downstream and in the HUC 12; and helps to manage and protect all those from flood events.

Illinois Urban and Community Forestry Program is a part of a nearly 5 billion economic engine in Illinois. The state program helps assist municipalities and local units of government in developing, managing and sustaining local community forestry programs. Illinois Citizens benefit from this program by living in and near high quality diverse managed forests within TREE CITY USA communities. https://www2.illinois.gov/dnr/conservation/Forestry/UrbanForestry/Pages/default.aspx

Federal Programs

Conservation Easements - Through the federal tax code, charitable gift and estate tax benefits exist for long-term land protection. With a conservation easement, a landowner limits future development opportunities and reduces the value of the property while ensuring long term conservation protection and receiving tax benefits. This program is administered through a local land trust, such as HeartLands Conservancy.

North American Wetlands Conservation Act (NAWCA) - Through NAWCA, the US Fish & Wildlife Service provides matching grants to organizations and individuals who have developed partnerships to carry out wetlands conservation projects for the benefit of wetlands-associated migratory birds and other wildlife. Grants are competitive and require a 50/50 match. Areas in this corridor would rank high for grant funds from this program. Extremely competitive and probably not well-suited for DLPOA.

Wetland Reserve Program (WRP) – This program provides cash payments to permanently restrict wetlands for conservation purposes. The program is administered by USDA-NRCS.

IDOT Illinois Green Streets Initiative - The Illinois Green Streets Initiative is part of the Replanting the Prairie State Initiative to further reduce greenhouse emissions in the state. Project sponsors may receive up to 80 percent reimbursement for project costs. The remaining 20 percent is the responsibility of the project sponsor. Funds for this program can only be used for planting of trees or prairie grasses, and the program is overseen by the Illinois Department of Transportation.

IEPA Environmental Settlements This program is limited but can be used for a variety of conservation objectives. This would most likely have to be awarded from a settlement that affected the watershed directly.

Regional|Local Programs

Metro-East Park and Recreation District (MEPRD) – This program is approved by voters, to collect a 1/10th sales tax for parks, open space, trails and other conservation programs. Fund divisions are determined by state statute with 50% directed to regional projects and 50% directed to county and local projects. This is an excellent source of funds for greenway corridor protection, trailhead, partner implementation, and construction. REGIONAL Metro East Park and Recreation District Long-Range Plan (2011) Metro East Park and Recreation District (MEPRD) is the public body responsible for the development of an interconnected system of parks, greenways, and trails in Madison and St. Clair Counties. MEPRD often provides grants to supplement the efforts of local governments, special districts, and other jurisdictions who are already working on the planning, construction and management of bike, pedestrian, and park facilities to further their mission.

Currently funding sources for the county and city is funded by a property tax for recreation, user fees for programs, and City Council appropriated general funds for specific capital improvement projects.

Consider Foundations

Foundations are excellent sources of funding for acquisition of land for conservation, interpretation, education, and project-specific purposes. Each has unique directives that may need to be matched to a specific opportunity.

Companies often have foundations or grant programs to support environmental missions.

Charts on the following pages include the following sources:

Illinois Environmental Protection Agency (IEPA)

The **Section 319(h) Nonpoint Source Pollution Control Financial Assistance Program** implements Illinois' Nonpoint Source Management Program with federal funds through section 319(h) of the Clean Water Act. The funds can be for watershed planning, implementation of Best Management Practices (BMPs), or monitoring of water quality. Projects that address nonpoint source (NPS) pollution in Illinois waters that have impaired water quality are given priority.

The State Revolving Fund Loan Program includes the Public Water Supply Loan Program (PWSLP) for drinking water projects and the Water Pollution Control Loan Program (WPCLP) for wastewater and stormwater projects. Eligible projects include upgrading or rehabilitating existing infrastructure, stormwater-related projects that benefit water quality, and a wide-variety of other projects that protect or improve the quality of Illinois's rivers, streams, and lakes. Funds can be provided for flood relief if the projects are tied to water quality improvements. Green infrastructure projects such as street tree or urban forestry programs, stormwater harvesting programs, downspout disconnection projects, and street drainage practices that mimic natural hydrology may be funded.

Streambank Cleanup and Lakeshore Enhancement (SCALE) grants from EPA have been available in previous years (2013-2016) to support cleanup efforts under Section 319 of the Clean Water Act. The funds were paid to groups that "have already established a recurring streambank or lakeshore cleanup," and used for dumpster rental, landfill fees, and safety attire. Recipients such as Alton Marketplace/Main Street and the Village of Swansea received $500 (or more if more participants were involved). This program may be funded again.

Illinois Department of Agriculture (IDOA)

The Streambank Stabilization and Restoration Program (SSRP) is designed to demonstrate effective streambank stabilization at demonstration sites using inexpensive vegetative and bio-engineering techniques. Program funds may be used for labor, equipment, and materials. Recipients of the cost-share and project funding must maintain the streambank stabilization project for at least 10 years. Investigate this program and its status.

The Conservation Practice Program (CPP) is implemented by the Soil and Water Conservation Districts (SWCDs) in Illinois. Cost-share funds are available through the SWCDs for various conservation practices including Filter Strips, Grassed Waterways, No-Till, and Terraces. A CPP-Special Project cost share program funds practices that meet local natural resource priorities but are not on the state-wide list of practices, such as stream crossings, rain gardens, and heavy area livestock use area protection.

Applications received are prioritized based on tons of soil saved, acres benefited, cost per acre of practice, and cost per ton of soil saved. Investigate this program and its status. This program is better suited for farms and agricultural lands.

Agricultural lands in the watershed of Dunlap Lake would be most eligible for cost-share assistance. Conservation practices installed in the watershed will reduce sediment to the lake. The recommended goal for watershed practices is that at least 70% of the watershed be protected with conservation practices.

Illinois Department of Natural Resources (IDNR)

The **Urban Flood Control Program** has been implemented for many years under the authority of the Flood Control Act of 1945. IDNR's Office of Water Resources (OWR) has typically applied the program to out-of-bank riverine flooding, and to the development and construction of projects that provide an outlet for stormwater systems.

Illinois Emergency Management Agency

The Flood Mitigation Assistance (FMA) program is a cost-share program (75% federal, 25% local match) through which communities can receive grants for the development of a comprehensive flood mitigation plan and the implementation of flood mitigation projects. Communities must be members of the National Flood Insurance Program (NFIP). Partner with the city or county.

The Pre-Disaster Mitigation (PDM) program makes grants available to state and local governments to implement cost-effective hazard mitigation activities that complement a comprehensive mitigation program. Funding is awarded for the development of an all-hazards

mitigation plan or for a cost-effective hazard mitigation project. Partner with the city or county.

The Hazard Mitigation Grant (HMG) program makes grants available to state and local governments as well as eligible private, non-profit organizations to implement cost-effective, long-term mitigation measures following a major disaster declaration. A project does not have to be in a declared county to be eligible; every community that is vulnerable to natural hazards should consider applying. Partner with the city or county.

The Severe Repetitive Loss program provides funding to reduce or eliminate the long-term risk of flood damage to severe repetitive loss structures insured under the NFIP. These structures are residential properties insured under the NFIP that have had two or more large claims (see the Federal Emergency Management Agency website for details). Partner with the city or county.

Illinois Department of Commerce and Economic Opportunity (DCEO)

The Illinois Community Development Assistance

	IDNR/OWR UFC	IEMA FMA	IEMA PDM	IEMA HMGP	Direct Legislative Action	DCEO CDAP PI and Emergency PI	DCEO CDP PI + Design	IEPA Revolving Loan
Types of Projects/Outcomes								
Storm Sewer Improvements		Y	Y	Y	Y	Y	Y	Y
Combined Sewer Improvements					Y	Y	Y	Y
Conveyance Improvements	Y	Y	Y	Y	Y			
Levees	Y				Y			
Detention Basins	Y	Y	Y	Y	Y			
Projects on Private Property		Y	Y	Y				
Individual Basement Mitigation								
Repetitive Loss Structure Buyouts		Y	Y	Y				
Planning Reports	Y	Y	Y	Y	Y			
Program Outputs								
Project Specific Planning Documents	Y				Y		Y	
Construction Documents	Y				Y	Y	Y	
Construction Funding	Y	Y	Y	Y	Y	Y	Y	
Construction Engineering	Y				Y	Y	Y	
Local Participation Requirements								
Operation and Maintenance	Y	Y	Y	Y	Y	Y	Y	Y
Utility Relocations	Y							
Land Rights Acquisition	Y							
NFIP Participation	Y	Y	Y	Y		Y	Y	
Emphasis on Low to Moderate Income						Y	Y	
Pre-approved Planning		Mitigation PI	Mitigation PI	Mitigation PI		Y		Y
Program Funding								
Federal Disaster Declaration Required				Y				
Local Cost Share		25%	25%	25%		25%	25%	Low interest loan
B/C Ratio	≥ 1.0	≥ 1.0	≥ 1.0	≥ 1.0	None	None	None	None
Funding Limits						$450,000 or $200,000 for Emergency	$450,000 max with $150,000 Design Included	

IDNR/OWR – Illinois Department of Natural Resources, Office of Water Resources
IEMA – Illinois Emergency Management Agency
FMA – Flood Mitigation Assistance program
PDM – Pre-Disaster Mitigation program
HMG – Hazard Mitigation Grant program

DCEO – Department of Commerce and Economic Opportunity
CDAP PI and Emergency PI – Community Development Assistance Program – Planning and Emergency Planning

CDP PI + Design – Community Development Assistance Program – Planning and Design
IEPA – Illinois Environmental Protection Agency
NFIP – National Flood Insurance Program
B/C ratio – Benefit/Cost ratio
Mitigation PI – Mitigation Plan

Program administers funds through the Federal Community Development Block Grants: Small Cities program. The Community Development Assistance Program is designed to help communities meet their greatest economic and community development needs, with a focus on communities with low- to moderate-income populations.

