

Final Report and Feasibility Study Humboldt, Iowa



Program Partners:

Iowa Department of Transportation
Trees Forever
Iowa State University



Participants

Humboldt Steering Committee

Bret Davis	Alissa O'Connor
Travis Fuller	Jess Poutre
Travis Goedken	Dan Scholl
Clifton Kalafatich	Kent Thompson
Todd Lee	Clayton Vorland
TC Loving	Kirk Whittlesey
Jenna Mulford	

Trees Forever

770 7th Avenue
Marion, IA 52302
319-373-0650
www.treesforever.org

Patty Reisinger, Field Coordinator
319-373-0650 ext. 280
preisinger@treesforever.org

Iowa State University

Landscape Architecture Extension
2321 North Loop Drive, Suite 121
Ames, IA 50010
515-294-3721
www.communityvisioning.org

Julia Badenhope, Program Director and Professor of Landscape Architecture
Sandra Oberbroeckling, Project Manager and Extension Program Specialist

Bolton & Menk

309 E 5th Street
Suite 202
Des Moines, IA 50309
515-259-9190
www.bolton-menk.com

Dylan Jones, PLA, LEED GA
515-259-9190 ext. 3110
dylanjo@bolton-menk.com

Hannah Schmitz
Landscape Architecture Intern
Iowa State University

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About Bolton & Menk

In 1949, two hard working Midwesterners – John Bolton and Martin Menk – saw people in their surrounding communities with dreams of a bright future, a desire to grow, and a common challenge of aging infrastructure. Their goal: to help communities make progress by listening to what people want, finding the best solutions for their needs, and treating them right. The legacy of John and Martin lives on. We still want to help, we work hard every day, and we always remember what got us here – we’re people helping people. Today, Bolton & Menk, Inc. has more than 400 employees including a professional staff of over 150 engineers, planners, landscape architects, and surveyors.

Bolton & Menk specializes in providing public infrastructure solutions. We want to take care of our clients by providing the best services and solutions for them. From advocating for our communities, to designing their dreams, to finding funding; we take pride in our work throughout the Upper Midwest. Because we live here too. We believe in the power of face-to-face meetings, friendly conversations, and a collaborative decision making process to keep your projects on schedule, within budget, and focused on real, workable solutions.

Beyond our technical experience and skills, our service is also based on management and product delivery strategies we have developed over time:

Listen to the client’s needs and wants

Learn the characteristics and personality of each client

Communicate proactively with staff, stakeholders, and the public

Develop **effective solutions** through consensus building

Achieve the **client’s vision**

Foster **long-term relationships**

We promise every client two things: we’ll work hard for you and we’ll do a good job. We take a personal interest in the work being done around us. And at the end of the day, we’re **Real People** offering **Real Solutions**.



Riverfront Renaissance Improvements | Hastings, MN

Program Overview

The city of Humboldt is one of 10 communities selected to participate in the 2017 Iowa's Living Roadways Community Visioning Program. The program, which selects communities through a competitive application process, provides professional planning and design assistance along transportation corridors to small Iowa communities (populations of fewer than 10,000).

Goals for the Visioning Program include:

- Developing a conceptual plan and implementation strategies with local communities
- Enhancing the natural, cultural, and visual resources of communities
- Assisting local communities in using external funds as leverage for transportation corridor enhancement

Each visioning community works through a planning process consisting of four phases of concept development:

1. Program initiation
2. Needs assessment and goal setting
3. Development of a concept plan
4. Implementation and sustained action

Each visioning community is represented by a steering committee of local residents and stakeholders who take part in a series of meetings that are facilitated by field coordinators from Trees Forever. Iowa State University organizes design teams of professional landscape architects, design interns, and ISU faculty and staff. The program is sponsored by the Iowa Department of Transportation.

Community Goals

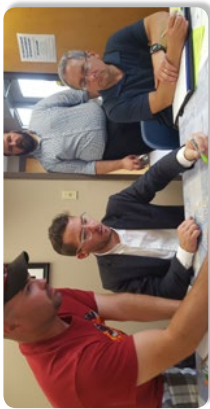
The Humboldt visioning committee identified a number of goals and priority areas during the visioning process, which are included below:

- Improve pedestrian connections by establishing cohesive routes between Humboldt's existing trails
- Improve the downtown streetscape along Sumner Avenue and develop an identity/theme for downtown
- Include stormwater management practices such as permeable pavers and rain gardens along Sumner Avenue
- Strengthen wayfinding signage along roads and trails by building upon the community's current signage theme
- Alter the dam to include both environmental and recreational benefits

Capturing the Humboldt Vision

Based on the needs and desires of the local residents, as well as a detailed inventory of community resources, the design team developed a conceptual transportation enhancement plan. This plan, as well as the inventory information, is illustrated in the following set of presentation boards.

01. Program Overview
02. Bioregional Context
03. Transportation Assets and Barriers Assessments
04. Transportation Behavior and Needs Survey
05. Transportation Inventory
06. Goal Setting
07. Concept Overview
08. Pedestrian Connections
09. Sumner Ave Streetscape
10. Wayfinding Signage
11. Dam Mitigation



Transportation Meeting

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Goal Setting Meeting

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- Improve pedestrian connections by establishing cohesive routes between Humboldt's existing trails
- Improve the downtown streetscape along Summer Avenue and develop an identity/theme for downtown
- Include stormwater management practices such as permeable pavers and rain gardens along Summer Avenue
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Community Design Workshop

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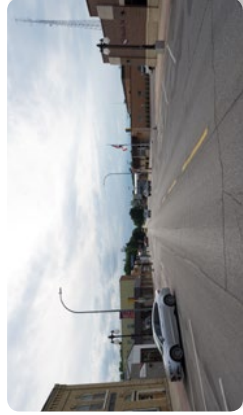
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11. Dam Mitigation



Three Rivers Trail Entry



Dam Along the Des Moines River



Summer Avenue Meading East

Humboldt
Program Overview

Design Team
LA: Dylan Jones, PLA, LEED GA
Intern: Hannah Schmitz

Iowa State University | Trees Forever | Iowa Department of Transportation



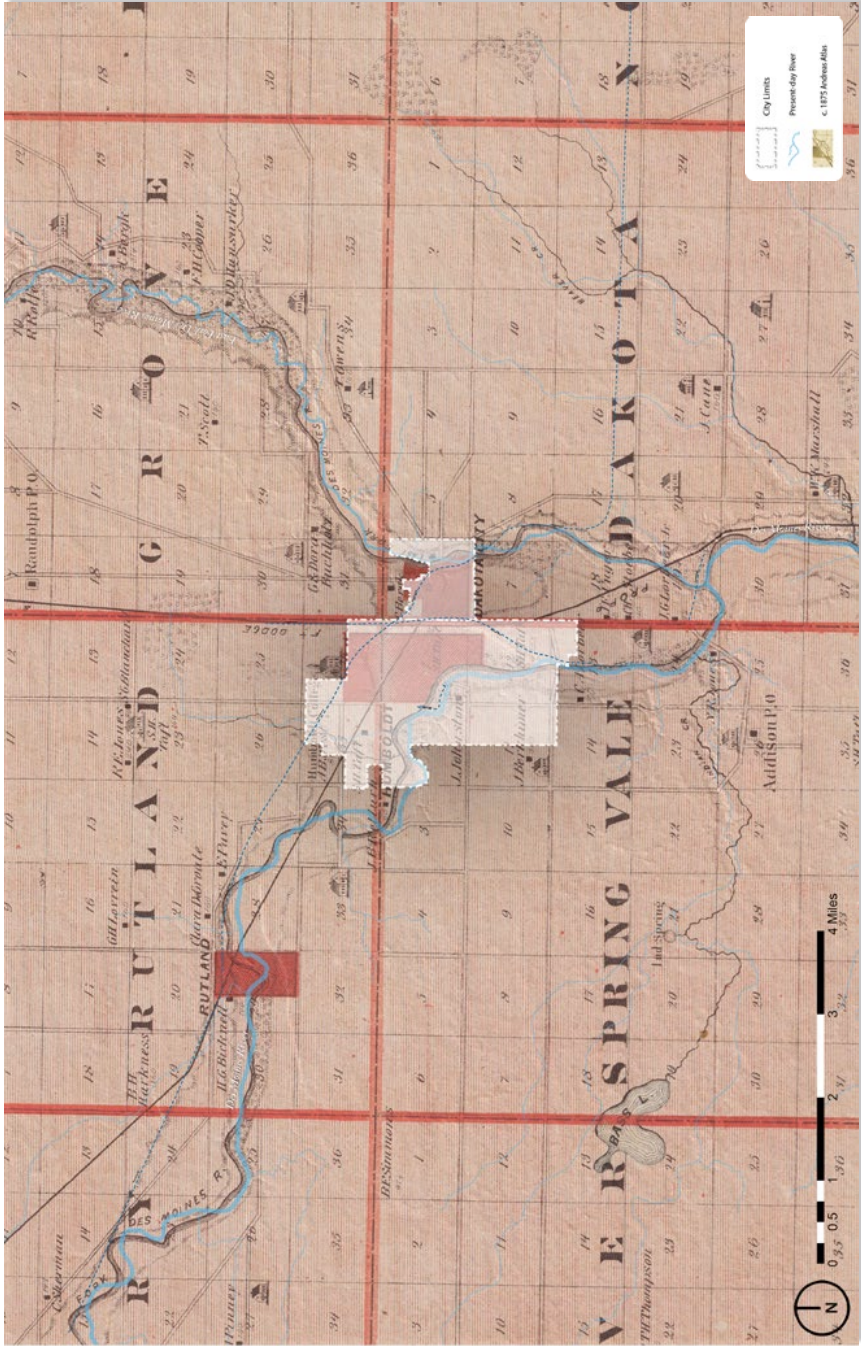
Bioregional Assessment

Settlement Patterns

This board uses maps from A.T. Andreas' Illustrated Historical Atlas of the State of Iowa, 1875 overlaid with present-day town boundaries and water bodies. Published in 1875, Andreas' Atlas is an extraordinary resource showing the post-Civil War landscape of Iowa including settlement features (towns and villages, churches, schools, roads, railroads, etc.) and landscape features (water bodies, vegetated patches such as "timber" and "swamp," and major topographic features.) High-quality scans of the Atlas have been arranged to correspond closely with present-day maps revealing major landscape changes as well as features that have persisted, such as railroad rights-of-way and in some cases remnant vegetation patches.

Humboldt in Context

Compare the 1875 boundaries of your town to the current boundaries. How much has your town grown? Compare the course of the rivers in 1875 to their current course, are there major changes in alignment or location? Are there vegetation patches shown in the 1875 map still in existence?



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Humboldt
 Settlement Patterns

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 Julia Baden Hope, Matthew Gordy, Colby Fangman, Emma Lorenz
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Map Source: Iowa Department of Natural Resources, "Natural Resources Geographic Information Systems Library," <http://www.gis.iowa.edu/inglib/>.

Historical Vegetation

The vegetation information shown here is derived from township maps made by the General Land Office (GLO) surveys beginning in 1836 through 1859. The vegetation information was digitized in 1996 as a resource for natural resource management and is useful "...for the study of long term ecological processes and as baseline data for the study of present day communities.¹

The plant communities mapped by the GLO surveyors varied in classification and the terminology from the original maps has been preserved.

The vegetation types are defined²:

1. Field: Cultivated lands of early pioneers.
2. Grove: Isolated dense young stand of trees.
3. Marsh: Perennial wetlands, basins of irregular shape.
4. Prairie: Dominated by prairie grasses with individual or few scattered trees.
5. Thicket: Impenetrable blocks of young trees, often thorny.
6. Timber: Contiguous blocks of trees extending to the horizon in at least one direction.
7. Slough: Like marsh but more linear in shape.

1 J.E. Ebinger, "Presettlement Vegetation of Coles County, Illinois," Transactions of the Illinois Academy of Science (1987): 15-24, quoted in Michael Charles Miller, "Analysis of historic vegetation patterns in Iowa using Government Land Office surveys and a Geographic Information System" (master's thesis, Iowa State University, 1995), 8.

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Historical Vegetation

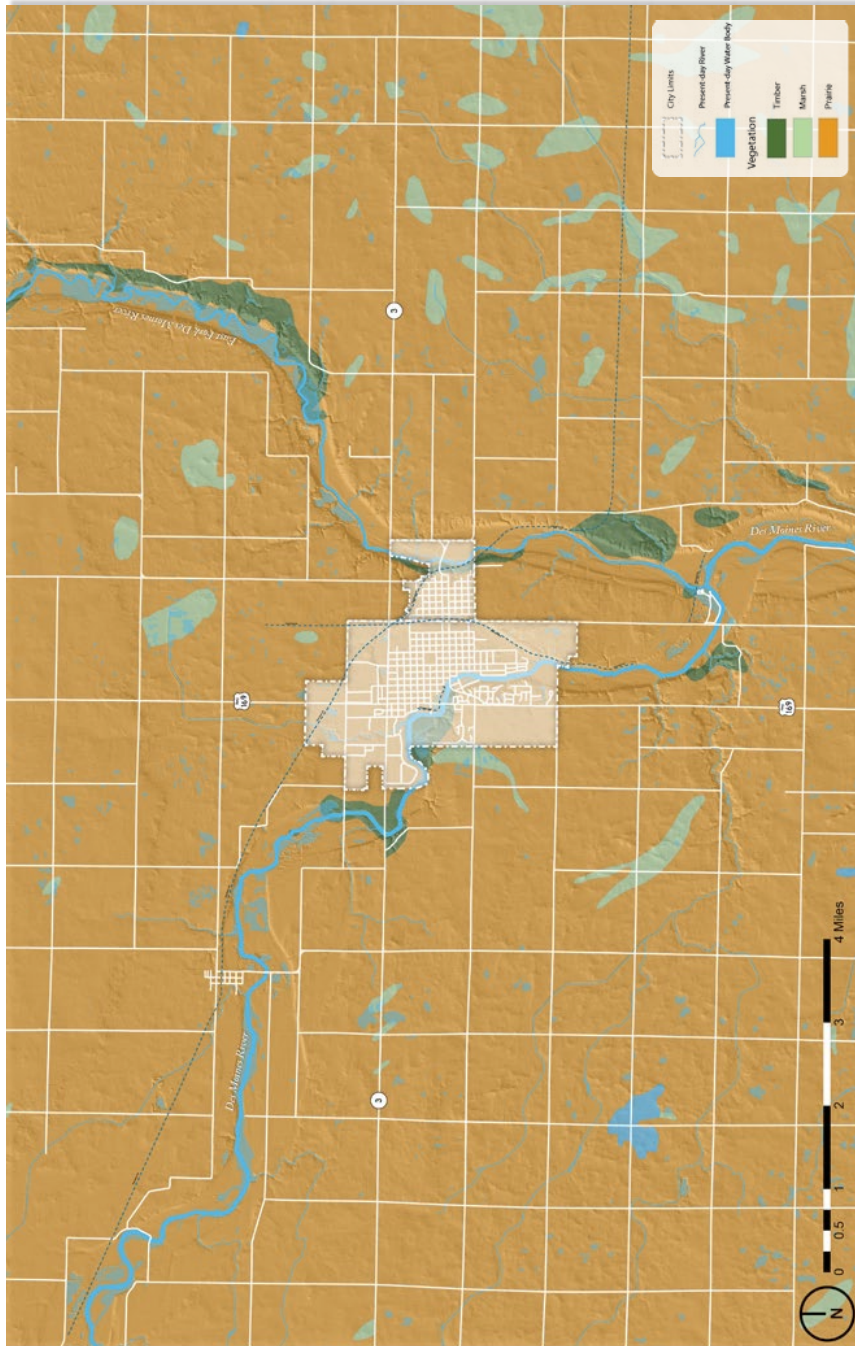
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3. **Marsh:** Perennial wetlands, basins of irregular shape.
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1. J.E. Ramage, "Pre-settlement Vegetation of Cass County, Illinois", Transactions of the Illinois Academy of Science (1967) 52-54, quoted in Richard Charles Matisoff, "Analysis of Historic Survey Maps of Iowa State: A Geographical Information System" (master's thesis, Iowa State University, 1998), 8.
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Map Source: Iowa Department of Natural Resources, "Natural Resources Geographic Information Systems Library," <http://www.gis.iowa.edu/mglib/>.

Humboldt

Historical Vegetation

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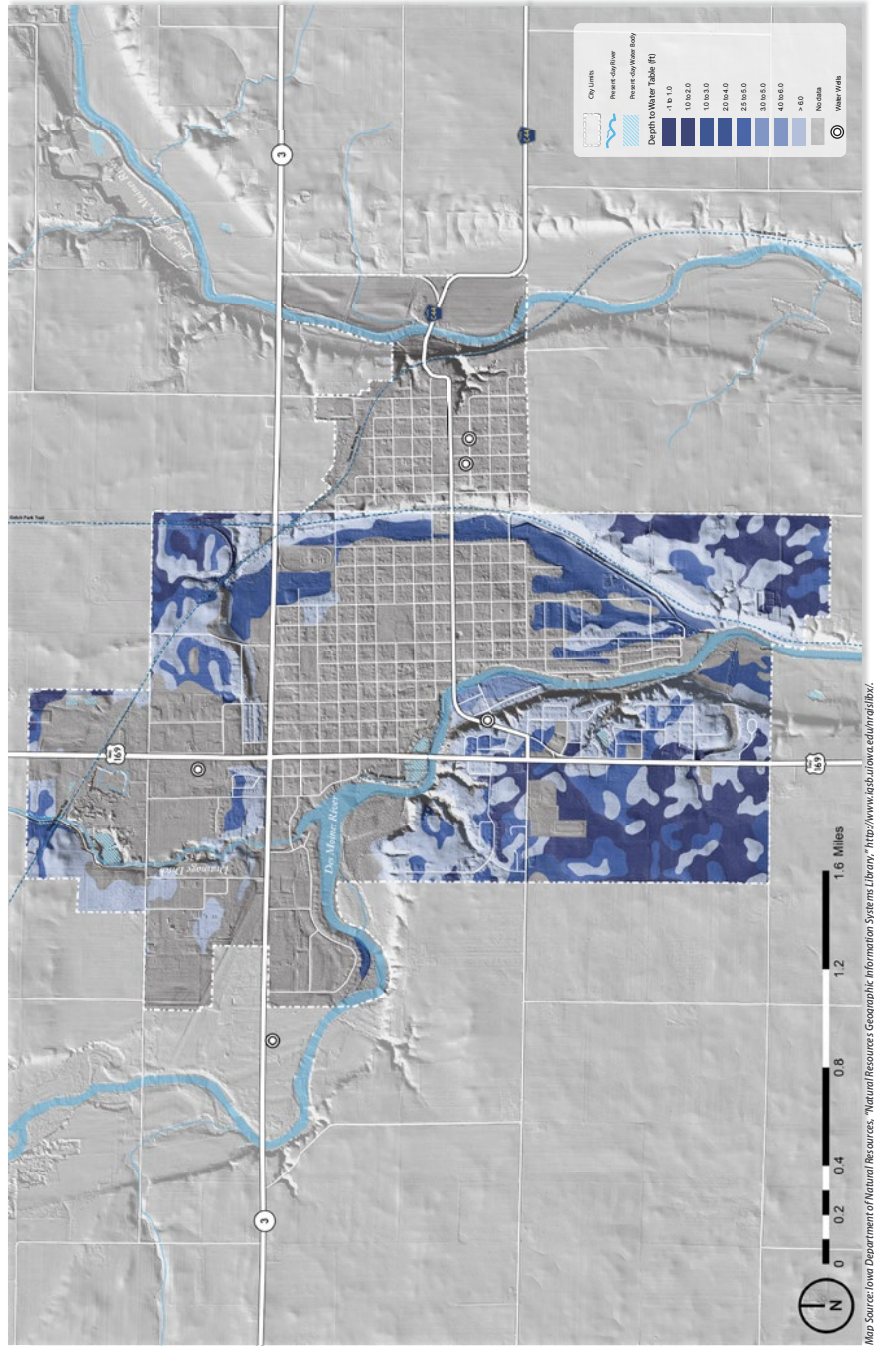
Depth to Water Table

The water table is defined as the level below which the ground is saturated with water. The water table generally mimics surface topography, but there are differences depending on localized conditions such as the permeability and porosity of soils and depth to bedrock. Depth to water table is represented as a range because it varies due to seasonal changes and precipitation volumes. For example, following spring snow-melt an area with a depth to water table ranging from one foot to three feet is likely to be at or near one foot depth. Impermeable layers such as concrete also affect the depth to water table by preventing precipitation from infiltrating into the soil which could result in a lowered water table.

SPRING 2017 2c

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Humboldt

Depth to Water Table



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Elevation and Flood Hazard

The map to the left displays topographic differences in elevation using a combination of contour lines and the color gradient depicted in the legend. The high points and low points have also been located.

