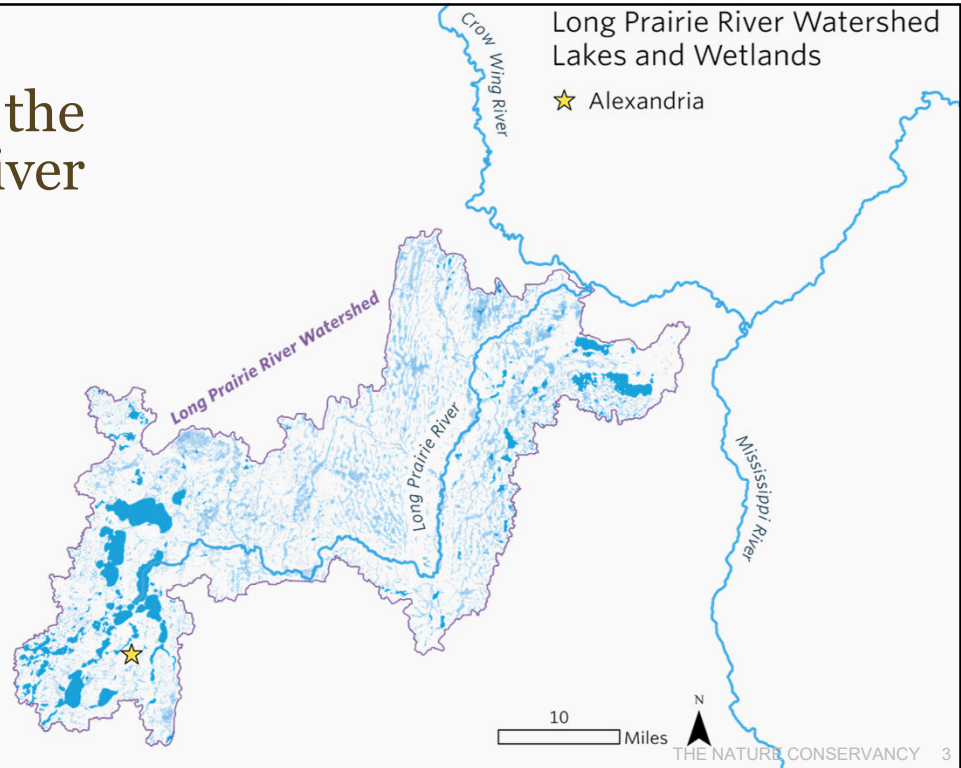
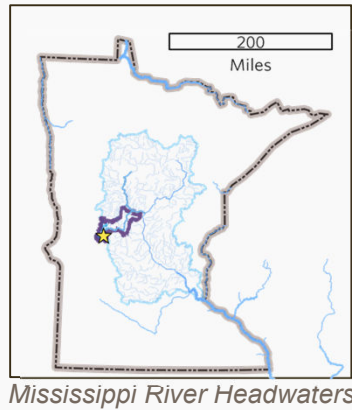


