

GREATER DES MOINES
WATER TRAILS + GREENWAYS

WALNUT CREEK

PHASE I - REGIONAL ENGINEERING STUDY





ISG'S PURPOSE

This Phase I Regional Engineering Study builds upon the Des Moines Area Metropolitan Planning Organization's Water Trails and Greenways Plan, completed in 2016. Using the suggestions and recommendations included in the original Plan, ISG developed conceptual designs and opinion of probable costs for the improvements along the region's creeks and rivers. This study will assist municipalities and organizations in prioritizing projects, informing budget considerations, and building community support for implementation.

The Greater Des Moines Water Trails and Greenways Plan establishes a regional vision for our rivers, creeks, and greenways. Through extensive community engagement, and with the help of a strong steering committee, a clear regional vision emerged.

REGIONAL VISION

The water trails and greenways of Greater Des Moines will be a natural haven, healthy ecosystem, signature recreational destination, economic driver, and community focal point that welcome people of all ages, abilities, interests, incomes, and cultures to connect with their rivers, creeks, and greenways.



INTRODUCTION

The Des Moines Metro has been blessed with an abundance of natural resources. Rivers and creeks flow through our backyards and the hearts of our cities and towns. Healthy riparian corridors supply safe drinking water, protect communities from flooding, provide habitat for fish and other wildlife, support family-friendly recreation, and serve as local economic drivers. However, this value is often not recognized. The Greater Des Moines Water Trails and Greenways Plan seeks to change that by highlighting the significant opportunities provided by our rivers and creeks.

The following Phase I - Regional Engineering Study represents the next step in realizing the Plan's vision. With the goal of providing communities an implementation strategy for the outlined improvements, ISG field-verified all of the identified amenities and developed site plans, conceptual renderings, preliminary opinion of probable cost and construction schedules, and potential permitting requirements for each recommendation.

This report provides community leaders with the information necessary to move forward with implementation and the process of reconnecting to this vital natural resource, our water.



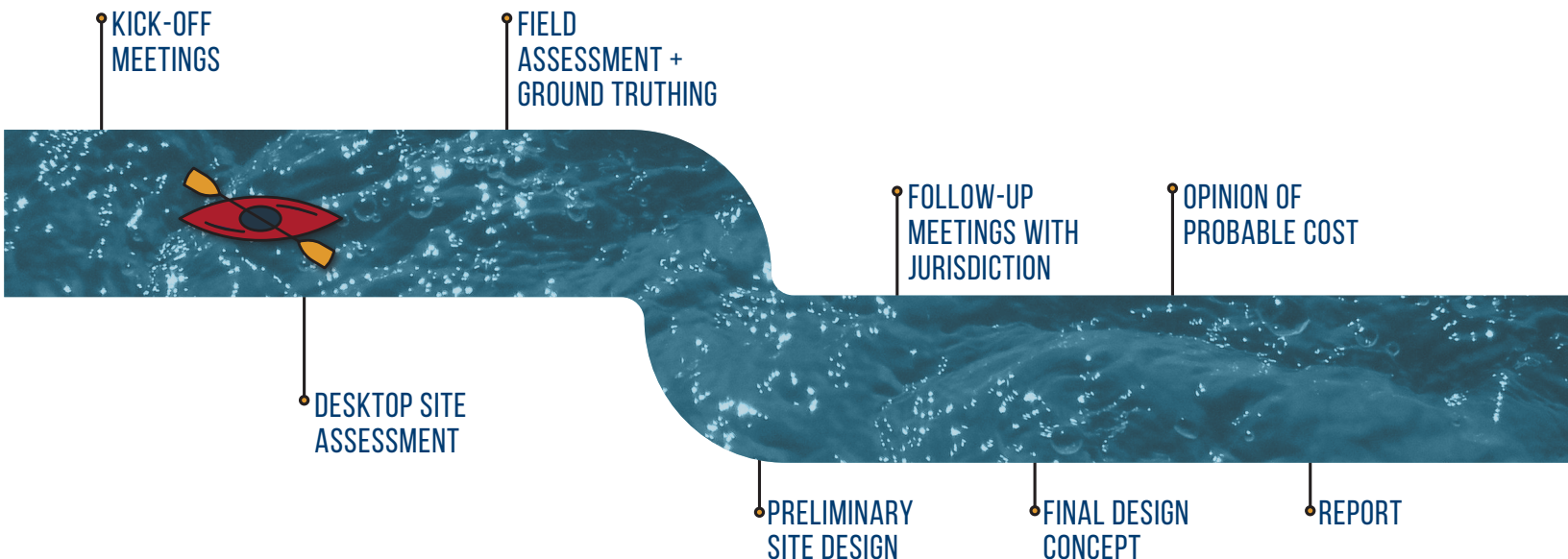
MUSSEL SURVEYS AND PERMITS

At sites where there is a disturbance to the streambank or stream channel, a mussel survey will be completed, with few exceptions. This will be done with staff from IDNR and local stakeholders on a site specific basis, immediately preceding the start of construction. Optimal conditions for surveys are when water temperatures are above 50°F and during times of low flow. For sites with state listed species, coordination with IDNR will be done through environmental review as part of the joint application process and a letter of environmental review will be requested from the Director.