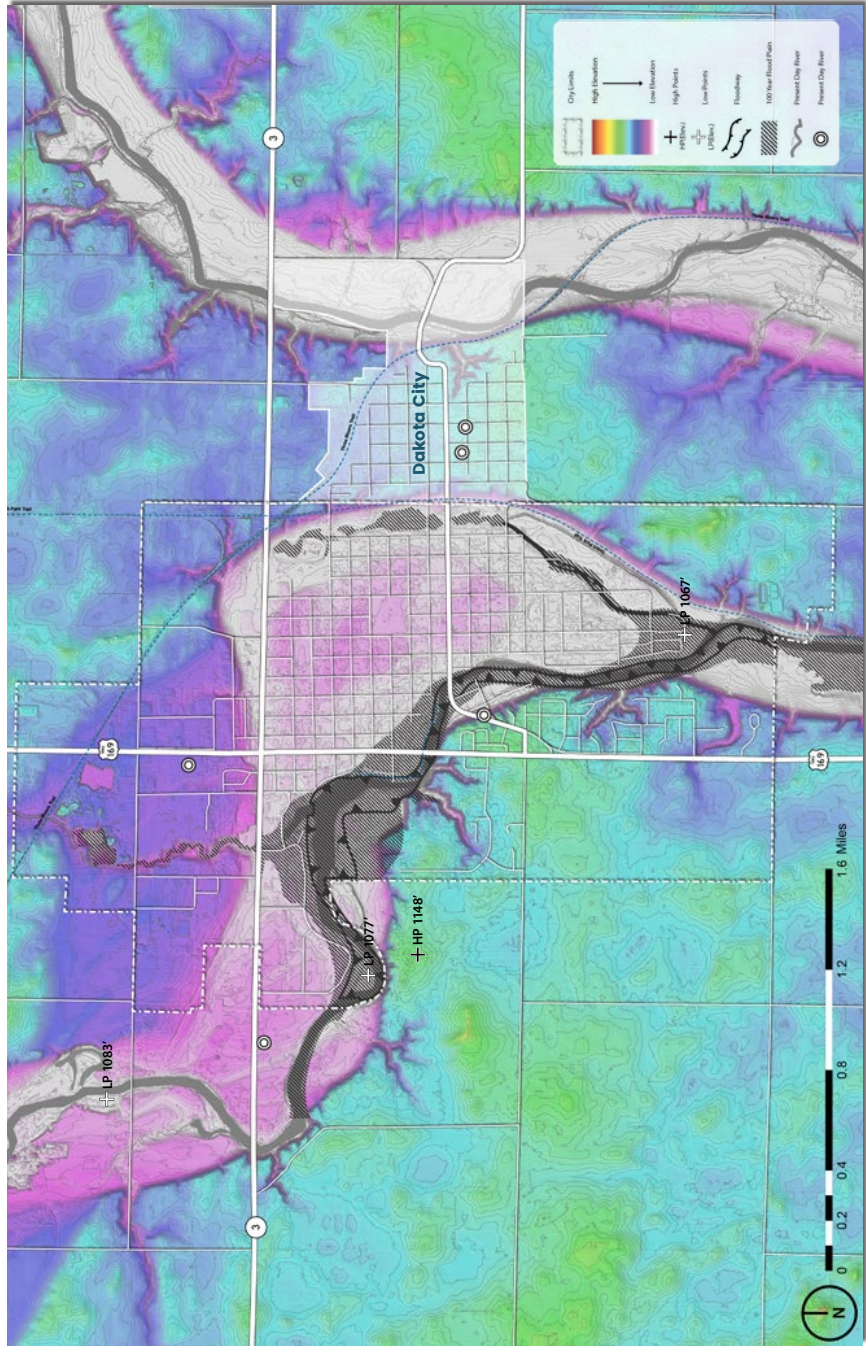
Note the relationship of your community to the surrounding elevation; is it located in a valley or on high ground, or is it split between the two? Flood risk is correlated to low-lying land, this map also shows your community's flood risk as defined by the Federal Emergency Management Agency (FEMA) Flood Map Service Center. This map shows the two most important flood zones, the Base Flood and the Regulatory Floodway (consult legend.) Base Flood is the zone having a one percent chance of being equaled or exceeded in any given year, also referred to as the "100-year floodplain." The Regulatory Floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% flood discharge can be accommodated without increasing the base flood elevation.

SPRING 2017 **2d**

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Map Source: Iowa Department of Natural Resources. "Natural Resources Geographic Information System Library." <http://www.iagbu.iowa.edu/nrgi/lib/>.

Humboldt

Elevation and Flood Hazard

Bioregional Context

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Regional Watershed

A watershed is a defined area or ridge of land with a boundary that separates waters flowing to different rivers, creeks, or basins. Watershed boundaries show the extent of a drainage area flowing to a single outlet point, and determines whether precipitation is directed into one watershed or an adjacent watershed. It is important to note that there are multiple levels of watersheds, for instance the Iowa River watershed has a dozen smaller watersheds, and the Iowa River watershed is a sub-basin of the Mississippi River watershed.

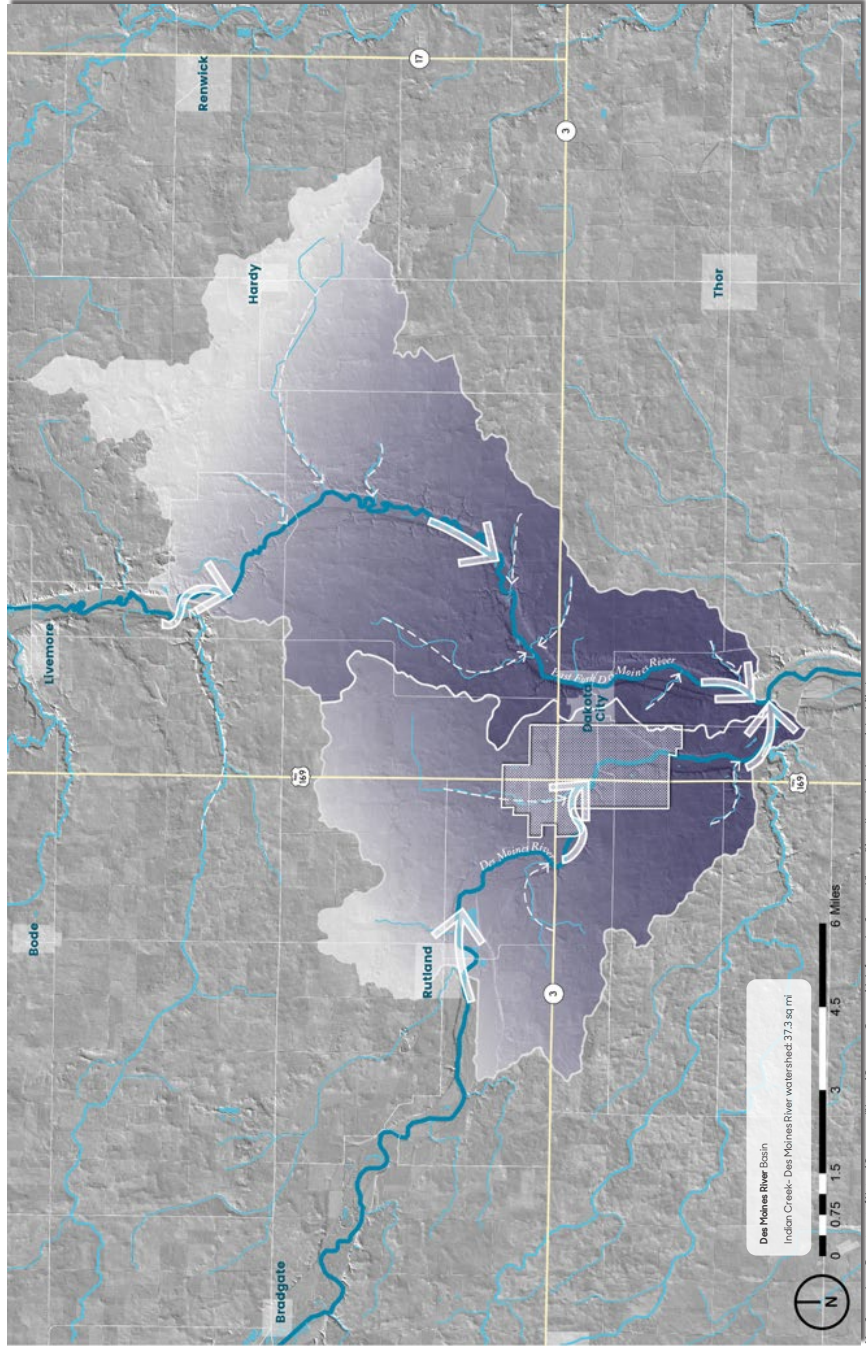
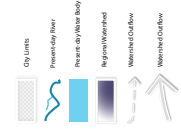
Where a community is located in relation to its surrounding watershed(s) determines its capacity to manage regional watershed issues such as flooding. For example, a community located near the end of a watershed (close to the outlet point) will have little capacity to reduce the amount of water draining toward it from upland areas.

SPRING 2017 2e

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Humboldt

Regional Watershed

Bioregional Context

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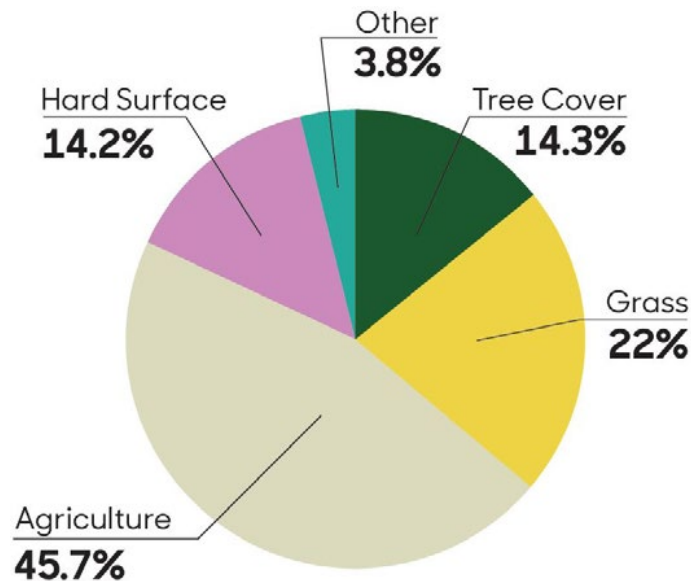


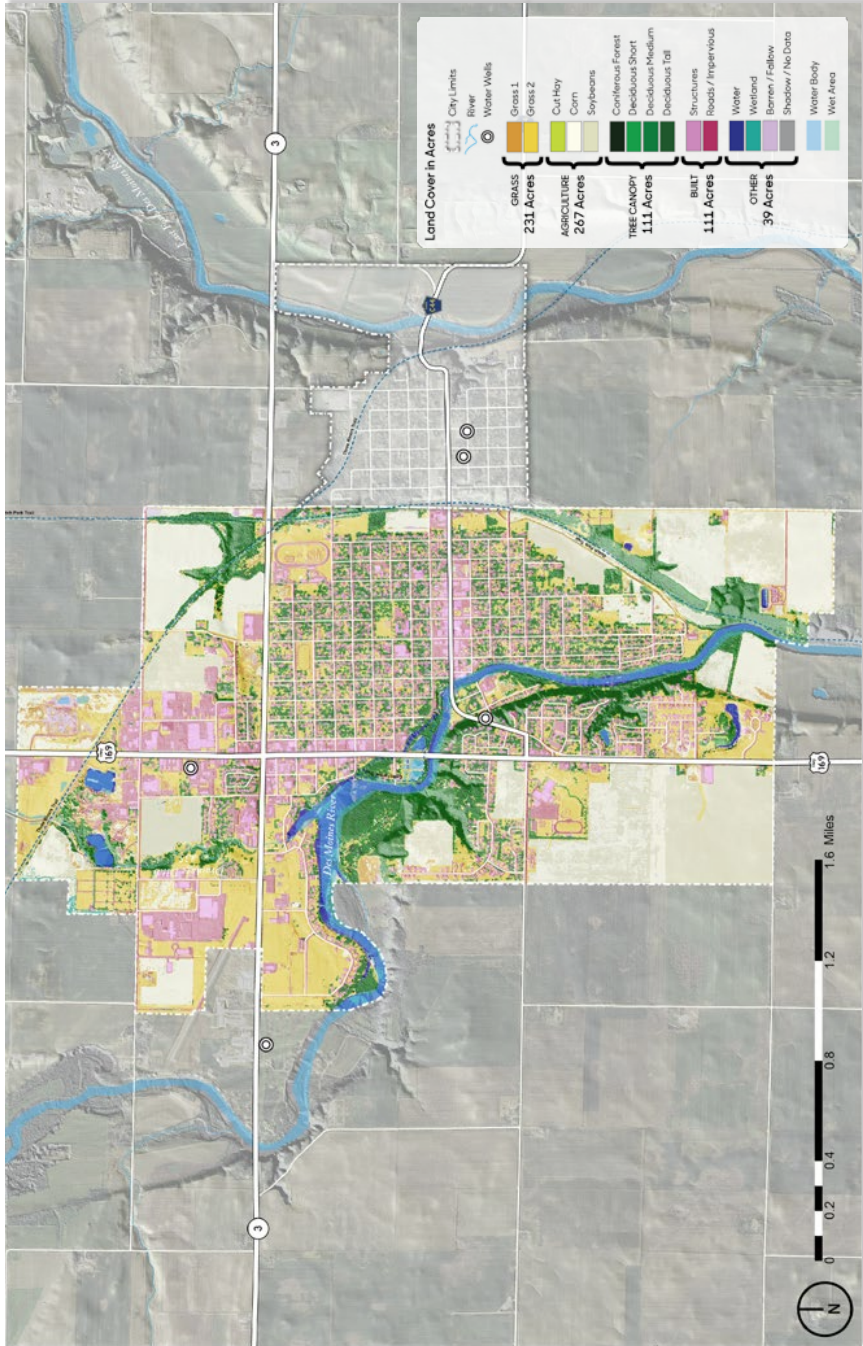
Present Day Land Cover

The land cover map depicts both natural and man-made land cover types with aerial imagery. The Iowa DNR created 15 unique classes for this dataset to differentiate land covers. Refer to the legend for a breakdown of land cover types.

What do you observe about the dominant land cover types in your community? Where is the tree canopy most concentrated? Compare the amount of impervious surfaces (e.g., parking lots, roads, buildings) to the other surfaces (e.g., water, grass, and agriculture.) What parts of town are covered with the most impervious surfaces and what patterns do you observe about these locations?

Percent Land Cover Type

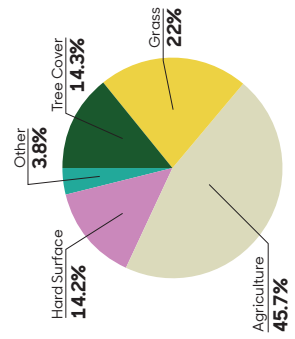




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Humboldt Present Day Land Cover

Bioregional Context
 Julia Badenhop, Matthew Gordy, Colby Fangman, Emma Lorenz
 Iowa State University | Trees Forever | Iowa Department of Transportation



Map Source: Iowa Department of Natural Resources, "Natural Resources Geographic Information Systems Library," <http://www.gis.dnr.iowa.edu/mglb/box/>.

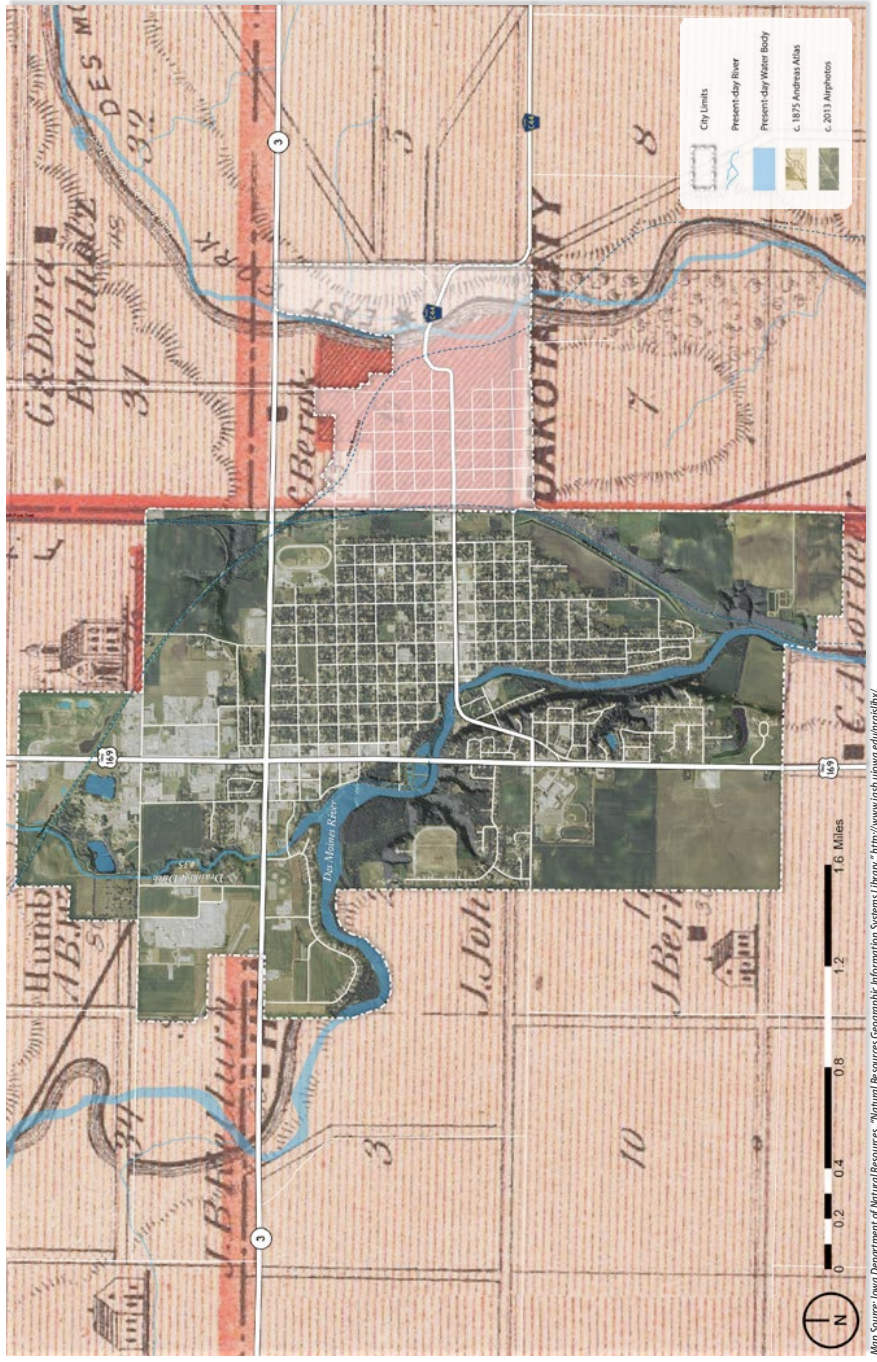
Present Day Vegetation

Overlaying a present-day aerial image on the historic, 1875 Andreas Atlas shows how management of the land over several decades has changed the locations of trees and other native vegetation in the landscape.

SPRING 2017 2G

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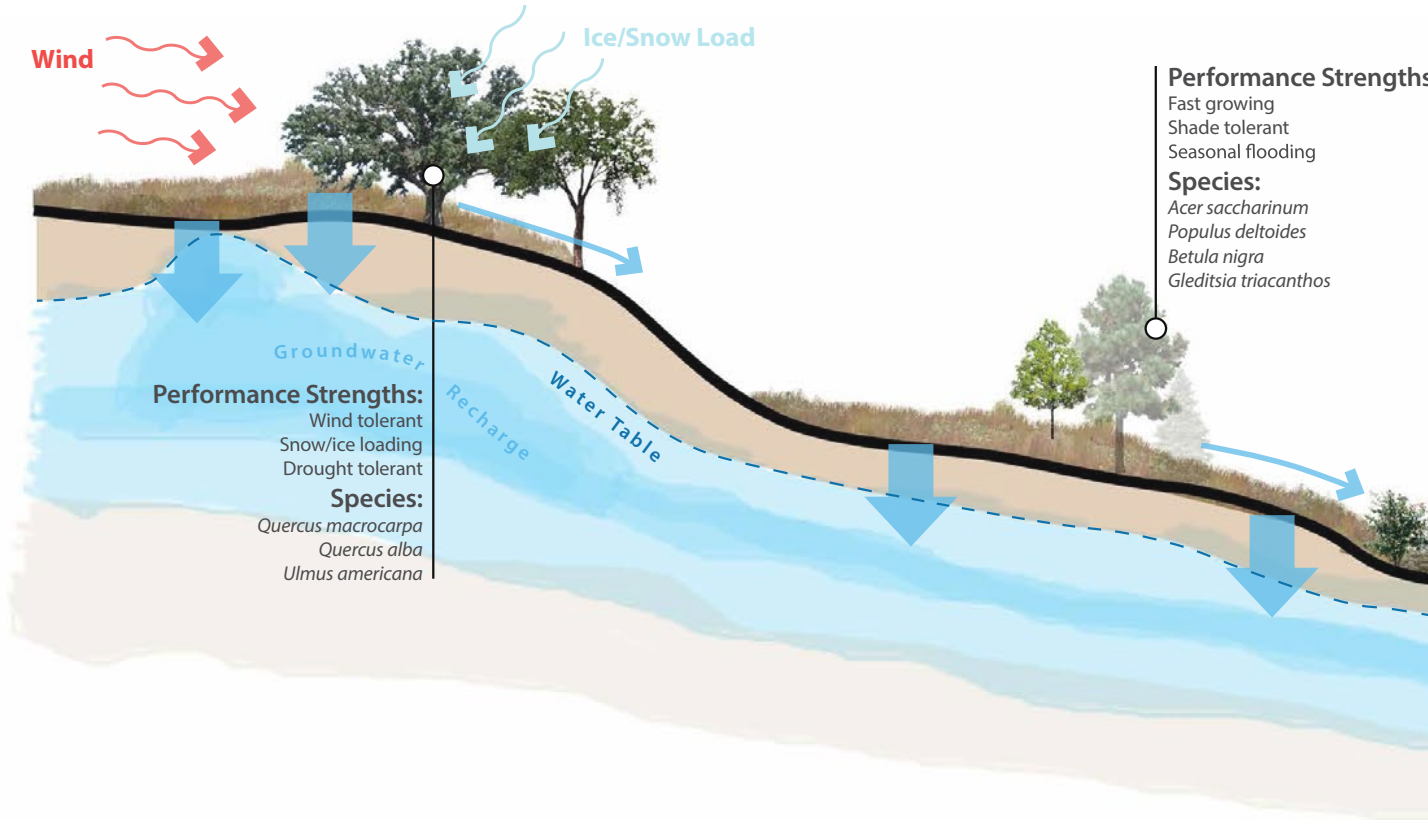
Humboldt
Present Day Vegetation