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<h2>Douglas County Water Quality Legacy Fund</h2> <p>OUR LAKES - OUR FUTURE</p> <p>Douglas County is known for its water. It contains 4 major watersheds, which drain to the Mississippi and Minnesota Rivers, and contains over 200 lakes.</p> <p>Clean water is vital to the health of our community:</p> <ul style="list-style-type: none"> • We depend on high-quality groundwater for our drinking water. • We enjoy our lakes and streams for boating, fishing, and swimming. • We appreciate our lakes, streams, and wetlands for providing critical wildlife habitat and wildlife viewing. • We value our local water resources as an economic driver, providing direct and indirect business opportunities. <p>It is important to keep our water clean for our permanent and seasonal residents, annual tourists, and future generations.</p> <p>It's time to take action!</p> <p>Douglas County Lakes Association in partnership with:</p> <ul style="list-style-type: none"> • Douglas Soil and Water Conservation District • City of Alexandria • Douglas County • Minnesota DNR • The Nature Conservancy • Alexandria Chamber of Commerce • Douglas County Corn & Soybean Growers' Association 	<p>How can we help keep our waters healthy?</p> <ul style="list-style-type: none"> • We are happy to announce the founding of the Douglas County Water Quality Legacy Fund. Its goal is to provide the required matching dollars for grants available from other sources to protect and restore our natural water resources. • Projects selected will be supported by obtaining ongoing donations to this Fund and income from the formation of a West Central Initiative Component Fund. • This Component Fund would provide a sustainable source of funding to restore and keep our waters healthy for generations to come. <ul style="list-style-type: none"> • Projects that rank the highest for cost-effectiveness and multiple benefits will be prioritized and targeted. • Projects with multiple benefits include those that provide benefits to habitat, surface and groundwater quality and quantity, and flooding and erosion control. • Projects may include wetland and shoreline restoration, stormwater management, erosion control, and protection of high-quality properties. • Projects will minimize adverse impacts on the natural environment, address existing cultural resources, and result in water quality net gain. <p>Help us reach our goal to safeguard the future of our Douglas County waters. Investing in local water quality is an investment in your community, future generations and Minnesota. You can donate online at wcif.org/fund/dcw</p> <p>To learn more, contact DouglasWaterQualityFund@gmail.com</p> <p>The Douglas County Water Quality Legacy Fund is a component fund of West Central Initiative, a regional community foundation that serves the west central Minnesota counties of Becker, Clay, Douglas, Grant, Otter Tail, Pope, Stevens, Traverse, and Wilkin.</p> <p>wcif.org 800-735-2239 PO Box 318 Fergus Falls, MN 56538</p>
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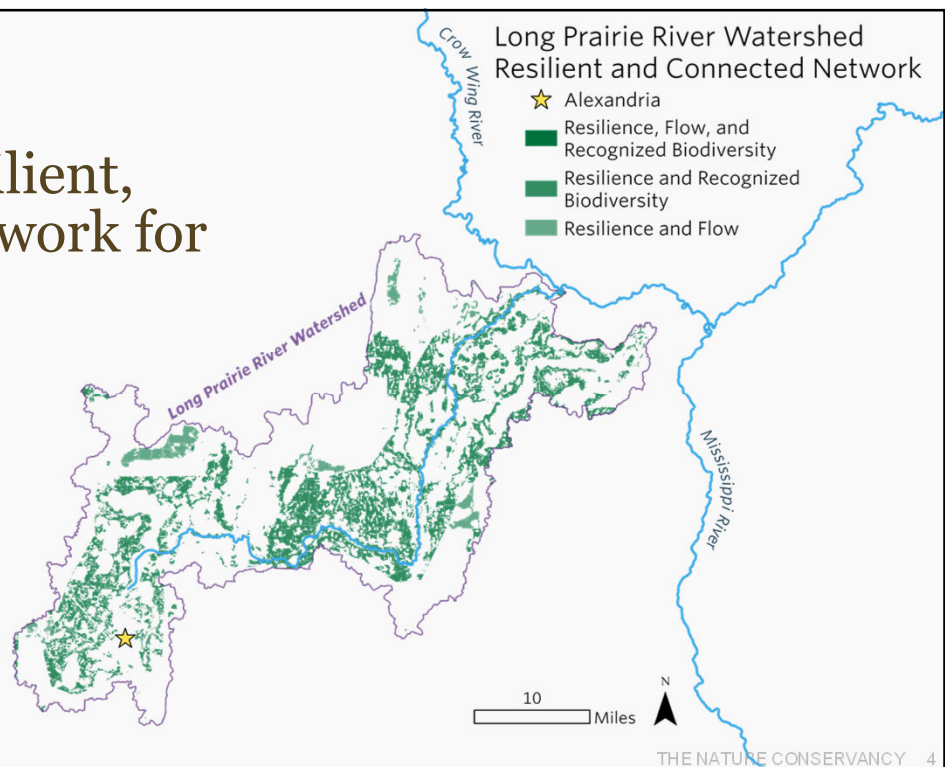
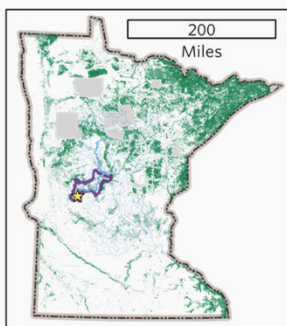
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Alexandria in the Mississippi River Headwaters



3

Building a resilient, connected network for conservation



4

Nature-Based Solutions for Resilient & Safe Communities

2019 was the wettest year on record in Minnesota to date. Flood damage to roads, buildings, homes, and wastewater infrastructure in addition to degraded water quality, erosion, and soil loss are some of the negative effects of increased precipitation impacting the everyday lives of Minnesotans. Projections from the University of Minnesota predict an **increase in extreme precipitation events** across the state in years to come. Green infrastructure and nature-based solutions to address stormwater, increase storage and infiltration on the land while protecting and improving water quality and habitat are crucial. These practices can take pressure off traditional 'gray' infrastructure and can be tailored to meet specific stormwater challenges.