The public infrastructure component of the program is used to mitigate conditions that are detrimental to public health and welfare, primarily in residential areas. These projects can include the design and construction of storm sewers. The Dunlap neighborhood probably would not qualify alone. However, if DLPOA were to support and partner with the county in DCEO work in initiatives that provided stormwater management in adjacent areas within the watershed, they could benefit through less stormwater runoff and water quality improvements.

The previous table on page 85 shows Illinois EMA and DCEO funding sources with their associated program outputs, participation requirements, and funding limits.

U.S. Army Corps of Engineers

The Continuing Authorities Program is a group of 10 legislative authorities under which the Secretary of the Army, acting through the Chief of Engineers, is authorized to plan, design, and implement certain types of water resources projects without additional project specific congressional authorization.

Water resource related problems that can be evaluated include bank instability that compromises public property or infrastructure, aquatic ecosystem degradation, and overbank flooding and structural damages. These problems are evaluated through a cost shared partnership addressed in two phases to include study and implementation.

If you think you have a water resources problem that may fit into the stated examples, please contact the St. Louis District. The Continuing Authorities Program Manager will speak with you and, if warranted, will visit your problem area to ascertain whether or not your problem fits within this authority.

U.S. Environmental Protection Agency

The USEPA Source Reduction Assistance grant program supports pollution prevention projects that will provide an overall benefit to the environment by preventing pollutants at the source (i.e., not treatment or cleanup programs). Applicants must demonstrate new or innovative techniques for education or training that promote pollution prevention and source reduction efforts.

State and local governments and nonprofits (depending on classification) are eligible to receive funds or cooperative agreements. Usually this pertains to point-sourced based pollution. This program may be applicable in partnership with adjacent farmland, city and county as partners to protect the lake as a natural resource.

EPA 319 Program – This program is designed to improve water quality in impaired streams or watersheds. This is a 60-40% cost-share program. More information under Illinois EPA.

The **Urban Waters Small Grants Program** improves coordination among federal agencies and collaborates with community-led revitalization efforts to improve the Nation's water systems. Funds go to research, investigations, training, surveys, studies, and demonstrations that will advance the restoration of urban waters by improving water quality through activities that also advance community priorities. Sponsored projects receive support in several different ways. Investigate whether there are open Request for Proposals. For a stronger application, seek partnership with the city and/or county.

EPA Regions will engage a contractor to provide technical assistance to states or local communities for pilot projects on two topics: (1) green stormwater management (low impact development/green infrastructure), and (2) protection of healthy watersheds. Funds are provided to the selected EPA Region for the Region to contract services to explore integrating the topics into local or state FEMA hazard mitigation plans.

U.S. Department of Agriculture

This is applicable for adjacent farmland. Contact Soil and Water Conservation District regarding this process. Support and work with the city and county on any initiatives that may involve landowners'

agricultural fields of farmers using CRP program grants to fund their conservation efforts.

The CRP-Pollinator Habitat Initiative - The Farm Service Agency (FSA) collaborated with pollinator experts and other conservation partners to develop a new practice, CP42-Pollinator Habitat, to help enhance and restore habitat for ecologically and economically significant pollinator species. Contact Madison County Soil and Water Conservation District regarding this process. https://www.fsa.usda.gov/Internet/FSA_File/cp42_habitat.pdf

The Agricultural Conservation Easement Program (ACEP) is a Natural Resources Conservation Service (NRCS) program. This is a good program. However, it is a rare circumstance in which it would apply. It applies to the agricultural lands that are in the watershed and from willing owners. Often these lands are in high development areas. It repeals the Farm and Ranch Lands Protection Program (FRPP), the Grassland Reserve Program (GRP), and the Wetlands Reserve Program (WRP) and consolidates the purposes of these programs into one easement program. The two easement enrollment components of ACEP are agricultural land easements (ACEP-ALE) and wetland reserve easements (ACEP-WRE).

- **Agricultural Land Easements (ALEs)** prevent the conversion of productive farmland to non-agricultural uses. Land eligible for agricultural easements includes cropland, rangeland, grassland, pastureland and nonindustrial private forest land. NRCS will prioritize applications that protect agricultural uses and related conservation values of the land and those that maximize the protection of contiguous acres devoted to agricultural use.
- **Wetland Reserve Easements (WREs)** provide habitat for wildlife, improve water quality, and reduce flooding. Technical and financial assistance is provided to restore, protect, and enhance wetlands. Land may be enrolled in easements for various time periods. Land eligible for wetland reserve easements includes farmed or converted wetland that can be successfully and cost-effectively restored. NRCS will prioritize applications based on the easement's potential for protecting and enhancing habitat for migratory birds and other wildlife.

The Environmental Quality Incentive Program (EQIP), run by NRCS, provides financial and technical assistance to individuals and entities to address soil, water, air, plant, animal and other related natural resource concerns on their land. Funding can be provided for the implementation of structural and management practices, including conservation tillage, on eligible agricultural land. This is applicable for adjacent farmland. Contact Soil and Water Conservation District regarding this process.

The Conservation Stewardship Program (CSP) helps producers maintain and improve existing conservation systems and implement additional activities to address priority resources concerns. Payments made are based on performance of the practices. Two types of payments are provided through five-year contracts: annual payments for installing new conservation practices and maintaining existing practices, and supplemental payments for adopting a resource-conserving crop rotation. This is applicable for adjacent farmland. Contact Soil and Water Conservation District regarding this process.

The Healthy Forests Reserve Program (HFRP) aims to assist landowners in restoring, enhancing, and protecting forestland resources on private land through easements, 30-year contracts, and 10-year cost-share agreements. The land must restore, enhance, or measurably increase the recovery of threatened or endangered species, improve biological diversity, or increase carbon storage. Contact Madison Co. Soil and Water Conservation District regarding this process.

The Regional Conservation Partnership Program (RCPP) encourages partnerships with producers on installing and maintaining conservation projects that increase the restoration and sustainable use of soil, water, wildlife, and related natural resources. Contracts and easement agreements are implemented through other NRCS programs: ACEP, EQIP, CSP, or HFRP.

The RCPP essentially provides more funding through these programs. There are three funding pools within the program: state, federal, and Critical Conservation Areas (CCAs). This is applicable for adjacent farmland. Contact the Madison Co. Soil and Water Conservation District regarding this process.

Conservation Innovation Grants (CIG) is a voluntary program intended to stimulate the development and adoption of innovative conservation approaches and technologies in agricultural production. The program allows NRCS to work with other public and private entities to accelerate technology transfer and adoption. There have been funding opportunities at the national and state level. This is applicable for adjacent farmland. Contact Soil and Water Conservation District regarding this process.

U.S. Fish and Wildlife Service

The Partners for Fish and Wildlife Program is run by the U.S. Fish and Wildlife Service (USFWS) under the Department of the Interior (DOI). The program works with private landowners to improve fish and wildlife habitat on lands through voluntary, community-based stewardship. Noting more than 90% of land in the Midwest is in private ownership, the program promotes high quality habitat through partnerships with private conservation organizations, state and federal agencies, and tribes to reach private landowners. Funding, materials, equipment, labor and expertise are shared to meet shared restoration and conservation goals.

Non-Governmental & Non-profit Organizations (NGOs)

Several NGOs have programs or missions that support the recommendations in this plan. The following groups may have programs or funds to help carry out their missions at any given time:

Set up a registered philanthropy group for Dunlap Lake to raise and accept tax-deductible donations.

Ducks Unlimited (DU) – DU's Living Lake Initiative is established to provide support in enhancing shallow lake complexes.

Edwardsville Community Foundation - set up a fund to donate to specific Dunlap Lake projects (dam, spillway, sediment)

HeartLands Conservancy – Works to protect diverse natural resources and habitats of southern Illinois.

Illinois Forestry Development Council – Supports statewide work and forest/tree canopy programs and conservation

Morton Arboretum – Supports statewide work and forest/tree canopy programs and conservation.

Pheasants Forever – Local Chapters often provide food plot and native grass seed to landowners.

The Conservation Fund – Conservation Loans and green bonds programs offer flexible financing as well as sustained and expert technical assistance to land trusts and other organizations aiming to protect key properties in their communities, increase access to green and open-space, recover natural habitats, provide conservation education programs, and help people connect with nature.

