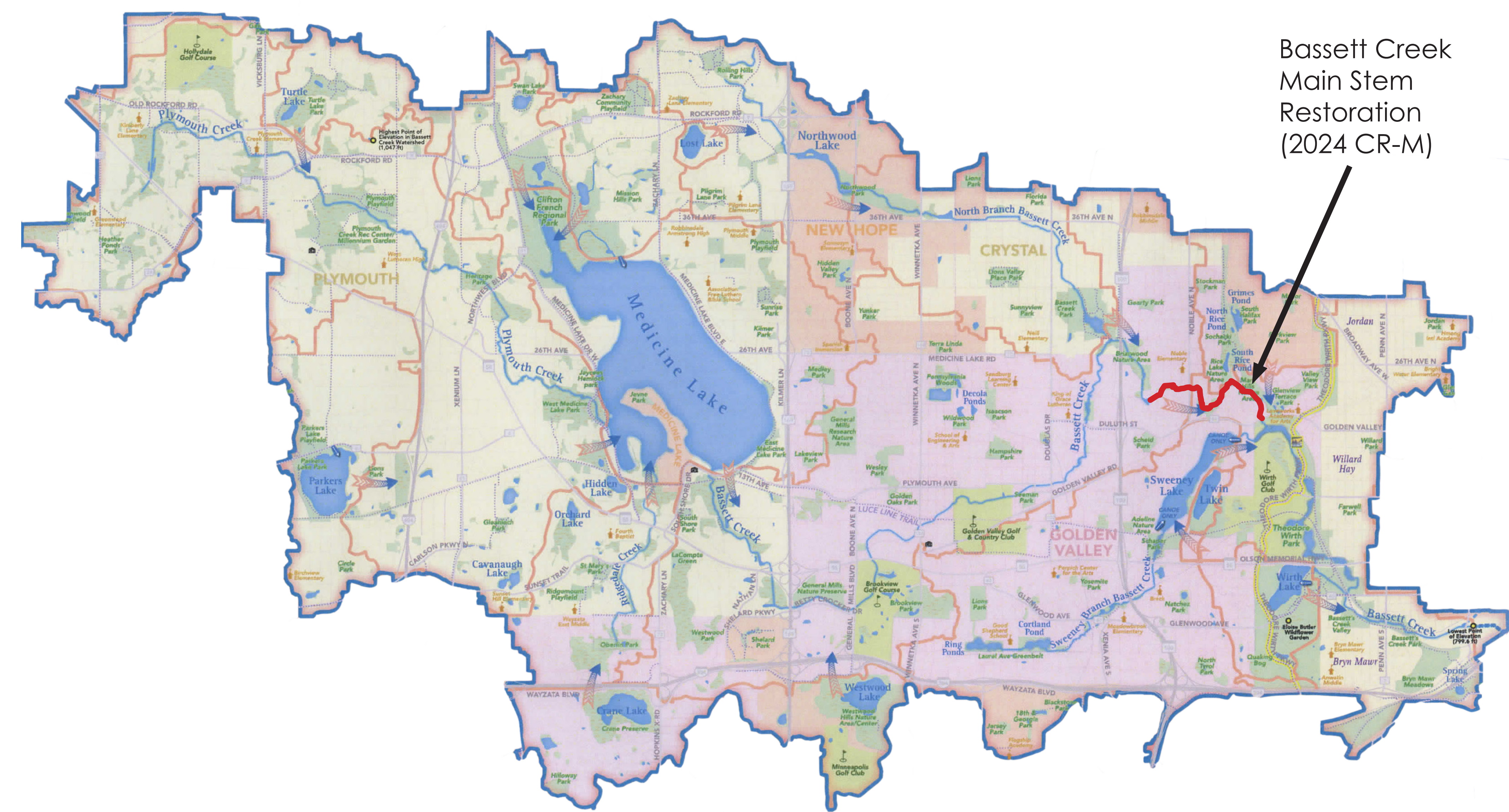


About the Bassett Creek Watershed Management Commission (BCWMC)

The vision: stewardship of water resources to protect and enhance our communities



Bassett Creek
Main Stem
Restoration
(2024 CR-M)

About the BCWMC

- **Regional government organization** formed in 1969 to focus on flood control along Bassett Creek
- **Operates under 1982 Metropolitan Surface Water Management Act**
- **Focused on providing flood management and improving and protecting the water quality** of Bassett Creek and lakes/streams
- **Nine member cities:** Crystal, Golden Valley, Medicine Lake, Minneapolis, Minnetonka, New Hope, Plymouth, Robbinsdale, St. Louis Park
- **Area:** approximately 40 square miles

Commission funding

- Contributions from nine member cities (approximately \$600,000 per year)
- Hennepin County tax levy for major projects (approximately \$1.5–2 million per year)
- Grant funds and application fees (varies)

Commission activities

- Implements capital improvement projects that reduce flooding and improve lakes, streams, and wetlands throughout the watershed
- Monitors water quality, performs studies, maps resources
- Provides water resource education and watershed-wide coordination
- Reviews developments for compliance with standards and requirements

EXAMPLE BCWMC CIP PROJECTS



Wirth Lake outlet



Bassett Creek restoration



Bassett Creek Main Stem Erosion Issues and Restoration Prioritization



- Significant Trees
- Legacy Trees
- Bassett Creek
- Bike and Pedestrian Trail System
- Private Parcel
- Public Parcel
- Easement
- Existing Stabilization
- Bank Erosion Hazard Index (BEHI)
 - Very High
 - High
 - Moderate
- Utilities
 - Gravity Storm Sewer
 - Sanitary Main

Restoration Prioritization Factors

Several factors will impact prioritization of Bassett Creek Main Stem restoration locations, including:

- Severity of existing erosion
- Public access/ownership
- Protection of existing structures/infrastructure
- Impact to surrounding areas
- Public visibility/accessibility
- Potential for future erosion (near-bank stress and bank erosion hazard index ratings)
- Opportunity for habitat creation or restoration
- Maintaining healthy, native significant trees (minimize removal)
- Vegetation establishment potential (exposure to sunlight)
- Ease of construction access
- Consider proximity/possibility for other improvements (e.g. new sediment trapping device in nearby storm drains)



Streambank undercutting



Tributary erosion



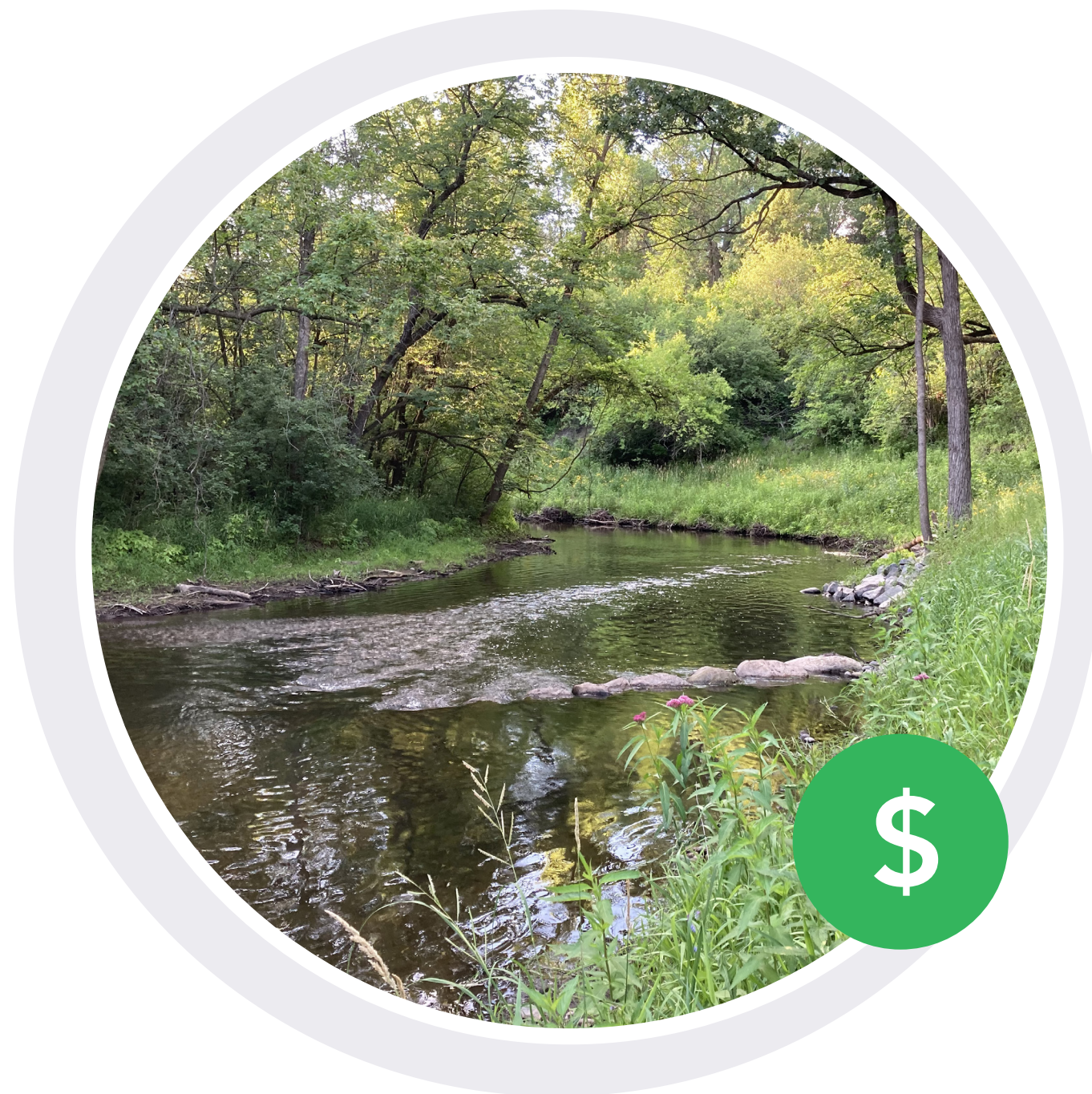
Scour near culverts

Any type of erosion comes with the associated issues:

- Introduction of sediment to stream and downstream water bodies
- Degradation of bank vegetation and reduced potential for re-growth
- Degradation of in-stream and bank habitats
- Increased risk of continued erosion
- Changing of the stream shape and size overtime

Alternate Design Concepts Summary

1



In-stream structures

\$

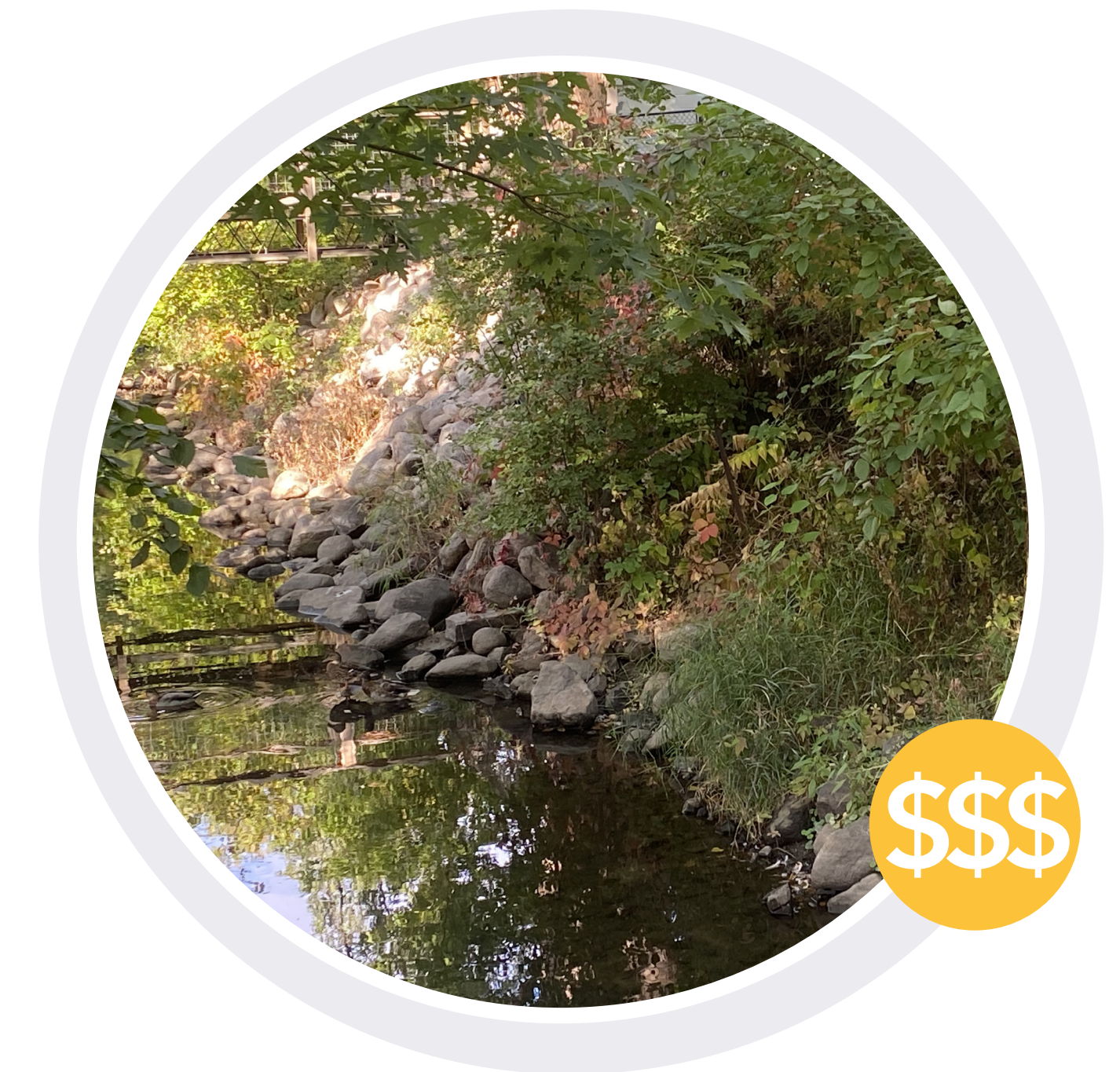
2



Bank stabilization with bioengineering methods

\$\$

3



Bank grading with riprap and vegetation establishment

\$\$\$

Pros

- Reduces near-bank stress
- Minimal bank disturbance
- Lowest construction cost
- Diversifies flow within stream, including energy dissipation pools
- Features provide in-stream habitat

