



WEBSTER
CITY

Opportunity Awaits



WEBSTER CITY and
HAMILTON COUNTY CONSERVATION
TRAIL MASTER PLAN

December 2020

CREDITS

Webster City and Hamilton County Conservation

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CONTENTS

Introduction	3
Existing Conditions	4
Trail Design Guides	5
Planned Trails	7
Preliminary Cost Opinions	16
Funding Opportunities	17
Wayfinding Signage	18
References + Resources	19

INTRODUCTION

Hamilton County is located in north central Iowa and has a population of 15,115 (2017). The County is mostly rural in nature with the largest community being the county seat, Webster City with a population of 8,000 (2011). There are a handful of smaller communities located throughout the county. Webster City and Hamilton County Conservation have the goal of making Hamilton County a trail hub that eventually connects to the adjacent regional trails. To make this happen, it was decided a county wide master plan should be the first step.

Planning Process

Early on, Hamilton County Conservation and officials from the City of Webster City agreed that a joint effort would be most beneficial to the residents of both the city and county. They also agreed that the public's input was vital to the process. Realizing not all residents would be able to make it to a public input meeting, a public input website was created as another tool to collect the public's thoughts and ideas. This website was advertised by the County and City of Webster City for approximately 3 months. In addition the website, a Public Meeting was held at the Briggs Woods Conference Center on October 17, 2019. This public input process asked residents to identify areas throughout the county they'd like to see trail connections to.

After the public input was collected, the data was analyzed and then discussed with the County and City stakeholders to build a consensus on the the future vision. Then concept level route alignments and cost opinions were prepared so that priorities and recommendations could be made. The following pages communicate the findings.

Working together to expand and create recreational trail opportunities that will enhance our communities and the Boone Forks Region.

EXISTING CONDITIONS

There are numerous soft trails or hiking trails within the woodlands at both Briggs Woods Park and Little Wall Lake Park. In addition, the City of Jewell has the Jubilee Trail, which is approximately one mile of aggregate surface trail on the southeast side of town.

There is one designated water trail within the county. The Boone River Water Trail stretches from Webster City to the Boone Forks for canoeing and kayaking.

Paved trails within the county are located in the towns of Jewell and Webster City:

- JewEllsworth Trail – 3.5 miles of 10-foot wide concrete multi-use trail constructed mainly on abandoned railbed between the towns of Jewell and Ellsworth. Trail provides the opportunity for users to experience glacial marshes, natural prairies, and rural farmland.
- East Second Street Trail – 1 mile of 8-foot wide concrete sidewalk east of the Boone River along East Second Street in Webster City.
- Boone River Trail – a 5.7 mile, 10-foot wide, concrete multi-use trail beginning on the north end in Webster City at Nokomis Park-Middleton Sports Complex and follows the Boone River through scenic forests, rural farmland and natural prairies. The south end of the trail finishes up in Briggs Woods Park. The trail follows a scenic wooded area, has river views, and passes by farmlands and prairies. This trail is also groomed for cross country skiing in the winter.
- Brewer Creek Trail – 2 miles of paved trail loop following the waterway and natural prairie of Brewer Creek Park and continues along Des Moines, Ohio, and Beach Street in Webster City.



Boone River Trail at Briggs Woods



JewEllsworth Trail



TRAIL DESIGN GUIDES

Design Standards

All trails should be designed using the most current design standards. The Iowa Department of Transportation (Iowa DOT) and the Iowa Statewide Urban Design And Specifications (SUDAS) joined efforts in 2011 to produce standard design guides for trails and sidewalks within the state. These guidelines took into consideration both the Federal regulations and guidelines for Americans with Disabilities Act Accessibility and the AASHTO Guide for the Development of Bicycle Facilities. Depending on the source of funding, most trails will be required to meet these standards as a minimum.

Tips for affordable and feasible trail development:

- When possible, use public property for trail alignments to limit land acquisition costs.
- Consider drainage when developing the route. Water can be very damaging to a trail and water crossings can be expensive depending on the size of the structure needed to convey water underneath the trail. Consider utilizing existing structures or crossings and modify for pedestrian/trail use.
- Provide ample distance between the waterways and trail corridors.
- Avoid disturbance of environmentally sensitive, historical, and/or culturally significant areas. These can be costly to mitigate for disturbance.
- Keep safety in mind. At grade road crossing are recommended to cross perpendicular to the roadway. Consider sight distances in all directions and consider the various levels of sight from various trail users. For example, the line of sight of a person on a recumbent bike is much lower than a person walking or a touring bike.
- Consider surfacing materials based on the probable users, maintenance requirements, constructability for the particular site, and the current bid climate.

Surfacing Materials

The three main types of trail surfaces are granular material, asphalt, and concrete. There are pros and cons for using each of the materials for surfacing and each have their place depending on the projected use and construction challenges for the project. In December of 2017, Shive-Hattery surveyed Central Iowa communities and county conservation organizations about the annual maintenance they performed on the trails within their network. Below is a summary of the various types of surfacing materials and their typical use and maintenance patterns:



Granular Material is most commonly found on rural trails and is the most natural looking and economical option. Most runners say this is the easiest material on their joints. However, this surface type also has the highest maintenance level of any trail type. It can be difficult to meet ADA standards; it erodes easily; and if the material is too loose, it can cause issues with tires on bike and strollers. It also eliminates the ability for the trail to be used by many wheeled modes of transportation, like rollerblades, skateboards, longboards, etc.