The Nature Conservancy (TNC) – works to protect diverse natural habitats including wetlands and forests.

The National Fish and Wildlife Foundation (NFWF) – provides grants on a competitive basis to projects that support fish and wildlife. Its program areas include protecting critical habitat, capacity building for partner organizations, and wetland and forest stewardship.

The National Wildlife Federation (NWF) – supports projects that protect and restore fish and wildlife habitat.

Trees Forever – The Working Watersheds: Buffers and Beyond program provides a 50% cost share (up to a maximum of $2,000) to implement a water quality project or demonstration site. Riparian

buffer plantings are the main focus of the program, but other innovative projects are also considered.

Water Environment Research Federation (WERF) – The Foundation funds water quality research and facilitates collaboration among partners. Currently, an open Request for Proposals solicits research projects on integrating water services planning with urban planning.

Private Foundations/ Companies

Companies often have foundations or grant programs to support environmental missions. There are many to select. Examples of companies/foundations include:

Walton Family Foundation – The Walton Foundation supports projects including freshwater projects that sustain healthy communities in the Mississippi River Basin.

Illinois American Water Environmental Grant Program – Illinois American Water supports innovative, community-based environmental projects that improve, restore or protect watersheds through partnerships. Watershed cleanups, reforestation efforts, biodiversity projects, wellhead protection and hazardous waste collection efforts are supported through grants of up to $10,000.

Home Depot & Lowes Grants These can used for tools and supplies for demonstration projects, education, building amenities, community gardens, pollinator gardens, or beneficial landscapes.

Notes:

Notes:

Funding Sources	Grant Programs	Eligible Entities	Types of Practices Funded	Scale
State/Federal Government				
Illinois Environmental Protection Agency	Section 319(h) Nonpoint Source Pollution Control Financial Assistance Program	Local units of government and other organizations.	Watershed planning, implementing BMPs, or water quality monitoring.	Watershed/ Context/Lake
	State Revolving Fund Loan Program, including: • Public Water Supply Loan Program • Water Pollution Control Loan Program	Communities and public or private entities.	Infrastructure upgrades, stormwater projects that benefit water quality, projects that improve Illinois' rivers, streams, and lakes.	Watershed/ Context/Lake
	Streambank Cleanup and Lakeshore Enhancement Grants	Groups that have established a recurring streambank or lakeshore cleanup.	Dumpster rental, landfill fees, safety attire.	Lake
Illinois Department of Agriculture	Streambank Stabilization and Restoration Program	Landowners with severely eroded streambanks.	Labor, equipment, materials.	Lake
	Conservation Practice Program	N/A	Conservation practices including filter strips, grassed waterways, no-till, and terraces.	Context/Lake
Illinois Department of Natural Resources	Urban Flood Control Program	Citizens or local, state, or federal officials.	Out-of-bank riverine flooding initiatives and projects that provide an outlet for stormwater.	Context/Lake
Illinois Emergency Management Agency	Flood Mitigation Assistance Program	Communities that are members of the NFIP.	Development of a comprehensive flood mitigation plan, or implementation of flood mitigation projects.	Watershed/ Context/Lake
	Pre-Disaster Mitigation Program	State and local governments.	Creation of an all-hazards mitigation plan or a cost-effective hazard mitigation project.	Watershed/ Context/Lake
	Hazard Mitigation Grant Program	State and local governments and non-profit organizations.	Cost-effective, long-term mitigation measures following a major disaster.	Watershed/ Context/Lake
	Severe Repetitive Loss Program	Residential properties insured under the NFIP that have had two or more large claims.	Initiatives that reduce or eliminate the long-term risk of flood damage.	Watershed/ Context/Lake
Illinois Department of Commerce and Economic Opportunity	Illinois Development Assistance Program	Communities with low- to moderate-income populations.	Implementation of mitigation measures, primarily in residential areas, to address issues that are detrimental to public health and welfare (e.g., design and construction of storm sewers).	Watershed/ Context/Lake

Funding Sources for Stormwater Management Efforts

Funding Sources	Grant Programs	Eligible Entities	Types of Practices Funded	Scale
State/Federal Government (continued)				
U.S. Army Corps of Engineers	Continuing Authorities Program *(not a grant)*	U.S. Army Corps of Engineers	Planning, design, and implementation of certain types of water resources projects to address problems including bank instability that compromises public property or infrastructure, aquatic ecosystem degradation, and overbank flooding and structural damages. Cost share required.	Watershed/ Context/Lake
U.S. Environmental Protection Agency	USEPA Source Reduction Assistance Grant Program	State and local governments and non-profit organizations.	Pollution prevention projects that will benefit the environment by eliminating pollution at the source.	Watershed/ Context/Lake
U.S. Environmental Protection Agency (continued)	Urban Waters Small Grants Program	Communities and community-based organizations.	Research, training, surveys, and demonstrations that advance the restoration of urban waters by improving water quality through activities that also advance community priorities.	Watershed/ Context/Lake
	Technical assistance from EPA Regions	EPA Regions collaborate with FEMA and states or local communities.	Pilot projects that can be integrated into a state or local hazard mitigation plan on the topics of green stormwater management (low impact development/green infrastructure) and the protection of healthy watersheds.	Watershed/ Context/Lake
U.S. Department of Agriculture	CRP—Grasslands	Landowners and operators.	Initiatives to conserve working grasslands, rangeland, and pastureland while maintaining livestock grazing land. Highly unlikely this is appropriate. Very particular circumstances are required. Work with city and Count and SWCD to investigate these.	adjacent farmlands or agricultural fields within watershed of DLPOA
	Conservation Reserve Enhancement Program (CREP)	Farmers and ranchers that live in a state with a CREP agreement in place with the Farm Service Agency (FSA).	Removal of environmentally sensitive land (e.g., wetlands) from crop production and introduction of conservation practices. Highly unlikely this is appropriate. Very particular circumstances are required. Work with city and Count and SWCD to investigate these.	adjacent farmlands or agricultural fields within watershed of DLPOA

Funding Sources	Grant Programs	Eligible Entities	Types of Practices Funded	Scale
State/Federal Government (continued)				
U.S. Department of Agriculture (continued)	Agricultural Conservation Easement Program, including: • Agricultural Land Easements • Wetland Reserve Easements	Agricultural Land Easement eligibility: cropland, rangeland, grassland, pastureland, and nonindustrial private forest.	Prevention of productive farmland conversion to non-agricultural uses.	adjacent farmlands or within watershed of DLPOA
		Wetland Reserve Easement eligibility: farmed or converted wetland that can be successfully and cost-effectively restored.	Habitat creation, water quality improvement, flood reduction.	
	Environmental Quality Incentive Program	Individuals and entities.	Structural and management practices that address natural resource concerns on agricultural land.	ditto
	Conservation Stewardship Program	Landowners in compliance with highly erodible land and wetland conservation requirements with current farm records with FSA.	Assistance in maintaining and improving existing conservation systems. Implementation of additional activities to address priority resource concerns.	ditto
	Healthy Forests Reserve Program	Any landowner whose land restores, enhances, or increases the recovery of threatened or endangered species.	Restoration, enhancement, and protection of forestland resources on private lands through easements.	ditto
	Regional Conservation Partnership Program	Partners of the Natural Resources Conservation Service.	Partnerships with producers to install and maintain conservation projects that increase the restoration and sustainable use of soil, water, wildlife, and related natural resources.	ditto
U.S. Department of Agriculture (continued)	Conservation Innovation Grants	Public and private entities.	Development and adoption of innovative conservation approaches and technologies in agricultural production.	ditto
	Forest Legacy Program	Environmentally sensitive "working forests" that protect water quality, provide habitat, and public benefits. Must prepare a multiple resources management plan for the land.	Protect privately owned forest lands through conservation easements.	May apply to Richard's Brick Forested Land
U.S. Fish and Wildlife Service	Partners for Fish and Wildlife Program	Private landowners	Improvements to fish and wildlife habitat through voluntary, community-based stewardship.	Lake

