SUGAR CREEK GREENWAY TRAIL

PROJECT SUMMARY

2019

PREPARED BY

SNYDER & ASSOCIATES

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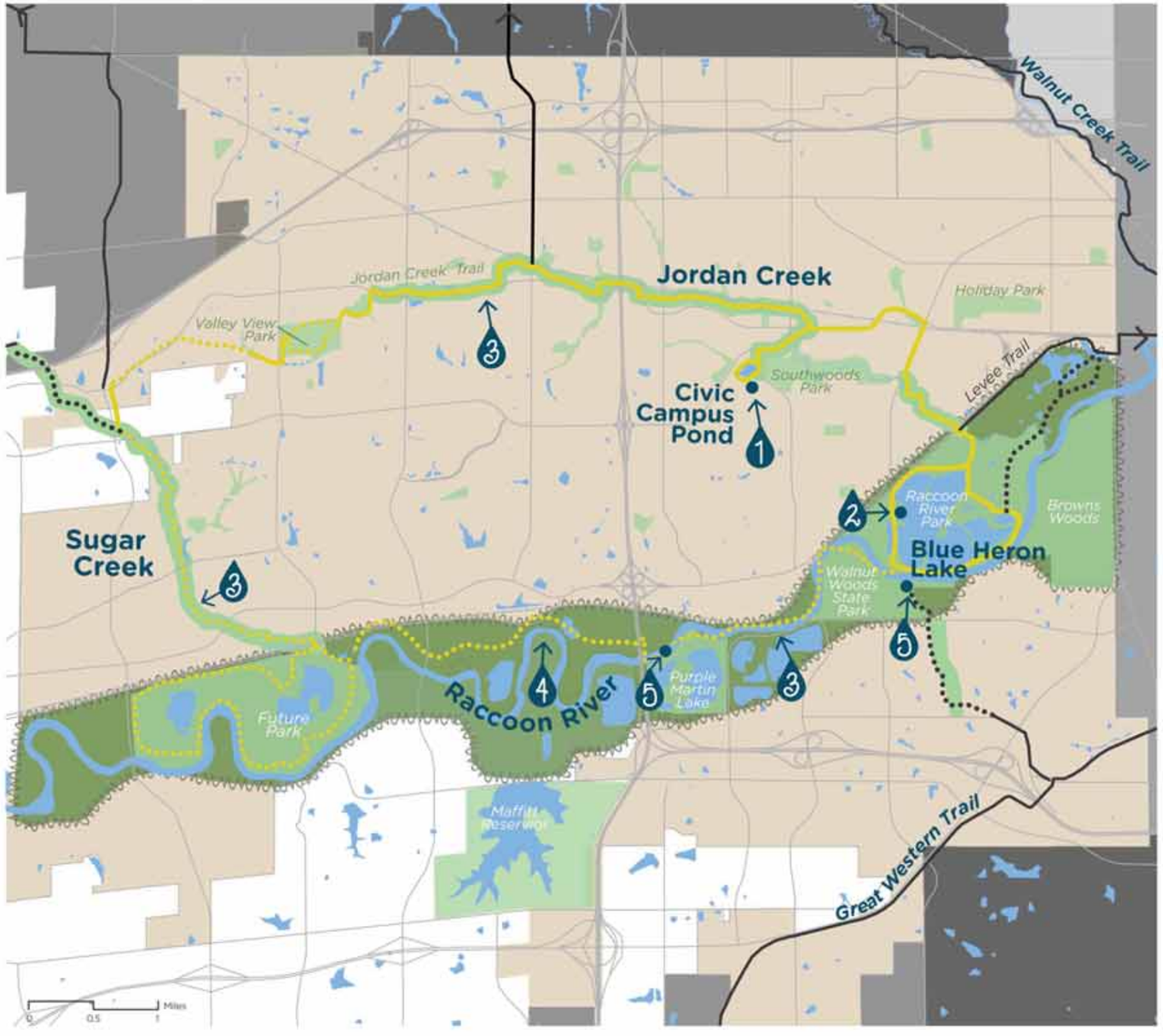
INTRODUCTION



FIVE WATERS PROJECT

1. CIVIC CAMPUS AMPHITHEATER
2. RACCOON RIVER PARK BOATHOUSE
3. MARATHON LOOP TRAIL
4. RACCOON RIVER GREENWAY
5. RACCOON RIVER PEDESTRIAN BRIDGES & GREAT WESTERN TRAIL CONNECTION

LEGEND

- Marathon Loop (Existing|Proposed)
- Regional Trail Connection (Existing|Proposed)
- Raccoon River Greenway Corridor
- Park Facility (Existing/Future)
- WDM City Limits

PURPOSE OF THE PROJECT

The Sugar Creek Greenway Trail is part of the City's Five Waters Project which connects the Raccoon River, Blue Heron Lake, the City Campus Pond, Jordan Creek, and Sugar Creek via a 26.2 mile trail loop, known as the Marathon Loop. The Sugar Creek Greenway Trail would establish 4 miles of that larger loop by connecting the future Raccoon River Trail into a future extension of the Jordan Creek Trail. The Sugar Creek Greenway Trail will also create a connection under Interstate 80 into the City of Waukee.

RELEVANT PLANS AND PROJECTS

Several plans and studies have been completed addressing various elements of this greenway corridor.

- WRA Stream Restoration (Booneville Road to Mills Civic)
- City Conveyance Improvement (Booneville Road to mouth of creek)
- Sugar Creek/Fox Creek Greenway Master Plan (2008)
- Sugar Creek/Fox Creek Greenway Natural Resources Reports (2008)
- Grand Technology Gateway Concurrence Pointes 1 & 2 Presentation (HDR/HRGreen – 2014)
- Grand Technology Gateway Flood Study – Hydraulic Technical Memorandum (2015 –HDR)
- Sugar and Johnson Creeks Floodplain Improvements – 2D Hydraulic Analysis = Addendum (2015 – HDR)
- West Des Moines Grand Technology Gateway Location and Environmental Study: Phase 1A Archaeological Assessment (2014 - Tallgrass Historians)
- West Des Moines Grand Technology Gateway Location and Environmental Study: Architectural/Historical Reconnaissance (2014 - Tallgrass Historians)
- Wetland Delineation Report – Grand Technology Gateway (2015 - HRGreen)

JURISDICTIONAL COORDINATION

The proposed Sugar Creek Trail would pass under Interstate 80 and into the City of Waukee, requiring coordination with both the City of Waukee and the Iowa Department of Transportation (DOT). Per contact made in December 2018, the following guidance has been documented:

Iowa DOT

Contact

John Narigon and Scott Dockstader, District 1 – plan review
Jeff Cunningham – Work on Right-of-Way and/or Trail in Right-of-Way permits

Process

Send preliminary plans to District 1. Allot sufficient time for their review since they may have several offices involved in the review. They will be looking for issues related to:

- Excavation into the berm slope
- Changing the hydraulics of the bridge opening
- Access control fencing to ensure the trail users don't have easy access to I-80