Asphalt typically has the best initial trail surface because of its smoothness without any joints. It opens the trail up to additional user types when compared with granular material, and runners claim it is a good compromise on their joints between granular and concrete. However, asphalt is prone to cracking, especially along the edges due to adjacent vegetation so requires regular maintenance over the life of the pavement. The surface also oxidizes over the life and this results in a loss of surface smoothness. Lastly, depending on the construction of the subgrade and the thickness of the asphalt, rutting can also occur. From talking with communities that regularly maintain asphalt trails, the typical maintenance will involve yearly filling and sealing of cracks, shoulder repair, fog seals to restore flexibility and surface texture, shoulder repairs and periodic asphalt



overlays. Depending on the capabilities of the individual community maintenance departments, the maintenance work is either completed in-house or by hiring a contractor.



Concrete is the third material often used for construction. It is durable, maintains its shape and form, and has the least maintenance needs. Area communities report that typical maintenance for a concrete trail involves shoulder repair and grinding down, patching or replacing an occasional panel when it heaves or cracks. Current construction costs make concrete very comparable to asphalt in initial construction costs. The minimal maintenance and longer lifespan make this much more attractive to communities with little to no maintenance funding in their budgets. Plus, when minor concrete repairs are needed, many communities have the capability of doing those with their own

staff. The majority of communities surveyed in the December 2017 cited concrete as their preferred surfacing choice.

When you have the need (and width available) to accommodate multiple, conflicting user types (for example equestrians and/or snow mobiles versus pedestrian and/or cyclists), consider multiple surfacing materials for a secondary trail system. If granular material is one of those surfaces, it is preferred to have a grass buffer strip between the two surfaces to help keep the pavement clear of debris. An example of this is shown in the photo to the right. This is a section of the Mary Carter Greenway Trail in Colorado.

