2050

Black Hawk County MPO

LONG-RANGE TRANSPORTATION PLAN

Adopted November 9, 2023

INRCOG
Iowa Northland Regional Council of Governments

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RESOLUTION OF THE BLACK HAWK COUNTY METROPOLITAN AREA TRANSPORTATION POLICY BOARD

WHEREAS, the Black Hawk County Metropolitan Area Transportation Policy Board has been designated as the Metropolitan Planning Organization (MPO) for the Black Hawk County urbanized area; and

WHEREAS, the Policy Board in cooperation with the state is conducting a continuing, cooperative, and comprehensive (3-C) transportation planning process pursuant to 23 CFR 450 (c); and

WHEREAS, this planning process shall lead to the development, maintenance, and operation of an integrated system that considers all relevant modes of transportation for the efficient movement of people and goods; and

WHEREAS, the Policy Board, in cooperation with the Federal Highway Administration, the Federal Transit Administration, the Iowa Department of Transportation, the Metropolitan Transit Authority, and city and county jurisdictions has developed an integrated and multimodal 2050 Long-Range Transportation Plan in compliance with U.S. Department of Transportation regulations; and

WHEREAS, the Policy Board has included the open participation of the public in the development of the 2050 Long-Range Transportation Plan in conformance with the Policy Board's approved Public Participation Plan; and

WHEREAS, the Black Hawk County Metropolitan Area Transportation Policy Board certifies that the 2050 Long-Range Transportation Plan was developed in accordance with 23 CFR 450 (c) and is being conducted in accordance with all applicable requirements.

NOW, THEREFORE BE IT RESOLVED that the Black Hawk County Metropolitan Area Transportation Policy Board hereby approves the 2050 Long-Range Transportation Plan for the Black Hawk County urbanized area; and

BE IT FURTHER RESOLVED that the Black Hawk County Metropolitan Area Transportation Policy Board certifies that the 2050 Long-Range Transportation Plan is consistent with the metropolitan transportation planning process as described in 23 CFR 450 (c).

Passed and adopted this 9th day of November, 2023.

DeAnne Kobliska, Chair

ATTEST:

Nick Fratzke, Director of Transportation
INRCOG

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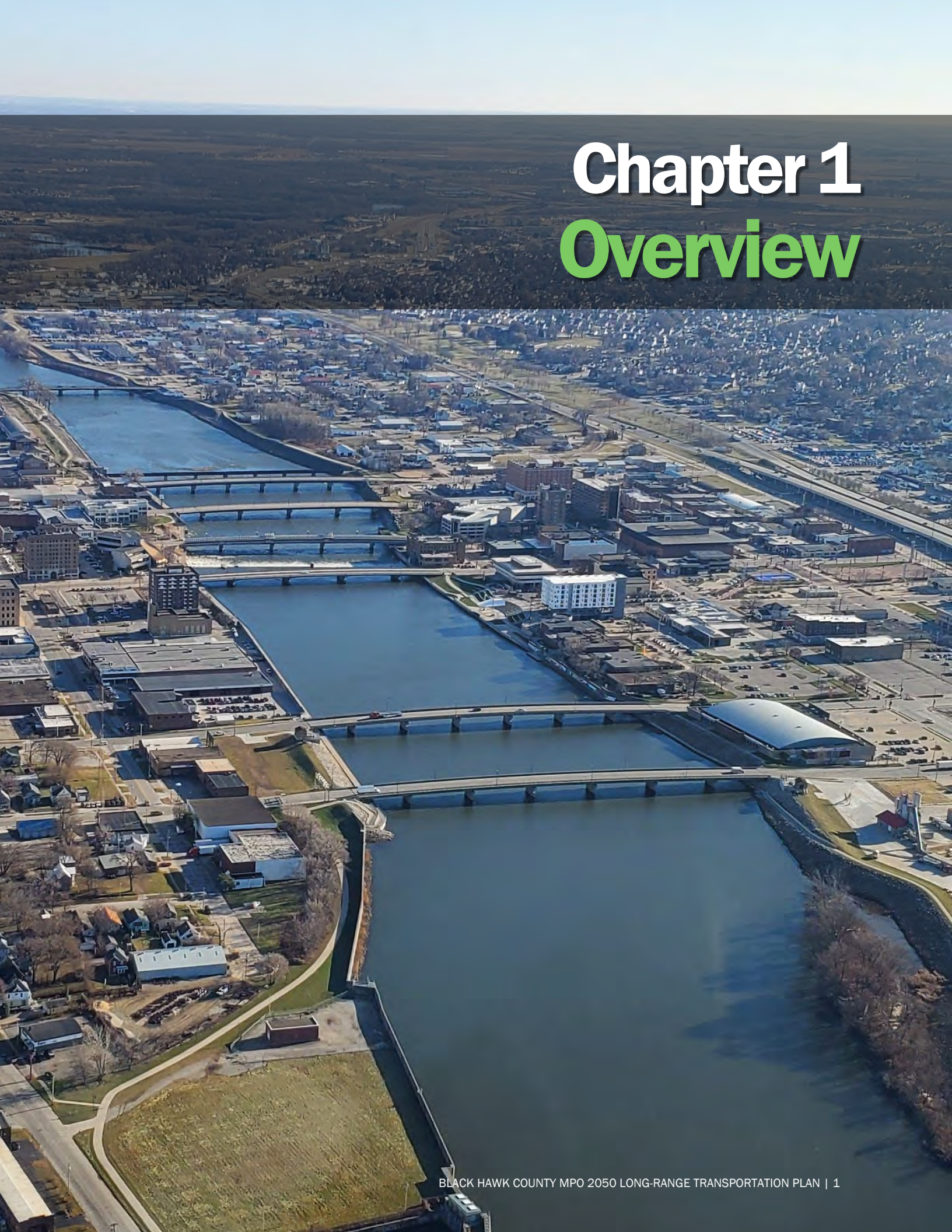
Chapter 1
Overview



Chapter 1 – Overview

The goal of the Long-Range Transportation Plan (LRTP) is to document the present state of transportation patterns and infrastructure in the Black Hawk County metropolitan area across all modes, and to provide a plan for the maintenance and improvement of each mode based on anticipated needs and revenues. This Plan has a horizon year of 2050. As such, it endeavors to gauge the transportation system over three decades. While these forecasted needs are based on past trends and expected progression, it is necessary to periodically review and update this Plan to consider new developments and changing trends. Accordingly, this Plan is reviewed and revised every five years.

This document has been prepared to meet the federal requirements outlined in the 2021 federal transportation bill, the Infrastructure Investment and Jobs Act (IIJA), under the authority of the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), and the Iowa Department of Transportation (DOT). IIJA builds on previous federal transportation bills that included provisions to make transportation more streamlined, performance-based, and multimodal, and to address challenges including improving safety, maintaining infrastructure condition, reducing traffic congestions, improving efficiency of the system and freight movement, protecting the environment, and reducing delays in project delivery. IIJA also incorporates performance goals, measures, and targets into the process of identifying needed transportation improvements and project selection.

Purpose of the Long-Range Transportation Plan

The Long-Range Transportation Plan serves as a mechanism for the metropolitan planning organization (MPO) to examine its current transportation networks – highway, transit, air, rail, bicycle, and pedestrian modes – and to assess their adequacy for the existing population and economy. Moreover, it provides area officials with an opportunity to explore the future transportation needs of the community based on existing conditions, projected revenues, and population and employment projections. This effort is conducted through a traffic modeling process, close coordination with focus groups, a series of meetings with the MPO Transportation Technical Committee, and the solicitation of public input to discuss the needs and opportunities of the region.

This document provides a framework upon which local jurisdictions can base transportation project selection during the annual programming process. Given a constrained financial future, local officials must be able to prioritize and select projects which best meet the needs of the community, while not exceeding the revenue projected to be available during the life of this Plan.

What is the MPO?

Federal law requires the formation of MPOs for urbanized areas with a population greater than 50,000. The role of an MPO is to oversee transportation planning and programming to ensure that existing and future federal expenditures on transportation projects are based on a **continuing**, **cooperative**, and **comprehensive** (3-C) planning process. MPOs bring together cities and counties in an urban area to ensure that planning reflects their region's shared vision.

BLACK HAWK COUNTY MPO

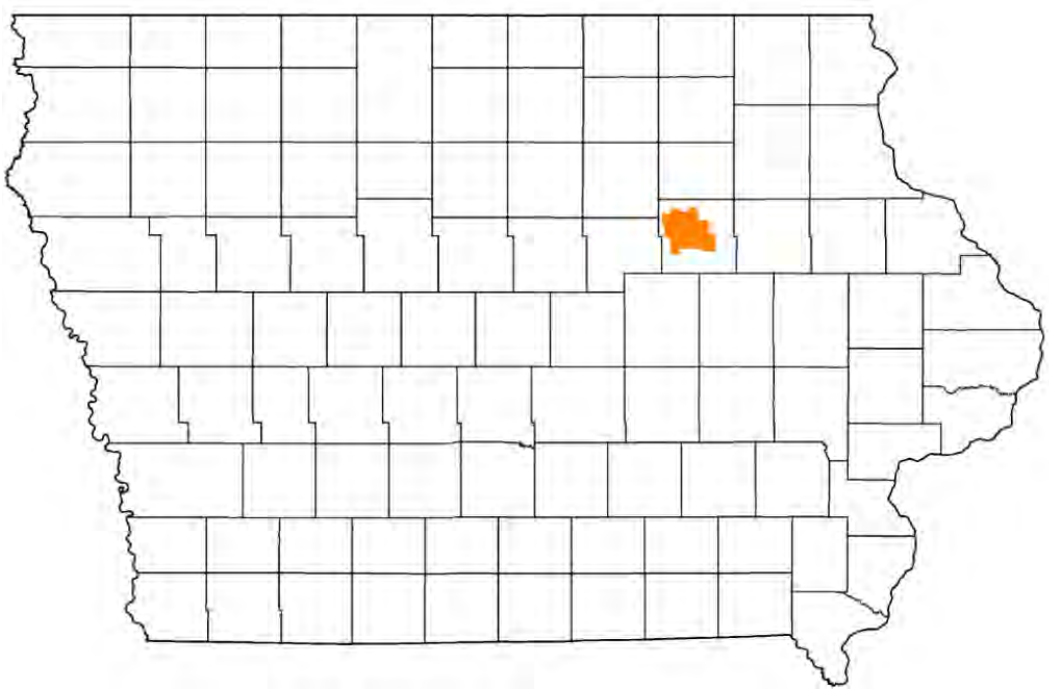
1 COUNTY
Black Hawk County

7 CITIES
Cedar Falls
Elk Run Heights
Evansdale
Gilbertville
Hudson
Raymond
Waterloo

2 TRANSPORTATION SERVICES
Metropolitan Transit Authority
Waterloo Regional Airport

The Black Hawk County MPO consists of the contiguous urbanized area at the center of Black Hawk County, Iowa (Map 1.1). The corporate boundaries included in this urbanized area are the cities of Cedar Falls, Elk Run Heights, Evansdale, Hudson, Raymond, and Waterloo. The MPO has a defined urban area boundary and study area boundary (Map 1.2). The **urban area boundary** is a smoothed-out boundary that captures all census-defined urbanized areas. This boundary also defines whether roadways are classified as "urban" or "rural" for federal functional classification (FFC). The **MPO study area** boundary extends beyond this and defines what area is anticipated to be urbanized over a horizon of at least 20 years. The MPO study area includes the city of Gilbertville and parts of unincorporated Black Hawk County.

Map 1.1: Location of the Black Hawk County MPO



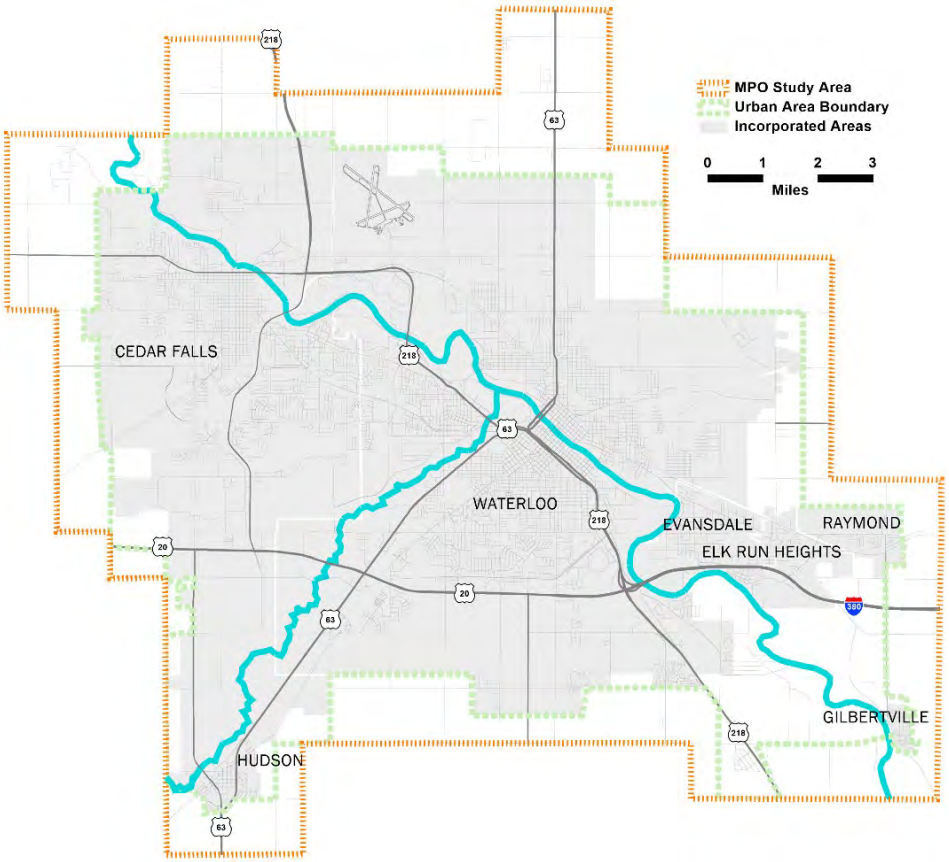
Structure of the MPO

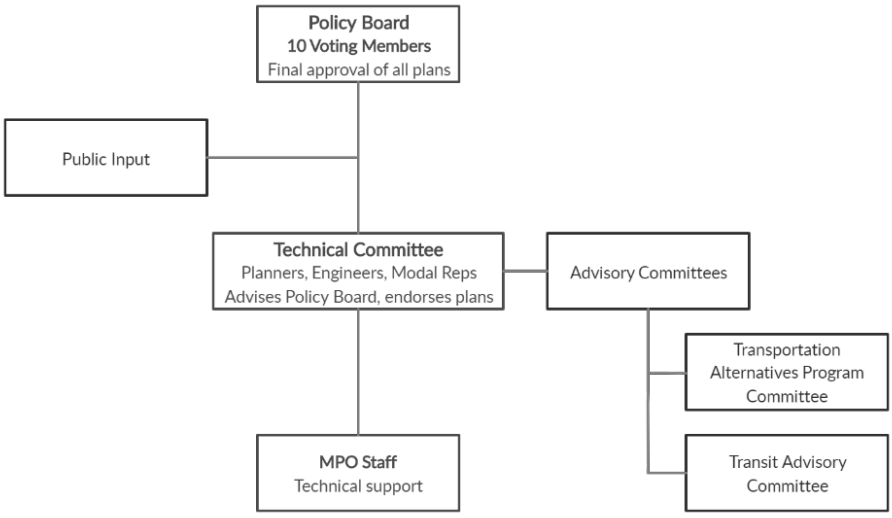
The Iowa Northland Regional Council of Governments (INRCOG) is designated by the State of Iowa as the MPO for the Black Hawk County Metropolitan Area and provides staff and technical support. Two designated committees form the structure of the MPO: The **Policy Board**, and the **Transportation Technical Committee (TTC)**. The Policy Board and TTC meet jointly each month.

The **Policy Board** is the governing body of the MPO. Voting members include the mayor from Cedar Falls, Elk Run Heights, Evansdale, Gilbertville, Hudson, Raymond, Waterloo, a member of the Black Hawk County Board of Supervisors, and the chairperson of the Metropolitan Transit Authority (MET Transit) Board and the Waterloo Regional Airport Board. Non-voting members include representatives from INRCOG, the Iowa DOT, FHWA, and FTA.

The **Transportation Technical Committee** is comprised of local planners, engineers, modal representatives, and interested parties that have extensive knowledge of the area's transportation system. The TTC advises the Policy Board but does not vote on policy issues.

Map 1.2: Black Hawk County MPO Planning Area





The MPO establishes and supports subcommittees and working groups as needed. A subcommittee of the TTC is the Bicycle and Pedestrian Advisory Committee (BPAC) which meets annually to discuss, rank, and program transportation alternatives projects. Another standing committee is the Transit Advisory Committee (TAC). This group meets at least twice annually to discuss passenger transportation and human service agency coordination, and to develop the Passenger Transportation Plan (PTP).

Transportation Planning Process

In addition to conducting ongoing transportation planning and programing and participating in studies and projects, the MPO is responsible for completing the following transportation planning documents:

- Transportation Planning Work Program (TPWP) – Outlines the transportation planning activities MPO staff plan to conduct in the next fiscal year and sources of funding; **updated annually**.
- Transportation Improvement Program (TIP) – Includes all projects programmed for federal transportation funding in the MPO in the next four fiscal years; **updated annually**.
- Long-Range Transportation Plan (LRTP) – Reviews the current condition and future needs of the transportation system and provides guidance for transportation investment decisions; **updated every five years**.
- Passenger Transportation Plan (PTP) – Provides coordination between passenger transportation providers and human service agencies and recommends projects to improve passenger transportation; joint document between the MPO and the Iowa Northland Regional Transportation Authority; **updated every five years**.
- Public Participation Plan (PPP) – Describes the agency's proactive strategies, techniques, and desired outcomes to inform and engage all community members in the transportation planning and decision-making process; **updated every five years**.

IIJA Planning Factors

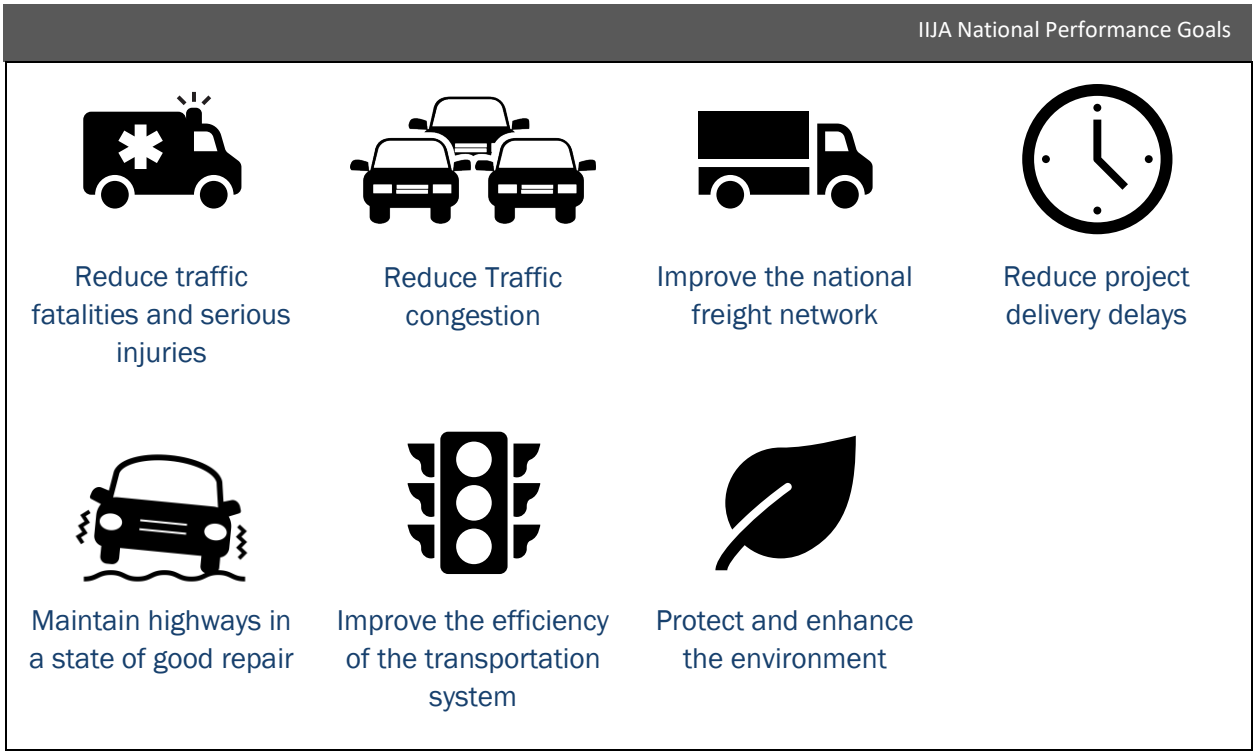
The planning and programming process required of the MPO is outlined in IIJA. Like the previous federal transportation bill, IIJA continues, and further strengthens, the requirement that an extensive, ongoing, and cooperative planning effort for the programming of federal funds be undertaken. The MPO's overall transportation planning goal is to provide for the **adequate**, **safe**, and **efficient** movement of persons and goods in the urban area. The MPO utilizes IIJA's planning factors to help reach this goal, which are as follows:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency
- Increase the safety of the transportation system for motorized and non-motorized users
- Increase the security of the transportation system for motorized and non-motorized users
- Increase the accessibility and mobility of people and for freight
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight
- Promote efficient system management and operation
- Emphasize the preservation of the existing transportation system
- Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts on surface transportation
- Enhance travel and tourism

IIJA National Goals

The federal transportation bill emphasizes a performance-based approach and requires a process of performance measurement setting, starting with the U.S. DOT establishing performance measures, followed by the states and MPOs establishing performance targets. The national goals are as follows:

- **Safety** – To achieve a significant reduction in traffic fatalities and serious injuries on all public roads
- **Infrastructure Condition** – To maintain the highway infrastructure asset system in a state of good repair
- **Congestion Reduction** – To achieve a significant reduction in congestion on the National Highway System
- **System Reliability** – To improve the efficiency of the surface transportation system
- **Freight Movement and Economic Vitality** – To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
- **Environmental Sustainability** – To enhance the performance of the transportation system while protecting and enhancing the natural environment
- **Reduced Project Delivery Delays** – To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices



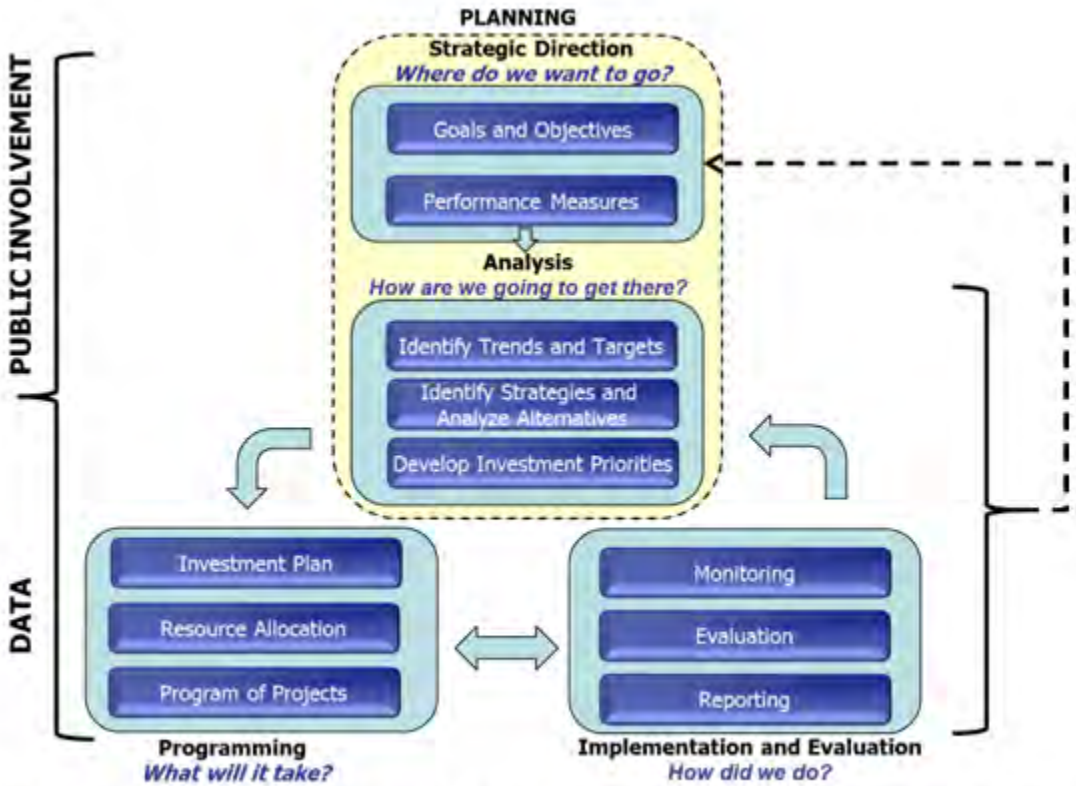
Performance-Based Planning and Programming

The foundation of this Plan is built upon performance-based planning and programming. This approach provides a link between short-term management and long-range decisions about policies and investments made for the transportation system, links specific actionable strategies to help improve decision making, and provides accountability for following through on the plan. The building blocks for a performance-based planning process are goals, objectives, and performance measures which are defined as:

- **Goal** – A broad statement that describes a desired end state.
- **Objective** – A specific and measurable statement that supports achievement of a goal.
- **Performance Measure** – A metric used to assess progress toward meeting an objective. The MPO coordinates with regional, state, and federal partners to establish performance measures for the MPO planning area.

Performance-based planning and programming begins with a strategic direction, which indicates where the MPO would like to go in the future. The MPO sets this strategic direction by choosing goals, quantifiable objectives, and performance measures to guide decision making. Next, the MPO creates a long-range plan that identifies trends and targets, defines strategies, analyzes alternatives, and develops investment priorities. The MPO then links the long-range plan to a Transportation Improvement Program (TIP) to deliver projects that improve performance and achieve targets within the strategic direction. Finally, the MPO monitors, evaluates, and reports on the performance-based planning and programming process to create a feedback loop that informs future planning efforts. Figure 1.1 illustrates the performance-based planning and programming process.

Figure 1.1: Framework for Performance-based Planning and Programming



Source: FHWA Performance-Based Planning and Programming Guidebook, Page iv.

National Performance Measures and Targets

IIJA requires that State DOTs and MPOs establish performance targets and report on the progress made toward achieving each of these performance targets for the following performance measures:

- **Safety**
  - Total number of traffic related fatalities
  - Rate of traffic related fatalities per 100 million Vehicle Miles Traveled (VMT)
  - Total number of traffic related serious injuries
  - Rate of traffic related serious injuries per 100 million VMT
  - Total number of traffic related non-motorized fatalities and serious injuries
- **Pavement and Bridge**
  - Percentage of pavements of the Interstate System in good condition
  - Percentage of pavements of the Interstate System in poor condition
  - Percentage of pavements of the non-Interstate National Highway System (NHS) in good condition
  - Percentage of pavements of the non-Interstate NHS in poor condition
  - Percentage of NHS bridges classified as in good condition
  - Percentage of NHS bridges classified as in poor condition
- **System Performance and Freight**
  - Percent of the person-miles traveled on the Interstate that are reliable
  - Percent of the person miles traveled on the non-Interstate NHS that are reliable
  - Truck Travel Time Reliability (TTTR) Index
  - [1]Annual hours of peak hour excessive delay per capita* (*not applicable for the Black Hawk County MPO*)
  - [1]Percent of non-single-occupancy-vehicle (*not applicable for the Black Hawk County MPO*)
  - [2]Total emissions reduction (*not applicable for the Black Hawk County MPO*)
- **Transit Asset Management**
  - Percentage of non-revenue vehicles met or exceeded Useful Life
  - Percentage of revenue vehicles met or exceeded Useful Life
  - Percentage of track segments with performance restrictions (rail)
  - Percentage of assets with condition rating below 3.0 on FTA Transit Economic Requirements Model (TERM) Scale

[1]Applicable to urbanized areas with a population over 1 million for the first performance period and over 200,000 for the second and all other performance periods.

[2]Does not apply to MPOs that do not contain any portions of nonattainment or maintenance areas for ozone (O3), carbon monoxide (CO), or particulate matter (PM10 and PM2.5) National Ambient Air Quality Standards.

Performance Targets Methodology

Rather than setting its own targets, the MPO has chosen to support the statewide safety, pavement, bridge, system performance, and freight targets set by the Iowa DOT, and the Transit Asset Management (TAM) and Public Transportation Agency Safety Plan (PTASP) targets set by MET. The MPO supports those targets by agreeing to plan and program projects so that they contribute toward the accomplishment of the performance measures. The Iowa DOT's methodology for setting federal performance management and asset management targets can be found on the Iowa DOT Systems Planning Bureau webpage. Safety targets are set annually as five-year rolling averages. Pavement, bridge, system performance, and freight targets are set as two- and four-year targets; MPOs are not required to establish two-year targets. Targets to-date are shown in Table 1.1.

By agreeing to support the state's targets for safety, pavement, bridges, system performance, and freight, and MET's TAM and PTASP targets, the Black Hawk County MPO agrees to:

- Work with the Iowa DOT and stakeholders to address areas of concern regarding fatalities and serious injuries, pavement, bridges, system performance, and freight within the metropolitan planning area.
- Work with MET Transit to address areas of concern regarding transit and transit asset management.
- Coordinate with the Iowa DOT and MET Transit and include the State and transit performance measures and targets in the Long-Range Transportation Plan.
- Integrate into the metropolitan transportation planning process the goals, objectives, performance measures, and targets described in other Iowa DOT transportation plans and processes.
- Include a description in the Transportation Improvement Program (TIP) of the anticipated effects of the programming process towards achieving the State safety, pavement, bridges, system performance, freight, and transit asset management targets.

The Iowa DOT Systems Planning Bureau provides a federal performance management and asset management website which provides information and links to various resources.

https://iowadot.gov/systems_planning/planning/federal-performance-management-and-asset-management

Performance-Based Planning and the MPO Planning Process

Under IIJA, MPO's shall integrate into the metropolitan transportation planning, directly or by reference, the goals, objectives, performance measures, and targets described in other State transportation plans and transportation processes, as well as any plans developed under 49 U.S.C. Chapter 53 by providers of public transportation, required as part of a performance-based program. For the Black Hawk County MPO, this

includes the State Long Range Transportation Plan, State Transportation Asset Management Plan, Strategic Highway Safety Plan, State Freight Plan, and MET's Transit Asset Management Plan and Public Transportation Agency Safety Plan. Links to the State transportation plans are provided on the following pages.

Transportation planning must be cooperative, as no single agency has responsibility for the construction, operation, and maintenance of the entire transportation system. The State plans developed by the Iowa DOT help define Iowa's statewide future transportation vision and identify goals, objectives, and strategies to guide transportation decision-making. The MET Transit Asset Management Plan establishes a strategic and systematic process of operating, maintaining, and improving the metropolitan transit capital assets through their entire life cycle.

A desired outcome of the MPO performance-based planning process is constant quality improvement in project selection, programming, and delivery to help meet the State and MET's goals. The Black Hawk County MPO's goals and objectives can help implement the State's plans and MET's TAM and PTASP by aligning with goals and objectives identified within the documents. The MPO will review the goals and objectives outlined in statewide plans and MET's plans throughout the planning and programming process to ensure MPO projects align with those goals and strategies and will facilitate the accomplishment of State and MET Transit performance measures.

To implement performance-based planning, the MPO, MET, and the Iowa DOT will work together to coordinate:

- Collection of performance measurement data.
- Selection of performance targets for the metropolitan area.
- Reporting of metropolitan area targets.
- Reporting of system performance related to specific targets.

The method of coordination between the MPO and the Iowa DOT is outlined in the MPO's Transportation Planning Work Program, and the agreement between MET Transit and the Iowa DOT is outlined in the consolidated funding application. In addition, MPO TIPs are required to document compliance with each of the performance-based planning categories. The TIP discusses how the projects included within it help achieve the state and MPO targets for these areas.

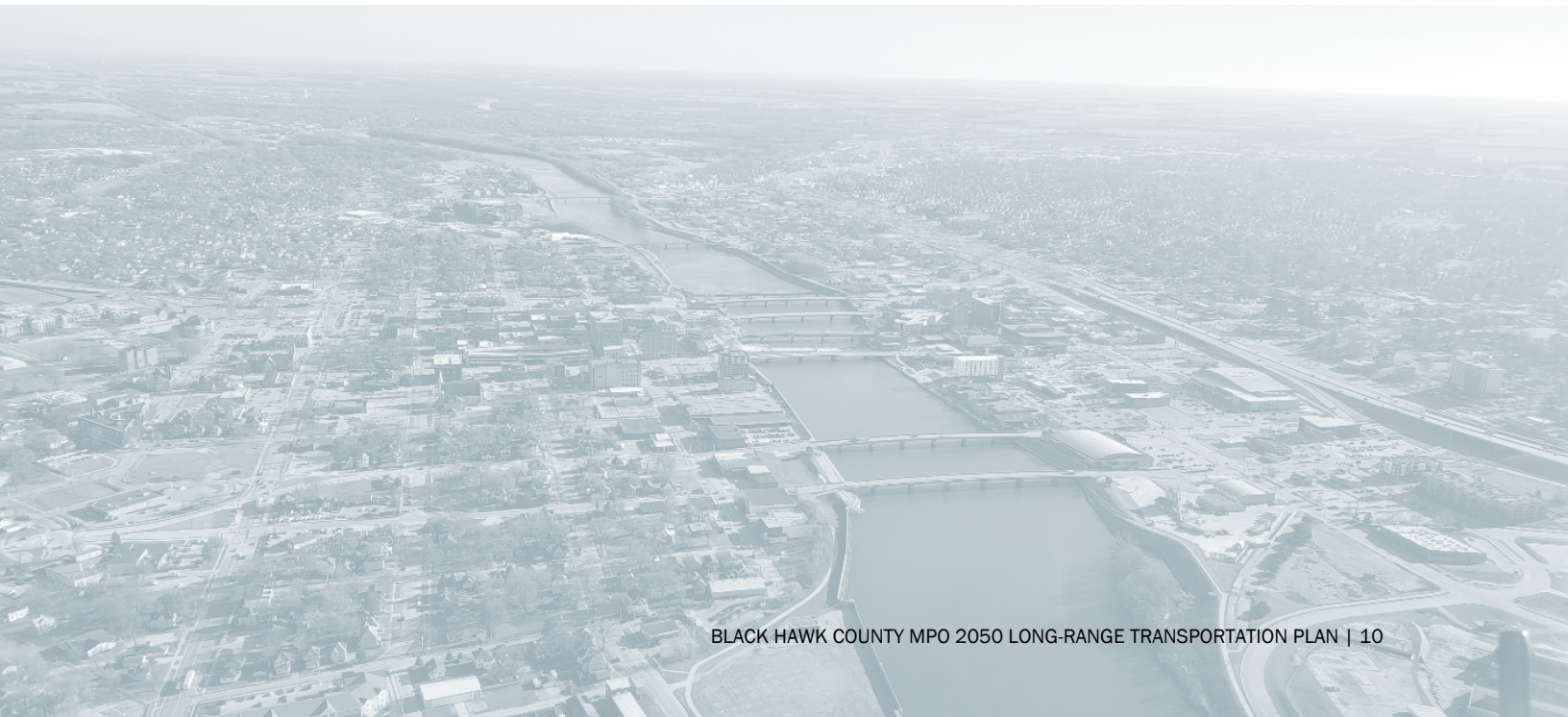


Table 1.1: Iowa DOT Federal Performance Targets

Goal	Performance Measurement	Baseline Year	Baseline	Target Year	Target	State/MET Adoption	MPO Adoption*
Safety[1]	Number of fatalities	2018-2022	338.6	2020-2024	352.6	8/31/23	10/12/23
	Fatality rate per 100 million Vehicle Miles Traveled	2018-2022	1.036	2020-2024	1.080	8/31/23	10/12/23
	Number of serious injuries	2018-2022	1,363.2	2020-2024	1,419.8	8/31/23	10/12/23
	Serious injury rate per 100 million Vehicle Miles Traveled	2018-2022	4.166	2020-2024	4.344	8/31/23	10/12/23
	Non-motorized fatalities and serious injuries	2018-2022	136.4	2020-2024	138.2	8/31/23	10/12/23
Pavement and Bridges[2]	Percentage of pavements of the Interstate System in good condition	2021	58.8%	2025	55.0%	10/3/22	10/13/22
	Percentage of pavements of the Interstate System in poor condition	2021	0.4%	2025	3.0%	10/3/22	10/13/22
	Percentage of pavements of the non-Interstate National Highway System in good condition	2021	37.9%	2025	35.0%	10/3/22	10/13/22
	Percentage of pavements of the non-interstate National Highway System in poor condition	2021	3.7%	2025	6.0%	10/3/22	10/13/22
	Percentage of National Highway System bridges classified as in good condition	2021	48.6%	2025	56.0%	10/3/22	10/13/22
	Percentage of National Highway System bridges classified as in poor condition	2021	2.4%	2025	6.6%	10/3/22	10/13/22
System and Freight Reliability[3]	Percent of the person-miles traveled on the Interstate that are reliable	2021	99.9%	2025	98.0%	10/3/22	10/13/22
	Percent of the person-miles traveled on the non-Interstate National Highway System that are reliable	2021	96.5%	2025	95.0%	10/3/22	10/13/22
	Truck Travel Time Reliability (TTTR) Index	2021	1.13	2025	1.25	10/3/22	10/13/22
Transit Asset Management (TAM)[4]	Percentage of MET's non-revenue vehicles met or exceeded Useful Life Benchmark	2022	80.0%	2023	50.0%	9/29/22	11/10/22
	Percentage of MET's revenue vehicles (buses) met or exceeded Useful Life Benchmark	2022	47.0%	2023	58.0%	9/29/22	11/10/22
	Percentage of MET's revenue vehicles (mini-buses) met or exceeded Useful Life Benchmark	2022	38.0%	2023	45.0%	9/29/22	11/10/22
	Percentage of MET's assets with condition rating below 3.0 on FTA TERM Scale	2022	0.0%	2023	0.0%	9/29/22	11/10/22
Public Transportation Agency Safety Plan (PTASP)[5]	Fatalities (Total)	2018-2022	Fixed: 0 Para: 0	2019-2023	Fixed: 0 Para: 0	7/27/23	7/27/23
	Fatalities (Per 100k Vehicle Revenue Miles (VRM)	2018-2022	Fixed: 0 Para: 0	2019-2023	Fixed: 0 Para: 0	7/27/23	7/27/23
	Injuries (Total)	2018-2022	Fixed: 15 Para: 2	2019-2023	Fixed: 14.25 Para: 1.9	7/27/23	7/27/23
	Injuries (Per 100k VRM)	2018-2022	Fixed: 0.55 Para: 0.13	2019-2023	Fixed: 0.53 Para: 0.12	7/27/23	7/27/23
	Safety Events (Total)	2018-2022	Fixed: 12 Para: 7	2019-2023	Fixed: 11.4 Para: 6.65	7/27/23	7/27/23
	Safety Events (Per 100k VRM)	2018-2022	Fixed: 0.44 Para: 0.45	2019-2023	Fixed: 0.42 Para: 0.43	7/27/23	7/27/23
	System Reliability (VRM/Failures)	2018-2022	Fixed: 14,121 Para: 35,223	2019-2023	Fixed: 14,827 Para: 36,984	7/27/23	7/27/23

** Rather than setting its own targets, the MPO has chosen to support the statewide safety, pavement, bridge, system performance, and freight targets set by the Iowa DOT, and the TAM and PTASP targets set by MET.*

[1] www.iowadot.gov/systems_planning/fpmam/Iowa-2019-2023-safety-targets.pdf

[2] www.iowadot.gov/systems_planning/fpmam/2022-2025-Pavement-Bridge-Targets.pdf

[3] www.iowadot.gov/systems_planning/fpmam/2022-2025-System-Performance-Freight-Targets.pdf

[4] https://bhcmpo.org/performance-measures/

[5] https://bhcmpo.org/performance-measures/

State Transportation Plans

The users are the primary beneficiary of the nation's intermodal transportation system built to serve public mobility and productivity. Transportation decisions must be made in an environmentally sensitive way, using a comprehensive planning process that includes the public and considers land use, development, safety, and security. The vision of the Iowa DOT and the Transportation Commission is "***A safe and efficient multimodal transportation system that enables the social and economic wellbeing of all Iowans, provides enhanced access and mobility for people and freight, and accommodates the unique needs of urban and rural areas in a sustainable manner.***" The Iowa DOT has adopted several plans to address federal requirements and guide transportation investments to achieve the system vision.

Iowa in Motion 2050 State Long Range Transportation Plan (SLRTP)

Adopted in 2022, this long-range document addresses federal requirements and serves as a transportation investment guide for each transportation mode. The State Long Range Transportation Plan (SLRTP) is updated every five years because Iowa's transportation system is ever-changing. Proactively planning for the future of the system is critical to ensure people and goods can get where they need to go in a safe manner. The needs for the system are continually evolving due to changes in demographics, land use, travel patterns, technology, legislation, and available funding. The SLRTP establishes the vision and objectives for the state's multimodal transportation system, identifies existing and emerging needs, risks, and challenges, and recommends strategies to achieve the vision for the transportation system. The SLRTP also supports a continued emphasis on stewardship. The Iowa DOT views stewardship as an efficient investment and prudent, responsible management of the existing transportation system.

The 2050 SLRTP is the third in a current series of long-range plans. In 2012, a policy level plan was adopted. In 2017, the plan was expanded to identify primary investment areas, categorize future needs across modes, and provide strategies to achieve the system objectives. The 2022 SLRTP planning effort and document builds on these past plans with enhancements that include the following:

- Additional focus on emerging planning considerations
- Establishment of system objectives
- Expanded analysis of highway system needs and risks
- Updated strategies to implement the plan
- Development of Iowa DOT's rightsizing policy

www.iowadot.gov/iowainmotion/Long-Range-Transportation-Plans/2022-State-Transportation-Plan

Iowa Transportation Asset Management Plan 2023

Transportation asset management is a strategic approach to managing transportation infrastructure. It embodies a philosophy that is comprehensive, proactive, and long-term. The overall goals of asset management are to minimize long-term costs, extend the life of the transportation system, and improve the performance of the transportation system. Transportation Asset Management Plans (TAMP) act as a focal point for information about the state's assets, management strategies, long-term expenditure forecasts, and business management processes. The Iowa DOT's TAMP describes how the agency manages its bridges and pavements throughout their lives. The document also connects the SLRTP and system and modal plans to the Iowa DOT's five-year Transportation Improvement Program. In addition to meeting federal requirements, this TAMP meets the following objectives:

- Defines clear links among agency goals, objectives, and decisions
- Defines the relationship between proposed funding levels and expected results
- Develops a long-term outlook for asset performance
- Documents how decisions are supported by sound information
- Develops a feedback loop from observed performance to subsequent planning and programming decisions
- Improves accountability for decision-making
- Unifies existing data, business practices, and divisions to achieve asset management goals

Consistent with best practices nationally, the Iowa DOT's asset management goals are to:

- Build, preserve, operate, maintain, upgrade, and enhance the transportation system more cost-effectively throughout its whole life.
- Improve the performance of the transportation system.
- Deliver the Iowa DOT's customers the best value for every dollar spent.
- Enhance Iowa DOT's credibility and accountability in the stewardship of transportation assets.

www.iowadot.gov/systems_planning/Planning/Federal-Performance-Management-and-Asset-Management

Iowa Strategic Highway Safety Plan 2019

One method a state uses to conduct safety planning is through the development of a highway safety plan. A Strategic Highway Safety Plan (SHSP) is a statewide-coordinated safety plan that provides a comprehensive framework for reducing highway fatalities and serious injuries on all public roads. The SHSP establishes statewide goals, objectives, and key emphasis areas developed in consultation with federal, state, local, and private sector safety stakeholders. The 2019 SHSP is the fourth statewide safety plan to be adopted in Iowa.

The 2019 SHSP was developed in consultation with the SHSP Implementation Team which is comprised of individuals representing the E's of safety – education, emergency medical services, enforcement, and engineering. These representatives provide updates on programs, policies, and education campaigns for their respective organizations, as well as data on the latest research for their

area of expertise. For this update, the prioritization of Iowa's 19 safety emphasis areas was supported by an analysis of crash data and an extensive statewide input process involving Iowa's traffic safety stakeholders. The result of these efforts was the prioritization of eight of the safety emphasis areas that are now considered priority safety emphasis areas. For each of the priority safety emphasis areas, the Implementation Team identified strategies that provide the greatest opportunity to reduce fatalities and serious injuries. The eight priority safety emphasis areas are as follows:

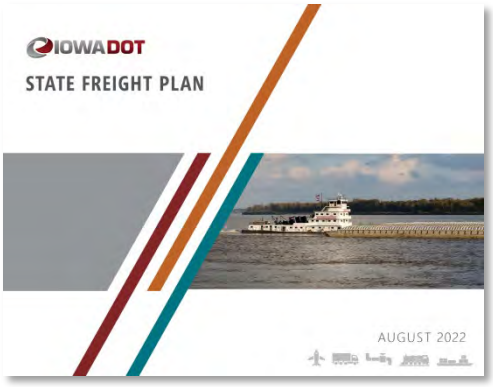
- Lane departures and roadside collisions
- Speed-related
- Unprotected persons
- Young drivers
- Intersections
- Impairment involved
- Older drivers
- Distracted or inattentive drivers

Implementation of the priority safety emphasis areas and strategies will be carried out by the SHSP Implementation Team and broadly supported by traffic safety professionals from around the state. The implementation and progress of the plan will be evaluated on an annual basis for the five-year planning period ending December 2023. The goal of this plan is **Zero Fatalities**, however, interim annual goals aligning with the Highway Safety Improvement Program performance measures will be developed during the plan period. Although the Implementation Team is fully committed to reducing the number of fatalities and serious injuries on Iowa's roadways, it recognizes that commitment pales in comparison to the cumulative impact **every driver** (fifth "E") can have on the safety of Iowa's roadways.

Although Zero Fatalities is Iowa's long-term vision, the state also recognizes the need to establish short-term goals in pursuit of this vision. In 2016, FHWA published the Highway Safety Improvement Program (HSIP) and Safety Performance Management Final Rules. As part of these rules, states are required to develop statewide targets annually for five safety performance measures. These targets serve as the short-term goals for the state.

www.iowadot.gov/traffic/shsp/home

Iowa State Freight Plan 2022



The primary purpose of the State Freight Plan is to document the immediate and long-range freight planning activities and investments in the state. More specifically, it provides guidance on how to address issues, adapt to emerging trends, and invest strategically in the freight system to grow a stronger economy, strengthen the nation's competitive advantage, and enhance the quality of life for Iowans.

Developed in coordination with the Iowa Freight Advisory Council (FAC), the State Freight Plan serves as a platform for connecting Iowa's freight-related initiatives and a tool for informed decision-making aimed at addressing the ongoing challenges of today's freight system and supply chains.

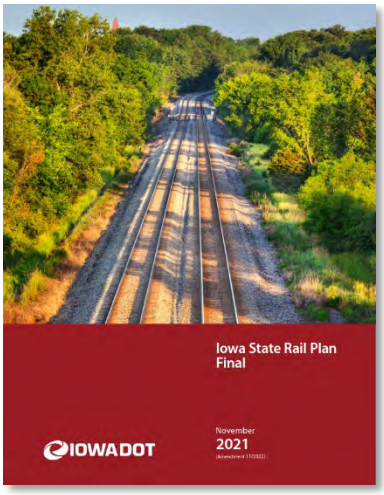
This document is the second in the current series of freight plans that are now federally required to be updated every four years. The 2022 State Freight Plan is an updated and streamlined version of the original 2017 State Freight Plan with several notable enhancements that will impact the freight transportation system including:

- Clearly defined system objectives
- Process for identifying multimodal bottlenecks

- Focus on infrastructure and supply chain resiliency
- Freight design considerations
- Commercial motor vehicle parking facilities assessment
- Catalog of freight-generating facilities

www.iowadot.gov/iowainmotion/Specialized-System-plans/2022-State-Freight-Plan

Iowa State Rail Plan 2021



This document is intended to guide the Iowa DOT in its activities of promoting access to rail transportation, helping to improve the freight railroad transportation system, expanding passenger rail service, and promoting improved safety both on the rail system and where the rail system interacts with people and other transportation modes. The State Rail Plan describes the state's existing rail network and rail-related economic and socioeconomic impacts. It also describes the State Rail Plan process, Iowa's rail vision and supporting goals, proposed short- and long-range capital improvements, studies, and recommended next steps to address the issues identified. The State Rail Plan is intended to meet the requirements established under Section 303 of the Passenger Rail Investment and Improvement Act of 2008 which provides for enhanced State involvement in rail policy, planning, and development efforts, including requiring States to develop FRA-accepts State Rail Plans to be eligible for capital grants authorized under this act and subsequent federal transportation bills.

https://iowadot.gov/iowainmotion/modal-plans/rail-transportation-plan

Iowa Public Transit 2050 Long Range Plan

In 2020, the Iowa DOT adopted the Iowa Public Transit 2050 Long Range Plan. While the Iowa DOT has conducted specific planning efforts – Iowa Statewide Passenger Transportation Funding Study, Iowa Park and Ride System Plan – this Plan looks at the public transit system from a broader point of view. The Plan seeks to coordinate planning, programming, and technical assistance statewide to support transit operations at the local level. The goal is to provide specific strategies and improvements that can be implemented and revisited over time.

This Plan serves as a guide to assist the Iowa DOT in making informed public transit decisions for the state. The strategies and action items within the plan serve as the starting point for the implementation phases of the planning process. The transit plan will also be updated every five years to stay current with trends, forecasts, and factors that influence decision-making.

www.iowadot.gov/iowainmotion/Modal-Plans/Public-Transit-Plan

Black Hawk County MPO Goals, Objectives, and Performance Measures

The MPO identified four goals for the 2050 Long-Range Transportation Plan which are to:

- Increase the safety of the transportation system.
- Strategically preserve the existing infrastructure.
- Support an efficient transportation system.
- Provide a high degree of multimodal accessibility and mobility.

The MPO has adopted several objectives to help achieve these goals and performance measurements to track the progress toward meeting the objectives (Table 1.2). This includes federally-required performance measurements. The MPO's goals and objectives help to implement the state transportation plan and to contribute toward the accomplishment of the state's performance measures.

MPO Performance Report

The Black Hawk County MPO is committed to promoting and implementing a safe, efficient, and multimodal transportation system. The goals and objectives provide the framework for achieving this vision, and the performance measures assess the progress towards meeting the objectives. To gauge the region's progress toward achieving these goals, the MPO will prepare a Performance Report halfway through the life of this Plan, or by May 14, 2026. The MPO's first Performance Report was adopted May 13, 2021, and provided an insight to the MPO's performance towards achieving the goals and objectives outlined in the 2045 LRTP. Notable findings of the MPO Performance Report include the following:

- Positive Trends
  - Decrease in the number and rate of traffic serious injuries
  - Decrease in crashes involved pedestrians and bicyclists
  - Improved pavement and bridge conditions
  - Maintained transit facilities
  - Increase in the number of bus shelters
- Negative Trends
  - Increase in the number and rate of traffic fatalities
  - Increase in non-motorized fatalities and serious injuries
  - Limited increase in on-road bicycle accommodations
  - Decrease in fixed route bus rides
  - Increase in buses that have met or exceeded ULB

www.bhcmpo.org/performance-measures/

The 2026 MPO Performance Report will be a valuable tool for the MPO Policy Board to help guide decision-making for transportation investments and will be beneficial for increased public engagement and communication about regional performance. The baseline condition data shown in Table 1.2 will serve as the base for the Performance Report. As planning occurs through multiple cycles, the Performance Report will help to identify latest trends in performance and can be used to refine long-range goals, objectives, and performance measures. Table 1.3 provides a comparison of trends from the 2045 and 2045 LRTPs.

Transportation Performance Management approach
Source: FHWA

Why is Performance-Based Planning and Programming Important?

With limited transportation funds and a growing list of infrastructure needs, it is critical that the MPO prioritizes projects that accomplish the goals of the Long-Range Transportation Plan. One of the best ways to accomplish this is to select performance measures and targets, and then prioritize projects that help achieve those measures. The performance measures identified in the 2050 LRTP are the first step towards a performance-based planning and programming process for the MPO.

Table 1.2: 2050 Long-Range Transportation Plan Goals, Objectives, and Performance Measures

Goal	Objective	Performance Measurement	2018 MPO Baseline Condition Data	2018-2022 Data	Desired Trend	Current Trend
Increase the safety of the transportation system	1.1) Reduce the number of traffic fatalities	[1]Number of fatalities	6.8 / year	6.6		
	1.2) Reduce the rate of traffic fatalities	[1]Fatality rate (per 100 million VMT)	0.831	0.833		
	1.3) Reduce the number of traffic serious injuries	[1]Number of serious injuries	39.6 / year	35.0		
	1.4) Reduce the rate of traffic serious injuries	[1]Serious injury rate (per 100 million VMT)	4.548	4.440		
	1.5) Reduce the number of non-motorized fatalities and serious injuries	[1]Non-motorized fatalities and serious injuries	6.8 / year	7.2		
	1.6) Reduce the number of traffic accidents involving pedestrians and bicyclists	Crashes involving pedestrians and bicyclists	40.8 / year	36.8		
Strategically preserve the existing infrastructure	2.1) Preserve and maintain Interstate system pavement	[1]Percent of pavement in good condition	75.5%	87.6%		
		[1]Percent of pavement in poor condition	0%	0%		
	2.2) Preserve and maintain non-Interstate National Highway System (NHS) pavement	[1]Percent of pavement in good condition	24.2%	28.1%		
		[1]Percent of pavement in poor condition	30.6%	5.9%		
	2.3) Preserve and maintain state-owned pavement	Percent of pavement in good condition (IRI)	47.4%	46.9%		
		Percent of pavement in poor condition (IRI)	2.9%	2.7%		
	2.4) Preserve and maintain city and county road pavement conditions	Percent of pavement in good condition	34.5%	40.8%		
		Percent of pavement in poor condition	21.3%	19.8%		
	2.5) Preserve and maintain NHS bridges	[1]Percent of bridges in good condition (deck area)	57.8%	55.0%		
		[1]Percent of bridges in poor condition (deck area)	0%	0%		
	2.6) Decrease the number of bridges that are posted or closed	Posted or closed bridges	13	12.0		
	2.7) Decrease the number of bridges that are structurally deficient	Structurally deficient bridges	12	10.3		
	2.8) Increase the average bridge sufficiency rating	Average bridge sufficiency rating in the metropolitan area	88.3	88.9		

Goal	Objective	Performance Measurement	2018 MPO Baseline Condition Data	2018-2022 Data	Desired Trend	Current Trend
Support an efficient transportation system	3.1) Maintain the percent of person-miles traveled on the Interstate that are reliable	[1]Level of Travel Time Reliability (LOTTR)	100%	100%		
	3.2) Maintain the percent of the person-miles traveled on the non-Interstate NHS that are reliable	[1]Level of Travel Time Reliability (LOTTR)	99.6%	99.0%		
	3.3) Improve freight travel time reliability	[1]Truck Travel Time Reliability (TTTR) Index	1.19	1.25		
	3.4) Reduce the total vehicle miles traveled	Vehicle miles per capita 5-year average	7,012	6,501		
Provide a high degree of multimodal accessibility and mobility	4.1) Provide more on-road bicycle facilities	Miles of on-road bicycle accommodations	17.6	17.6		
	4.2) A greater number of trips are made using public transit	Number of MET fixed route rides	398,270	272,907		
	4.3) Decrease the percent of MET's vehicles that are beyond Useful Life Benchmark (ULB)	[1]Percent of revenue vehicles within an asset class that have met or exceeded ULB	Buses: 26%	45.8%		
			Mini-buses: 54%	44.2%		
		[1]Percent of non-revenue vehicles that have met or exceeded ULB	66%	29.2%		
	4.4) Transit facilities remain in good condition	[1]Percent of MET's facilities with a condition rating below 3.0 on FTA TERM Scale	0%	0%		
	4.5) Increase the number of bus shelters in the metropolitan area	Bus shelters	6	13		

[1]*Federally required performance measurement*

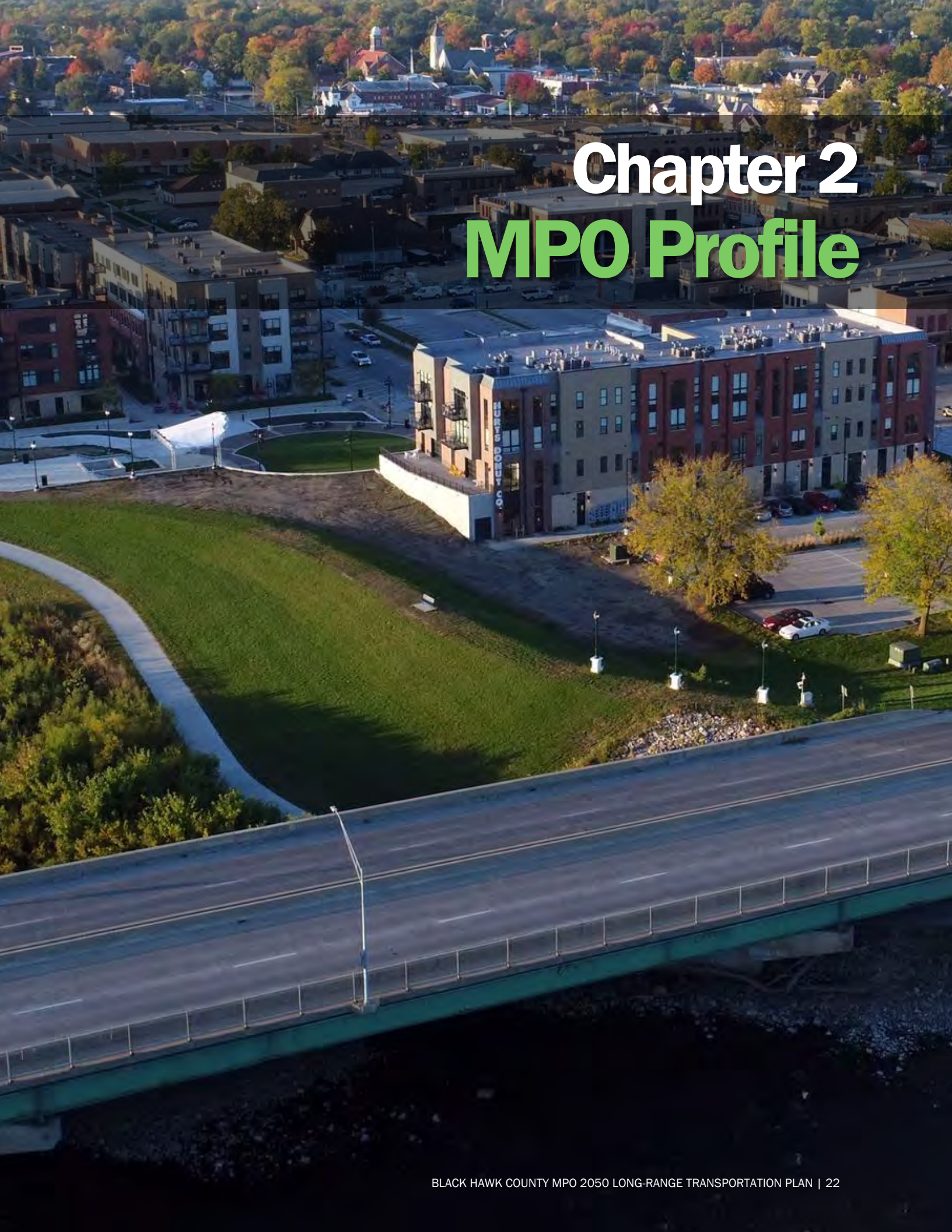
Table 1.3: 2045 and 2050 Long-Range Transportation Plan Performance Measures Trends

Goal	Objective	Performance Measurement	Desired Trend	2016-2020 Trend (2021 PM Report)	2018-2022 Current Trend (2050 LRTP)
Increase the safety of the transportation system	1.1) Reduce the number of traffic fatalities	[1]Number of fatalities			
	1.2) Reduce the rate of traffic fatalities	[1]Fatality rate (per 100 million VMT)			
	1.3) Reduce the number of traffic serious injuries	[1]Number of serious injuries			
	1.4) Reduce the rate of traffic serious injuries	[1]Serious injury rate (per 100 million VMT)			
	1.5) Reduce the number of non-motorized fatalities and serious injuries	[1]Non-motorized fatalities and serious injuries			
	1.6) Reduce the number of traffic accidents involving pedestrians and bicyclists	Crashes involving pedestrians and bicyclists			
Strategically preserve the existing infrastructure	2.1) Preserve and maintain Interstate system pavement	[1]Percent of pavement in good condition			
		[1]Percent of pavement in poor condition			
	2.2) Preserve and maintain non-Interstate National Highway System (NHS) pavement	[1]Percent of pavement in good condition			
		[1]Percent of pavement in poor condition			
	2.3) Preserve and maintain state-owned pavement	Percent of pavement in good condition (IRI)			
		Percent of pavement in poor condition (IRI)			
	2.4) Preserve and maintain city and county road pavement conditions	Percent of pavement in good condition			
		Percent of pavement in poor condition			
	2.5) Preserve and maintain NHS bridges	[1]Percent of bridges in good condition (deck area)			
		[1]Percent of bridges in poor condition (deck area)			
	2.6) Decrease the number of bridges that are posted or closed	Posted or closed bridges			
	2.7) Decrease the number of bridges that are structurally deficient	Structurally deficient bridges			
	2.8) Increase the average bridge sufficiency rating	Average bridge sufficiency rating in the metropolitan area			

Goal	Objective	Performance Measurement	Desired Trend	2016-2020 Trend (2021 PM Report)	2018-2022 Current Trend (2050 LRTP)
Support an efficient transportation system	3.1) Maintain the percent of person-miles traveled on the Interstate that are reliable	[1]Level of Travel Time Reliability (LOTTR)			
	3.2) Maintain the percent of the person-miles traveled on the non-Interstate NHS that are reliable	[1]Level of Travel Time Reliability (LOTTR)			
	3.3) Improve freight travel time reliability	[1]Truck Travel Time Reliability (TTTR) Index			
	3.4) Reduce the total vehicle miles traveled	Vehicle miles per capita 5-year average			
Provide a high degree of multimodal accessibility and mobility	4.1) Provide more on-road bicycle facilities	Miles of on-road bicycle accommodations			
	4.2) A greater number of trips are made using public transit	Number of MET fixed route rides			
	4.3) Decrease the percent of MET's vehicles that are beyond Useful Life Benchmark (ULB)	[1]Percent of revenue vehicles within an asset class that have met or exceeded ULB			
					
		[1]Percent of non-revenue vehicles that have met or exceeded ULB			
	4.4) Transit facilities remain in good condition	[1]Percent of MET's facilities with a condition rating below 3.0 on FTA TERM Scale			
	4.5) Increase the number of bus shelters in the metropolitan area	Bus shelters			

[1]*Federally required performance measurement*

2019 pavement did not include I-380, and there were substantial data gaps for IA 58 and U.S. 63. Furthermore, the methodology for calculating the non-Interstate NHS pavement performance changed in 2022, limiting data comparison capabilities for 2016-2020.



Chapter 2
MPO Profile

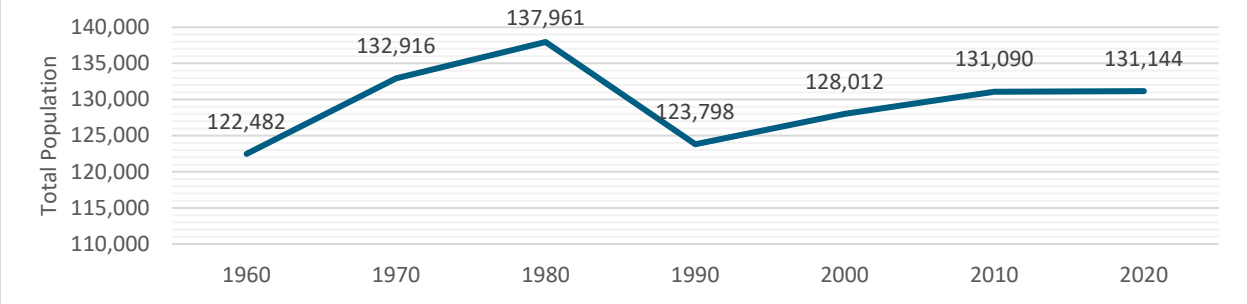
Chapter 2 – MPO Profile

An understanding of the characteristics of the community is necessary to properly maintain the existing transportation system and plan for future needs, challenges, and opportunities. It is important to review existing conditions and anticipated trends of demographic and economic characteristics, as these elements directly affect the volume and type of transportation taking place and the infrastructure required to meet its demand. This chapter provides an overview of existing characteristics influencing travel in the area and the anticipated population and employment growth that will affect transportation needs over the next 25 years. Data used are often at the county level since most of the population reside in the MPO boundary.

Population

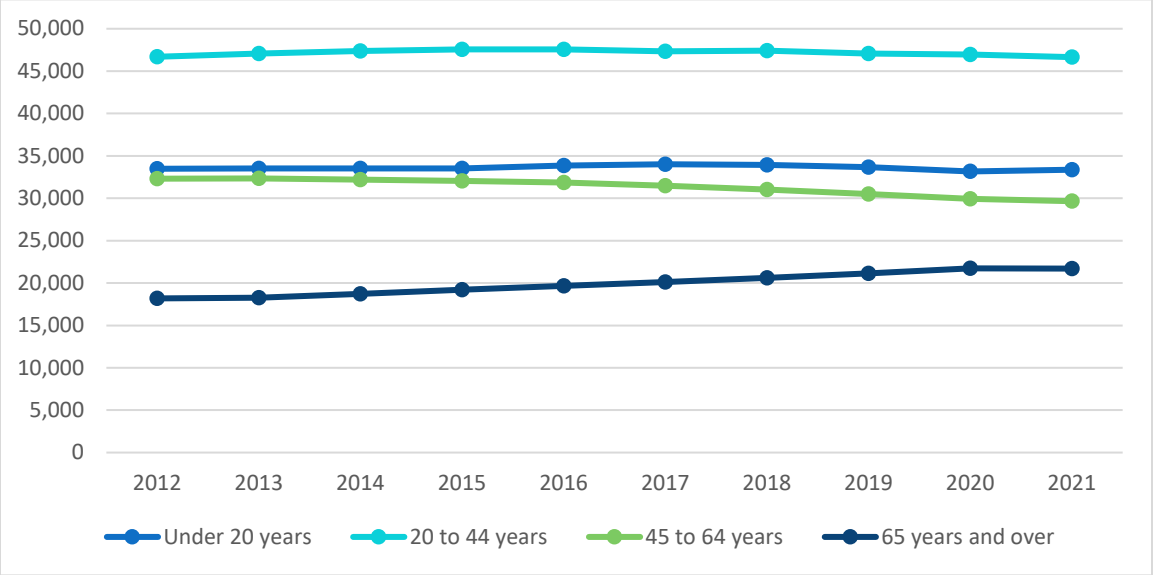
Over the past 60 years, the population of the region has fluctuated in size. Figure 2.1 shows historical population estimates for Black Hawk County from 1960 to 2010. The area's population experienced a sharp decrease following the economic recession of the 1980s, which has a detrimental effect on agriculture and manufacturing in the area. Since 1990 the county's population has experienced minimal growth (245 persons per year). Figures 2.2 and 2.3 show the historical population for Black Hawk County by age group and median age, and Map 2.1 shows the total population per Census block.

Figure 2.1: Black Hawk County Historical Population



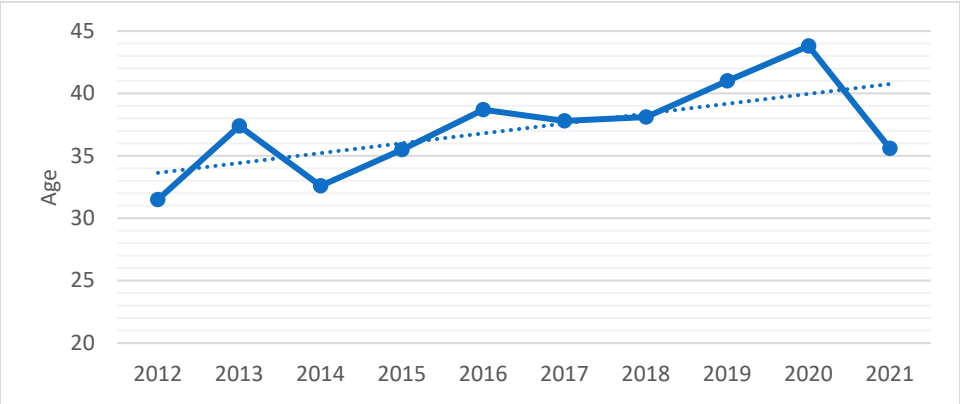
Source: U.S. Census Bureau, Decennial Census, 1960 to 2020

Figure 2.2: Black Hawk County Historical Population by Age Group



Source: U.S. Census Bureau, American Community Survey 5-year Estimates, 2012-2021

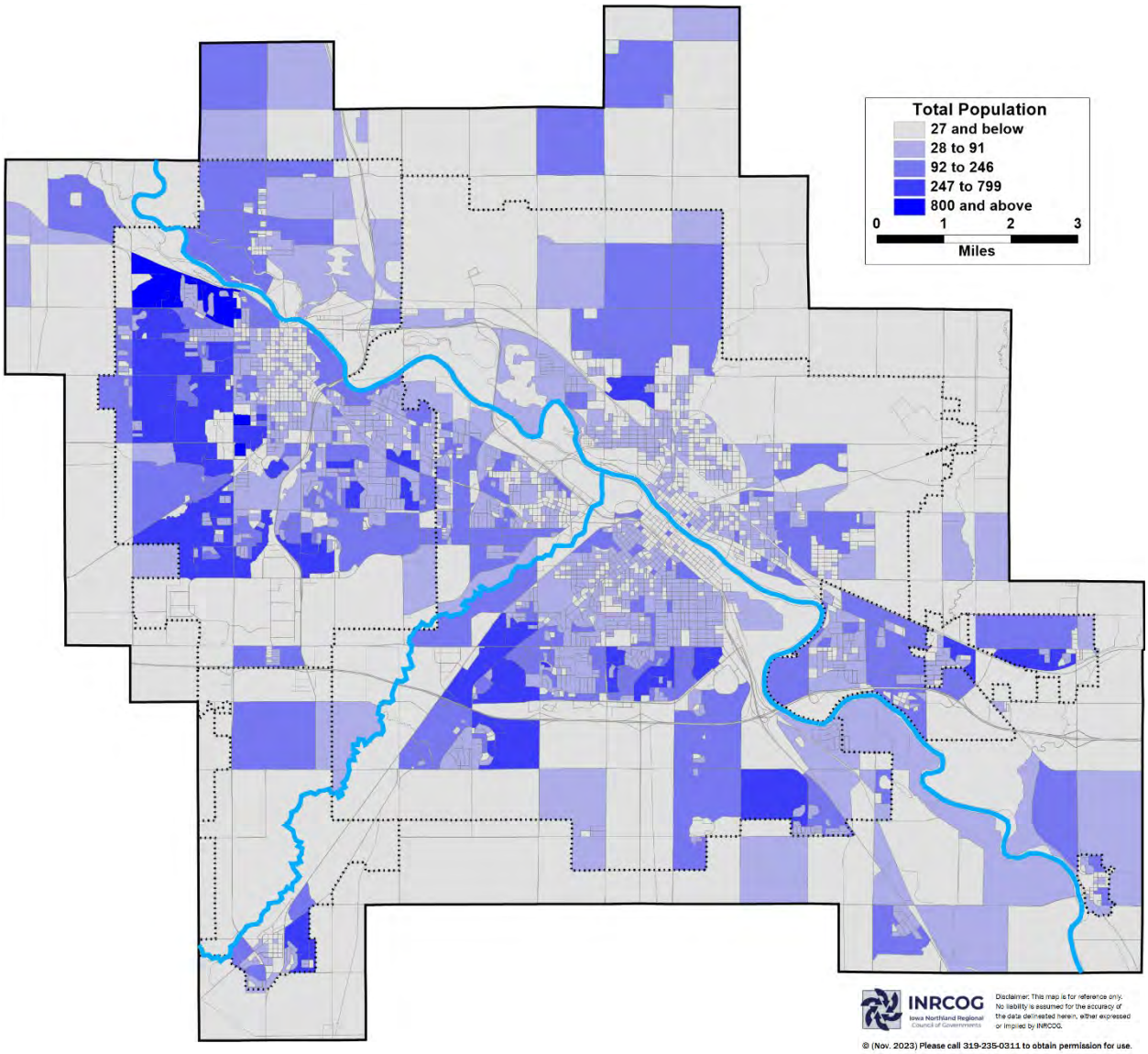
Figure 2.3: Black Hawk County Historical Median Age



Source: U.S. Census Bureau, American Community Survey 5-year Estimates, 2012-2021

Map 2.1: Total Population by Census Block

Source: U.S. Census Bureau, Decennial Census, 2020

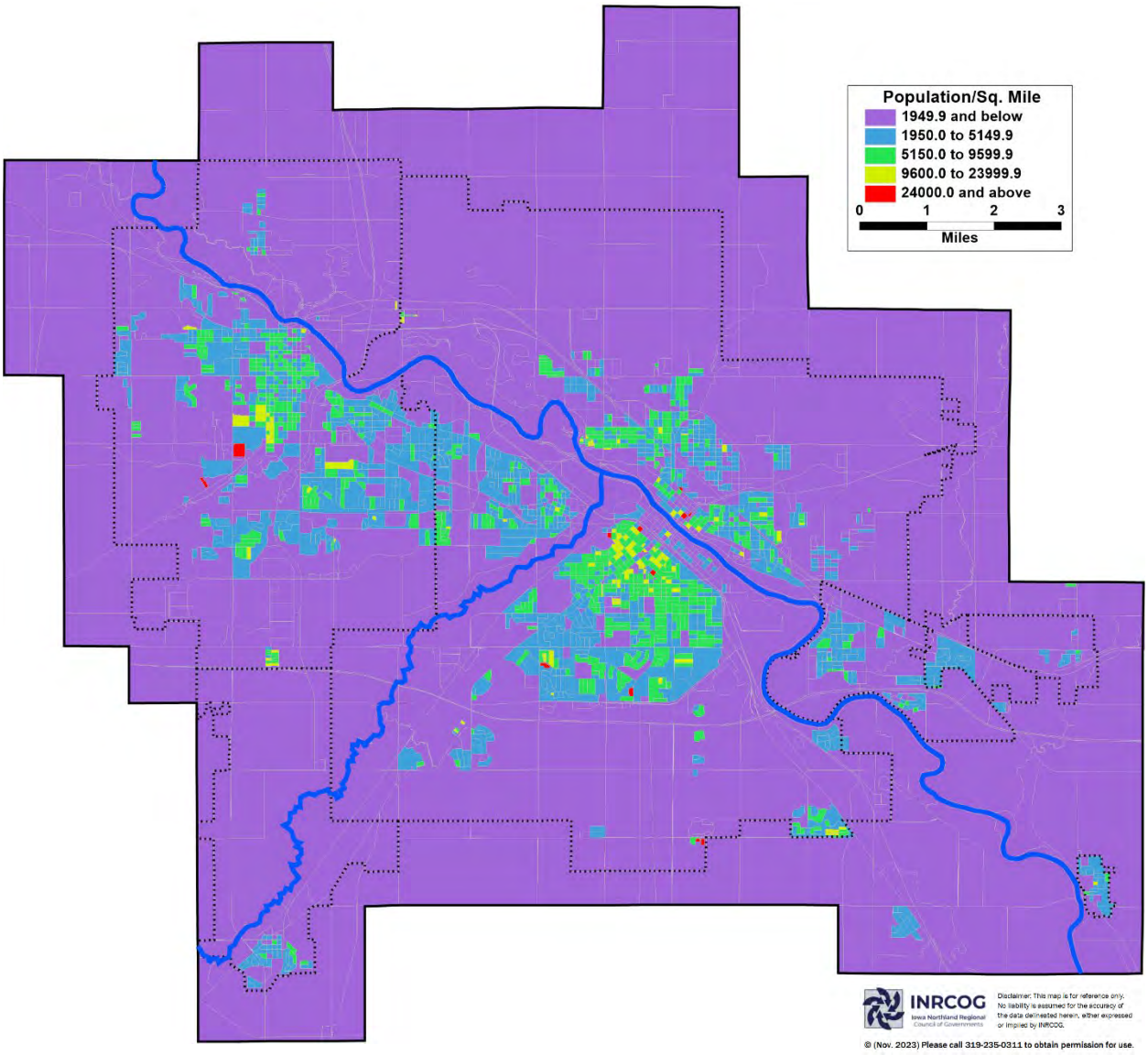


Population Density

Areas containing higher population densities are likely to produce more vehicle trips. Map 2.2 shows the population density in the metropolitan area in 2020. The areas with the greatest population densities tend to be centered near the University of Northern Iowa, central Waterloo, and along major arterial corridors.

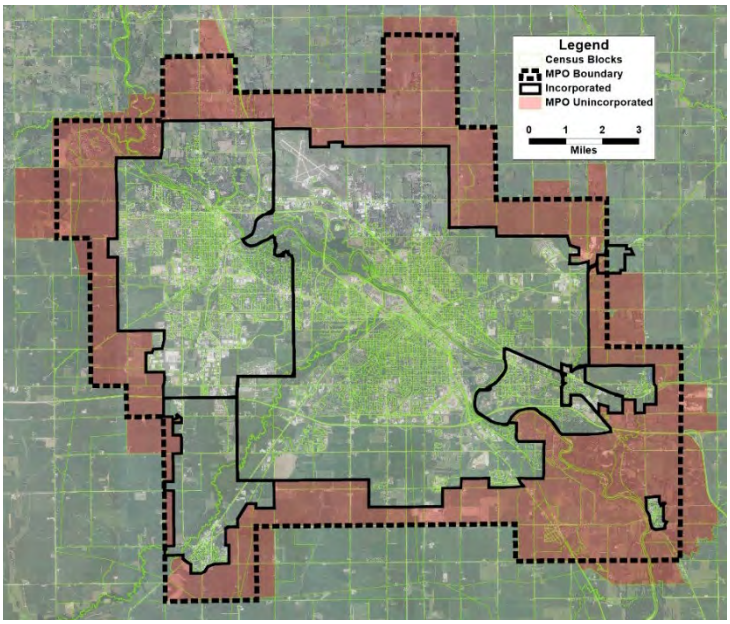
Map 2.2: Population Per Square Mile by Census Block

Source: U.S. Census Bureau, Decennial Census, 2020



Population Projections

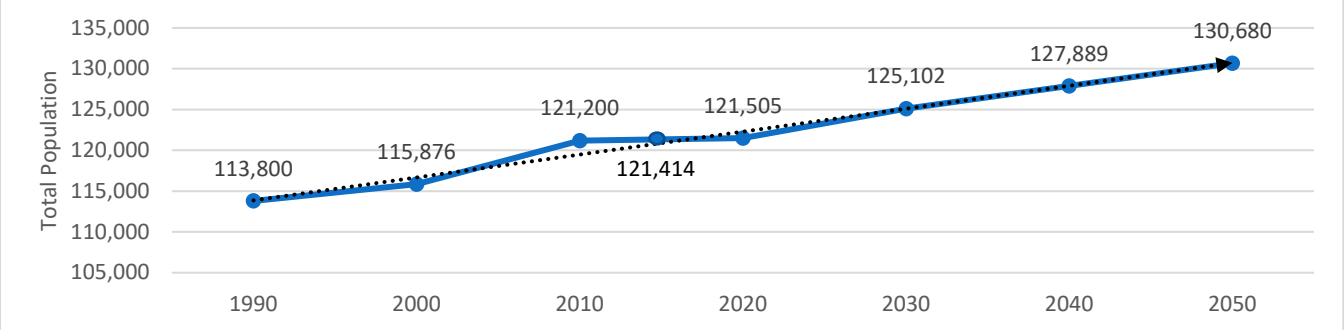
The MPO growth rate was calculated using U.S. Census Bureau Decennial Census data from 1990 to 2020. Broad economic events including the post-war boom in the 1950s and the farm crisis in the 1980s make data from earlier time frames difficult to rely on. Linear projections from 1990 to 2020 provide a more up-to-date picture of the area's growth. Additional GIS analysis was used to estimate the population who live in the unincorporated portions of the MPO area. To calculate the MPO unincorporated population, Census blocks outside of incorporated boundaries and inside of the MPO boundary were selected. For consistency, Census blocks located on the MPOU boundary were included. There are an estimated 3,749 people in the MPO unincorporated area in 2020.



There are an estimated 121,505 people in the MPO area in 2020. Linear projections from 2010 to 2020 were used to calculate the MPO population in the base year 2017. There were an estimated 121,414 people in the MPO area in the base year 2017. This value is projected to increase by 9,266 for a total of 130,680 people in the horizon year 2050.

Table 2.1: Population Projection Control Total

		1990	2000	2010	2017 (Base)	2020	2030	2040	2050	2017-2050
1990-2020 Linear	Waterloo	66,814	67,781	68,406	67,642	67,314	68,110	68,323	68,535	893
	Cedar Falls	33,894	35,020	39,260	40,277	40,713	43,396	45,866	48,336	8,059
	Evansdale	4,685	4,606	4,751	4,618	4,561	4,594	4,571	4,549	-69
	Hudson	2,013	2,065	2,282	2,467	2,546	2,681	2,862	3,044	577
	Elk Run Heights	1,087	1,070	1,117	1,083	1,069	1,084	1,083	1,083	0
	Raymond	615	576	788	768	759	846	910	974	206
	Gilbertville	749	758	712	769	794	776	784	793	24
	Unincorp.	3,943	3,972	3,884	3,790	3,749	3,617	3,489	3,366	-424
	MPO Total	113,800	115,876	121,200	121,414	121,505	125,102	127,889	130,680	9,266



The Travel Demand Model (TDM) relies on data from economic activity to predict transportation decisions and trip generation. In residential areas, the number of housing units determines trip-making potential. Black Hawk County parcel data was used to calculate the number of housing units in the base year 2017. This methodology was found to be reliable in accurately pinpointing existing housing units. Parcel processing resulted in an estimated 52,710 housing units in 2017. To determine projected housing units, the 2050 population projections were divided by each jurisdiction's average household size (2017 population/2017 housing units). The number of housing units is projected to increase by 3,718 over the base year 2017.

Table 2.2: Housing Unit Control Totals

	2017 Population	2017 Housing Units	Average Household Size	2050 Population	2050 Housing Units	Housing Units 2017-2050
Waterloo	67,642	30,963	2.1846	68,535	31,372	409
Cedar Falls	40,277	15,989	2.5191	48,336	19,188	3,199
Evansdale	4,618	2,050	2.2531	4,549	2,019	-31
Hudson	2,467	953	2.5884	3,044	1,176	223
Elk Run Heights	1,083	464	2.3341	1,083	464	0
Raymond	768	326	2.3527	974	414	88
Gilbertville	769	349	2.2028	793	360	11
Unincorp.	3,790	1,616	2.3456	3,366	1,435	-181
MPO Total	121,414	52,710		130,680	56,428	3,718

The last step was to distribute each jurisdiction's projected change in housing units to the Traffic Analysis Zones (TAZ). Growth areas for housing were not anticipated to change drastically from what was projected in the 2045 Long-Range Transportation Plan. Accordingly, each jurisdiction's projected change in housing units was distributed in a comparable proportion to the previous plan. Adjustments were made to account for recent and impending developments. Projected decreases in housing units were not incorporated into the travel demand model. Map 2.3 shows the projected change in housing units from 2017 to 2050.

Housing Characteristics

Table 2.3 provides a housing profile for Black Hawk County. Approximately 40% of households have either one or no vehicles available. While the number of vehicles per household has increased over time, a substantial percentage of households have no vehicles available (7.6%). These households are more likely to depend on carpooling, public transit, walking, or bicycling to get to and from their destinations.

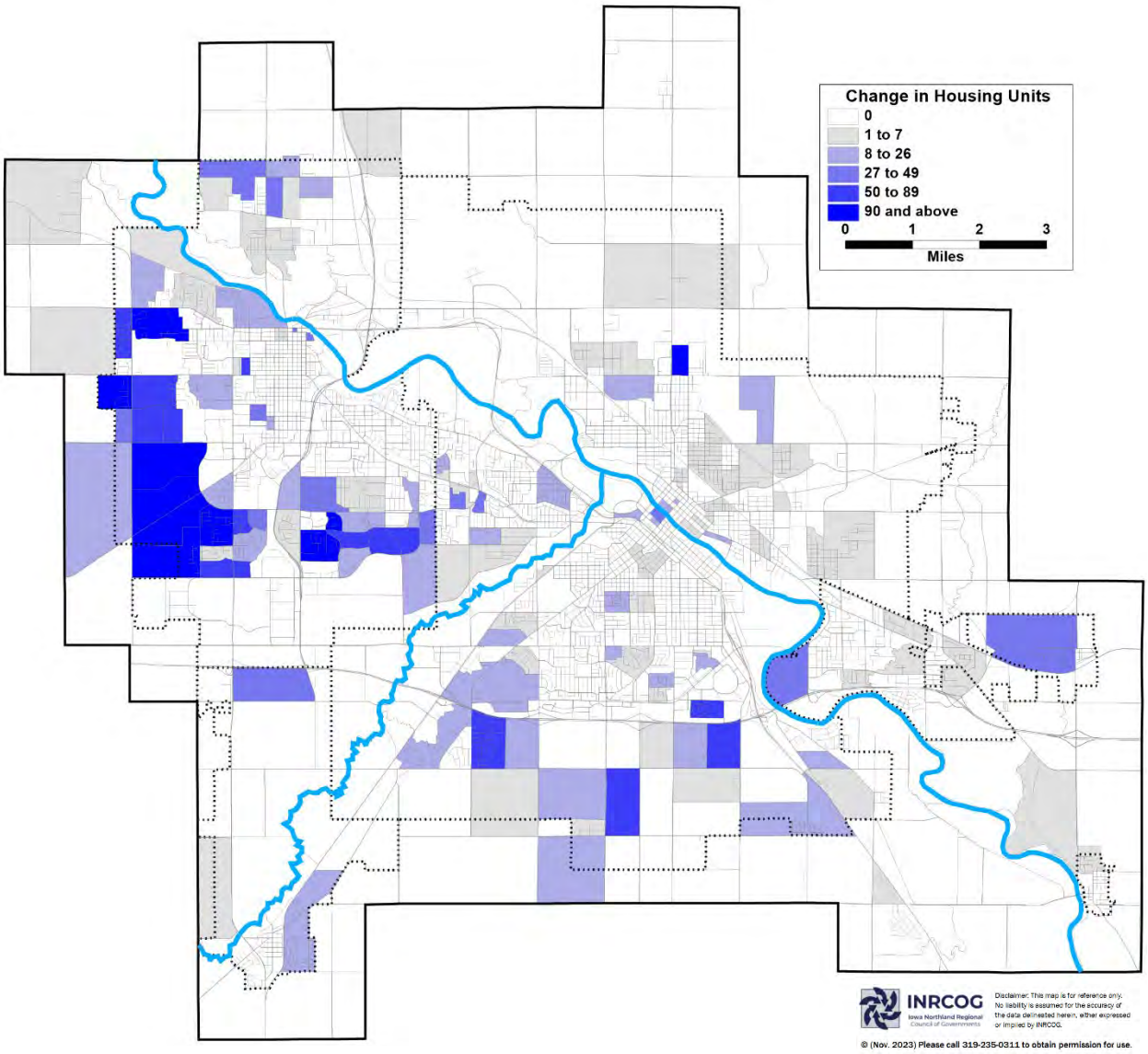
Table 2.3: Selected Housing Characteristics for Black Hawk County

	Black Hawk County	Margin of Error
Housing Occupancy		
Homeowner vacancy rate	1.4	±0.5
Rental vacancy rate	5.2	±1.5
Housing Tenure		
Owner-occupied housing units	66.3%	±2.5
Renter-occupied housing units	33.7%	±2.5
Year Structure Built		
2000 or later	14.4%	±1.6
1960 to 1999	44.1%	±3.5
1959 or earlier	41.5%	±2.7
Vehicles Available		
No vehicle available	7.6%	±0.8
1 vehicle available	31.9%	±1.2
2 or more vehicles available	60.5%	±2.8

Sources: U.S. Census Bureau, American Community Survey 5-year Estimates, 2021

Map 2.3: Projected Change in Housing Units, 2017 to 2050, by TAZ

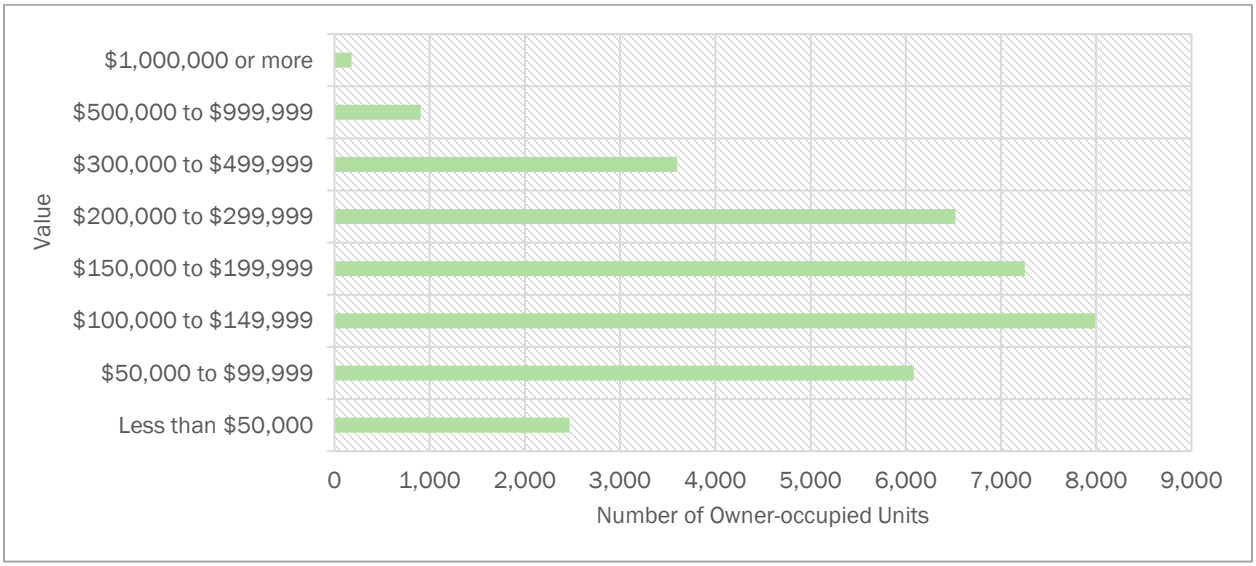
Source: Black Hawk County MPO 2050 Travel Demand Model



Housing Value

The cost of housing and the cost of transportation are two large factors in determining where people choose to live. Metropolitan area workers are faced with the advantages and disadvantages of living in the metropolitan area or living in a smaller community or rural area outside of it. The median owner-occupied home value in Black Hawk County is $155,400 and there is a wide range in housing value within the county (Figure 2.4).

Figure 2.4: Housing Value, Owner-occupied Units

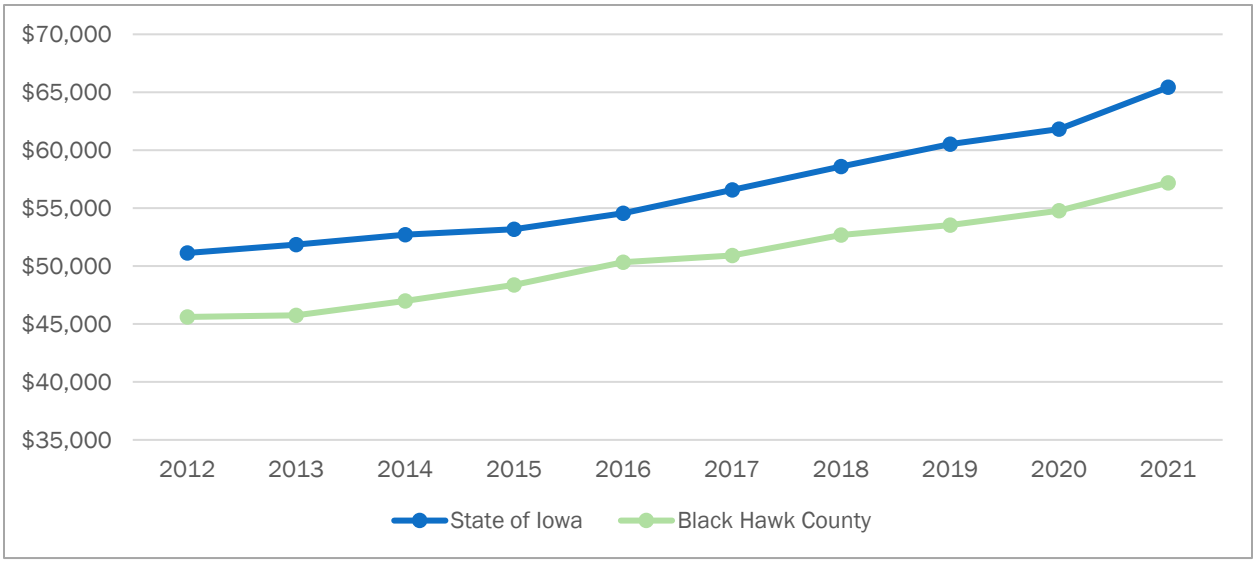


Sources: U.S. Census Bureau, American Community Survey 5-year Estimates, 2021

Household Income

According to the FHWA Livability Initiative, transportation is the second largest expense for most households after housing. Households living in auto-dependent locations spend 25% of their income on transportation costs. Housing that is affordable and located closer to employment, shopping, restaurants, and other destinations can reduce household transportation costs to nine percent of household income. Figure 2.5 compares the median household income for Black Hawk County and the State of Iowa.

Figure 2.5: Median Household Income



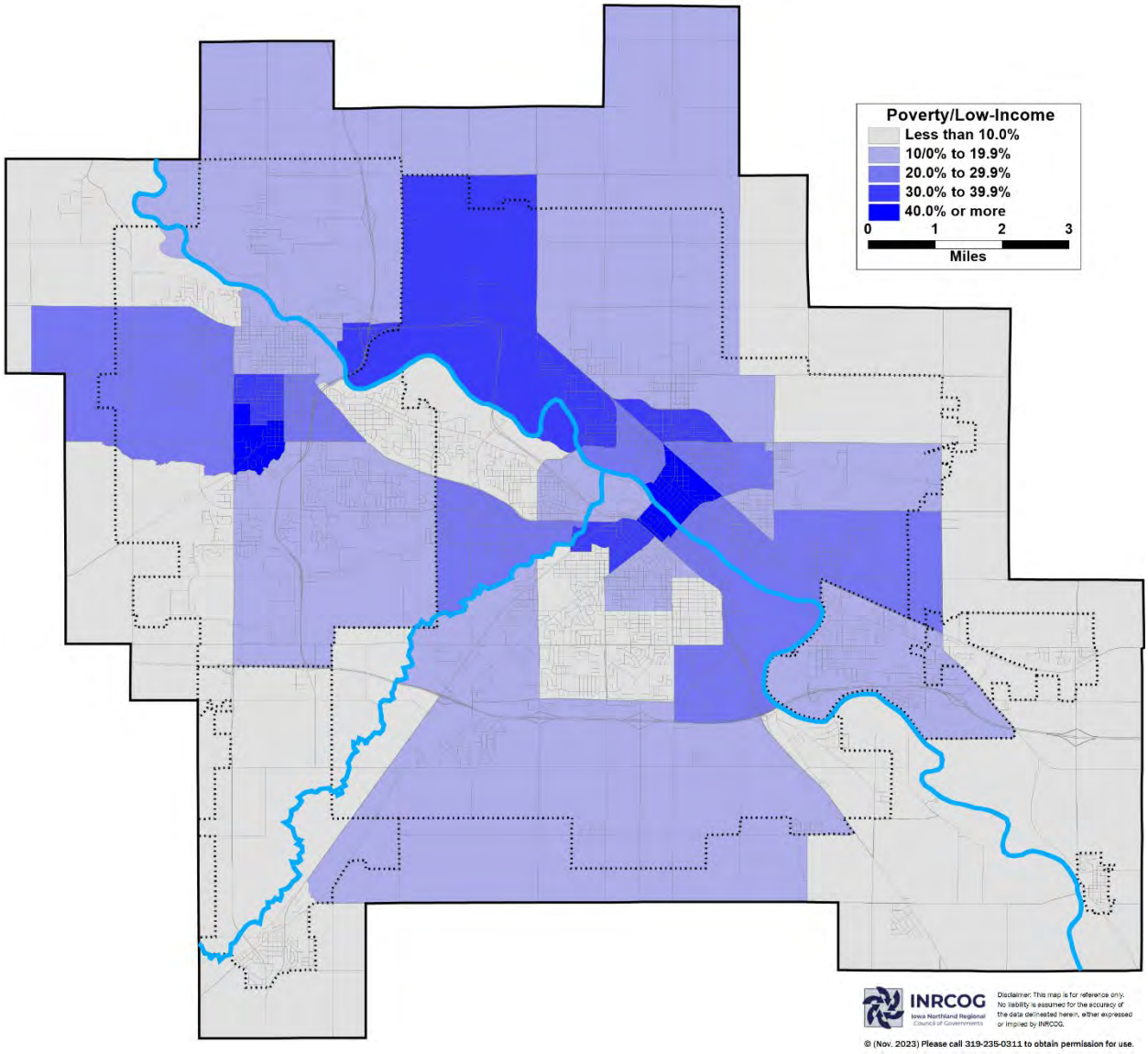
Source: U.S. Census Bureau, American Community Survey 5-year Estimates, 2012-2021

Poverty/Low Income

According to the U.S. Census Bureau, people and families are classified as being in poverty if their income is less than their poverty threshold. Approximately 15.0% of the population within Black Hawk County is below the poverty level. Map 2.4 shows the percentage of the population that is below the poverty level by Census tract.

Map 2.4: Poverty/Low-Income by Census Tract

Source: U.S. Census Bureau, American Community Survey 5-year Estimates, 2021

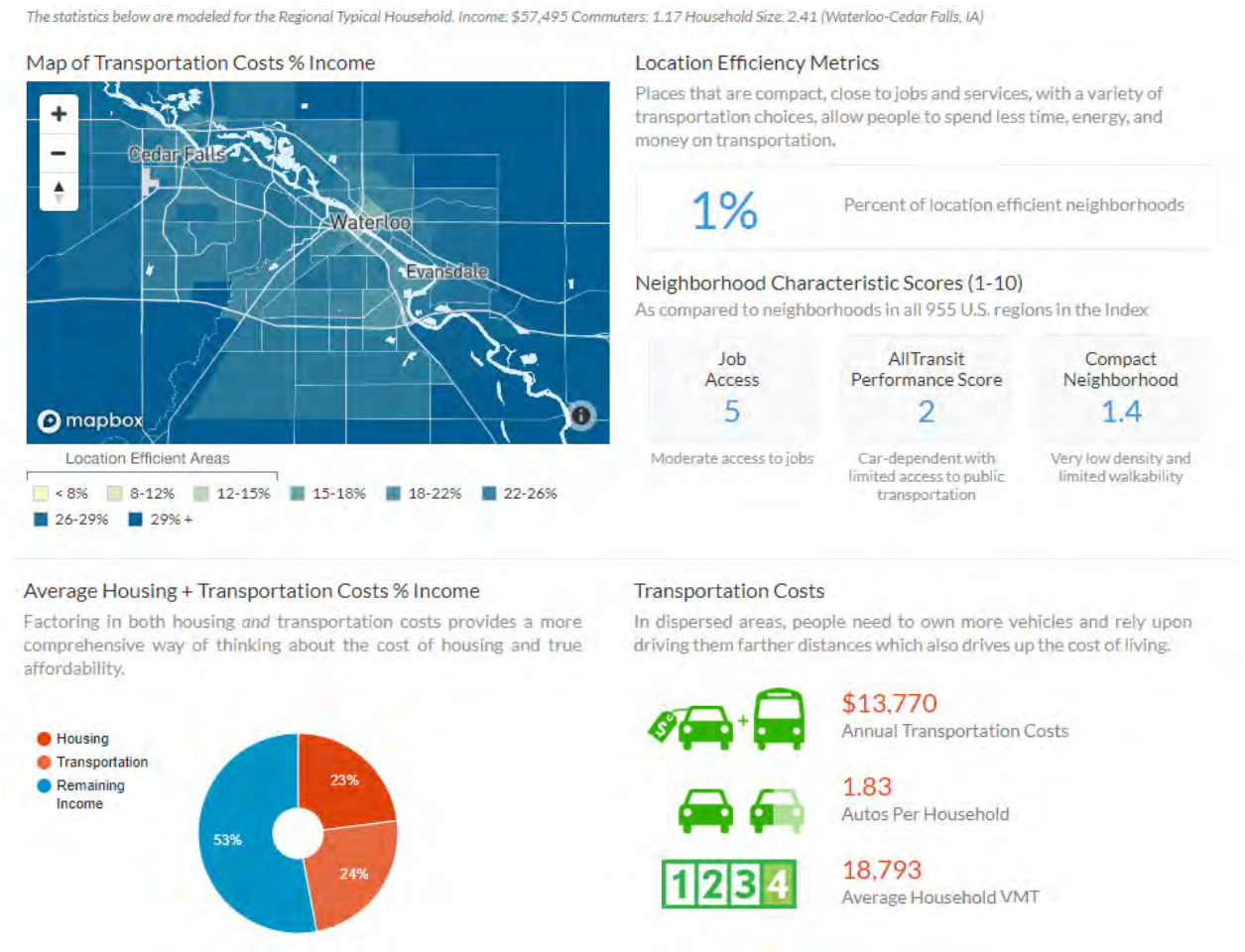


Average Housing and Transportation Costs

Traditional measures of housing affordability do not consider transportation costs. According to the Center for Neighborhood Technology, a household's second-largest expenditure is typically transportation costs. Compact and dynamic neighborhoods with walkable streets and high access to jobs, transit, and a wide variety of businesses can be more efficient, affordable, and sustainable. Figure 2.6 illustrates the average housing and transportation costs as a percentage of household income.

Figure 2.6: Housing and Transportation Fact Sheet, Black Hawk County

Source: Center for Neighborhood Technology, Housing and Transportation Facts Sheet

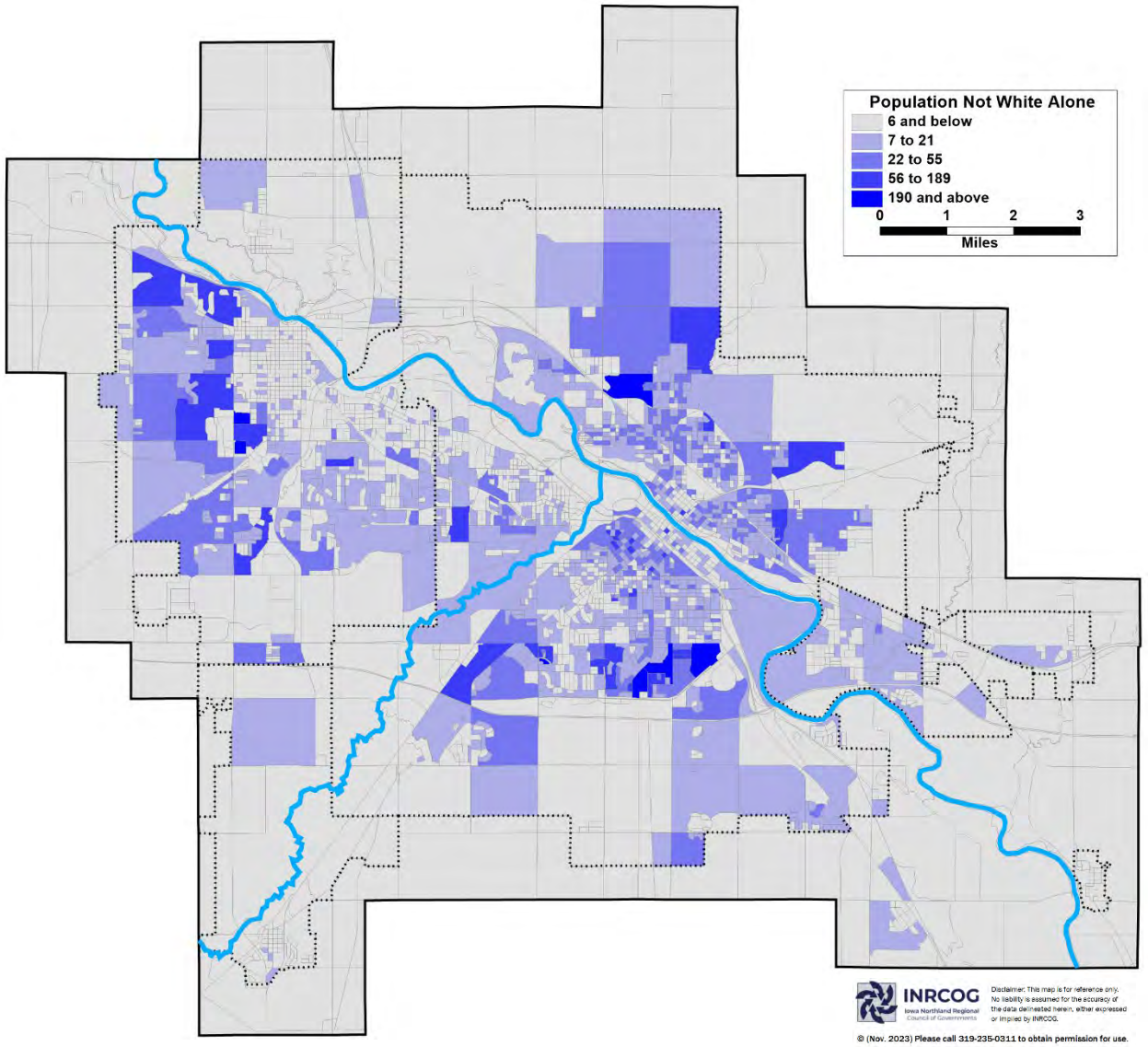


Racial and Ethnic Minorities

For the purposes of this plan, Racial and Ethnic Minorities are defined as individuals that do not identify as White alone. Under this definition, the estimated Minority population accounts for 21.6% of the total population in Black Hawk County. Waterloo is the metropolitan area's most diverse city, though significant minority populations are found in other MPO cities as well. The area continues to experience new-comer populations. These populations may present special challenges and opportunities for transportation planning. Map 2.5 shows the number of persons that do not identify as White alone by Census block, and Map 2.6 shows the percent of the population that is foreign born by Census tract.