IOWA OUTDOOR RECREATION GENERATES

\$8.7 BILLION IN ANNUAL CONSUMER SPENDING | 83,000 DIRECT JOBS
\$2.7 BILLION WAGES + SALARIES | \$649 MILLION STATE + LOCAL TAX REVENUE

Source: https://outdoorindustry.org/wp-content/uploads/2017/07/OIA_RecEcoState_IA.pdf





GROUND TRUTHING + AMENITY IMPLEMENTATION

ID	AMENITY	JURISDICTION
42	Fishing, Respite, Wading	City of Urbandale
45	Fishing, Respite, Wading	City of Urbandale
53	Carry Down, Fishing, Wading	City of Clive
55	Carry Down, Fishing, Wading	City of Clive
57	Carry Down, Fishing, Wading	City of Windsor Heights

SITE 42: FISHING, RESPITE, WADING

Permits Needed

- ☒ Iowa DNR Floodplain Permit
- ☒ City of Urbandale Floodplain Development Permit

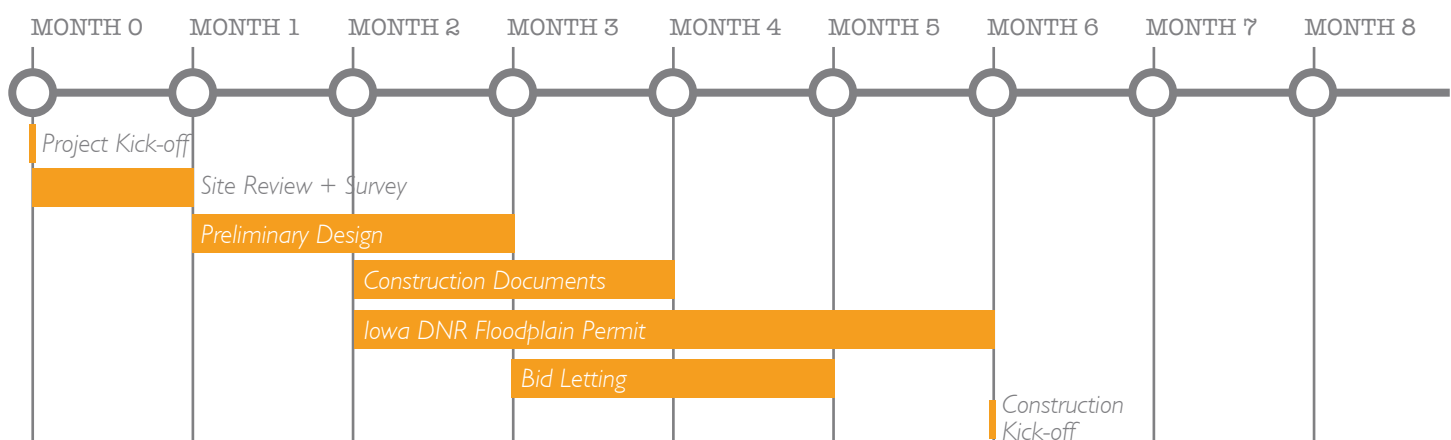
OVERVIEW

This site is located within Walnut Creek Regional Park, which includes an extensive trails network, playgrounds, natural play areas, a basketball court, and significant prairie restoration near the creek. The outlined improvements complement existing park features and provide opportunities for interacting with the creek by expanding the soft trails network, incorporating interpretive signage, limestone stairs on both sides of the creek, and respite areas near the water. The proposed improvements benefit numerous user groups including: park visitors, waders, birders, and trail users.

OPINION OF PROBABLE COST

COST ITEM	TOTAL AMOUNT
Carry Down Access - Limestone Stairs	\$34,902.00
Crossing Stepping Stones	\$4,500.00
Erosion and Sediment Control	\$540.00
Signage	\$2,880.00
Trail - Soft	\$2,000.00
Additional Amenities	\$1,600.00
CONSTRUCTION COST	\$46,422.00
Mobilization (5% Construction Costs)	\$2,321.10
20% Contingency	\$9,284.40
Non-Construction Costs (15% Construction Costs)	\$6,963.30
TOTAL PROJECT COST	\$64,990.80

PROJECT SCHEDULE



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SITE 42 CONCEPT PLAN

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SITE 45: FISHING, RESPITE, WADING

Permits Needed

- ☒ Iowa DNR Floodplain Permit
- ☒ City of Urbandale Floodplain Development Permit