What are nature-based solutions?

Nature-based solutions, - aka NBS, natural infrastructure or green infrastructure - incorporate the natural environment to mimic or work in concert with natural processes to provide clean water, clean air, and flood, fire and drought risk reduction. They also offer an array of economic, social, and environmental co-benefits, which all work to increase community resiliency.

Examples of NBS:

- Wetland restoration and construction
- Rain Gardens
- Bioswales
- Strategic planting
- Targeted land protection
- Floodplain restoration
- Best Land Management Practices

Defining Future Challenges

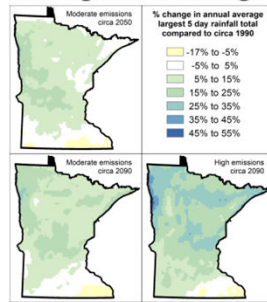


Figure 1. Precipitation projections for Minnesota based on moderate and high emission scenarios.

Maps produced by researchers at the University of Minnesota downscaled climate projections to illustrate fine-scale regional and temporal variations. According to these models, in the next 20 years, most regions of the state can expect more precipitation. This indicates a strong need to consider climate variations and incorporate innovative solutions in stormwater planning.

What are the benefits of nature-based solutions?

Nature-based solutions mitigate and help communities adapt to the effects of climate change while providing social, economic and ecosystem benefits. Benefits include:

- Flood mitigation
- Improved water quality
- Erosion control/decreased soil loss
- Restored wildlife habitat
- Enhanced recreational areas
- Infrastructure/property protection
- Reduced long-term costs

How can TNC help?

We seek to identify and fill capacity gaps in collaboration with city staff and other stakeholders, as well as help communities identify additional resources to incorporate more nature-based solutions and increase community resiliency.

Contact Us

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Government Relations Mgr.
S.pinkalla@tnc.org
612-590-7725

Using Data & Models to Enhance Community Stormwater Planning

Changing precipitation and flooding events will not affect all parts of Minnesota equally. Past climate and precipitation models have failed to sufficiently capture localized variations across the state, and provided outputs at resolutions too coarse to interpret local and regional trends.

To meet this challenge, researchers at the University of Minnesota created customized climate reports for individual municipalities. Supported with funding from the Environment and Natural Resources Trust Fund, this effort has produced climate projections applicable at the local level.

Global scale model resolution Dynamically downscaled 10km resolution

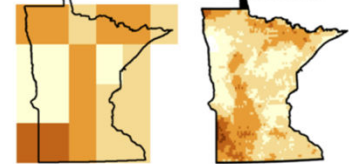


Figure 2. Comparison between the coarse spatial resolution of traditional climate models (left) to the downscaled models (right).

Start now to better plan and implement nature-based management practices to increase your overall community resiliency. Here are some questions to ask:

Where does current flooding occur? How will this change in the future under different climate models? Who will be the most impacted in your community by climate change? What are the best solutions to increase resiliency? What are the social, environmental, and economic costs of acting now versus waiting? What are some ways to secure funding to develop and/or implement your resiliency plan? **Help your community become more resilient and seek to answer these questions now.**

The Nature Conservancy

Planning for extreme rainfall in Alexandria



Flash flooding near Midway Mall (Source: Echo Press News)



Planning for extreme rainfall in Alexandria



Flash flooding near Midway Mall (Source: Echo Press News)