Bioregional Context

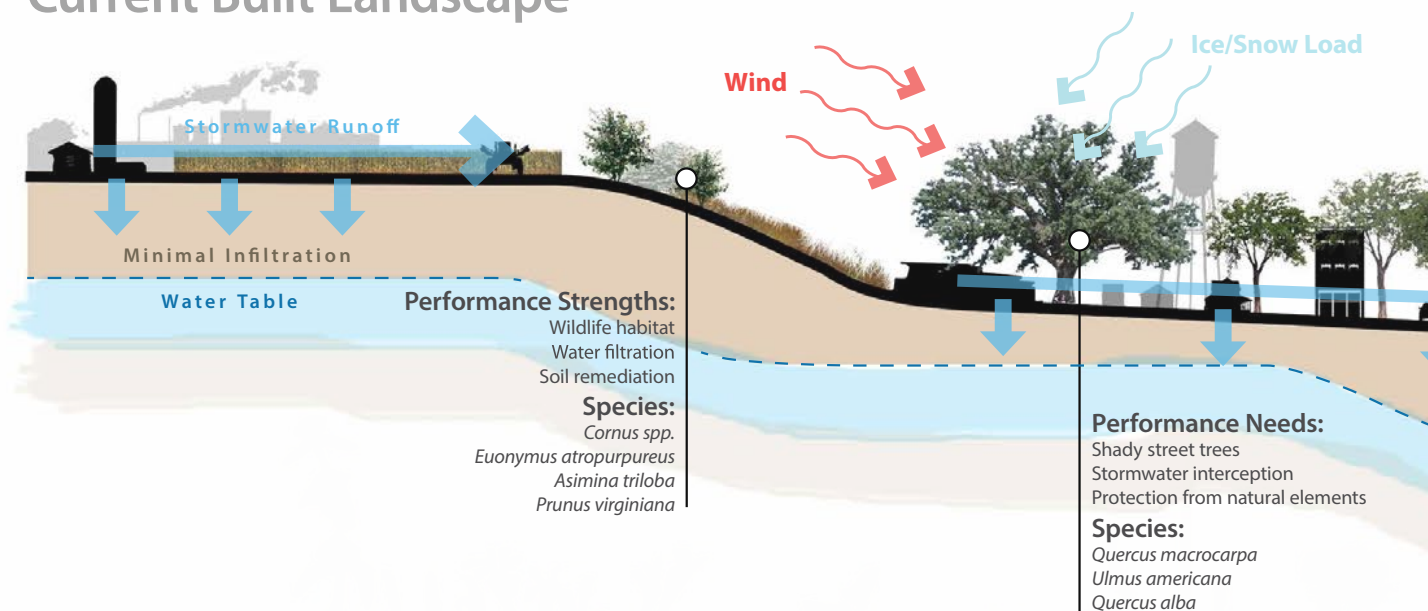
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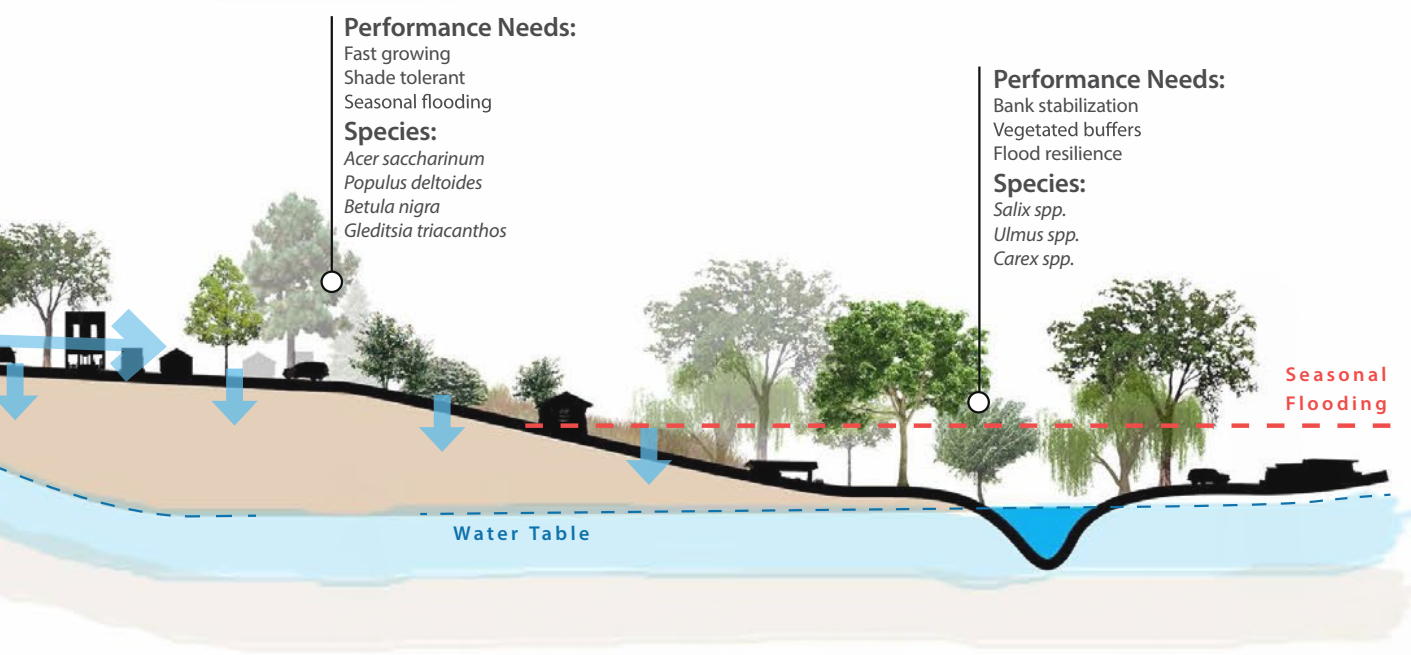
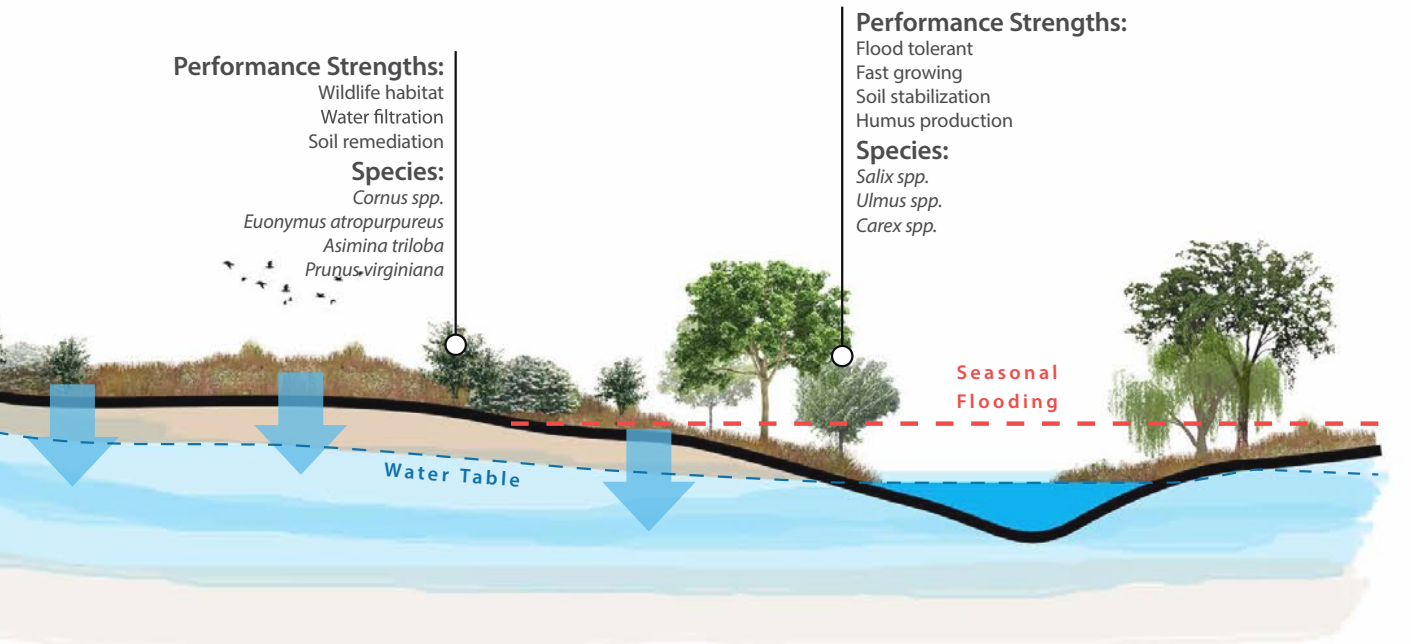
Using Native Plants



Current Built Landscape



Pre-Settlement Landscape



Transportation Assets and Barriers

Overview

Transportation is integral to small-town life and a vibrant economy. In the context of the Community Visioning Program, we recognize walking, biking, and driving as quintessential modes of travel to various destinations important to residents and visitors. Access to these destinations is crucial for many everyday activities—getting to work and school, participating in community events, and providing for basic needs such as food, health care, and healthy activity.

In this participatory assessment, we want to find out which factors and conditions affect transportation use in Humboldt, where these factors and conditions are most prevalent, and how they influence route and transportation choices locally. Because residents have the best knowledge of how Humboldt's transportation system works, we use focused, small-group conversations, mapping, and photos of the best and worst places taken by residents to understand local transportation.

Different Users = Different Needs

To capture insights about transportation from a variety of perspectives, we invited Humboldt residents with different transportation needs to participate in focus groups. A total of 24 residents attended Humboldt's workshop. Participants were separated into five user groups and the Humboldt steering committee.



Actives

(2 participants): This user group represents those in the community who engage in outdoor recreation, including cycling, walking, running, swimming, skiing, etc. The availability of multiple venues for outdoor recreation matters to this group.



Mobility Impaired

(4 participants): This user group is directly affected by accessibility barriers such as high curbing and uneven sidewalks that make it difficult to operate mobility-aiding equipment effectively. Handicapped parking, curb ramps, and smooth surfaces are critical transportation features.



Older Adults

(7 participants): Accessibility—both in terms of physical access and proximity—is a major concern for this user group. Because some people in this user group do not or are unable to drive, having goods and services within walking distance is important.



Youth

(4 participants): This group uses primarily non-motorized modes of transportation, so pedestrian- and bike-friendly streets and sidewalks are important. These users value the ability to get to destinations on foot or via bicycle and having goods and services within walking distance.



Parents

(3 participants): Safety of their children is a primary concern of this user group. Access to safe and easy routes to school activities is another significant factor to this group. Parents of young children desire smooth, wide surfaces for strollers.



Steering Committee

(4 participants): The common denominator for this user group is that their observations are influenced by special knowledge of the transportation system acquired during the Community Visioning assessment process. As a result, this group is more representative of decision makers.

SPRING 2017 3a

What Factors Affect Transportation in Humboldt?

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Transportation Assets and Barriers
 Julia Badenhop, Sandra Oberbroeckling, Matthew Gordy, Miao Fangzhou
 Iowa State University | Trees Forever | Iowa Department of Transportation



Asset: Bicknell Park



Asset: Cottonwood Trail



Asset: Taft Park

Humboldt
 Overview



Barrier: Intersection at Highways 3 and 469



Barrier: Bridge over 6th Avenue



Barriers: Highway 469 Bridge

What People Said

"It would be nice to connect [from Cottonwood Trail] all the way over to [Joe Sheldon County Park]."

"One thing that I would like is more walking paths because in the summer, I would want to walk to work because it's not far. I wish there was a path along [Highway] 169 that would connect you to different areas of town."

"There [are] a lot of unmarked intersections, which is a little bit weird, but [you] just have to be a little more cautious."

"There's a lot of natural beauty between the two river valleys that you feel like...there's a lot of stuff we could go explore."

"Not all the streets in town have sidewalks."



Actives

"People are walking up and down [15th Street] to go down to the Cottonwood Trail. There [are] women pushing baby buggy carts. There [are] walkers. There [are] people walking dogs. There's absolutely no place to walk. You need a sidewalk somewhere...that accesses Cottonwood Trail."

"I walked the Cottonwood Trail almost every day this winter. They brush it off. There's no ice or [anything]."

"I live right in Sheldon Park, and I canoe and kayak both rivers a lot."

"We need a place to walk [indoors during winter]."



"On scooters you can't get through [on the sidewalks]."

Older Adults

"...[at the corner of Third Avenue North and Ninth Street], the road has such a crown on it that there's...a gutter [that's] bigger than it should be, so if you step off the curb just wrong, your shoe catches on the street because the street is way higher than the gutter."

"Sometimes [curb cuts] are there and sometimes they're not...You have to zigzag around or you have to go down right on the street, which you're not supposed to be on with a scooter."


"I can drive and then I have to get out my walker and then I'll have to go up a curb, which is not so fun around here."

"There is no pathway or sidewalk up [the new bridge on Highway 169]."

"[John Brown Park] has swings and slides and nice, big sidewalks to walk on too."



Mobility Impaired



"If there were a way to walk, bike, or whatever from Sheldon Park and get to anywhere you wanted to be in the city, I think it [would] open up our city so much more."


"You have to walk on the street. Fortunately, we have wide streets in Humboldt. That helps facilitate walking, but still, it would be nice to have a sidewalk."

"People here bike. People here walk. People here jog. We don't have enough of those opportunities yet, I don't think."

"We walk the Cottonwood Trail, but we have to go down one end and back the other way. If it was longer, I'd stay out longer."

"There's no lighting on Three Rivers Trail whatsoever."

Parents



"[We ride bikes] on the street because there [are] no sidewalks."

"We have to take our own water [on the trail], and we have to [ride] with one hand."

"Sometimes we go over [to Montana Avenue] on the gravel and we go find some friends."

"In the winter, we'll go sledding...at Gunder's Hill."

"We take the Cottonwood Trail."

Youth



"I live out in the country, and in the summer I do like to bike to town at least once a day and sometimes, if I can work it in, twice."

"Cottonwood Trail has got some nice views with the benches located kind of where those nice views are. I don't think there's any lighting there at night."

"I go out a lot at night just around our place and ski or walk or bike after dark and it is beautiful."

"I would like to see something that would encourage little kids to bike around town."

"I think maybe for some members of the community, with the highways, it does segment the town a little bit."

Steering Committee

Emerging Themes

Discovering themes and consistencies among user groups helps the steering committee to identify solutions to address the needs of all. The chart on the opposite page displays each user group's collective thoughts on particular issues in comparison with the other user groups in the community.

Actives walk, and drive. This group is interested in making pedestrian and cyclist connections throughout town to facilitate more walking and biking.

Mobility-impaired individuals often rely on motorized scooters and wheelchairs to get around. The lack of curb cuts on many corners in town make using the sidewalks difficult.

Older adults drive, bike, and walk to destinations. They also ride the Co-City Bus or motorized scooters. This group would like to see the bus service expanded. They are also interested in community connectivity.

Youth mainly walk and bike to get around the community. Some ride the school bus and older youth drive. This group is interested in having more outdoor recreation opportunities and improving existing facilities.

Parents drive and bike. Parents are concerned about their children's safety as they travel throughout town. Specific areas where they would like to see improvement is the intersection of Highway 169 and Wildcat Road and at the new Highway 169 bridge.

Steering committee members walk, drive, and bike. This group would like to make improvements such as increasing access to the river, marketing the community with signage along the trails, and making better connections.

User Types	Destinations and Activities			Desirable Qualities and Features			Undesirable Qualities and Features			Most Desired Improvements and Activities					
	Parks	Three Rivers Trail	Cottonwood Trail	Some Views	Recreation Opportunities	Trails	Poor, Incomplete Sidewalks	Lack of Connectivity	Highway 169 & Wildcat Road Intersection	Lack of Accessibility	Better Connected Sidewalks	Connection to Eagle Ridge Development	Extend Cottonwood Trail	Way-finding on Three Rivers Trail	Walk/Bike Path Along Highway 169
Actives	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Mobility Impaired	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Older Adults	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Youth	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Parents	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Steering Committee	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Humboldt residents are proud of the town's 12 parks, which provide users of a variety of abilities, such as fishing and hiking, at Mt. Park, and holding the events in George Beabe Park.

Both adults and youth enjoy the Three Rivers Trail for Eagle Grove and Bink.

All user groups mentioned Cottonwood Trail as an important community asset. People are able to hike and jog the trail year-round because the city clears the snow during the winter months.

Residents appreciate the many scenic views in and around Humboldt and Doherty. Scenic views with the old trees.

In addition to 12 parks, Humboldt has an abundance of recreation amenities, including the outdoor center, the trail in Joe Sheldon and Three Rivers Park, and a bike path just south of town.

Both adult and youth users pointed out that the existing sidewalk system is incomplete, and that some of the work in the street, which participants perceive as unsafe.

According to focus-group participants, Highway 169 connectivity and the town's specific goals for local connectivity are the focus.

The steering committee, Living Community 169 and Wildcat Road on a corner between Highway 169 and Wildcat Road, and a barrier between Highway 169 and Wildcat Road, making it difficult to get access to the river.

Mobility-impaired residents noted that curbs cuts and the street without raising it in the street, which is a major concern for people with school bags and kids have trouble crossing Highway 169.

Participants expressed the need for more on/off (up/down) sidewalks.

The steering committee, older adults, parents, and some focus-group participants would like to see the Cottonwood Trail a valuable amenity and more opportunities for walking and biking.

Some participants suggested adding way-finding signs along the trail, along with points-of-interest located along the trail.

Focus-group participants pointed out that the new Highway 169 bridge has to accommodate pedestrian/cyclists. They also suggested adding a trail along the highway through town.

Steering committee members wish to make improvements such as increasing access to the river, marking the trail, adding the trail, and making better connections.

Analysis of Barriers

The analysis of barriers synthesizes the feedback we received from the five transportation user groups. Although not summarized below, input from the steering committee is incorporated into the map of all five user types. Barriers in Humboldt that focus-group participants identified are related to accessibility and visibility. For example, some participants pointed out that access to the river is lacking. Access to Cottonwood Trail from the north is inhibited by the fact that there are no sidewalks. In terms of visibility, some people noted the lack of any lighting on the trails, as well as poor lighting on Main Street and in the high school parking lot.

Actives

Traffic control is the main concern among active recreationists, who pointed out that Humboldt has many unmarked intersections. This group also noted that the stoplights on Main Street are difficult to see and that 9th Street has no stop signs.

Mobility Impaired

Mobility-impaired individuals cited the limited number of curb cuts and ramps as a barrier. This group also pointed out that overgrown trees and shrubs along sidewalks cause problems. Steep berms, crowned streets, and snow piles also impede travel among the mobility impaired.

Older Adults

Older adults consider the lack of lighting along the trails as a barrier. This group also noted that there are no sidewalks to Cottonwood Trail from the senior living facility.

Youth

Youth perceive the lack of streetlights and sidewalks near 6th Street as a barrier. They pointed out that there is no access to the river from Dakota City Park, the playground equipment in Taft Park is in poor condition, and that 5th Street is gravel.

Parents

Parents said that the four-way stops at Highway 169 and Wildcat Road and at Highways 169 and 3 cause traffic congestion. They see the silt build up in Lake Nokomis as a barrier to boating because the lake is too shallow.


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Humboldt's Barriers: Common Factors

The analysis of barriers synthesizes the feedback we received from the five transportation user groups. Although not summarized below, input from the steering committee is incorporated into the map of all five user types.

Barriers in Humboldt that focus-group participants identified are related to accessibility and visibility. For example, some participants pointed out that access to the river is lacking. Access to Cottonwood Trail from the north is inhibited by the fact that there are no sidewalks. In terms of visibility, some people noted the lack of any lighting on the trails, as well as poor lighting on Main Street and in the high school parking lot.

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Mobility Impaired



Mobility-impaired individuals cited the limited number of curb cuts and ramps as a barrier. This group also pointed out that overgrown trees and shrubs along sidewalks cause problems. Steep berms, crowded streets, and snow piles also impede travel among the mobility impaired.

Older Adults




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Youth

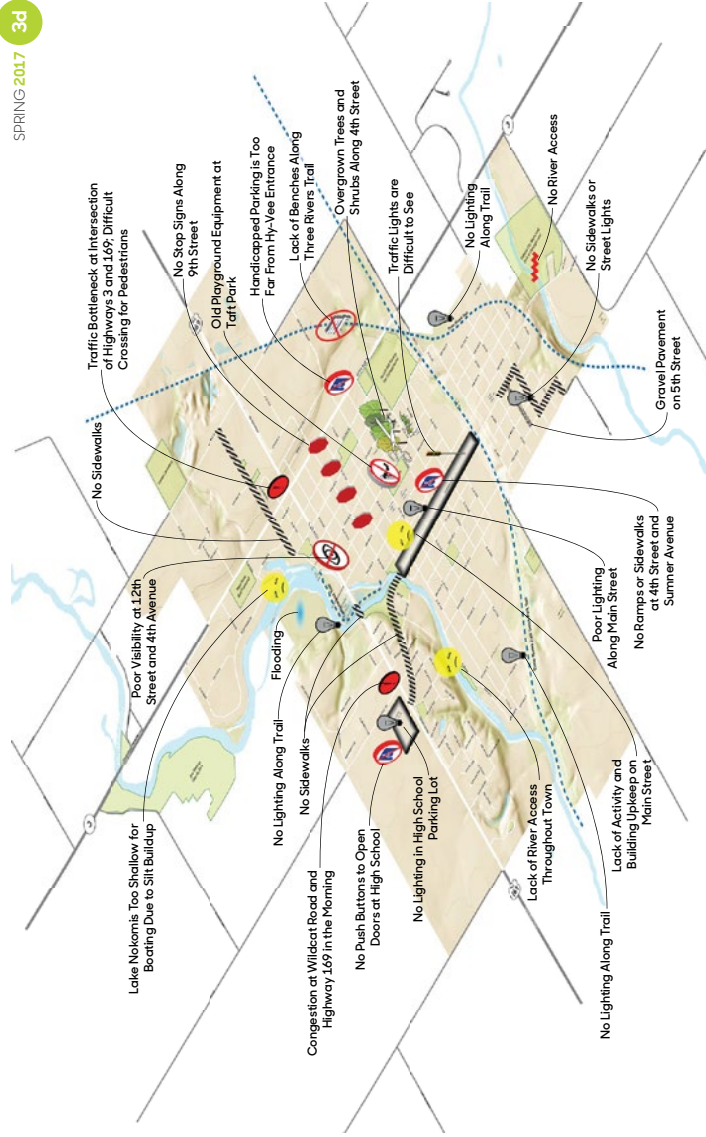


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Legend

-  Traffic Conflict
-  No Stop Signs
-  Poor Visibility
-  Playground in Poor Condition
-  Flooding
-  Lack of Benches
-  Maintenance Needed
-  Poor Lighting
-  Missing Sidewalks
-  Missing Amenities
-  Poor Access
-  Poor Accessibility

Humboldt Barriers

Transportation Assets and Barriers
 Julia Badenhop, Sandra Oberbroeckling, Matthew Gordy, Richard Garcia
 Iowa State University | Trees Forever | Iowa Department of Transportation



Analysis of Assets

The analysis of assets synthesizes the feedback we received from the five transportation user groups. Although not summarized below, input from the steering committee is incorporated into the map of all five user types.

All user groups value the parks and trails in Humboldt. Joe Sheldon County Park was noted for Frisbee golf, the RV camp, nice equipment, and scenic views.

Residents enjoy football and basketball at Dakota City Park. People appreciate the trail at Frank Gotch Park south of town. Three Rivers Trail and Cottonwood Trail are used for biking, walking, viewing wildlife, cross-country skiing and snowshoeing.

Actives

Active recreationists appreciate the fact that all of the local trails have benches. This group enjoys the wildlife area and the parks that overlook the Des Moines River. They like the wide sidewalks on Sumner Avenue.

Mobility Impaired

Mobility-impaired individuals value local amenities such as the movie theater, the Jim Heinz Sports Complex, and the aquatic center. This group appreciates the wide sidewalks in John Brown Park.