Cons

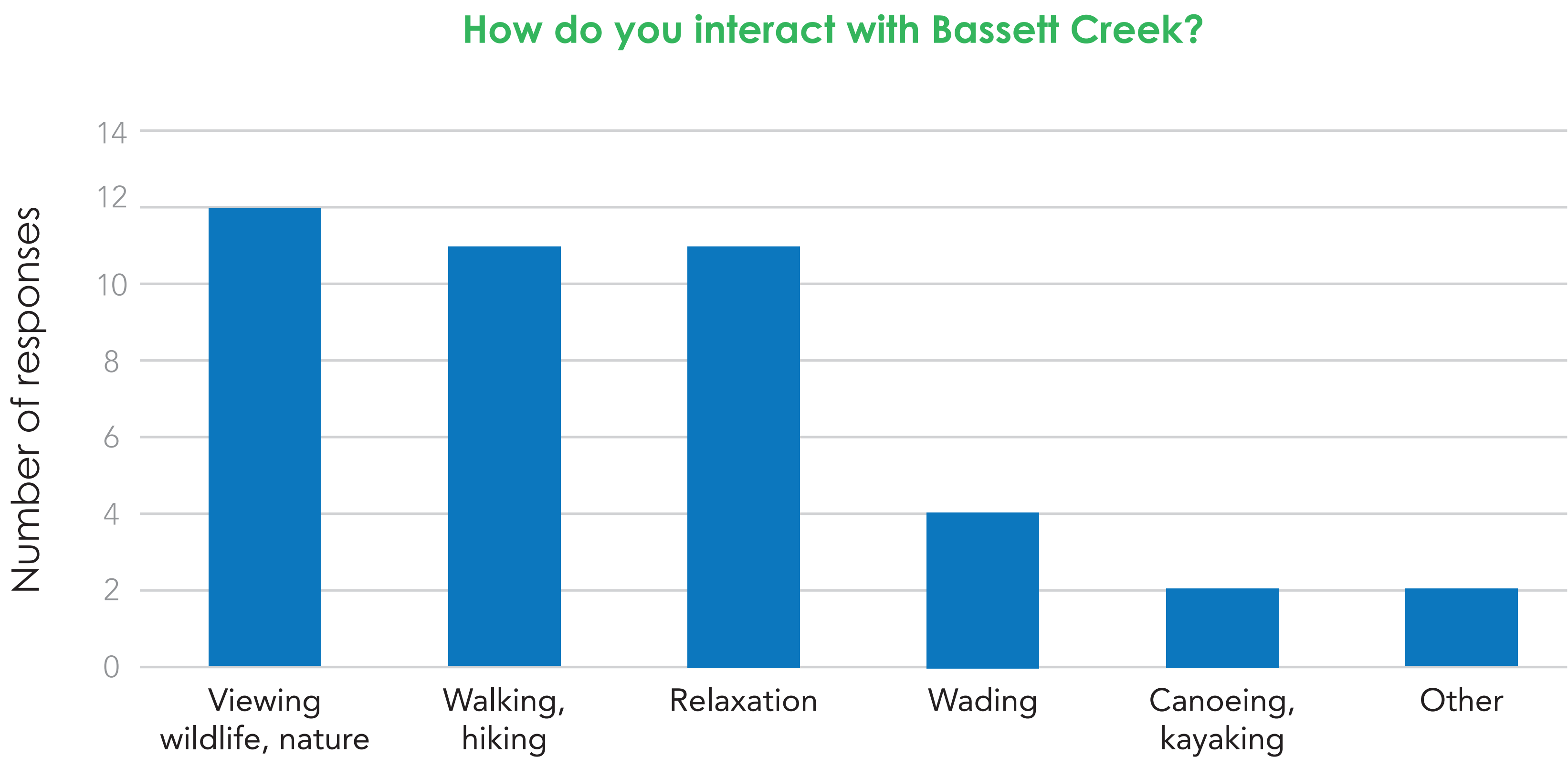
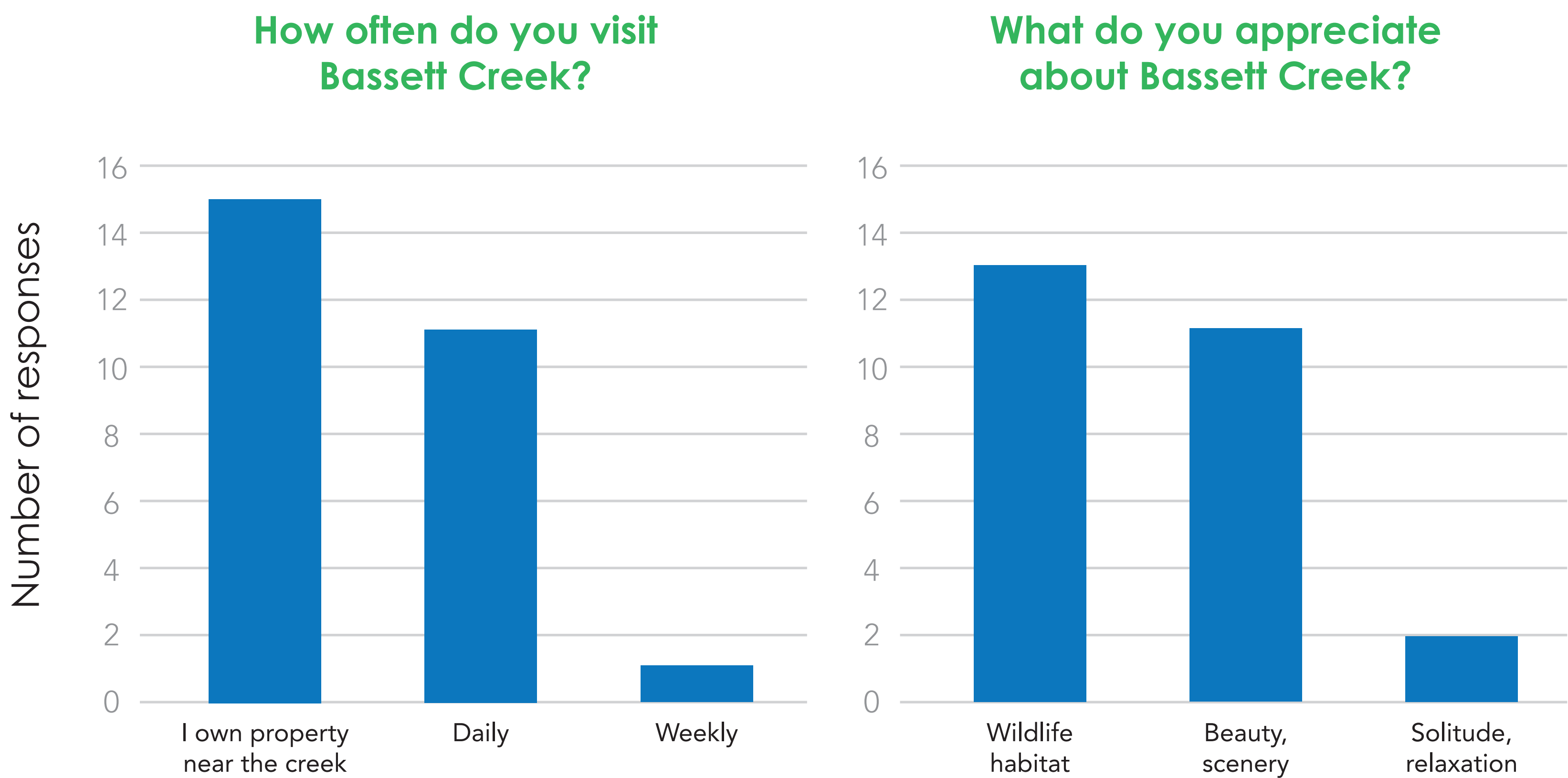
- In-stream features can be obstructed with sediment and debris
- Continued erosion on unprotected bank toe outside the zone of influence of the structures

- More erosion protection along the base of the bank, also known as the bank toe
- Bioengineering and vegetation features can improve in-stream and bank habitat

- Requires establishment period for vegetation features
- Moderate grading can increase construction costs, bank disturbance, and potential tree removal

- Riprap allows for the most protection against high shear stress flows
- Immediate stabilization of eroding areas

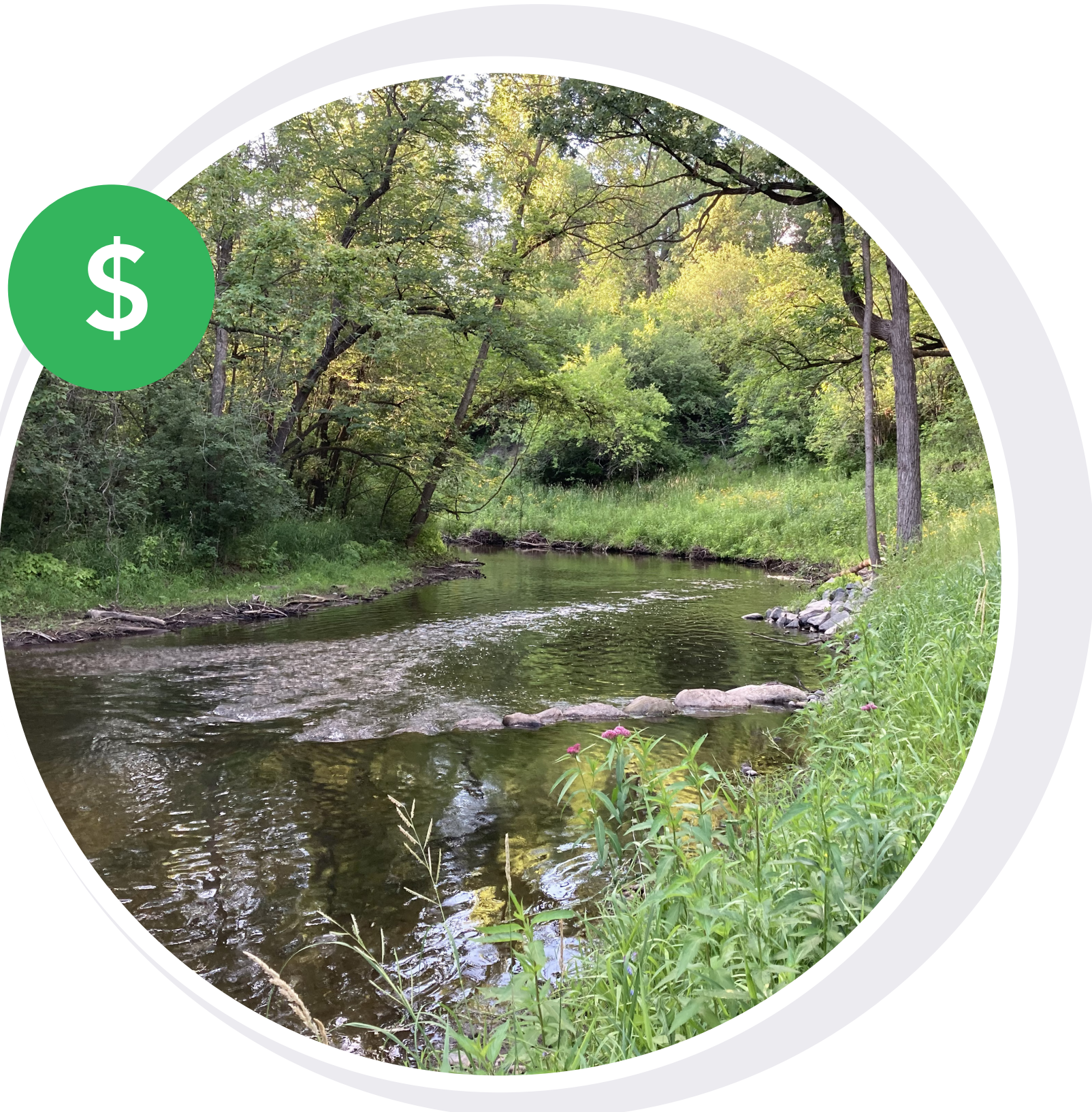
- Riprap provides minimal in-stream or bank habitat
- Riprap and grading are more cost intensive
- Most bank disturbance during construction, and potential tree removal