Funding Sources	Grant Programs	Eligible Entities	Types of Practices Funded	Scale
Non-Governmental Organizations (non-profit organizations, private foundations/companies, other) that support watershed management efforts.				
Ducks Unlimited	e.g. Living Lake Initiative	N/A	Support and enhance shallow lake complexes.	Lake
Edwardsville Community Foundation	Set up a fund to donate to specific Dunlap Lake projects (dam, spillway, sediment)			Lake
HeartLands Conservancy	Can assist in applying for grant and programs		Conservation and restoration of natural resources and habitats of southern Illinois	Lake
Home Depot & Lowes Grants	tools and supplies		for building amenities or landscapes	Lake
Illinois Forestry Development Council			Supports statewide work and forest/tree canopy programs and conservation	Lake
Illinois American Water	2018 Environmental Grant Program	Communities that have a source water or watershed protection need.	Community-based projects that improve or protect watersheds through partnerships. Watershed cleanups, reforestation, biodiversity, wellhead protection and hazardous waste collection are supported through grants of up to $10,000.	Lake
Morton Arboretum			Supports statewide work and forest/tree canopy programs and conservation	Lake
Pheasants Forever	N/A	Landowners	Local chapters provide food plot and native grass seed.	Lake
Trees Forever	Working Watersheds: Buffers and Beyond	Iowa landowners	Fifty-percent cost share to implement a water quality project or demonstration site.	Lake
The Nature Conservancy	N/A	N/A	Protect diverse natural habitats, including wetlands and forests.	Lake
The National Fish and Wildlife Foundation	N/A	N/A	Critical habitat protection, capacity building for partner organizations, and wetland and forest stewardship.	Lake
The National Wildlife Federation	N/A	N/A	Protection and restoration of fish and wildlife habitat.	Lake
Water Environment Federation	N/A	N/A	Water quality research and facilities collaboration among partners.	Lake
Walton Family Foundation	N/A	Projects that match the foundation's funding criteria and priorities.	Freshwater projects that sustain healthy communities in the Mississippi River Basin.	Lake
Private Donors Appeals	Donations can be used as a match to other grants. Corporate donations, Individuals, Family Foundations, etc.		All programs, initiatives, and capital projects can be funded in this manner. Typically matching their mission to a project or endowment works best. Direct asks are more successful than open ended requests.	Lake

Funding Sources for Stormwater Management Efforts

Potential Funding Sources For Pedestrian and Bicycle Connectivity

Although this is not the immediate priority, the DLPOA can work with Madison County Transit, the city and county in partnership to make these improvements within the neighborhood because the streets and right of way are public streets and snow routes.

In general, the governmental entity has to process the grant applications and requests, unless it is a private donor. The bicycle and pedestrian improvements, especially those addressing accessibility and connecting students to schools, can be funded through a variety of federal, local, and private sources.

Federal funds are well suited for higher cost infrastructure projects, such as sidewalks or shared-use paths. Improvements that involve mainly paint, such as shared lane markings and crosswalks, can be implemented through routine maintenance, set-aside funds, or grouped as one federal funding application with a governmental partner. The city, county, and IDOT would plan for the cost of ongoing maintenance as part of capital improvements planning, as grants for maintenance are rare.

The chart on the page is a typical funding guide that HeartLands Conservancy would provide for a Pedestrian and Bike Plan for a community. Again, due to the lack of urgency, these opportunities should be investigated further as particular initiatives arise.

It is the recommendation of this plan to connect residents safely to common areas, regional and city trails, and safe and accessible crossings at intersections, especially those leading to schools of all levels.

It is important to note that infrastructure for pedestrian, bicycles, trails, routes to schools can be used for both recreation and transportation by all ages – from school age children and teens to the region's working citizens. Therefore, funding sources will differentiate for those purposes i.e. IDNR Bikeways Funds are used for recreation while IDOT Enhancements are used for transportation related projects and IDOT CMAQ funds are used for congestion/air quality mitigation. Additionally, any lands with a public partner for acquisition and development should utilize the IDNR OSLAD/ LAWCON programs whenever possible. Additionally, IDNR Bikeways funds could be used to help offset the local match necessary for the IDOT grant programs. Often MEPRD and Madison County have assisted cities with part of the match to either to IDNR or IDOT. SO again - a public partner is key.

State and Federal Funding Sources

The current transportation bill, Fixing America's Surface Transportation (FAST) Act, provides federal transportation policy and funding for 5 years (FY 2016-2020). In addition to funding sources through the FAST Act, there are other federal funding sources, which are described in the table below.

Please note, the grant sources administered by the Illinois Department of Transportation are now part of a single supply of funding that IDOT can participate/allocate on an optional basis due to the federal transportation bill MAP-21. Availability will be determined annually by the state. All grants, regardless of source, can fluctuate form year-to-year based on annual budgets and fund availability. The list below has traditionally been valid. However, due to various unforeseen circumstances, all funding sources and grant applications should be reviewed.

Local Funding Source Ideas

Many grants require local match. It is important to consider where that match is going to come from before applying for grant funding.

In addition to applying for MEPRD grants with the city, county, and MCT as a partners, below are some ideas other cities are using throughout the region.

Local Option Economic Development Sales Taxes:

Cities in the state of Illinois have the option to impose a local sales tax up to 4.75% to be used to fund projects that could include pedestrian & bicycle, stormwater (curb and gutter), and other improvements related to economic development.

Capital Improvement Budget Set-Aside:

The city or county could make a policy decision to set-aside a percentage of capital improvement budgets for watershed initiatives, but also to continue to expand and fund bicycle and pedestrian projects. These projects could be incorporated into scheduled road work to be stand alone projects. These funds can be leveraged as local match to secure federal funds.

	Grant Program	Type	Match Needed	Website:
Regional MPO (East - West Gateway Council of Governments	Congestion Mitigation & Air Quality (CMAQ)	Engineering Construction Right of way acquisition (ROW)	20%	http://www.fhwa.dot.gov/environment/air_quality/cmaq/ http://www.ewgateway.org/trans/TIP/CMAQ/cmaq.htm
	Surface Transportation Program (STP)	Construction	25%	http://www.ewgateway.org/trans/TIP/STP/stp.htm
	Transportation Alternatives Program (TAP)	Engineering Construction ROW	20% 50%	http://www.ewgateway.org/trans/TIP/TAP/tap.htm
	Great Streets Initiative	Planning	20%	http://www.ewgateway.org/Great-Streets/greatstreets.htm
Illinois Department of Transportation	Illinois Transportation Enhancements Program (ITEP)	Engineering Construction ROW	20% 50%	www.dot.state.il.us/
	Highway Safety Improvement Program (HSIP)	Engineering Construction	10%	www.dot.state.il.us/
	Safe Routes to School (SRTS)	Engineering Construction Encouragement, Enforcement and Evaluation Programs	20%	www.dot.state.il.us/
	Scenic Byways	Engineering Construction ROW	20%	www.dot.state.il.us/
	Injury Prevention Program	Education Only		www.dot.state.il.us/
	Grade Crossing Protection	Engineering Construction ROW	15% - 40%	www.dot.state.il.us/
IDNR	Bike Path Grant Program	Acquisition & Construction		dnr.state.il.us/
	Open Space Lands Acquisition & Development (OSLAD)	Acquisition & Construction	min. 51%	dnr.state.il.us/
	Recreational Trails Program	Acquisition & Construction	20%	dnr.state.il.us/

	Grant Program	Type	Match Needed	Website:
MetroEastPark& Recreation District	Park & Trail Grant	Acquisition Construction	60%	meprd.org/PDFs/MEPRD-FY18-Park-and-Trail-Grant-Program.pdf
	Event Sponsorship	Events	75%	meprd.org/PDFs/MEPRD-FY18-Event-Sponsorship-Grant-Program.pdf
Madison County	Park Enhancement Program	Acquisition Construction		www.co.madison.il.us
	Sustainability Grant	Planning Construction Programs		www.co.madison.il.us
Illinois Dept. of Commerce	Tourism Attraction Development Grant (TAP)	Construction	min. 51%	www.commerce.state.il.us/
	Community Development Assistance Program	Construction		www.commerce.state.il.us/
National Park Service	Land & Water Conservation Fund (LWCF)	Construction	min. 51%	www.nps.gov/ subjects/lwcf
	Preserve America Grant	Construction		www.nps.gov/preservation-grants/PreserveAmerica/
USDOT	Transportation Investment Generating Economic Recovery (TIGER)	Planning Construction	20%	www.transportation.gov/tiger
Private Foundations	PeopleforBikesCommunityGrants	Construction & Programs	min. 51%	www.peopleforbikes.org/
	Robert Wood Johnson Foundation	Various Grants		www.rwjf.org/en/how-we-work/grants-and-grant-programs.html
	American Hiking Society's National Trails Fund			www.americanhiking.org/national-trails-fund/
	Walmart Foundation	$250-2,500 through local stores		http://giving.walmart.com/foundation

Appendix

Glossary of Terms

Resources & References

Presentation Boards from Work Sessions

Implementation Committee Worksheets

Resident Survey Report - See DLPOA Manager

Appendix: Glossary of Terms

100-year floodplain: Land adjoining the channel of a river, stream, watercourse, lake, or wetland that has been or may be inundated by floodwater during periods of high water that exceed normal bank-full elevations. The 100-year floodplain has a probability of 1% chance per year of being flooded.

Aquifer: A layer of permeable rock, sand, or gravel through which groundwater flows, containing enough water to supply springs and wells.

Association: means Dunlap Lake Property Owners Assoc., Inc., an Illinois Not-for-Profit corporation, acting pursuant to bylaws through its duly elected board of directors.

Base flow: The flow to which a perennially flowing stream reduces during the dry season. It is commonly supported by groundwater seepage into the channel.

Bedrock: The solid rock that lies beneath loose material, such as soil, sand, clay, or gravel.

Board: the Board of Directors of the Association.

Center for Watershed Protection (CWP): Non-profit 501(c)3 corporation founded in 1992 that provides government entities, watershed organizations, and others around the country with the tools to protect streams, lakes, rivers, and watersheds.