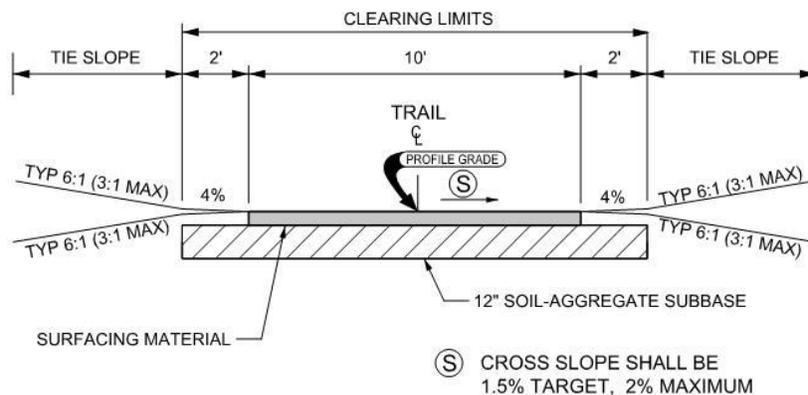


Photo credit: AmericanTrails.org

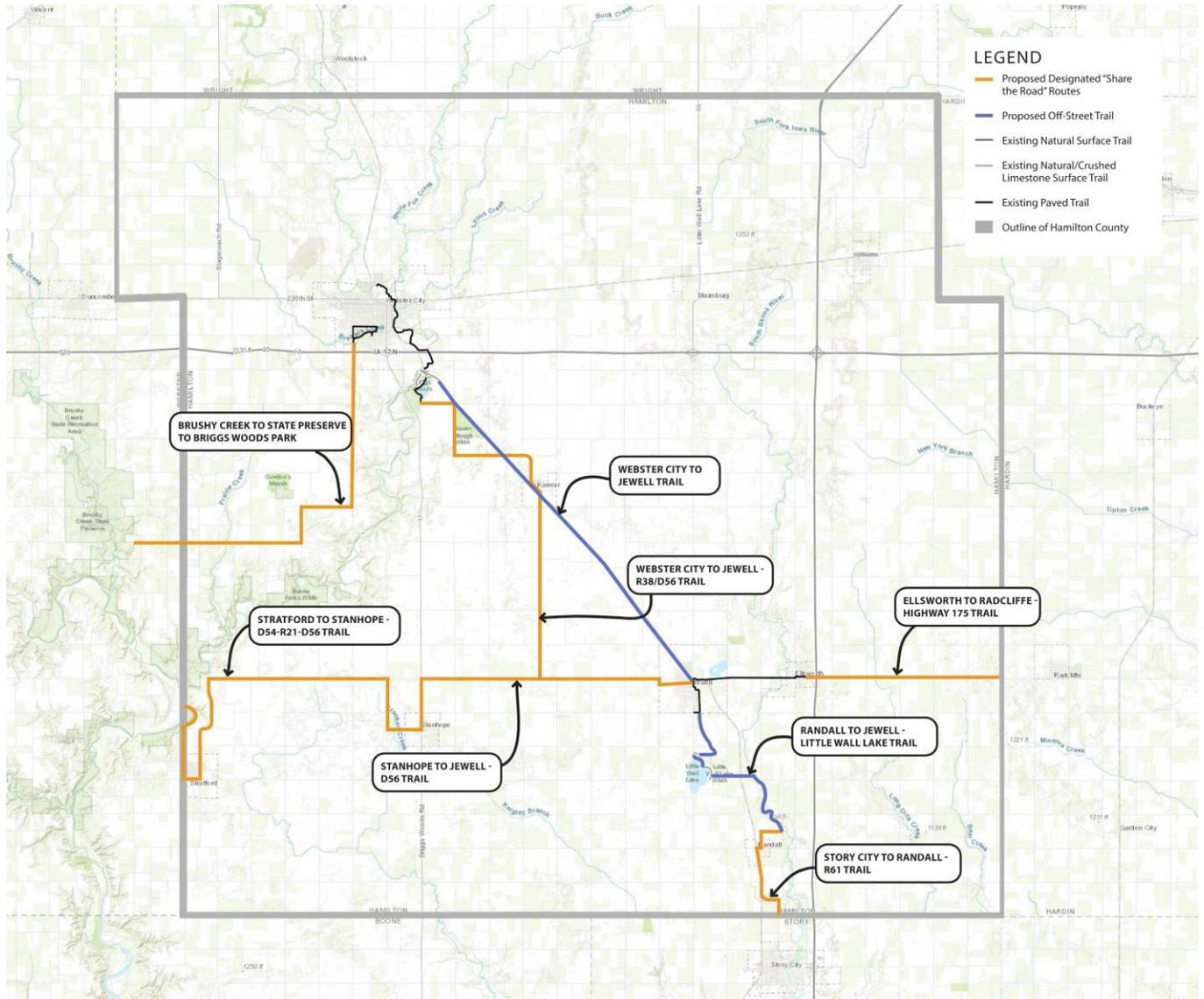
Trail Typical Section

No matter which surfacing option is chosen, the minimum recommended typical cross section for a trail is a 10-foot wide surface with a target cross slope of 1.5% (2.0% as the absolute maximum allowed slope) and a minimum of 2-foot wide shoulders at 6:1 or flatter on each side (4% is typical). If there is existing aggregate present, it is recommended to incorporate into the 12 inches of subgrade preparation under the paving creating a soil-aggregate subbase (for more information, refer to Iowa DOT Standard Specification 2110). The soil-aggregate subbase provides a stronger base for the pavement. When no existing aggregate is present, an aggregate subbase can be added under the pavement. This is especially helpful in areas where the alignment is mostly shaded or has poor soils because the aggregate layer will make things easier during construction.

Vertical clearance over the trail and shoulder area should be ten feet at a minimum. Foreslopes outside of the shoulders should be at a 3:1 slope or flatter.



PLANNED TRAILS



HAMILTON COUNTY FUTURE TRAILS MAP

The map on the previous page shows the existing and proposed future trails for Hamilton County. During the public input process, people were asked to identify what connections within the County they would prefer. Many connections identified linking towns to nearby communities, recreation areas, and existing trails. For example, a connection between Webster City and Jewel was identified by many respondents as a desired connection.

Those connections were then reviewed with the committee for possible route options and compared with previously identified future trails. Adjacent county trail master plans were also reviewed to identify potential connections to adjacent county trail systems.

Due to the rural nature of the majority of the county, many of the future trails follow existing lower volume roads. The existing road right of way in most cases is too narrow to construct an adjacent off-street trail without acquiring additional right of way adjacent to the highway right of way or drastically decreasing the capacity of the ditch to carry water (which could result in flooding of adjacent properties). There are some locations where the existing shoulder could be widened and paved to create bike lanes. With the desired routes identified, the County could look for opportunities to add the widened paved shoulders as maintenance activities or roadway improvements occur throughout the county. In the mean time, it is recommended that the County Conservation work with the County Engineer to designate with signing "Share the Road" routes where it makes sense.

Routes designated as "Share the Road" would have signs placed similar to those shown below. Spacing would depend on the location and nature of the route. In urban situations, the sign spacing should be no more than ¼ mile as per the MUTCD, Ch. 9B. In rural areas, it's more important to have them near road crossings so that traffic entering the roadway knows to look for bicyclists. For cost estimating purposes, the average current price per sign installed is approximately \$300-\$400.



W11-1 / W16-1
Share the Road with Bicyclists assembly

Sign images from the Manual of Traffic Signs <<http://www.traffic-sign.us/>>
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Webster City to Jewell Connections: There are two routes identified for this connection. The first route is a 16 mile “Share the Road” option that winds it’s way mostly along existing roadways from Briggs Woods Lake to Jewell, passing through Kamrar. This trail is labeled as the **R38/D56 Trail** on the Overall Map. The roads between Briggs Woods Lake and Kamrar are mostly existing gravel roads with fairly narrow right of way. Once through Kamrar, the trail would follow County Road R38 (Neely Ave) to County Road D56 (330th St/Lyon St), then east along D56 to a connection in Jewell.