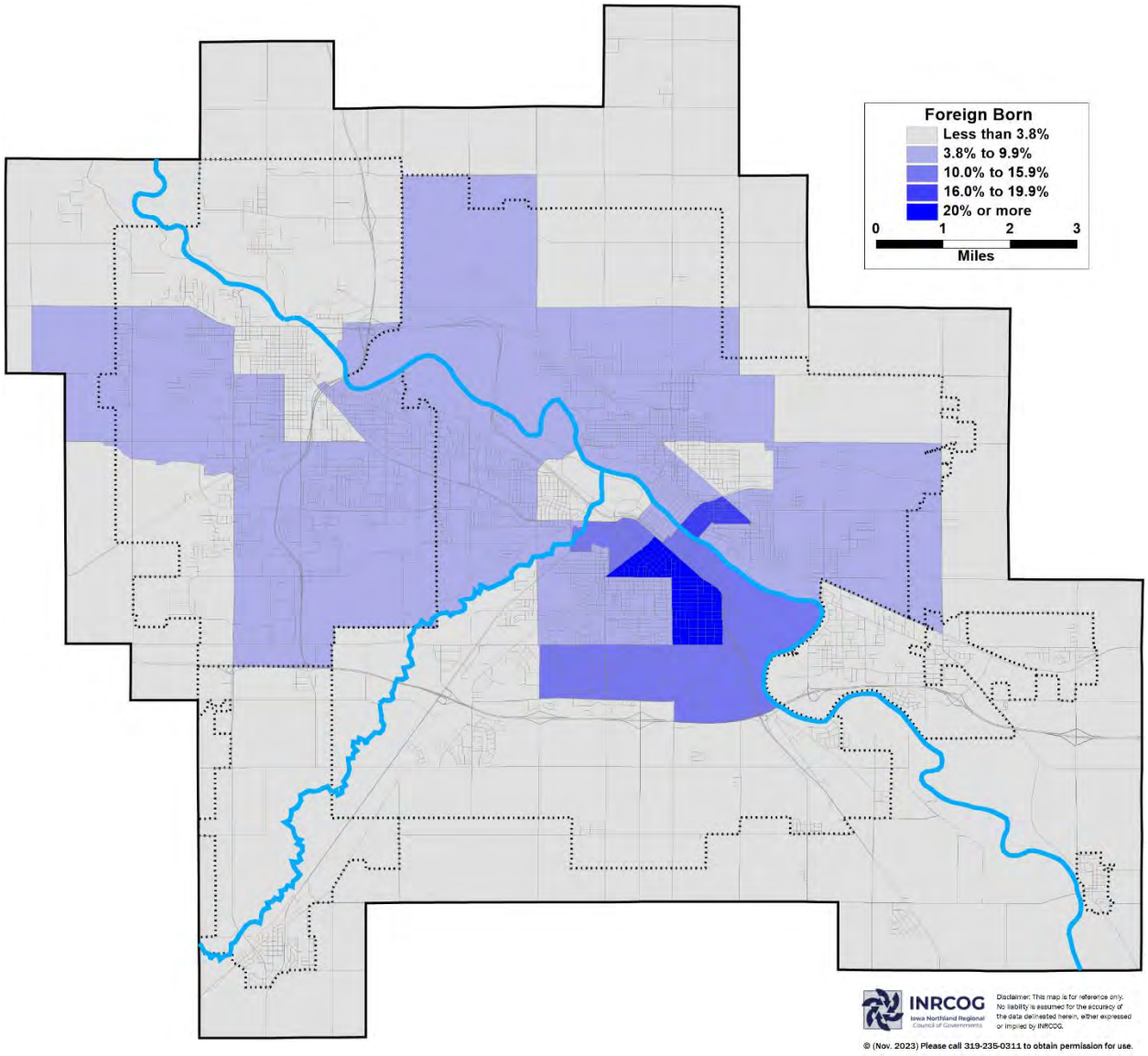
Map 2.5: Racial and Ethnic Minorities by Census Block

Source: U.S. Census Bureau, Decennial Census, 2020



Map 2.6: Foreign Born Population by Census Tract

Source: U.S. Census Bureau, American Community Survey 5-year Estimates, 2021

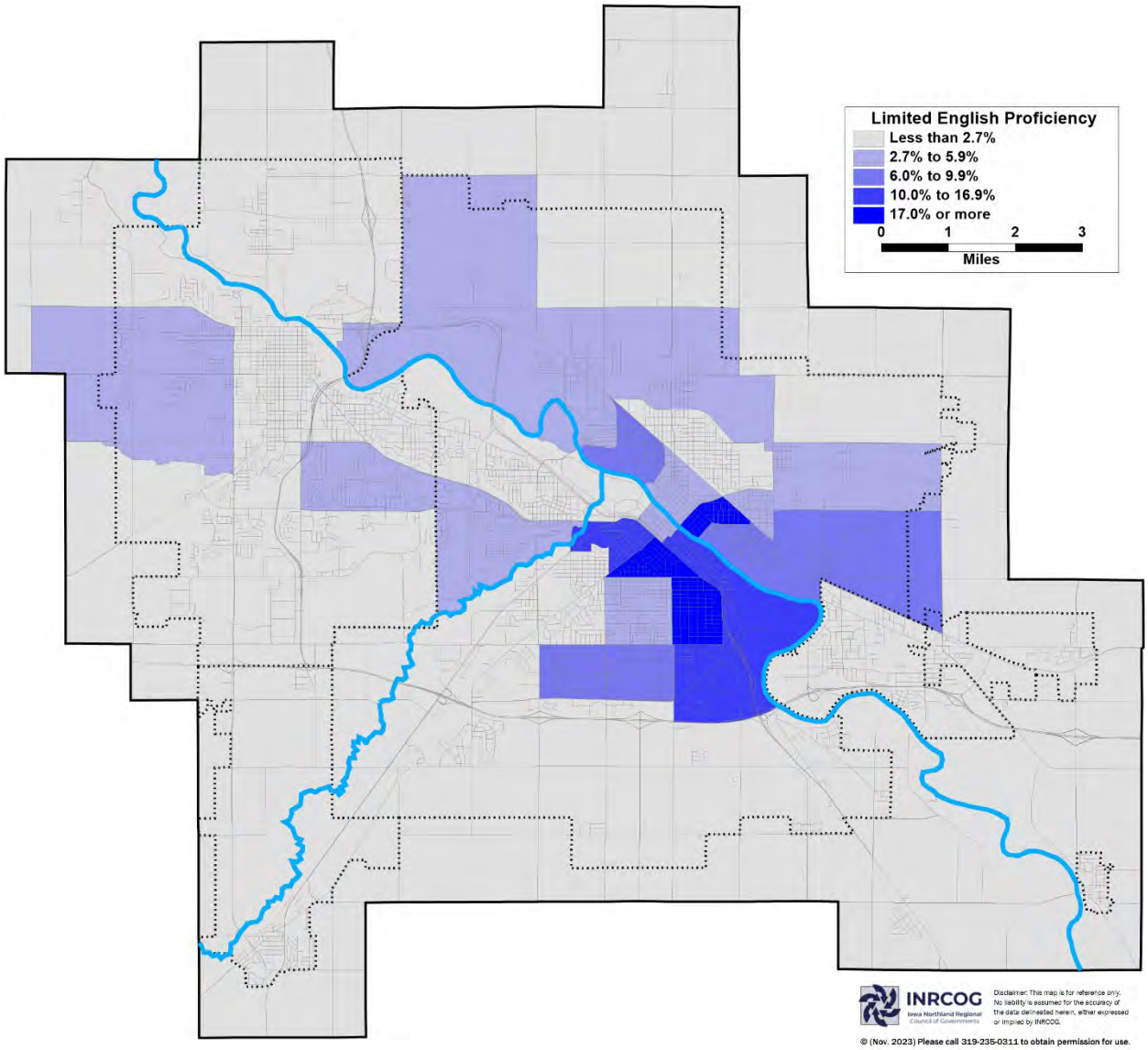


Limited English Proficiency (LEP)

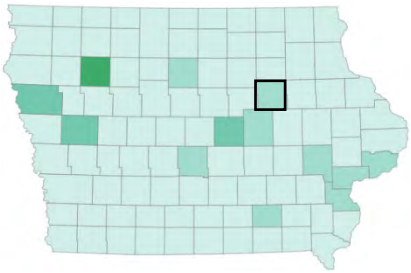
The U.S. Department of Justice defines LEP persons as, "Individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English…" Approximately 3.8% of the population 5 years of age and older within Black Hawk County are considered LEP individuals. Map 2.7 shows the percentage of the population that is considered LEP by Census tract

Map 2.7: Limited English Proficiency by Census Tract

Source: U.S. Census Bureau, American Community Survey 5-year Estimates, 2021



Ethnic Diversity Index

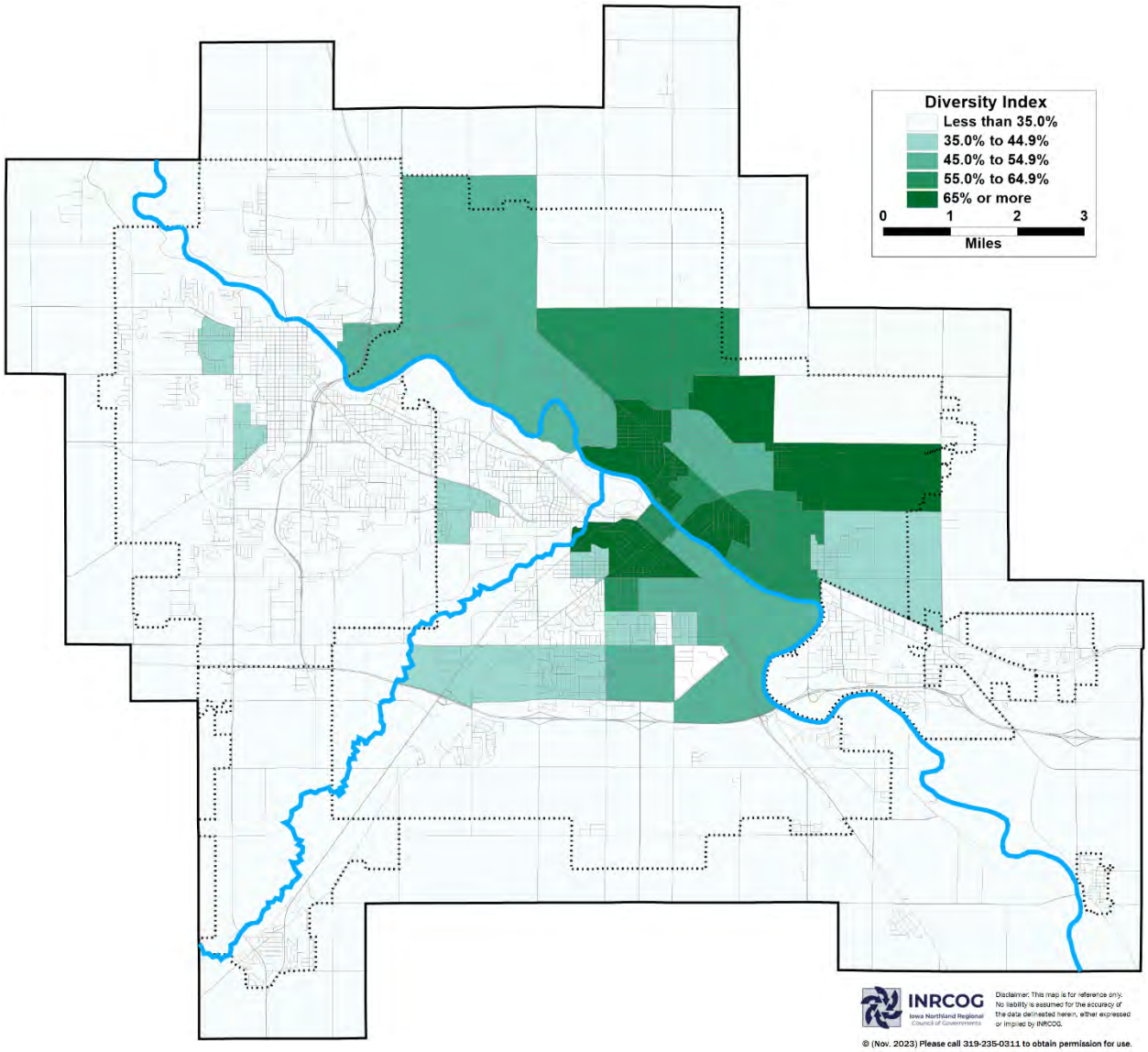


According to the U.S. Census Bureau, the overall racial and ethnic diversity of the country has increased since 2010. The U.S. Census Bureau uses a Diversity Index (DI) to measure the probability that two people chosen at random will be from different racial and ethnic groups. The DI is bounded between 0% and 100%. A value closer to 100% indicates that much of the population has different racial and ethnic characteristics. Map 2.8 shows the DI for the metropolitan area by Census block group. For comparison, Iowa and Black Hawk County have DI of 30.8% and 39.0%, respectively. Black Hawk County has the ninth highest Diversity Index in the state.

https://www.census.gov/library/visualizations/interactive/racial-and-ethnic-diversity-in-the-united-states-2010-and-2020-census.html

Map 2.8: Ethnic Diversity Index by Census Block Group

Source: U.S. Census Bureau, Decennial Census, 2020

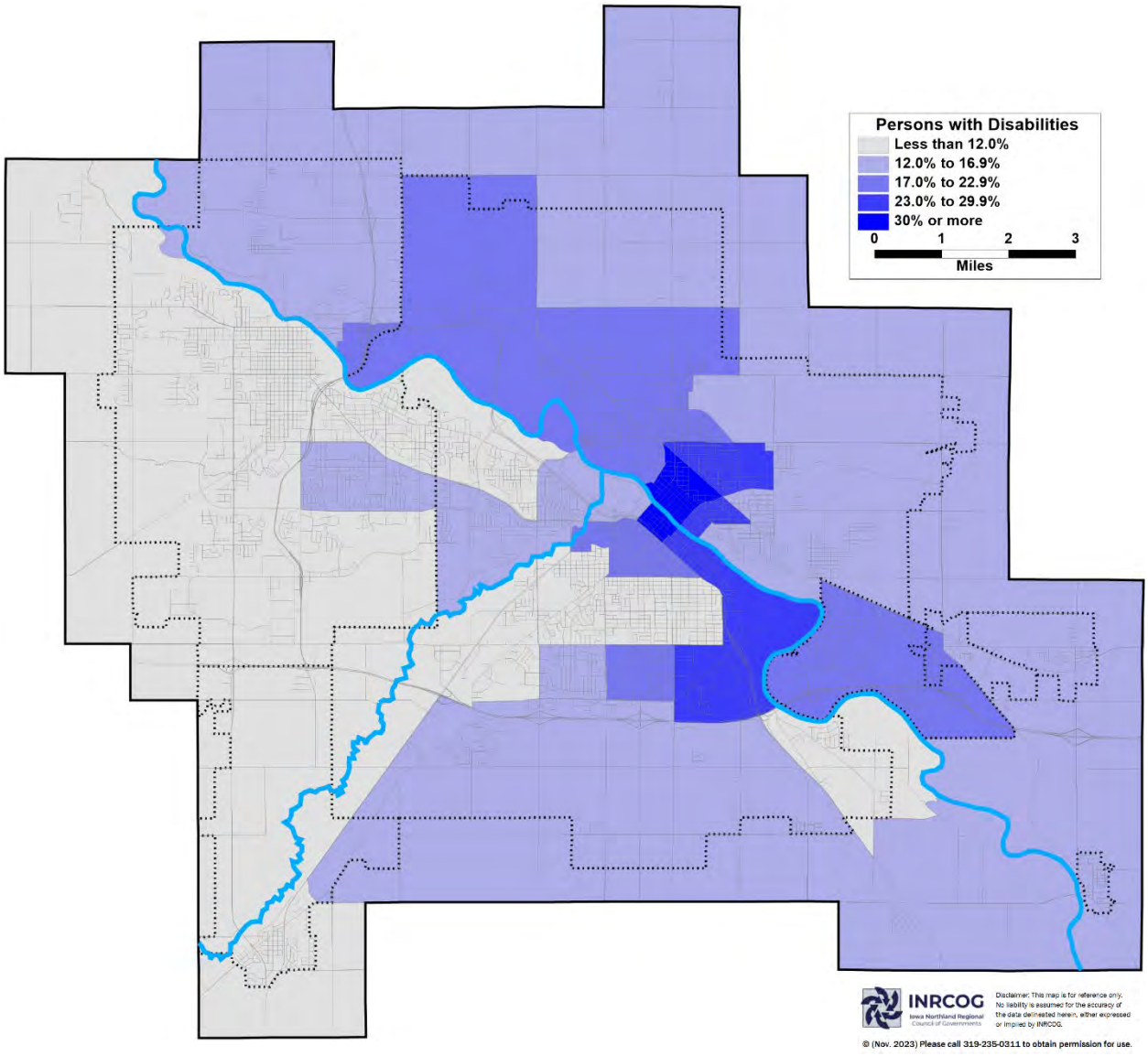


Persons with Disabilities

To capture a variety of characteristics that encompass the definition of disability, the U.S. Census Bureau American Community Survey identifies serious difficulty with four basic areas of functioning – hearing, vision, cognition, and ambulation (movement); difficulty bathing and dressing; and difficulty performing errands such as shopping. Approximately 13.6% of the total civilian noninstitutionalized population within Black Hawk County have at least one disability. Map 2.9 shows the percentage of the population with disabilities by Census tract.

Map 2.9: Persons with Disabilities

Source: U.S. Census Bureau, American Community Survey 5-year Estimates, 2021



Jobs

The number of jobs in the Black Hawk County metropolitan area has gradually increased over the past decade. According to the U.S. Census Bureau, there are approximately 75,000 jobs in the MPO area in 2019, an increase of 3,300 jobs from 2010. Map 2.10 shows the number of jobs and jobs per square mile, and Figure 2.7 shows the job counts by North American Industry Classification System (NAICS) industry sector.

Map 2.10: Jobs and Jobs per Square Mile

Source: U.S. Census Bureau, OnTheMap, 2019

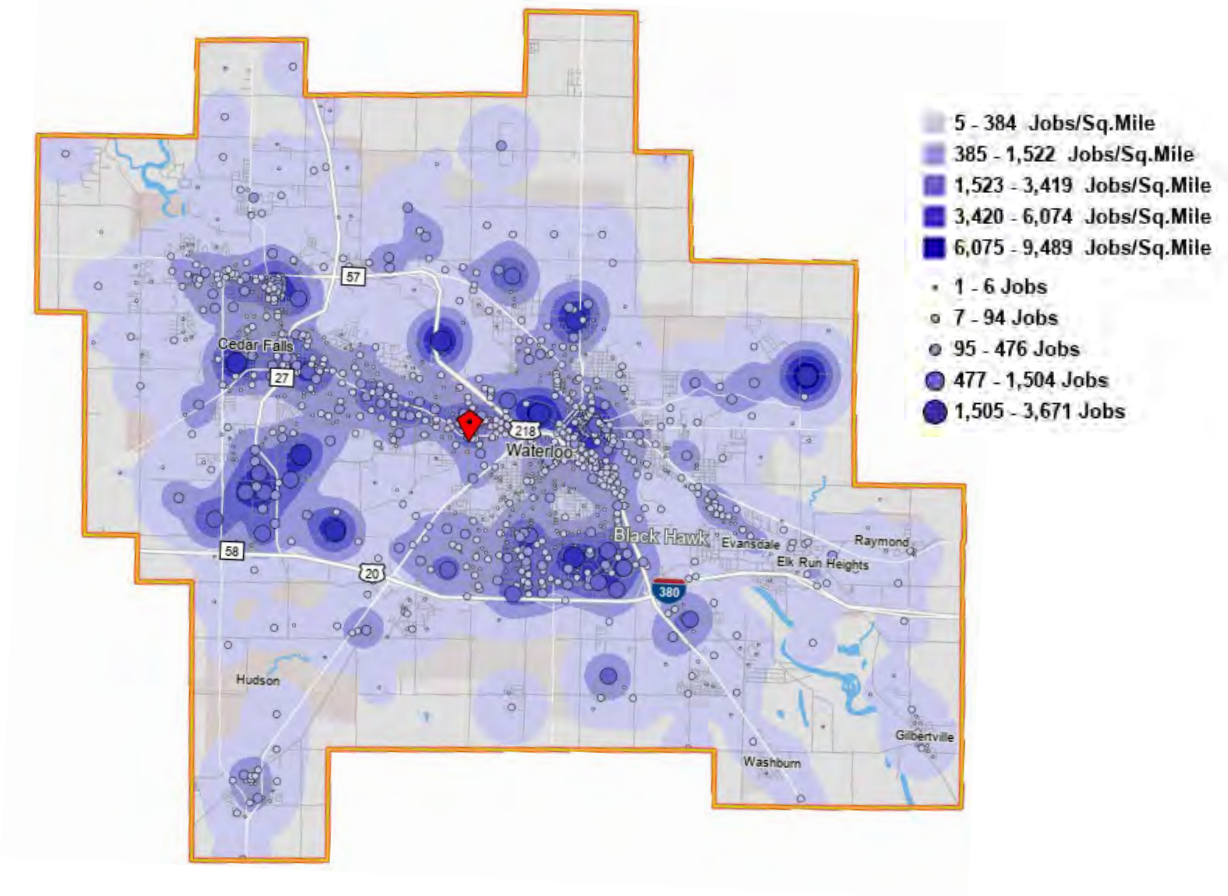
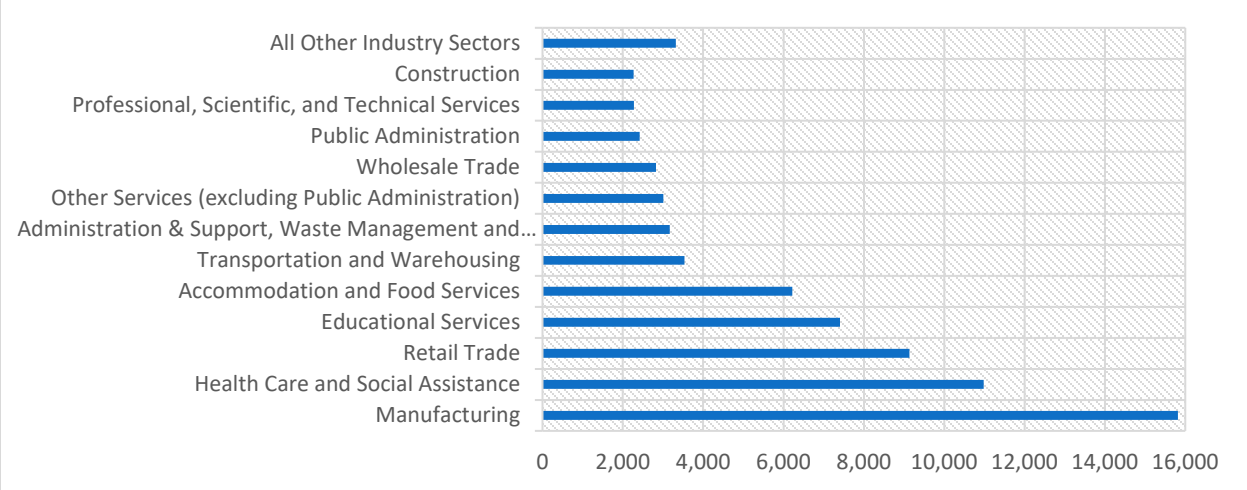


Figure 2.7: Jobs by NAICS Industry Sector

Source: U.S. Census Bureau, OnTheMap, 2019



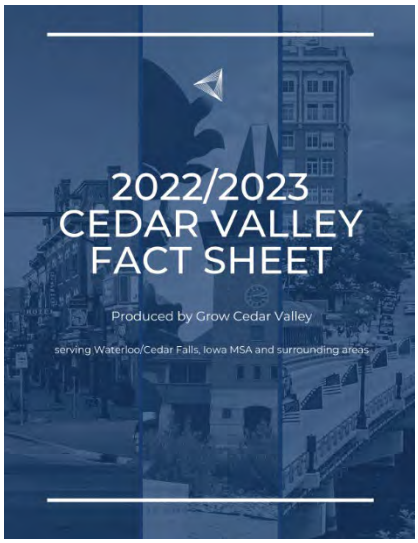
Major Employers

Table 2.4 lists the major employers in the metropolitan area. Of these top employers, manufacturing, education, and health care are the top three industries by number of employees.

Table 2.4: Top 20 Major Employers

Source: Grow Cedar Valley, 2022/2023 Cedar Valley Fact Sheet

Company	Industry	Approximate Employees
John Deere	Manufacturing	5,000
UnityPoint Health	Health Care	3,162
Tyson Fresh Meats	Food Processing	3,000
MercyOne	Health Care	2,597
Waterloo Community Schools	Education	1,900
Target Distribution Centers	Distribution	1,800
University of Northern Iowa	Education	1,650
VGM Group	Diversified	1,400
Hy-Vee Food Stores	Grocery	1,256
Western Home Communities	Health Care/Housing	891
Cedar Falls Community Schools	Education	879
Bertch Cabinet Manufacturing	Manufacturing	725
Veridian Credit Union	Financial	626
Omega Cabinetry	Manufacturing	550
LSB/LSBX	Financial	500
Peterson Contractors, Inc	Construction	500
Viking Pump	Manufacturing	491
Martin Brothers Distribution	Distribution	450
Cedar Valley Medical Specialists	Health Care	405
CBE Companies, Inc	Financial	400

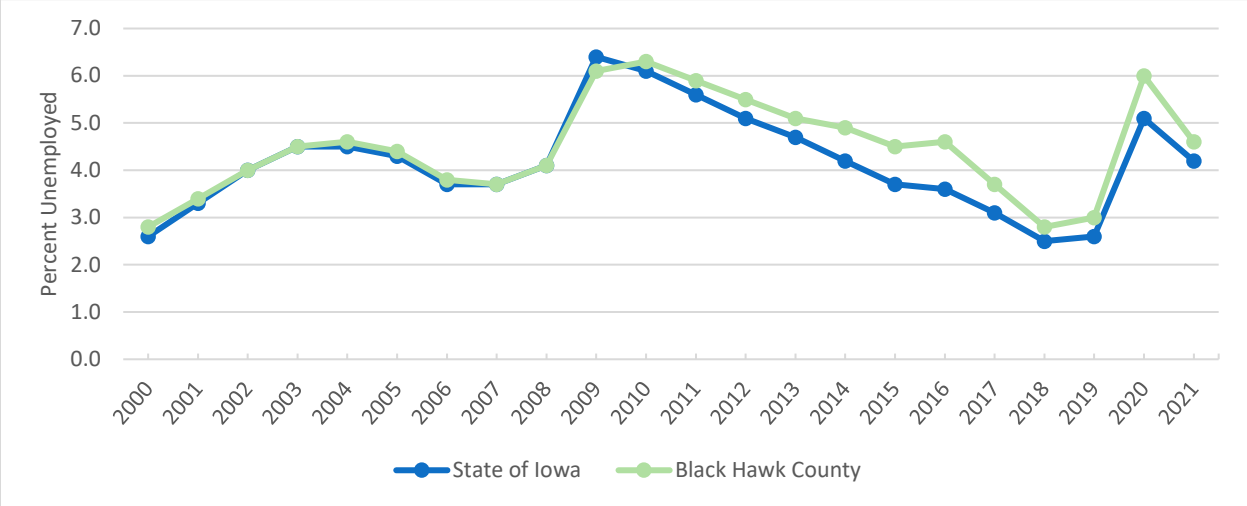


Unemployment

Figure 2.8 shows the unemployment rate for Black Hawk County over the past 25 years, along with the statewide average. Since 2000, Black Hawk County and the state have had similar unemployment rates.

Figure 2.8: Unemployment Rate

Source: Iowa Workforce Development, Local Area Unemployment Statistics, Annual Average Unemployment Rate

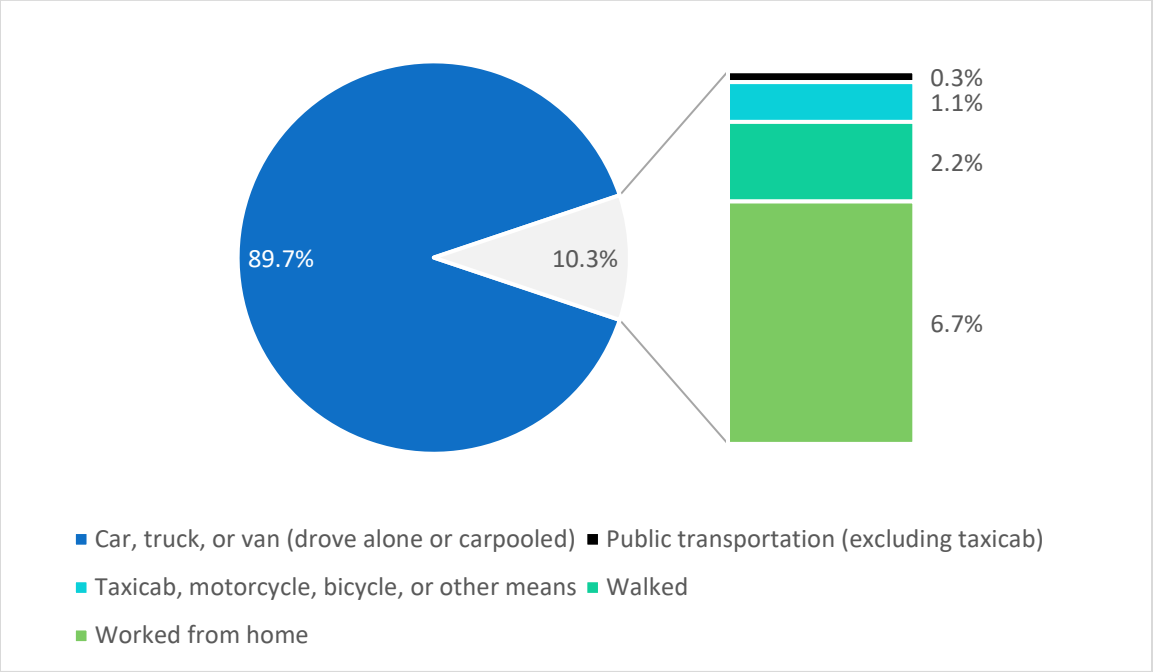


Mode of Transportation to Work

The metropolitan area remains an auto-oriented community. Approximately 90 percent of residents utilize an automobile for travel to work (Figure 2.9). Walking is the next highest mode of transportation to work outside of the home. The number of people working from home is on the rise, not dissimilar to the rest of the nation. In 2021, 6.7% of people worked from home, an increase of 4.2 percent since 2010.

Figure 2.9: Mode of Transportation to Work

Source: U.S. Census Bureau, American Community Survey 5-year Estimates, 2021

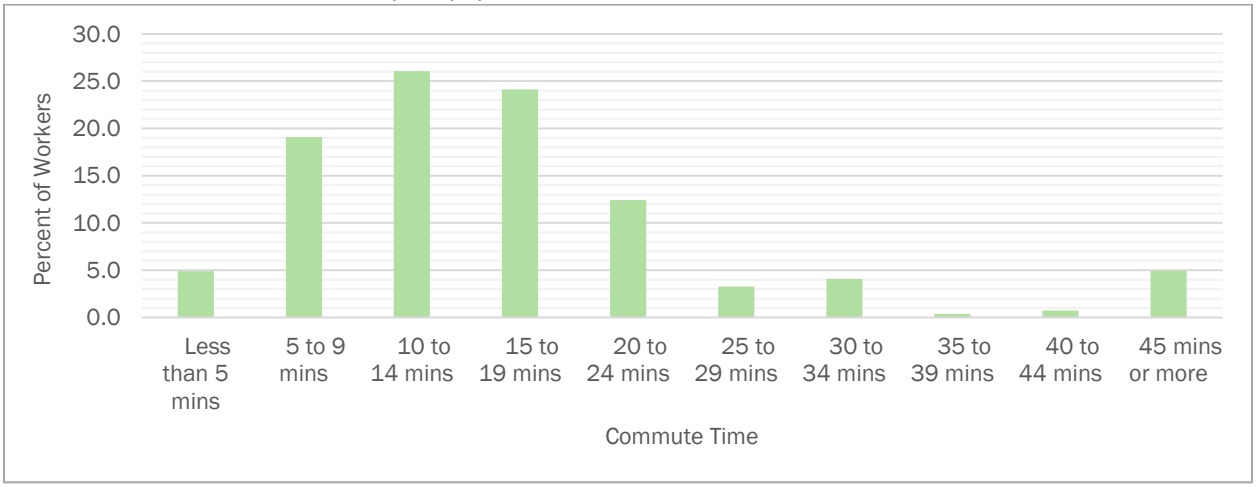


Commute to Work

Like other smaller metropolitan areas, most work trips are short in time; 90 percent of workers in Black Hawk County have travel times less than 30 minutes. For comparison, 83 percent of workers in Linn County have travel times of less than 30 minutes.

Figure 2.10: Commute Time to Work

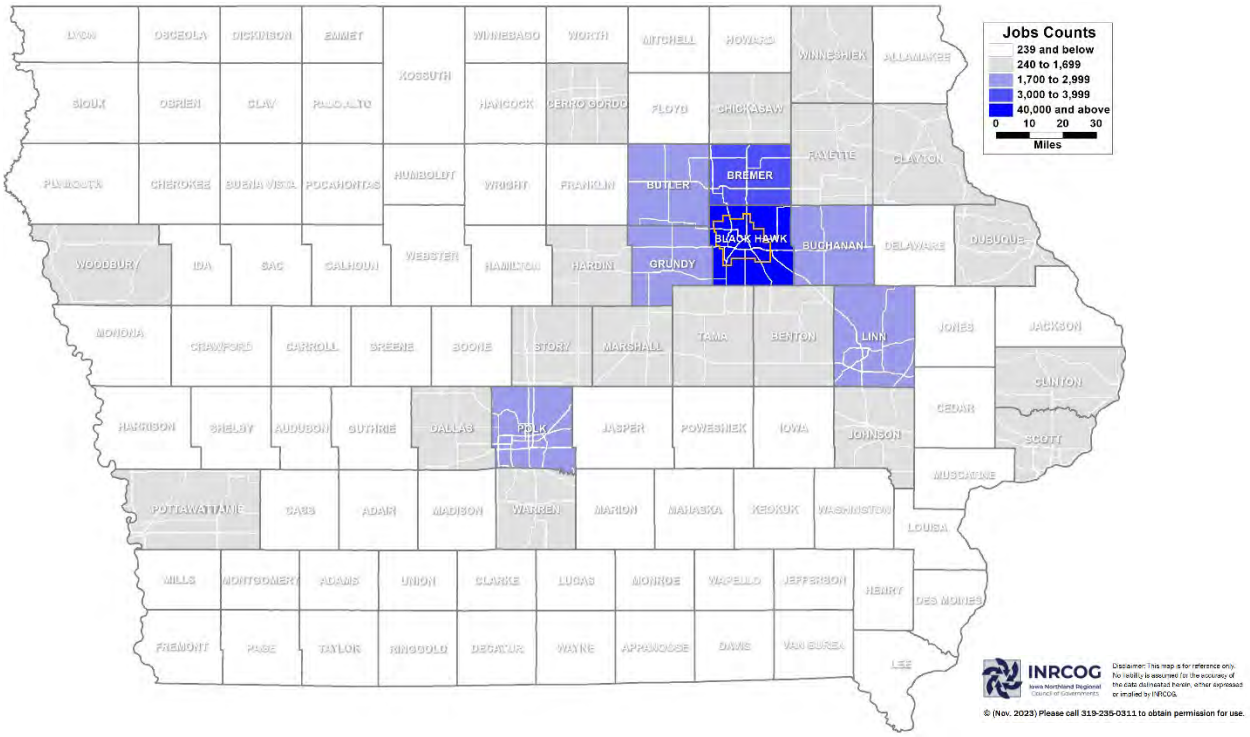
Source: U.S. Census Bureau, American Community Survey 5-year Estimates, 2021



Map 2.11 shows the job counts by counties for workers employed in the MPO area in 2019 (i.e., where do people that work in the metropolitan area live). Of the 75,000 workers employed in the metropolitan area, approximately 57.7% live in Black Hawk County, followed by Bremer County (5.3%) and Polk County (3.3%). Map 2.12 illustrates the movement of workers commuting in and out of the metropolitan area.

Map 2.11: Job Counts by Counties for Workers Living in the MPO Area

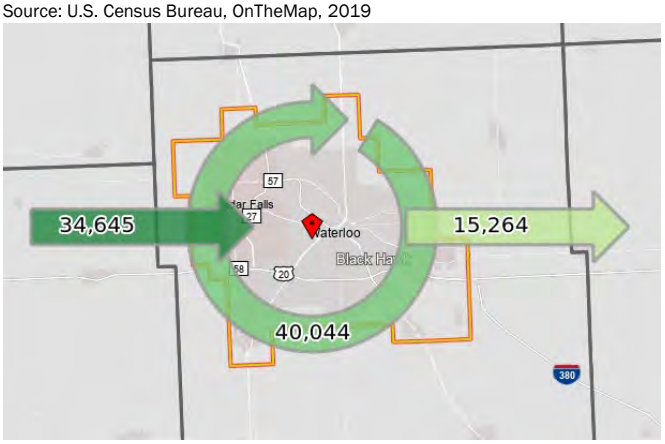
Source: U.S. Census Bureau, OnTheMap, 2019



County	Count	Share (%)	County	Count	Share (%)
Black Hawk	43,103	57.7	Butler	1,726	2.3
Bremer	3,950	5.3	Tama	1,049	1.4
Polk	2,434	3.3	Johnson	938	1.3
Buchanan	2,141	2.9	Scott	877	1.2
Linn	2,019	2.7	All Other Counties	14,466	19.4
Grundy	1,983	2.7			

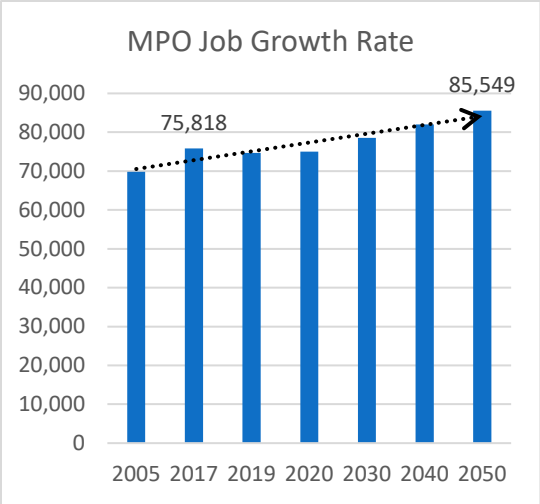
Map 2.12: Inflow/Outflow of Jobs in the MPO Area

Source: U.S. Census Bureau, OnTheMap, 2019



Employment Projections

In addition to projecting how many people are expected to live in the metropolitan area in the future and where additional housing is likely to develop, it is important to forecast future jobs. Identifying the rate that the MPO area is growing was the first step used to determine the area's employment projections. The MPO job growth rate was calculated using U.S. Census Bureau OnTheMap data from 2005 to 2019. Figures from this timeframe provide a more up-to-date picture of the area's growth. To calculate the MPO unincorporated jobs, a shapefile of the MPO boundary was imported to OnTheMap. This enabled calculating the total number of jobs within the MPO boundary. The sum of jobs in the incorporated areas was then subtracted from this total, providing a total number of jobs in the MPO unincorporated area.



Linear projections from 2005 to 2019 were used to forecast the number of jobs in the incorporated areas, and linear projections from 2011 to 2019 were used to forecast the number of jobs in the unincorporated areas. There were an estimated 75,818 jobs in the MPO area in the base year 2017. This value is projected to increase by 9,731 for a total of 85,549 jobs in the horizon year 2050.

The average of each jurisdiction's share of the total jobs from 2011 to 2019 was applied to the MPO total job growth rate projections. Data for smaller incorporated areas and the unincorporated area show small year-to-year anomalies. Using the average share of the total jobs reduces the effects of these anomalies, better reflecting trends within the metropolitan area.

Table 2.5: Average Jurisdictional Share of Total Jobs

	2011	2012	2013	2014	2015	2016	2017	2018	2019	Avg
Waterloo	66.79%	67.42%	68.67%	67.70%	66.32%	65.11%	64.38%	64.36%	64.10%	66.10%
Cedar Falls	29.95%	29.16%	28.09%	29.09%	30.43%	31.56%	32.33%	32.36%	32.44%	30.60%
Evansdale	1.10%	1.14%	1.24%	1.15%	1.16%	1.23%	1.22%	1.26%	1.27%	1.20%
Hudson	1.05%	0.99%	1.01%	0.98%	1.00%	1.03%	0.97%	0.95%	1.00%	1.00%
Elk Run Heights	0.40%	0.45%	0.34%	0.41%	0.41%	0.44%	0.44%	0.37%	0.40%	0.41%
Raymond	0.07%	0.08%	0.07%	0.03%	0.09%	0.07%	0.06%	0.08%	0.07%	0.07%
Gilbertville	0.18%	0.13%	0.12%	0.11%	0.11%	0.14%	0.15%	0.16%	0.15%	0.14%
Unincorporated	0.45%	0.63%	0.46%	0.53%	0.47%	0.42%	0.45%	0.45%	0.57%	0.49%

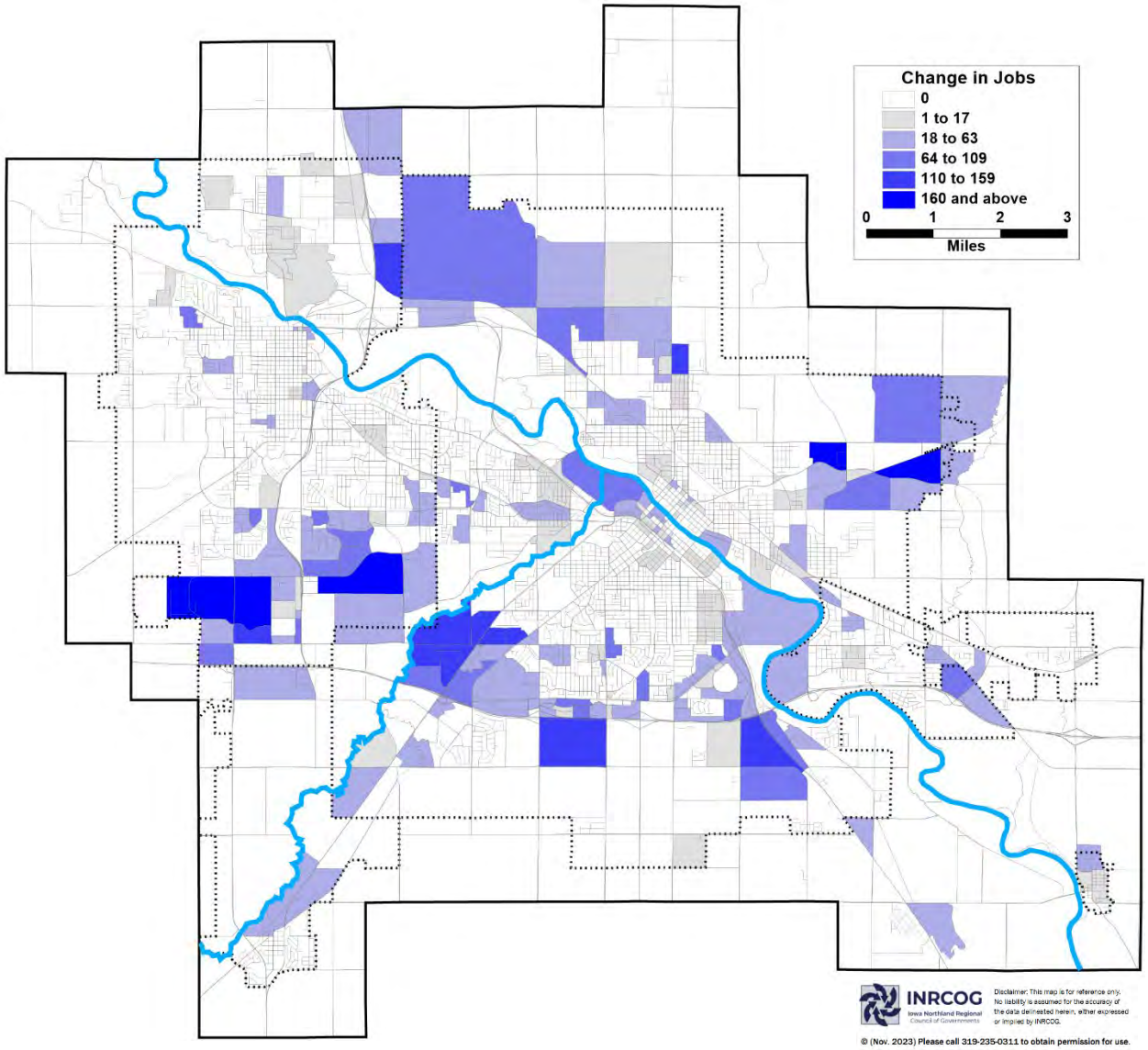
Table 2.6: Employment Projection Control Totals

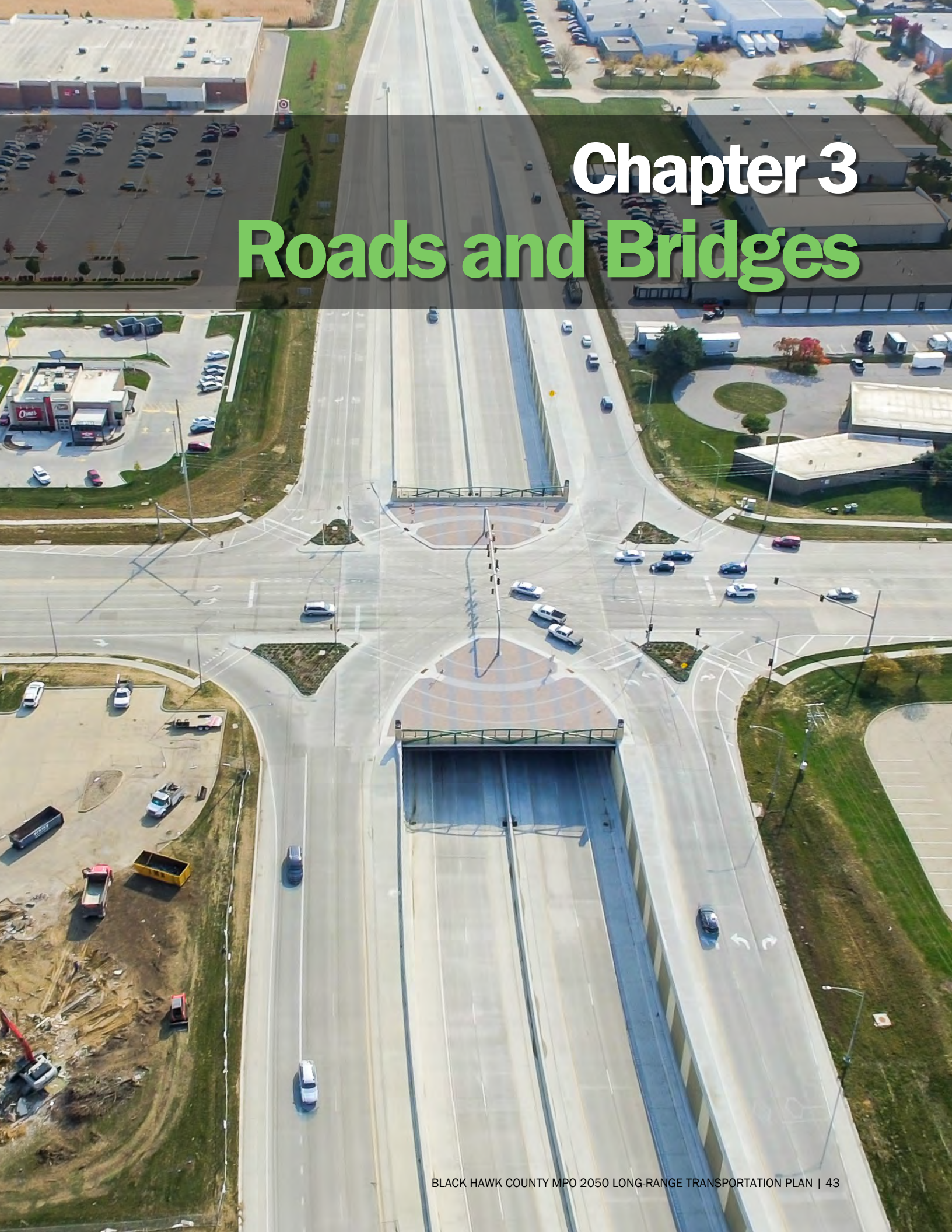
	2017	2020	2030	2040	2050	2017-2050
Waterloo	48,815	49,596	51,912	54,228	56,544	7,729
Cedar Falls	24,512	22,962	24,035	25,107	26,179	1,667
Evansdale	928	899	941	983	1,025	97
Hudson	733	749	784	819	854	121
Elk Run Heights	330	305	319	333	348	18
Raymond	49	52	54	56	59	10
Gilbertville	112	105	110	115	119	7
Unincorporated	339	370	387	404	422	83
Total	75,818	75,037	78,541	82,045	85,549	9,731

The next step was to distribute each jurisdiction's projected change in jobs to the TAZs. Largely speaking, employment growth areas were not anticipated to change drastically from what was forecasted in the 2045 Long-Range Transportation Plan. Accordingly, each jurisdiction's forecasted change in jobs was distributed in a comparable proportion to the previous plan. Adjustments were made to account for recent and impending developments. Map 2.13 shows the projected change in jobs from 2017 to 2050.

Map 2.13: Projected Change in Jobs, 2017 to 2050, by TAZ

Source: Black Hawk County MPO 2050 Travel Demand Model





Chapter 3
Roads and Bridges

Chapter 3 – Roads and Bridges

The MPO's overall goal is to provide for the safe, reliable, and efficient movement of persons and goods in the region. The road network is the most readily available and used public transportation infrastructure that can be utilized to help reach this goal, stressing the importance of maintaining a viable road network. The MPO's objectives are to maintain the metropolitan road network for existing and planned traffic and maintain a balance of connectivity and accessibility while ensuring user safety for all modes.

History

Past transportation planning efforts in the MPO have significantly impacted the development of the transportation network. Since the 1960s, transportation planning efforts have focused on creating a local transportation network that connects neighboring cities to each other and to other Iowa metropolitan areas. This has been embodied in past transportation studies for the metropolitan area, and more recently in Long-Range Transportation Plan updates. This ongoing planning process has included documents with horizon years of 1990, 2000, 2020, 2025, 2035, 2040, 2045, and the current effort of 2050. A summary of previous planning efforts helps illustrate how the transportation system developed into what it is today.

Waterloo Metropolitan Area Transportation Study: 1990 Plan

In 1965, the Iowa development Commission, the Metropolitan Planning Commission of Black Hawk County, and the Iowa State Highway Commission hired a consultant to develop a transportation plan for the year 1990. The plan used origin and destination data gathered from a 1964 survey of the metropolitan area to develop traffic forecasts for the horizon year. The MPO reviewed the analysis and adopted the 1990 network in August 1967. Major construction projects identified include the following:

- U.S. Highway 20 from Evansdale eastward as a two-lane expressway with right-of-way for four lanes
- The "Cedar Valley Freeway" to connect the Waterloo and Cedar Falls central business districts
- Hackett Road from Old U.S. Highway 218 (University Avenue) to Ridgeway Avenue as two lanes with right-of-way for four lanes
- U.S. Highway 20 west of U.S. Highway 63 as a two-lane expressway with right-of-way for four lanes
- Extension of Orchard Drive as two lanes with right-of-way for four lanes

Other projects, smaller in scope and mostly involving upgrades to existing streets, were also included in the document. The total cost estimate for all projects identified in this plan, which was to be implemented over 25 years, was $100 million.

Metro Stats

1,100
Lane miles of roads[1]

207
Miles of locally owned roads in poor condition[2]

257
Bridges[3]

10
Structurally deficient bridges[4]

41 years
Average age of bridge structures[4]

89.3
Average bridge sufficiency rating[4]

Sources:
[1]Iowa DOT, Roadway Asset Management System (RAMS)

[2]Iowa Pavement Management Program, 2022

[3]Iowa DOT, Data Portal, Bridge Point

[4]FHWA, National Bridge Inventory, 2022

Interstate Substitution and the Waterloo Metropolitan Transportation Study: 2000 Plan

In 1968, amid a nationwide push to increase the mileage of the U.S. Interstate Highway System, an Interstate connecting I-80 across southern Iowa to the southeast corner of Waterloo was designated. This highway was labeled I-380. In 1974, state and local officials petitioned heavily to have Interstate 380 extended through Waterloo to downtown Cedar Falls. This highway would follow the right-of-way planned for the "Cedar Valley Freeway" during the 1990 Plan and complete the area's "Golden Triangle" of highways.

In Washington, D.C., a new anti-highway sentiment was beginning to affect the drafting of amendments to the Interstate Highway Bill. In 1973, the United States Congress passed legislation that allowed municipalities to "withdraw" planned Interstate highway projects and replace them with transit projects. This amendment was modified in 1976 to include non-Interstate highway projects. The funding for these projects was to be equal to that which had been allocated for the Interstate segment being withdrawn and would be available at an 85/15 federal match. Withdrawals were to be allowed until 1983, while substitute projects were to be initiated by 1986.

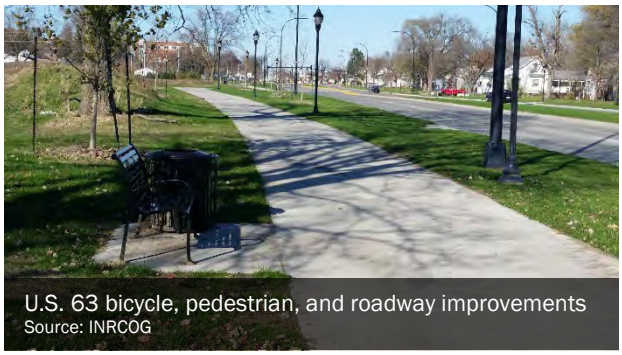
The program, known as Interstate Substitution, drew the interest of local officials. In March of 1981, a delegation of elected officials from the metropolitan area met with the Iowa Transportation Commission to discuss the possibility of withdrawing the proposed extension of I-380. This withdrawal would result in approximately $370 million that could be substituted for several smaller-scale transportation projects.

Downtown Waterloo in the 1960s prior to Interstate Substitution and today
Source: Iowa DNR Historic Photo Interactive Mapping Site

At issue was the question of whether smaller-scale projects would adequately serve the area's future traffic demands. Thus, the summer of 1981 was spent developing a transportation plan for the year 2000. This undertaking, conducted by the Iowa DOT and the MPO, involved an update of the 1965 traffic model. Using year 2000 socioeconomic forecasts, state and local planners worked to develop an updated street and highway network reflecting the proposed projects. It was concluded that it would be feasible to substitute the I-380 extension with a less expensive, partially access-controlled, arterial street. It was also determined that when combined with several other local street and highway projects, using Interstate Substitution funds in this manner would better serve the area's projected transportation deficiencies than one interstate freeway through the center of the cities.

2020 and 2025 Long-Range Transportation Plans

The 2020 Plan (adopted in 1997) addressed automotive congestion, connectivity, and accessibility. The 2020 Plan included a couple of major construction projects for the first time, including an interchange at U.S. Highway 20 and Ansborough Avenue which was completed in 2006.

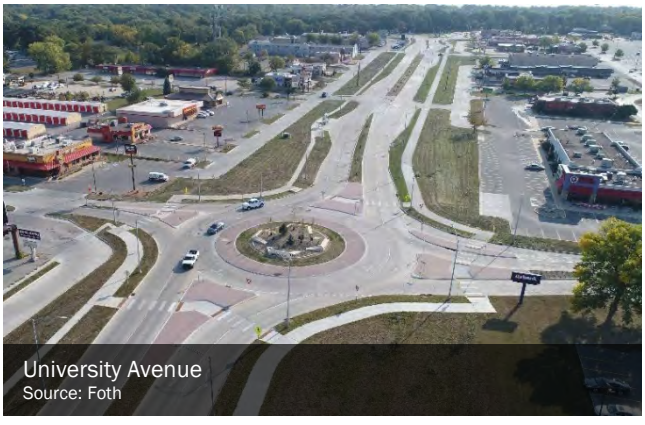


U.S. 63 bicycle, pedestrian, and roadway improvements
Source: INRCOG

In 2002, MPO staff developed a Travel Demand Model (TDM) to simulate traffic in a base-planning year. This model, which was adjusted to reflect Iowa DOT ground counts, simulated the traffic patterns of the MPO in 2001. Local planning officials anticipated the MPO population to increase by 11 percent and total employment by 37 percent by the plan year 2025. Applying the forecasted 2025 socioeconomic data to the base year network resulted in some capacity-related issues. Utilizing the TDM, a list of projects was developed for the 2025 Plan. This document also identified two illustrative projects which were beyond the funds projected to be available over the life of the Plan. These were a northeast arterial to provide access to the northeast industrial area of Waterloo and serve as a route for through traffic, and U.S. Highway 63 urban corridor improvements which would involve the corridor from U.S. Highway 218 to Airline Highway in Waterloo. The U.S. Highway 63 project eventually received a substantial earmark under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users.

2035 Long-Range Transportation Plan

Approved in 2008, this document updated the TDM to a base year of 2005 with traffic projected to a horizon year of 2035. The population and employment of the MPO were projected to increase substantially. With updated socioeconomic forecasts, several capacity issues were shown in the 2035 model run, primarily in the southern area of Waterloo along segments of U.S. Highway 218, Hammond Avenue, Shaulis Road, Ansborough Avenue, and La Porte Road. Future capacity issues led to the projects included in the 2035 LRTP. Major construction projects included the following:



University Avenue
Source: Foth

- University Avenue from U.S. Highway 63 in Waterloo to Iowa Highway 58 in Cedar Falls
- Kimball Avenue from Ridgeway Avenue to San Marnan Drive, Waterloo
- U.S. Highway 63 from Newell Street to U.S. Highway 218, Waterloo

In addition, the following large initiatives were included as illustrative projects:

- Northeast arterial to improve access to Waterloo's northeast industrial area as well as provide an alternate route around the city for through traffic, connecting U.S. Highway 63 to Interstate 380
- Upgrading U.S. Highway 218 to fully access-controlled through Waterloo from Mitchell Avenue to West 9th Street by implementing interchanges and/or grade separation
- Corridor preservation and/or access control on Iowa Highway 58 between U.S. Highway 20 and University Avenue in Cedar Falls

2040 Long-Range Transportation Plan

This Plan was approved in 2013 and updated the TDM to a base year of 2010. The population of the MPO was projected to increase by 30,000 by the horizon year, and employment was projected to increase by 24,000. With these socioeconomic forecasts, a handful of areas were shown to have capacity issues. Major construction and reconstruction projects included the following:

Rendering of the Park Avenue Bridge
Source: City of Waterloo

- La Porte Road from Shaulis Road to Hawthorne Avenue, Waterloo
- Cedar Heights Drive from Viking Road to Greenhill Road, Cedar Falls
- Park Avenue Bridge replacement, Waterloo
- Grade separation of the intersection of Iowa Highway 58 and Greenhill Road, Cedar Falls

Several illustrative projects of various scales were identified, including the following:

- 11th Street Bridge replacement, Waterloo
- Pedestrian Crossing over the CN Railyard on East 4th Street, Waterloo
- Northeast Industrial Access and Access-Controlled U.S. 218 from I-380 to U.S. Highway 63

2045 Long-Range Transportation Plan

The most recent LRTP was approved in 2018 and updated the TDM to a base year of 2014. Population and employment projections were calculated using more recent data from 2001 to 2015 which provided a more up-to-date picture of the area's growth. From 2014 to 2045, the population of the MPO was conservatively projected to increase by 14,000, and employment was projected to increase by 12,500. With these socioeconomic forecasts, a couple of areas were shown to have capacity issues, predominately on the Primary Highway System. Future capacity issues, along with connectivity, accessibility, economic development, and safety, led to the projects included in the LRTP. Table 3.1 shows the projects that were included as well as their status.

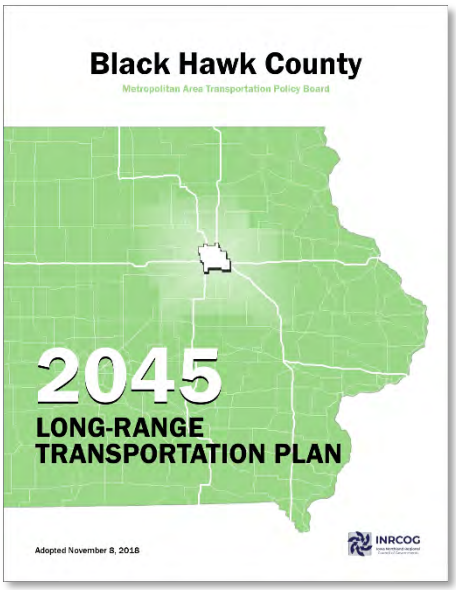


Table 3.1: 2045 Long-Range Transportation Plan Projects

Timeframe	Jurisdiction	Project	Termini	Description	Status
2019	Black Hawk	V49 (Raymond Rd)	600' N of Indian Creek Rd to 0.25 mi. S of Young Rd	Resurfacing	Complete
2019	Hudson	U.S. 63 Pedestrian Underpass	Pedestrian underpass of U.S. 63	Bike/Ped Structures	Complete
2019	Hudson	Butterfield Rd	Ranchero Rd to 500' S of U.S. 20	Reconstruction	Complete
2019	Waterloo	U.S. 63 Enhancements	Parker St to U.S. 218	Landscaping, Lighting, Bike/Ped	Complete
2019	Waterloo	W Ridgeway Ave	U.S. 63 to Kimball Ave	Engineering	Complete
2019	Waterloo	Downtown Traffic Signals Retiming	Bound by Walnut St, Washington St, 6th St, Mullan Ave	Intelligent Transportation Systems	Complete
2019	Waterloo	Ansborough Ave	Black Hawk Rd to Downing Ave	Capacity Improvements	Complete
2019	Cedar Falls	W 1st St (IA 57)	Hudson Rd to Franklin St	Reconstruction, Lane Reconfiguration	Complete
2020	Black Hawk	V43 (Elk Run Rd)	Independence Ave (IA 281) to Elk Run Heights city limits	Resurfacing, Shoulder Widening	Complete
2020	Evansdale	Lafayette Rd	Evans Rd to east city limits	Engineering	Complete
2021	Waterloo	Traffic Signal Fiber Optics & Traffic Monitoring Cameras	Bound by Walnut St, Washington St, 6th St, Mullan Ave	Intelligent Transportation Systems	Complete
2021	Raymond	Lafayette Rd	1000' E of Dubuque Rd to 5th St	Reconstruction, Bike/Ped	FY 2024 Letting
2021	Elk Run Heights	Lafayette Rd/Gilbertville Rd	West city limits to Amber Ln	Reconstruction, Bike/Ped	FY 2024 Letting
2019-2021	Cedar Falls	Cedar Heights Dr	Greenhill Rd to Viking Rd	Reconstruction, Additional Turn Lanes, Bike/Ped	Complete
2019-2020	Waterloo	La Porte Rd	Hawthorne Ave to E Shaulis Rd	Engineering	Complete
2022	Waterloo	La Porte Rd	Hawthorne Ave to San Marnan Dr	Reconstruction, Bike/Ped, Capacity Improvements	Three-phase project funded; completion anticipated by FY 2027
2023-2025	Black Hawk	Donald St (D16)	Waterloo city limits to Raymond Rd	Resurfacing, Intersection Improvements	Included in 2050 LRTP
2023-2025	Black Hawk	Orange Rd	Waterloo city limits to U.S. 218	Resurfacing	Unmet Need
2023-2025	Cedar Falls	Olive St Bridge	S of W 20th St, over University Branch of Dry Run Creek	Bridge Replacement	Unmet Need
2023-2025	Cedar Falls	Tremont St Bridge	N of W 21st St, over University Branch of Dry Run Creek	Bridge Replacement	Unmet Need
2023-2025	Cedar Falls	Walnut St Bridge	S of W 20th St, over University Branch of Dry Run Creek	Bridge Replacement	Complete
2023-2025	Cedar Falls	W Ridgeway Ave Bridge	0.15 mi. W of Hudson Rd, over S Branch of Dry Run Creek	Bridge Replacement	Included in 2050 LRTP
2023-2025	Evansdale	Lafayette Rd	Evans Rd to east city limits	Reconstruction, Bike/Ped	FY 2024 Letting
2023-2025	Waterloo	5th St/6th St	Kimball Ave to S Barclay St	Study on conversion to two-way streets	Complete; included 4th St
2023-2025	Waterloo	W Ridgeway Ave	U.S. 63 to Kimball Ave	Reconstruction, Bike/Ped	Unmet Need
2026-2035	Black Hawk	Elk Run Rd (V43)	Dubuque Rd to Independence Ave (IA 281)	Resurfacing, Shoulder Widening	Included in 2050 LRTP
2026-2035	Black Hawk	Raymond Rd (V49)	Gilbertville NCL to Raymond SCL	Resurfacing	Included in 2050 LRTP
2026-2035	Black Hawk	W Ridgeway Ave (D19)	University Ave to Cedar Falls city limits	Resurfacing	Included in 2050 LRTP
2026-2035	Black Hawk	Union Rd (T75) Bridge	0.25 mi. S of Beaver Valley Rd, over Beaver Creek	Bridge Replacement	Included in 2050 LRTP
2026-2035	Black Hawk	Washburn Rd (D38)	IA 21 to U.S. 218	Resurfacing	Included in 2050 LRTP
2026-2035	Cedar Falls	Cedar Heights Dr	Viking Rd to south city limits	Reconstruction, Additional Turn Lanes, Capacity Improvements	Included in 2050 LRTP
2026-2035	Cedar Falls	Greenhill Rd	Hudson Rd to east city limits	Reconstruction, Safety Improvements, Additional Turn Lanes	Included in 2050 LRTP
2026-2035	Cedar Falls	Leversee Rd	Lone Tree Rd to north city limits	Reconstruction	Included in 2050 LRTP

Timeframe	Jurisdiction	Project	Termini	Description	Status
2026-2035	Cedar Falls	Main St	W 6th St to University Ave	Reconstruction, Intersection Improvements, Lane Reconfiguration	Under construction
2026-2035	Evansdale/ Elk Run Heights	Plaza Dr/Elk Run Rd	I-380 EB ramp to N of Gilbertville Rd	Capacity Improvements, New Signal, Additional Turn Lanes	Included in 2050 LRTP
2026-2035	Raymond	S Raymond Rd Bridge	0.2 mi. S of Dubuque Rd, over Poyner Creek	Bridge Replacement	Unmet Need
2026-2035	Waterloo	11th St Bridge	SW of Sycamore St, over Cedar River	Bridge Replacement	Under construction, awarded federal Competitive Highway Bridge Program funds
2026-2035	Waterloo	Park Ave Bridge	SW of Sycamore St, over Cedar River	Bridge Replacement	Under construction, awarded federal Competitive Highway Bridge Program funds
2026-2035	Waterloo	Franklin St	1st St to Nevada St	Reconstruction, Bike/Ped	Unmet Need
2026-2035	Waterloo	Hammond Ave/ San Marnan Access Dr	Hammond Ave and San Marnan Access Dr intersection	Intersection Improvements	Included in 2050 LRTP (One Complete Project)
2026-2035	Waterloo	N Elk Run Rd	Independence Ave (IA 281) to E Donald St	Additional Thru Lanes, Additional Turn Lanes, Intersection Improvements	Included in 2050 LRTP
2036-2045	Black Hawk	Elk Run Rd (V43) Bridge	0.15 mi. N of Dubuque Rd, over Elk Run Creek	Bridge Replacement	Included in 2050 LRTP
2036-2045	Black Hawk	Union Rd (T75) Bridge	0.4 mi. S of Beaver Valley Rd, over Beaver Creek	Bridge Replacement	Included in 2050 LRTP
2036-2045	Black Hawk	University Ave (D18)	U.S. 20 to Cedar Falls city limits	Resurfacing	Unmet Need
2036-2045	Black Hawk	Washburn Rd (D38) Bridge	W of city of Gilbertville, over Cedar River	Bridge Replacement	Included in 2050 LRTP
2036-2045	Black Hawk	Washburn Rd (D38)	U.S. 218 to Gilbertville city limits	Resurfacing	Included in 2050 LRTP
2036-2045	Cedar Falls	Hudson Rd	W 1st St to University Ave	Reconstruction, Safety Improvements, Additional Turn Lanes, Intersection Improvements	Included in 2050 LRTP
2036-2045	Cedar Falls	Prairie Pkwy/Viking Rd	Prairie Pkwy and Viking Rd intersection	Intersection Improvements	Included in 2050 LRTP
2036-2045	Cedar Falls	W Ridgeway Ave	East city limits to IA 58	Reconstruction	Included in 2050 LRTP
2036-2045	Cedar Falls	W Ridgeway Ave	Hudson Rd to west city limits	Reconstruction, Additional Turn Lanes	Included in 2050 LRTP
2036-2045	Hudson	Washington St	IA 58 to Waterloo Rd	Reconstruction	FY 2026 Letting
2036-2045	Waterloo	Donald St	E 4th St to Sage Rd	Reconstruction	Unmet Need
2036-2045	Waterloo	E Shaulis Rd	Isle of Capri Blvd to U.S. 218	Reconstruction, Realignment	Complete
2036-2045	Waterloo	La Porte Rd	San Marnan Dr to E Shaulis Rd	Reconstruction, Bike/Ped	Three-phase project funded; completion anticipated by FY 2027
2036-2045	Waterloo	Orange Rd	Hawkeye Community College intersections	Additional Turn Lanes	Included in 2050 LRTP
2036-2045	Waterloo	San Marnan Dr/Flammang Dr	San Marnan Dr and Flammang Dr intersection	Realignment	Included in 2050 LRTP (One Complete Project)
2036-2045	Waterloo	W 9th St/E Ridgeway Ave	W 9th St and E Ridgeway Ave intersection	Safety Improvements, Additional Turn Lanes, Intersection Improvements	Unmet Need
2036-2045	Waterloo	W Ridgeway Ave	Deere Rd to U.S. 63	Reconstruction	Unmet Need

State Road and Bridge Plans

The Iowa DOT has adopted several plans to address federal requirements and guide transportation investments to maintain and improve Iowa's roads and bridges.

Iowa in Motion 2050

Adopted in 2022, the state transportation plan is a long-range document that addresses federal requirements and serves as a transportation investment guide for each transportation mode. This document is updated every five years to stay current with trends, forecasts, and factors that influence decision making.

The 2050 State Transportation Plan is the third in the current series of long-range plans. In 2012, a policy level plan was adopted. In 2017, the plan was expanded to identify primary investment areas, categorize future needs across modes, and provide strategies to achieve the system vision. The 2022 plan builds on these past plans by making enhancements that include:

- Additional focus on emerging planning considerations
- Establishment of system objectives
- Expanded analysis of highway system needs and risks
- Updated strategies to implement the plan
- Development of Iowa DOT's rightsizing policy

A multi-pronged approach was used to determine improvement needs across the multimodal system. For highways and bridges, a nine-layer analysis was conducted to analyze various needs and risks. The Primary Highway System was divided into 464 corridors for analysis and needs and risks were identified at the corridor level. A comprehensive matrix covering the entire Primary Highway System is included in the Plan. The matrix shows which need(s) and/or risk(s) were identified in each corridor.

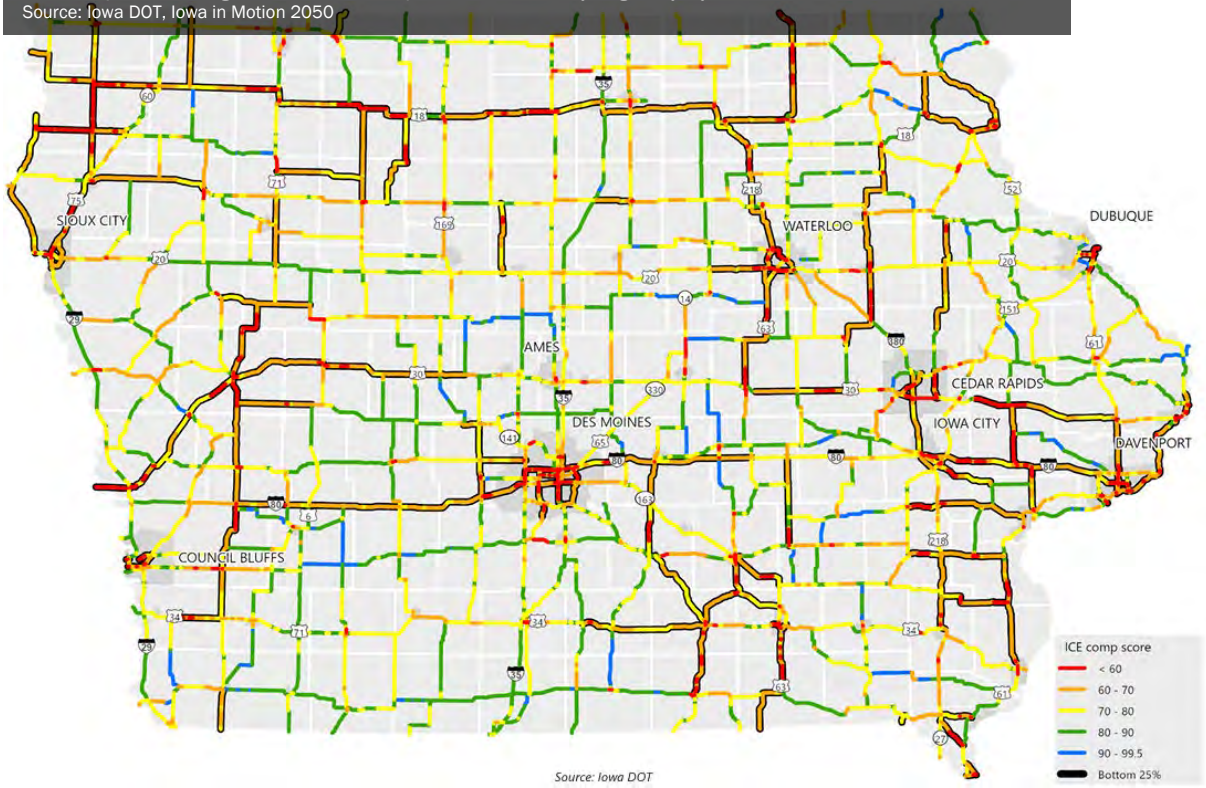
Route	Corridor	County	IMFN Networks	CIN Networks	Pavement Condition	Bridge Condition	Bottlenecks	Super-2	Capacity	Safety	Operations	Flood Resiliency	Bicyclists	Pedestrians		
			Needs								Risks					
US 6	I-80 to US 59	Pottawattamie						99							0.0%	5.9%
	US 59 to US 71	Pottawattamie, Cass													7.8%	7.8%
	US 169 to I-35/80	Dallas, Polk						20, 46		Partial					1.9%	1.9%
	I-35/80 to IA 28	Polk		Partial				1, 11, 37, 102							35.1%	56.9%
	IA 28 to US 69	Polk						15, 37, 43							98.1%	98.1%
	US 69 to I-235	Polk													99.7%	99.7%
	I-235 to I-80	Polk						75, 78							25.6%	39.6%
	I-80 to IA 146	Jasper, Poweshiek						36							9.8%	10.1%
	IA 146 to US 151	Poweshiek, Iowa					111	36							6.7%	4.1%
	US 151 to IA 965	Iowa, Johnson						81		Partial					0.1%	0.1%
	IA 965 to IA 1	Johnson						2, 30, 81							49.3%	56.8%
	IA 1 to IA 70	Johnson, Muscatine		Partial			75	26, 30		Partial					8.8%	7.5%
	IA 70 to IA 38	Muscatine					132								0.1%	0.1%
	IA 38 to I-80	Muscatine, Cedar					147								2.7%	1.5%
	I-280 to IA 461	Scott					191	73							32.9%	34.1%
	IA 461 to I-74	Scott						73							0.8%	2.6%

Highway Needs and Risks Matrix
Source: Iowa DOT, Iowa in Motion 2050

Excerpts from the *Highway Needs and Risks* section of the 2050 State Transportation Plan are provided on the following pages.

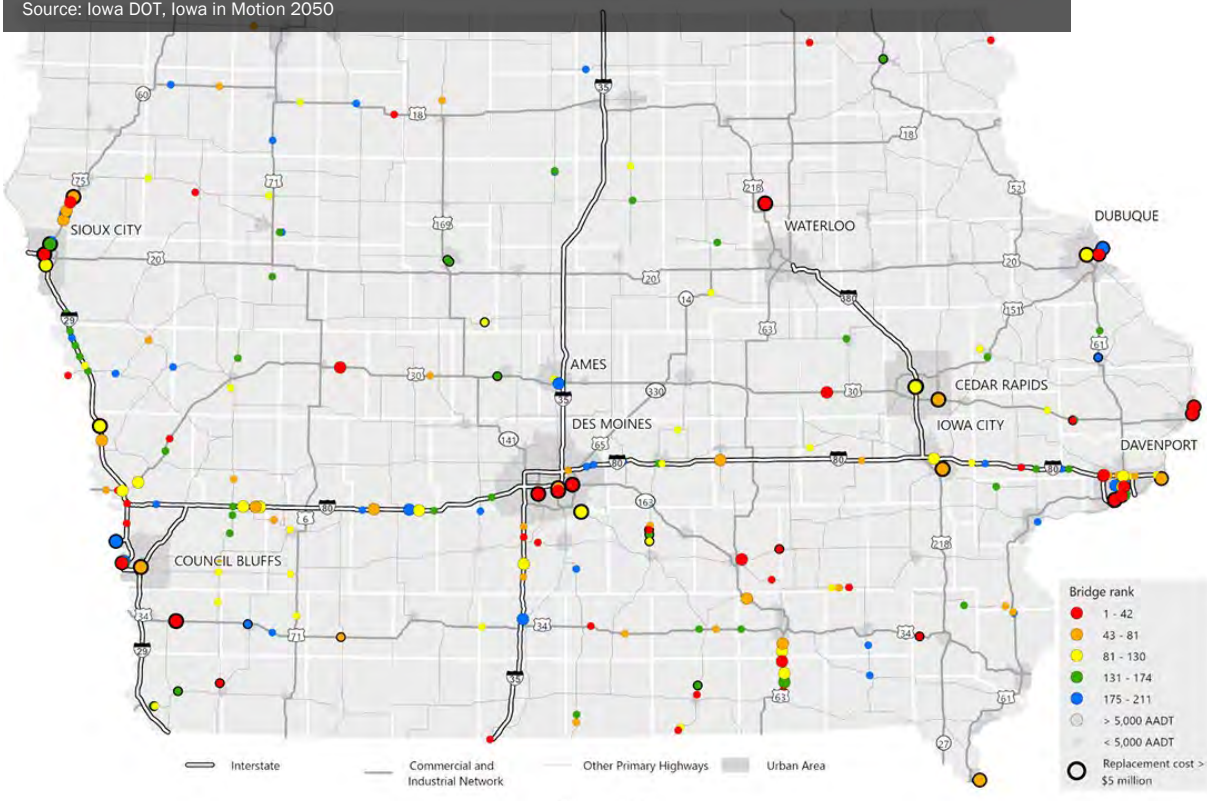
www.iowadot.gov/iowainmotion/

ICE composite ratings and bottom 25 percent of Primary Highway System corridors
Source: Iowa DOT, Iowa in Motion 2050



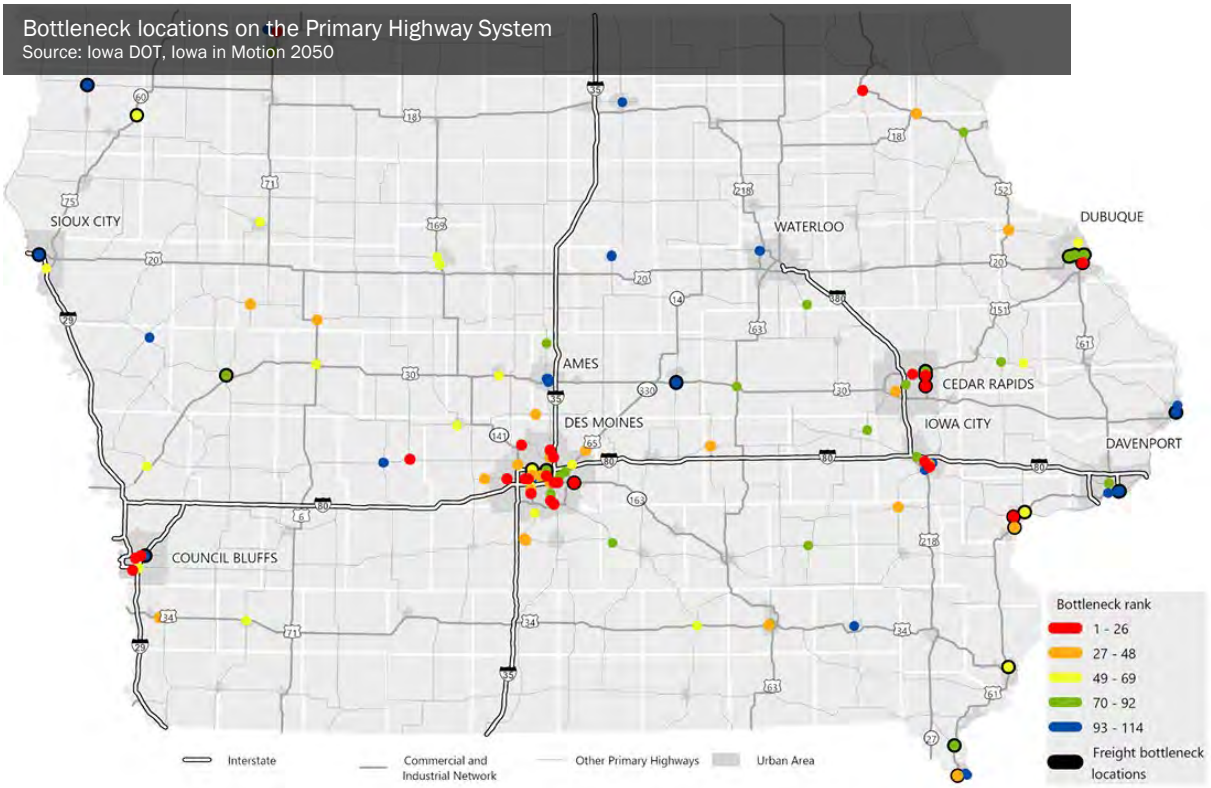
Source: Iowa DOT

Bottom 5 percent of Primary Highway System bridges
Source: Iowa DOT, Iowa in Motion 2050



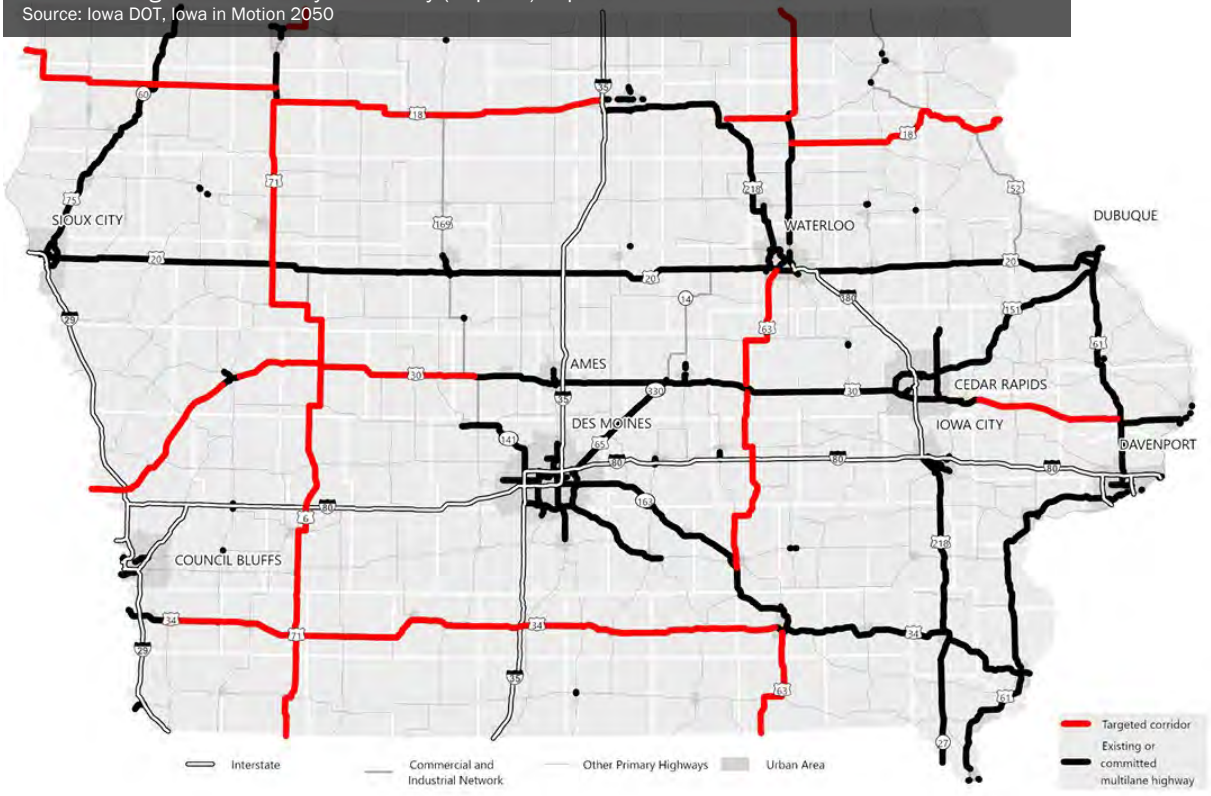
Source: Iowa DOT

Bottleneck locations on the Primary Highway System
Source: Iowa DOT, Iowa in Motion 2050



Source: Iowa DOT

Corridors targeted for mobility and safety (Super-2) improvements
Source: Iowa DOT, Iowa in Motion 2050

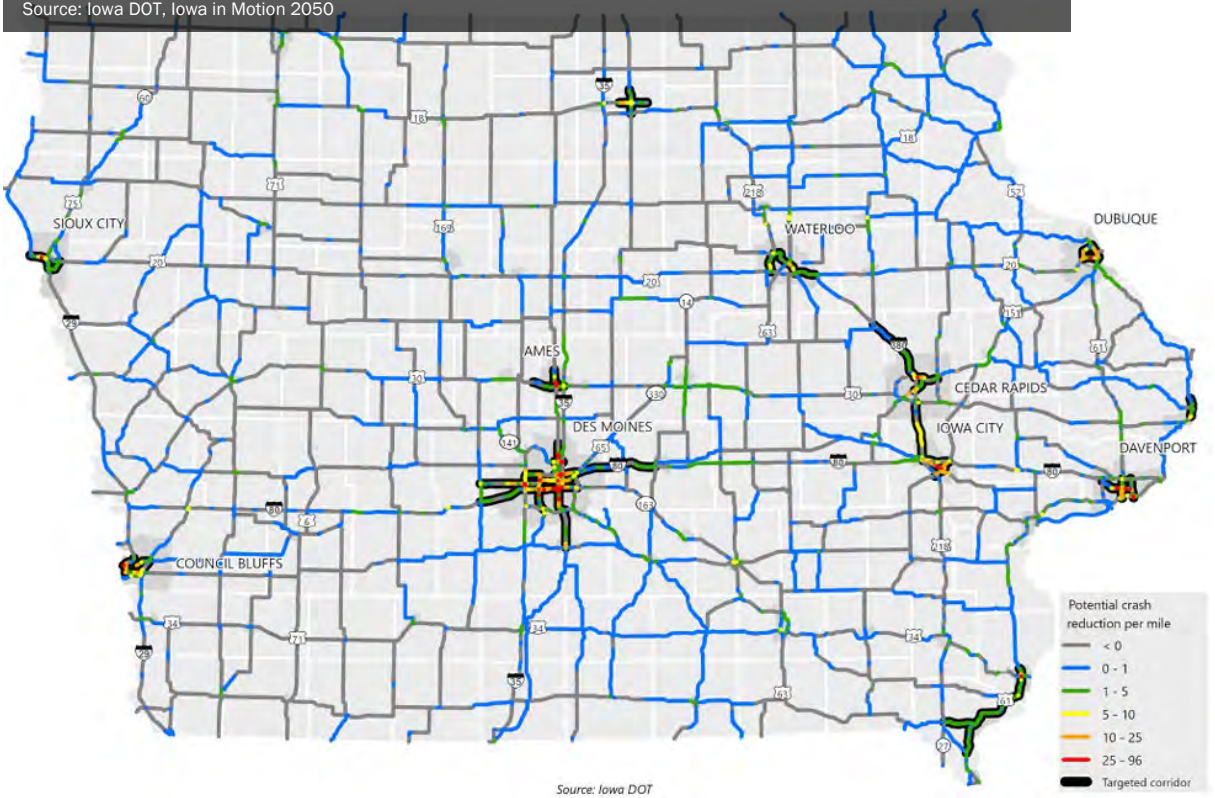


Source: Iowa DOT

Corridors projected to be approaching or over capacity by 2050
Source: Iowa DOT, Iowa in Motion 2050

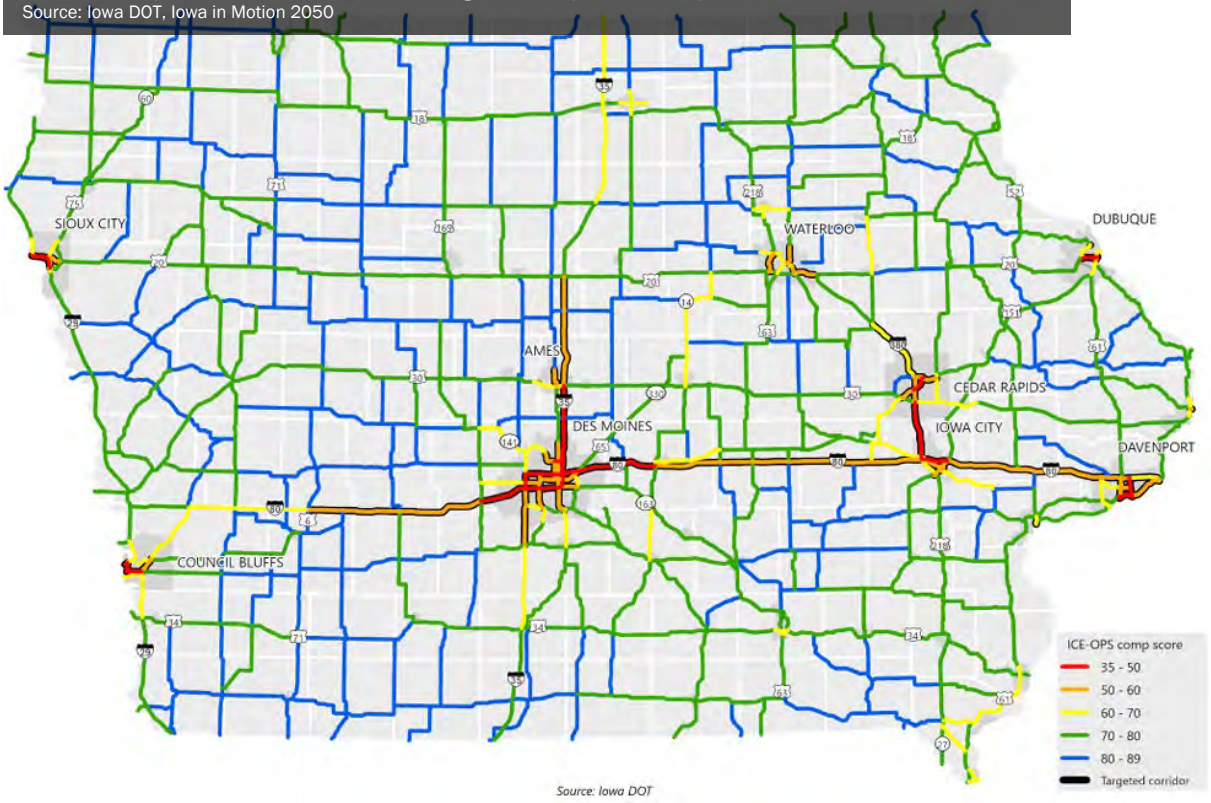
Source: Iowa DOT

Potential for crash reduction per mile and corridors targeted for safety improvements
Source: Iowa DOT, Iowa in Motion 2050



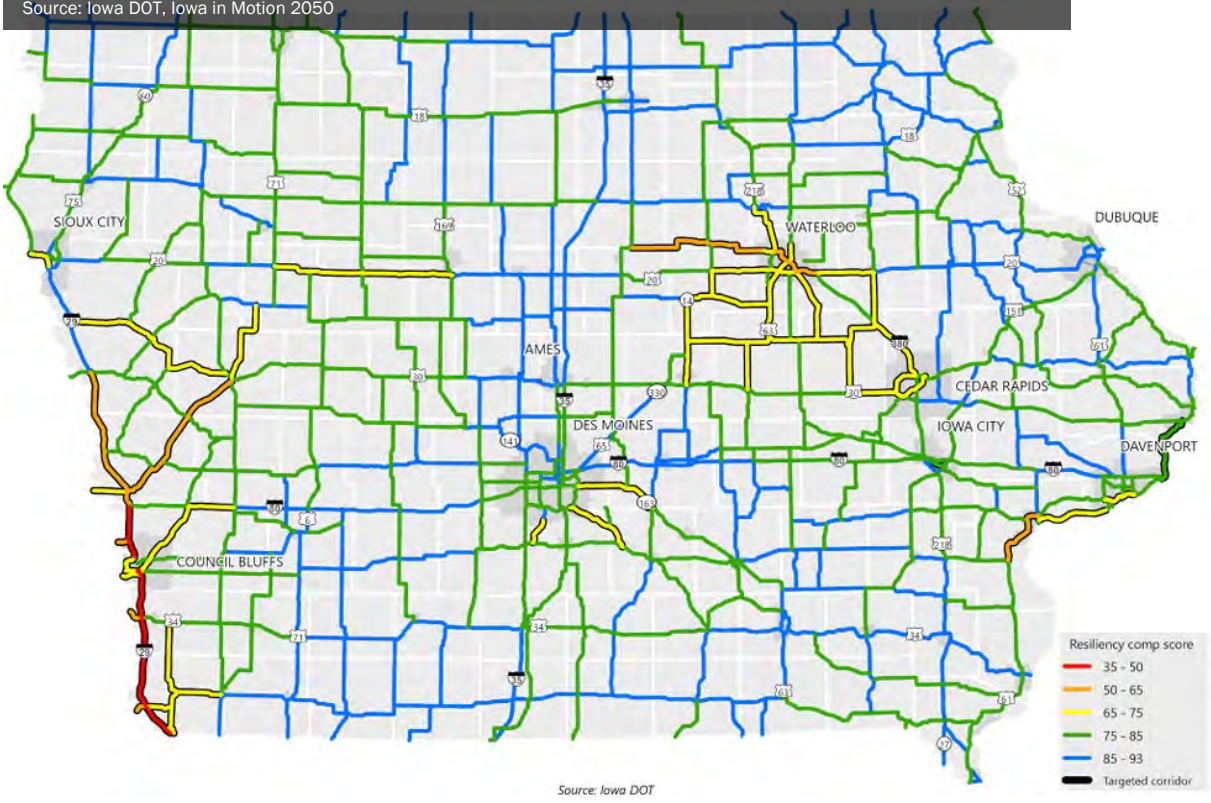
Source: Iowa DOT

ICE-OPS composite scores and corridors targeted for operations improvements
Source: Iowa DOT, Iowa in Motion 2050



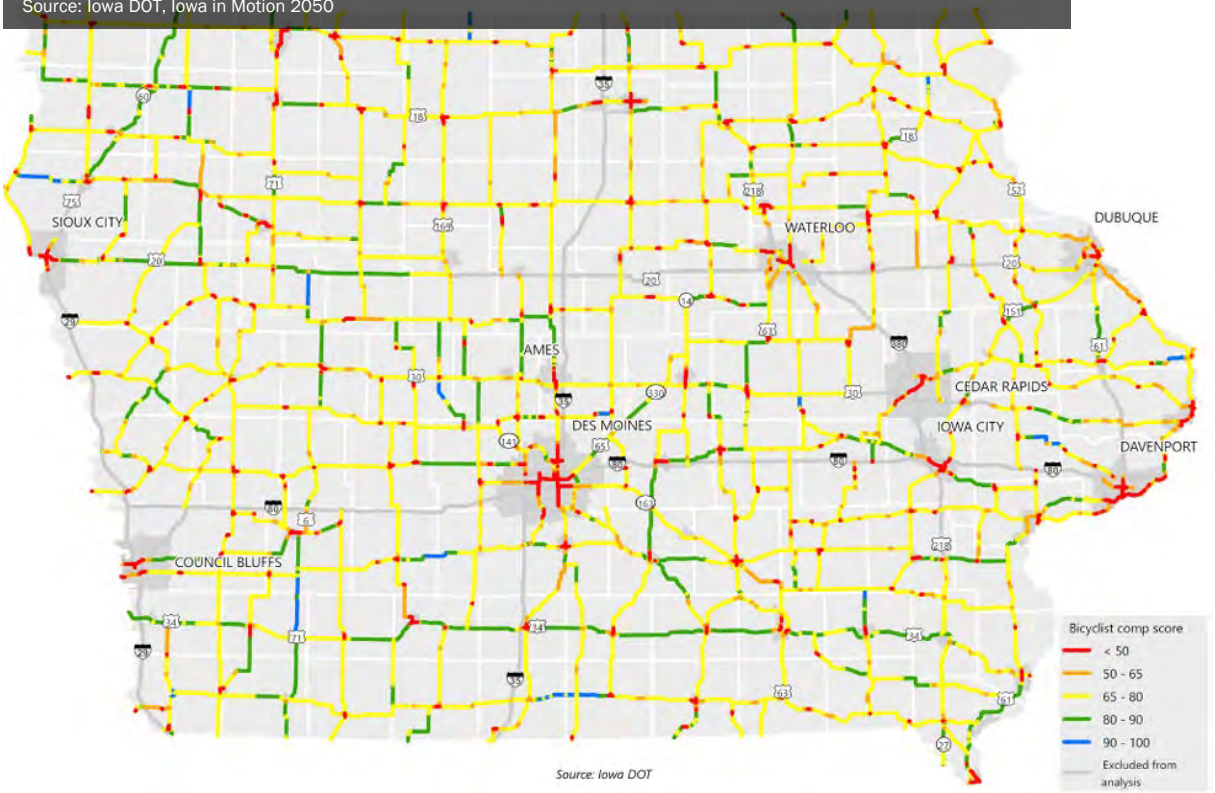
Source: Iowa DOT

Flood resiliency analysis composite scores and corridors targeted for resiliency improvements
Source: Iowa DOT, Iowa in Motion 2050



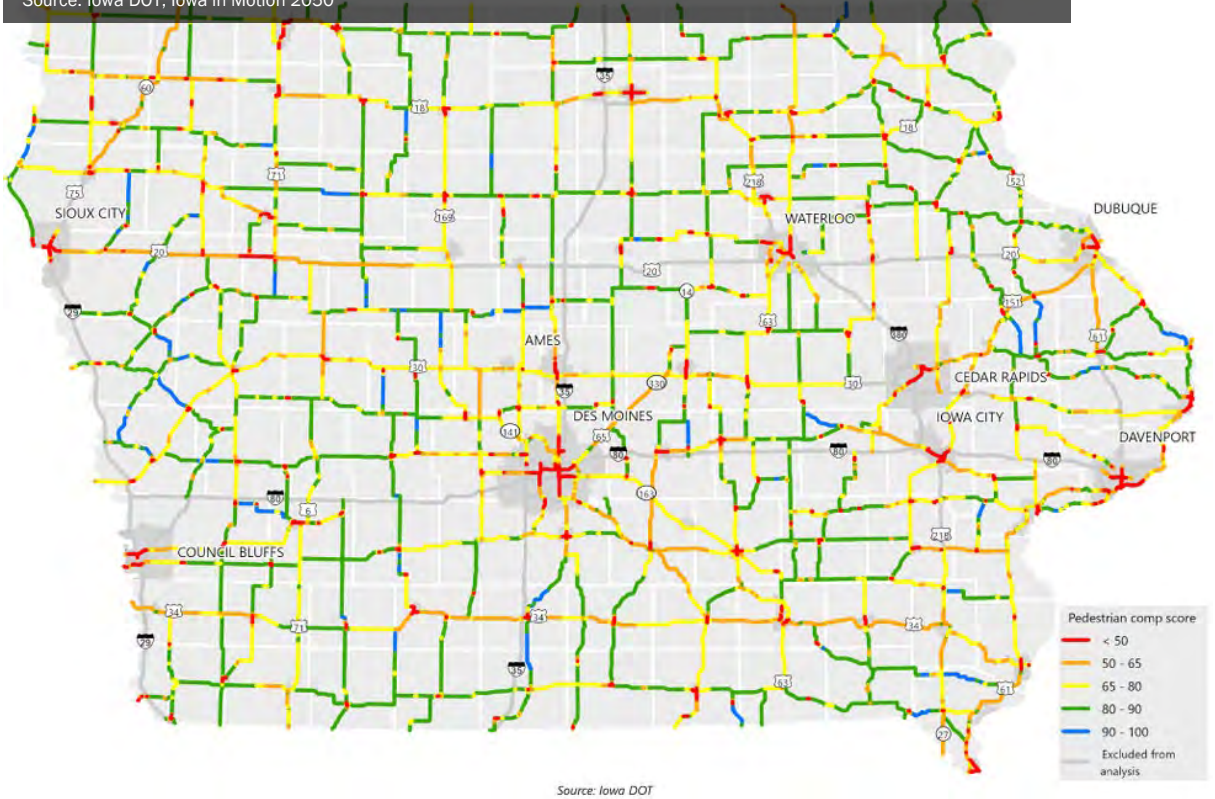
Source: Iowa DOT

Composite scores for Primary Highway System segments for bicyclist systemic safety analysis
Source: Iowa DOT, Iowa in Motion 2050



Source: Iowa DOT

Composite scores for Primary Highway System segments for pedestrian systemic safety analysis
Source: Iowa DOT, Iowa in Motion 2050



Source: Iowa DOT

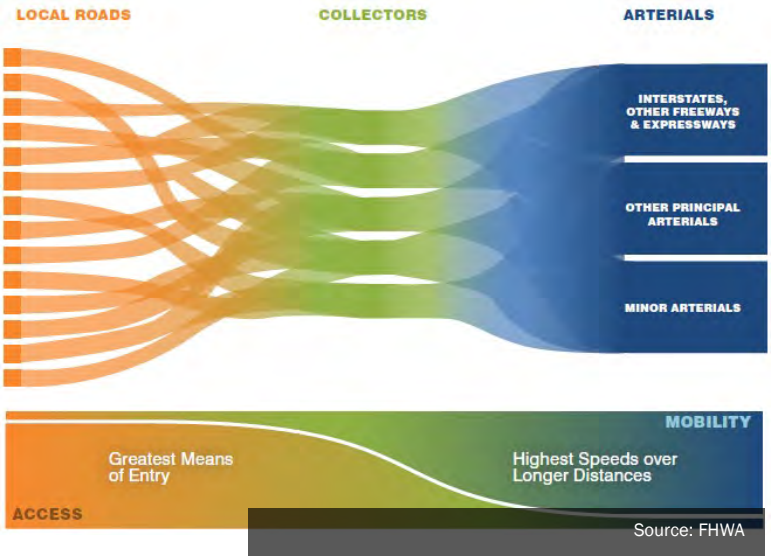
Iowa Transportation Asset Management Plan 2023

Transportation asset management is a strategic approach to managing transportation infrastructure. It embodies a philosophy that is comprehensive, proactive, and long-term. The overall goals of asset management are to minimize long-term costs, extend the life of the transportation system, and improve the performance of the transportation system. Transportation Asset Management Plans (TAMP) act as a focal point for information about the state's assets, management strategies, long-term expenditure forecasts, and business management processes. The Iowa DOT's TAMP describes how the agency manages its bridges and pavements throughout their lives. The TAMP also connects *Iowa in Motion* and system and modal plans to the Iowa DOT's five-year Transportation Improvement Program.

www.iowadot.gov/systems_planning/Planning/Federal-Performance-Management-and-Asset-Management

Road Inventory

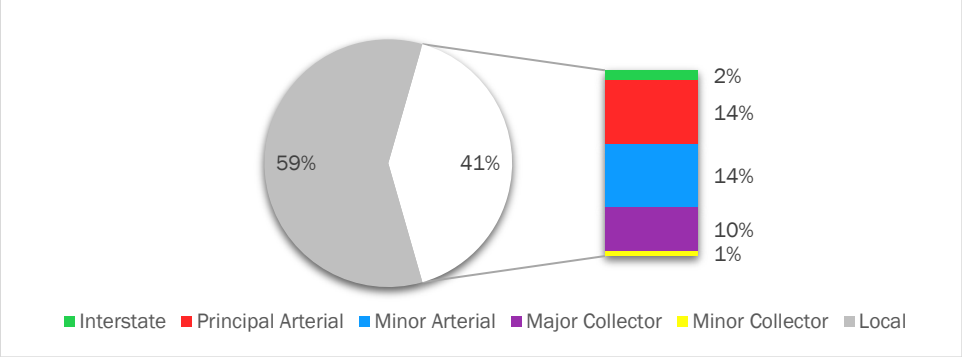
The current street network of the MPO is comprised of 1,100 miles of road. The Federal Functional Classification (FFC) system groups highways and streets into classes according to the service they provide. Classifications are as follows:



- **Arterials** provide the highest level of mobility at the greatest vehicular speeds for the longest uninterrupted distances. These roadways have higher design standards and feature multiple lanes with some degree of access control. The rural arterial network provides connections between metropolitan areas, cities, and bordering states. Arterials are divided into principal and minor, with principal arterials maintaining the highest speeds and longest uninterrupted distances.
- **Collectors** provide a mixture of mobility and land access. Collector streets provide an intraregional level of mobility by connecting the arterial network to local roadways. In non-metropolitan areas, collectors are divided into major and minor.
- **Local Streets** represent the largest element of the road network in terms of mileage. Local streets provide the lowest level of mobility by accessing adjacent land use, serving local trip purposes, and connecting to higher order roadways. Vehicular speeds are slower than on arterial or collector streets.

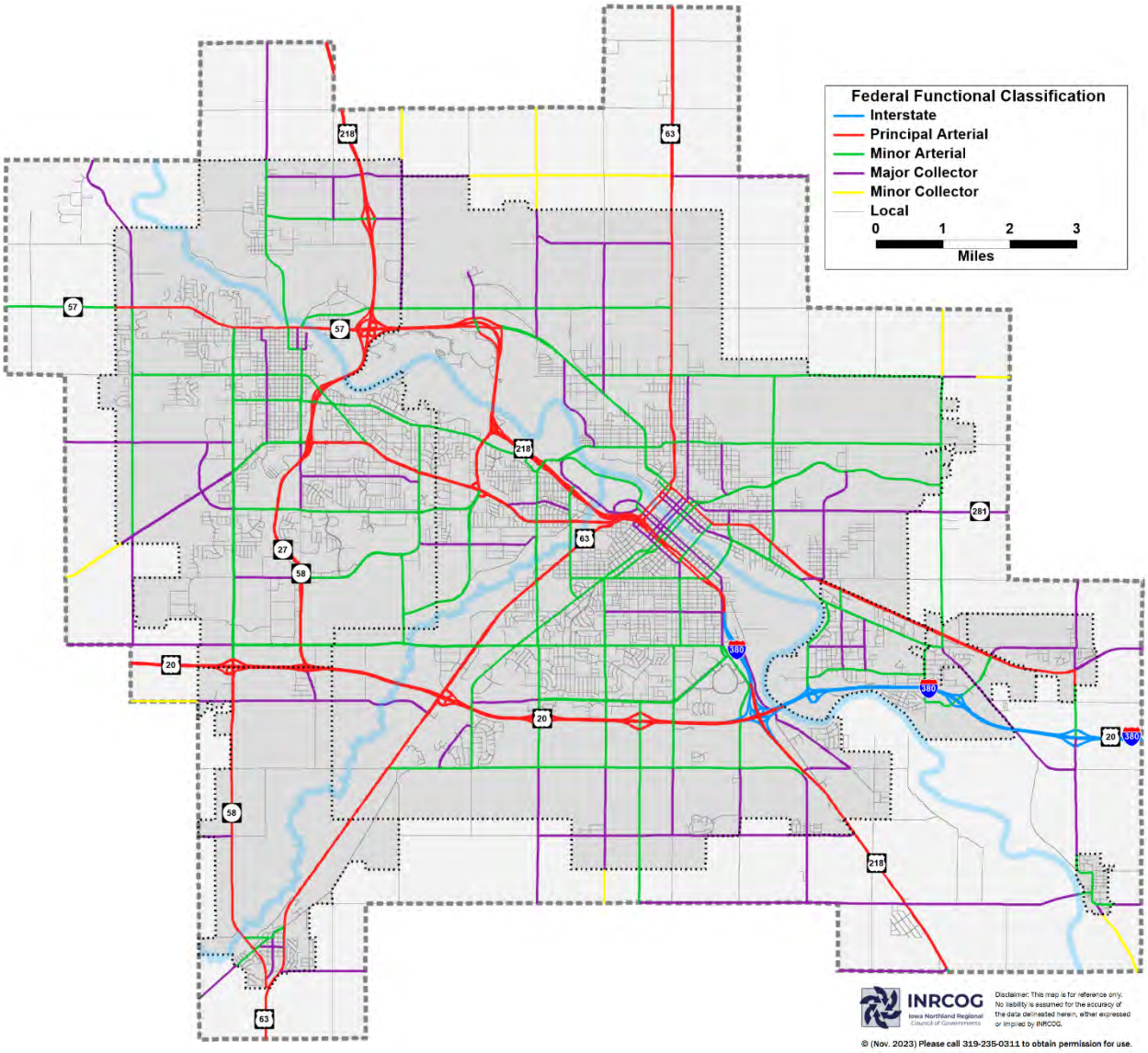
To be eligible for federal funding for road projects, streets must be classified as collector or above; local streets are ineligible for federal funding for street construction or reconstruction. Federal funds can be utilized for pedestrian and bicycle accommodations along any roadway. In total, approximately 40 percent of the MPO's roadway mileage is eligible for federal aid.

Figure 3.1: Distribution of Roads, by Federal Functional Classification



Map 3.1: Federal Functional Classification

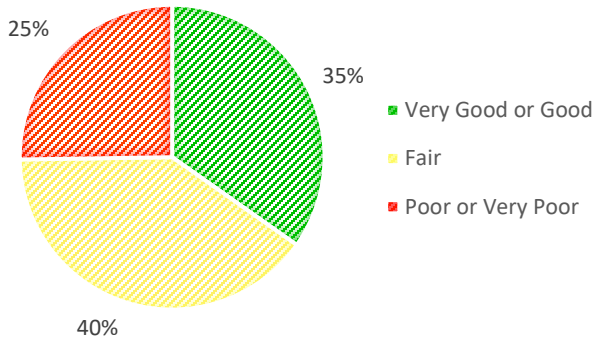
Source: Iowa DOT, Roadway Asset Management System (RAMS)



www.iowadot.gov/maps/Digital-maps/pdfview/blackhawk

Roadway Conditions

The condition of the road network is critical to the operating efficiency of the system. Roadway conditions within the region are assessed based on the Pavement Condition Index, International Roughness Index, and Average Annual Daily Traffic.

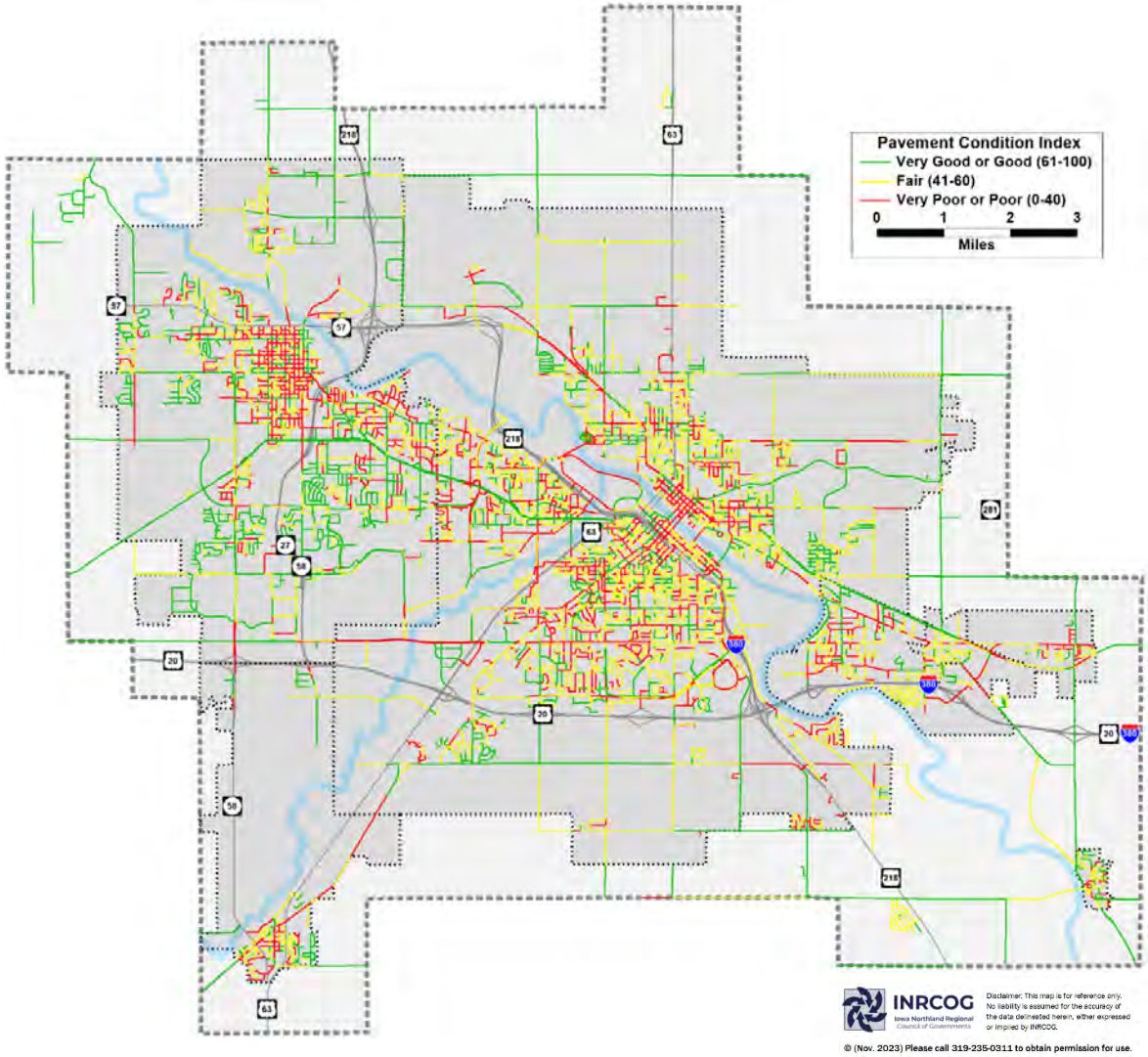


Pavement Condition Index (PCI)

PCI is a numerical index between 0 and 100 used to indicate the general condition of a pavement. This method is based on a visual survey of the number and types of distresses in a pavement. The result of the analysis is a numerical value with 100 representing the best possible condition and 0 representing the worst. PCI data from 2022 was available for the evaluation of 822 centerline miles of locally owned roads. From 2016 to 2022, the percentage of centerline miles of roads in poor or very poor condition increased from 21% to 25% while the percentage of roads in fair condition decreased from 44% to 40%.