City of Waukee

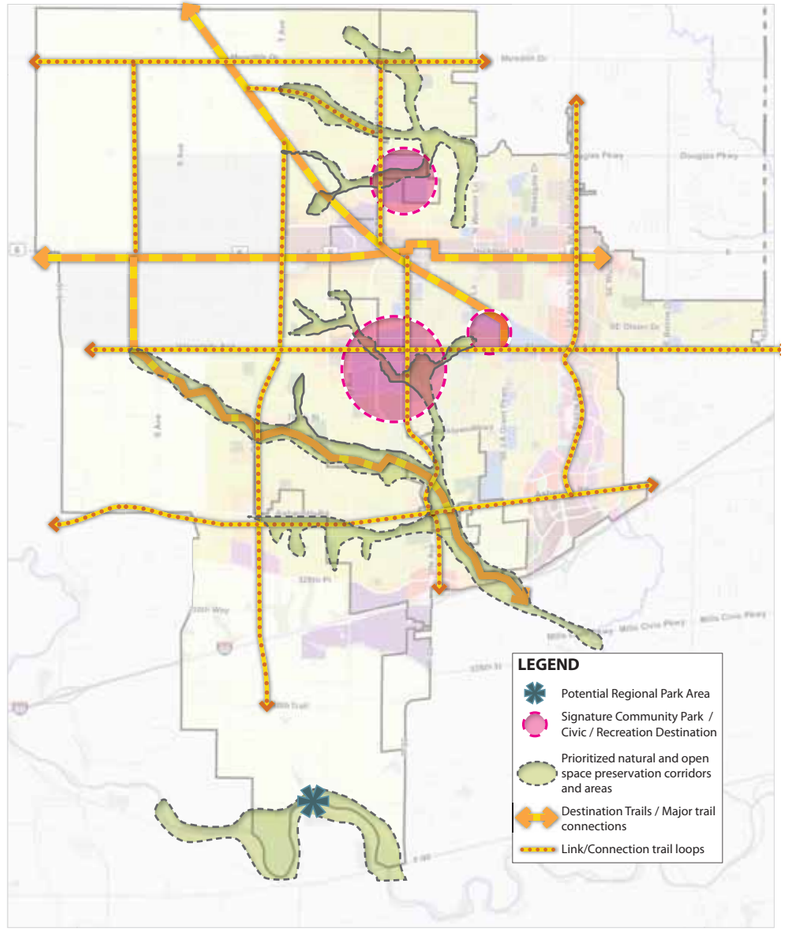
Contact

Matt Jermier, Parks and Rec Director

Process

Provide periodic updates to the City of Waukee as the project progresses. The proposed plan is consistent with the City of Waukee's Comprehensive Plan to establish a trail along Sugar Creek.

TRAILS AND OPEN SPACE FRAMEWORK



City of Waukee Comprehensive Plan

FLOOD PLAIN ANALYSIS

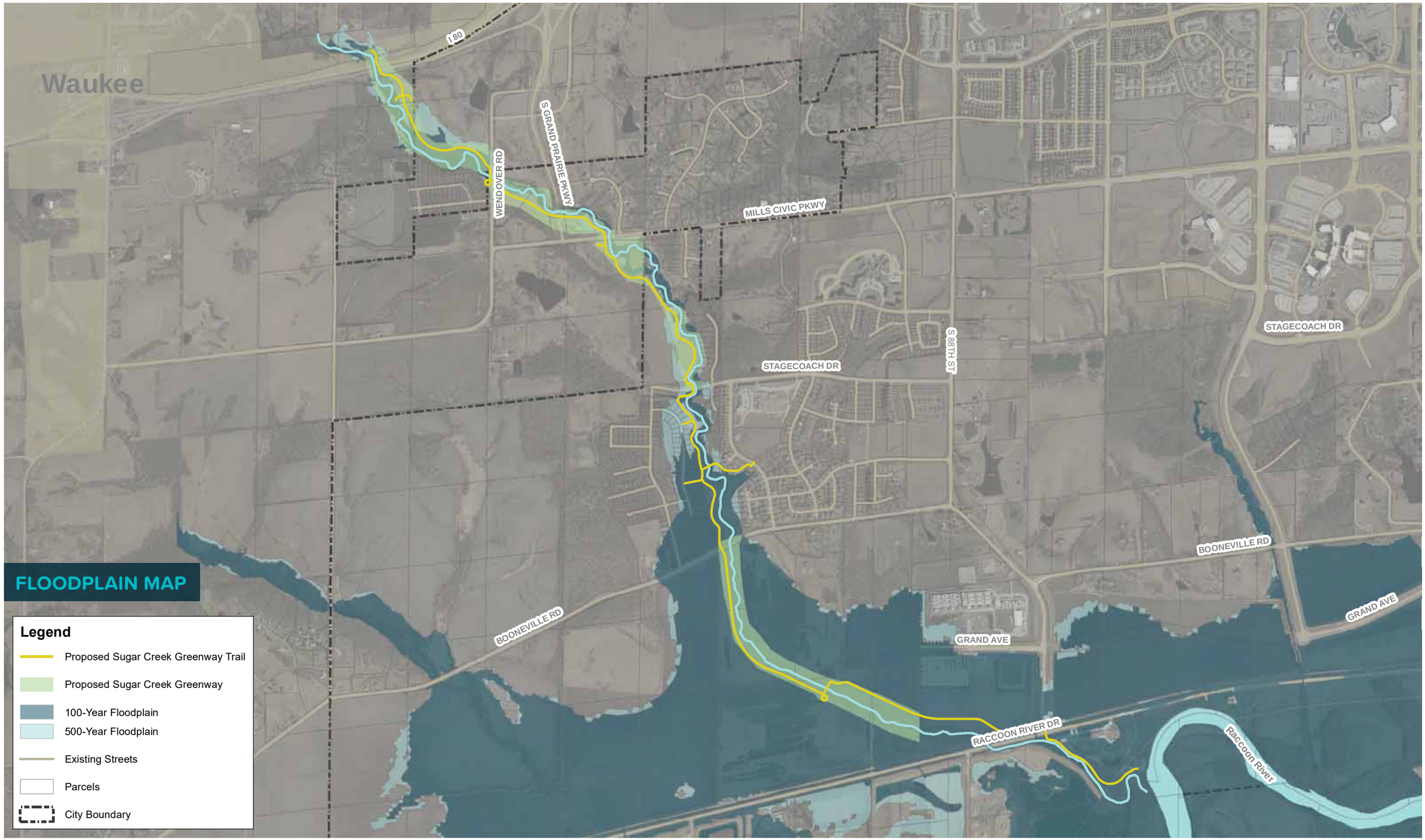
FLOOD PLAIN MAP

WASTEWATER RECLAMATION AUTHORITY (WRA) STREAM RESTORATION

STORM WATER CONVEYANCE IMPROVEMENTS

IOWA DNR DESIGN CRITERIA FOR FLOOD PLAIN DEVELOPMENT

BRIDGE AND CROSSING REVIEW


Waukee
I 80
WENDOVER RD
S GRAND PRAIRIE PKWY
MILLS CIVIC PKWY
STAGECOACH DR
S 88TH ST
STAGECOACH DR
BOONEVILLE RD
GRAND AVE
BOONEVILLE RD
GRAND AVE
RACCOON RIVER DR
Raccoon River
FLOODPLAIN MAP
Legend
Proposed Sugar Creek Greenway Trail
Proposed Sugar Creek Greenway
100-Year Floodplain
500-Year Floodplain
Existing Streets
Parcels
City Boundary

WASTEWATER RECLAMATION AUTHORITY (WRA) STREAM RESTORATION

The Wastewater Reclamation Authority (WRA) is leading an effort to restore a portion of Sugar Creek between Booneville Road and Mills Civic Parkway. This reach of Sugar Creek is adjacent to existing sewer infrastructure and through a holistic stream restoration program, they are able to improve water quality and protect their infrastructure. The WRA's efforts are funded through the State Revolving Fund (SRF) Water Resource Restoration Sponsored Projects program aimed at improving water quality in the State of Iowa.