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Nature-based solutions



Flood mitigation



Water quality improvements



Wildlife habitat

Recreational Opportunities

Reduced long-term costs



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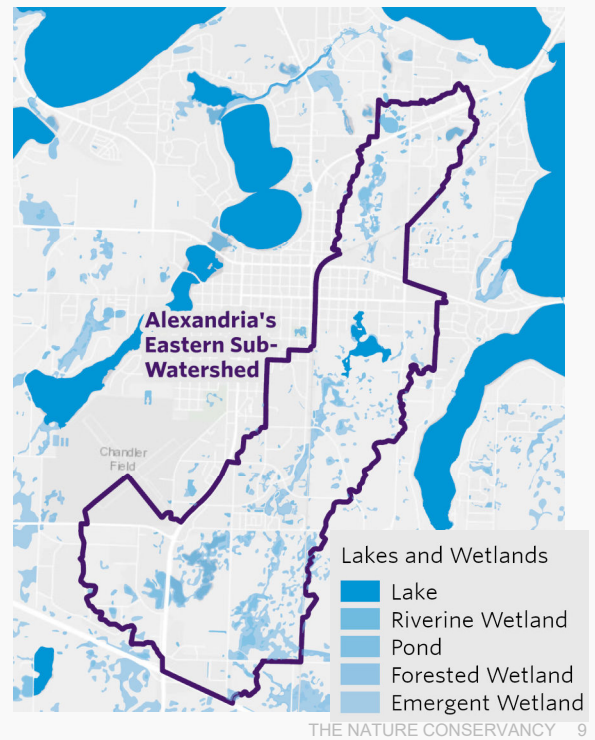
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Wetlands

- Increase storage and infiltration
 - Reduce pressure on “gray” infrastructure
- Improve water quality
 - Reduces nutrients entering lakes
 - Limits algae growth
 - Reduces sediment and erosion
- Provide critical habitat

Minnesota wetlands are expected to provide \$29 million in flood control benefits through 2050

(McKinsey, 2018. Mississippi Headwaters: The Business Case for Conservation)



9

Multiple Benefits



• Fish & wildlife habitat



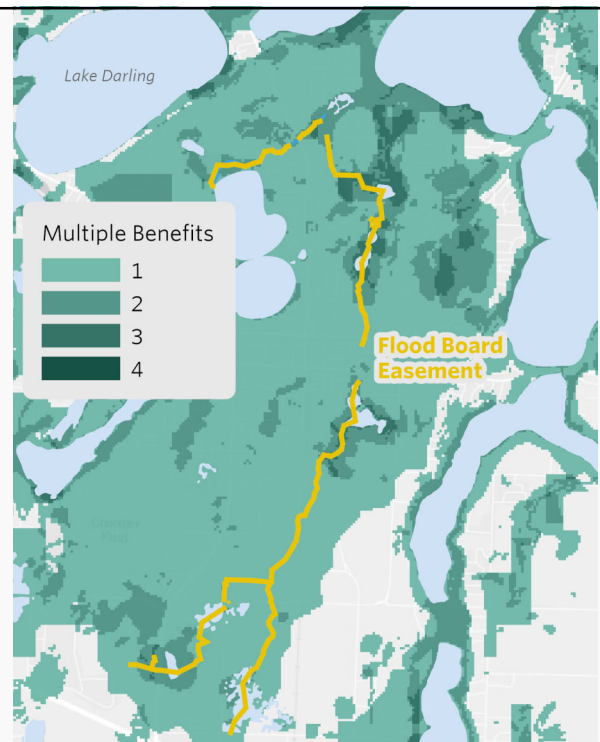
• Surface & groundwater quality



• Flooding & erosion control



• Groundwater quantity

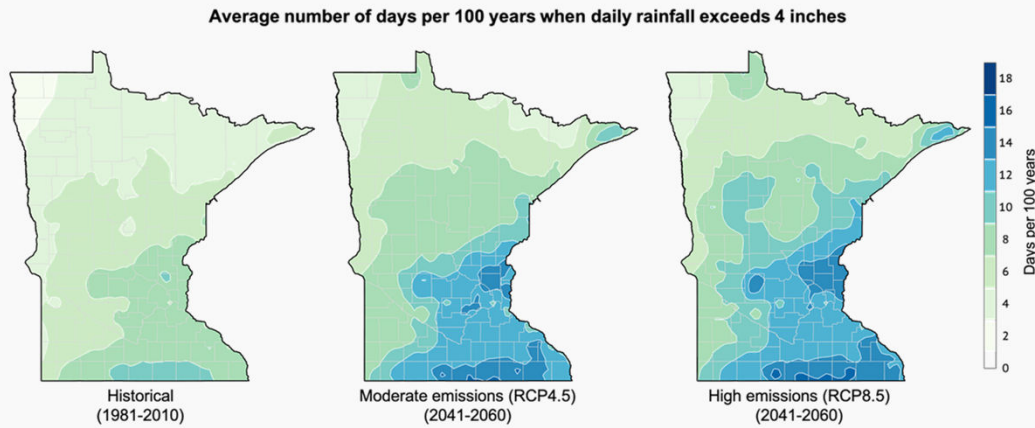


Photos, from top: © Eric Engebretson, © Mark Godfrey, © Jerry and Marcy Monkman, © Kent Mason

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Flood risk increases with more intense storms and increased development.

