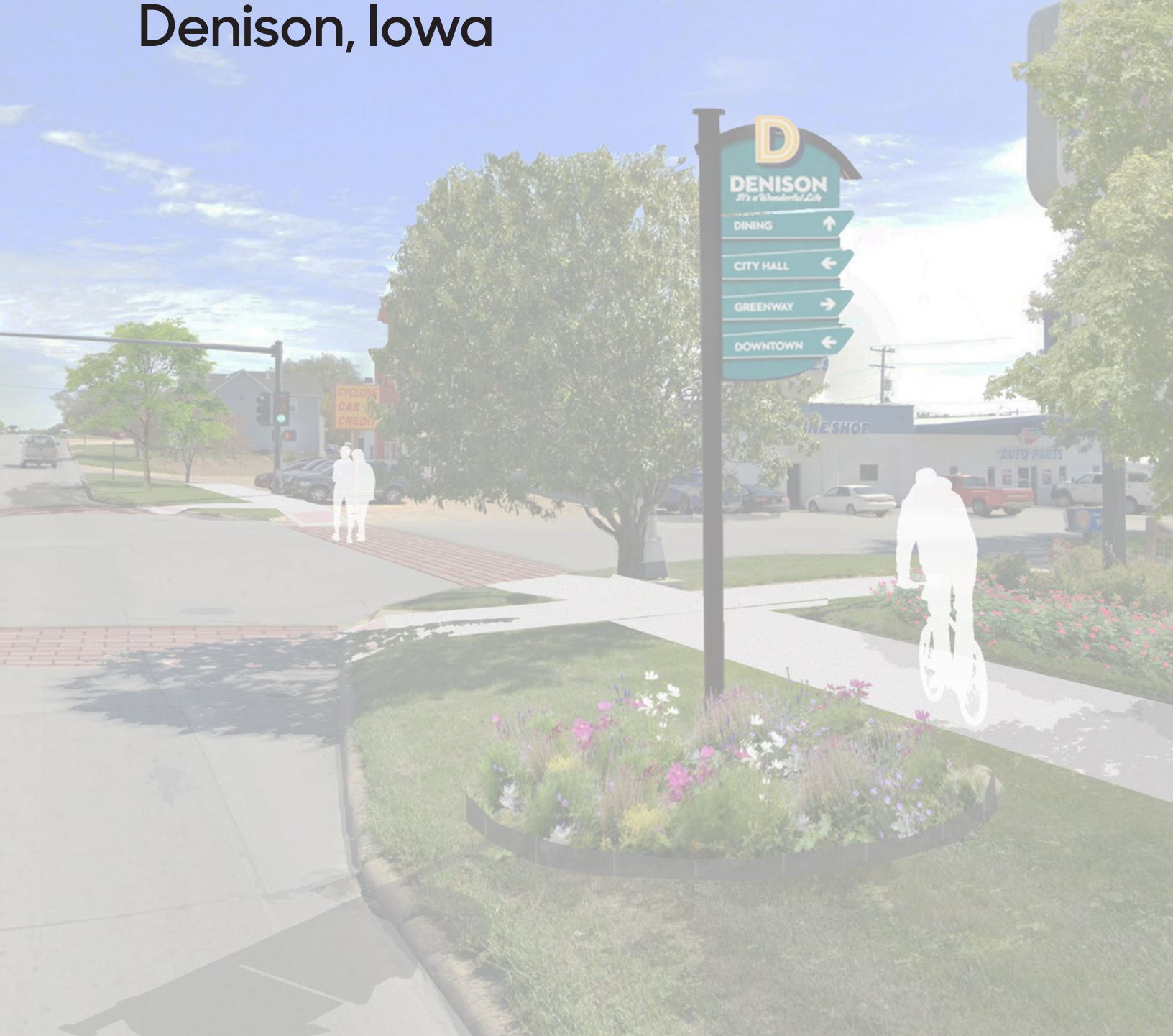


Final Report and Feasibility Study

Denison, Iowa



Program Partners:

Iowa Department of Transportation
Trees Forever
Iowa State University



Participants

Town Steering Committee

Pam Soseman
Mike Pardun
Erin Muck

Mike Vogt
Bill Bruce
Jessica Garcia

Alma Puga
Clay Adams

Trees Forever

80 West 8th Avenue
Marion, IA 52302
319-373-0650
www.treesforever.org

Brad Riphagen
515-370-1291
briphagen@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
Chad Hunter, Landscape Architecture Outreach Studio Manager
Britney Markhardt, Program Specialist

HDR

1917 S 67th Street
Omaha, NE 68154
402-399-1000
www.hdrinc.com

Alison Ingunza, PLA, ASLA
402-548-5170
alison.ingunza@hdrinc.com

Caeley Reade
Landscape Architecture Intern
Iowa State University

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About HDR

Architecture & Design

1917

year established

104

years in business

10,706

global employees

2,414

architecture and building
engineering staff

761

sustainable
accredited professionals

225

global office locations

38

architecture design studios
Australia
Canada
China
Germany
Middle East
United States

We Design to Unite People and Elevate the Human Spirit

We are an integrated, multidisciplinary design practice dedicated to creating places and spaces that elevate the human spirit and inspire human endeavors. We are inspired to design buildings and evolve space typologies to provide solutions to societal challenges and create stronger, more vibrant communities.

Expertise

80 million SF

of sustainable projects

40+ AIA Awards

over the past 5 years

Finalist

in the 2020 Fast Company
World Changing Company of
the Year

Services

Architecture
Architectural Engineering
Branding
Data-Driven Design
Experience Design
Interiors
Landscape & Site Design
Lighting Design
Planning & Consulting
Product Design
Signage & Wayfinding
Sustainability & Resiliency
Urban Design & Development

Notable Rankings

No. 1

Science and Health
Building Design
World Architecture 100 Survey,
2021

No. 2

Architecture/Engineering
Firms
Building Design+Construction, 2021

No. 3

Top 100 Global Design Firms
Building Design
World Architecture 100 Survey,
2021

No. 3

Top 300 Architecture Firms
Architectural Record, 2021

No. 4

Top 50 Firms in Sustainability
Architect 50, 2019

No. 1

Winner-Collaboration
Architizer A+ Firm Awards, 2021

Program Overview

Denison is one of 10 communities selected to participate in the 2023 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 Denison visioning committee identified a number of goals and priority areas during the visioning process, which are included below:

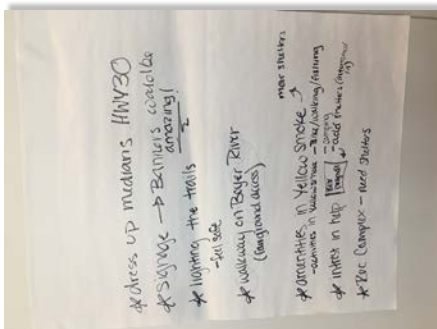
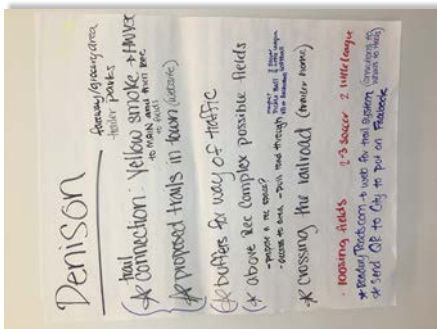
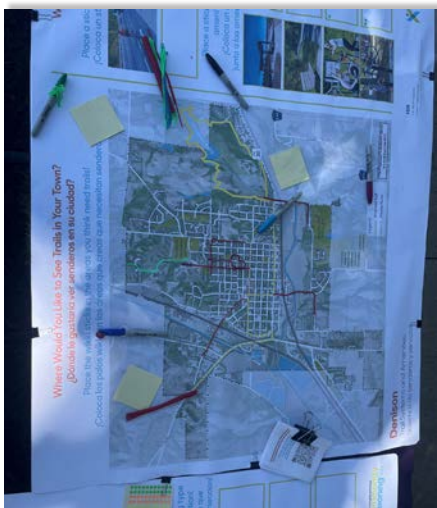
- Improve safety and accessibility within the community.
- Provide multi-modal accessible connectivity.
- Improving community amenities to provide opportunities for social connections and physical activities.

Capturing the Denison 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. These boards include the Program Overview, Bioregional Assessment, Transportation Assets and Barriers Assessment, Transportation Behavior and Needs Assessment, Hispanic Interview, Transportation Inventory and Analysis, Concept Overview, and Community Design Boards.



Design Workshop - Immigrant Heritage Festival



Program Overview

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Community Goals

The steering committee identified a number of goals and priority areas during the visioning process. These goals and priorities were reflective of what residents identified during their participation in the Transportation Assets and Barriers (TAB) workshops. The community goals focused on four main initiatives:

- Improve safety and accessibility within the community.
- Provide multi-modal accessible connectivity.
- Improving community amenities to provide opportunities for social connections and physical activities.

Refer to board 6, "What, Where, & Why," for further details related to the main community goals summarized above.

Capturing the Denison Vision

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1. Program Overview
2. Bioregional Assessments
3. Transportation Assets & Barriers
4. Transportation Behaviors & Needs
5. Transportation Inventory & Analysis
6. What, Where, & Why
7. Concept Plan Overview
8. Typical Intersection Improvement
9. Community Connection
10. Community Way-finding
11. Northside Recreation Complex Expansion

Denison

Program Overview

HDR Inc.
 LA: Alison Ingunza, PLA, ASLA
 Intern: Caeley Reade
 Iowa State University | Trees Forever | Iowa Department of Transportation



Bioregional Assessment

Historical Settlement Patterns

This page uses a map 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). A high-quality scan of the Atlas has been arranged to correspond closely with present-day map, revealing major landscape changes as well as features that have persisted, such as railroad rights-of-way and in some cases remnant vegetation patches.

Denison 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?

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. This 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

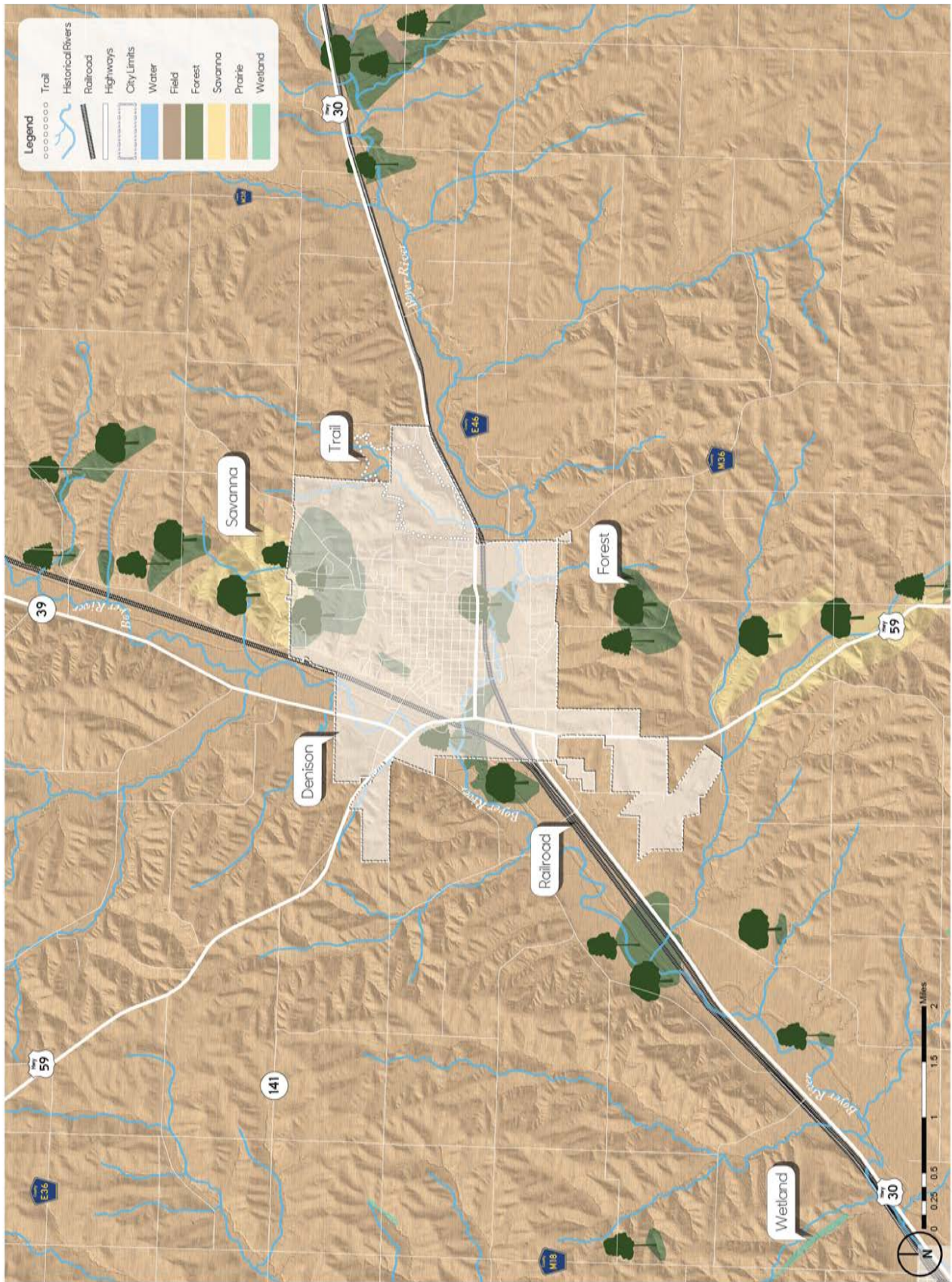
The plant community names mapped by the GLO surveyors varied. The original terminology they used has been preserved in the original data, but we have renamed them on this map to reflect names used to describe contemporary vegetation communities.

Not all communities will have all vegetation types, because various conditions that affect vegetation—such as geology, wind exposure, seasonally high water or groundwater, and frequency of fire—differ from place to place. Early land surveyors mapped the following vegetation types, some of which may not be present in the vicinity of your community:

The vegetation types are defined¹:

1. Forest: Tree dominated, with a mostly closed canopy. Ground vegetation shade tolerant. developed under infrequent fire.
2. Prairie: Perennial non-woody plants; fire dominated.
3. Savanna: Scattered trees, with an open canopy, and prairie below. Fire dominated.
4. Wetland: Perennial non-woody plants, water and fire dominated.
5. Field: Cultivated lands of early pioneers or Native Americans.

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.