Restoration techniques include laying streambank slopes back to improve stability, creating low water flood plain benches, low water stream directive devices like bendway weirs, and rock riffle structures. Given the highly eroded banks and entrenched condition of Sugar Creek, the stream restoration project will require a grading corridor between 100 and 130 feet wide. Another 50 or more feet are needed beyond the grading corridor on both sides for natural buffer areas in accordance with the SRF Sponsored Projects eligibility requirements. The proposed trail alignment accounts for the WRA's proposed stream restoration corridor.

STORM WATER CONVEYANCE IMPROVEMENTS

The City of West Des Moines commissioned a hydrologic and hydraulic study of Sugar Creek as part of the Grand Technology Gateway Location and Environment Study. The findings of the hydrologic and hydraulic study found that flood elevations and flood risk for the 1% and 0.2% annual chance floods exceeded expectations for the Sugar Creek area between Booneville Road and Raccoon River Drive.

Flood mitigation alternatives were evaluated to reduce flood risk potential and reserve a corridor for flood conveyance and green space. Flow conveyance capacity of the existing Sugar Creek bridges at the Iowa Interstate Railroad and Raccoon River Drive and overflow from the Johnson Creek watershed were major factors contributing to the elevated flood risk on Sugar Creek. Since both bridges were scheduled for replacement due to functional and structural obsolescence, the preferred flood mitigation alternative included replacement of both bridges with larger openings to increase flow capacity.

To fully achieve the extra bridge capacity, downstream and upstream improvements to the Sugar Creek flood plain are also needed along with similar improvements in the Johnson Creek watershed. These improvements include removal of accumulated high bank sediments in the flood plain, removal of fill encroachments, and removal of dense vegetation. These improvements will increase flood plain flow conveyance capacity which reduces tailwater at the new road and railroad bridges. Conveyance improvements will maintain and stabilize the current stream alignment and improve flood plain connectivity to restore proper flood plain functions.

Stormwater conveyance improvements will require a 150 foot wide corridor upstream of the future Grand Avenue crossing and a 400 foot wide corridor from the future Grand Avenue crossing to the mouth with the Raccoon River. The proposed trail alignment accounts for the proposed conveyance improvement corridor.

IOWA DNR DESIGN CRITERIA FOR FLOOD PLAIN DEVELOPMENT

Development within the Sugar Creek flood plain will required approval from the Iowa Department of Natural Resources (DNR) for improvements such as bridge crossings and flood plain fill located within the City limits. Maximum backwater and minimum bridge freeboard requirements are defined in Iowa Administrative Code Section 567 Chapter 72. These limits allow up to 1.0 foot of backwater for the 1% annual chance flood (100 Year) and require a minimum of 3 feet of bridge freeboard for the 2% annual chance flood (50 Year). A small portion of the study corridor is located in unincorporated Dallas County, improvements within the flood plain of these rural areas would not require an Iowa DNR flood plain permit. Even though these backwater and freeboard limits don't apply to the rural areas of the study area, we recommend adhering to this criteria as a standard practice for bridge hydraulic design in Iowa.

Portions of the proposed trail alignment pass through mapped Zone A special flood areas depicted in the Polk County Flood Insurance Rate Maps dated February 1, 2019. Development within these mapped flood plains follows the same criteria noted above for the Iowa DNR with the exception of a small portion of the southern project terminus which is located in the mapped Raccoon River floodway. Proposed trail improvements in the floodway would need to be placed on existing grade and cause no rise to the 1% annual chance flood on the Raccoon River.

With the exception of project area south of Raccoon River Drive and located within the Raccoon River flood plain, base flood elevations associated with the 1% annual chance flood were not developed by FEMA. For proposed improvements north of Raccoon River Drive, previously prepared hydraulic models for the Grand Technology Gateway study and stormwater conveyance improvements should be utilized as the base models to document backwater and freeboard of proposed improvements.

BRIDGE AND CROSSING REVIEW

Existing Bridges

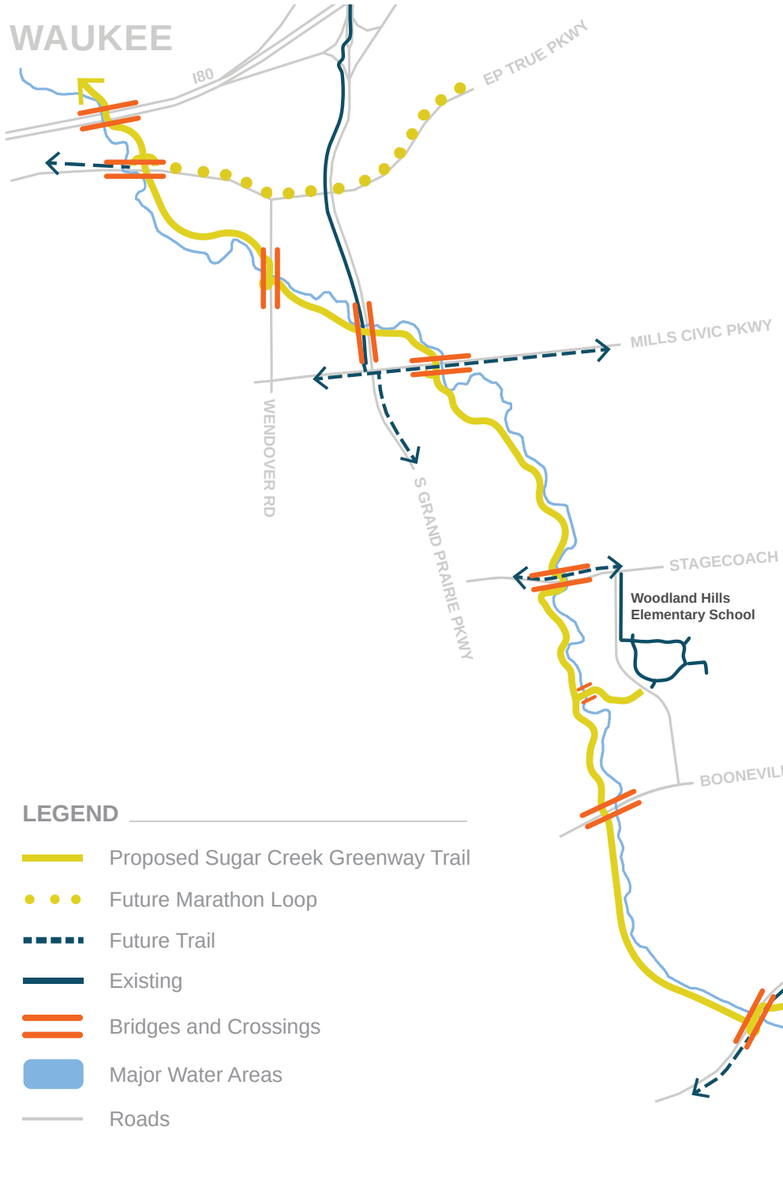
Improvements needed for trail to pass under existing roadway bridges:

- I-80 – Upon review and approval by the Iowa DOT, the trail will pass under I-80 on the east side of the creek.
- Grand Prairie Parkway – The Grand Prairie Parkway bridge includes a sidepath trail for crossing the creek. The Sugar Creek Greenway Trail will also pass under the bridge at the south end.
- Stagecoach Drive – The trail will pass under the Stagecoach Drive bridge on the west side of the creek. It will connect to a future trail planned along the north side of the roadway upon expansion.
- Booneville Road – The trail will pass under the Booneville Road Bridge on the west side of the creek. It will connect to the sidewalk in the Kings Landing plat on the west side of the trail.