Channelization: The artificial straightening, deepening, or widening of a stream or river to accommodate increased stormwater flows, typically to increase the amount of adjacent developable land for urban development, agriculture, or navigation.

Common Areas: The portion of the Property other than a Single Family Lot or Parkway, including, but not limited to, the designated areas owned by the Association that provide Lot Owners whose Lot does not adjoin the Parkway with access to the lake.

Community: The Dunlap Lake development/ neighborhood as platted and as represented by the DLPOA/Dunlap Lake Property Owners Association, in Edwardsville, Illinois.

Community Instruments: All documents and authorized amendments thereto recorded and/ or adopted by the developer of the Community or the Association, including, but not limited to, the Declaration, the Association's Articles of Incorporation and Bylaws, the Plat, and rules and regulations adopted pursuant to the foregoing, all as amended from time to time.

Designated use: Appropriate use of a waterbody as designated by states and tribes. Designated uses are identified by considering the use, suitability, and value of the water body for public water supply; protection of fish and wildlife; and recreational, agricultural, industrial, and navigational purposes. Determinations are based on its physical, chemical, and biological characteristics; geographical setting and scenic qualities; and economic considerations.

Digital Elevation Model (DEM): Grid of elevation points used to produce elevation maps.

Discharge (streamflow): The volume of water passing through a channel over a given time period, usually measured in cubic feet per second.

Dissolved oxygen (DO): The amount of oxygen in water, usually measured in milligrams/liter.

Erosion: The displacement of soil particles on land surfaces due to water or wind action.

Federal Emergency Management Agency (FEMA): Government agency within the Department of Homeland Security that responds to, plans for, coordinates recovery from, and mitigates against natural and man-made disasters and emergencies, including significant floods.

Flash flood: A rapid rise of water along a stream or low-lying area, usually produced when heavy localized precipitation falls over an area in a short amount of time. Flash floods are considered the most dangerous type of flood event because they offer little or no warning time and their capacity for damage, including the capability to induce mudslides.

Geographic Information System (GIS): A computer-based approach to interpreting maps and images and applying them to problem-solving.

Geology: The scientific study of the structure of the Earth, focused primarily on the composition and origins of rocks, soil, and minerals.

Headwaters: Upper reaches of streams and tributaries in a watershed.

HUC or HUC Code: A Hydrologic Unit Code (HUC) that refers to the division and subdivision of U.S. watersheds. The hydrologic units are arranged or nested within each other, from the largest geographic area (regions) to the smallest geographic area (cataloging units). Where two digits follow "HUC," they refer to the length of the HUC code. For example, "HUC14" refers to the lowest-nested subwatershed level with a 14-digit long code, such as HUC 07140204050101.

Hydric soil: Soil units that are wet frequently enough to periodically produce anaerobic conditions, thereby influencing the species composition and/or growth of plants on those soils.

Hydrology: The scientific study of the properties, distribution, and effects of water in relation to the earth's surface, in the soil and underlying rocks, and in the atmosphere.

Hydrologic Soil Groups (HSG): Soils are classified by the Natural Resource Conservation Service into four Hydrologic Soil Groups, A, B, C and D, based on the soil's runoff potential. A's generally have the smallest runoff potential and D's the greatest.

Hydrophytic vegetation: Plant life growing in water. An indicator of wetlands.

Illinois Department of Natural Resources (IDNR): State government agency established to manage, protect, and sustain Illinois' natural and cultural resources, provide resource-compatible recreational opportunities, and promote natural resource-related issues for the public's safety and education. They also assist in water and dams.

Illinois Environmental Protection Agency (IEPA): State government agency established to safeguard environmental quality so as to protect health, welfare, property, and quality of life.

Illinois Nature Preserves Commission (INPC): Commission responsible for protecting Illinois Nature Preserves, state-protected areas that are provided the highest level of legal protection, and have management plans in place.

Impervious Cover Model: Simple urban stream classification model based on impervious cover and stream quality. The classification system contains three stream categories (sensitive, impacted, and non-supporting) based on the percentage of impervious cover.

Impervious cover/surface: An area covered with solid material or that is compacted to the point where water cannot infiltrate underlying soils (e.g. parking lots, roads, houses, etc.).

Infiltration: Rainfall or surface runoff that moves downward from the surface into the subsurface soil.

Invasives plant and wildlife: Species which are exotic to the area. These are harmful to native environs as they typically quickly overtake the resources and choke out native species.

Loess: An unstratified loamy deposit, usually buff to yellowish brown, chiefly deposited by the wind and thought to have formed by the grinding of glaciers.

Marsh: An area of soft, wet, low-lying land, characterized by grassy vegetation and often forming a transition zone between water and land.

Municipal Separate Storm Sewer System (MS4): A system that transports or holds stormwater, such as catch basins, curbs, gutters, and ditches, before discharging into local waterbodies.

National Flood Insurance Program (NFIP): Federal program created by Congress in 1968 to help provide a means for property owners to financially protect themselves from flood risk.

National Hydrography Dataset (NHD): Digital database of surface water features, such as lakes, ponds, streams, and rivers. The NHD is used to make hydrology and watershed boundary maps.

National Pollutant Discharge Elimination System (NPDES) Phase II: Permit program authorized by the Clean Water Act requiring smaller communities and public entities that own and operate a Municipal Separate Storm Sewer System (MS4) to apply and obtain a NPDES permit for stormwater discharges to surface water. Permittees must develop, implement, and enforce a stormwater program designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable. Individual homes that use a septic system, are connected to a municipal system, or do not have a surface discharge do not need an NPDES permit. The NPDES permit program is administered by authorized states. In Illinois, the Illinois EPA administers the program.

National Wetland Inventory (NWI): U.S. Fish and Wildlife Service program that provides information on the characteristics, extent, and status of U.S. wetlands and deepwater habitats.

Native vegetation/plants: Plant species that have historically been found in a given area and are beneficial to water, soil, and wildlife qualities.

Natural Resources Conservation Service (NRCS): Government agency under the U.S. Department of Agriculture (USDA) that provides technical assistance to landowners and land managers.

Nitrogen: A colorless, odorless, unreactive gas that constitutes about 78% of the earth's atmosphere. The availability of nitrogen in soil is important for plant growth and ecosystem processes, and nitrogen is used in many fertilizers.

Nonpoint source pollution (NPS pollution): Any source of water pollution that is not from a discrete outflow point. Instead, NPS pollution comes from diffuse sources and is carried into waterways with runoff from the land. Pollutants can include oil, grease, sediment, and nutrients in excess fertilizer.

Nutrients: Substances needed for the growth of plants and animals, such as phosphorous and nitrogen. The addition of too many nutrients to a waterway causes problems to the aquatic ecosystem by promoting nuisance vegetation including excess algae growth.

Open space parcel: Any parcel of land that is not developed and is set aside for recreation or conservation purposes.

Overland flood: Flooding that occurs when rainfall collects on saturated or frozen ground. When surface runoff cannot find a channel, it may flow out over a large area at a somewhat uniform depth in sheet flow or collect in depressions as ponding.

Parkway: The land between the Lot line and the lake shoreline.

Point source pollution: Pollution that discharges in water from a single, discrete source, such as an outfall pipe from an industrial plant or wastewater treatment facility.

Pollutant load: The amount of any pollutant deposited into waterbodies from point source discharges, combined sewer overflows, and/or stormwater runoff.

Property: All the land, property, and space comprising the Community, all improvements and structures erected, constructed or contained therein or thereon, including any Building, and all easements, rights, and appurtenances belonging thereto, and all fixtures and equipment intended for the mutual use, benefit, or enjoyment of the Members, under authority or Association control .

Riparian: The riverside or riverine environment adjacent to the stream channel. For example, riparian, or streamside, vegetation grows next to (and over) a stream.

Riverine flood: Gradual rise of water in a river, stream, lake, reservoir, or other waterway that results in the waterway overflowing its banks. This type of flooding generally occurs when storm systems remain in the area for extended periods of time, when winter or spring rains combine with melting snow to create higher flows, or when obstructions block normal water flow.

Runoff: The portion of precipitation that does not infiltrate into the ground and is discharged into streams by flowing over the ground.

Sediment: Soil particles that have been transported from their natural location by wind or water action.

Sedimentation: The process that deposits soils, debris, and other materials either on other ground surfaces or in bodies of water.

Sludge: The settable solids separated from water during processing.

Slurry: A watery mixture or suspension of insoluble (not dissolved) matter, a thin watery mud or any substance resembling it (such as a grit slurry or a lime slurry).

Special Flood Hazard Area: The area inundated during the base flood is called the Special Flood Hazard Area or 100-year floodplain.

Stakeholders: Individuals, organizations, or enterprises that have an interest or a share in a project.

Stream reach: A stream segment having fairly homogeneous hydraulic, geomorphic, riparian cover, and land use characteristics.

Subwatershed: Any drainage basin within a larger drainage basin or watershed.

Threatened and endangered species: A "threatened" species is one that is likely to become endangered in the foreseeable future. An "endangered" species is one that is in danger of extinction throughout all or a significant portion of its range.