Older Adults

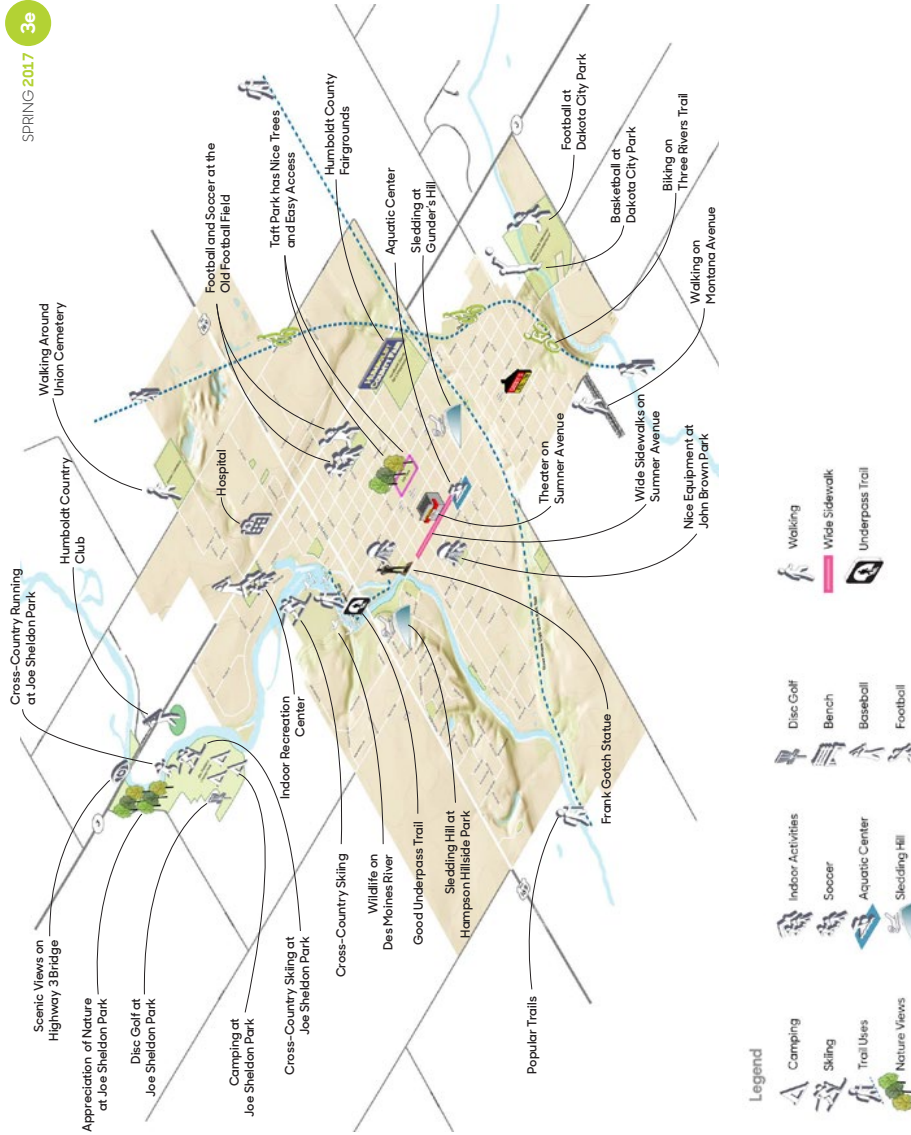
Older adults identified the new school building, the hospital, the recreation center and the golf course as community assets. They like to walk around the cemetery and go to Joe Sheldon County Park.

Youth

Youth value the many outdoor recreation activities available to them in Humboldt, including the Franklin County Fair, the old football field, and Dakota City Park for football and basketball. They like to sled at Gunder's Hill and the sledding hill east of St. Mary's.

Parents

Parents consider the wide streets as an asset. This group noted several sites for winter activities, such as sledding near the aquatic center, the sledding hill in Iowa Park, and ice skating at the fish ponds. Parents enjoy Joe Sheldon County Park for camping, walking, and viewing nature.



Humboldt's Assets: Common Factors

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Mobility Impaired

Mobility-impaired individuals value local amenities such as the movie theater, the Jim Heinz Sports Complex, and the aquatic center. This group appreciates the wide sidewalks in John Brown Park.

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Humboldt Assets

Transportation Assets and Barriers
 Julia Badenhop, Sandra Oberbroeckling, Matthew Gandy, Richard Garcia
 Iowa State University | Trees Forever | Iowa Department of Transportation



Desired Improvements

The analysis of desired improvements synthesizes the feedback we received from the five transportation user groups. Although not summarized below, input from the steering committee is incorporated into the map of all five user types.

Focus-group participants in Humboldt identified improvements aimed at making existing assets better, such as adding more parking at and more water fountains and benches along Three Rivers Trail. Some participants would like trail signage on the Three Rivers, Cottonwood, and Gotch Park Trails. Other suggestions for improvement focused on Highways 3 and 169, such as adding a stoplight where the two highways intersect and a crosswalk with flashing lights along Highway 3.

Actives

Active recreationists are interested in making new connections, including connecting Cottonwood Trail to the other trails in town, adding a trail from Joe Sheldon County Park to town, and building a bridge across the Des Moines River in the south part of town.

Mobility Impaired

Mobility-impaired individuals would like improved sidewalks and more businesses along Main Street. This group also wants the beginning and end of Gotch Park Trail and Cottonwood Trail to be identified by textured pavement.

Older Adults

Creating an indoor walking facility is a priority among older adults. This group would like more benches, dog waste facilities, and directional signage along Gotch Park Trail. Older adults also would like to see the streets repaved. Removing the dam to create better kayaking routes was also suggested by older adults.

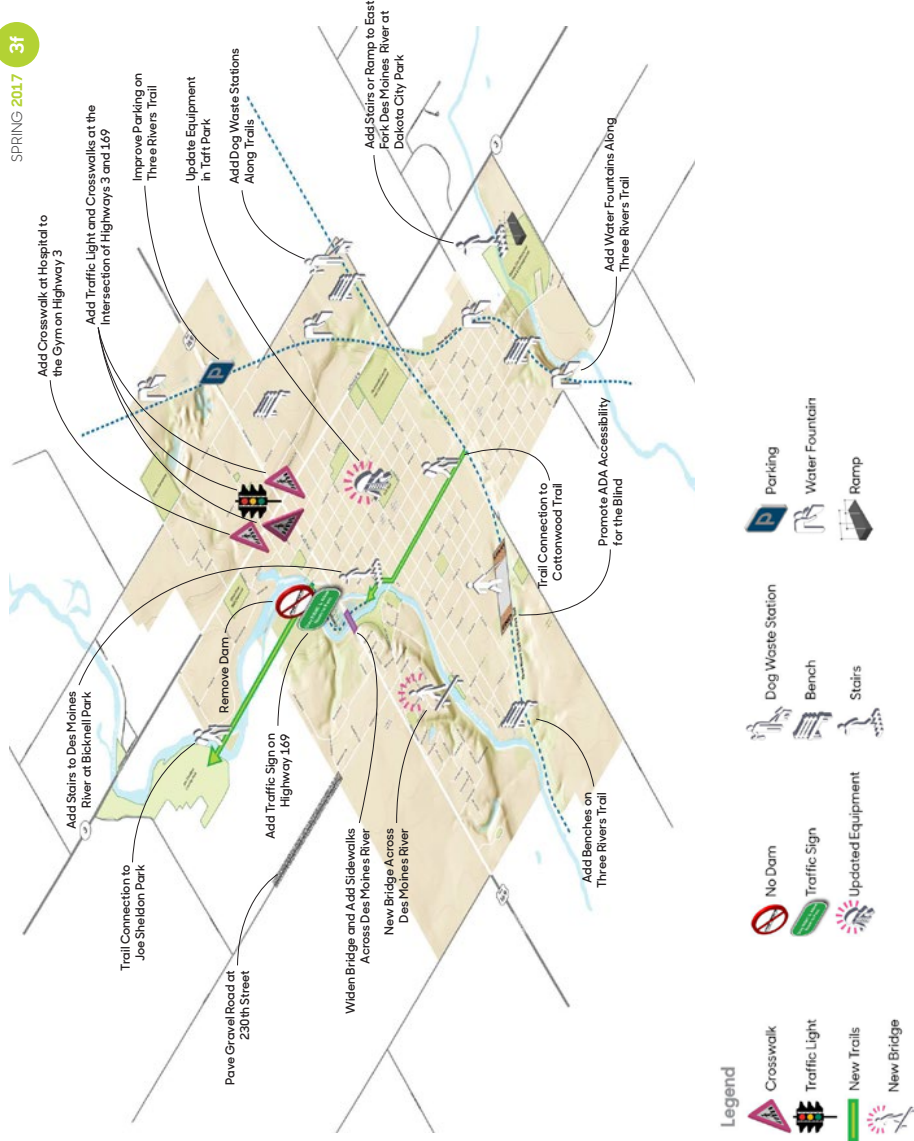
Youth

The youth group focused its desired improvements on the city's parks and on additional recreation opportunities. They want stairs or a ramp to the river at Dakota City Park and at the Frank Gotch Monument in Bicknell Park, as well as updated play equipment in Taft Park.

Parents

Parents are interested in connecting downtown to Joe Sheldon County Park, as well as installing more sidewalks in town. This group would also like the new bridge on Highway 169 modified to accommodate pedestrians and cyclists.

SPRING 2017 3f



Desired Improvements: Common Factors
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Humboldt Desired Improvements



Transportation Assets and Barriers
 Julia Badenhop, Sandra Oberbroeckling, Matthew Gordy, Richard Garcia
 Iowa State University | Trees Forever | Iowa Department of Transportation

Transportation Behaviors and Needs

Overview

Why Do A Survey?

The survey gives the visioning steering committee objective, representative information for the goal-setting phase of community visioning. The quantitative data collected from survey responses complements the qualitative information gathered from the focus groups at the transportation assets and barriers workshop.

The modes of transportation that residents use and the routes they take suggest suitable types of transportation enhancements in these areas. Having a sense for people's willingness to help either financially or with their time is important because many transportation enhancements are funded from multiple sources, including grants, private donations, in-kind contributions, and volunteers. Understanding what types of improvements are important to residents gives the committee insight into how to prioritize projects.

How Is It Done?

With assistance from Iowa State University's Survey Research Services staff in the Center for Survey Statistics and Methodology (CSSM-SRS), ISU visioning program staff conducted a survey to better understand the transportation patterns and behaviors, needs and desires of Humboldt residents. Surveys were mailed to 400 randomly selected residents living in Humboldt and the surrounding area. To increase the response rate, the study was publicized through the local media and follow-up packets were mailed to nonrespondents. With adjustments for ineligible respondents (e.g., incorrect addresses, no longer living in the community), the final sample size was 373. A total of 187 people returned surveys, for a response rate of 50.1%. (A response rate of 20% is considered valid.)

What Did We Find Out?

We asked survey recipients what routes they used most often for going to work, walking, and biking. We also asked whether or not residents would like a recreation trail and where they think it should be. We also discovered what residents think is most important in terms of transportation enhancements that address issues such as accessibility, mobility, and safety. Finally, we learned whether or not residents are willing to contribute their time or their financial resources to making enhancements to Humboldt. This series of boards summarizes the results of the survey as follows:

- Willingness to Help
- Enhancement Priorities
- Commuting Routes
- Walking Routes
- Biking Routes
- Desired Trail Routes

How did we do?

The demographics of the respondents are somewhat different from those obtained from the 2015 American Community Survey Five-Year Estimate. For example, the survey respondents median age of 59 is significantly older than the 2015 estimated average age for Humboldt residents of 43. In terms of gender, males are overrepresented in the survey sample. The average household size from the survey sample is similar the 2015 estimates, but the number of children in the household is slightly lower.

How Do Humboldt Residents Travel?

Most survey respondents drive to important destinations such as the convenience store, the post office, school, and church (85%). More than 20% car pool or ride with someone else. Some people indicated that they walk or bike, but the primary mode of transportation in Humboldt is by vehicle.

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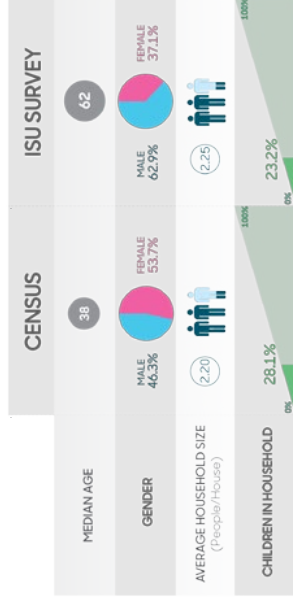
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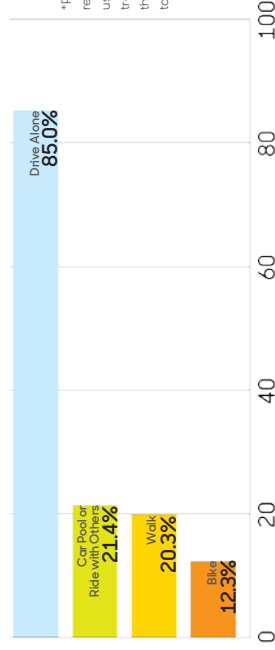
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*Please note that some respondents indicated that they use more than one mode of transportation to get to work therefore, percentages add up to more than 100%.

Transportation Behavior and Needs Survey
 Julia Badenhop, Sandra Oberbroeckling, Matthew Gordy, Miao Fangzhou
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Willingness to Help

Are People Willing To Help?

Most survey participants who answered this question are willing to contribute their time and talent to community improvements (54.1%), while just over 40% would contribute time and talent and provide financial help. More than 5% of respondents indicated that they would be willing to contribute financially.

Compared to other small towns in Iowa, Humboldt residents are more willing to become involved in improving their community. In 2014, on average, 43% of residents in small, rural towns volunteered to help with a community project

Are People Willing To Help?

"[The trail needs] handicapped areas, [which] I am pushing for Humboldt. I have a grant in place."

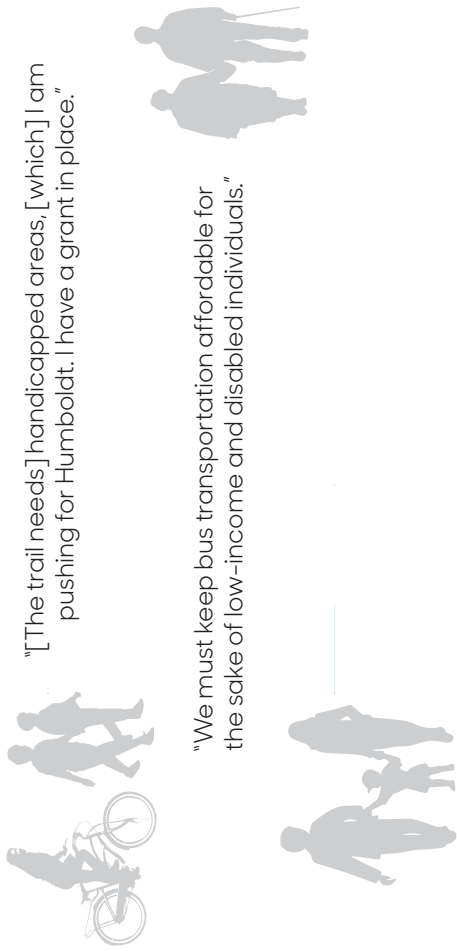
"We must keep bus transportation affordable for the sake of low-income and disabled individuals."

How Do You Get People To Help?

In 2014, the most common reason residents in small-town Iowa said they didn't become involved in community projects is that no one asked them (34%). Twenty-eight percent on average said that they don't have time, which is significantly lower than the 2004 average of 59%. Sixteen percent indicated that they didn't know how to become involved, and 7% said that no community project needed volunteers.¹ These results indicate that the best ways to get people involved in community projects is to simply ask, along with advertising opportunities through traditional and social media outlets.

¹ *Sigma: A Profile of Iowa Small Towns 1994 to 2014* (Ames, IA: Iowa State University College of Agriculture and Life Sciences, 2015).

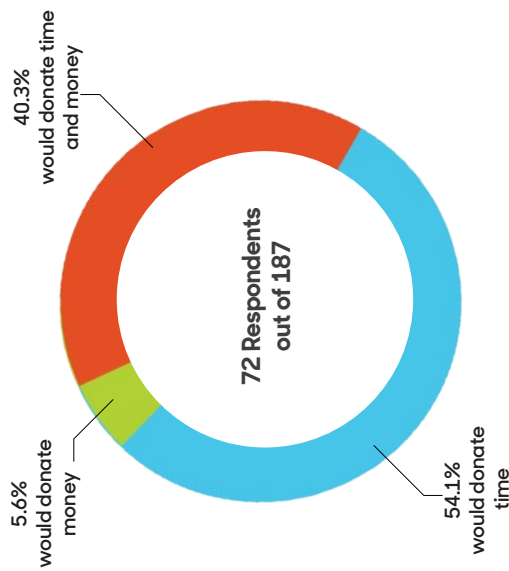
WHAT DID PEOPLE SAY THEY ARE WILLING TO DO? Survey Participants Said...



"[The trail needs] handicapped areas, [which] I am pushing for Humboldt. I have a grant in place."

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ARE PEOPLE WILLING TO HELP? More than 47% said YES!



Willingness to implement change
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HOW DO YOU GET PEOPLE TO HELP?

Ask, Show, and Advertise Opportunities

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Humboldt

Willingness to Help



Transportation Behavior and Needs Survey

Julia Badenhop, Sandra Oberbroeckling, Matthew Gordy, Miao Fangzhou
Iowa State University | Trees Forever | Iowa Department of Transportation

Priorities

What Types Of Enhancements Are Important?

On a scale of 1 to 5, with 5 being the most important, participants in Humboldt ranked creating safer routes to school as most important, with a mean value of 3.89. Other transportation enhancements that address pedestrian mobility, health, and safety are also considered important. Environmental and aesthetic issues are less important among respondents, with mean values ranging from 3.05 to 3.53. These findings are consistent with the views expressed by focus group participants during the Transportation Assets and Barriers workshop held in March 2017.

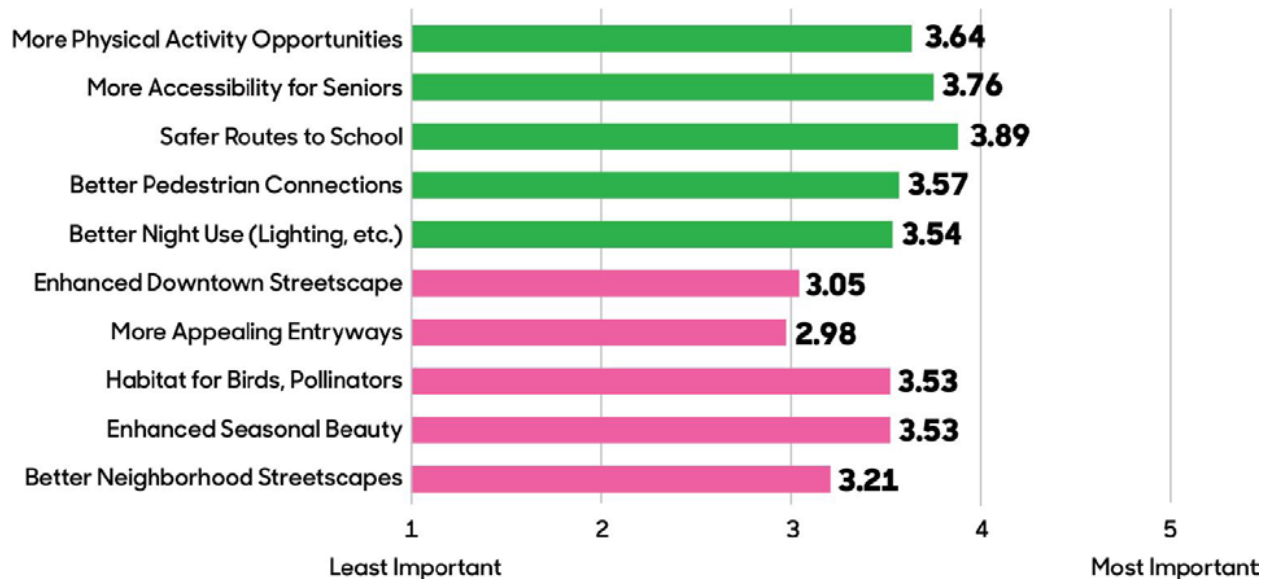
What Did They Say?

"Trails are needed to bike to the middle and high schools. [There is] no truly safe route to follow [Highway] 169."

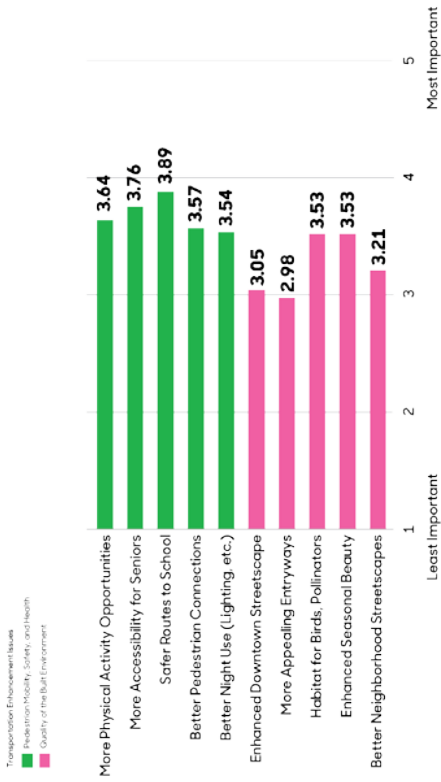
"We have a lot of active people in this community and people getting from point A to point B. Extending our trail system in a logical/functional and beautifully tasteful way that increases use [and] value to Humboldtians is important."

"Handicapped/stroller friendly sidewalks should be a priority."

"Some trails are nearly impossible to access on foot with a stroller. It'd be helpful if we didn't have to pick [the stroller] up and carry it onto the trail."



WHAT TYPES OF ENHANCEMENTS ARE IMPORTANT? Mobility, Safety, and Health!



Importance of transportation enhancement by type (167 responses)
 On a scale of 1 to 5, with 5 being the most important, participants in Humboldt ranked creating safer routes to school as most important, with a mean value of 3.89. Other transportation enhancements that address pedestrian mobility, health, and safety are also considered important. Environmental and aesthetic issues are less important among respondents, with mean values ranging from 3.05 to 3.53. These findings are consistent with the views expressed by focus group participants during the Transportation Assets and Barriers workshop held in March 2017.

WHAT DID THEY SAY?

Survey Participants Said...



"Trails are needed to bike to the middle and high schools. [There is] no truly safe route to follow [Highway] 169."



"We have a lot of active people in this community and people getting from point A to point B. Extending our trail system in a logical/functional and beautifully tasteful way that increases use [and] value to Humboldtians is important."



"Handicapped/stroller friendly sidewalks should be a priority."



"Some trails are nearly impossible to access on foot with a stroller. It'd be helpful if we didn't have to pick [the stroller] up and carry it onto the trail."