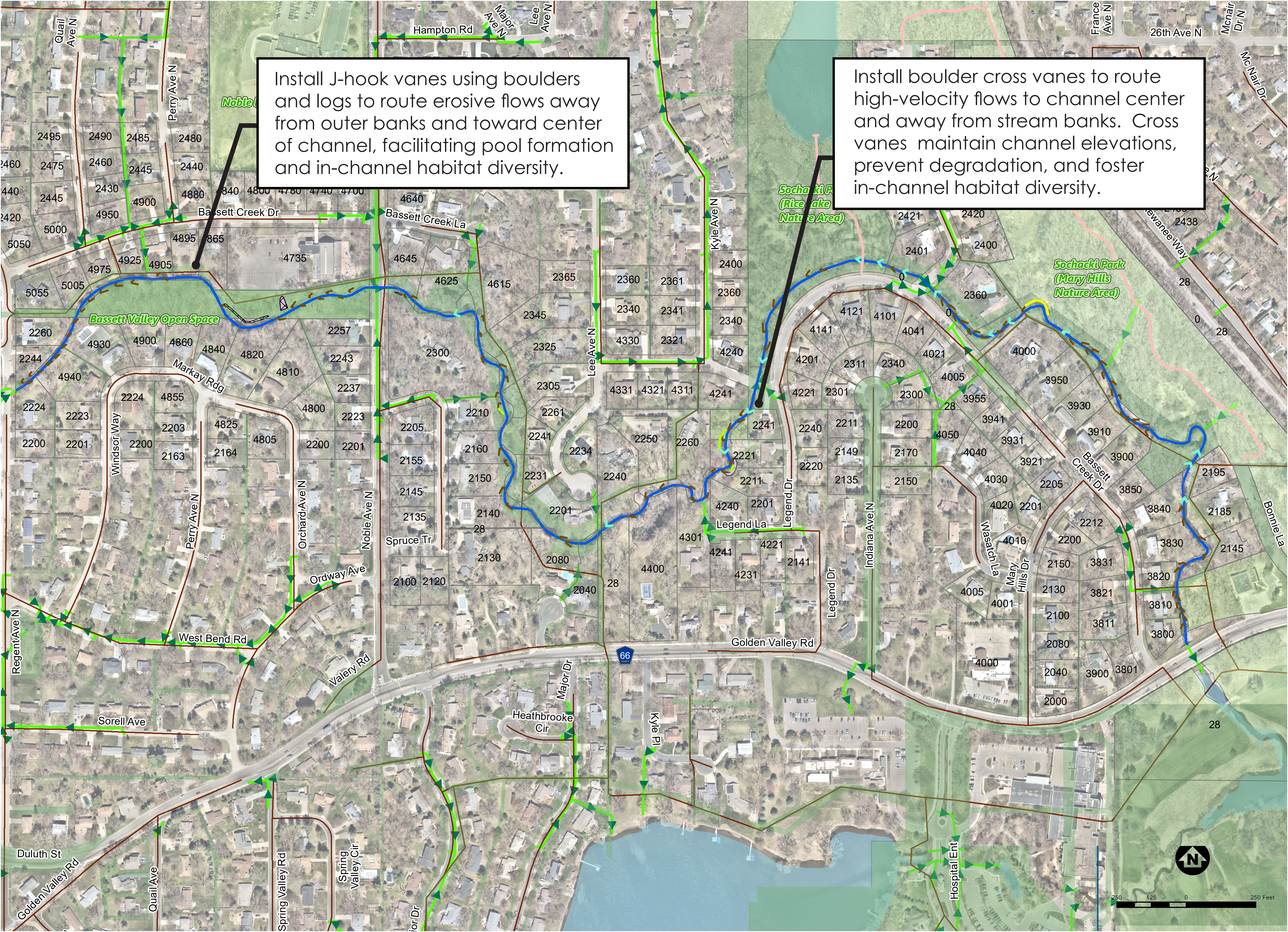
How can Bassett Creek be improved as part of this project?	
Mitigate erosion and stabilize channel banks.	
Protect and preserve as many trees as possible.	
Protect and improve wildlife habitat.	
Control invasive species.	
Mitigate flooding.	
Remove debris clogging the channel.	
Improve navigability.	
Concern	Response
Tree removal and loss of wildlife habitat	Tree removal will be limited to only those trees essential to the project construction; our goal is to protect as many healthy trees as possible. The proposed stream restoration project will increase wildlife habitat by increasing native vegetation adjacent to streambanks, as well as by introducing woody habitat to the streams.
Property access and property damage	All areas disturbed during the stream restoration project will be restored with seeding.
Cost to adjacent property owners	This project would be funded through taxes collected from all residents of the Bassett Creek Watershed area through the BCWMC Capital Improvement Program. Additional funds may be collected from partners, grants, or the city of Golden Valley. There will be no special assessments to property owners for the Bassett Creek Main Stem Restoration Project.
Effects on the floodplain and flood risk to properties	The proposed restoration will not result in net fill in the floodplain, therefore, flood risk will not increase.
Effects on utility lines	The project will be designed to avoid impacts to utility lines. A utility locate will occur during the design and construction process to ensure all utilities are avoided during construction.
Concerns about the ability of fish to migrate upstream	Any in-stream structure that spans the width of the creek (i.e. cross vanes) will be designed to allow fish passage during low and high flow events.
Ability to inform restoration design	Public input gathered via the online Story Map and public meetings will inform design decisions.

Restoration Design Concept

1 In-stream structures with minimal grading, riprap, and vegetation establishment



- Bassett Creek Centerline
- Bike and Pedestrian Trail System
- Easement
- Sanitary Main
- Gravity Storm Sewer
- Toe Wood
- Root Wad
- J Hooks
- Cross Vane
- ▨ Riprap
- ▨ Bank and Channel Grading with Vegetation Establishment
- ▨ Bioengineering Features (coir log and/or fascine)



Restoration Design Concept

2 Toe stabilization with bioengineering methods with minimal in-stream structures and riprap, as well as moderate grading and vegetation establishment



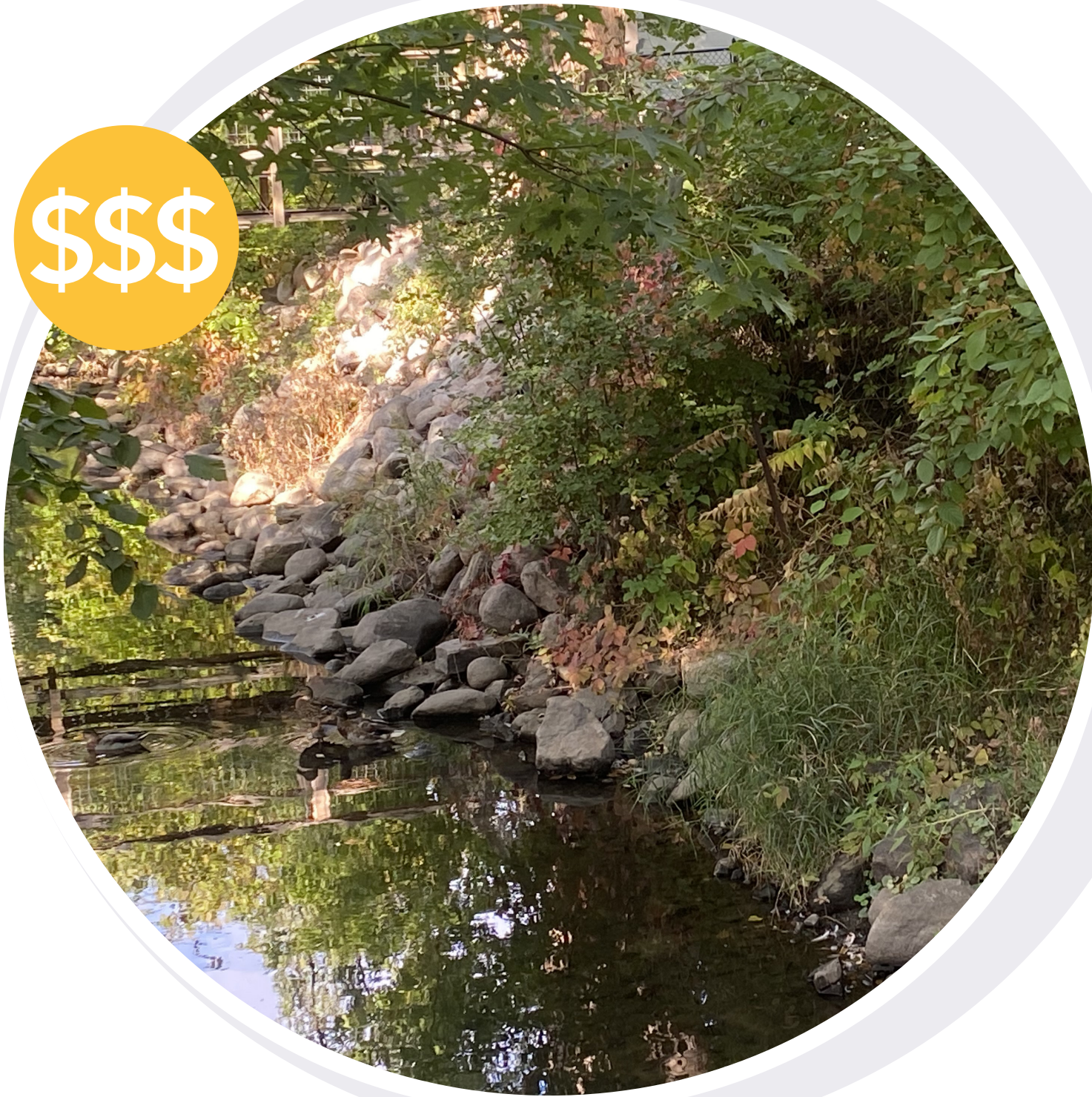
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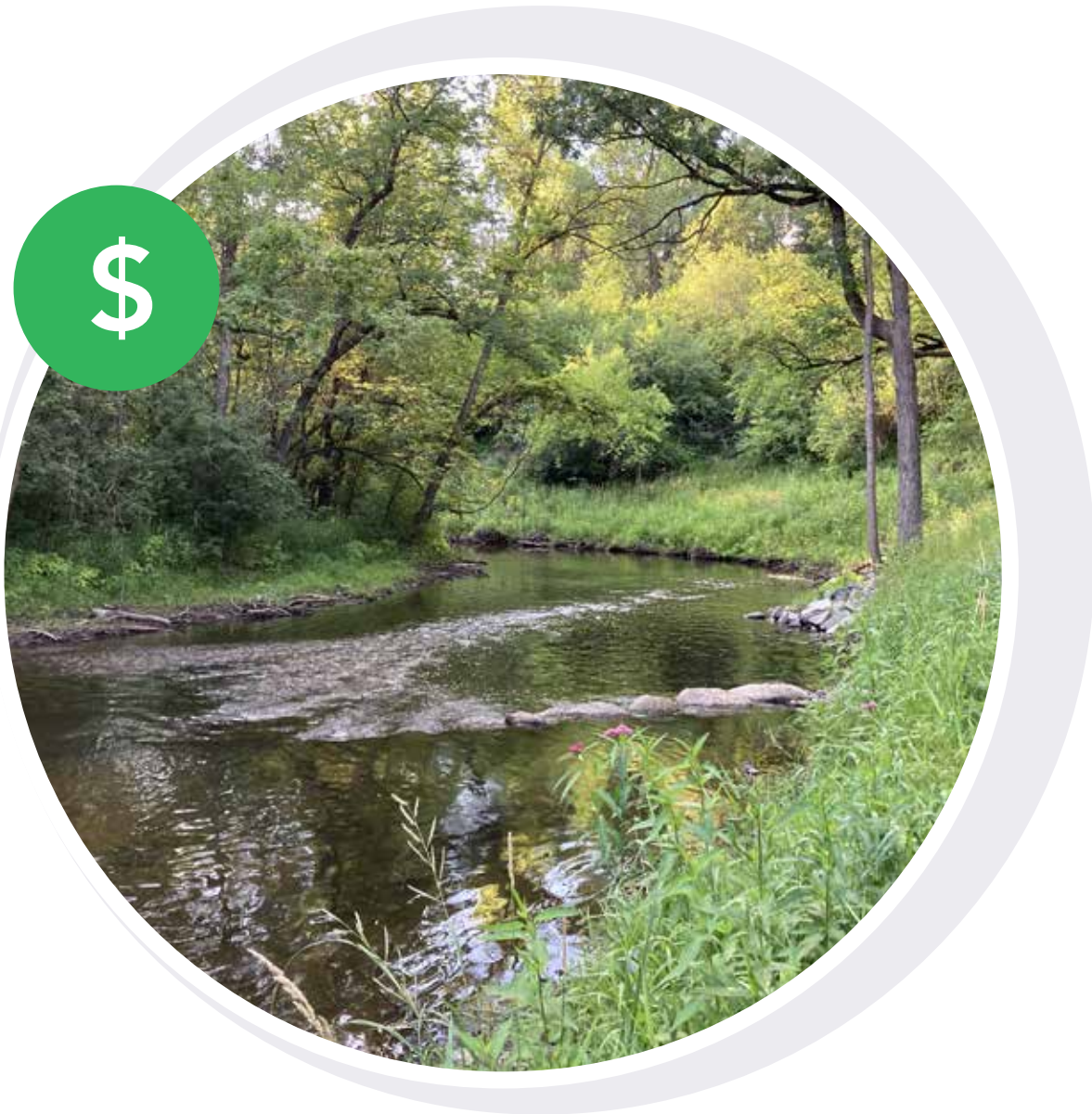
Restoration Design Concept