Topography: The relative elevations of a landscape describing the configuration of its surface. Also, the study and depiction of the distribution, relative positions, and elevations of natural and man-made features of a particular landscape (e.g. on a map).

Total Maximum Daily Load (TMDL): The highest amount of discharge of a particular pollutant that a waterbody can handle safely per day.

Total Suspended Solids (TSS): The organic and inorganic material suspended in the water column greater than 0.45 micron in size.

United States Army Corps of Engineers (USACE): Federal group of civilian and military engineers and scientists that provide services for planning, designing, building, and operating water resources and other Civil Works projects. These include flood control and environmental protection projects.

U.S. Fish and Wildlife Service (USFWS): Federal government agency within the U.S. Department of the Interior dedicated to the management of fish and wildlife and their habitats.

United States Geological Survey (USGS): Federal government agency established with the responsibility to provide reliable scientific information to describe and understand the Earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect quality of life.

Urban runoff: Runoff that runs over urban developed surfaces such as streets, lawns, and parking lots, entering directly into storm sewers rather than infiltrating the land upon which it falls.

Watershed: The area of land that contributes runoff to a single point on a waterbody.

Watershed Plan: A strategy and work plan for achieving water resource goals that provides assessment and management information for a geographically defined watershed, including the analysis, actions, participants, and resources related to its development and implementation.

Wetland: Lands that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, under normal conditions, a prevalence of vegetation adapted for life in saturated soil conditions. There are several types of wetlands. A wetland is identified based upon the three attributes: 1) hydrology, 2) hydric soils, and 3) hydrophytic vegetation. A wetland is considered a subset of the definition of the Waters of the United States.

Appendix: Resources & References

This document was compiled by HeartLands Conservancy - a vital nonprofit organization that works in partnership with organization, agencies, landowners, and communities to permanently protect the lands that we value in Southern Illinois -urban canopies, parks, greenways, rivers, farms, forests, wetlands, wildlife habitat, open spaces, and scenic vistas. HeartLands is dedicated to the mission of advancing the conservation of environmental resources to ensure a resilient quality of life through program areas of conservation of open space and fostering livable and sustainable communities. With interdisciplinary staff they led the project from public engagement to planning, environmental and GIS design to landscape design concepts. More information is available at www.HeartLandsConservancy.org.

On the following pages there are lists of references and resources that have contributed valuable information, diagrams, and research to this document as well as to our region's education and foundation in best management practices most appropriate.

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CE News: Professional Development Series Article, Jennifer Steff ens, E.I., LEED-AP, and Denise Pinto, P.E. Designing For LID: An In-depth

Look at Integrated Management Practices and Design Considerations July, 2011

The Stormwater Blog, Greg Kowalsky, BSME, Low Impact Development Manager What is LID? Five Principles of Low Impact Development, 2012.

EPA (2006). "Fact Sheet: Low-Impact Development and Other Green Design Strategies." June 1, 2006.

Gilfillan, Abigail (2008). "Using Geographic Information Systems to Develop and Analyze Land-Use Policies." Applied Research Projects.

Paper 273. Texas State University-San Marcos.

Watershed Planning & Protection

http://www.cmap.illinois.gov/watershed/default.aspx?ekmensel=c580fa7b_8_12_222_6 : a 2007 manual produced by the Chicago Metropolitan Agency for Planning, "Guidance for Developing Watershed Action Plans in Illinois," which includes guidelines for taking a watershed approach to addressing nonpoint-source pollution

http://www.cwp.org/: website of the Center for Watershed Protection, which includes a general discussion of watershed protection and assistance programs at: http://www.cwp.org/Our_Work/swmgmt.htm, and a slide show "Why Watersheds? An introduction to the whys and hows of water resource protection" at http://www.slideshare.net/watershedprotection/why-watersheds?src=embed

http://www.epa.gov/owow/watershed/wacademy/acad2000/protection/glossary.html: a glossary of watershed Best Management Practices produced by USEPA Watershed Academy

http://www.il.nrcs.usda.gov/technical/engineer/watershed.html: USDA NRCS watershed planning case studies in Illinois

http://cfpub.epa.gov/npdes/stormwatermonth.cfm: outreach materials and documents on stormwater management produced by USEPA NPDESThe Maschhoffs LLC

Quick information about waterways, presented in plain language, from USEPA. http://watersgeo.epa.gov/mywaterway/

Links and information on streamflow, water quality, and groups working on environmental protection in your watershed, from USEPA. http://cfpub.epa.gov/surf/locate/index.cfm

Free storm drain stencil kits with directions. http://prairierivers.org/articles/2008/09/stenciling/

Illinois RiverWatch and the National Great Rivers Research and Education Center (NGRREC) (http://www.ngrrec.org/riverwatch/). Stream monitoring manual, kit supply lists, monitoring guidelines, identification keys, biotic index calculator, and volunteer training.

The National Wildlife Federation's Certified Wildlife Habitat program

American Rivers: www.americanrivers.org/take-action/cleanup. Living Lands and Waters: http://livinglandsandwaters.org/

BMP Resources & Costing

The implementation costs of the management measures recommended were assembled from several sources, including the following primary sources:

• Natural Resources Conservation Service (NRCS) Practice Component List FY2014

• Iowa State University, 2011, 'Woodchip Bioreactors for Nitrate in Agricultural Drainage', page 2

• Long Run Creek Watershed Plan, Table 41 and Table 42

• Green Values National Stormwater Management Calculator, http://greenvalues.cnt.org/national/cost_detail.php

• National Pollutant Removal Performance Database, seen in Lower Meramec Watershed Plan, Table 20 and Table 21

• Illinois Urban Flooding Awareness Act report, 2015, https://www.dnr.illinois.gov/waterresources/documents/final_ufaa_report.pdf

• Low Impact Development Urban Design Tools website, https://www.lid-stormwater.net/

• Southwestern Illinois Resource Conservation District (SWIRCD), Thinking Outside the Pipe, seen in Lower Meramec Watershed Plan.•

• Stormwater Management Center fact sheets, seen in Lower Meramec Watershed Plan, Table 20 & Table 21

• The Green Values National Stormwater Management Calculator, available online at http://greenvalues.cnt.org/national/cost_detail.php. This site includes information on construction costs, maintenance costs, and component lifespan.

• www.usinflationcalculator.com

• Technical assistance in sample estimates from Midwest Streams Inc and Andreas Consulting Inc., 2017.

• International Stormwater BMP Database Pollutant Category Summary Statistical Addendum: TSS, Bacteria, Nutrients, and Metals, www.bmpdatabase.org, linked to by USEPA

• U.S. Environmental Protection Agency (USEPA) Region 5 Load Estimation Model Users Manual, Figure E6-2

• Illinois Nutrient Loss Reduction Strategy (2015)

• Green Values National Stormwater Management Calculator, http://greenvalues.cnt.org/national/cost_detail.php

• Minnesota Department of Transportation - Table 2.2 in the report: "Comparing Properties of Water Absorbing/Filtering Media for Bioslope/Bioswale Design," 2017 http://www.dot.state.mn.us/research/reports/2017/201746.pdf

• National Pollutant Removal Performance Database, seen in Lower Meramec Watershed Plan, Table 20 and Table 21

• Illinois Urban Flooding Awareness Act report, 2015, https://www.dnr.illinois.gov/waterresources/documents/final_ufaa_report.pdf

• Low Impact Development Urban Design Tools website, https://www.lid-stormwater.net/

• International Stormwater BMPs Database Pollutant Category Summary Statistical Addendum: Total Suspended Solids, Bacteria, Nutrients, and Metals, www.bmpdatabase.org, linked to by USEPA

Explanation of BMP usage adjacent to lakes:

Animated video about lakeshore restoration and stewardship created in collaboration with the Anoka County Water Resource Outreach Collaborative and several local Lake Associations. https://youtu.be/dwjAoRwLrmM

More Residential Resources

List of Illinois native plant species: www.wildflower.org/collections

How to prepare for and prevent flooding: www.ready.gov/floods

Chicago Wilderness Green Infrastructure Vision and data: www.cmap.illinois.gov/green-infrastructure

Sustainable backyard tours in St. Louis: http://www.sustainablebackyardtour.com/grassrootsgreenstl.com/Home.html

Urban farm and chicken coop tour in Alton: http://www.sierraclubppg.org/index.cfm?page=2970&eventID=12083&view=event

Conservation@Home Program: HeartLands Conservancy www.HeartLandsConservancy.org

DLPOA Videos

Drone Silt video - https://www.dropbox.com/s/rz7migwkwe5dwnm/silt%20basin.mp4?dl=0

https://www.facebook.com/DunlapLake/videos/1075623215844265/

2016 dredging video:

https://www.facebook.com/DunlapLake/videos/1075630579176862/

Appendix: Resources & References

These particular references were used to complete the extensive analysis for the Indian Cahokia Creek Watershed Plan: A Guide to Protecting and Restoring Watershed Health for Madison County, Illinois. Dunlap Lake resides within this watershed and plays a critical part in the movement and storage of stormwater.

These resources are valuable tools in the future of this master plan in that they provide the strong science and data for the lake's past, present, and future.