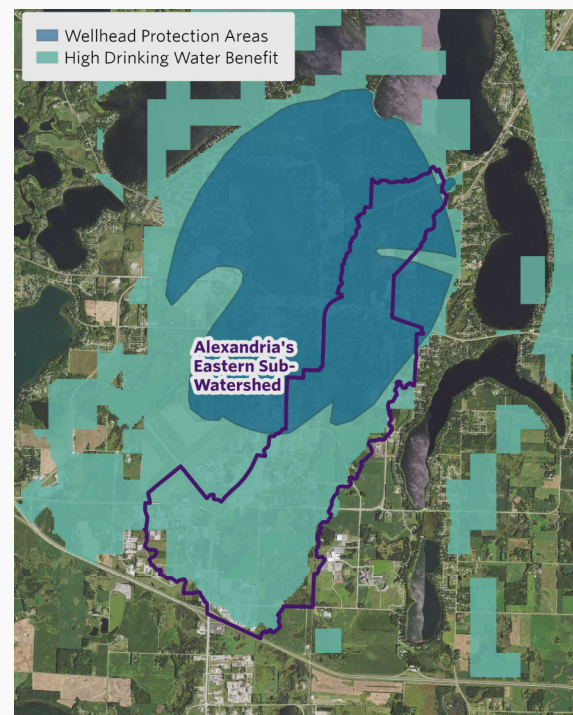


Courtesy of MCAP and the University of Wisconsin Probabilistic Downscaling v2.0.; David Lorenz and the Nelson Institute Center for Climatic Research

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Drinking Water Benefit



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12

City of Alexandria: 2040 Plan Goals



Priority Rank 2

"New growth and development will be in harmony with and preserve the natural environment and its resources"



Priority Rank 5

"As valued assets of the Alexandria community, existing parks and recreational amenities will be maintained and improved, which will help retain existing residents and attract new ones"



Priority Rank 6

"The City's transportation system will continue to diversify its mobility options to improve travel by automobile, pedestrian, bicycle, and transit"



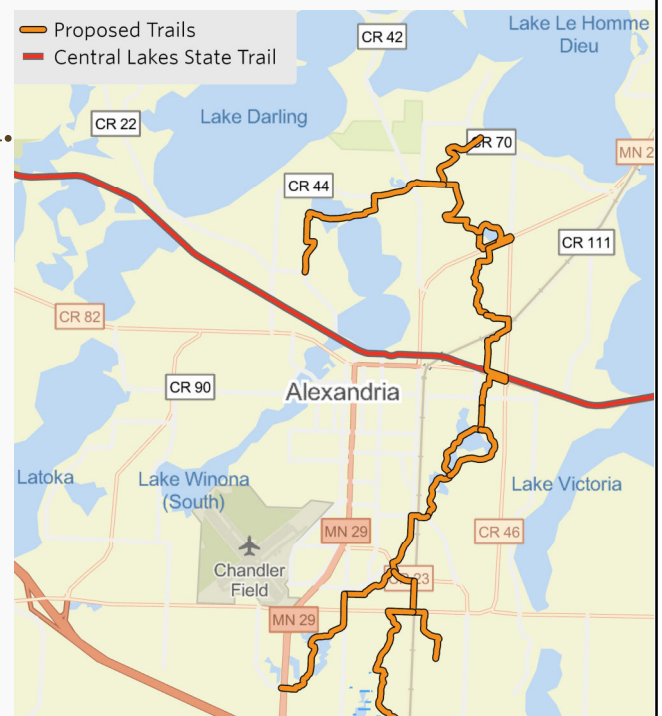
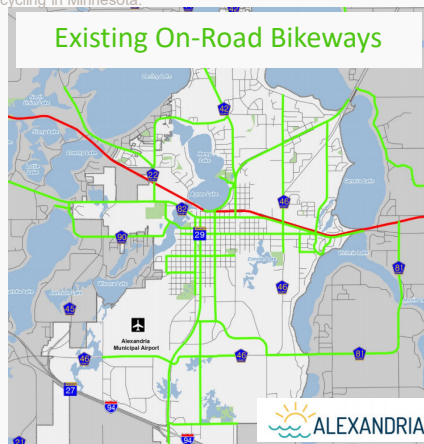
THE NATURE CONSERVANCY 13

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Conservation to support transportation and bike tourism.