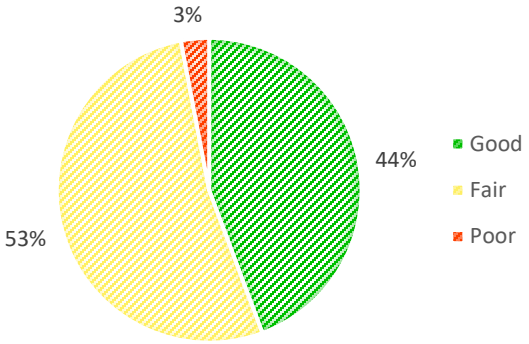
Map 3.2: Pavement Condition Index

Source: Iowa Pavement Management Program, 2022



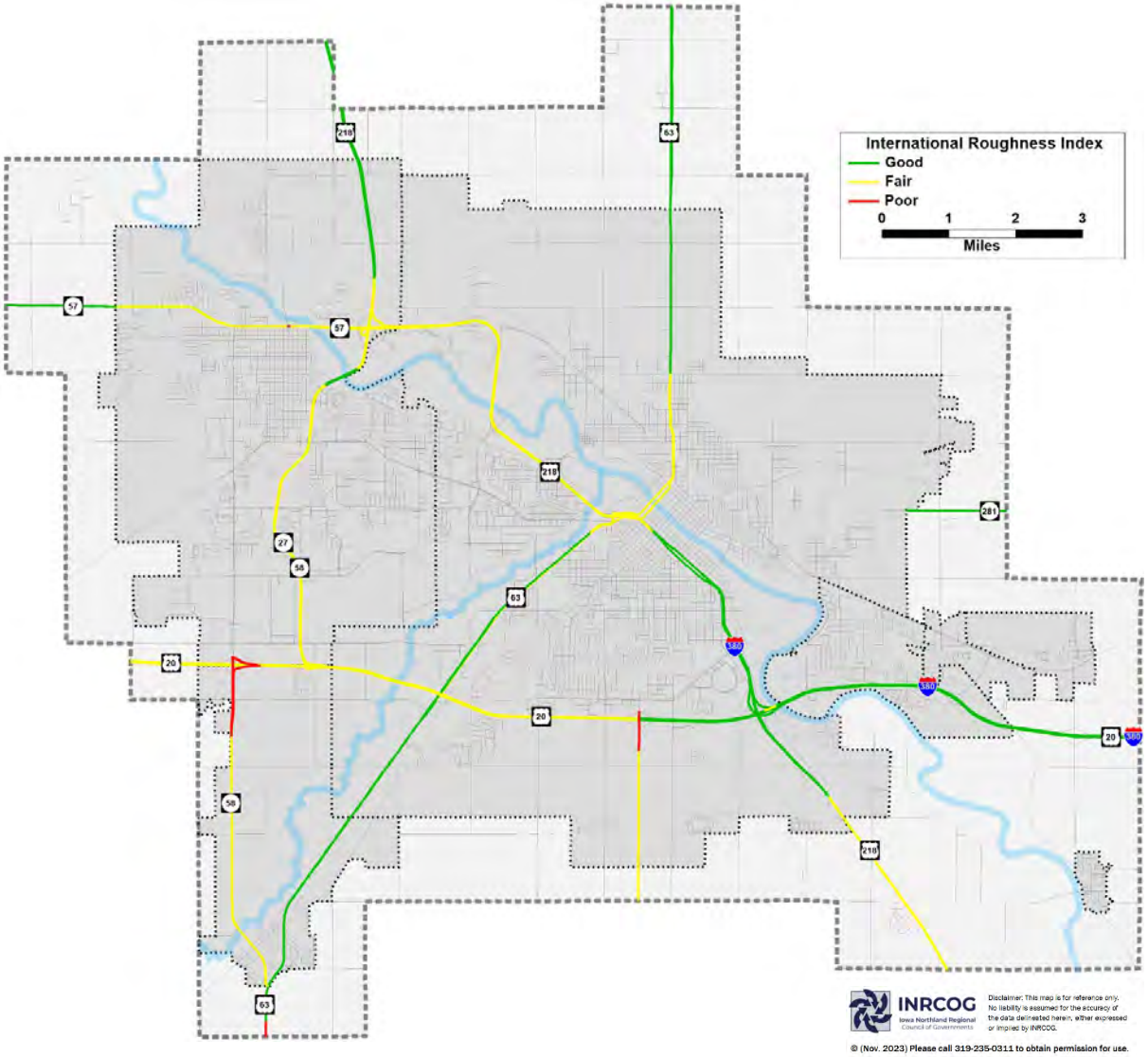
International Roughness Index (IRI)

One indicator of pavement condition is the smoothness of the ride. This measure gets to the subjective "feel" of the road that most users notice when riding on it. Although this can vary by season due to Iowa's various climates, the measure of smoothness is one indicator of overall pavement health. All states use a federally mandated standard measure of pavement smoothness, the International Roughness Index (IRI), to measure the smoothness of the primary highway system. IRI data from 2021 was available for the evaluation of 125 centerline miles of primary highways in the metropolitan area. From 2017 to 2021, the percentage of centerline miles of roads in poor condition decreased from 13% to 3% while the percentage of roads in good condition increased from 33% to 44%.



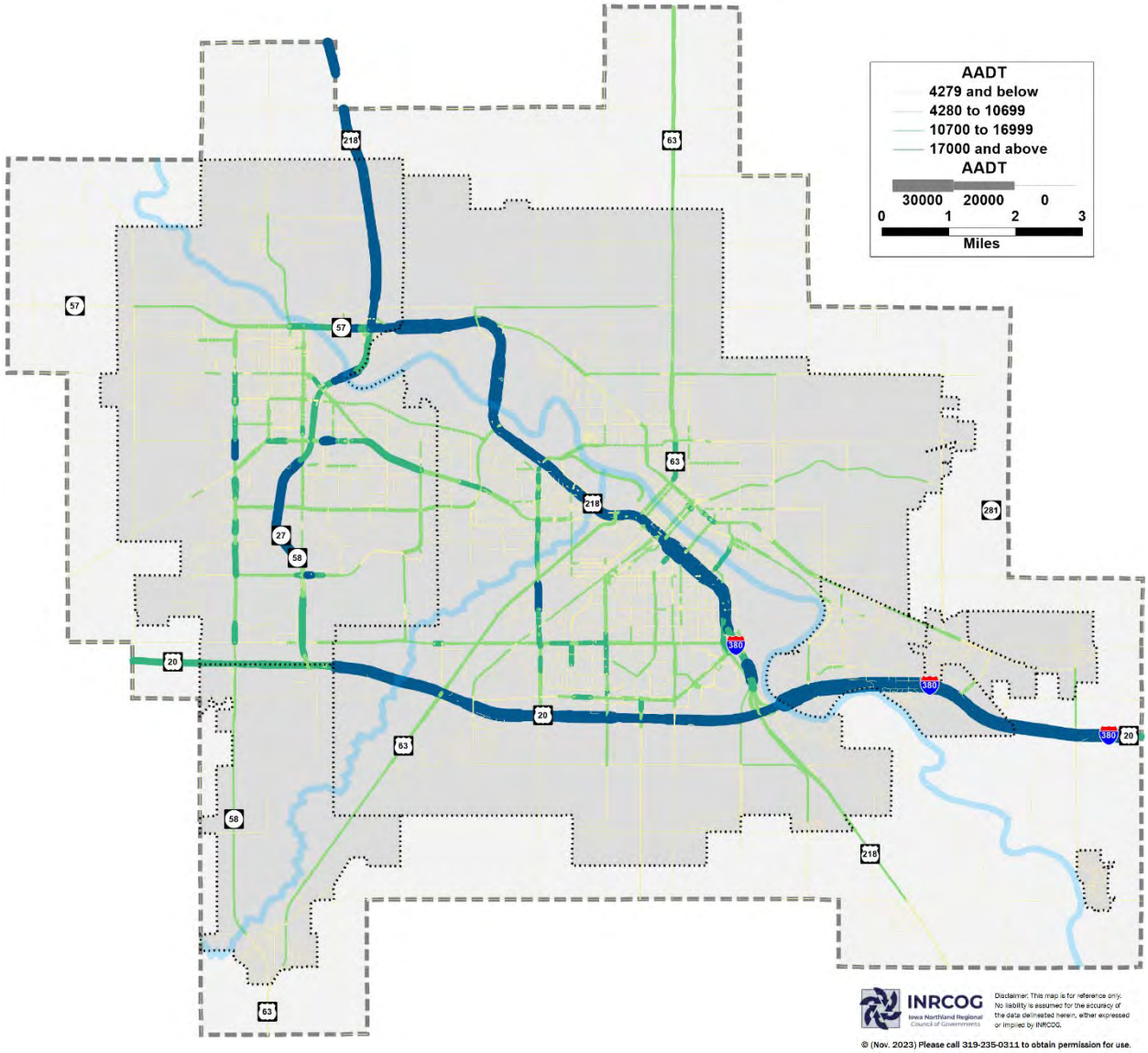
Map 3.3: International Roughness Index

Source: Iowa DOT, Data Portal, Pavement, 2021



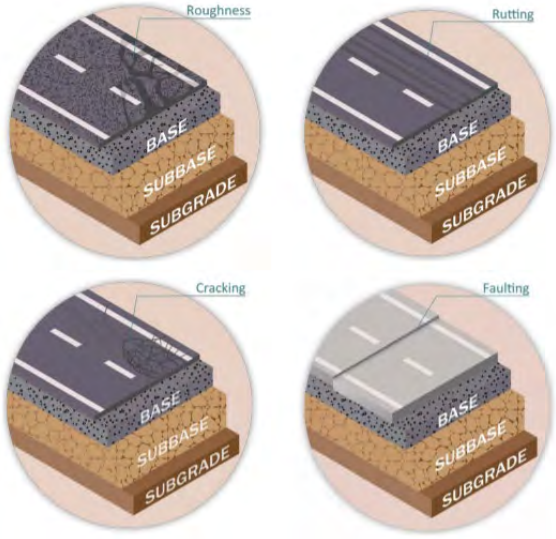
Average Annual Daily Traffic (AADT)
The Average Annual Daily Traffic is an indicator of the actual use of a road. To measure AADT on individual road segments, traffic data is collected either by an automated traffic counter or hiring an observer to record traffic. Data is recorded and adjusted to account for the season, time of day, and other variables that would correct the primary data to reflect actual traffic volumes. Map 3.4 shows AADT for the metropolitan area.

Map 3.4: Average Annual Daily Traffic
Source: Iowa DOT, Roadway Asset Management System (RAMS)



Pavement Condition Performance

In 2018, FHWA established four performance measures for National Highway System (NHS) pavement conditions, each of which is calculated based on data reported by the Iowa DOT to the Highway Performance Management System (HPMS). The following metrics are used to calculate the pavement condition performance measures:



- Pavement roughness is an indicator of discomfort experienced by road users traveling over the pavement and is measured using the International Roughness Index (IRI).
- Rutting is quantified for asphalt pavement by measuring the depth of ruts along the wheel path.
- Cracking is measured in terms of the percentage of cracked pavement surfaces.
- Faulting is quantified only for concrete pavements.

For each metric, FHWA has established thresholds for good, fair, and poor conditions. Road sections are rated as being in good condition if all the metrics are rated as good, and poor when two or more are rated as poor. All other combinations are rated as fair.

Metric	Good	Fair	Poor
IRI (inches/mile)	<95	95-170	>170
Rutting (inches)	<0.20	0.20-0.40	>0.40
Cracking (%)			
- Asphalt	<5	5-20	>20
- Jointed Concrete	<5	5-15	>15
- Continuously Reinforced Concrete	<5	5-10	>10
Faulting (inches)	<0.10	0.10-0.15	>0.15

Bridge Inventory

The metropolitan area has many bridges with a wide range of structure age, length, and design. There are a total of 257 bridges located within the metropolitan area. Most bridges provide service for vehicular traffic, though there are a few structures that service non-motorized traffic only. Table 3.2 provides further details of the bridge inventory.

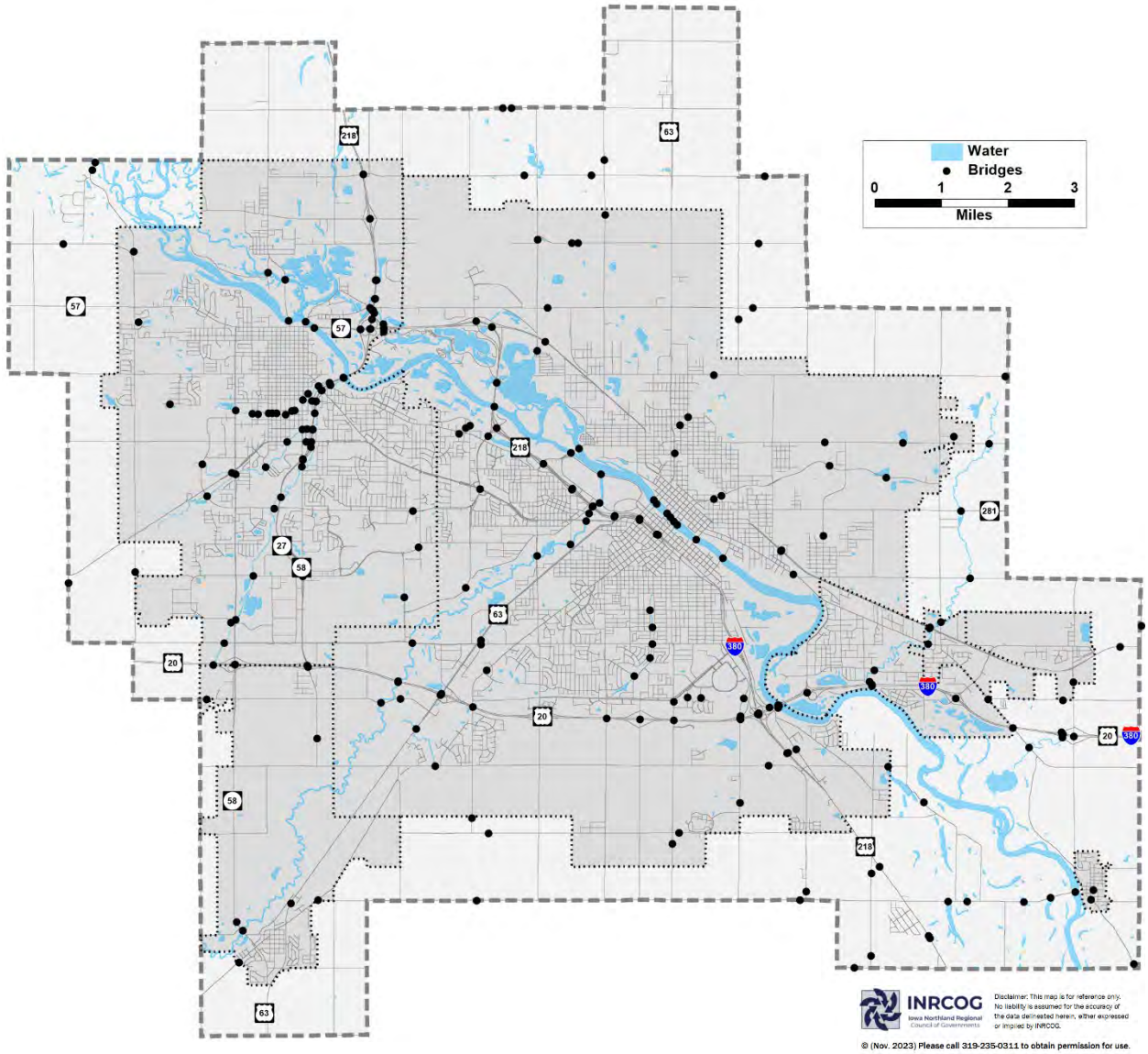
Table 3.2: Bridge Inventory

	2018	2022
Number of Bridges	249	257
Average Age of Structures (Years)	37	41
Posted or Closed Bridges	13	11
Structurally Deficient Bridges	12	10
Average Bridge Sufficiency Rating	88.3	89.3

Source: FHWA, National Bridge Inventory, 2018 & 2022

Map 3.5: Bridge Inventory

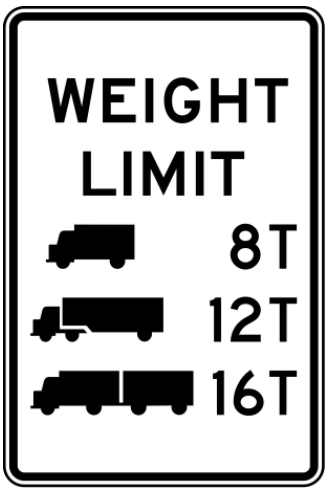
Source: Iowa DOT, Data Portal, Bridge Point



Bridge Conditions

Bridge performance can be measured by various conditions and the percentage of all bridges affected. Three of the most common measures of bridge performance are as follows:

- **Load Capacity Challenged (Posted or Closed)** – Posted bridges have weight restrictions to prohibit heavy loads, while closed bridges prohibit all traffic. Bridges may also be posted for other load-capacity restrictions including speed and number of vehicles permitted on the bridge. Posted and closed bridges can negatively impact the movement of people and goods as well as emergency response times.
- **Substandard Bridges (Structurally Deficient or Functionally Obsolete)** – Structurally deficient bridges are structures unable to carry vehicle loads or tolerate the speeds that would normally be expected for that bridge in its designated system. Functional obsolescence refers to a bridge with inadequate width or vertical clearance for its associated highway system.
- **Sufficiency Ratings** – Ratings of individual bridge elements, such as the deck substructure and superstructure, and levels of traffic, are factors utilized in the determination of bridge sufficiency ratings.



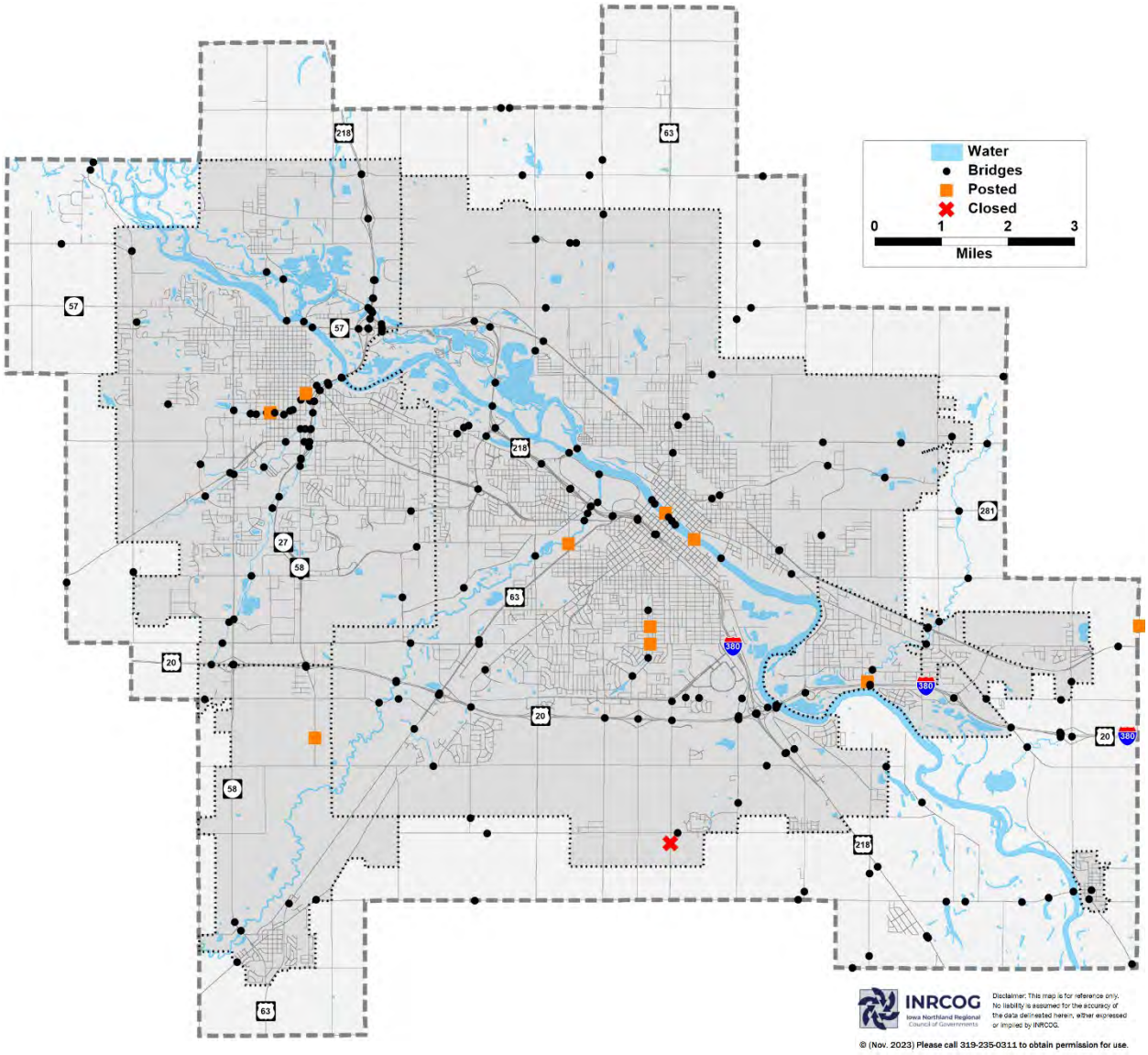
Posted and Closed Bridges

Bridge posting is part of a load rating process that determines the safe load carrying capacity of a structure. Load posting to a bridge is required by the National Bridge Inspection Standards when a bridge is not capable of safely carrying a legal load. If a structure is deemed deficient, officials will post a maximum load for the bridge. Bridges may also be posted for other load-capacity restrictions including speed and number of vehicles permitted on the bridge. Bridges closed to traffic are those structures deemed unsafe to carry any type of traffic. Map 3.6 identifies bridges that are posted and closed as of 2022.

A planning concern for county engineers in Iowa has been the permitting of large haulers on county-owned bridges. Senate File 629, passed in 2019, allows forestry haulers greater leeway to move heavy loads on local roadways, further straining road and bridge conditions and increasing the number of bridges needing posting.

Map 3.6: Posted and Closed Bridges

Source: FHWA, National Bridge Inventory, 2022

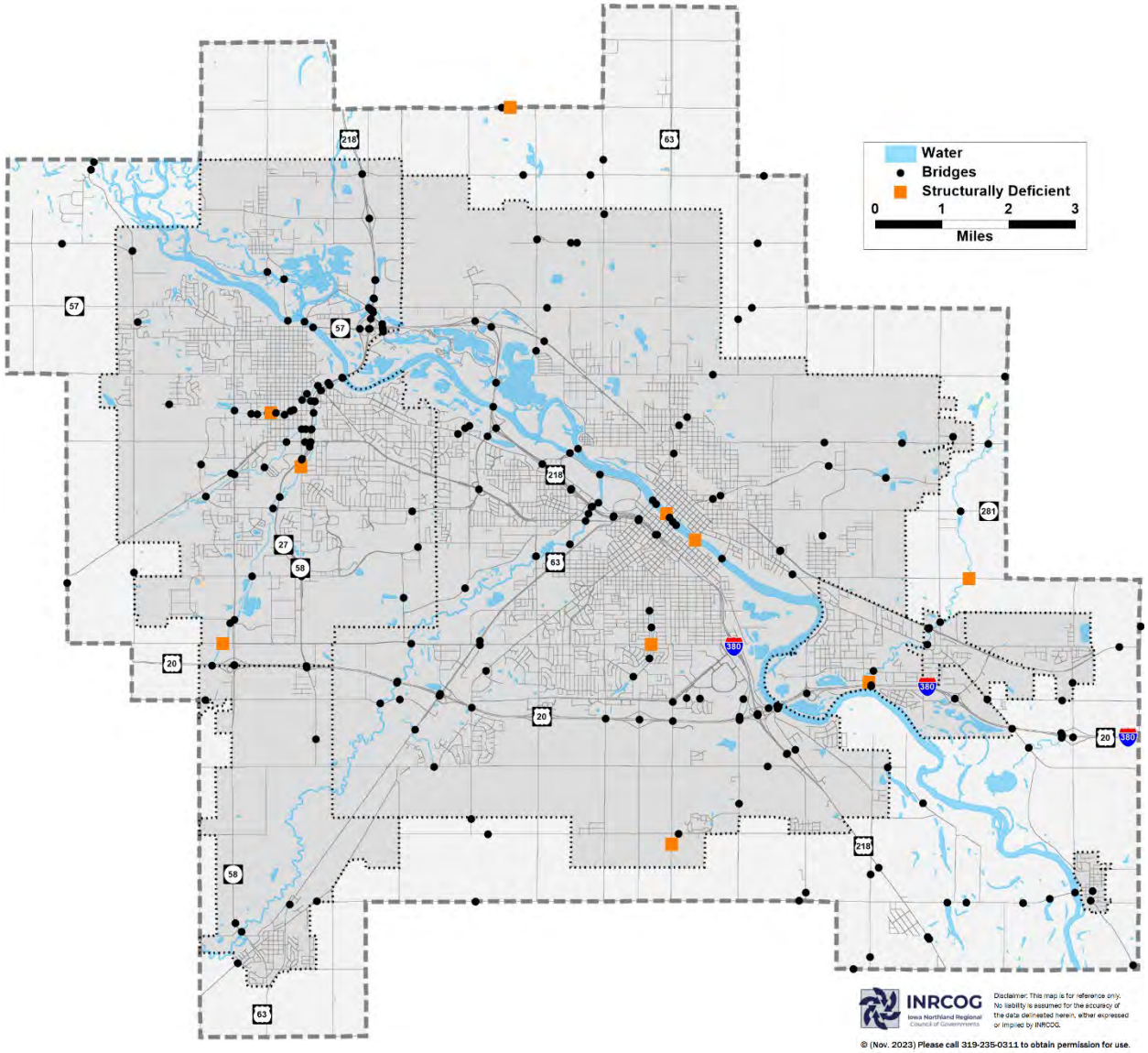


Structurally Deficient Bridges

Structural deficiencies are characterized by deteriorated conditions of significant bridge elements and potentially reduced load-carrying capacity. This may include spalled or cracked concrete, the bridge deck, the support structure, or the entire bridge itself. A "structurally deficient" designation does not imply that a bridge is unsafe. However, such bridges typically require significant maintenance and repair to remain in service and would eventually require major rehabilitation or replacement to address the underlying deficiency. To remain in service, structurally deficient bridges are often posted with weight limits restricting the gross weight of vehicles using the bridge to less than the maximum weight typically allowed by statute. Map 3.7 shows the locations of structurally deficient bridges as of 2022.

Map 3.7: Structurally Deficient Bridges

Source: FHWA, National Bridge Inventory, 2022



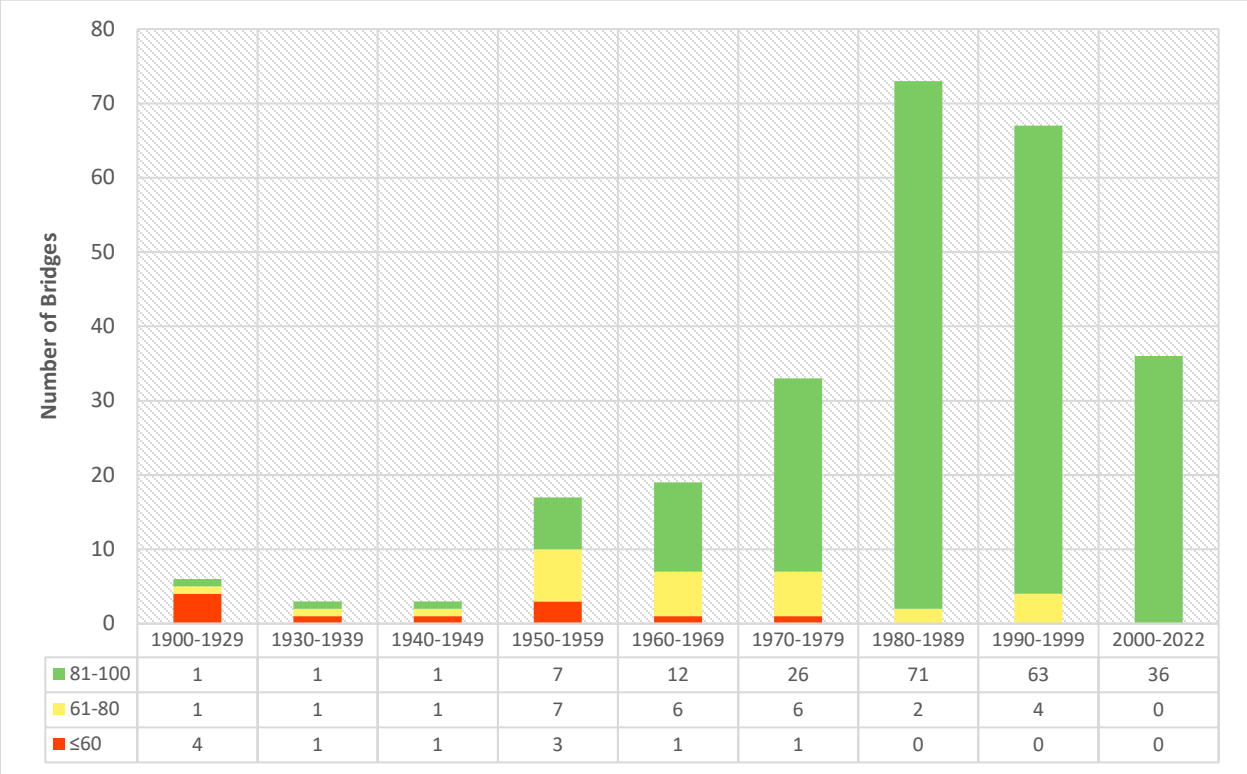
Sufficiency Ratings

The sufficiency rating formula is a method of evaluating a bridge's sufficiency to remain in service based on a combination of several factors. The result of the formula is a percentage in which 100 percent represents an entirely sufficient bridge and zero percent represents an entirely insufficient or deficient bridge. Factors may include inspection results of the structural condition of the bridge, traffic volumes, number of lanes, road widths, clearances, and importance for national security and public use. The sufficiency rating does not necessarily indicate a bridge's ability to carry traffic loads or a potential for collapse. Conversely, it helps determine which bridges may need repair or replacement.

Bridges are inspected every two to four years. States submit information for each bridge annually to FHWA who, in turn, uses the information to determine the sufficiency rating. A bridge's sufficiency rating provides an overall measure of the bridge's condition and is used to determine eligibility for federal funds. For bridges to qualify for federal replacement funds, they must have a rating of 60 or below. To qualify for federal rehabilitation funds, a bridge must have a sufficiency rating of 80 or below. Figure 3.2 and Map 3.8 show the sufficiency ratings of bridges in the metropolitan area.

Figure 3.2: Bridge Sufficiency Ratings, by Year Built

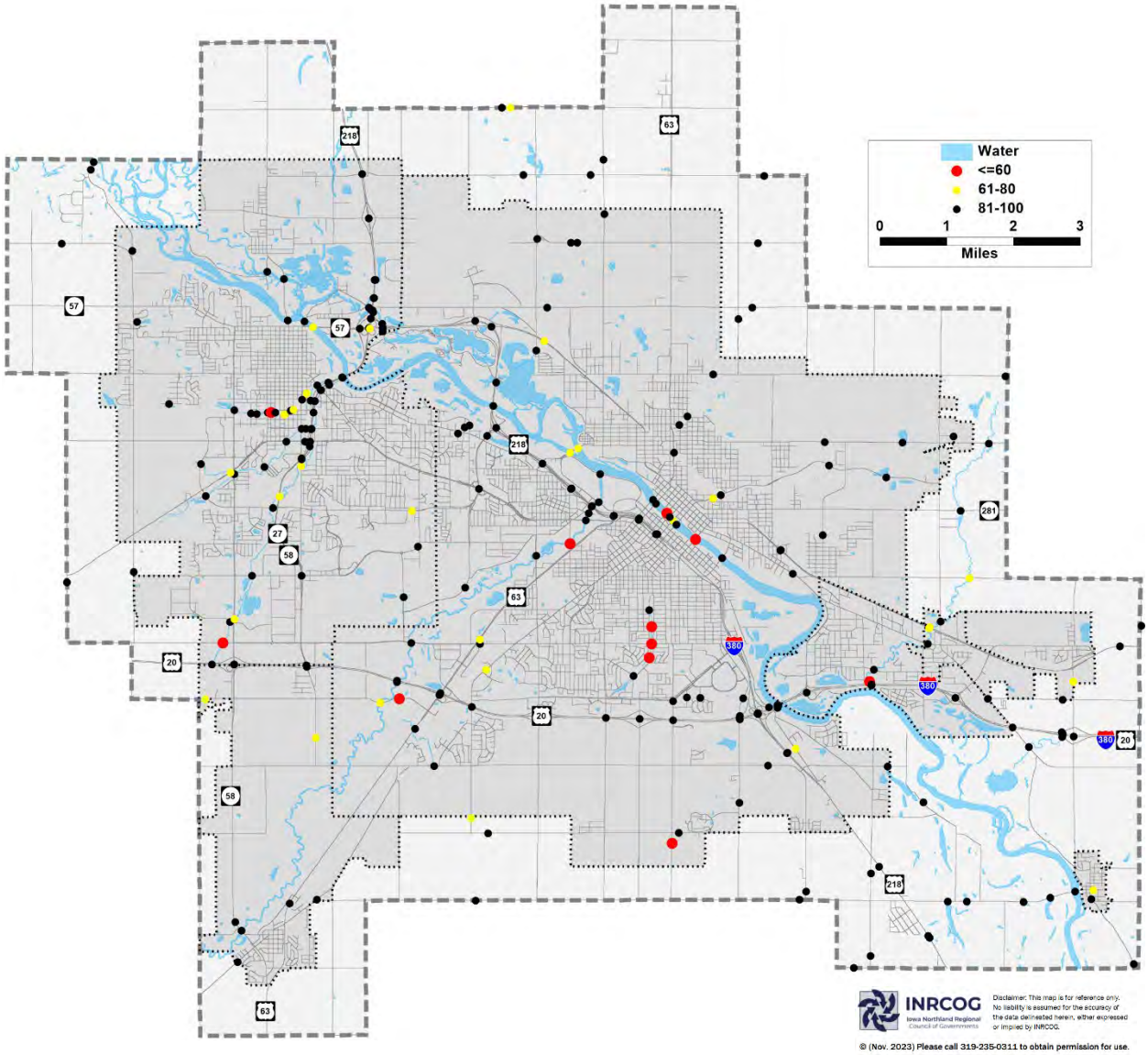
Source: FHWA, National Bridge Inventory, 2022



	1900-1929	1930-1939	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-2022
81-100	1	1	1	7	12	26	71	63	36
61-80	1	1	1	7	6	6	2	4	0
≤60	4	1	1	3	1	1	0	0	0

Map 3.8: Bridge Sufficiency Ratings

Source: FHWA, National Bridge Inventory, 2022



Travel Demand Model

The Travel Demand Model (TDM) is an important tool for transportation planning. The TDM is a computer model that estimates and distributes an area's trips across its street and highway network. The modeling process attempts to replicate existing traffic levels and forecast future traffic levels based on anticipated population and employment growth. The model can be used to identify potential deficiencies in the road network. The model can also be used to estimate the impacts of various scenarios such as adding new roads, changing the capacity of existing roads, changing the type of intersection control, or removing roads from the network.

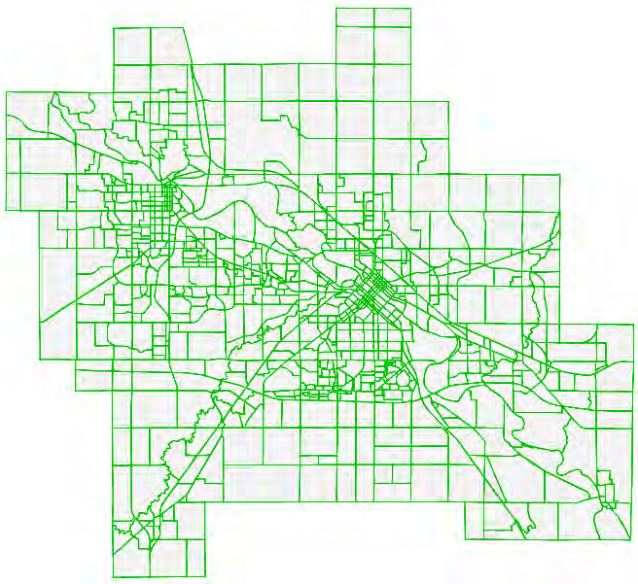
To estimate existing and potential future congestion on the area's road network, MPO and Iowa DOT staff built a new TDM for the 2050 LRTP. This model has a base year of 2017, interim years of 2030 and 2040, and a horizon year of 2050. The TDM was rebuilt using the Iowa DOT's Iowa Standardized Model Structure (ISMS) which provides a standardized yet scalable travel demand modeling architecture for use by all MPOs across Iowa. The ISMS architecture uses parcel data as a primary input to trip generation for the following reasons:

- Parcel data is generally accurate since it is used to collect property taxes.
- Building use codes are detailed and can be aggregated to land uses that better reflect trip generation potential as opposed to a small number of employment categories.
- Location accuracy is high since coordinates are obtained directly from a GIS file rather than through an address matching process.
- Parcel data is readily available from tax assessment agencies.

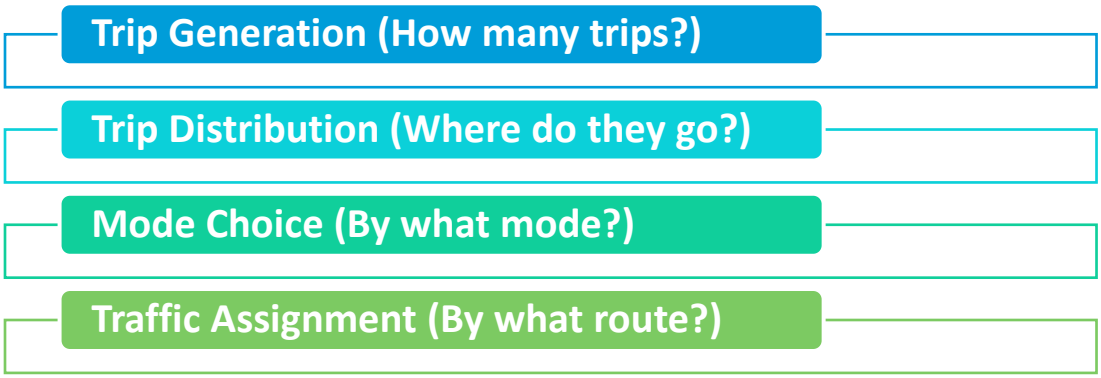
Additional inputs to the 2050 TDM include the following:

- Input from communities on employment and population growth locations
- U.S. Census data
- National Household Travel Survey (NHTS) Add-on data
- Grade school enrollment and projected enrollment data
- City existing and future land use information
- University of Northern Iowa (UNI) on- and off-campus student housing locations
- UNI employment by building
- Traffic signal and stop sign locations
- MET Transit fixed route annual rides
- Iowa statewide travel model data
- Iowa DOT RAMS data

The traffic volumes in the model are based primarily on the area's population and employment activities which are broken into 958 Traffic Analysis Zones (TAZ). Boundaries for TAZs are typically roads included in the network or natural features, such as rivers. Each TAZ includes a centroid, which is usually placed near the center of activity, and centroid connectors, which are links that connect the centroid to the network to replicate local streets. Each TAZ includes base year population and employment data. Local planners then assigned their jurisdiction's anticipated population and employment growth (reference Chapter 2) to the TAZs for years 2030, 2040, and 2050.



The distribution of trips in the TDM is based on a traditional gravity model formula which assumes that the amount of travel between TAZs is based on the relative attractiveness between the origin and destination. The trip-based travel demand model, which is often called a "four-step model", includes the following steps:



Trips in the TDM are divided into the following three purposes:

- Home-based work: Between one's home and workplace
- Home-based other: Between one's home and a location other than work, such as shopping
- Non-home based: Does not begin or end at home, such as a trip from work to shopping

The model assigns trips to segments of the road network using Multi-Modal, Multi-Class Assignment. This process allows for unique trip tables to be assigned to unique sets of links within the network, such as truck trip tables assigned to links that do not restrict truck movements.

Level of Service

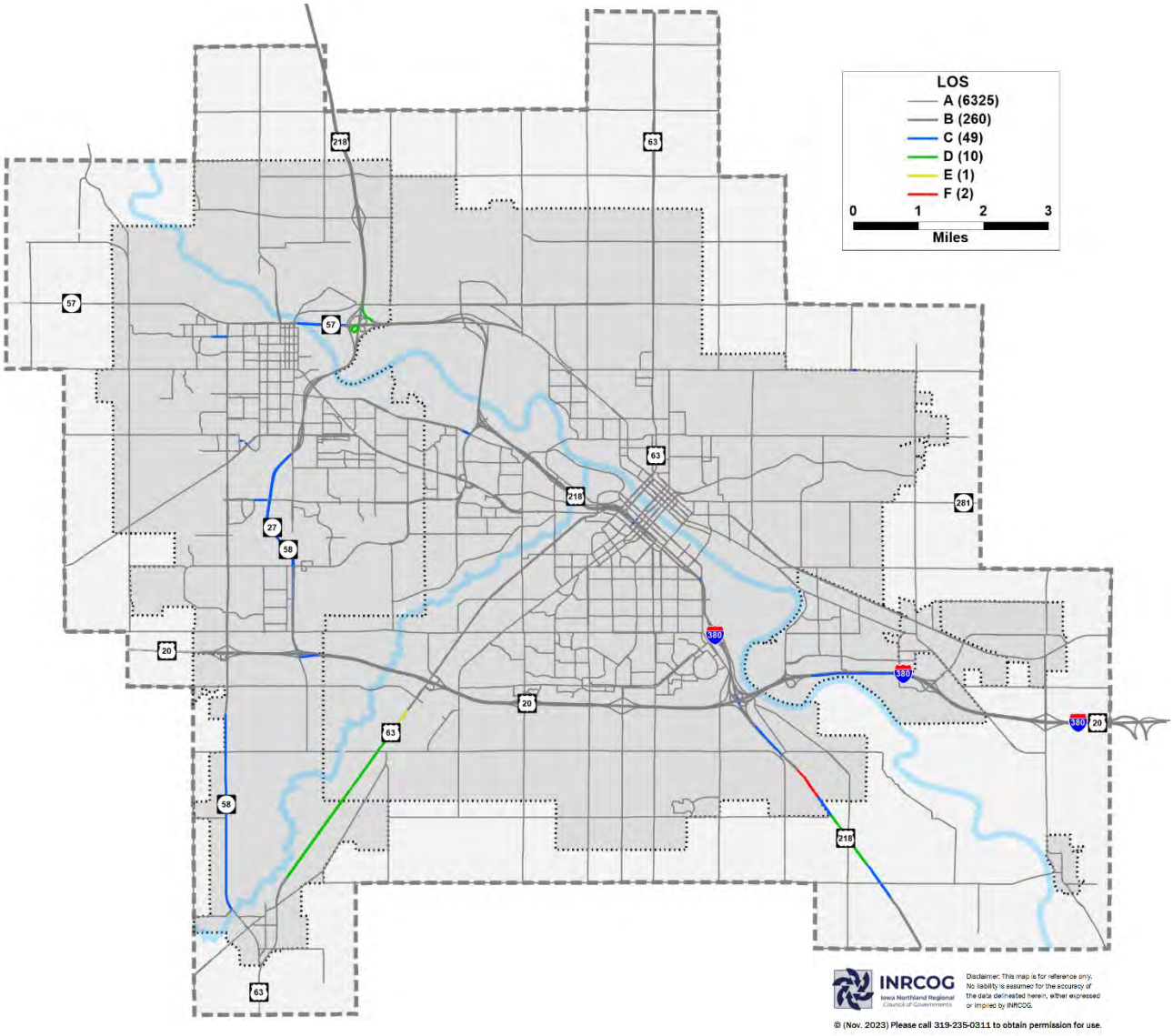
Level of service (LOS) is a commonly used system to describe congestion, or the flow of traffic on a roadway. There are grades of A through F with the following descriptions assigned by the FHWA:

- A – Free flow with low volumes and high speeds
- B – Reasonably free flow, but speeds beginning to be restricted by traffic conditions
- C – In stable flow zone, but most drivers are restricted in the freedom to select their own speeds
- D – Approaching unstable flow; drivers have little freedom to select their own speeds
- E – Unstable flow, may experience short stoppages
- F – Unacceptable congestion; stop-and-go; forced flow

LOS is often used to describe how a road is functioning; a LOS of C or above during peak hour traffic is acceptable. Map 3.9 shows the LOS of the existing road network with base-year socioeconomic data.

Map 3.9: Level of Service, 2017 Existing Network

Source: Black Hawk County MPO 2050 Travel Demand Model



Future Conditions

The transportation modeling process would not be necessary if the MPO's population and employment levels remained static through 2050. Local planning officials anticipate that the MPO will experience growth in population and employment during this time. Accordingly, the transportation modeling and planning process is critical to address this growth and ensure that the transportation system is adequate to manage future traffic levels.

Socioeconomic Forecasts

As outlined in Chapter 2, population and employment projections were used to forecast growth in the area. To better understand forecasted short- and long-term growth in the area, interim years of 2030 and 2040 were used in addition to the forecast year of 2050. Table 3.3 shows the projected population and employment in the MPO, the projected person trips made, vehicle miles traveled (VMT), and congested vehicle hours traveled (VHT) on a weekday evening over this timeframe.

Table 3.3: Socioeconomic Projections

	2017	2030	2040	2050
Population	121,414	125,102	127,889	130,680
Employment	75,818	78,541	82,045	85,549
Person Trips (Weekday)	738,338	748,900	759,218	793,481
VMT (Weekday)	2,712,454	3,067,686	3,337,224	3,676,041
Congested VHT (Weekday)	63,211	69,861	75,033	82,191

Source: Black Hawk County MPO 2050 Travel Demand Model

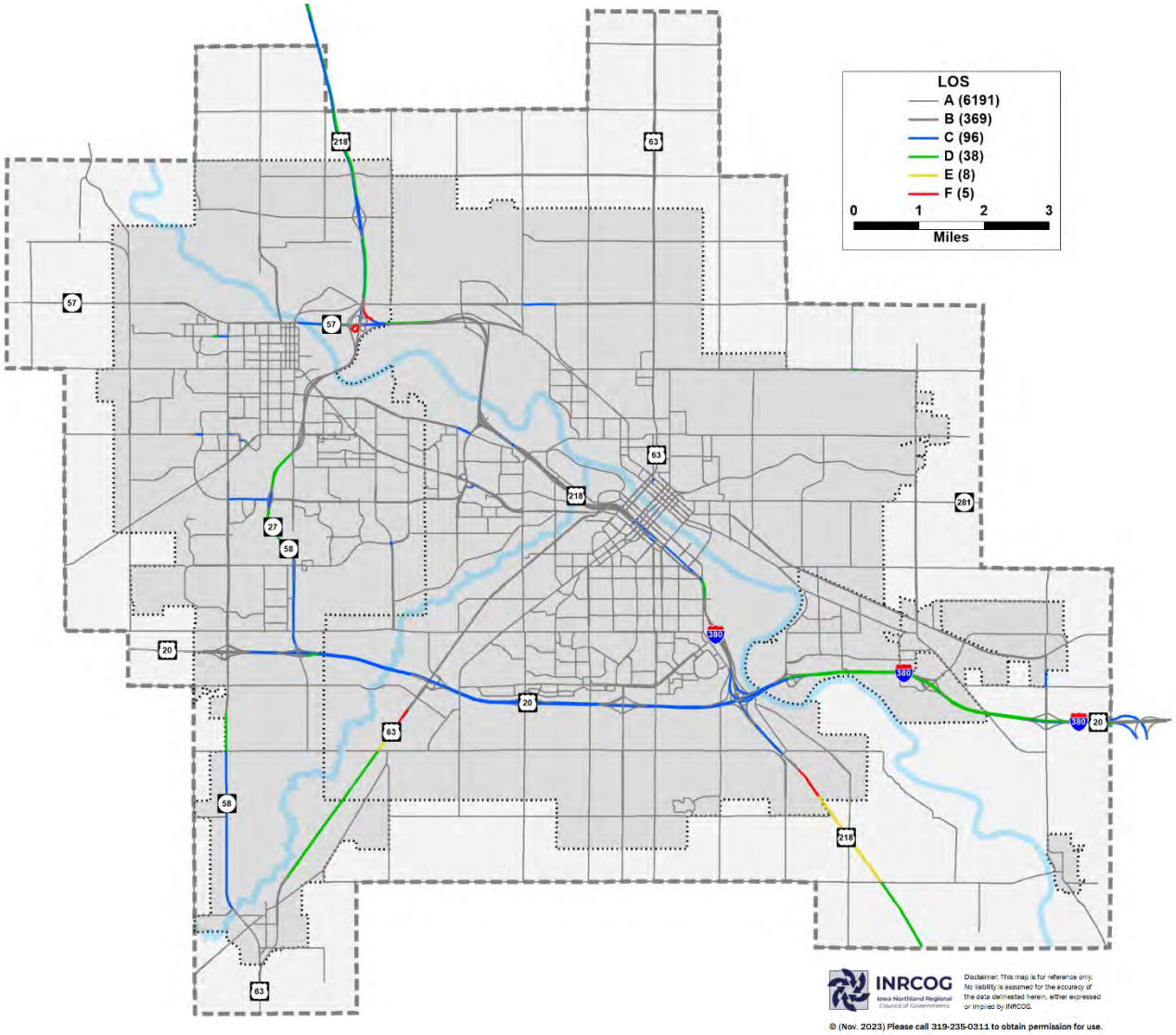
When the forecasted socioeconomic data is applied to the base year network, some capacity-related issues result. One of the goals of the transportation planning process is to address these issues by planning and programming projects that will best serve the public and avert potential traffic issues.

Existing and Committed Network

To Evaluate the impact of increasing population and employment, the 2050 socioeconomic forecasts were loaded on the existing and committed (construction funded or pending) network.

Map 3.10: Level of Service, 2050 Existing and Committed Network

Source: Black Hawk County MPO 2050 Travel Demand Model



2050 LRTP Projects

Project Selection

To determine what projects to include in the LRTP, each jurisdiction was asked to submit road and bridge projects they felt were likely candidates for federal aid during the horizon of the plan. In addition to considering how projects met the goals, objectives, and performance measures of the LRTP outlined in Chapter 1, staff reviewed projects based on the timeframe, federal functional classifications, and current traffic volumes, level of service, and conditions. The financially constrained list of projects was recommended to the Policy Board for approval.

The projects included in the LRTP must be financially constrained. A financial analysis was conducted to examine available transportation resources and compared to the cost of projects selected through the MPO transportation planning process (see Chapter 9). To account for inflation, project costs were increased by four percent per year to the timeframe they were targeted. Road and bridge projects beyond the FY 2024-2027 Transportation Improvement Program (TIP) are assumed to have a maximum 65 percent state or federal participation which is the average for projects programmed through STBG over the past 10 years.

Planned Projects

The outcome was a recommendation of projects to include in this Plan. Table 3.4 lists the financially constrained road and bridge projects, and they are shown on Map 3.11. Projects have been divided into three time periods: 2024-2030, 2031-2040, and 2041-2050. Projects are not prioritized within time periods. To meet fiscal constraint requirements, project costs have been inflated to year of expenditure (YOE) dollars as follows:

- 2024-2027: Programmed in the FY 2024-2027 TIP in YOE dollars
- 2028-2030: Inflated four percent annually to the year 2029 (multiplying current cost by 1.24)
- 2031-2040: Inflated four percent annually to the year 2035 (multiplying current cost by 1.48)
- 2041-2050: Inflated four percent annually to the year 2045 (multiplying current cost by 1.88)

For projects to be funded through the Surface Transportation Block Grant (STBG) program, they must be included in, or consistent with, the MPO's LRTP. Major projects, including full reconstruction, new construction, and capacity improvements, have been specifically identified in this document. This does not limit the MPO to consider only these projects for funding. Projects that could be funded that are not identified include safety improvements, bus replacements, bicycle and pedestrian accommodations, and other projects that are consistent with the MPO's goals, objectives, and performance measures.

Table 3.4: 2050 Long-Range Transportation Plan Projects

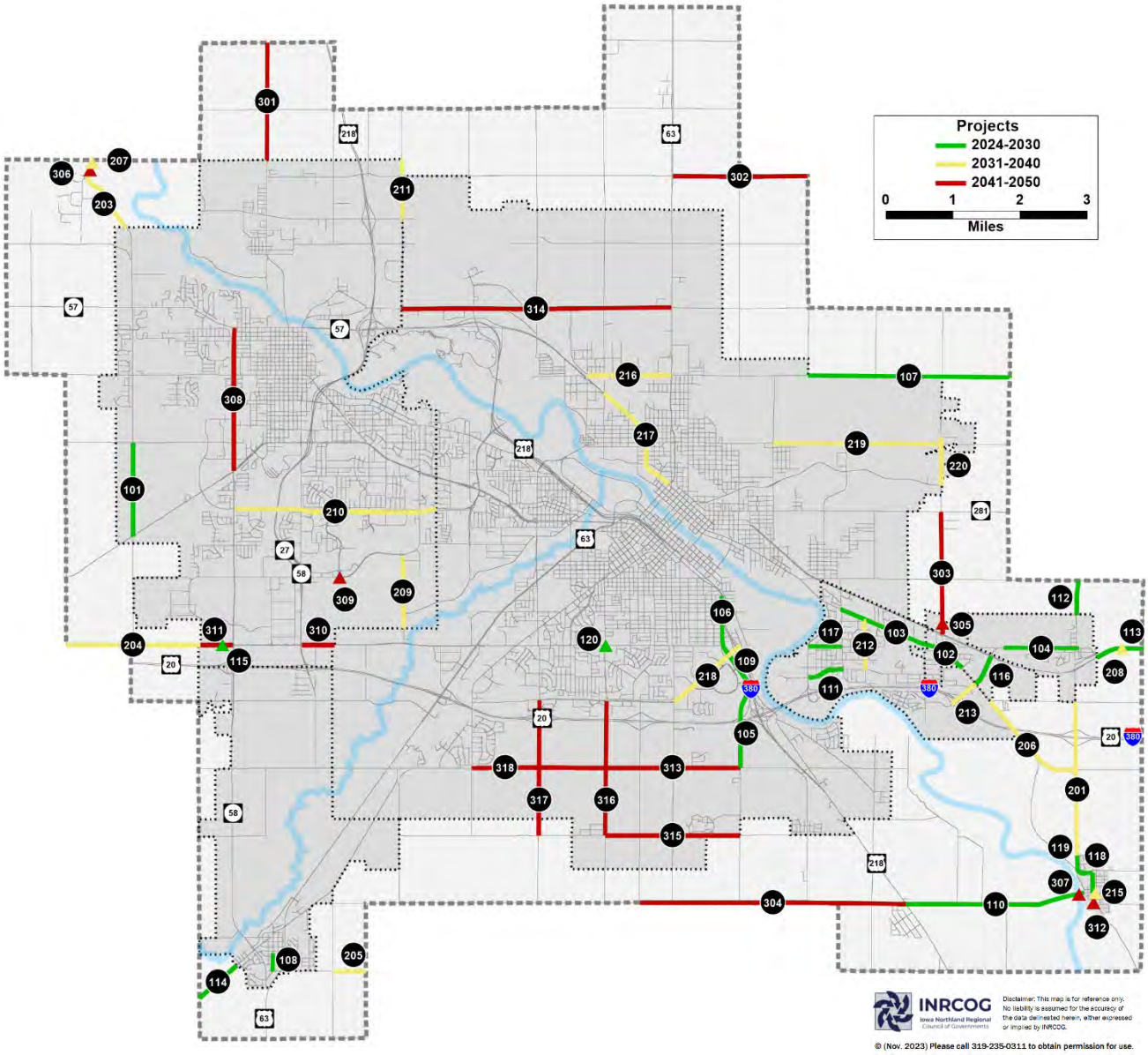
ID	Timeframe	Jurisdiction	Project	Termini	Description	Cost Estimate (YOE)
101	2024	Cedar Falls	Union Rd	W 27th St to University Ave	Reconstruction	6,550,000
102	2024	Elk Run Heights	Gilbertville Rd/Lafayette Rd	Elk Run Creek to Amber Ln	Reconstruction	2,185,500
103	2024	Evansdale	Lafayette Rd	Evans Rd to Elk Run Creek	Reconstruction, Bike/Ped Improvements	6,095,000
104	2024	Raymond	Lafayette Rd	2,750' W of Taylor Ln to 2nd St	Reconstruction	3,913,000
105	2024	Waterloo	La Porte Rd (Ph I)	E Shaulis Rd to Bopp St	Reconstruction, Capacity Improvements, Bike/Ped Improvements	14,196,000
106	2025	Waterloo	La Porte Rd (Ph II)	Plymouth Ave to U.S. 218 slip ramp	Reconstruction, Capacity Improvements, Bike/Ped Improvements	11,160,000
107	2026	Black Hawk Co.	Donald St (D16)	Sage Rd to Raymond Rd (V49)	Pavement Rehab	2,050,000
108	2026	Hudson	Washington St	50' south of Wood St to 240' north of 1st St	Reconstruction	1,067,000
109	2026	Waterloo	La Porte Rd (Ph III)	Bopp St to Plymouth Ave	Reconstruction, Capacity Improvements, Bike/Ped Improvements	7,558,000
110	2027	Black Hawk Co.	Washburn Rd (D39)	U.S. 218 to Gilbertville WCL	Pavement Rehab	2,450,000
111	2027	Evansdale	W. Gilbert Dr	River Forest Rd to Grand Blvd	Reconstruction	3,026,970
112	2028-2030	Black Hawk Co.	Raymond Rd (V49)	Conard Rd to Osage Rd	Pavement Rehab	558,000
113	2028-2030	Black Hawk Co.	Dubuque Rd (D22)	Raymond ECL to Ordway Rd	Pavement Rehab	620,000
114	2028-2030	Black Hawk Co.	Eldora Rd (D35)	Lincoln Rd to Hudson SCL	Pavement Rehab	620,000
115	2028-2030	Cedar Falls	Ridgeway Ave BR	0.15 mi. west of Hudson Road, over South Branch of Dry Run Creek	Bridge Replacement	824,600
116	2028-2030	Elk Run Heights	Plaza Dr	Gilbertville Rd to Dubuque Rd	Reconstruction	806,000
117	2028-2030	Evansdale	Central Ave	River Forest Rd to Evans Rd	Reconstruction	1,240,000
118	2028-2030	Gilbertville	5th St	20th Ave to 14th Ave	Reconstruction, Bike/Ped Improvements, Lane Reconfiguration (4 to 3 Lanes)	620,000
119	2028-2030	Gilbertville	20th Ave	5th St to 25th Ave	Shoulder Paving	93,000
120	2028-2030	Waterloo	E. Ridgeway Ave/Kimball Ave	Immediately north and east of intersection	Capacity Improvements (turn lanes to new developments)	2,480,000

ID	Timeframe	Jurisdiction	Project	Termini	Description	Cost Estimate (YOE)
201	2031-2040	Black Hawk Co.	Raymond Rd (V49)	Gilbertville NCL to Raymond SCL	Pavement Rehab	2,368,000
202	2031-2040	Black Hawk Co.	Washburn Rd (D38)	U.S. 218 to Gilbertville WCL	Pavement Rehab	2,220,000
203	2031-2040	Black Hawk Co.	Union Rd (T75)	Cedar Falls NCL to Beaver Valley Rd (C67)	Pavement Rehab	1,110,000
204	2031-2040	Black Hawk Co.	Ridgeway Ave (D19)	Hearst Rd to Cedar Falls WCL	Pavement Rehab	740,000
205	2031-2040	Black Hawk Co.	Schrock Rd (D35)	Holmes Rd to Acker Rd	Pavement Rehab	740,000
206	2031-2040	Black Hawk Co.	Indian Creek Rd	Evansdale CL to Raymond Rd (V49)	Pavement Rehab	740,000
207	2031-2040	Black Hawk Co.	Union Rd (T75) BR	0.25 mi. south of Beaver Valley Rd, over Beaver Creek	Bridge Replacement	3,552,000
208	2031-2040	Black Hawk Co.	Dubuque Rd (D22) BR	0.4 mi. east of Lafayette Rd, Over Poyner Creek	Bridge Replacement	1,036,000
209	2031-2040	Cedar Falls	Cedar Heights Dr	Viking Rd to SCL	Reconstruction	4,440,000
210	2031-2040	Cedar Falls	Greenhill Rd	Hudson Rd to ECL	Reconstruction	6,660,000
211	2031-2040	Cedar Falls	Leversee Rd	Lone Tree Rd to NCL	Reconstruction	3,700,000
212	2031-2040	Evansdale	Grand Blvd	Lafayette Rd to Gilbert Dr	Reconstruction	8,584,000
213	2031-2040	Evansdale	Evansdale Dr/Plaza Dr	I-380 EB ramp to Gilbertville Rd	Reconstruction	2,960,000
214	2031-2040	Evansdale	Evansdale Dr/Plaza Dr	I-380 EB ramp to Gilbertville Rd	Capacity Improvements, New Signals	3,700,000
215	2031-2040	Gilbertville	14th Ave BR	East of 5th St	Bridge Replacement	481,000
216	2031-2040	Waterloo	W. Donald St	Broadway St to Logan Ave (U.S. 63)	Reconstruction	9,620,000
217	2031-2040	Waterloo	Broadway St	E. Mullan Ave (U.S. 63) to Burton Ave	Reconstruction, Bike/Ped Improvements	14,800,000
218	2031-2040	Waterloo	E. San Marnan Dr	Hammond Ave to Texas St	Reconstruction, Bike/Ped Improvements	13,172,000
219	2031-2040	Waterloo	Newell St	Idaho St to N. Elk Run Rd	Reconstruction, Bike/Ped Improvements	17,760,000
220	2031-2040	Waterloo	N. Elk Run Rd	Martin Luther King Jr Dr to Remington Rd	Capacity Improvements	3,922,000

ID	Timeframe	Jurisdiction	Project	Termini	Description	Cost Estimate (YOE)
301	2041-2050	Black Hawk Co.	Waverly Rd (V14)	Fitkin Rd to Bennington Rd	Pavement Rehab	2,350,000
302	2041-2050	Black Hawk Co.	Dunkerton Rd (C66)	U.S. 63 to Sage Rd	Pavement Rehab	2,350,000
303	2041-2050	Black Hawk Co.	Elk Run Rd (V43)	Dubuque Rd to Independence Ave (IA 281)	Pavement Rehab	1,645,000
304	2041-2050	Black Hawk Co.	Washburn Rd (D38)	IA 21 to U.S. 218	Pavement Rehab	3,760,000
305	2041-2050	Black Hawk Co.	Elk Run Rd (V43) BR	0.2 mi. north of Dubuque Rd, over Elk Run Creek	Bridge Replacement	3,290,000
306	2041-2050	Black Hawk Co.	Union Rd (T75) BR	0.4 mi. south of Beaver Valley Rd, over Beaver Creek	Bridge Replacement	3,384,000
307	2041-2050	Black Hawk Co.	Washburn Rd (D38) BR	West of 3rd St, over Cedar River	Bridge Replacement	15,040,000
308	2041-2050	Cedar Falls	Hudson Rd	W. 1st St to University Ave	Reconstruction	18,800,000
309	2041-2050	Cedar Falls	Prairie Pkwy/Viking Rd	Prairie Pkwy/Viking Rd Intersection	Roundabout Construction	1,880,000
310	2041-2050	Cedar Falls	W. Ridgeway Ave	IA 58 to ECL	Reconstruction	14,100,000
311	2041-2050	Cedar Falls	W. Ridgeway Ave	Hudson Rd to WCL	Reconstruction	10,810,000
312	2041-2050	Gilbertville	5th St BR	South of 12th Ave	Bridge Replacement	282,000
313	2041-2050	Waterloo	E. Shaulis Rd	Hawkeye Rd (IA 21) to La Porte Rd	Reconstruction	12,718,200
314	2041-2050	Waterloo	Airline Hwy	Leversee Rd to U.S. 63	Reconstruction, Bike/Ped Improvements	34,780,000
315	2041-2050	Waterloo	E. Orange Rd	Kimball Ave to Hess Rd	Reconstruction, Bike/Ped Improvements	14,100,000
316	2041-2050	Waterloo	Kimball Ave	Orange Rd to San Marnan Dr	Reconstruction, Bike/Ped Improvements	17,860,000
317	2041-2050	Waterloo	Ansborough Ave	Orange Rd to San Marnan Dr	Reconstruction, Bike/Ped Improvements	17,860,000
318	2041-2050	Waterloo	W. Shaulis Rd	Hoff Rd to Hawkeye Rd (IA 21)	Reconstruction, Bike/Ped Improvements	9,964,000

Map 3.11: 2050 Long-Range Transportation Plan Locally-Sponsored Projects

Source: Black Hawk County MPO 2050 Travel Demand Model



Iowa DOT Projects

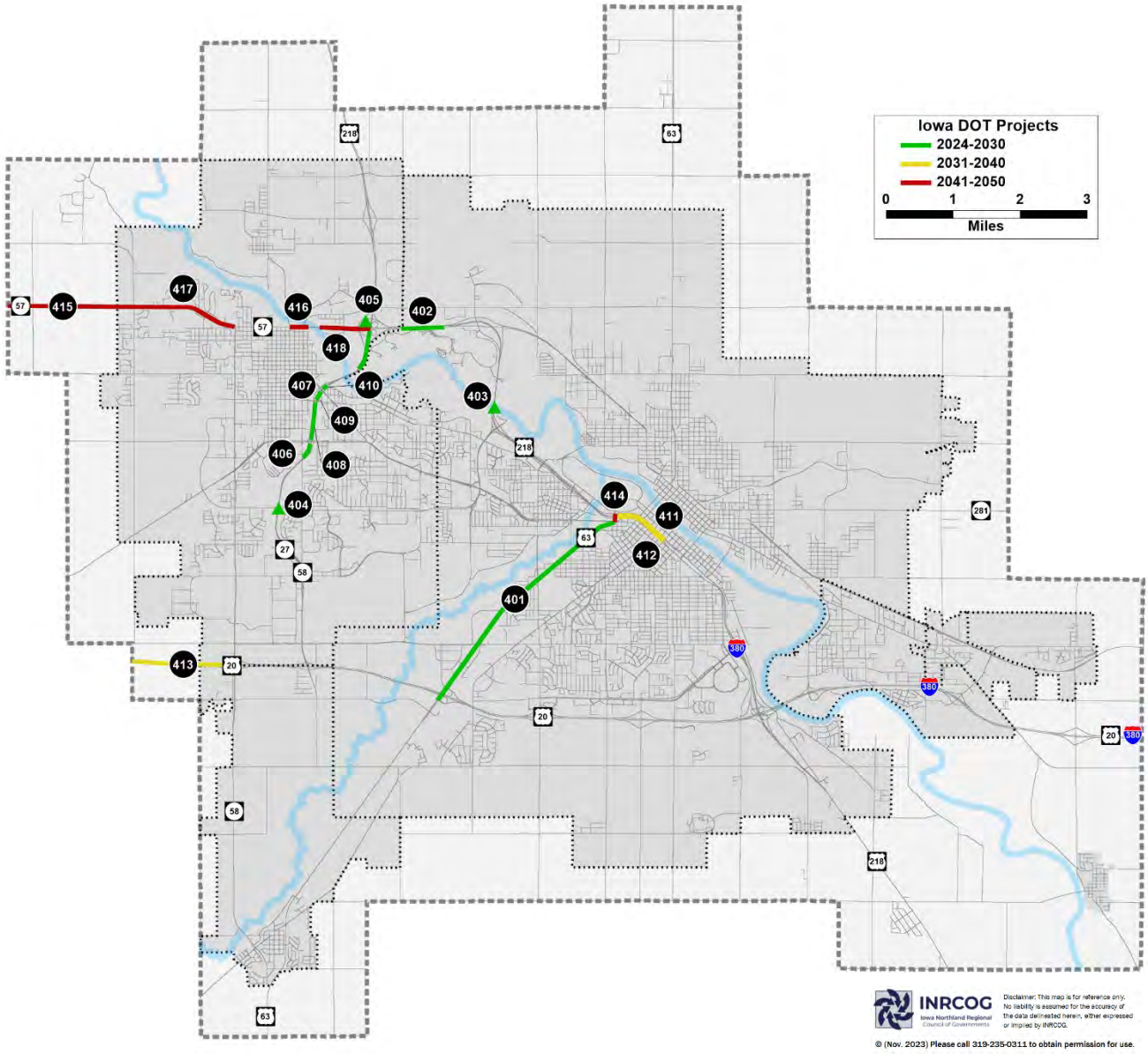
Table 3.5 and Map 3.12 show Iowa DOT-sponsored projects. These projects are not listed with the other roadway projects as they utilize different funding sources and are programmed at the state level. Projects beyond FY 2028 have not been programmed for funding by the Iowa DOT at the time of adoption of this Plan.

Table 3.5: 2050 Iowa DOT Projects

ID	Timeframe	Jurisdiction	Project	Termini	Description	Cost Estimate (YOE)
401	2025	Iowa DOT	U.S. 63 (MPO Share)	U.S. 20 to University Ave	Reconstruction	875,000
402	2027	Iowa DOT	U.S. 218 (SB) (MPO Share)	IA 57/27/58 Interchange to Exit 185	Reconstruction	4,570,000
403	2027	Iowa DOT	US 218	Cedar River Bridge	Bridge Deck Overlay	3,116,000
404	2028	Iowa DOT	IA 58 & Greenhill Rd	Intersection of IA 58 and Greenhill Rd	Grade Separation, Interchange	48,352,000
405	2028	Iowa DOT	IA 58/IA 27 & US 218 Ramp	NB US 218 to SB IA 58/27 (Ramp J)	Bridge Deck Overlay	750,000
406	2028-2030	Iowa DOT	IA 58/IA 27 (SB)	Bridge over Main St to University Ave	Partial Depth Repair	815,000
407	2028-2030	Iowa DOT	IA 58/IA 27 (SB)	Cedar River Bridge to US 218	Partial Depth Repair	815,000
408	2028-2030	Iowa DOT	IA 58/IA 27 (NB)	University Ave to 18th St	Partial Depth Repair	815,000
409	2028-2030	Iowa DOT	IA 58/IA 27 (NB)	18th St to Waterloo Rd	Partial Depth Repair	815,000
410	2028-2030	Iowa DOT	IA 58/IA 27 (NB)	Waterloo Rd to Cedar River Bridge	Partial Depth Repair	815,000
411	2031-2040	Iowa DOT	US 218 (NB)	6th St to Sergeant Rd (US 63)	Partial Depth Repair	1,425,000
412	2031-2040	Iowa DOT	US 218 (SB)	6th St to Sergeant Rd (US 63)	Partial Depth Repair	1,425,000
413	2031-2040	Iowa DOT	US 20	Grundy County Line to Hudson Rd	Partial Depth Repair, Joint Route & Seal	1,069,700
414	2041-2050	Iowa DOT	US 63	Through University Ave/US 218 Interchange	Partial Depth Repair	2,350,000
415	2041-2050	Iowa DOT	IA 57	Butler County Line to Cedar Falls WCL	3” Cold-in-Place w/3” HMA Overlay	1,478,150
416	2041-2050	Iowa DOT	IA 57	Franklin St to Cedar River	3” HMA Overlay	2,183,150
417	2041-2050	Iowa DOT	IA 57	Cedar Falls WCL to Hudson Rd	3” HMA Overlay	2,183,150
418	2041-2050	Iowa DOT	IA 57	Cedar River to US 218/IA 27	3” HMA Overlay	2,183,150

Map 3.12: 2050 Long-Range Transportation Plan Iowa DOT-Sponsored Projects

Source: Black Hawk County MPO 2050 Travel Demand Model



Local Projects

The table below shows local roads included in the 2050 Existing, Committed, and Planned (ECP) Network in addition to the planned federal-aid projects. These roads are included in the Travel Demand Model, as they are anticipated to be constructed as development occurs and will be funded with local or private funds; these roads are not anticipated to be federally functionally classified.

Table 3.6: New Local Roads Included in the 2050 Existing, Committed, and Planned Network

Timeframe	Jurisdiction	Project	Termini/Description
2028-2030	Cedar Falls	Arbors Dr	Red Oak Ln to Erik Rd to Aldrich Elementary
2031-2040	Cedar Falls	Cross Creek Dr	Waterbury Dr to W 27th St
2031-2040	Cedar Falls	Waterbury Dr	Cross Creek Dr to Union Rd
2031-2040	Cedar Falls	Oster Pkwy	Green Creek Rd to Cedar Heights Dr
2031-2040	Cedar Falls	Prairie View Rd	Prairie Pkwy to Oster Pkwy Extension
2031-2040	Cedar Falls	Rownd St	Green Creek Rd to Cedar Heights Dr/Viking Rd Roundabout
2031-2040	Waterloo	Oleson Rd	Bethel St to Existing Terminus
2031-2040	Waterloo	Tower Park Dr	Bankers Blvd to Hurst Dr
2041-2050	Cedar Falls	W 18th St	Quail Run Ln to Existing Terminus
2041-2050	Waterloo	Fisher Dr	Bankers Blvd to Existing Terminus
2041-2050	Waterloo	Hurst Dr	Tower Park Dr to Fisher Dr Extension
2041-2050	Waterloo	Fitzway Dr	Galactic Dr to San Marnan Dr
2041-2050	Waterloo	Ranchero Rd	K Line Dr to Katie Ridge

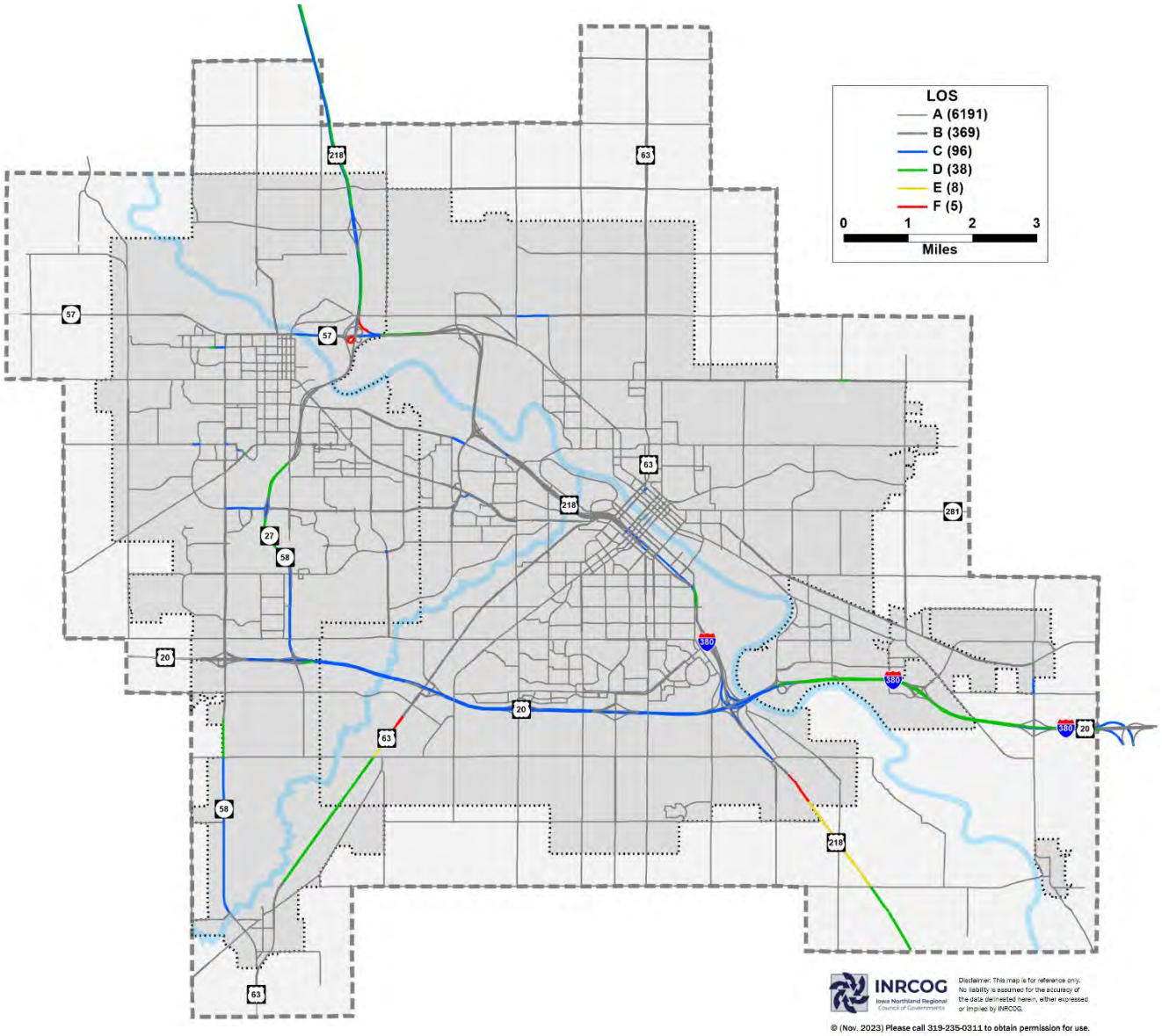
Existing, Committed, and Planned Network

The projects listed under the financially constrained portion of the plan, as well as Iowa DOT and planned local projects, make up the 2050 ECP Network (Map 3.13). This includes new construction projects and major capacity improvements as well as reconstruction of portions of the existing network.

Capacity is not the only issue to be considered in developing future projects. While the TDM is a useful tool for highlighting roads that are forecasted to be near or over capacity, it does not necessarily highlight the connectivity, accessibility, or safety benefits a particular project may offer. There are several projects in this Plan which may not have a visible impact on capacity issues but have a significant impact on other areas. For example, roadway reconfiguration projects that add dedicated bicycle lanes could significantly improve the safety and connectivity of the metropolitan bicycle network while minimally impacting automobile capacity.

Map 3.13: Level of Service, 2050 Existing, Committed, and Planned Network

Source: Black Hawk County MPO 2050 Travel Demand Model



Unmet Needs

Outside the financial constraint of the 2050 LRTP, the MPO has identified several illustrative projects that would require additional funding beyond what is anticipated to be available to the MPO through traditional sources. Should funding become available, or if an illustrative project becomes a higher priority, the MPO could consider amending it into the LRTP so long as fiscal constraint is maintained. This may require the removal of project(s) that are determined to have a lower priority than originally anticipated.

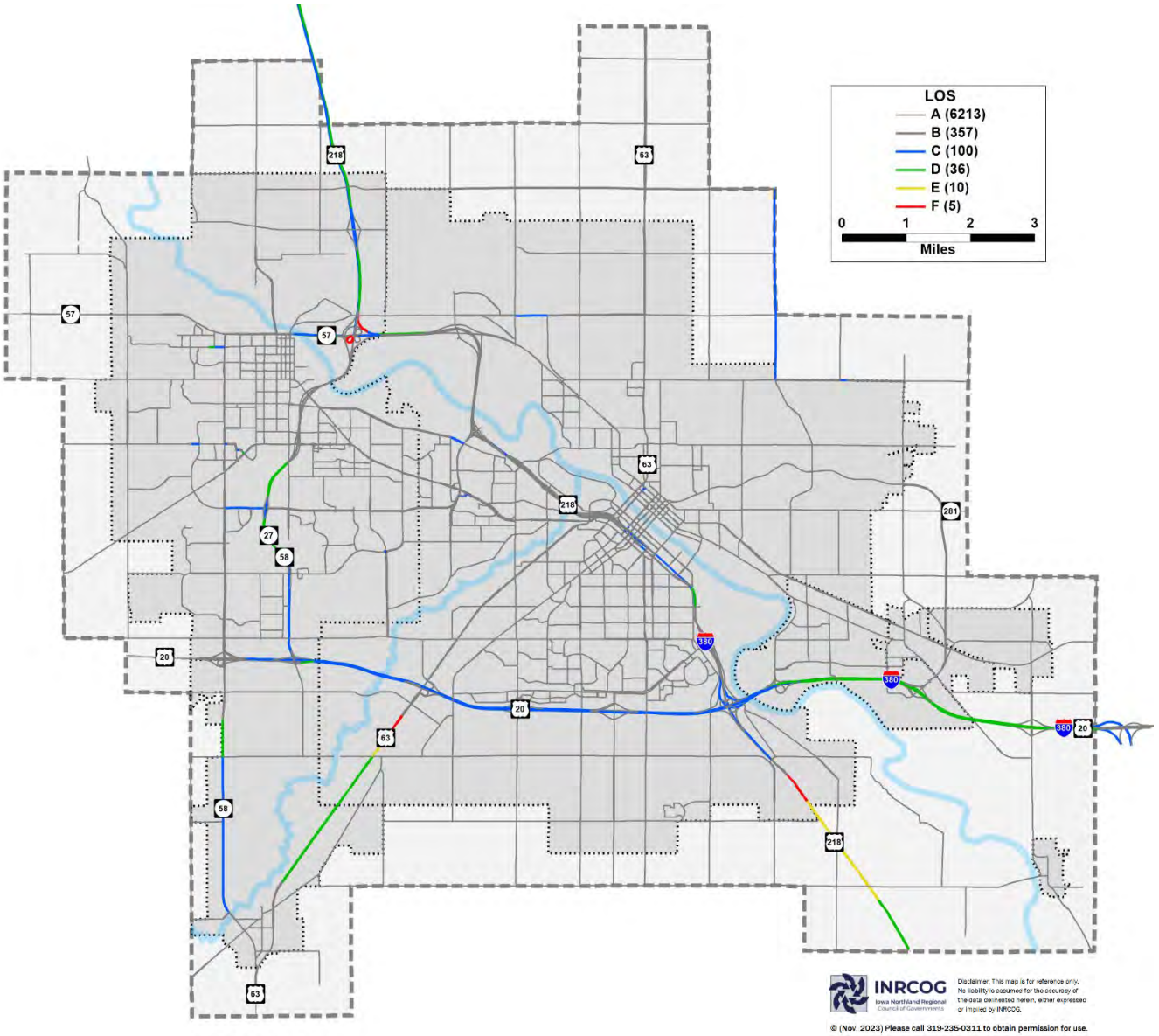
Several projects have been identified as part of the Northeast Industrial Access Planning Study which was completed in 2019. The goal of the study was to identify improvements to increase efficiency and access of freight travel, reduce traffic congestion at major junctions, decrease semi traffic on county roads, and accommodate future growth in Waterloo's Northeast Industrial Area. Alternatives include spot improvements at intersections, capacity improvements, and partial and new roadway alignments. Several of the spot and capacity improvements have been included in the financially constrained list of projects; new roadway and grade separation projects have been included as unmet needs. The next step will involve completion of the NEPA phase of the study where a preferred alternative will be selected.

Table 3.7: 2050 Unmet Needs

Jurisdiction	Project	Termini	Description
TBD	Plaza Dr/Elk Run Rd Extension (NEIA)	Gilbertville Rd to Osage Rd	New Roadway, Grade Separation
TBD	Plaza Dr/MLK Jr Dr Extension (NEIA)	Gilbertville Rd to MLK Jr Dr	New Roadway, Grade Separation
TBD	Conard Rd (NEIA)	S Raymond Rd to Plaza Dr/Elk Run Rd Extension	Reconstruction, Realignment
TBD	Sage Rd (NEIA)	Dunkerton Rd to Newell St	Reconstruction, Realignment, New Roadway
Cedar Falls	Olive St Bridge	S of W 20th St, over University Branch of Dry Run Creek	Bridge Replacement
Cedar Falls	Tremont St Bridge	N of W 21st St, over University Branch of Dry Run Creek	Bridge Replacement
Raymond	S Raymond Rd Bridge	0.2 mi. S of Dubuque Rd, over Poyner Creek	Bridge Replacement
Waterloo	W Ridgeway Ave	U.S. 63 to Kimball Ave	Reconstruction, Bike/Ped
Waterloo	Franklin St	1st St to Nevada St	Reconstruction, Bike/Ped
Waterloo	Donald St	E 4th St to Sage Rd	Reconstruction
Waterloo	W Ridgeway Ave	Deere Rd to U.S. 63	Reconstruction
Waterloo	E Ridgeway Ave/ Hammond Ave	Intersection of E Ridgeway Ave and Hammond Ave	Roundabout Construction

Map 3.14: Level of Service, 2050 Existing, Committed, and Planned Network, and Unmet Needs

Source: Black Hawk County MPO 2050 Travel Demand Model



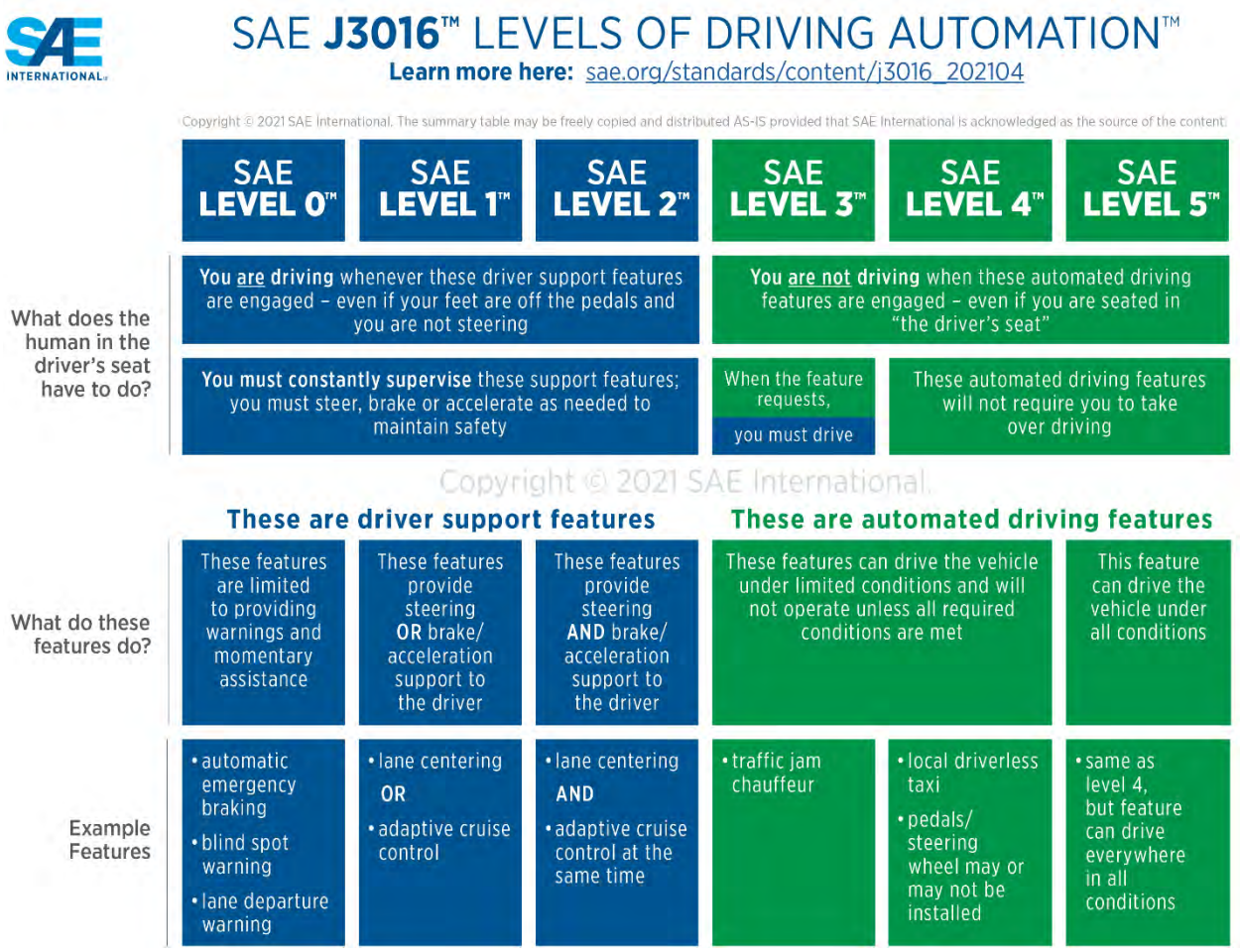
Technological Advancements

The transportation system is anticipated to undergo momentous changes in the coming decades due to the adoption and utilization of a variety of technologies. Rapid advances in transportation technology are expected to transform how people move around the nation. A few of the most recent high-profile technology changes include connected and automated vehicles (CAV), and the electrification of our transportation system through the increased adoption of electric vehicles (EV). The State of Iowa and the Black Hawk County MPO must be aware of the benefits, needs, and constraints of these technologies, and cognization of how they should be adapted in both urban and rural environments. This section highlights a couple of transportation technologies that could apply to the area. This list is not intended to be all inclusive.

Connected and Automated Vehicles (CAV)

CAV has the potential to transform travel as we know it. CAV combines leading edge technologies – advanced wireless communications, on-board computer processing, advanced vehicle-sensors, GPS navigation, smart infrastructure, and others – to provide the capability for vehicles to identify threats and hazards on the roadway and communicate this information over wireless networks to give drivers alerts and warnings.

Fully automated, autonomous, or "self-driving" vehicles are defined by the U.S. DOT's National Highway Traffic Safety Administration (NHTSA) as "*Those in which operation of the vehicle occurs without direct drive input to control the steering, acceleration, and braking and are designed so that the driver is not expected to constantly monitor the roadway while operating in self-driving mode.*" NHTSA has adopted the SAE International definitions for levels of automation.



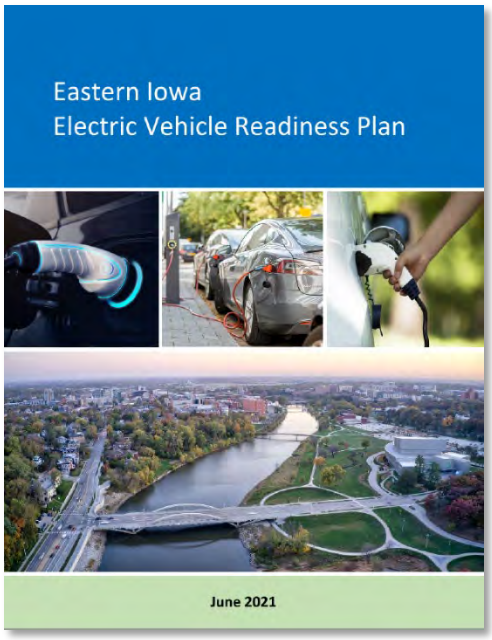
Connected vehicles are those that use any number of different communication technologies to communicate with the driver, other cars on the road, roadside infrastructure, and the "Cloud." This technology can be used to improve vehicle safety and vehicle efficiency, saving lives and reducing fuel consumption and emissions. Market adoption predictions vary, with some predicting 100 percent adoption rates towards 2050.

Connected vehicles can continuously share important safety and mobility information with each other.
Source: U.S. DOT, Intelligent Transportation Systems Joint Program Office

Alternative-Fuel Vehicles

Most vehicles operating within the U.S. (and the Black Hawk County metro area) use fossil fuels. Hybrid electric vehicles have been around since the early 2000s with moderate adoption across the U.S. According to the U.S. Bureau of Transportation Statistics, hybrid electric vehicles made up 5.5 percent of the total U.S. market share in 2021. Plug-in electric vehicle purchases have been on the rise, as increased manufacturers release electric vehicle models. However, the U.S. market share in 2021 was only 3.2 percent, up from 1.9 percent in 2019. An increase in non-gasoline vehicle usage, not only by individuals but also the private sector, will require significant improvement of the electric charging infrastructure. The buildout of electric vehicle charging infrastructure in the region will help ensure a positive experience for the growing market of EV owners.

In 2021, the Black Hawk County MPO participated in the development of the Eastern Iowa Electric Vehicle Readiness Plan (EVRP), a collective effort with Iowa City, Cedar Rapids, Dubuque, Davenport, and the MPOs of Eastern Iowa towards increasing zero-emission vehicle adoption while ensuring the mobility needs of the region and the target carbon reductions are met equitably. As part of the process, the City of Iowa City commissioned the consulting firm ICF to evaluate the existing EV market, charging infrastructure, incentives, and characterized barriers to greater EV adoption as well as the policy and educational opportunities to overcome such barriers. Achieving a greater level of adoption requires a set of coordinated strategies and actions that encompass infrastructure planning and deployment, local policies, consumer education, and partnership creation.



The Steering Committee defined a regional vision statement and a set of specific goals that provide the foundation for the EVRP. The vision statement reflects the Committee's role and intent to support communities across Eastern Iowa to further EV adoption in a way that is equitable, improves air quality, and generates economic benefits.

www.icgov.org/government/departments-and-divisions/climate-action-outreach/climate-plans-and-reports

The Regional Goals of the EVRP are as follows:

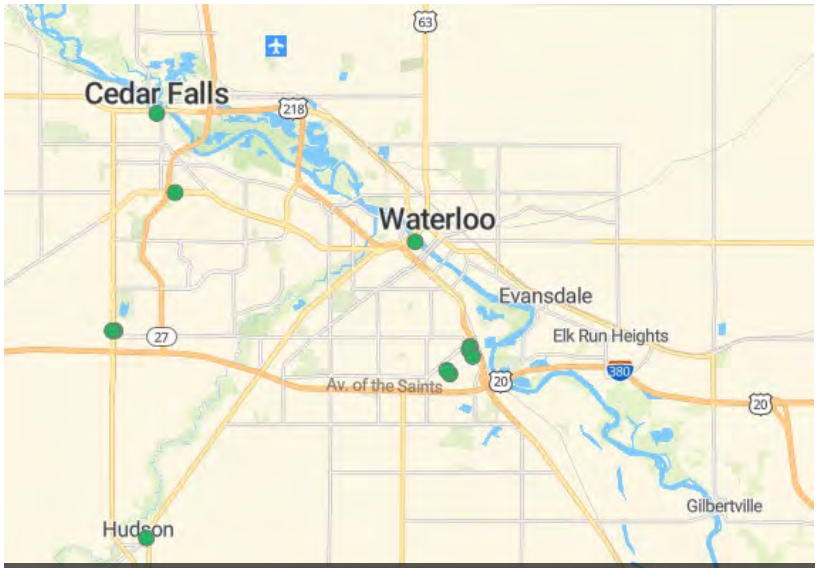
- Increase EV use
- Increase EV charger availability
- Increase equitable access to EVs and charging
- Reduce emissions
- Improve air quality
- Generate economic benefits
- Establish regional collaboration to leverage resources and share learnings

"The communities of Eastern Iowa will be leaders in supporting the increased use of EVs and improving access to charging infrastructure. We will empower our residents, businesses, and visitors through policies, partnerships, and initiatives that encourage adoption of EVs."

Regional Vision Statement, Eastern Iowa EVRP

According to the U.S. Department of Energy's Alternative Fuel Data Center, there were 324 public EV charging stations in Iowa for a total of 703 charging ports as of June of 2023. Most of the EV charging stations are public Level 2. Within the Black Hawk County metropolitan area, there were a total of ten public EV charging stations for a total of 30 charging ports, as shown in the map to the right.

www.afdc.energy.gov/stations#/find/nearest

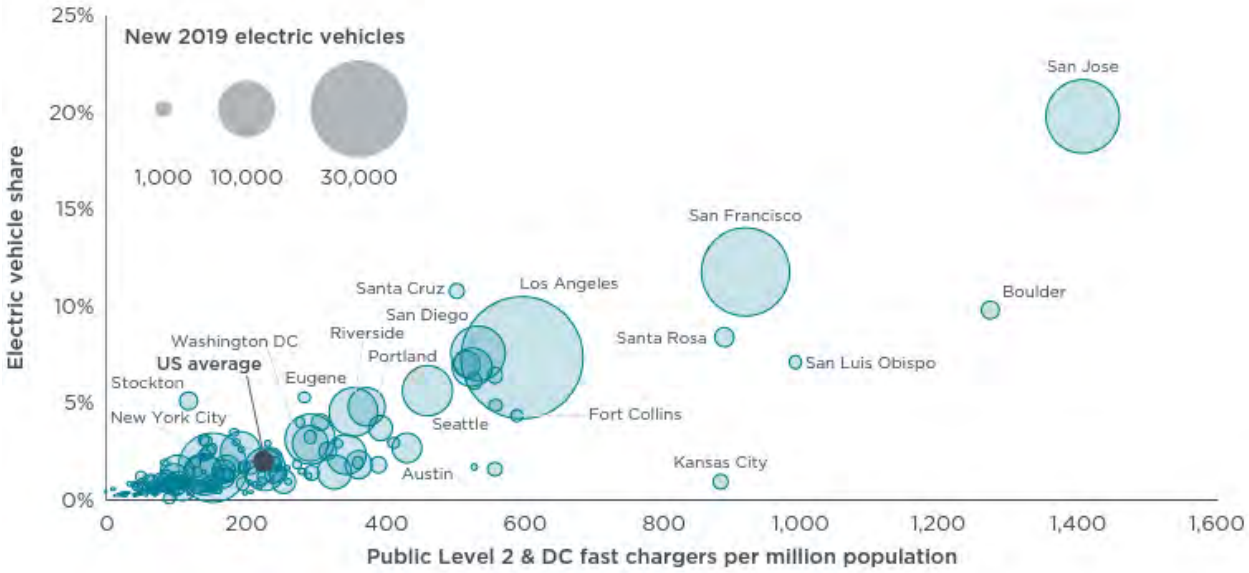


EV charging station locations as of June of 2023
Source: U.S. DOE, Alternative Fuels Data Center, EV Charging Station Locations

The number of EV charge points per million people is a critical factor influencing EV adoption rates. A robust charging infrastructure is essential to alleviate range anxiety and provide convenient charging options for EV owners. Higher availability and accessibility of charge points make EV ownership more practical and appealing to potential buyers.

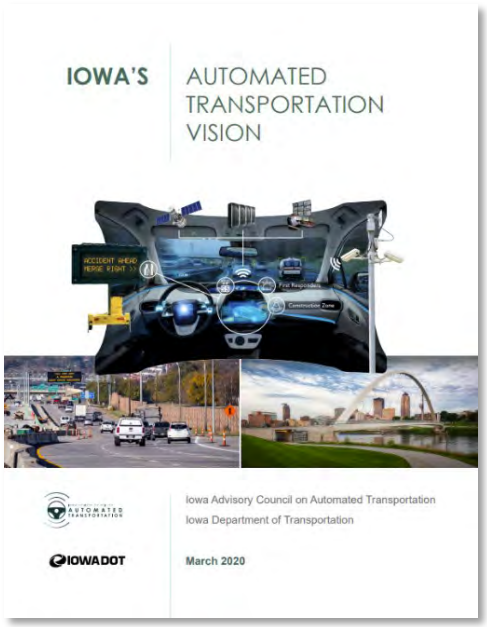
The number of EV charge points per million required to substantially increase EV adoption rates is subject to various factors such as population density, geographic distribution, and driving patterns. While there is no universally applicable threshold, a general guideline suggests that a significant increase in EV adoption rates can be achieved when the number of charge points per million reaches a level that ensures convenient access to charging infrastructure for EV owners. This typically entails a robust and well-distributed charging network, including a mix of fast chargers along highways, workplace chargers, and residential chargers. Ideally, a target range of 400 to 450 charge points per million people is often considered a reasonable benchmark to stimulate widespread EV adoption. As of 2023, the MPO has 247 charge points per million population with limited geographic coverage.

EV share of new vehicles and public chargers per million population for the 200 most populous US metro areas.
Source: International Council on Clean Transportation, August 2020 Briefing



To increase EV adoption rates, it is imperative that the public and private sectors collaborate to enhance the number and coverage of publicly available EV charging stations in the Black Hawk County metro area and surrounding communities. Both sectors have complementary roles to play in achieving this goal. The public sector, including government agencies and utilities, can provide the necessary frameworks, policies, and funding support to incentivize the expansion of charging infrastructure. This includes identifying strategic locations for charging stations, streamlining permitting processes, and allocating resources to underserved areas. The private sector, including charging station operators and businesses, can invest in the deployment of charging infrastructure and collaborate with public entities to develop sustainable charging solutions. By working together, the public and private sectors can create a robust and accessible charging network that addresses range anxiety, instills confidence in potential EV owners, and accelerates the transition to cleaner and more sustainable transportation solutions.

Iowa Advisory Council on Automated Transportation (AT Council)
The AT Council is intended to increase roadway safety, personal mobility, and freight movement within the state of Iowa by advancing highly automated technologies. The AT Council provides guidance, recommendations, and strategic oversight of automated transportation activities in the state. The vision statement for the AT Council is "*To create an AV-ready driving environment in Iowa for the safe movement of people and freight for a thriving Iowa economy.*" The Council – chaired by the Iowa DOT – consists of four subcommittees to provide in-depth resources and insights on topics related to the implementation of automated transportation and technologies. Membership consists of leaders from a variety of organizations across the state, bringing different backgrounds and expertise to discussions. In March of 2020, the AT Council published *Iowa's Automated Transportation Vision* which serves as an automated transportation development roadmap for the AT Council and the Iowa DOT as they work to safely advance automated transportation in Iowa.



www.iowadrivingav.org

Local Transportation Technologies
Waterloo has embraced an array of innovative traffic and transportation technologies with the aim of addressing transportation challenges, improving the overall efficiency of its transportation systems, and minimizing fuel consumption and emissions. Traffic and transportation technologies Waterloo has implemented include the following:

- Routeware, Fleet Management – Provides route optimization, allowing for efficient fleet management, and reducing fuel consumption and emissions.
- Salient, Video Management System – Enhanced video surveillance and analytics, facilitating real-time monitoring and improved safety on roadways.
- Elements XS, GIS-based Asset Management System – Provides advanced traffic signal control capabilities, optimizing signal timings to minimize congestion and enhance traffic flow.
- MaxAdapt, Adaptive Signal Control Technology – Dynamically adjusted signal timings based on real-time traffic conditions, further improving overall traffic efficiency.
- Kinetics, Advanced Traffic Management System – Enabled comprehensive transportation modeling and simulation, facilitating informed decision-making for infrastructure planning and traffic management.
- Precise AVL, Rolling Stock Movement Monitoring – Accurate real-time tracking of vehicles, allowing for better fleet management and response to emergencies.
- Weather Sentry, Accurate Weather Predictions – Provides critical weather information, allowing authorities to proactively respond to adverse weather conditions and ensure safer travel experiences.
- SCADA, Wase Management Supervisory Control – Centralized control and monitoring of transportation systems, enhancing operational efficiency and responsiveness.

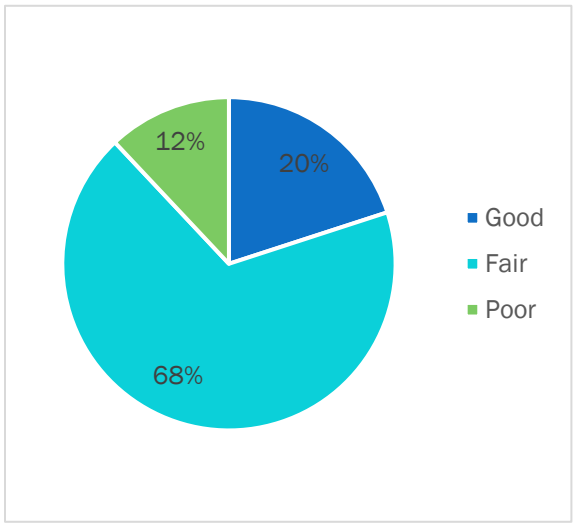
With these advanced technologies working in harmony, Waterloo has significantly improved traffic management, transportation efficiency, and overall road safety, enhancing the quality of life for its residents and visitors.

2022 Public Input Survey

In September 2022, the personnel of the MPO carried out a pair of internet-based surveys. These surveys were aimed at collecting feedback from residents within the jurisdictions of the MPO. The subsequent details provided here highlight survey responses that hold significance within the context of this chapter.