3 Bank grading with riprap and vegetation establishment with minimal in-stream structures and bioengineering

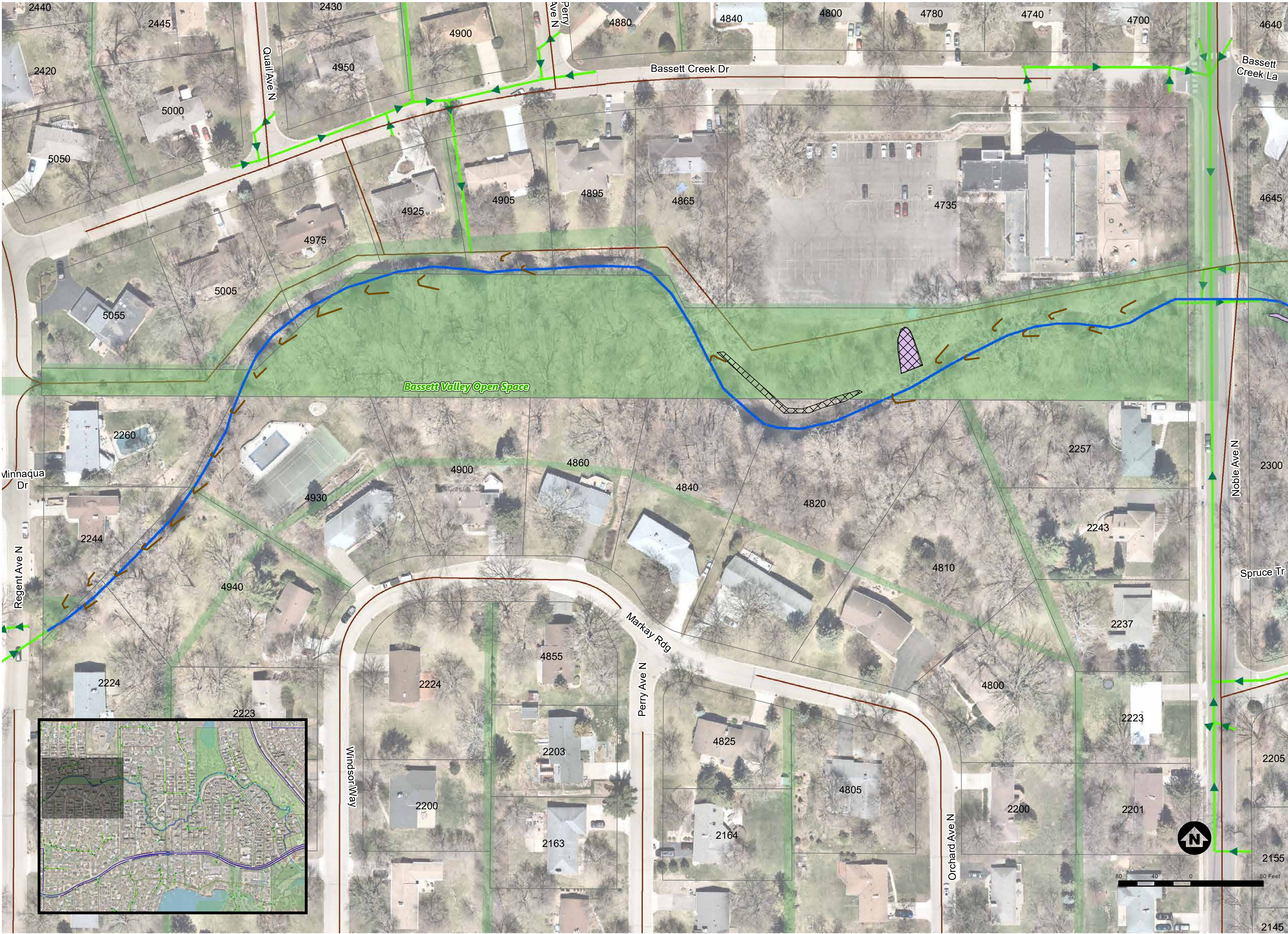


Restoration Design Concept

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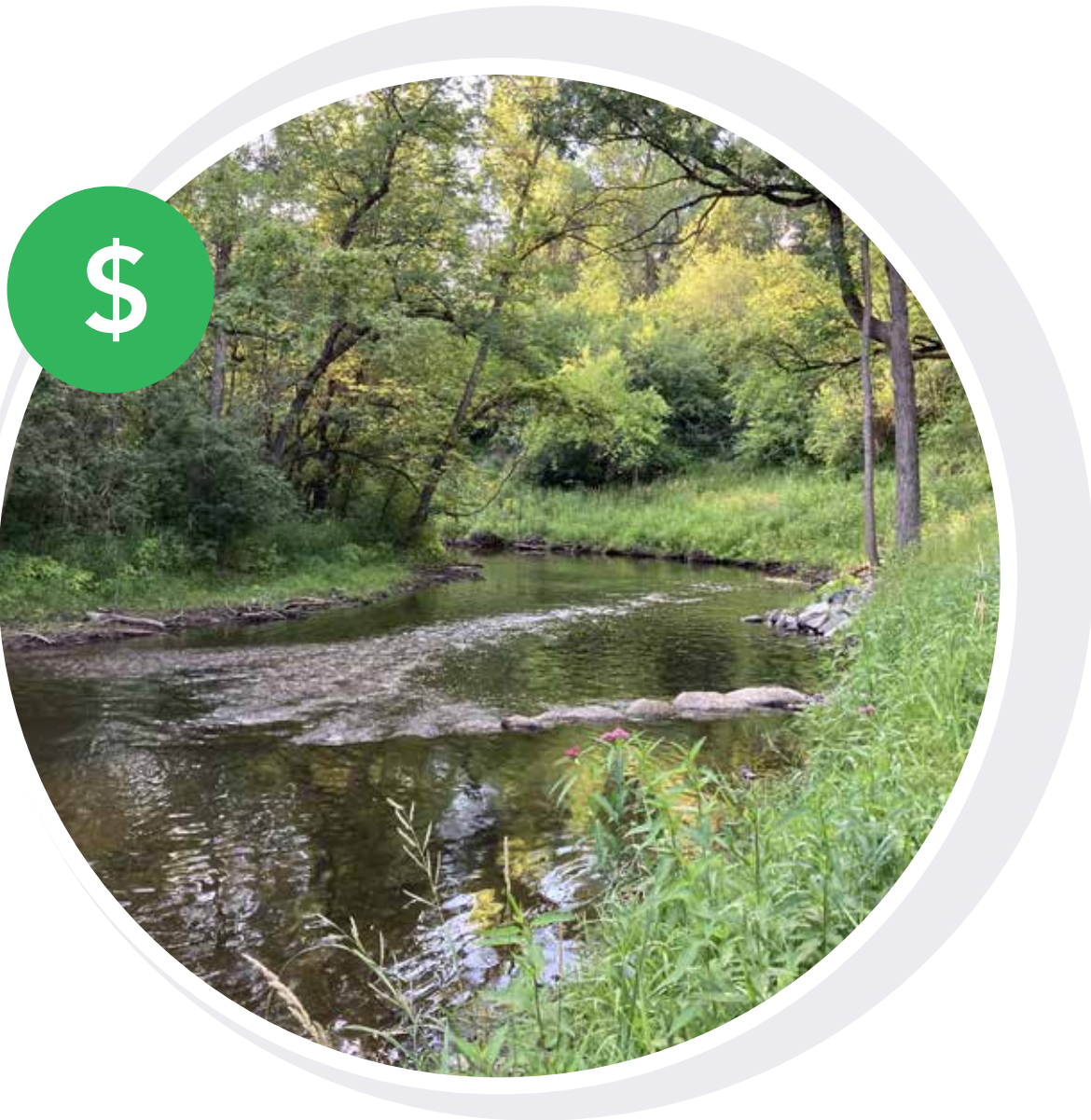


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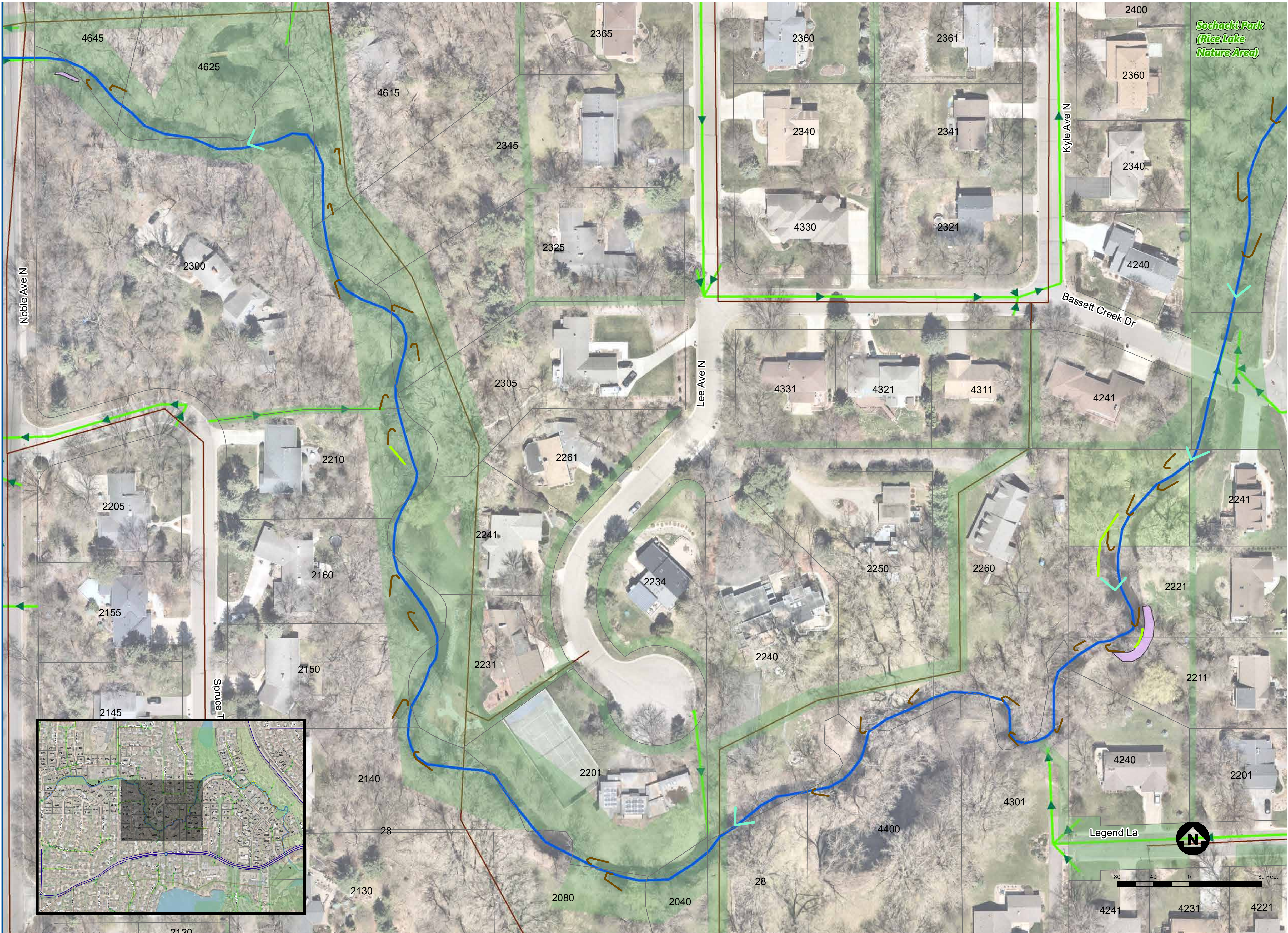