Bicycling contributes over \$780 million annually to economic activity in Minnesota

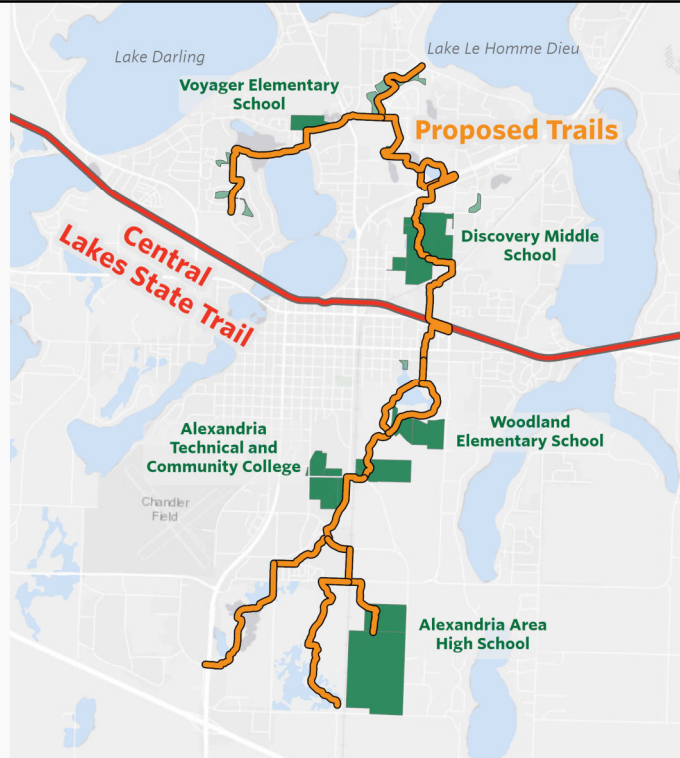
(University of MN Tourism Center. 2016. Assessing the Economic Impact and Health Effects of Bicycling in Minnesota.)