Figure 3.3: Public Input Survey, Rounds One and Two asking respondents how they rate the physical condition of our roads:

Answered: 25



Answered: 86

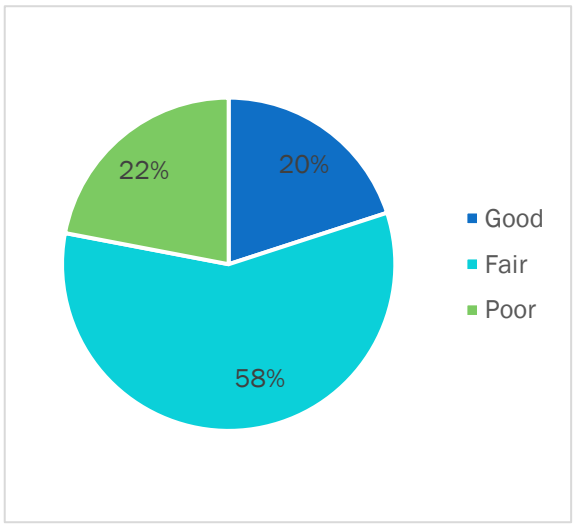
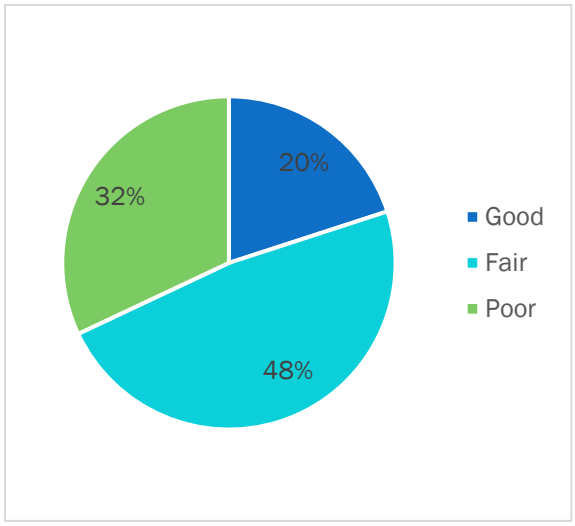


Figure 3.4: Public Input Survey, Rounds One and Two asking respondents how they rate the physical condition of our bridges:

Answered: 25



Answered: 86

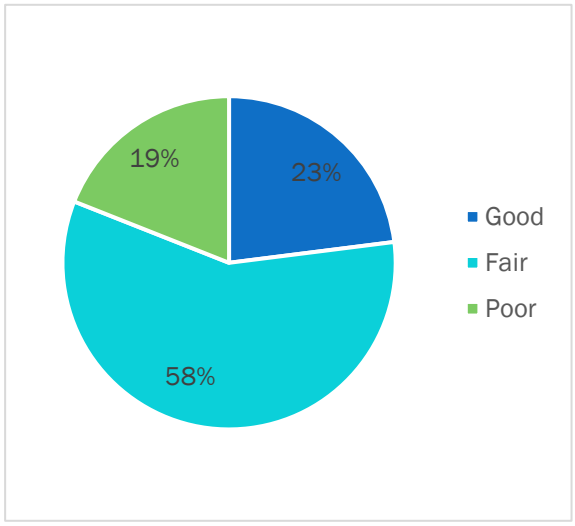
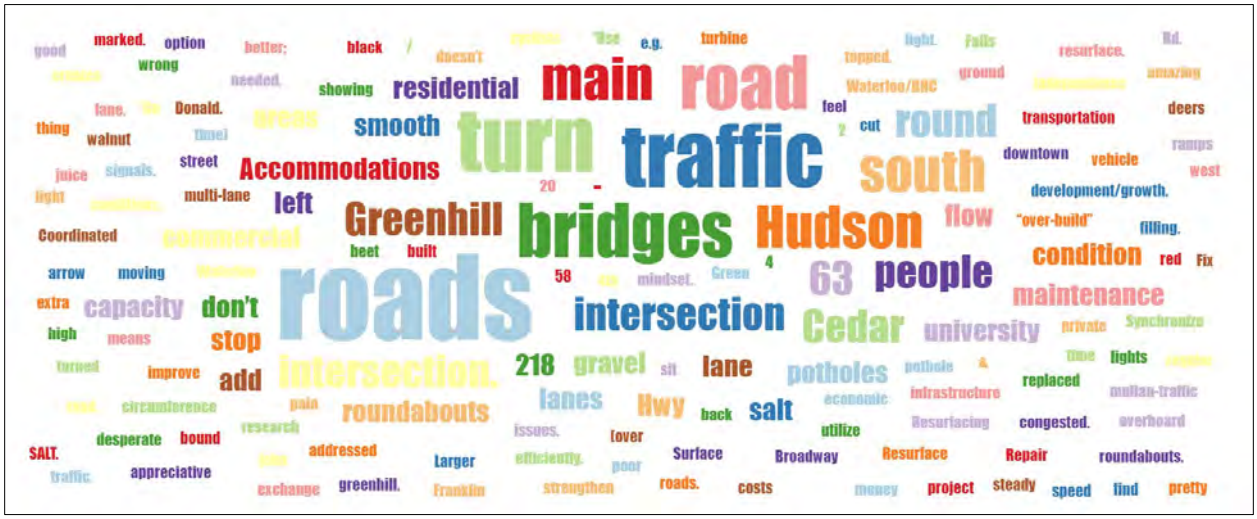


Figure 3.5: Public Input Survey, Rounds One and Two asking respondents how our roads and bridges could be improved (e.g., conditions, connectivity, capacity, etc.):

Answered: 21



Answered: 62

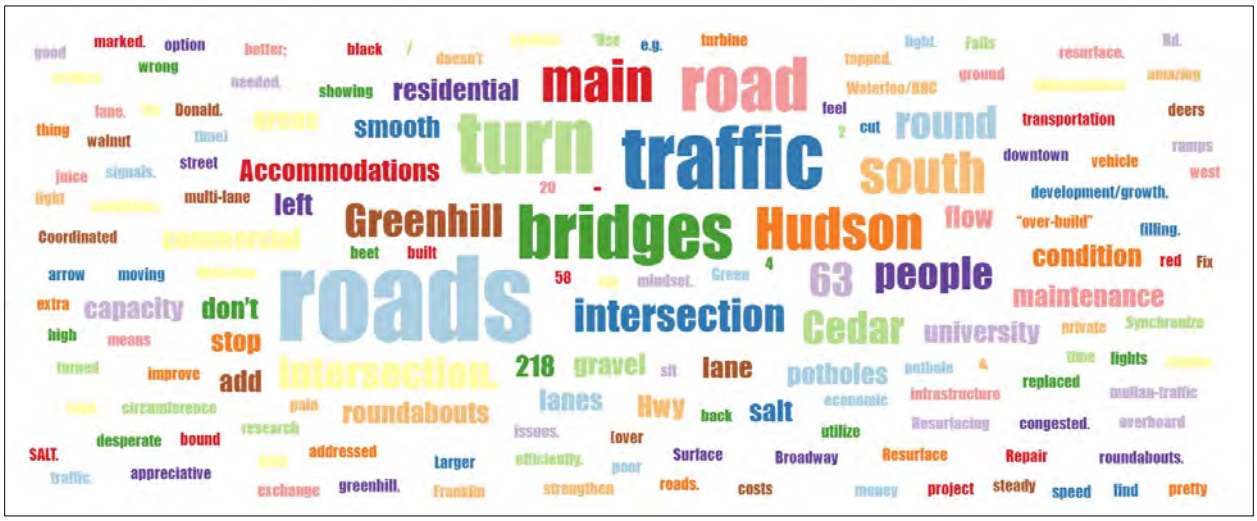
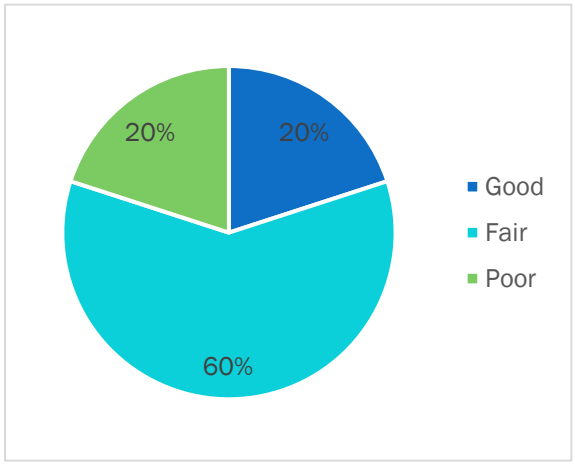


Figure 3.6: Public Input Survey, Rounds One and Two asking respondents how our streets rate regarding "Complete Streets":

Answered: 25



Answered: 86

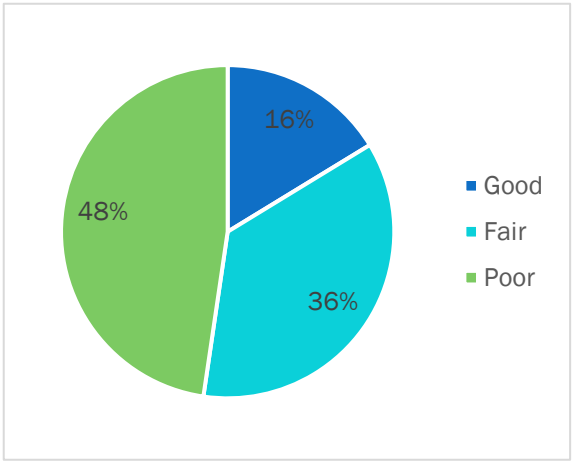


Figure 3.7: Public Input Survey, Rounds One and Two asking respondents which road they would improve to serve ALL road users:

Answered: 22

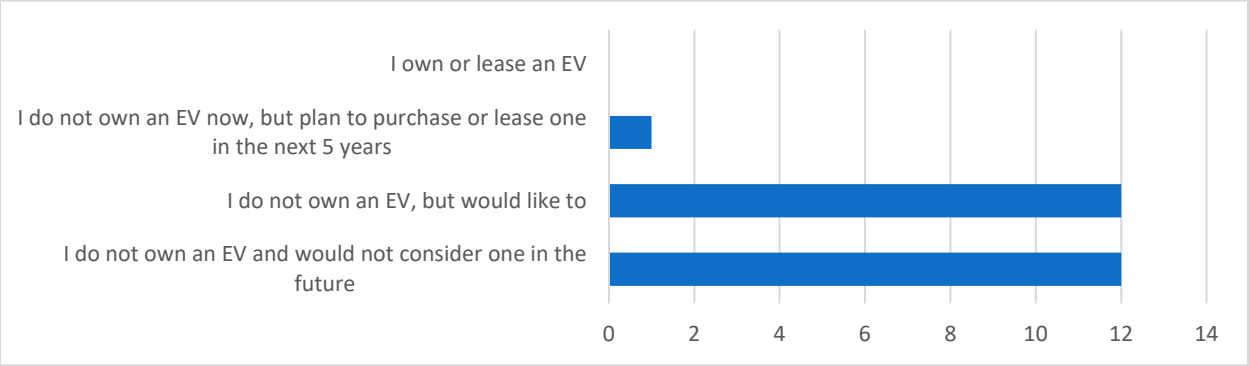
- Main St (3)
- Hudson Rd (2)
- Broadway St (2)
- Washington St
- La Porte Rd
- US 63
- IA 57
- Hawthorne Ave
- Grand Blvd
- Franklin St
- Dubuque Rd

Answered: 73

- Ridgeway Ave (14)
- 4th/5th St (6)
- La Porte Rd (4)
- Lafayette Rd (4)
- Waterloo Rd (4)
- Park Ave (3)
- San Marnan Dr (3)
- Washington St (2)
- University Ave (2)
- Rainbow Dr (2)
- Hamond Ave (2)
- Kimball Ave (2)
- W. Gilbert Dr
- S. Main St
- Mullan/Logan
- Viking Rd
- Hudson Rd
- Franklin St
- E San Marnan Dr
- Broadway St
- Airline Hwy
- W 1st St (IA 57)
- South St

Figure 3.8: Public Input Survey, Rounds One and Two asking respondents about Electric Vehicle ownership:

Answered: 25



Answered: 86

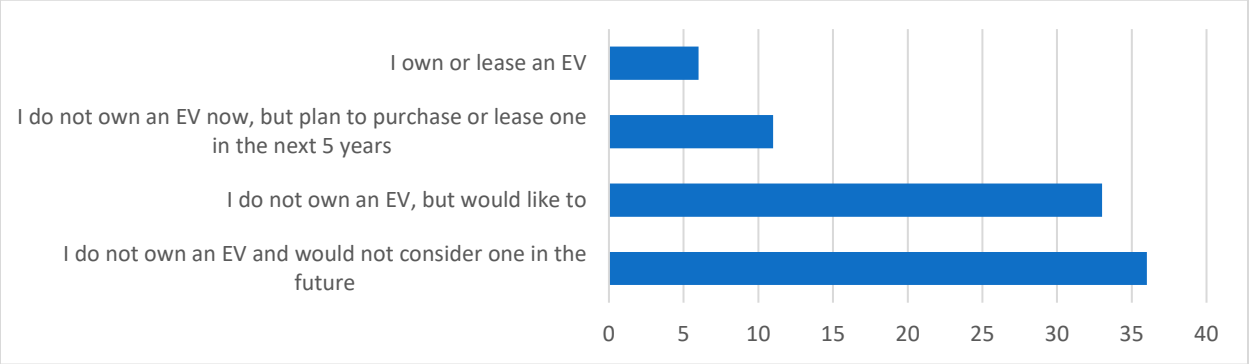
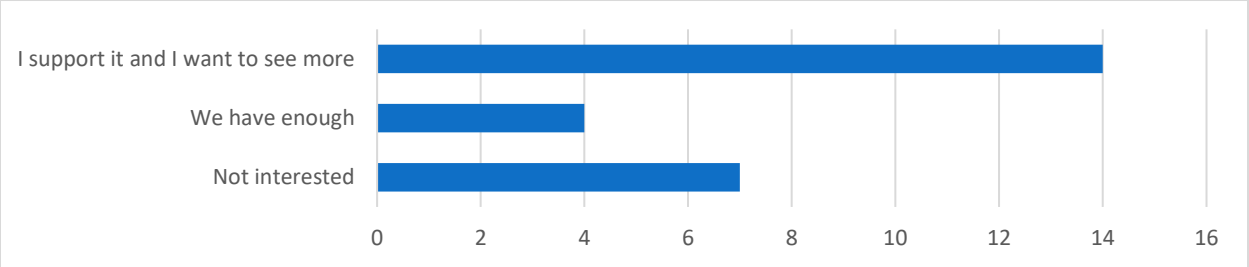


Figure 3.9: Public Input Survey, Rounds One and Two asking respondents about Electric Vehicle ownership:

Answered: 25



Answered: 86

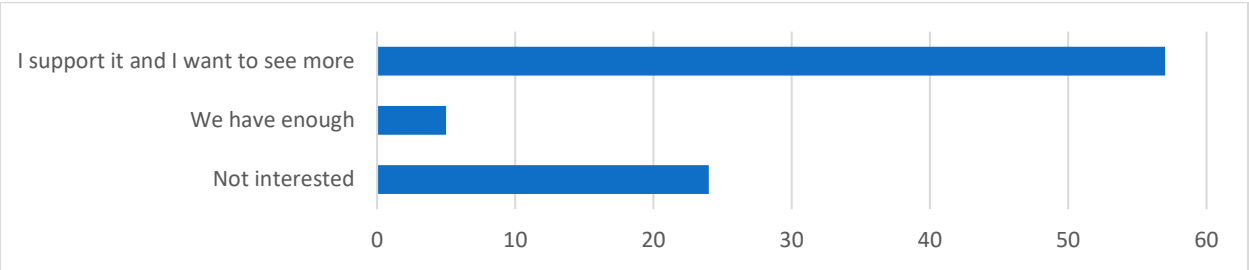
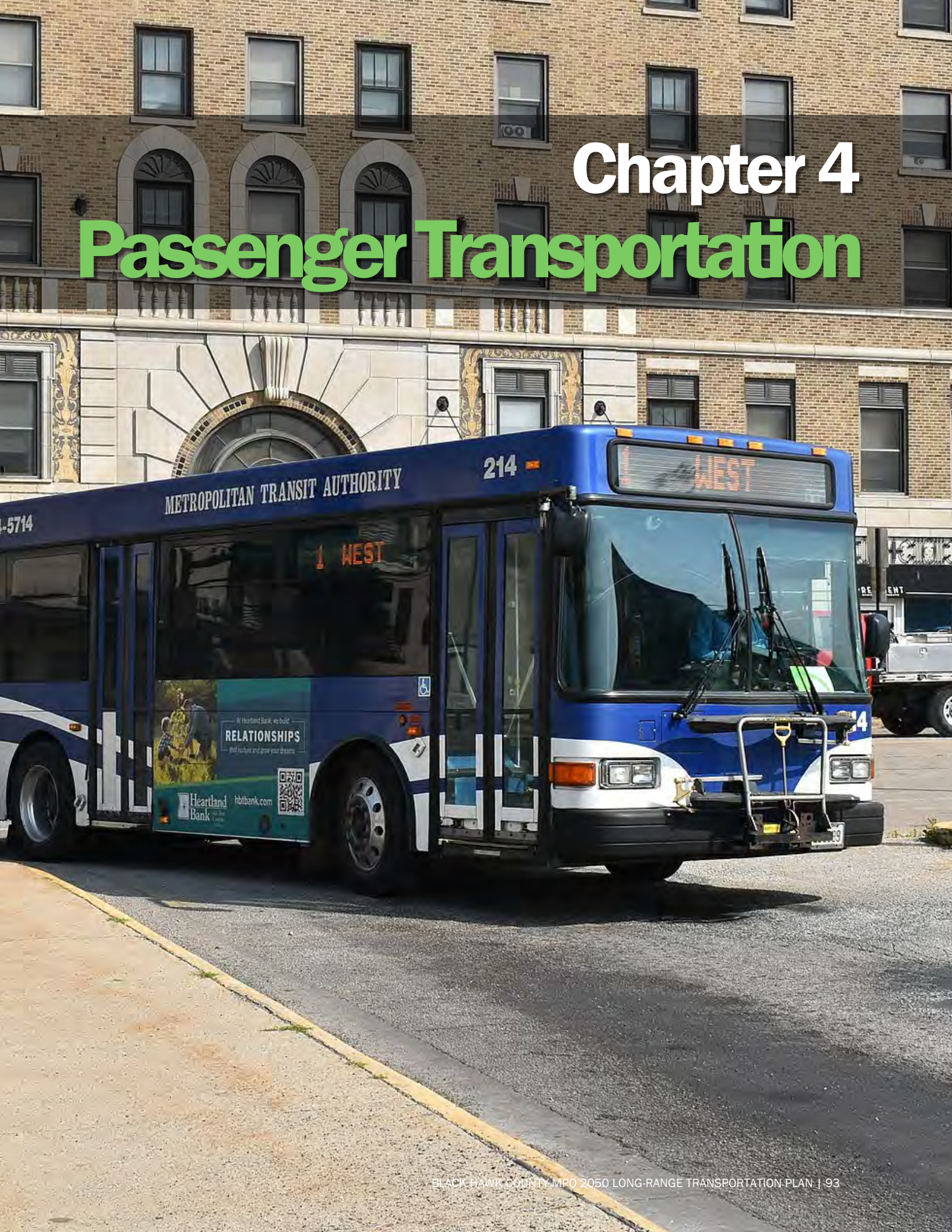


Figure 3.10: Public Input Survey, Rounds One and Two asking respondents what their biggest transportation challenge is in the MPO:

Summary of Worded Responses (Both Rounds):

- Road Conditions and Maintenance
  - Concerns about poor road surfaces, potholes, and rough roads.
  - Frustration with road conditions during winter.
  - Desire for better road maintenance and keeping roads in good condition.
- Traffic and Safety
  - Challenges related to speeding and reckless driving.
  - Issues with people not understanding traffic rules, like four-way stops.
  - Safety concerns at specific intersections, especially high-speed areas.
- Construction and Congestion
  - Frustration over ongoing road construction and its impact on traffic.
  - Desire for better timing of traffic signals and adaptive signal systems.
  - Concerns about traffic congestion in populated areas.
- Infrastructure Improvements
  - Suggestions for roundabouts to improve traffic flow and safety.
  - Calls for elevating highways and adding interchanges for safer intersections.
  - Interest in road improvements to accommodate various modes of transportation.
- Environmental Considerations
  - Consideration of environmental impact, including the preference for hydrogen fuel cell cars over electric vehicles.
  - Feedback on the timing of traffic signals, with suggestions for improvements.
- Public Transit
  - Suggestions for incorporating public transportation considerations into road design.
  - Desire for better connectivity and improved public transit options.
- Driving Behavior and Education
  - Concerns about people driving slowly in the left lane, blocking traffic.
  - Issues with drivers changing lanes abruptly and not understanding traffic patterns.
- General Inconveniences
  - Mention of inconveniences related to dead-end streets and lack of connectivity.
- Specific Locations
  - Concerns and suggestions related to specific intersections, highways, and roads.

Chapter 4
Passenger Transportation



Chapter 4 – Passenger Transportation

Overview

Public transit and passenger transportation play a crucial role within the transportation system by presenting individuals with travel alternatives that do not hinge on possessing personal vehicles. Numerous factors influence an individual's decision to utilize public transit or passenger transportation. Some rely on these services due to necessity, such as lacking a driver's license, lacking access to a vehicle, or facing physical disabilities that hinder their ability to drive. Others opt for alternative transportation methods as a deliberate lifestyle choice, driven by affordability, convenience, environmental concerns associated with solo car commuting, or limited driving experience. Moreover, the American Public Transportation Association approximates that an investment of $1 billion in public transportation initiatives stimulates the creation of around 50,000 jobs and generates $2.7 billion in economic activity.

Across Iowa, an intricate web of transportation systems spans urban, small urban, and rural areas, facilitating comprehensive coverage throughout the state. Within the MPO, public transit services are overseen by the Metropolitan Transit Authority (MET Transit). This authority functions as the designated transit provider, operating under the guidance of a 28E agreement established with Waterloo and Cedar Falls. MET Transit is responsible for offering both fixed route and paratransit services, catering to the diverse needs of the public.

Metro Stats

10
Year-round fixed routes[1]

176,000
Fixed route rides per year[1]

$1.50
Regular fixed route fare[1]

16,300
Air passenger enplanements per year[2]

56 years
Since passenger rail service was available (Land O' Corn)

Sources:
[1]MET Transit

[2]FAA, CY 2022 Enplanements at Airports, Waterloo Regional Airport

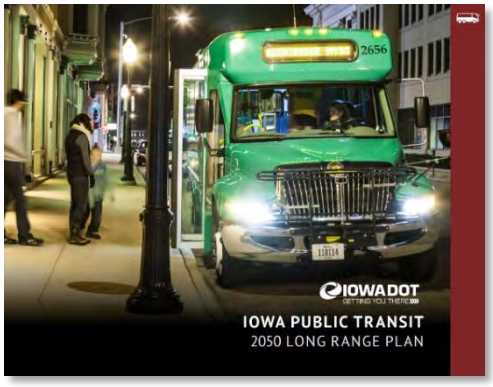
Airline travel options to the area are facilitated by the Waterloo Regional Airport (ALO). As of November 2023, American Airlines operates two daily flights to and from O'Hare International Airport, providing convenient connections to a vast array of domestic and international destinations. This translates to direct and connecting flights to more than thirty prominent cities across the United States.

Passenger rail has gained interest, in recent years, as a viable alternative to passenger vehicle commutes for several reasons. Reduced congestion, enhanced connectivity, safer alternatives to automotive transportation, environmental sustainability, promotion of tourism and recreation, and economic growth each contribute to a growing sense of amenability for passenger rail service. According to the Federal Railroad Administration, **trains are 20-30% percent more energy-efficient than cars** and **emit 70% less carbon dioxide per passenger mile than airplanes**. The National Highway Traffic Safety Administration (NHTSA) and the Federal Railroad Administration (FRA) have consistently reported that passenger rail travel has a significantly lower fatality rate per vehicle mile traveled (VMT) compared to automotive travel. In general, **fatalities in automotive accidents are several times higher than those in rail accidents per VMT**.

State Transit and Passenger Transportation Plans

Iowa Public Transit 2050 Long Range Plan

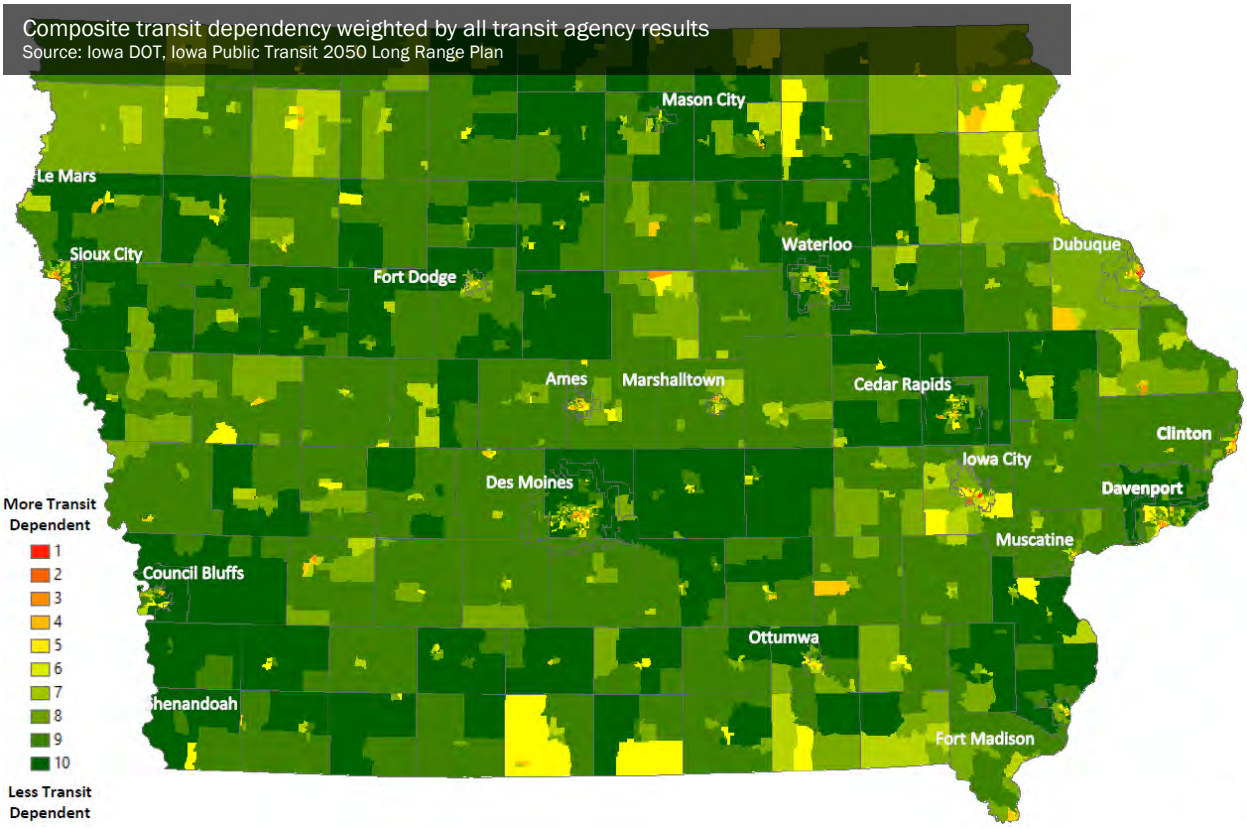
In 2020, the Iowa DOT adopted the Iowa Public Transit 2050 Long Range Plan. While the Iowa DOT has conducted specific planning efforts – Iowa Statewide Passenger Transportation Funding Study, Iowa Park and Ride System Plan – this Plan looks at the public transit system from a broader point of view. The Plan seeks to coordinate planning, programming, and technical assistance statewide to support transit operations at the local level. The goal is to provide specific strategies and improvements that can be implemented and revisited over time.



This Plan serves as a guide to assist the Iowa DOT in making informed public transit decisions for the state. The strategies and action items within the plan serve as the starting point for the implementation phases of the planning process. The transit plan will also be updated every five years to stay current with trends, forecasts, and factors that influence decision-making.

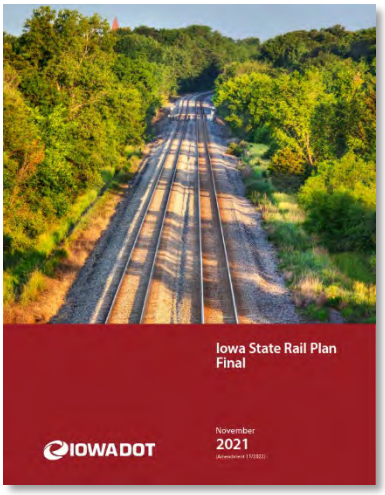
Included within the Plan is a Transit Dependency Analysis, aimed at anticipating and projecting the locations of focal points where the demand for, and reliance on, transit is most pronounced in Iowa. The analysis incorporates external factors contributing to transit dependency, encompassing aspects such as gas prices, median household income, households without vehicles, linguistic diversity, racial composition, college enrollment rates, and population density.

After collecting data for the various factors, it was processed using GIS. Each block group was assigned a score from one to ten for each of the seven distinct external factors employed in the analysis. Subsequently, these individual layers were combined to create an overarching composite layer, pinpointing the regions with the highest transit dependency as influenced by these seven factors. To determine the significance of each factor, input from Iowa's transit agencies was used to assign appropriate weights.



www.iowadot.gov/iowainmotion/Modal-Plans/Public-Transit-Plan

Iowa State Rail Plan 2021



This document is intended to guide the Iowa DOT in its activities of promoting access to rail transportation, helping to improve the freight railroad transportation system, expanding passenger rail service, and promoting improved safety both on the rail system and where the rail system interacts with people and other transportation modes. The State Rail Plan describes the state's existing rail network and rail-related economic and socioeconomic impacts. The document provides an overview of existing passenger rail service and outlines proposed passenger rail improvements and investments. Of particular interest is the intercity passenger rail initiative between Chicago and Omaha which was identified as one of several routes of the Midwest Regional Rail System. The Plan also identifies new potential passenger services reaching all regions of the state including a conceptual route from Dubuque to Sioux City with station stops in Waterloo and Fort Dodge. This potential route remains to be studied.

https://iowadot.gov/iowainmotion/modal-plans/rail-transportation-plan

Midwest Regional Rail System
Source: Midwest Interstate Passenger Rail Commission

Existing and Potential Future Passenger Rail Routes in Iowa
Source: Iowa DOT, Iowa State Rail Plan 2021

Transit Asset Management Plan

Transit Asset Management (TAM) Plans are comprehensive and strategic frameworks implemented by transit agencies to efficiently manage their transportation assets. These plans are vital for ensuring the long-term sustainability and optimal performance of transit systems. TAM plans involve the systematic inventory, assessment, and maintenance of various assets, such as buses and support facilities. By establishing data-driven processes and performance targets, TAM plans help transit agencies prioritize investments, allocate resources, and make informed decisions to extend the useful life of assets while minimizing operational disruptions. The goal is to enhance safety, reliability, and the overall quality of public transportation services for the benefit of passengers and the communities they serve.

Every transit agency is federally required to develop a TAM plan if it owns, operates, or manages capital assets used to provide public transportation and receives federal financial assistance under 49 USC Chapter 53 as a recipient or subrecipient. The most recent TAM Plan for MET Transit was adopted in September of 2022.

https://bhcmpo.org/performance-measures/

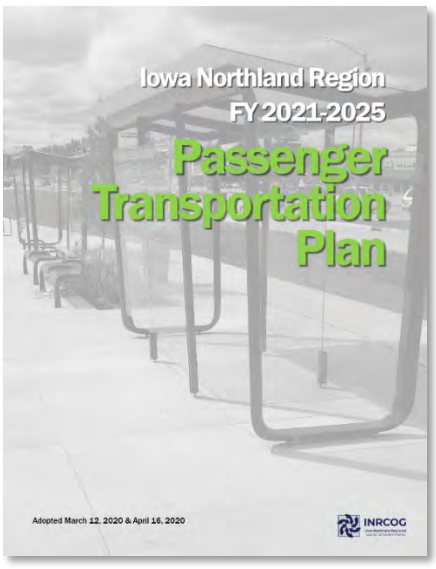
Transit Performance Management Plan

Public Transportation Agency Safety Plans (PTASP) are comprehensive frameworks that transit agencies develop and implement to enhance safety in public transportation systems. Mandated by the FTA, a PTASP is a proactive approach that focuses on identifying and mitigating safety risks to prevent accidents and incidents. These plans involve a thorough analysis of the agency's operations, infrastructure, equipment, and personnel to identify potential hazards and vulnerabilities. Based on this assessment, specific safety goals, objectives, and performance targets are established, along with strategies for achieving them. PTASP ensures that safety responsibilities and accountabilities are clearly defined across the organization and that employees are well-trained and equipped to manage potential safety-related situations. By promoting a culture of safety, fostering collaboration, and incorporating industry best practices, the PTASP aims to continually improve the safety of public transportation systems, providing passengers with confidence in the reliability and security of their travel experience.

https://bhcmpo.org/performance-measures/

Passenger Transportation Plan

The MPO coordinates the development of a Passenger Transportation Plan (PTP). The plan coordinates efforts between passenger transportation providers and human service agencies providing services in the INRCOG six-county region. The plan also recommends projects to improve passenger transportation. The purpose is to enhance transportation access throughout the community, minimize duplication of services, and facilitate the most appropriate cost-effective transportation possible with available resources



The PTP is a joint document between the MPO and its regional counterpart the Iowa Northland Regional Transportation Authority (RTA). A full update of the document is completed every five years. The most recent PTP update was adopted in April 2020 for the fiscal years 2021 to 2025. The overall goal identified in this Plan is to **ensure that the public has access to safe, dependable, convenient, and efficient transit systems, placing special emphasis on providing transit service for those that are most dependent upon transit**.

To achieve this goal, the PTP includes the following objectives:

1. Promote and improve the image of the public transit system
2. Build awareness of the existing public transportation system through education and marketing
3. Enhance the efficiency of the public transit system
4. Improve accessibility and availability of public transit
5. Improve fleet conditions and reliability
6. Improve service to all user groups
7. Coordinate transportation planning and services with other community organizations and workforce development

The PTP includes a series of projects and initiatives recommended throughout the plan's duration (reference pages 56-58). Essential projects outlined in the PTP are detailed in Table 4.1.

Table 4.1: Key Projects Identified in the FY 2021-2025 PTP

Project or Initiative	Description	Objectives Addressed
Joint Mobility Coordinator and Marketing position for MET Transit and OnBoard Public Transit (formerly RTC)	This position will assist individuals in navigating from their origin to their destination, regardless of the mode of transportation. Tasks can include travel training; meeting with human service agencies, businesses, and other organizations to inform them of available services; and educating the public on available transportation services.	1, 2, 7
Transit audits for the metropolitan area	Transit audits take people through the entire transit experience (reading a transit map, ticket purchasing, boarding, riding the bus, using the pedestrian network, etc.). This initiative will help obtain insight from a range of citizens and elected officials.	1, 2
Extend weekday service hours and weekend hours	Extending service hours will help serve the needs of all user groups.	4, 6
Vanpools to businesses and medical facilities inside and outside of the six-county region	Vanpool program to businesses and/or medical facilities within and outside of the Iowa Northland Region.	4
Implement a winter maintenance program for bus stops in the metropolitan area	Using public transit in the winter is challenging. Limited and/or inconsistent maintenance of sidewalks and bus stops severely limits accessibility to public transit.	4
Improve accommodations at bus stops	Many bus stops need to be improved either through the addition of complete bus shelters, or bus pads with connections to the existing sidewalk network.	4, 6
Add commuter service to the Airline Highway Industrial Area in Waterloo	This project was identified as a need in the 2018 Airline Highway Transportation Survey. A new fixed route could serve employees during 1st and 2nd shift start and end times.	4

As a result of this collaboration, INRCOG and MET Transit solicited consultant proposals in the spring of 2023 for a Comprehensive Transit Study for the Metropolitan Transit Authority of Black Hawk County with the goal of identifying opportunities to improve the system. Included in the study is a review of the previous route restructuring (undertaken prior to the COVID-19 pandemic), characterization of the service area, user and travel analysis, inventory of service productivity, determination of current service adequacy, and a fleet and facilities assessment. The study will include several opportunities for gathering public input, a crucial element in achieving the goal of further improving the services to the community and the overall functionality and efficiency of the system. Results of the study are anticipated to become available in early 2024.

https://bhcmpo.files.wordpress.com/2022/11/ptp_fy2021-2025.pdf

Transit Advisory Committee

The transit planning process and development of the PTP is coordinated through the Transit Advisory Committee (TAC). The TAC consists of human service organizations, representatives of local government, transit users, and transportation providers. These entities work cooperatively to recognize current transit and passenger transportation shortfalls and identify the potential for new services and coordination possibilities in the region.

Some needs identified by the TAC over the past several years include the following:

- Providing service to the growing population of older adults
- Installation and maintenance of bus shelters
- Cashless fareboxes (alternatives to cash)
- Expanded service time and area
- Vanpools
- Educating new populations on bus service, particularly those with limited English proficiency
- Marketing and education on existing services

Transit Service

MET Transit operates six fixed routes in Waterloo, one route in Cedar Falls, and two routes between Waterloo and Cedar Falls year-round. Route 10 serves the University of Northern Iowa, the Hawkeye Community College main campus, and the Crossroads Mall during the academic year, and continues services between Hawkeye Community College and the Crossroads Mall area during the summer. Map 4.1 shows the location of MET Transit's fixed routes as of November 2023, and Table 4.2 outlines each route's operations and average annual ridership over the past five state fiscal years.

Map 4.2: MET Transit Fixed Routes

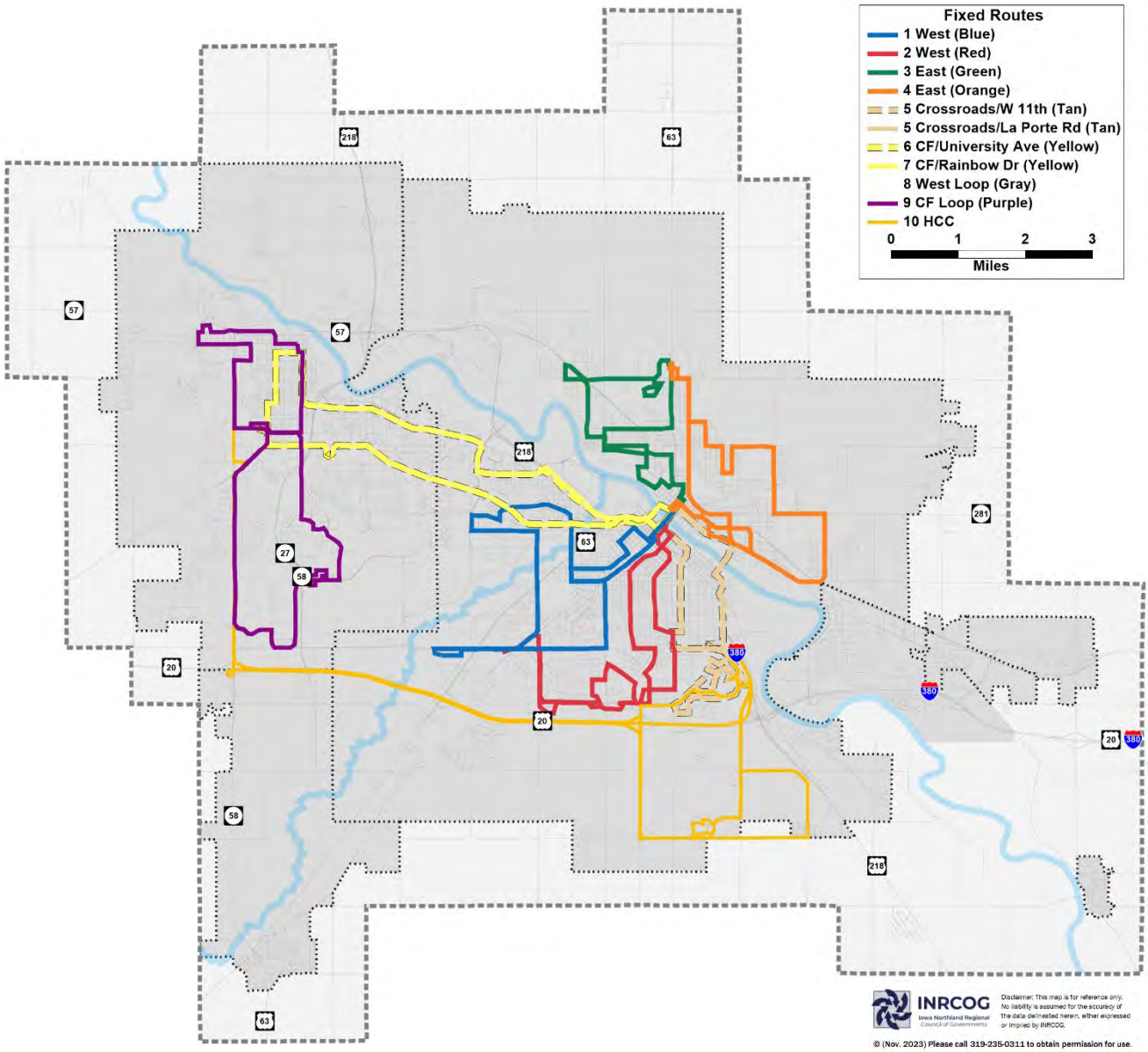


Table 4.2: MET Transit Fixed Routes

Route	Annual Operations	Daily Operations	Average Annual Rides SFY 2019-2023
1 West (Blue)	All year	All day	25,817
2 West (Red)	All year	All day	26,490
3 East (Green)	All year	All day	23,823
4 East (Orange)	All year	All day	24,280
5 Crossroads/W 11th (Tan)	All year	All day	37,963
5 Crossroads/La Porte Rd (Tan)	All year	All day	18,064
6 CF/University Ave (Yellow)	All year	All day	17,468
7 CF/Rainbow Dr (Yellow)	All year	All day	34,993
9 CF Loop (Purple)	All year	All day	10,579
10 HCC (Gold)	Reduced summer service	No mid-day service	3,589

MET Transit's fixed route and paratransit hours of operation are 5:45 a.m. to 6:15 p.m. from Monday to Friday, and 7:15 a.m. to 6:15 p.m. on Saturday. There is no service on Sunday. Regular fixed route fares have remained the same for well over a decade. Regular fares for adults are $1.50 per ride, while fares for seniors, disabled, Medicare card holders, and students are $0.75; the cost of a 30-day pass is $50 and $45, respectively. Riders can also purchase eleven ride tickets at once for the price of ten tickets.

Paratransit service, which is also provided by MET Transit, provides transportation for people who are unable to use fixed route buses. To qualify for paratransit service, passengers must meet one of the following conditions established by the Americans with Disabilities Act (ADA):

- Inability to get on or off a bus
- Inability to get to or from a fixed route bus stop
- Inability to wait at a fixed route bus stop
- Inability to ride the fixed route buses or follow transit instructions because of a disability

ADA paratransit eligibility is based on a passenger's functional abilities rather than a medical diagnosis. MET Transit currently offers paratransit throughout Waterloo, Cedar Falls, and Evansdale, though it is only required to offer the service within 0.75 miles of fixed routes.

Transit Ridership

Figures 4.1 and 4.2 show the total number of rides for fixed routes and paratransit from state fiscal years 2019 to 2023. Over the past five years, MET Transit has witnessed a notable decline in transit ridership due to various factors, with the COVID-19 pandemic being one of the most significant contributors. The transit system was temporarily shut down due to the pandemic, and widespread restrictions and social distancing measures discouraged public gatherings, leading to a significant shift towards remote work for many individuals. This shift resulted in fewer people utilizing public transportation services, causing a considerable drop in MET Transit's ridership. Moreover, fluctuations in fuel prices and changes in demographic trends could have also played a role in the overall decline in transit ridership for MET Transit over the past five years.

Figure 4.1: Fixed Route Ridership by Month, SFY 2019-2023

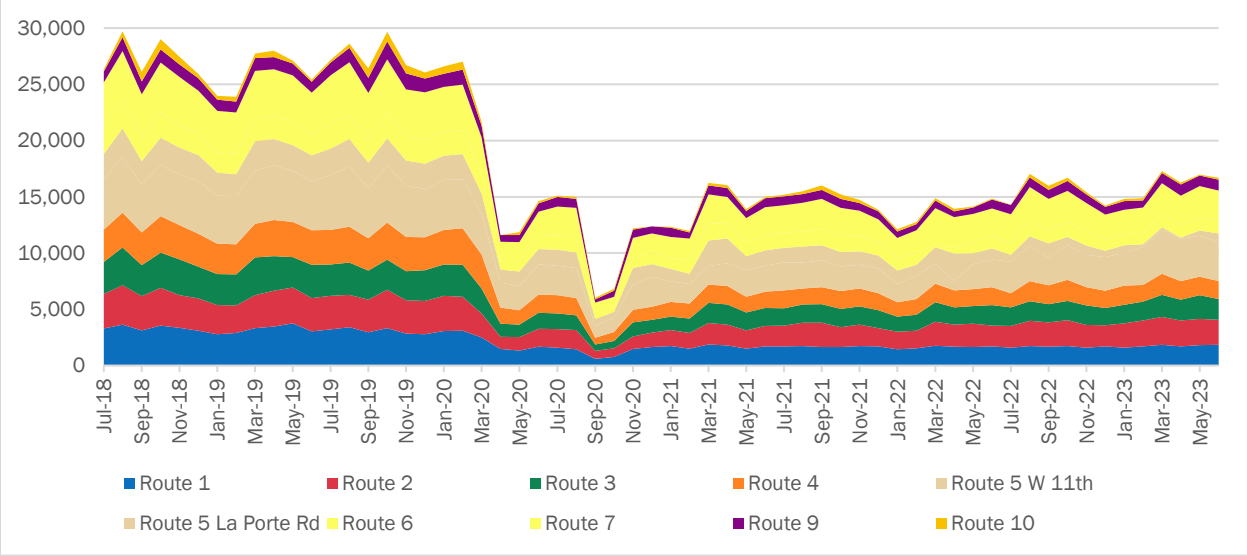
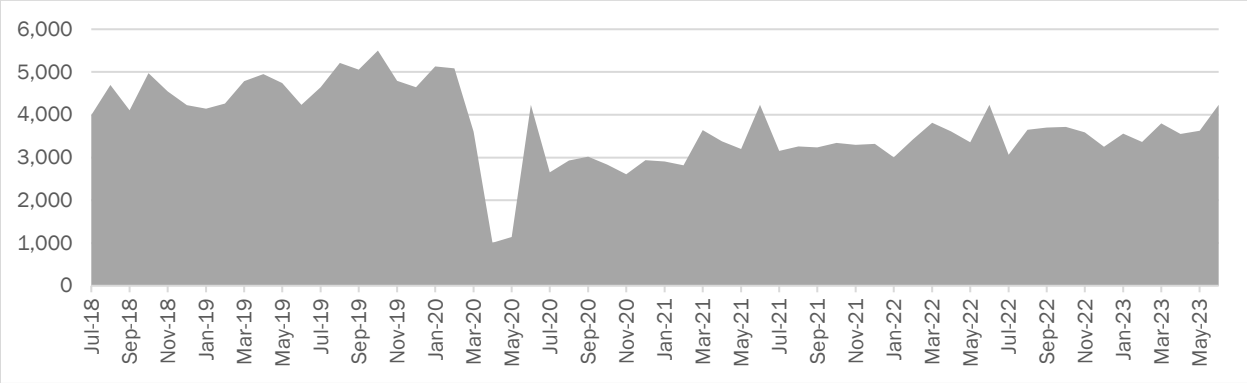


Figure 4.2: Paratransit Ridership by Month, SFY 2019-2023



Transit Ridership Forecasts

Predicting future transit ridership is a tough task due to uncertainties and factors involved. The challenge is foreseeing changes in urban settings caused by population shifts, economic changes, and altered land use patterns. This task is made harder by factors like technological advancements and new transportation choices. Unexpected events like pandemics can disrupt travel patterns, making accurate predictions even tougher.

Using a power trendline for predicting transit ridership offers a range of valuable advantages in forecasting accuracy and insight. Unlike linear models, power trendlines can effectively capture non-linear trends inherent in transit ridership data, accommodating exponential growth or decay patterns. Moreover, power trendlines can adeptly identify periods of rapids growth followed by saturation, mirroring real-world scenarios in transit systems.

Figure 4.3 provides a power trendline projection based on annual ridership data from state fiscal years 2021 to 2023. Notably, the data from state fiscal years 2019 and 2020 have been excluded from this analysis. This omission is a result of the significant decline in ridership during these years, attributable to the widespread restrictions imposed in response to the COVID-19 pandemic. By focusing on the years that follow the pandemic-related impact, the power trendline projection seeks to provide a clearer outlook for fixed route ridership, considering a context that is more aligned with regular travel patterns and conditions.

Relying solely on a power or linear trendline can be limiting, as transit ridership is influenced by various dynamic factors. More sophisticated forecasting methods, such as autoregressive integrated moving average models, can capture seasonality and cyclic patterns in ridership data. Additionally, conducting frequent surveys and engaging with the community to understand their changing needs and preferences can provide valuable insights for predicting future ridership.

Figure 4.3: Fixed Route Ridership Projection, Power Trendline

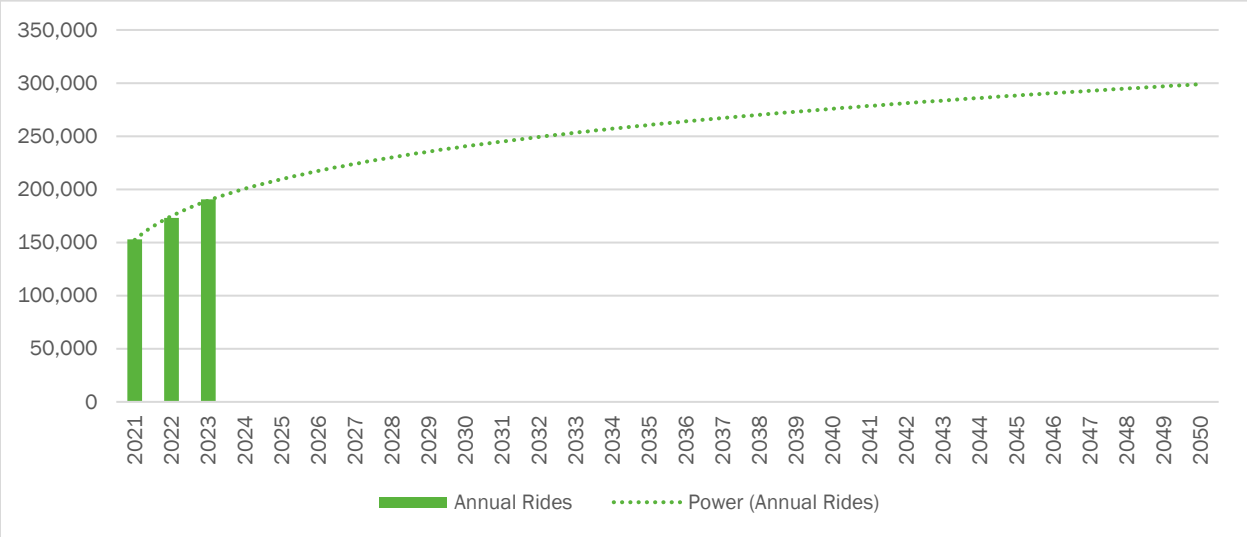
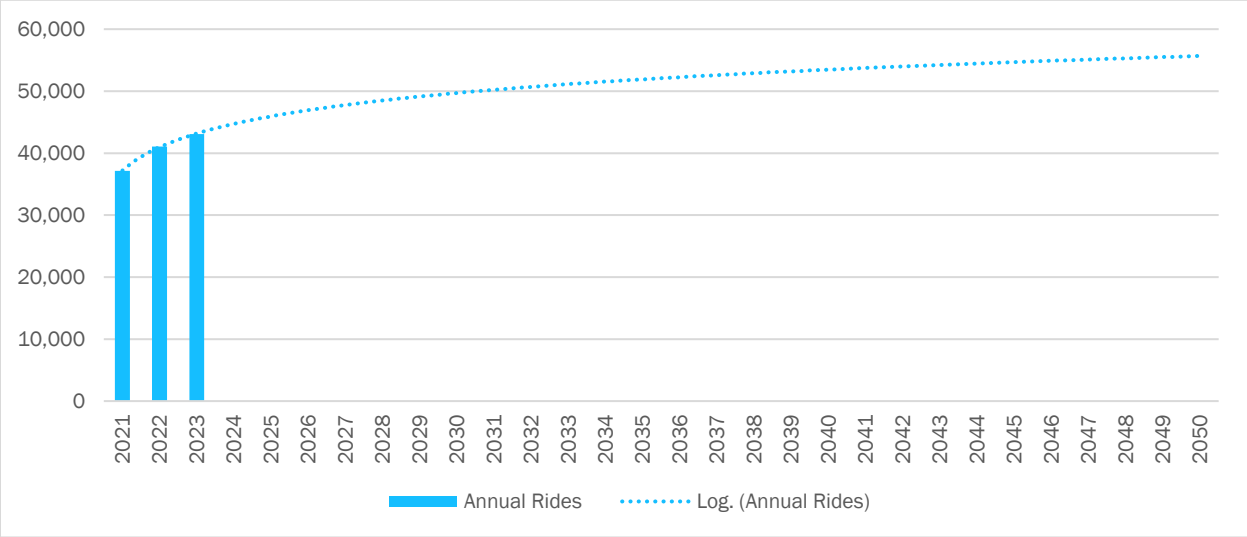


Figure 4.4 displays the ridership projection for MET Transit's paratransit system, where a logarithmic trendline was employed instead of a linear one. The rationale behind this choice lies in the anticipation that ridership will plateau as the baby boomer generation ages and increasingly utilizes the paratransit service.

Figure 4.4: Paratransit Ridership Projection, Logarithmic Trendline



Transit Coverage

Transit Coverage

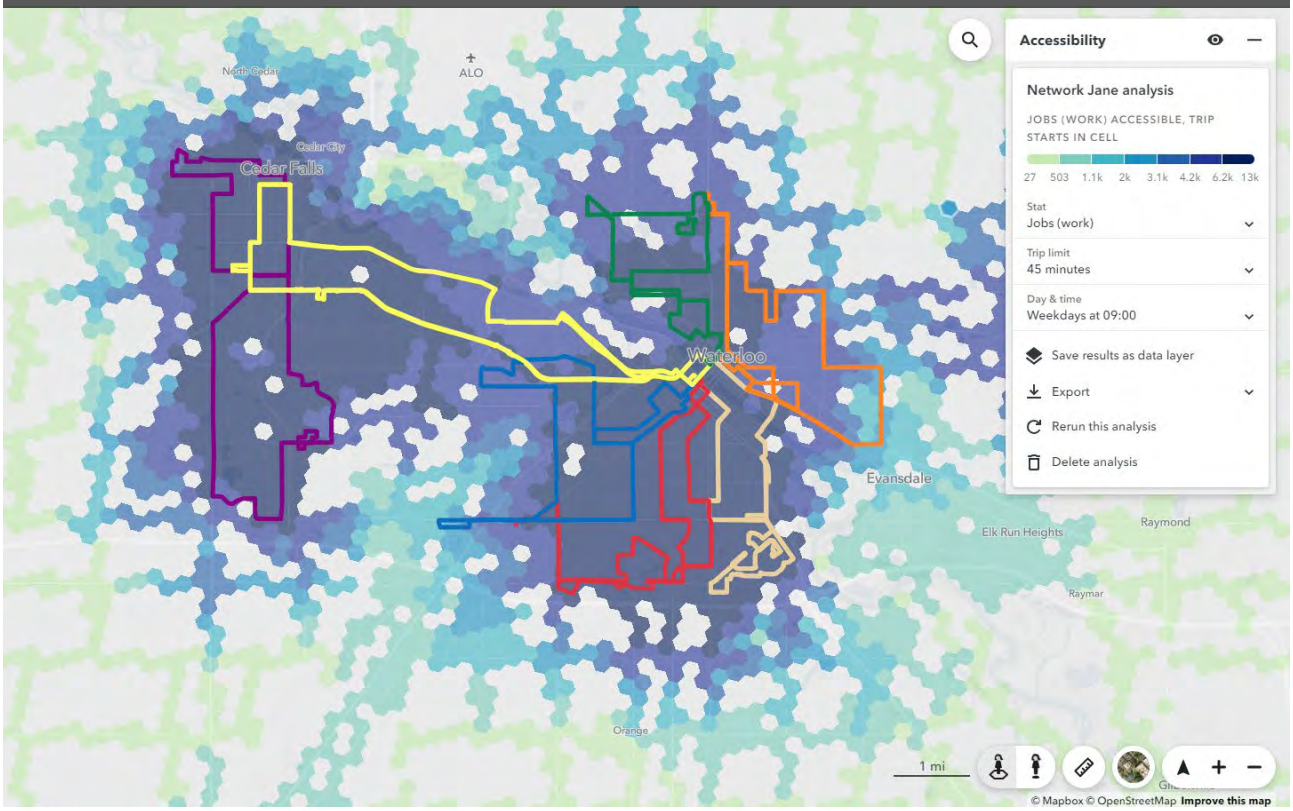
Maps 4.2 through 4.8 show the relationship between MET Transit's fixed routes and several economic and demographic characteristics identified in Chapter 2 of this document. Reviewing these characteristics may help to show gaps in coverage that could be considered for future projects.

In 2017, the MET Transit Board voted to purchase a license for the transit planning software, Remix. MET Transit and MPO staff utilized this tool to determine the feasibility of long-term changes to the fixed route system. The software also enables overlaying existing routes with various demographic data. Table 4.3 shows various demographic data made available through Remix, based on a 0.25-mile radius of each fixed route.

Table 4.3: Demographic Characteristics Within ¼ Mile of Fixed Routes (as of November 2023)

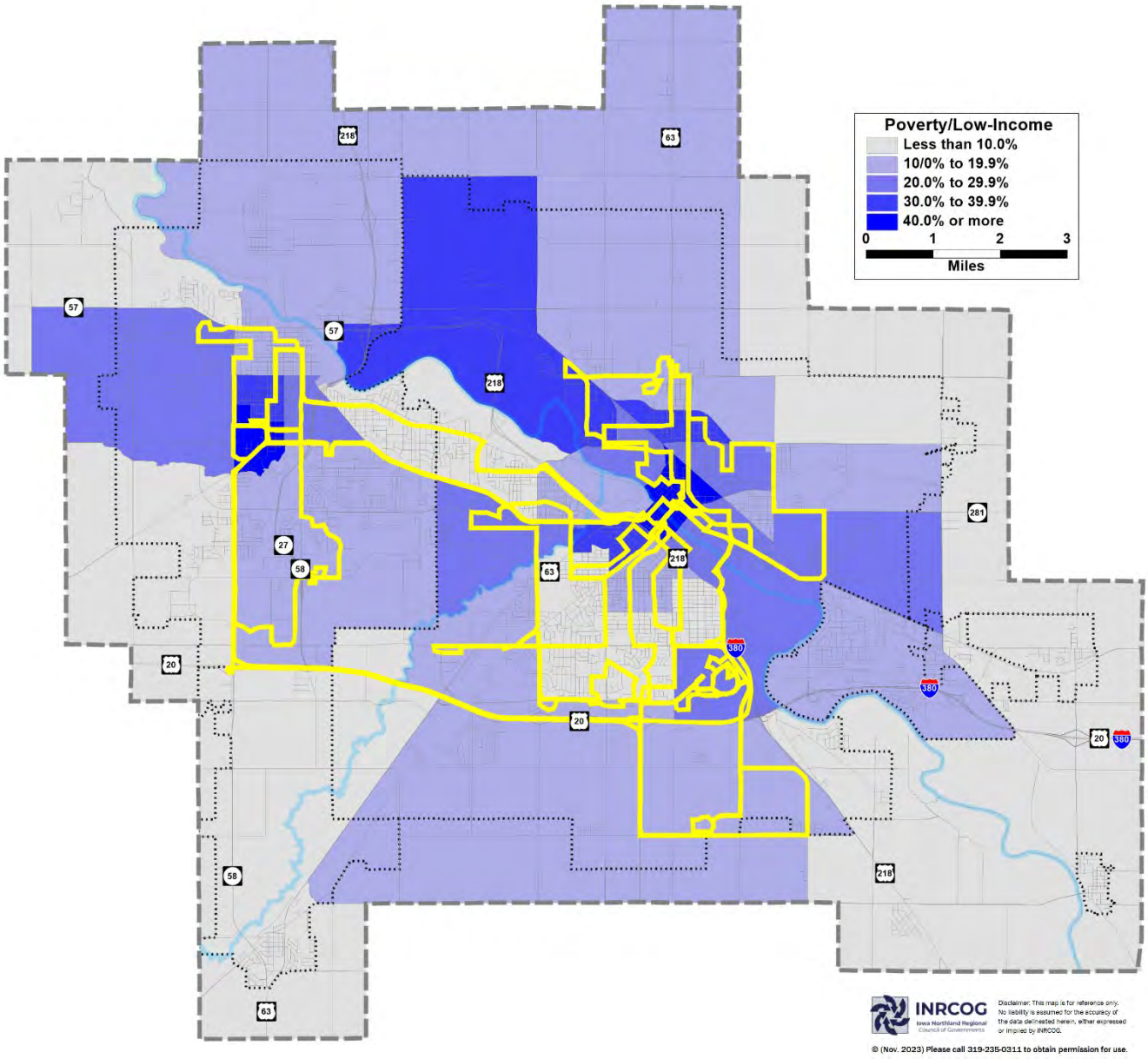
Route	Pop. (2020)	Jobs	Poverty	Non-White	Car Free Houses	Disability	Age 65+	Non-English
1 West (Blue)	14,200	4,800	18%	32%	12%	14%	15%	7%
2 West (Red)	17,300	7,800	12%	35%	10%	16%	17%	9%
3 East (Green)	6,300	4,400	31%	59%	26%	23%	15%	5%
4 East (Orange)	9,400	3,800	26%	61%	20%	23%	15%	7%
5 Crossroads/W 11th/La Porte Rd (Tan)	9,300	5,300	18%	38%	16%	17%	13%	15%
6 CF/University Ave (Yellow)	19,900	9,900	21%	18%	10%	12%	15%	2%
7 CF/Rainbow Dr (Yellow)	19,200	10,000	22%	18%	11%	12%	15%	2%
9 CF Loop (Purple)	13,200	8,500	25%	17%	6%	9%	10%	1%
10 HCC (Gold)	8,400	5,800	29%	21%	9%	12%	9%	3%

Access to Jobs Analysis
Source: Remix



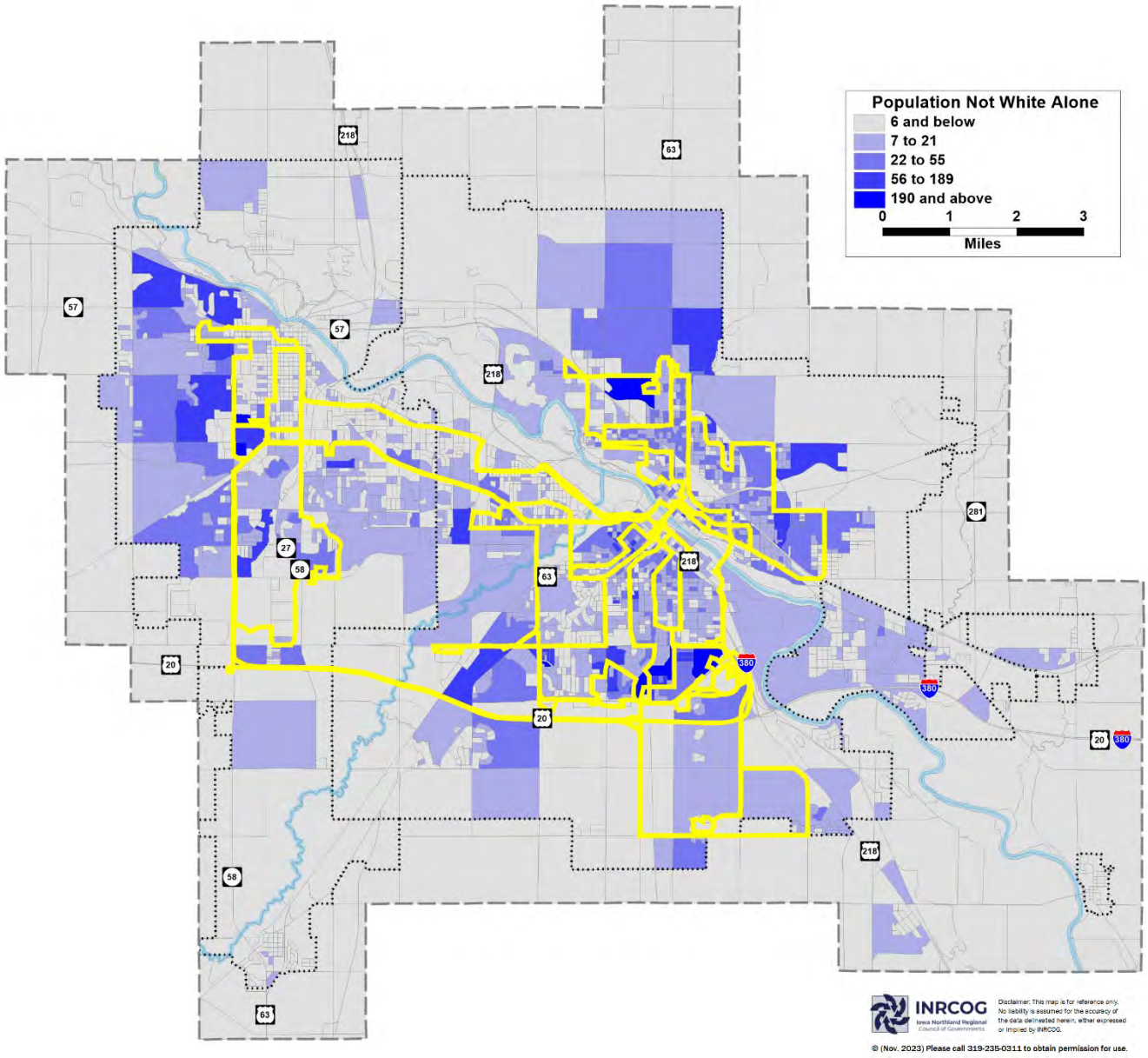
Map 4.2: Poverty/Low-Income by Census Tract

Source: U.S. Census Bureau, American Community Survey 5-year Estimates, 2021



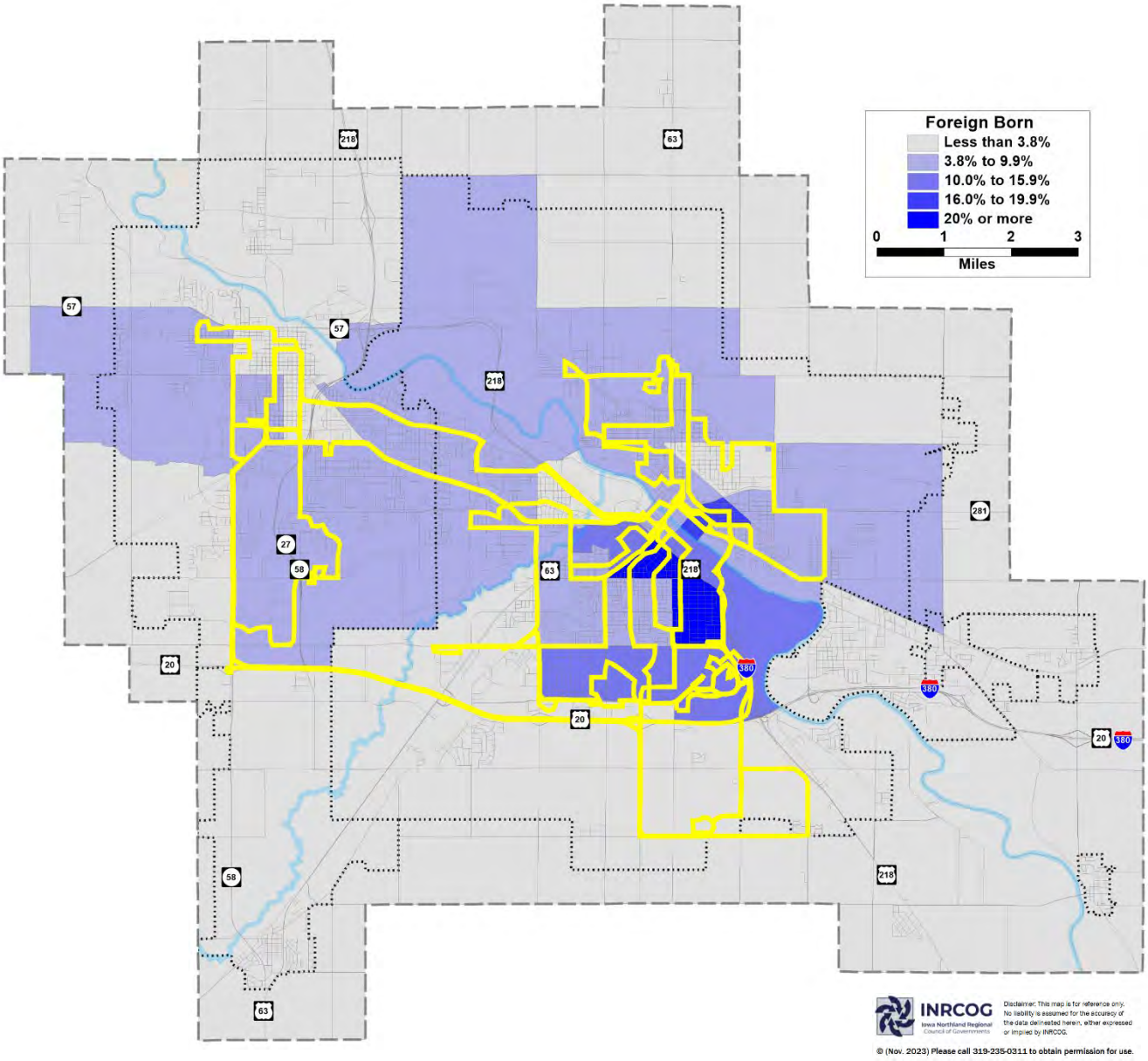
Map 4.3: Racial and Ethnic Minorities by Census Block

Source: U.S. Census Bureau, Decennial Census, 2020



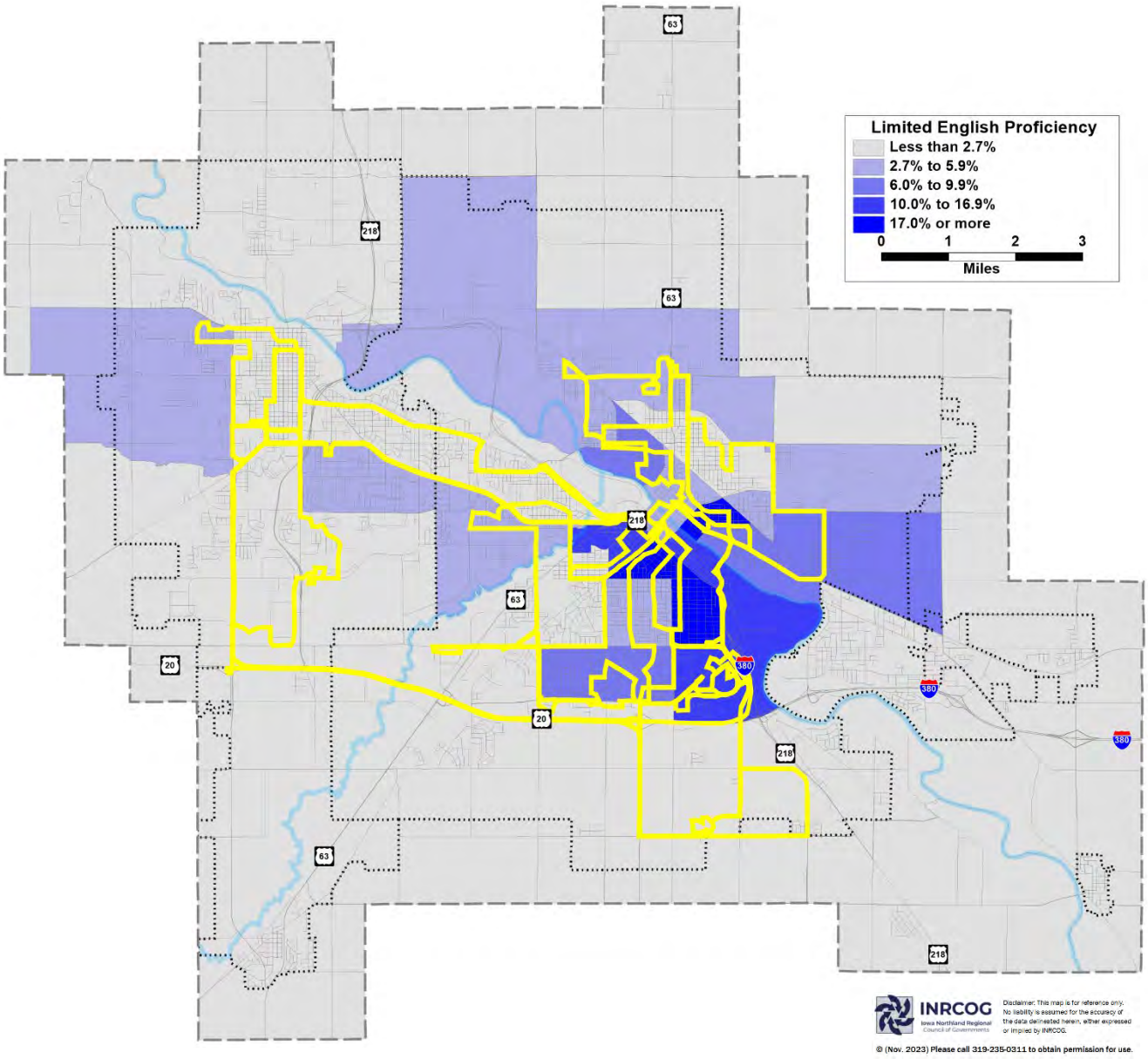
Map 4.4: Foreign Born Population by Census Tract

Source: U.S. Census Bureau, American Community Survey 5-year Estimates, 2021



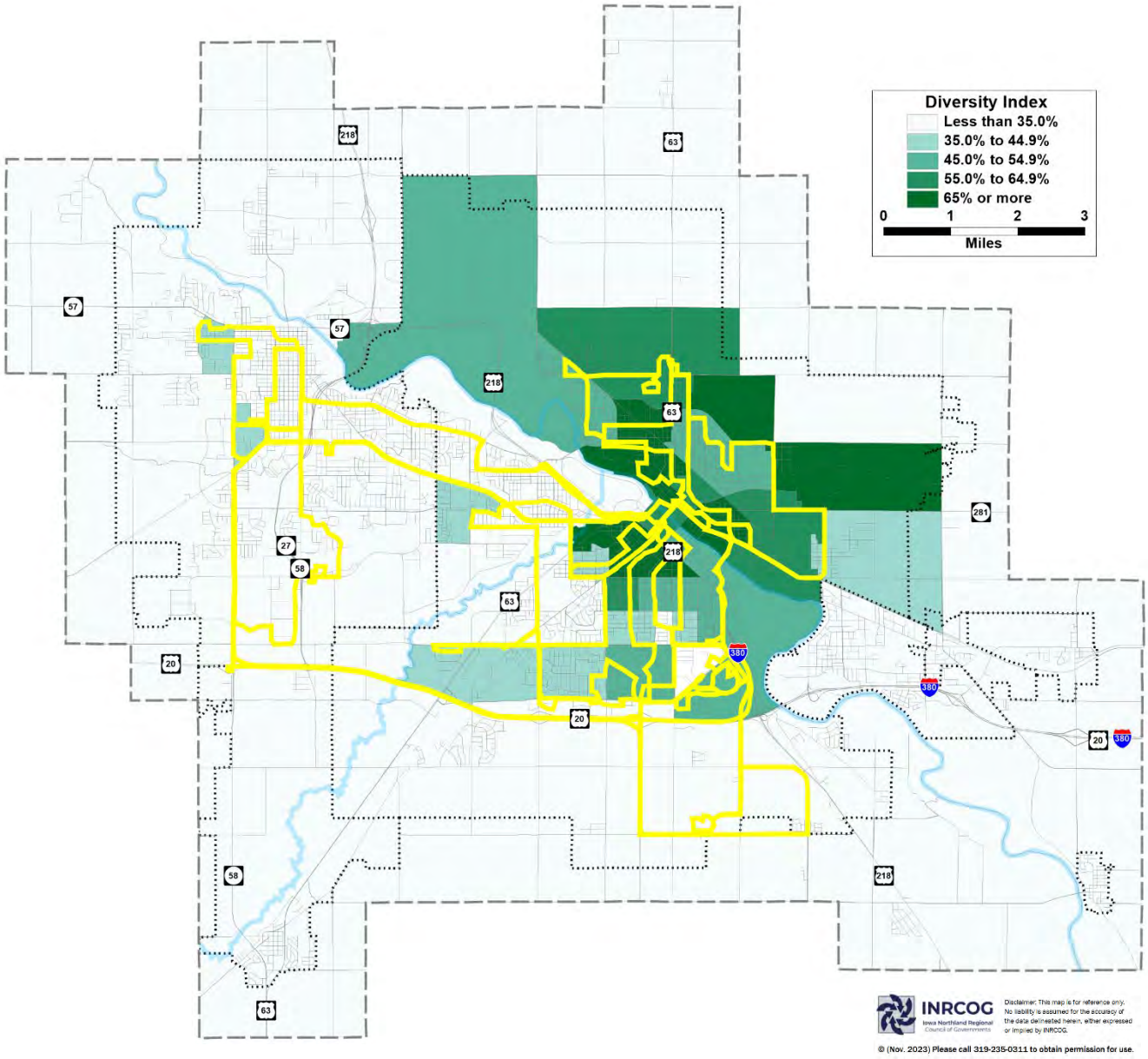
Map 4.5: Limited English Proficiency by Census Tract

Source: U.S. Census Bureau, American Community Survey 5-year Estimates, 2021



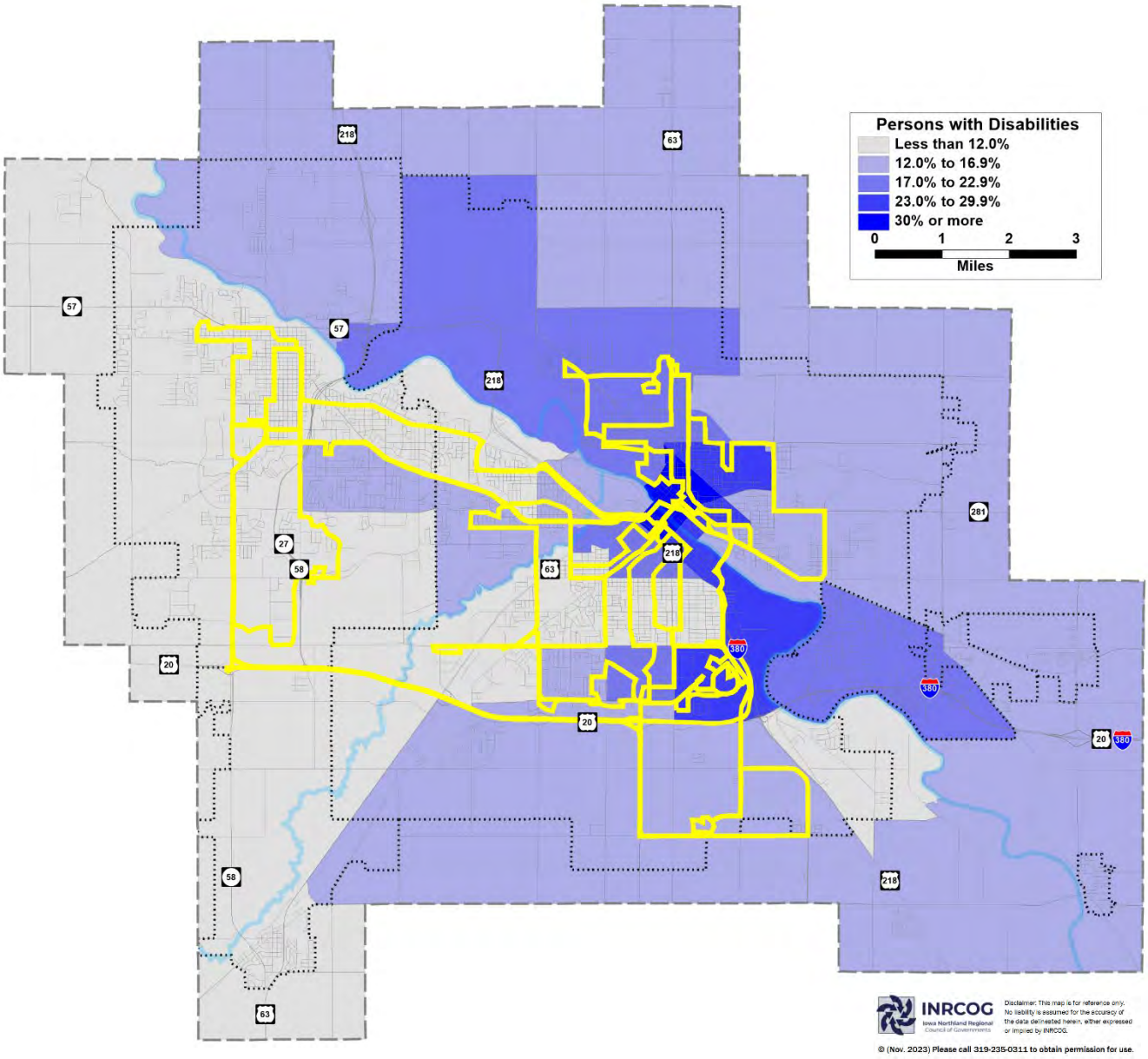
Map 4.6: Ethnic Diversity Index by Census Block Group

Source: U.S. Census Bureau, Decennial Census, 2020



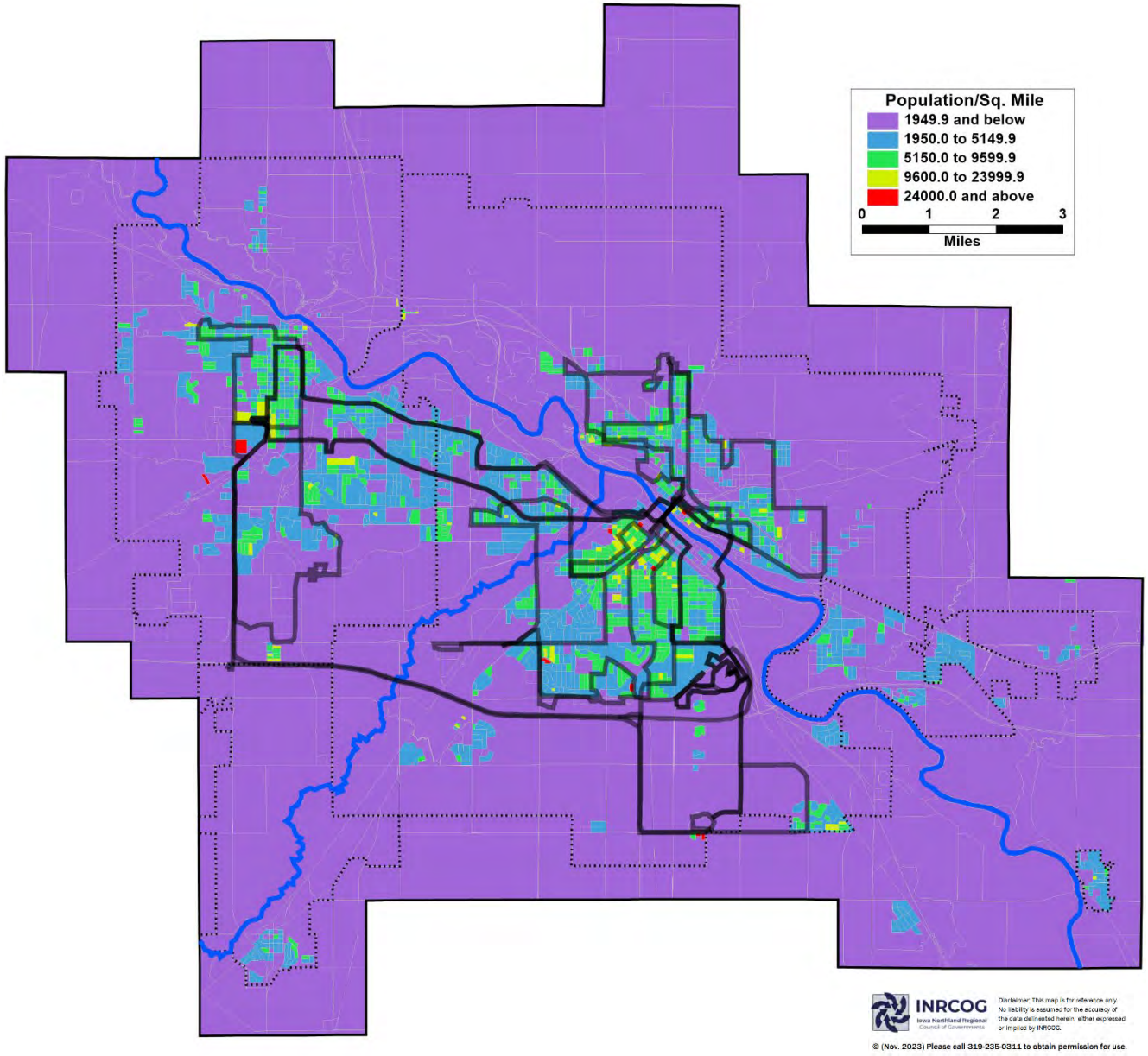
Map 4.7: Persons with Disabilities

Source: U.S. Census Bureau, American Community Survey 5-year Estimates, 2021



Map 4.8: Population Per Square Mile by Census Block

Source: U.S. Census Bureau, Decennial Census, 2020



Inventory

MET Transit has a total of thirty-nine vehicles in service, including 20 fixed route buses and 19 paratransit buses. Table 4.4 shows the fleet of vehicles and several characteristics.

Table 4.4: MET Transit Vehicle Inventory (as of July 2023)

Bus ID	Service	Description	Seats/ Standing	Lock Downs	Date Acquired	Purchase Price	Condition	Mileage	Over ULB*
901	Fixed Route	2009 Gillig-30'	26/18	2	4/20/09	$288,599	Fair	507,174	Y
902	Fixed Route	2009 Gillig-30'	26/18	2	4/20/09	$288,599	Fair	495,511	Y
903	Fixed Route	2009 Gillig-35'	30/56	3	4/20/09	$328,655	Fair	542,892	Y
110	Fixed Route	2010 Gillig-30'	26-40	2	8/23/10	$345,787	Fair	405,826	Y
210	Fixed Route	2010 Gillig-30'	26-40	2	8/19/10	$345,787	Fair	439,969	Y
310	Fixed Route	2010 Gillig-30'	26-40	2	8/19/10	$345,787	Fair	471,510	Y
410	Fixed Route	2010 Gillig-35'	31-50	3	8/19/10	$355,632	Fair	480,615	Y
510	Fixed Route	2010 Gillig-35'	31-50	3	8/30/10	$355,632	Fair	405,295	Y
112	Fixed Route	2012 Gillig-30'	26-16	2	3/12/12	$356,945	Good	451,023	Y
212	Fixed Route	2012 Gillig-30'	26-16	2	2/14/12	$356,945	Good	405,446	Y
312	Fixed Route	2012 Gillig-30'	26-16	2	3/12/12	$356,945	Good	441,256	Y
113	Fixed Route	2013 Gillig-30'	26-17	2	2/21/13	$373,449	Good	460,688	Y
114	Fixed Route	2014 Gillig-30'	26-17	2	3/18/14	$373,873	Good	361,898	
214	Fixed Route	2014 Gillig-30'	26-17	2	3/19/14	$373,873	Good	435,086	
120	Fixed Route	2020 Ford Glaval-176"	16-0	4	1/23/20	$92,995	Excellent	109,552	
220	Fixed Route	2020 Gillig-30'	26-17	4	9/26/20	$439,801	Excellent	184,111	
820	Fixed Route	2020 Ford Glaval-176"	16-0	4	1/12/21	$93,219	Excellent	90,965	
221	Fixed Route	2021 Gillig-30'	26-17	4	7/28/21	$461,800	Excellent	82,719	
122	Fixed Route	2022 Gillig-30'	26-17	4	1/11/23	$466,178	Excellent	24,795	
222	Fixed Route	2022 Gillig-30'	26-17	4	11/12/23	$466,178	Excellent	20,726	
301	Paratransit	03 Bluebird-30'	24-18	10	8/21/03	$154,393	Poor	268,657	Y
412	Paratransit	12 Glaval Titan-183"	16-0	5	10/8/12	$81,203	Poor	160,013	Y
512	Paratransit	12 Glaval Con.-MD	10-0	7	12/17/12	$155,674	Good	160,332	Y
115	Paratransit	15 Glaval Legacy-MD	18-0	7	5/1/15	$136,786	Good	159,262	Y
215	Paratransit	15 Glaval Legacy-MD	18-0	7	5/1/15	$136,786	Good	167,001	Y
315	Paratransit	15 Glaval Legacy-MD	18-0	7	7/28/15	$135,186	Good	142,944	Y
415	Paratransit	16 Chev TurtleTop-176"	16-0	5	10/27/15	$94,329	Good	135,331	Y
515	Paratransit	16 Chev TurtleTop-176"	16-0	5	10/27/15	$94,329	Good	159,740	Y
615	Paratransit	16 Chev TurtleTop-176"	16-0	5	10/27/15	$94,854	Good	143,402	Y
116	Paratransit	16 Chev TurtleTop-176"	16-0	5	12/7/16	$95,806	Good	128,813	Y
216	Paratransit	16 Chev TurtleTop-176"	16-0	5	12/7/16	$95,806	Good	141,631	Y
117	Paratransit	17 Glaval Legacy-MD	18-0	7	4/7/17	$140,363	Excellent	113,417	
118	Paratransit	18 Glaval Uni-176"	16-0	5	6/13/18	$81,318	Excellent	135,444	
218	Paratransit	18 Glaval Uni-176"	16-0	5	11/8/18	$81,318	Excellent	126,330	
420	Paratransit	20 Glaval Uni-176"	16-0	5	1/12/21	$93,219	Excellent	63,787	
520	Paratransit	20 Glaval Uni-176"	16-0	5	1/12/21	$93,219	Excellent	64,928	
620	Paratransit	20 Glaval Uni-176"	16-0	5	1/12/21	$93,219	Excellent	65,035	
720	Paratransit	20 Glaval Uni-176"	16-0	5	1/12/21	$93,219	Excellent	70,763	
121	Paratransit	21 Glaval Uni-176"	16-0	5	8/6/21	$84,270	Excellent	58,193	

**Useful Life Benchmark*

Intercity Transit

Burlington Trailways provides intercity bus service throughout Iowa and the Midwest with routes extending as far as Indianapolis, St. Louis, and Denver. Burlington Trailways operates one private intercity bus route with a stop at Central Transfer in Waterloo. The Schedule 1492 bus departs Waterloo daily at 1:30 p.m. to Cedar Rapids, Iowa City, Davenport, and Chicago.

Burlington Trailways Depots
Source: www.burlingtontrailways.com

Transit Infrastructure

During the last five years, there has been a steady growth in transit-related infrastructure development within the metropolitan area. In 2018, the City of Waterloo initiated a project to replace its outdated bus benches with ADA-compliant bus stop landings. The previous benches were frequently located in grassy areas, making them inaccessible to individuals using wheelchairs, and their condition had significantly deteriorated over time. The newly installed landings align with existing bus routes, ensuring improved accessibility and convenience for all users.

New bus shelters on University Avenue, Cedar Falls
Source: INRCOG

As part of the University Avenue reconstruction projects in Waterloo and Cedar Falls, new bus shelters and benches have been introduced. These upgraded bus stops boast the distinction of being the first designated bus pull-outs in the metropolitan area. Additionally, plans are underway to implement similar shelters in Waterloo for the La Porte Rd reconstruction and enhancement project.

The University of Northern Iowa Multimodal Transportation Center, located at 1215 W 23rd St in Cedar Falls, was completed in the early 2010s, offering the metropolitan area an additional indoor temperature-controlled transfer facility. The facility's operations are under the supervision of the UNI Department of Public Safety. Bike lockers are provided in front of the facility and may be leased during the school year or over the summer.

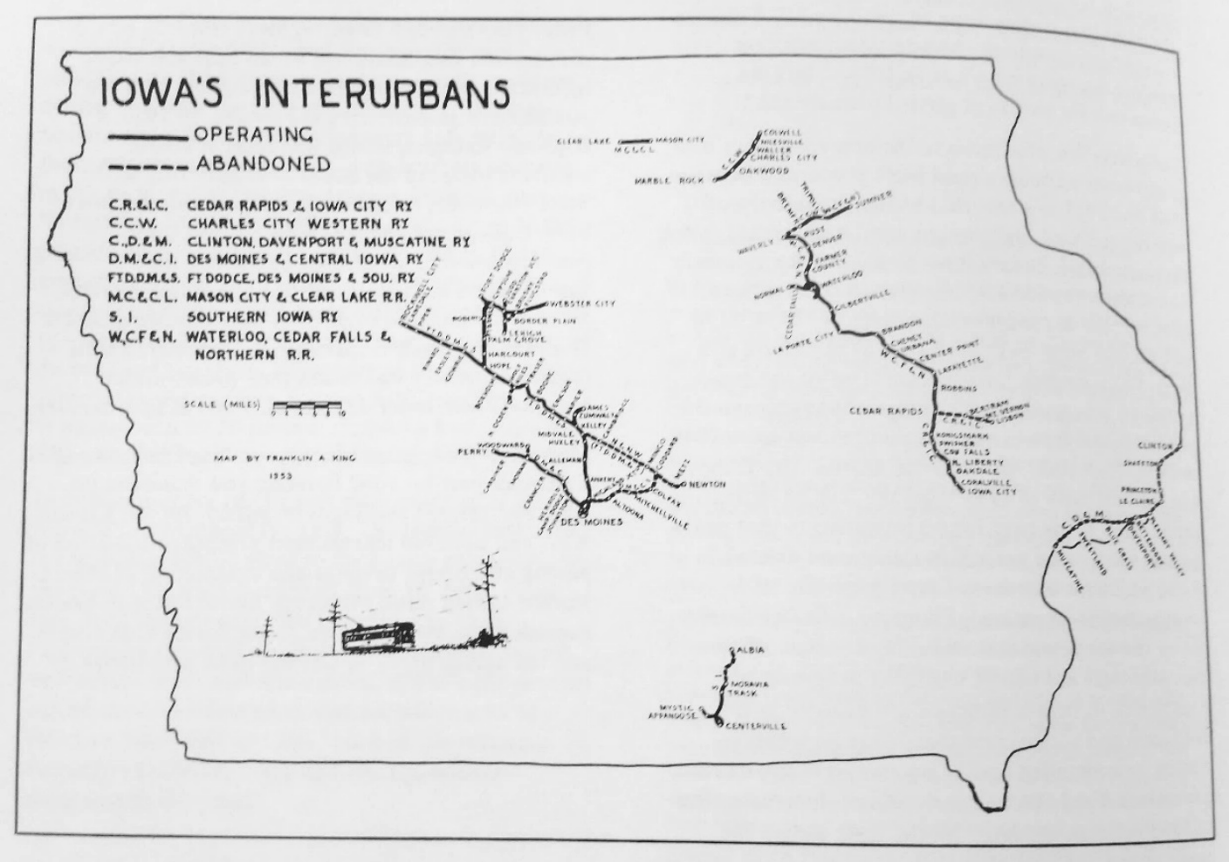
Built in the 1980s, MET Transit's Central Transfer facility was established at its present location, situated on the corner of Sycamore St and E Park Ave in downtown Waterloo. The facility not only serves as the primary transfer point for fixed routes but also offers connections to intercity bus services operated by Burlington Trailways. Inside, passengers can find indoor seating, while unsheltered outdoor seating is also available. Additionally, there are restrooms and a staffed ticket booth. Since its original construction, the facility has not undergone any upgrades, making it ripe for improvement. Implementing enhancements like dynamic message signs and tickers, the introduction of greenery with trees and vegetation, installing pedestrian lighting, incorporating public art, and providing bicycle racks would significantly elevate the overall experience for riders.

Passenger Rail

Black Hawk County possesses a rich heritage of passenger rail connectivity. Over numerous decades, the region proudly hosted one of the most expansive interurban rail networks within the state. During the early 1900s, a train journey spanning from Sumner to Waverly, traversing Black Hawk County, and extending onward to Cedar Rapids and Iowa City was entirely feasible. Additionally, passenger rail travel was possible from Waterloo to Chicago, facilitated by the esteemed Land O' Corn service.

Streetcar at East 4th St & Mulberry St in Waterloo, 1943
Source: University of Iowa Libraries

Apart from the interurban lines, the city of Waterloo boasted an expansive array of streetcar lines. Among these were electric interurban lines that linked Waterloo with Cedar Falls, Waverly, and Cedar Rapids. Within the boundaries of Waterloo itself, a multitude of streetcar routes existed, namely Sans Souci, Litchfield, Galloway, Cottage, Highland, Linden, West Ninth Line, and Prospect. One remarkable advantage of Waterloo's streetcar system was its "Loop," which provided direct access to more than 20 industrial sites. However, by the year 1940, the streetcar service within Waterloo underwent a complete phase-out, being displaced by buses. During the 1950s, the interurban lines also succumbed to closure.



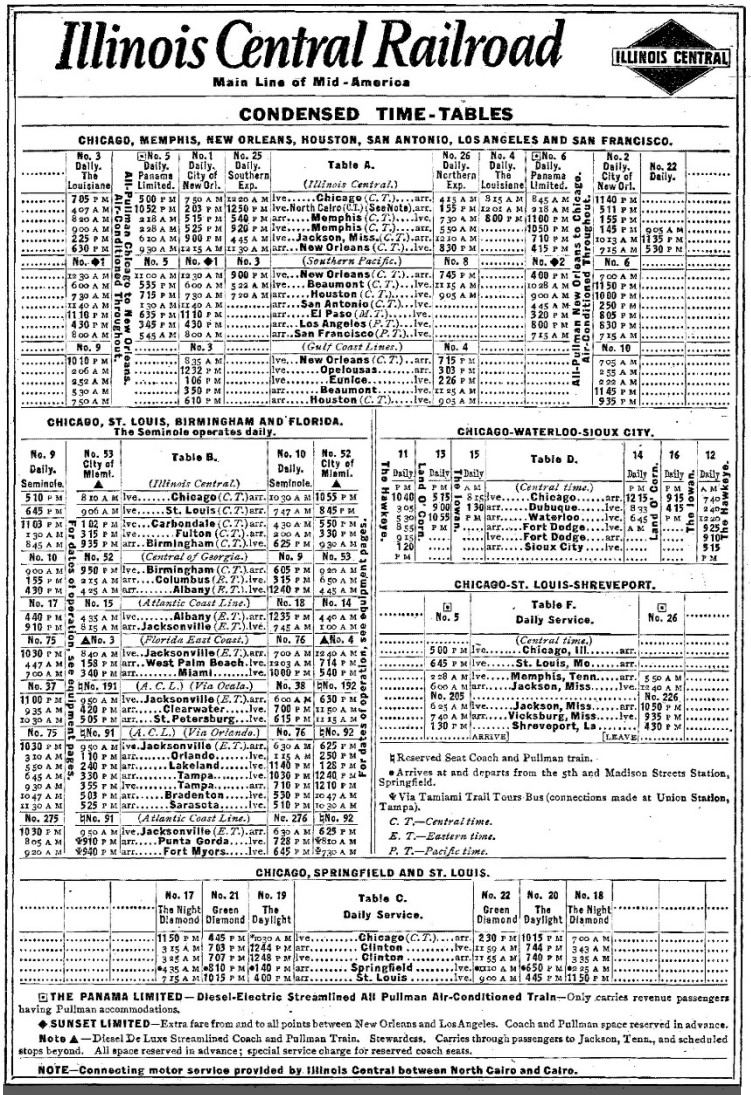
Iowa's Interurban Rail Lines, 1953
Source: The Palimpsest Publication Vol. XXXV No. 5 by Frank P. Donovan Jr., May 1954

Since 1967, passenger rail services have been absent from the metro area, following the discontinuation of the Land O' Corn by Illinois Central. This passenger railway, which initially commenced operations in 1941, owed its existence to John W. Rath, a significant figure in both the Rath Packing Company and the Illinois Central's board of directors. Originally, the Land O' Corn completed its Waterloo-Chicago journey in 5.5 hours. By the mid-1960s, the travel time had extended to 6.5 hours. The train departed from Waterloo in the morning and returned in the evening, serving as a vital transportation link to the greater Chicago area. The Hawkeye served as a counterpart to the west, providing services from Waterloo to Sioux City.

Illinois Central Land O' Corn departing from Chicago to Waterloo, 1967
Photo by Paul Enenbach

Presently, Iowa's passenger rail services are provided by Amtrak through two prominent routes: the California Zephyr journeying from Chicago to Oakland, and the Southwestern Chief route from Chicago to Los Angeles. Throughout their respective journeys, these trains make several stops at various cities along the way. Both services primarily cater to southern Iowa, with stops at Fort Madison, Burlington, Mount Pleasant, Ottumwa, Osceola, Creston, and Omaha.

The revival of passenger rail in Iowa and the reconnection of the Black Hawk County metropolitan area to Chicago through passenger rail is of utmost significance for multiple reasons. Firstly, the revitalization of passenger rail would enrich transportation choices. Rail travel offers an effective and eco-friendly alternative to driving or flying, enabling passengers to reach their destinations swiftly and comfortably while easing congestion and reducing carbon emissions. Furthermore, passenger rail has demonstrated its potential to drive economic development in other states that have embraced this mode of transportation. It invigorates local economies by generating job opportunities, attracting businesses, and fostering tourism. Moreover, investing in passenger rail demonstrates dedication to sustainability and environmental responsibility. Rail travel proves significantly more energy efficient than automobiles or airplanes, resulting in lower greenhouse gas emissions per passenger mile.



Illinois Central Railroad

Main Line of Mid-America

ILLINOIS CENTRAL

CONDENSED TIME-TABLES

CHICAGO, MEMPHIS, NEW ORLEANS, HOUSTON, SAN ANTONIO, LOS ANGELES AND SAN FRANCISCO.

No. 3 Daily. The Louisiane	⊡No. 5 Daily. Panama Limited.	No. 1 Daily. City of New Orl.	No. 25 Daily. Southern Exp.	Table A. (Illinois Central.)	No. 26 Daily. Northern Exp.	No. 4 Daily. The Louisiane	⊡No. 6 Daily. Panama Limited.	No. 2 Daily. City of New Orl.	No. 22 Daily.
7 05 P M	5 00 P M	7 30 A M	12 20 A M	lve.....Chicago (C. T.).....arr.	4 15 A M	8 15 A M	8 45 A M	11 40 P M	
4 07 A M	10 52 P M	2 03 P M	12 50 P M	lve. North Cairo (C.I.) (See Note) arr.	1 55 P M	12 02 A M	9 18 A M	5 11 P M	
8 20 A M	2 18 A M	5 15 P M	5 40 P M	arr.....Memphis (C. T.).....lve.	7 30 A M	8 00 P M	11 00 P M	1 55 P M	
9 00 A M	2 28 A M	5 25 P M	5 20 P M	lve.....Memphis (C. T.).....arr.	5 50 A M	.....	10 50 P M	1 45 P M	9 05 A M
2 25 P M	6 20 A M	9 00 P M	4 45 A M	lve..Jackson, Miss. (C. T.)..arr.	12 10 A M	.....	7 10 P M	10 23 A M	11 35 P M
6 30 P M	9 30 A M	12 15 A M	11 30 A M	arr...New Orleans (C. T.)..lve.	8 30 P M	.....	4 15 P M	7 15 A M	5 30 P M
No. ◆1		No. 5	No. ◆1	No. 3	(Southern Pacific.)	No. 8		No. ◆2	No. 6
10 30 A M	11 00 A M	12 30 A M	9 00 P M	lve...New Orleans (C. T.)...arr.	7 45 P M	.....	4 00 P M		7 00 A M
6 00 A M	5 35 P M	6 00 A M	5 22 A M	lve....Beaumont (C. T.)....lve.	11 25 A M	.....	10 28 A M		11 50 P M
7 30 A M	7 15 P M	7 30 A M	7 20 A M	arr.....Houston (C. T.).....lve.	9 05 A M	.....	9 00 A M		10 00 P M
12 40 A M	1 30 A M	12 40 A M	.....	arr...San Antonio (C. T.)....lve.	.....	.....	4 45 A M		2 50 P M
11 10 P M	6 35 P M	11 10 P M	.....	arr.....El Paso (M. T.).....lve.	.....	.....	3 20 P M		8 05 P M
4 30 P M	3 45 P M	4 30 P M	.....	arr...Los Angeles (P. T.)...lve.	.....	.....	8 00 P M		8 30 P M
8 00 A M	5 45 A M	8 00 A M	.....	arr..San Francisco (P. T.)..lve.	.....	.....	7 15 A M		7 35 A M
No. 9		No. 3		(Gulf Coast Lines.)	No. 4				No. 10
10 10 P M	.....	8 35 A M	.....	lve...New Orleans (C. T.)...arr.	7 15 P M	.....	.....		7 05 A M
2 06 A M	.....	12 32 P M	.....	lve.....Opelousas.....arr.	3 03 P M	.....	.....		2 55 A M
8 50 A M	.....	1 06 P M	.....	lve.....Eunice.....lve.	2 26 P M	.....	.....		2 00 A M
5 30 A M	.....	3 50 P M	.....	arr.....Beaumont.....lve.	12 25 A M	.....	.....		11 45 P M
7 50 A M	.....	6 10 P M	.....	arr.....Houston (C. T.).....lve.	9 05 A M	.....	.....		9 35 P M

CHICAGO, ST. LOUIS, BIRMINGHAM AND FLORIDA.

The Seminole operates daily.

No. 9 Daily. Seminole.	No. 53 City of Miami. ▲	Table B. (Illinois Central.)	No. 10 Daily. Seminole.	No. 52 City of Miami. ▲
5 10 P M	8 10 A M	lve.....Chicago (C. T.).arr.	10 30 A M	10 55 P M
6 45 P M	9 06 A M	lve.....St. Louis (C. T.).arr.	7 47 A M	8 45 P M
11 03 P M	1 02 P M	lve...Carbondale (C. T.).arr.	4 30 A M	5 50 P M
2 30 A M	3 15 P M	lve.....Fulton (C. T.).....arr.	2 00 A M	3 30 P M
8 45 A M	9 35 P M	arr..Birmingham (C. T.).lve.	6 25 P M	9 30 A M
No. 10	No. 52	(Central of Georgia.)	No. 9	No. 53
9 00 A M	9 50 P M	lve..Birmingham (C. T.).arr.	6 05 P M	9 20 A M
1 55 P M	2 55 A M	arr...Columbus (E. T.).lve.	3 15 P M	6 50 A M
4 30 P M	4 25 A M	arr.....Albany (E. T.).lve.	12 40 P M	4 45 A M
No. 17	No. 15	(Atlantic Coast Line.)	No. 18	No. 14
4 40 P M	4 35 A M	lve.....Albany (E. T.).arr.	12 35 P M	4 40 A M
9 10 P M	8 15 A M	arr..Jacksonville (E. T.).lve.	7 45 A M	1 00 A M
No. 75	▲No. 3	(Florida East Coast.)	No. 76	▲No. 4
10 30 P M	8 40 A M	lve..Jacksonville (E. T.).arr.	7 00 A M	12 40 A M
4 47 A M	1 58 P M	arr..West Palm Beach..lve.	12 03 A M	7 14 P M
7 00 A M	3 40 P M	arr.....Miami.....lve.	10 00 P M	5 40 P M
No. 37	⊡No. 191	(A. C. L.) (Via Ocala.)	No. 38	⊡No. 192
11 00 P M	9 50 A M	lve..Jacksonville (E. T.).arr.	6 00 A M	6 30 P M
9 35 A M	4 20 P M	arr.....Clearwater.....lve.	7 00 P M	11 50 A M
10 30 A M	5 05 P M	arr...St. Petersburg.....lve.	6 15 P M	11 15 A M
No. 75	⊡No. 91	(A. C. L.) (Via Orlando.)	No. 76	⊡No. 92
10 30 P M	9 50 A M	lve..Jacksonville (E. T.).arr.	6 30 A M	6 25 P M
3 10 A M	1 10 P M	arr.....Orlando.....lve.	1 15 A M	2 50 P M
5 50 A M	2 40 P M	arr.....Lakeland.....lve.	11 40 P M	1 28 P M
6 45 A M	3 30 P M	arr.....Tampa.....lve.	10 30 P M	12 40 P M
9 30 A M	3 55 P M	lve.....Tampa.....arr.	7 10 P M	12 10 P M
10 47 A M	5 03 P M	arr.....Bradenton.....lve.	5 30 P M	10 47 A M
11 30 A M	5 25 P M	arr.....Sarasota.....lve.	5 10 P M	10 30 A M
No. 275	⊡No. 91	(Atlantic Coast Line.)	No. 276	⊡No. 92
10 30 P M	9 50 A M	lve..Jacksonville (E. T.).arr.	6 50 A M	6 25 P M
8 05 A M	◆910 P M	arr.....Punta Gorda.....lve.	7 28 P M	◆8 10 A M
9 20 A M	◆940 P M	arr.....Fort Myers.....lve.	6 45 P M	◆7 30 A M

CHICAGO-WATERLOO-SIOUX CITY.

11 The Hawkeye. Daily P M	13 Daily P M	15 Daily	Table D. (Central time.)	14 Daily P M	16 Daily A M	12 The Hawkeye. Daily P M
10 40	5 15	8 15	lve.....Chicago.....arr.	12 15	9 15	7 40
8 00	9 00	1 30	arr.....Dubuque.....lve.	8 33	4 15	3 40
5 30	10 55		arr.....Waterloo.....lve.	6 45		12 20
3 55			arr.....Fort Dodge.....lve.	5 00		9 25
2 10			lve.....Fort Dodge.....arr.			8 10
1 20			arr.....Sioux City.....lve.			5 15

CHICAGO-ST. LOUIS-SHREVEPORT.

⊡ No. 5	Table F. Daily Service.	⊡ No. 26
	(Central time.)	
5 00 P M	lve.....Chicago, Ill.....arr.	
6 45 P M	lve.....St. Louis, Mo.....arr.	
2 28 A M	lve.....Memphis, Tenn.....arr.	5 50 A M
6 00 A M	arr.....Jackson, Miss.....lve.	12 40 A M
No. 205		No. 226
6 25 A M	lve.....Jackson, Miss.....arr.	10 50 P M
7 40 A M	arr.....Vicksburg, Miss.....lve.	9 35 P M
1 30 P M	arr.....Shreveport, La.....lve.	4 30 P M
ARRIVE		LEAVE

‖ Reserved Seat Coach and Pullman train.

● Arrives at and departs from the 5th and Madison Streets Station, Springfield.

❖ Via Tamiami Trail Tours Bus (connections made at Union Station, Tampa).

C. T.—Central time.
E. T.—Eastern time.
P. T.—Pacific time.

CHICAGO, SPRINGFIELD AND ST. LOUIS.

No. 17 The Night Diamond	No. 21 Green Diamond	No. 19 The Daylight	Table C. Daily Service.	No. 22 Green Diamond	No. 20 The Daylight	No. 18 The Night Diamond
11 50 P M	4 45 P M	●10 30 A M	lve.....Chicago (C. T.).....arr.	2 30 P M	10 15 P M	7 00 A M
3 15 A M	7 03 P M	12 44 P M	arr.....Clinton.....lve.	11 59 A M	7 44 P M	3 43 A M
3 25 A M	7 07 P M	12 48 P M	lve.....Clinton.....arr.	11 55 A M	7 40 P M	3 35 A M
●4 35 A M	●8 10 P M	●1 40 P M	arr.....Springfield.....lve.	●10 50 A M	●6 50 P M	●2 25 A M
7 25 A M	10 15 P M	4 00 P M	arr.....St. Louis.....lve.	9 00 A M	4 45 P M	11 50 P M

⊡ **THE PANAMA LIMITED**—Diesel-Electric Streamlined All Pullman Air-Conditioned Train—Only carries revenue passengers having Pullman accommodations.

◆ **SUNSET LIMITED**—Extra fare from and to all points between New Orleans and Los Angeles. Coach and Pullman space reserved in advance.

Note ▲—Diesel De Luxe Streamlined Coach and Pullman Train. Stewardess. Carries through passengers to Jackson, Tenn., and scheduled stops beyond. All space reserved in advance; special service charge for reserved coach seats.

NOTE—Connecting motor service provided by Illinois Central between North Cairo and Cairo.

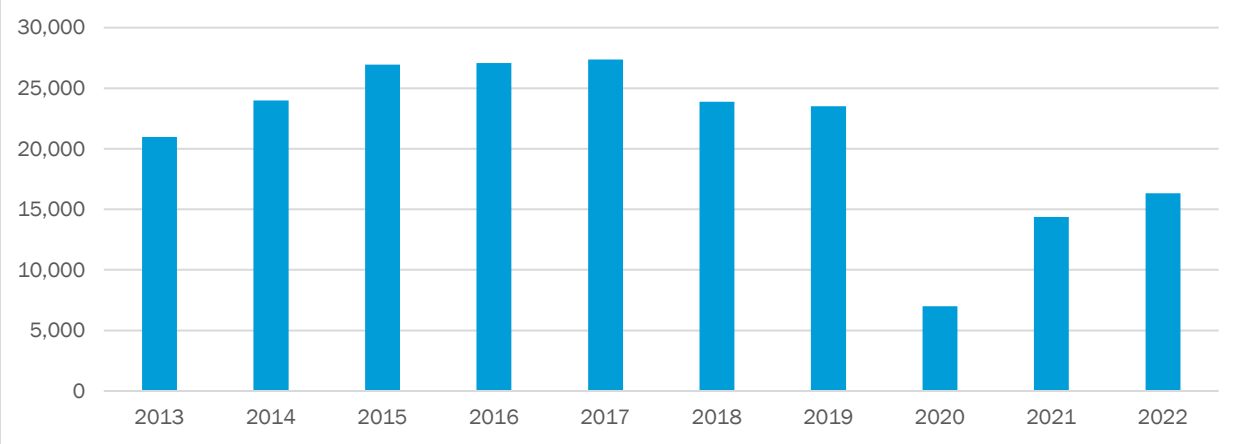
Illinois Central Railroad Timetable, 1952
Source: www.american-rails.com/illinois

Commercial Air

The Waterloo Regional Airport (ALO) is located on Airport Boulevard immediately off U.S. 218 in the northwest corner of Waterloo. Transit service is not currently available to and from the airport. The facility is owned and operated by the City of Waterloo and overseen by a seven-member Airport Board appointed by the Mayor of Waterloo. The airport is classified as a non-hub primary commercial service airport, offering general aviation and commercial service.

ALO is served by American Airlines with two daily flights to and from Chicago. In 2022, American Airlines signed a two-year contract extension to continue providing twice daily flights through the federal Essential Air Service program. American Airlines, which has been the sole carrier for the Waterloo Regional Airport since 2012, provides flights on 50-seat regional jets operated through the regional brand American Eagle. Prior to the COVID-19 pandemic, the Waterloo Regional Airport was averaging 24,000 annual enplanements. Despite some recovery in air travel from 2020 to 2022, enplanements have not yet returned to pre-pandemic levels (Figure 4.5).

Figure 4.5: Calendar Year Annual Enplanements, Waterloo Regional Airport

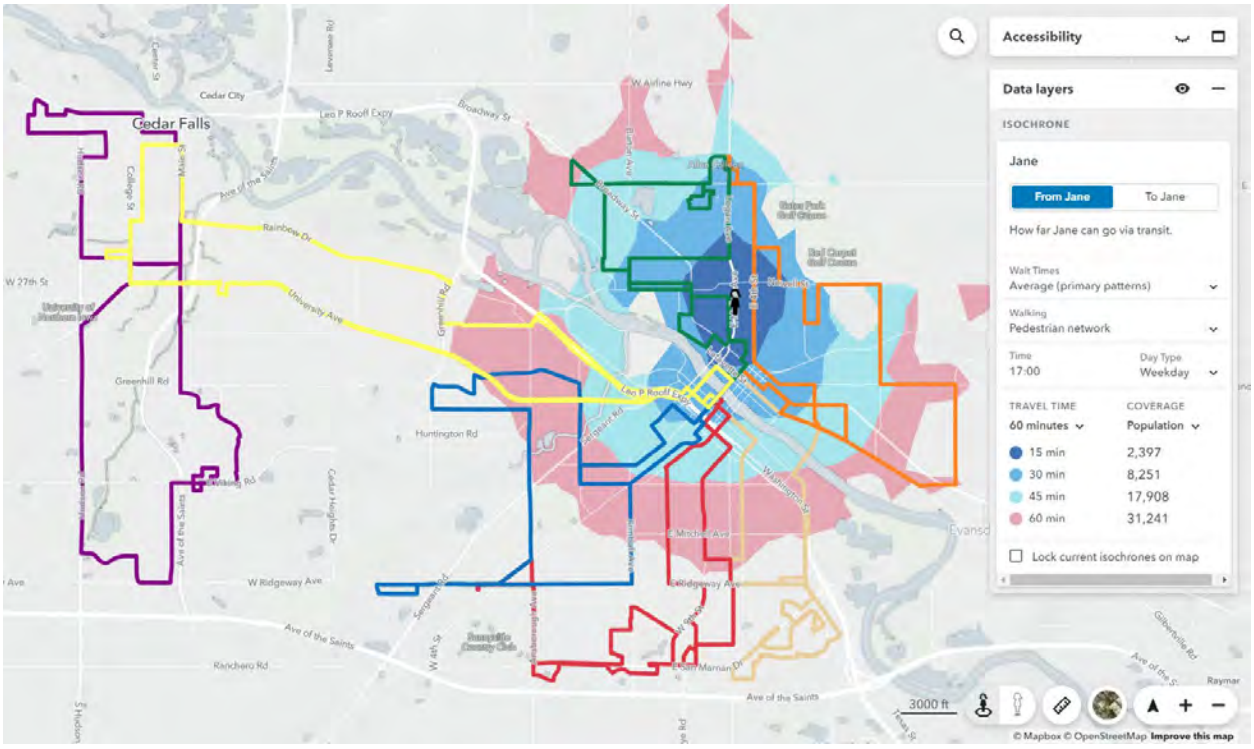


Source: Federal Aviation Administration, Passenger Boarding for U.S. Airports

Current and Ongoing Projects & Initiatives

MET Transit Fixed Route Restructure

MET Transit and MPO staff collaborated in assessing the viability of substantial, long-term adjustments to the fixed route system. While minor modifications to individual bus routes have occurred periodically, the overall fixed route network has remained unchanged for over two decades. Moreover, the existing looping system for fixed routes prioritizes geographical coverage at the expense of operational efficiency, resulting in a reduction in the system's overall effectiveness. Through the utilization of Remix software, both MET Transit and MPO personnel have been able to meticulously analyze data, unveiling entirely new configurations for the fixed route network. These configurations have been analyzed to discern routes that optimize ridership, coverage, frequency, and cost efficiency. Such analyses have also been instrumental in identifying new transfer hubs, including hospitals and commercial centers, where converging routes from different directions intersect.



The restructured route framework underwent thorough evaluation as an integral component of the Comprehensive Study (as detailed below) and was subjected to public review and comment in 2023. MET Transit is poised to introduce the revamped fixed route system, anticipated to be operational by the conclusion of the 2023 calendar year. **It is recommended that MET Transit persist in tracking the performance of the new routes and undertake a comprehensive system-wide analysis within a span of 3-5 years**. By conducting regular assessments, MET Transit can ensure that the new routes are effective and meet the needs of the community.

MET Transit Study and Public Input

As many transportation providers experienced with the start of the global pandemic, ridership numbers for MET Transit decreased significantly. The current route structure, travel times, and service hours do not meet many riders' needs, leaving gaps for residents who do not have access to a car in a primarily auto-oriented community. As a solution, MET Transit hired a consultant in February of 2023 to undertake a thorough and systematic assessment of the current public transit system with the objective of identifying areas for

enhancement, optimization, and strategic development. This in-depth study aims to provide a comprehensive understanding of the transit system's strengths, weaknesses, opportunities, and challenges. Key goals of the study include operational efficiency enhancement, ridership and accessibility improvement, service optimization, innovation and technological integration, environmental and sustainability considerations, community engagement, and long-term planning and investment.

During May 2023, the consultant initiated an online survey to collect input and insights from the community. To ensure inclusivity, Black Hawk County Public Health staff played a pivotal role by translating the survey and public notice materials into Bosnian, French, Marshallese, and Spanish languages. In July, two public engagement sessions were held to further solicit initial feedback on the envisioned reconfiguration of fixed routes, service coverage, frequency, and prospective enhancements.

Overall, the comprehensive transit study will serve as a strategic blueprint for the future of public transit service in the metropolitan area, with the aim of creating a more efficient, accessible, and sustainable transit network that meets the evolving needs of the community. The study will empower and engage residents, stakeholders, and key partners in shaping the future of the public transit system. The community-led approach ensures that the resulting recommendations and decisions reflect the values and priorities of the people who rely on and benefit from the transit system, fostering a stronger sense of ownership, connectivity, and pride in the local transportation infrastructure. The study is anticipated to be completed in 2024.