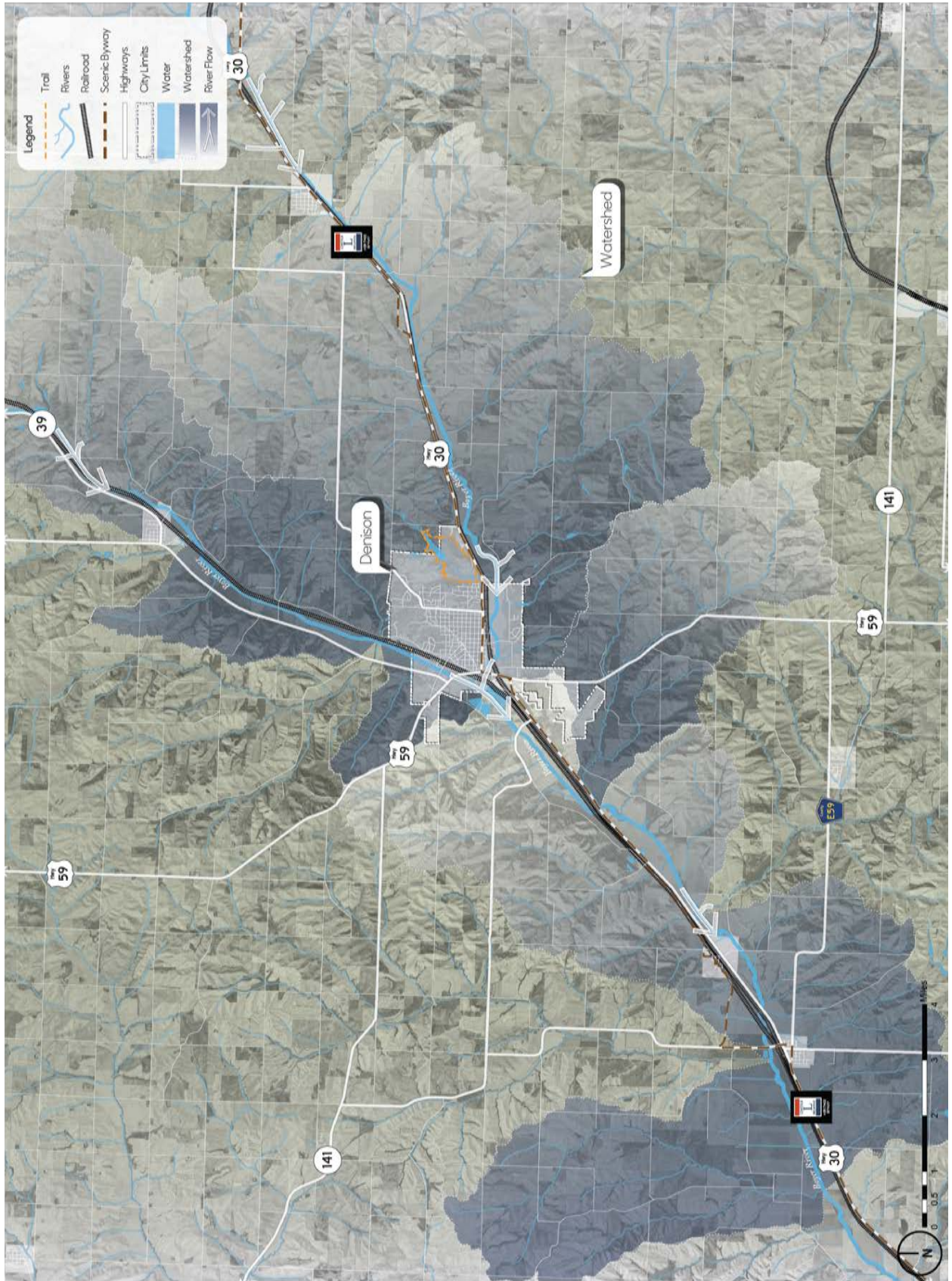


Regional Watershed

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 determine 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 is composed of 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.

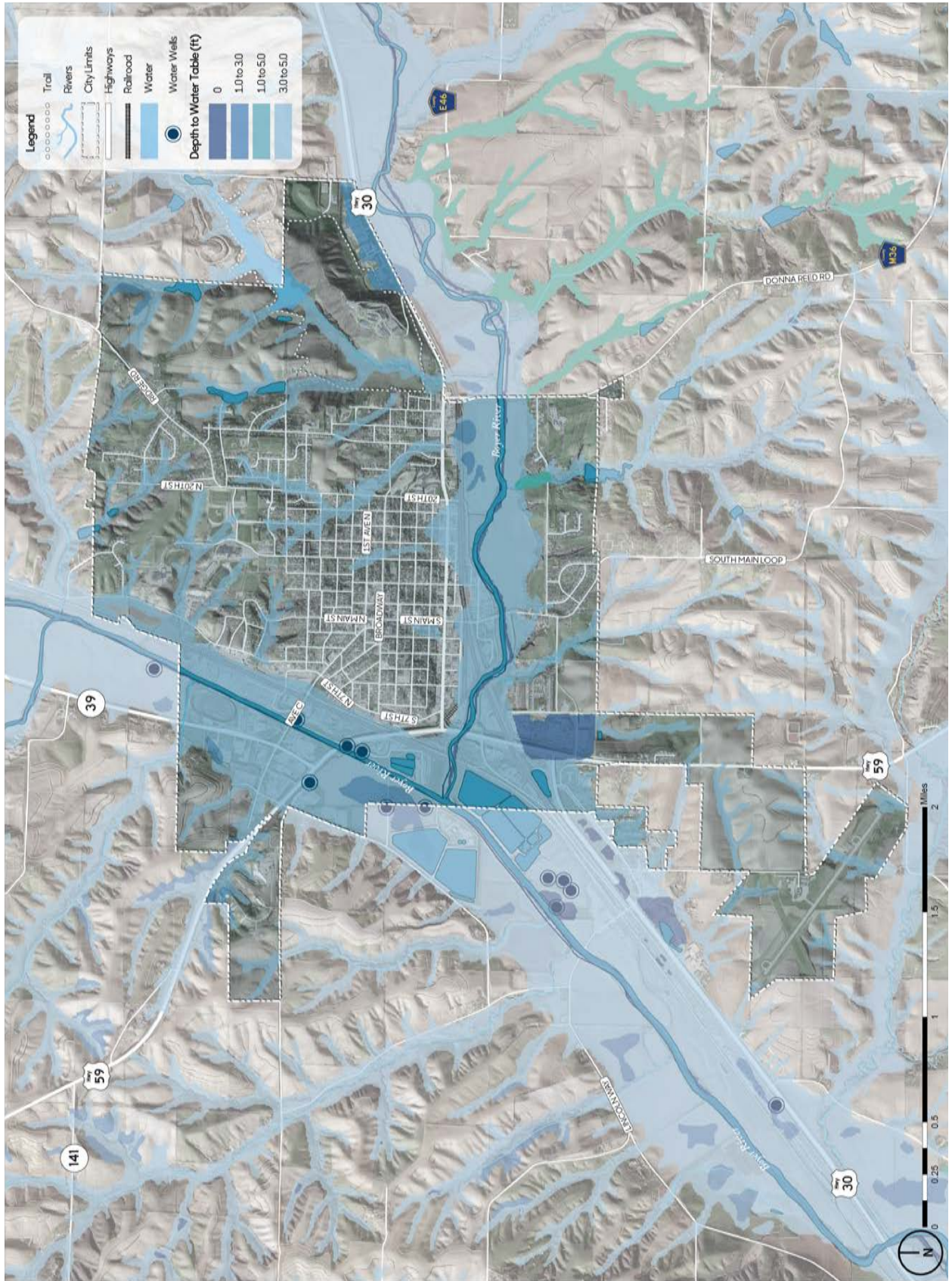


Depth to Water Table

The water table is defined as the distance below the surface at which the ground is saturated with water. Depth to water table is represented as a range because it varies due to seasonal changes and precipitation volumes. For example, following spring snowmelt, 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.

The map shows how close to the surface groundwater can be. Pavement and foundations are affected by groundwater near the surface. Freezing and thawing and upward pressure of rising groundwater can cause cracks or "frost boils" in pavement. Foundations can be wet and require "dewatering," which can be expensive.

Where the value is less than zero feet, water can well up out of the ground. This causes localized flooding, even if there is no surface water draining to the area.

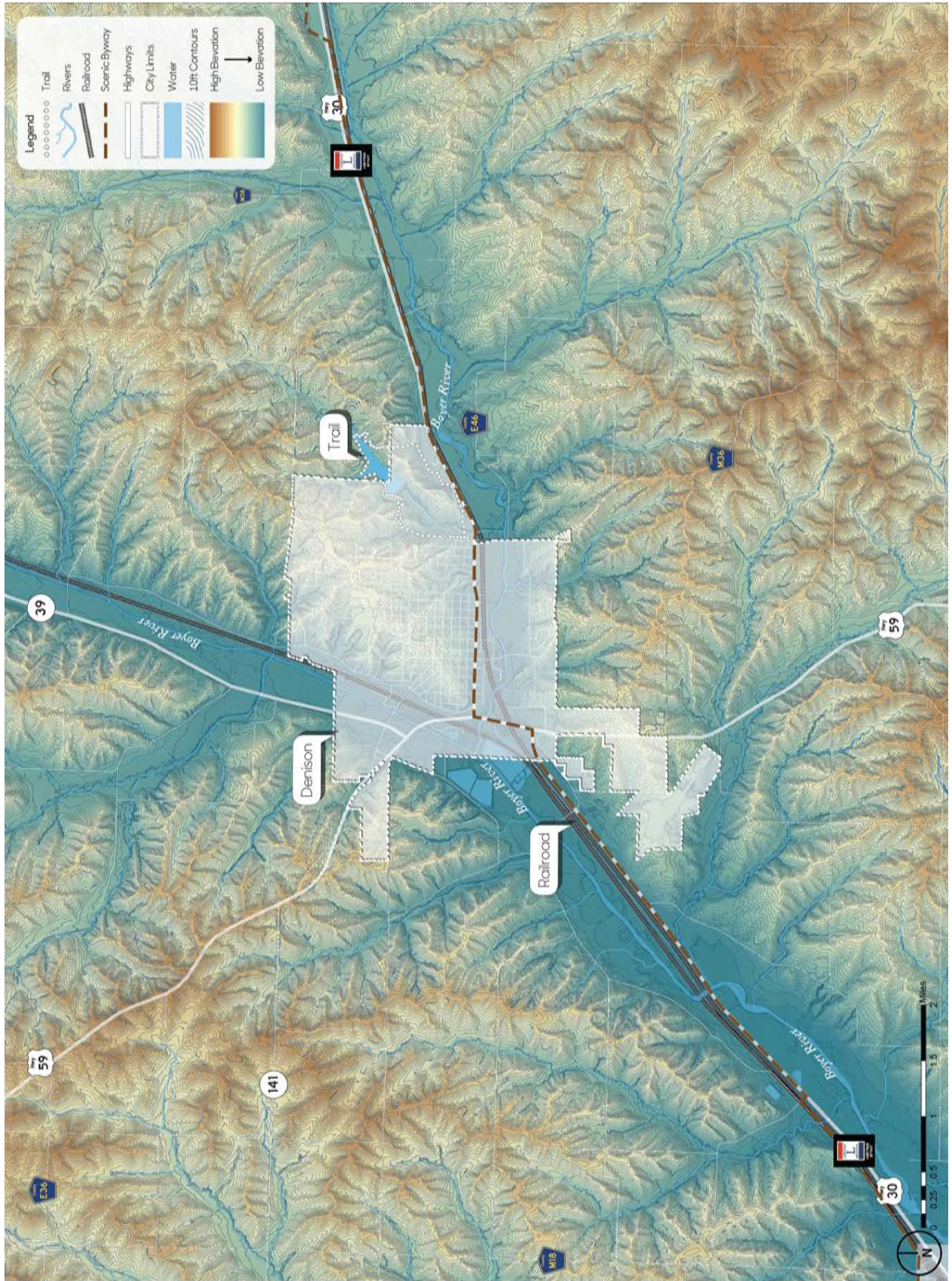


Elevation and Flow

This map displays topographic differences in elevation using a combination of contour lines and the color gradient depicted in the legend. The high 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?

If your community lies within or near a floodplain or floodway, the map reflects these features. Not all communities will have these elements; if they are absent on this map, none are present.

Flood risk is correlated to low-lying land. This map shows your community's flood risk as defined by the Federal Emergency Management Agency (FEMA) Flood Map Service Center. The map shows the two most important flood zones if present: the Base Flood and the Regulatory Floodway (consult legend). Base Flood is the zone having a 1% 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.



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 within your community boundaries.

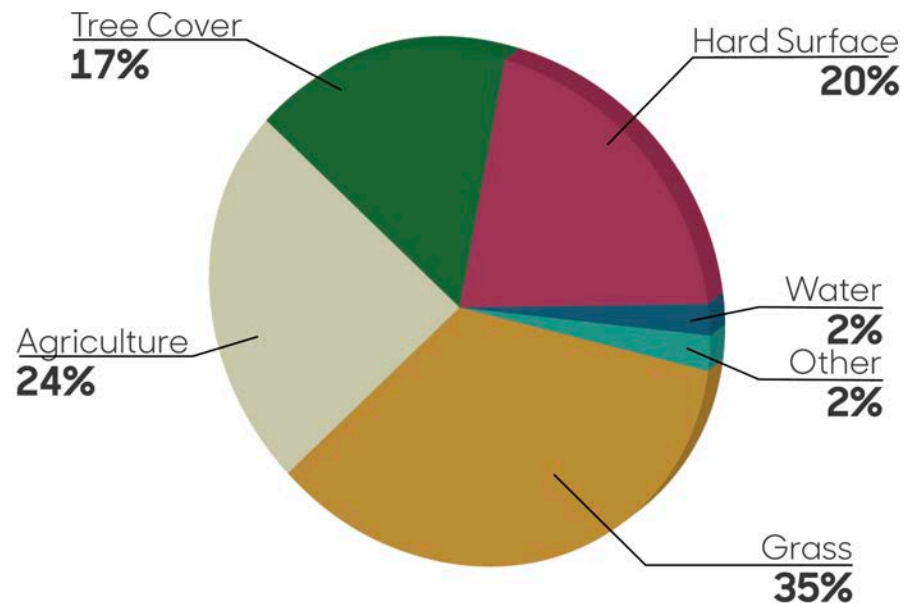
What do you observe about the dominant landcover types in your community?

Where is the tree canopy most concentrated?

Look at how much of your community consists of impervious surfaces (e.g., parking lots, roads, buildings) compared to the other surfaces (e.g, water, grass, and agriculture). What does this mean for surface-water movement?

Tree cover affects microclimate. Are places surrounded by canopy more pleasant in the summer? How do these places feel in the winter?

Percent Land Cover Type



Landscape Change Over Time

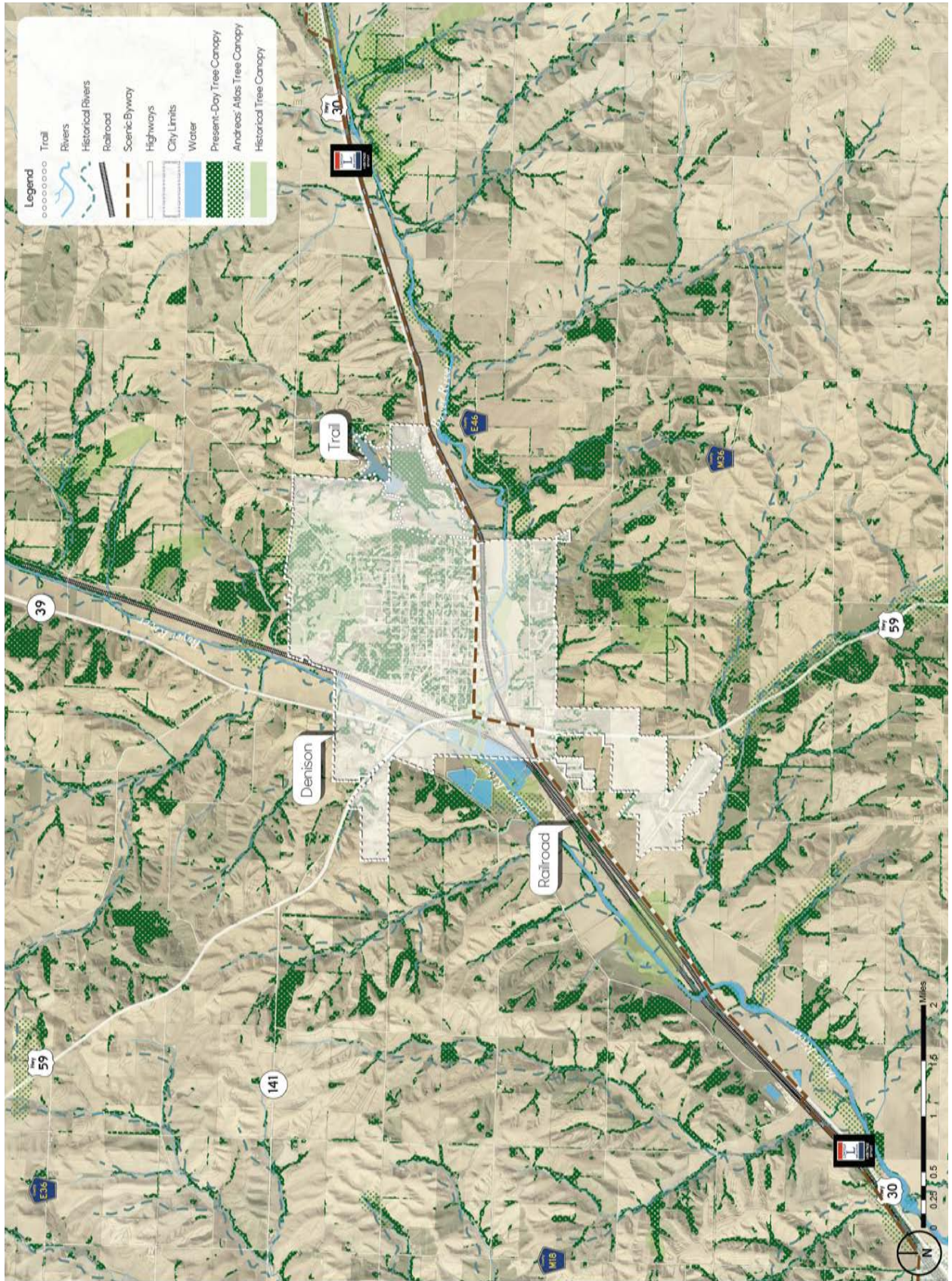
The map on this page shows how the landscape has changed over time, with an emphasis on vegetation and drainageways.¹ The map is helpful for understanding how landscapes change and considering how these changes might affect how well the landscape works to support human and ecological needs.