Future Bridges

Trail design characteristics for future bridges:

- EP True Parkway – The trail will pass under the future EP True Parkway bridge on the east side of the creek. It will loop up to the bridge deck on the north side.
- Wendover Road – The trail will pass under the future Wendover Road bridge on the south end and loop up to the bridge deck. The trail will cross Sugar Creek on the on the west side of the bridge.
- Mills Civic Parkway – The trail will pass under the bridge at Mills Civic Parkway on the west side of the creek. It will connect to the planned trail along Mills Civic Parkway on the south side of the road.
- Trail Bridge - A new trail bridge is planned to cross Sugar Creek between Woodland Hills and Kings Landing neighborhoods, as a spur to the Sugar Creek Greenway Trail.
- Grand Avenue - The trail will cross Sugar Creek on the south side of the future Grand Avenue Bridge, and loop under the bridge on the west end to continue parallel to the creek.



Grand Prairie Parkway Bridge

Stagecoach Drive Bridge

NATURAL RESOURCES ANALYSIS

THREATENED AND ENDANGERED SPECIES HABITAT SUMMARY

WETLAND SUMMARY

HYDRIC SOILS SUMMARY

THREATENED AND ENDANGERED SPECIES HABITAT SUMMARY

"Critical habitat" is a term that comes from the Endangered Species Act. It is defined as "specific geographic areas that contain features essential to the conservation of an endangered or threatened species and that may require special management and protection." In Iowa, this is often considered the trees and riparian (i.e. streambank and shoreline) areas that are known habitat for certain bat and bird species.

A designation of critical habitat does not mean that development is impossible in that area; however, special precautions must be taken to minimize the potential impact to these species, such as clearing trees during the winter when bats are less active.

STAGECOACH DR

BOONEVILLE RD

BOONEVILLE RD

GRAND AVE

RACCOON RIVER DR

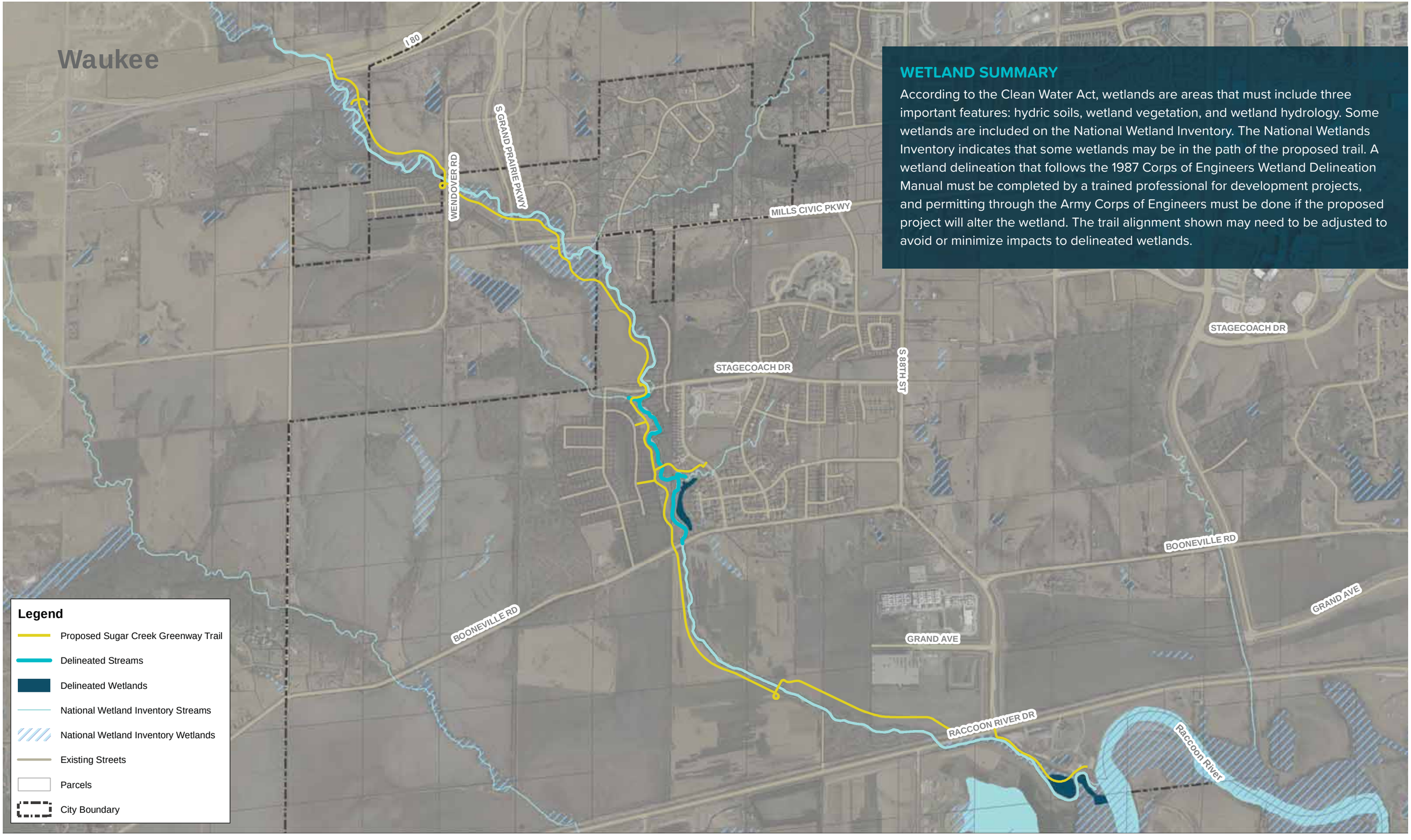
Raccoon River

Legend

- Potential Bat Habitat Trees
- Proposed Sugar Creek Greenway Trail
- Proposed Sugar Creek Greenway
- City Lot
- Existing Parkland and Greenway
- Parkland Agreement (Future)
- Existing Streets
- City Boundary