Midwest Interstate Passenger Rail Commission

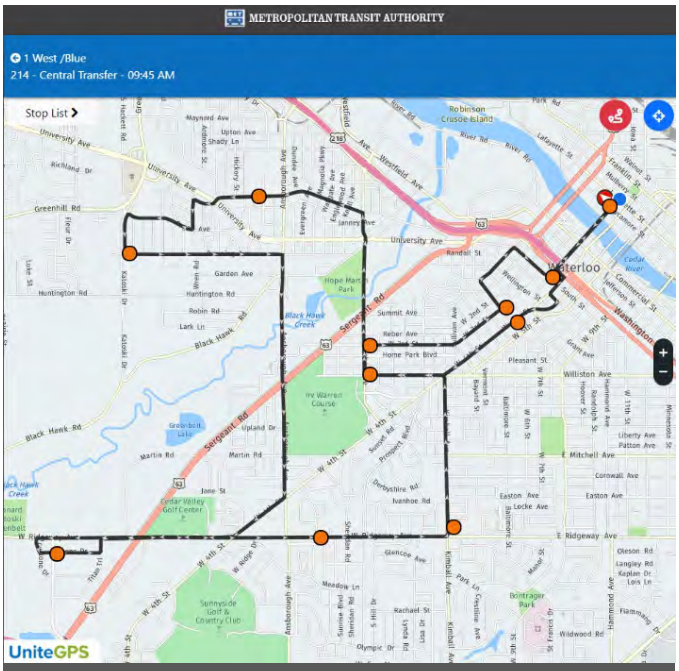
The Black Hawk County MPO supports efforts to engage in planning for and establishing a more robust network of infrastructure conducive to passenger rail transportation across Iowa. Growing support across the Midwest has shown promise and the consensus is that the State of Iowa should have equal representation at the planning table. It is for this reason that in 2023, the Black Hawk County MPO drafted a Letter of Support encouraging congressional leaders to reestablish involvement in the Midwest Interstate Passenger Rail Commission (MIPRC). This regional interstate compact focuses on promoting and advocating for passenger rail service in the Midwest region. Established in 2000, MIPRC plays a crucial role in coordinating efforts among member states and fostering regional cooperation to enhance connectivity and mobility through passenger rail services. It is for these reasons that **the MPO is strongly urging Iowa Legislators to support legislation for Iowa's rejoining the MIPRC.**

MIPRC
Midwest Interstate Passenger Rail Commission

www.miprc.org

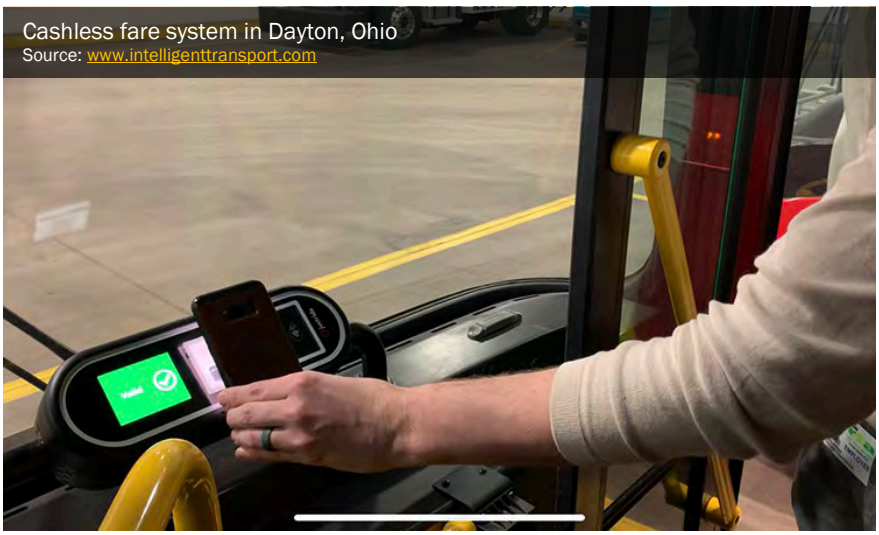
Technology

MET Transit has equipped all buses with GPS, enabling passengers to conveniently monitor bus locations through an interactive online map in real time. This innovative GPS technology also opens avenues for displaying live updates on television screens or tickers at key central points, a feature that was previously unavailable. The prospect of these advancements has captured the attention of MET Transit. Furthermore, MET Transit could collaborate with external entities like hospitals and educational institutions, potentially playing a pivotal role in introducing this technology to more transfer points.



MET Transit Real-Time Map
Source: https://transit.unitegps.com/mt

In the last decade, a range of technological advancements have been implemented, notably the integration of electronic fareboxes designed to accept both cash and traditional fare tickets. However, these fareboxes currently lack the capability to process electronic payment methods like contactless cards, mobile wallets, and digital apps. Furthermore, the coordination of paratransit service is efficiently managed through EchoLane, with each bus driver equipped with user-friendly tablets to ensure seamless operational processes.


Cashless fare system in Dayton, Ohio
Source: www.intelligenttransport.com

The integration of electronic payment methods on MET Transit buses would enhance the passenger experience and operational efficiency. Firstly, electronic payment options would streamline the boarding process, reducing the time passengers spend while boarding and making transactions swift and hassle-free. This not only enhances overall rider satisfaction but also encourages greater public transportation usage by catering to the preferences of modern, tech-savvy commuters. Additionally, the transition to electronic payment methods reduces the need for exact change, enhancing accessibility for riders from diverse backgrounds. The adoption of updated fareboxes with electronic payment options represents a pivotal step towards a more efficient, inclusive, and convenient public transportation system.

Ridesharing and Vanpooling

The emergence of Uber and Lyft services in Black Hawk County has introduced a transformative shift in the transportation landscape. These innovative platforms have swiftly gained prominence nationally as convenient alternatives to traditional modes of transit. By leveraging smartphone technology and digital interfaces, ridesharing services can offer residents an unprecedented level of flexibility and accessibility in commuting.

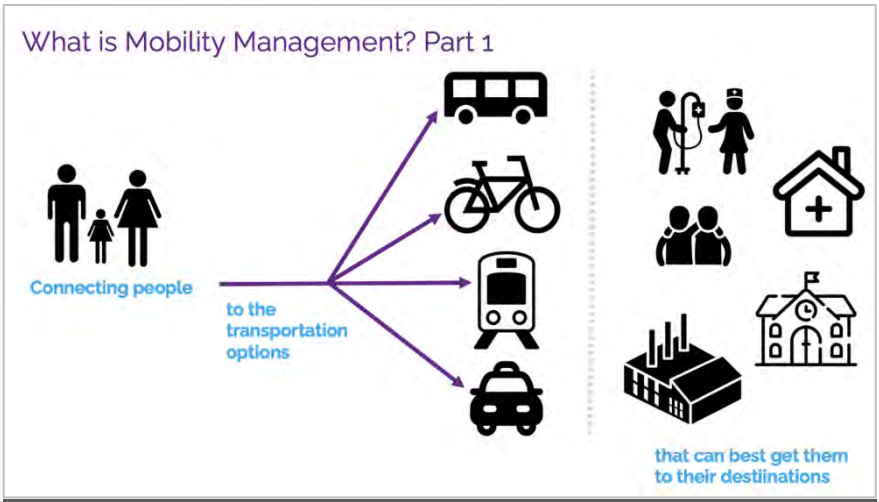
Despite their convenience, ridesharing services have certain downsides that warrant consideration. One notable drawback is limited availability in smaller urban areas. This can result in longer wait times or even unavailability of rides when needed. Additionally, the reliance on ridesharing services may contribute to increased traffic congestion and competition for road space, particularly in urban areas.

Vanpooling, exemplified by programs like Commute with Enterprise, offers a compelling solution to the challenges of commuting and limited transit availability by fostering a shared and efficient transportation arrangement. Commuters come together in a single van, typically organized and managed by a service provider like Enterprise, to collectively travel to and from work. Vanpooling offers participants cost savings compared to driving alone. Moreover, these programs often provide a valuable alternative for individuals who lack access to traditional public transportation options or face long commutes. Commute with Enterprise currently has operations established in Cedar Rapids, Des Moines, and the SIMPCO region in Sioux City. Both MET Transit and OnBoard Public Transit through INRCOG have demonstrated a keen interest in establishing a vanpool program and are actively investigating potential options and the viability of such an initiative.

Mobility Management

Mobility management has been a planning emphasis both nationally and in Iowa for well over a decade. The role of a Mobility Manager (or Mobility Coordinator) offers a multitude of benefits that contribute to the efficient functioning and enhanced utilization of public transportation systems. A mobility manager serves as a pivotal link between various transportation agencies, local governments, and the community, working to develop comprehensive mobility solutions. This role fosters the integration of different modes of transportation, such as public transit, ridesharing, cycling, and walking, to create a seamless and sustainable mobility network. The mobility manager's emphasis on inclusivity ensures that transportation solutions cater to the diverse needs of the community, including individuals with disabilities and underserved populations.

Presently, there is an absence of a designated mobility manager within Black Hawk County and the encompassing six-county region overseen by INRCOG. Collaborative discussions have taken place between MET Transit and OnBoard Public Transit regarding the shared recruitment of a mobility manager, a recognized necessity. The Iowa DOT has established a Statewide Mobility Manager who undertakes the crucial role of educating public transit agencies, planning entities, and other statewide organizations about the inherent advantages linked to effective mobility management practices.



Source: https://nationalcenterformobilitymanagement.org/for-mobility-managers/

Complete Streets

In pursuit of fostering more sustainable and inclusive urban environments, cities are increasingly embracing complete streets for road design. Sidewalks widened to accommodate pedestrians, designated cycling lanes, and thoughtfully placed transit stops and shelters not only encourage walking and cycling but also provide convenient access to public transportation. This promotes the use of eco-friendly modes of transit and lessens the environmental impact. Moreover, features like accessible curb cuts, tactile paving, and audible pedestrian signals cater to individuals with disabilities, ensuring equitable mobility for everyone. By incorporating complete streets principles, the MPO can create well-integrated transportation networks that only prioritize efficiency and safety but also foster a sense of community, making urban spaces more livable and inviting for all residents. **It is highly recommended that all governing bodies in the metropolitan area integrate comprehensive complete streets elements into the design of roadways, encompassing both new construction and reconstruction projects.** This proactive approach serves to advance the development of a robust multimodal transportation system.

Source: https://santafenm.gov/news/complete-streets-resolution-supports-transportation-improvements-for-all

Bus Replacement

MET Transit is confronted with the need to modernize its ageing fleet of buses. A considerable portion of MET Transit's bus fleet was procured under the stimulus package instituted in 2009, rendering them significantly aged. **By 2022, an alarming 58 percent of the standard buses and 65 percent of the mini-buses in MET Transit's possession have surpassed the federal Useful Life Benchmark (ULB).** This situation is not exclusive to MET Transit, as a notable 63 percent of buses across the state find themselves in a similar state of exceeding the ULB status, as reported by the Iowa Public Transit Association.

In the absence of an increase in state and federal transit assistance, MET Transit may find itself at a potential crossroads where difficult choices must be made to ensure the continued viability of operations. Limited state and federal funding could necessitate raising local revenues, scaling back on essential services, deferring necessary repairs and maintenance, thereby potentially exacerbating future costs, or navigating a complex balance of these alternatives. Each option presents its own set of implications. Opting to increase local revenues could strain Waterloo and Cedar Falls' budgets and place an additional burden on local taxpayers. Conversely, reducing services might undermine the agency's mission of providing accessible and efficient transit solutions, affecting the mobility and quality of life for residents who rely on these services. Delaying repairs and maintenance, while appearing to alleviate immediate budgetary pressures, could lead to higher costs down the road, jeopardizing the safety and reliability of the transit infrastructure. The interplay of these choices underscores the **critical need for enhanced state and federal support to ensure the sustainability and effectiveness of MET Transit's operations in serving its community**.

Electric bus in Iowa City
Source: Wikipedia

MET Transit Planned Projects

Table 4.5 provides a comprehensive overview of transit projects that have been incorporated into the MPO Transportation Improvement Program (TIP) for FY 2024-2027. While the table demonstrates a considerable number of buses slated for replacement, MET Transit is unlikely to replace all the listed vehicles. The Iowa DOT uses the Public Transit Management System to prioritize statewide vehicle replacements which are determined by factors like age and mileage. Buses are selected to be replaced based on the statewide ranking and funding available. Iowa has over 1,700 vehicles statewide, all competing for the same amount of limited dollars. As a result, only a small number of bus replacements are anticipated annually, at most. The amount of federal aid shown below for capital expenses is not guaranteed.

Table 4.5: MET Transit Planned Projects, FY 2024-2027

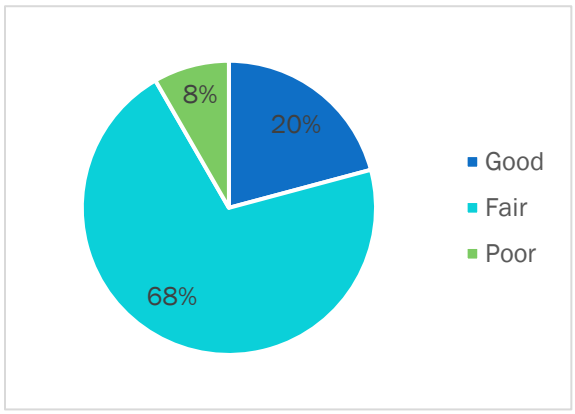
Funding Source	Expense Type	Unit #	Description	Fiscal Year	Total Cost	Federal Aid
5339	Capital	120	Light Duty Bus (176" WB)	2024	$179,574	$152,638
5339	Capital	218	Light Duty Bus (176" WB)	2024	$171,338	$145,638
5339	Capital	116	Light Duty Bus (176" WB)	2024	$171,338	$145,638
5339	Capital	216	Light Duty Bus (176" WB)	2024	$171,338	$145,638
5339	Capital	415	Light Duty Bus (176" WB)	2024	$171,338	$145,638
5339	Capital	515	Light Duty Bus (176" WB)	2024	$171,338	$145,638
5339	Capital	615	Light Duty Bus (176" WB)	2024	$171,338	$145,638
5339	Capital	115	Medium Duty Bus (to 28 ft.)	2024	$265,612	$225,770
5339	Capital	215	Medium Duty Bus (to 28 ft.)	2024	$265,612	$225,770
5339	Capital	315	Medium Duty Bus (to 28 ft.)	2024	$265,612	$225,270
5339	Capital	117	Medium Duty Bus (to 28 ft.)	2024	$265,612	$225,270
5339	Capital	512	Medium Duty Bus (to 28 ft.)	2024	$265,612	$225,270
5339	Capital	113	Heavy Duty Bus (30-34 ft.)	2024	$660,795	$561,676
5339	Capital	112	Heavy Duty Bus (30-34 ft.)	2024	$660,795	$561,676
5339	Capital	410	Heavy Duty Bus (35-39 ft.)	2024	$671,453	$570,735
5339	Capital	510D	Heavy Duty Bus (35-39 ft.)	2024	$671,453	$570,735
5339	Capital	210D	Heavy Duty Bus (30-34 ft.)	2024	$660,795	$561,676
5339	Capital	310D	Heavy Duty Bus (30-34 ft.)	2024	$660,795	$561,676
5339	Capital	903	Heavy Duty Bus (30-34 ft.)	2024	$660,795	$561,676
5339	Capital	110	Heavy Duty Bus (30-34 ft.)	2024	$660,795	$561,676
5339	Capital		Heavy Duty Bus (30-34 ft.)	2024	$660,795	$561,676
5339	Capital		Heavy Duty Bus (30-34 ft.)	2024	$660,795	$561,676
5307	Operations		Gen. Op./Maintenance/Admin./Planning	2024	$4,640,000	$2,320,000
5303	Planning		Transit Planning	2024	$120,000	96,000
5310	Operations		Preventative Maint. & Mobility Coordinator	2024	$130,000	$104,000
5339	Capital	820	Light Duty Bus (176" WB)	2025	$171,338	$145,638
5339	Capital	212	Heavy Duty Bus (30-34 ft.)	2025	$660,795	$561,676
5339	Capital	312	Heavy Duty Bus (30-34 ft.)	2025	$660,795	$561,676
5339	Capital	114	Heavy Duty Bus (30-34 ft.)	2025	$660,795	$561,676
5339	Capital	214	Heavy Duty Bus (35-39 ft.)	2025	$681,453	$570,735
5307	Operations		Gen. Op./Maintenance/Admin./Planning	2025	$4,640,000	$2,320,000
5303	Planning		Transit Planning	2025	$120,000	96,000
5310	Operations		Preventative Maint. & Mobility Coordinator	2025	$130,000	$104,000
5339	Capital	420	Light Duty Bus (176" WB)	2026	$171,338	$145,638
5339	Capital	520	Light Duty Bus (176" WB)	2026	$171,338	$145,638
5339	Capital	620	Light Duty Bus (176" WB)	2026	$171,338	$145,638
5339	Capital	720	Light Duty Bus (176" WB)	2026	$171,338	$145,638
5307	Operations		Gen. Op./Maintenance/Admin./Planning	2026	$4,640,000	$2,320,000
5303	Planning		Transit Planning	2026	$120,000	96,000
5310	Operations		Preventative Maint. & Mobility Coordinator	2026	$130,000	$104,000
5339	Capital		Light Duty Bus (176" WB)	2027	$171,338	$145,638
5307	Operations		Gen. Op./Maintenance/Admin./Planning	2027	$4,640,000	$2,320,000
5303	Planning		Transit Planning	2027	$120,000	96,000
5310	Operations		Preventative Maint. & Mobility Coordinator	2027	$130,000	$104,000

2022 Public Input Survey

In September 2022, the personnel of the MPO conducted a pair of internet-based surveys. These surveys were aimed at collecting feedback from residents within the jurisdictions of the MPO. The subsequent details provided here highlight survey responses that hold significance within the context of this chapter.

Figure 4.6: Public Input Survey, Rounds One and Two asking respondents how they would rate our public transit:

Answered: 24



Answered: 86

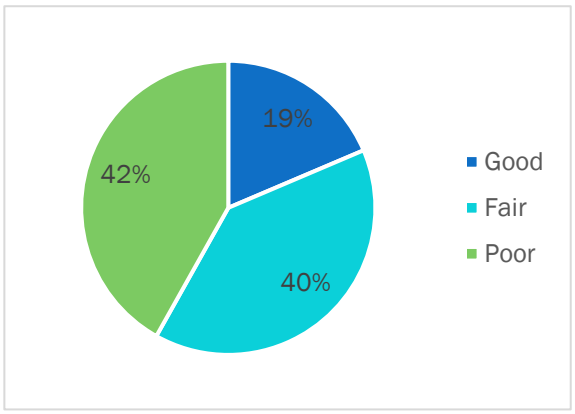
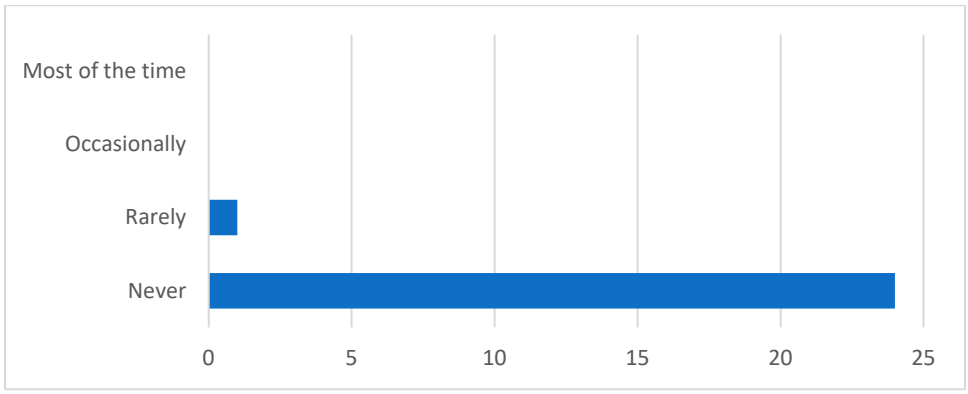


Figure 4.7: Public Input Survey, Rounds One and Two asking respondents how often they ride public transit:

Answered: 25



Answered: 86

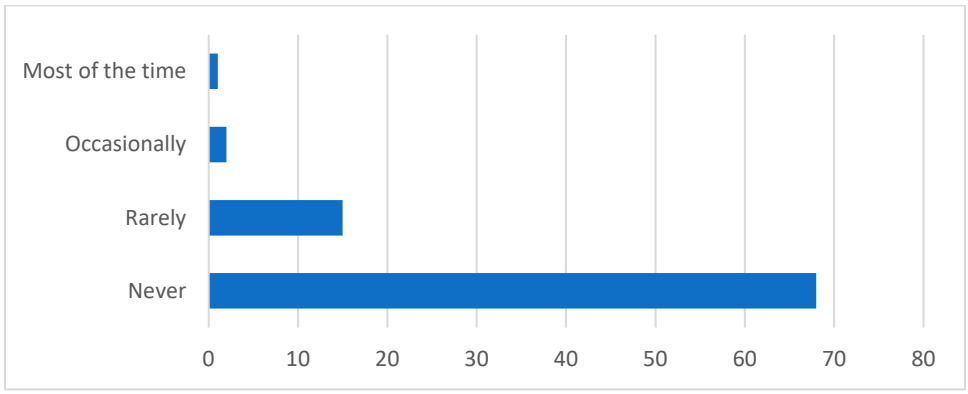


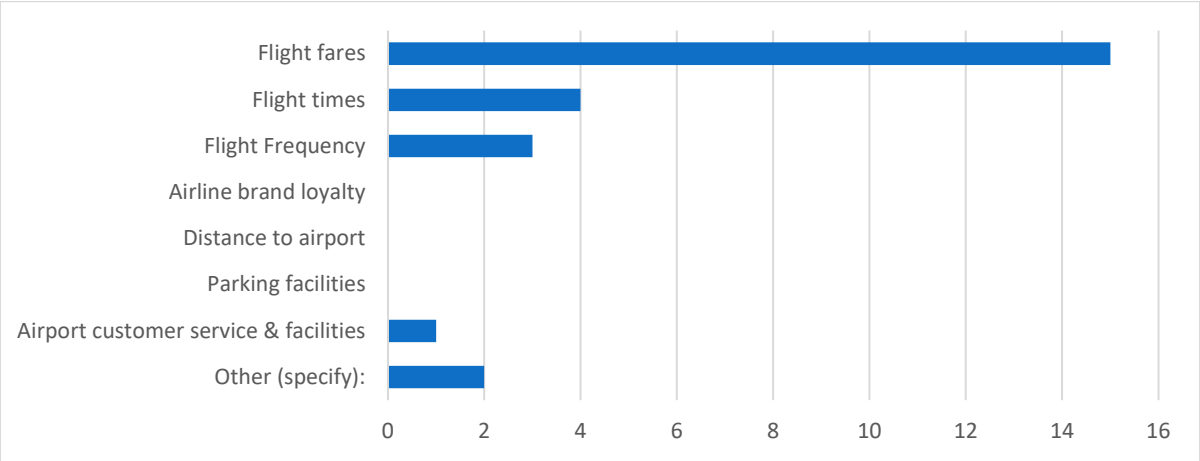
Figure 4.8: Public Input Survey, Rounds One and Two asking respondents how our public transit could be improved (e.g., availability, connectivity, efficiency, hours of operation, etc.):

Summary of Worded Responses (Both Rounds):

- Route Expansion and Connectivity
  - Suggestions for routes to specific destinations like industrial areas, workplaces, Tyson, John Deere, UNI campus, etc.
  - Calls for better connectivity and more routes connecting neighborhoods and destinations.
  - Requests for strategic stops in unserved communities, such as Evansdale and Elk Run Heights.
- Frequency and Hours of Operation
  - Desires for increased frequency of buses to reduce wait times.
  - Calls for longer hours of operation, especially during shift change hours or later at night.
- Accessibility and Convenience
  - Suggestions for more customer pickup stations.
  - Requests for cover/shelter at bus stops to protect against inclement weather.
  - Concerns about lack of knowledge regarding schedules and routes.
  - Desire for better signage along routes and at bus stops.
  - Calls for better promotion and visibility of public transit services.
- Efficiency and Modernization
  - Requests for smaller, more efficient buses.
  - Calls for modernization of buses and bus stops to improve aesthetics.
  - Suggestions for the use of electric buses where feasible.
  - Suggestions for the use of hydrogen cell buses and electric buses for sustainability
- Specific Destinations and Needs
  - Emphasis on serving specific destinations like Tyson, John Deere, university campuses, and workplaces.
  - Need for better routes to underserved communities and low-income housing complexes.
  - Suggestions for routes to the airport and industrial parks.
  - Suggestions for offering park-and-ride options for large events or utilizing alternative modes of transportation like biking.
- Ridership and Awareness
  - Desire to increase ridership through marketing, public outreach, and education.
  - Concerns about low awareness of public transit options and routes.
  - Suggestions for leaving brochures at area businesses.
- Challenges and Solutions
  - Recognition of the chicken-and-egg issue regarding ridership and connectivity.
  - Calls for a comprehensive transit study to identify needs and efficiencies.
  - Suggestion to make scheduling of paratransit available online for better accessibility.

Figure 4.9: Public Input Survey, Rounds One and Two asking respondents what the biggest factor is that influences their decision on whether to fly from the Waterloo Regional Airport:

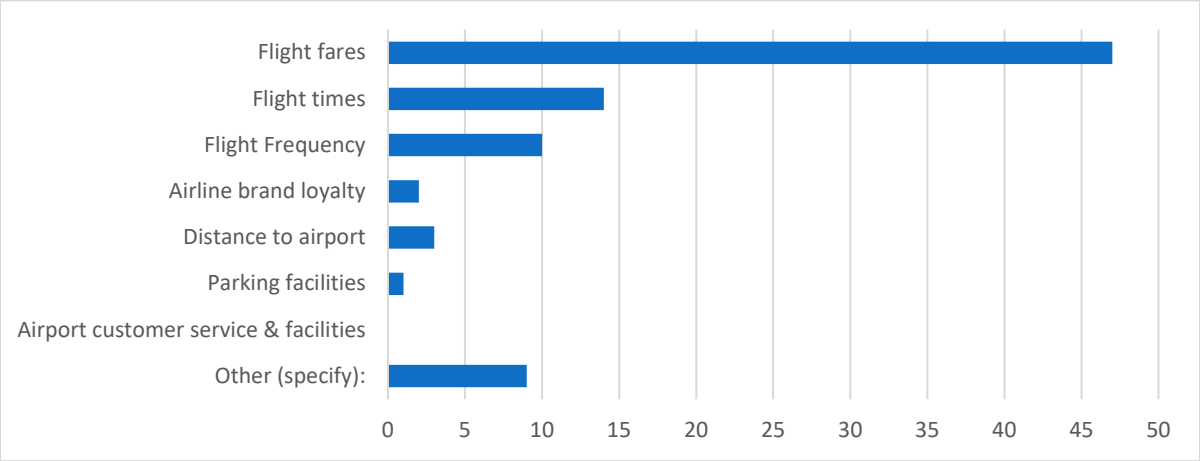
Answered: 25



Other (specify):

- "No one reason – might be the rates; might be the flight times; might be the airline brand; depends on where/what I am going."
- "Destination and connection flights."

Answered: 86



Other (specify):

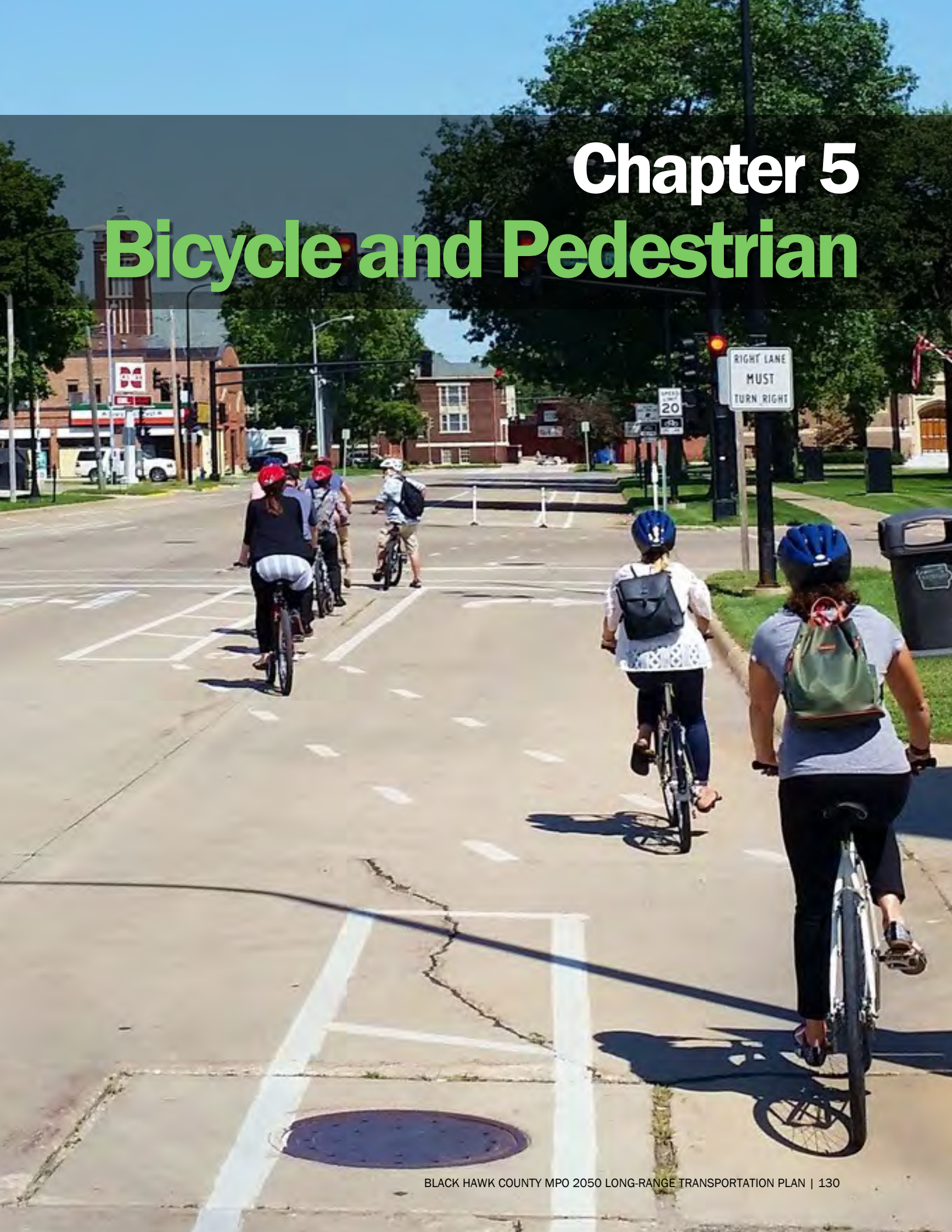
- "No nonstop." (4)
- "Destination."
- "Cost AND is the flight actually going to happen. So many times the Waterloo flight is canceled and then the last minute they want me to drive to Cedar Rapids, that isn't always an option."
- "Convenience of connections to other destinations."
- "Connection delays or failures at Chicago O'Hare are a problem when flying from Waterloo."
- "As of current, I have no experience flying- but if I did, it would likely come down to cost and convenience fares."

Figure 4.10: Public Input Survey, Rounds One and Two asking respondents what their biggest transportation challenge is in the MPO:

Summary of Worded Responses (Both Rounds):

- Air Travel and Airport
  - Desires for more flights from Waterloo Regional Airport to various destinations.
  - Dissatisfaction with the limited flight options and lack of competitive prices.
  - Calls for better airline options, additional carriers, and more hubs.
- Transportation Options
  - Requests for improved public transportation options in Waterloo and Cedar Falls.
  - Concerns about inadequate bus service, lack of mass transit, and limited routes.
  - Desire for better cycling infrastructure and public transit to increase quality of life.
  - Interest in taking public transit but hindered by efficiency and frequency.
- Accessibility and Convenience
  - Desire for transportation options for other citizens who cannot drive.
  - Frustration with the need to rely on cars and vehicles for transportation.
  - Need for more accessible and efficient bus services.
- Regional Connectivity
  - Desire for train services to major metropolitan areas like Chicago and Minneapolis.
  - Concerns about limited flights, cancellations, and having to fly from other airports.
  - Calls for better service, more frequent routes, and expanded coverage.
- Social Equity and Accessibility
  - Requests for public transportation options for low-income individuals.
  - Calls for affordable and accessible bus services.
  - Suggestions for raising fares to improve bus service quality and working with social service agencies.

Chapter 5
Bicycle and Pedestrian



Chapter 5 – Bicycle and Pedestrian

The majority of bicycle and pedestrian trips in Black Hawk County are categorized as physical and leisurely activities. However, approximately 8 percent of households in Black Hawk County have no vehicles available, making bicycling and walking a vital mode of transportation for many community members.

The Importance of Bicycle and Pedestrian Infrastructure

Road construction projects in the U.S. have primarily been planned with the goal of moving automobiles and traffic through a corridor as quickly and efficiently as possible. This type of auto-centric planning typically leaves behind bicyclists and pedestrians as an afterthought, resulting in unfriendly, hazardous, and even deadly crossing points. Common issues include inefficient or aging infrastructure, a lack of ADA-compliancy, and a lack of protective barriers for vulnerable road users against busy traffic and high-speed limits.

www.smartgrowthamerica.org/dangerous-by-design/

A Nationwide Shift

Transportation and urban planning in the U.S. have undergone a drastic shift towards comprehensive multimodal planning in recent years. Policy approaches and tactics such as Vision Zero and Complete Streets provide a framework that encourages safe, accessible, and convenient access to our nation's roads for all modes of transportation. This shift has also been highlighted by the 2021 Bipartisan Infrastructure Bill, which includes various funding sources dedicated to projects that implement multimodal inclusion. While Complete Streets approaches expand across the nation, it should be noted that they are not solely reserved for major cities; rather, they can be applied to any road where various types of road users commonly interact with each other.

Metro Stats

133.4
Miles of bike infrastructure

18,100
Miles walked daily by residents[1]

6.8%
Of all trips are walking trips[1]

9,167
Residents have bicycled in the past week on average[1]

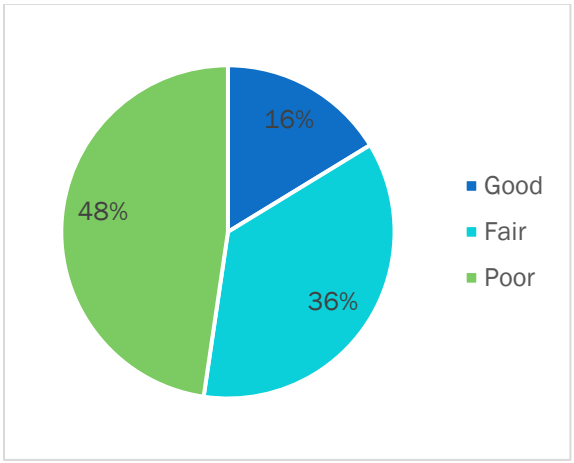
7
Non-motorized fatalities & serious injuries per year[2]

Sources:
[1]Estimates from 2017 NHTS Add-On

[2]Iowa DOT, Iowa Crash Analysis Tool, 2017-2022

The *2022 Public Input Survey* asked Black Hawk County metropolitan residents to rate our streets based on the concept of Complete Streets, or how well our roads serve all road users. This includes automobile users, transit riders, bicyclists, and pedestrians alike. Most respondents rated our streets as "poor" in this regard. The bikeway network faces significant challenges due to its disconnected nature and limited on-road presence, making it challenging for cyclists to travel seamlessly and efficiently throughout the metro area. Cyclists often encounter discontinuities, where bike lanes or share lane facilities suddenly end or fail to connect to other parts of the network, forcing them to navigate through busy streets or unsafe roadways. Implementing Complete Street projects remains a substantial opportunity area for the Black Hawk County metropolitan area. Addressing these connectivity issues and investing in a cohesive and comprehensive bikeway network will not only improve safety and encourage active transportation but also enhance the overall accessibility and livability of the area. The later sections of this chapter detail the planning efforts and projects currently underway to expand the number of Complete Streets in Waterloo.

Figure 5.1: 2022 Public Input Survey, Round Two asking respondents how well our streets serve all road users, including vehicle users, transit riders, bicyclists, and pedestrians.



Overview of Bicycle and Pedestrian Facilities

To serve all road users effectively and efficiently, it is important to recognize the similarities and differences between each group and understand how they interact with the road. Both non-motorized and motorized modes of transportation share the same principles: improve safety, reduce delays, and maximize traffic flow. However, pedestrians and bicyclists have unique needs and interact with the transportation system in different ways than drivers do. Table 5.1 identifies how non-motorized users use each facility type.

Table 5.1: Bicycle and Pedestrian Facilities

Facility	Bicycles	Pedestrians	Example
Sidewalk (< 8 ft)	No	Yes	Rainbow Dr sidewalks
Paved Trail (≥ 8 ft*)	Yes	Yes	Greenhill Rd trail
Paved Shoulders	Yes	Not recommended	W 27th St shoulders
Bike lane	Yes	No	Park Ave bike lanes
Driving lane	Yes	No	Cedar Heights Dr

**The standard width for a paved trail is 10 feet*

Which Facilities Work Best?

The decision of which facilities to include in a new construction or reconstruction project is determined by the respective jurisdiction. Sidewalks and paved trails accommodate pedestrian travel; while paved trails, bike lanes, paved shoulders, and driving lanes accommodate bicycle travel. However, not all facility types provide equal service for bicycles. While there are instances in which a paved trail is preferable to bike lanes, such as on roadways with high-speed limits or natural areas not situated alongside a roadway, these do not always meet a bicyclist's needs.

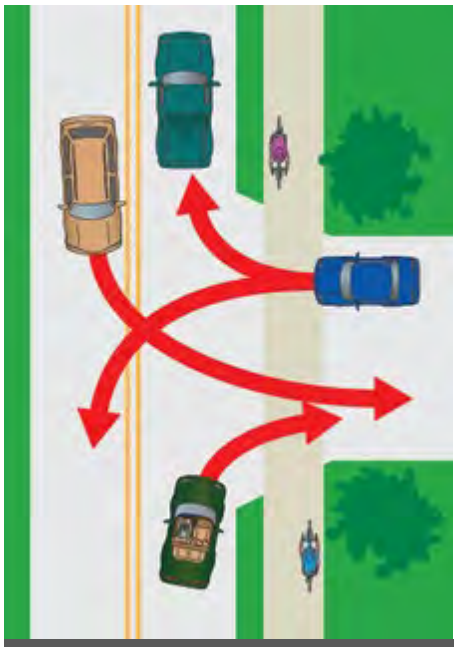
In more concentrated urban areas, a paved trail does not always serve as a connection point to another location, thus requiring on-road travel. Additionally, constructing a separate, paved trail into a new or existing project is costly and not a feasible alternative for every project. Since bicyclists and pedestrians are also roadway users, it is important to develop efficient connections for them just as we do for roadway users in vehicles. Furthermore, since pedestrians and bicyclists are the most vulnerable transportation group, it is crucial to plan for safety.

Roads with bike lanes provide the additional benefit of separating drivers and bicyclists who typically operate at different speeds. This makes bicycles feel safer and can reduce delay for drivers. Bicyclists also tend to face fewer delays on bike lanes than on paved trails, as they have priority at most intersections. The *Guide for the Development of Bicycle Facilities* by AASHTO lists fourteen conflicts associated with paved trails or "side paths," including the following:

- Bicyclists are often not seen by motorists turning left or right.
- Motorists may block crossings at intersections and driveways.
- Stop or yield signs along trails are ineffective.
- Fixed objects can constrain the usable width of a trail.

Sidewalks should not be considered a bicycle facility. While it varies by state and local ordinance, some cities prohibit sidewalk cycling entirely or in key areas, such as in Iowa City's downtown and commercial district. In addition to the conflicts listed above, there are other disadvantages of bicycling on a sidewalk:

- Conflicts with pedestrians are more likely.
- Motorists may not expect bicyclists to appear suddenly at crossings and driveways.
- Uneven sidewalk pavement can make riding less comfortable and increase delays.



Sidewalk bicycling conflicts
Source: CyclingSavvy

While bicycling on sidewalks is allowed in most areas in the Black Hawk County MPO, sidewalks do not efficiently fulfill the needs of bicycle transportation and should not be considered a substitute for bicycling facilities.

Bicyclists may operate on most driving lanes in the MPO area in the same manner as automobile traffic. The only places where it is illegal for bicyclists to operate on-road are on Interstate highways and highways with a posted minimum speed limit. While the law allows bicycling on most driving lanes, in practice this can often be dangerous for bicyclists and frustrating for drivers. Any time a bicyclist avoids the most direct route because of perceived danger, it should be considered a delay for the bicyclist.

On the other hand, many local roads with low traffic volumes are suitable for bicycling as-is without the need for additional bike lanes or trails. These roads may be suitable to designate as "shared lanes" which can be defined with Share the Road signage, Bikes May Use Full Lane signage, Bike Route signage, or shared lane markings (or "sharrows"). Providing signage on these roads helps bicyclists identify a safe route and helps to spread additional awareness of a bicyclist's presence on shared roadways. Many of these roads are included in the MPO Bikeway Plan shown as Map 5.2.

For pedestrians, the development of trails and sidewalks is more straightforward. Sidewalks and trails offer equal accommodation for pedestrians, though sidewalks less than five feet wide are not suitable for pedestrians walking two abreast. Additional improvements for pedestrians involve site-specific treatments that reduce crossing distances, calm traffic, and provide a safe area to wait for traffic. Some of these treatments are included in the next section.

While much discussion about pedestrian planning relates to transportation improvements, land uses play an equal if not greater role in shaping the environment for walking. Large block sizes, setback distances, and parking lots can increase the distance pedestrians must travel and compel them to walk along informal routes. In addition, many businesses and civic buildings do not have a designated walkway to their front door, so pedestrians must walk through parking lots or grassy areas to reach their destination. For these reasons, discussions about pedestrian planning should not be limited to trails and sidewalks alone.

Site-Specific Bicycle and Pedestrian Treatments

A variety of site-specific treatments can be used in addition to each of the five facilities described prior. Currently, these treatments are employed sparingly in the MPO area, and some do not currently exist at all.

Table 5.2 describes some of the most common treatments. This is only an overview and is not intended to serve as an exhaustive list of treatments. All treatments presented on the next pages are eligible for Transportation Alternatives Program (TAP) and Surface Transportation Block Grant (STBG) funding.

Table 5.2: Site-Specific Bicycle and Pedestrian Treatments

 New York City, nacto.org	**Median refuge island** Facility type: Sidewalks and Trails Description: A protected space in the middle of a road crossing, typically designed as part of a median, that allows pedestrians and bicyclists to cross one direction of traffic at a time Benefits: Reduces time spent waiting for traffic, and reduces exposure in the crosswalk
 Canada, Flickr user drdul	**Curb extensions (or bulb-outs)** Facility type: Sidewalks Description: Any lateral shift in the curb that narrows the width of the street Benefits: Improves visibility, reduces exposure in the crosswalk, and reduces travel speeds
 Waterloo, INRCOG	**Vertical speed control** Facility type: All Description: Raised pavement in driving lanes including speed humps, speed tables, and speed cushions Benefits: Reduces travel speeds

 Atlanta, nacto.org	**Narrower driving lanes** Facility type: All Description: Driving lanes no greater than 11 feet wide, and parking lanes no greater than nine feet wide Benefits: Reduces travel speeds, and reduces crossing distance
 Marion, INRCOG	**Pedestrian alleys** Facility type: N/A Description: An alley where vehicles are restricted, and installations are added to appeal to pedestrians Benefits: Eliminates conflicts with vehicles
 Des Moines, INRCOG	**Buffers and delineators** Facility type: Bike lanes Description: Additional separation between bike lanes and driving lanes by means of buffer markings and delineator posts Benefits: Reduces conflicts, and improves perceived safety
 St Paul, INRCOG	**On-road wayfinding signs** Facility type: Bike lanes and driving lanes Description: Signage that directs bicyclists to local destinations via bike lanes and designated bike routes Benefits: Improves operations, reduces delay
 Tampa, twitter	**Bike boxes** Facility type: Bike lanes and driving lanes Description: A designated area at signalized intersections for bicyclists to wait at the head of a traffic lane Benefits: Improves visibility, reduces conflicts, reduces traffic delays

 San Luis Obispo, nacto.org	**Signal detection and actuation** Facility type: Bike lanes and driving lanes Description: A marked location for bicycles to actuate detection at signalized intersections Benefits: Improves traffic operations, and reduces delay
 Waterloo, INRCOG	**Bicycle signals** Facility type: Bike lanes Description: A traffic control device for bicyclists to be used along with conventional signals Benefits: Improves traffic operations, and reduces conflicts between bicyclists and other modes
 Portland, nacto.org	**Bike Boulevards** Facility type: Driving lanes Description: A street with low traffic volumes designed to prioritize bicycles and restrict through movements by vehicles Benefits: Reduces conflicts, maintains low travel speeds

Park Avenue Bike Lanes Redesign project in downtown, Waterloo. More information under the “Current and Ongoing Projects” section in this chapter.

National Guidance

U.S. Law

Planning for bicycles and pedestrians is United States law. Section 217 in Title 23 of the U.S. Code addresses bicycle transportation and pedestrian walkways. Subsection (g) relates to planning and design:

(1) In general—
Bicyclists and pedestrians **shall** be given consideration in the comprehensive transportation plans developed by each metropolitan planning organization and State in accordance with sections 134 and 135, respectively. Bicycle transportation facilities and pedestrian walkways **shall** be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation facilities, except where bicycle and pedestrian use are not permitted.

(2) Safety considerations—
Transportation plans and projects **shall** provide consideration for safety and contiguous routes for bicyclists and pedestrians. Safety considerations **shall** include the installation, where appropriate, and maintenance of audible traffic signals and audible signs at street crossings.

In 2010, the United States Department of Transportation (DOT) issued a Policy Statement on bicycle and pedestrian accommodation regulations and recommendations:

"The DOT policy is to incorporate safe and convenient walking and bicycling facilities into transportation projects. Every transportation agency, including DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. Because of the numerous individual and community benefits that walking and bicycling provide — including health, safety, environmental, transportation, and quality of life — transportation agencies are encouraged to go beyond minimum standards to provide safe and convenient facilities for these modes."

The DOT encourages transportation agencies to adopt similar policy statements on bicycle and pedestrian accommodation and go beyond the minimum design standards and requirements to create safe, attractive, sustainable, accessible, and convenient bicycling and walking networks. Several recommended actions are included in the DOT Policy Statement:

- Considering walking and bicycling as equals with other transportation modes
- Ensuring that there are transportation choices for people of all ages and abilities, especially children
- Going beyond minimum design standards
- Integrating bicycle and pedestrian accommodation on new, rehabilitated, and limited-access bridges
- Collecting data on walking and biking trips
- Setting mode share targets for walking and bicycling and tracking them over time
- Removing snow from sidewalks and shared-use paths
- Improving non-motorized facilities during maintenance projects

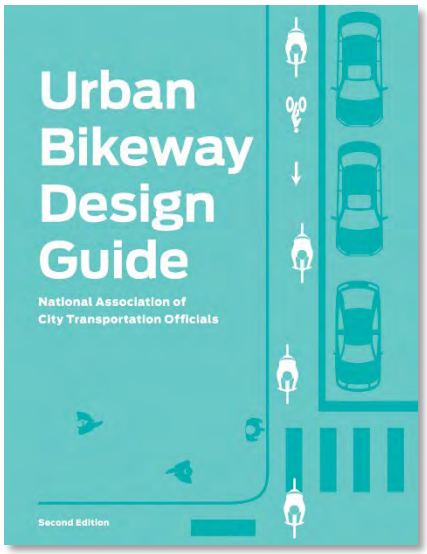
The Federal Highway Administration (FHWA) is a division of the DOT and issues the Manual on Uniform Traffic Control Devices (MUTCD), which has a significant impact on the design of bicycle facilities. The MUTCD sets the standards for traffic signage, signals, and pavement markings in the United States. The last update to the MUTCD was in 2009.

National Standards

In addition to federal policy, other organizations also influence transportation planning for bicycles and pedestrians. The American Association of State Highway and Transportation Officials (AASHTO) is the standards-setting body for the design and construction of highways and streets in the United States. AASHTO is an organization of State DOTs, not an entity of the federal government. However, the FHWA uses a formal rulemaking process to adopt AASHTO standards for application on the National Highway System.

Foremost is the AASHTO Green Book, *A Policy on Geometric Design of Highways and Streets*. The most recent edition of the Green Book, the 7th Edition, is more flexible, multimodal, and performance-based than in the past. In addition to the Green Gook, AASHTO also publishes the *Guide for the Development of Bicycle Facilities* and the *Guide for the Planning, Design, and Operations of Pedestrian Facilities*.

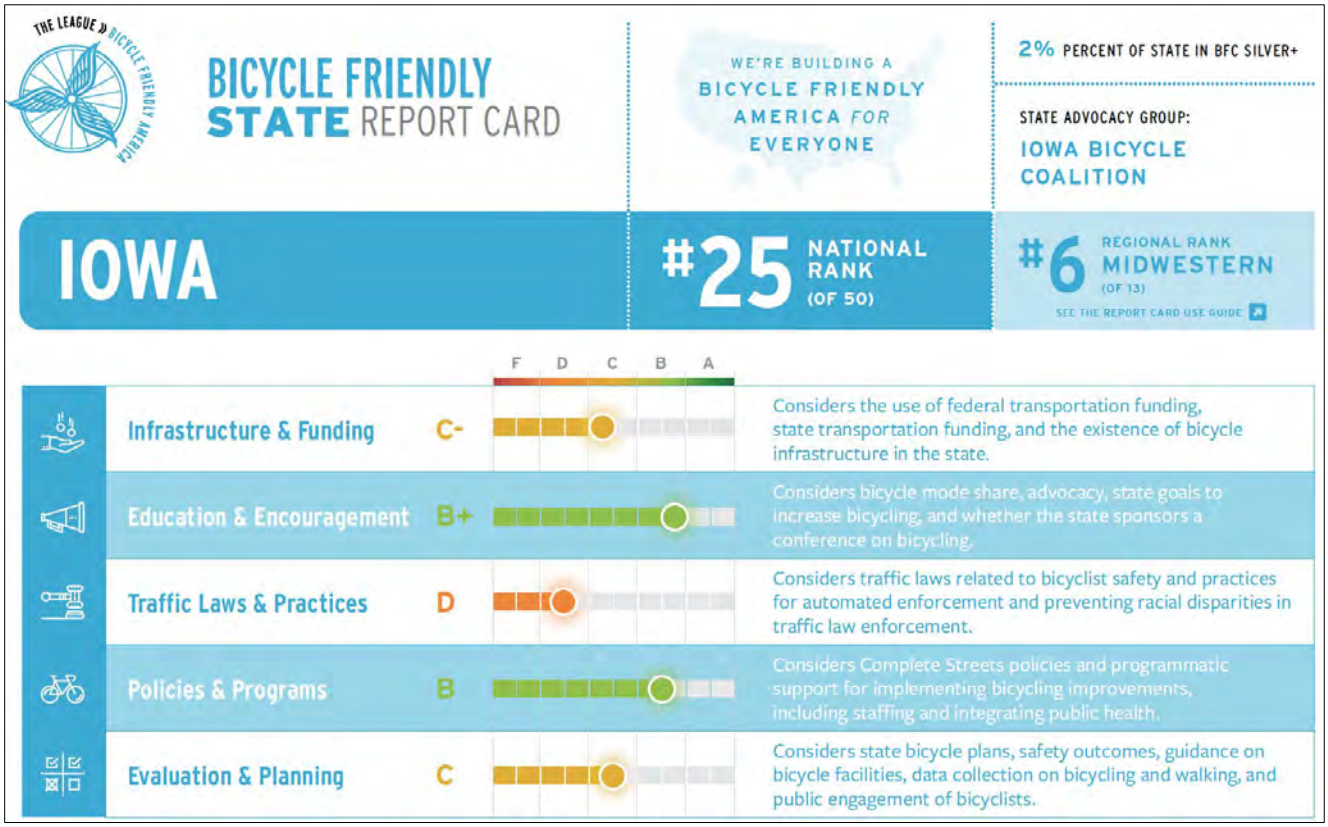
Another notable organization is the National Association of City Transportation Officials (NACTO) which is an association of 96 major North American cities and transit agencies formed to exchange transportation ideas, insights, and practices and cooperatively approach national transportation issues. NACTO's mission is to build cities as places for people, with safe, sustainable, accessible, and equitable transportation choices that support a strong economy and vibrant quality of life. No cities in Iowa are members of NACTO. However, NACTO has been very influential in the advancement of bikeway and street design at a national level for the past several years. NACTO's *Urban Bikeway Design Guide* was released in 2011 and includes several treatments not yet adopted in the MUTCD or AASHTO manuals. In 2013, NACTO released the *Urban Street Design Guide* which focuses on the street as a whole and emphasizes pedestrian activity at intersections, sidewalks, and sitting areas, as well as traffic calming and streetscaping measures.



The League of American Bicyclists

National advances in bicycle planning have outpaced Iowa for many years. In 2011, Iowa was ranked as the 6th most bicycle friendly state according to The League of American Bicyclists. In 2017, Iowa ranked 30th. Most recently, in 2022, Iowa ranked 25th on a national basis, and 6th on a midwestern region basis. This ranking is a part of The League of American Bicyclists' 2022 national report, *State Leadership for Safer Streets*. In it is included a state-by-state report card based on bicycle-friendliness. The report considers a variety of factors, including infrastructure, education, traffic laws and practices, policies, and planning.

Figure 5.5: The League of American Bicyclists, Bicycle Friendly State Report Card



Among positive steps forward, the Bicycle Friendly State Report Card commends the state of Iowa for adopting a Complete Streets policy and the Iowa DOT for adopting rumble strip standards. As for opportunities to explore, the report card suggests Iowa implement a "dooring" law, which prohibits motorists from opening an automobile door unless it is safe to do so. The report states Iowa is one of only eleven states that has not yet adopted a dooring law. The report also suggests the state spend more federal transportation funds on bicycling and pedestrian improvements, as the state currently spends less than two percent on such projects.

Figure 5.6: The League of American Bicyclists, Bicycle Friendly State Report Card

Based on the information we obtained for Iowa, the League of American Bicyclists believes the following actions will improve the safety, comfort, and accessibility of bicycling in Iowa.

Adopt a safe passing law with a minimum distance of 3 feet to address bicyclist safety. Over the last two decades most states have adopted a safe passing law to protect people biking. Iowa is one of 11 states that has not.

Spend at least 2% of federal transportation funds on biking and walking improvements.

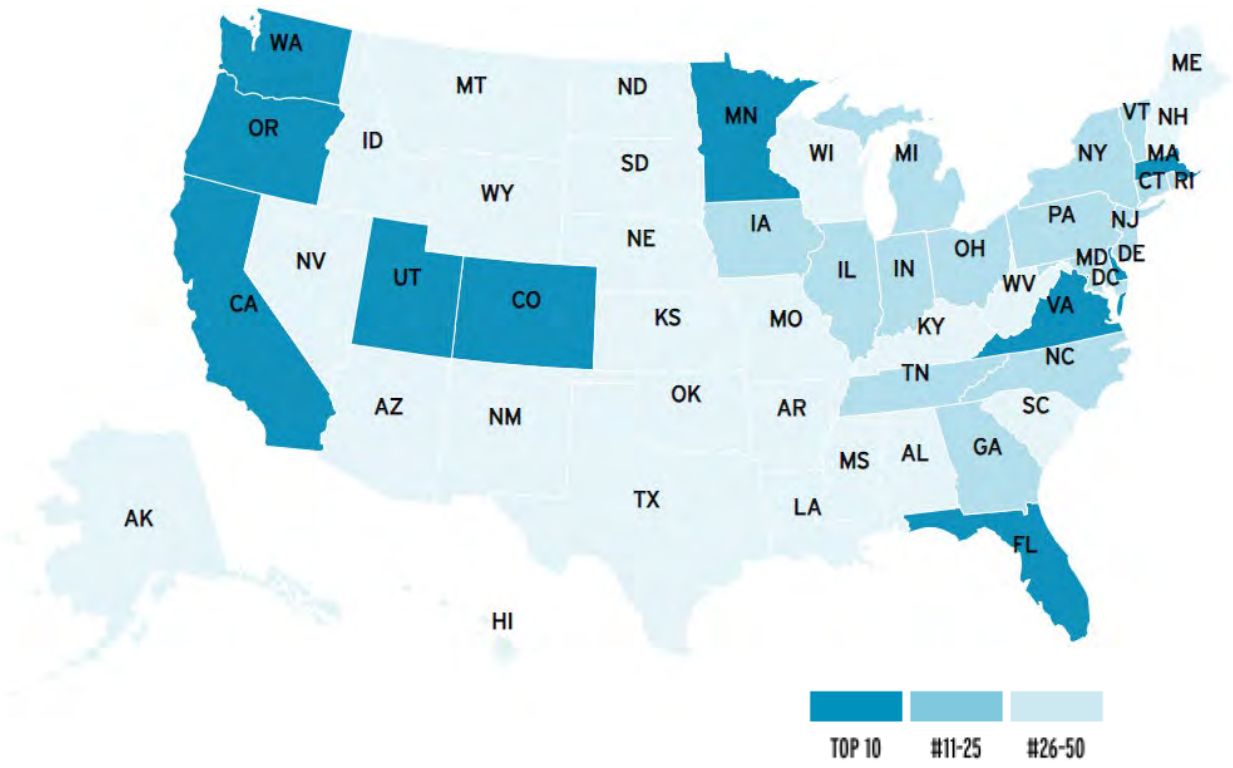
Adopt a law prohibiting a motorist from opening an automobile's door unless the motorist is able to do so safely. Iowa is one of only eight states that has not adopted this type of law to reduce "dooring."

Iowa has a recently adopted Complete Streets policy, which ensures that improvements for bicyclists are made during resurfacing, restoration and rehabilitation projects. This is often the most cost-effective time to make improvements.

In 2020 the Adventure Cycling Association found that Iowa was one of 18 states that failed to meet minimum rumble strip standards. The League is excited to congratulate the Iowa DOT for adopting rumble strip standards and creating a prioritization process for rumble strips and shoulders in its Complete Streets process. This is a great improvement and we hope other states learn from it as well.

Bicycle Friendly Actions	Progress?
Complete Streets Law / Policy	Yes-New/Updated
Safe Passing Law (3ft+)	No
Statewide bike plan last 10 years	Yes
2% or more federal funds on bike/ped	No
Bicycle Safety Emphasis Area	Yes

Federal Data on Biking		Rank
Ridership	**0.41% of commuters** biking to work	23/50
Safety	**5.8 fatalities** per 10K bike commuters	17/50
Spending	**$3.47 per capita** FHWA spending on biking and walking	17/50



www.bikeleague.org/bfa/states/state-report-cards/

State Guidance

The *Iowa Bicycle and Pedestrian Long-Range Plan* was adopted by the Iowa DOT in 2018. The document includes a statewide Complete Streets policy which applies to all Iowa DOT projects. The policy outlines that bicycle and pedestrian accommodations will be considered in the design and scope for all transportation projects that involve new or improved facilities. Accommodations are to be implemented unless the additional cost would be excessively disproportionate to the need or probable use, or there is a demonstrated absence of future needs as determined by factors including current and future land use, current and projected user volumes, population density, and crash data.

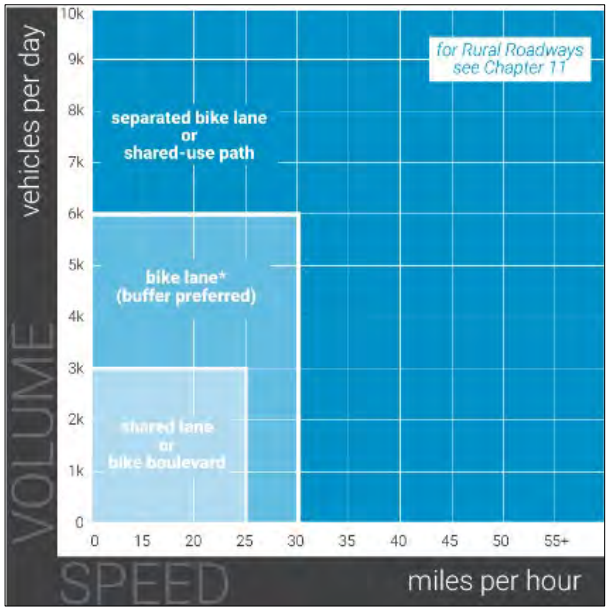
The Iowa DOT also updated the state's *Design Manual* and *Bridge Design Manual* to reflect national best practices regarding bicycle and pedestrian facilities, particularly on-road facilities. These updates will be coordinated with the on-road bicycle section of the *Statewide Urban Design and Specifications (SUDAS) Manual.*

The *Iowa Bicycle and Pedestrian Long-Range Plan* includes basic design parameters for sidewalks, trails, curb ramps, crosswalks, refuge islands, and signals for pedestrians. For bicycles, the plan identifies basic design parameters for trails, paved shoulders, bike lanes, separated bike lanes, bike boulevards, shared lanes, wayfinding, and intersection treatments.

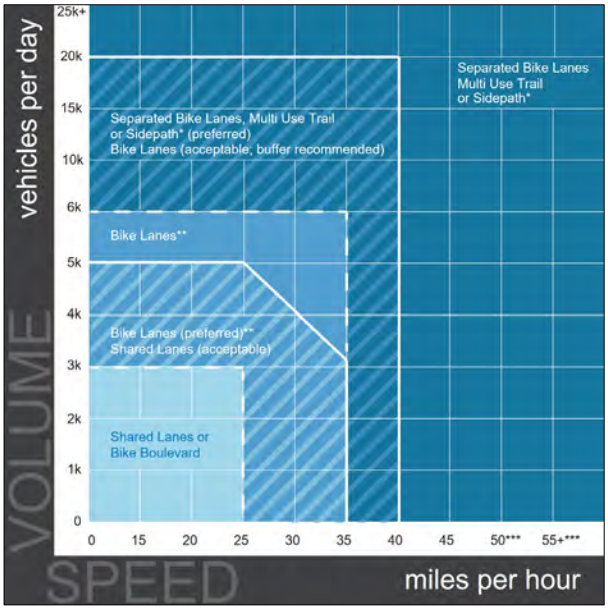
Numerous types and widths of bicycle facilities are available, and some are more appropriate than others for any given context. To help select an appropriate facility based on traffic volume and speed, the Plan includes a facility selection matrix for urban settings and another for rural settings (Figure 5.2). These matrices include preferred and acceptable values for each facility type.

Figure 5.2: Urban Bikeway Facility Selection Matrices

AASHTO (2018)



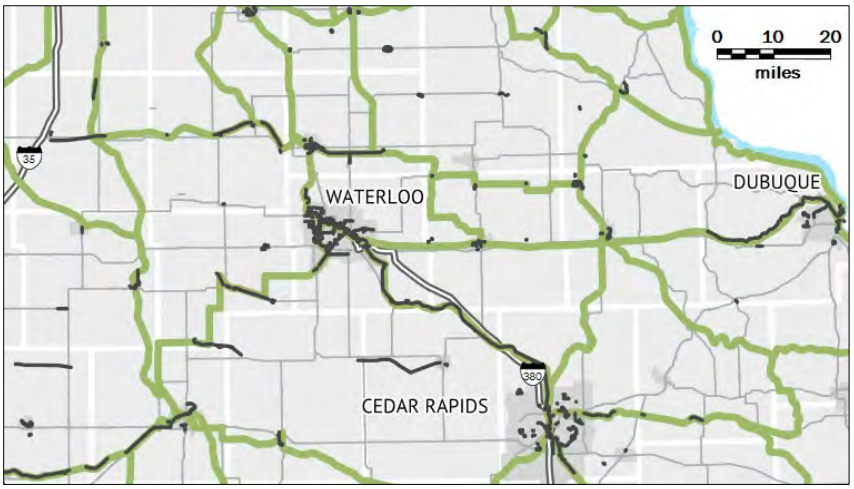
Iowa DOT (2018)



The second tool provided in the Plan is a table of context characteristics of common facility types, which summarizes various attributes of the primary bicycle and pedestrian facility types used in Iowa and provides additional guidance on facility selection. The table can be found on page 96 of the document.

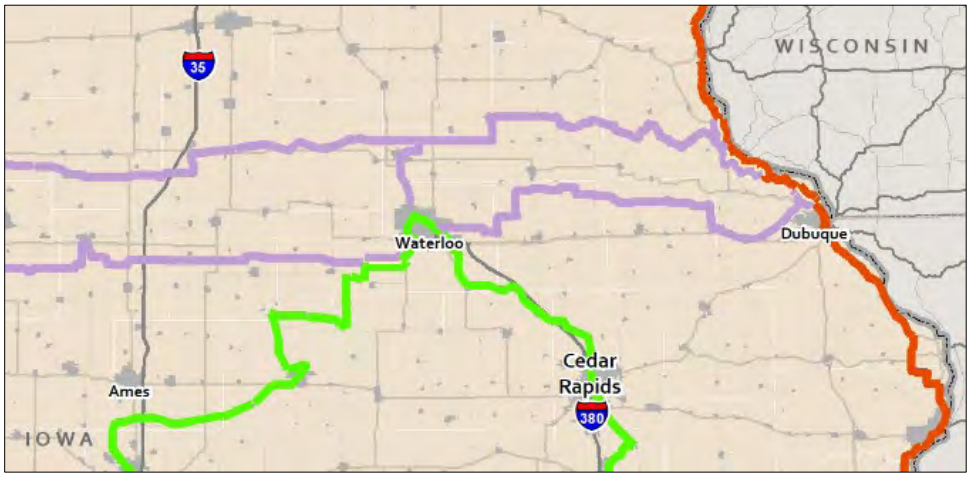
Planned statewide trails of significance to the MPO area include the Cedar Valley Nature Trail to Cedar Rapids, a trail north to Waverly, a trail east to Dubuque, and a combination of trails to the south and west toward the Des Moines metropolitan area. Figure 5.3 shows part of the Statewide Trails Vision relevant to the MPO:

Figure 5.3: Statewide Trails Vision around the MPO area



Also being planned at a statewide scale is the proposed United States Bike Routes (USBR). Of significance to the MPO area is USBR 36, a planned bike route from New York to Oregon with established segments in Pennsylvania and Indiana. Two alignments are proposed for this route. The northern route would bypass the MPO area, while the southern route would pass through the MPO area. Between the two alignments, the southern route has a greater share of on-road rural roads considered "good" for bicycling compared to the northern route (90 vs 75 percent), though the southern alignment has thirty-five more on-road miles altogether. Figure 5.4 shows the proposed routes for USBR 36 in purple, as well as the American Discovery Trail route in green.

Figure 5.4: Proposed alignments for US Bike Route 36



Iowa Law Regarding E-Bikes

Iowa enacted new law on January 1, 2022 that defines the rules around electric assist bicycles (Motor Vehicles and Law of the Road §321.235B).

Summary:

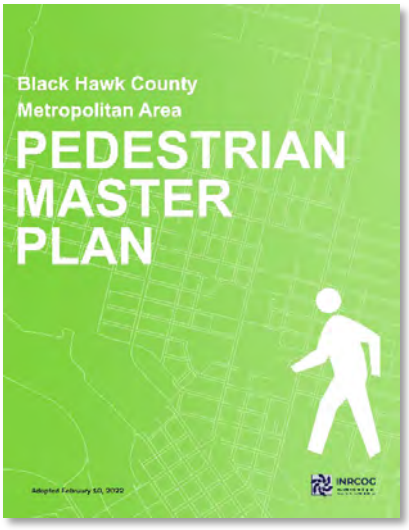
- Iowa has three classes of low-speed electric bicycles (321.1, subsection 36A):
    - Class 1: E-Bikes equipped with a pedal-assist motor which stops when the bike reaches 20 mph.
    - Class 2: E-Bikes equipped with a motor that may be used exclusively to propel the bicycle and stop when the bike reaches the speed of 20 mph.
    - Class 3: E-Bikes equipped with a motor that aids only when the rider is pedaling and stops when the rider stops pedaling or when the bicycle reaches the speed of 28 mph.
- Class 3 E-Bikes are limited to **20 MPO** on bike lanes and trails.
- Persons under the age of 16 cannot operate a Class 3 E-Bike

Read a comprehensive overview about E-Bikes, the different types, how they operate, and more at "E-Bikes in Iowa: A Guide for Electric-Assist Bicycles" by the Iowa Bicycle Coalition at https://www.iowabicyclecoalition.org/guides/download-e-bikes-in-iowa/.

Local Guidance

Pedestrian Master Plan

The foremost planning effort related to pedestrians is the MPO Pedestrian Master Plan. Planning for the Pedestrian Master Plan began in 2014, and three public input surveys were developed specifically for the plan:



- 2015 Pedestrian Master Plan Mail-Out Survey, 344 responses
- 2015 Special Outreach Survey, 207 responses
- 2016 Public Input Meeting Survey, 92 responses

Recommendations from the Pedestrian Master Plan include various policies and procedures. Project recommendations are based in part on the results of the initial mail-out surveys. Respondents were asked to select one area they would improve for pedestrians, out of 24 areas total. The highest ranked areas were reviewed by MPO staff to determine the "focus areas" of the plan. In other words, these are the areas with the greatest demand for pedestrian improvements where new investments may have the greatest public benefit. In addition, the plan utilizes a significant amount of data from the 2017 National Household Travel Survey (NHTS) Add-on. The NHTS Add-on includes responses from 1,221 households representing 2,450 individuals in the MPO area. In addition to the survey responses, over 500 walking trips were also recorded.

Policy Recommendations in the Pedestrian Master Plan include:

1. Prioritize sidewalk construction and infill needs identified in Section 5 (of the Pedestrian Master Plan).
2. Establish an annual funding source for new sidewalk construction.
3. Establish an annual funding source for sidewalk maintenance.
4. Restructure and expand MET Transit Service.
5. Revise snow removal policies and enforcement practices.

Planning and Zoning Recommendations in the Pedestrian Master Plan include:

1. Encourage sidewalk connections in site planning for new development.
2. Update zoning and subdivision ordinances to prioritize street connectivity.
3. Encourage transit-oriented development.
4. Reduce minimum parking requirements.
5. Adopt pedestrian “through zones” on sidewalks in business districts.

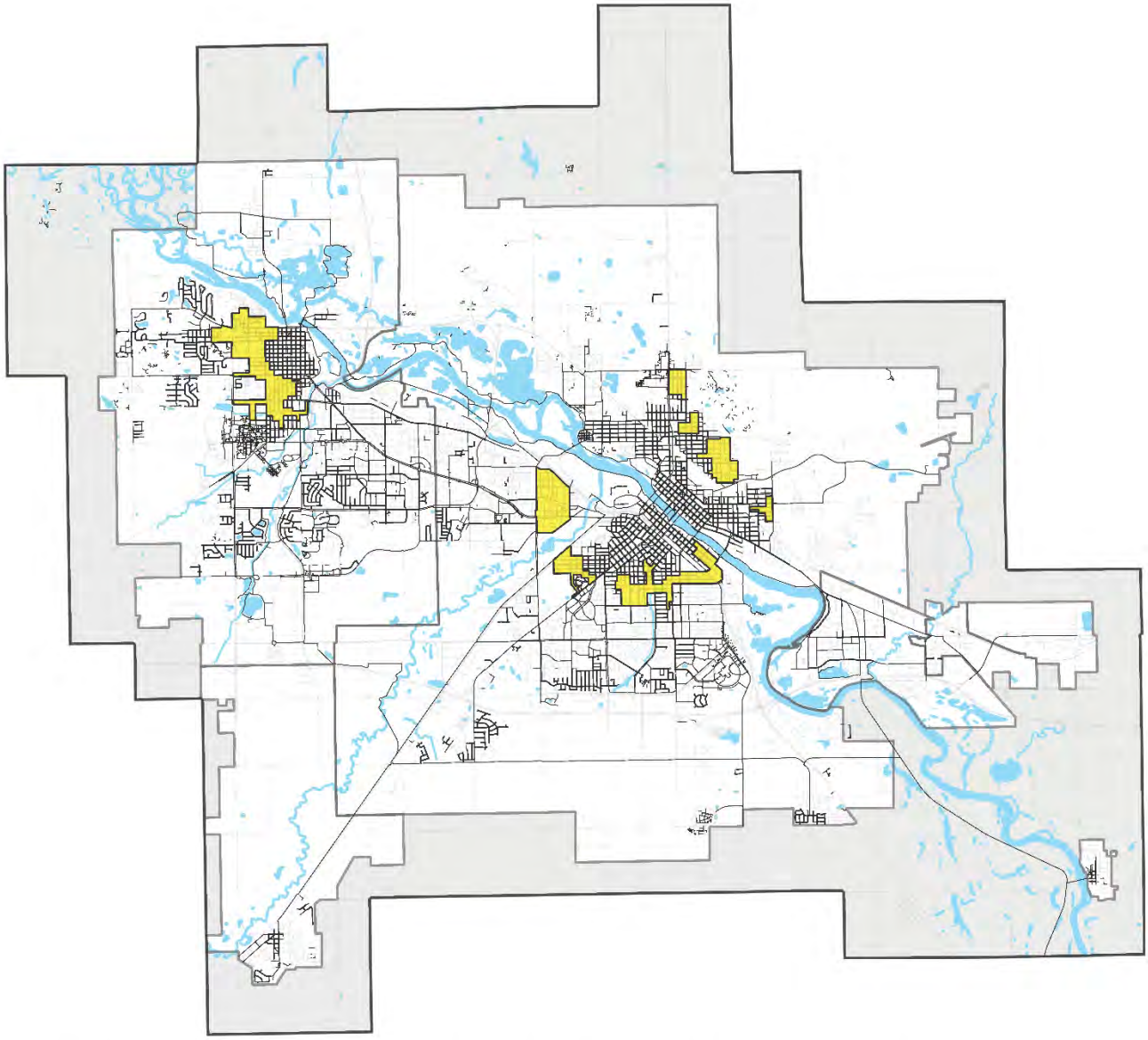
Engineering Recommendations in the Pedestrian Master Plan include:

1. Include routine inspection program.
2. Adopt street design standards to improve safety for all users.
3. Reduce design speeds along arterial and collector roads.
4. Install curb extensions along arterial and collector roads.
5. Support infrastructure for buses and bicycles.
6. Improve the design of pedestrian crossings.
7. Provide adequate pedestrian accommodation during construction.

Traffic Control Recommendations in the Pedestrian Master Plan include:

1. Adopt street design standards to improve safety for all users.
2. Phase out pedestrian actuated signals.
3. Support infrastructure for buses and bicycles.
4. Apply high visible markings (zebra, continental) at major crosswalks.

Some of these recommendations are actively being implemented or already have by the Waterloo Complete Streets Advisory Committee and Cedar Falls Bicycle and Pedestrian Commission, such as restructuring MET Transit Service and encouraging sidewalk connections for new development. Others, like encouraging transit-oriented development remain as opportunities to explore.



Priority Infill Areas in Waterloo and Cedar Falls

Priority Area

Sidewalk or Trail

N

0 0.5 1 2 3 4 Miles

INRCOG
Iowa Northland Regional Council of Governments

Local Advisory Committees

In 2013, the City of Waterloo and City of Cedar Falls both adopted Complete Streets resolutions consistent with the National Complete Streets Coalition guidance. Adopting a Complete Streets policy was a prerequisite of becoming a certified Blue Zones community, and both cities have since attained Blue Zones certification. The goal of Blue Zones is to improve the health and wellness of areas by encouraging citizens to take individual actions, and by efforts through employers, schools, restaurants, grocery stores, and city policy.

One outcome of these resolutions was the creation of an advisory committee in each city. These committees are the Waterloo Complete Streets Advisory Committee and the Cedar Falls Bicycle and Pedestrian Commission. MPO staff attend both meetings to provide input, seek input, and provide updates on related projects and initiatives. While both committees share a similar role, the makeup of their attendees is notably different. In Waterloo, the committee is chaired by a member of the community, but most attendees are affiliated with the City government. Conversely in Cedar Falls, many committee members are Cedar Falls residents, and only one or two City staff attend each meeting. Both committees address similar topics and face similar challenges.

The Waterloo Complete Streets Advisory Committee is chaired by a Waterloo resident and includes representation from a variety of City departments, community organizations, avid bicyclists, and interested individuals. City staff regularly provide updates on street reconstruction projects and commercial developments to identify opportunities for improving sidewalk connectivity. For larger projects, such as the University Avenue reconstruction project, engineering firms have attended meetings and presented project updates to allow the committee to provide input directly. The committee also had a hand in redesigning the Park Avenue bike lanes discussed later in this chapter. The committee chair provides updates to the Mayor and City Council and occasionally submits recommendations to City department heads. The committee actively works to increase representation from the broader community.

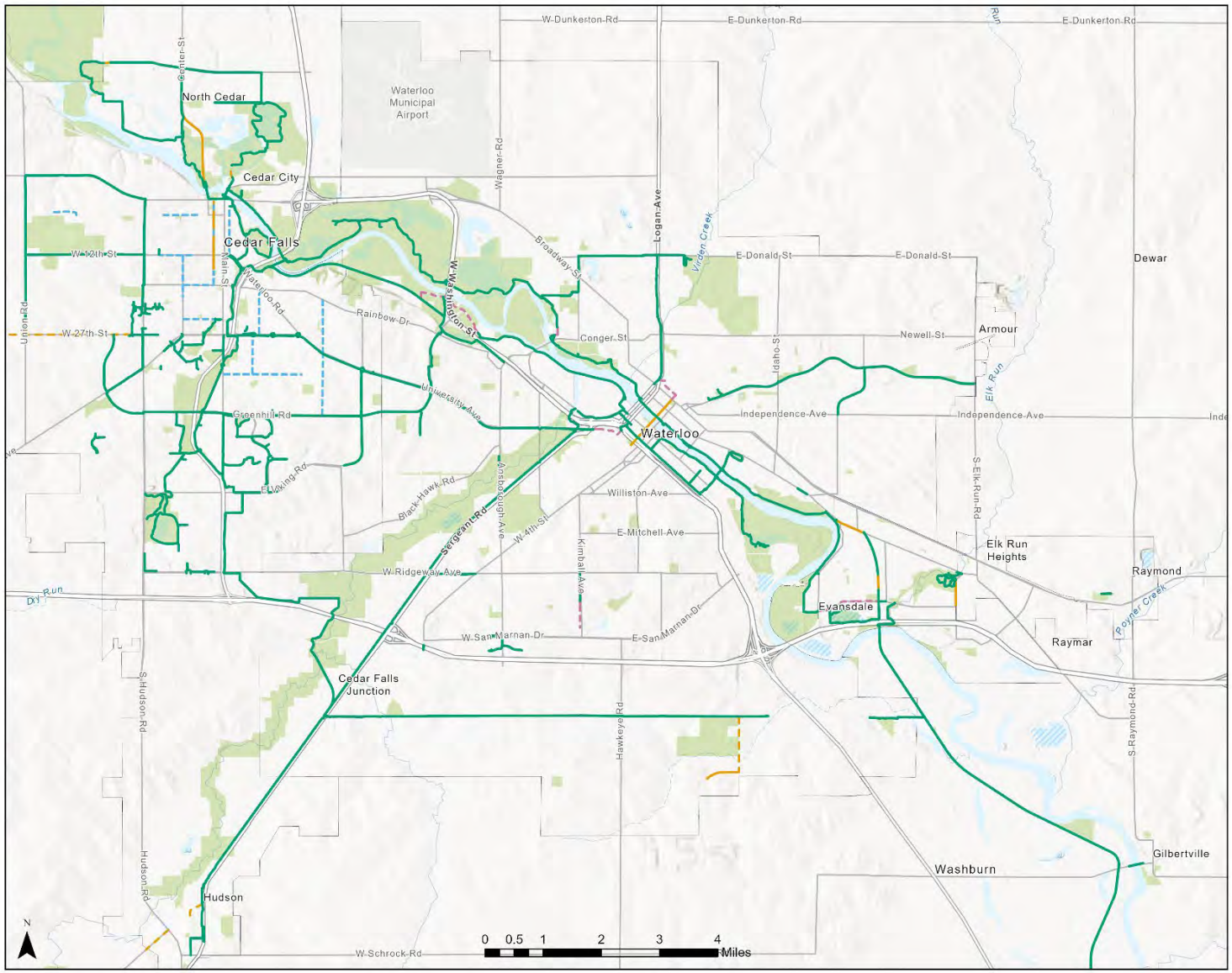
The Cedar Falls Bicycle and Pedestrian Commission is chaired by a Cedar Falls resident and includes representation from City planning, law enforcement, the school district, and several members of the community. From 2009 to 2027, Cedar Falls has been awarded the status as a Bronze Bicycle Friendly Community by the League of American Bicyclists, and the city and committee plan to actively retain its status through continued bicycle infrastructure planning. The committee occasionally makes recommendations to the City regarding specific projects and potential improvements for bicyclists. More predominantly, the committee engages in a variety of educational and community events including Bike Rodeos, Bike to School events, Pedal Fest, a Mayor's bike ride, and Bike Month activities in May. The committee also conducts outreach by submitting content to the city's quarterly newsletter, its Facebook page, and occasionally on local access television Channel 15. A small amount of funding is allotted to the committee by the City for education, and the committee can send a representative to relevant conferences including the Iowa Bicycle Summit. While this committee has significant community involvement, it currently lacks representation from City engineers and Council members.

Existing Facilities

The MPO area has a variety of facilities for bicycles and pedestrians including over 115 miles of paved trails. However, the definition of a paved trail is inherently up to interpretation. Today's standard for new trail construction is 10 feet wide, and eight-foot-wide trails are acceptable in certain circumstances such as where low bicycle and pedestrian traffic is anticipated. Many trail segments in the MPO area were constructed before this standard was adopted and are only six to eight feet wide. Also, areas such as the University of Northern Iowa campus and Downtown Waterloo have several pedestrian facilities at least eight feet wide, though their function is not conducive for bicycle traffic. Existing trails presented in this document represent trails that are conducive for bicycle travel and are at least part of an eight to ten-foot-wide trail.

Currently, paved trails make up most separated bicycle facilities in the MPO area. The MPO area also has bike lanes, paved shoulders, shared lane markings (or "sharrows"), and signed bike routes. Table 5.3 shows the total centerline length of each facility type in the MPO area. The term buffered bike lanes refers to a bike lane with a painted buffer as described previously and may or may not include vertical infrastructure such as delineator posts. The term on-road path refers to a segment of roadway that is designated for both bicycle and pedestrian travel, usually as part of a much longer paved trail.

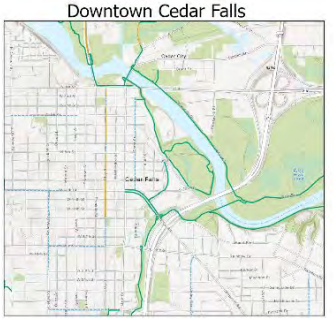
The development of the first protected bike lanes in the MPO area began in 2017 along Park Avenue in Waterloo. The term protected refers to any sort of vertical protection between a bike lane and driving lane, such as delineator posts, planters, or parked cars. Development of the Park Avenue bike lanes was spearheaded by MPO staff and the Waterloo Complete Streets Committee. MPO staff helped facilitate discussions between multiple City departments and elected officials, and staff also helped develop the initial planning-level design of the protected bike lane concept. Six years later, in 2023, the Park Avenue bike lane project was revisited with the goal of redesigning, enhancing, and expanding them. More information can be found under the "Current and On-Going Projects" section.



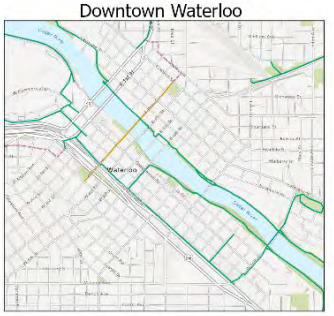
Existing Bicycle Facilities

Map 5.1

Downtown Cedar Falls



Downtown Waterloo

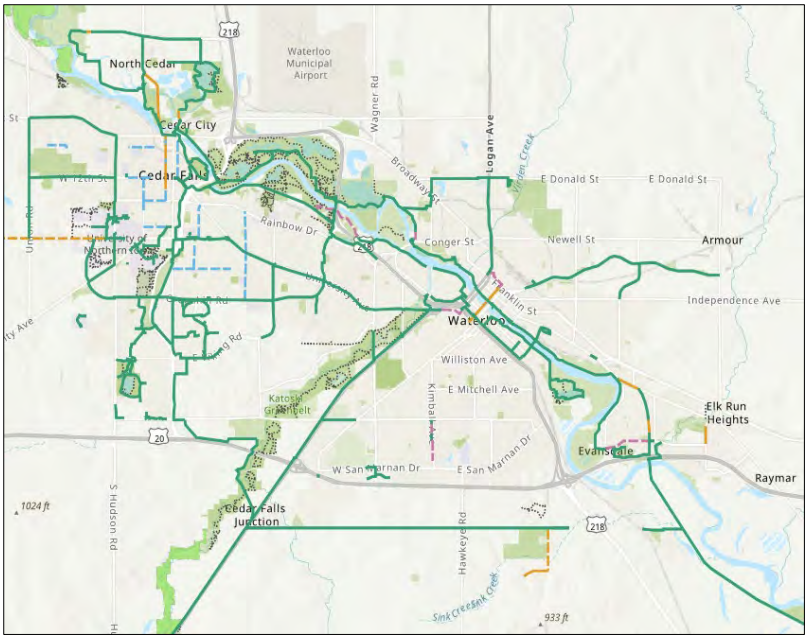


Legend

- Paved Trail
- Bike Lane
- Paved Shoulder
- Signed Bike Route
- Share The Road
- City Boundaries

Current and Ongoing Projects

Interactive Cedar Valley Trails Map



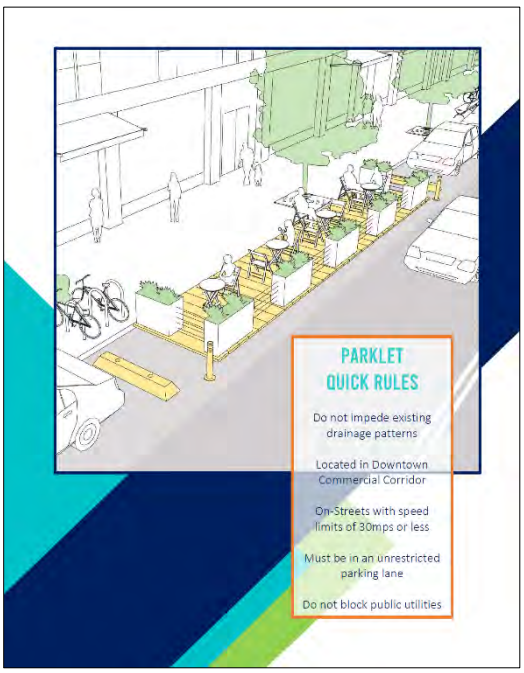
Every couple of years, INRCOG updates the Cedar Valley Trail and Recreation paper guide which entails all the trails in the MPO region. In 2021, local nonprofit organizations asked INRCOG to create an online, interactive version of this map. The Interactive Cedar Valley Trail Map launched in May of 2022 and is frequently updated to include new features or expand upon current ones. The map currently shows over 125 miles of paved trails, as well as dirt trails, on-road bicycle infrastructure, local bike retailers, bird watching spots thanks to a collaboration with the Prairie Rapids Audubon Society, and much more. The map utilizes a color-blind friendly color scheme and is currently being expanded to include INRCOG's six-county region. Visit the map at https://arcg.is/yvGn

Interactive Cedar Valley Trails Map QR-Code Decals

Following the development of the interactive trail map, QR-code decals were created by MPO staff and funded by the Cedar Valley Trails Partnership. The jurisdictions of Waterloo, Cedar Falls, Evansdale, and Hudson, as well as Black Hawk County and George Wyth State Park, collaborated to install decals on over 170 Wayfinding signs throughout the MPO. The Wayfinding signage is a previous project also conducted by MPO staff. When the QR-code is scanned with a smartphone, it takes users to the interactive map to highlight the various amenities and recreational opportunities our trail system has to offer. The map also has a locator button, allowing users to locate themselves along the trail map if needed. Decals were distributed and installed in the Summer and Fall of 2023.

Park Avenue Bike Lanes Redesign

While the initial Park Avenue bike lanes in downtown Waterloo were a step in the right direction, the public had difficulty using them for several reasons. A confusing layout for both bicyclists and drivers, rough pavement conditions, an incomplete network, and a general lack of cyclist-right of way knowledge led to bike users avoiding Park Avenue entirely. In response, MPO staff developed a renewed concept design for bike lanes on Park Avenue, Commercial Street, and E 4th Street in May of 2023. Comprehensive solutions were identified through a meticulous process of researching nationwide best practices, as well as gathering valuable insights from dedicated stakeholder committees and public comments. Collaboration between MPO staff, Waterloo Complete Streets Advisory Committee, and the City of Waterloo Engineering led to a finalized design that simultaneously aligned with the Park Avenue bridge reconstruction project. This collaborative approach helped address concerns and ensured that the proposed solution would meet community needs. The improved and expanded bike lanes will provide a safer and more attractive bicycling environment, encouraging more cyclists to use them and visit Waterloo's downtown area.



Waterloo Downtown Parklets

Main Street Waterloo, Waterloo Complete Streets Advisory Committee, and MPO Staff collaborated to develop a parklet program for downtown Waterloo. Together, a manual, guidelines, and application process were developed for downtown businesses. The overall goal of the parklet program is to enhance the livability, walkability, and beautification of downtown Waterloo. By using underutilized parking spaces, this program aims to create a lively public realm for community interaction while boosting local business support. The Parklet Program was presented to Waterloo City Council in August of 2023, and the parklet application process is anticipated to begin in 2024. The parklets themselves are meant to be a temporary structure that can be assembled and placed outside during the spring, summer, and fall months, then disassembled during the winter months. The City of Waterloo will annually accept applications.

MPO Complete Streets

Enhancing the safety and mobility of our roadway users can be achieved through the adoption of Complete Streets policies. Complete Streets involves the strategic planning, design, and operation of our transportation network to accommodate all types of roadway users. MPO staff actively participate in the Waterloo Complete Streets Advisory Committee, dedicated to creating streets that provide a safe, comfortable, and convenient environment for all road users. This committee draws its principles from both the MPO Pedestrian Master Plan and the City of Waterloo's Complete Streets Policy. MPO staff also contribute to the Cedar Falls Bicycle and Pedestrian Commission, with the aim of improving the quality of life through the increased opportunity for safe walking and bicycling as viable means of transportation and physical activity. The committee is guided by the Cedar Falls Bike Network Plan, Cedar Falls' Complete Streets Policy, and the MPO Pedestrian Master Plan.

The MPO is actively collaborating with established Complete Streets initiatives to further its goals. These initiatives adopt a comprehensive approach to urban and transportation planning, emphasizing the safety, accessibility, and convenience of all road users. By aligning its efforts with these ongoing activities, the MPO is set to play a pivotal role in formulating a comprehensive MPO-wide Complete Streets Policy, slated for completion in 2024. This policy will establish formal guidelines, principles, and objectives for guiding transportation planning, and project development efforts. Its aim is to ensure that transportation projects across the region contribute to safer, more accessible, and sustainable transportation systems that benefit all MPO residents. Additionally, it will help synchronize local priorities with federal transportation objectives and requirements, promoting a more inclusive and comprehensive approach to infrastructure development.

Complete Streets Plan for Redmond, Washington
Source: Community and Economic Development in North Carolina and Beyond

MPO staff will additionally develop a comprehensive Complete Streets Project Prioritization Plan. This plan is a strategic document that delineates the methodology and criteria used for the prioritization and selection of transportation projects that align with the MPO Complete Streets Policy. The plan's primary objective will be to offer guidance for the decision-making process and the allocation of MPO federal funds, ensuring that transportation projects are in alignment not only with the MPO Complete Streets Policy but also with nationwide transportation goals. As part of this plan, projects that closely align with the MPO Complete Streets Policy will receive elevated priority during the project ranking and selection process.

Jurisdictional Projects

There are several ongoing bicycle and pedestrian infrastructure projects underway in the MPO area. The Park Avenue bridge reconstruction project in Waterloo will include shared use paths that connect to on-street bicycle lanes on Park Avenue. From there, the Park Avenue Bike Lane Redesign project could provide connections to Commercial Street and East 4th Street. The Main Street reconstruction project in Cedar Falls between Seerley Boulevard and 6th Street includes on-street bike lanes and sidewalks to enhance bicycle and pedestrian mobility. Other projects with bicycle/and or pedestrian facilities expected include a trail along La Porte Rd and US 218 from Shaulis Rd to W 18th St, Lafayette Rd Trail and Elk Run Creek Levee Trail in Evansdale, and Sergeant Road Trail Bridge Replacements. Furthermore, the City of Waterloo is planning to incorporate bike lanes as part of a transformative one-way to two-way conversion project for 4th 5th and 6th Streets in the downtown area. In September 2023, the City applied for Reconnecting Communities and Neighborhoods Grant funds to complete this pivotal complete street project.

Projects completed between 2019 and 2023 that incorporated a paved trail project include the following:

- Union Road Trail, Cedar Falls
- Cedar Heights Drive Trail Extension, Cedar Falls
- Lake Street Trail, Cedar Falls
- US 63 Pedestrian Underpass, Hudson
- University Avenue Trail, Waterloo
- US 63 Trail Extension, Waterloo
- Cedar Valley Lakes Trail Reconstruction and Widening, George Wyth State Park

2050 MPO Bikeway Plan

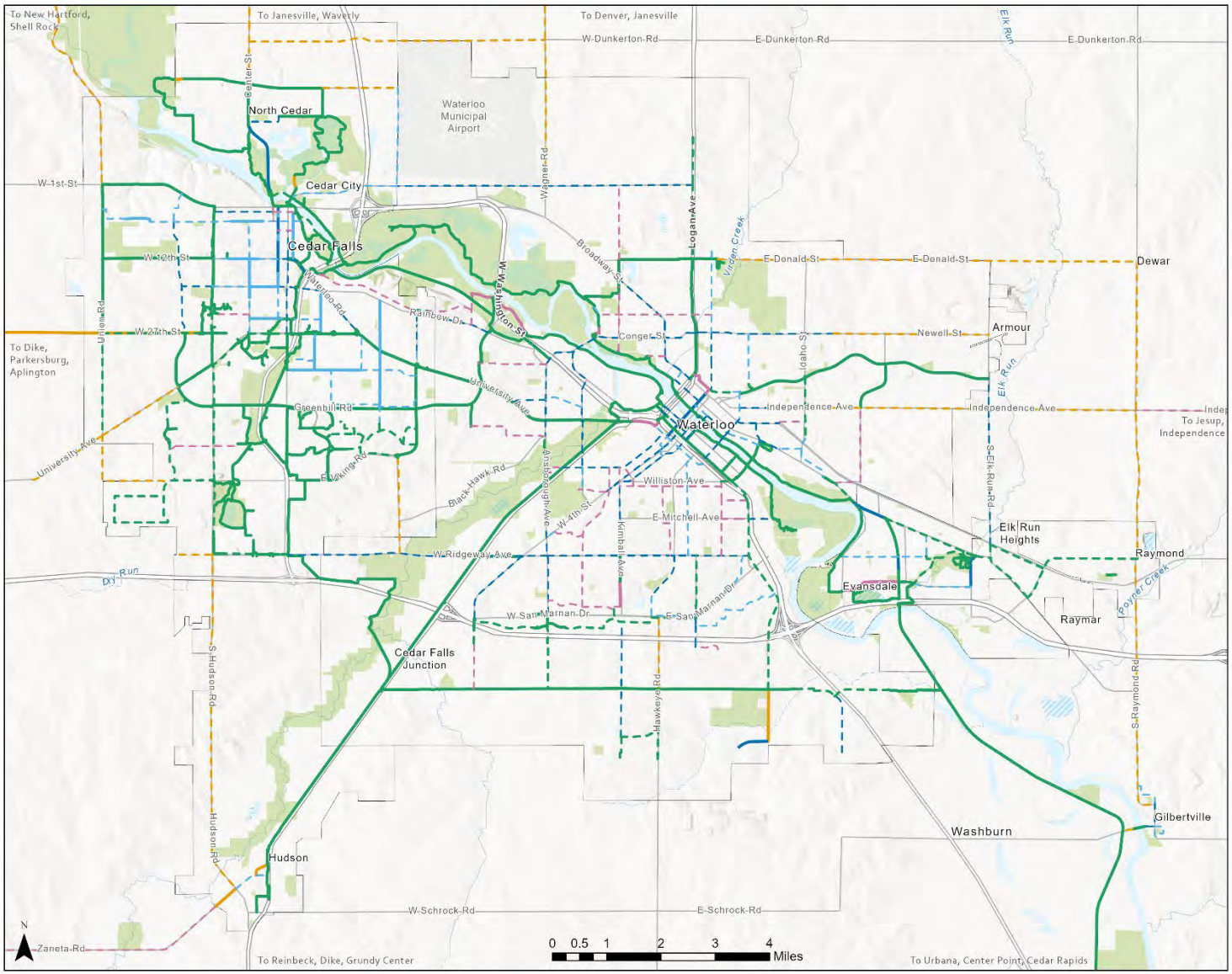
The MPO Bikeway Plan is a comprehensive and forward-thinking initiative aimed at enhancing cycling infrastructure and promoting sustainable transportation in the Black Hawk County metropolitan area. This plan outlines a network of interconnected bikeways, paths, and trails that prioritize safety, accessibility, and connectivity for cyclists. It envisions a more bike-friendly community, encouraging active transportation, reducing traffic congestion, and improving the overall quality of life for residents.

The 2050 Bikeway Plan builds off the 2045 Plan which provided detailed reviews of roadways to determine feasible facility types. Several factors were considered including right-of-way, trees, driveways, drainage areas, traffic volumes, and lane configurations. Connectivity to businesses and educational instructions was also a priority. The Plan also identifies low-volume residential streets that can be used by bicyclists without any additional treatments with the intent of connecting more separate bicycle facilities.

Table 5.3 shows the existing mileage of each facility type, and the existing and proposed mileage combined in the 2050 MPO Bikeway Plan. As noted above, a major emphasis of this plan is identifying low-volume roads suitable as part of a bicycle network, and the planned increase in signed on-road bike routes and shared lane markings reflects this.

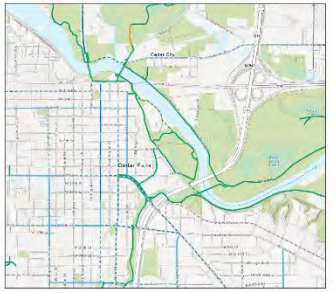
Table 5.3: Existing and proposed miles of bicycle facilities

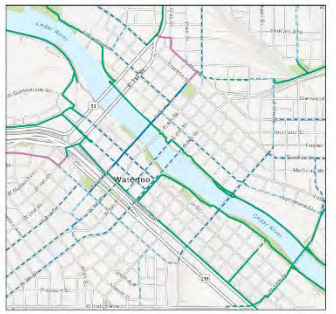
Facility Type	Existing Miles	Proposed Miles	Existing + Proposed Miles
Paved trails (including on-road paths)	115.8	36.6	152.4
Bike lanes (including buffered and one-way)	3.4	49.8	53.2
Paved shoulders	3.9	36.1	40.0
Signed on-road bike routes	3.3	22.5	25.8
Shared lane markings (i.e., sharrows)	7.0	26.6	33.6
Total	133.4	171.6	305.0



MPO Bikeway Plan

Map 5.2





Legend

- Paved Trail
- Bike Lane
- Paved Shoulder
- Signed Bike Route
- Share The Road
- Proposed Paved Trail
- Proposed Bike Lane
- Proposed Paved Shoulder
- Proposed Signed Bike Route
- Proposed Share the Road
- City Boundaries

Notable Past Projects

Trail Wayfinding Signage

In 2016, the Cedar Valley Trails Partnership secured a grant from Principal Financial for wayfinding signs on the paved trails in the metropolitan area. The Partnership reached out to MPO staff for guidance, and the MPO agreed to plan the implementation of the new signs. These signs would be implemented in several jurisdictions and would effectively replace smaller wooden signs scattered along the trails. Meetings were held with representatives from the Partnership, each City, and George Wyth State Park.

MPO staff determined the location of each sign, the destinations displayed on each customized sign, and the optimal routes to each destination. The sign layout and design were developed as a committee, using graphic elements from the Cedar Valley Trails Partnership logo and Prairie Pathways interpretive panels.

Each sign also shows the distance to each destination, as well as the estimated time it would take by bicycle based on an average speed of 10 miles-per-hour. Each customized sign displays the closest destination first, followed by any other destination in the same direction, and then the next closest destination in a different direction.

Altogether, more than 170 customized wayfinding signs were installed throughout the MPO area, in addition to dozens of standard bike route sign assemblies. There was a total of three phases for the project to utilize all remaining grant funds. All signs have since been installed.

Bicycle Ordinance Updates

In 2018, the City of Hudson was the first city in Iowa to adopt an updated bicycle ordinance based on the Iowa Bicycle Coalition's model ordinance. The model ordinance is a template that includes seventeen sections addressing a variety of topics including rules for lamps and reflectors, obedience to signals, and passing a bicyclist. In the MPO area, the last known updates to any city's ordinances related to bicycling were in the 1970s.

Waterloo and Cedar Falls have held discussions among staff to update their own ordinances. In Waterloo, the ordinance update is led by the city's Traffic Operations department. In Cedar Falls, discussions are led by the Bicycle and Pedestrian Commission with participation from the city's Planning and Police departments.

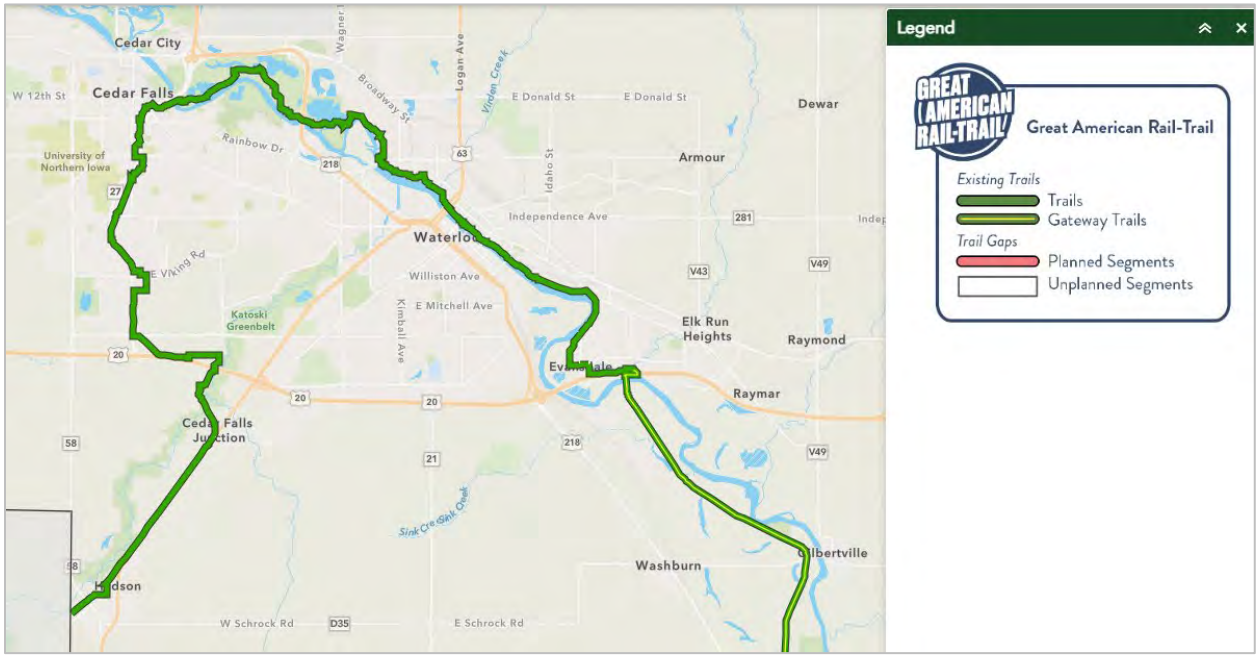
American Discovery Trail

The American Discovery Trail (ADT) is a designated east-west bicycle route extending from the East Coast to California. The ADT uses some paved trails, though it is designated along roadways. The official ADT route splits into a Northern Route and Southern Route between Ohio and Colorado, and the MPO area is situated along the northern route. In fact, the trail through George Wyth State Park is the northernmost point along the entire trail nationwide.

The ADT includes the Cedar Valley Nature Trail, the Evansdale Nature Trail, portions of the Cedar Valley Lakes Trail and South Riverside Trails, and the Cedar Prairie Trail. Locally, the route has been considered to include the entirety of the two riverfront trails between Pfeiffer Park in Cedar Falls and Downtown Waterloo. However, the official route as of 2016 is a single linear route, and it does not exclusively follow the existing riverfront trails. A sizable portion of the official route follows Commercial Street in Waterloo, even though there are now paved trails on both sides of the river parallel to the official route. It is a goal of the MPO to coordinate with the ADT Board to realign the official route through the MPO area to make optimal use of the existing paved trail network. Map 5.3 shows the official ADT route, other routes identified as part of the ADT in the past, and areas of the trail where a realignment will be possible or necessary.

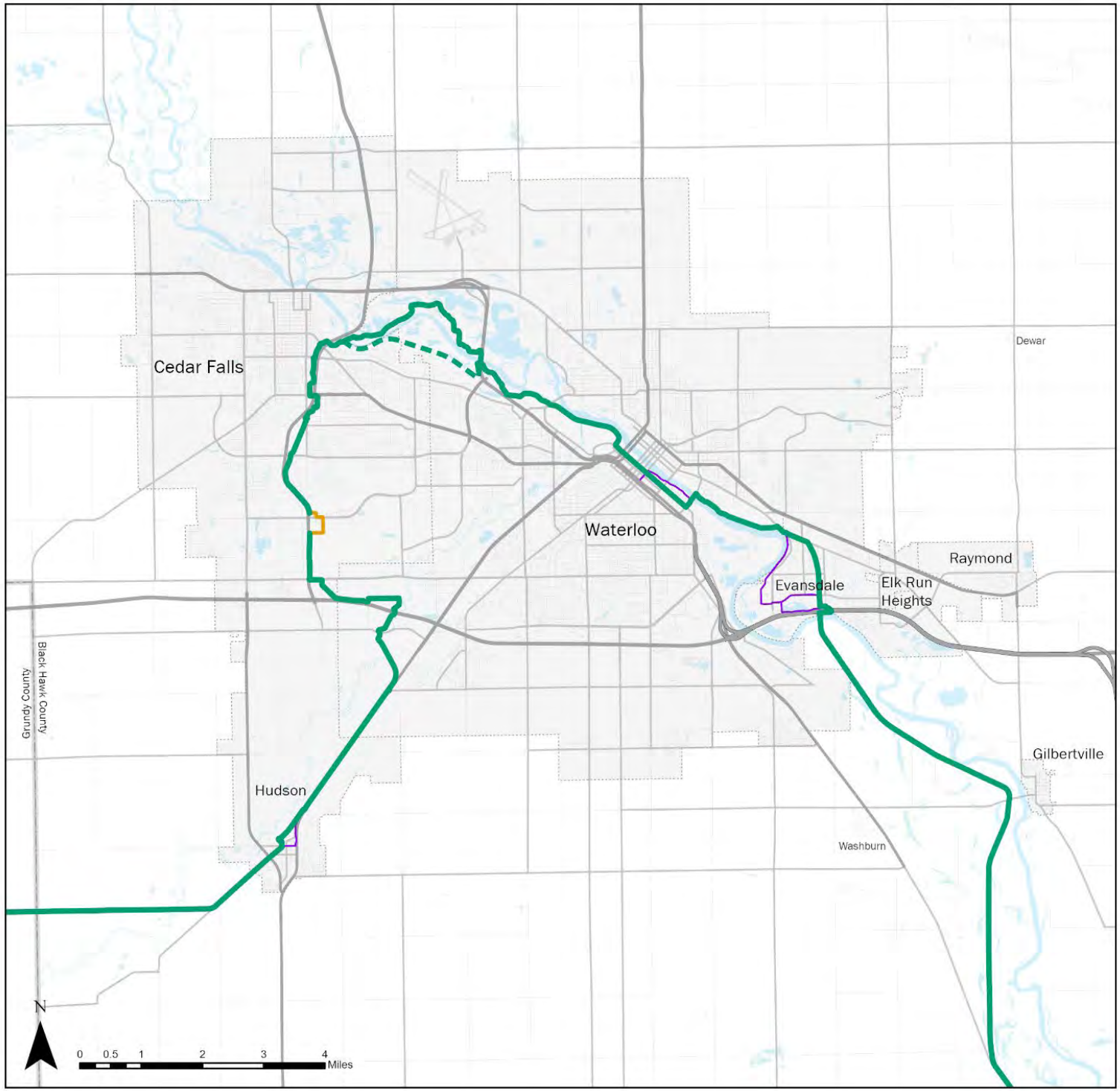
Great American Rail-Trail

The vision of the Great American Rail-Trail, a project of the Trails-to-Trails Conservancy, is to be the first trail that will be entirely bikeable across the country and, when completed, separated from vehicle traffic. This trail would stretch more than 3,700 miles between Washington, D.C., and Washington State, connecting more than 125 existing rail-trails, greenways, and other multiuse paths. The designated path travels through Evansdale, Waterloo, Cedar Falls, Hudson, and George Wyth State Park.



www.railstotrails.org/greatamericanrailtrail/

American Discovery Trail
Map 5.3



Downtown Cedar Falls

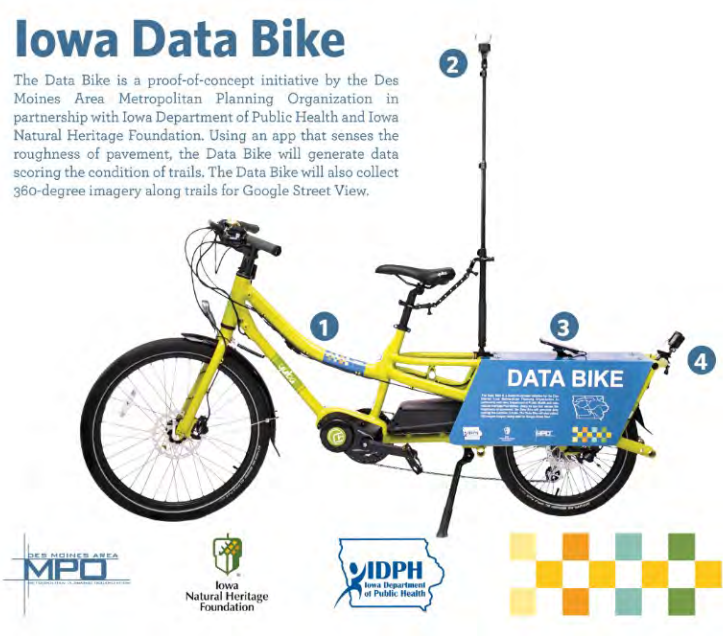
Downtown Waterloo

Legend

- Official Route
- Official Alt. Route for High Water
- Required Route Realignment
- Potential Route Realignment

Iowa Data Bike

In fall of 2022, MPO staff borrowed the Iowa Data Bike from the Des Moines Area MPO. The Iowa Data Bike is an electric assist bicycle that contains various equipment, including a 360-degree camera that uploads imagery to Google Street View, a smartphone that runs the "rRuf" app which measures roughness of trails, and a GoPro camera that takes photos of trail conditions. MPO staff borrowed the data bike for approximately one month and rode 97 of 128 miles of trails in the Cedar Valley. Regional and state significant trails were prioritized. Over 3,000 360-degree images were taken, and over 44,000 pavement photos were taken. The 360-degree images can be found on Google Street View on trails within the Black Hawk County MPO boundary. The data will help inform a long-term maintenance strategy for each jurisdiction's trail network.