Restoration Design Concept

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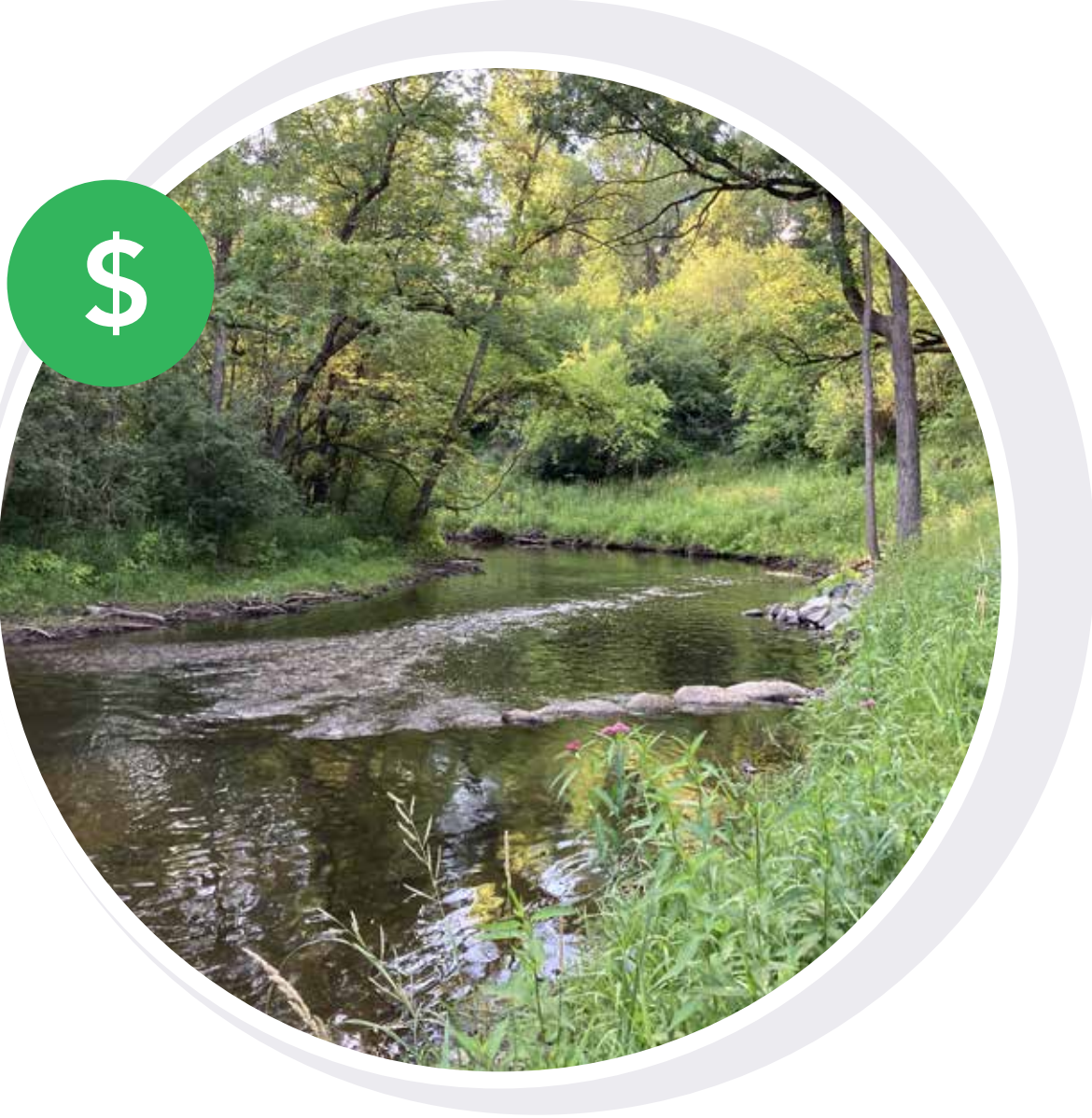


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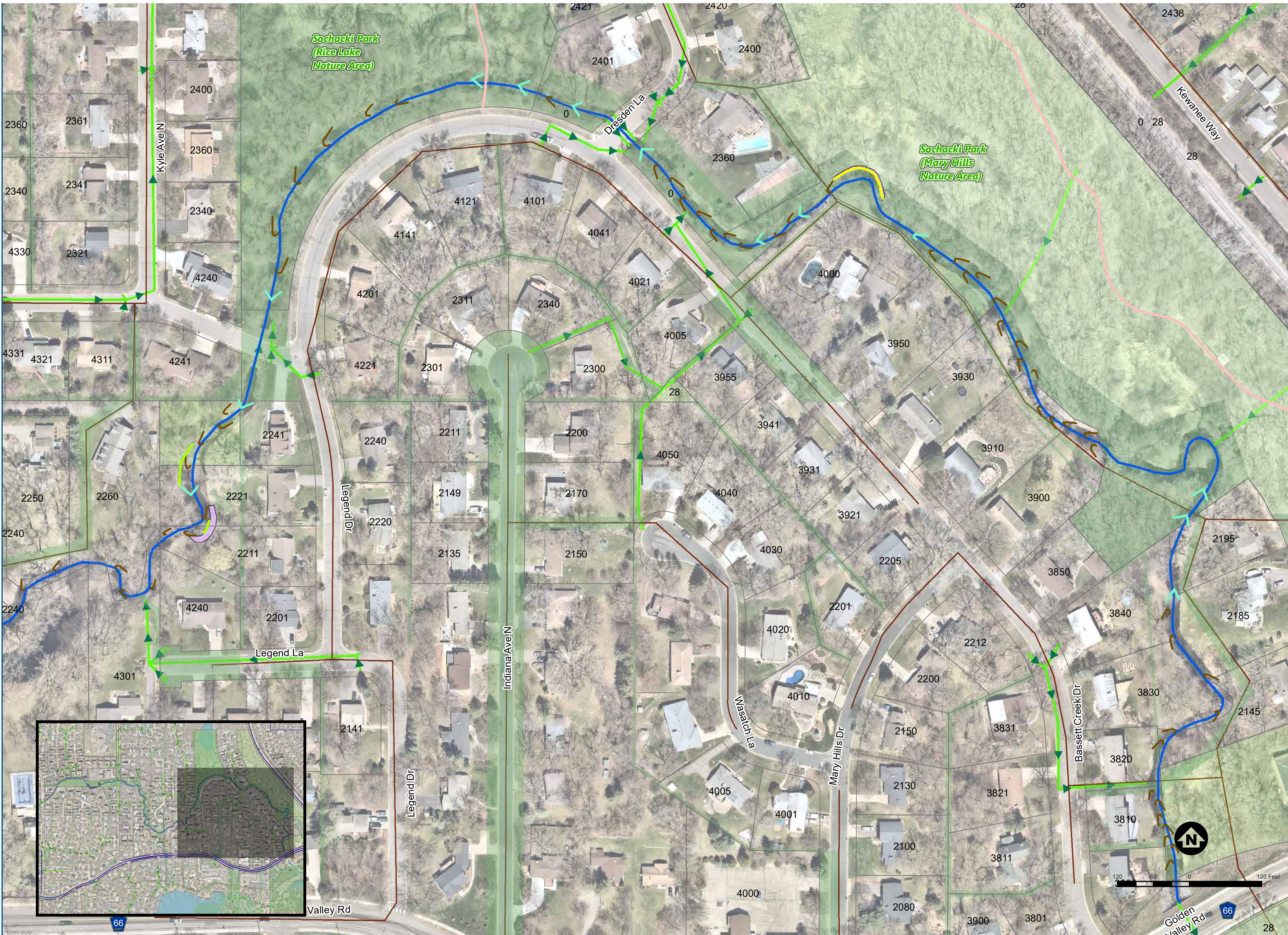


Restoration Design Concept

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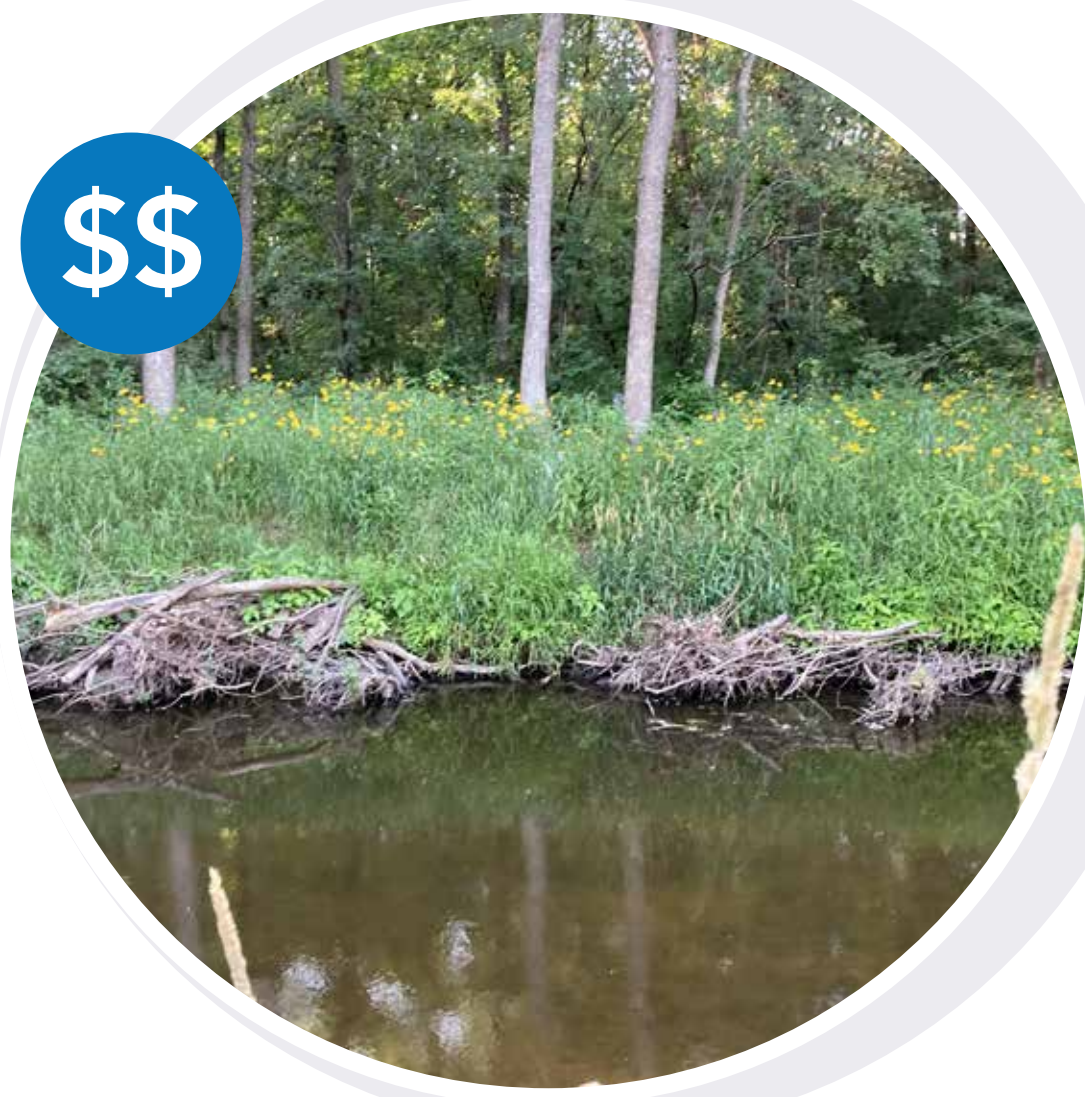
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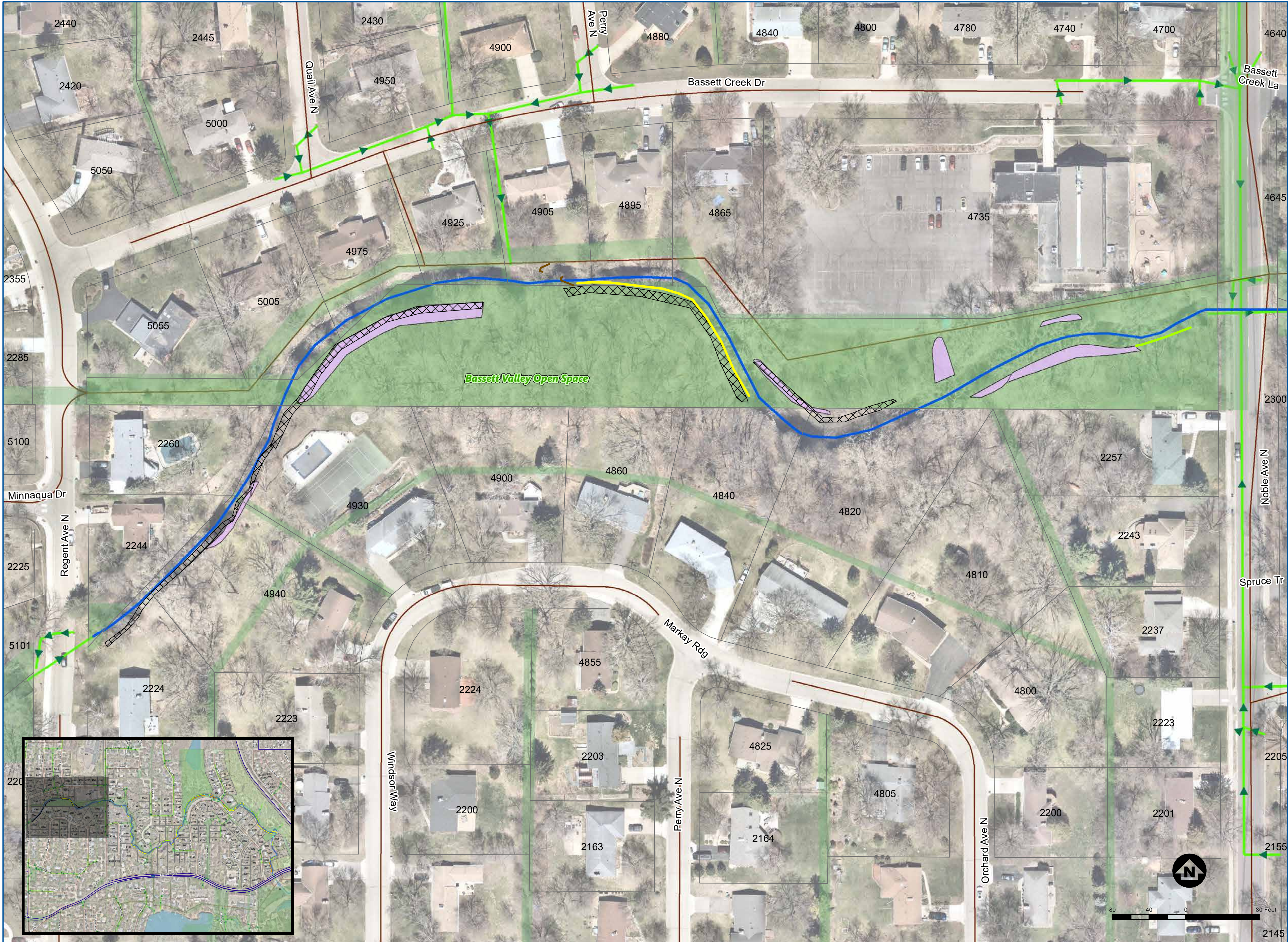
Restoration Design Concept