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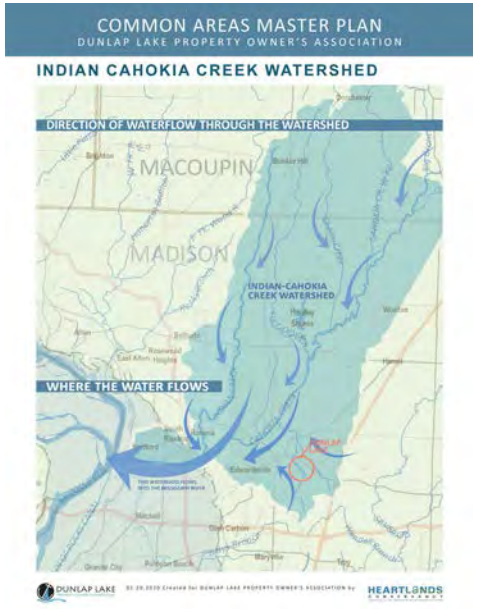
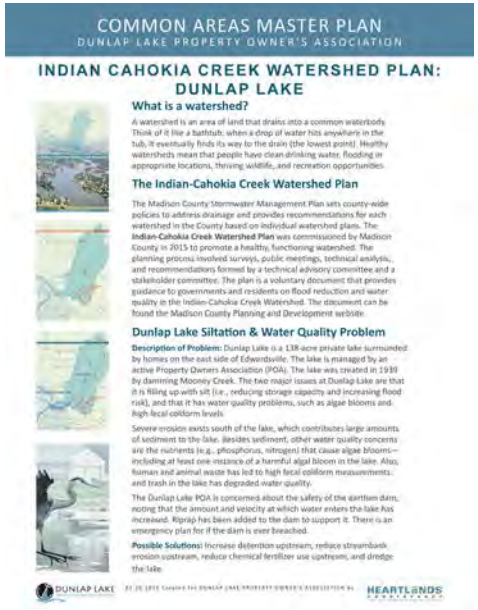
Appendix: Templates for Implementation Committee

IMPLEMENTATION PHASE PROJECTS & TASKS	PRIORITY LEVEL				LAKE INFRASTRUCTURE	DLPOA NEED	GREEN INFRASTRUCTURE	DESIRED IMPROVEMENT	DESIRED & OPTIONAL	POTENTIAL PARTNERS	EXTERNAL FUNDING OPPORTUNITIES
PHASE | PROJECT | TASK	LOW	MED	HIGH	ONGOING							
Phase ___: Year ___ to____											

IMPLEMENTATION PHASE PROJECTS & TASKS	PRIORITY LEVEL				LAKE INFRASTRUCTURE	DLPOA NEED	GREEN INFRASTRUCTURE	DESIRED IMPROVEMENT	DESIRED & OPTIONAL	POTENTIAL PARTNERS	EXTERNAL FUNDING OPPORTUNITIES
PHASE | PROJECT | TASK	LOW	MED	HIGH	ONGOING							
ON-GOING & SPECIAL											

Appendix: Presentation Boards From Work Sessions





COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

DUNLAP LAKE COMMON AREAS

• Please list issues, ideas, or amenities for the various common areas.

• East Lake	• West Lake
• East Lake	• West Lake
• East Lake	• West Lake
• East Lake	• West Lake
• East Lake	• West Lake
• East Lake	• Barnet Rd
• East Lake	• Barnet Rd
• Creek entering Lake	• Barnet Rd
• West Lake	• Barnet Rd
• West Lake	• Barnet Rd
	• Barnet Rd

DUNLAP LAKE HEARTLANDS

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

DOCKS, SLIPS, & ACCESS

	QUESTIONS	YES	NO
1	I am okay with individual residents building docks on association-owned land and leaving upkeep at the resident's discretion		
2	I would like to see association be more proactive on requiring residents to remove docks that are in serious disrepair		
3	I think the association should build additional association-owned docks in high-traffic areas. Right now there is only one.		
4	I think the Association should move towards owning and managing docks on common areas if a plan were devised so they would be self-funding		
	•Because of liability		
	•Because of limited space		
	•Because of financial management		
	•Other (write on sticky notes)		
5	I do not think the Association should move towards owning and managing docks on commons areas		
	•Because of liability		
	•Because of limited space		
	•Other (write on sticky notes)		
6	I have not thought about the current situation being a problem.		
7	Other thoughts on how the Association should address the fact there are residents who have been waiting for years to get dock space in high-traffic areas?		
	•Lottery		
	•Private rental, but registered with Association		
	•Other (write on sticky notes)		
8	Would you use a small boat stand if there were more stands and launch pads (for jon boats, kayaks, canoes)?		

DUNLAP LAKE HEARTLANDS

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

DOCKS, SLIPS, & ACCESS

- Docks are a cost in the DLPOA Capital Plan. Please answer the following questions with a mark as a reply next to the answer you choose.
- Put a dot on the map in a commons area where you would like to have a dock.
- Put a dot on the map where your boat currently is located.

• Is a discussion about docks, slips, and lake access important to you?

YES	
MAYBE	
NO	

• Should the DLPOA Association make policy changes for docks on association-owned land?

YES	
MAYBE	
NO	

• Do you have a dock?

YES	
wait-listed	
NO	
NO but I would rent	
I don't want one	

• If yes, do you like its location?

YES	
NO	

DUNLAP LAKE HEARTLANDS

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

HOW YOU CAN HELP!

- Fill out the Survey for the Common Areas Master Plan
- Invite & encourage neighbors to participate in events
- DLPOA Common Area's Master Plan: approve, adopt, & advocate
- Participate in programs, community beautification & stormwater management efforts
- Use native plants & remove invasive plants
- Volunteer for events & clean up days
- Stay informed, and attend seminars/educational sessions
- Volunteer & join committees for Implementation

DUNLAP LAKE HEARTLANDS

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

AMENITIES

What do you want to use on the common areas & around the lake in the future?

• Please choose your top 3 uses or activities in each column.

	Amenities	Yes	No
1	Seating & Benches		
2	Picnic Tables		
3	Shade Structure(s)		
4	More Trail Linkages		
5	Public Boat Slips		
6	Kayak Launch		
7	Walking Paths		
8	Fishing Supply & Dock		
9	Equipment Rental		
10	Motor Repair Hut		
11	Nature Interpretation		
12	Fishing		
13	Fire Pits		
14	Grills		
15	Connect to Glik Park		
16	Other (Write Ideas)		
17	no amenties needed		

DUNLAP LAKE HEARTLANDS

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

ACTIVITIES & RECREATION

How do you currently use or want to use the lake & common areas in the future?

• Please choose your top 3 uses or activities in each column.

	Activitiy	Current Use	Future Use
1	Walking		
2	Kayaking		
3	Canoeing		
4	Motor Boat		
5	Don't use/ don't want to use lake		
6	Bird Watching		
7	Swimming		
8	4th of July		
9	Special Events		
10	Playing		
11	Relaxing		
12	Fishing		
13	Bon fires		
14	Picnic		
15	Grilling		
16	Storing Boat		
17	Other (write)		

DUNLAP LAKE HEARTLANDS

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

PLAN & PROJECTS FUNDING

• Please put a mark next to the options you agree with to fund capital projects, as well as beautification, recreation, & stormwater BMP projects.

• Explore Public/Partnerships Limited to maintenace, management or particular projects

YES	
NO	

• Explore Low Interest Loans

YES	
NO	

• Explore Large & Small Grants

YES	
NO	

• Explore SSA with County/City of Edwardsville

YES	
NO	

• Explore Stepped Increase in Annual Fees

YES	
NO	

• Set up Endowment for Future Maintenance

YES	
NO	

• Explore Revenue Streams Large & Small

YES	
NO	

DUNLAP LAKE HEARTLANDS

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

EDUCATIONAL SEMINARS

• Please put a mark or your name if you would like to attend a session on any of these topics or suggest others.