Other Non-Motorized Projects

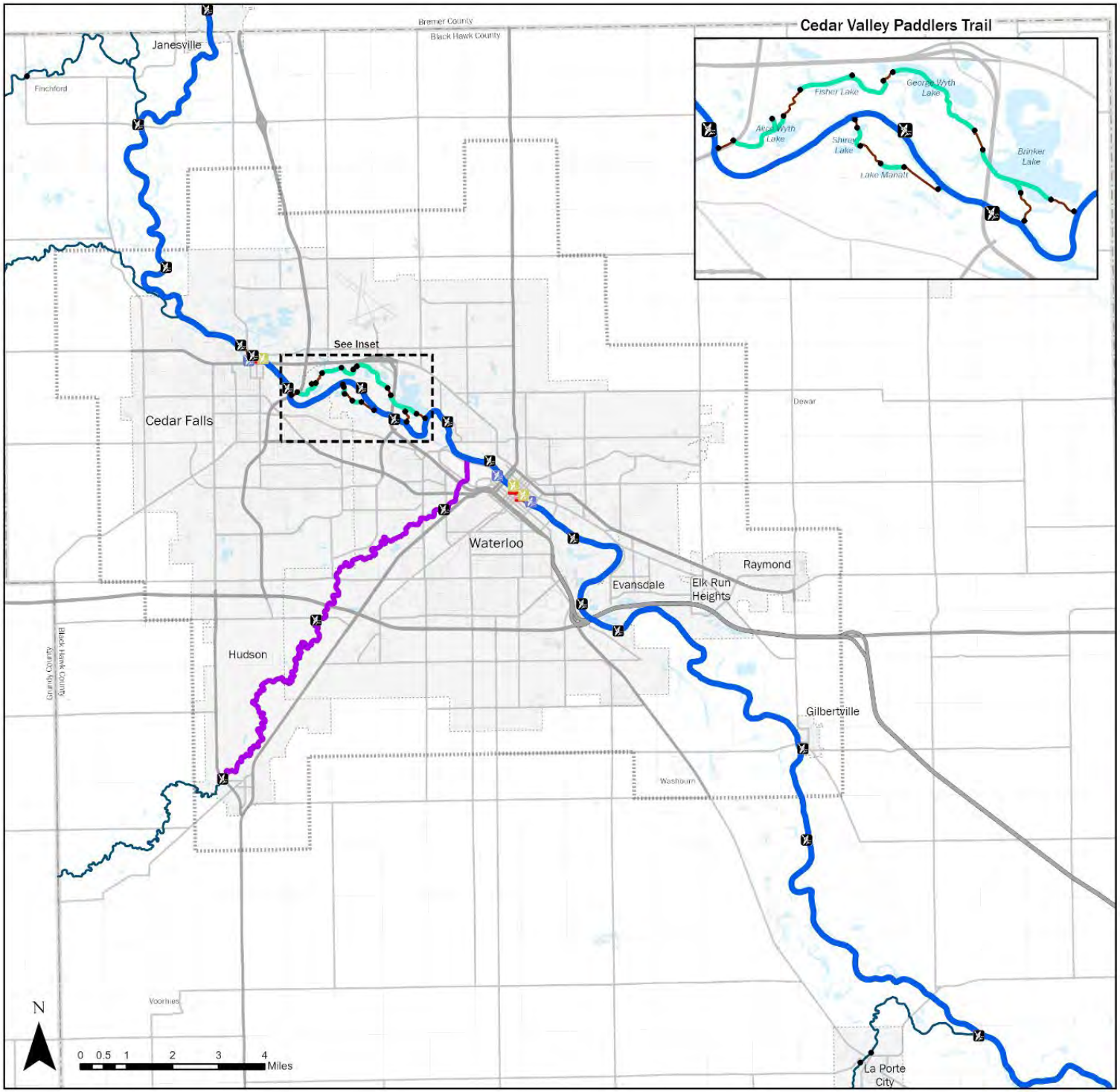
Water Trails Master Plan

The Black Hawk County Water Trails were officially designated by the State of Iowa in September 2022. INRCOG worked to develop the Water Trails Master Plan for over seven years. This project was funded through the Iowa Department of Natural Resources (DNR) and identifies site-specific improvements to river access throughout the County, including about twenty sites in the MPO area. Many of these river accesses are situated near or along paved trails, creating multiple opportunities for "pedal paddle" trips. These are trips where a paddler drops off their bike at their take-out location, drives to the put-in location, paddles downstream, locks up their canoe or kayak, bicycles back to their vehicle, and returns with the vehicle to pick up their canoe or kayak.

Two public input meetings were held for the development of the Water Trails Master Plan. One was held in July, and another was held in August of 2018. 92 individuals completed surveys to help guide development of the water trails. The plan is available at the INRCOG office and at https://cedarvalleywatertrails.wordpress.com/.

Soft Trails

The MPO features a network of soft trails that provide hiking, bicycling, running, and skiing opportunities. There are over 40 miles of soft trails through the metropolitan area with the heaviest concentrations in George Wyth Memorial State Park and Hartman Reserve. The Cedar Valley Association for Soft Trails (CVAST) is a local group dedicated to promoting, maintaining, and building sustainable soft trails in the area. A variety of events are held throughout the year to encourage people to explore and enjoy the soft trails in the metro area. CVAST provides an online interactive map to identify tracks and the locations of parking, water, and restrooms. Visit their website at www.cvast.org.



Cedar Valley Paddlers Trail

Water Trails in Black Hawk County

Map 5.4

Downtown Cedar Falls

Downtown Waterloo

Legend

- MPO Boundary
- Cedar River Water Trail
- Black Hawk Creek Water Trail
- Cedar Valley Paddlers Trail
- Other Stream
- Portage
- River Access, Existing
- River Access, Potential
- River Access, Changes Planned Locally
- Other Access
- Dam

Safe Routes to School

Safe Routes to School (SRTS) is a nationwide effort to promote children safely walking and bicycling to school through engineering, education, enforcement, encouragement, and evaluation (5-E's). SRTS projects are eligible under the Transportation Alternatives Program (TAP). INRCOG has been awarded Statewide TAP funding in multiple years to fund a staff person to coordinate a regional Safe Routes to School initiative in partnership with the Iowa Bicycle Coalition and Upper Explorerland Regional Planning Commission in Decorah. The goal of the program is to increase the number of students walking and bicycling to school with the goal of improving the overall health and well-being of the region's youth. To date, INRCOG has done the following:

Clarksville Library summer bike safety clinic, 2022

- Supported Safe Routes related education and encouragement programs at 38 elementary and middle schools for 22 districts in INRCOG's six-county area.
- Supported 28 community organizations and 8 daycares in hosting their own bike rodeos and safety events.
- Received grants from several area community foundations to distribute over 1,800 new bike helmets to those in need.
- Collaborated with schools and caregivers to start Walking School Bus programs encouraging physical activity and safety for over 75 students and continues to advocate to form new groups.
- Worked with four schools to host Walk, Bike and Roll to School Day events, encouraging all students to rethink their daily commute options.
- Overall outreach to 11,320 youth and 1,682 adult "roll" models in INRCOG's six-county area.
- Continuously attend area community wellness coalitions that emphasis on increasing physical activity, bike skills, and traffic safety awareness.
- Provide input for the development of statewide resources, curriculum, and guides.

Though there is no dedicated Safe Routes to School funding for infrastructure projects anymore, the MPO is committed to maintaining the Safe Routes to School Coordinator position to continue and grow these activities.

Grundy Center Middle School -Bike Skills Rodeo, 2022

2022 Public Input Survey

In September 2022, MPO staff conducted a pair of internet-based surveys. These surveys were aimed at collecting feedback from residents within the jurisdictions of the MPO. The subsequent details provided here highlight survey responses that hold significance within the context of this chapter.

Figure 5.7: 2022 Public Input Survey, Round Two results of where respondents are walking to:

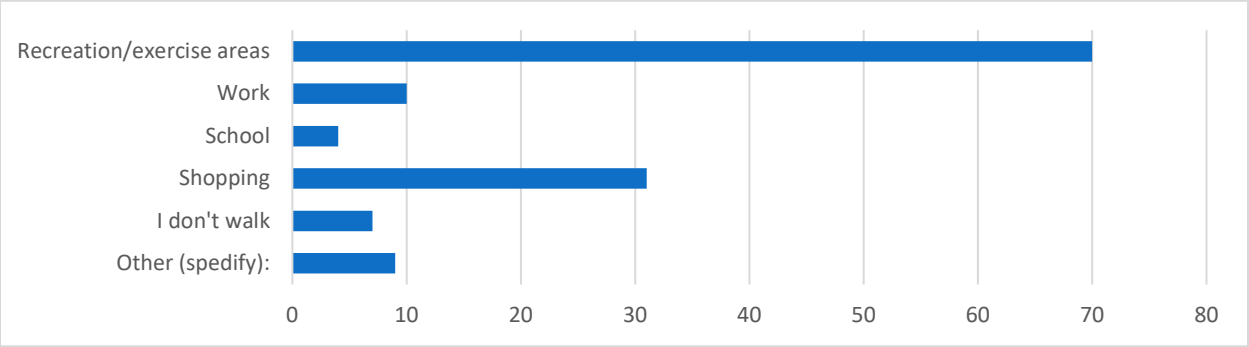
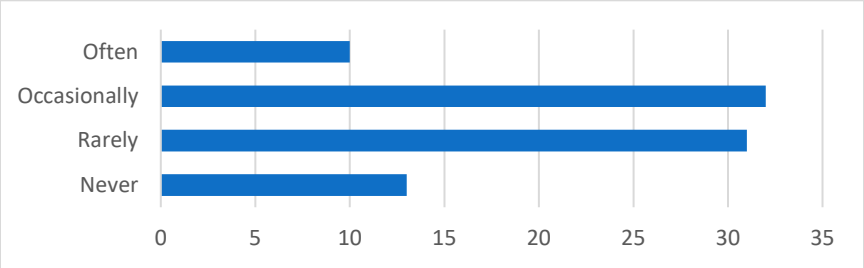
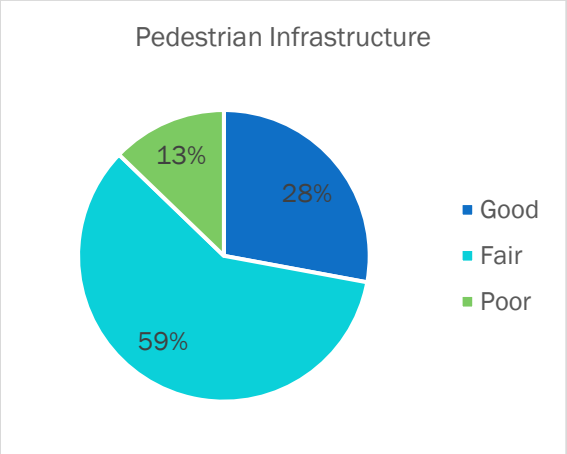
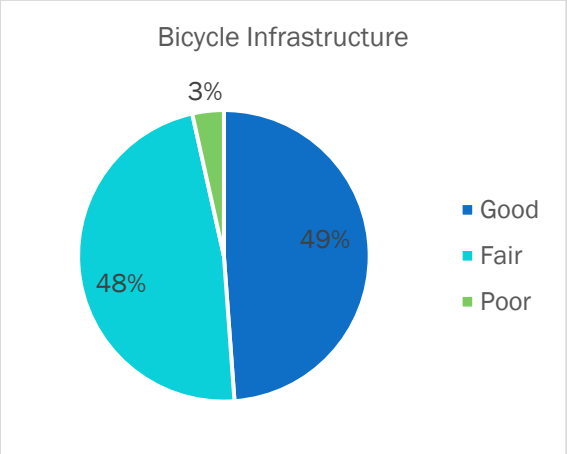


Figure 5.8: 2022 Public Input Survey, Round Two results of how often respondents walk to a destination instead of driving or taking a bus:

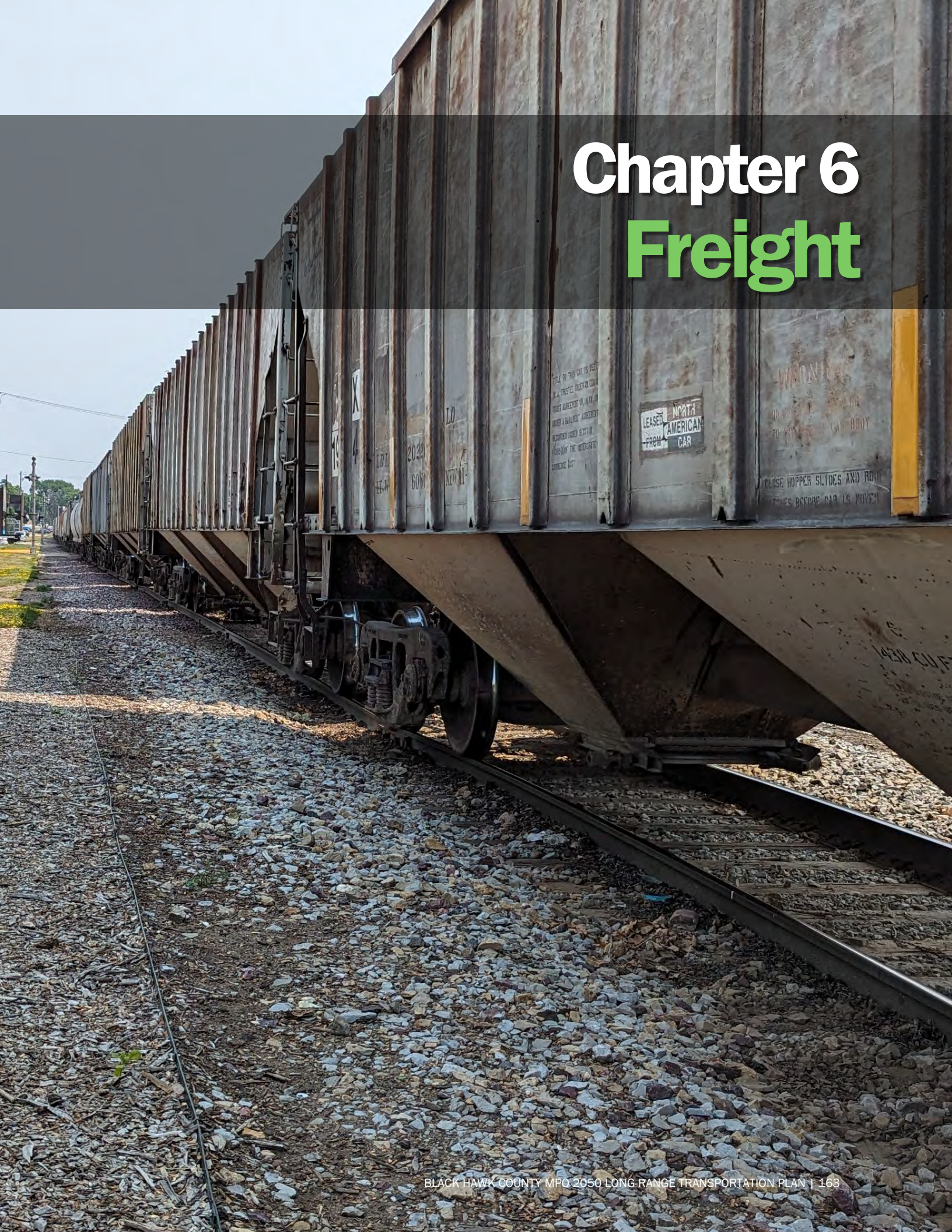


Figures 5.9 and 5.10: 2022 Public Input Survey, Round Two asking respondents how they rate MPO pedestrian and bicycle infrastructure:





In the second round of surveys, participants were asked about the road they would prioritize to improve pedestrian infrastructure. The most frequently mentioned roads for improvement include West 4th Street, San Marnan Drive, Kimball Avenue, Ridgeway Avenue, and Lafayette Road.



Chapter 6
Freight

Chapter 6 – Freight

Freight Background

Multimodal freight is crucial for the economic growth of Black Hawk County and nearby communities. Situated in the heart of the Midwest, this region heavily relies on smooth goods movement to fuel industries and local businesses. With varied multimodal infrastructure, the county enjoys better connections to regional, national, and global markets. This network allows easy transfers between modes, making freight movement efficient and cost-effective. Undoubtedly, multimodal freight is a vital component driving economic prosperity and advancement in the Black Hawk County area.

The importance of freight transportation planning has grown due to the increasing volume of goods moved. With expanding global trade and consumer demand, efficient systems are vital to reduce congestion and inefficiencies. Effective planning optimizes routes, modes, and infrastructure, meeting customer expectations while cutting costs and environmental impact. Anticipating trends helps identify bottlenecks, safety problems, and innovative solutions, enabling infrastructure upgrades. Integration of technologies and sustainability practices, like electric vehicles and green logistics, addresses environmental issues.

The significance of planning for multimodal networks and freight transportation has been emphasized by past federal transportation bills and continues with the Infrastructure Investment and Jobs Act (IIJA), also known as the Bipartisan Infrastructure Law (BIL). Three of IIJA's planning factors targeted towards the multimodal system and freight are to:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
- Increase the accessibility and mobility of people and for freight.

Metro Stats

132
Transportation and warehousing businesses[1]

82
Miles of active rail lines[2]

127
At-grade road-rail crossings[2]

65 & 1
Road-rail injuries and fatalities since 1976[3]

25
Miles of active pipeline[4]

Sources:
[1]U.S. Census Bureau, 2021 County Business Patterns

[2]Iowa DOT, REST Services, Active Rail Lines

[3]U.S. DOT, Highway-Rail Grade Crossing Accident Data

[4]U.S. DOT, Pipeline and Hazardous Materials Safety Administration, National Pipeline Mapping System

- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.

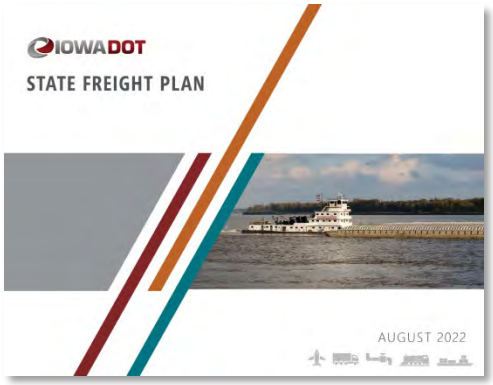
Freight planning is distinct from planning for other transportation modes. This is because it mostly involves private sector operations, especially in rail and pipeline, where infrastructure is privately owned. This leads to less public data on freight and difficulties in involving all stakeholders. Some companies might hesitate to discuss sensitive freight matters.

The focus of this chapter is to explore freight and multimodal transportation which often overlap. The movement of freight frequently involves several steps and potentially multiple modes of transportation. There are four modes of freight transportation available in the region – truck, rail, air, and pipeline. **The metro area does not contain any navigable waterways**.

State Freight Plans

In 2012, the Freight Advisory Council (FAC) was formed to help understand the complexities of freight movement. Its aim is to guide public investment in transportation infrastructure through education, discussion, and review. The Iowa FAC's mission is to improve Iowa's business and industry competitiveness by fostering a safe, efficient, and convenient multimodal freight transportation system. The Council includes stakeholders from various industries and groups linked to freight transportation. It has contributed to planning documents and projects like the Iowa State Freight Plan, Iowa State Rail Plan, Iowa in Motion 2050 State Long Range Transportation Plan, and Iowa Statewide Freight Transportation Network Optimization Strategy.

Iowa State Freight Plan 2022



The primary purpose of the State Freight Plan is to document the immediate and long-range freight planning activities and investments in the state. More specifically, it provides guidance on how to address issues, adapt to emerging trends, and invest strategically in the freight system to grow a stronger economy, strengthen the nation's competitive advantage, and enhance the quality of life for Iowans.

Developed in coordination with the FAC, the State Freight Plan serves as a platform for connecting Iowa's freight-related initiatives and a tool for informed decision-making aimed at addressing the ongoing challenges of today's freight system and supply chains.

This document is the second in the current series of freight plans that are now federally required to be updated every four years. The 2022 State Freight Plan is an updated and streamlined version of the original 2017 Plan with several notable enhancements that will impact the freight transportation system including:

- Clearly defined system objectives
- Process for identifying multimodal bottlenecks
- Focus on infrastructure and supply chain resiliency
- Freight design considerations
- Commercial motor vehicle parking facilities assessment
- Catalog of freight-generating facilities

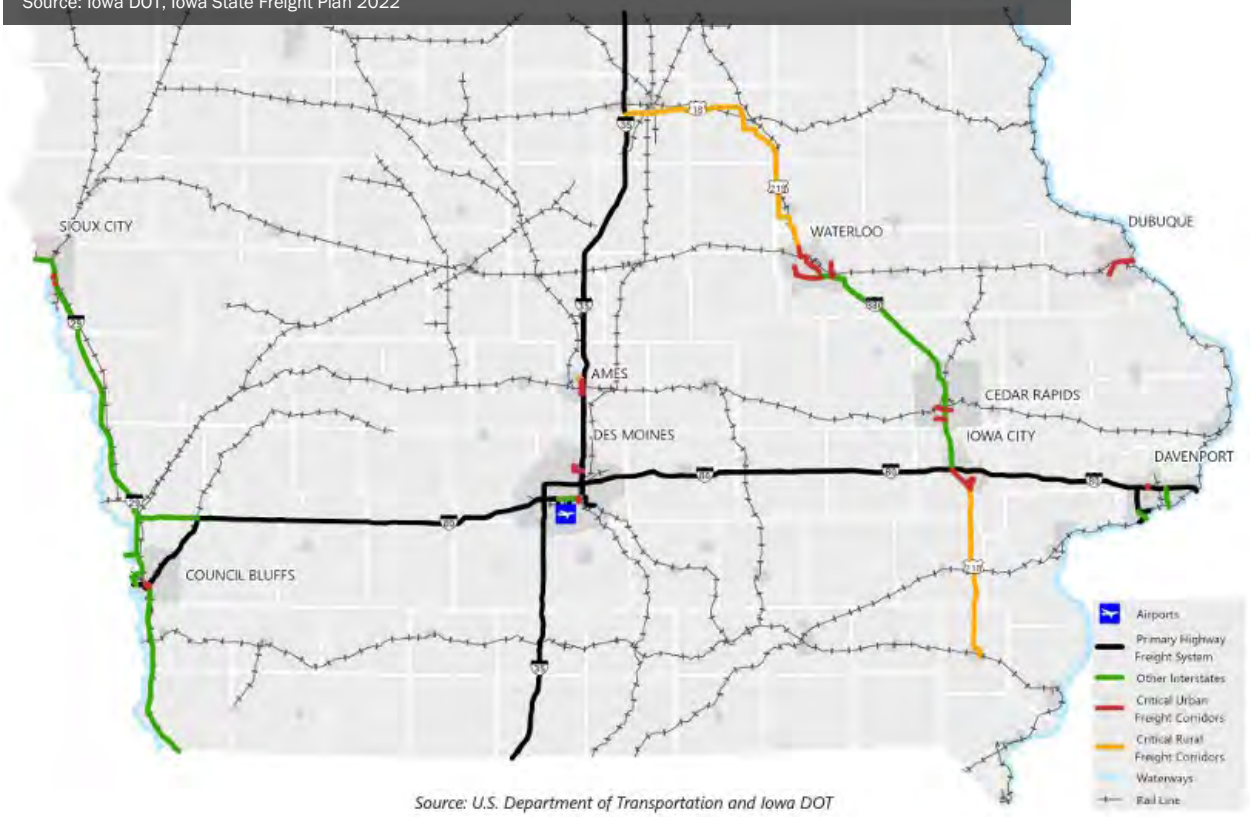
www.iowadot.gov/iowainmotion/Specialized-System-plans/2022-State-Freight-Plan

The most critical freight infrastructure in Iowa is designated as part of two freight networks – the National Multimodal Freight Network (NMFN), designated at the federal level, and the Iowa Multimodal Freight Network, (IMFN), designated at the state level. The NMFN consists primarily of infrastructure of national and international significance. The IMFN complements the national network by also identifying infrastructure critical to state and regional commerce including airports, highways, railroads, and inland waterways. Strategic military networks, specifically the Strategic Highway network (STRAHNET) and Strategic Rail Corridor Network (STRACNET), are also designated to prioritize infrastructure and connectivity needs for national defense.

The National Highway Freight Network (NHFN) is the highway portion of the NMFN and the system eligible for National Highway Freight Program (NHFP) funds distributed to the states annually. The NHFN includes the following four subsystems of roadways:

- Primary Highway Freight System (PHFS) – A network of highways designated at the federal level and identified as the most critical highway portions of the U.S. freight transportation system.
- Other Interstates Not On PHFS – These highways consist of the remaining portion of Interstate roads not included in the PHFS. These routes provide important continuity and access to freight transportation facilities.
- Critical Rural Freight Corridors (CRFC) – Public roads not in an urbanized area that provide access and connection to the PHFS and the Interstate from other important ports, public transportation facilities, or other intermodal freight facilities.
- Critical Urban Freight Corridors (CUFC) – Public roads in urbanized areas that provide access and connection to the PHFS and the Interstate from other ports, public transportation facilities, or other intermodal freight facilities.

National Multimodal Freight Network
Source: Iowa DOT, Iowa State Freight Plan 2022



Source: U.S. Department of Transportation and Iowa DOT

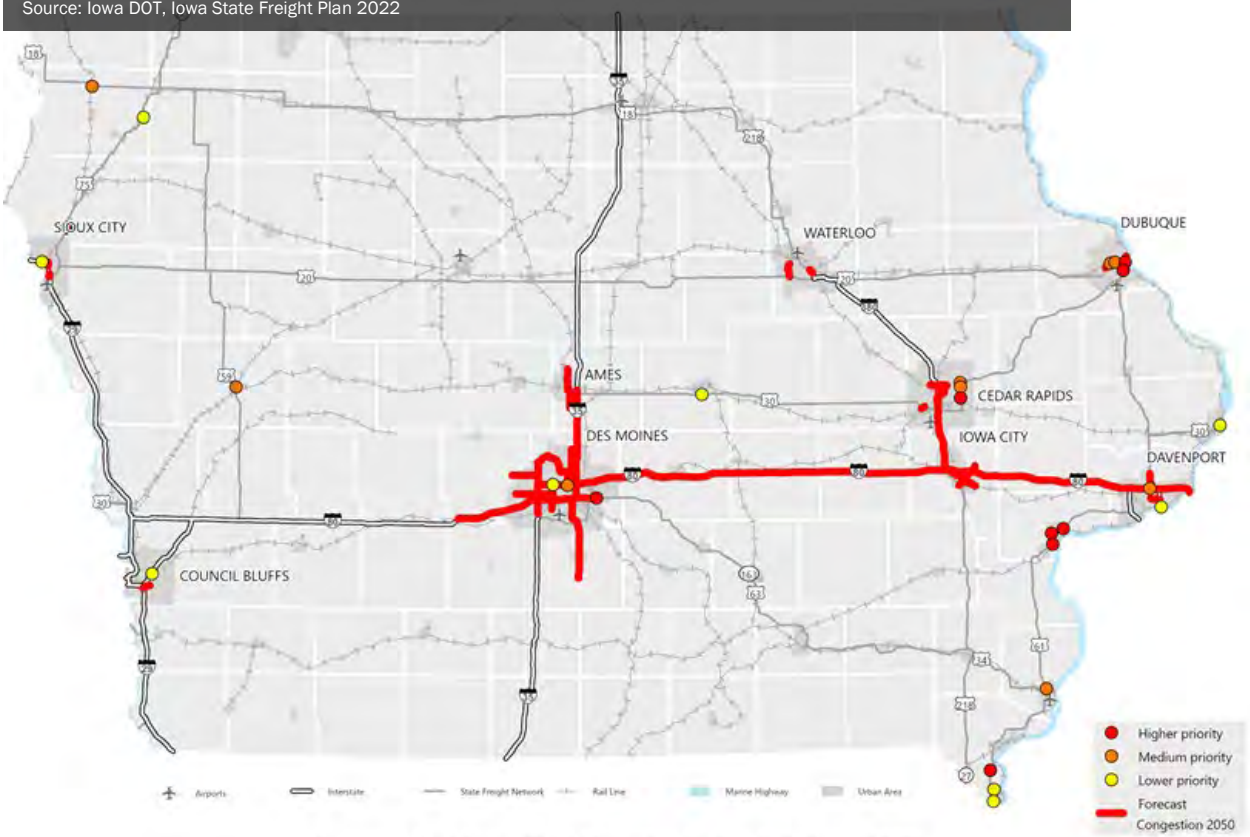
Iowa Multimodal Freight Network
Source: Iowa DOT, Iowa State Freight Plan 2022

Source: Iowa DOT

The State Freight Plan identifies specific improvements to address the freight mobility issues experienced in Iowa. These improvements are intended to support the state's freight implementation strategies, the national freight goals, and the Iowa DOT system objectives.

There were **27 locations identified as highway freight bottlenecks in Iowa**. Highway segments with capacity needs that impact freight mobility were also identified. To identify and prioritize candidates for highway freight improvements, the Iowa DOT utilized the Value, Condition, and Performance (VCAP) matrix. This approach takes advantage of multiple tools available at the Iowa DOT, including the Iowa Travel Analysis Model (iTRAM), Infrastructure Condition Evaluation (ICE), INRIX travel speed data, and Iowa's annual traffic counts. After each candidate location was assigned a VCAP value, each was ranked for the three categories. The average of these three rankings was calculated and the locations were assigned an overall priority rank. Though the analysis shows localized areas of forecasted congestion in 2050, **none of the 27 highway freight bottlenecks identified fall within the Black Hawk County metro area**.

Highway freight priority locations and capacity needs
Source: Iowa DOT, Iowa State Freight Plan 2022



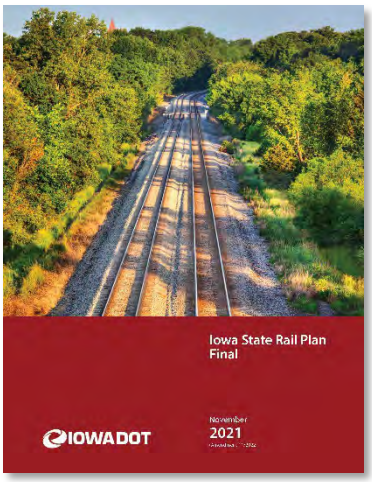
Source: Iowa Travel Analysis Model, Infrastructure Condition Evaluation, and INRIX

Railroad bottleneck locations (more commonly referred to as "choke points") were identified by surveying each of the rail companies operating trackage in the state. Locations submitted primarily include structural choke points (e.g., low clearance areas and bridges with size restrictions), congested choke points (e.g., locations with operational issues or shared-use corridors), and low-lying areas at risk of flooding during heavy rains or high-water levels. Additionally, railroads continue to focus their attention on heavier axle-load freight equipment and longer, heavier trains to lower costs. Using larger rail cars in 100-plus car unit trains allows the greatest savings and economic benefits, as well as keeping would-be truck traffic off the highways. The industry standard for rail car weight, which includes the weight of commodities and the rail car combined, is 286,000 pounds. Iowa has rail lines that are unable to carry the sizes and weights of railroad equipment that meet this threshold. **Bryant Yard at Waterloo is identified as a railroad freight chokepoint** due to the convergence of traffic from three subdivisions resulting in insufficient classification space.

Railroad freight chokepoints
Source: Iowa DOT, Iowa State Freight Plan 2022

Iowa State Rail Plan 2021

This document guides the Iowa DOT in promoting rail access, improving freight and passenger rail, and enhancing rail safety. The State Rail Plan describes Iowa's rail network, its impacts, and the planning process. The Plan includes goals, capital improvements, studies, and steps to address identified issues. The document meets requirements from the Passenger Rail Investment and Improvement Act of 2008, enabling Iowa to be eligible for rail-related capital grants.



Various themes arose during the outreach process regarding existing rail issues at the local, regional, or state levels and the direction or actions that should be taken in the future. The themes described included:

- General rail benefits, opportunities, and threats
- Rail freight
- Intercity passenger rail service
- Commuter rail service
- Rail safety and security
- Rail-related economic development
- Environmental issues
- Rail financing
- The role of public agencies regarding rail

Based on suggestions obtained through outreach efforts, the Iowa DOT developed Iowa's rail vision of "*A safe, secure, and efficient Iowa rail system that ensures Iowa's economic competitiveness and development by maintaining the rail infrastructure and providing rail access and connectivity for people and goods in an environmentally sustainable manner.*"

Rail service goals aligned with the vision were developed based on the rail-related benefits, issues, and challenges that had been identified. These goals are as follows:

- Enhance safety and security of the rail system
- Maintain the rail infrastructure
- Provide access and connectivity
- Improve efficiency
- Ensure economic competitiveness and development
- Sustain the environment

https://iowadot.gov/iowainmotion/modal-plans/rail-transportation-plan

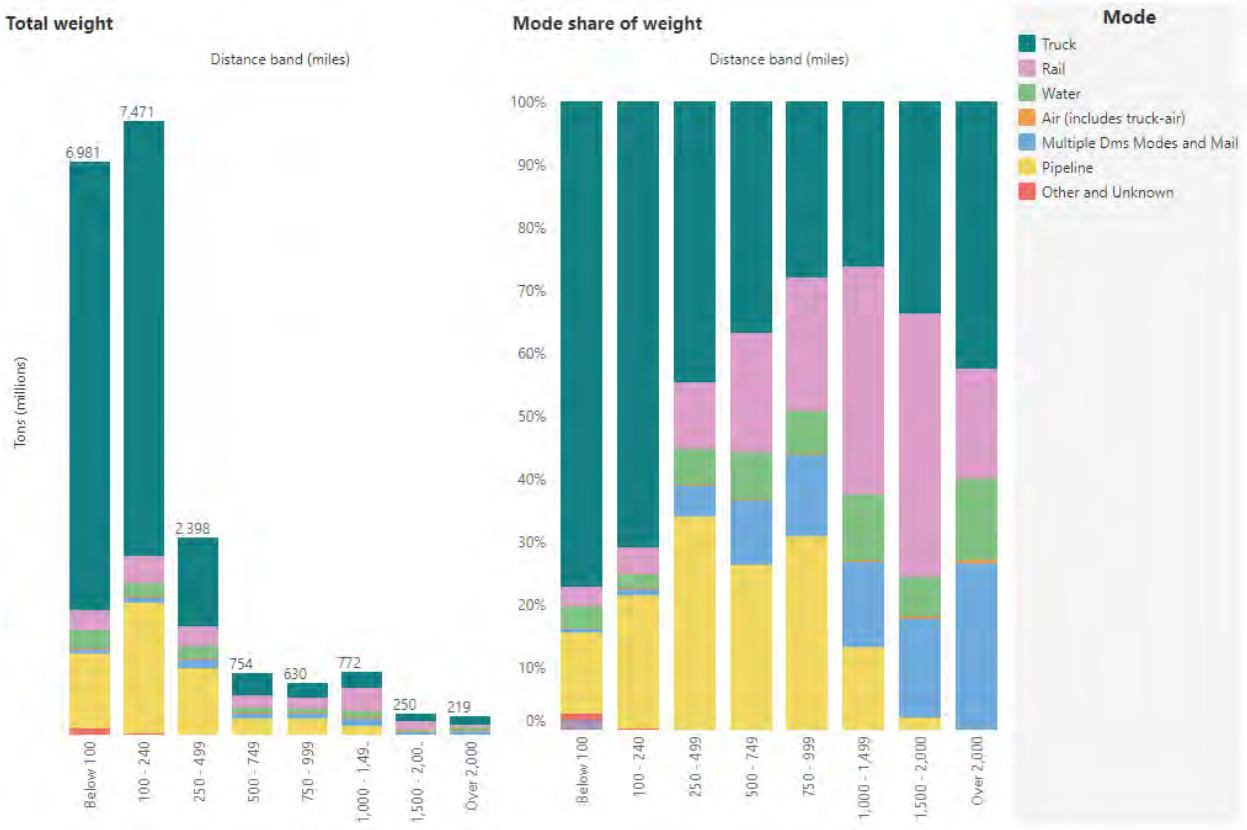
Freight at the National Level

Freight is categorized by weight and value. Weight matters for transportation and system health. Value matters economically and helps identify influential goods and industries in local economies.

In 2021, the U.S. transportation system moved **53 million tons of freight daily, worth over $50.7 billion**. The Freight Analysis Framework (FAF), produced through a partnership between the U.S. DOT, Bureau of Transportation Statistics, and FHWA estimates tonnage will increase at about 1.4 percent per year between 2022 and 2050. Freight value is predicted to increase faster, growing from $996 to $1,256 per ton (adjusted for inflation). This is due to higher growth in valuable, lightweight goods. In 2022, exports at $1,278 per ton and imports at $1,941 per ton exceeded domestic shipments at $909 per ton. By 2050, exports and imports are expected to make up 13.8 percent of tonnage and 21.7 percent of value.

The largest percentage of goods, by weight and value, are transported short distances (less than 250 miles). Approximately 73.8 percent of the weight and 55.5 percent of the value of goods moved less than 250 miles between origin and destination in 2022. In contrast, about 6.6 percent of the weight and 17.4 percent of the value of goods moved 1,000 miles or more in 2022. Trucks carry 77 percent of the freight tonnage that travels less than 100 miles.

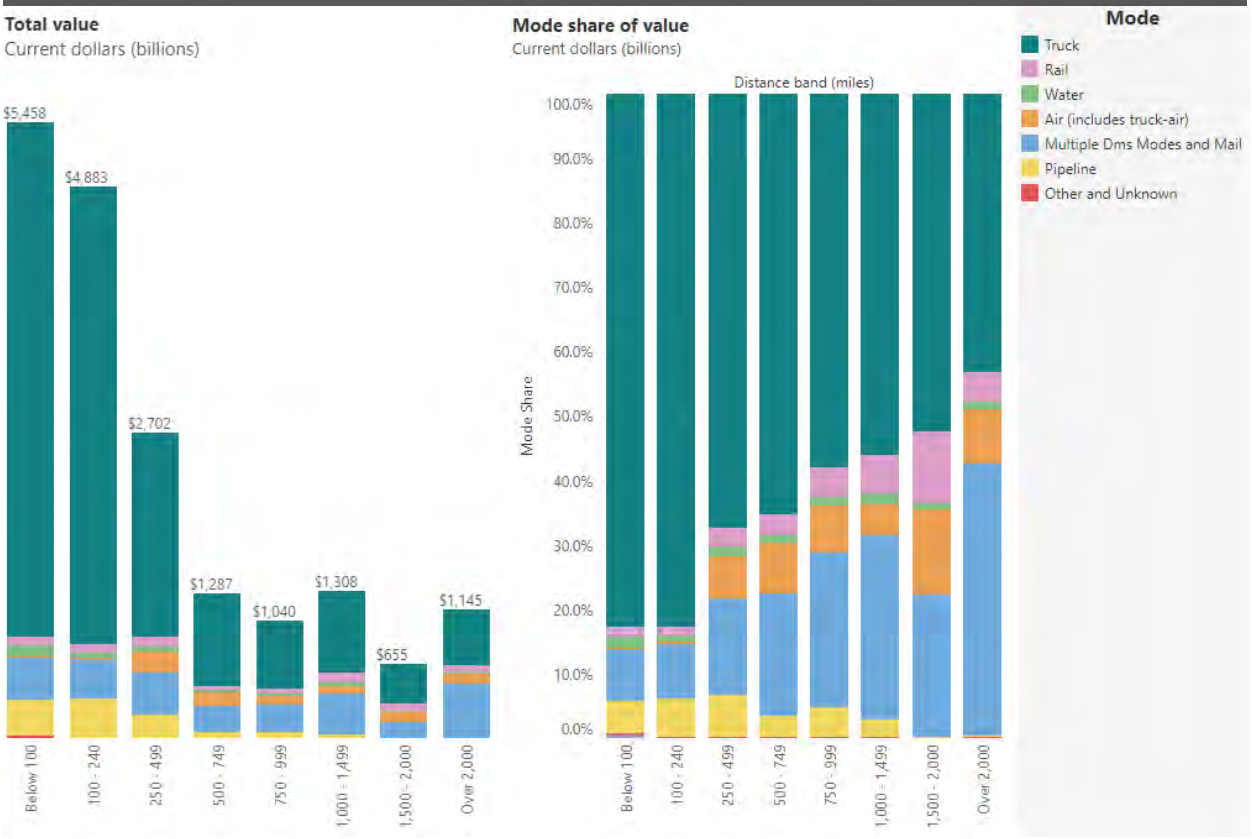
Weight of freight by mode and distance, 2021
Source: U.S. DOT, Bureau of Transportation Statistics, FHWA, Freight Analysis Framework



The distribution of transportation modes used for freight movement differs based on the distance covered. When considering both current and constant dollars, trucks take the lead in carrying the most valuable shipments for distances less than 2,000 miles. This underscores their efficiency and suitability for shorter hauls. Conversely, for shipments covering distances between 1,000 and 2,000 miles in 2020, rail emerges as the dominant mode in terms of weight and ton-miles. This indicates that rail transport is particularly well-suited for hauling heavier cargo across moderate distances.

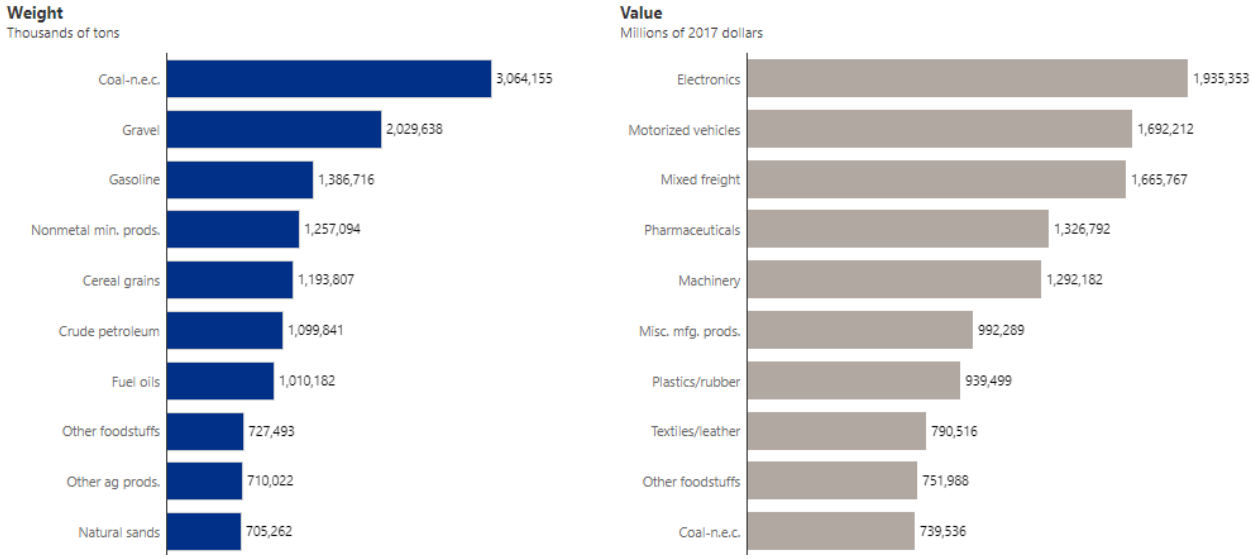
However, as distances extend beyond 2,000 miles, a different pattern emerges. Air transport, a combination of various modes including mail, water transportation, and rail, together account for more than half of the total value of shipments in this longer distance category. This suggests that these modes play a significant role in facilitating the movement of high-value goods across extensive geographical spans. The reliance on air transport indicates the importance of speed and efficiency in covering vast distances, while the combined usage of multiple modes highlights the complexity and integrated nature of modern supply chains that span across different transportation networks.

Value of freight by mode and distance, 2021
Source: U.S. DOT, Bureau of Transportation Statistics, FHWA, Freight Analysis Framework



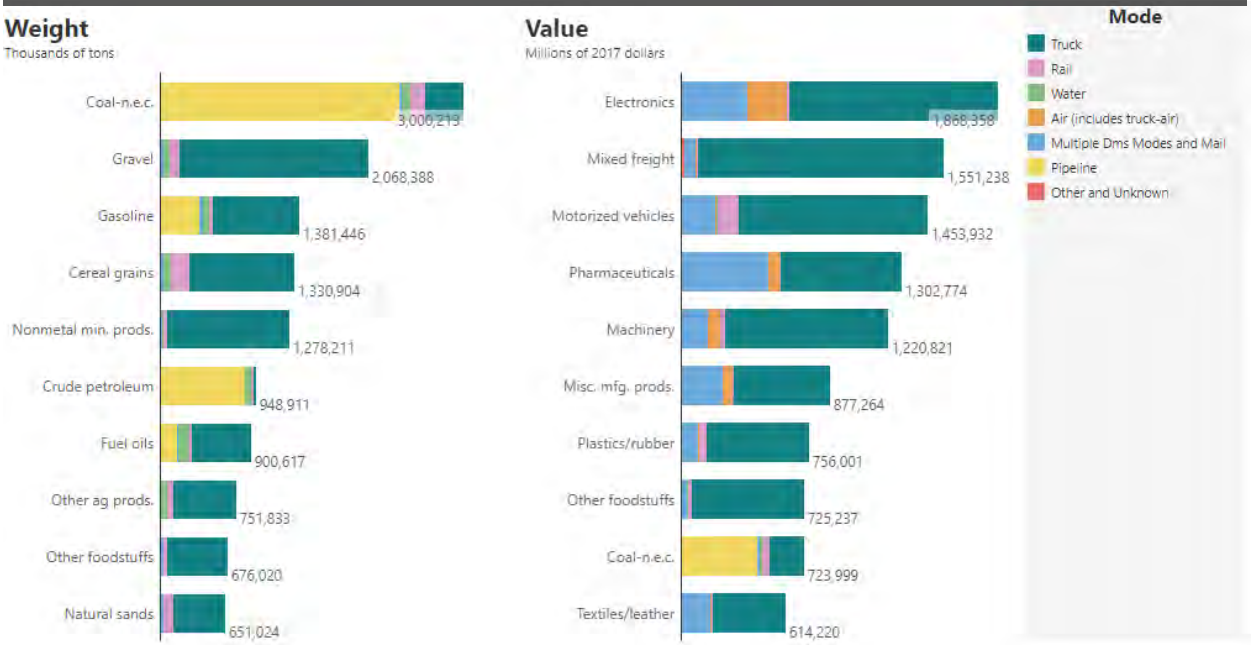
The top ten commodities by weight accounted for 65 percent of total tonnage while the top 10 by value accounted for 60 percent of total value of goods moved in 2022. The leading commodities by weight are coal-N.E.C., gravel, gasoline, and nonmetallic mineral products. The leading commodities by value are high value-per-ton goods, such as electronics, motorized vehicles, mixed freight (principally food), and machinery.

Top commodities by weight and value, 2021
Source: U.S. DOT, Bureau of Transportation Statistics, FHWA, Freight Analysis Framework



Trucks engage in the supply chain of all top 10 commodities by weight and value. Trucks carry all types of goods, ranging from high-value commodities, such as mixed freight and electronics, to bulk commodities, such as gravel, grains, and gasoline. Mixed freight includes grocery and convenience store goods, office supplies, and hardware and plumbing items. In comparison, rail and water modes primarily move bulk products, while air (including truck-air transport) moves high-value items, such as electronics and pharmaceuticals. However, trucks moved more high-value, time sensitive commodities than any other mode in 2022.

Top commodities moved by mode, 2021
Source: U.S. DOT, Bureau of Transportation Statistics, FHWA, Freight Analysis Framework



www.bts.gov/product/freight-facts-and-figures

Freight in Iowa

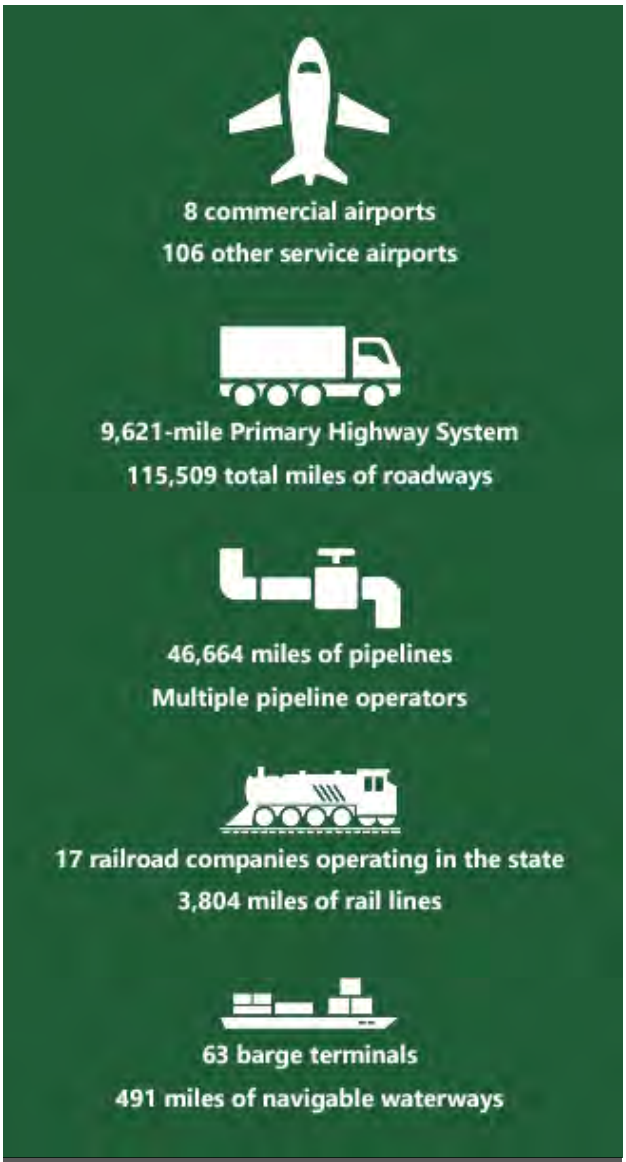
Iowa's strong economy depends on smooth freight transportation for continued growth. Known as the "Food Capital of the World," Iowa produces significant quantities of corn, soybeans, and livestock. It also has a thriving manufacturing sector making machinery, chemicals, and more. To connect its industries with markets, Iowa needs a reliable freight system. This system ensures timely deliveries of materials for production and smooth distribution of finished goods. The need for good freight transportation shows Iowa's vibrant economy and dedication to business growth and jobs.

The need for freight transportation is influenced by where people and businesses are located. In the South and West, population and economic activity have grown faster than in the Northeast and Midwest. Iowa's transportation system is vital for moving freight from coast to coast and for handling goods that pass through the state.

Iowa's current transportation systems boasts an extensive network of roads, bridges, railroads, waterways, and airports, which play a vital role in connecting the state's communities and facilitating the movement of people and goods. The state has a robust road network, enabling efficient travel withing and beyond its borders. The state's railroad system covers significant mileage, supporting freight transportation contributing to the state's economy. Iowa also benefits from its extensive network of waterways, including the Mississippi and Missouri Rivers, which allows for efficient barge transportation. The state also hosts an extensive pipeline network for the transportation of various resources. Furthermore, Iowa's airports, both commercial and general aviation, are strategically located throughout the state, offering convenient travel options for residents and businesses.

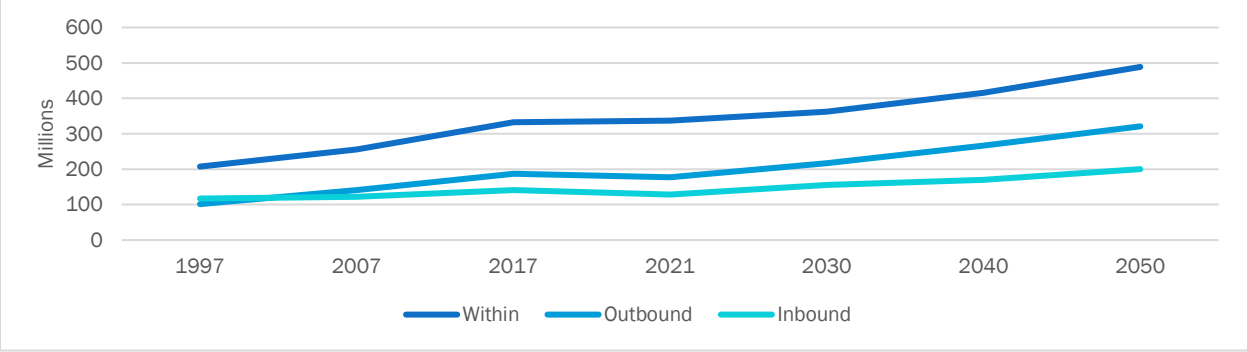
According to the FAF, freight tonnage moving in the U.S. will double in the next 20 years, challenging the overall freight transportation system. This growth will be reflected in Iowa at varying levels across all modes. **Iowa's transportation system facilitated the movement of 642 million tons of freight with an estimated value of $376 billion in 2021**. The total weight of goods imported into and exported out of the state is expected to grow.

Since the turn of the century, Iowa has remained an exporting state, meaning the state produces and exports more goods than it imports. This is true both in terms of tonnage and value. The gap between Iowa's imports and exports is projected to grow wider, from 40 million tons in 2017 to 115 tons in 2050.



Iowa freight transportation system
Source: Iowa State Freight Plan 2022

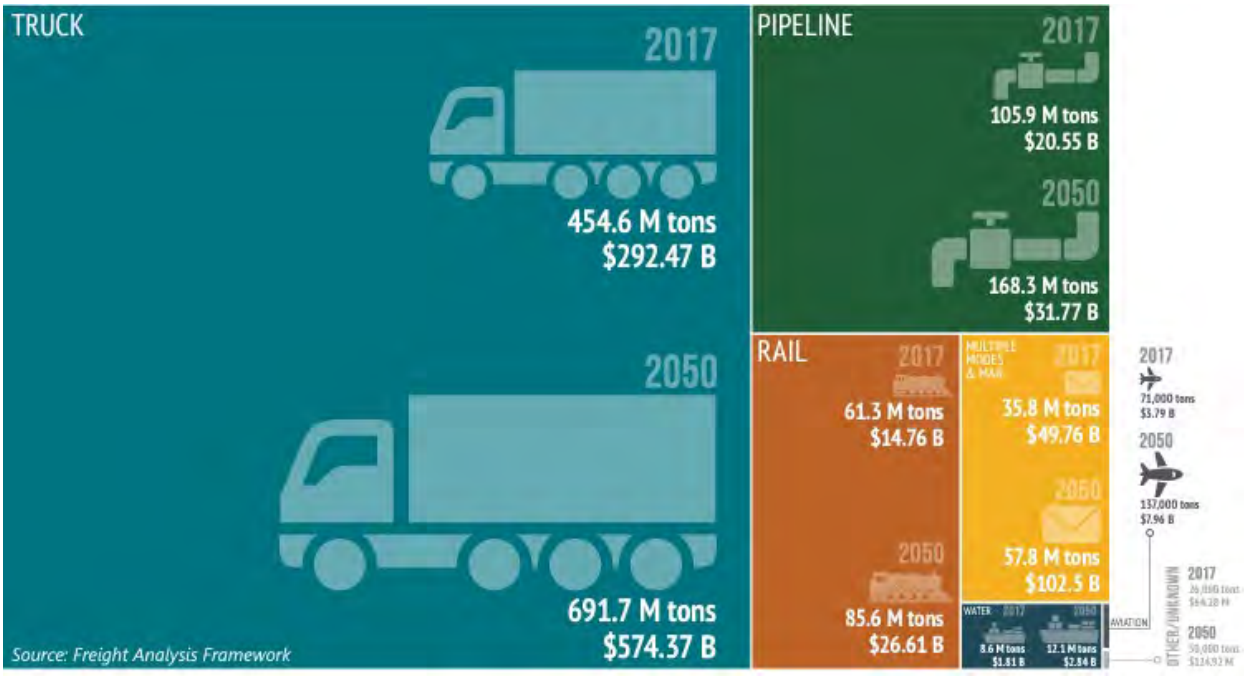
Figure 6.1: Projected Iowa freight movement by ton, 1997-2050



Source: U.S. DOT, Bureau of Transportation Statistics, FHWA, Freight Analysis Framework

The graphic below shows Iowa's freight tonnage and value by mode in 2017, and the projections for 2050. **Truck, rail, and pipeline are the three top modes and collectively transport 93 percent of the tonnage to, from, and within Iowa**. These three modes are expected to maintain their prominence through 2050. In addition, the share of each mode's tonnage is expected to remain consistent with small changes of less than one percent. The continued prominence of trucks coupled with the projected 52 percent increase in tonnage will have a large impact on the state's highway system, resulting in increased congestion and more rapid deterioration of pavement and structures along the roadways.

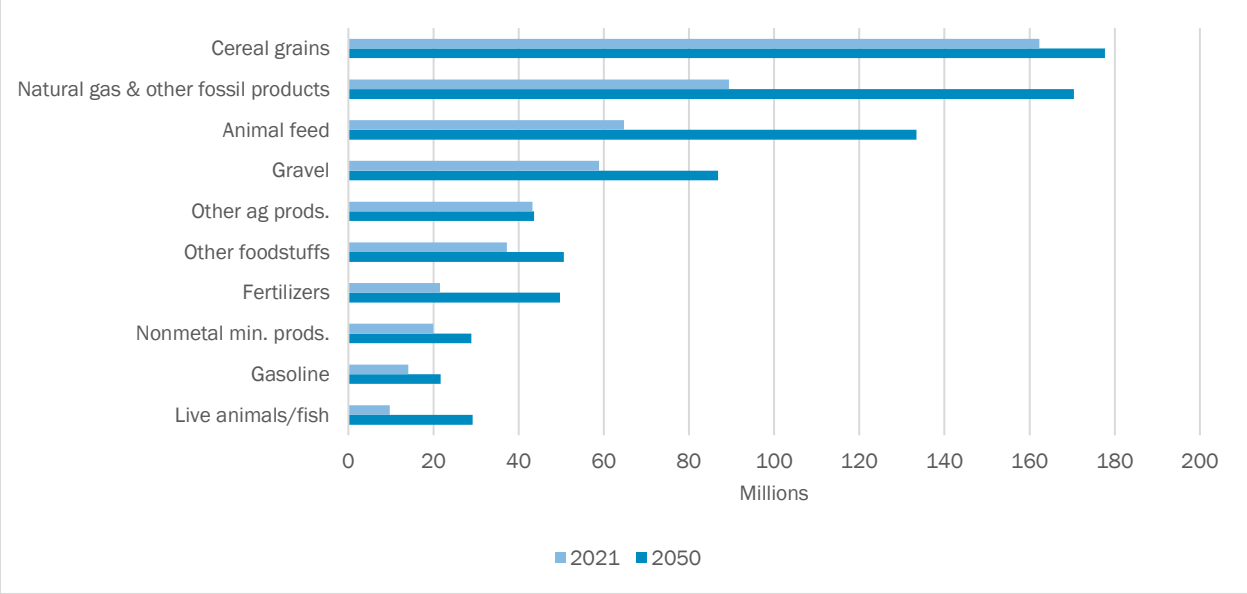
Projected growth in tonnage and value of Iowa freight by mode, 2017-2050
Source: Iowa DOT, Iowa State Freight Plan 2022; U.S. DOT, Bureau of Transportation Statistics, FHWA, Freight Analysis Framework



Iowa is renowned for its agricultural prowess, with cereal grains, animal feed, other agricultural products, other foodstuffs, fertilizers, and live animals and fish among its tops commodities by weight. The state's fertile soil and favorable climate make it an ideal region for growing an array of cereal grains, such as corn, soybeans, and oats. These crops serve as the foundation for Iowa's thriving agriculture industry, contributing significantly to the state's economy. Iowa's cereal grains are not only used for human consumption but also play a crucial role in producing animal feed. With a robust livestock sector, including hogs, cattle, and poultry, Iowa has a high demand for animal feed to support its thriving livestock industry.

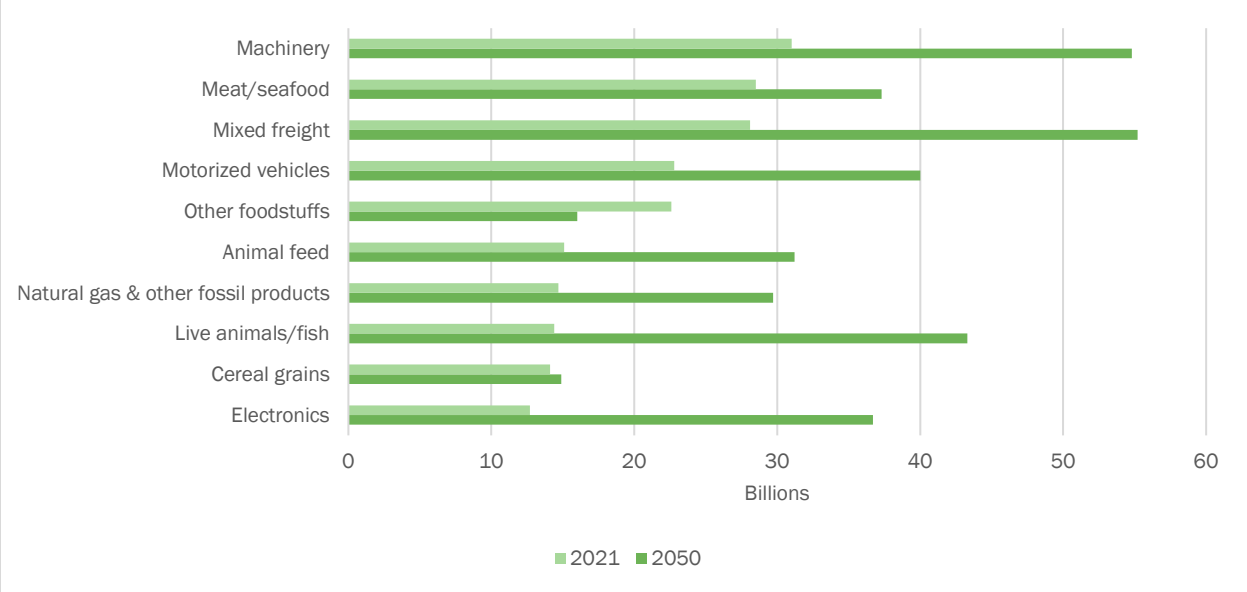
Iowa's top commodities highlight the state's agricultural ability and diverse industrial output. Corn, being a staple crop in the state, occupies a significant portion of Iowa's top commodities along with other cereal grains. With vast fields of corn across its fertile lanes, Iowa produces a substantial weight of corn, contributing to the state's agricultural economy. Soybeans, another major crop, also make a significant impact on Iowa's commodity landscape, both in terms of weight and economic value. As shown in Figures 6.2 and 6.3, agricultural products will play an important role in Iowa's economy for years to come.

Figure 6.2: Projected Iowa top commodities by ton, 2021-2050



Source: U.S. DOT, Bureau of Transportation Statistics, FHWA, Freight Analysis Framework

Figure 6.3: Projected Iowa top commodities by value, 2021-2050



Source: U.S. DOT, Bureau of Transportation Statistics, FHWA, Freight Analysis Framework

In 2021, Iowa's top domestic trading partner by value was Illinois, as shown in Table 6.1. By tonnage, Minnesota was Iowa's top domestic trading partner with 81 million tons imported from or exported to the state. Iowa receives most domestic imports from the Great Plains and Midwest regions, with some exports from Texas and Louisiana. Iowa exports most goods throughout the Midwest (reference Figures 6.5 and 6.6).

Table 6.1: Iowa's top five domestic trading partners by value (billions), 2021

State	Origin from Iowa	Destination to Iowa	Total
Illinois	$20.2	$15.9	$36.1
Minnesota	$16.6	$15.6	$32.2
Nebraska	$10.5	$9.7	$20.2
Missouri	$7.5	$6.9	$14.4
Texas	$9.2	$3.7	$12.9

Source: U.S. DOT, Bureau of Transportation Statistics, FHWA, Freight Analysis Framework

In 2020, Iowa's top international trading partner was Canada at $3.5 billion of goods, followed by Mexico at almost $2 billion, and China at $1.2 billion. Figure 6.4 shows the locations of Iowa's top ten international trading partners, and the value of goods exported. The state of Iowa exported $12.6 billion in goods in 2020, the top commodity being corn, followed by tractors, pork, and soy products.

Figure 6.4: Iowa's top ten international trading partners (exports only) by value, 2020

Source: Iowa DOT, Iowa State Freight Plan 2022; U.S. Census Bureau and U.S. Trade Online

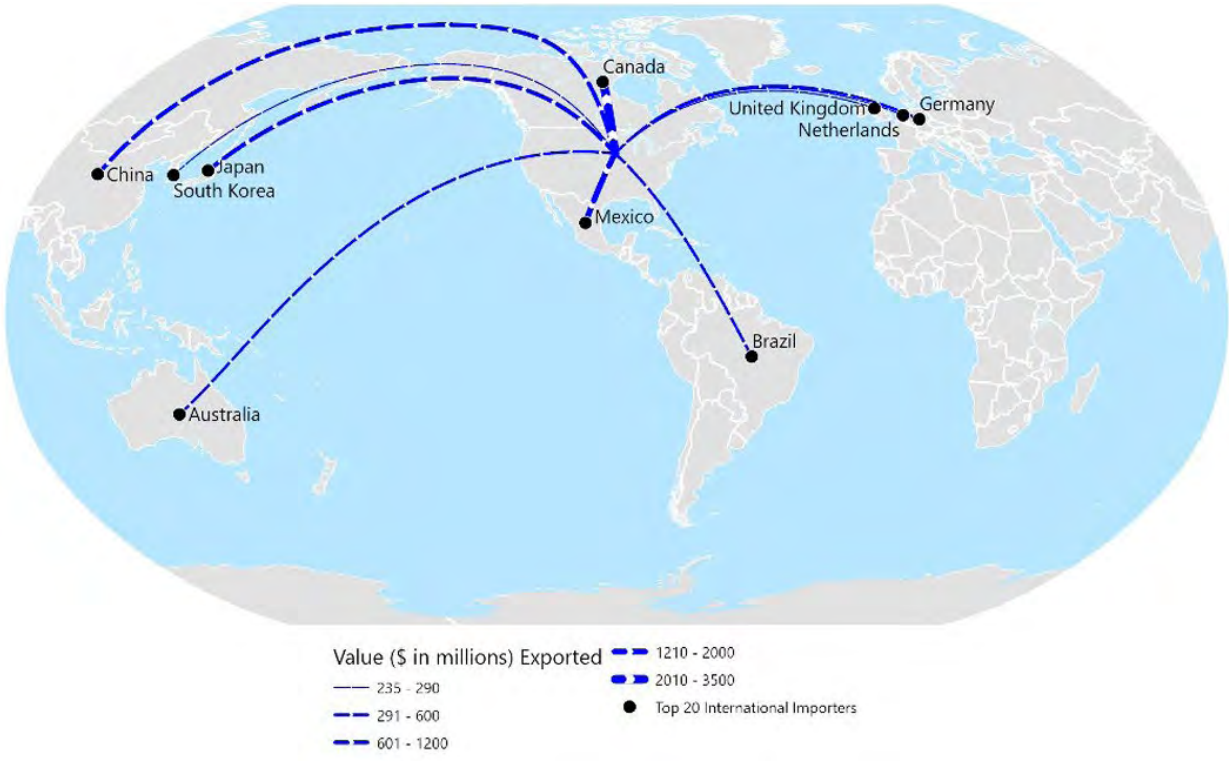


Figure 6.5: Domestic origin-destination flows from Iowa by ton (thousands)
Source: U.S. DOT, Bureau of Transportation Statistics, FHWA, Freight Analysis Framework

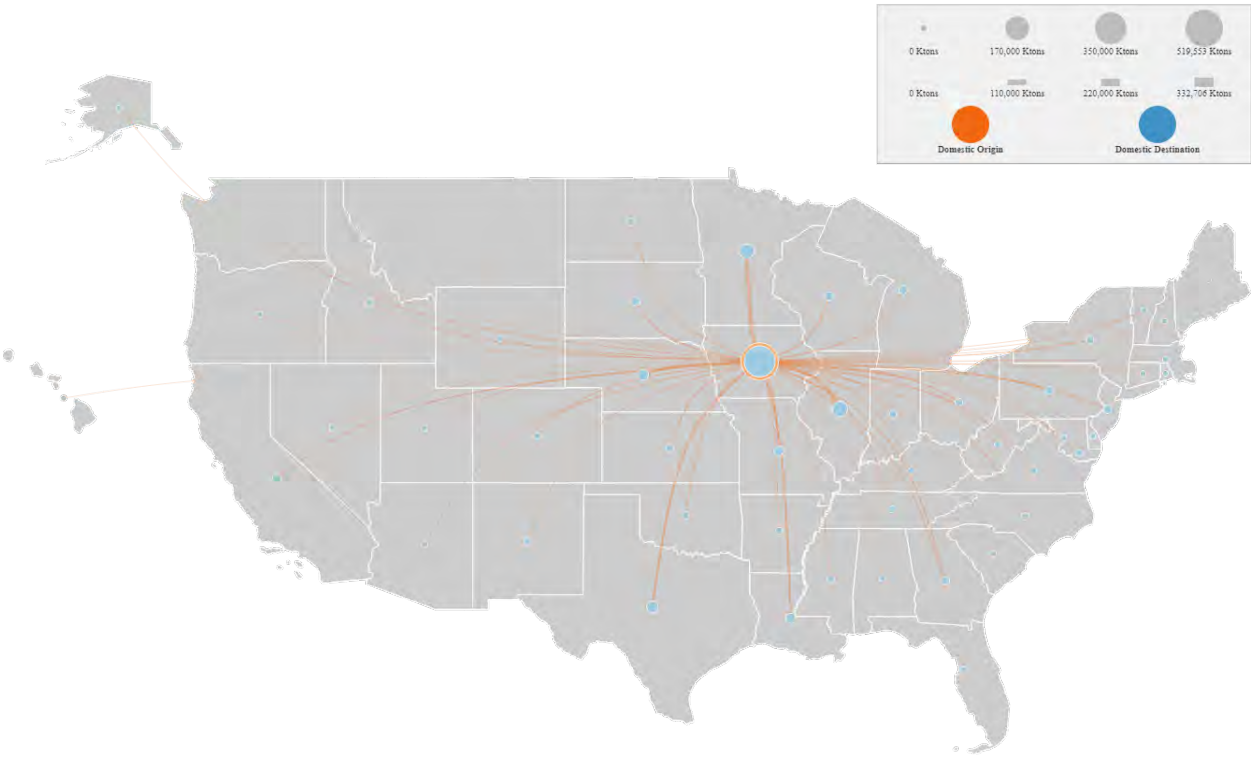
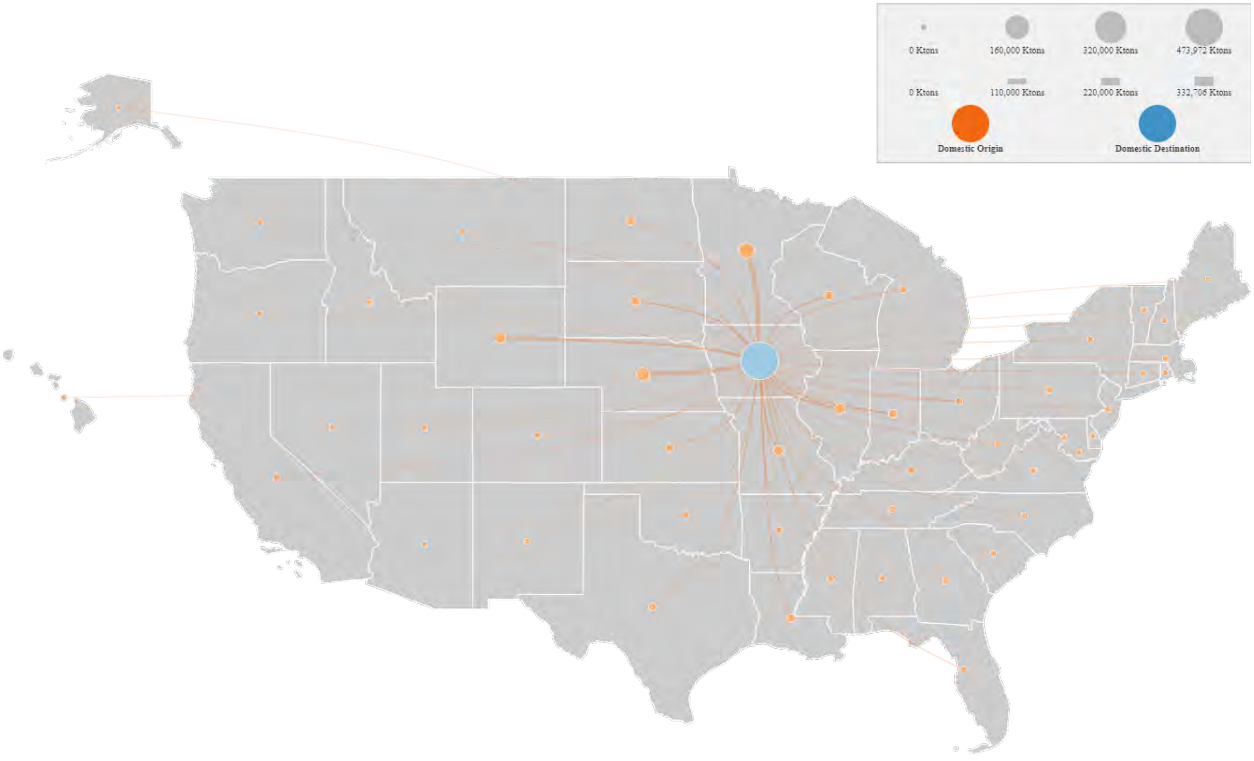
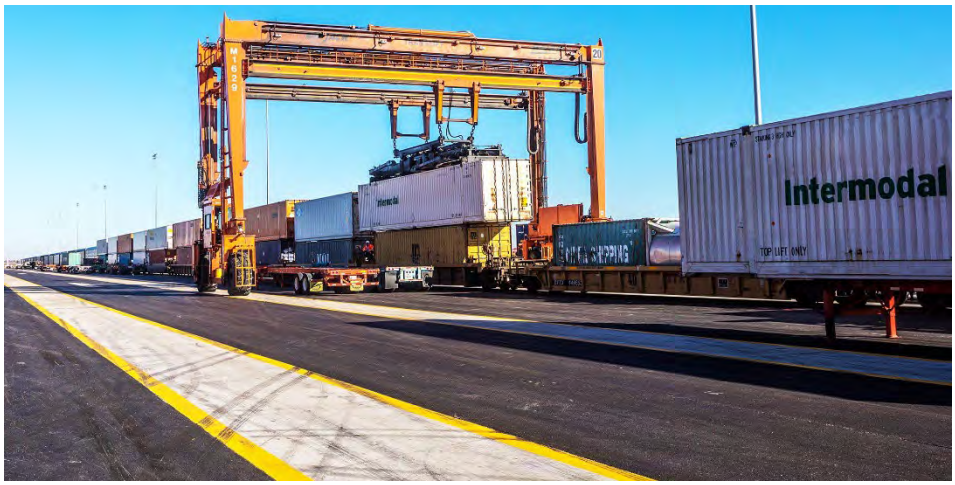


Figure 6.6: Domestic origin-destination flows to Iowa by ton (thousands)
Source: U.S. DOT, Bureau of Transportation Statistics, FHWA, Freight Analysis Framework

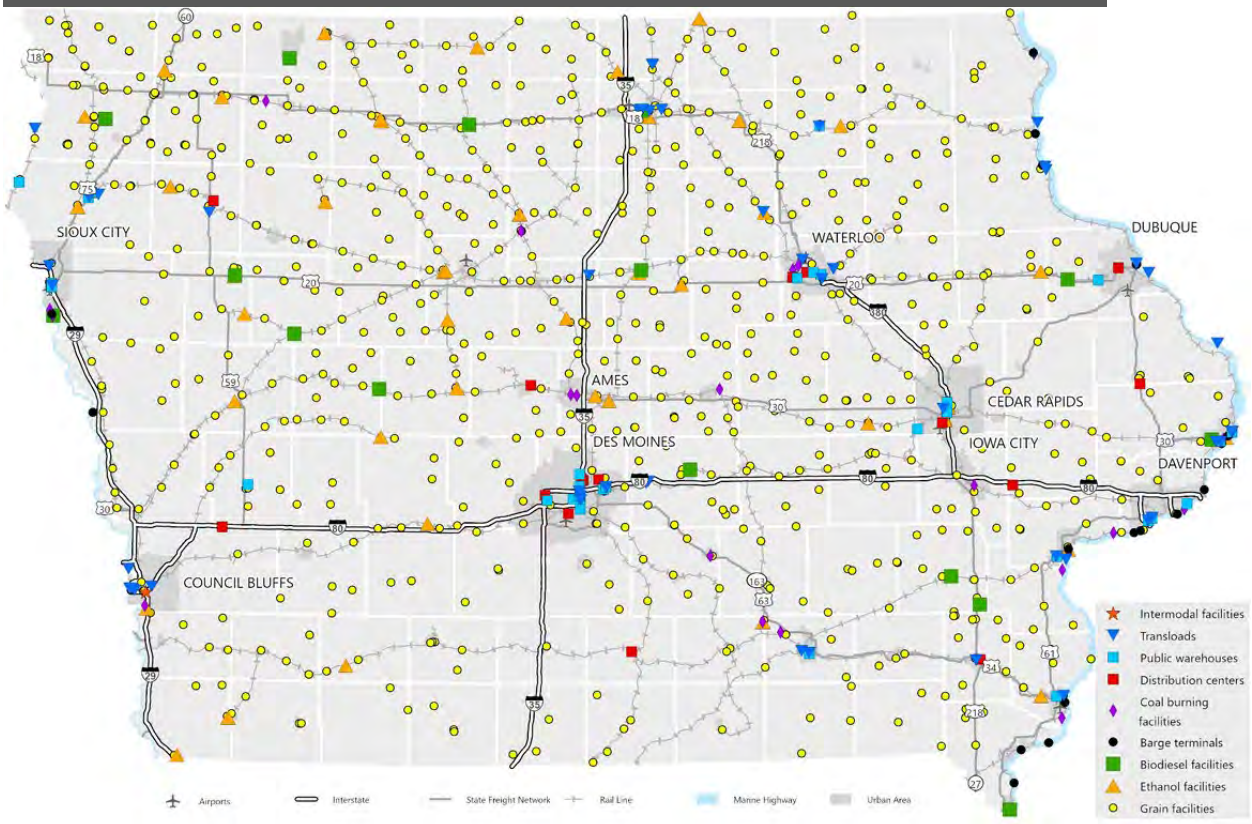


Iowa's freight system includes several intermodal facilities and transload facilities which play a pivotal role in the modern transportation and logistics industry. Intermodal facilities are key hubs where various transportation methods like rail, trucking, and shipping come together to smoothly exchange goods. They have the setup, tools, and knowledge to manage shipments efficiently, making the whole transportation process cost-effective. These places ensure containers move easily between different modes, cutting handling costs and boosting supply chain reliability. Transload facilities play a similar role, helping goods switch between transport modes like rail and truck. They are adaptable, letting transportation methods change based on cost, efficiency, and what customers need.



The multimodal options within Iowa also include several warehouse and distribution centers that collect and distribute freight. These locations can generate many truck trips from the shipping and receiving of products and commodities, making them an important part of the transportation planning process.

Iowa freight-generating facilities
Source: Iowa DOT, Iowa State Freight Plan 2022



Freight in the Metropolitan Area

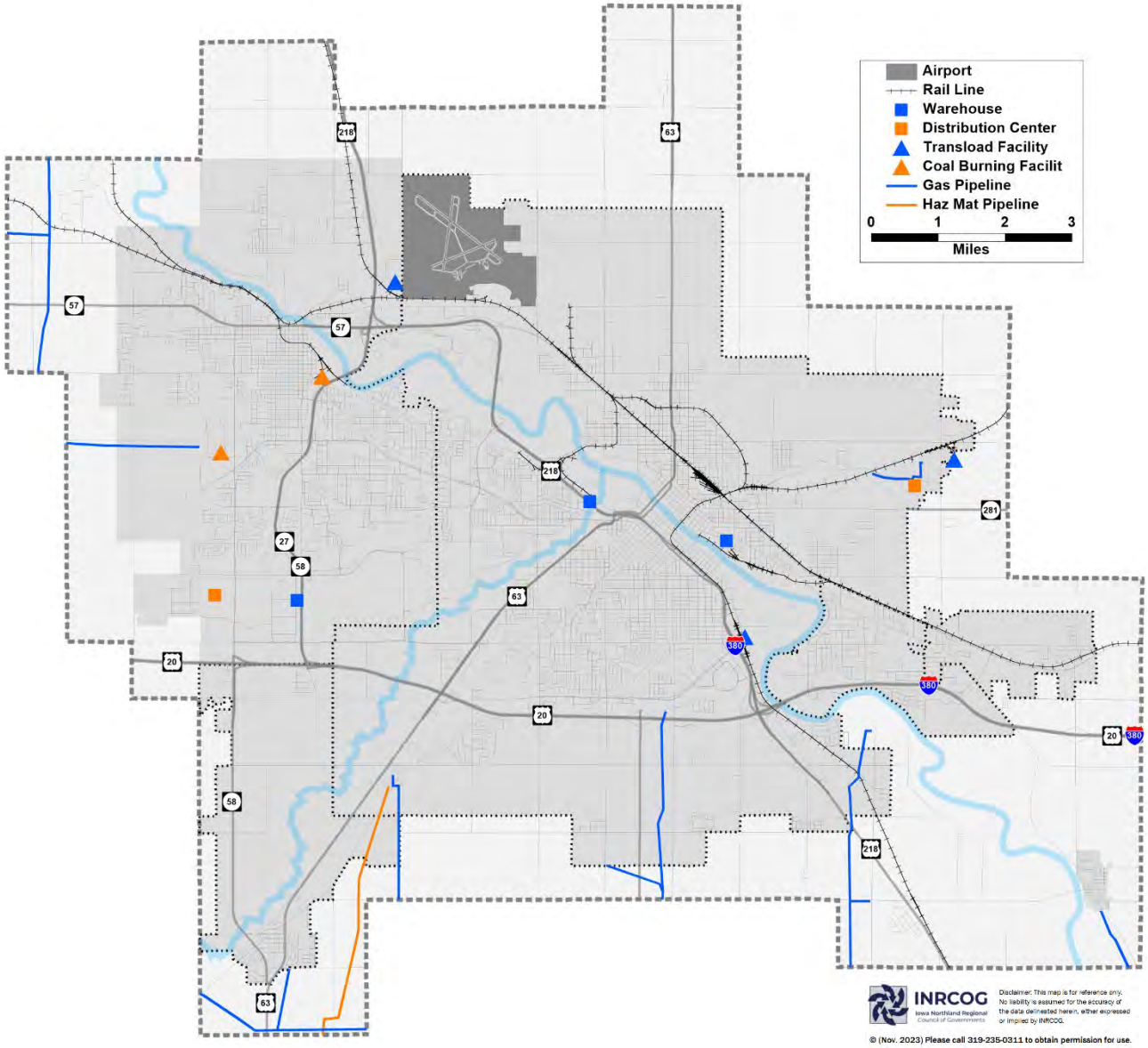
The Black Hawk County metro area offers four modes of transportation for freight: truck, rail, air, and pipelines. These modes are all utilized for the movement of goods within, to, and from the metropolitan area. Map 6.1 shows the multimodal freight elements in the area.

Black Hawk County is home to multiple manufacturing companies and industries that facilitate or rely on freight movements. There are also a variety of transportation-related companies and motor carriers homebased in the metropolitan area. According to the U.S. Census Bureau 2021 County Business Patterns, **Black Hawk County has 132 transportation and warehousing establishments with a total of 3,300 employees and annual payroll of $183.4 million**. There are also a variety of businesses in the MPO that rely on freight transportation. Businesses in the manufacturing, retail, and wholesale sectors require efficient transport of their products inbound and outbound. As shown in Table 2.4 in Chapter 2, two of the top five employers in the metro area rely heavily on freight shipments.

A wide variety of freight is moved throughout the metro area every day, much of which arrives without incident. However, accidents involving freight do occur and must be planned for accordingly. Of particular concern is the transport of hazardous materials. Black Hawk County has an Emergency Management Agency (EMA) and EMA Coordinator whose emergency management efforts include mitigating future risk from hazards, and developing a Hazard Mitigation Plan which outlines the potential for natural and humanmade disasters and the potential impact of those disasters on the community and the transportation system. In the event of a crash, spill, or derailment involving hazardous materials, it is imperative that local jurisdictions be prepared to respond in an expeditious manner. Waterloo is the base for the Northeast Iowa Response Group which responds to hazmat incidents in an 11-county area including Black Hawk, Bremer, Butler, Chickasaw, and Grundy Counties.

Northeast Iowa Response Group (Team 4)

Map 6.1: Freight Generating Facilities in the Metropolitan Area



Truck Transportation

Black Hawk County has an extensive highway network that makes moving goods easy and helps the local economy. The highway system connects different business areas within and outside the county, making it simple for companies to transport their products to other places. Most truck movement happens on the Interstate System and the Commercial and Industrial Network, both of which Black Hawk County has. These highways stretch beyond the county, connecting it to the state and the whole country. These great roads do not just help local businesses, they also bring in industries and help the economy grow by giving them reliable access to bigger networks.

Truck transportation is crucial for shippers in the metro area for a few key reasons. Iowa's vast highway network makes trucking easy and accessible. Trucks can reach both cities and remote places, delivering goods efficiently. They are fast and direct, which is important for time-sensitive items like agriculture and manufacturing products. Trucks are versatile, fitting all sorts of cargo sizes and types. Plus, they give shippers control with tracking and adjusting delivery times. Overall, these factors make trucks the top choice for metro area shippers.

Highway Network

Black Hawk County has a substantial inventory of major arterials that connect the region to the rest of the Midwest and nation. Table 6.2 provides a comparison of traffic figures for segments of these highways from 2014 to 2020. During the COVID-19 pandemic, Iowa experienced a notable decrease in total traffic as restrictions and lockdown measures limited travel and commuting. However, in contrast to the decline in passenger vehicles, freight traffic witnessed an increase during this time. The heightened demand for essential goods, medical supplies, and e-commerce deliveries led to a surge in freight movement across the state and the metro area. Freight traffic remained robust as trucking companies and logistics providers adapted to meet the evolving needs of the pandemic era.

Table 6.2: Highway traffic comparison, 2014 vs 2020

Location	AADT 2014	AADT 2020	Percent Trucks 2014	Percent Trucks 2020	+/- Percent Trucks
I-380 at D38 (Poyner Rd) interchange	15,500	14,100	24.2	28.9	4.7
I-380 at Evansdale Dr interchange	29,400	24,700	19.1	23.1	4.0
I-380 at W Junction U.S. Hwy 20/218 interchange	40,900	33,800	15.2	19.3	4.1
I-380 at Mitchell Avenue	25,200	23,100	11.2	14.7	3.5
U.S. Hwy 20 at IA Hwy 58 interchange	13,300	12,600	25.7	20.1	-5.6
U.S. Hwy 20 at I-380/U.S. Hwy 218 W interchange	25,440	20,700	15.7	18.3	2.6
U.S. Hwy 218 at IA Hwy 27/57 interchange	28,900	27,500	9.2	8.8	-0.4
U.S. Hwy 218 at W 11th St	26,700	25,500	10.5	11.2	0.7
U.S. Hwy 63 at Ansborough Ave	6,700	5,400	9.1	8.5	-0.6
U.S. Hwy 63 at Donald St	10,900	10,200	4.6	5.2	0.6
IA Hwy 27/58 at Viking Rd	17,000	15,600	6.5	6.7	0.2
IA Hwy 58 at University Ave	21,600	20,100	6.6	7.1	0.5

Source: Iowa DOT, Traffic Books

Truck Transportation Planning Issues

One of the primary planning issues facing truck transportation is the state's aging infrastructure. Many highways, roads, and bridges need repair and expansion to accommodate the growing demands of truck traffic. Insufficient capacity, outdated interchanges, and inadequate truck rest areas can lead to congestion, delays, and increased costs for shippers and carriers. Addressing these infrastructure challenges requires a strategic and prioritized investment plan to enhance roadway conditions and support the efficient movement of freight.

Safety is paramount in truck transportation planning. Although efforts have been made to improve safety measures on Iowa's roadways, accidents involving trucks remain a concern. Factors such as driver fatigue, inadequate training, and inadequate enforcement of regulations can contribute to accidents and jeopardize public safety. Enhancing safety in truck transportation requires a multi-faceted approach, including driver education, stricter compliance with regulations, and investment in technology to monitor and improve safety conditions.

Increasing demand for e-commerce and last-mile deliveries present new challenges that require proactive measures and strategic solutions. The rise of online shopping has amplified the need for efficient and timely delivery of goods to consumers' doorsteps. This surge in small package deliveries necessitates a reevaluation of truck transportation planning to optimize routes, manage congestion, and enhance delivery efficiency in urban areas. Another emerging issue is the integration of evolving technologies, such as autonomous trucks and electric vehicles, into the trucking industry. As these technologies evolve and become more prevalent, transportation planners must address infrastructure requirements, safety regulations, and charging or refueling infrastructure to facilitate their adoption.

Truck transportation is associated with environmental impacts such as emissions, noise pollution, and energy consumption. The ongoing emphasis on sustainability and environmental concerns calls for incorporating eco-friendly practices into truck transportation planning, such as incentivizing the use of alternative fuels and promoting energy-efficient trucking practices to reduce the carbon footprint. To address this issue, the state needs to encourage the adoption of cleaner and more fuel-efficient vehicles, promote alternative fuels, and explore innovative technologies to mitigate the environmental impacts of truck freight transportation. By actively addressing these emerging issues, Iowa can adapt its truck transportation planning to meet the evolving needs of a changing industry and promote a more efficient, sustainable, and resilient freight network.

Iowa has made significant strides in the production of renewable energy, particularly in the fields of wind energy and biofuels. The state's abundant wind resources have positioned it as a leader in wind energy generation, with numerous wind farms dotting its landscape. Additionally, Iowa has emerged as a major producer of biofuels, primarily ethanol and biodiesel, derived from its substantial corn and soybean crops. The increased production of renewable energy in Iowa has a direct impact on truck transportation planning. The transportation of wind turbine components, such as blades and tower sections, requires careful logistical planning to accommodate their size and weight. Specialized trucks and trailers, permits, and route considerations are necessary to ensure the safe and efficient delivery of these components. Similarly, the transportation of biofuels necessitates a well-coordinated trucking network to distribute these products to fueling stations across the state. The added truck traffic can also accelerate the rate of deterioration on roads and bridges. As Iowa continues to expand its renewable energy production, truck transportation planning will play a vital role in supporting the movement of equipment, feedstock, and end products, contributing to a more sustainable and greener future.

Planned highway initiatives that would impact truck transportation are addressed in Chapter 3. The projects primarily focus on the preservation of the major corridors in the metropolitan area while improving safety and capacity at specific intersections. A specific freight-related project involves the Northeast Industrial Area in Waterloo. This area has several large industrial and manufacturing businesses, resulting in a high volume of freight traffic moving to and from the area. Traffic counts indicate 15 to 35 percent truck traffic, and these figures are anticipated to increase over the next 25 years. There are several safety, capacity, and traffic access concerns associated with the truck traffic accessing this area. To address these issues, a planning study was initiated by the MPO with a focus on freight traffic. The Planning Study was completed in 2019.

Several feasible alternatives have been identified to address concerns. Alternatives include spot improvements at intersections, capacity improvements, and partial and new roadway alignments. The Planning Study provides conceptual alternatives that can be used to guide future planning and development of projects in the study area. The next steps will involve identifying alternatives to move forward with preliminary design and environmental review. Improvements identified for Plaza Drive/Elk Run Road and North Elk Run Road are shown in the fiscally constrained table of projects in Chapter 3; large-scale projects are also identified outside of the financial constraint of this Plan.

Rail Transportation

Rail is typically second to trucks in terms of freight movement across the nation, Iowa, and the Black Hawk County metropolitan area. While railroad mileage in the state is less than half of what it was early in the 20th Century, the volume of rail traffic continues to increase. According to the *2021 Iowa State Rail Plan*, Iowa remains in the top 15 states in the total miles of rail (11th), rail tons originated (12th), rail carloads originated (15th), rail tons carried (7th), and rail carloads carried (7th). Iowa also ranks highly among all states for rail movements in many individual commodities. For commodities originating by state, Iowa ranks highly in food products (1st), chemicals (4th), and farm products (7th).

There are several rail lines operating in the metropolitan area including:

- Canadian National rail line running east-west through the metro area, whose primary operators are the Chicago Central and Pacific Railroad and Cedar River Railroad Company.
- Canadian National rail line that comes from the north paralleling U.S. Hwy 218 before merging with the east-west route. The primary operator is the Cedar River Railroad Company.
- Iowa Northern Railway Company line running northwest-southeast through the metro area, with haulage agreement with Union Pacific.
- Union Pacific rail line running from downtown Waterloo to the township of Dewar. The line continues northeast to Oelwein under the D&W Railroad Company. Iowa Northern Railway Company is the primary operator.

Railroads in the United States are designated as Class I, Class II, or Class III according to revenue thresholds adjusted for inflation established by the Surface Transportation Bureau (STB).

Table 6.3: Railroads Operating in the Metro Area, by Class

Class	Revenue Threshold	Railroads in the Area	Miles Owned in Iowa	Percent of Total Iowa Rail Network
Class I	$467 million or more	Union Pacific (UP) Canadian National Railway (CN)	1,291 605	33.5 15.7
Class II “regional”	$37.4 - $467 million			
Class III “short line”	Less than $37.4 million	D&W Railroad (DWRV) Iowa Northern Railway Company (IANR)	22 167	0.6 4.3

Source: Iowa DOT, 2021 Iowa State Rail Plan

The above carriers depend on the transportation of bulk commodities such as grain, coal, and chemicals as their primary freight. These carriers also transport intermediate and finished manufactured products outbound from the metropolitan area. There are multiple businesses located in the metro area that rely on rail to provide portions or all their freight transportation needs.

Rail Network

The rail network in the metro area plays a vital role in the transportation infrastructure of the region. Covering a significant mileage, the current rail network in the area provides essential connections for freight services. With 88 miles of tracks spanning the metro area, it enables the efficient movement of goods and commodities to and from various industries, including manufacturing, agriculture, and distribution. Its extensive reach contributes to the economic development and connectivity of the Black Hawk County metropolitan area, supporting the growth and prosperity of the community.

There are two major freight rail yards in Black Hawk County, both of which are in Waterloo. The CN Waterloo Yard is located northeast of Downtown Waterloo between East 4th Street and Martin Luther King Jr. Boulevard. The IANR Bryant Yard is located to the east of the Interstate 380 and San Marnan Drive interchange. There are three transload facilities in the metro area where freight can be transferred between truck and rail. Table 6.4 identifies specific multimodal facilities in the area with connections to the rail network.

Table 6.4: Inventory of Multimodal Facilities with Connections to the Iowa Rail Network

Name	City	Public Facility	Intermodal	Transload	Cross-Dock	Team Track	Warehouse	Truck to Rail	Known Railroad Connections
Bryant Yard	Waterloo	X		X	X		X	X	IANR
Kinder Morgan/Black Hawk Terminal	Waterloo	X		X			X	X	UP
Standard Distribution Rail Facility	Cedar Falls	X		X	X		X	X	CN

Source: Iowa DOT, 2021 Iowa State Rail Plan

Rail Transportation Planning Issues

The most visible issue regarding rail transportation planning is safety and delays at at-grade road crossings. Within the metro area, there are 127 at-grade rail crossings, a couple of them intersecting with off-road trails. Railroad crossings remain a safety concern despite widespread use of active warning systems to clear the tracks for oncoming trains.

The CN carries manufactured and industrial goods across the Midwestern and Southern U.S. and Canada. Throughout Iowa, CN's largest railyard and facility network is in Waterloo. While the city supports the movement of commerce goods, the specific location of the railyard poses longstanding issues related to environmental justice, community connection, and public safety.

CN's railyard is located between East 4th Street and Martin Luther King Jr Drive in downtown Waterloo. Its adjacency to the second most populous high school in the city and near the downtown area causes numerous disruptions. Stopped trains cause extensively blocked crossings that inhibit residents, employees, school students, and a historically, disproportionately disadvantaged community. The image to the right highlights the shortest path of travel to and from East High School. This path is often blocked, affecting a substantial portion of the population. According to U.S. Census Bureau data, 78 percent of this population are persons of color. Public frustration with frequently blocked crossings has led to safety concerns and serious injuries to pedestrians and motorists. Since 1976, a total of 65 injuries and 1 fatality have occurred in the metropolitan area, of which 67 percent have occurred in Waterloo alone. Since 1991, at least five people have lost limbs because of railroad accidents, resulting in civil lawsuits against CN.

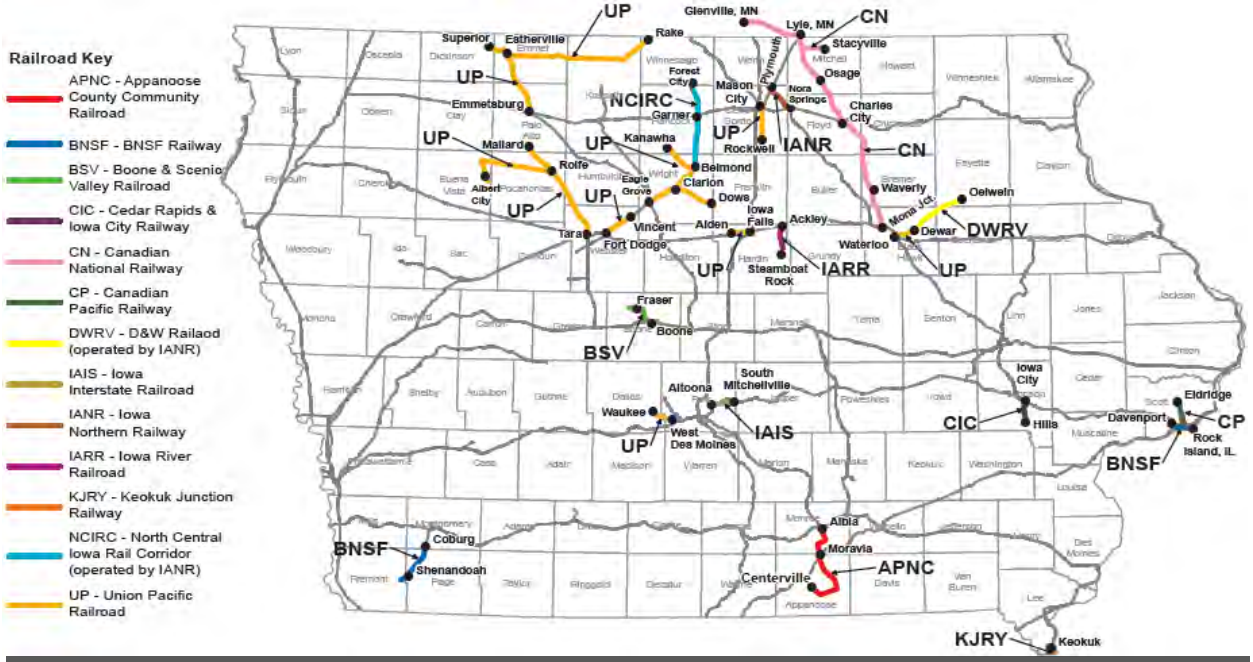
Addressing the community's social and safety issues associated with the current location of CN's railyard is a high priority for the city and MPO. In 2019, the City of Waterloo funded a preliminary study to assess relocating the railyard. The proposed relocation site is approximately ten miles away from the downtown area, is a safe distance away from residential neighborhoods and schools and provides a significantly greater amount of land for future economic growth. Further discussions about relocating the railyard were cut short due to financial constraints. However, in 2022 the U.S. DOT unveiled the Reconnecting Communities and Neighborhoods Program and the Railroad Crossing Elimination Grant Program to address various safety and connectivity issues across the nation. The City of Waterloo is interested in collaborating with railroads operating in the city to pursue federal funding for railroad improvement projects. In 2023 the City

applied for Reconnecting Communities and Neighborhoods Program funds for a Downtown Railyard Relocation and Railroad Crossing Improvement Study. The project aims to conduct a comprehensive analysis of the current rail network, with a focus on assessing its generational impact on disadvantaged communities. This study will identify barriers created by the existing rail infrastructure, explore public health and safety solutions, and develop alternatives to address the degraded quality of life resulting from a history of redlining and segregation that still affects the community. The study will be conducted in close collaboration with the CN Railroad, local authorities, community stakeholders, and transportation experts.

Iowa is poised to experience a significant increase in total rail traffic in the coming years. Being in the center of the Midwest helps Iowa connect to both local and global trade. From 2021 to 2050, the amount of goods transported by rail, coming in, going out, and moving within Iowa, could go up by 48 percent. Several things contribute to this growth. Iowa's strong farming, especially corn, soybeans, and livestock, needs rail transport. Plus, the state's factories and distribution centers add to rail use. There are also plans to improve rail systems, like making better intermodal hubs and using modern tech. This will make rail transport more efficient and attract even more rail traffic. This increase might lead to parts of rail lines in the metro area being too busy.

Railroads everywhere are dealing with a big problem: not having enough space for all the freight they need to carry. One major reason for this is that increased goods need to be transported by rail as industries grow. This is putting stress on the current rail systems. Some main routes do not have enough space, which can cause things to get stuck or slow down. There's also not enough room in terminals and yards, which can make things stop moving smoothly. Some rail systems are old and need fixing or updating to manage more freight. Dealing with these capacity problems is a top concern to make sure railroads can manage the growing needs for transporting goods.

Iowa's railroads have made considerable progress in the last two decades to upgrade track and bridges to accommodate heavier railcars with maximum allowable gross weights of 286,000 pounds. These rail cars are becoming an industry standard for railroad transportation. **At present, there are three lines in Black Hawk County that are incapable of handling 286,000-pound railcar weights**. As a result, additional rail traffic may be diverted onto local roads, thus increasing highway maintenance and rehabilitation costs.



Iowa rail line segments incapable of handling 286,000 lb. railcar weights
Source: Iowa DOT, 2021 Iowa State Rail Plan; Iowa's Class I, II, and III railroads

Pipeline Transportation

Pipelines play a crucial role in the transportation infrastructure, serving as a vital lifeline for various industries and facilitating the movement of essential resources. Iowa has many pipelines that move energy like oil, gas, and fuel around the state and beyond. This helps make sure there is enough energy and helps the economy grow. Using pipelines is a reliable and cheap way to move things, helping businesses save money and be more competitive. It also reduces the need for trucks and trains, which means less traffic, pollution, and better safety. Thus, the importance of pipeline transportation in Iowa and the metropolitan area cannot be overstated, as it serves as a critical backbone for the state's energy supply and economic prosperity.

Pipeline Network

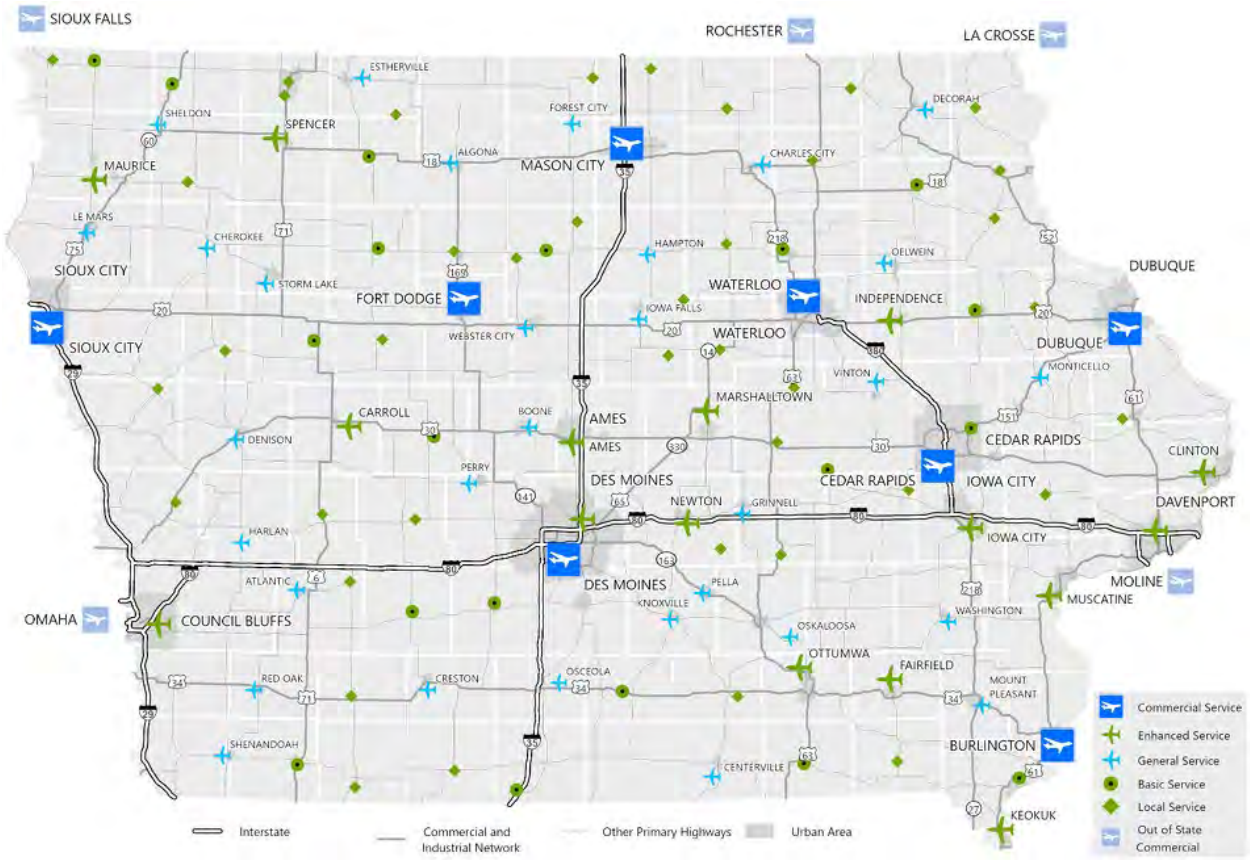
The U.S. DOT Pipeline and Hazardous Materials Safety Administration (PHMSA) serves as the regulatory authority for pipeline safety and hazardous materials regulations, developing and enforcing standards, regulations, and inspection protocols to protect public safety, the environment, and infrastructure. Since 1970, PHMSA has collected data about pipeline infrastructure from operators. As of 2022, there are 19,179 miles of pipeline and 58 operators in Iowa. In the metro area, there are approximately 21 miles of gas transmission pipeline, and 4 miles of hazardous liquid pipeline.

Pipeline Transportation Planning Issues

Pipelines are typically privately owned, and any deficiencies or infrastructure improvements would be completed by the owner. Planning issues to be considered include awareness of their locations and product type, and preparedness to manage any type of pipeline incident. A serious incident could require evacuation efforts around that location which could have major transportation implications.

Air Transportation

Iowa has a variety of airports that serve different needs for people and businesses. Most of Iowa's population lives within 30 minutes of an airport, thanks to the state's airport system. There are big airports connecting to many places, which are busy with travelers and cargo. Iowa also has smaller regional airports across the state. These are important for smaller communities and are used by private pilots, recreational flyers, and businesses. They offer services like training, maintenance, and help with farming. The need for these smaller airports changes based on things like local economy, tourism, and recreational activities.



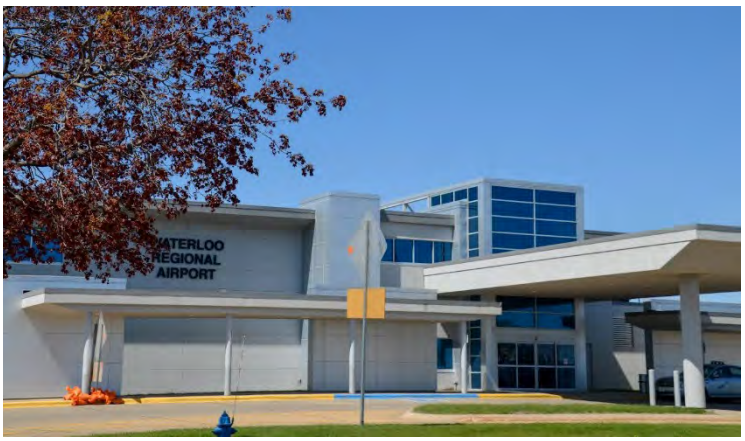
Iowa airports by role and bordering commercial airports
Source: Iowa DOT, Iowa in Motion 2050

Air Network

The Waterloo Regional Airport (ALO) is located on Airport Boulevard immediately off U.S. Hwy 218 in the northwest corner of Waterloo. Transit service is not currently available to and from the airport. The facility is owned and operated by the City of Waterloo and is overseen by a seven-member Airport Board appointed by the Mayor of Waterloo. The airport is classified as a non-hub primary commercial service airport, offering general aviation and commercial service. The Iowa Army National Guard uses the airport as a major base. While the airport does facilitate some air cargo, most of its operations are commercial, general aviation, and military. ALO does not have a dedicated air cargo operator.

The Waterloo Regional Airport features two runways and a variety of facilities to serve air transportation. The primary runway is 12/30, oriented northwest to southeast. The runway is 8,4000 feet long, 150 feet wide, and consists of grooved asphalt. The second runway, 18/36, is oriented north to south; the runway is 6,000 feet long, 150 feet wide, and consists of grooved asphalt. This runway services the needs of all aircraft when winds are not favorable for the primary runway. A third runway, 06/24, was closed in February of 2020 due to maintenance costs and surrounding development. Runway 12/30 features high intensity runway lights, and runway 18/36 has medium intensity runway lights.

ALO has a series of connecting and parallel asphalt taxiways ranging from 50 to 75 feet in width and lit with blue taxiway edge lights. The terminal building opened in 1948 and has experienced a series of renovations and additions. The main floor provides airline ticketing, airline boarding, baggage claim, car rental, and lounge. Short- and long-term parking is provided for travelers. Hangar facilities are located directly west and east of the terminal building along with aprons for general aviation aircraft. The airport shares the use of the airfield with the Iowa Army National Guard – 194th Air Cavalry. The Guard facilities are not on airport property but are located just east of the airport with access to the runway and taxiway system. The unit operates several helicopters from these facilities.



The Federal Aviation Administration (FAA) owns and operates an air traffic control tower located on the southeast part of the airport. 100LL and Jet A aviation fuel is stored in a consolidated fuel farm southwest of the passenger terminal building.

The airport is home to Livingston Aviation, a full-service fixed base operator (FBO) providing aeronautical services to the general aviation public. There are two limited FBO's providing certain types of service to the general aviation public. The FBO has its own terminal facilities. ALO is home to around 75-based aircraft.

Facility improvements are funded through a variety of federal, state, and local programs. At the federal level, the FAA sponsors an Airport Improvement Program (AIP) which allocated a trust fund both on an entitlement and discretionary basis. The entitlement provision in the AIP supplies local airports with funds based on average annual passenger boardings. Discretionary funds are based on highest priority and selected from each airport's five-year Capital Improvement Program (CIP) through an 18-month grant process. Funds from this source require a ten percent local match and can be used to improve runways and purchase equipment, signs, lighting, and other non-operating expenses.

The Iowa DOT also sponsors an AIP and has developed a grant process in which state aviation fuel taxes are redistributed to airports. Like the FAA's discretionary AIP funds, capital improvement projects are selected from a five-year Capital Improvement Program and must be used to modernize and improve the facilities at Iowa airports. Projects at the Waterloo Regional Airport that have been funded by these grant programs in the past five years are summarized below.

Table 6.5: Airport Improvement Program Grants, FY 2018-2022

Fiscal Year	Project	AIP Funding ($)	CARES Funding ($)	State Funding ($)
2018	Hangar Improvements	--	--	61,563
2019	Hangar and Terminal Improvements	--	--	102,354
2020	Reconstruct Taxiway	3,206,039	250,000	
2020	Reconstruct Apron	1,316,479	83,336	
2020	Hangar and Terminal Improvements	--	--	129,342
2021	Hangar Rehabilitation	--	--	67,090
2022	Large Concessions	--	20,135	
2022	Hangar Rehabilitation	--	--	126,752

Source: Federal Aviation Administration, Grant History Summaries; Iowa DOT, Aviation Program Funding

Rehabilitation and improvement of airport facilities are necessary to ensure the viability of the airport as a passenger and freight transportation option. The 2022-2026 Capital Improvement Program for the Waterloo Regional Airport outlines anticipated projects over a five-year period. Table 6.6 provides a summary of projects.