Trees are invaluable. They clean the air, create shade, and cool the atmosphere. They intercept rainfall and consume groundwater, which helps mitigate stormwater runoff. Carefully chosen and placed trees provide communities identity and residents with a sense of home. In Iowa, a prairie state, we increased tree cover to create shade and a sense of enclosure within rural towns. Lack of natural fires and burning has also generally increased tree cover along rivers and floodplains. Other areas of trees have diminished due to clearing for roads, agriculture, or other purposes.

What changes do you see to the tree canopy surrounding your community? Where has the tree canopy decreased? Where might the tree canopy have increased? Consider what changes to the landscape might have led to the increase or decrease of trees in the region (e.g., farming practices, community development, establishing homesteads and windbreaks, preservation of natural resources).

This map also shows current and historical stream and river corridors. Alterations to waterways such as channelization have been made to increase drainage, but can lead to increased erosion, sediment movement, and flooding where the straightened portion ends. Storm sewers also affect streams and waterways where outfalls drop urban runoff into the corridor, which can dramatically decrease water quality. How have streams and rivers changed? Do these changes appear to be man-made or natural?

¹ This map shows the difference between the present day tree canopy gathered from the DNR's Land Cover data and past landscape cover, as defined in the General Land Office (GLO) surveys from 1836 through 1859 and the *A.T. Andreas' Illustrated Historical Atlas of the State of Iowa from 1875*.



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 Denison, 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 Denison's transportation system works, we use focused, small-group conversations, mapping, and photos of the best and worst to understand local transportation.

Different Users = Different Needs

To capture insights about transportation from a variety of perspectives, we invited Denison residents with different transportation needs to participate in focus groups. A total of 48 residents attended Denison's workshop. Participants were separated into five user groups and the Denison steering committee.



Actives

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.



Older Adults & Mobility Challenged

Accessibility—both in terms of physical access and proximity—is a major concern for this user group. Handicapped parking, curb ramps, and smooth surfaces are critical transportation features. Because some people in this user group do not or are unable to drive, having goods and services within walking distance is important.



Youth

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

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.



Spanish-speaking Parents

More than 48% of Denison's population is Hispanic, making this group a significant demographic. This group tends to consist of working-age parents; as a result, their needs are similar to those of Anglo parents. However, some do not drive and need to find rides to work and other locations.



Steering Committee

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.



Northside Recreation Complex has good pedestrian connectivity to town, ball fields, a pergola, and ample parking.



People feel uncomfortable walking along Avenue C and crossing Highway 39 because traffic is heavy and there is no buffer or crosswalks.



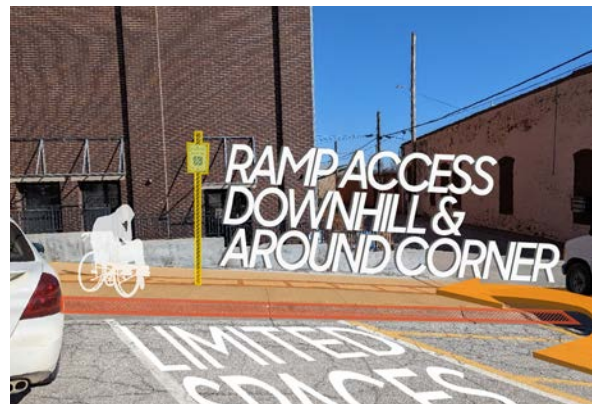
Uptown is nicely landscaped and has pedestrian-friendly curbs and ramps, wide and level sidewalks, and safe crossings.



The Highway 30/59 interchange, referred to as "The Bucket of Worms," is hard to navigate because of the heavy, fast traffic and confusing configuration.



Yellow Smoke Park trails weave through scenic natural area; walkers and cyclists can take in the beauty of the lake from the smooth, shaded paths.



Uptown has only a few handicapped parking spaces that accommodate side-loading vans; some ramps are located around the corner, requiring the mobility challenged to travel on the street.

What People Said



Actives

"It's weird how...[the] City View [neighborhood] is removed from the city... There's one road to get there...and there [are] a lot of people [who] live out [there]..."

"...when we go biking in other communities or areas, we'll see older people where they have their electric bikes [and] they're... having a great time...We can't do that [in Denison]...and it pushes people elsewhere to do that."

"...[it's] impossible without a car to get to [the soccer fields on South 5th Street]...there's no walking trail...it's [just] a gravel road to get there."

"[Highway] 30's really grown over the last five years as far as businesses...but [it doesn't feel safe] to be down there [on foot or a bike] because the sidewalks are so thin..."

"I like [the] idea of getting [a trail] along the Boyer River because we don't really showcase [it]...It's not really that hilly...Once you get there, you could ride along the [river] and we like to ride along the rivers."

"...people...like to walk [on N 10th Street], but there's not a walking trail...It's a 20[-mph] speed zone, but people go pretty fast, because it's the back route to the schools...a lot of people...would appreciate...a walk[ing trail]."

"...there is a crossing signal [at S 12th Street and Highway 30], but it is not very well marked and...I don't feel like the light is very long, so we really have to rush across the street..."

"...only a little bit of [Yellow Smoke trail] is in town, but that part of it, I think, is wide. It's smooth... and it's pretty and scenic...the bike/walking trail itself is a nice trail."



Parents

"[In] the older, original part of town...some [sidewalks] are narrow. Some are wide. Some are broken. Some are nonexistent... biking and walking...[are] kind of hard...[and] pushing a stroller."

"...coming from the north going south to Highway 30... can get icy on all of [the north-south streets in winter]."

"...[a good taxi] service is much needed here, because not everyone in the town drives...not everyone has [a driver's license]... [and] when [immigrants] arrive here...it is not easy to acquire a car immediately..."

"One of the things that one enjoys when walking in the autumn time is to look, look at the colors, the different colors [on the trees]."



Spanish-speaking Parents

"It would be a very good benefit for the community if there [were] bike lanes]...and the one who does not have a car, you grab the bicycle and go to the store."

"...in general...there are many sidewalks that are not very accessible...there are no ramps to go up or down... You can't get up with [a wheelchair]...or walk with the babies in the strollers."

"...many people go to Yellow Smoke [Park]. [We would like] a way that you could enter from town on a bicycle [so] you would not have to go by car."



Older Adults & Mobility Challenged


"So we don't really have a great biking or walking area, because...[the hills] discourage some people...you can bike the trail [in Yellow Smoke Park], which I'll do, but...it's a lot of up and down."

"I have an accessible van with a side-loading ramp, and on the corner of Broadway and Main, which is a fairly busy corner, there's one area [where] I can park, but...you have to get onto the street and go around the corner... to get to the curb cut. And that [feels unsafe]."

"I do want to get back into walking and adding easier access trails or sidewalks through town would be nice."

"[Washington Park is] a real nice place. They even have picnic tables [that] have cutout[s] so that I can [use] my chair..."

"...we need to upgrade some of the sidewalks in...some of our residential areas or even going towards uptown, because every once in a while, they're not in the best shape."



Steering Committee


"...since there are a lot of people [who] bike and walk [along Highway 30], we [want to] have...traffic signals and...painted crosswalks... because...[vehicles] fly... they're not [going] 35 [mph]...It's terrible."

"The median [of Highway 30] on the east end of town, where it's divided isn't wide enough to be a turn lane...Tail end of cars stick out, and you're always [wondering] 'Am I going to get rear ended or not? Where do you go?'"

"...we're a little bit concerned about... the ability to cross any of [the] highways that don't have a designated crosswalk or designated crossing signal."

"[Yellow Smoke is] a beautiful place to walk; it's safe."

"...the only viable bicycling...and dedicated walking area is the Yellow Smoke [trail], and it is very difficult to get there [by bike] from anywhere [in town]."



Youth

"Near Broadway [Elementary] School, there's... a four-way crossing... there's normally a lot of traffic from busses and then parents...and...there [are] a bunch of little kids walking too, and sometimes they don't necessarily pay attention to the road and who's coming. So that causes a lot of problems."

"I love that bridge [in Yellow Smoke]. It has a good view... It's a wide-open space... [and] if you look over it, sometimes there [are] birds there too, just minding their own business."

"...[the intersection of 2nd Avenue N and 14th Street is] a blind spot...you have to keep on nudging your car out to make sure a car's not coming."

"...my mom says I can't really go anywhere by myself because I live near a highway. There [are] not a lot of sidewalks."

"[I would like] more trails to walk on... I like Yellow [Smoke] Park, but sometimes it's the same old nature... sometimes you want to go somewhere new."

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 bike for recreation and exercise. This group wants more amenities for cyclists, including a bike repair stations at the trailheads by the dog park, and restrooms at various locations. Actives also think the park shelter at Tuckers Pond should be updated.

Older adults and **Mobility-challenged** individuals primarily drive. Older adults also walk and use the hospital shuttle. Mobility-challenged individuals use wheelchairs and would like public transportation that can accommodate them. Older adults find the trailhead on 6th Avenue N difficult to access because of the steep hill.

Youth walk, bike, carpool, and ride the bus to get around. Older youth also drive. This group thinks that a buffer is needed between Hillcrest Park and the roadway. They also want access points to the high school parking lot and the city soccer fields, as well as bigger parking lots.

Parents drive, walk, bike, and run. They are primarily concerned with the safety of their children, and safe pedestrian/cyclist crossings are important to them. Parents would like the sidewalks to be wide enough to accommodate two walkers or cyclists side by side.

Spanish-speaking parents drive, carpool, walk, and bike. This group expressed the need for a shuttle service to and from the packing plants. They would like a skate park for young people, and a new location for the Latino soccer league, because they aren't allowed to make needed upgrades such as adding seating to the city-owned fields.

Steering committee members walk, bike, and drive vehicles and UTV/ATVs. Steering committee members want to improve "The Bucket of Worms" to reduce confusion. This group would also like railroad overpasses for pedestrians and/or vehicles, as well as entryway beautification.

Transportation Behaviors and Needs

Overview

The survey provides the visioning steering committee with 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.

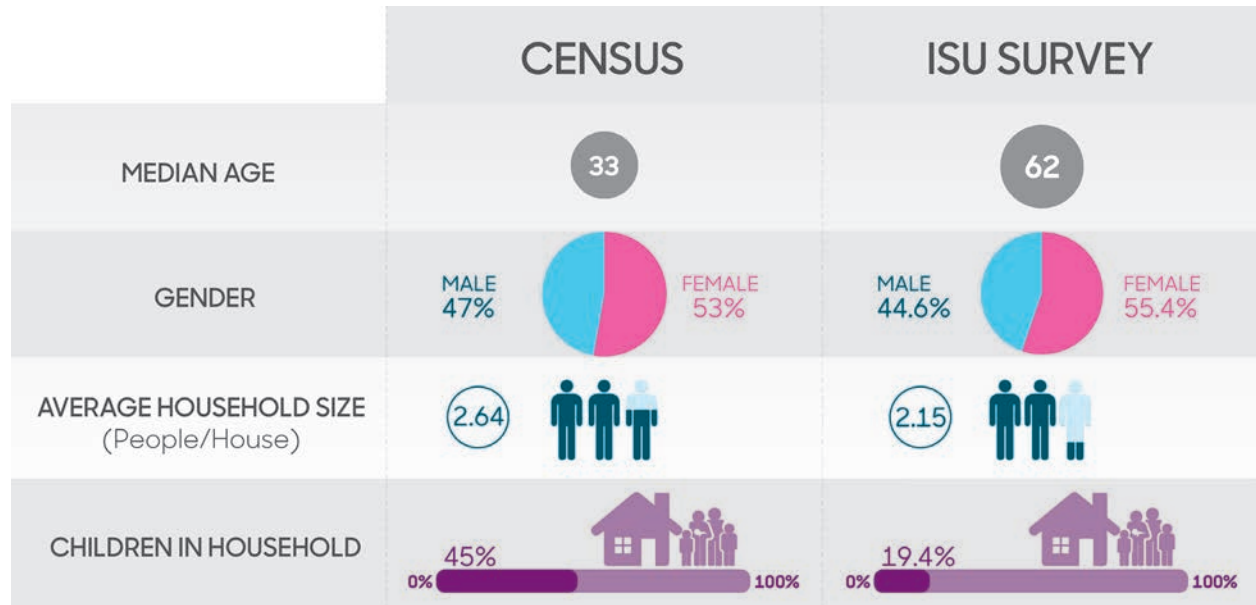
With assistance from Iowa State University's Survey Research Services staff in the Center for Survey Statistics and Methodology (CSSM-SRS), ISU visioning program staff conducted a survey to better understand the transportation patterns, behaviors, needs, and desires of Denison residents. Surveys were mailed to 900 randomly selected residents living in Denison 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 802. A total of 183 people returned surveys, for a response rate of 22.8%. (A response rate of 20% is considered valid.)

We asked survey recipients what routes they use most often for going to work, walking, and biking. In addition, we asked what qualities and features are important to trail users. 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 Denison. 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 Features

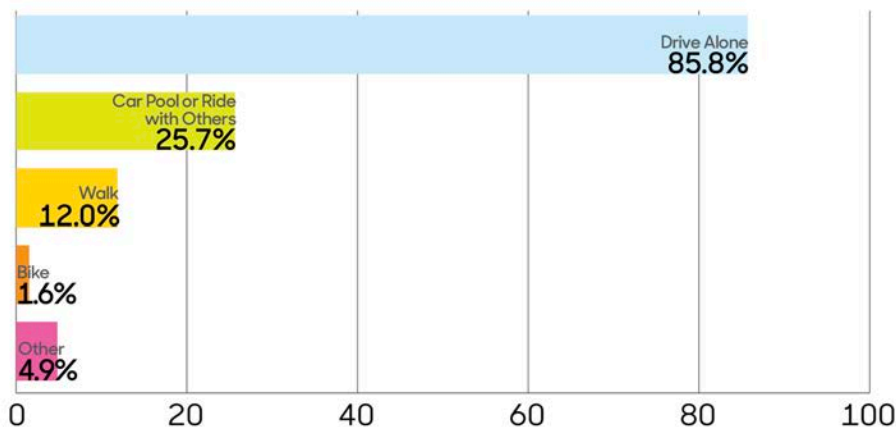
How We Did

The demographics of the respondents are somewhat different from those obtained from the 2021 American Community Survey (ACS). For example, the survey respondents median age of 62 is significantly older than the ACS estimated average age for Denison residents of 33. In terms of gender, the percentages of male and female survey respondents are similar to that of 2021 ACS estimates. Average household size among survey respondents is significantly lower than the 2021 ACS estimates, and the percentage of households with children among survey responses is much lower.