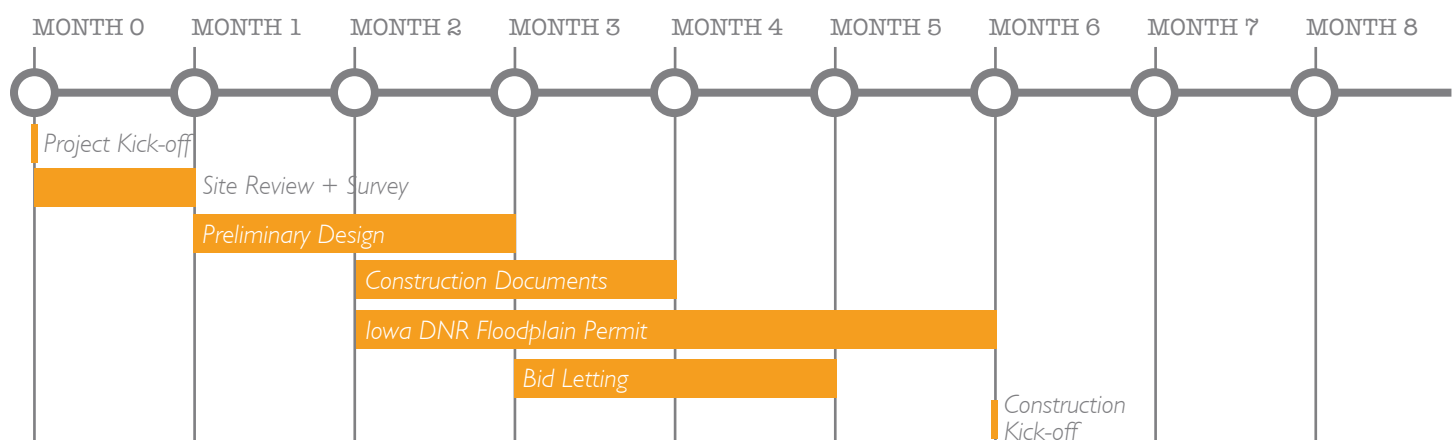
OVERVIEW

This site is located along North Walnut Creek within one of Urbandale's signature amenities, Walker Johnston Park. Existing park infrastructure includes trails, natural play features, baseball and softball fields, playgrounds, a picnic shelter, tennis courts, restrooms, public art, a skate park, and the Giovanetti Community Shelter. Proposed improvements are aimed at enhancing the user experience for visitors to Walker Johnston and the Urbandale Library by incorporating into park programming a limestone stair creek access, interpretive signage, and an outdoor learning space. The proposed improvements benefit numerous user groups including: park visitors, waders, birders, and trail users.

OPINION OF PROBABLE COST

COST ITEM	TOTAL AMOUNT
Carry Down Access - Limestone Stairs	\$12,666.00
Erosion and Sediment Control	\$225.00
Respite	\$2,538.00
Signage	\$1,440.00
Additional Amenities	\$34,000.00
CONSTRUCTION COST	\$50,869.00
Mobilization (5% Construction Costs)	\$2,543.45
20% Contingency	\$10,173.80
Non-Construction Costs (15% Construction Costs)	\$7,630.35
TOTAL PROJECT COST	\$71,216.60