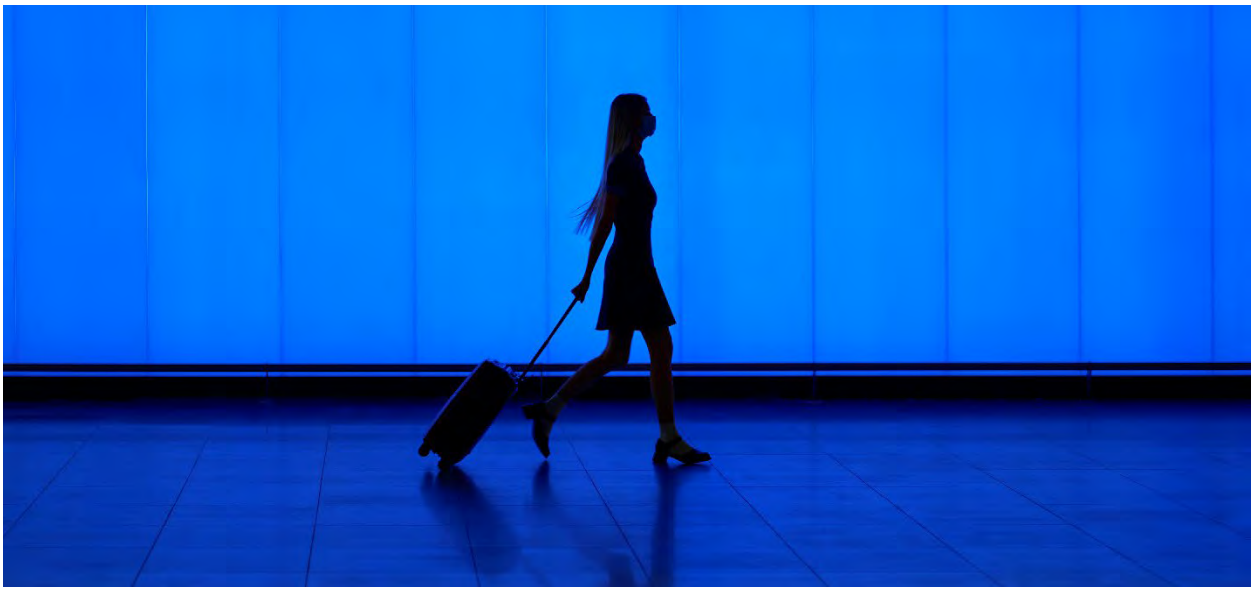
Table 6.6: Summary of projects in the 2022-2026 CIP for the Waterloo Regional Airport

Fiscal Year	Project	Federal	Local	Total Cost
2022	Obstruction Mitigation, Reconstruction of Terminal Apron – Phase 4, Reconstruction of Taxiway B, Clean/Reseal Joints – East Terminal Apron	4,703,605	152,249	4,855,854
2023	Pavement Maintenance (Runway 12/30) - Pavement rejuvenator, crack sealing, pavement marking	801,000	89,000	890,000
2025	Taxiway A West Reconstruction, Airfield Pavement Marking (Runway 18/36 and Taxiways), Updated Pavement Management Program	2,756,071	306,230	3,062,301
2026	Runway 18/36 and Runway 12/30 Intersection Rehabilitation Inside of the Runway Safety Area	1,031,184	114,576	1,145,760

Source: 2022-2026 Capital Improvement Program for the Waterloo Regional Airport

Air Transportation Planning Issues

Recent planning uses have been shaped by the dynamic landscape created by the COVID-19 pandemic. The pandemic significantly disrupted the global aviation industry, leading to challenges in forecasting future demand, managing capacity, and ensuring the safety of passengers and staff. Airports and airlines had to adapt quickly to rapidly changing travel restrictions and health protocols. Planning efforts focused on implementing stringent hygiene measures, reconfiguring airport layouts to allow for social distancing, and optimizing passenger flow to minimize contact points. As the industry has navigated the recovery phase, planning efforts have been centered around fostering resilience, enhancing operational flexibility, and ensuring the ability to respond effectively to future disruptions.



Future planning for air transportation will be marked by a range of significant issues that demand careful consideration and proactive strategies. One key challenge is managing the anticipated growth in air travel demand. As populations continue to grow and economies develop, the demand for air travel is expected to increase. Planning for this growth involves expanding airport capacity, improving infrastructure, and optimizing airspace utilization. Another pressing concern is environmental sustainability. As the aviation industry aims to reduce its carbon footprint and mitigate the impact of emissions, future planning will need to focus on developing and implementing sustainable aviation fuels, adopting more fuel-efficient technologies, and exploring alternative propulsion systems.

2022 Public Input Survey

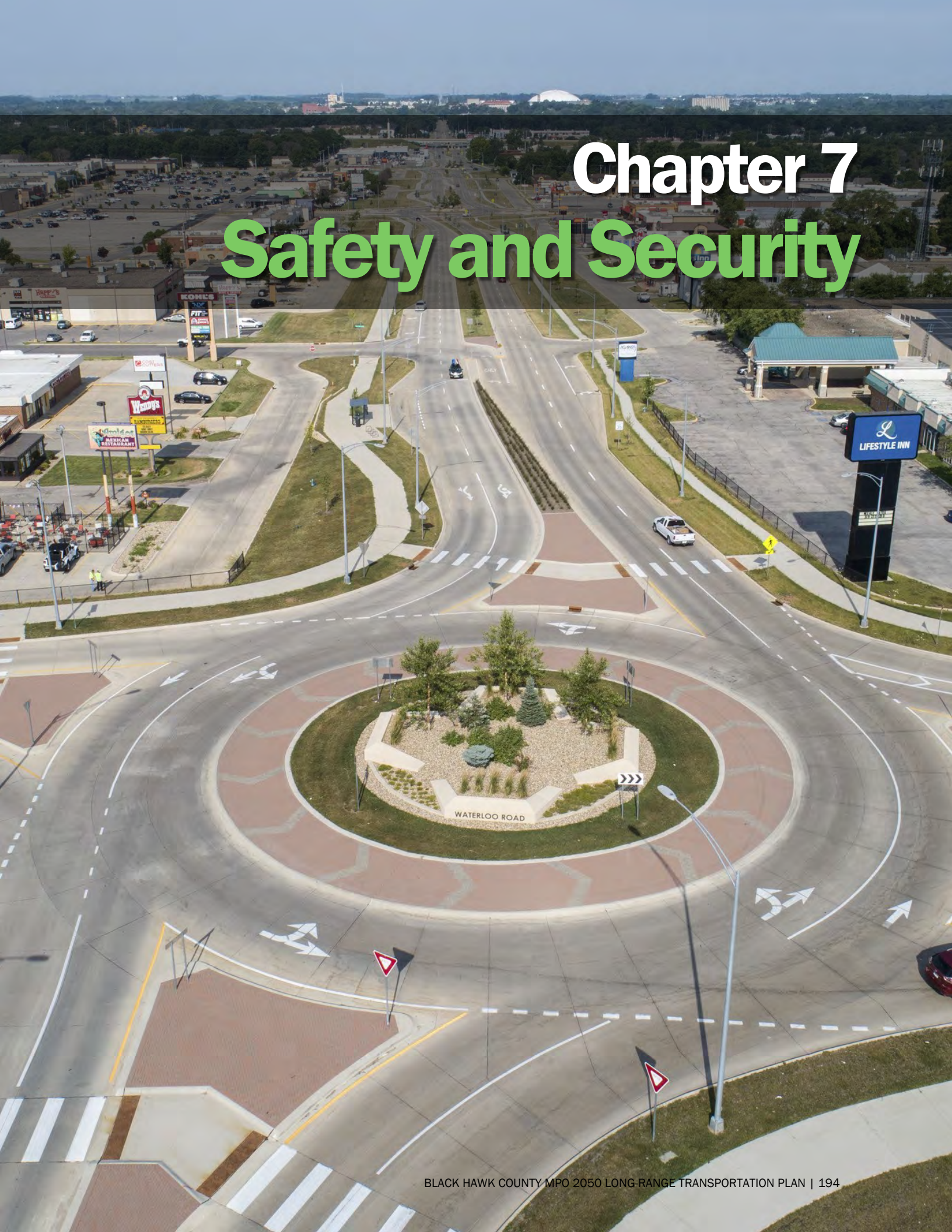
In September 2022, the personnel of the MPO conducted a pair of internet-based surveys. These surveys were aimed at collecting feedback from residents within the jurisdictions of the MPO. The subsequent details provided here highlight survey responses that hold significance within the context of this chapter.

Figure 6.7: Public Input Survey, Round Two asking respondents how our roads and bridges could be improved (e.g., conditions, connectivity, capacity, etc.):

- "At the intersection of Hammond and Ridgeway in Waterloo please consider stop lights. I've witnessed too many people blow through those stop signs and traffic backs up there. More bridges or tunnels around rail roads along and near 218. 3x I've waited 30+ minutes while the train stops then backs up then pulls forward then stops again. Often I'm trapped between cars and can't back out to find alternate routes. Not sure if this is your department but PLEASE MORE STREET LIGHTS. My street is so dark."

Figure 6.8: Public Input Survey, Round Two asking respondents what their biggest transportation challenge is in the MPO:

- "Trains and congestion. I have lives here my whole life and it's only in the past couple of years that I feel like we have started to have "rush hours." And when a train is thrown in the mix we get backed up often for long periods of time and people get overwhelmed and make poor driving decisions. I've witnessed people running through red lights on 218, briefly driving down the wrong way to get around a stopped train, semis not having enough space to turn due to backed up traffic, etc."



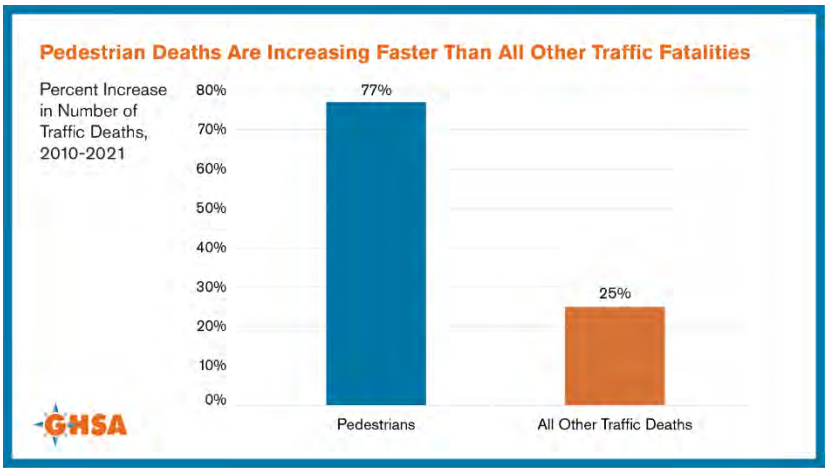
Chapter 7
Safety and Security

Chapter 7 – Safety and Security

National Crash Background

Over the past five years, traffic fatalities in the United States have remained a significant concern. While there have been efforts to improve road safety, the statistics paint a troubling picture. According to the National Highway Traffic Safety Administration (NHTSA), there has been a concerning upward trend in traffic fatalities since 2018 (36,560 and 42,939 fatalities in 2018 and 2022). In 2020, despite the pandemic-induced reduction in traffic volume, there were 38,800 traffic deaths, which represents a 7.5% increase from the previous year. While innovations in vehicle safety technology and public awareness campaigns have aimed to address these issues, it is evident that significant work is required to effectively reduce traffic fatalities and create safer roadways across the nation.

Several factors contributed to the overall high number of traffic fatalities in 2022. Distracted driving remained a significant concern, with the use of electronic devices, such as smartphones, continuing to be a leading cause of accidents. Additionally, impaired driving due to alcohol and drugs remained a persistent issue, contributing to a significant number of fatalities. Speeding, reckless driving behaviors, and failure to wear seat belts were also key factors leading to fatal crashes.



Pedestrians and cyclists continue to face significant risks on US roads. The Governors Highway Safety Association annual report, *Pedestrian Traffic Fatalities by State: 2022 Preliminary Data*, projects that drivers struck and killed at least 7,508 people walking in 2022 – the highest number since 1981 and an average of twenty deaths every day. There were 2.37 pedestrian deaths per billion vehicle miles traveled (VMT) in 2022, up yet again and continuing a troubling trend of elevated rates that began in 2020. The growing popularity of electric scooters and the rise in micromobility options also added to the vulnerability of non-motorized road users. Ensuring the safety of pedestrians and cyclists demands enhanced infrastructure, education, and awareness campaigns.

Metro Stats

7
People killed in crashes each year[1]

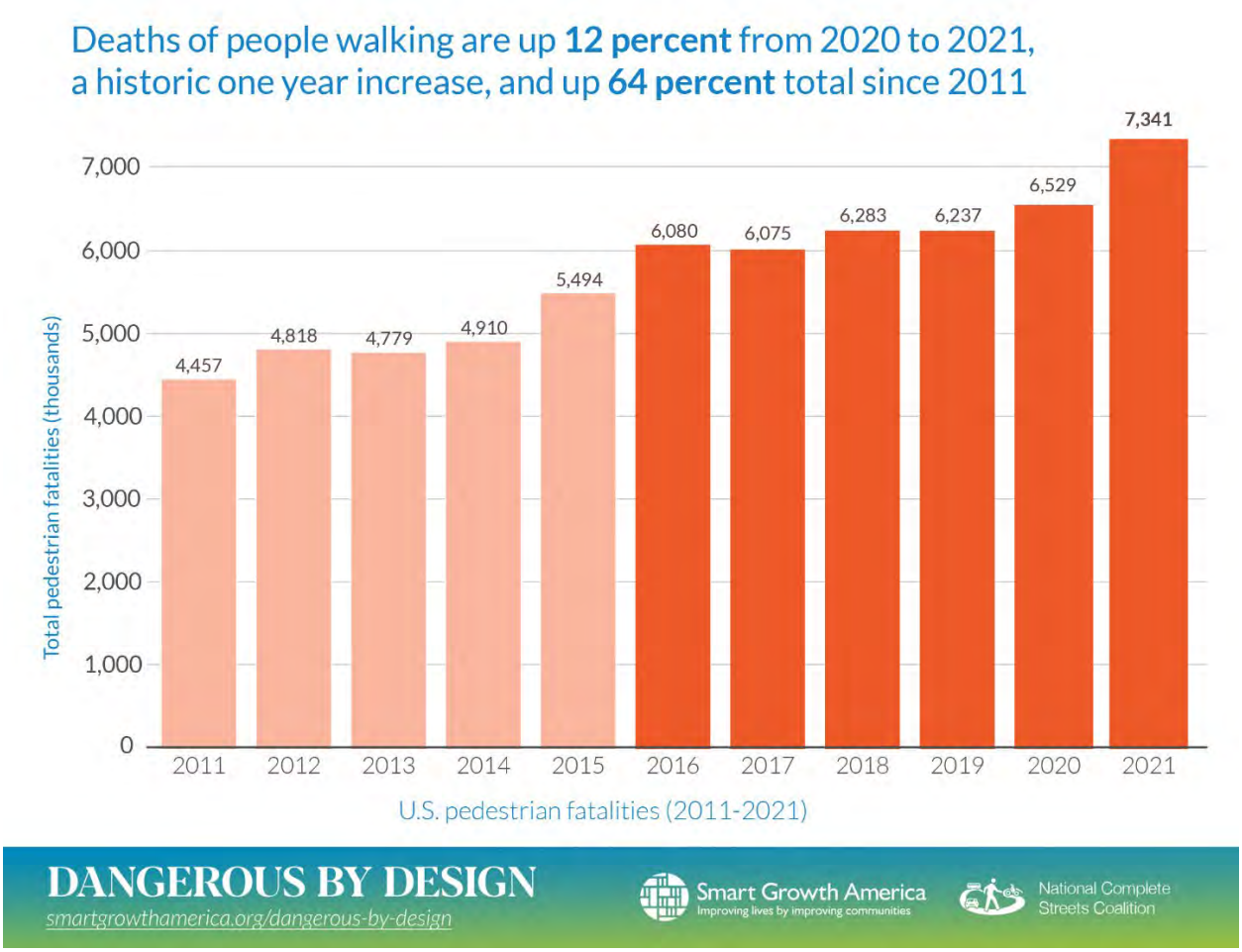
40
People suffer serious injuries from crashes each year[1]

5.5
Crashes occur each day[1]

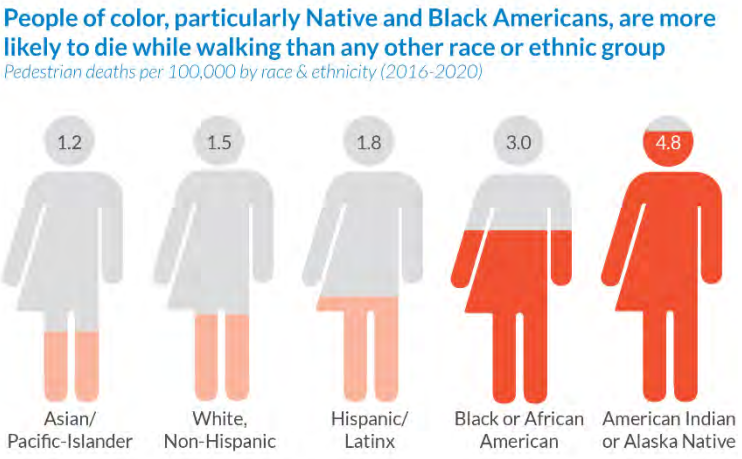
$12.2M
In property damage each year[1]

Every 9.4 days
A crash occurs involving a non-motorist[1]

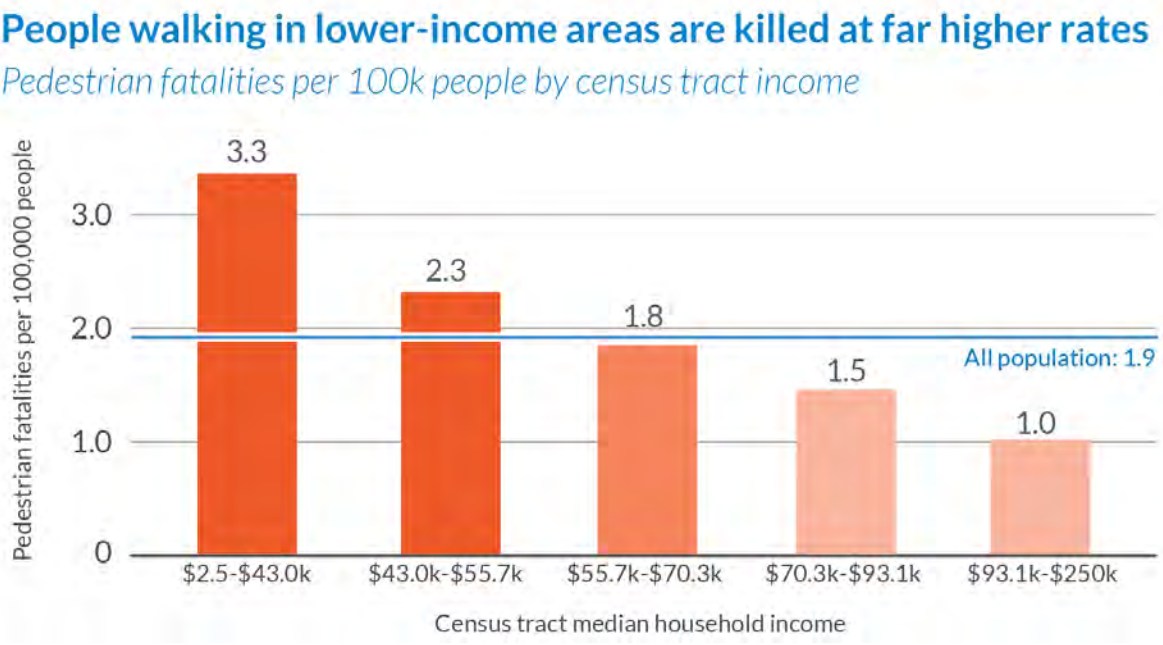
Sources:
[1]Iowa DOT, Iowa Crash Analysis Tool, 2013-2022



The COVID-19 pandemic had a profound impact on many aspects of society, including pedestrian fatalities. The pandemic exacerbated existing disparities in pedestrian fatalities, particularly among vulnerable communities. As lockdowns and restrictions were imposed, people relied more on walking and bicycling for transportation and exercise. However, disadvantaged neighborhoods often lack proper infrastructure and pedestrian-friendly amenities, forcing residents to navigate hazardous conditions. Additionally, essential workers from marginalized communities faced heightened exposure to risks while commuting on foot, as they had limited access to private vehicles and were more likely to rely on public transportation. The pandemic served as a stark reminder of the inequities in pedestrian safety, highlighting the urgent need for targeted interventions and equitable distribution of resources to address these disparities and create safer environments for all pedestrians.



Despite the alarming statistics, multiple efforts were made in 2022 to improve road safety and reduce traffic fatalities. Law enforcement agencies increased their vigilance in enforcing traffic laws and impaired driving regulations. States also worked to enhance infrastructure, implementing traffic calming measures, improving signage, and building protected bike lanes. Furthermore, the automotive industry continued to make advancements in safety technology, including lane departure warning systems, automatic emergency braking, and pedestrian detection systems.



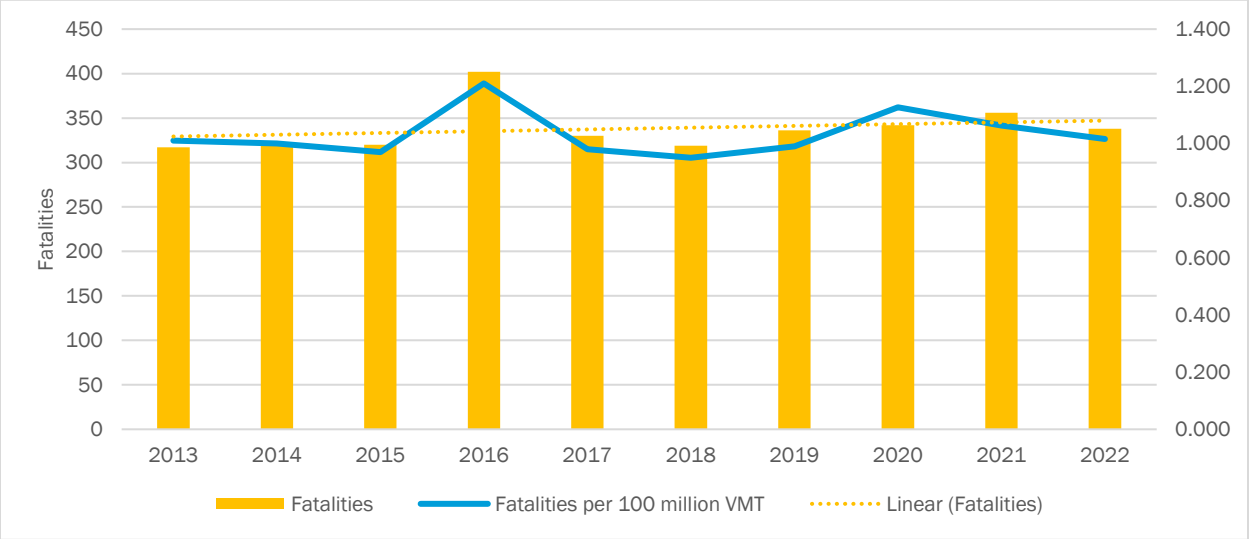
Source: Smart Growth America, Dangerous by Design 2022

The year 2022 marked a distressing increase in US traffic fatalities, emphasizing the need for comprehensive measures to address this pressing issue. Distracted driving, impaired driving, speeding, and other risky behaviors remained significant contributing factors. Furthermore, the safety of vulnerable road users, such as pedestrians and cyclists, continued to be a growing concern. Despite these challenges, efforts to improve road safety through law enforcement, infrastructure enhancements, and technological advancements persist. By prioritizing road safety and implementing a multi-faceted approach, it is possible to reduce traffic fatalities and create safer roads for everyone in the United States.

Iowa Crash Statistics

Traffic fatalities in Iowa have gradually decreased over the past two decades. However, the state is still averaging 339 traffic fatalities per year over the past ten years, with 338 fatalities reported in 2022. Figure 7.1 shows the historical trend for traffic fatalities in Iowa.

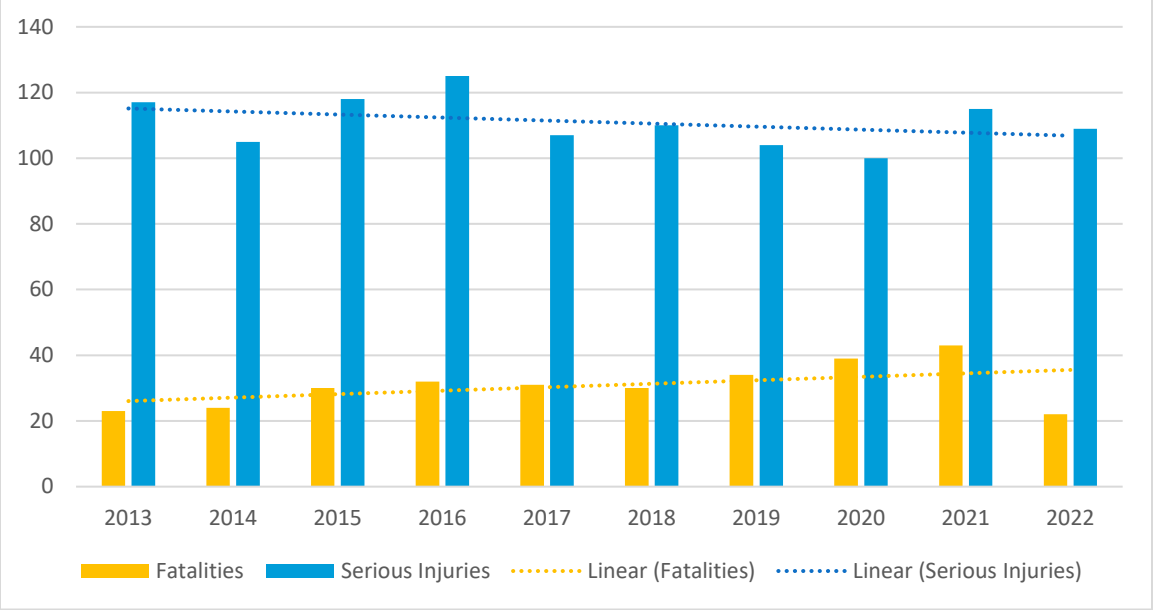
Figure 7.1: Traffic Fatalities in Iowa



Source: Iowa DOT, Crash Analysis Tool

Like nationwide trends, Iowa has witnessed a troubling rise in bicycle and pedestrian fatalities. From 2017 to 2022, the state has averaged 770 crashes, 31 fatalities, and 111 serious injuries involving vulnerable non-motorized road users. Rural areas continue to experience a disproportionate number of traffic fatalities, with 70 percent of fatalities in 2022 occurring on rural facilities. These statistics reveal a somber reality, highlighting the imperative for ongoing efforts to improve road infrastructure, implementing stricter traffic laws, and promoting responsible driving behaviors.

Figure 7.2: Crash Statistics for Non-Motorized Users in Iowa



Source: Iowa DOT, Crash Analysis Tool

MPO Crash Statistics

Over the past ten years, the total number of crashes, fatalities, and serious or major injuries (defined as any injury, other than a fatality, which prevents the injured person from walking, driving, or normally continuing the activities the person was capable of before the injury occurred) have been on the decline. In 2022, the metropolitan area experienced a ten-year low of 1,798 crashes (excluding 2020 data). Another method to measure fatalities is to consider them within the context of total travel. There is a direct relationship between the amount of travel and the probability of a crash involving a fatal injury. Figure 7.4 shows the fatality rate per 100 million vehicle miles traveled. The fatality rate has been trending upward since 2015.

Though the area has made significant progress, an average of **7 people die and 40 are seriously injured in traffic accidents in the MPO each year**.

Map 7.1: Crash Density of Fatalities and Serious Injuries (2013-2022)

Source: Iowa DOT, Crash Analysis Tool

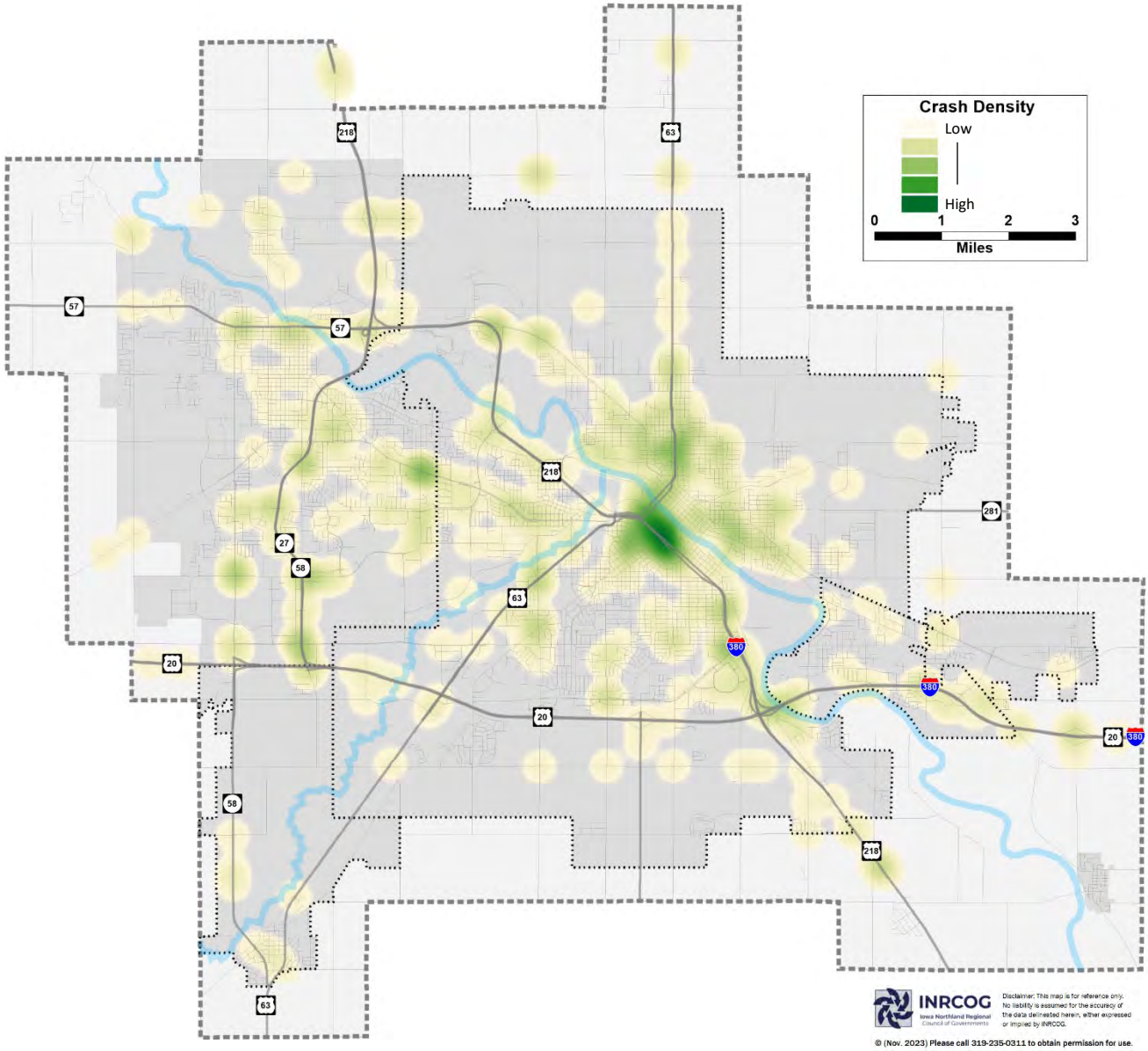


Figure 7.3: Traffic fatalities in the MPO

Source: Iowa DOT, Crash Analysis Tool

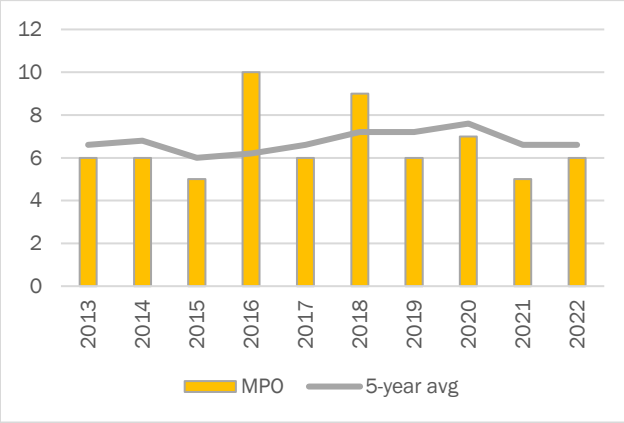


Figure 7.4: Fatality rate per 100 million VMT

Source: Iowa DOT, Crash Analysis Tool

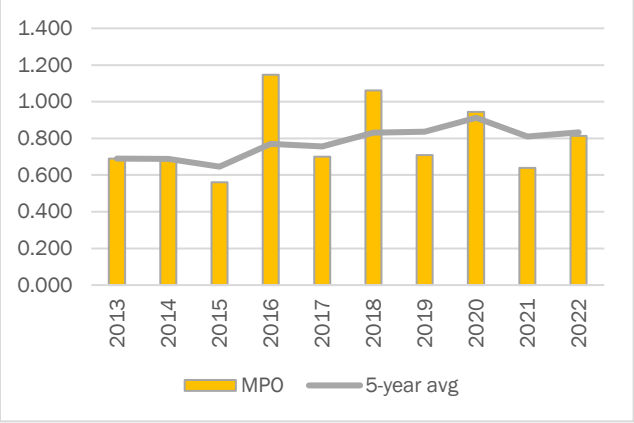


Figure 7.5: Serious Injuries in the MPO

Source: Iowa DOT, Crash Analysis Tool

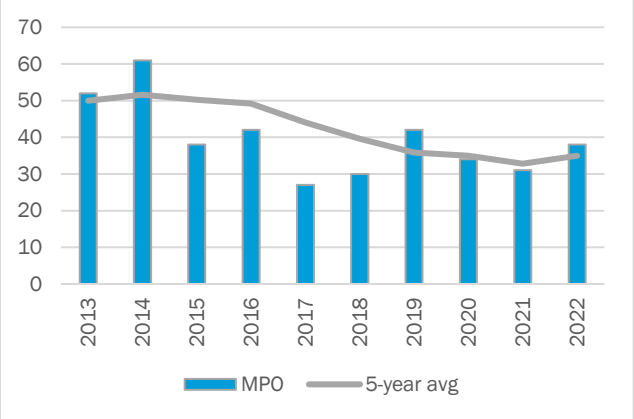
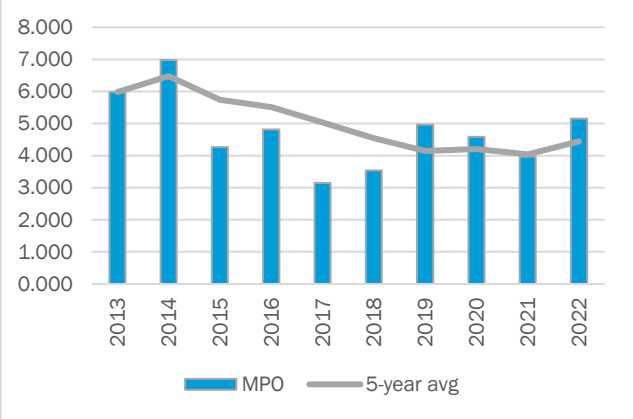


Figure 7.6: Serious injury rate per 100 million VMT

Source: Iowa DOT, Crash Analysis Tool



Like state and nationwide trends, bicycle and pedestrian fatalities and serious injuries in the metropolitan area have been on the rise. From 2018 to 2022, the metro area averaged 37 crashes, 2 fatalities, and 5 serious injuries involving vulnerable non-motorized road users. Though the overall number of bicycle and pedestrian crashes may be decreasing, the number of fatalities and serious injuries are trending upward, presenting a concerning challenge.

Figure 7.7: Non-motorized fatalities and serious injuries

Source: Iowa DOT, Crash Analysis Tool

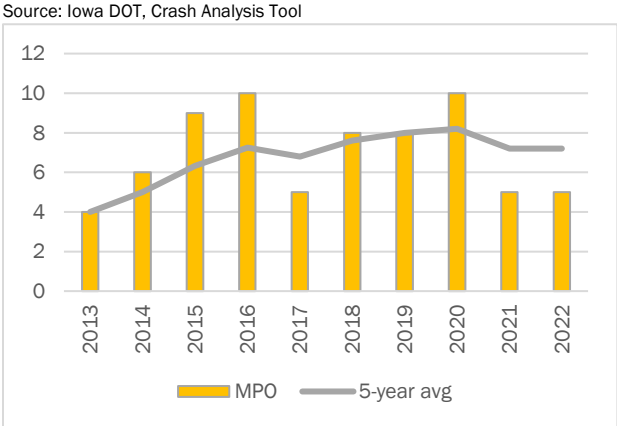
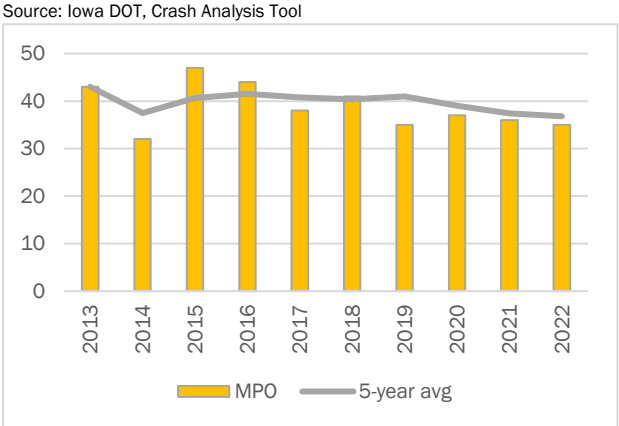
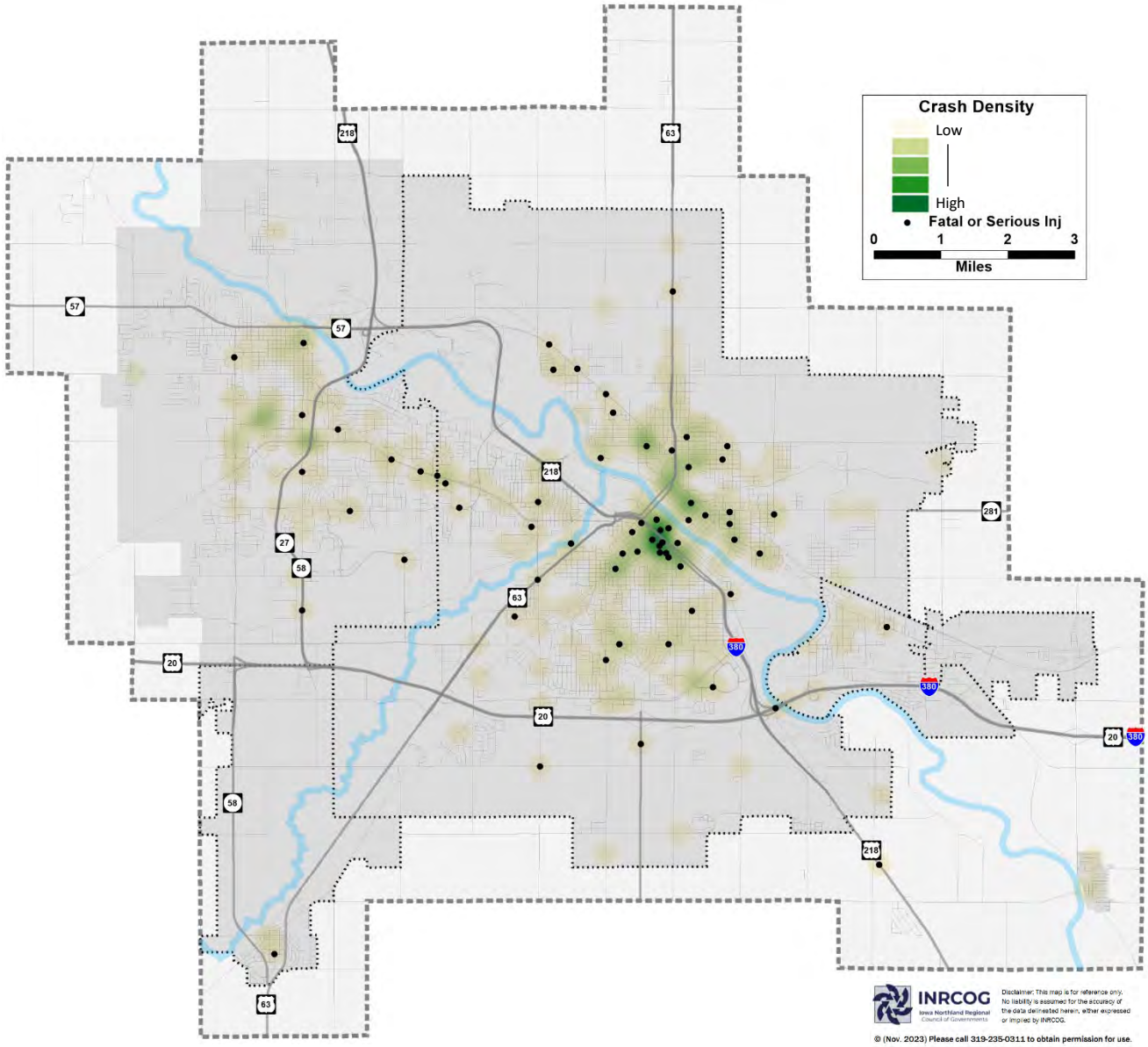


Figure 7.8: Non-motorized traffic accidents

Source: Iowa DOT, Crash Analysis Tool



Map 7.2: Non-Motorized Crash Density and Fatal and Serious Injury Crashes (2013-2022)
Source: Iowa DOT, Crash Analysis Tool



Several factors could be contributing to this troubling scenario. One explanation is the increase in vehicular traffic, which raises the potential for severe injuries or fatalities in the event of a collision. Additionally, distractions from mobile devices, both for drivers and pedestrians, can lead to more severe accidents due to reduced reaction times. Furthermore, the lack of proper infrastructure, such as dedicated bike lanes or pedestrian-friendly crossings, may contribute to the higher fatality and serious injury rate as vulnerable road users are exposed to increased risks. To address this issue, it is crucial to not only continue efforts to decrease the number of crashes but also intensify measures to improve safety conditions for bicyclists and pedestrians, including enhancing infrastructure, educating all road users, and implementing stricter enforcement of traffic laws. By taking a comprehensive approach, we can strive to reverse the alarming trend of increasing fatalities and ensure the safety and well-being of all those who choose to travel by foot or bicycle.

Figures 7.9 and 7.10 provide a heat chart of the major cause of all crashes and fatal and serious injury crashes in the MPO. The top five major causes of all crashes over the past decade have been as follows:

1. Following too close
2. Failure to yield to right of way from a stop sign
3. Driver distraction
4. Driving too fast for conditions
5. Failure to yield to the right of way making a left turn.

For fatal and serious injury causes, the top five major causes (excluding “No improper action”) have been as follows:

1. Running off the road to the right
2. Exceeding authorized speed
3. Failure to yield to the right of way making a left turn
4. Running a traffic signal
5. Losing control, and Driving too fast for conditions (tie)

Addressing fatal and serious injury crashes caused by various factors requires a multifaceted approach that encompasses education, enforcement, engineering, and collaboration among stakeholders. Firstly, raising awareness through targeted public education campaigns is crucial. Providing information about the risks and consequences of speeding, driving too fast, and distracted driving can help change driver behavior. Reinforcing the importance of defensive driving, responsible decision-making, and adherence to traffic laws is essential.

Secondly, enforcement of traffic laws is vital to deter reckless behaviors. Law enforcement agencies should prioritize monitoring and issuing citations for offenses such as speeding, failure to yield, and running traffic signals. Strict enforcement sends a clear message that such violations will not be tolerated and encourages compliance.

Thirdly, engineering measures can play a significant role in preventing crashes. Road design improvements, such as clear signage, rumble strips, bike lanes, high visibility crosswalks, and better delineation of curves and intersections, can help alert drivers and enhance roadway safety. Implementing traffic calming measures and designing roads with appropriate speed limits can also contribute to reducing crash severity.

Finally, leveraging technology can assist in preventing crashes. Advanced Driver Assistance Systems (ADAS) and Intelligent Transportation Systems (ITS) are two interconnected systems that revolutionize the way we approach transportation. ADAS focuses on enhancing vehicle safety and improving driver convenience using advanced sensors and artificial intelligence. It encompasses technologies such as adaptive cruise control, lane-keeping assist, and collision warning systems, which work together to reduce the risk of accidents and improve overall road safety. On the other hand, ITS involves the integration of information and communication technologies into transportation infrastructure, vehicles, and traffic management systems. ITS aims to optimize traffic flow, reduce congestion, and enhance the efficiency of transportation networks. By combining ADAS and ITS, communities can create a seamless and intelligent transportation ecosystem that provides real-time information to drivers, warns them about hazardous conditions, and even intervenes to prevent collisions, resulting in safer roads, reduced travel times, and improved sustainability.

Figure 7.9: Major cause of crashes in the MPO

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Avg
Followed too close	181	162	171	189	203	183	155	82	130	134	159.0
FTYROW: From stop sign	127	154	165	149	138	146	145	88	107	104	132.3
Driver distraction: All Categories	42	52	154	136	141	119	143	135	156	146	122.4
Driving too fast for conditions	170	160	111	112	68	113	151	74	86	87	113.2
FTYROW: Making left turn	159	131	121	143	115	96	89	65	89	102	111.0
Lost control	120	97	122	104	108	123	146	83	93	88	108.4
Ran traffic signal	128	124	119	129	128	113	97	65	88	85	107.6
Animal	90	91	109	126	121	117	110	99	83	104	105.0
Ran stop sign	71	96	91	89	87	88	127	76	96	122	94.3
Ran off road - right	75	83	72	62	72	62	50	50	56	48	63.0
Made improper turn	71	86	57	56	54	53	62	34	52	40	56.5
Operating vehicle recklessly	40	27	36	41	35	32	36	36	62	44	38.9
FTYROW: From yield sign	36	33	28	27	24	49	41	30	37	37	34.2
Ran off road - left	36	36	42	37	38	34	38	24	33	24	34.2
Improper or erratic lane changing	20	28	33	35	38	38	37	33	36	37	33.5
FTYROW: From driveway	45	33	35	31	34	27	33	18	26	27	30.9
FTYROW: Other	53	48	31	27	23	33	26	13	21	23	29.8
Swerving/Evasive Action	67	76	28	16	18	22	14	10	12	16	27.9
FTYROW: At uncontrolled intersection	34	36	33	33	23	33	19	24	22	19	27.6
Exceeded authorized speed	21	19	21	27	23	25	32	31	28	25	25.2
Improper backing	24	36	18	13	21	8	10	13	11	12	16.6
Crossed centerline (undivided)	67	72	5	1	3	1	5	0	3	2	15.9
Failed to keep in proper lane	0	0	20	17	12	17	15	24	13	14	13.2
Passing: All categories	0	0	22	18	18	14	19	13	9	9	12.2
Ran off road - straight	9	6	9	15	13	6	12	13	9	3	9.5
FTYROW: Making right turn on red signal	11	11	12	10	11	9	9	3	7	7	9.0
Traveling wrong way or on wrong side of road	11	9	5	9	8	3	11	2	10	6	7.4
FTYROW: From parked position	13	6	5	3	8	9	6	7	7	5	6.9
FTYROW: To pedestrian	11	4	8	2	5	6	3	5	7	3	5.4
Aggressive driving/road rage	0	0	9	4	8	4	2	4	6	2	3.9
Operator inexperience	0	0	4	2	2	3	7	6	1	10	3.5
Over correcting/over steering	7	9	3	1	1	4	2	3	0	4	3.4
Illegally parked/unattended	6	6	0	1	4	4	4	1	4	3	3.3
Failed to yield to emergency vehicle	0	0	7	4	3	2	5	4	1	5	3.1
Equipment failure	6	8	4	1	2	3	1	2	1	1	2.9
Cargo/equipment loss or shift	1	1	2	2	2	1	3	2	0	0	1.4
Disregarded RR Signal	0	3	0	1	1	1	2	1	0	0	0.9
Separation of units	4	2	0	0	0	1	0	0	1	1	0.9
Crossed median (divided)	0	0	1	0	3	1	1	0	0	0	0.6
Drove around RR grade crossing gates	0	0	1	0	0	1	0	0	0	3	0.5
Failure to signal intentions	0	0	0	1	0	0	1	0	2	1	0.5
Downhill runaway	2	0	0	0	1	0	0	0	1	0	0.4
Traveling on prohibited traffic way	0	0	1	0	0	1	1	1	0	0	0.4
Failure to dim lights/have lights on	0	0	0	1	0	1	0	0	1	0	0.3
Driving less than the posted speed limit	0	0	1	0	0	1	0	0	0	0	0.2
Oversized load/vehicle	1	0	0	0	0	0	0	1	0	0	0.2
Improper starting	0	0	0	0	0	0	0	0	0	1	0.1
Towing improperly	0	0	0	0	0	1	0	0	0	0	0.1
Vehicle stopped on railroad tracks	0	0	0	0	0	0	0	1	0	0	0.1

Source: Iowa DOT, Crash Analysis Tool

Figure 7.10: Major cause of fatal and serious injury crashes in the MPO

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Avg
Ran off road - right	6	3	3	5	6	0	3	5	2	2	3.5
Other: No improper action	0	4	6	6	2	3	3	4	1	2	3.1
Exceeded authorized speed	3	3	2	7	1	2	3	4	3	2	3.0
FTYROW: Making left turn	5	4	6	2	3	1	1	1	1	3	2.7
Ran traffic signal	5	2	1	5	3	4	0	2	0	2	2.4
Lost control	6	3	4	2	0	0	3	3	0	2	2.3
Driving too fast for conditions	4	3	1	1	1	3	2	1	3	2	2.1
FTYROW: From stop sign	1	4	3	1	2	2	2	1	2	3	2.1
Ran stop sign	3	3	2	3	1	1	1	2	2	2	2.0
Operating vehicle recklessly	0	1	3	1	2	4	2	1	1	0	1.5
Followed too close	2	4	0	1	1	2	0	1	0	3	1.4
Ran off road - left	0	0	1	3	2	0	2	0	2	1	1.1
Crossed centerline (undivided)	3	5	1	0	0	0	1	0	0	0	1.0
Swerving/Evasive Action	3	4	1	0	0	1	1	0	0	0	1.0
FTYROW: To pedestrian	0	1	0	1	1	2	0	1	1	0	0.7
Driver Distraction: Other interior distraction	0	0	0	1	1	0	1	0	1	2	0.6
FTYROW: At uncontrolled intersection	1	0	0	3	0	0	0	0	0	1	0.5
Driver Distraction: Exterior distraction	0	0	0	0	0	0	1	0	2	1	0.4
FTYROW: Other	0	0	0	0	0	0	2	0	1	1	0.4
Crossed median (divided)	0	0	1	0	1	1	0	0	0	0	0.3
FTYROW: From driveway	0	0	0	1	0	0	0	2	0	0	0.3
Improper or erratic lane changing	1	0	1	0	0	0	0	0	0	1	0.3
Made improper turn	0	1	0	0	0	0	0	1	1	0	0.3
Ran off road - straight	0	0	1	0	0	0	2	0	0	0	0.3
Animal	1	0	0	0	0	0	0	1	0	0	0.2
Cargo/equipment loss or shift	0	0	1	0	0	1	0	0	0	0	0.2
Driver Distraction: Reaching for object(s)	0	0	1	0	0	0	0	1	0	0	0.2
FTYROW: From yield sign	0	0	0	0	0	0	1	0	1	0	0.2
Other: Improper operation	0	0	0	0	0	0	1	0	1	0	0.2
Other: Vision obstructed	0	0	0	0	0	0	1	0	0	1	0.2
Traveling wrong way or on wrong side of road	1	1	0	0	0	0	0	0	0	0	0.2
Aggressive driving/road rage	0	0	0	0	0	0	0	0	0	1	0.1
Driver Distraction: Adjusting devices	0	0	0	0	1	0	0	0	0	0	0.1
Driver Distraction: Inattentive/lost in thought	0	0	0	1	0	0	0	0	0	0	0.1
Driver Distraction: Talking on a hand-held device	0	0	0	0	0	0	0	1	0	0	0.1
Failed to keep in proper lane	0	0	0	0	1	0	0	0	0	0	0.1
Failed to yield to emergency vehicle	0	0	0	0	0	0	0	1	0	0	0.1
FTYROW: Making right turn on red signal	1	0	0	0	0	0	0	0	0	0	0.1
Illegally parked/unattended	0	0	0	1	0	0	0	0	0	0	0.1
Over correcting/over steering	0	1	0	0	0	0	0	0	0	0	0.1
Passing: With insufficient distance	0	0	0	1	0	0	0	0	0	0	0.1

Source: Iowa DOT, Crash Analysis Tool

Safety Plans and Efforts

The Iowa DOT has been involved in several initiatives related to improving safety. There is an abundance of crash information and several tools for users located on the Iowa DOT website, as well as documents and plans outlining safety efforts.

Iowa Strategic Highway Safety Plan 2019

One method a state uses to conduct safety planning is through the development of a highway safety plan. A Strategic Highway Safety Plan (SHSP) is a statewide-coordinated safety plan that provides a comprehensive framework for reducing highway fatalities and serious injuries on all public roads. The SHSP establishes statewide goals, objectives, and key emphasis areas developed in consultation with federal, state, local, and private sector safety stakeholders. The 2019 SHSP is the fourth statewide safety plan to be adopted in Iowa.

The 2019 SHSP was developed in consultation with the SHSP Implementation Team which is comprised of individuals representing the E's of safety – education, emergency medical services, enforcement, and engineering. These representatives provide updates on programs, policies, and education campaigns for their respective organizations, as well as data on the latest research for their area of expertise. For this update, the prioritization of Iowa's 19 safety emphasis areas was supported by an analysis of crash data and an extensive statewide input process involving Iowa's traffic safety stakeholders. The result of these efforts was the prioritization of eight of the safety emphasis areas that are now considered priority safety emphasis areas. For each of the priority safety emphasis areas, the Implementation Team identified strategies that provide the greatest opportunity to reduce fatalities and serious injuries. The eight priority safety emphasis areas are as follows:

- Lane departures and roadside collisions
- Speed-related
- Unprotected persons
- Young drivers
- Intersections
- Impairment involved
- Older drivers
- Distracted or inattentive drivers

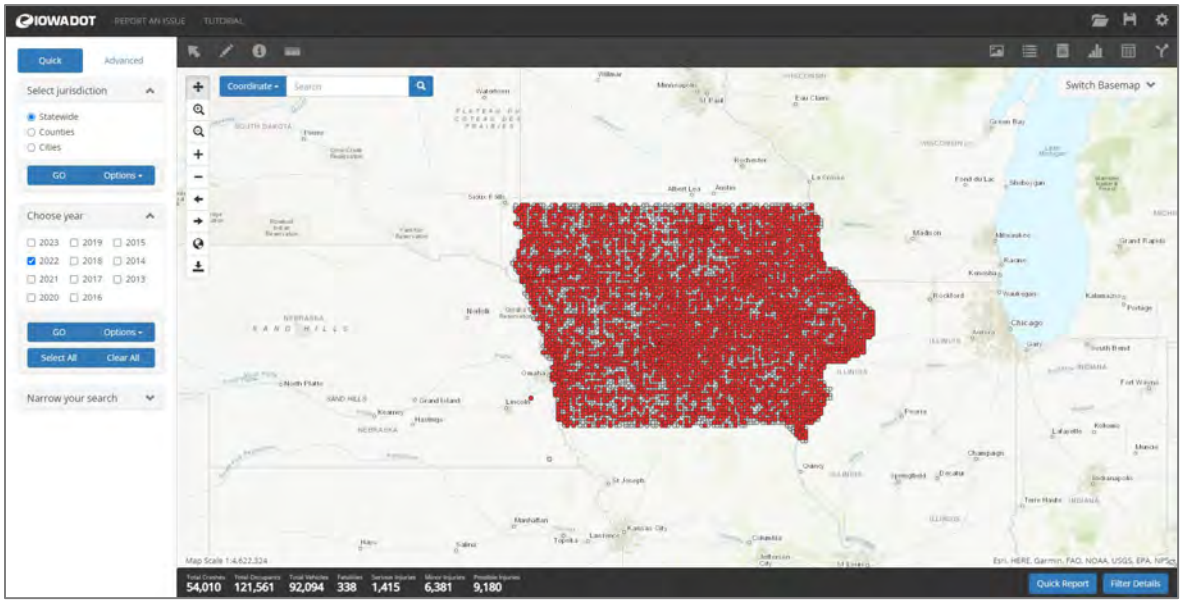
Implementation of the priority safety emphasis areas and strategies will be conducted by the SHSP Implementation Team and broadly supported by traffic safety professionals from around the state. The implementation and progress of the plan will be evaluated on an annual basis for the five-year planning period ending December 2023. The goal of this plan is **Zero Fatalities**, however, interim annual goals aligning with the Highway Safety Improvement Program performance measures will be developed during the plan period. Although the Implementation Team is fully committed to reducing the number of fatalities and serious injuries on Iowa's roadways, it recognizes that commitment pales in comparison to the cumulative impact **every driver** (fifth "E") can have on the safety of Iowa's roadways.

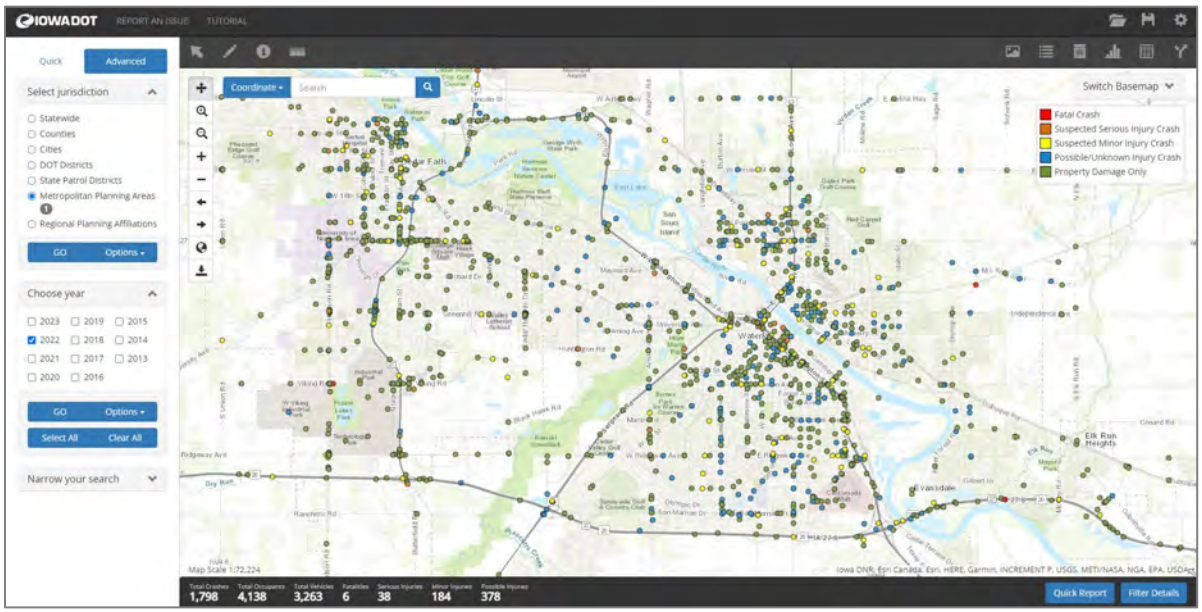
Although Zero Fatalities is Iowa's long-term vision, the state also recognizes the need to establish short-term goals in pursuit of this vision. In 2016, FHWA published the Highway Safety Improvement Program (HSIP) and Safety Performance Management Final Rules. As part of these rules, states are required to develop statewide targets annually for five safety performance measures. These targets serve as the short-term goals for the state.

www.iowadot.gov/traffic/shsp/home

Iowa Crash Analysis Tool

The Iowa DOT provides public access to a web-based Iowa Crash Analysis Tool featuring quick, user-friendly functionality to review and analyze ten-years of crash data. Through the online interface, users can select geographic boundaries, query crash records, export crash data, and produce summary charts and reports.





www.icat.iowadot.gov

Multidisciplinary Roadway Safety Series

The Iowa State University Institute for Transportation (InTrans) holds a series of workshops (formerly called the Local Road Safety Workshops) to provide the most current information and advice for improving safety on local agencies' roads and streets in terms of planning, law enforcement, education, and engineering. These workshops are presented annually across the state in collaboration with the Iowa DOT, FHWA, Governors Traffic Safety Bureau (GTSB), and the Iowa Local Technical Assistance Program (LTAP).

Potential for Crash Reduction (PCR)

The Iowa DOT created a tool to analyze and compare data from similar intersections to aid in identifying the potential for crash reduction. Using models for different data points, the tool predicts the average number of crashes per year per intersection. The difference between the predicted and observed number of crashes is the intersection potential for crash reduction. If the predicted number of crashes is lower than the observed crashes during a specific time, the intersection is a priority for safety funds. Intersections are classified into one of three tiers: high, medium, and negligible potential for crash reduction. Using this new way of analyzing data, Iowa DOT's Traffic and Safety Bureau staff are working with Iowa DOT district staff to determine priorities for each district on state and U.S. highways and interstates. **In 2023, there were five intersections with a high PCR and 51 intersections with a medium PCR in the metropolitan area**. Table 7.1 shows the top twenty intersections in the metro area with the highest potential for crash reduction.

https://arcg.is/1bTSPz

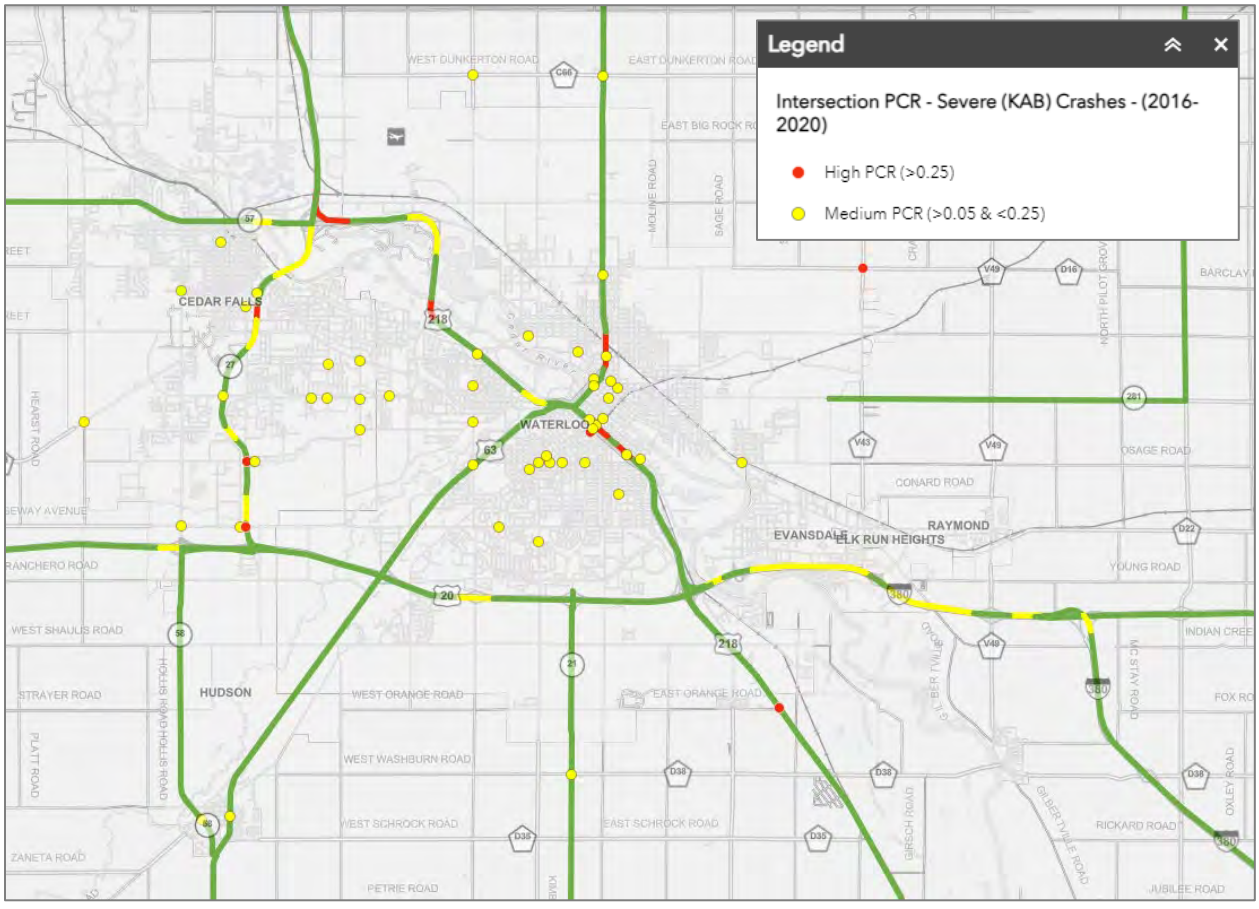


Table 7.1: Metro area intersections with the highest potential for crash reduction (2016-2020)

PCR	City	Intersection	Category Ranking	Statewide Ranking	Mitigation Efforts
H	Cedar Falls	IA 58/27 & Viking Rd	1	12	Interchange constructed (2019
H	Cedar Falls	IA 58/27 & W Ridgeway Ave	4	46	Additional turn lanes constructed (2023)
H	Waterloo	W 6th St & South St	18	142	
H	Waterloo	Donald St (V43) & N Elk Run Rd (V43)	29	147	
H	Waterloo	U.S. 218 & E Orange Rd	1	158	
M	Cedar Falls	W Ridgeway Ave & Hudson Rd	15	187	
M	Waterloo	U.S. 218 SB & W 6th St	66	244	
M	Cedar Falls	Orchard Dr & Rownd St	38	270	
M	Cedar Falls	Nordic Dr & W Ridgeway Ave	2	292	
M	Waterloo	Washington St & W 6th St	84	293	
M	Waterloo	U.S. 63 & Sycamore St	85	295	
M	Cedar Falls	IA 58/27 & Greenhill Rd	24	316	Interchange funded (2028)
M	Cedar Falls	6th St & Walnut St	51	353	
M	Cedar Falls	Greenhill Rd & Cedar Heights Dr	59	389	Roundabout constructed (2023)
M	Cedar Falls	Hudson Rd & 18th St	60	390	
M	Cedar Falls	University Ave & Cedar Heights Dr	4	438	Roundabout constructed (2018)
M	Waterloo	E 4th St & Franklin St	109	448	
M	Waterloo	W 4th St & Bayard St	114	453	
M	Waterloo	Kimball Ave/Frontage Rd & W Park Ln	124	468	
M	Waterloo	U.S. 63 & Ansborough Ave	76	474	

Source: Iowa DOT, Potential for Crash Reduction Tool

SS4A Comprehensive Safety Action Plan

The Bipartisan Infrastructure Law established a discretionary grant program called Safe Streets and Roads for All (SS4A) to implement the goal of zero deaths. Funds are to be awarded on a competitive basis to support planning, infrastructure, behavioral, and operational initiatives to improve roadway safety by significantly reducing or eliminating roadway fatalities and serious injuries through safety action plan development and refinement and implementation focused on all users. On February 1, 2023, the MPO received a SS4A Action Plan grant award to complete a Comprehensive Safety Action Plan for Waterloo's Central Business District in the downtown area where a disproportionate percentage of fatal and serious injury crashes are occurring. Following completion, the Plan will provide an opportunity for the city of Waterloo to seek SS4A Implementation funding to implement strategies or projects that will improve and enhance safety.

Local Road Safety Plan

Fatal and serious injury crashes disproportionately occur on the local system. To address this challenge, counties in Iowa have been developing local road safety plans (LRSP) since 2014. LRSPs provide a systemic approach to transportation safety improvements. LRSPs screen the roadway network for high-risk roadway features before they become crash sites. The result is a prioritized list of curves, intersections, and segments where proactive countermeasures may save lives. Black Hawk County is part of a 97-county multi-jurisdictional SS4A awarded project to update or adopt new LRSPs by 2025.

State Safety Legislation

Iowa's traffic safety culture is supported by policy and legislation that is focused on reducing the number and severity of vehicle crashes on Iowa's roadways. This section provides a brief overview of the legislation related to traffic safety that has been passed since 2017, and future legislative strategies to further improve safety on our roads.

Ignition Interlock

In 2018, the Iowa Legislature passed House File 2338 which requires first-time OWI offenders who seek a temporary restricted license to install an ignition interlock device on all vehicles owned and driven by the offender. An ignition interlock device requires a driver to blow into a mouthpiece, and the device prevents the vehicle from starting if it detects the presence of alcohol. Beyond reducing the number of alcohol-related traffic fatalities and serious injuries, the passage of the ignition interlock law also means that Iowa is eligible for federal grants from the National Highway Traffic Safety Administration (NHTSA).

Statewide Sobriety and Drug Monitoring Program

Senate File 444, passed in 2017, established a Statewide Sobriety and Drug Monitoring Program that can be used by participating jurisdictions within Iowa. This program requires OWI offenders, under condition of bond, pretrial release, sentence, probation, parole, or a temporary restricted license, to be subject to twice-daily testing to determine whether alcohol and/or a controlled substance is present in the person's body. Offenders are also required to install an approved ignition interlock device on all motor vehicles owned or operated by the offender.

Homicide-by-vehicle

Senate File 444 also expanded Iowa's homicide-by-vehicle statute. Those drivers who are using a device such as a cell phone and are involved in a vehicle crash that results in a fatality can now face felony charges. These charges carry a sentence of up to 10 years in prison and a fine of up to $10,000.

Use of Electronic Communication

Senate File 234, passed in 2017, banned the "use of hand-held electronic communication device to write, send or view an electronic message while driving a motor vehicle unless the vehicle is at a complete stop off the traveled portion of the roadway." This use is now a primary offense and includes drivers viewing text messages, instant messages, e-mail, internet sites, social media applications, or games while driving.

Backseat Safety Belt

Iowa has maintained a primary safety belt law since July 1, 1986. In 2018, the Iowa Legislature passed a law requiring all passengers under the age of 18 riding in the backseat of a vehicle to be properly belted.

Blue and White Lights

Senate File 2163, passed in 2018, allows for the permanent use of amber, white, or blue reflector lights for Iowa DOT equipment that is being used for snow and ice treatment or removal on public roadways. This law made permanent an existing law that had a repeal date of July 1, 2019. The addition of the white and blue lights makes the snowplows more visible to vehicles approaching them from behind. During the two years of piloting this project, Iowa DOT snowplows were involved in 10 crashes compared to 29 during the two years before the project.

Move Over or Slow Down

All 50 states have a version of the "Move Over" law which requires motorists to change lanes or slow down when approaching a stationary emergency vehicle with flashing lights. In 2018, Iowa expanded its original 2002 "Move Over" law to include any vehicle with flashing hazard lights. This expansion is designed to protect not only emergency personnel or those who maintain roadways, but all motorists who might find themselves on the side of the road.

Future Legislative Strategies

Although Iowa has made great strides in passing legislation that supports reducing the number of severe crashes on its roadways, there are still opportunities to improve traffic safety. Initial legislative strategies that the Iowa Strategic Highway Safety Plan Implementation Team will undertake in the coming years include the following:

- Reducing distracted, drowsy, and impaired driving
- Hands-free cell phone requirements
- All-passenger primary seatbelt requirements
- Strengthening or enhancing graduated driver's license (GDL) requirements
- Requiring drivers to change lanes when passing bicyclists

Proven Safety Countermeasures

FHWA's Proven Safety Countermeasures (PSC) initiative is a collection of 28 countermeasures and strategies effective in reducing roadway fatalities and serious injuries on our Nation's highways. Transportation agencies are strongly encouraged to consider widespread implementation of PSCs to accelerate the achievement of local, State, and National safety goals. These strategies are designed for all road users and types of roads. Each countermeasure addresses at least one safety focus area—speed management, intersections, roadway departures, or pedestrians/bicyclists—while others are crosscutting strategies that address multiple safety focus areas.

highways.dot.gov/safety/proven-safety-countermeasures

Speed Management: Appropriate Speed Limits for All Road Users

There is broad consensus among global roadway safety experts that speed control is one of the most important methods for reducing fatalities and serious injuries. Speed is an especially important factor on non-limited access roadways where vehicles and vulnerable road users mix.

A driver may not see or be aware of the conditions within a corridor and may drive at a speed that feels reasonable for themselves but may not be for all users of the system, especially vulnerable road users, including children and seniors. A driver traveling at 30 miles per hour who hits a pedestrian has a 45 percent chance of killing or seriously injuring them. At 20 miles per hour, that percentage drops to 5 percent. Several cities across the United States, including New York, Washington, Seattle, and Minneapolis, have reduced their local speed limits in recent years to reduce fatalities and serious injuries, with most having to secure State legislative authorization to do so.

States and local jurisdictions should set appropriate speed limits to reduce the significant risks drivers impose on others—especially vulnerable road users—and on themselves. Addressing speed is fundamental to the Safe System Approach to making streets safer, and a growing body of research shows that speed limit changes alone can lead to measurable declines in speeds and crashes. Based on international experience and implementation in the United States, the use of 20 mph speed zones or speed limits in urban core areas where vulnerable users share the road environment with motorists may result in further safety benefits.

Safety Benefits:

Traffic fatalities in the City of Seattle decreased 26 percent after the city implemented comprehensive, city-wide speed management strategies and countermeasures inspired by Vision Zero. This included setting speed limits on all non-arterial streets at 20 mph and 200 miles of arterial streets at 25 mph.[5]

One study found that on rural roads, when considering other relevant factors in the engineering study along with the speed distribution, setting a speed limit no more than 5 mph below the 85th-percentile speed may result in fewer total and fatal plus injury crashes, and lead to drivers complying closely with the posted speed limit.[5]

When setting a speed limit, agencies should consider a range of factors such as pedestrian and bicyclist activity, crash history, land use context, intersection spacing, driveway density, roadway geometry, roadside conditions, roadway functional classification, traffic volume, and observed speeds. To achieve desired speeds, agencies often implement other speed management strategies concurrently with setting speed limits, such as self-enforcing roadways, traffic calming, and speed safety cameras.

Speed Management: Speed Safety Cameras

Agencies can use speed safety cameras as an effective and reliable technology to supplement more traditional methods of enforcement, engineering measures, and education to alter the social norms of speeding. Speed safety cameras use speed measurement devices to detect speeding and capture photographic or video evidence of vehicles that are violating a set speed threshold.

Agencies sould conduct a network analysis of speeding-related crashes to identify locations to implement these devices. Speed safety cameras can be deployed as fixed units, point-to-ponit units, or mobile units.

Table of selection considerations for SSC deployment

Considerations for Selection	Fixed	P2P	Mobile
Problems are long-term and site-specific.	X	X	
Problems are network-wide, and shift based on enforcement efforts.			X
Speeds at enforcement site vary largely from downstream sites.		X	X
Overt enforcement is legally required.	X	X	X
Sight distance for the enforcement unit is limited.	X	X	
Enforcement sites are multilane facilities.	X	X	

As of 2023, the City of Waterloo has implemented 23 fixed units, 1 P2P unit, and 1 mobile unit; and the City of Hudson has implemented 4 fixed units.

Safety Benefits:

Fixed units can reduce crashes on urban principal arteries up to: [4]

54%

for all crashes.

47%

for injury crashes.

P2P units can reduce crashes on urban expressways, freeways, and principal arterials up to:

37%

for fatal and injury crashes.[2]

Mobile units can reduce crashes on urban principal arterials up to:

20%

for fatal and injury crashes.[5]

Pedestrian/Bicyclist: Bicycle Lanes

Most fatal and serious injury bicyclist crashes occur at non-intersection locations. Nearly one-third of these crashes involve overtaking motorists; the speed and size differential between vehicles and bicycles can lead to severe injury. To make bicycling safer and more comfortable for most types of bicyclists, State and local agencies should consider installing bicycle lanes. These dedicated facilities for the use of bicyclists along the roadway can take several forms. Providing bicycle facilities can mitigate or prevent interactions, conflicts, and crashes between bicyclists and motor vehicles, and create a network of safer roadways for bicycling. Bicycle Lanes align with the Safe System Approach principle of recognizing human vulnerability—where separating users in space can enhance safety for all road users.

Bicycle lanes can be included on new roadways or created on existing roads by reallocating space in the right-of-way. In addition to the paint stripe used for a typical bicycle lane, a lateral offset with painted buffer can help to further separate bicyclists from vehicle traffic. State and local agencies may also consider physical separation of the bicycle lane from motorized traffic lanes through the use of vertical elements like posts, curbs, or vegetation.

Pedestrian/Bicyclist: Leading Pedestrian Interval

A leading pedestrian interval (LPI) gives pedestrians the opportunity to enter the crosswalk at an intersection 3-7 seconds before vehicles are given a green indication. Pedestrians can better establish their presence in the crosswalk before vehicles have priority to turn right or left.

LPIs provide the following benefits:

- Increased visibility of crossing pedestrians
- Reduced conflicts between pedestrians and vehicles
- Increased likelihood of motorists yielding to pedestrians
- Enhanced safety for pedestrians who may be slower to start into the intersection

Pedestrian/Bicyclist: Crosswalk Visibility Enhancements

Poor lighting conditions, obstructions such as parked cars, and horizontal or vertical roadway curvature can reduce visibility at crosswalks, contributing to safety issues. For multilane roadway crossings where vehicle volumes are more than 10,000 AADT, a marked crosswalk alone is typically not sufficient. Under such conditions, more substantial crossing improvements could prevent an increase in pedestrian crash potential.

Three main crosswalk visibility enhancements help make crosswalks and the pedestrians, bicyclists, wheelchair and other mobility device users, and transit users using them more visible to drivers. These include **high-visibility crosswalks, lighting, and signing and pavement markings**. These enhancements can also assist users in deciding where to cross. Agencies can implement these features as standalone or combination enhancements to indicate the preferred location for users to cross.

High-visibility crosswalks use patterns (i.e., bar pairs, continental, ladder) that are visible to both the driver and pedestrian from farther away compared to traditional transverse line crosswalks. They should be considered at all midblock pedestrian crossings and uncontrolled intersections. Agencies should use materials such as inlay or thermoplastic tape, instead of paint or brick, for highly reflective crosswalk markings.

The goal of improved crosswalk lighting should be to illuminate with positive contrast to make it easier for a driver to visually identify the pedestrian. This involves carefully placing the luminaires in forward locations to avoid a silhouette effect of the pedestrian.

On multilane roadways, agencies can use “YIELD Here to Pedestrians” or “STOP Here for Pedestrians” signs 20 to 50 feet in advance of a marked crosswalk to indicate where a driver should stop or yield to pedestrians, depending on State law. To supplement the signing, agencies can also install a STOP or YIELD bar (commonly referred to as “shark’s teeth”) pavement markings. In-street signing, such as ”STOP Here for Pedestrians“ or ”YIELD Here to Pedestrians“ may be appropriate on roads with two or three lanes where speed limits are 30 miles per hour or less.

Pedestrian/Bicyclist: Medians and Pedestrian Refuge Islands in Urban and Suburban Areas

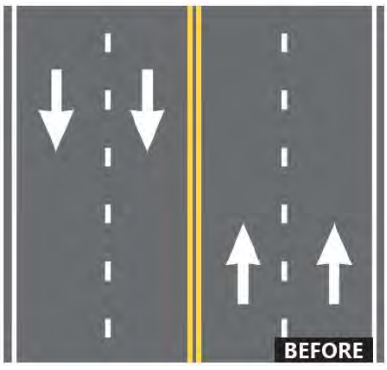
A *median* is the area between opposing lanes of traffic, excluding turn lanes. Medians in urban and suburban areas can be defined by pavement markings, raised medians, or islands to separate motorized and non-motorized road users.

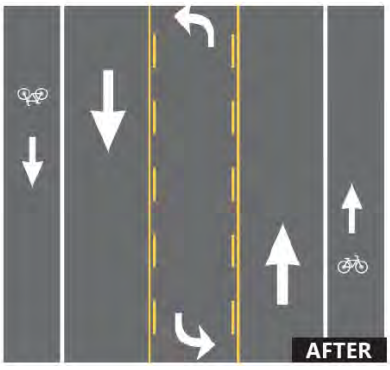
A *pedestrian refuge island* (or crossing area) is a median with a refuge area that is intended to help protect pedestrians who are crossing a road.

Pedestrian crashes account for approximately 17 percent of all traffic fatalities annually, and 74 percent of these occur at non-intersection locations. For pedestrians to safely cross a roadway, they must estimate vehicle speeds, determine acceptable gaps in traffic based on their walking speed, and predict vehicle paths. Installing a median or pedestrian refuge island can help improve safety by allowing pedestrians to cross one direction of traffic at a time.

Pedestrian/Bicyclist: Road Diets (Roadway Reconfiguration)

A Road Diet, or roadway reconfiguration, can improve safety, calm traffic, provide better mobility and access for all road users, and enhance overall quality of life. A Road Diet typically involves converting an existing four-lane undivided roadway to a three-lane roadway consisting of two through lanes and a center two-way left-turn lane (TWLTL). Benefits may include reduction of rear-end and left-turn crashes, reduced right-angle crashes, fewer lanes for pedestrians to cross, opportunity to install pedestrian refuge islands and bike lanes, traffic calming and more consistent speeds, and a roadway that better accommodates the needs of all road users.





Pedestrian/Bicyclist: Rectangular Rapid Flashing Beacons (RRFB)
A marked crosswalk or pedestrian warning sign can improve safety for pedestrians crossing the road, but at times may not be sufficient for drivers to visibly locate crossing locations and yield to pedestrians. To enhance pedestrian conspicuity and increase driver awareness at uncontrolled and marked crosswalks, transportation agencies can install a pedestrian actuated RRFB to accompany a pedestrian warning sign. RRFBs consist of two, rectangular-shaped yellow indications, each with an LED-array-based light source. RRFBs flash with an alternating high frequency when activated to enhance the conspicuity of pedestrians at the crossing to drivers.

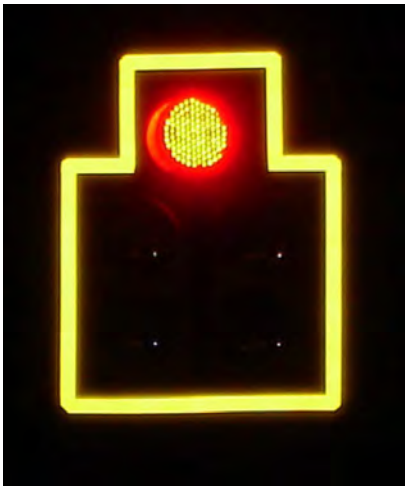
The RRFB is applicable to many types of pedestrian crossings but is particularly effective at multilane crossings with speed limits of less than 40 miles per hour. Research suggests RRFBs can result in motorist yielding rates as high as 98 percent at marked crosswalks, but vary depending on the location, posted speed limit, pedestrian crossing distance, one- versus two-way road, and the number of travel lanes. RRFBs can also accompany school or trail crossing warning signs. Agencies should reserve the use of RRFBs for locations with significant pedestrian safety issues, as over-use of RRFB treatments may diminish their effectiveness.

Pedestrian/Bicyclist: Walkways
A walkway is any type of defined space or pathway for use by a person traveling by foot or using a wheelchair. These may be pedestrian walkways, shared use paths, sidewalks, or roadway shoulders.

With the staggering numbers of pedestrian fatalities and injuries occurring in roadway crashes annually, it is important for transportation agencies to improve conditions and safety for pedestrians and to integrate walkways more fully into the transportation system. Research shows people living in low-income communities are less likely to encounter walkways and other pedestrian-friendly features.

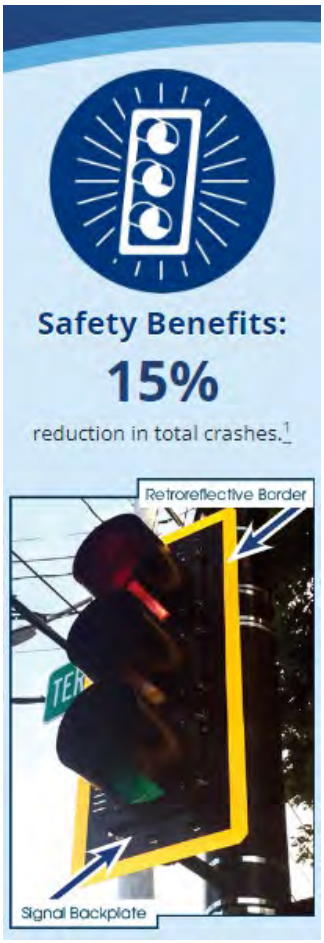
Intersections: Backplates with Retroreflective Borders

Backplates added to a traffic signal head improve the visibility of the illuminated face of the signal by introducing a controlled-contrast background. The improved visibility of a signal head with a backplate is made even more conspicuous by framing it with a 1- to 3-inch yellow retroreflective border. Signal heads that have backplates equipped with retroreflective borders are more visible and conspicuous in both daytime and nighttime conditions.



This treatment is recognized as a human factor enhancement of traffic signal visibility, conspicuity, and orientation for both older and color vision deficient drivers. This countermeasure is also advantageous during periods of power outages when the signals would otherwise be dark, providing a visible indicator for motorists to stop at the intersection ahead.

Transportation agencies should consider backplates with retroreflective borders as part of their efforts to systematically improve safety performance at signalized intersections. Adding a retroreflective border to an existing signal backplate is a very low-cost safety treatment. This can be done by either adding retroreflective tape to an existing backplate or purchasing a new backplate with a retroreflective border already incorporated. The most efficient means of implementing this proven safety countermeasure is to adopt it as a standard treatment for signalized intersections across a jurisdiction or State.



Intersections: Yellow Change Intervals

At a signalized intersection, the yellow change interval is the length of time that the yellow signal indication is displayed following a green signal indication. The yellow signal confirms to motorists that the green has ended and that a red will soon follow.

Since red-light running is a leading cause of severe crashes at signalized intersections, it is imperative that the yellow change interval be appropriately timed. Too brief an interval may result in drivers being unable to stop safely and cause unintentional red-light running. Too long of an interval may result in drivers treating the yellow as an extension of the green phase and invite intentional red-light running. Factors such as the speed of approaching and turning vehicles, driver perception-reaction time, vehicle deceleration, and intersection geometry should all be considered in the timing calculation.

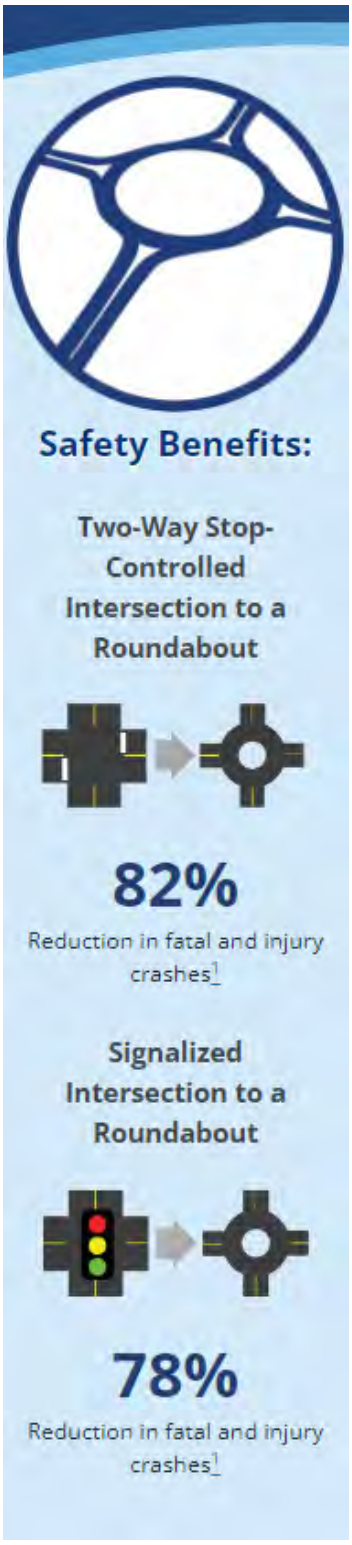
Transportation agencies can improve signalized intersection safety and reduce red-light running by reviewing and updating their traffic signal timing policies and procedures concerning the yellow change interval.

Intersections: Roundabouts

The modern roundabout is an intersection with a circular configuration that safely and efficiently moves traffic. Roundabouts feature channelized, curved approaches that reduce vehicle speed, entry yield control that gives right-of-way to circulating traffic, and counterclockwise flow around a central island that minimizes conflict points. The net result of lower speeds and reduced conflicts at roundabouts is an environment where crashes that cause injury or fatality are reduced.

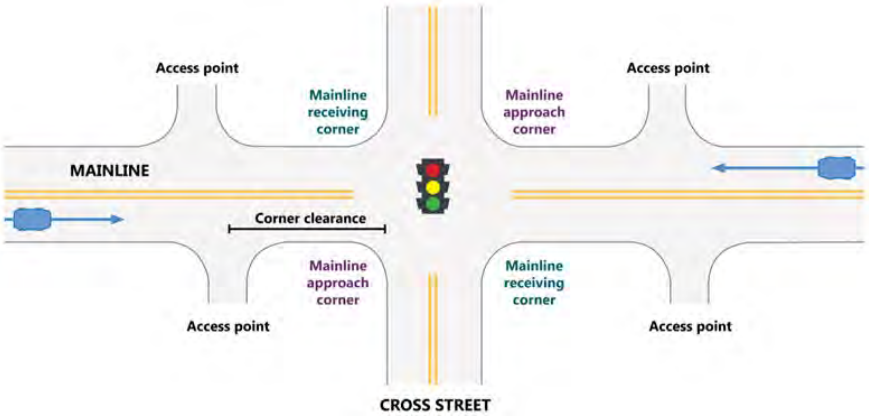
Roundabouts are not only a safer type of intersection; they are also efficient in terms of keeping people moving. Even while calming traffic, they can reduce delay and queuing when compared to other intersection alternatives. Furthermore, the lower vehicular speeds and reduced conflict environment can create a more suitable environment for walking and bicycling.

Roundabouts can be implemented in both urban and rural areas under a wide range of traffic conditions. They can replace signals, two-way stop controls, and all-way stop controls. Roundabouts are an effective option for managing speed and transitioning traffic from high-speed to low-speed environments, such as freeway interchange ramp terminals, and rural intersections along high-speed roads.



Intersections: Corridor Access Management

Access management refers to the design, application, and control of entry and exit points along a roadway. This includes intersections with other roads and driveways that serve adjacent properties. Thoughtful access management along a corridor can simultaneously enhance safety for all modes, facilitate walking and biking, and reduce trip delay and congestion.



Every intersection, from a signalized intersection to an unpaved driveway, has the potential for conflicts between vehicles, pedestrians, and bicyclists. The number and types of conflict points—locations where the travel paths of two users intersect—influence the safety performance of the intersection or driveway. FHWA developed corridor-level crash prediction models to estimate and analyze the safety effects of selected access management techniques for different area types, land uses, roadway variables, and traffic volumes.

The following access management strategies can be used individually or in combination with one another:

- Reduce density through driveway closure, consolidation, or relocation.
- Manage spacing of intersection and access points.
- Limit allowable movements at driveways (such as right-in/right-out only).
- Place driveways on an intersection approach corner rather than a receiving corner, which is expected to have fewer total crashes.
- Implement raised medians that preclude across-roadway movements.
- Utilize designs such as roundabouts or reduced left-turn conflicts (such as restricted crossing U-turn, median U-turns, etc.).
- Provide turn lanes (i.e., left-only, right-only, or interior two-way left).
- Use lower speed one-way or two-way off-arterial circulation roads.

Successful corridor access management involves balancing overall safety and mobility for all users along with the needs of adjacent land uses.

Intersections: Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections

This systemic approach to intersection safety involves deploying a package of multiple low-cost countermeasures, including enhanced signing and pavement markings, at many stop-controlled intersections within a jurisdiction. These countermeasures increase driver awareness and recognition of the intersections and potential conflicts.

There are several benefits to systemically applying multiple low-cost countermeasures at stop-controlled intersections, including the following:

- Resources are maximized because the treatments are low cost.
- A high number of intersections can receive treatment.
- Improvements are highly cost-effective, with an average benefit-cost ratio of 12:1, even assuming a conservative 3-year service life.

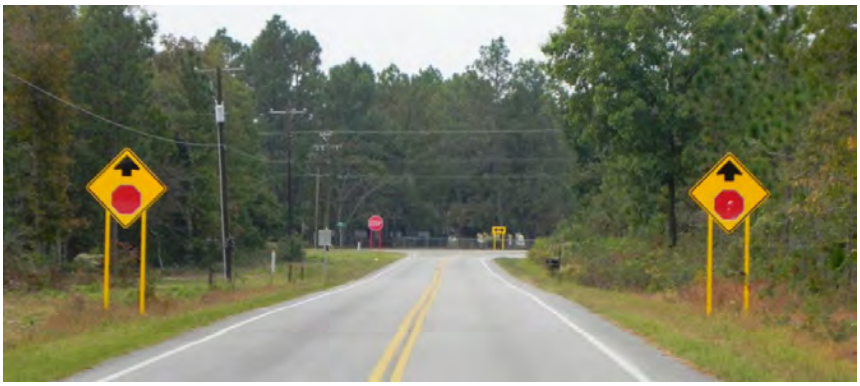
The low-cost countermeasures for stop-controlled intersections consist of the following treatments:

On the Through Approach

- Doubled-up (left and right), oversized advance intersection warning signs, with supplemental street name plaques (can also include flashing beacon)
- Retroreflective sheeting on signposts
- Enhanced pavement markings that delineate through lane edge lines

On the Stop Approach

- Doubled-up (left and right), oversized advance "Stop Ahead" intersection warning signs (can also include flashing beacon)
- Doubled-up (left and right), oversized Stop signs
- Retroreflective sheeting on signposts
- Properly placed stop bar
- Removal of vegetation, parking, or obstructions that limit sight distance
- Double arrow warning sign at stem of T-intersections



Intersections: Dedicated Left- and Right-Turn Lanes at Intersections

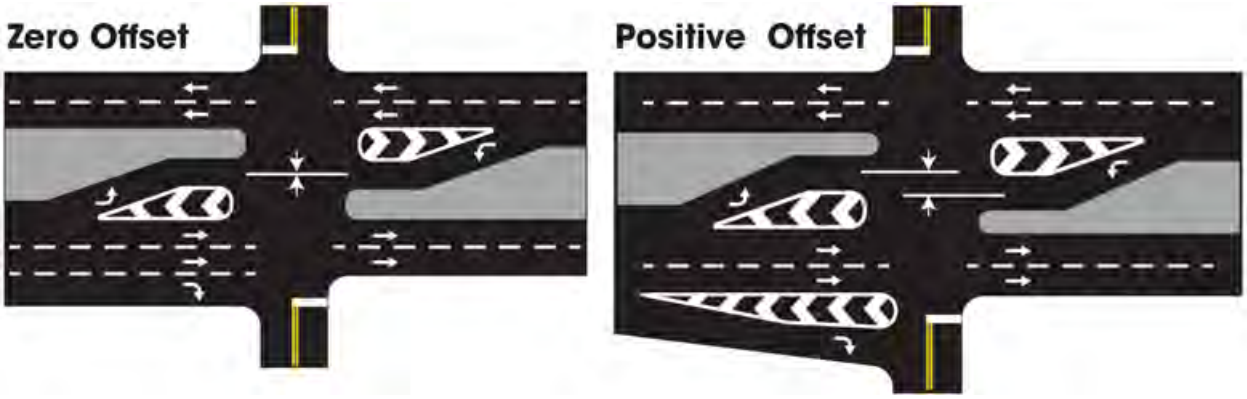
Auxiliary turn lanes—either for left turns or right turns—provide physical separation between turning traffic that is slowing or stopped and adjacent through traffic at approaches to intersections. Turn lanes can be designed to provide for deceleration prior to a turn, as well as for storage of vehicles that are stopped and waiting for the opportunity to complete a turn.

While turn lanes provide measurable safety and operational benefits at many types of intersections, they are particularly helpful at two-way stop-controlled intersections. Crashes occurring at these intersections are often related to turning maneuvers. Since the major route traffic is free flowing and typically travels at higher speeds, crashes that do occur are often severe. The main crash types include collisions of vehicles turning left across opposing through traffic and rear-end collisions of vehicles turning left or right with other vehicles following closely behind. Turn lanes reduce the potential for these types of crashes.

Installing left-turn lanes and/or right-turn lanes should be considered for the major road approaches for improving safety at both three- and four-leg intersections with stop control on the minor road, where significant turning volumes exist, or where there is a history of turn-related crashes. Pedestrian and bicyclist safety and convenience should also be considered when adding turn lanes at an intersection. Specifically, offset left- and right-turn lanes will lengthen crossing distances for pedestrians.

Providing an offset of left- and right-turn lanes to increase visibility can provide added safety benefits, and is preferable in many situations, particularly at locations with higher speeds, or where free-flow or permissive movements are possible.

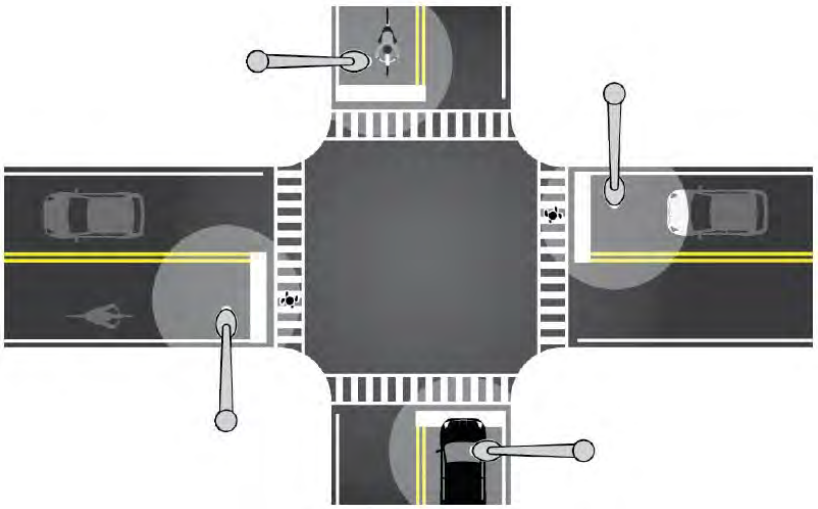
At turn lanes with zero or negative offset, turning vehicles can block sightlines. For left-turn lanes, this usually involves opposing left-turning vehicles occupying the turn lanes at the same time. For right-turn lanes, this typically involves right-turning vehicles from the major road and vehicles entering the intersection from the minor road. In both scenarios, adding positive offset to turn lanes enhances the sight distance to approaching vehicles that conflict with the turning movement. Offset turn lanes should be considered when there is a high frequency of these types of conflicts to reduce the likelihood of a severe crash.



Crosscutting: Lighting

The number of fatal crashes occurring in daylight is about the same as those that occur in darkness. However, the nighttime fatality rate is three times the daytime rate because only 25 percent of vehicle miles traveled (VMT) occur at night. At nighttime, vehicles traveling at higher speeds may not have the ability to stop once a hazard or change in the road ahead becomes visible by the headlights. Therefore, lighting can be applied continuously along segments and at spot locations such as intersections and pedestrian crossings to reduce the chances of a crash.

Adequate lighting (i.e., at or above minimum acceptable standards) is based on research recommending horizontal and vertical illuminance levels to provide safety benefits to all users of the roadway environment. Adequate lighting can also provide benefits in terms of personal security for pedestrians, wheelchair and other mobility device users, bicyclists, and transit users as they travel along and across roadways.



Research indicates that continuous lighting on both rural and urban highways (including freeways) has an established safety benefit for motorized vehicles. Agencies can provide adequate visibility of the roadway and its users through the uniform application of lighting that provides full coverage along the roadway and the strategic placement of lighting where it is needed the most.

Increased visibility at intersections at nighttime is important since various modes of travel cross paths at these locations. Agencies should consider providing lighting to intersections based on factors such as a history of crashes at nighttime, traffic volume, the volume of non-motorized users, the presence of crosswalks and raised medians, and the presence of transit stops and boarding volumes.

Most new lighting installations are made with breakaway features, shielded, or placed far enough from the roadway to reduce the probability and/or severity of fixed-object crashes. Modern lighting technology gives precise control with minimal excessive light affecting the nighttime sky or spilling over to adjacent properties. Agencies can equitably engage with underserved communities to determine where and how new and improved lighting can most benefit the community by considering their priorities, including eliminating crash disparities, connecting to essential neighborhood services, improving active transportation routes, and promoting personal safety.

Crosscutting: Pavement Friction Management

Friction is a critical characteristic of a pavement that affects how vehicles interact with the roadway, including the frequency of crashes. Measuring, monitoring, and maintaining pavement friction—especially at locations where vehicles are frequently turning, slowing, and stopping—can prevent many roadway departures, intersection, and pedestrian-related crashes.

Pavement friction treatments, such as High Friction Surface Treatment (HFST), can be better targeted and result in more efficient and effective installations when using continuous pavement friction data along with crash and roadway data.

Friction data for safety performance is best measured with Continuous Pavement Friction Measurement (CPFM) equipment. Spot friction measurement devices, like locked-wheel skid trailers, cannot safely and accurately collect friction data in curves or intersections, where the pavement polishes more quickly and adequate friction is so much more critical. Without CPFM equipment, agencies will assume the same friction over a mile or more.

CPFM technology measures friction continuously at highway speeds and provides both network and segment level data. Practitioners can analyze the friction, crash, and roadway data to better understand and predict where friction-related crashes will occur to better target locations and more effectively install treatments.

HFST consists of a layer of durable, anti-abrasion, and polish-resistant aggregate over a thermosetting polymer resin binder that locks the aggregate in place to restore or enhance friction and skid resistance. Calcined bauxite is the aggregate shown to yield the best results and should be used with HFST applications.

HFST should be applied in locations with increased friction demand, including:

- Horizontal curves
- Interchange ramps
- Intersection approaches
    - Higher-speed signalized and stop-controlled intersections
    - Steep downward grades
- Locations with a history of rear-end, failure to yield, wet-weather, or red-light running crashes
- Crosswalk approaches

Automated application of HFST.
Source: FHWA

Crosscutting: Road Safety Audit

While most transportation agencies have established traditional safety review procedures, a road safety audit (RSA) or assessment is unique. RSAs are performed by a multidisciplinary team independent of the project. RSAs consider all road users, account for human factors and road user capabilities, are documented in a formal report, and require a formal response from the road owner.

Multi-disciplinary team performs field review during an RSA.
Source: FHWA

RSAs provide the following benefits:

- Reduced number and severity of crashes due to safer designs.
- Reduced costs resulting from early identification and mitigation of safety issues before projects are built
- Increased opportunities to integrate multimodal safety strategies and proven safety countermeasures
- Expanded ability to consider human factors in all facets of design
- Increased communication and collaboration among safety stakeholders
- Objective review by independent multidisciplinary team

RSAs can be performed in any phase of project development, from planning to construction. Agencies may focus RSAs specifically on motorized vehicles, pedestrians, bicyclists, motorcyclists, or a combination of these roadway users. Agencies are encouraged to conduct an RSA at the earliest stage possible, as all roadway design options and alternatives are being explored.

Security Planning

Transportation planning for the security of the transportation system is a primary concern nationwide due to its critical role in ensuring public safety, economic stability, and social well-being. The transportation system is essential for the movement of people, goods, and services across the country. Any disruption or security breach within this system can have severe consequences, including the potential for terrorist attacks, accidents, or the spread of illegal activities. Natural disasters and humanmade accidental or intentional incidents can cause serious disruption to the system and pose danger to the public. Conversely, the transportation system is also what provides a means for exit during an emergency evacuation. By prioritizing transportation planning for security, authorities can implement measures such as enhanced surveillance, infrastructure protection, and emergency response protocols to mitigate risks and safeguard the integrity of the transportation system, thereby ensuring the smooth functioning of society.

U.S. DOT Strategic Plan

The FY 2022-2026 U.S. DOT Strategic Plan establishes the DOT's strategic goals and objectives. This document is a roadmap for transformative investments that will modernize the infrastructure to deliver safer, cleaner, and more equitable transportation systems. Strategic Goals and Objectives tied to security planning include the following:

Strategic Goal	Strategic Objectives
Safety: Make our transportation system safer for all people. Advance a future without transportation-related serious injuries and fatalities.	Critical Infrastructure Cybersecurity
Climate and Sustainability: Tackle the climate crisis by ensuring that transportation plays a central role in the solution. Substantially reduce greenhouse gas emissions and transportation-related pollution and build more resilient and sustainable transportation systems to benefit and protect communities.	Infrastructure Resilience

www.transportation.gov/dot-strategic-plan

National Response Framework and National Incident Management System

The National Response Framework (NRF) is a guide to how the Nation responds to all types of disasters and emergencies. It is built on scalable, flexible, and adaptable concepts identified in the National Incident Management System to align key roles and responsibilities across the Nation. The document describes specific authorities and best practices for managing incidents that range from the serious but purely local to large-scale terrorist attacks or catastrophic natural disasters.

The National Incident Management System (NIMS) is a comprehensive, national approach to incident management. NIMS provides a consistent nationwide framework, approach, and command structure to enable government at all levels, the private sector, and non-governmental organizations to work together to prepare for, prevent, respond to, recover from, and mitigate the effects of incidents. The document uses the Incident Command System (ICS) as a basis for organization structure.

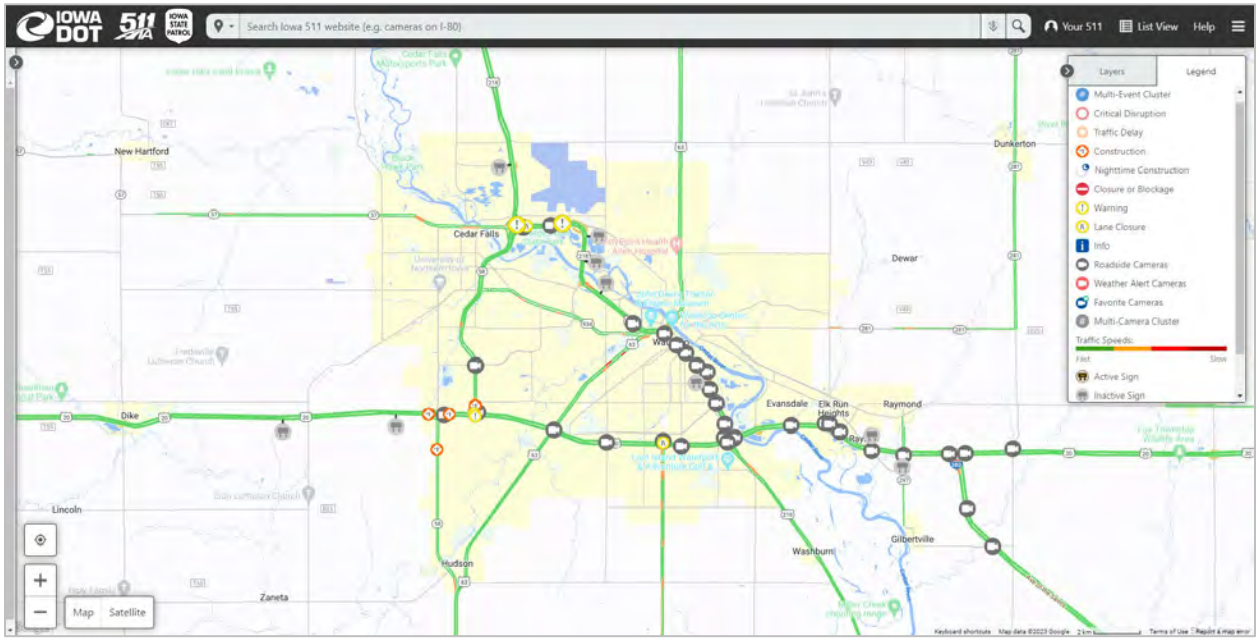
www.fema.gov/emergency-managers/national-preparedness/frameworks/response

Iowa Statewide Traffic Management Center (TMC)

The TMC located in Ankeny is a 24/7 center located used to proactively manage the transportation system by addressing recurring and nonrecurring congestion in real-time. Using advanced technology, the TMC proactively monitors the transportation system, mainly on the primary roadway system, for disruptions in traffic flow. When disruptions occur, the TMC coordinates with internal and external partners to provide safe and quick clearance, detour routing, traffic control, and accurate and timely information to the public. The TMC uses tools such as Iowa 511, social media, and Dynamic Message Signs (DMS) to help protect on-scene responders and to prevent secondary crashes when disruptions occur.

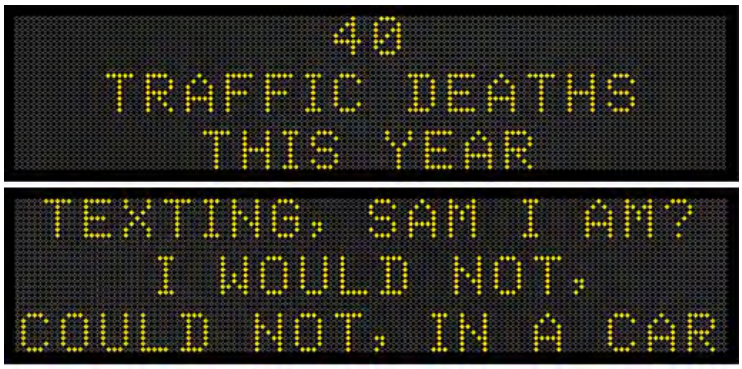
Intelligent Transportation Systems (ITS)

There are several ITS safety and security activities undertaken by the Iowa DOT. This includes the Iowa 511 Traveler Information System which provides citizens with real-time information on roadway travel conditions, incidents, and construction activities. The 511 system can be accessed via phone, web, or mobile application and provides a way to quickly communicate with the traveling public. Many metropolitan areas have cameras on major routes and speed sensors that monitor congestion. The first installation of cameras and speed sensors in the Black Hawk County metropolitan area was part of the Interstate 380 reconstruction project in 2012. Since then, the Iowa DOT has expanded the system to include U.S. 218 and U.S. 20.



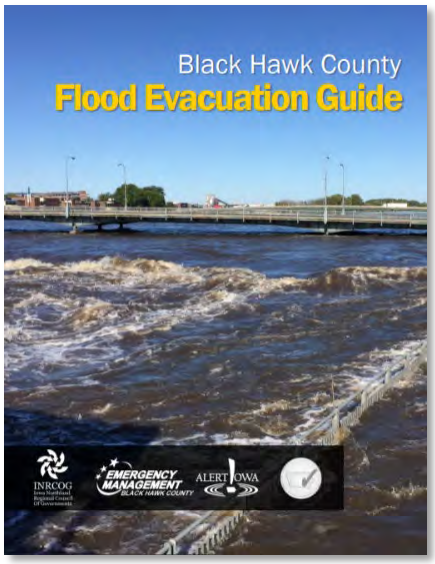
Another ITS activity undertaken by the Iowa DOT is the use of dynamic message signs. Large overhead signs can be found throughout the state on many interstates and primary highways. These signs can be used to communicate information to drivers on weather, incidents, diversions, Amber Alerts, public reminders, and other topics. DMS have been installed in the Waterloo and Cedar Falls metropolitan area on U.S. 218, U.S. 20, and Interstate 380.

Every Monday since 2013, the Iowa DOT has been utilizing dynamic message signs across the state to provide a safety message and the number of people who have been killed on Iowa's roads so far in the year. "Message Monday" is meant to increase awareness, change driver behavior, and reduce accidents and fatalities. To make messages more memorable, movie quotes, song lyrics, and puns are used. The Iowa DOT also has a Transportation Matters Blog where each Message Monday is discussed and additional information and tips for motorist safety are provided.



2018 Black Hawk County Evacuation Plan

The purpose of the Evacuation Plan is to provide the Black Hawk County Emergency Management Agency and responders with an initial framework of information to be used for an orderly and coordinated evacuation in the event of a disaster. The Plan does not address normal day-to-day emergencies or procedures used in coping with such emergencies. The concept of operations reflected in the document focuses on potential large-scale disasters that were identified in the *Black Hawk County Multi-Jurisdictional Hazard Mitigation Plan* and provides a framework for addressing emergency situations. The Black Hawk County Evacuation Plan is designed to be implemented under NIMS. In addition to the Plan, a Flood Evacuation Guide was developed to aid the public in preparing for an evacuation due to flooding which is one of the most likely natural disasters to impact the county.