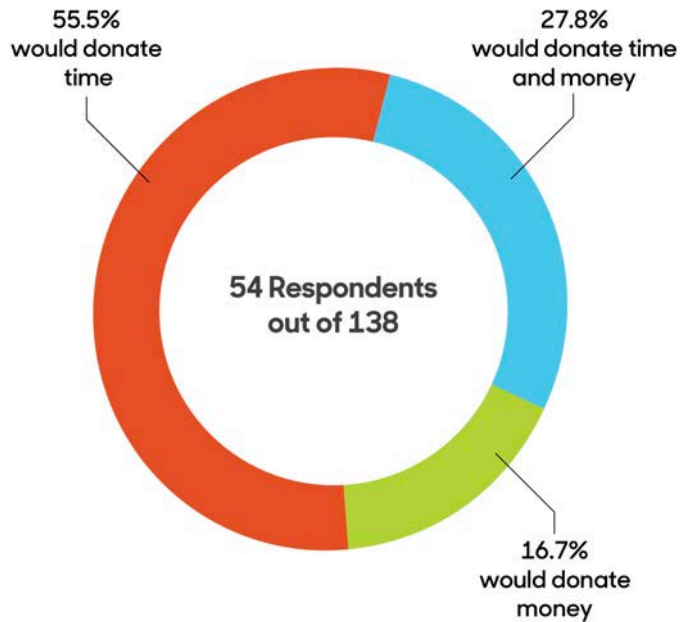
How Denison Residents Travel

Most survey respondents drive to important destinations such as the convenience store, the post office, school, and church (85.8%). More than 25% car pool or ride with someone else. Some people indicated that they walk (12%) and/or bike (1.6%), but the primary mode of transportation in Denison is by vehicle.



*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%.

Willingness to Help



Most survey participants who answered “Yes” to this question are willing to contribute their time to community improvements (55.5%), while 27.8% would help financially and contribute their time. More than 16% of respondents indicated that they would be willing to contribute financially.

Compared to other small towns in Iowa, Denison residents are somewhat less 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.¹ The percentage of Denison residents willing to be involved is 4% lower than this average.

How Do You Get People to Help?

Ask, Show, and Advertise Opportunities

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).

Survey Participants Said...



"Street conditions [are] a serious problem in Denison."

"There is a need for transportation options to the general public."



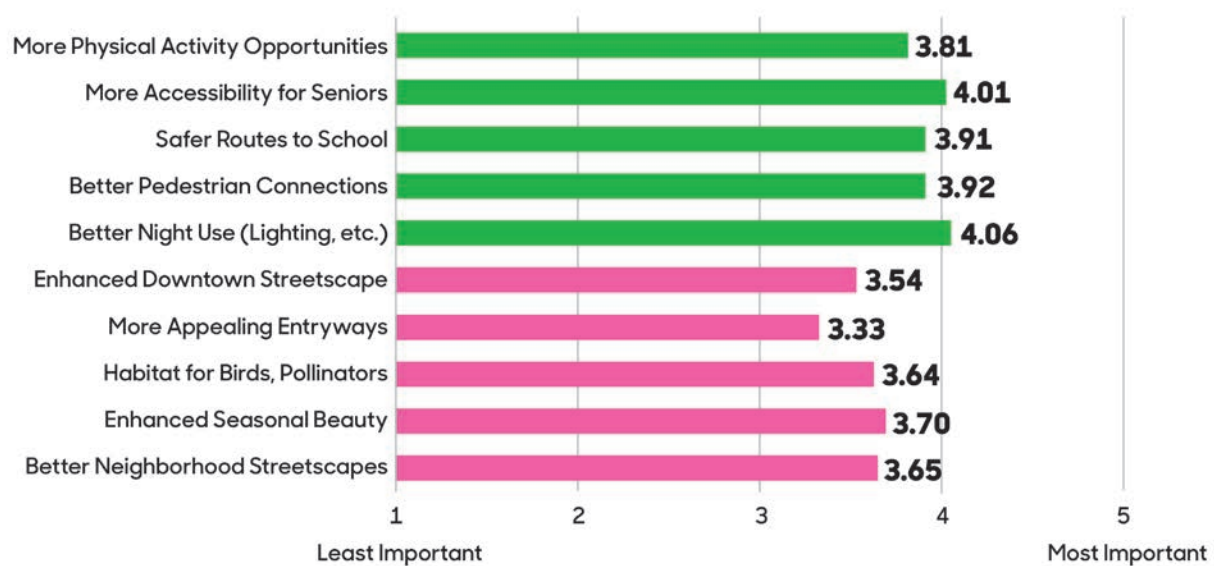
"There aren't many roads connecting [the north part of town] with highways or other parts of town. A route or routes that would connect highways to schools would especially be beneficial."

Priorities

On a scale of 1 to 5, with 5 being the most important, participants in Denison ranked improving night use as most important, with a mean value of 4.06. Other types of transportation enhancements that address pedestrian mobility, health, and safety are also considered important, such as providing more accessibility for seniors (4.01), creating better pedestrian connections (3.92), and developing safer routes to school (3.91). In terms of quality of the built environment, survey respondents consider enhancing seasonal beauty as most important (3.70), followed by improving neighborhood streetscapes (3.65) and creating habitat for birds and pollinators (3.64). These findings are consistent with the views expressed by focus group participants during the Transportation Assets and Barriers workshop held in March 2023.

Transportation Enhancement Issues

- Pedestrian Mobility, Safety, and Health
- Quality of the Built Environment



Survey Participants Said...



"...for pedestrians walking on N 10th Street from the gas station to the Hilldale Apartments, a sidewalk would be welcome."

"There should be more options for disabled [people] to get around town and feel safe."



"I feel like we are greatly lacking walking trails and...parks throughout our community. I see a need on the western, older side of town for children to have places to play and exercise."

"School drop-off zones should be reviewed. Twentieth Street and Broadway are very busy, and it feels a bit scary to drop kids in the street with traffic."



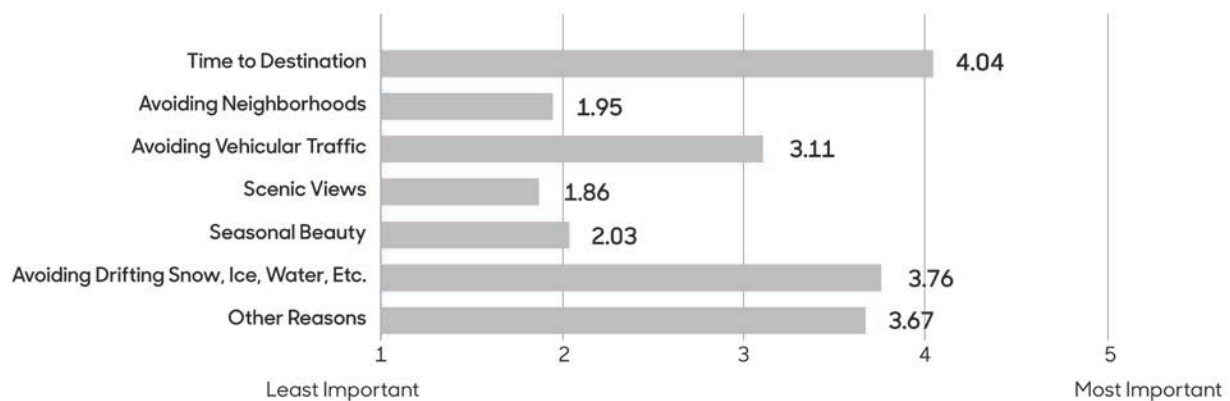
Commuting Routes

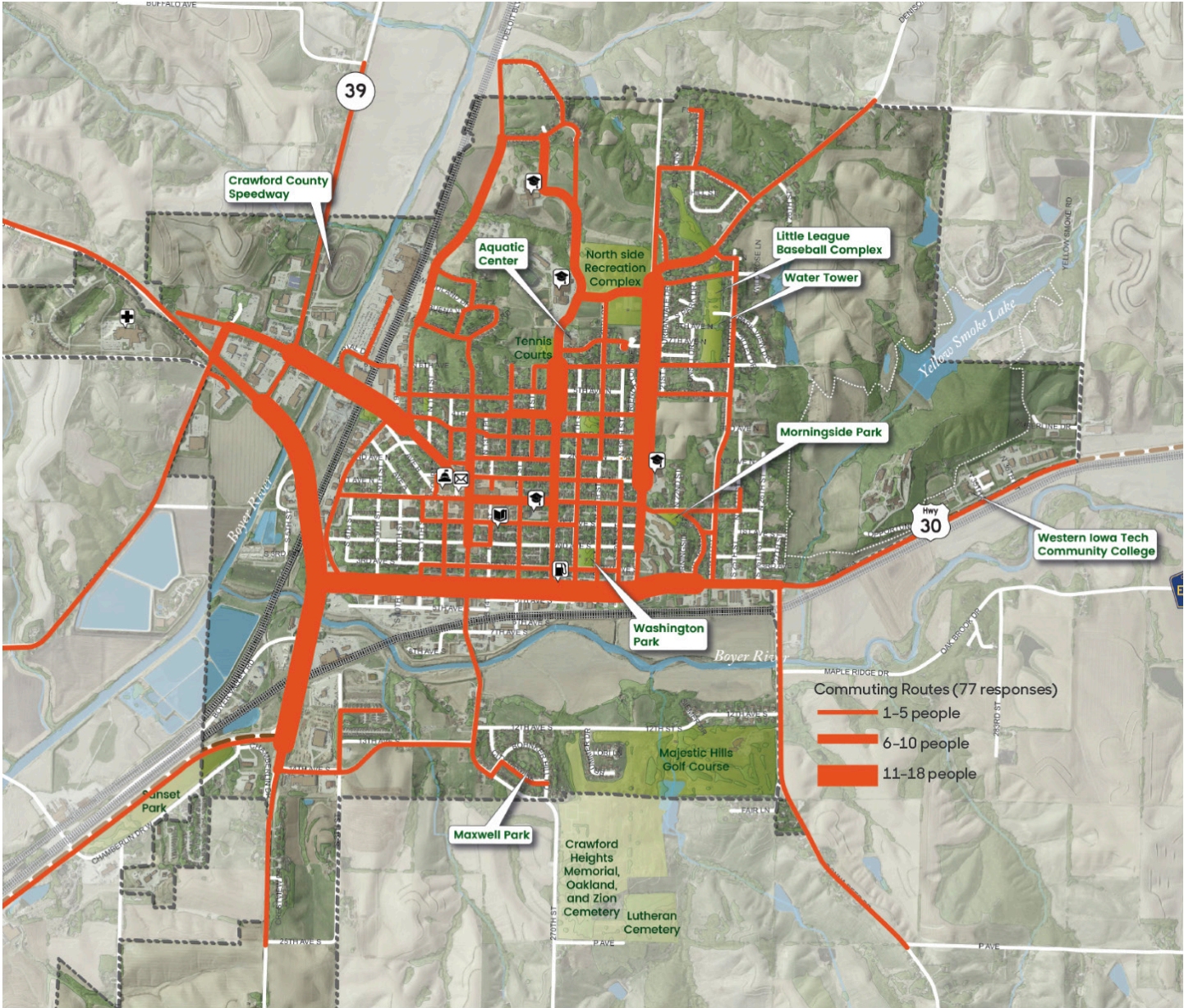
This map shows the commuting routes identified by 77 survey respondents. The frequency that the routes are used is depicted by their width, with most frequently used routes being the thickest. The primary commuting corridors into and out of Denison are Highways 30, 141, and 59. Some commuters take Arrowhead Road and Highway 39 on the west side of town, while others take Donna Reed Road/County Road M36 on the east side. The most heavily used corridors in town are N 20th Street, N 16th Street, Avenue C, and Highway 30.

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 Denison participants, time to destination is the most important factor in determining commuting routes, with a mean value of 4.04. Avoiding weather-related issues such as snow and ice is also somewhat important (3.76), followed by other factors that include avoiding school traffic, road conditions, avoiding road construction, and avoiding intersections with stop signs (3.67). Scenic views, seasonal beauty, and avoiding neighborhoods are not critical factors in determining commuting routes.





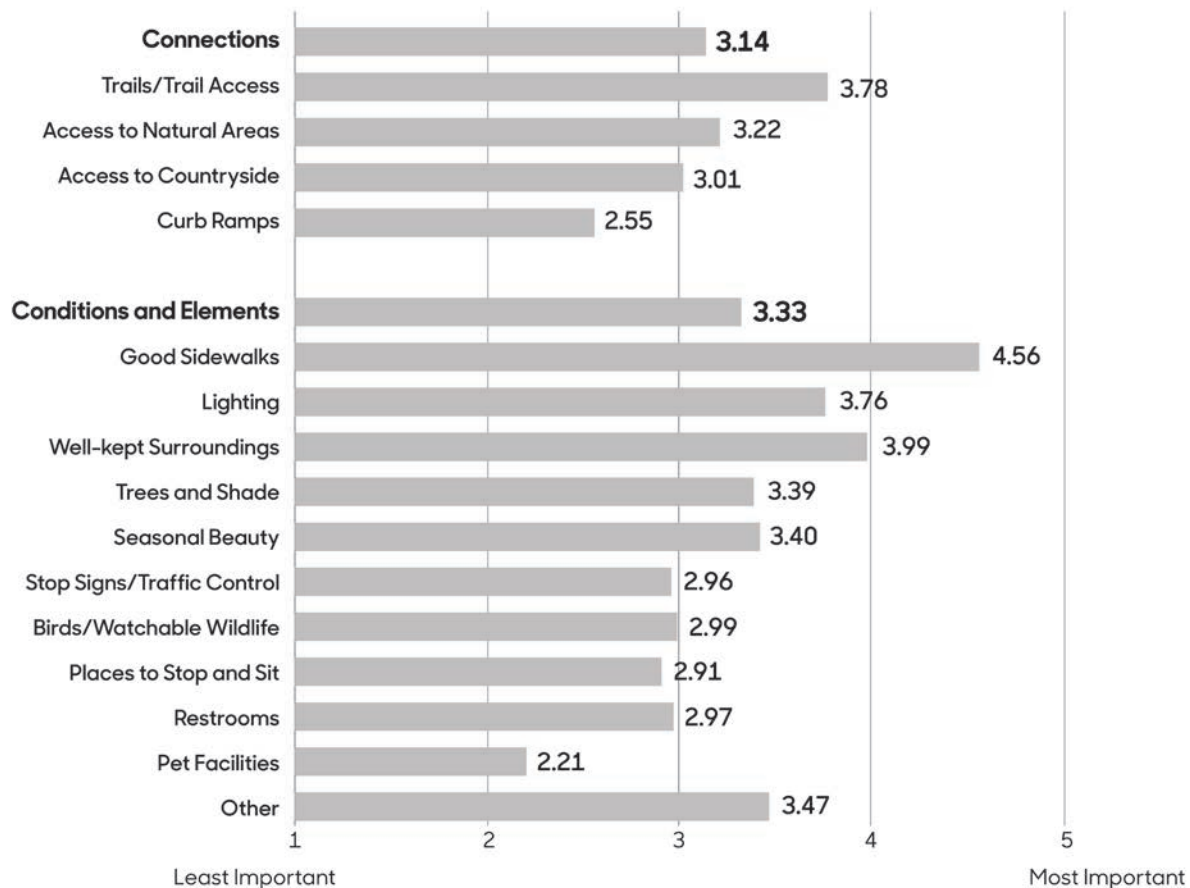
Map Source: Iowa Department of Natural Resources, "Natural Resources Geographic Information Systems Library," <http://www.igsb.uiowa.edu/nrgislib/>.