• DLPOA Finance & Capital Plan Seminar

YES	
MAYBE	
NO	

• Lake & Dam: Silting, Dredging, & Technical Informational Seminar

YES	
MAYBE	
NO	

• The Water's Edge: Lake Ecology, Native Landcape & Water/Erosion Management

YES	
MAYBE	
NO	

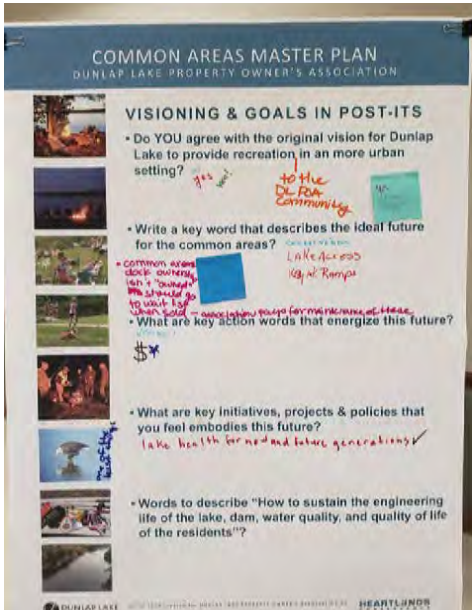
• Conservation@Home & Your Own Yard Seminar

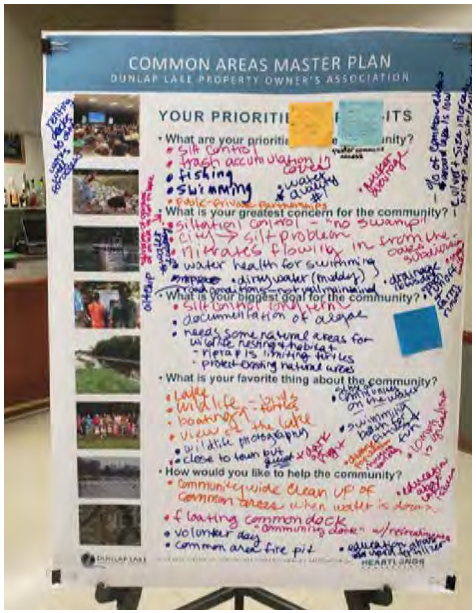
YES	
MAYBE	
NO	

• Volunteering to Leverage Cost-savings

YES	

DUNLAP LAKE HEARTLANDS


COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION
VISIONING & GOALS IN POST-ITS
• Do YOU agree with the original vision for Dunlap Lake to provide recreation in an more urban setting?
• Write a key word that describes the ideal future for the common areas?
• What are key action words that energize this future?
• What are key initiatives, projects & policies that you feel embodies this future?
• Words to describe "How to sustain the engineering life of the lake, dam, water quality, and quality of life of the residents"?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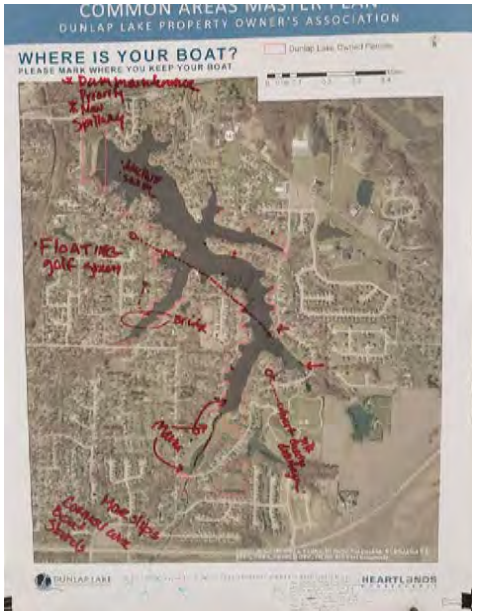
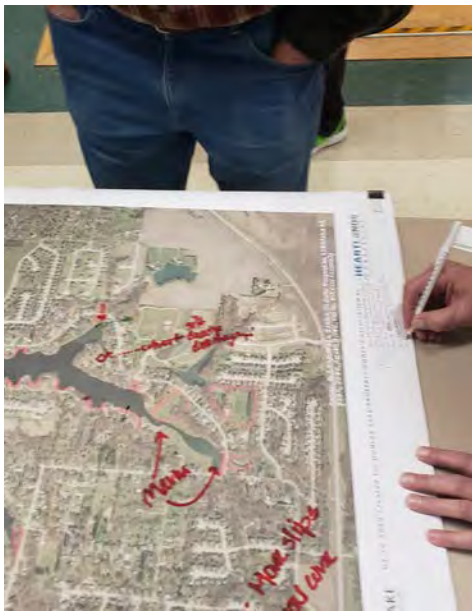
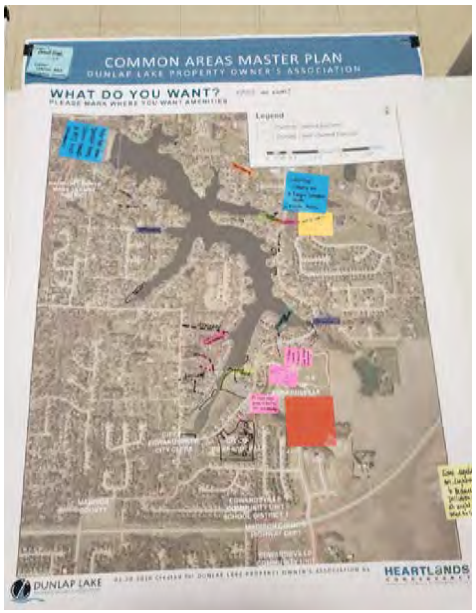
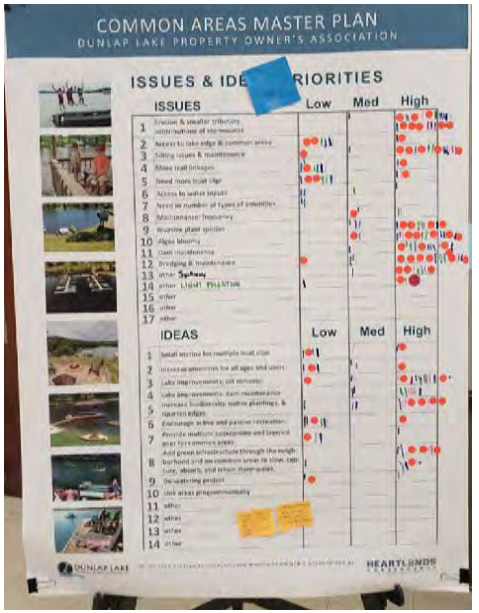
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION

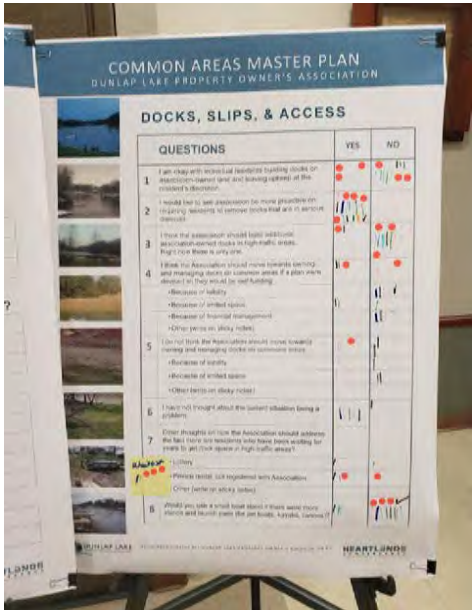

COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION
WHERE IS YOUR BOAT?
PLEASE MARK WHERE YOU KEEP YOUR BOAT

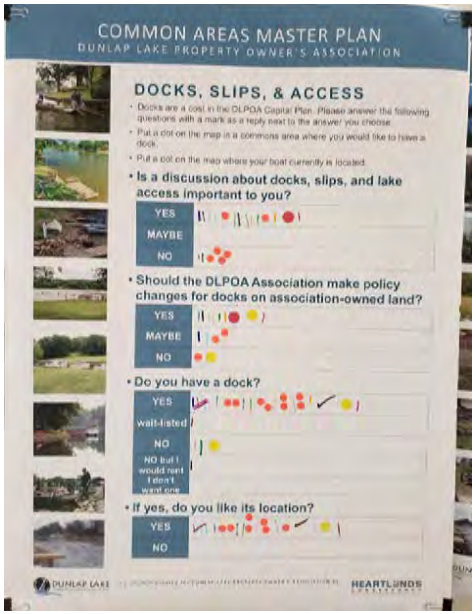



COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION
WHAT DO YOU WANT?


COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION
ISSUES
IDEAS
Low
Med
High


COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION
DUNLAP LAKE COMMON AREAS
East Lake
West Lake
Barnett Rd
Creek entering Lake
DUNLAP LAKE
HEARTLANDS


COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION
DOCKS, SLIPS, & ACCESS
QUESTIONS
YES
NO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• Do you have a dock?
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wait-listed
NO
NO but I would not / don't want one
• If yes, do you like its location?
YES
NO
DUNLAP LAKE
HEARTLANDS


COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION
AMENITIES
What do you want to use on the common areas & around the lake in the future?
Amenities
Yes
No
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13 Fire Pits
14 Grills
15 Connect to Glik Park
16 Other (Write)
17 no amenities needed
DUNLAP LAKE
HEARTLANDS


COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION
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DUNLAP LAKE
HEARTLANDS


COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION
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• Set up Endowment for Future Maintenance
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DUNLAP LAKE
HEARTLANDS


COMMON AREAS MASTER PLAN
DUNLAP LAKE PROPERTY OWNER'S ASSOCIATION
EDUCATIONAL SEMINARS
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• Lake & Dam: Silting, Dredging, & Technical Informational Seminar
• The Water's Edge: Lake Ecology, Native Landscape & Water Erosion Management
• Conservation@Home & Your Own Yard Seminar
• Volunteering to Leverage Cost-savings
YES
MAYBE
NO
COMMON AREAS MASTER PLAN

DUNLAP LAKE

Port of Edwardsville, Illinois

Slow Boatin' Since 1939

HEARTLANDS CONSERVANCY