Along 250th Street



Along Kantor Avenue



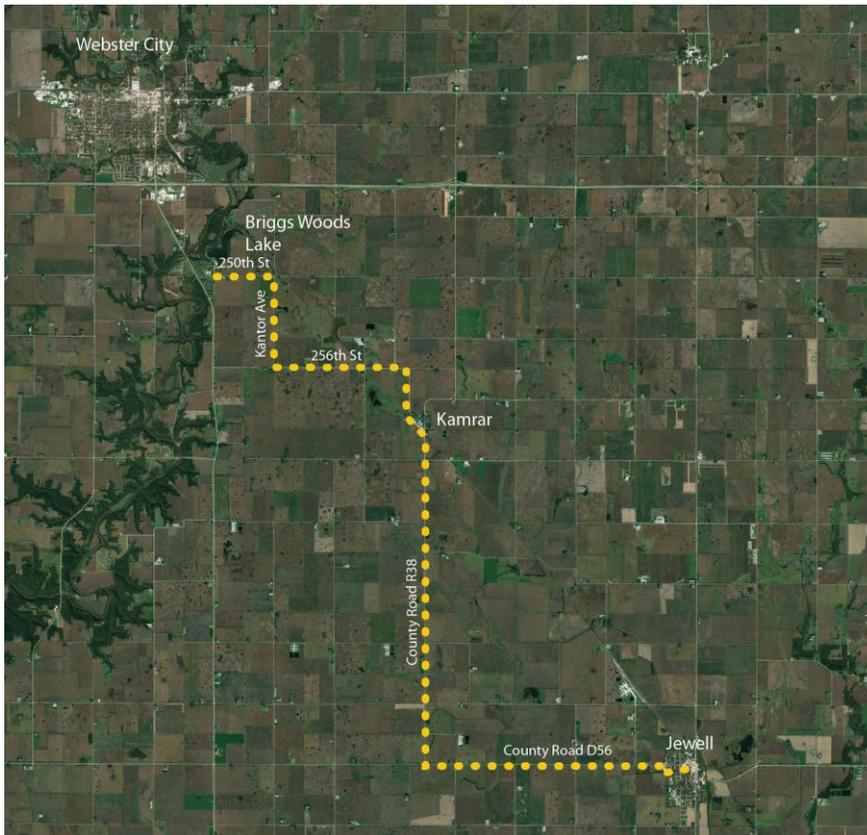
Along 265th Street



Along County Road R38



Along County Road D56



The second route identified for this connection is a 12 mile off-street trail that would run adjacent to the active rail line that connects Webster City to Kamrar and Jewell (**Webster City to Jewell Trail** on the Overall Map). The railroad will not allow a trail to be placed within their right of way since the line is active. But if the rail line is abandoned or if a swath of land adjacent to the rail line could be secured, this would make an ideal location for an off-street trail connection. This is an important connection for the county because it would connect the two existing trail networks within the county.

From reviewing the aerial view adjacent to the railroad, there are approximately 10 stream/river crossings along this corridor varying in size from 30' – 200' in length. A section of boardwalk would also most likely be required to cross the Bauer Slough WMA. Concept level costs for this connection can be found on page 12.



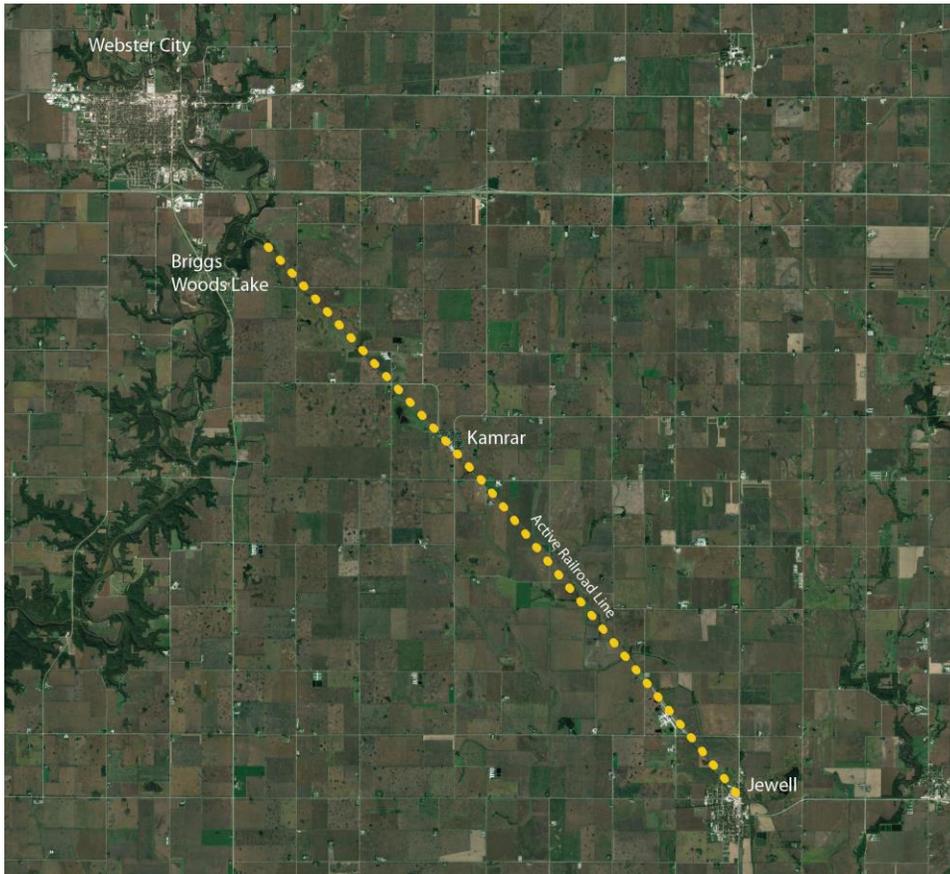
Railbed S of Webster City (looking SE)