Humboldt Priorities



Transportation Behavior and Needs Survey
 Julia Badenhop, Sandra Oberbroeckling, Matthew Gardy, Miao Fangzhou
 Iowa State University | Trees Forever | Iowa Department of Transportation

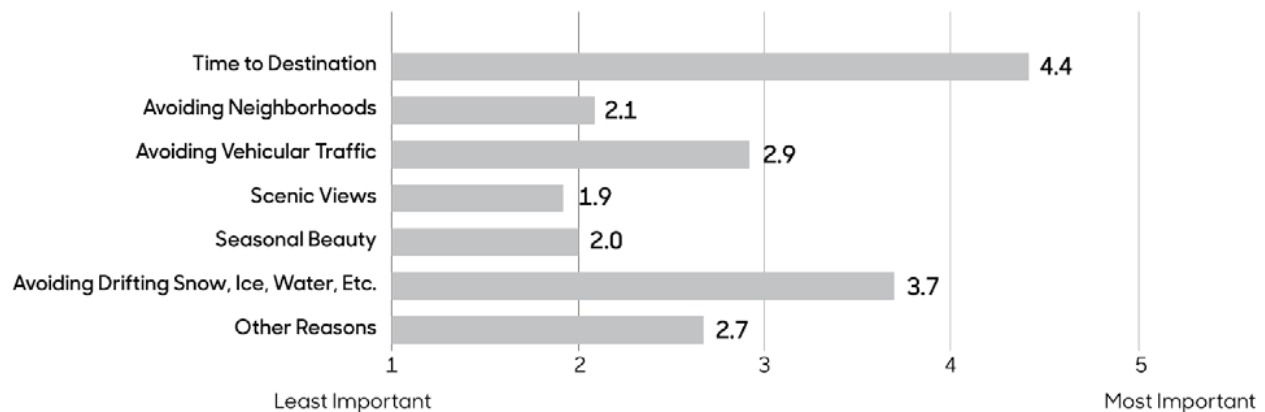
Commuting Routes

How They Get There

This map shows the commuting routes identified by 52 survey respondents. The frequency that the routes are used is depicted by their thickness, with most frequently used routes being the thickest. The primary commuting corridors in Humboldt are Highway 169 north and south and Highway 3 east and west. Some people also go north on K Road. In town, Sumner Avenue is the most heavily traveled and is the main road commuters use to access to Highway 169. The circulation patterns that emerge when routes for biking, walking, and commuting are overlaid suggest suitable types of transportation enhancements. For example, where pedestrian and vehicular traffic intersect, such improvements could include creating better visibility, defining crossing points, or improving signage.

Why They Go That Way

On a scale of 1 to 5, with 5 being the most important, survey participants ranked the characteristics and features that factored into their choice of commuting route. Among Humboldt participants, time to destination is clearly the most important factor, with a mean value of 4.4. Avoiding vehicular traffic and avoiding weather-related issues such as snow and ice is also considered important, with mean values of 3.7. Avoiding neighborhoods, avoiding vehicular traffic, scenic views, and seasonal beauty are not critical factors in determining commuting routes.

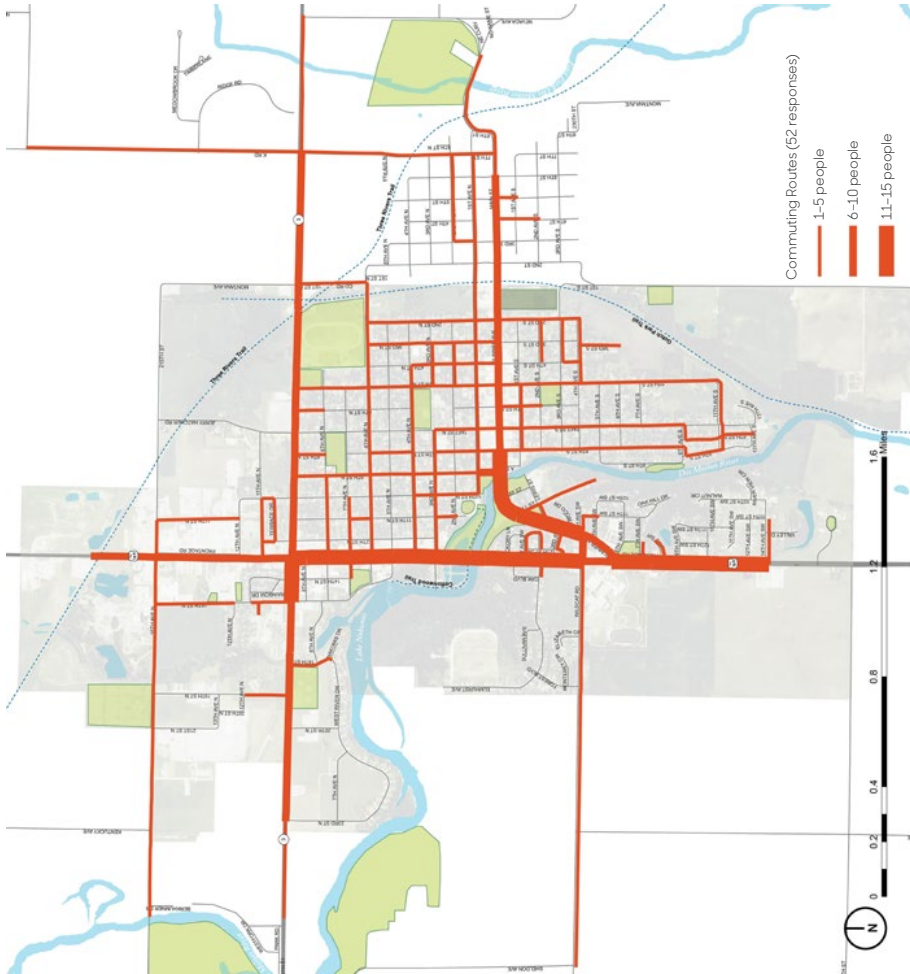


SPRING 2017 4d

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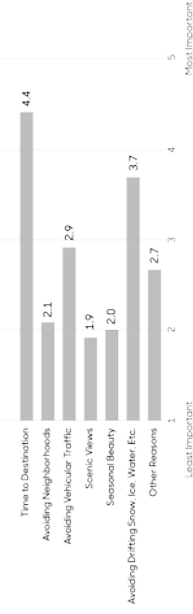
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Humboldt Commuting Routes

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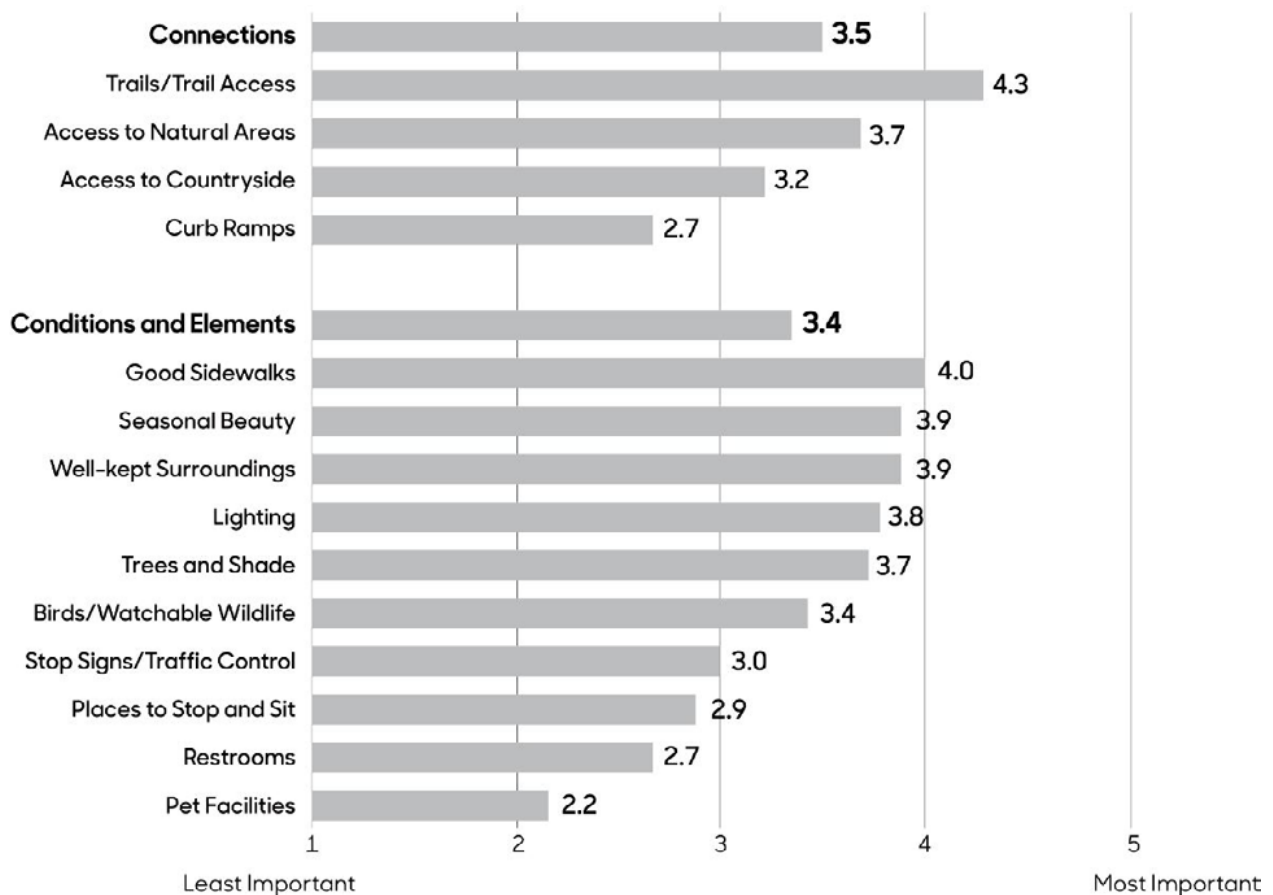
Walking Routes

Where They Go

This map shows the walking routes identified by 57 survey respondents. The frequency that the routes are used is depicted by their thickness, with most frequently used routes being the thickest. Cottonwood Trail is clearly the most popular walking route in Humboldt, followed by the Gotch Park and Three Rivers Trails. In town, participants indicated that they walk the grid of streets throughout town. The most frequently walked streets in town are Sumner Avenue and the streets connecting to the three trails.

Why They Go That Way

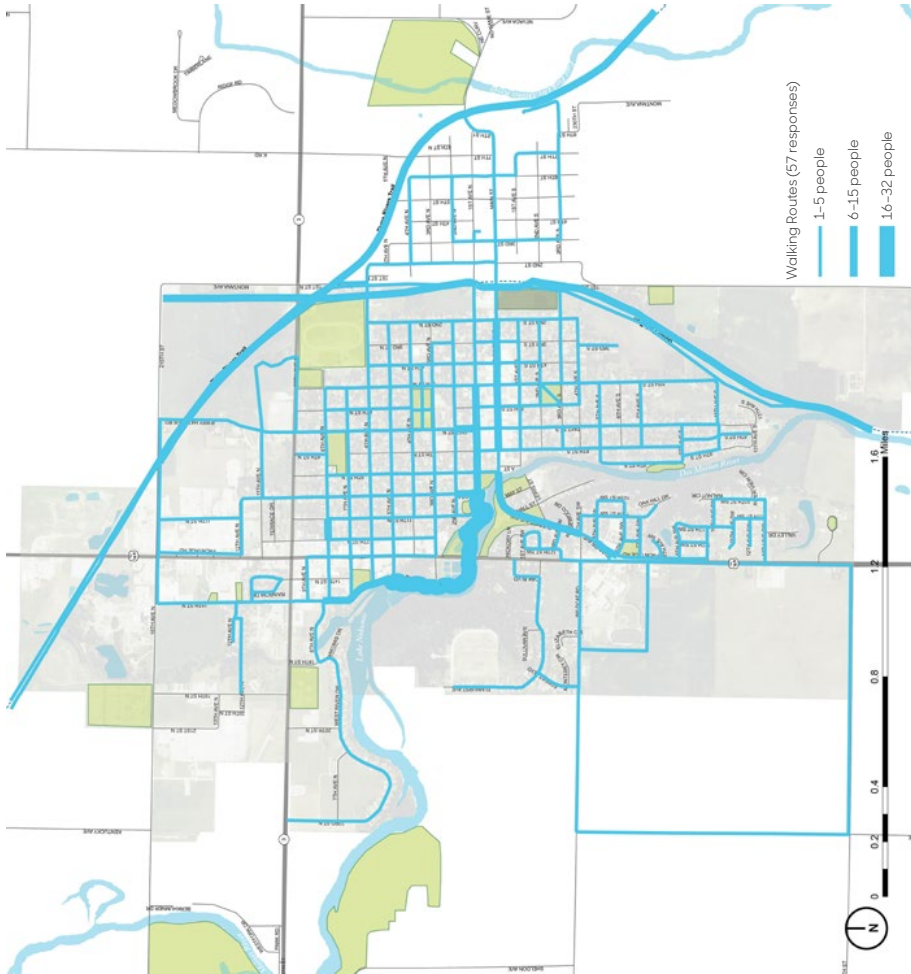
On a scale of 1 to 5, with 5 being the most important, survey participants ranked the characteristics and features that made their walking experience better. These features are categorized as either "connections" or "conditions and elements." Among Humboldt participants, connections and conditions/elements have nearly equal importance with mean values of 3.5 and 3.4, respectively. In terms of connections, access to trails is most important with a mean value of 4.3. Good sidewalks are the most important element to walkers (4.0), followed by seasonal beauty and well-kept surroundings (each with a mean value of 3.9).



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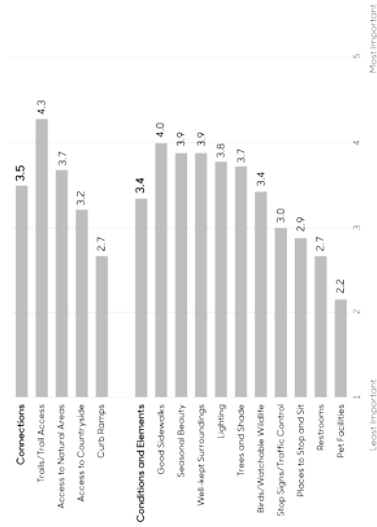
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Humboldt

Walking Routes

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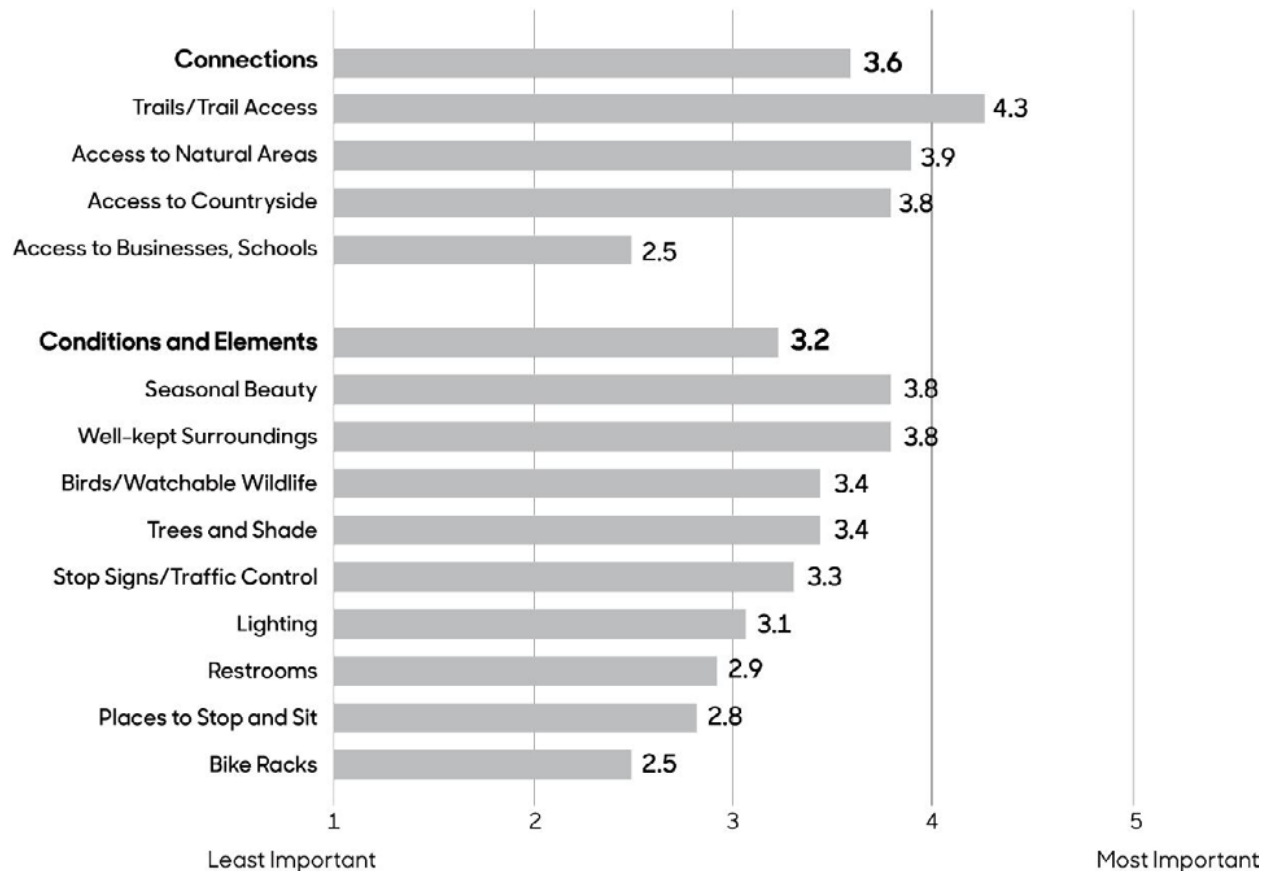
Biking Routes

Where They Go

This map shows the biking routes identified by 27 survey respondents. The frequency that the routes are used is depicted by their thickness, with most frequently used routes being the thickest. Bikers in Humboldt most frequently ride on the Cottonwood and Three Rivers Trails, as well as the Gotch Park Trail. They also ride on the grid of city streets throughout town, primarily using streets connecting to the three trails. Some people ride on Wildcat Road and 16th Avenue North to the west.

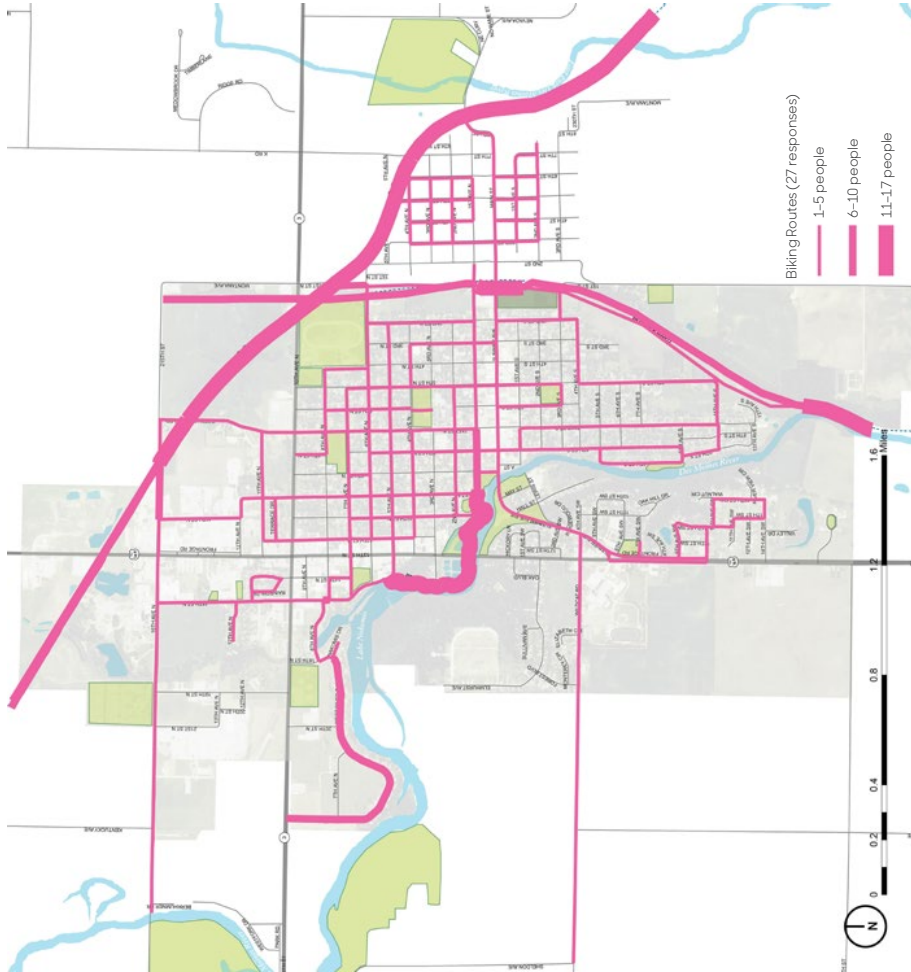
Why They Go That Way

On a scale of 1 to 5, with 5 being the most important, survey participants ranked the characteristics and features that made their walking experience better. These features are categorized as either "connections" or "conditions and elements." Connections and conditions/elements are somewhat more important to participants than conditions and elements, having mean values of 3.6 and 3.2, respectively. In terms of connections, access to trails is most important with a mean value of 4.3. Seasonal beauty and well-kept surroundings are equally important elements to bikers (3.8 each), followed by birds/watchable wildlife and trees and shade (3.4 each).



Where They Go

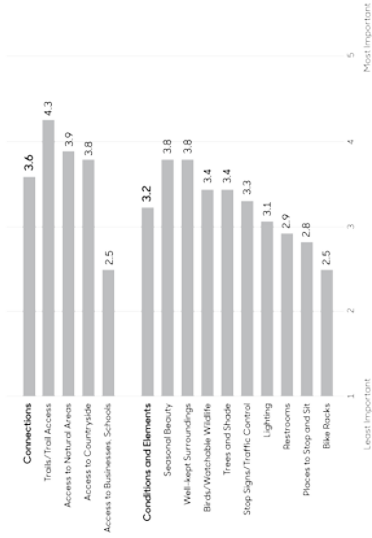
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Map Source: Iowa Department of Natural Resources, "Natural Resources Geographic Information Systems Library," <http://www.iagb.uiowa.edu/ngislib/>.