PROJECT SCHEDULE



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SITE 53: CARRY DOWN ACCESS

Permits Needed

- ☒ Iowa DNR Floodplain Permit
- ☒ City of Clive Floodplain Development Permit

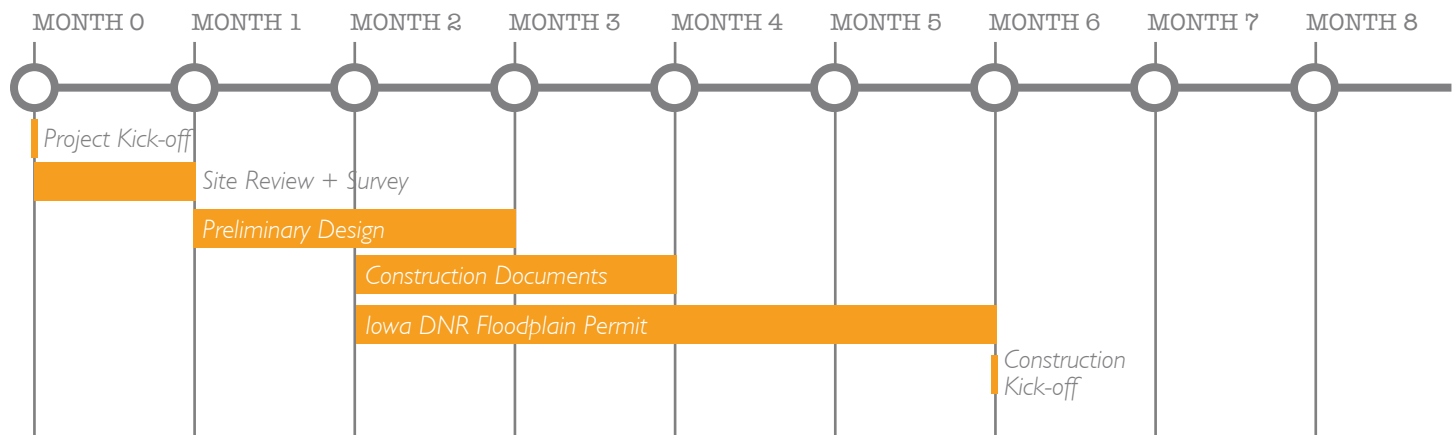
OVERVIEW

The City of Clive is currently developing plans for a number of improvements near the Clive Aquatic Center, including a new creek access. To accommodate creek users until these plans are finalized and implemented, a limestone stair access, soft trail, and interpretive signage are recommended near the Clive Library and City Hall to provide creek users opportunity to utilize the resource in a location where there is existing public infrastructure. Furthermore, once complete, this site will complement the downstream access and provide a short loop for waders, tubers, and anglers. The proposed improvements benefit numerous user groups including: paddlers, waders, and anglers.

OPINION OF PROBABLE COST

COST ITEM	TOTAL AMOUNT
Carry Down Access - Limestone Stairs	\$11,666.00
Erosion and Sediment Control	\$225.00
Signage	\$790.00
CONSTRUCTION COST	\$12,681.00
Mobilization (5% Construction Costs)	\$634.05
20% Contingency	\$2,536.20
Non-Construction Costs (15% Construction Costs)	\$1,902.15
TOTAL PROJECT COST	\$17,753.40

PROJECT SCHEDULE



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SITE 53 CONCEPT PLAN

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SITE 55: CARRY DOWN ACCESS, FISHING, AND WADING

Permits Needed

- ☒ Iowa DNR Floodplain Permit
- ☒ City of Clive Floodplain Development Permit

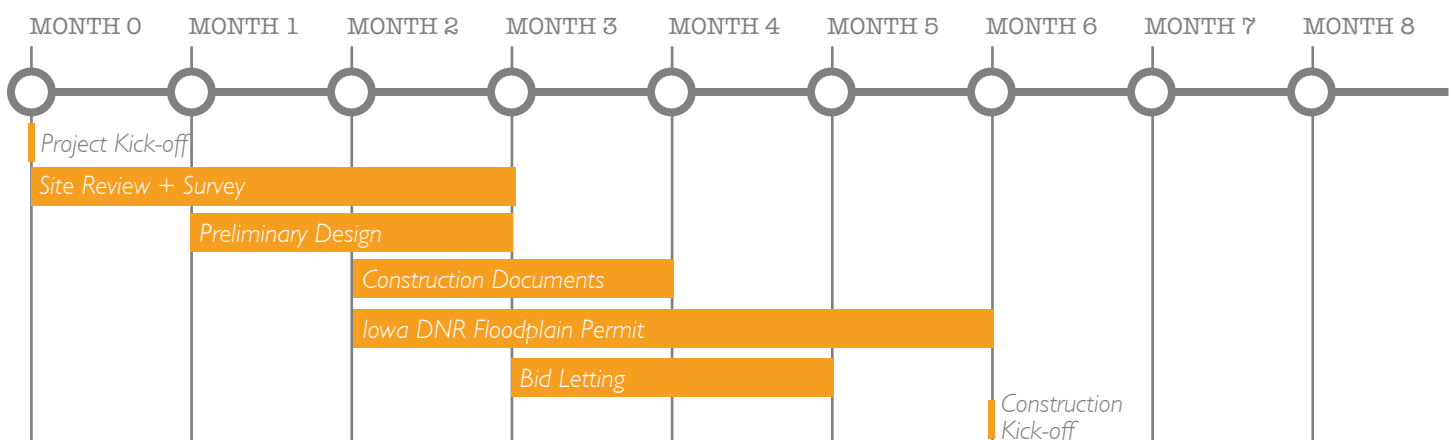
OVERVIEW

The proposed improvements for this location are meant to enhance existing amenities, including the Clive Greenbelt, which runs parallel to the creek, a playground, parking, and stream restoration. To complement this, limestone stair accesses are proposed for each side of the creek with large stones placed strategically for stream crossing, with a soft trail loop on the west side of the creek, respite seating near the water, and interpretive signage. Additionally, a historic oxbow restoration is recommended to improve flood storage and water quality. The proposed improvements benefit numerous user groups including: park visitors, trail users, paddlers, waders, and anglers.