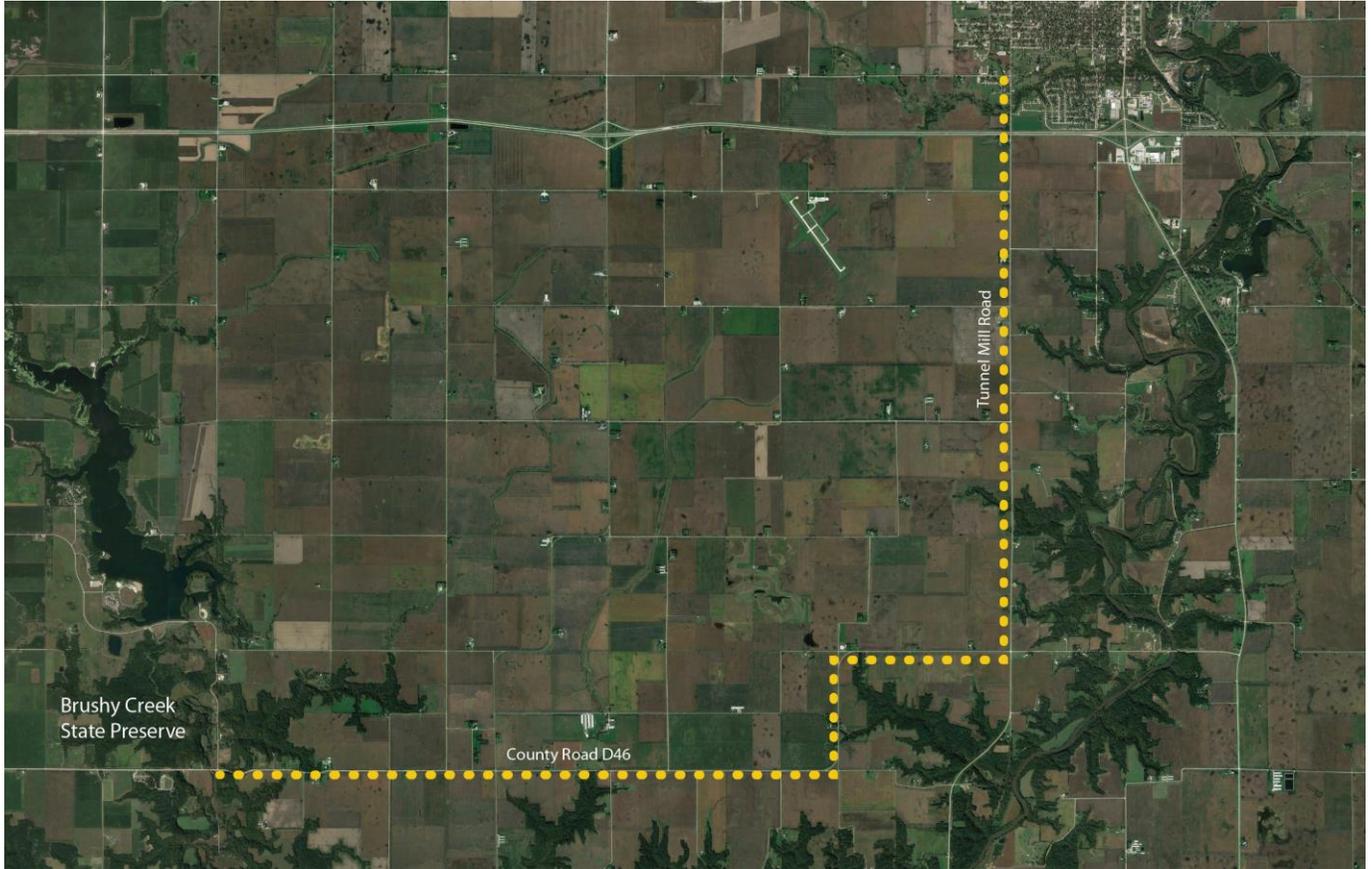
Rail crossing at Kamrar looking SE



Rail crossing at Co Rd D41 looking NW



Brushy Creek State Preserve to Briggs Woods Park – D46 Trail: This trail will mostly be designated “Share the Road) with some potential sections of off-street trail. The trail will start at Brushy Creek State Park and follow County Road D46 (290th St/Fowler Ave/280th St) east to Tunnel Mill Road. From there it will go North into Webster City and connect to the existing Brewer Creek Trail that connects to the Boone River Recreational Trail to Briggs Woods Park. The approximate length of this trail is 1 mile within Webster County and then 11 miles within Hamilton County.



Stratford to Stanhope – D54/R21/D56 Trail: This almost 14 mile trail section starts north of Stratford on County Rd D54 (Belleville Rd) at the county line. This will be a signed “Share the Road” route that follows D54 south into Stratford to Highway 175, east on 175 to County Road R21 (Stagecoach Rd), then north on R21 to County Road D56 (330th St), then east along D56 to Inkpaduta Ave, then south to Main St, then along Main St to a connection in Stanhope. The majority of this trail would be sharing the road on paved highway and/or city streets, with the exception of the last 2 miles (Inkpaduta Ave & Main St outside of Stanhope) which are currently gravel roads.