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Humboldt Biking Routes

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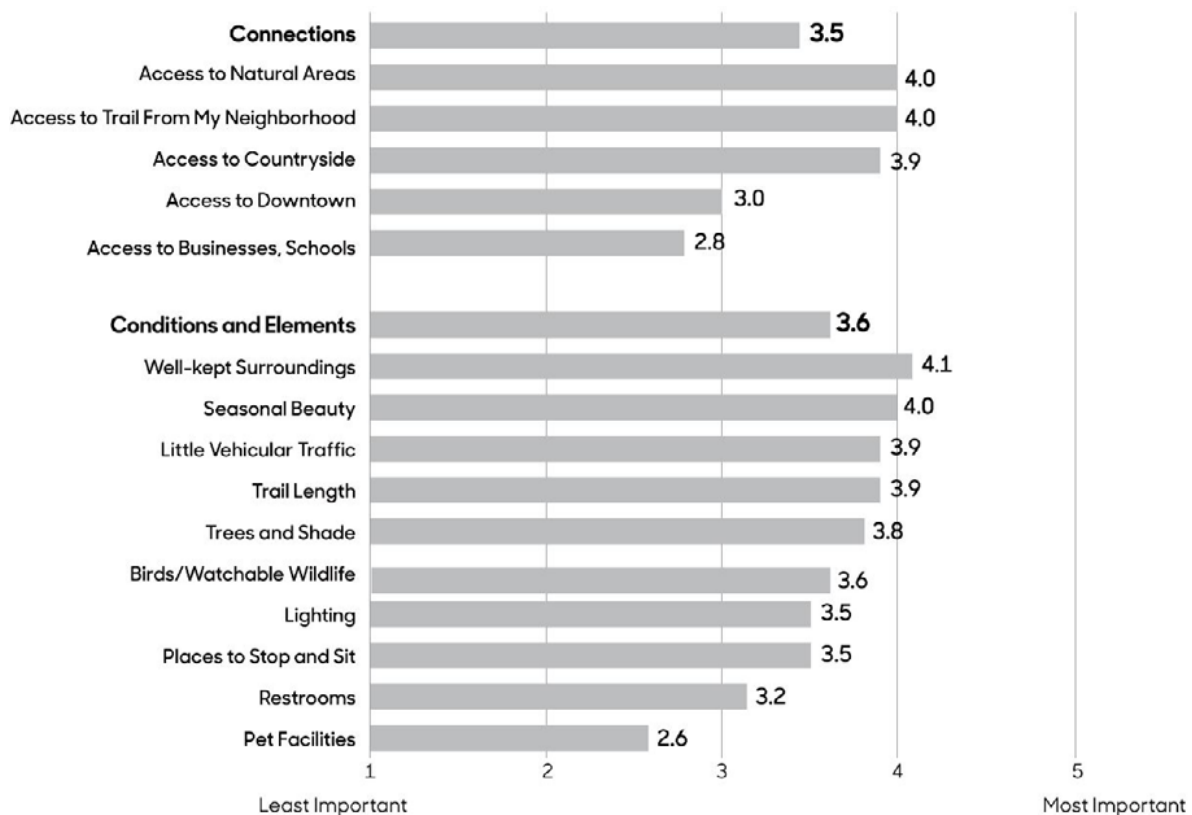
Desired Trail Routes

Where They Go

This map shows the desired trail routes identified by 10 survey respondents. The frequency that the routes are used is depicted by their thickness, with most frequently used routes being the thickest. The most desired trail route among survey respondents is a connection between Highways 3 and 169 (13th Street North) via 15th Street North. This finding supports what focus group participants said regarding accessibility to the new Fareway Store located along Highway 3. Another frequently identified route is along the Des Moines River from Cottonwood Trail to Joe Sheldon County Park, which also supports information gathered during focus groups. Survey participants identified additional connections to Gotch Park and Three Rivers Trails as well.

Why They Go That Way

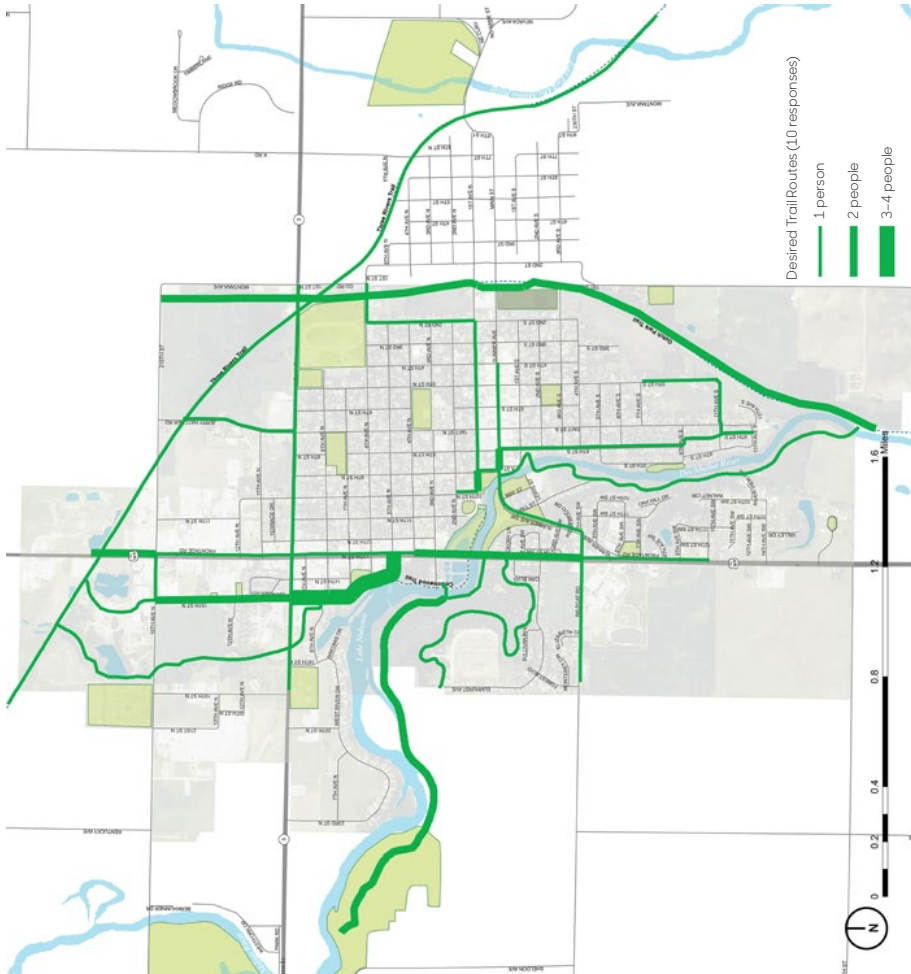
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SPRING 2017 49

Where They Go

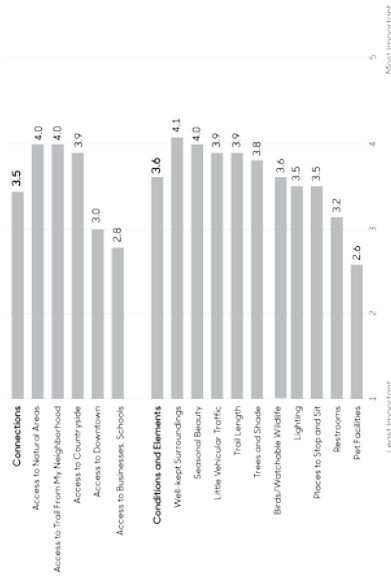
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Map Source: Iowa Department of Natural Resources, "Natural Resources Geographic Information Systems Library," <http://www.igb.uiowa.edu/mgislib/>.

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Humboldt

Desired Trail Routes

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Transportation Inventory and Analysis

Knowledge of the transportation systems in and around a community is critical for sustainable transportation enhancement planning. Transportation systems include paved and unpaved roadways, pedestrian and bike trails, waterways, railroad lines or railbeds from abandoned railroad lines and airports. During the transportation meeting, we learned that there is an insufficient amount of pedestrian/bike trails and designated cycling routes throughout Humboldt.

Humboldt benefits from several local attractions, including its presence of trumpeter swans, Liberty Fountain, scenic walking trails, and multiple city parks. However, many of these amenities need fewer barriers to connect to other parts of the community. The existing Cottonwood Trail, Three Rivers Trail, and Gotch Park Trail are currently lacking connectivity to each other, existing pedestrian infrastructure and nearby attractions and amenities. Some of them hit dead ends and stop short of attractive destinations, such as nearby parks. Downtown Humboldt (Sumner Ave) and the Humboldt High School also experience separation from the overall existing pedestrian network, causing a need for more pedestrian connections and wayfinding signage along both trails and roadways. Highway 3 and Highway 169 factor into the need for pedestrian connections and contain some intersections of concern, as well. Both roads experience high levels of traffic traveling at high speeds, which creates barriers throughout the community.

Humboldt also experiences some flooding along the rivers and drainage-ways through town; some areas require sandbagging during high water events to prevent damage to nearby properties.

The design team used this information to explore opportunities for improving connectivity, safety and cohesiveness throughout Humboldt.

Goal Setting

Pedestrian Connections

- Connect to Gotch Park Trail at 5th Street South (bridge over ravine)
- Provide trail connection to high school and youth sports complex
- Establish protected bike lanes along Sumner Avenue to link trails
- Provide amenities along trail routes, such as benches, lighting, and signage
- Connect Cottonwood Trail to Three Rivers Trail – north along 15th Street (avoid industrial area)
- Add pedestrian bridge and expand Cottonwood Trail into Eagle Ridge Park and to Joe Sheldon County Park

Sumner Avenue Streetscape Improvements

- Develop gateway enhancements and signage
- Update, but preserve historic style of lighting
- Improve paving and accessibility
- Create a multi-modal corridor (protected bike lanes)
- Enhance landscape throughout corridor
- Incorporate green infrastructure

Wayfinding Signage

- Create a family of signage
- Improve signage for pedestrians and cyclists along trails (e.g. intersection of Sumner Avenue and Three Rivers Trail)
- Develop gateway enhancements and signage at the intersections of Sumner Ave / Hwy 169, 3rd Ave / Hwy 169, and 5th St / Hwy 3
- Institute maps / develop regional trail brochure

Dam Mitigation

- Implement a fish ladder to allow fish to swim upstream
- Create pass-through for canoes and kayaks
- Consider rock rapids

Fishing Park

- Implement on city land located near the river on the south side of Humboldt
- Incorporate ADA accessible features into the park

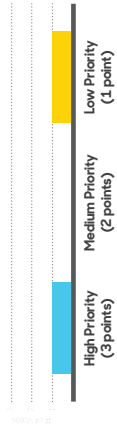
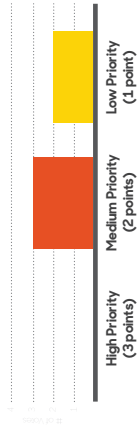
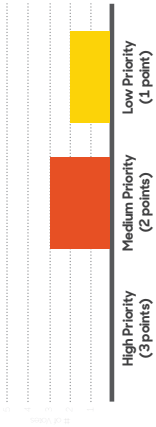
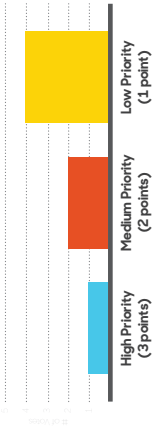
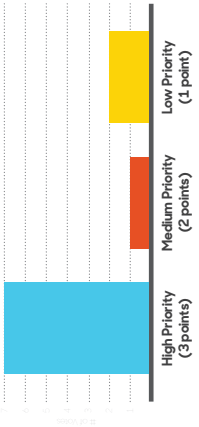
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- Connect to Gatch Park Trail at 5th Street South (bridge over ravine)
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 - Establish protected bike lanes along Summer Avenue to link trails
 - Provide amenities along trail routes, such as benches, lighting, and signage
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 - Add pedestrian bridge and expand Cottonwood Trail into Eagle Ridge Park and to Joe Sheldon County Park

- Summer Avenue Streetscape Improvements**
- Develop gateway enhancements and signage
 - Update, but preserve historic style of lighting
 - Improve paving and accessibility
 - Create a multi-modal corridor (protected bike lanes)
 - Enhance landscape throughout corridor
 - Incorporate green infrastructure

- Wayfinding Signage**
- Create a family of signage
 - Improve signage for pedestrians and cyclists along trails (eg. intersection of Summer Avenue and Three Rivers Trail)
 - Develop gateway enhancements and signage at the intersections of Summer Ave / Hwy 169, 3rd Ave / Hwy 169 and 5th St / Hwy 3
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- Implement on city land located near the river on the south side of Humboldt
 - Incorporate ADA accessible features into the park



23 points

11 points

8 points

8 points

4 points

Humboldt
Goal Setting

Design Team
LA: Dylan Jones, PLA, LEED GA
Intern: Hannah Schmitz
Iowa State University | Trees Forever | Iowa Department of Transportation



Concept Overview

Long-term visioning and planning are essential for a community to be able to provide sustainable, functional, and beneficial improvements.

Using the results of the inventory and analysis of community resources, the Humboldt visioning committee set goals and determined their vision for the community.

Following the goal-setting process, the design team led a conceptual design workshop, during which preliminary concepts were created with help from community members. The enhancements explored during the workshop were:

- Enhance pedestrian connections to link existing trails to each other and to various amenities within the community
- Create a conceptual master plan for Sumner Avenue downtown to improve accessibility, amenities, and green infrastructure
- Develop a family of wayfinding signage to be used along trails and roadways
- Mitigate the dam to allow for canoe, kayak, and fish passage

The community concept plan is based on input from both the visioning committee and residents of Humboldt and brings together ideas, goals, and visions for improvements.

Summary of Preliminary Opinion of Probable Costs

The preliminary opinions of probable construction costs in this report are based on current construction costs for typical contractors bidding on materials and installation. These costs also reflect generally conceptualized master plan concepts for each area described in the following pages. Final costs may be impacted by quantities, size, and type of materials used and may also change based on further design. The opinions also do not reflect: donations, in-kind gifts, volunteer labor, alternatives, regulatory agency permits/fees, property costs, all utilities, or other various unknown conditions.

The opinions of cost presented in this report are intended to be used for preliminary ball park budgetary information only and will need to be refined and updated as the concepts are further developed.

Concept Development

Long-term visioning and planning are essential for a community to be able to provide sustainable, functional, and beneficial improvements. Using the results of the inventory and analysis of community resources, the Humboldt visioning committee set goals and determined their vision for the community.

Following the goal-setting process, the design team led a conceptual design workshop, during which preliminary concepts were created with help from community members. The enhancements explored during the workshop were:

Pedestrian Connections



Enhance pedestrian connections to link existing trails to each other and to various amenities within the community

Summer Ave Streetscape



Create a conceptual master plan for Summer Avenue downtown to improve accessibility, amenities, and green infrastructure

Wayfinding Signage

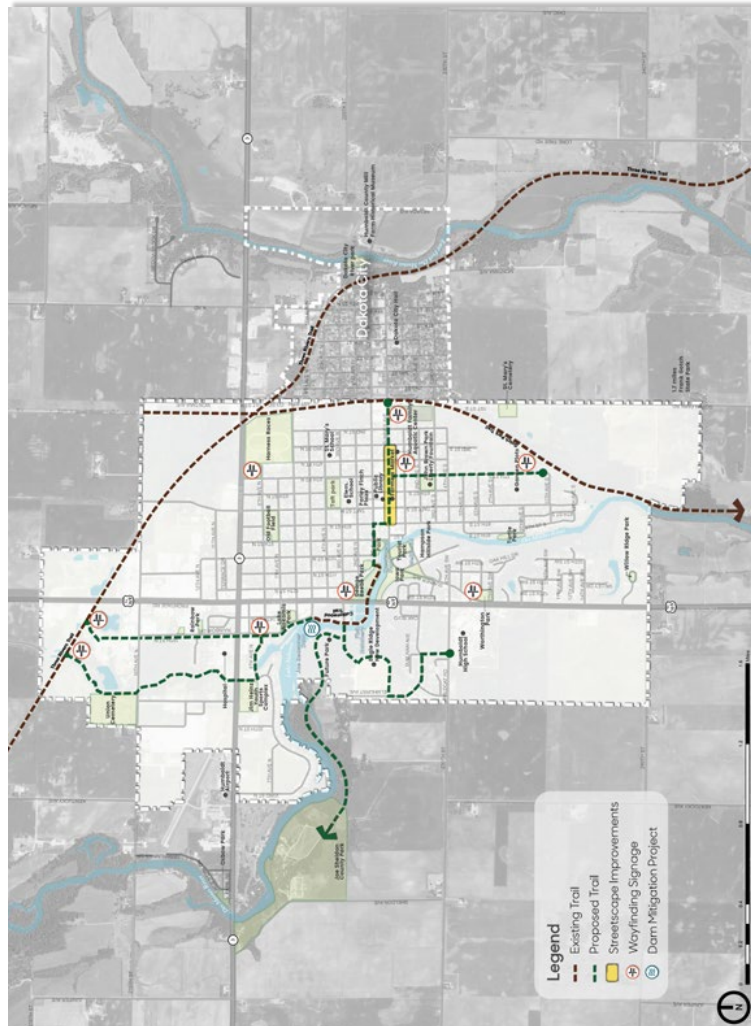


Develop a family of wayfinding signage to be used along trails and roadways

Dam Mitigation



Mitigate the dam to allow for canoe, kayak, and fish passage



Map Source: Iowa Department of Natural Resources, "Natural Resources Geographic Information Systems Library", accessed April 2017.

Humboldt

Concept Overview

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The community concept plan is based on input from both the visioning committee and residents of Humboldt and brings together ideas, goals, and visions for improvements.

Pedestrian Connections

Humboldt's strong connection to nature through its many parks and trails creates a pleasant experience for both residents and visitors to enjoy. Despite having over a dozen parks and two multi-use trails, the community has yet to create a network which helps link these features together. Humboldt has two main barriers that divide the town - Highways 3 and 169. These roads experience high levels of daily traffic caused by both cars and trucks and can act as a barrier for trail users trying to navigate from one trail to another.

As evidenced by the assessment information, biking and running are valued by the community. As a result, there is a desire to create connections to existing trails/walks in town. Development of a connected trail system will be an impactful first step for safe connections and increased recreation opportunities. By introducing this concept, Humboldt residents will benefit from a stronger link between several local attractions, downtown businesses, and public spaces. Amenities such as benches, litter receptacles, and trail lighting may be found along these trails to enhance the overall experience. Traffic safety measures such as pedestrian crossings with High-Intensity Activated Crosswalk (HAWK) beacons are recommended when the proposed trail crosses a highway.

Community Pedestrian Connections

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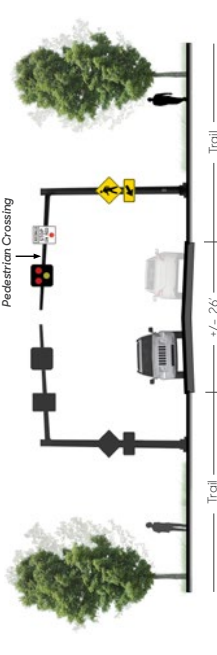
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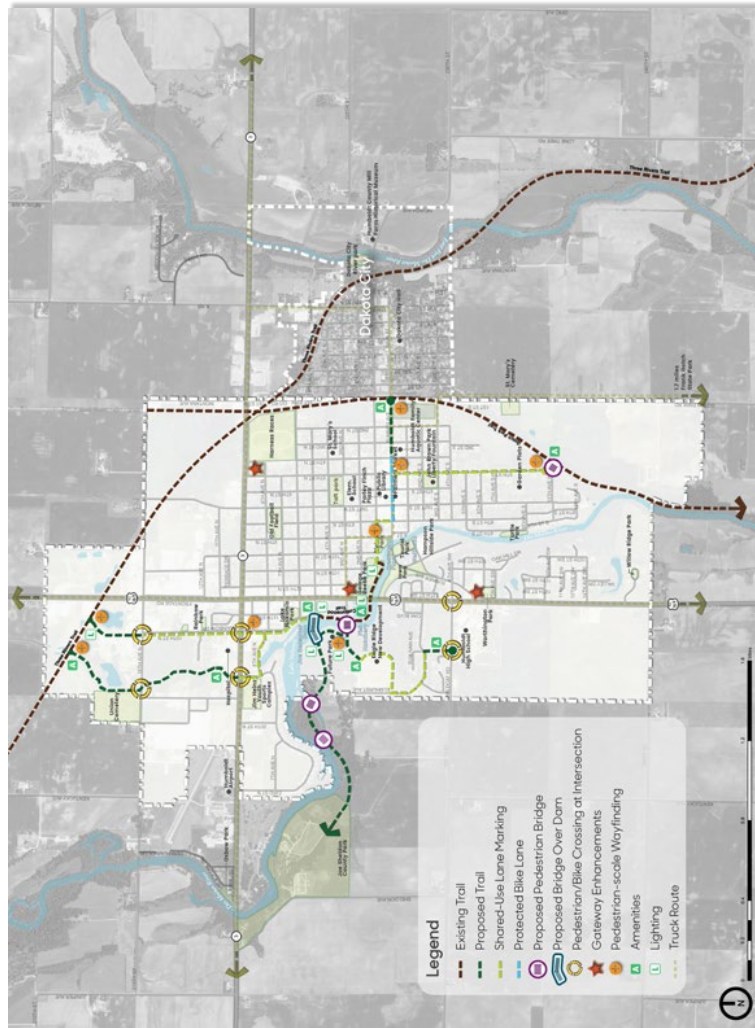
Existing Amenities



Proposed Benches, Litter Receptacles, Solar-Powered LED Lighting



Typical Proposed Trail Crossing at Highway 3



Map Source: Iowa Department of Natural Resources, "Natural Resources Geographic Information Systems Library," accessed April 2017

Humboldt

Pedestrian Connections

Design Team

LA: Dylan Jones, P.L.A., LEED GA
Intern: Hannah Schmitz
Iowa State University | Trees Forever | Iowa Department of Transportation



Pedestrian Connections

The Des Moines River impacts the design of the proposed trail because it is both a guide and a barrier for pedestrians to cross the water. Near Eagle Ridge, a new trail is proposed to lead trail users into the park and then split off, allowing them to navigate into the Eagle Ridge development or toward the Joe Reasoner Dam and eventually to Joe Sheldon County Park. A pedestrian bridge is proposed to connect the trail near Eagle Ridge to the Cottonwood Trail near 3rd Avenue North. As the Cottonwood Trail goes north toward the Three Rivers Trail, pedestrian crossing signage is proposed along roadways. This causes vehicular traffic to yield to pedestrians and pedestrians to stop and look for vehicular traffic. Another pedestrian crossing occurs near Wildcat Road and Highway 169. This has been an intersection of concern due to heavy amounts of traffic on both roads. The addition of a recreation center north of the high school may further add to traffic levels here. This intersection would benefit from further study. The study could begin by identifying opportunities and constraints, which could then lead to a solution finding process and a design that involves the district engineer and a qualified consultant. Any intersection improvement along Highway 3 or 169 will require further study by a consultant and coordination/approval with the Iowa DOT.