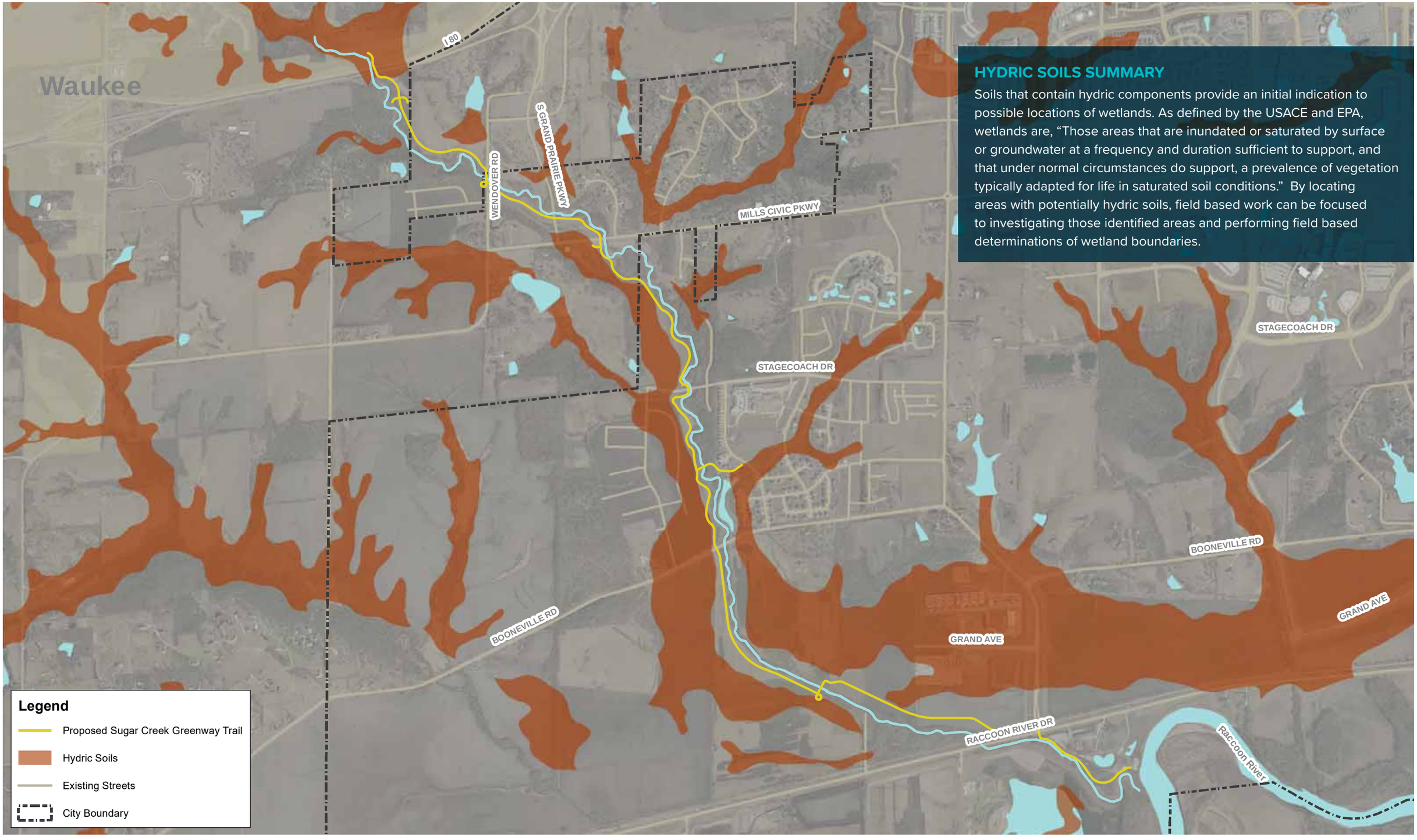
WETLAND SUMMARY

According to the Clean Water Act, wetlands are areas that must include three important features: hydric soils, wetland vegetation, and wetland hydrology. Some wetlands are included on the National Wetland Inventory. The National Wetlands Inventory indicates that some wetlands may be in the path of the proposed trail. A wetland delineation that follows the 1987 Corps of Engineers Wetland Delineation Manual must be completed by a trained professional for development projects, and permitting through the Army Corps of Engineers must be done if the proposed project will alter the wetland. The trail alignment shown may need to be adjusted to avoid or minimize impacts to delineated wetlands.



HYDRIC SOILS SUMMARY

Soils that contain hydric components provide an initial indication to possible locations of wetlands. As defined by the USACE and EPA, wetlands are, “Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” By locating areas with potentially hydric soils, field based work can be focused to investigating those identified areas and performing field based determinations of wetland boundaries.

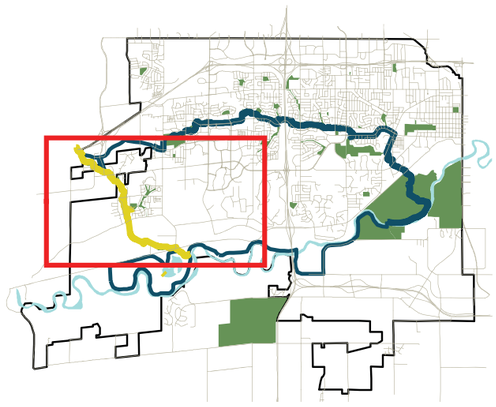


PROPOSED CONCEPT

SUGAR CREEK GREENWAY TRAIL

CONCEPT PLAN

- Mile Marker
- Proposed Sugar Creek Greenway Trail
- Marathon Loop (Future)
- Existing Trail
- Future Trail
- Proposed Sugar Creek Greenway
- Conveyance Improvements
- WRA Stream Restoration
- Parkland Agreement (Future)
- Existing Parkland and Greenway
- City Lot
- West Des Moines City Limits



- Proposed Sugar Creek Greenway Trail
- Future Trail
- Existing
- Major Water Areas

DESIGN CONSIDERATIONS

The 12-foot wide trail generally follows Sugar Creek from its mouth at the Raccoon River to the I-80 bridge over Sugar Creek. The Sugar Creek Greenway Trail will constitute a portion of the Marathon Loop Trail, connecting into the Raccoon River Greenway at the south and the proposed sidepath trail along the future extension of EP True Parkway at the north. It will also connect under Interstate 80 and into the City of Waukee, consistent with Waukee's future trails plan.

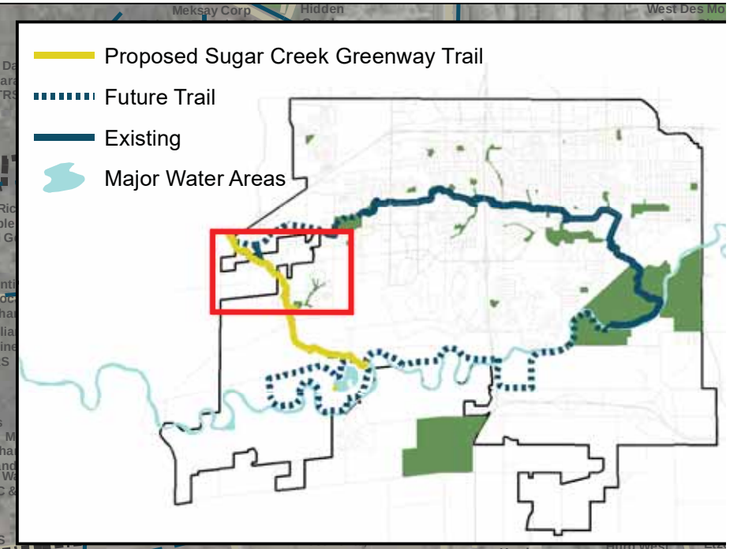
The design prioritizes natural resources protection and management to create the most environmentally friendly and sustainable design. Creek bank stabilization where necessary and native landscape buffers will promote a healthy riparian corridor for trail users to enjoy.

One challenge for development of the project will be right-of-way acquisition. Much of the land necessary for trail and greenway development is currently privately owned. The City will need to acquire property either through purchase or donation of easements or fee-title land dedication in order to develop the trail.

TOP: North half of project area from Woodland Hills facing north toward Interstate 80 (not visible). **BOTTOM:** The trail will pass under I-35 into the City of Waukee at the north end of the project.