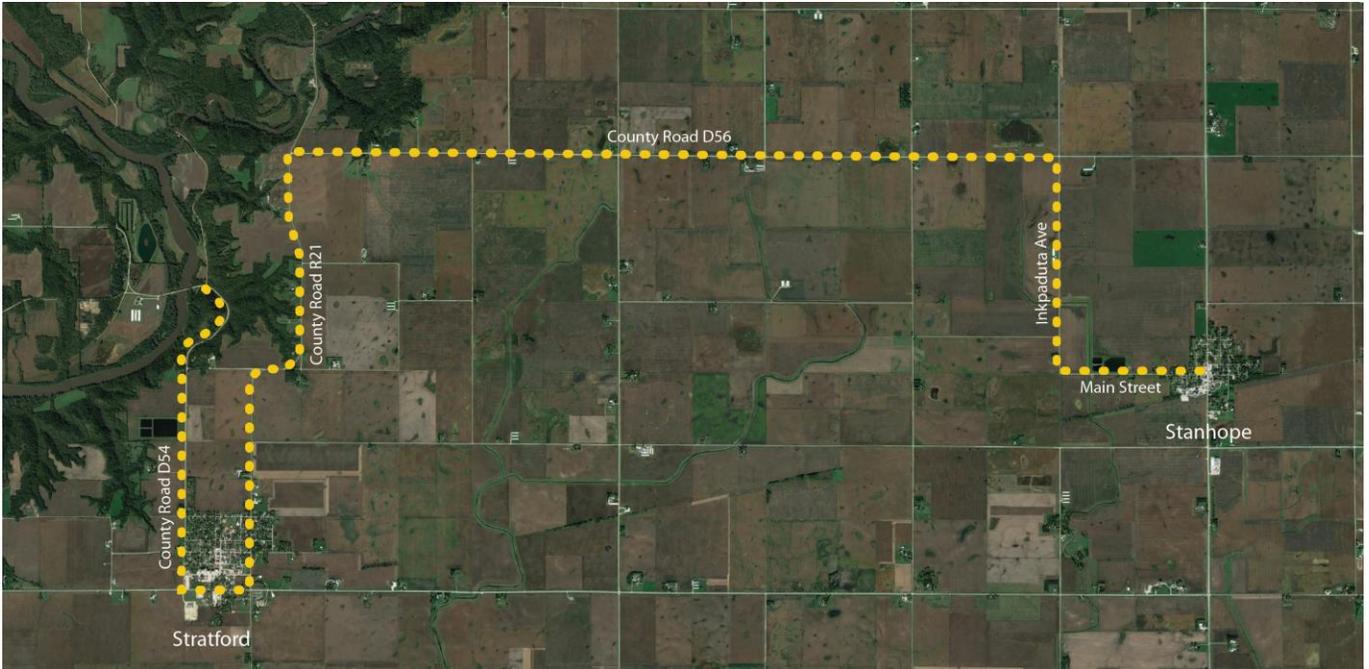
Along County Road D54



Along County Road D56



Along Inkpaduta Avenue



Stanhope to Jewell – D56 Trail: This connection is approximately 9 miles of designated “Share the Road” between Stanhope and Jewell. The designated routes would include Highway 17 north out of Stanhope to County Road D56 (330th St), then east along D56 to a connection in Jewell.



Along Highway 17



Along County Road D56



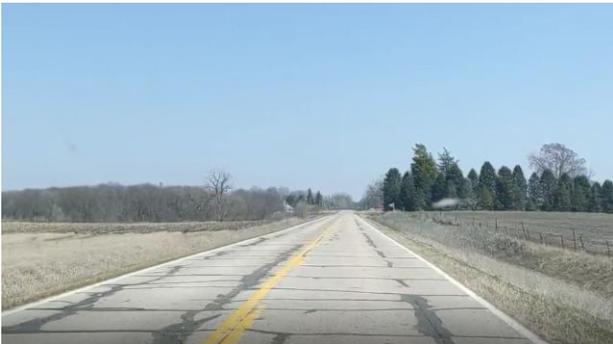
Along County Road D56 entering Jewell



Story City to Randall – R61 Trail: This trail would be designated a “Share the Road” route. The alignment would start at the north side of Story City and be signed north along County Road R61 (555th Ave/Christytown Rd/Tollman Ave) to its terminus at Randall. This route is approximately 2.5 miles within Hamilton County. It is then an additional mile in Story County to reach the north side of Story City.