On the southeast side of Humboldt lies an approximately 90ft ravine, preventing Gotch Park Trail users from accessing 5th Street which leads to downtown. Two options are provided to bridge this gap. Option 1 proposes soil to fill the ravine, allowing for a paved surface to connect the trail to the street. In this option, a split rail fence would be implemented to keep pedestrians safe from the sloping grade on each side. The second option proposes a clear-span pedestrian bridge. In this option the natural state of the ravine would be preserved and trail traffic would continue above the grassy area.

Key Concept Components

- Develop trail network with amenities
- Improve connections to existing trails and add new trails
- Improve connections across major barriers, such as waterways and highways

Design Expertise Recommended

Projects may require help beyond the capability of the visioning committee or available city staff. For this improvement project, the committee should expect to involve the following design professionals: Landscape architect and transportation/civil engineer. The committee should also expect to coordinate design efforts with the District DOT Office.

Project Scope and Cost Opinion

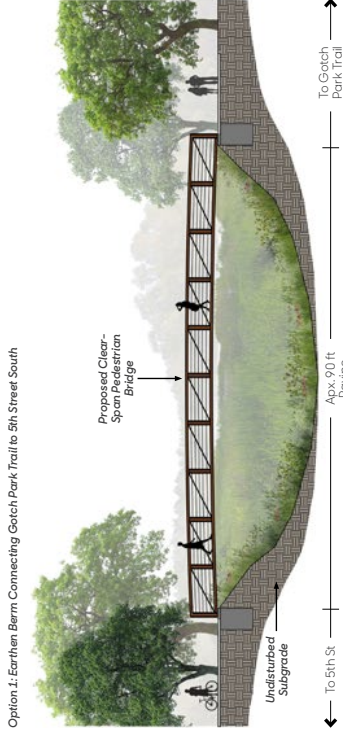
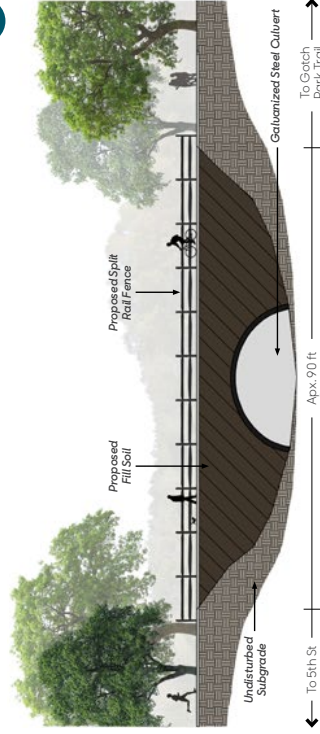
The following cost opinion is for conceptual design based on current low bid pricing. Donated or at-cost materials and volunteer labor, when appropriate, could reduce overall project costs. Additional investigation may be needed to determine the impact trail construction might have on existing utilities, which can be resolved in a subsequent design phase. Additional design/engineering costs are not included in the cost opinion. Coordination with land owners, setting up easements, and/or purchasing land, will also be necessary to complete some trail connections and are not represented in the cost opinion.

	UNIT	QUANTITY	UNIT COST	TOTAL
PEDESTRIAN CONNECTIONS (CITY TRAILS + AMENITIES)				
MOBILIZATION	LS	1	\$180,000	\$180,000
SITE PREPARATION / EXCAVATION	LS	1	\$180,000	\$180,000
PROPOSED ASPHALT TRAIL - 10' WIDE	SY	2,625	\$55	\$170,625
PROPOSED GRAVEL TRAIL - 10' WIDE	SY	9,875	\$30	\$296,250
SHARED-USE LANE MARKING	EA	46	\$250	\$11,500
WEATHERING STEEL PEDESTRIAN BRIDGE W/ CONCRETE DECK (NW OF EAGLE RIDGE)	EA	2	\$170,000	\$340,000
WEATHERING STEEL PEDESTRIAN BRIDGE W/ CONCRETE DECK (RAVINE NEAR GOTCH PARK TRAIL)	EA	1	\$170,000	\$170,000
WEATHERING STEEL PEDESTRIAN BRIDGE W/ CONCRETE DECK (OVER DES MOINES RIVER)	EA	1	\$650,000	\$650,000
H.A.W.K. SIGNAL AT HIGHWAY	EA	1	\$200,000	\$200,000
PEDESTRIAN CROSSING AT LOCAL ROAD	EA	2	\$2,000	\$4,000
BENCHES	EA	12	\$1,750	\$21,000
LITTER RECEPTACLES	EA	12	\$1,750	\$21,000
SOLAR POWERED LED PEDESTRIAN LIGHTS	EA	28	\$7,500	\$210,000
IMPROVEMENTS SUBTOTAL				\$2,454,375
CONTINGENCY (15%)				\$368,156
DESIGN/ENGINEERING FEES (10%)				\$245,438
SITE IMPROVEMENTS TOTAL				\$3,067,969

ANTICIPATED COST RANGE \$3,000,000 - \$3,500,000

ALTERNATES				
GRAVEL TRAIL CONNECTION FROM HWY 3 TO THREE RIVERS TRAIL (W/ SITE PREP)	SY	5,900	\$50	\$295,000
SHARED USE LANE MARKINGS ALONG 8TH AVE N & 18TH ST N	EA	6	\$250	\$1,500
EARTHEN BERM, CULVERT, SPLIT RAIL FENCE, & TRAIL OVER RAVINE	LS	1	\$220,000	\$220,000
IMPROVEMENTS SUBTOTAL				\$516,500
CONTINGENCY (15%)				\$77,475
DESIGN/ENGINEERING FEES (10%)				\$51,650
SITE IMPROVEMENTS TOTAL				\$645,625

ANTICIPATED COST RANGE \$600,000 - \$700,000



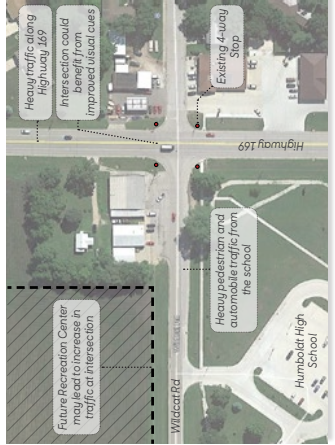
Option 1: Earthfill Berm Connecting Gatch Park Trail to 5th Street South

Option 2: Clear-Span Bridge Connecting Gatch Park Trail to 5th Street South

and a design that involves the district engineer and a qualified consultant. Any intersection improvement along Highway 3 or 169 will require further study by a consultant and coordination/approval with the Iowa DOT. On the southeast side of Humboldt lies an approximately 90ft ravine, preventing Gatch Park Trail users from accessing 5th Street which leads to downtown. Two options are provided to bridge this gap. Option 1, proposes soil to fill the ravine, allowing for a paved surface to connect the trail to the street. In this option, a split rail fence would be implemented to keep pedestrians safe from the sloping grade on each side. The second option proposes a clear-span pedestrian bridge. In this option the natural state of the ravine would be preserved and trail traffic would continue above the grassy area.



Pedestrian Bridge Near 3rd Avenue North



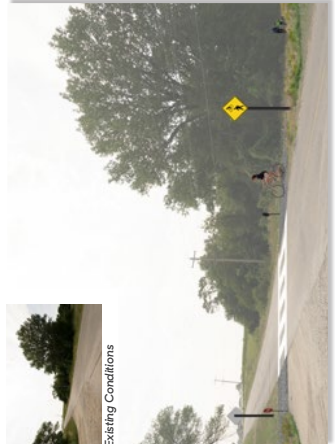
Intersection of Wildcat Road and Highway 169

Community Pedestrian Connections The Des Moines River impacts the design of the proposed trail because it is both a guide and a barrier for pedestrians to cross the water. Near Eagle Ridge, a new trail is proposed to lead trail users into the park and then split off, allowing them to navigate into the Eagle Ridge development or toward the Joe Reasmer Dam and eventually to Joe Sheldon County Park. A pedestrian bridge is proposed to connect the trail near Eagle Ridge to the Cottonwood Trail near 3rd Avenue North. As the Cottonwood Trail goes north toward the Three Rivers Trail, pedestrian crossing signage is proposed along roadways. This causes vehicular traffic to yield to pedestrians and pedestrians to stop and look for vehicular traffic. Another pedestrian crossing occurs near Wildcat Road and Highway 169. This has been an intersection of concern due to heavy amounts of traffic on both roads. The addition of a recreation center north of the high school may further add to traffic levels here. This intersection would benefit from further study. The study could begin by identifying opportunities and constraints, which could then lead to a solution finding process

Design Team
 LA: Dylan Jones, PLA, LEED GA
 Intern: Hannah Schmitz
 Iowa State University | Trees Forever | Iowa Department of Transportation



Trail Near Eagle Ridge



Trail Crossing Road at 16th Avenue North

Humboldt Pedestrian Connections

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Sumner Ave Streetscape

Sumner Avenue extends the business district east, off of Highway 169 on the southeastern end of town. Located in this area are businesses such as restaurants, banks, and service providers, along with municipal offices and the Humboldt Family Aquatic Center, making this an active street for Humboldt residents. However, aging existing conditions are hindering pedestrians' experiences while carrying out everyday activities such as biking, shopping, or dining in the area, thus warranting an updated streetscape on Sumner Avenue between 9th and 2nd Street. Humboldt's downtown improvements include bump-outs, street trees, biocells, lighting, signage, site furnishings, and protected bike lanes; all factors which help create a safer, more enjoyable experience for all users downtown.

Key Concept Components

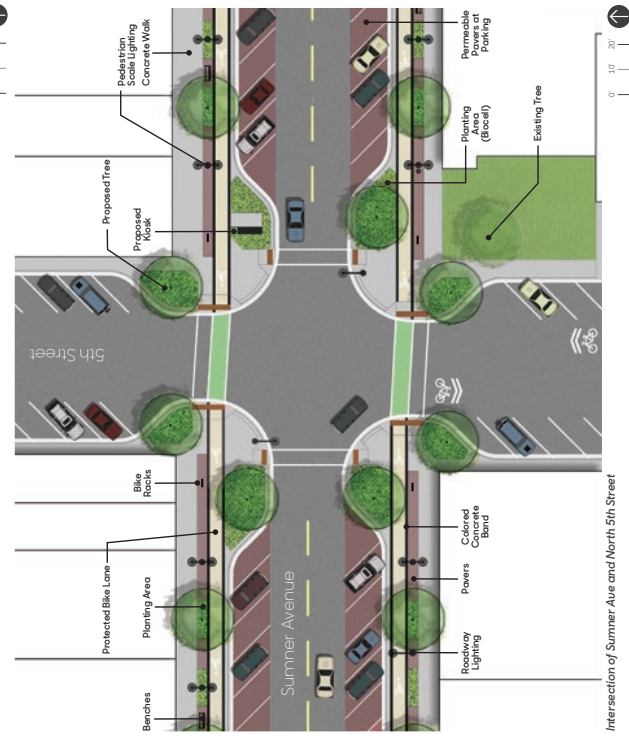
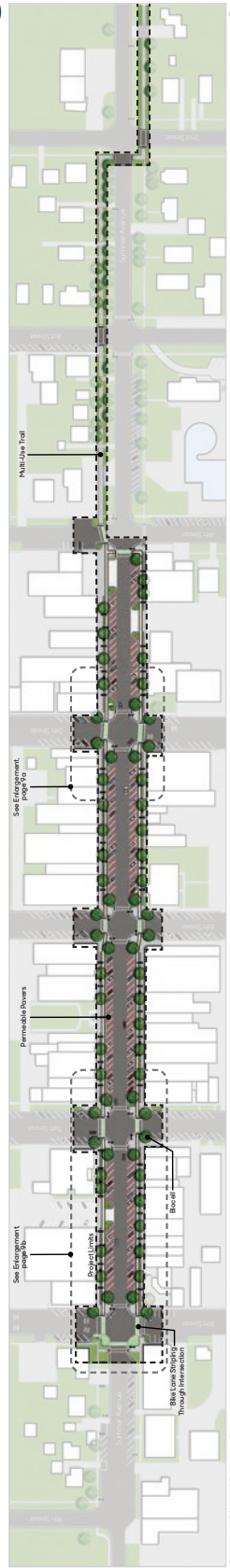
- Incorporate green infrastructure through permeable pavers and biocells
- Enhance streetscape with new sidewalks, bump-outs, street trees and plantings, decorative concrete, site furnishings, upgraded lighting, and pavers
- Create a multi-modal corridor through the addition of protected bike lanes

Design Expertise Recommended

Projects may require help beyond the capability of the visioning committee or available city staff. For this improvement project, the committee should expect to involve the following design professionals: Landscape architect and civil engineer.

Project Scope and Cost Opinion

The following cost opinion is for conceptual design based on current lowa bid pricing. Donated or at-cost materials and volunteer labor, when appropriate, could reduce overall project costs. Additional investigation will be necessary to determine the condition of and impact to existing utilities, which can be resolved in a subsequent design phase. As a result, not all utility costs are included in the cost opinion.



Streetscape Improvements
 Summer Avenue extends the business district east, off of Highway 169 on the southeastern end of town. Located in this area are businesses such as restaurants, banks, and service providers, along with municipal offices and the Humboldt Family Aquatic Center, making this an active street for Humboldt residents. However, aging existing conditions are hindering pedestrians' experiences while carrying out everyday activities such as biking, shopping, or dining in the area, thus warranting an updated streetscape on Summer Avenue between 9th and 2nd Street. Humboldt's downtown improvements include bump-outs, street trees, bollards, lighting, signage, site furnishings, and protected bike lanes; all factors which help create a safer, more enjoyable experience for all users downtown.

Design Team
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 Intern: Hannah Schmitz
 Iowa State University | Trees Forever | Iowa Department of Transportation

Humboldt
 Summer Ave Streetscape



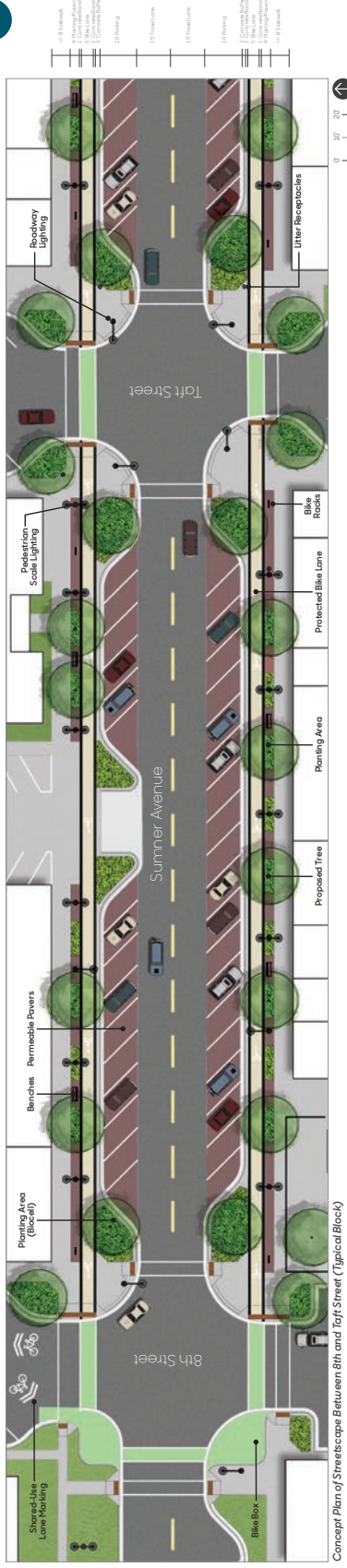
Sumner Ave Streetscape

The proposed plan incorporates safety, aesthetic and ecological enhancements along Sumner Avenue. Safety is promoted through protected bike lanes, which are created using a hierarchy between raised sidewalks and bike lanes, parallel parking, and travel lanes. Planting areas, pavers, and decorative concrete are also used to create a distinct separation between pedestrians and cyclists, while also providing aesthetic benefits along the corridor. Intersections will include bump-outs to improve pedestrian safety through reduced crosswalk lengths, while offering additional greenspace for perennial plantings, street trees, and biocells. Biocells at intersections and permeable pavers at parking areas create ecological advantages by slowing down, filtering, and infiltrating stormwater runoff along the roadway. Other amenities and improvements consist of planting areas, benches, litter receptacles, and pedestrian and roadway lighting. Creating a downtown identity with new streetscape amenities throughout Sumner Avenue will allow Humboldt to enhance pedestrian experiences and amplify what the community has to offer.

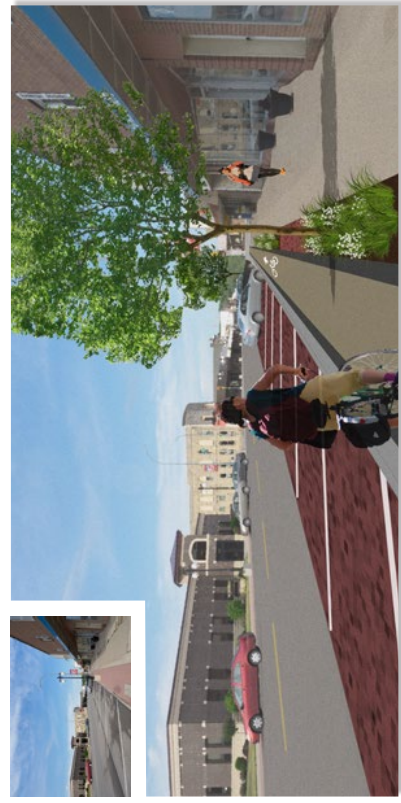
	UNIT	QUANTITY	UNIT COST	TOTAL
SUMNER AVENUE STREETScape (8TH STREET TO 4TH STREET)				
MOBILIZATION	LS	1	\$240,000	\$240,000
SITE PREPARATION / EXCAVATION / COMPACTION	SY	16,700	\$15	\$250,500
EXISTING SIDEWALK AND CURB & GUTTER REMOVALS	SY	7,100	\$13	\$92,300
EXISTING ASPHALT REMOVALS	SY	9,000	\$14	\$126,000
ASPHALT STREET MILL AND OVERLAY - PROPOSED	SY	7,850	\$35	\$274,750
CONCRETE WALK - PROPOSED	SY	5,225	\$60	\$313,500
CONCRETE DRIVE APRONS - PROPOSED	SY	260	\$65	\$16,900
CONCRETE CURB AND GUTTER	LF	4,675	\$24	\$112,200
COLORED CONCRETE BIKE LANE	SY	1,700	\$135	\$229,500
1' CONCRETE BAND BETWEEN ASPHALT STREET AND PERMEABLE PAVER PARKING	LF	2,400	\$20	\$48,000
CONCRETE UNIT PAVERS ON CONCRETE SUBBASE	SY	650	\$125	\$81,250
PERMEABLE PAVERS AT PARKING	SF	3,100	\$150	\$465,000
ROADWAY LIGHTING - REMOVE AND RELOCATE	EA	23	\$3,500	\$80,500
PEDESTRIAN LIGHTS - REMOVE EXISTING	EA	40	\$800	\$32,000
PEDESTRIAN LIGHTS - PROPOSED	EA	38	\$5,500	\$209,000
ELECTRICAL CONDUIT AND WIRE - PROPOSED	LS	1	\$35,000	\$35,000
STOP LIGHTS - REMOVE AND RELOCATE (INCLUDING HANDHOLES)	EA	16	\$2,250	\$36,000
STORM INTAKES - REMOVE EXISTING	EA	12	\$500	\$6,000
STORM INTAKES - PROPOSED	EA	12	\$4,500	\$54,000
REMOVE AND RELOCATE HYDRANTS	EA	4	\$4,000	\$16,000
ADJUST MANHOLE CASTINGS	EA	8	\$1,250	\$10,000
BIORETENTION BASINS (AMENDED SOILS, DRAINAGE ROCK/TILE, MULCH, PLANTINGS)	SY	1,000	\$250	\$250,000
SIDEWALK PLANTINGS (AMENDED SOILS, MULCH, PERENNIALS/GRASSES)	SY	400	\$180	\$72,000
TREES	EA	65	\$550	\$35,750
BENCHES	EA	16	\$1,750	\$28,000
LITTER RECEPTACLES	EA	8	\$1,550	\$12,400
BIKE RACKS	EA	15	\$700	\$10,500
CROSSWALK / BIKE LANE STRIPING	LF	6,200	\$2	\$12,400
BIKE LANE SYMBOL - PAINTED	EA	16	\$250	\$4,000
ADA DETECTABLE WARNING PLATE	SF	875	\$50	\$43,750
IMPROVEMENTS SUBTOTAL				\$3,197,200
CONTINGENCY (15%)				\$479,580
DESIGN/ENGINEERING FEES (10%)				\$319,720
SITE IMPROVEMENTS TOTAL				\$3,996,500

ANTICIPATED COST RANGE \$4,000,000 - \$4,500,000

NOTE: DOES NOT INCLUDE ADDITIONAL UTILITY COSTS. VERIFY CONDITION OF EXISTING UTILITIES AND DETERMINE IMPROVEMENT NEEDS.



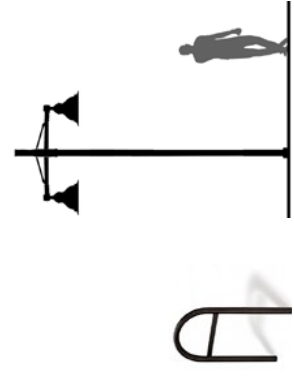
Concept Plan of Streetscape Between 8th and Taft Street (Typical Block)



Rendering of Proposed Streetscape

Streetscape Improvements

The proposed plan incorporates safety, aesthetic and ecological enhancements along Summer Avenue. Safety is promoted through protected bike lanes, which are created using a hierarchy between raised sidewalks and bike lanes, parallel parking, and travel lanes. Planting areas, pavers, and decorative concrete are also used to create a distinct separation between pedestrians and cyclists, while also providing aesthetic benefits along the corridor. Intersections will include bump-outs to improve pedestrian safety through reduced crosswalk lengths, while offering additional greenspace for perennial plantings, street trees, and biocells. Biocells at intersections and permeable pavers at parking areas create ecological advantages by slowing down, filtering, and infiltrating stormwater runoff along the roadway. Other amenities and improvements consist of planting areas, benches, litter receptacles, and pedestrian and roadway lighting. Creating a downtown identity with new streetscape amenities throughout Summer Avenue will allow Humboldt to enhance pedestrian experiences and amplify what the community has to offer.



Proposed Bike Racks and LED Pedestrian Lighting (see also for benches/litter receptacles)

Humboldt
 Summer Ave Streetscape

Design Team
 LA: Dylan Jones, P.L.A., LEED GA
 Intern: Hannah Schmitz
 Iowa State University | Trees Forever | Iowa Department of Transportation



Wayfinding Signage

A town's identity evokes a sense of community pride. By creating cohesive signage, a town's identity can be made unique and a community's sense of place can be strengthened. Humboldt's existing signage uses engraved limestone to welcome both residents and guests into the community. Despite the newest entry signs, a family of signs has not yet been created to connect trails, parks, and the downtown business district. The steering committee identified a variety of signage options that can help bridge these areas together. These options include signage that showcases trail routes, information kiosks, vehicular wayfinding, and light pole mounted signs/banners.