OPINION OF PROBABLE COST

COST ITEM	TOTAL AMOUNT
Carry Down Access - Limestone Stairs	\$29,150.00
Crossing Stepping Stones	\$4,500.00
Erosion and Sediment Control	\$630.00
Respite	\$672.00
Signage	\$1,580.00
Trail - Soft	\$34,800.00
Water Quality Improvements - Oxbow Restoration	\$25,000.00
Additional Amenities	\$1,200.00
CONSTRUCTION COST	\$97,532.00
Mobilization (5% Construction Costs)	\$4,876.60
20% Contingency	\$19,506.40
Non-Construction Costs (15% Construction Costs)	\$14,629.80
TOTAL PROJECT COST	\$136,544.80

PROJECT SCHEDULE



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SITE 55 CONCEPT SKETCH

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SITE 57: CARRY DOWN, FISHING, WADING

Permits Needed

- ☒ Iowa DNR Joint Permit
- ☒ City of Windsor Heights Floodplain Development Permit

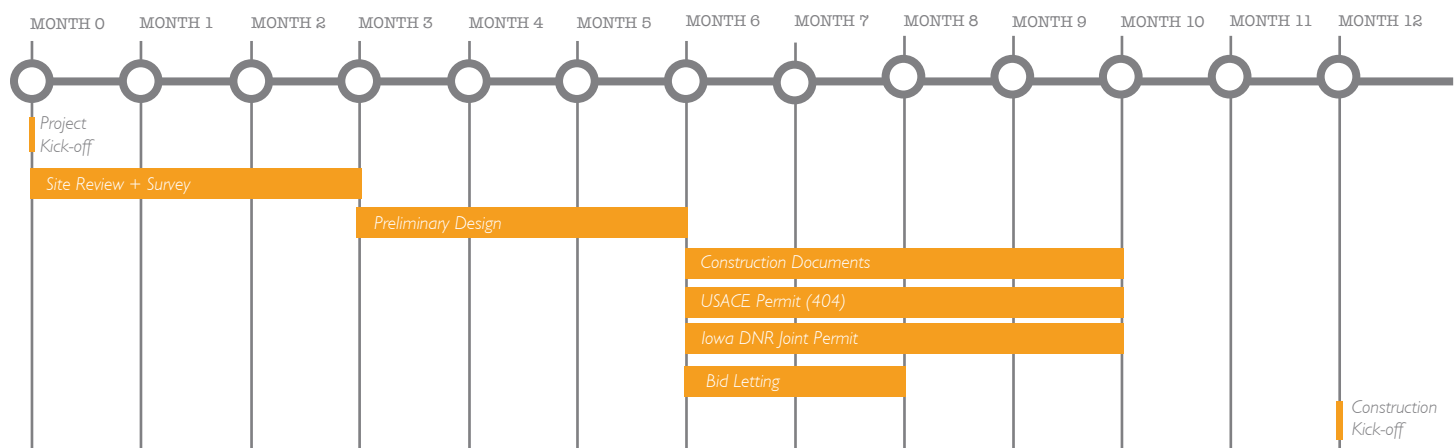
OVERVIEW

This site is located within Colby Park in Windsor Heights, which has undergone a transformation in recent years. Park features include the Windsor Heights Community Center, a playground, restrooms, parking, the Walnut Creek Trail, a dog park, tennis courts, a ball field, a covered performance pavilion, and green space. Recommended improvements are aimed at providing a connection to the creek for park and trail users, and features a stream restoration demonstration project, public art, interpretive signage, soft trails, natural play features near the creek, respite areas, and a limestone stair access. The proposed improvements benefit numerous user groups including: park visitors, paddlers, waders, birders, and anglers.