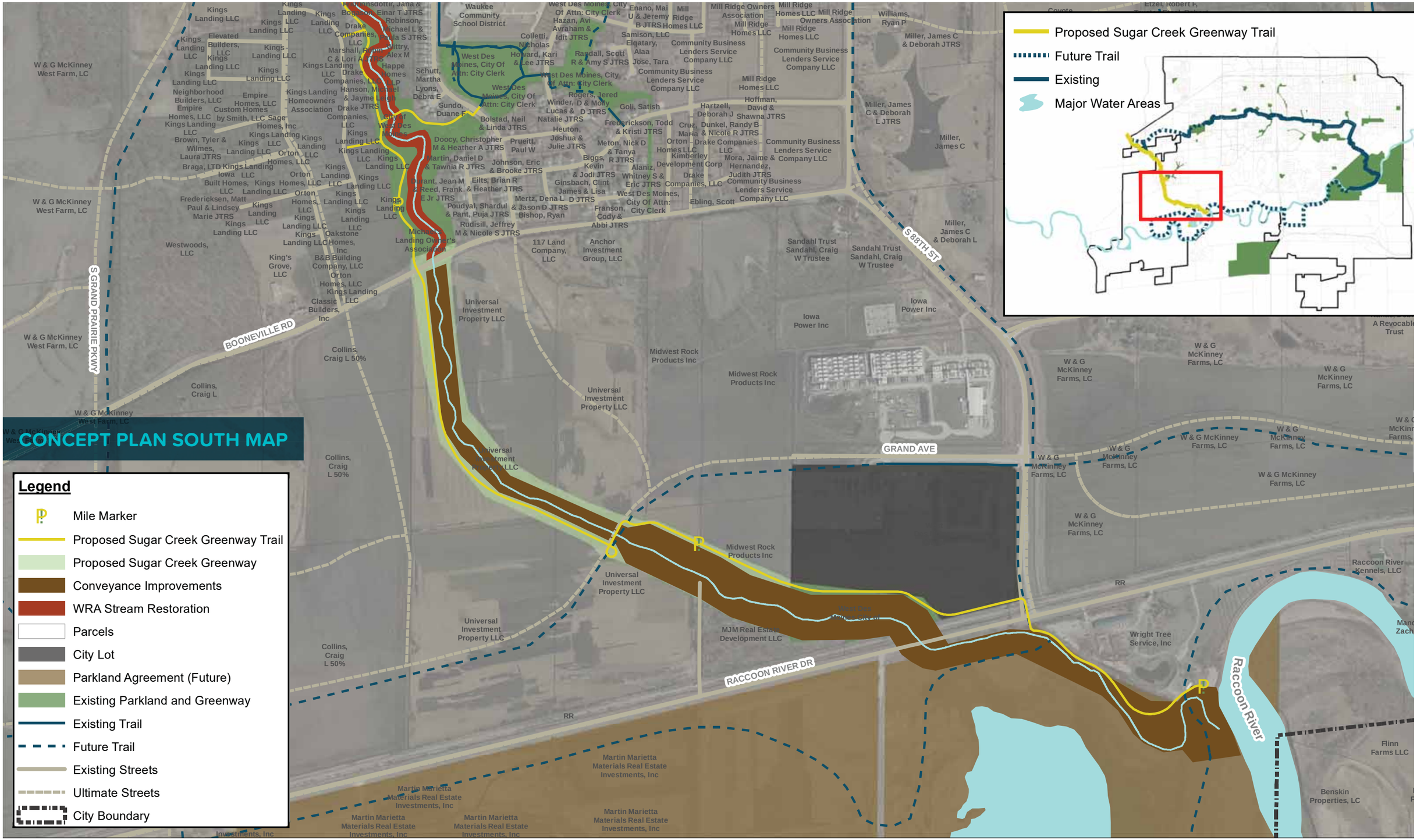
South half of project area from Woodland Hills neighborhood facing south toward the Raccoon River.

CONCEPT PLAN NORTH MAP

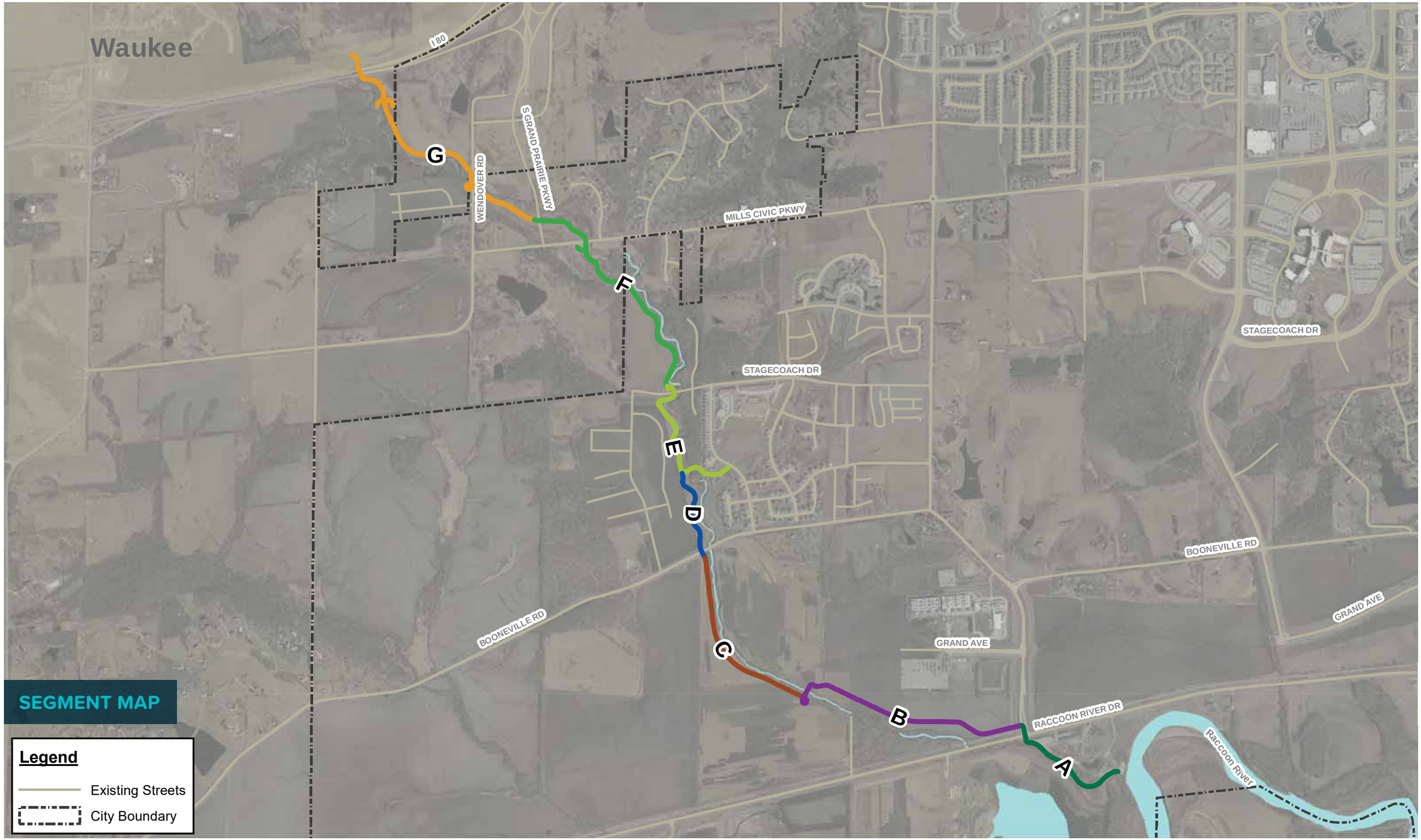


Legend

- Mile Marker
- Proposed Sugar Creek Greenway Trail
- Proposed Sugar Creek Greenway
- Conveyance Improvements
- WRA Stream Restoration
- Parcels
- City Lot
- Parkland Agreement (Future)
- Existing Parkland and Greenway
- Existing Trail
- Future Trail
- Existing Streets
- Ultimate Streets
- City Boundary