2 Toe stabilization with bioengineering methods with minimal in-stream structures and riprap, as well as moderate grading and vegetation establishment

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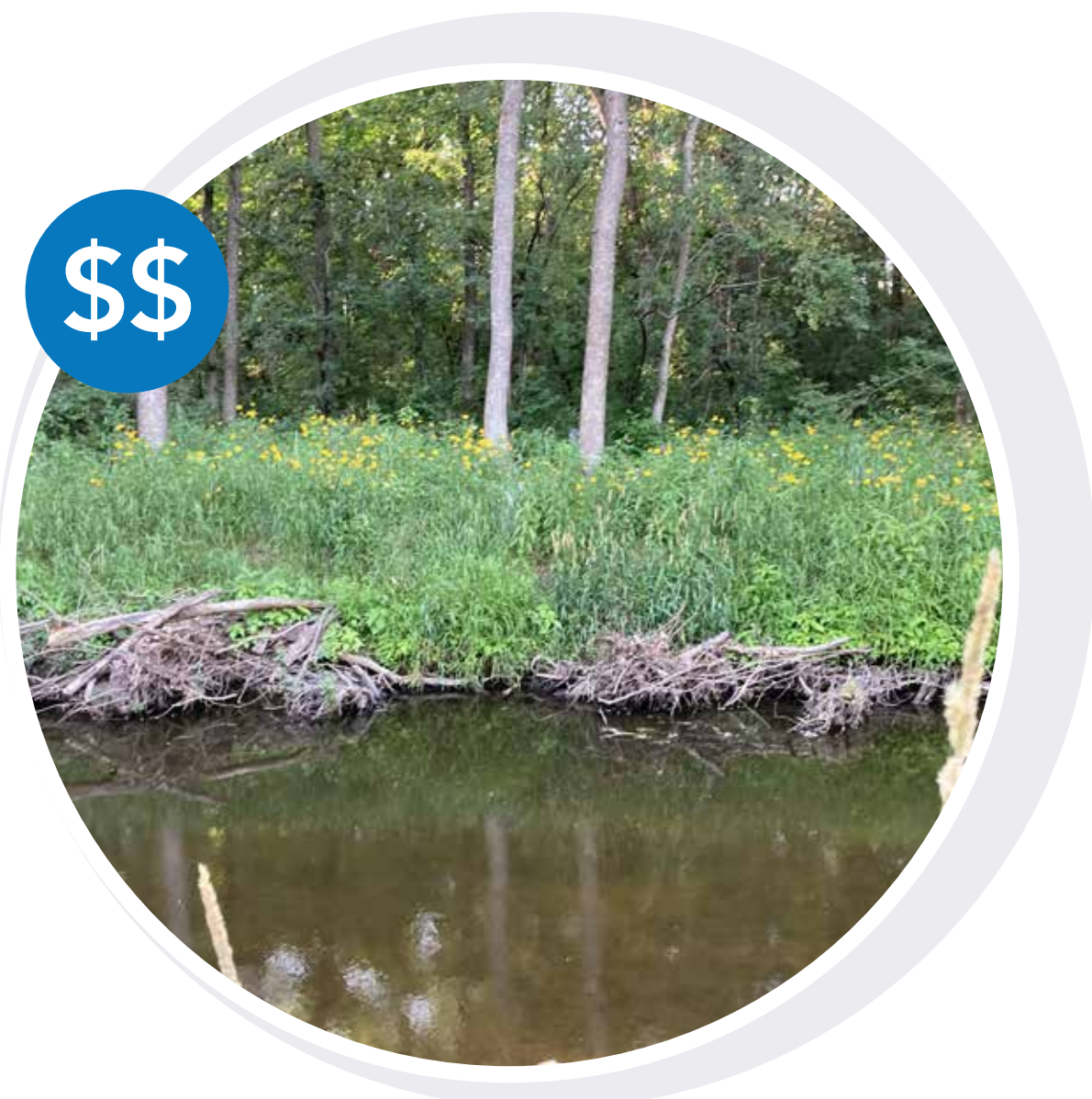


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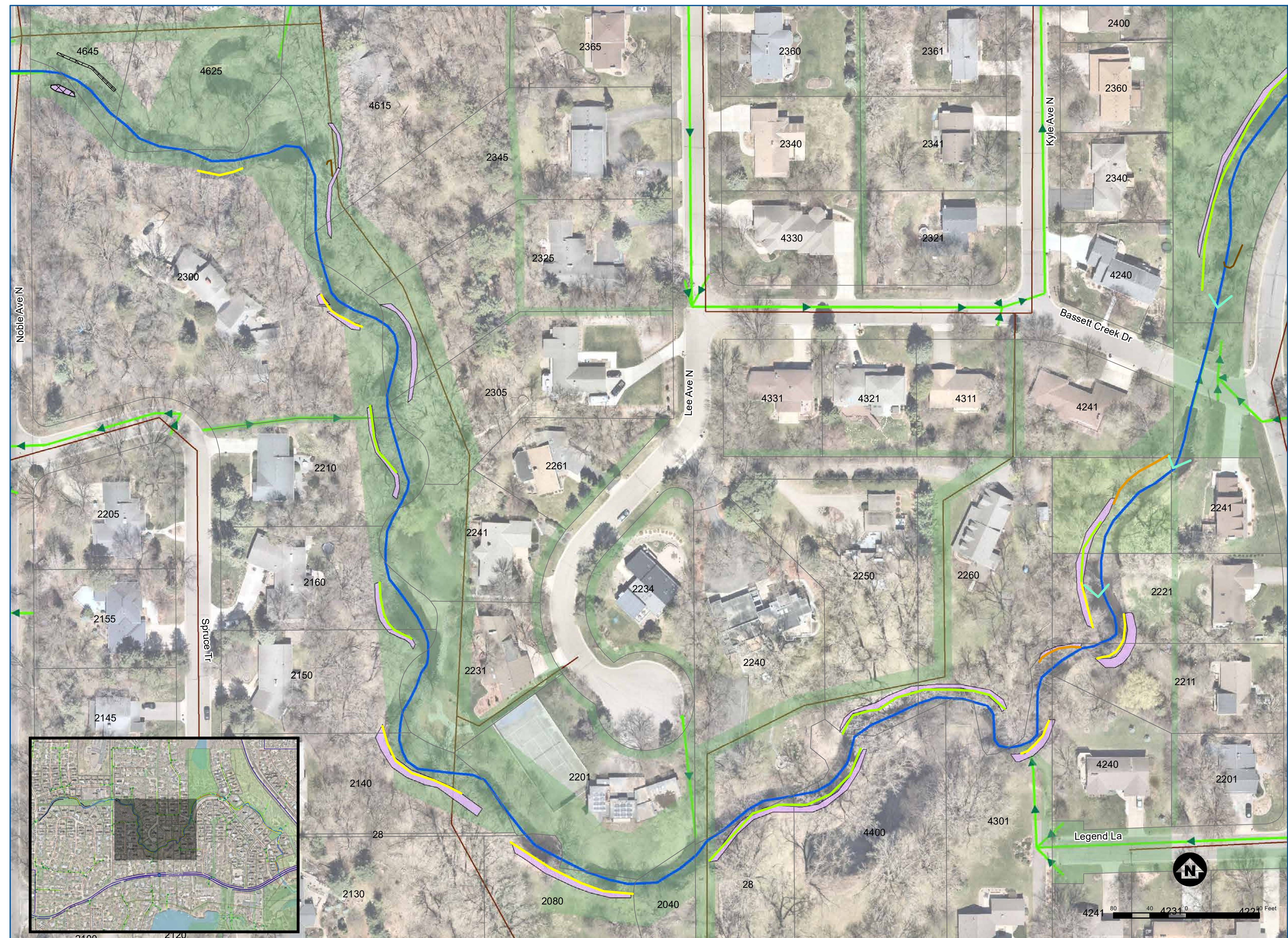