The trail, downtown kiosk, and entry monument concepts incorporate limestone materials to match the new community entry signs near Highway 169 and Highway 3. The first option includes a trail map, which features the Three Rivers Trail, the Cottonwood Trail and the various other trail routes/connections around town. In the second option, a downtown directory is portrayed to inform pedestrians of business, park, and trail locations near Sumner Avenue. The third sign reading "Welcome to Humboldt Downtown" replaces existing directional signage along Highway 169 and Highway 3. All options incorporate metal sign blades, which point motorists, cyclists, and pedestrians in the right direction. Signage mounted to light poles also incorporate metallic elements that are used as a frame to hold double-sided banners. The banner frame reflects the form of the proposed limestone signage to make a cohesive family of signs. The left banner can be used for seasonal interests and event promotion, while the right banner will display the town name and logo. Metal wayfinding signs mounted to light poles can be placed as needed; these signs represent Humboldt's river and streets to form an artful canvas for the directional blades.

Key Concept Components

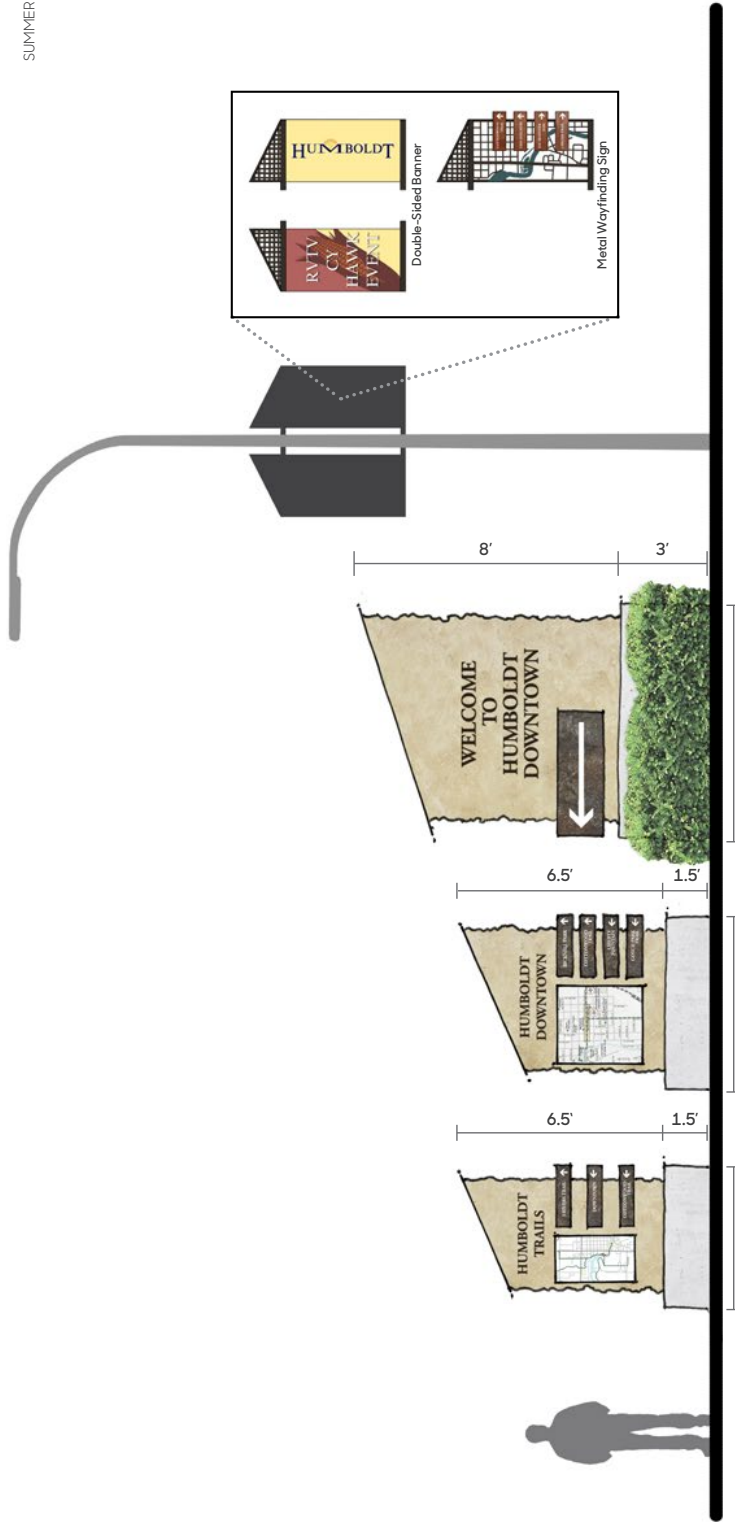
- Create a family of signage
- Improve wayfinding signage along trails for pedestrians and cyclists
- Develop gateway enhancements and signage at the intersections of Sumner Ave / Hwy 169, 3rd Ave / Hwy 169, and 5th St / Hwy 3
- Institute maps / develop regional trail brochure

Design Expertise Recommended

Projects may require help beyond the capability of the visioning committee or available city staff. For this improvement project, the committee should expect to involve the following design professionals: Landscape architect and sign fabricator.

Project Scope and Cost Opinion

The following cost opinion is for conceptual design based on current lowa bid pricing. Donated or at-cost materials and volunteer labor, when appropriate, could reduce overall project costs.



Wayfinding Signage

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Pictured above are each of these options. The trail, downtown kiosk, and entry monument concepts incorporate limestone materials to match the new community entry signs near Highway 169 and Highway 3. The first option includes a trail map, which features the Three Rivers Trail, the

Cottonwood Trail and the various other trail routes/connections around town. In the second option, a downtown directory is portrayed to inform pedestrians of business, park, and trail locations near Summer Avenue. The third sign reading "Welcome to Humboldt Downtown" replaces existing directional signage along Highway 169 and Highway 3. All options incorporate metal sign blades, which point motorists, cyclists, and pedestrians in the right direction. Signage mounted to light poles also incorporate metallic elements that are used as a frame to hold double-sided banners. The banner frame reflects the form of the proposed limestone signage to make a cohesive family of signs. The left banner can be used for seasonal interests and event promotion, while the right banner will display the town name and logo. Metal wayfinding signs mounted to light poles can be placed as needed; these signs represent Humboldt's river and streets to form an artful canvas for the directional blades.

Humboldt

Wayfinding Signage

Design Team

LA: Dylan Jones, PLA, LEED GA
 Intern: Hannah Schmitz
 Iowa State University | Trees Forever | Iowa Department of Transportation



Wayfinding Signage

Wayfinding signage is used to help orient both residents and visitors in the community from where they are to where they want to go. This signage works best when the information displayed is both clear and consistent. Correlating materials and themes on each piece also helps establish a community's identity.

Four types of wayfinding features have been designed to help guide people to key areas in town, such as the Three Rivers Trail, Gotch Park Trail, Joe Reasoner Dam, various parks, and downtown Humboldt. The signs are made of limestone, concrete, and metal materials to create a cohesive theme. They can be found near highways to lead vehicles downtown, near trail entries to guide cyclists and on-foot traffic, and downtown along street corners and on light poles to orient residents and visitors around Humboldt. The top left image portrays the proposed "Welcome to Humboldt" sign. It is located on the corner of Highway 169 and 3rd Avenue. Another sign of this type is located at the intersection of Highway 3 and 5th Street. Evergreen shrubs and perennial plantings are proposed to mask the concrete footing on the bottom of the sign. The top right image depicts the trail entry sign for the Three Rivers Trail near Sumner Ave. Here you can see the height in proportion to the biker; this sign stands 6.5 feet tall at its highest point. The final rendering showcases Sumner Avenue's proposed downtown kiosk. This kiosk will be placed at the intersection of Sumner Avenue and 5th Street off of the sidewalk, within a biocell, on a concrete base. It is strategically placed here to guide trail users through downtown and to highlight the proposed trail connection directly south via 5th Street. All wayfinding options bring a pleasing sense of scale to the streets and trails they inhabit and improve one's ability to navigate Humboldt.

	UNIT	QUANTITY	UNIT COST	TOTAL
WAYFINDING SIGNAGE				
MOBILIZATION	LS	1	\$15,000	\$15,000
TRAIL SIGNAGE (LIMESTONE, CONCRETE BASE, MAP, METAL WORK)	EA	6	\$7,000	\$42,000
PEDESTRIAN SCALE KIOSK (LIMESTONE, CONCRETE BASE, MAP, METAL WORK)	EA	1	\$10,500	\$10,500
GATEWAY SIGNAGE (LIMESTONE, CONCRETE BASE, METAL WORK)	EA	2	\$17,000	\$34,000
PLANTINGS AT GATEWAY SIGNAGE	LS	1	\$4,000	\$4,000
BANNER ARMS AND BANNERS ON LIGHT POLES	EA	18	\$1,200	\$21,600
METAL WAYFINDING BANNER ON LIGHT POLES	EA	5	\$2,500	\$12,500
IMPROVEMENTS SUBTOTAL				\$139,600
CONTINGENCY (15%)				\$20,940
DESIGN/ENGINEERING FEES (10%)				\$13,960
SITE IMPROVEMENTS TOTAL				\$174,500

ANTICIPATED COST RANGE \$150,000 - \$200,000

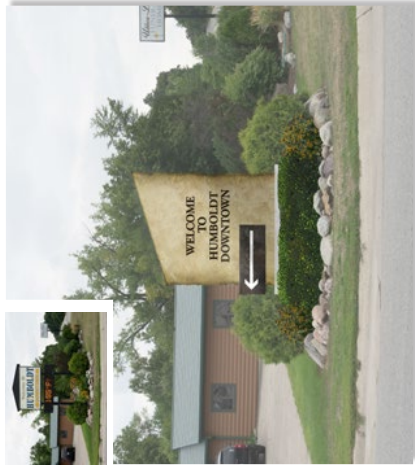
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Proposed Sign Along Three Rivers Trail



Proposed Gateway Sign



Proposed Kiosk Downtown

Humboldt

Wayfinding Signage

Design Team

LA: Dylan Jones, PLA, LEED GA
 Intern: Hannah Schmitz
 Iowa State University | Trees Forever | Iowa Department of Transportation



Dam Mitigation

Humboldt's proximity to the Des Moines River has created a variety of recreational activities within the community. Unfortunately, the existing Joe Reasoner dam serves as a barrier for not only recreational purposes, but also for fish heading north up the river. Due to this hindrance, a series of navigable drops, known as rock rapids, have been proposed to mitigate the dam and allow for these activities to take place.

Implementation of the rock rapids can be carried out through two different options. In option 1, half of the existing dam structure will remain while the other half is transformed by the rock rapids to provide the gradual change in grade needed to mitigate the height of the dam. This would allow some functions of the dam to continue, while also allowing fish and boaters the ability to pass through. At the top of the dam, a roped off area would be enforced to keep water activities away from the currents of the dam. The second option does not call for a roped off area as it would be rock rapids stretched from one side of the river to the other. In both examples, a pedestrian bridge is designed to allow trail users to cross the dam and connect to other trails throughout Humboldt. By mitigating the dam, the community hopes to see environmental and economic benefits by creating a draw for kayakers, canoers, and fishers from inside and outside of Humboldt. This project would require a feasibility study of the structural integrity of the existing dam structure and coordination with the Iowa Department of Natural Resources.

Key Concept Components

- Mitigate dam to allow unimpeded travel for canoers, kayakers, and aquatic life
- Improve recreation opportunities through use of rock rapids
- Use existing dam footings/structure to create a pedestrian bridge

Design Expertise Recommended

Projects may require help beyond the capability of the visioning committee or available city staff. For this improvement project, the committee should expect to involve the following design professionals: Landscape architect, civil engineer, water resources/environmental engineer, geotechnical engineer, and structural engineer. The committee should also expect to coordinate design efforts with the Iowa Department of Natural Resources and Army Corps of Engineers.

Project Scope and Cost Opinion

The following cost opinion is for conceptual design based on current Iowa bid pricing. Donated or at-cost materials and volunteer labor, when appropriate, could reduce overall project costs. This project will require further study to determine final scope and cost. It is recommended that a more detailed planning and feasibility study be prepared (impact to the river and analysis of dam structure to remain). All necessary permits must be obtained prior to any construction on this project.

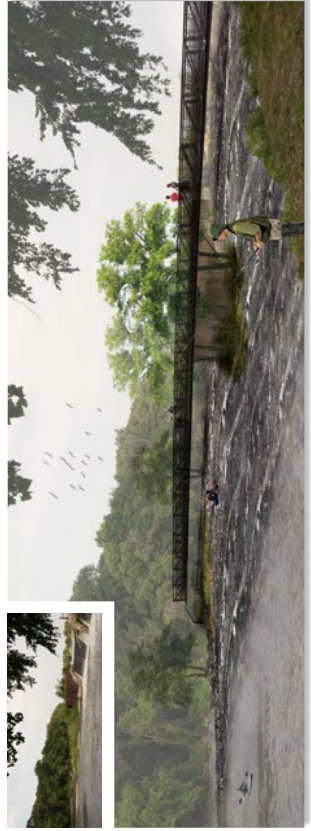
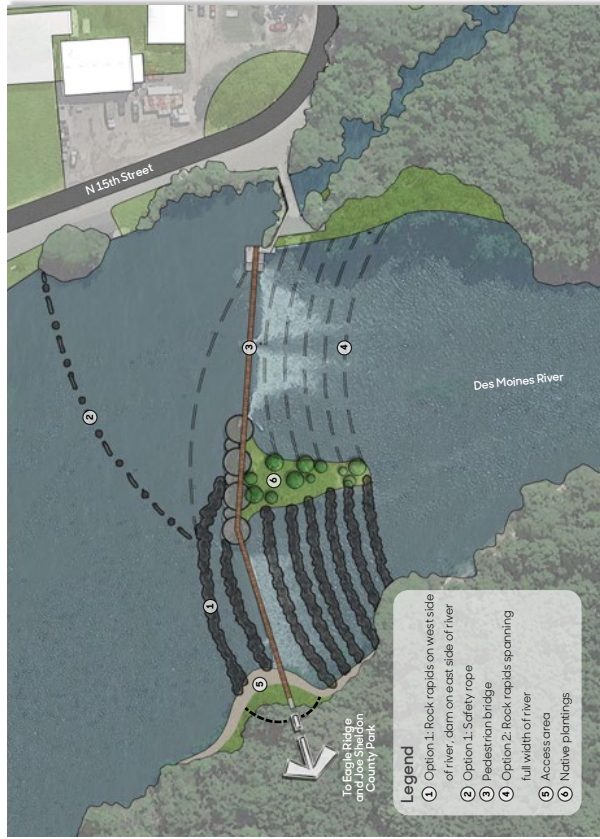
	UNIT	QUANTITY	UNIT COST	TOTAL
DAM MITIGATION - OPTION 1 (HALF)				
MOBILIZATION	LS	1	\$135,000	\$135,000
SITE PREPARATION / TEMPORARY DAM / DEWATERING	LS	1	\$175,000	\$175,000
DAM REMOVAL - WEST SIDE	LS	1	\$50,000	\$50,000
EARTHWORK - EXCAVATION AND BACKFILLING	LS	1	\$400,000	\$400,000
WATER ACCESS AREA (GRAVEL BEACH, BOULDERS)	LS	1	\$40,000	\$40,000
ROCK RAPIDS	LS	1	\$200,000	\$200,000
12' WIDE PEDESTRIAN BRIDGE (ON EXISTING DAM STRUCTURE)	LS	1	\$650,000	\$650,000
ROPED OFF AREA - NAVIGATION BUOYS + SIGNAGE	LS	1	\$25,000	\$25,000
NATIVE PLANTINGS / RESTORATION (ISLAND AND STREAMBANK)	SF	8,000	\$15	\$120,000
TREE - 2" CAL.	EA	10	\$550	\$5,500
IMPROVEMENTS SUBTOTAL				\$1,800,500
CONTINGENCY (20%)				\$360,100
DESIGN/ENGINEERING FEES (15%)				\$270,075
SITE IMPROVEMENTS TOTAL				\$2,430,675

ANTICIPATED COST RANGE \$2,250,000 - \$2,750,000

	UNIT	QUANTITY	UNIT COST	TOTAL
DAM MITIGATION - OPTION 2 (FULL)				
MOBILIZATION	LS	1	\$190,000	\$190,000
SITE PREPARATION / TEMPORARY DAM / DEWATERING	LS	1	\$250,000	\$250,000
DAM REMOVAL - FULL	LS	1	\$100,000	\$100,000
EARTHWORK - EXCAVATION AND BACKFILLING	LS	1	\$850,000	\$850,000
WATER ACCESS AREA (GRAVEL BEACH, BOULDERS)	LS	1	\$40,000	\$40,000
ROCK RAPIDS	LS	1	\$400,000	\$400,000
12' WIDE PEDESTRIAN BRIDGE (ON EXISTING DAM STRUCTURE)	LS	1	\$650,000	\$650,000
NATIVE PLANTINGS / RESTORATION (ISLAND AND STREAMBANK)	SF	8,000	\$15	\$120,000
TREE - 2" CAL.	EA	10	\$550	\$5,500
IMPROVEMENTS SUBTOTAL				\$2,605,500
CONTINGENCY (20%)				\$521,100
DESIGN/ENGINEERING FEES (15%)				\$390,825
SITE IMPROVEMENTS TOTAL				\$3,517,425

ANTICIPATED COST RANGE \$3,500,000 - \$4,000,000

NOTE: THIS PROJECT WILL REQUIRE GEOTECHNICAL AND STRUCTURAL ANALYSIS AND APPROPRIATE PERMITTING.
THIS COST ESTIMATE IS PRELIMINARY AND THERE MAY BE ADDITIONAL UNFORSEEN COSTS AS A RESULT OF FURTHER STUDY.



Dam Mitigation

Humboldt's proximity to the Des Moines River has created a variety of recreational activities within the community. Unfortunately, the existing Joe Reardon dam serves as a barrier for not only recreational purposes, but also for fish heading north up the river. Due to this hindrance, a series of navigable drops, known as rock rapids, have been proposed to mitigate the dam and allow for these activities to take place.

Implementation of the rock rapids can be carried out through two different options. In option 1, half of the existing dam structure will remain while the other half is transformed by the rock rapids to provide the gradual change in grade needed to mitigate the height of the dam. This would allow some functions of the dam to continue, while also allowing fish and boaters the ability

to pass through. At the top of the dam, a roped off area would be enforced to keep water activities away from the currents of the dam. The second option does not call for a roped off area as it would be rock rapids stretched from one side of the river to the other. In both examples, a pedestrian bridge is designed to allow trail users to cross the dam and connect to other trails throughout Humboldt. By mitigating the dam, the community hopes to see environmental and economic benefits by creating a draw for kayakers, canoeers, and fishers from inside and outside of Humboldt. This project would require a feasibility study of the structural integrity of the existing dam structure and coordination with the Iowa Department of Natural Resources.

Humboldt
Dam Mitigation

Design Team

LA: Dylan Jones, P.L.A., LEED GA
Intern: Hannah Schmitz

Iowa State University | Trees Forever | Iowa Department of Transportation



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Implementation Strategies

The Visioning Program is the beginning of the planning process for implementation of projects that will contribute to an enhanced quality of life in Humboldt. Despite the tremendous value in data gathering, analysis, conclusions, and recommendations; the greatest value is providing residents of Humboldt with the opportunity to look at their community from different perspectives and to motivate future positive change. It is the design team's intent to provide the community with a framework for significant future development and enhancement to community resources.

Recommendations

Project implementation should be determined based on the priority given it by the community and also with the realization of available funding sources. These funding sources may be through grants and private donations, but may also be in the form of volunteer labor, donated materials, or donated services.

The projects have been developed with a variety of different scales in mind, allowing some to be more easily realized than others. By reviewing the available resources and developing an implementation plan, the community can move forward towards realizing the fruits of its vision.

The primary goal of the community as it moves forward should be planning for successful projects. Successful implementation of a project allows for public support and interest to grow and can quickly lead to availability of additional and more diverse implementation resources – a community with a history of successful projects and involvement is more appealing to funding agencies. Therefore, a smaller project that fits the following criteria is generally recommended as a starting project for the community to undertake:

1. Is highly visible
2. Has a good chance of receiving a grant or funding assistance
3. Can use volunteers
4. Is not overly complicated

Because the information depicted on each board is conceptual in nature, the edits, sketches, and other deliverables are not intended for use as final design/construction documents. They need to be further developed with the help of professionals during a "design phase." During a design phase, concepts will be refined and developed to determine the actual character, size, and essentials that will become part of the final project. The final products from this phase may retain the general concepts depicted on the boards, but may look vastly different because of constraints or opportunities unknown during the visioning process. However, the design that emerges from final design may also look very similar to that developed during the Visioning Program.

One thing to keep in mind with all projects, whether phased or not, is to make sure that the overall project is designed and planned for at the beginning to ensure that each segment will interconnect and relate to another. Failing to plan for future construction phases can easily lead to complications that could set back positive progress for years.

Available Resources

There are many creative ways that communities can raise the resources necessary to fund and implement projects. The following list is a compilation of various sources and opportunities for funding the projects conceptualized during the visioning process. This list is not all-inclusive; it is meant to serve as a tool to assist in brainstorming ideas.

Funding Opportunities

- Grants
- Partnerships (private and public)
- Trusts and endowments
- Fund-raising and donations
- Memorials
- Volunteer labor
- Low-interest loans
- Implementation of project in phases

Funding Sources

- Iowa Department of Transportation
- Iowa Department of Natural Resources
- Iowa Department of Education
- Iowa Department of Economic Development
- Utility companies
- Trees Forever

Grant Programs

- MidAmerican Energy's Trees Please! Program
- Federal Surface Transportation Program (STP)
- Iowa Clean Air Attainment Program (ICAAP)
- Iowa DOT/DNR Fund Iowa
- Iowa DOT Iowa's Living Roadways Projects Program
- Iowa DOT Living Roadways Trust Fund Program
- Iowa DOT Pedestrian Curb Ramp Construction Program
- Iowa DOT Statewide Transportation Enhancement Funding
- Iowa DNR Recreation Infrastructure Program
- Land and Water Conservation Fund
- National Recreational Trails Program
- Pheasants Forever
- Pollinator Habitat Conservation
- Revitalization Assistance for Community Improvement (RACI) Grant Program
- State Recreational Trails Program
- Transportation Alternatives Program (TAP)

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