Proposed Sugar Creek Greenway Trail
Future Trail
Existing
Major Water Areas
CONCEPT PLAN SOUTH MAP
Legend
Mile Marker
Proposed Sugar Creek Greenway Trail
Proposed Sugar Creek Greenway
Conveyance Improvements
WRA Stream Restoration
Parcels
City Lot
Parkland Agreement (Future)
Existing Parkland and Greenway
Existing Trail
Future Trail
Existing Streets
Ultimate Streets
City Boundary
S GRAND PRAIRIE PKWY
BOONEVILLE RD
S 88TH ST
GRAND AVE
RACCOON RIVER DR
RR
Raccoon River
Waukee Community School District
Universal Investment Property LLC
Midwest Rock Products Inc
Iowa Power Inc
Sandahl Trust Sandahl, Craig W Trustee
Anchor Investment Group, LLC
117 Land Company, LLC
Collins, Craig L 50%
Collins, Craig L
W & G McKinney West Farm, LC
W & G McKinney Farms, LC
Raccoon River Kennels, LLC
Wright Tree Service, Inc
Flinn Farms LLC
Benskin Properties, LC
Miller, James C & Deborah L JTRS
Miller, James C
Williams, Ryan P
Mill Ridge Homes LLC
Mill Ridge Owners Association
Community Business Lenders Service Company LLC
Martin Marietta Materials Real Estate Investments, Inc

TYPICAL TRAIL CROSS SECTION


Waukee
I 80
S GRAND PRAIRIE PKWY
WENDOVER RD
MILLS CIVIC PKWY
STAGECOACH DR
STAGECOACH DR
BOONEVILLE RD
BOONEVILLE RD
GRAND AVE
GRAND AVE
RACCOON RIVER DR
Raccoon River
G
F
E
D
C
B
A
SEGMENT MAP
Legend
Existing Streets
City Boundary

COST OPINIONS

*Trail Corridor will be provided through a development agreement unless noted otherwise.

Unit Prices reflect 2019 construction.

DESCRIPTION	SEGMENT LENGTH (LF)	EXTENDED PRICE
Segment A	2,300	$347,000.00
Segment B	4,400	$920,000.00
Segment C	3,300	$489,000.00
Segment D	1,500	$230,000.00
Segment E	2,900	$715,000.00
Segment F	4,700	$684,000.00
Segment G	5,200	$769,000.00

TOTAL CONSTRUCTION COST	**$4,154,000.00**
Other Project Costs	
Right-of-Way Acquisition*	$52,000.00
Engineering, Construction, and Administration	$627,000.00
TOTAL PROJECT COST	**$4,833,000.00**

APPENDIX

DETAILED COST OPINIONS

OPINION OF PROBABLE PROJECT COSTS - ORDER OF MAGNITUDE

SNYDER & ASSOCIATES

SUGAR CREEK GREENWAY TRAIL
TOTAL TRAIL CORRIDOR
WEST DES MOINES, IOWA
2/4/2019
PROJECT NO. 117.1039

ITEM #	DESCRIPTION	Segment Length (LF)	EXTENDED PRICE
1	Segment A	2,300	$ 347,000.00
2	Segment B	4,400	$ 920,000.00
3	Segment C	3,300	$ 489,000.00
4	Segment D	1,500	$ 230,000.00
5	Segment E	2,900	$ 715,000.00
6	Segment F	4,700	$ 684,000.00
7	Segment G	5,200	$ 769,000.00

TOTAL CONSTRUCTION COST: $ 4,154,000.00

Other Project Costs
Right-of-Way Acquisition* $ 52,000.00
Engineering, Construction, and Administration: $ 627,000.00

TOTAL PROJECT COST: $ 4,833,000.00

*Trail Corridor will be provided through a development agreement unless noted otherwise.
Unit Prices reflect 2019 construction.

OPINION OF PROBABLE PROJECT COSTS - ORDER OF MAGNITUDE

SNYDER & ASSOCIATES

SUGAR CREEK GREENWAY TRAIL
SEGMENT B
WEST DES MOINES, IOWA
2/4/2019
PROJECT NO. 117.1039

ITEM #	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED PRICE
1	Excavation, Class 10	1900	CY	$ 15.00	$ 28,500.00
2	Shared Use Path, PCC 6" Reinforced	5650	SY	$ 70.00	$ 395,500.00
3	Special Subgrade Preparation for Shared Use Path	7600	SY	$ 6.00	$ 45,600.00
4	Detectable Warning	48	SF	$ 50.00	$ 2,400.00
5	Traffic Control	1	LS	$ 5,000.00	$ 5,000.00
6	Signing	1	LS	$ 2,500.00	$ 2,500.00
7	Seeding, Restoration, Erosion Control, & Construction Staking	1	LS	$ 65,000.00	$ 65,000.00
8	Painted Pavement Markings	9	STA	$ 400.00	$ 3,600.00
9	Prefabricated Truss Bridge, Sugar Creek Tributary (55x12)	1	LS	$ 132,000.00	$ 132,000.00
10	Prefabricated Truss Bridge, Sugar Creek Tributary (50x12)	1	LS	$ 120,000.00	$ 120,000.00

Subtotal: $ 800,100.00
Contigency (15%): $ 119,900.00

TOTAL CONSTRUCTION COST: $ 920,000.00

Other Project Costs
Right-of-Way Acquisition* -
Engineering, Construction, and Administration: $ 138,000.00

TOTAL PROJECT COST: $ 1,058,000.00

*Trail Corridor will be provided through a development agreement unless noted otherwise.
Unit Prices reflect 2019 construction.

OPINION OF PROBABLE PROJECT COSTS - ORDER OF MAGNITUDE

SNYDER & ASSOCIATES

SUGAR CREEK GREENWAY TRAIL
SEGMENT A
WEST DES MOINES, IOWA
2/4/2019
PROJECT NO. 117.1039

ITEM #	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED PRICE
1	Clearing and Grubbing	1	ACRE	$ 10,000.00	$ 10,000.00
2	Excavation, Class 10	1000	CY	$ 15.00	$ 15,000.00
3	Shared Use Path, PCC 6" Reinforced	2910	SY	$ 70.00	$ 203,700.00
4	Special Subgrade Preparation for Shared Use Path	3900	SY	$ 6.00	$ 23,400.00
5	Detectable Warning	48	SF	$ 50.00	$ 2,400.00
6	Traffic Control	1	LS	$ 5,000.00	$ 5,000.00
7	Signing	1	LS	$ 2,500.00	$ 2,500.00
8	Seeding, Restoration, Erosion Control, & Construction Staking	1	LS	$ 35,000.00	$ 35,000.00
9	Painted Pavement Markings	9	STA	$ 400.00	$ 3,600.00

Subtotal: $ 300,600.00
Contigency (15%): $ 46,400.00

TOTAL CONSTRUCTION COST: $ 347,000.00

Other Project Costs
Right-of-Way Acquisition* -
Engineering, Construction, and Administration: $ 53,000.00

TOTAL PROJECT COST: $ 400,000.00

*Trail Corridor will be provided through a development agreement unless noted otherwise.
Unit Prices reflect 2019 construction.