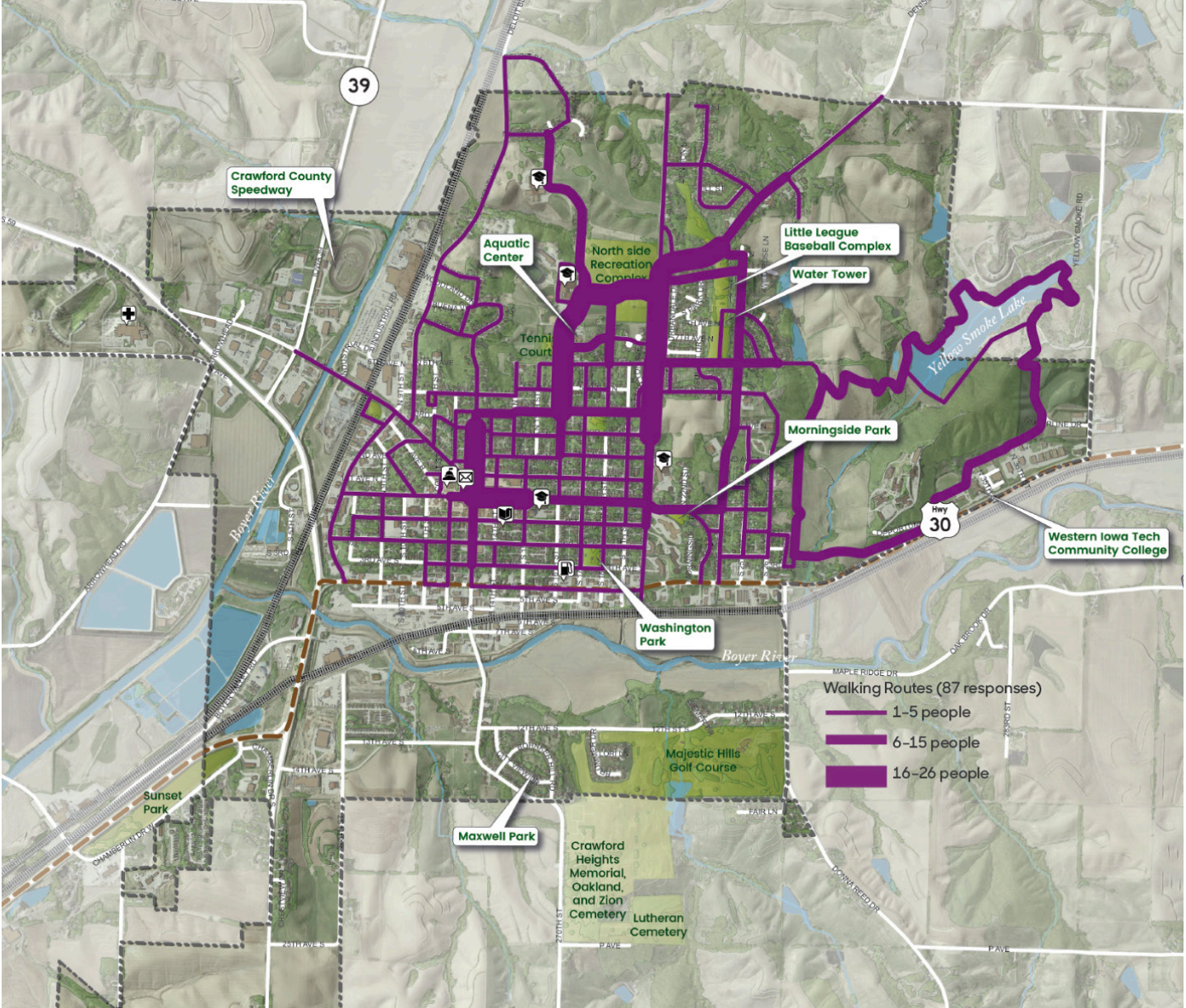
Walking Routes

This map shows the walking routes identified by 87 survey respondents. The frequency that the routes are used is depicted by their width, with most frequently used routes being the thickest. The Wheels to Heels Trail to and through Yellow Smoke Park is a popular walking route among survey respondents. People also walk along city streets; the most heavily traveled of those include Ridge Road, N 20th Street, 8th Avenue N, N 16th Street, and Broadway and N Main Street in the downtown area. Walkers also use N 24th Street, 4th Avenue N, and 6th Avenue N somewhat frequently.

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." Denison participants consider conditions/elements to be more important than connections, with mean values of 3.33 and 3.14, respectively. In terms of connections, access to trails is most important with a mean value of 3.78. Good sidewalks (4.56) are the most important condition/element to walkers, followed by well-kept surroundings (3.99) and lighting (3.76). Other elements such as topography, traffic levels, and snow removal affect walkers' route choices (3.47).





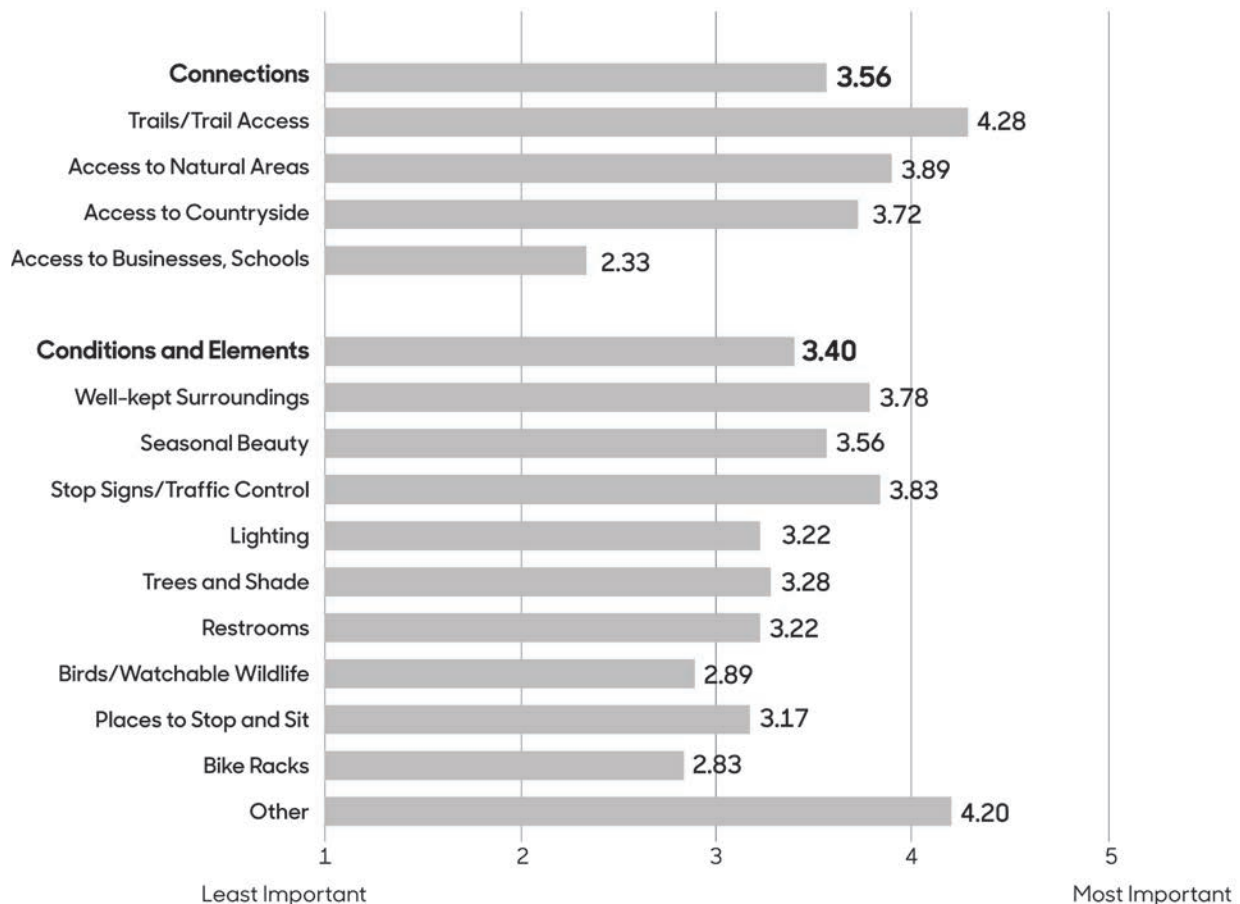
Map Source: Iowa Department of Natural Resources, "Natural Resources Geographic Information Systems Library," <http://www.igsb.uiowa.edu/nrgislib/>.

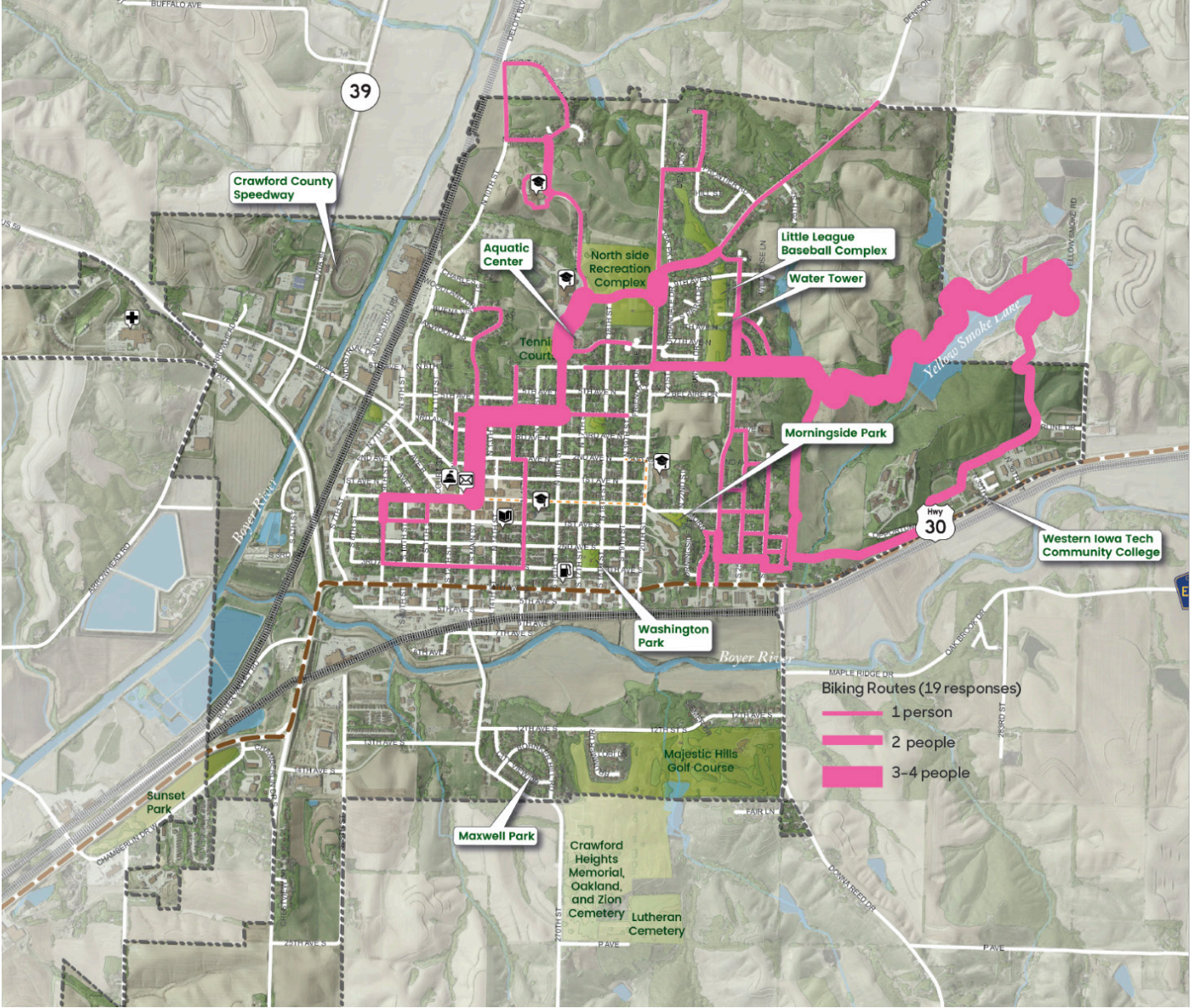
Biking Routes

This map shows the biking routes identified by 19 survey respondents. The frequency that the routes are used is depicted by their width, with most frequently used routes being the thickest. Cycling routes are similar to those of walkers, including the Wheels to Heels Trail to and through Yellow Smoke Park and along city streets such as Ridge Road, N 20th Street, 8th Avenue N, N 16th Street, Broadway, and N Main Street. People also bike in the neighborhood nearest the trail access point.

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 biking experience better. These features are categorized as either "connections" or "conditions and elements." Denison participants consider connections more important than conditions/elements, with mean values of 3.56 and 3.40, respectively. Access to trails is most important connection to survey respondents with a mean value of 4.28. In terms of conditions/elements, other factors such as connections to well-established bike trails, safety for children, and "grand views" are most important (4.20). Stop signs/traffic control (3.83) and well-kept surroundings (3.78) are also of significance.

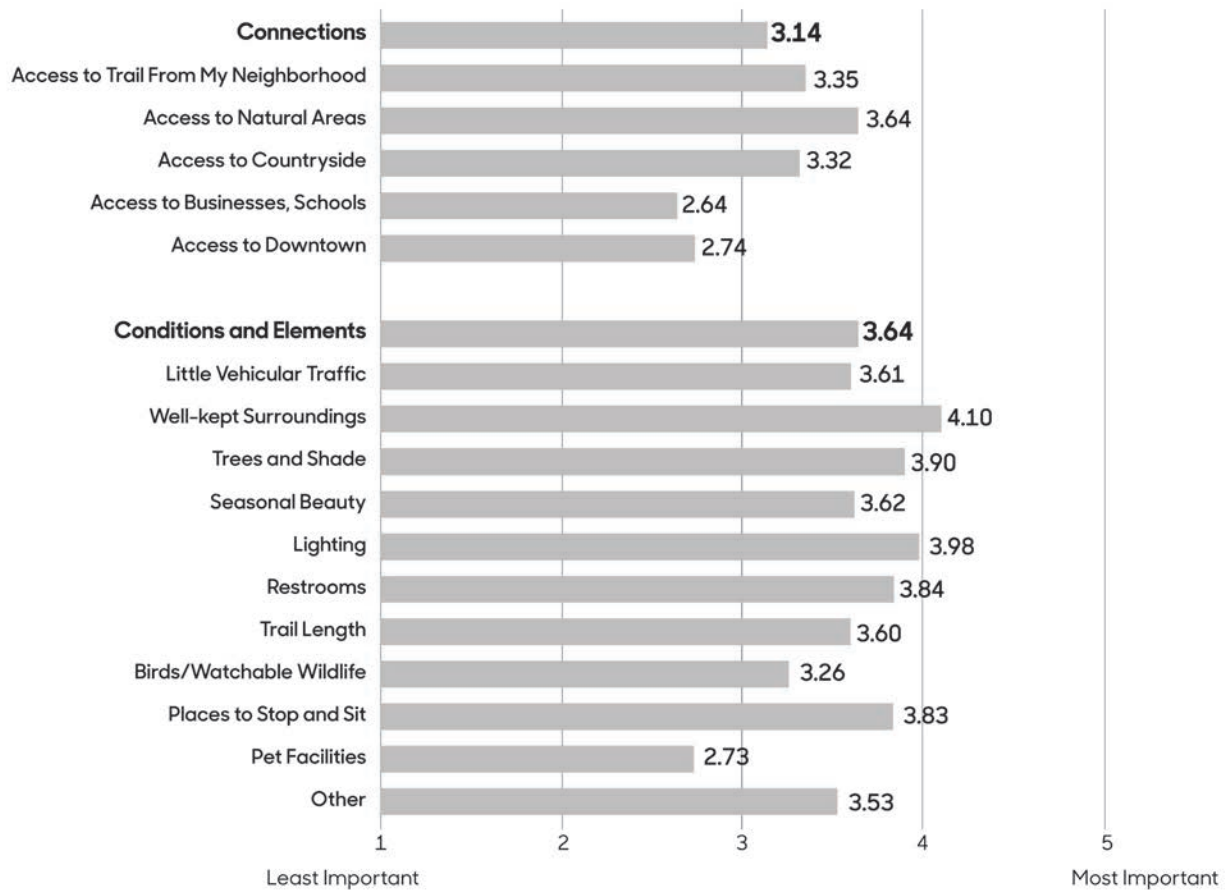




Map Source: Iowa Department of Natural Resources, "Natural Resources Geographic Information Systems Library," <http://www.igsb.uiowa.edu/nrgislib/>.