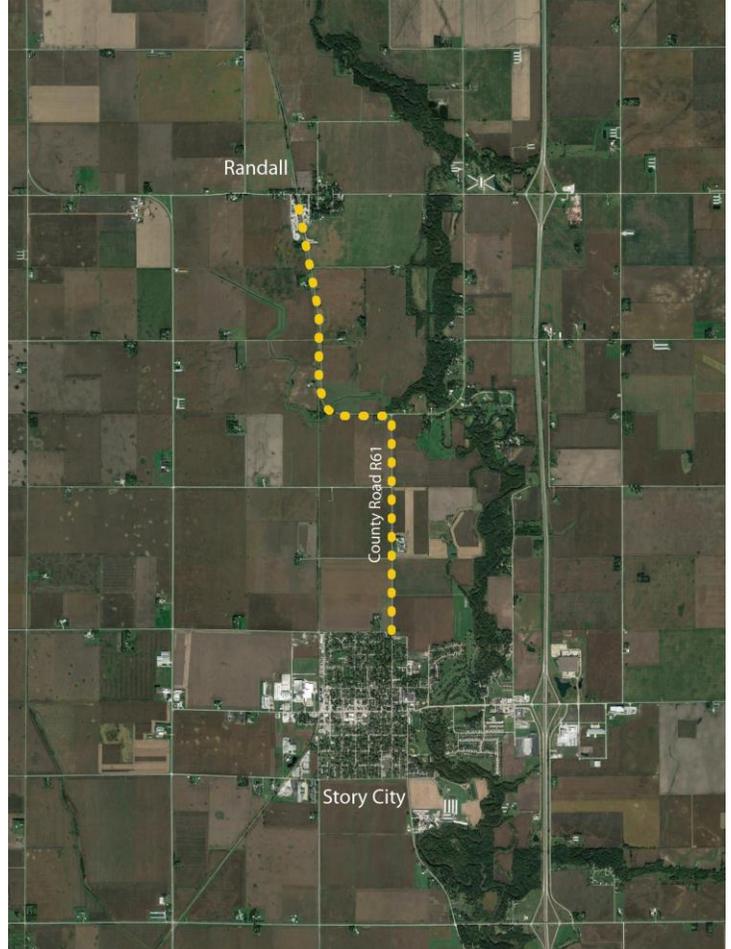
Along County Road R61 S of Randall



Along County Road R61



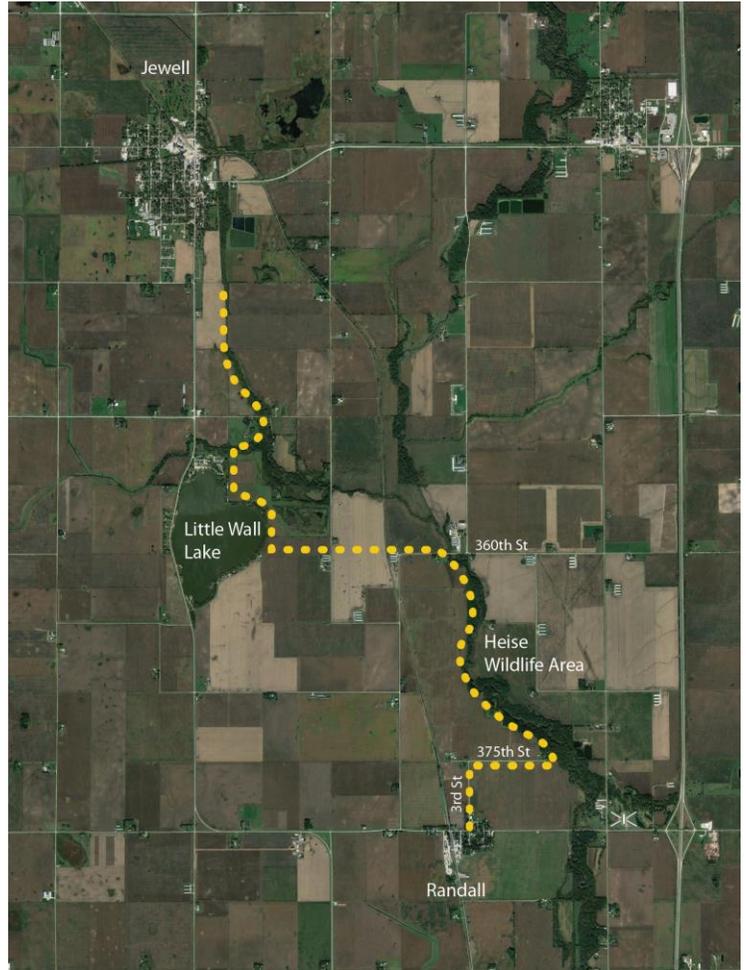
Along County Road R61 nearing Story City



Randall to Jewell – Little Wall Lake Trail: The alignment would start at Randall, sharing the road for approximately 1.5 miles north and east of town. At that point, it would become off-street trail heading northwesterly, generally following the Heise Wildlife Area/South Skunk River to just north of 360th St. The alignment would then go west over to Little Wall Lake, around the northeast side of the lake, then northerly again along the South Skunk River corridor to its terminus at the Jubilee Trail in Jewell. This route is approximately 7.5 miles in length and has a few small stream/drainageway crossings and one railroad crossing. Concept level costs for this connection can be found on page 12.



Along Tollman Ave just N of Randall



Ellsworth to Radcliffe – Highway 175 Trail: This trail is approximately 7 miles of designated “Share the Road” alignment between Ellsworth and Radcliffe along Highway 175. 6 miles would be within Hamilton County and 1 mile within Hardin County. Right of way and topography through this corridor looks sufficient to potentially add a sidepath or adjacent off-street trail, if desired.



Along Highway 175 at Interstate 35



Along Highway 175



Along Highway 175



PRELIMINARY COST OPINIONS

Projected concept level construction costs shown below are in 2020 dollars. Costs exclude right of way, engineering, legal and administrative fees.

Webster City to Jewell Off-Street Trail Conceptual Construction Cost				
Task	Units	Quantity	Unit Cost	Extended Cost
Earthwork	CY	70400	\$ 15.00	\$ 1,056,000.00
Modified Subbase	CY	11800	\$ 40.00	\$ 472,000.00
Subgrade Preparation	STA	634	\$ 500.00	\$ 317,000.00
Trail Paving	SY	70400	\$ 50.00	\$ 3,520,000.00
Structures for Stream Crossings	LS	1	\$ 1,800,000.00	\$ 1,800,000.00
Boardwalk	LS	1	\$ 1,200,000.00	\$ 1,200,000.00
Seeding, Fertilizing & Mulch	ACRE	44.0	\$ 5,000.00	\$ 220,000.00
Drainage	LS	1	\$ 300,000.00	\$ 300,000.00
Erosion Control	LS	1	\$ 300,000.00	\$ 300,000.00
Clearing & Grubbing	LS	1	\$ 300,000.00	\$ 300,000.00
Subtotal				\$ 9,485,000.00
30% Contingency				\$ 2,845,500.00
Total Construction Cost				\$ 12,330,500.00

Randall to Jewel – Little Wall Lake Trail Conceptual Construction Cost				
Task	Units	Quantity	Unit Cost	Extended Cost
Earthwork	CY	35200	\$ 15.00	\$ 528,000.00
Modified Subbase	CY	5900	\$ 40.00	\$ 236,000.00
Subgrade Preparation	STA	317	\$ 500.00	\$ 158,500.00
Trail Paving	SY	35200	\$ 50.00	\$ 1,760,000.00
Structures for Stream Crossings	LS	1	\$ 400,000.00	\$ 400,000.00
Seeding, Fertilizing & Mulch	ACRE	22.0	\$ 5,000.00	\$ 110,000.00
Drainage	LS	1	\$ 100,000.00	\$ 100,000.00
Erosion Control	LS	1	\$ 150,000.00	\$ 150,000.00
Clearing & Grubbing	LS	1	\$ 150,000.00	\$ 150,000.00
Subtotal				\$ 3,592,500.00
30% Contingency				\$ 1,077,800.00
Total Construction Cost				\$ 4,670,300.00

FUNDING OPPORTUNITIES

How does a master plan help to leverage outside funding sources?