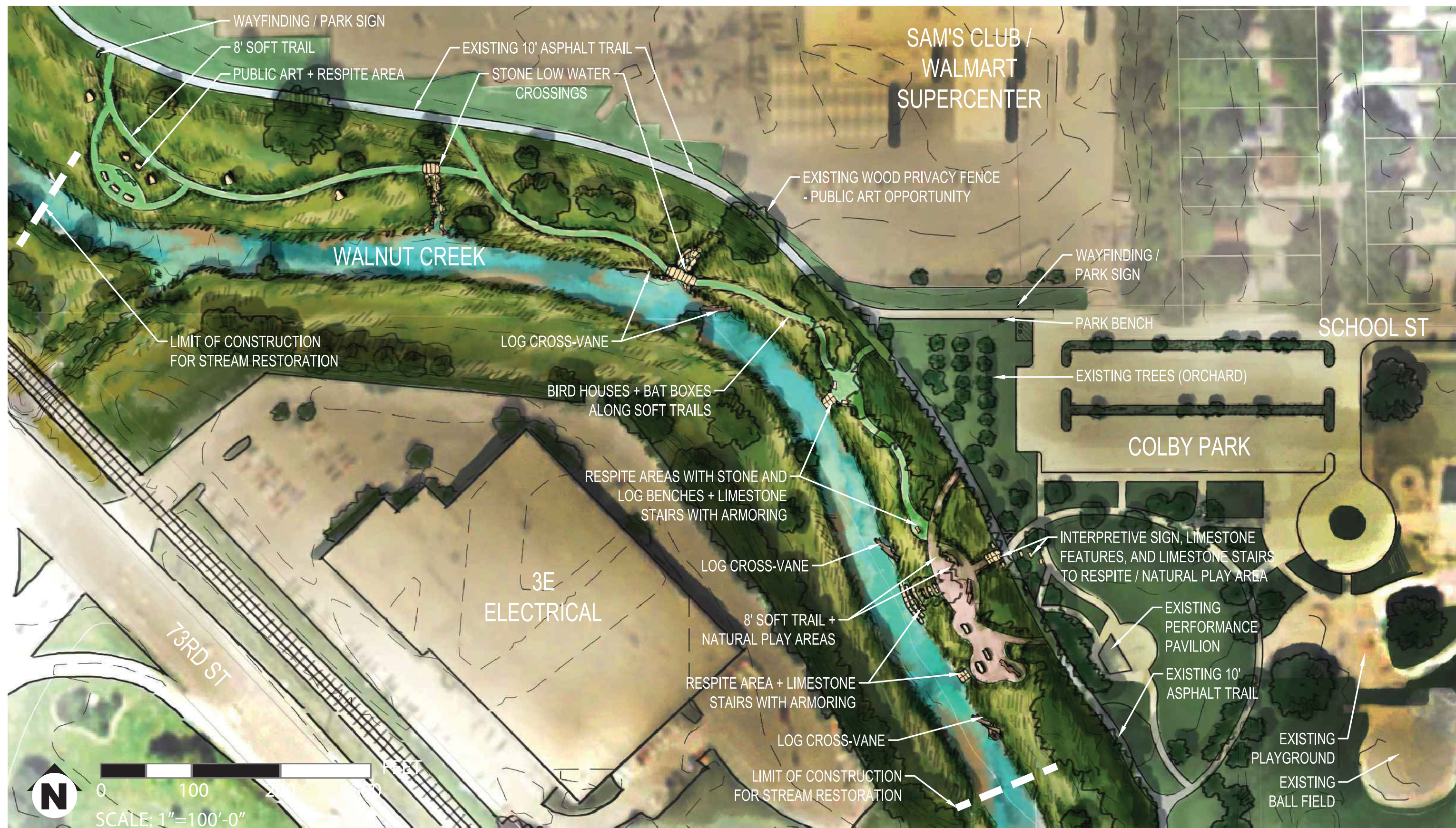
OPINION OF PROBABLE COST

COST ITEM	TOTAL AMOUNT
Carry Down Access - Limestone Stairs	\$16,550.00
Erosion and Sediment Control	\$20,442.00
Signage	\$3,930.00
Streambank Restoration/Stabilization	\$416,188.00
Trail - Soft	\$9,200.00
Additional Amenities	\$220,600.00
CONSTRUCTION COST	\$686,910.00
Mobilization (5% Construction Costs)	\$34,345.50
20% Contingency	\$137,382.00
Non-Construction Costs (20% Construction Costs)	\$137,382.00
TOTAL PROJECT COST	\$996,019.50