Desired Trail Features

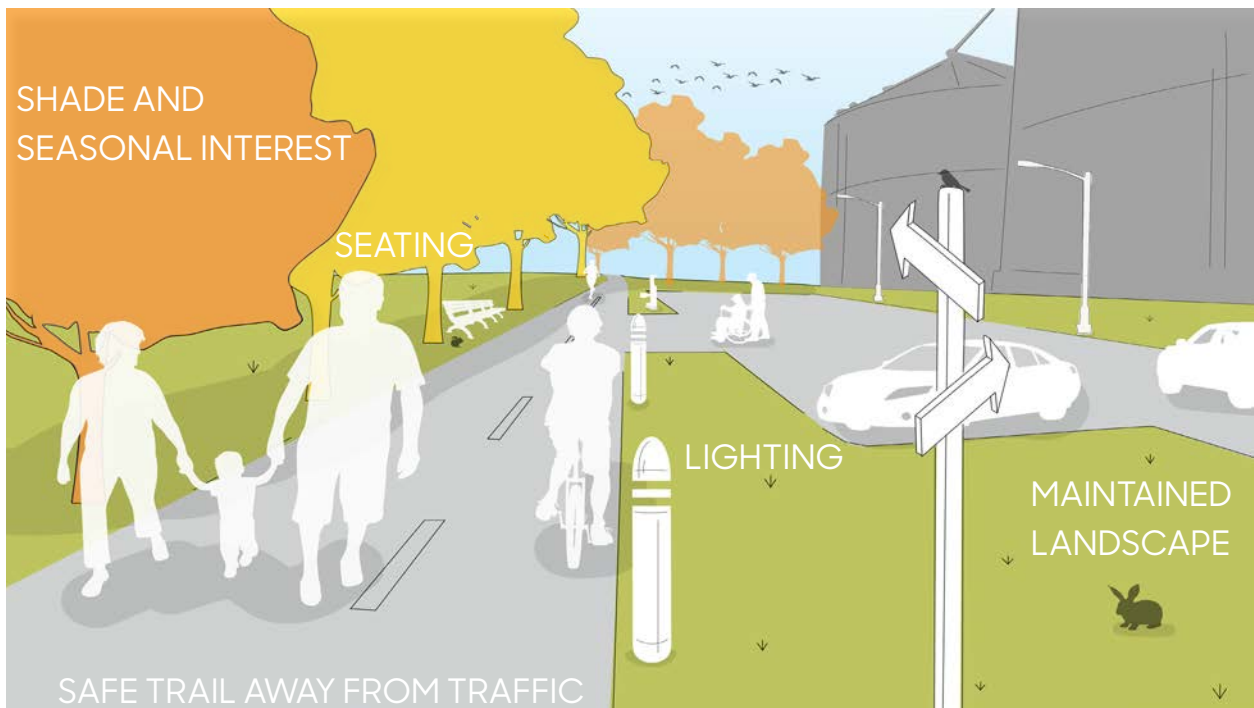
Trails are off-street paths that are paved or unpaved and can be used by pedestrians and cyclists. On a scale of 1 to 5, with 5 being the most important, survey participants ranked the characteristics and features that made their trail experience better. Like the bike route features, they are categorized as either “connections” or “conditions and elements.” Conditions/elements are more important to Denison trail users than connections, with mean values of 3.64 and 3.14, respectively. Access to natural areas is the most important connection among trail users, with a mean value of 3.64. In terms of conditions/elements, well-kept surroundings (4.10) is most important, followed by lighting (3.98). Trees and shade (3.90), availability of restrooms (3.84), places to stop and sit (3.83), and seasonal beauty (3.62) are also valued by trail users.





"[I] would like to connect to bike trails [that are] already established."

"Access [to] trails [from] many of the housing areas and [connections between] these areas are lacking. Housing areas are only connected by streets..."



Transportation Inventory and Analysis

Knowledge of the transportation systems in and around a community is critical for sustainable transportation enhancement planning. Denison's transportation system includes roadways (paved and unpaved), sidewalks, multi-purpose trails, and an active railroad.

The Denison visioning design team met with the local officials to identify existing, past, and future transportation system capital improvements, maintenance activities and issues, and other transportation-related constraints and opportunities in the area.

The Iowa Department of Transportation (IDOT) and Crawford County have several projects planned. A full deck replacement is under construction on the US 30 bridge over the East Boyer River. That is anticipated to be complete by the end of October. Approximately two (2) miles east of Denison is the Rocky Run River. Beginning in mid-April, the US 30 bridge over the river is scheduled to be replaced. IDOT is also planning to completely replace the US 30 bridge over the Union Pacific Railroad. The bridge is located approximately a half mile south of the tracks, US 30/59 junction and IDOT is forecasting work to occur sometime in 2027. Prior to the bridge replacement, IDOT intends to mill and resurface US 30 from Denison to Vail. Depending on available funding, the scope may increase to continue work to Carroll. In 2024, IDOT will begin widening and resurfacing HWY 39 north of Denison, from Deloit to Odebolt. Prior to 2027, Crawford County will mill and resurface a four-mile stretch of US-59, just south of Denison, from County Road M59 south to the corporate limits.

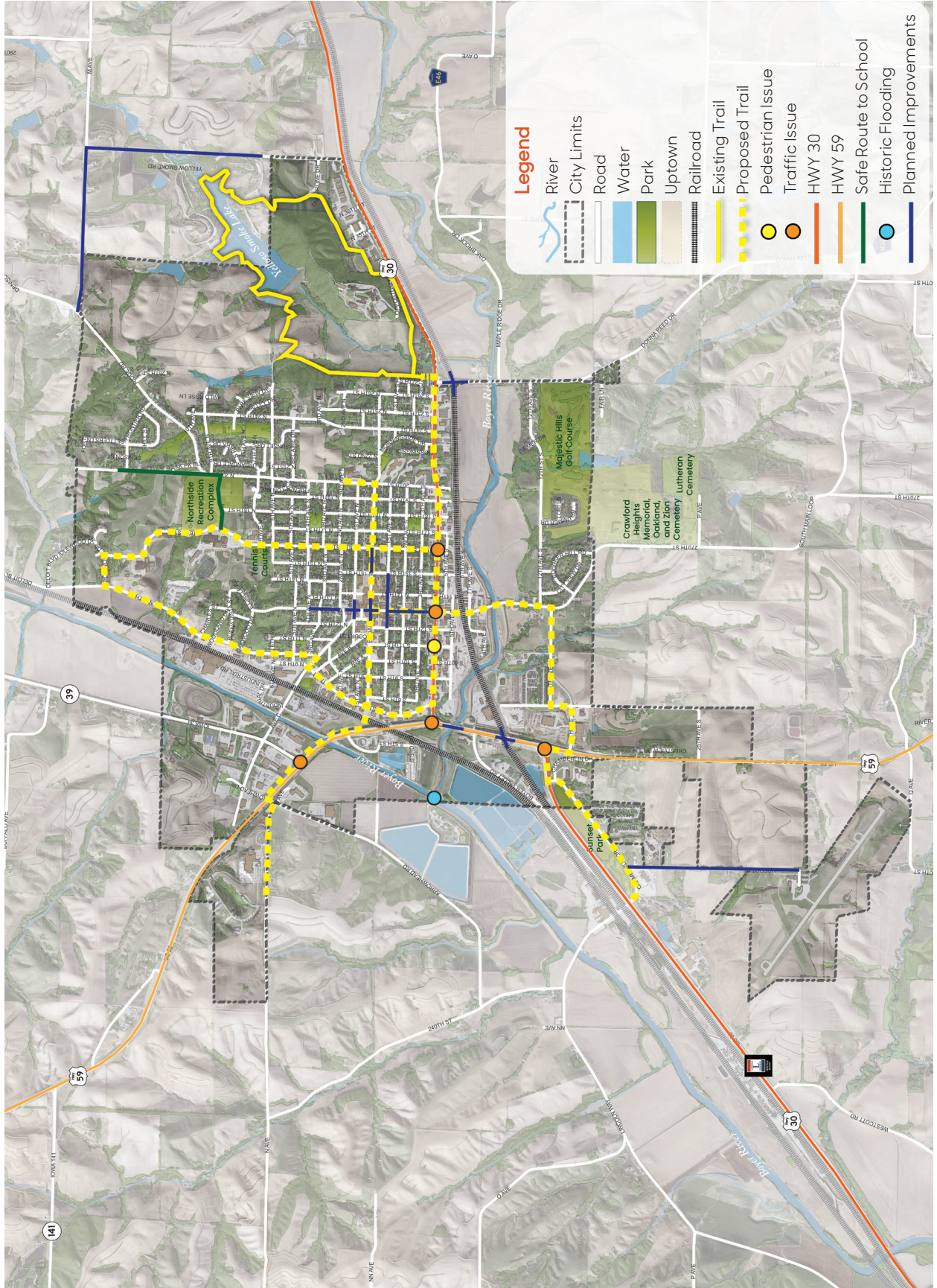
The street superintendent has several mill and resurfacing projects forecasted:

- Main St from 2nd Ave N to 4th Ave N and from 1st Ave S to US 30
- 1st Ave S from S 12th St to S 15th St
- Intersection of Broadway and Main St
- Intersection of Broadway and 1st Ave N
- Airport St from the entrance into the Denison Municipal Airport to Chamberlin Dr

In addition to these projects, the city is planning to completely reconstruct Broadway between N 15th St and N 16th St and is intending to mill down S 5th St.

The city and Crawford County are jointly coordinating a road pavement project northeast of Yellow Smoke Park. The scope will include paving Yellow Smoke Road north of Crawford County Conservation to M Avenue and continuing new construction from M Ave to Ridge Rd. This project will close the loop of paved roadways back to Denison city limits and is scheduled for 2025.

Beginning this spring, the city will be constructing a 10' safe route to school trail along 8th Ave N to the Denison High School.





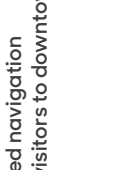

What, Where, & Why

The What, Where, & Why meeting is a critical component in the development of a successful project. Setting and prioritizing goals allows us to focus our efforts and resources more effectively to help the community develop a vision for Denison based on its goals.

The design team and Trees Forever facilitator met with the Denison visioning committee to discuss its goals. The steering committee presented its takeaways from previous discussions about the transportation assets and barriers focus-group findings, random-sample surveys, transportation analysis, and bioregional information.

The visioning committee considered the information provided as well as their own knowledge and opinions of Denison to reach a consensus of priorities to focus on for design improvements.

The chart on the left reflects these major themes and potential project locations as expressed throughout the goal-setting process. The charts moves through the key themes identified, what the large outcomes or big dreams would be, reasoning for identifying these components, and finally how the design team implemented these goals into the final designs.

Themes	Broad-based Outcomes/Goals	Why Change Anything?	What Exactly & Where?
<p>Safety and Accessibility</p> 	<ul style="list-style-type: none"> • Reduce speed of traffic • Railroad crossing safety • Improvements to sidewalks • Lighting of sidewalks/trails • Way-finding • Improve main intersections 	<ul style="list-style-type: none"> • Provide accessibility to public and private amenities • Improve multi-modal safety 	<ul style="list-style-type: none"> • Highway 30 and S.11th Street intersection improvements • Sidewalk improvements along trail corridor
<p>Community Connections</p> 	<ul style="list-style-type: none"> • Improve multi-modal user safety • Provide connection to existing trail network • Create loop 	<ul style="list-style-type: none"> • Create opportunity for physical activity and social interaction • Provide safe route for those without access to vehicles 	<ul style="list-style-type: none"> • Safe route to school • Trail from Yellow Smoke Lake to hospital
<p>Way-finding</p> 	<ul style="list-style-type: none"> • Create a sense of place • Provide a cohesive aesthetics • Improved navigation • Direct visitors to downtown 	<ul style="list-style-type: none"> • Create an authentic sense of place • Opportunities for economic development • Improve navigation for visitors • Beautify the community 	<ul style="list-style-type: none"> • Sign at Highway 59 and Highway 30 directing vehicles to S Main Street • Sign at Highway 30 and S Main Street • Trail directional sign at Broadway
<p>Community Amenities</p> 	<ul style="list-style-type: none"> • Recreation opportunities • Improve quality of life • Promote healthy living • Connect and build community 	<ul style="list-style-type: none"> • Improve vehicular/pedestrian crossings • Provide destination for community sporting activities 	<ul style="list-style-type: none"> • Ballfields, soccer fields, and cross country trail at Northside Recreation Complex • Trail from Yellow Smoke Lake to hospital

Community Concept Plan

The committee was very pragmatic in creating goals on which they could build a strong foundation and implement through phasing based on community size and funding available.

The committee gathered additional feedback during a workshop at the Immigrant Heritage Festival, where members of the community were able to actively participate in laying out the proposed mobility network. Individuals who stopped by the workshop also provided feedback on way-finding, intersection improvements, and the expansion at the Northside Recreation Complex. In an effort to obtain additional community feedback, the design team created a digital survey that was distributed via flyers at the workshop and posted online on Denison's Facebook page.

The concept headings were created to reflect the major themes as expressed throughout the project goal-setting process. The steering committee prioritized project areas based on the What, Where, & Why findings and focused on projects that achieved goals from multiple themes. The represented icons (seen below) on each concept design theme from each focus area. The map shows the location of each of these concept designs.