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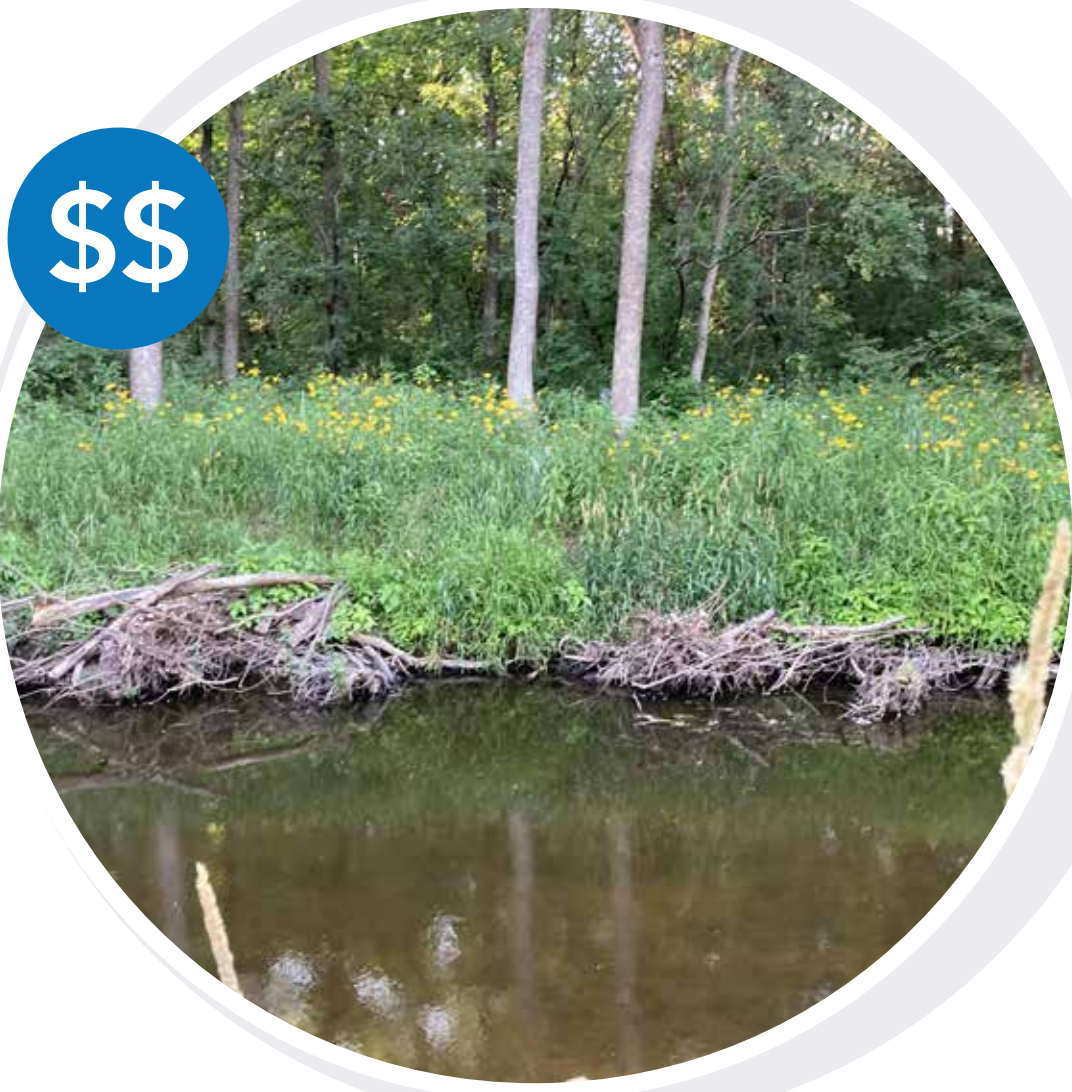
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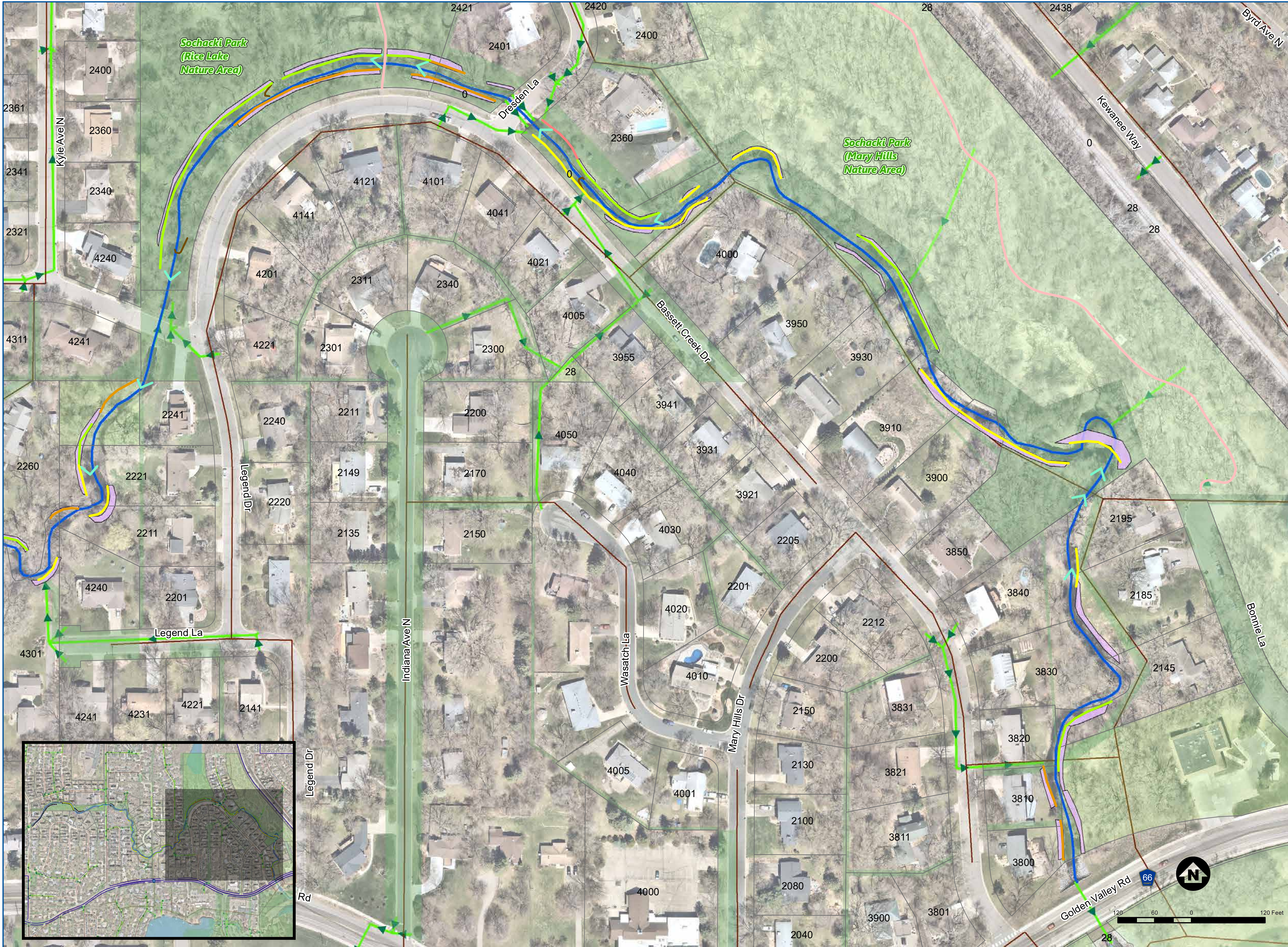
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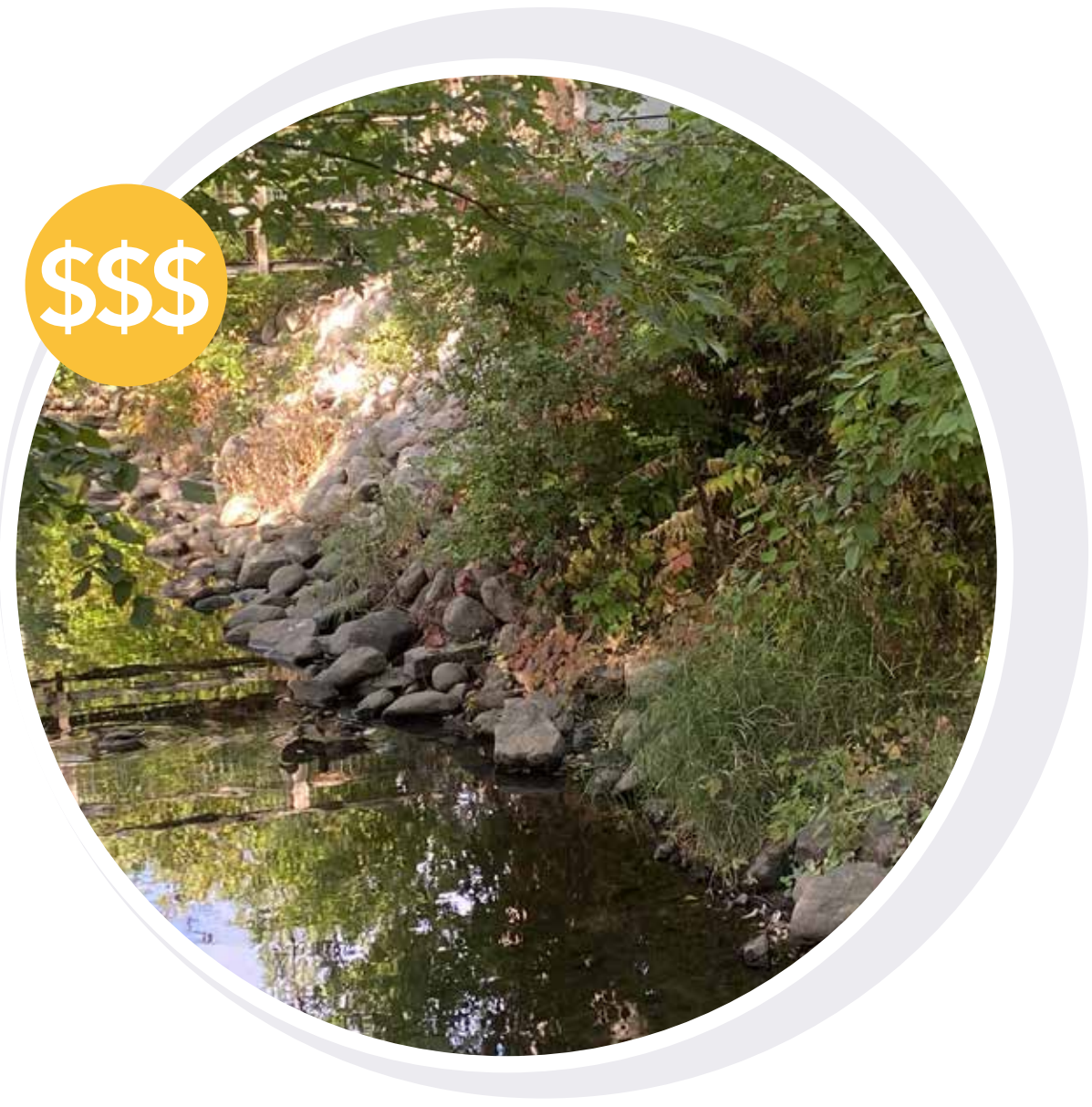
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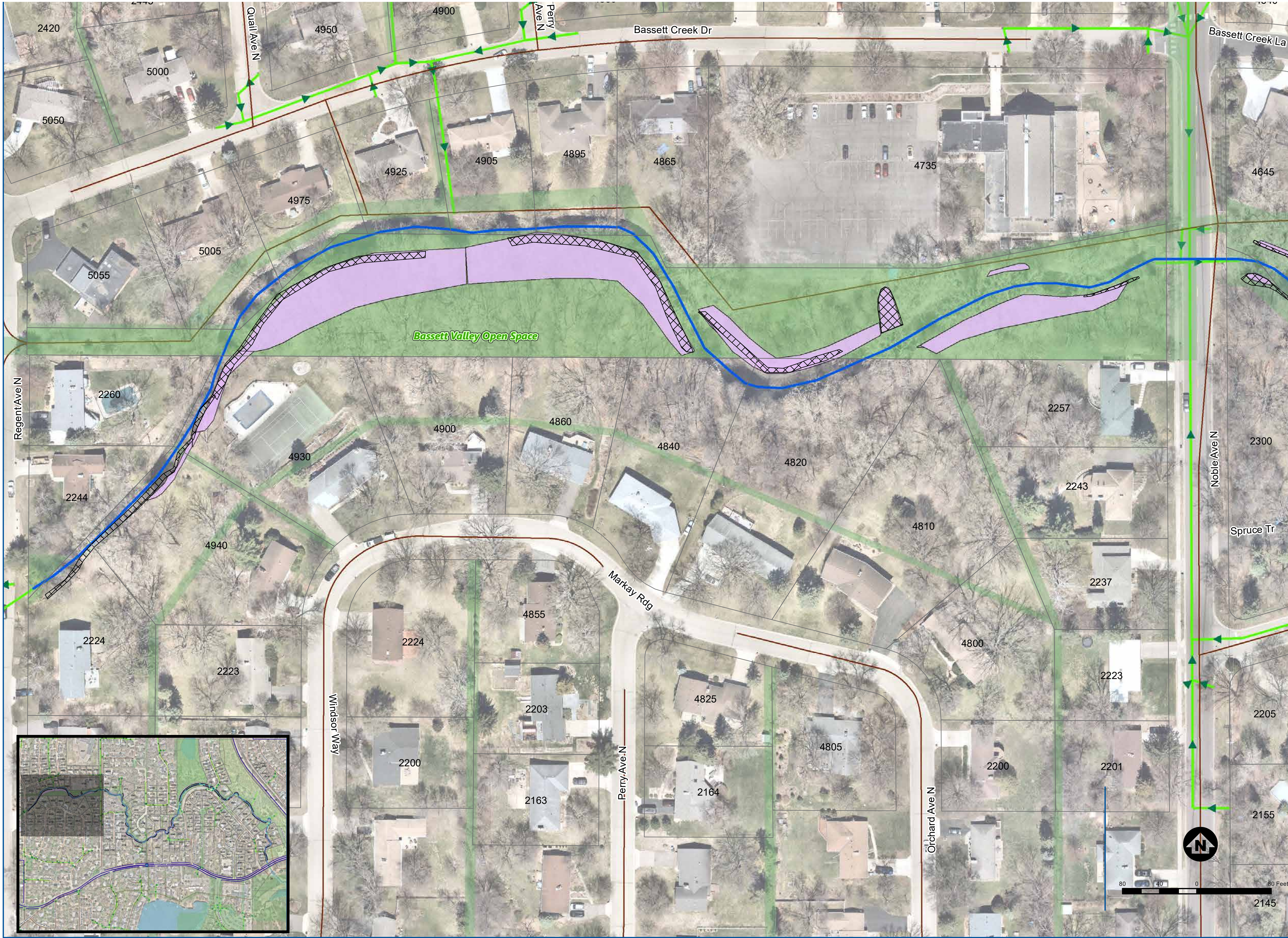
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with minimal in-stream structures and bioengineering