PROJECT SCHEDULE

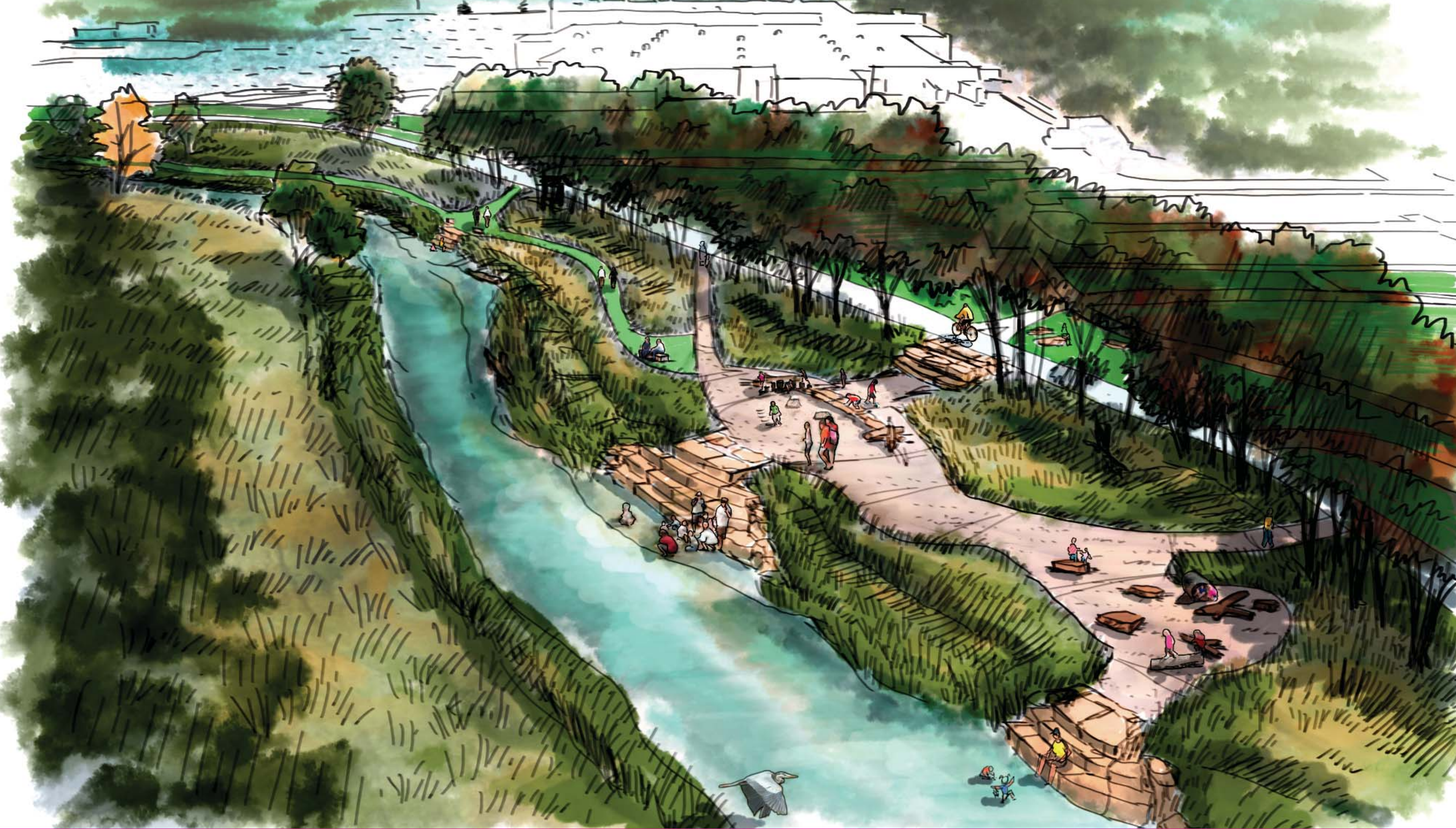


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COMMUNITY COST

OPINION OF PROBABLE COSTS

The following table shows the total opinion of probable costs to the impacted jurisdictions for the conceptual projects included in this Phase I Engineering Study for Walnut Creek.

AMENITY OR PROJECT	OPINION OF PROBABLE COST
CITY OF URBANDALE	
Site 42: Fishing, Respite, Wading	\$64,990.80
Site 45: Fishing, Respite, Wading	\$71,216.60
JURISDICTION TOTAL	\$136,207.40
CITY OF CLIVE	
Site 53: Carry Down, Fishing, Wading	\$17,753.40
Site 55: Carry Down, Fishing, Wading	\$136,544.80
JURISDICTION TOTAL	\$154,298.20
CITY OF WINDSOR HEIGHTS	
Site 57: Carry Down, Fishing, Wading	\$996,019.50
JURISDICTION TOTAL	\$996,019.50

WATER QUALITY



CURRENT AND FUTURE WATER QUALITY

Iowa's water quality challenges have received much attention in recent years. From beach closings due to cyanobacteria to high nitrate levels in drinking water, addressing these challenges will take a collaborative approach amongst both urban and rural communities, a comprehensive long-term monitoring program, and dedicated funding. While progress is being made, the Greater Des Moines Water Trails and Greenways Plan proposes to increase recreation on our waterways, highlighting the need for more detailed study on the relationship between public health and water quality. Specific focus should be given to biological factors, such as bacteria, which are an issue of primary concern for urban rivers.

Currently in Polk County, there is a robust effort to monitor water quality conditions in regards to ecological, physical, and chemical properties, such as stream coverage, clarity, nitrate levels, and more. This is done through a network of 58 testing sites managed by Polk County Conservation's Water Quality Monitoring Program, with staff and volunteers collecting data throughout the year and publishing it in an annual report. While there are a number of takeaways from this effort that we can learn from and build upon in developing more efficient testing for biological indicators, there are components that make this more complicated, and potentially groundbreaking, including:

1. Results are delayed due to the need for lab testing of biological assays. Real-time data is key to understanding trends occurring in our waterways.
2. Testing is a tricky thing to get right. Small deviations, such as location, can skew the results. For example, if water tested is stagnant or located near wildlife this can lead to results that are not consistent with the rest of the waterbody. The dynamic, and ever-changing, nature of riverine systems makes accurate testing more difficult, especially when coupled with delays in reporting for biological pollutants.
3. Currently, streams and rivers in Iowa are not being regularly tested for biological harms.

To overcome these barriers and provide accurate information for water trail users, a system of real-time bacteria monitoring for rivers and streams should be considered, done in collaboration with diverse stakeholders and across varying areas of expertise. Once a clear strategy is outlined, significant consideration should also be given to the housing and dissemination of this information, with public health as the main focus.

NOTE: A group of local stakeholders and technical experts have begun to look at this issue more comprehensively, with conversations ongoing as an implementation and funding strategy for area water trails is formalized.