1. Most grant opportunities score higher if the trail section is part of a City/County approved plan.
2. If future corridors are defined, sometimes portions of the projects can be integrated into adjacent municipal/county projects (for example, providing trail accommodations on a new bridge that is being constructed within a planned corridor.) helping to make the overall cost of the project more manageable.
3. It can be used to generate excitement for private fundraising campaigns by helping to show the bigger picture.

Common funding opportunities include:

- Local business/corporate sponsors
- Land & Water Conservation Funds – The annual deadline for the LWCF grant applications is 4:30 pm, March 15th, or the closest working day thereof. <https://www.iowadnr.gov/about-dnr/grants-other-funding/land-water-conservation-fund>
- Resource Enhancement + Protection Program (REAP) City Parks & Open Spaces – Submittal deadline typically yearly on August 15: <http://www.iowadnr.gov/Conservation/REAP/REAP-Funding-at-Work/City-Parks-Open-Spaces>
- Resource Enhancement + Protection Program (REAP) County Conservation Grant – Submittal deadline typically yearly on August 15: <http://www.iowadnr.gov/Conservation/REAP/REAP-Funding-at-Work/County-Conservation>
- Natural Resources and Outdoor Recreation Trust Fund – (Fund is still awaiting authorization so this is a placeholder for future reference): <https://www.iowadnr.gov/About-DNR/Grants-Other-Funding/Natural-Resources-Rec-Trust>
- State Recreational Trails (SRT) Program – Submittal deadline typically yearly on July 1 (funding is available once award is made – typically October same year): https://iowadot.gov/systems_planning/Grant-Programs/-Federal-and-State-Recreational-Trails
- Federal Recreational Trails (FRT) Program – Submittal deadline typically yearly on October 1 (funding is available at start of the next Federal Fiscal Year): https://iowadot.gov/systems_planning/Grant-Programs/-Federal-and-State-Recreational-Trails
- Iowa's Transportation Alternatives Program (TAP) – Submittal deadline typically yearly on October 1 (funding is available a few years out, depending on how the individual RPA/MPO programs them): https://iowadot.gov/systems_planning/grant-programs/transportation-alternatives
- Wellmark Foundation MATCH grants – Submittal deadline typically yearly on Feb 23 (up to \$100,000): <https://www.wellmark.com/foundation/documents/Wellmark-Foundation-MATCH-RFP.pdf>
- Iowa Great Places – Submittal deadline typically yearly on May 1: <https://iowaculture.gov/about-us/about/grants/iowa-great-places>
- Doppelt Family – Submittal deadline typically yearly around January 21 (This is usually for Rail Trails) (Announce awards in late May & project must be started by December of same year) (up to \$50,000): <https://www.railstotrails.org/our-work/doppelt-family-trail-development-fund/>
- Rivers, Trails, and Conservation Assistance Program – Submittal deadline is yearly on March 1st: <https://www.nps.gov/orgs/rtca/>
- Enhance Iowa: Community Attraction and Tourism (CAT) (Iowa) - CAT applications are accepted quarterly on January 15, April 15, July 15, and October 15. <http://www.iowaeconomicdevelopment.com/Community/EnhanceIowa>

WAYFINDING SIGNAGE

One of the best things about trails is where they can take you! Besides the exercise benefits, the connections to existing parks, trails, recreation areas, schools, shops, restaurants, and business areas are what make them popular. Therefore, one of the most important features a trail can have is wayfinding signage both along the trail and adjacent to direct people to the trail. After all, how can a person use a trail or the adjacent amenities if they can't find it/them?

This is often an overlooked step that can help when marketing and/or applying for funding assistance; to have a strong trail brand/name. This helps with wayfinding throughout the city/county, makes it easier to promote the trail, and makes discussions of connections much easier on funding applications.

Recognizing the potential future connection to the Central Iowa Trails network, you may want to consider utilizing something similar to Central Iowa Trail signage standards and naming conventions. Benefits of doing this include:

- Uniformity – Trail users frequenting different trails will easily be able to navigate with uniformity in signage and wayfinding.
- Cost-effectiveness – Benefit by utilizing established signage design. Iowa Prison Industries is producing cost-conscious signage that is represented across the large network of over 600 miles of trails.
- Trail and Community identity – Identifying the trails and the communities through which they pass is important, as well as showing they are part of a bigger network and not an isolated entity. People want to connect to things/places so being part of a bigger network enlightens the users to the myriad of destinations available to them.

Below are examples of Central Iowa Trails signage that are available.



REFERENCES + RESOURCES

AASHTO Guide for the Development of Bicycle Facilities (2012 – Fourth Edition)

Iowa Statewide Urban Design and Specifications (2020 Edition)

Manual on Uniform Traffic Control Devices (MUTCD) (2009 Edition)

Central Iowa Trails Communication Master Plan (2006)

Webster City Parks and Recreation Master Plan (May 2019)