Themes identified by the committee include:



Safety and Accessibility



Community Connections

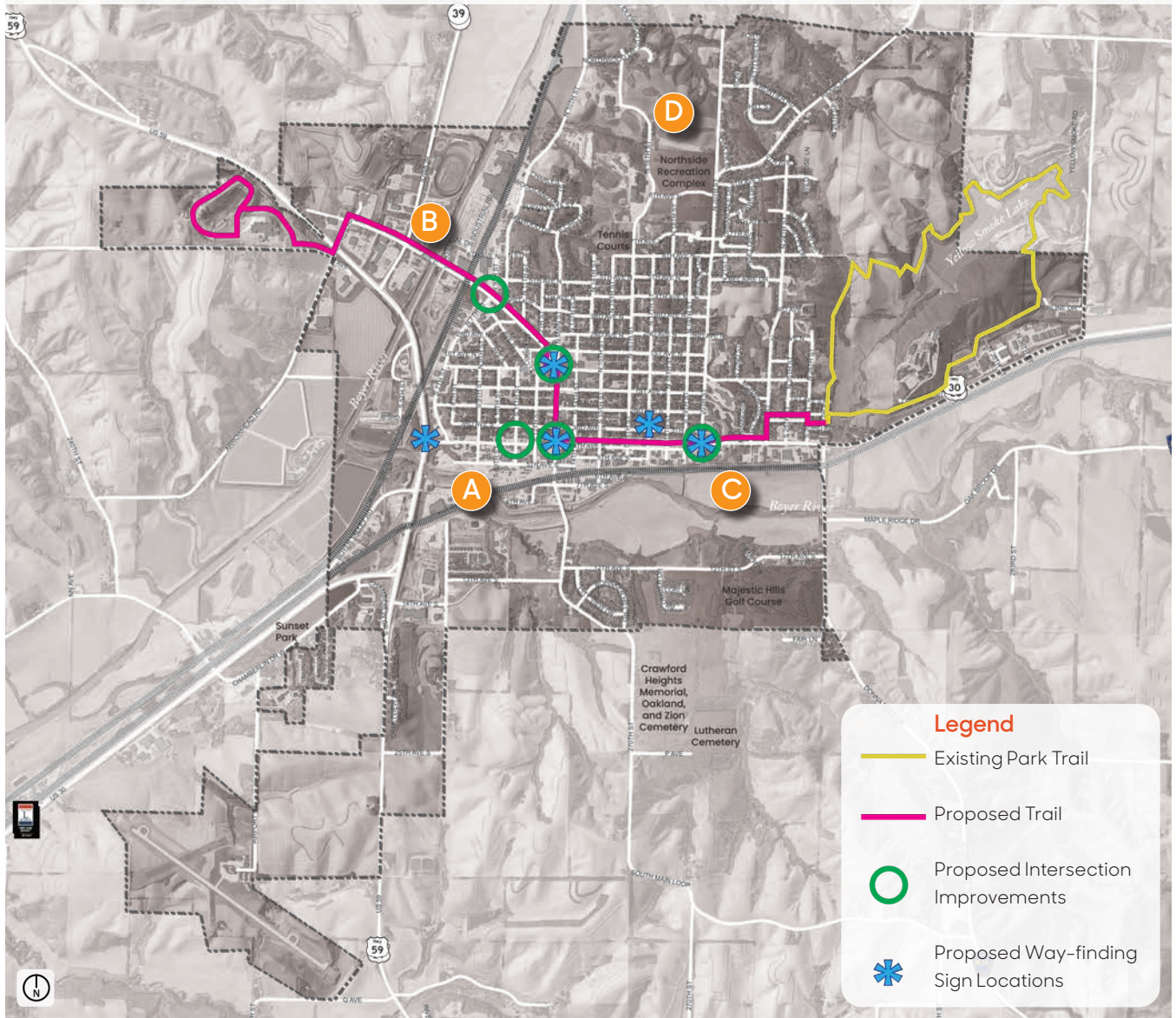


Way-finding



Community Amenities

Community Concept Map



A - Typical Intersection Improvements



B - Community Connection



C - Community Way-finding



D - Northside Recreation Complex Expansion



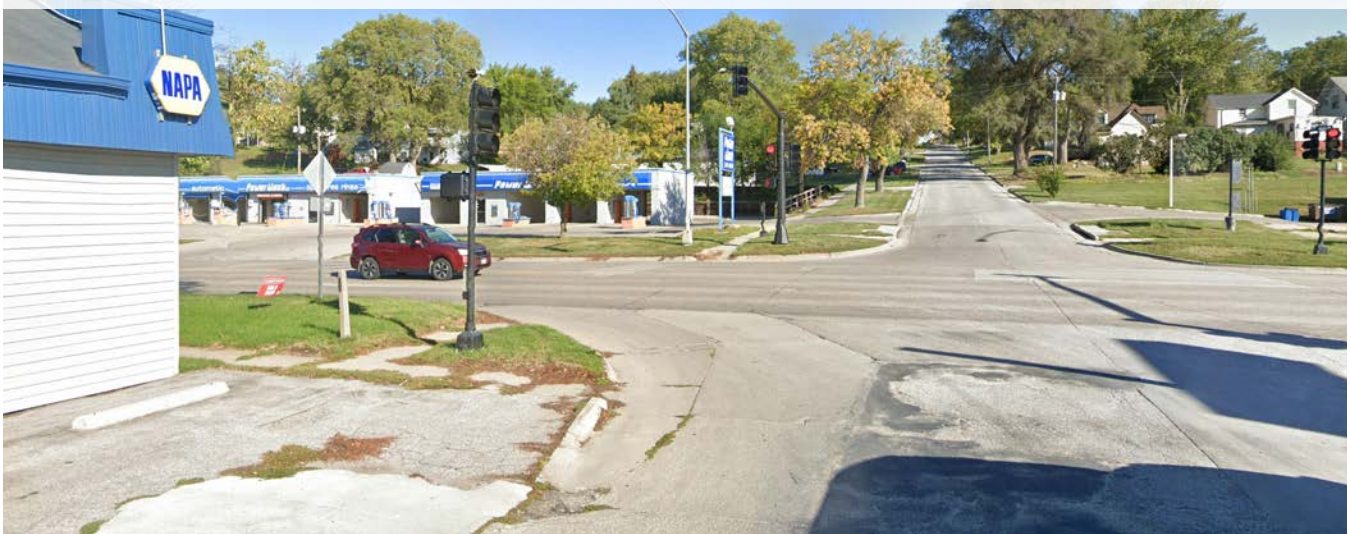
Typical Intersection Improvements

Reducing the speed of traffic, improving the pedestrian mobility experience, and enhancing the overall aesthetics of the community serve as the guiding principles for an intersection design template that can be implemented throughout Denison.

The intersection at Highway 30 and South 11th Street is the first signalized intersection vehicles reach when traveling west on Highway 30. Although this location would not be considered a main intersection within Denison, it does serve a large number of pedestrians, many with mobility challenges, who cross Highway 30 to access WESCO Industries (located directly south of the intersection).

The proposed template recommends additional improvements be implemented when the City of Denison needs to repair intersections. As necessary, replace surrounding sidewalk to eliminate any uneven, cracked, or spalling concrete panels. This will reduce any potential for tripping hazards as pedestrians approach the street. All sidewalks should be a minimum of 5' wide to allow for two-way pedestrian traffic. Where sidewalks meet the back of curb, ADA-accessible curb ramps with associated detectable warning plate should be installed. It is also recommended that signalized pedestrian crossing buttons be installed. To differentiate the pedestrian crosswalk from the vehicular street, the intersection template proposes installing a decorative textured crosswalk that is a minimum of 6' wide.

Existing Intersection (Looking North at Highway 30 and S 11th Street)



Proposed Intersection Improvements at Highway 30 and S 11th Street



Proposed Intersection Improvements (Looking North at Highway 30 and S 11th Street)



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Opinion of Probable Cost | Typical Intersection Improvements

Description	Quantity	Unit	Unit Price	Amount
General Requirements				
Mobilization	1	LS	\$ 5,000.00	\$ 5,000.00
Temporary Traffic Control	1	LS	\$ 7,500.00	\$ 7,500.00
Temporary Erosion Control Measures	1	LS	\$ 5,000.00	\$ 5,000.00
Temporary Utilities	1	LS	\$ 7,500.00	\$ 7,500.00
Demolition				
Remove Concrete Curb and Gutter	500	LF	\$ 60.00	\$ 30,000.00
Mill Asphalt Overlay	1,000	SF	\$ 5.00	\$ 5,000.00
Remove Concrete Curb Ramp	250	SF	\$ 12.00	\$ 3,000.00
Remove Concrete Sidewalk	3,800	SF	\$ 4.00	\$ 15,200.00
Earthwork				
General Site Preparation	1	LS	\$ 1,500.00	\$ 1,500.00
Rough Grading	1	LS	\$ 5,000.00	\$ 5,000.00
Utilities				
Construct X-ing Button and Signage	4	EA	\$ 1,500.00	\$ 6,000.00
Modify Existing Electrical Infrastructure	1	LS	\$ 6,000.00	\$ 6,000.00
Hardscape				
Prepare and Replace Faulty Subgrade	1	LS	\$ 2,500.00	\$ 2,500.00
Construct Asphalt Overlay	1,000	SF	\$ 5.00	\$ 5,000.00
Construct Concrete Curb and Gutter	500	LF	\$ 30.00	\$ 15,000.00
Construct Concrete Curb Ramp	300	SF	\$ 15.00	\$ 4,500.00
Construct Detectable Warning Plates	100	SF	\$ 25.00	\$ 2,500.00
Construct Concrete Imprinted Surface	600	SF	\$ 10.00	\$ 6,000.00
Construct Concrete Sidewalk (1)	5,400	SF	\$ 8.00	\$ 43,200.00
Landscape				
Installs Landscape Enhancements	1	LS	\$ 10,000.00	\$ 10,000.00
Install Seed & Mat	7,500	SY	\$ 1.50	\$ 11,250.00
Subtotal - Base Bid				\$ 191,650.00
Mobilization /General Conditions - 5%				\$ 9,582.50
Contingency - 20%				\$ 38,330.00
Design / Engineering Services - 12%				\$ 27,597.60
Construction Cost				\$ 267,160.10
Additional Notes				
1. See Community Connection OPC for all costs associated with sidewalk improvements beyond intersections.				

HDR, Iowa State University, and Trees Forever are not construction cost estimators or construction contractors. The Opinion of Probable Cost, provided above, should not be considered equivalent to the nature and extent of services a construction cost estimator or construction contractor would provide.

A number of assumptions were made as to actual conditions that will be encountered on site; the specific decisions of other design professionals engaged; the means and methods of construction the contractor will employ; the cost and extent of labor, equipment, and materials the contractor will employ; the contractor's techniques in determining prices and market conditions at the time, and other factors over which HDR, Iowa State University, and Trees Forever has no control.

Given the assumptions which must be made, HDR, Iowa State University, and Trees Forever cannot guarantee the accuracy of its opinions of cost, and in recognition of that fact, the City of Denison waives any claim against HDR, Iowa State University, and Trees Forever relative to the accuracy of the Opinion of Probable Cost.

Community Connection

Pedestrian and bicycle mobility networks are vital within a community because they provide both user types with a safe and comfortable route to circulate without worry of vehicular interference. A connected mobility network allows residents to easily access local shops and parks/open spaces without a vehicle. It also creates the opportunity for community groups to form cycling clubs or walking clubs. Reducing the need for residents to utilize vehicles is beneficial because fewer vehicles on the road mitigates greenhouse emissions, wear and tear on community streets, and overall congestion.

In Denison, many residents don't have access to vehicles to get around town. You'll find a number of residents both walking to work and to the grocery or local shops. The map on the left illustrates a proposed route that will connect the east and west sides of town. The proposed route will create a more than 10-mile loop, connecting Yellow Smoke Lake Trail to downtown, the Walmart Supercenter, and on to the Crawford County Memorial Hospital.

There are three unique treatments proposed throughout the corridor:

1. Shared-Street Sharrows
2. Buffered Lanes
3. Sidewalk Improvements and Landscape Enhancements

Shared-street sharrows are a great solution where routes follow along low-speed and low-traffic streets. A sharrow requires a painted marking that is placed in the street, indicating to drivers that the lane is shared by both vehicles and cyclists. From a financial perspective, incorporating a sharrow eliminates the need to invest in extra infrastructure costs such as constructing separate sidewalks/trails.

When street right-of-way (ROW) allows, a buffered bike/pedestrian lane can be installed using existing street infrastructure. To help define the buffered lane from the edge of the street, vertical delineation markers can be installed. These markers, sometimes referred to as flexible delineator posts, are typically surface mounted to existing pavement and

will breakaway if a vehicle happens to encounter them. They can come in a variety of colors and have a solar option if there is a desire for pathway lighting at night.

There are sidewalks along many streets in Denison. Although conditions and widths vary, a cost effective option is to utilize the existing infrastructure to expand the community's mobility network. Improvements such as widening, panel replacements, and joint/crack sealing can be done to improve overall conditions for all user types. Landscape enhancements can also be made to create a sense of place. Low-maintenance, native plants, should be selected along the corridor to reduce long-term maintenance requirements.

Community Connection Map



Proposed Trailhead to Yellow Smoke Park Trail



Existing - 3rd Ave S (Looking West)



Proposed Shared-Street with Sharrow Marking



Existing - Highway 30 at S 24th Street



Proposed Buffered Lane



Existing - Main Street at Highway 30 (Looking North)



Proposed Sidewalk and Landscape Enhancements



Existing - Ridgeline at Hospital



Proposed Park Trail



Opinion of Probable Cost | Community Connection

Description	Quantity	Unit	Unit Price	Amount
General Requirements				
Mobilization	1	LS	\$ 8,000.00	\$ 8,000.00
Traffic Control	1	LS	\$ 15,000.00	\$ 15,000.00
Temporary Erosion Control Measures	1	LS	\$ 10,000.00	\$ 10,000.00
Temporary Utilities	1	LS	\$ 8,000.00	\$ 8,000.00
Demolition				
Remove Concrete Sidewalk (1)	82,000	SF	\$ 6.00	\$ 492,000.00
Earthwork				
General Site Preparation	1	LS	\$ 12,000.00	\$ 12,000.00
Rough Grading	1	LS	\$ 8,000.00	\$ 8,000.00
Utilities				
Hardscape				
Prepare and Replace Faulty Subgrade	4	LS / Mile	\$ 1,500.00	\$ 6,000.00
Construct HWY 30 Expansion	8,200	SF	\$ 12.00	\$ 98,400.00
Construct Block Retaining Wall	800	LF	\$ 12.00	\$ 9,600.00
Construct 10 FT Concrete Sidewalk (2)	165,000	SF	\$ 8.00	\$ 1,320,000.00
Construct 10 FT Concrete Park Trail	16,000	SF	\$ 8.00	\$ 128,000.00
Landscape				
Landscape Enhancements	5	LS / Mile	\$ 12,000.00	\$ 60,000.00
Amenities				
Yellow Smoke Park Trailhead Sign	1	LS	\$ 10,000.00	\$ 10,000.00
Sharrow Pavement Markings	12	EA	\$ 400.00	\$ 4,800.00
Vertical Delineation Markers	175	EA	\$ 25.00	\$ 4,375.00
Subtotal - Base Bid				\$ 2,186,175.00
Mobilization /General Conditions - 5%				\$ 109,308.75
Contingency - 20%				\$ 437,235.00
Design / Engineering Services - 12%				\$ 314,809.20
Construction Cost				\$ 3,047,527.95
Additional Notes				
1. Assuming entire sidewalk of corridor is removed. Field verify extents of sidewalk panel removal along corridor to reduce figure.				
2. Assuming entire sidewalk of corridor is replaced. Field verify extents of sidewalk that can accommodate panel attachment.				
3. See Typical Intersection Improvements OPC for all costs associated with improvements at intersections.				
4. See Community Way-finding OPC for all costs associated with Proposed Trailhead signage.				

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Community Way-finding

Over the last year, the Uptown Revitalization Committee has been working to re-brand Denison in an effort to attract visitors into the downtown. The first phase, which continues to pay tribute to the film *It's a Wonderful Life*, was installing banners on existing light poles. The banners are done in a variety of vibrant colors and read "It's a Wonderful Life" printed in multiple dialects representing those spoken by Denison residents.

The next phase the committee would like to implement is the proposed community way-finding signage. The image on the right was developed for the city by the firm Destination by Design.