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14

Connecting parks and schools

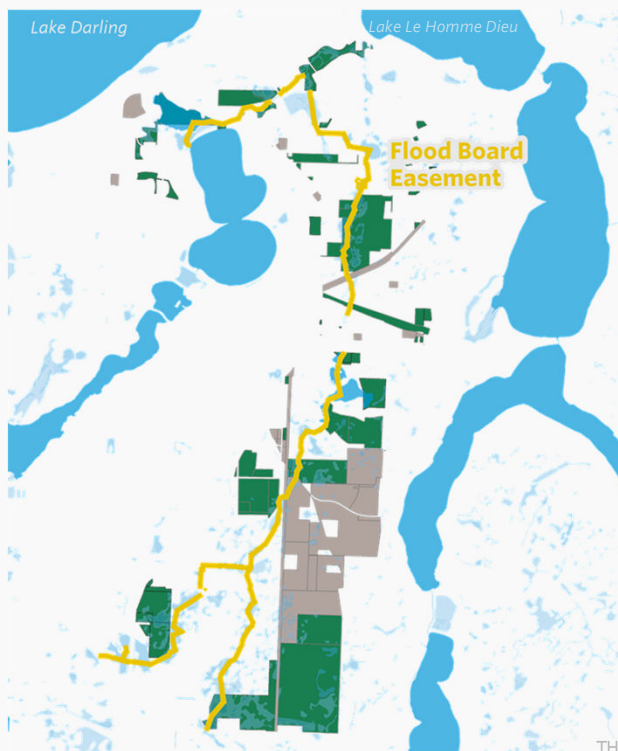


NATURE CONSERVANCY 15

15

Property ownership along the flood board easement

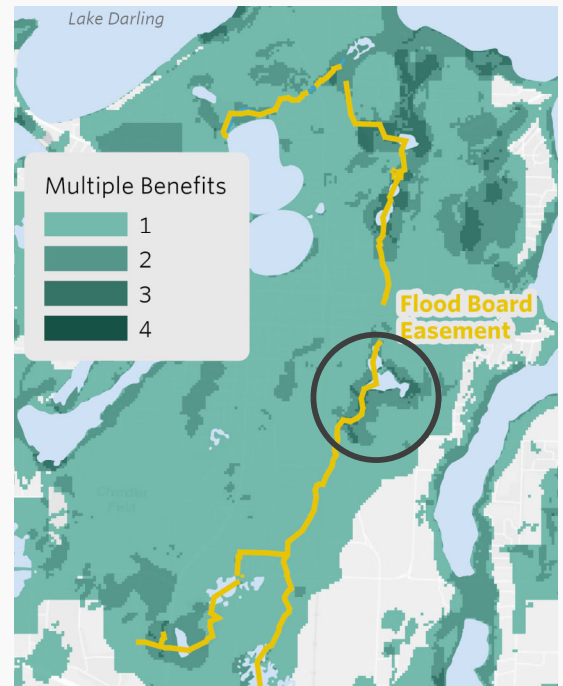
- Park, City, County, State, School, Utility
- Church, Farm, Railroad
- Lakes
- Wetlands



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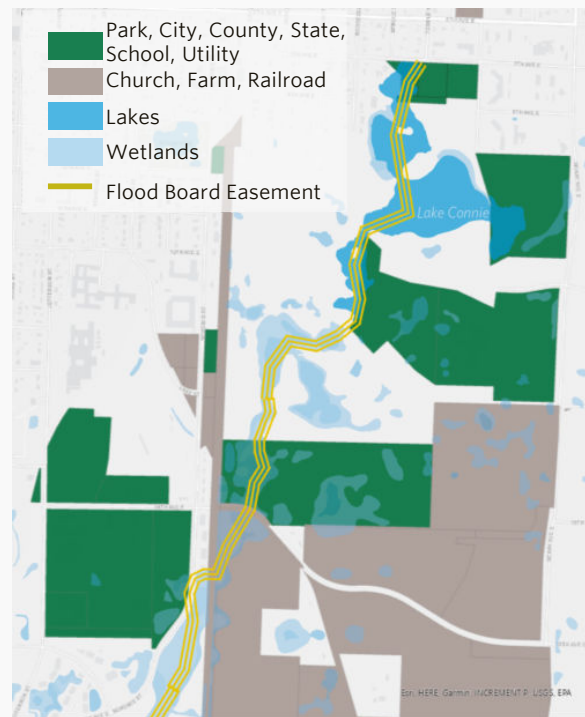
Lake Connie



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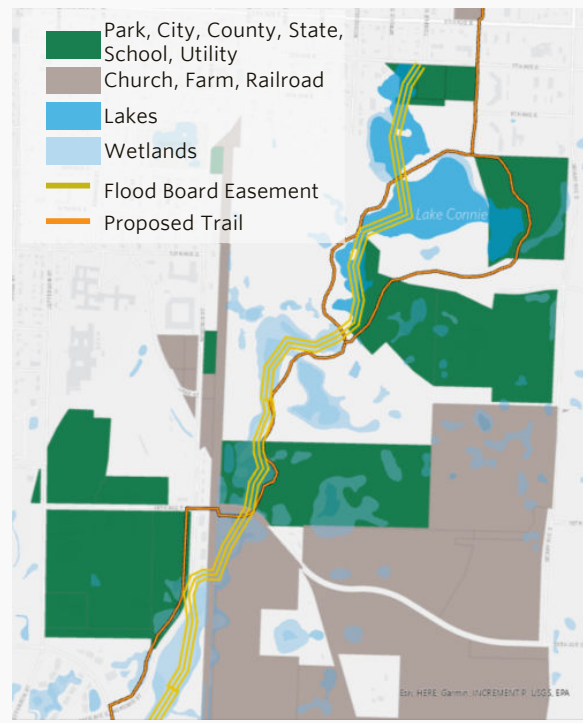
Lake Connie



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Lake Connie



THE NATURE CONSERVANCY 19

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Next Steps:

- 1) Task Force
- 2) Scope of Work

The Nature Conservancy



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