OPINION OF PROBABLE PROJECT COSTS - ORDER OF MAGNITUDE

SNYDER & ASSOCIATES

SUGAR CREEK GREENWAY TRAIL
SEGMENT C
WEST DES MOINES, IOWA
2/4/2019
PROJECT NO. 117.1039

ITEM #	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED PRICE
1	Excavation, Class 10	1500	CY	$ 15.00	$ 22,500.00
2	Shared Use Path, PCC 6" Reinforced	4390	SY	$ 70.00	$ 307,300.00
3	Special Subgrade Preparation for Shared Use Path	5900	SY	$ 6.00	$ 35,400.00
4	Detectable Warning	24	SF	$ 50.00	$ 1,200.00
5	Traffic Control	1	LS	$ 5,000.00	$ 5,000.00
6	Signing	1	LS	$ 2,500.00	$ 2,500.00
7	Seeding, Restoration, Erosion Control, & Construction Staking	1	LS	$ 50,000.00	$ 50,000.00
8	Painted Pavement Markings	3	STA	$ 400.00	$ 1,200.00

Subtotal: $ 425,100.00
Contigency (15%): $ 63,900.00

TOTAL CONSTRUCTION COST: $ 489,000.00

Other Project Costs
Right-of-Way Acquisition* -
Engineering, Construction, and Administration: $ 74,000.00

TOTAL PROJECT COST: $ 563,000.00

*Trail Corridor will be provided through a development agreement unless noted otherwise.
Unit Prices reflect 2019 construction.

OPINION OF PROBABLE PROJECT COSTS - ORDER OF MAGNITUDE

SNYDER & ASSOCIATES

SUGAR CREEK GREENWAY TRAIL
SEGMENT D
WEST DES MOINES, IOWA
2/4/2019
PROJECT NO. 117.1039

ITEM #	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED PRICE
1	Excavation, Class 10	700	CY	$ 15.00	$ 10,500.00
2	Shared Use Path, PCC 6" Reinforced	1970	SY	$ 70.00	$ 137,900.00
3	Special Subgrade Preparation for Shared Use Path	2700	SY	$ 6.00	$ 16,200.00
4	Detectable Warning	24	SF	$ 50.00	$ 1,200.00
5	Traffic Control	1	LS	$ 5,000.00	$ 5,000.00
6	Signing	1	LS	$ 2,500.00	$ 2,500.00
7	Seeding, Restoration, Erosion Control, & Construction Staking	1	LS	$ 25,000.00	$ 25,000.00
8	Painted Pavement Markings	3	STA	$ 400.00	$ 1,200.00

Subtotal: $ 199,500.00
Contigency (15%): $ 30,500.00

TOTAL CONSTRUCTION COST: $ 230,000.00

Other Project Costs
Right-of-Way Acquisition* -
Engineering, Construction, and Administration: $ 35,000.00

TOTAL PROJECT COST: $ 265,000.00

*Trail Corridor will be provided through a development agreement unless noted otherwise.
Unit Prices reflect 2019 construction.

OPINION OF PROBABLE PROJECT COSTS - ORDER OF MAGNITUDE

SNYDER & ASSOCIATES

SUGAR CREEK GREENWAY TRAIL
SEGMENT F
WEST DES MOINES, IOWA
2/4/2019
PROJECT NO. 117.1039

ITEM #	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED PRICE
1	Clearing and Grubbing	1	ACRE	$ 10,000.00	$ 10,000.00
2	Excavation, Class 10	2100	CY	$ 15.00	$ 31,500.00
3	Shared Use Path, PCC 6" Reinforced	6230	SY	$ 70.00	$ 436,100.00
4	Special Subgrade Preparation for Shared Use Path	8300	SY	$ 6.00	$ 49,800.00
5	Traffic Control	1	LS	$ 5,000.00	$ 5,000.00
6	Signing	1	LS	$ 2,500.00	$ 2,500.00
7	Seeding, Restoration, Erosion Control, & Construction Staking	1	LS	$ 70,000.00	$ 70,000.00

Subtotal: $ 594,900.00
Contigency (15%): $ 89,100.00

TOTAL CONSTRUCTION COST: $ 684,000.00

Other Project Costs
Right-of-Way Acquisition $ 20,000.00
Engineering, Construction, and Administration: $ 103,000.00

TOTAL PROJECT COST: $ 807,000.00

Unit Prices reflect 2019 construction.

OPINION OF PROBABLE PROJECT COSTS - ORDER OF MAGNITUDE

SNYDER & ASSOCIATES

SUGAR CREEK GREENWAY TRAIL
SEGMENT E
WEST DES MOINES, IOWA
2/4/2019
PROJECT NO. 117.1039

ITEM #	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED PRICE
1	Clearing and Grubbing	1	LS	$ 15,000.00	$ 15,000.00
2	Excavation, Class 10	1300	CY	$ 15.00	$ 19,500.00
3	Shared Use Path, PCC 6" Reinforced	3480	SY	$ 70.00	$ 243,600.00
4	Special Subgrade Preparation for Shared Use Path	5050	SY	$ 6.00	$ 30,300.00
5	Detectable Warning	40	SF	$ 50.00	$ 2,000.00
6	Traffic Control	1	LS	$ 5,000.00	$ 5,000.00
7	Signing	1	LS	$ 12,000.00	$ 12,000.00
8	Seeding, Restoration, Erosion Control, & Construction Staking	1	LS	$ 45,000.00	$ 45,000.00
10	Painted Pavement Markings	5	STA	$ 500.00	$ 2,500.00
11	Prefabricated Truss Bridge, Sugar Creek (120' x 10')	1	LS	$220,000.00	$ 220,000.00
12	Prefabricated Truss Bridge, Sugar Creek Tributary (50' x 12')	1	LS	$120,000.00	$ 120,000.00

Subtotal: $ 715,000.00
Contigency (0%):** $ -

TOTAL CONSTRUCTION COST: $ 715,000.00

Other Project Costs
Right-of-Way Acquisition* $ 2,000.00
Engineering, Construction, and Administration: $ 108,000.00

TOTAL PROJECT COST: $ 825,000.00

*Trail Corridor will be provided through a development agreement unless noted otherwise.
**No additional contingency included because this segment has additional design effort and construction is planned within a short timeframe.
Unit Prices reflect 2019 construction.

OPINION OF PROBABLE PROJECT COSTS - ORDER OF MAGNITUDE

SNYDER & ASSOCIATES

SUGAR CREEK GREENWAY TRAIL
SEGMENT G
WEST DES MOINES, IOWA
2/4/2019
PROJECT NO. 117.1039

ITEM #	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED PRICE
1	Clearing and Grubbing	1	ACRE	$ 10,000.00	$ 10,000.00
2	Excavation, Class 10	2300	CY	$ 15.00	$ 34,500.00
3	Shared Use Path, PCC 6" Reinforced	6810	SY	$ 70.00	$ 476,700.00
4	Special Subgrade Preparation for Shared Use Path	9100	SY	$ 6.00	$ 54,600.00
5	RCP Culvert	1	LS	$ 3,000.00	$ 10,000.00
6	Traffic Control	1	LS	$ 5,000.00	$ 5,000.00
7	Signing	1	LS	$ 2,500.00	$ 2,500.00
8	Seeding, Restoration, Erosion Control, & Construction Staking	1	LS	$ 75,000.00	$ 75,000.00

Subtotal: $ 668,300.00
Contigency (15%): $ 100,700.00

TOTAL CONSTRUCTION COST: $ 769,000.00

Other Project Costs
Right-of-Way Acquisition $ 30,000.00
Engineering, Construction, and Administration: $ 116,000.00

TOTAL PROJECT COST: $ 915,000.00

Unit Prices reflect 2019 construction.

SUGAR CREEK GREENWAY TRAIL | PROJECT SUMMARY