The image below is a conceptual rendering of an improved intersection with the sign and associated landscaping enhancements around the base of the sign post.

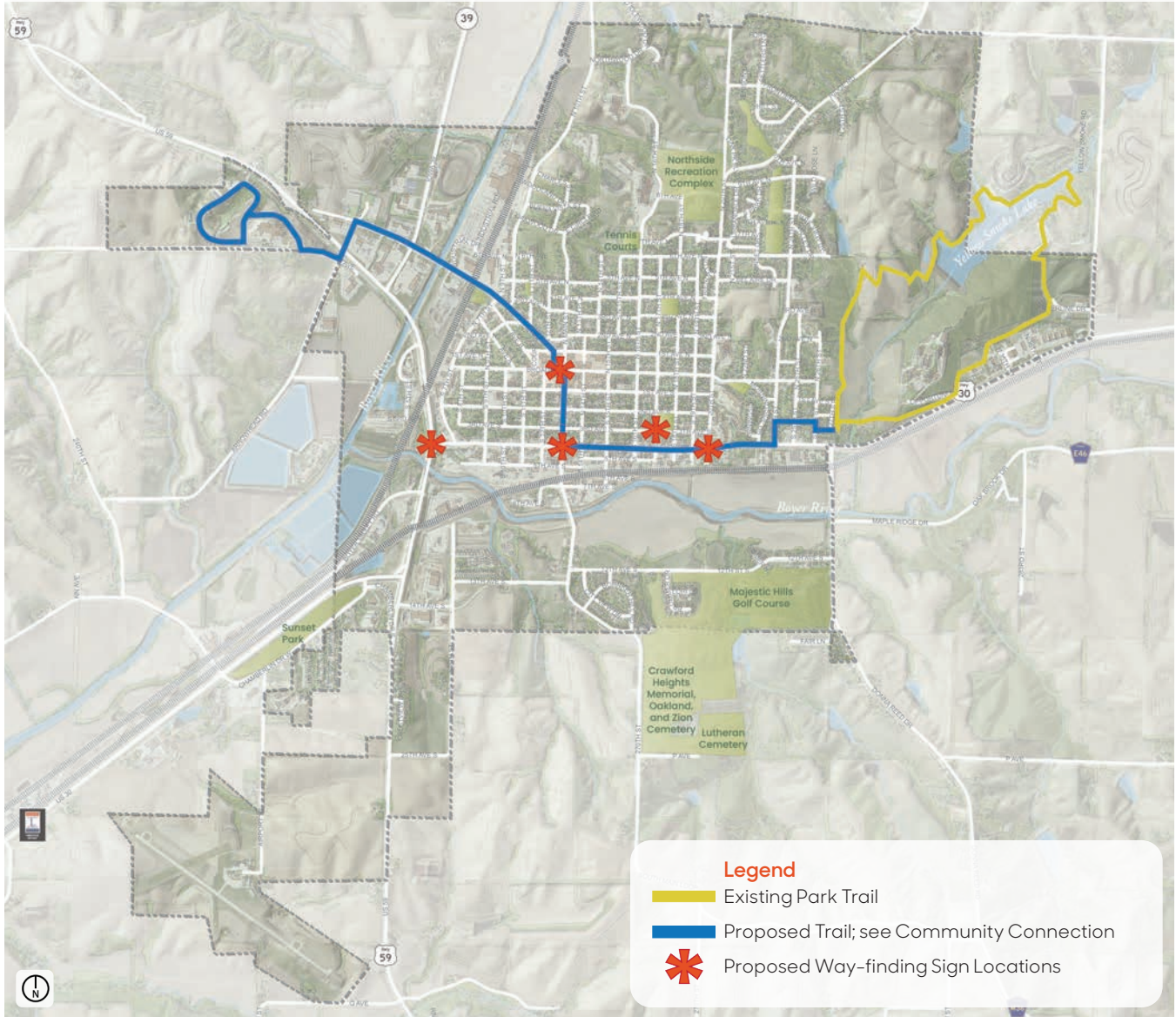
As a way to connect to the proposed trail route, it is recommended that signs be installed at the following intersections:

1. Highway 59 and Highway 30
2. Highway 30 and S Main Street
3. Highway 30 and S 20th Street
4. Main Street and Broadway
5. 3rd Ave S and S 17th Street at Washington Park



Sign graphic provided by the City of Denison.

Proposed Way-finding Sign Location Map



Proposed Intersection Improvement with Way-finding Sign and Landscaping Enhancements



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Opinion of Probable Cost | Community Way-finding

Description	Quantity	Unit	Unit Price	Amount
General Requirements				
Traffic Control	1	LS	\$ 5,000.00	\$ 5,000.00
Temporary Erosion Control Measures	1	LS	\$ 1,000.00	\$ 1,000.00
Temporary Utilities	1	LS	\$ 1,000.00	\$ 1,000.00
Demolition				
Earthwork				
General Site Preparation	1	LS	\$ 1,000.00	\$ 1,000.00
Rough Grading	1	LS	\$ 500.00	\$ 500.00
Utilities				
Hardscape				
42 IN Deep Sign Post Foundation	5	EA	\$ 2,000.00	\$ 10,000.00
Landscape				
Prepare Subgrade	5	EA	\$ 400.00	\$ 2,000.00
Landscape Enhancements	5	EA	\$ 1,000.00	\$ 5,000.00
Amenities				
Way-finding Sign	5	EA	\$ 7,500.00	\$ 37,500.00
Subtotal - Base Bid				\$ 63,000.00
Mobilization /General Conditions - 5%				\$ 3,150.00
Contingency - 20%				\$ 12,600.00
Design / Engineering Services - 12%				\$ 9,072.00
Construction Cost				\$ 87,822.00
Additional Notes				
1. See Typical Intersection Improvements OPC for all costs associated with improvements at intersections.				
2. See Community Connection OPC for all costs associated with sidewalk improvements.				

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Northside Recreation Complex Expansion

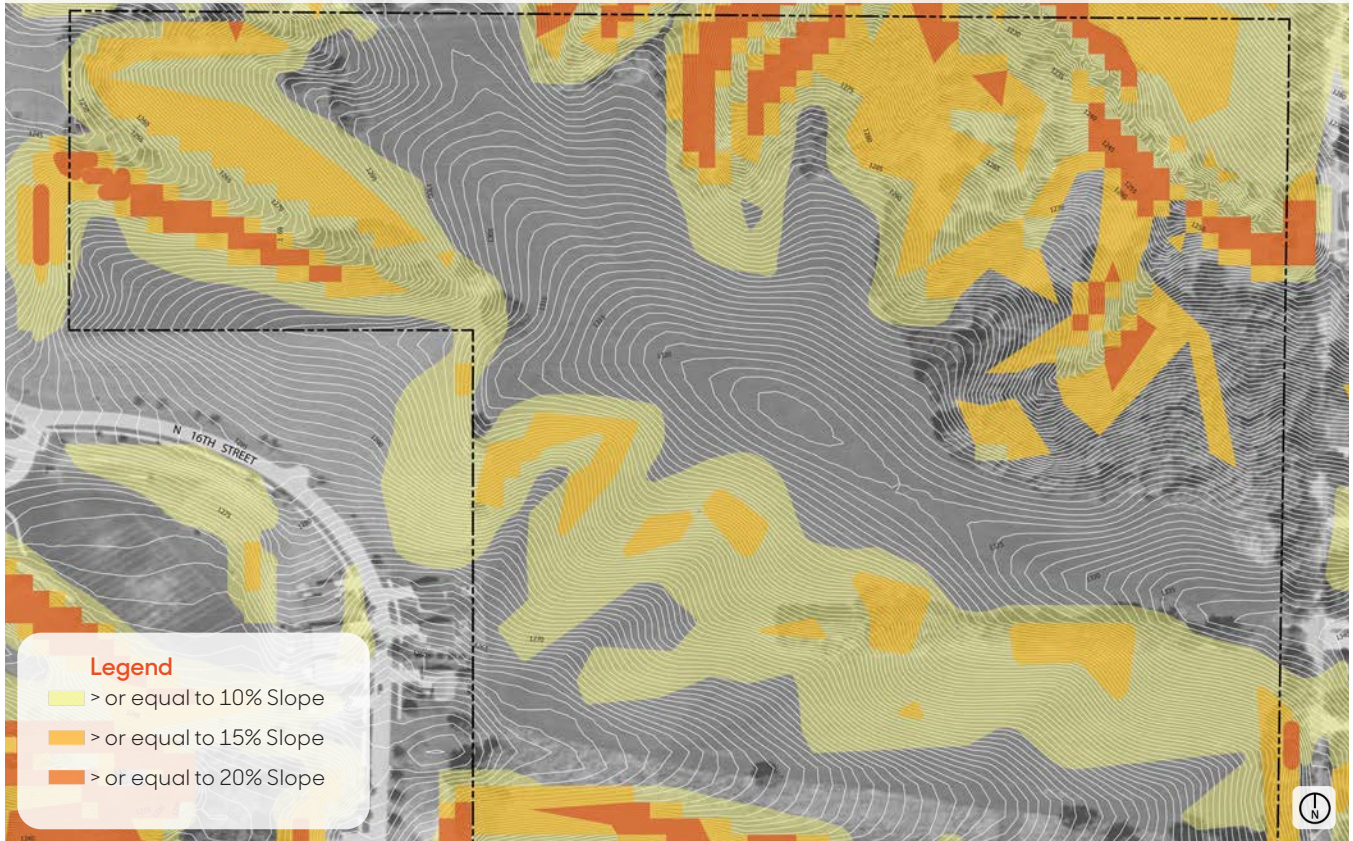
Home to Denison High School, the Northside Recreation Center, and the Aquatics Fun Center, the north side of Denison is an activity hub for the community. As you approach the area, along N 16th Street, you'll find tennis courts; a track; and baseball, softball, and soccer fields. The fields are home base for both organized team games and pick-up-games. Throughout the day, residents of all ages use these amenities. Because of the demand, the need for additional fields has been at the forefront of conversations among community leaders.

Further north along N 16th Street is a parcel of land, just over 60 acres. Due to its proximity to the Northside Recreation Complex, the parcel is an ideal location for future expansion. However, there are challenges that will need to be addressed if the parcel were to be developed. Playing fields of most kinds are relatively flat to accommodate proper play requirements. The map above illustrates a slope analysis of the parcel. It's important to note that a large portion of the parcel has a topographic slope that is equal to or greater than 10%. The map served as a guideline when schematically locating fields.

The map in the upper left is a test-to-fit plan that accommodates soccer and Little League fields and associated parking that support organized team events. It's important to note that additional grading studies will need to be completed. It should be expected that significant vegetative hills will be required in order to accommodate the proposed playing fields.

Despite the challenges, the parcel provides an opportunity for a more than one-mile long cross-county trail that can wind through the existing landscape through the rolling topography.

Existing Site Slope Analysis



Proposed Northside Recreation Complex Expansion Plan



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Opinion of Probable Cost | Northside Recreation Complex Expansion

Description	Quantity	Unit	Unit Price	Amount
General Requirements				
Mobilization	1	LS	\$ 20,000.00	\$ 20,000.00
Temporary Erosion Control Measures	1	LS	\$ 12,000.00	\$ 12,000.00
Temporary Utilities	1	LS	\$ 5,000.00	\$ 5,000.00
Demolition				
Earthwork				
General Site Preparation	1	LS	\$ 15,000.00	\$ 15,000.00
Clearing and Grubbing	1	LS	\$ 40,000.00	\$ 40,000.00
Rough Grading	1	LS	\$ 300,000.00	\$ 300,000.00
Utilities				
Extend Existing Electrical Infrastructure	600	LF	\$ 1,200.00	\$ 720,000.00
Construct Parking Lot Lighting	4	EA	\$ 1,200.00	\$ 4,800.00
Construct Soccer Field Lighting	8	EA	\$ 1,800.00	\$ 14,400.00
Construct Baseball Field Lighting	10	EA	\$ 1,800.00	\$ 18,000.00
Extend Existing Water Infrastructure	600	LF	\$ 300.00	\$ 180,000.00
Install Water Hydrants	4	EA	\$ 8,000.00	\$ 32,000.00
Hardscape				
Construct Road Extension	1,200	SY	\$ 200.00	\$ 240,000.00
Construct Concrete Parking Lot	4,000	SY	\$ 120.00	\$ 480,000.00
Construct Decorative Pavement Plaza	25,000	SF	\$ 12.00	\$ 300,000.00
Construct Concrete Sidewalk	4,000	SF	\$ 8.00	\$ 32,000.00
Block Retaining Walls	1,200	LF	\$ 60.00	\$ 72,000.00
Soccer Playing Field				
Construct Turf Playing Field	117,000	SF	\$ 2.00	\$ 234,000.00
Construct 5-Row Bleachers	2	EA	\$ 8,000.00	\$ 16,000.00
Little League Playing Field				
Construct Turf Playing Field	42,000	SF	\$ 2.00	\$ 84,000.00
Construct Clay Infield and Warning Track	8,000	SF	\$ 5.00	\$ 40,000.00
Construct Dugout Canopies	4	EA	\$ 15,000.00	\$ 60,000.00
Construct Field Fencing	1,200	LF	\$ 110.00	\$ 132,000.00
Construct 5-Row Bleachers	2	EA	\$ 8,000.00	\$ 16,000.00
Landscape				
Installs Landscape Enhancements	1	LS	\$ 100,000.00	\$ 100,000.00
Install Seed & Mat	1	LS	\$ 250,000.00	\$ 250,000.00
Amenities				
Construct Cross-Country Trail	3,000	LF	\$ 30.00	\$ 90,000.00
Subtotal - Base Bid				\$ 3,487,200.00
Mobilization /General Conditions - 5%				\$ 174,360.00
Contingency - 20%				\$ 697,440.00
Design / Engineering Services - 12%				\$ 502,156.80
Construction Cost				\$ 4,861,156.80
Additional Notes				
1. See Typical Intersection Improvements OPC for all costs associated with improvements at intersections.				
2. See Community Connection OPC for all costs associated with sidewalk improvements.				

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Implementation Strategies

The Visioning Program is just the first step of the planning process for the implementation of the projects that will contribute to an enhanced quality of life in Denison. It is the Design Team's intent to provide Denison with a framework for future enhancements to community development and resources. Although there is value in data gathering, analysis, conclusions, and recommendations, the greatest value is providing Denison residents with the opportunity to look at their community with new perspectives and to motivate future change within their community.

Based on economic return and increased quality of life, projects should be approached individually, keeping in mind that some may run concurrently and others may require additional phasing.

Typical Intersection Improvements | Improvements at intersections create a safe passage for pedestrians. Intersection improvements can help in slowing down traffic while beautifying the community. Denison may consider applying for grants such as the Iowa DOT Pedestrian Curb Ramp Construction Program to assist in intersection upgrades.

Community Connection | The connectivity of a trail system offers opportunities to promote wellness, while ensuring a safer cycling / walking route throughout Denison. Denison may consider applying for grants that support sidewalks and trail improvements, such as the State Recreational Trail Program.

Community Way-finding | Installing community way-finding signs help increase visibility to local shops and attractions while also enticing visitors to stop in Denison rather than just passing by. Denison may consider applying for grants such as the Iowa DOT Statewide Transportation Enhancement Funding for these improvements.

Northside Recreation Complex Expansion | The undeveloped site just north of the Northside Recreation Complex offers the opportunity for athletic field expansion that is needed within Denison. The proposed expansion will promote health and wellness through physical activity for community members of all ages. Denison may consider applying for the National Recreation Trails Program to assist with construction of the cross-country trail.

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

- Alliant Energy and Trees Forever Branching Out 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
- Revitalization Assistance for Community Improvement (RACI) Grant Program
- State Recreational Trails Program
- Transportation Alternatives Program (TAP)