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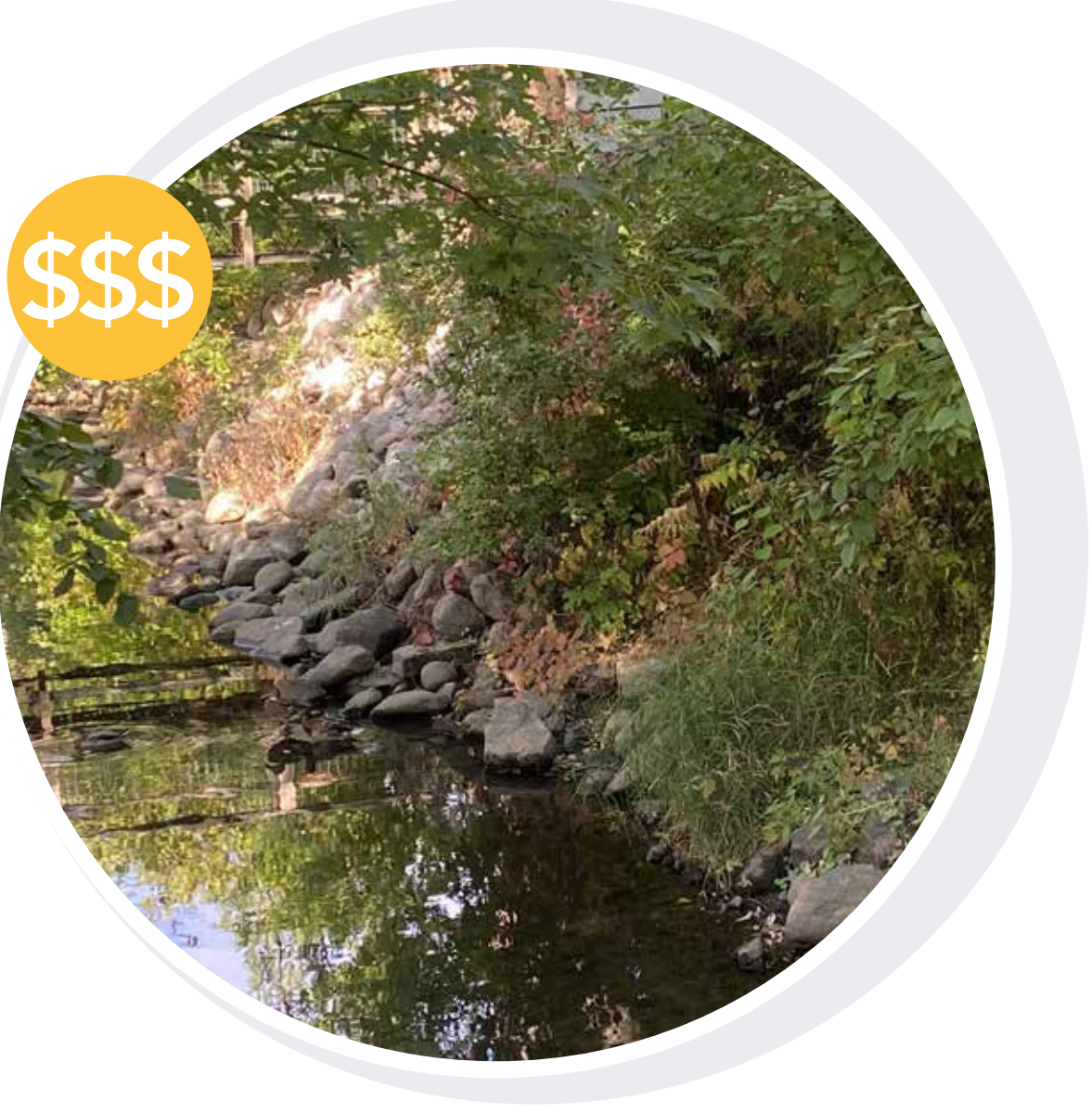
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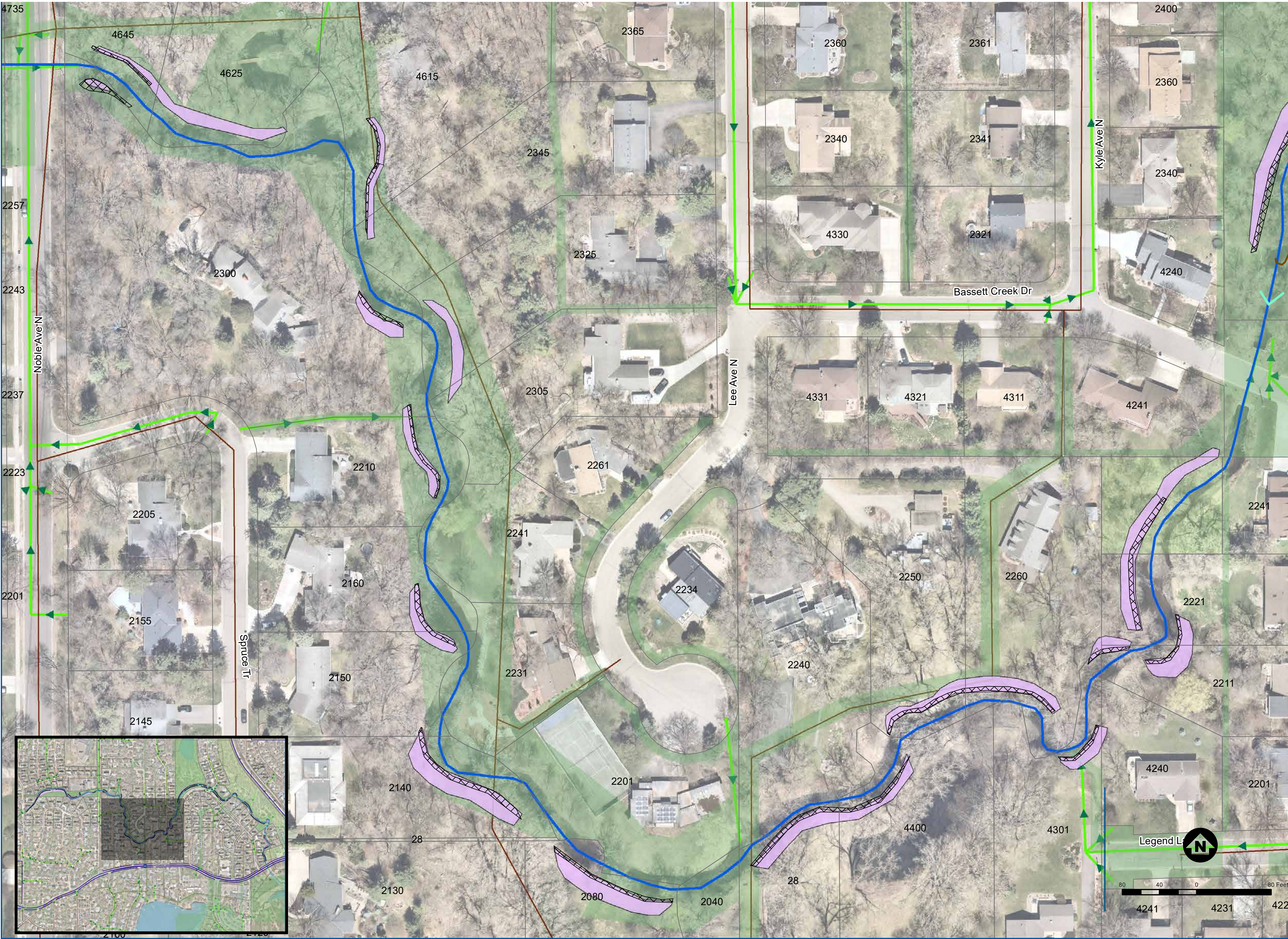
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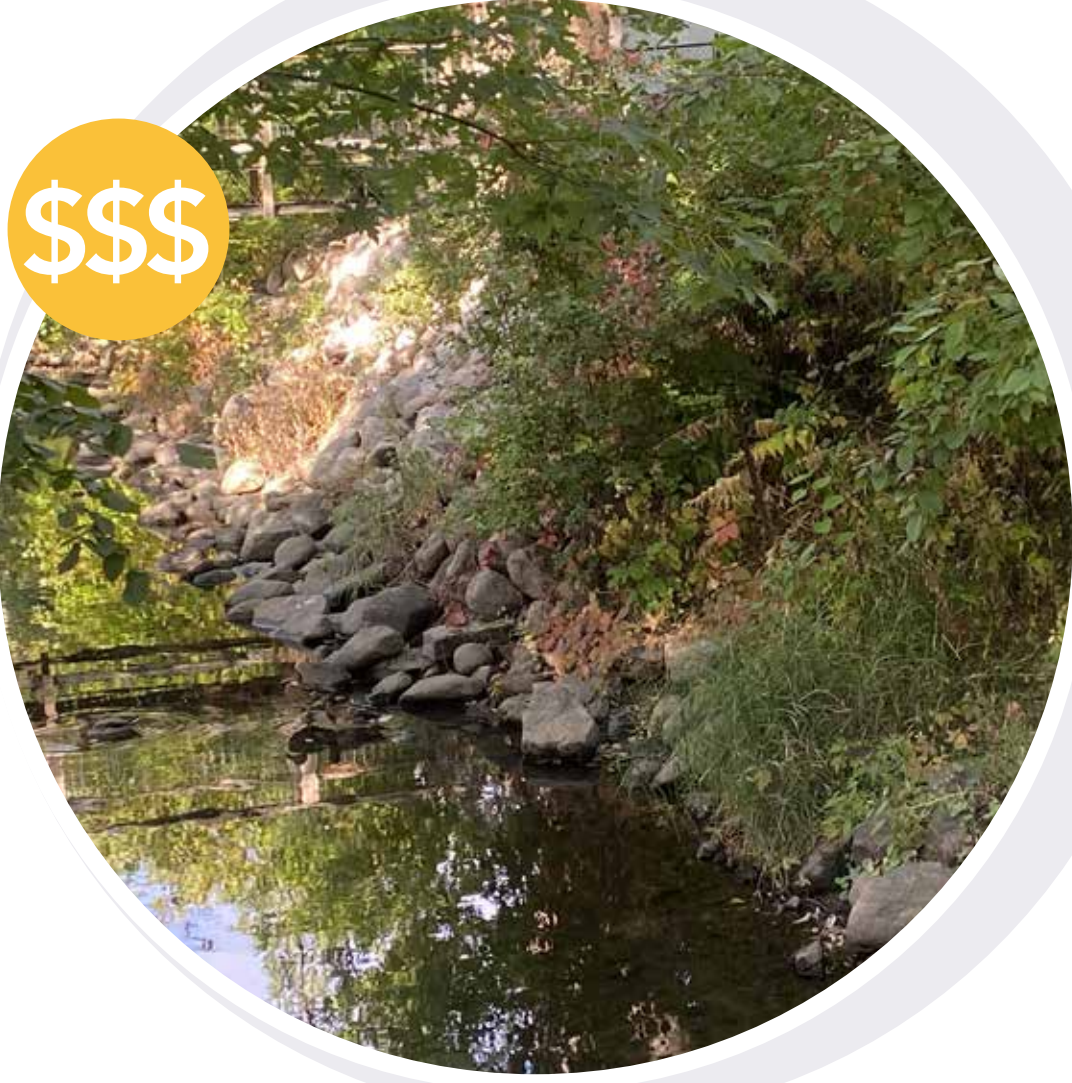
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