GET INVOLVED + SUPPORT

NEXT STEPS

As stated in the introduction, the Phase I Engineering Study further develops concepts introduced by the MPO Water Trails and Greenways Plan. The information contained in this document will assist municipalities in formulating implementation strategies, provide stakeholder groups with conceptual designs to further planning efforts, and allow communities to generate excitement and momentum around the multiple benefits inherent in a regional water trails plan.

Each site has been assessed and designed to maximize the Des Moines metro area's reconnection to the wondrous, yet often neglected, natural resources - our rivers and creeks. It is time we all "Rediscover our Rivers."

FOR MORE INFORMATION

For more information contact:

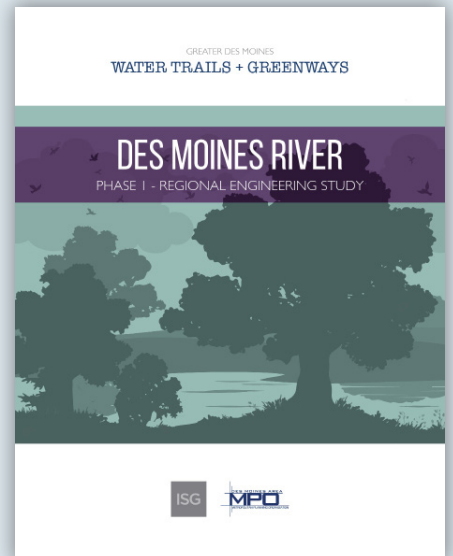
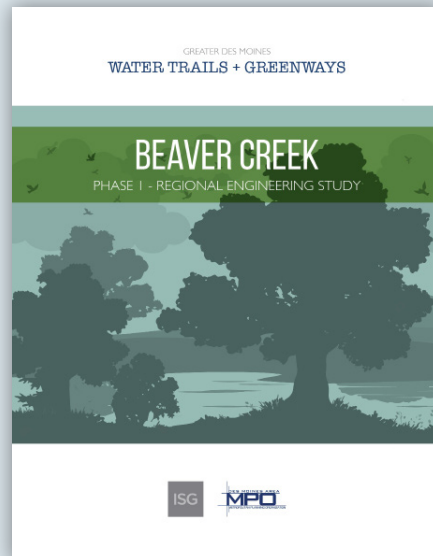
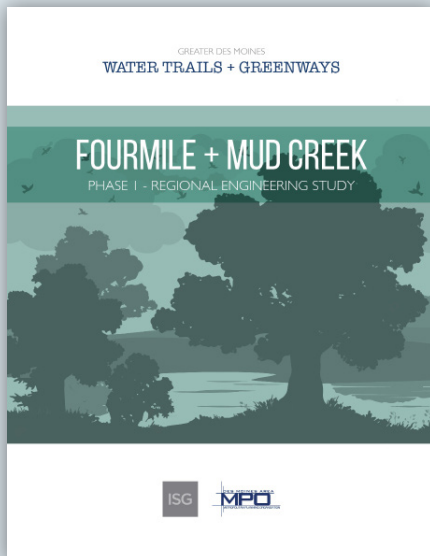
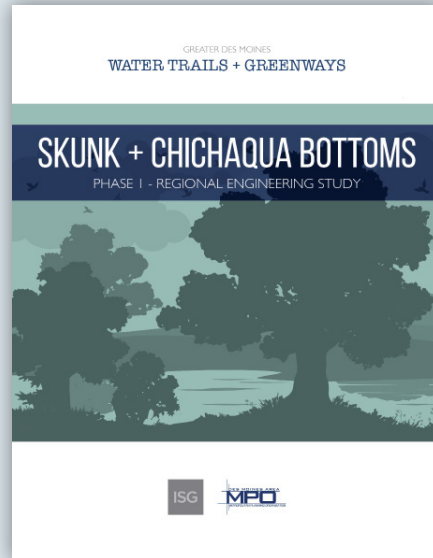
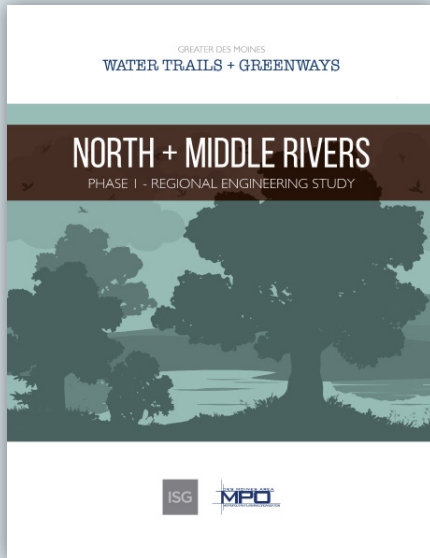
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OTHER REPORTS





GREATER DES MOINES

WATER TRAILS + GREENWAYS

WALNUT CREEK