Multi-Jurisdictional Hazard Mitigation Plan

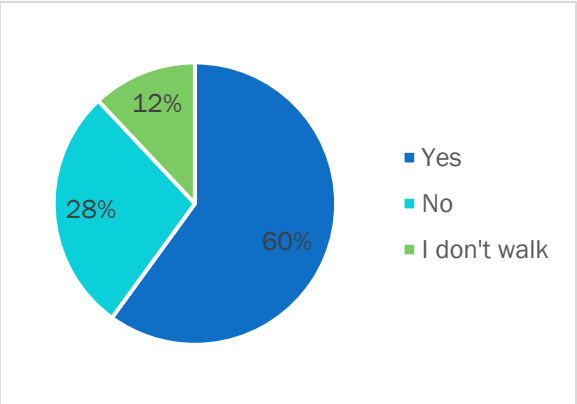
The 2020 Black Hawk County Multi-Jurisdictional Hazard Mitigation Plan outlines the potential for natural and humanmade disasters and the potential impact of those disasters. The plan identifies local community policies, actions, and tools for ongoing, short-, mid-, and long-term implementation to reduce risk and potential future losses of property and lives. The development of the document involved a local planning committee reviewing potential hazards and threats from these hazards. Reviews included a hazards and risk assessment of the transportation network itself due to the potential for vehicular and other types of crashes or events.

2022 Public Input Survey

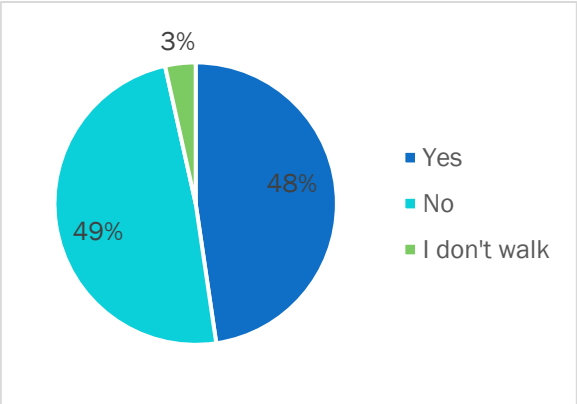
In September 2022, the personnel of the MPO conducted a pair of internet-based surveys. These surveys were aimed at collecting feedback from residents within the jurisdictions of the MPO. The subsequent details provided here highlight survey responses that hold significance within the context of this chapter.

Figure 7.11: Public Input Survey, Rounds One and Two asking respondents if they feel like they can safely walk to their preferred destination (in terms of existing infrastructure, speed limits, protected intersections, lighting, etc.):

Answered: 25



Answered: 86



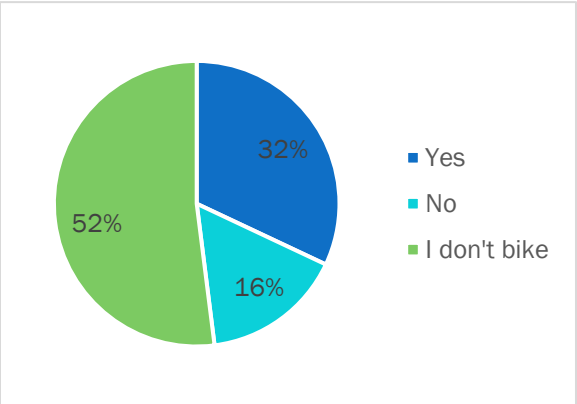
Summary of Worded Responses (Both Rounds):

- Lack of Sidewalks and Connectivity
  - Concerns about missing sidewalks in various areas.
  - Frustration with gaps in the sidewalk system.
  - Desire for sidewalks in older neighborhoods and on busy streets.
  - Calls for considering pedestrian pathways and safety in road projects.
  - Desire for more emphasis on pedestrian-friendly infrastructure and connectivity.
  - Calls for requiring sidewalks in new developments and adding sidewalks to older neighborhoods.
- Road Safety and Pedestrian Crossings
  - Safety concerns while crossing roads, especially busy intersections.
  - Desire for more pedestrian crossings and safer intersections.
  - Issues with drivers not yielding to pedestrians.
- Road Conditions and Infrastructure
  - Issues with broken roads and narrow sidewalks.
  - Calls for wider sidewalks and better maintenance.
- Traffic Behavior
  - Concerns about reckless driving and speeding, particularly near pedestrians.
  - Frustration with drivers not respecting pedestrians' right of way.
- Neighborhood Walkability
  - Desires for walkable neighborhoods and better connections to destinations.
  - Suggestions for prioritizing pedestrians over cars in urban planning.
  - Some respondents mention that their destinations are too far for walking.
- Lighting and Safety
  - Requests for more streetlights and pedestrian-scale lighting.
  - Safety concerns related to lack of lighting during evening and dawn.
  - Need for more streetlights in neighborhoods.

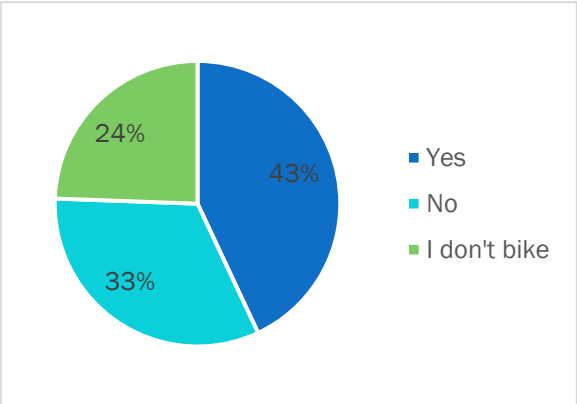
- Public Safety and Behavior
  - Concerns about public safety and undesirable behavior in certain areas.
  - Instances of feeling unsafe while walking, encountering homeless individuals, and facing attacks.
  - Concerns about misuse of walking trails by individuals engaging in illegal activities.
- Specific Locations
  - Feedback on certain intersections (e.g., Hudson Road, San Marnan Dr, Crossroads) and neighborhoods.
  - Mention of specific areas with no sidewalks or safe shoulders for walking.
  - Frustration with the layout of downtown streets and traffic patterns for pedestrians.

Figure 7.12: Public Input Survey, Rounds One and Two asking respondents if they feel like they can safely bike to a destination instead of taking a car or bus (in terms of existing infrastructure, speed limits, protected intersections, lighting, etc.):

Answered: 25



Answered: 86



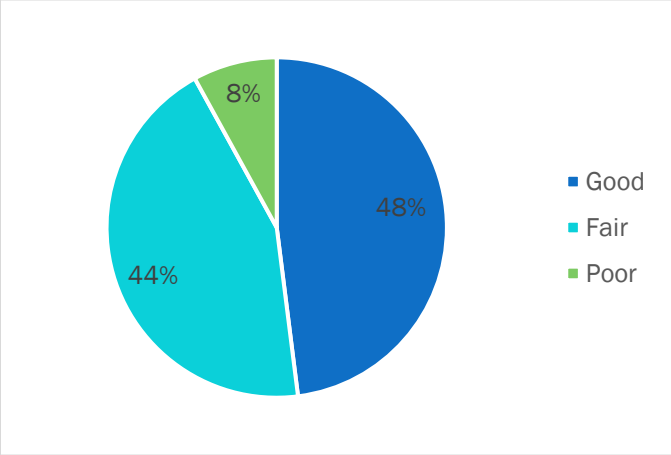
Summary of Worded Responses (Both Rounds):

- Infrastructure and Accessibility
  - Concerns about older neighborhoods lacking sidewalks and bike trails.
  - Desire for safer routes to destinations and workplaces.
  - Need for well-designed on-road bicycle accommodations.
  - Lack of connectivity between neighborhoods and destinations.
  - Difficulty accessing trails from residential areas.
- Safety and Awareness
  - Perceived dangers of biking on roads due to motorists' behavior.
  - Intersections feeling unsafe for cyclists and pedestrians.
  - Lack of awareness and respect from drivers towards cyclists and pedestrians.
- Bike Trails and Connectivity
  - Appreciation for existing bike trails.
  - Desire for more accessible and connected trails.
  - Trails often closed near downtown areas.
  - Challenges in getting to trails from residential neighborhoods.
- Concerns and Barriers
  - Distance and practicality of biking to certain locations.
  - Lack of bike lanes on main roads.
  - Limited accessibility to downtown areas due to various factors.

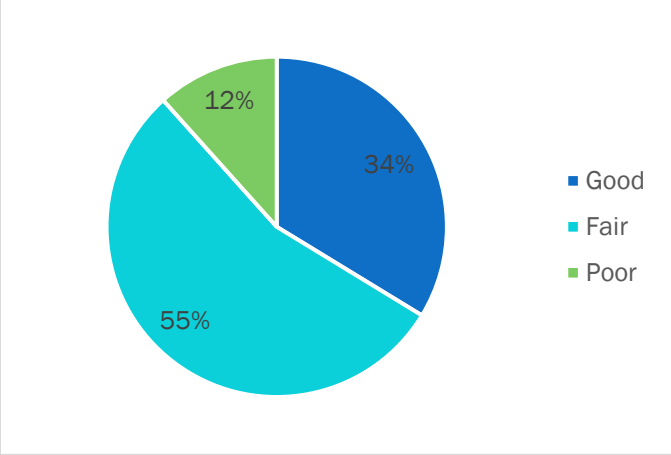
    - Maintenance issues such as glass on trails and bridges being out.
- Positive and Hopeful Outlook
    - Acknowledgment of progress in infrastructure.
    - Optimism about potential attitude change among drivers.
    - Positive experiences on some routes and trails.

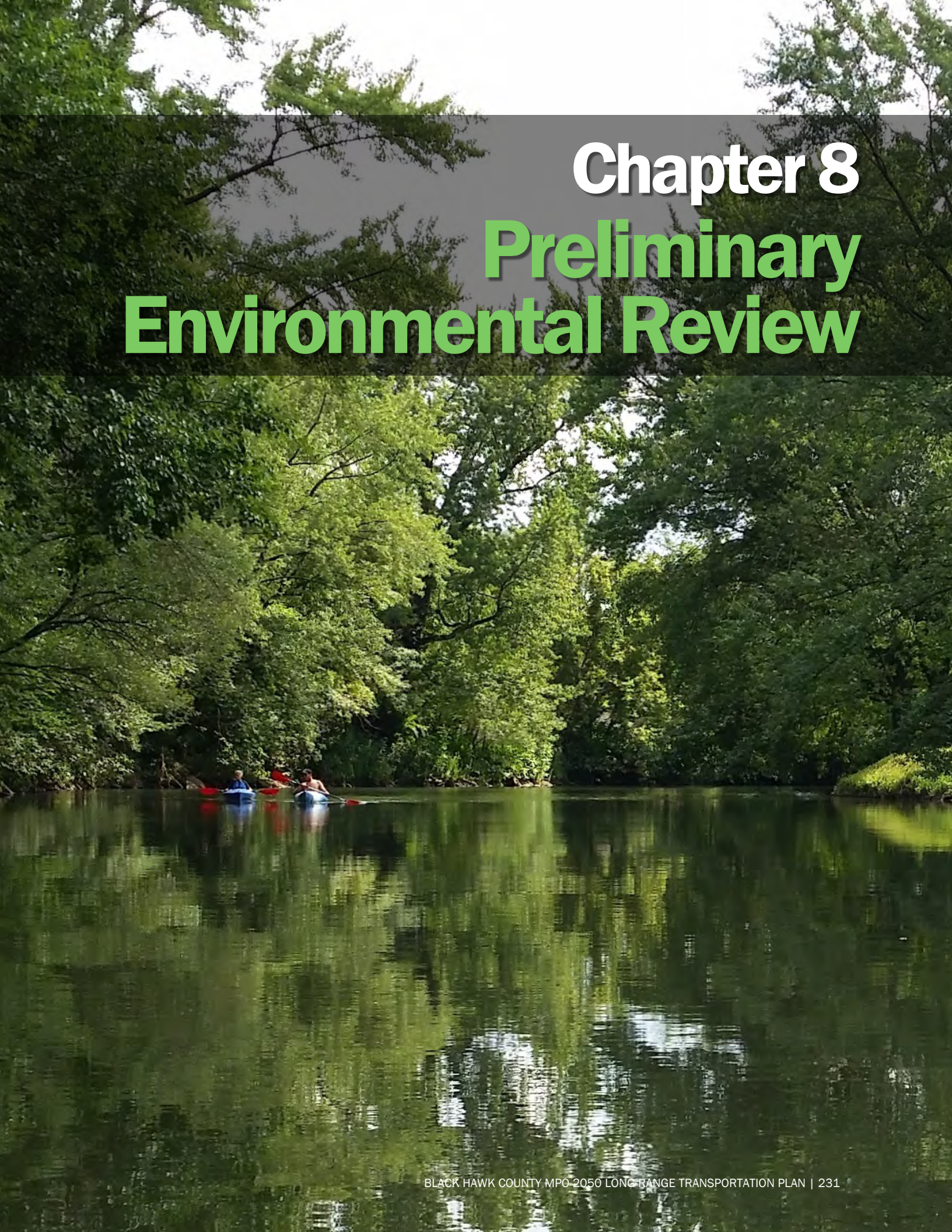
Figure 7.13: Public Input Survey, Rounds One and Two asking respondents how they would rate the overall safety of our streets:

Answered: 25



Answered: 86





Chapter 8
Preliminary Environmental Review

Chapter 8 – Preliminary Environmental Review

A preliminary environmental review holds paramount importance in the development of the Long-Range Transportation Plan. This crucial step ensures that transportation planning efforts are conducted with a keen awareness of the potential environmental impacts and sustainability concerns. By undertaking a high-level comprehensive assessment of the project's environmental implications early in the planning process, decision-makers can identify and address potential challenges proactively. The review also helps the MPO align the transportation goals and objectives (see Chapter 1) with broader environmental objectives, including minimizing air and water pollution, conserving natural habitats, and mitigating climate change impacts. Moreover, it promotes compliance with relevant environmental regulations and fosters transparency and public engagement. An effective preliminary environmental review sets the foundation for a more responsible and resilient LRTP that not only enhances regional mobility but also upholds environmental stewardship for present and future generations.

Federal and State Requirements

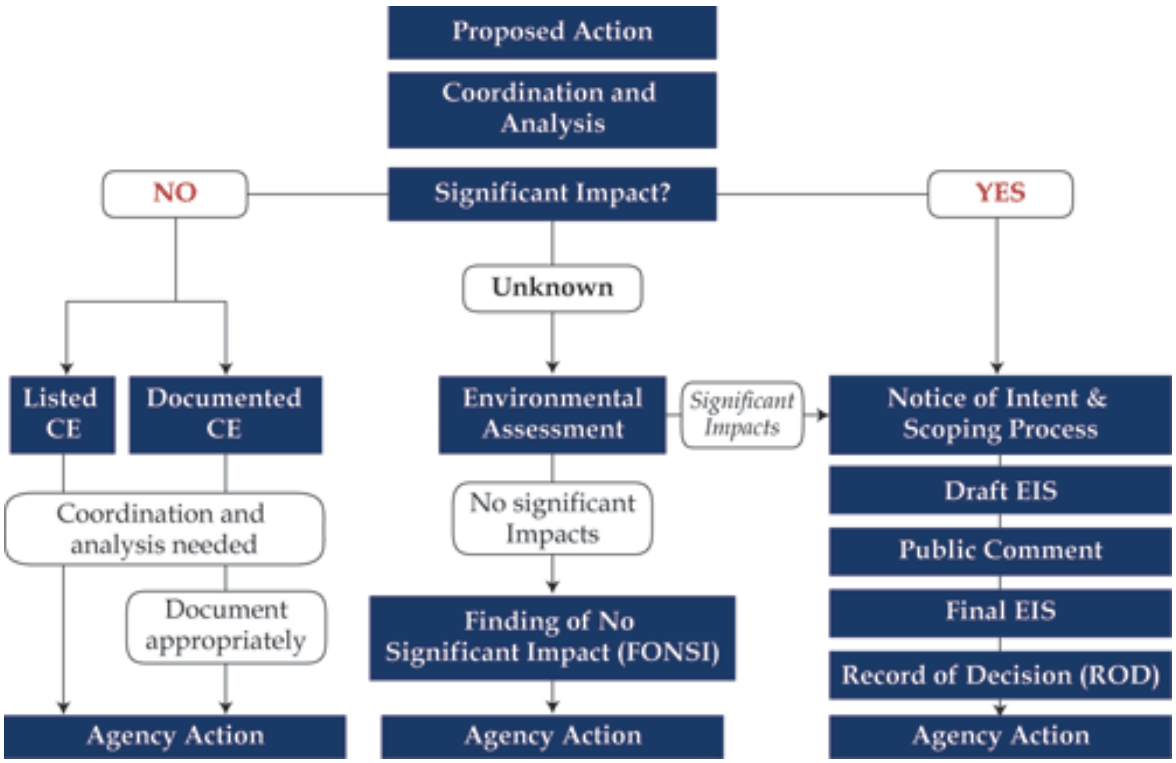
23 CFR 250.324 (f)(10) outlines requirements for MPOs regarding environmental consultation. The federal code states, *"The metropolitan transportation plan shall, at a minimum, include a discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan. The discussion may focus on policies, programs, or strategies, rather than at the project level. The MPO shall develop the discussion in consultation with applicable Federal, State, and Tribal land management, wildlife, and regulatory agencies. The MPO may establish reasonable timeframes for performing this consultation."*

When a federally funded transportation project reaches the engineering stage, compliance with several laws is required including the National Environmental Policy Act (NEPA) of 1969. NEPA is a national policy to protect and enhance the environment. The policy contains a process for developing major federal actions (such as federal funding for a transportation project) that requires environmental review documents as part of the project development. Complying with NEPA is typically the responsibility of the project sponsor. The NEPA process includes the consideration of alternatives for the project and their environmental effects, as well as public involvement and interagency collaboration.

The type and scope of environmental document required by NEPA depends on the nature of a project and the significance of its impacts. The three document types are a Categorical Exclusion (CE), Environmental Assessment (EA), and Environmental Impact Statement (EIS). A Categorical Exclusion is the simplest process and is applicable if the project meets certain criteria that have been previously determined to have no significant environmental impact. An Environmental Assessment is performed if a project's environmental impact is unclear, and the assessment determines whether the project would significantly affect the environment. If the project will not, a Finding of Not Significant Impact (FONSI) is issued. Conversely, if the EA

determines that there may be significant environmental consequences from the project, an Environmental Impact Statement must be prepared. This document is a detailed evaluation of the proposed project and its alternatives, and it includes additional opportunities for other agencies and the public to provide comments.

NEPA document process



Other actions concerning federal aid transportation projects that are mandated via either federal or state legislation include the following:

- The Federal Water Pollution Control Act was enacted in 1972, amended in 1977, and became commonly known as the Clean Water Act. This Act focuses on restoring and maintaining the chemical, physical, and biological integrity of the nation's waters so that they can support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water.
    - Section 401 requires that a Federal license or permit must be obtained when any activity, including the construction or operation of transportation facilities, may result in any discharge into navigable waters.
    - Section 404 permits may be issued after adequate opportunity for public comment for the discharge of dredged or fill material into the navigable waters at specified disposal sites.
    - The National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into any surface waters. Iowa is authorized to approve NPDES permits, regulate federal facilities, approve pretreatment programs, and approve general permits.
- The Endangered Species Act of 1973 addresses the fact that various species of fish, wildlife, and plants have been rendered extinct because of economic growth and development untampered by

adequate concern and conservation. This Act seeks to conserve endangered and threatened species and to resolve water resource issues in concert with the conservation of endangered species.
    - Section 7 addresses interagency cooperation and consultation to ensure that any transportation project authorized, funded, or carried out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat of such species.
    - The U.S. Department of Transportation Act of 1966 included a special provision to preserve the beauty and integrity of publicly owned parks and recreation areas, waterfowl and wildlife refuges, and historic sites considered to have national, state, or local significance.
    - Section 4(f) mandates that FHWA and State DOTs cannot approve the use of land from a significant publicly owned park, recreation area, wildlife or waterfowl refuge, or any significant historic site unless there is no feasible and prudent alternative to the use of land, and the transportation project includes all possible planning to minimize harm to the property.
- The National Historic Preservation Act of 1966 focuses on using measures, including financial and technical assistance, to preserve our prehistoric and historic resources and fulfill the social, economic, and other requirements of present and future generations. Section 106 requires that prior to the approval of any federal funds for a transportation project, a detailed assessment must be undertaken which considers the project's impact on any district, site, building, structure, or object that is included in or eligible for inclusion in the National register.

Presidential Executive Orders play a significant role in shaping transportation projects in the United States. They establish guidelines, policies, and standards that projects must adhere to, promoting efficiency, sustainability, safety, and equity. Some key Executive Orders relevant to transportation projects include:

- Executive Order 12898: Environmental Justice (1994) – This order directs agencies, including those overseeing transportation projects, to identify and address disproportionately high and adverse environmental and health effects on minority and low-income populations. It ensures that environmental justice considerations are integrated into project planning, preventing disproportionate impacts on vulnerable communities.
- Executive Order 14008: Tackling the Climate Crisis at Home and Abroad (2021) – This order focuses on addressing climate change and encourages sustainable transportation practices. It directs federal agencies to incorporate climate considerations into decision-making, including transportation infrastructure planning, to reduce greenhouse gas emissions and enhance resilience to climate-related impacts.
- Executive Order 13990: Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis (2021) – This order revokes certain actions taken by the previous administration and reinstates a framework for environmental protection, including for transportation projects. It emphasizes adherence to established environmental regulations and science-based decision-making to safeguard public health and the environment.
- Executive Order 13964: Advancing Racial Equity and Support for Underserved Communities Through the Federal Government (2020) – This order addresses systemic inequalities and directs agencies to prioritize equity in their policies and projects, ensuring fair distribution of transportation benefits and access to resources for historically underserved communities.

Iowa State Code and Administrative Code have several legislative mandates concerning the environment including the following:

- Sovereign Lands Construction Permit – requires that a person, association, or corporation shall not build or erect any pier, wharf, sluice, piling, wall, fence, obstruction, building, or structure of any kind upon or over any state-owned land or water without first obtaining a written permit.
- Flood Plain Development Permit – requires that a person who desires to construct or maintain a structure, dam, obstruction, deposit, or excavation in any flood plain or floodway must first seek approval. Approval is based on the protection of life and property from floods and to promote the orderly development and wise use of the flood plains.
- The Iowa Department of Natural Resources regulates the construction, operation, and closure of facilities and projects that manage, process, and dispose solid waste. This includes the reuse of soil.
- Open burning requires that burning of landscape waste produced in clearing, grubbing, and construction operations shall be limited to areas located at least one-quarter mile from any building inhabited by other than the landowner or tenant conducting the open burning.
- State permitting and air reporting system required for air quality permits.
- Iowa's endangered and threatened species law was enacted in 1975. The current law, entitled Endangered Plants and Wildlife, is Chapter 481B of the Code of Iowa.
- Iowa law requires transportation agencies to protect woodlands, wetlands, public parks, and prime agricultural lands (Iowa Code 314.23) and to avoid impacts to the natural and historic heritage of the state (Iowa Code 314.24).

Environmental analysis in a long-range transportation plan is not meant to be equal to or substitute for NEPA or other federal and state regulatory processes. Compliance with NEPA and other federal and state regulations will be carried out individually for each federally funded project at the development stage. The preliminary environmental review analysis in this chapter can provide a sense of the resources in the area and the potential of planned transportation projects to impact those resources.

Protecting and enhancing the natural and built environment is an important concern for the MPO. Project sponsors are encouraged to begin coordination with environmental, regulatory, and resource agencies early in the project development process to ensure the best possible project outcomes.

Environmental Strategy

The MPO encourages jurisdictions to follow federal guidance as an environmental strategy. The steps used to define mitigation in 40 CFR 1508.20 should be followed by project sponsors. In order or preference, steps include:

a) Avoiding the impact altogether by not taking a certain action or parts of an action.
b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
c) Rectifying the impact by repairing, rehabilitation, or restoring the affected environment.
d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
e) Compensating for the impact by replacing or providing substitute resources or environments.

Avoidance of damage to the environment should always be the primary goal. When this cannot be achieved, minimizing impacts and compensating for them can help mitigate any negative environmental impacts from transportation projects.

Local Mitigation Examples

The MPO encourages on-site, in-kind mitigation when possible. This involves compensatory mitigation, which replaces wetlands, streams, or natural habitat or functions lost because of a transportation project with the same or similar land use adjacent or contiguous to the site of the impact. On-site mitigation can also involve enhancing public recreation opportunities adjacent to transportation projects. An example is the Cedar Prairie Trail in Cedar Falls which was constructed adjacent to Iowa Highway 58 as part of the environmental mitigation for that project. Another example was the construction of Big Woods Lake, Brinker Lake, and Alice Wyth Lake out of borrow areas used for the construction of U.S. Highway 218.

The location of Big Woods Lake in 1970 and now. The lake was a borrow area for construction of U.S. Highway 218. Iowa DNR Historic Photo Interactive Mapping Site

Mitigation Activities

The project sponsor and regulating agencies will determine the type of mitigation performed for a particular transportation project. Avoidance of damage to the environment should continually be the primary goal. Nonetheless, this is not always possible. There are many types of activities that can be utilized as mitigation, depending on the size and scope of the project and the environmental resource(s) it may take. Table 8.1 outlines suggestions for potential mitigation activities for transportation projects.

Table 8.1: Potential Mitigation Activities for Transportation Projects

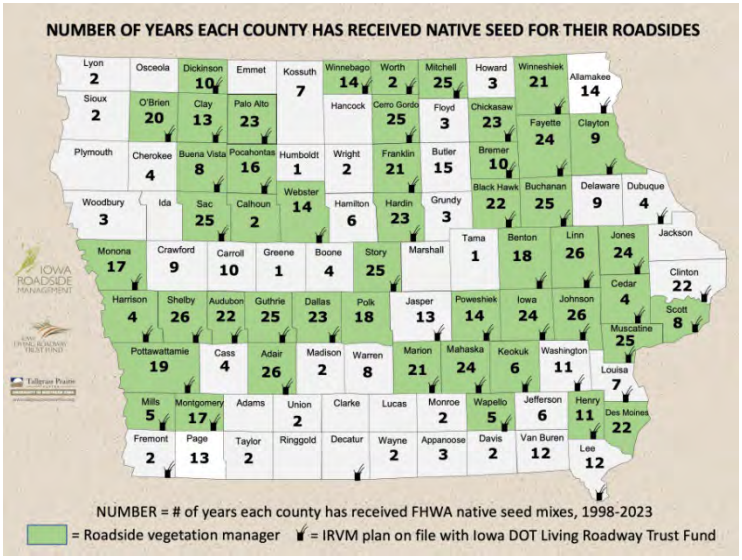
Resource	Potential Mitigation Activities
Air quality	• Transportation control measures • Transportation emission reduction measures • Control loose exposed soils with watering or canvas sheets • Minimize idle heavy construction vehicles
Cultural resources	• Landscaping for historic properties • Preservation in place or excavation for archeological sites • Memorandum of Agreement with State/Federal resource authorities • Education activities • Photo documentation and/or historic archival recording
Endangered and threatened species	• Time of year restrictions • Construction sequencing • Species research and/or fact sheets • Memorandum of Agreement for species management • Bridge sensitive areas instead of laying pavement directly onto the ground • Design measures to minimize potential fragmenting of animal habitats • Enhancement or restoration of degraded habitat • Creation of new habitat • Establish buffer areas around existing habitats • Modifications of land use practices • Restrictions on land use
Farmland	• Protect one farmland acre for every acre converted • Agricultural conservation easements on farmland
Forested and other natural areas	• Replacement property for open space easements of equal fair market value and equivalent usefulness • Minimize removal and/or selective cutting in forested areas except for what is needed to establish roadways and associated right of way • Preserve and/or reestablish vegetation whenever possible within open areas
Neighborhoods, communities, homes, and businesses	• Context sensitive solutions for communities • Minimize noise impact with sound barriers • Prevent the spread of hazardous materials with soil testing and treatment • Develop sidewalks, bike lanes, recreational areas, etc. • Property owners paid fair market value for property acquired • Residential and commercial relocation
Noise	• Depressed roads • Noise barriers • Plant trees
Parks and recreation areas	• Construct bicycle and pedestrian pathways • Replace impaired functions
Viewshed impacts	• Vegetation and landscaping; screening; buffers; earthen berms
Wetlands and water resources	• Preserve, create, replace, or restore wetland areas • Vegetative buffer zones • Bridge sensitive areas instead of laying pavement directly onto the ground • Improve storm water management • Make perpendicular crossings of streams and riparian buffers rather than lateral encroachments • Restore streams and/or stream buffers • Strict erosion and sedimentation control measures

Integrated Roadside Vegetation Management (IRVM)

IRVM is a holistic and environmentally conscious approach to managing vegetation along roadsides and highways. It involves the strategic integration of various practices, such as mowing, herbicide application, re-vegetation, prescribed burning, and the promotion of native plant species. IRVM aims to achieve multiple objectives, including enhancing road safety by maintaining clear visibility and minimizing roadside hazards, such as overgrown vegetation. Moreover, it promotes ecological sustainability by preserving and restoring natural habitats for wildlife, pollinators, and other beneficial organisms. By encouraging the growth of native plants, IRVM helps prevent the spread of invasive species and supports local biodiversity. These strong, weed-resistant plant communities adapt to all roadside conditions and provide a variety of benefits including but not limited to enhancing rainfall infiltration, slowing runoff, trapping sediment, and reducing erosion.

The history of Integrated Roadside Vegetation Management can be traced back to the mid-20th century when concerns about road safety, ecological conservation, and cost-effectiveness emerged. Prior to IRVM, roadside vegetation was often indiscriminately cleared or maintained without considering the ecological impact. In the 1960s and 1970s, with the rise of environmental awareness and the recognition of the value of native plants and wildlife, transportation agencies began experimenting with more sustainable and ecologically sensitive approaches to roadside vegetation. By the 1980s, several states in the United States, including California, Minnesota, and Maryland, pioneered IRVM programs that aimed to balance road safety with environmental preservation. Over the years, IRVM gained wider acceptance, and transportation agencies worldwide started adopting similar principles and practices. Today, IRVM continues to evolve, incorporating new technologies, research findings, and community engagement to create roadways that not only prioritize safety and functionality but also contribute positively to the natural environment and local ecosystems.

Another development of the mid-1980s was the Iowa DOT's use of native prairie grasses and wildflowers for erosion control. A few county conservation boards were also experimenting with this naturally adapted alternative vegetation for roadsides. The Iowa Legislature officially adopted IRVM in 1988, and the cornerstone of the program became the establishment and protection of native vegetation in Iowa roadsides. The Living Roadway Trust Fund was created the following year, supporting state, city, and county roadside projects.



The Iowa Roadside Management program, led by the University of Northern Iowa, is a pioneering initiative aimed at promoting sustainable and environmentally responsible practices for managing roadside vegetation in the state. Founded in collaboration with the Iowa DOT, the program focuses on IRVM principles. Since 1988, this program has received funds from the Iowa DOT to purchase native seed for county road right-of-way. The Iowa Roadside Management statewide coordinator organizes the bulk purchase of locally grown native seed, creating diverse seed mixes appropriate for use in all roadside conditions. Counties with IRVM plans then submit requests to the Iowa Roadside Management statewide coordinator for this seed. Each year, approximately one thousand acres-worth of seed is distributed to counties.

www.tallgrassprairiecenter.org/roadsides

Environmental Analysis

A high-level environmental analysis was conducted to raise environmental awareness early in the project development process and to provide the public and decision makers with an overview of potential environmental impacts. To conduct this analysis, GIS software was used to create a database of environment-related layers. Online interactive maps have also been identified for jurisdictions to utilize as well. This is not an exhaustive list of resources but rather a starting point to review some of the most common environmental concerns. Some types of environmental data are available at the section level, and detailed information is not available without a more in-depth review.

Table 8.2: Environmental Analysis Layers

Layer	Data Source
Major Water Sources	Iowa Department of Natural Resources
Watersheds	Iowa Department of Natural Resources
Impaired Waters	Iowa Department of Natural Resources
Floodplains	Iowa Department of Natural Resources
Wetlands	Iowa Department of Natural Resources
Historic Sites	Iowa Office of the State Archaeologist
Public Lands	Local jurisdictions
Cemeteries	Iowa Department of Natural Resources
Environmentally Sensitive Areas	Iowa Department of Natural Resources
Threatened and Endangered Species	Iowa Department of Natural Resources

The maps on the following pages show the environmental analysis for the road and bridge projects included in the fiscally constrained LRTP. This inventory is not meant to substitute for a project sponsor's responsibilities; rather, it is meant to create awareness of possible environmental impacts early in the planning process. The NEPA process must be completed, and other applicable federal and state regulations must be met for each project before any federal funds for transportation improvements are expended for construction.

The majority of road and bridge projects identified in this Plan are resurfacing or reconstruction projects and will occur within existing right-of-way with minimal environmental impacts. A project could end up requiring additional right-of-way than currently planned, or have a different alignment in final design, in which case other environmental impacts may be observed. Regardless, this environmental analysis provides a starting point for discussion of potential environmental effects of proposed transportation projects.

Major Water Sources and Flood Hazards

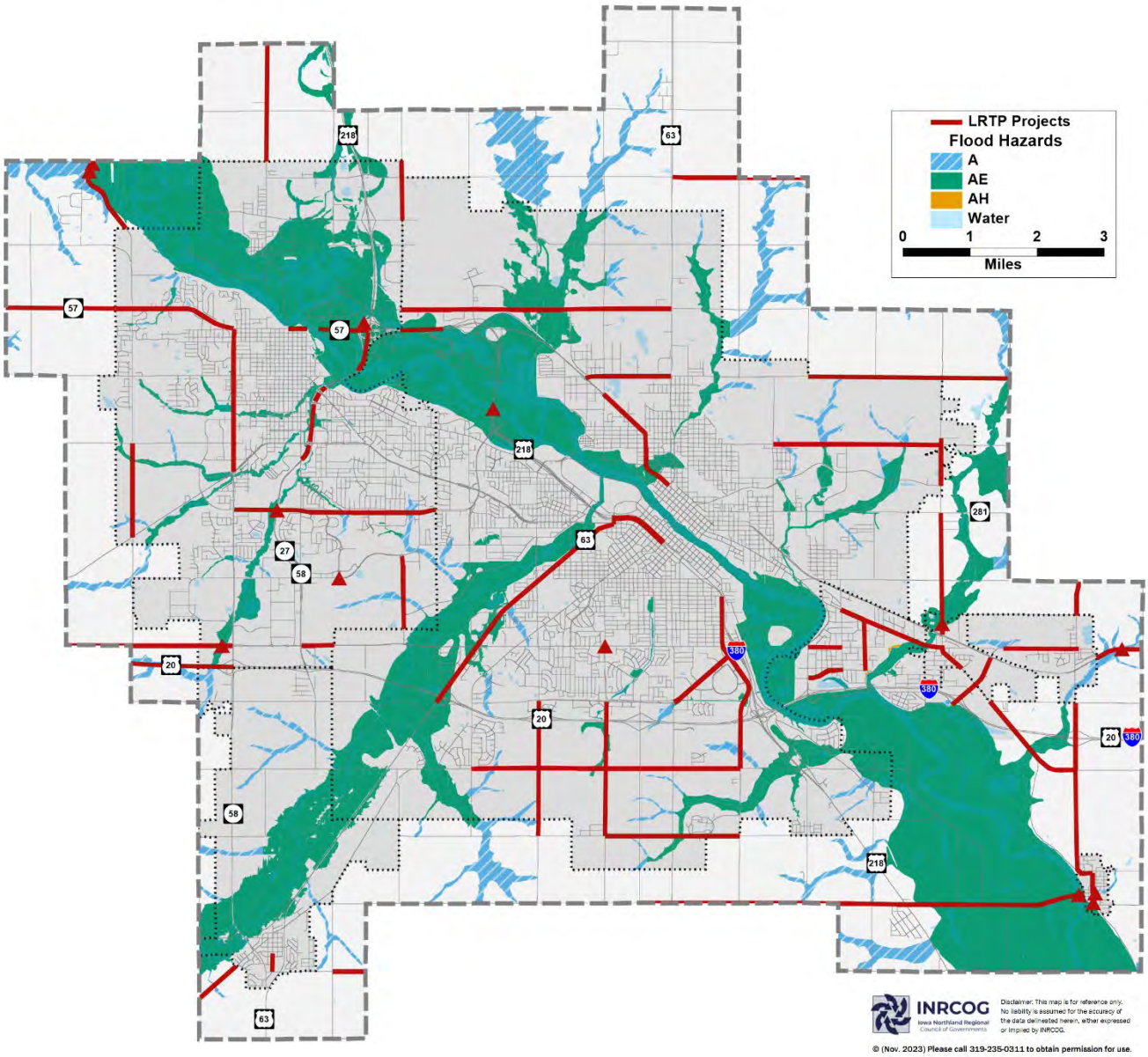
The Black Hawk County metropolitan area contains no waterways that are used for transportation purposes. The two largest rivers/creeks in the metro area are the Cedar River and the Black Hawk Creek. Flood zones are geographic areas that the Federal Emergency Management Agency (FEMA) has defined according to varying levels of flood risk. Transportation projects within a mapped floodplain would require a floodplain development permit in addition to other applicable environmental permits.

The Iowa DNR, along with the Iowa Flood Center and other partners, has created comprehensive floodplain maps for Iowa cities and counties accessible through two web-based interfaces.

https://ifis.iowafloodcenter.org/ifis/newmaps/hazard/
https://ifis.iowafloodcenter.org/ifis/newmaps/risk/map/

Map 8.1: Major Water Sources and Flood Hazards

Source: Federal Emergency Management Agency (FEMA)

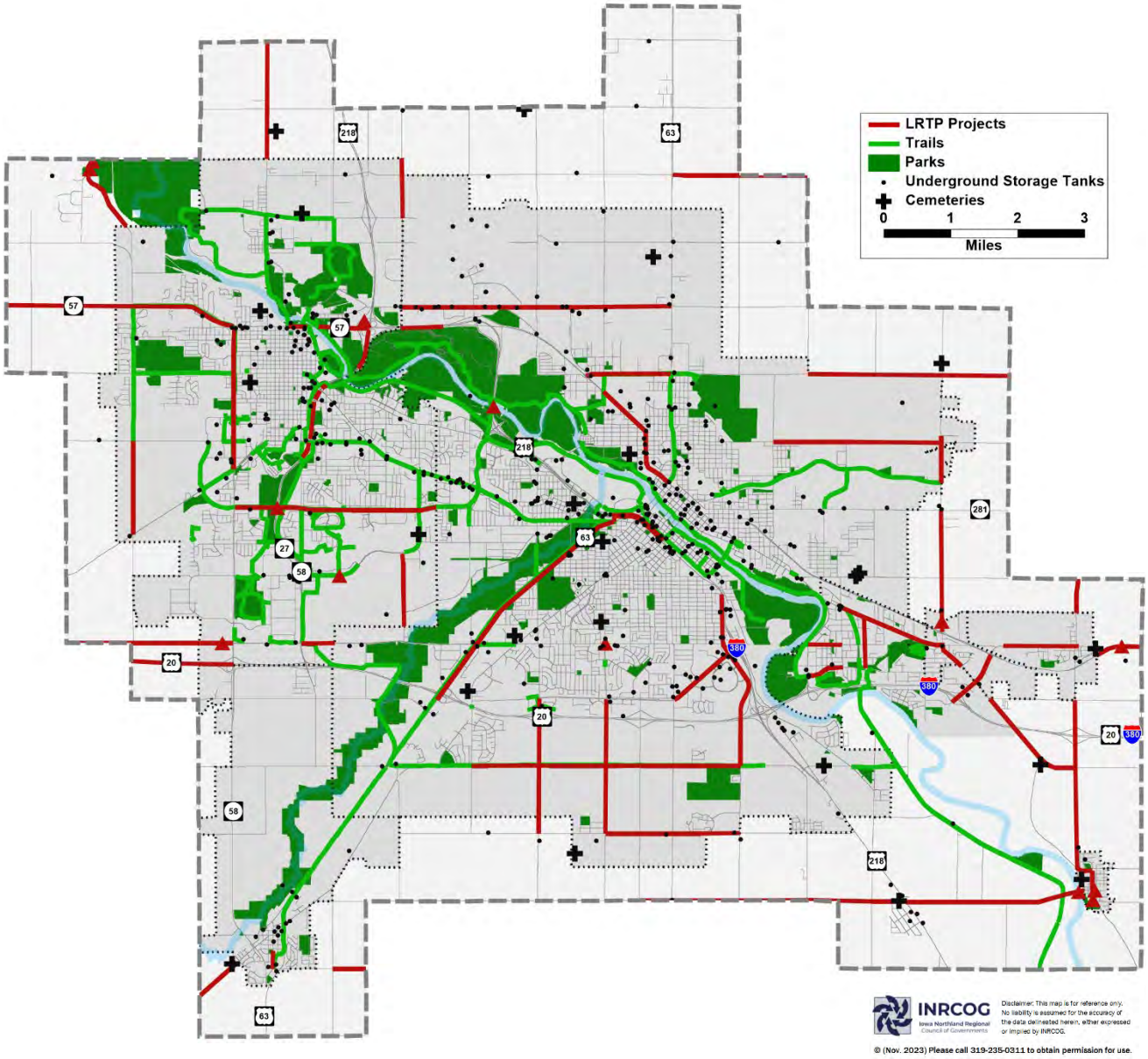


Environmentally Sensitive Areas

In planning for a road or bridge project, it is crucial to consider environmentally sensitive areas such as parks, trails, cemeteries, and underground storage tanks. These areas hold immense ecological, cultural, and historical significance, making their preservation and protection a matter of utmost importance. Additionally, underground storage tanks can post significant environmental risks if not managed carefully. By incorporating a comprehensive understanding of the significance of these areas into the planning process, a long-range transportation plan can be developed that ensures sustainable, harmonious development, safeguarding both nature and culture for generations to come.

Map 8.2: Environmentally Sensitive Areas

Source: US Environmental Protection Agency, UST Finder; State of Iowa Pen Geospatial Data

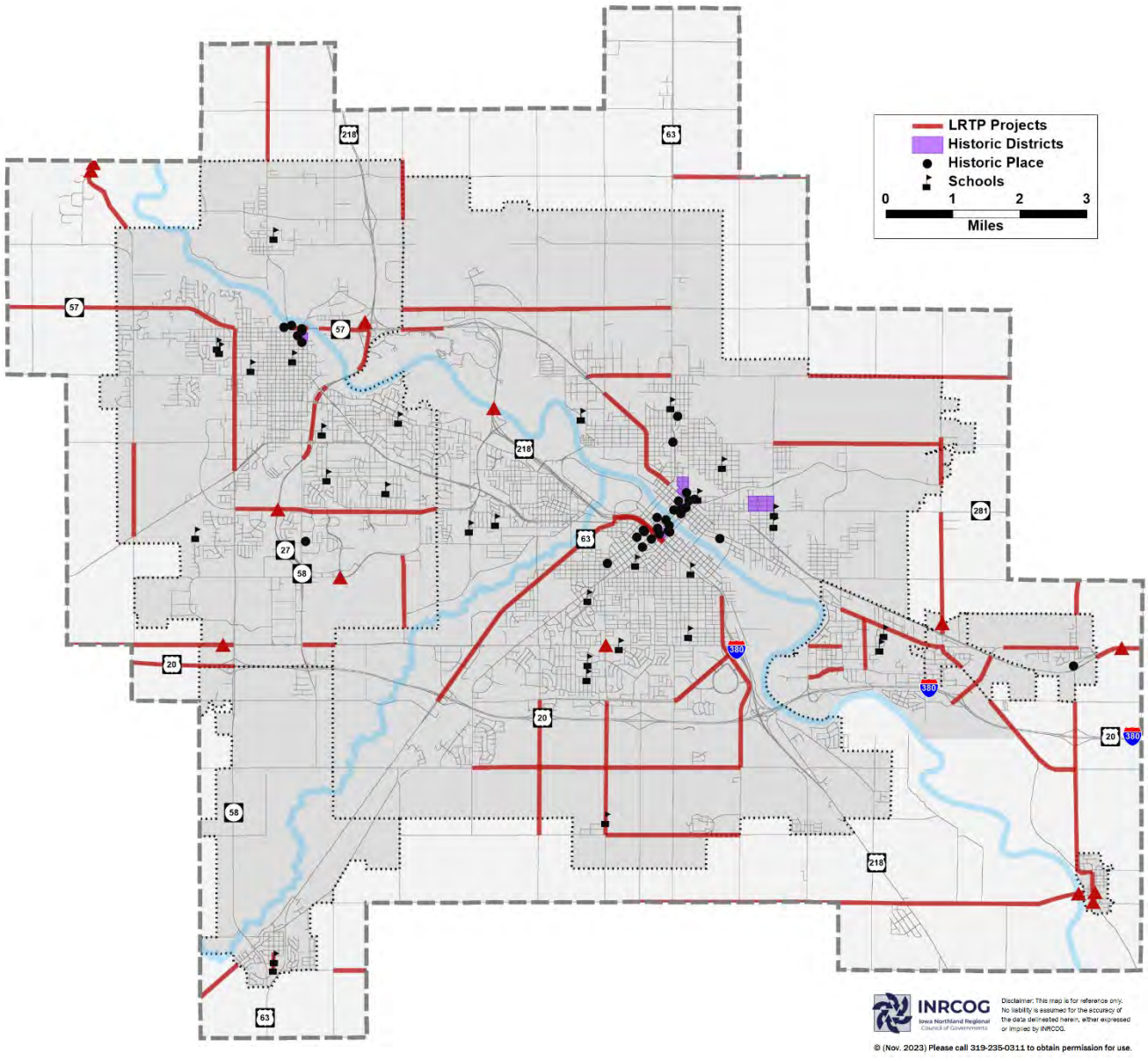


Human Environmental Constraints

Project sponsors should also incorporate a thorough review of human-built environmental constraints, such as schools, historic properties, and historic districts. These critical infrastructures and amenities represent the very fabric of our society, directly impacting the well-being and livelihoods of residents. By integrating these elements into the planning process, we can create a more resilient, inclusive, and sustainable transportation network that truly meets the needs and aspirations of the people it serves.

Map 8.3: Human Environmental Constraints

Source: National Register of Historic Places; Iowa Department of Education

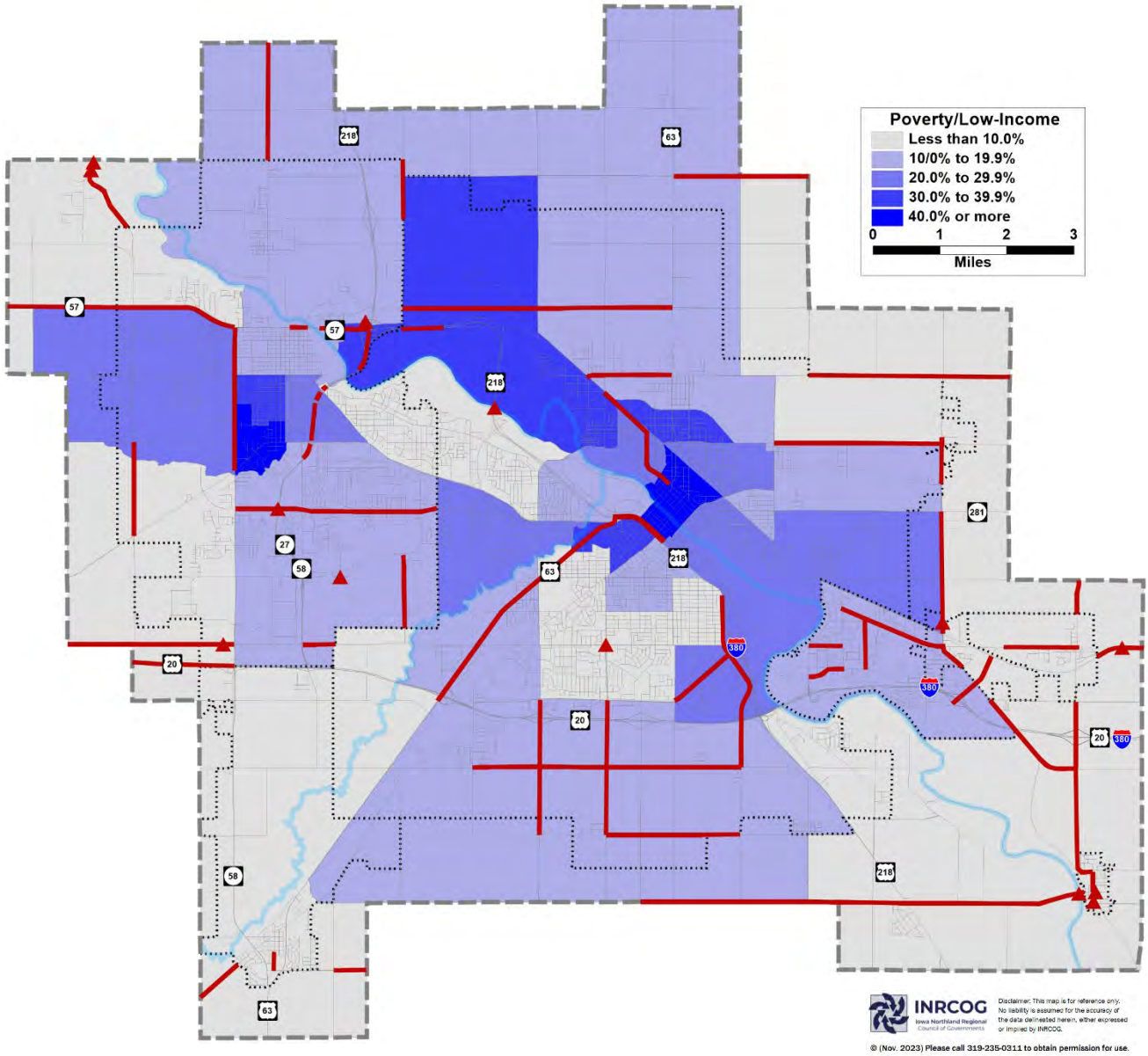


Environmental Justice Assessment

A high-level environmental justice assessment was conducted for the road and projects included in the fiscally constrained LRTP. This assessment aims to identify concentrations of underserved populations to foster equitable and sustainable development. These underserved communities are more vulnerable to the adverse impacts of transportation projects and infrastructure changes. Through comprehensive identification, policymakers, planners, and engineers can gain crucial insights into the specific needs and challenges faced by these populations. By tailoring the long-range transportation plan to include targeted investments in these underserved areas, we can create a more inclusive and accessible transportation network. Moreover, prioritizing the needs of underserved populations aligns with broader sustainability goals, as it helps promote social equity, reduce disparities, and create a more resilient and environmentally friendly transportation system for all members of society. The maps on the following pages show road and bridge projects layered with socioeconomic data provided in Chapter 2 of this document.

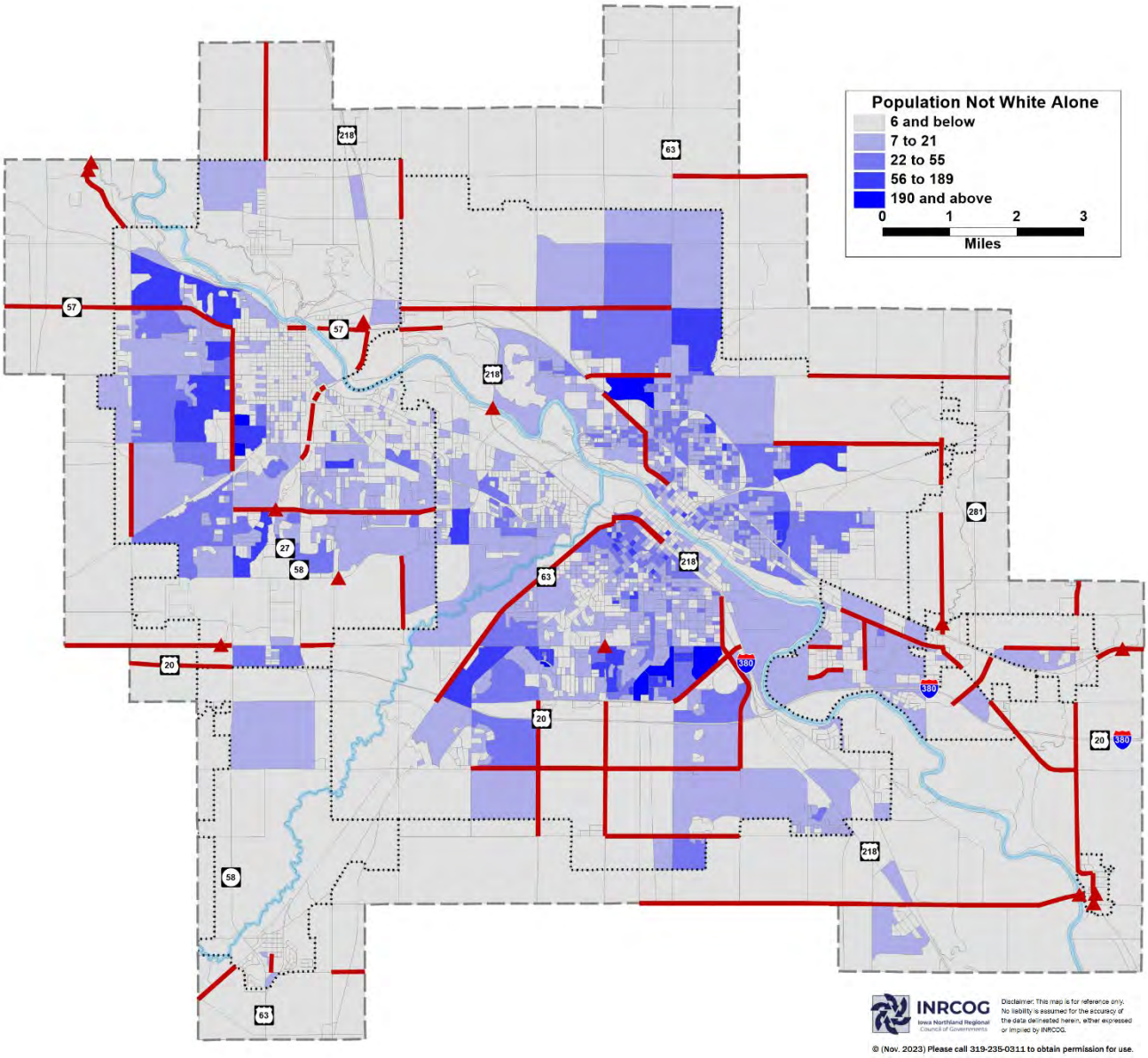
Map 8.4: Poverty/Low-Income by Census Tract

Source: U.S. Census Bureau, American Community Survey 5-year Estimates, 2021



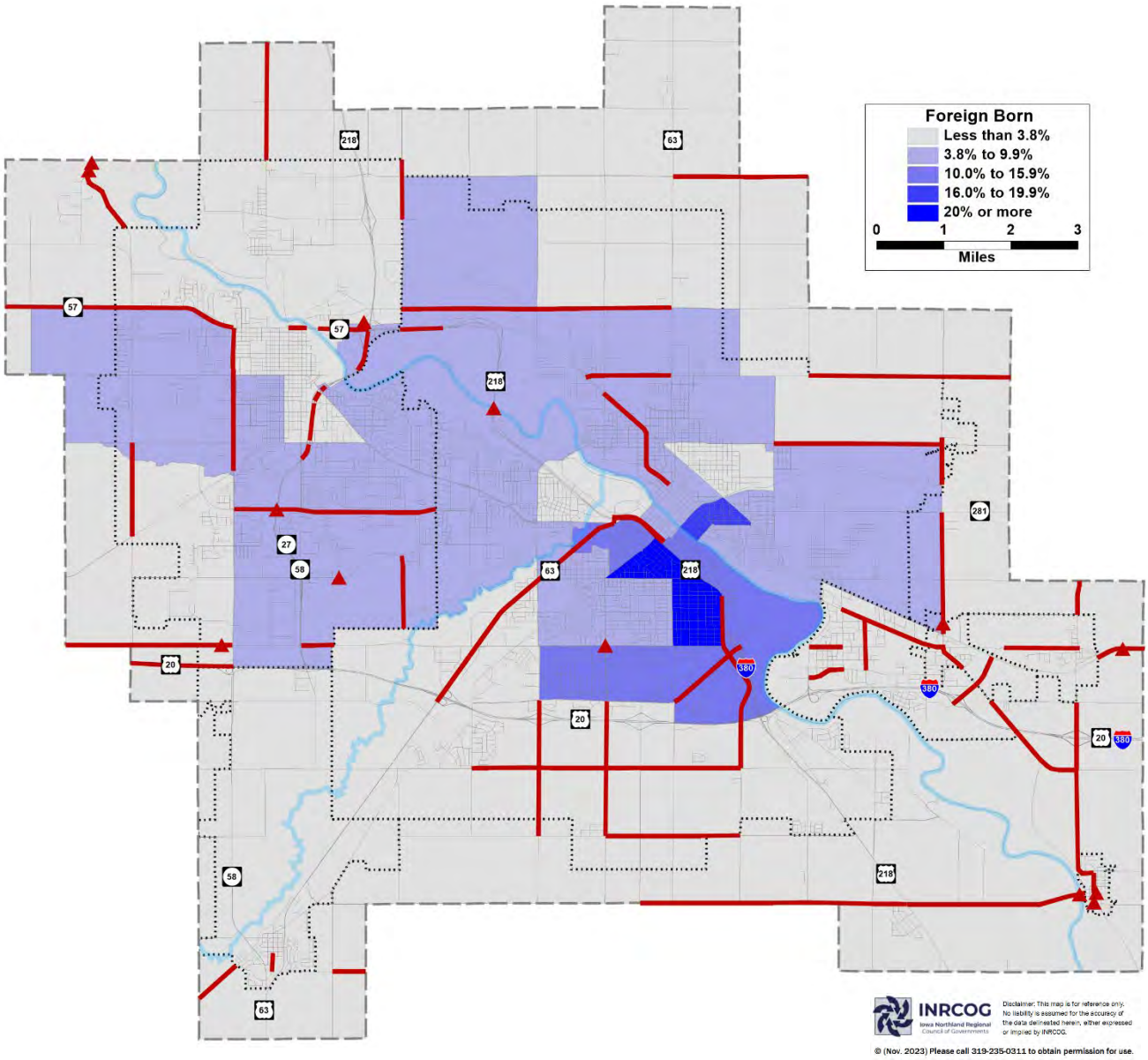
Map 8.5: Racial and Ethnic Minorities by Census Block

Source: U.S. Census Bureau, Decennial Census, 2020



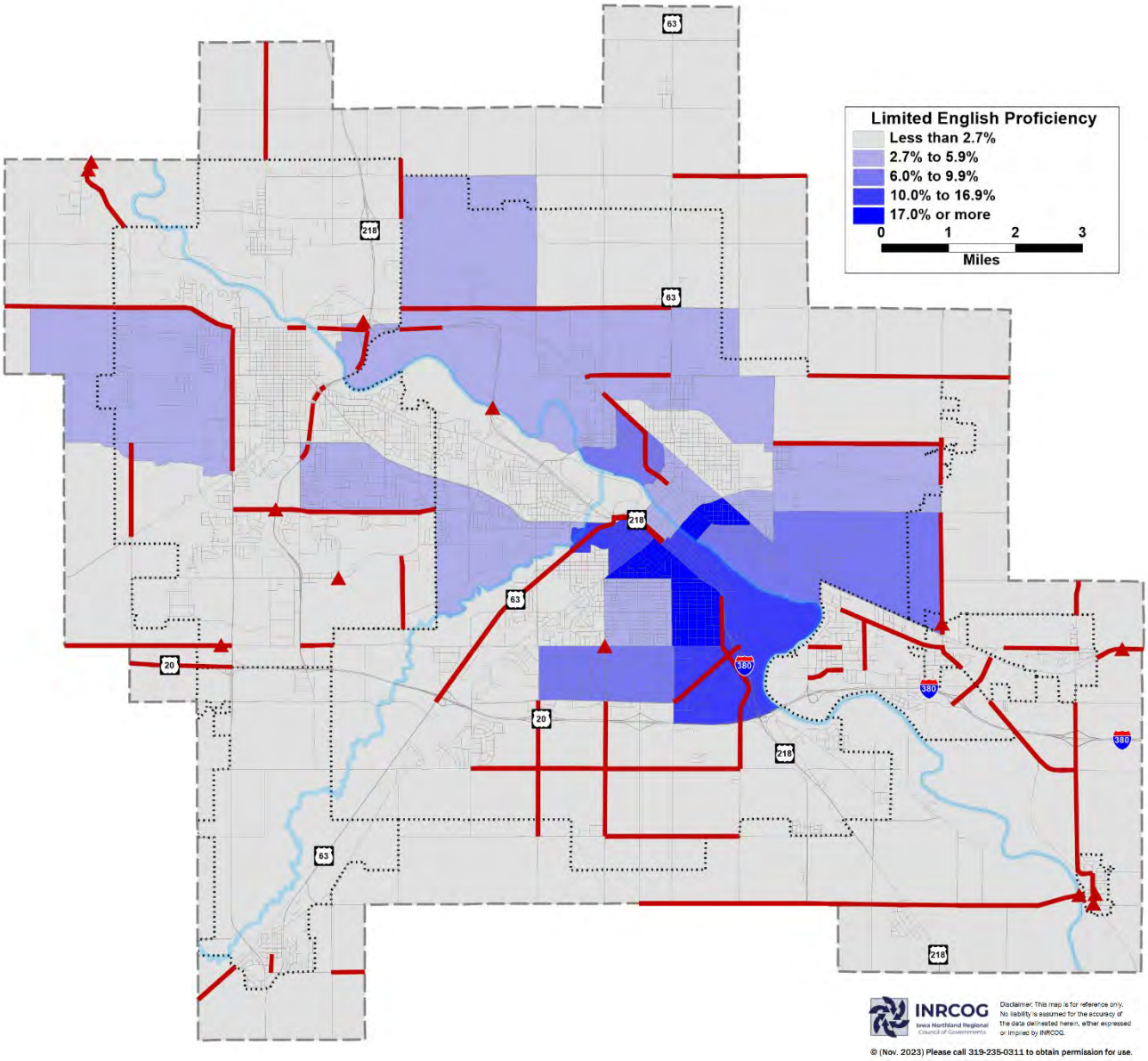
Map 8.6: Foreign Born Population by Census Tract

Source: U.S. Census Bureau, American Community Survey 5-year Estimates, 2021



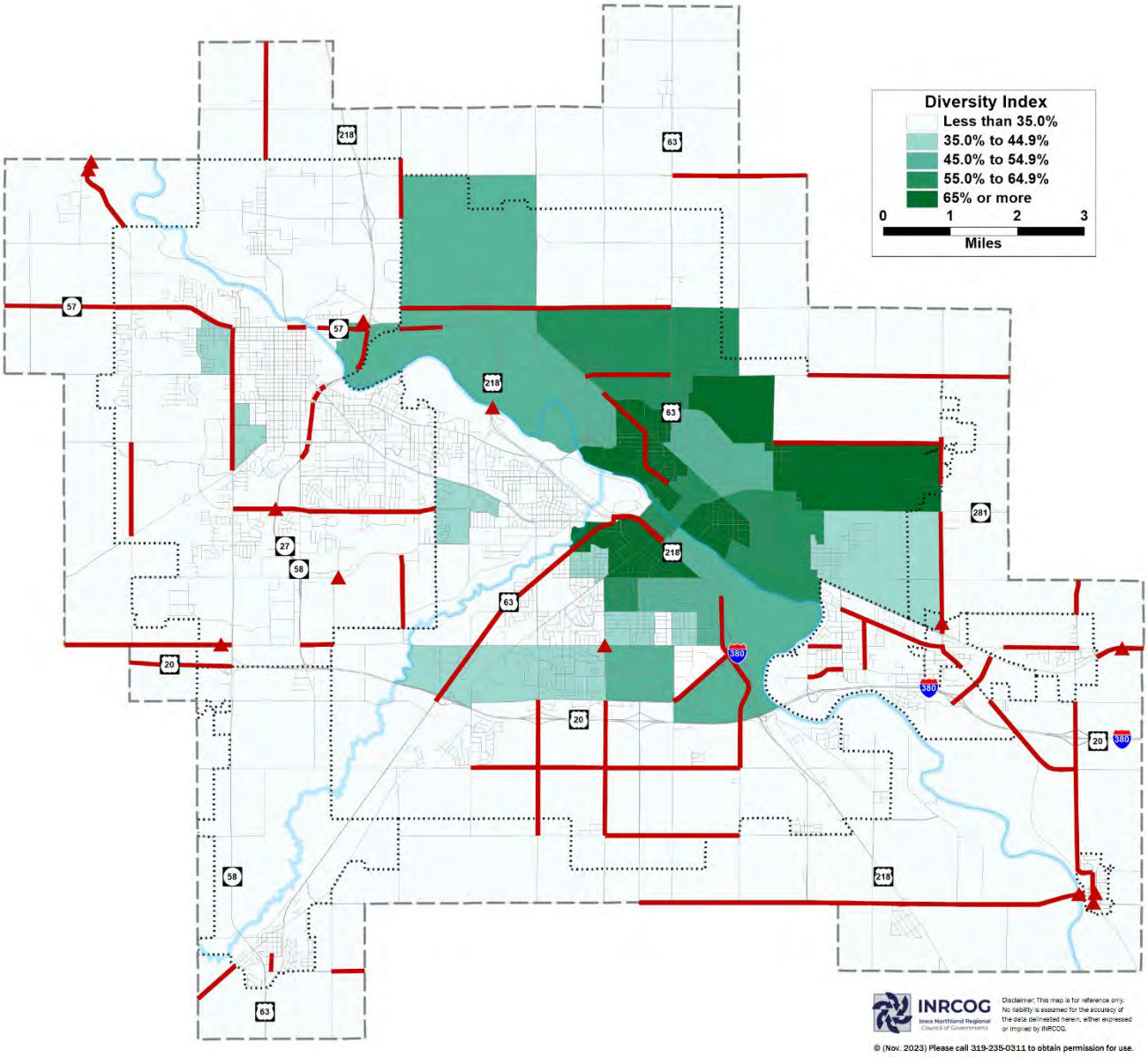
Map 8.7: Limited English Proficiency by Census Tract

Source: U.S. Census Bureau, American Community Survey 5-year Estimates, 2021



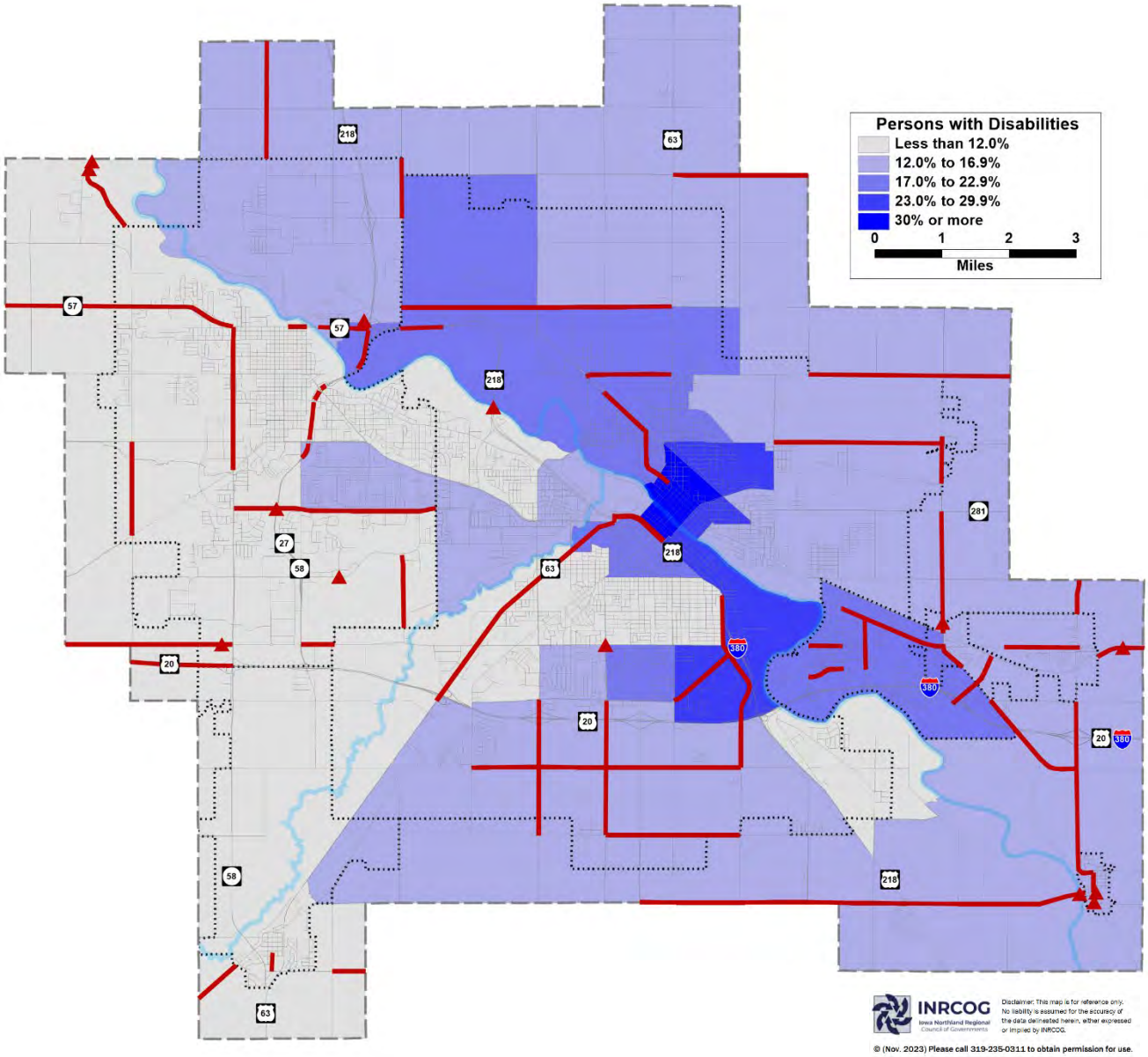
Map 8.8: Ethnic Diversity Index by Census Block Group

Source: U.S. Census Bureau, Decennial Census, 2020



Map 8.9: Persons with Disabilities

Source: U.S. Census Bureau, American Community Survey 5-year Estimates, 2021

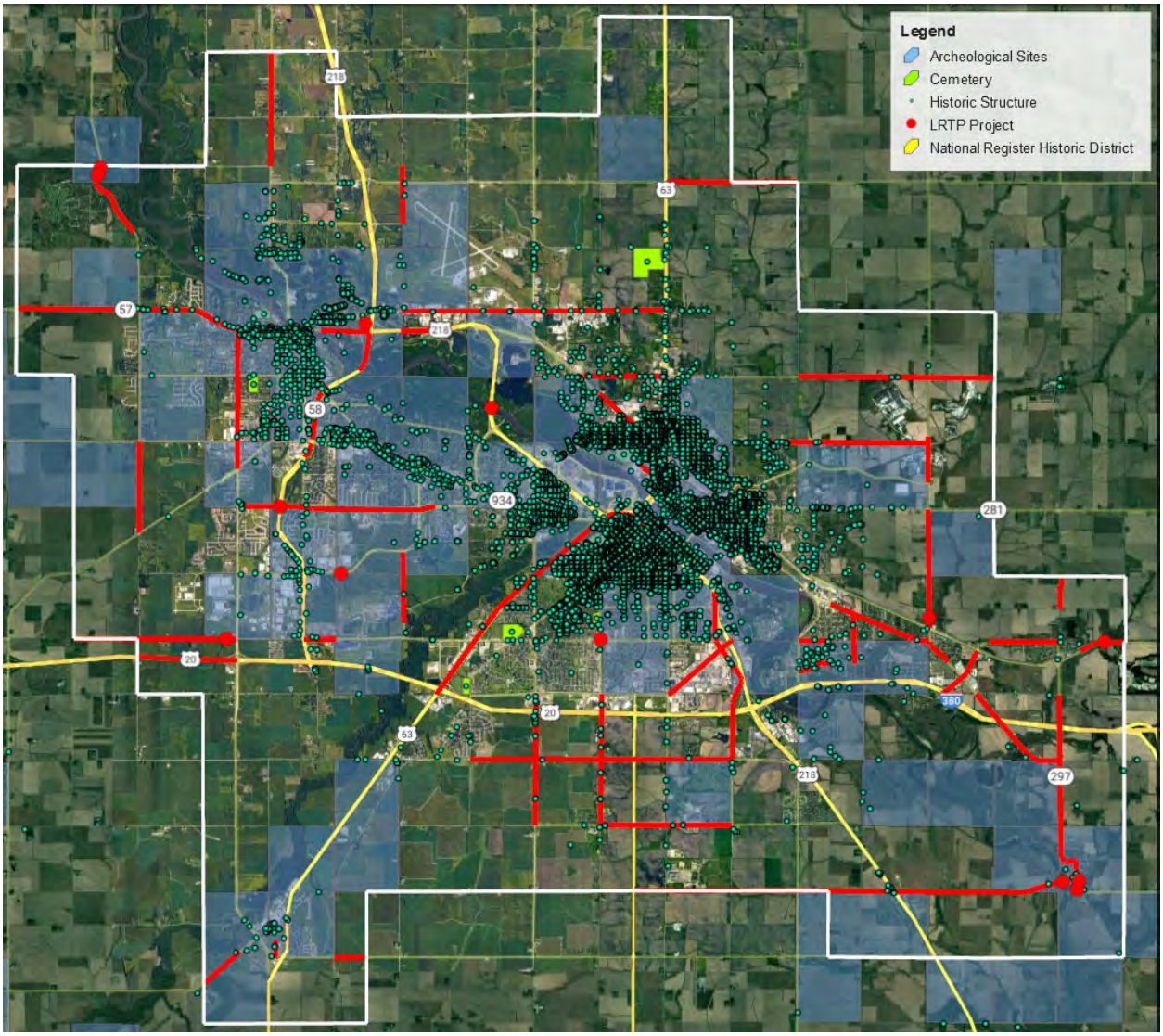


Archaeological and Historic Sites

The Iowa Office of the State Archaeologist manages the Iowa Site File which is the master inventory of archaeological sites in Iowa. I-Site™ Public Access is an online interactive map for historic and archaeological sites. Most archaeological sites are recorded because of cultural resource surveys conducted by professional archaeologists. Some, however, are reported by landowners, avocational archaeologists, and other non-professionals. Each archaeological site recorded contains information in a relational database and their locations are stored in a GIS database.

Map 8.10: Archaeological and Historic Sites

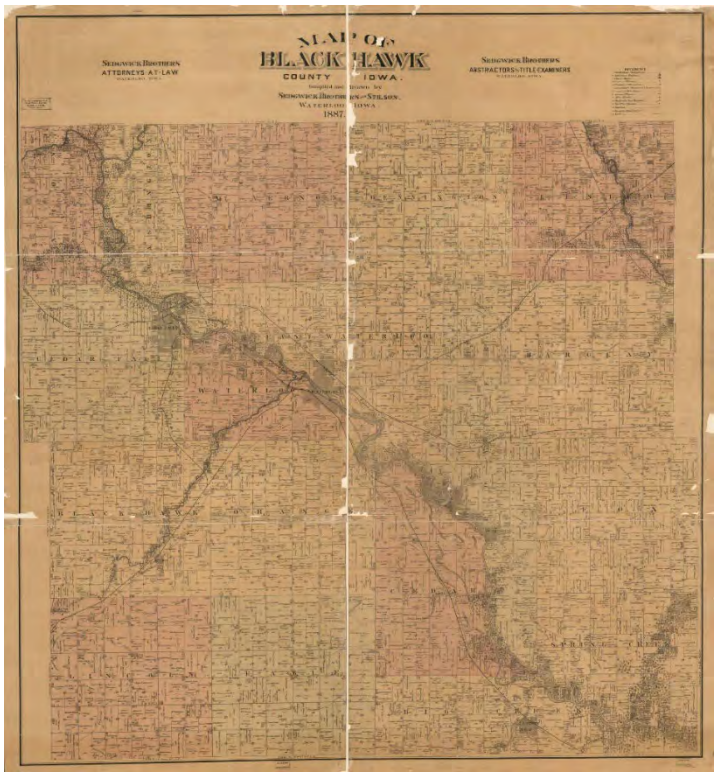
Source: I-Site Public Access, March 2023



https://archaeology.uiowa.edu/services/i-sites

Cultural Resources Evaluation Tool

In the realm of infrastructure development, careful consideration of cultural and historical resources is imperative to ensure a harmonious balance between progress and preservation. Jurisdictions embarking on road and bridge projects stand to greatly benefit from incorporating the Iowa DOT Location and Environment Bureau's Cultural Resources Evaluation tool into their planning processes. By harnessing this tool, which is readily available at no cost, project planners gain access to a comprehensive assessment that considers a spectrum of vital variables including landforms and soils, recorded historical data, archival accounts, and known archaeological sites. By synthesizing this information, the tool generates site-specific recommendations that steer decisions on whether further actions, such as additional fieldwork, are warranted.



Incorporating the Iowa DOT Location and Environment Bureau's CRE tool displays responsible and sustainable development, respecting history while advancing communities. Using the Cultural Resources Evaluation tool smartly links infrastructure growth with cultural preservation, guaranteeing projects are both strong and considerate of the area's historical significance.

Jurisdictions are strongly encouraged to examine the contents of the Iowa DOT Local Systems Bureau Informational Memorandum 4.120 as a crucial step before embarking on project development. This memorandum provides valuable insights into the Cultural Resources Evaluation tool process.

https://www.iowadot.gov/local_systems/publications/im/4120.pdf

Threatened and Endangered Species

Table 8.3 provides a list of state-classified threatened and endangered species found in Black Hawk County. Threatened species are animals and plants that are likely to become endangered soon. Endangered species are animals and plants that are in danger of becoming extinct.

Table 8.3: Threatened and Endangered Species

Source: Iowa DNR, Natural Areas Inventory

Common Name	Scientific Name	Class	State Status	Federal Status
Blue-spotted Salamander	Ambystoma laterale	AMPHIBIANS	E	
Central Newt	Notophthalmus viridescens	AMPHIBIANS	T	
Mudpuppy	Necturus maculosus	AMPHIBIANS	T	
Bald Eagle	Haliaeetus leucocephalus	BIRDS	S	
Barn Owl	Tyto alba	BIRDS	E	
Henslow's Sparrow	Ammodramus henslowii	BIRDS	T	
Red-shouldered Hawk	Buteo lineatus	BIRDS	E	
American Brook Lamprey	Lampetra appendix	FISH	T	
Black Redhorse	Moxostoma duquesnei	FISH	T	
Western Sand Darter	Ammocrypta clara	FISH	T	
Creek Heelsplitter	Lasmigona compressa	FRESHWATER MUSSELS	T	
Creeper	Strophitus undulatus	FRESHWATER MUSSELS	T	
Cylindrical Papershell	Anodontoides ferussacianus	FRESHWATER MUSSELS	T	
Yellow Sandshell	Lampsilis teres	FRESHWATER MUSSELS	E	
Acadian Hairstreak	Satyrium acadicum	INSECTS	S	
Broad-winged Skipper	Poanes viator	INSECTS	S	
Dion Skipper	Euphyes dion	INSECTS	S	
Pipevine Swallowtail	Battus philenor	INSECTS	S	
Purplish Copper	Lycaena helloides	INSECTS	S	
Regal Fritillary	Speyeria idalia	INSECTS	S	
Northern Long-eared Bat	Myotis septentrionalis	MAMMALS		T
Plains Pocket Mouse	Perognathus flavescens	MAMMALS	E	
Spotted Skunk	Spilogale putorius	MAMMALS	E	
Bent Milk-vetch	Astragalus distortus	PLANTS (DICOTS)	S	
Bog Birch	Betula pumila	PLANTS (DICOTS)	T	
Bog Willow	Salix pedicellaris	PLANTS (DICOTS)	T	
Brittle Prickly Pear	Opuntia fragilis	PLANTS (DICOTS)	T	
Cleft Phlox	Phlox bifida	PLANTS (DICOTS)	S	
Earleaf Foxglove	Tomanthera auriculata	PLANTS (DICOTS)	S	
Flat Top White Aster	Aster pubentior	PLANTS (DICOTS)	S	
Glade Mallow	Napaea dioica	PLANTS (DICOTS)	S	
Hill's Thistle	Cirsium hillii	PLANTS (DICOTS)	S	
Kitten Tails	Besseya bullii	PLANTS (DICOTS)	T	
Lance-leaved Violet	Viola lanceolata	PLANTS (DICOTS)	S	
Marsh-speedwell	Veronica scutellata	PLANTS (DICOTS)	S	
Narrowleaf Pinweed	Lechea intermedia	PLANTS (DICOTS)	T	

Common Name	Scientific Name	Class	State Status	Federal Status
Pearly Everlasting	Anaphalis margaritacea	PLANTS (DICOTS)	S	
Pink Milkwort	Polygala incarnata	PLANTS (DICOTS)	T	
Prairie Bush Clover	Lespedeza leptostachya	PLANTS (DICOTS)	T	T
Pretty Dodder	Cuscuta indecora	PLANTS (DICOTS)	S	
Ragwort	Senecio pseudaureus	PLANTS (DICOTS)	S	
Sage Willow	Salix candida	PLANTS (DICOTS)	S	
Sessile-leaf Tick-trefoil	Desmodium sessilifolium	PLANTS (DICOTS)	S	
Silky Prairie Clover	Dalea villosa	PLANTS (DICOTS)	E	
Silver Bladderpod	Lesquerella ludoviciana	PLANTS (DICOTS)	S	
Sweet Indian Plantain	Cacalia suaveolens	PLANTS (DICOTS)	T	
Toothcup	Rotala ramosior	PLANTS (DICOTS)	S	
Valerian	Valeriana edulis	PLANTS (DICOTS)	S	
Violet	Viola macloskeyi	PLANTS (DICOTS)	S	
Water Milfoil	Myriophyllum verticillatum	PLANTS (DICOTS)	S	
Water Shield	Brasenia schreberi	PLANTS (DICOTS)	S	
Wooly Milkweed	Asclepias lanuginosa	PLANTS (DICOTS)	T	
Field Sedge	Carex conoidea	PLANTS (MONOCOTS)	S	
Green's Rush	Juncus greenei	PLANTS (MONOCOTS)	S	
Northern Panic-grass	Dichanthelium boreale	PLANTS (MONOCOTS)	E	
Richardson Sedge	Carex richardsonii	PLANTS (MONOCOTS)	S	
Sedge	Carex cephalantha	PLANTS (MONOCOTS)	S	
Slender Sedge	Carex tenera	PLANTS (MONOCOTS)	S	
Small Green Woodland Orchid	Platanthera clavellata	PLANTS (MONOCOTS)	S	
Small White Lady's Slipper	Cypripedium candidum	PLANTS (MONOCOTS)	S	
Tall Cotton Grass	Eriophorum angustifolium	PLANTS (MONOCOTS)	S	
Vasey's Rush	Juncus vaseyi	PLANTS (MONOCOTS)	S	
Western Prairie Fringed Orchid	Platanthera praeclara	PLANTS (MONOCOTS)	T	T
Leathery Grape Fern	Botrychium multifidum	PLANTS (PTERIODOPHYTES)	T	
Ledge Spikemoss	Selaginella rupestris	PLANTS (PTERIODOPHYTES)	S	
Little Grape Fern	Botrychium simplex	PLANTS (PTERIODOPHYTES)	T	
Northern Adder's-tongue	Ophioglossum pusillum	PLANTS (PTERIODOPHYTES)	S	
Prairie Moonwort	Botrychium campestre	PLANTS (PTERIODOPHYTES)	S	
Blanding's Turtle	Emydoidea blandingii	REPTILES	T	
Bullsnake	Pituophis catenifer sayi	REPTILES	S	
Ornate Box Turtle	Terrapene ornata	REPTILES	T	
Smooth Green Snake	Liochlorophis vernalis	REPTILES	S	
Wood Turtle	Clemmys insculpta	REPTILES	E	

Consultation

Several Federal, State, Tribal, and local government agencies were notified when the draft LRTP document was available for review and comment. Feedback on topics relevant to their field of expertise was requested. Agencies notified include the following:

- Black Hawk County Conservation
- Black Hawk County Emergency Management Agency
- Cedar Valley Trails Partnership
- Grow Cedar Valley
- Hawkeye Community College
- Iowa Department of Agriculture and Land Stewardship
- Iowa Department on Aging
- Iowa Department for the Blind
- Iowa Department of Education
- Iowa Department of Human Rights
- Iowa Department of Health and Human Services
- Iowa Department of Natural Resources
- Iowa Department of Public Safety
- Iowa Department of Transportation, Systems Planning Bureau
- Iowa Department of Transportation, District 2
- Iowa Department of Veterans' Affairs
- Iowa Economic Development Authority
- Iowa Homeland Security and Emergency Management
- Iowa Utilities Board
- Iowa Workforce Development
- The Office of the State Archaeologist
- Sac & Fox Tribe of the Mississippi
- University of Northern Iowa
- U.S. Army Corps of Engineers, Rock Island District
- U.S. Environmental Protection Agency, Region 7
- U.S. Department of Agriculture – Natural Resources Conservation Service
- U.S. Department of the Interior Bureau Indian Affairs, Midwest Region
- U.S. Fish and Wildlife Service, Illinois-Iowa Ecological Services Field Office

INRCOG
Iowa Northland Regional Council of Governments

September 5, 2023

NAME
ORGANIZATION
ADDRESS
CITY, STATE ZIP

Subject: Invitation to Comment on the Draft 2050 Long-Range Transportation Plan

To Whom It May Concern:

We are pleased to share with you the draft 2050 Long-Range Transportation Plan (LRTP) developed by the Black Hawk County Metropolitan Planning Organization (MPO). As a valued stakeholder, we are reaching out to invite your input and feedback on this important planning document. We encourage you to review the draft plan, which is available on our website www.bhcmpo.org/lrtp.

The 2050 LRTP outlines a comprehensive and forward-looking strategy to guide transportation investments and policies within the Black Hawk County metropolitan area over the next five years. The plan reflects our commitment to creating a more efficient, sustainable, and resilient transportation system that meets the needs of our growing community while addressing emerging challenges over the next three decades.

Comments will be accepted until the MPO holds a public hearing and considers adoption of a final version of the Plan on Thursday, November 9 at 10:00 a.m. at INRCOG. Comments can be submitted to kdurant@inrcog.org.

Thank you in advance for your engagement in this critical planning process. We look forward to your thoughtful input and collaboration as we work towards a more connected and sustainable future for Black Hawk County.

Sincerely,

Kyle Durant
Transportation Planner II

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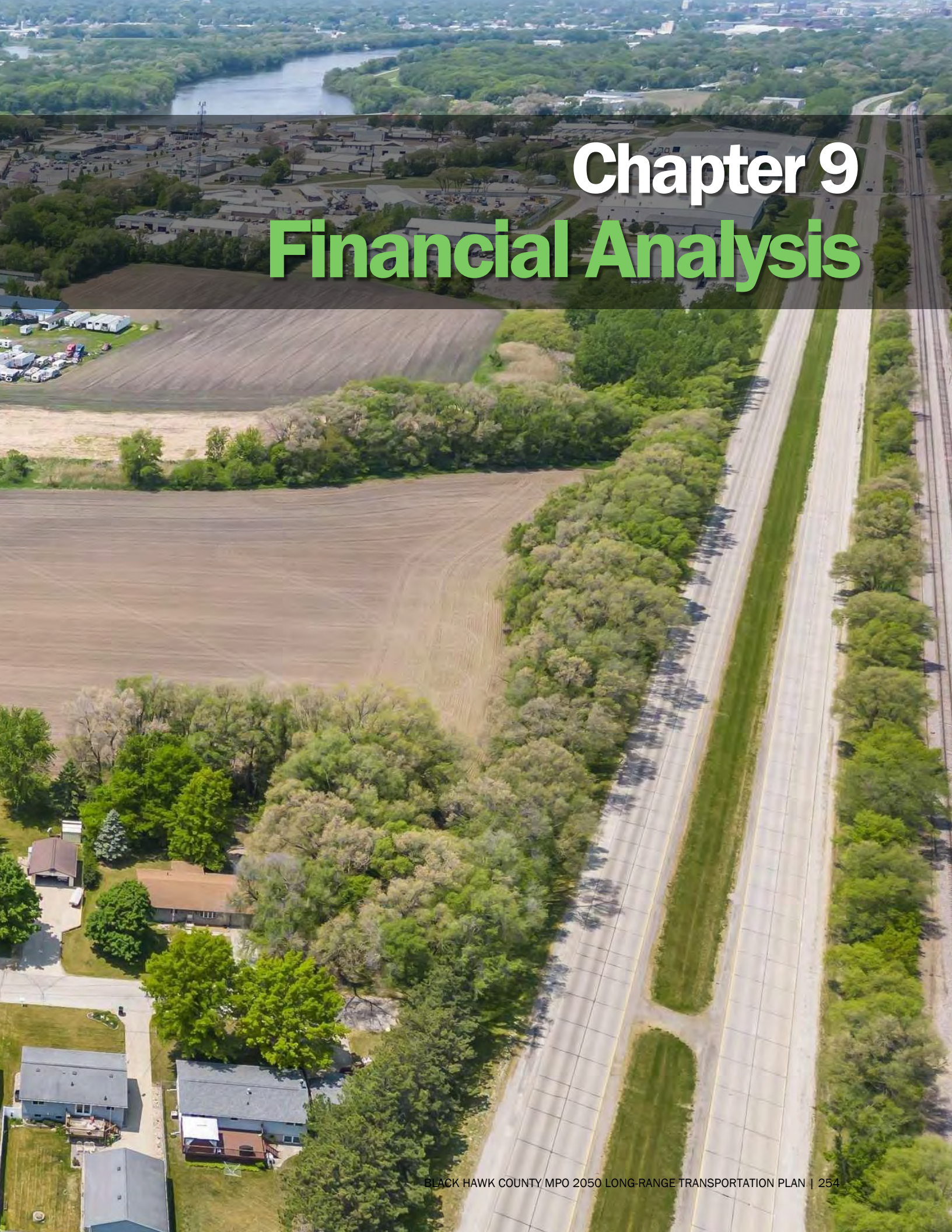


Chapter 9
Financial Analysis

Chapter 9 – Financial Analysis

Federal transportation planning legislation requires long-range transportation plans for MPOs to be fiscally constrained. MPOs must consider the probable resources available to their jurisdictions over the Plan's horizon before including projects. A financial analysis examines reasonably available transportation resources and compares them to the cost of projects selected through the MPO planning process. "Reasonably available" transportation resources include funds authorized at the local, state, and federal levels which are likely to be accessible over the duration of the plan. A variety of funding sources are utilized for transportation improvements, as described in this chapter.

Transportation Revenue Sources

Local jurisdictions receive transportation revenue from multiple sources including the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), Iowa Department of Transportation (DOT), and local funds. The MPO programs three federal funding sources: Surface Transportation Block Grant (STBG), Iowa's Transportation Alternatives Program (TAP), and Carbon Reduction Program (CRP). Other transportation-related funding sources discussed in this chapter are primarily programmed by the Iowa Transportation Commission or individual jurisdictions. Table 9.1 provides an overview of funding sources available to MPO jurisdictions.

The Iowa DOT has a Grants and Programs Funding Guide webpage to help local governments and other entities identify potential state and federal funding sources for a variety of transportation project types.

www.iowadot.gov/grants-programs

Federal Funding

The Infrastructure Investment and Jobs Act (IIJA), also known as the Bipartisan Infrastructure Law (BIL), encompasses several federal transportation programs aimed at improving and modernizing the transportation infrastructure across the United States. This legislation includes provisions for various sectors, including roads, bridges, public transit, rail, airports, and ports. IIJA allocates significant funding for a multitude of programs including several new federal transportation programs designed to address critical needs, promote sustainable infrastructure development, and revitalize and modernize the nation's transportation systems while promoting economic growth, environmental sustainability, and improved connectivity for communities across the country.

www.fhwa.dot.gov/bipartisan-infrastructure-law/grant_programs.cfm

Federal programs that could be used to fund various transportation projects throughout the metropolitan area include but are not limited to the following:

- **Surface Transportation Block Grant (STBG) Program** – This program is designed to address specific issues identified by Congress and provides flexible funding for a variety of projects that can be found in 23 U.S.C. 133. The Infrastructure Investment and Jobs Act (IIJA) allows many types of eligible projects including preserving the condition and performance of roads on Federal-aid routes and bridges on any public road. STBG funds may also be used on transit capital improvements and Transportation Alternatives Program eligible activities.
- **Transportation Alternatives Program (TAP)** – This program provides funding to expand travel choices and improve the transportation experience. TAP projects improve the cultural, historic, aesthetic, and environmental aspects of transportation infrastructure. Projects can include the creation of bicycle and pedestrian facilities, and the restoration of historic transportation facilities, among others.
- **Carbon Reduction Program (CRP)** – IIJA introduced this new funding opportunity to help states develop carbon reduction strategies and address the climate crisis facing our nation. CRP funds a wide range of projects designed to reduce carbon dioxide emissions from on-road highway sources. Eligible projects include on- and off-road trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation, and projects that support the deployment of alternative fuel vehicles.

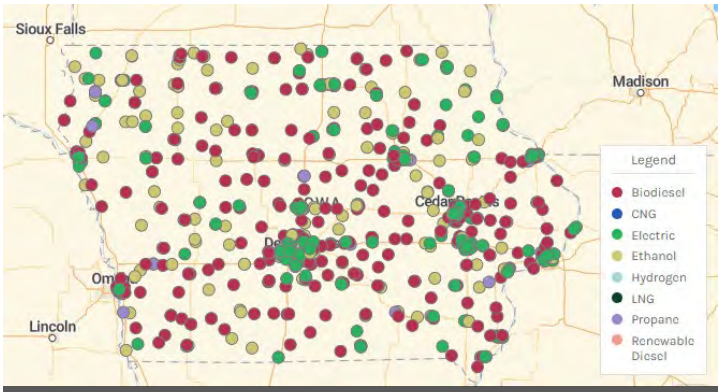
- **Congestion Mitigation and Air Quality Improvement Program (CMAQ)** – CMAQ provides flexible funding for transportation projects and programs tasked with helping to meet the requirements of the Clean Air Act. These projects can include those that reduce congestion and improve air quality.

Source: City of St. Albert, Canada

- **Demonstration Funding** – Demonstration funding is a combination of different programs and sources. The FHWA administers discretionary programs through various offices representing special funding categories. An appropriation bill provides money to a discretionary program through special congressionally directed appropriations or through legislative acts.
- **Highway Safety Improvement Program (HSIP)** – This is a core federal-aid program that funds projects with the goal of achieving a significant reduction in traffic fatalities and serious injuries on public roads. A portion of this funding is targeted for use on local high-risk rural roads and railway-highway crossings.
- **National Highway Performance Program (NHPP)** – The NHPP is focused on the condition, performance, and resiliency of the National Highway System (NHS), a network of 222,000 system miles of roadways important to the Nation's economy, defense, and mobility which carries 55 percent of vehicle miles traveled nationally. In addition to the Interstate System, the NHS includes the Strategic Highway Network (STRAHNET), major strategic highway network connectors and intermodal connectors, and both urban and rural principal arterials.
- **National Highway Freight Program (NHFP)** – NHFP funds are distributed to states via a formula process and are targeted towards transportation projects to improve the efficient movement of freight on the National Highway Freight Network (NHFN).
- **Safe Streets and Roads for All (SS4A)** – Provides grants to support local initiatives to prevent transportation-related death and serious injury on roads and streets. The SS4A program provides funding for two main types of grants: Planning and Demonstration Grants for comprehensive safety action plans, and Implementation Grants to implement strategies or projects that are consistent with an action plan. In 2023, the Black Hawk County MPO received a SS4A Action Plan grant award to complete a Comprehensive Safety Action Plan (CSAP) for Waterloo's Central Business District in the downtown area, where a disproportionate percentage of fatal and serious injury crashes are occurring. The CSAP will allow the City of Waterloo and the MPO to apply for implementation grant funds, along with other federal, state, and local funding opportunities, to implement projects to improve safety for people traveling by any mode in downtown Waterloo.

- **Rebuilding American Infrastructure with Sustainability and Equity (RAISE)** – The program provides grants for critical freight and passenger surface transportation infrastructure projects that will have a significant local or regional impact and improve safety and equity. In 2022, Waterloo received $20.5 million in funding to revitalize and transform La Porte Rd.

- **Reconnecting Communities Pilot Program** – This new program provides grants for projects to restore community connectivity by removing, retrofitting, or mitigating highways or other transportation facilities (i.e., railroad) that create barriers to community connectivity, including to mobility, access, or economic development.
- **Charging and Fueling Infrastructure Grants Program (Community Charging)** – Provides grants for projects to develop electric vehicle charging and hydrogen, propane, and natural gas fueling infrastructure access along alternative fuel corridors throughout the country, including in rural areas, low- and moderate-income neighborhoods, and communities with a low ratio or private parking spaces to households or a high ratio of multiunit dwellings to single family homes.



Source: U.S. DOE, Alternative Fuels Data Center, EV Charging Station Locations

- **Charging and Fueling Infrastructure Grants Program (Corridor Charging)** – Deploys publicly accessible EV charging infrastructure and hydrogen, propane, and natural gas fueling infrastructure along designated Alternative Fuel Corridors.
- **Advanced Transportation Technologies and Innovative Mobility Deployment (ATTAIN) Program** – Provides grants to deploy, install, and operate advanced transportation technologies to improve safety, mobility, efficiency, system performance, intermodal connectivity, and infrastructure return on investment.

The Iowa DOT administers several grant programs utilizing federal funding. Projects awarded grant funding must be documented in the region's Transportation Improvement Program (TIP). These grant awards are distributed through a competitive process. State administered grant programs include the following:

- **City Bridge Program** – A portion of STBG funding dedicated to local bridge projects is set aside for the funding of bridge projects within cities. Eligible projects must be classified as structurally deficient or functionally obsolete. Projects are rated and prioritized by the Iowa DOT Local Systems Bureau with awards based upon criteria identified in the application process. Projects can receive up to $1 million.
- **HSIP-Local** – This program promotes the installation of low-cost, systemic improvements. The program has the goal of reducing two types of crashes: lane departure crashes, and intersection crashes.
- **Iowa Clean Air Attainment Program (ICAAP)** – ICAAP funds projects that maximize emission reductions through traffic flow improvements, reduced vehicle-miles of travel, and reduced single-occupancy vehicle trips.
- **Federal Recreational Trails Program** – This program provides funding for both motorized and non-motorized trail projects and is funded through a takedown from Iowa's TAP funding.

There are also several transit programs that provide funding. The largest amount of funding is distributed by formula to state and large metropolitan areas. Other program funds are discretionary, and some are earmarked for specific projects. Federal transit program funds include the following:

- **Metropolitan Transportation Planning Program (Section 5303 and 5305)** – FTA provides funding for this program to the state based on its urbanized area populations. The funds are dedicated to support transportation planning projects in urbanized areas with more than 50,000 people.
- **Statewide Transportation Planning Program (Section 5304 and 5305)** – These funds come to the state based on population and are used to support transportation planning projects in non-urbanized areas. They are combined with Section 5311 funds and allocated among Iowa's RPAs.
- **Urbanized Area Formula Grants Program (Section 5307)** – FTA provides transit operating, planning, and capital assistance funds directly to local recipients in urbanized areas with populations between 50,000 and 200,000. Assistance amounts are based on population and density figures and transit performance factors for larger areas. Local recipients must apply directly to the FTA.
- **Bus and Bus Facilities Program (Section 5339)** – This formula program provides federal assistance for major capital needs, such as fleet replacement and construction of transit facilities. All transit systems in the state are eligible for this program.

- **Enhanced Mobility of Seniors and Individuals with Disabilities Program (Section 5310)** – Funding is provided through this program to increase mobility for the elderly and persons with disabilities. Part of the funding is administered along with the non-urbanized funding with the remaining funds allocated among urbanized transit systems in areas with a population of less than 200,000. Urbanized areas with more than 200,000 in population receive a direct allocation.
- **Non-urbanized Area Formula Assistance Program (Section 5311)** – This program provides capital and operating assistance for rural and small urban transit systems. 15 percent of funds are allocated to intercity bus projects. A portion of the funding is also allocated to support rural transit planning. The remaining funds are combined with the rural portion (30 percent) of Section 5310 funds and allocated among regional and small urban transit systems based on their relative performance in the prior year.
- **Rural Transit Assistance Program (Section 5311(b)(3))** – This funding is used for statewide training events and to support transit funding fellowships for regional and small urban transit staff or planners.

State Funding

The largest state transportation programs are funded through the Road Use Tax Fund (RUTF), which includes revenue from several sources including the state gas tax and new vehicle registration fees. Programs include:

- **Municipal Funds** – These funds are apportioned to and programmed by each city and comprises about 20 percent of the RUTF total statewide.
- **Secondary Road Fund** – These funds are distributed to each county for programming. Funds may be spent on construction, maintenance, salaries, equipment, etc. The secondary road network is defined as all public roads under a county's jurisdiction that are not primary roads. The Secondary Road Fund has historically accounted for 25 percent of the RUTF.
- **Farm to Market (FM)** – FM funds are distributed monthly to each county by the State. FM funds may only be used for construction on the FM network which includes trunk and trunk collector roads outside of metropolitan area boundaries. FMs accounted for 8 percent of the total RUTF.
- **Primary Road Fund (PRF)** – These funds are programmed by the Iowa Transportation Commission for use on any federal functionally classified primary road.
- **Traffic Safety Improvement Program (TSIP)** – TSIP distributes funds to cities, counties, and the Iowa DOT for roadway safety improvements, traffic control devices, studies, and outreach. TSIP provides funds for three types of projects: site-specific, traffic control devices, and studies and outreach.

Additional state funding sources for transportation projects include the following:

- **State Recreational Trails Program** – These funds are programmed by the Iowa Transportation Commission based on applications from state and local government agencies and non-profit organizations.
- **Revitalize Iowa's Sound Economy (RISE)** – RISE was designed by the state legislature in 1985 to help Iowa's cities and counties compete economically. Projects often involve new construction to attract businesses to an area (Immediate Opportunity) or improve an industrial park (Local Development). Cities and counties can apply to the Iowa DOT for the designated funds, and projects are programmed by the Iowa Transportation Commission.
- **Traffic Engineering Assistance Program (TEAP)** – Traffic engineering consultants are retained by the Iowa DOT and are available to local governments as requested for candidate projects on a first-come/first-served basis.
- **Community Attraction and Tourism (CAT)** – Administered through the Iowa Economic Development Authority (IEDA), CAT assists projects that will provide recreational, cultural, entertainment, and education attractions. The program is intended to help position a community to take advantage of economic development opportunities in tourism and strengthen a community's competitiveness as a place to work and live. Eligible projects include the construction of recreational trails with substantial region or statewide economic impact.
- **Resource Enhancement and Protection (REAP)** – Administered by the Iowa Department of Natural Resources (DNR), this statewide program invests in the enhancement and protection of the state's natural and cultural resources. Funding is available annually to cities through statewide competitive grants. Recreational trails are eligible, though they are typically funded as part of a larger project with environmental or park enhancement benefits.

There are also state funds for transit which include the following:

- **State Transit Assistance (STA)** – All public transit systems are eligible for this funding. Funds can be used by the public transit system for operating, capital, or planning expenses related to the provision of open-to-the-public passenger transportation. Most of the funds received in a fiscal year are distributed to individual transit systems based on a formula using performance statistics from the most recent available year.
- **STA Special Projects** – These funds aid with startup of new services that have been identified as needs by health, employment, or human services agencies participating in the passenger transportation planning process.
- **Public Transit Infrastructure Grant Fund** – This program can fund transit facility projects that involve new construction, reconstruction, or remodeling. To qualify, projects must include a vertical component.

Local Funding

Locally programmed transportation funds vary from jurisdiction to jurisdiction. Funding sources for transportation projects include the following:

- **Property Tax** – Although tax levies vary from city to city, a sizable portion of local transportation revenues comes from property tax assessments (general funds).
- **General Obligation Bonds** – General obligation bonds are debts incurred by cities or counties that are repaid through property tax revenues. These bonds can be issued for essential purposes including roads and bridges.
- **Local Option Sales Tax (LOST)** – Iowa Code provides that each county and city can vote to adopt up to a one percent local option sales tax. Revenues may be partially or completely dedicated to local street construction and reconstruction.
- **Tax Increment Finance Funding (TIFF)** – TIFF is a method of reallocating property tax revenues which are produced because of an increase in taxable valuations above the base valuation figure within a tax increment area. Both cities and counties may create tax increment financing areas.

Table 9.1: Federal, State, and Local Funding Sources for Transportation Projects

	Funding Program	Roads/ Bridges	Bike/Ped	Transit
Federal	Surface Transportation Block Grant (STBG) Program	X	X	X
	Iowa's Transportation Alternatives Program (TAP)		X	
	Carbon Reduction Program (CRP)		X	X
	Congestion Mitigation & Air Quality Improvement Program (CMAQ)	X	X	X
	Demonstration Funding	X	X	X
	Highway Safety Improvement Program (HSIP)	X		
	National Highway Performance Program (NHPP)	X		
	National Highway Freight Program (NHFP)	X		
	City Bridge Program	X		
	HSIP-Local	X		
	Iowa Clean Air Attainment Program (ICAAP)	X		X
	Federal Recreational Trails Program		X	
	Safe Streets and Roads for All (SS4A)	X	X	
	Rebuilding American Infrastructure with Sustainability and Equity (RAISE)	X	X	
	Reconnecting Communities Pilot Program	X	X	
State	Municipal Funds	X		
	Secondary Road Fund	X		
	Farm to Market (FM)	X		
	Primary Road Fund (PRF)	X		
	Traffic Safety Improvement Program (TSIP)	X		
	State Recreational Trails Program		X	
	Revitalize Iowa's Sound Economy (RISE)	X		
	Traffic Engineering Assistance Program (TEAP)	X		
	Community Attraction and Tourism (CAT)		X	
	Resource Enhancement and Protection (REAP)		X	
Local	Property Tax	X	X	
	General Obligation Bonds	X	X	
	Local Option Sales Tax (LOST)	X	X	
	Tax Increment Finance Funding (TIFF)	X	X	

MET Transit Funding Analysis

A Transit Financial Capacity Analysis was conducted to project operating revenues and expenditures for MET Transit to the horizon year 2050. A two percent constant rate was applied to FY 2022 operating revenues and expenses data. Based on this analysis, MET Transit can anticipate a total balance of approximately $2.9 million from FY 2024-2050.

Capital revenues and expenditures related to buses have been calculated separately. Due to the complexity of the bus procurement process, the variability in funding from one year to the next, and expanding options for low-no emissions vehicles, it is difficult to predict how many buses and of what type will be replaced. Accordingly, this document assumes an average of one diesel bus replaced each year – alternating between heavy, medium, and light duty vehicles – over the life of the plan. The approximate replacement cost shown in the FY 2024-2027 TIP, including vehicle surveillance systems, is $660,000 for heavy-duty buses, $265,000 for medium-duty buses, and $180,000 for light-duty buses, an average of $368,333 per year. Inflating this average cost by a constant two percent per year results in a total cost for bus replacements of approximately $13 million.

Funding from the FTA (Section 5339) is anticipated to cover 85 percent of the total costs for vehicle replacements. The remaining 15 percent, required as local match, is anticipated to come from the City of Waterloo (81 percent of the local match) and the City of Cedar Falls (19 percent of the local match). Tables 9.2 and 9.3 summarize operating and capital revenues and expenditures over the life of this plan.

Table 9.2: MET Transit Forecasted Operating Revenues & Expenditures, 2024-2050

Total Operating Income	$195,654,617
Operating Revenues (fares, contracts)	$42,373,528
Operating Subsidies (federal, state, local)	$153,281,088
Total Operating Expenses	$192,769,541
Balance	**$2,885,076**

Source: MET Transit, Historic Operating Revenues and Expenses, FY 2022

Table 9.3: MET Transit Forecasted Bus Replacement Costs & Funding Sources, 2024-2050

Expenditures (one bus per year, average cost of HD, MD, LD bus)	$13,018,493
Federal Share (Section 5339)	$11,065,719
City of Waterloo	$1,581,747
City of Cedar Falls	$371,027

Sources: MPO FY 2024-2027 TIP; Vehicle Replacement Projection

MPO Funding Analysis

Projects, revenues, and expenditures have been divided into three periods: 2024-2030 (including the FY 2024-2027 TIP), 2031-2040, and 2041-2050. Historical funding amounts were used to forecast state and federal dollars anticipated to be available during the life of this plan. Federal and state funding sources analyzed include the NHPP, PRF, and STBG. City and County Bridge funds have been targeted for specific bridge replacement projects at anticipated amounts based on input provided by city and county staff. Accordingly, bridges funds were not included in the funding analysis.

Revenue forecasts for STBG and TAP were projected using a linear growth rate of targets from FY 2023 to FY 2027. NHPP and PRF dollars were projected at a constant rate using ten-year averages from FY 2014-2023. Table 9.4 provides historical funding and revenue forecasts.

Table 9.4: History and Projections for Federal and State Transportation Funding

Fiscal Year	STBG	TAP	NHPP	PRF
2014	$2,996,361	$297,288	$4,639,000	$0
2015	$3,033,260	$299,560	$9,903,000	$0
2016	$3,017,619	$297,646	$0	$2,334,000
2017	$3,106,074	$306,906	$24,530,000	$1,983,000
2018	$3,106,815	$299,020	$9,331,000	$2,490,000
2019	$3,359,752	$303,322	$12,372,000	$6,727,000
2020	$3,469,008	$297,790	$11,657,000	$0
2021	$3,363,353	$300,457	$13,248,800	$0
2022	$3,277,907	$294,122	$3,176,800	$0
2023	$3,892,668	$373,498	$43,694,600	$0
2024-2030	$28,285,583	$2,896,329	$92,786,540	$9,473,800
2031-2040	$44,714,029	$4,908,001	$132,552,200	$13,534,000
2041-2050	$49,507,005	$5,846,826	$132,552,200	$13,534,000
2024-2050	**$122,506,617**	**$13,651,156**	**$357,890,940**	**$36,541,800**

Local revenues for transportation come from several sources, with the Road Use Tax Fund (RUTF), property taxes, general obligation bonds, and local option sales tax (LOST) typically being the largest sources. To determine a baseline of local revenues available for transportation, the City Street Financial Report was used for cities; and County Farm to Market Receipts, Secondary Road Fund Receipts, and County Secondary Road Operations and Maintenance Data were used for Black Hawk County. These reports outline transportation revenues and expenditures and are submitted to the Iowa DOT each fiscal year. Only 18 percent of Black Hawk County's revenues and expenditures were used for the analysis which is the percentage of roads that are within the MPO study area.

Table 9.5 shows the history and projections for local non-federal aid revenues and operation and maintenance expenditures. Revenue and expense averages from 2018 to 2022 were used for the analysis. Revenues were projected to increase by two percent annually, and operation and maintenance costs were projected to increase by four percent annually. These projections are consistent with the MPO FY 2024-2027 Transportation Improvement Program. The balance identified may be applied to other local projects, debt payments, and local matches for state and federal funding.

Table 9.5: Local Non-Federal Aid Revenues and Expenditures Projections

Fiscal Year	Non-Federal Aid Revenues	Operations Cost on Total Roadway System	Maintenance Cost on Total Roadway System	Balance
2018-2022 (Average)	$52,594,995	$11,539,749	$7,544,590	$33,510,656
2024-2030	$406,802,745	$98,581,715	$64,451,889	$243,769,141
2031-2040	$688,254,435	$197,196,243	$128,925,231	$362,132,961
2041-2050	$838,978,316	$291,898,611	$190,840,836	$356,238,869
2024-2050	**$1,934,035,495**	**$587,676,568**	**$384,217,957**	**$962,140,970**

Sources: Iowa DOT, 2022 City Operations & Maintenance Data, 2022 City Receipts, 2022 County Farm to Market Receipts, 2022 County Operations & Maintenance Data, 2022 County Receipts

Individual projects will be developed with various percentages of federal and local funding, and it is impossible to predict what those percentages will be. STBG projects in this plan beyond the FY 2024-2027 TIP are shown to have a maximum 65 percent federal participation which is the average for projects programmed over the past 10 years, and no more than $4.5 million in STBG which is the average annual amount projected to be available from 2024 to 2050. Actual funding amounts would be determined when a project is programmed as part of the TIP development process.

Project Costs and Funding Sources

Federal legislation requires that Long-Range Transportation Plans for MPOs be fiscally constrained. This document must show that revenues anticipated to be available will support the existing system and those road and bridge projects identified in the plan. Table 9.6 provides project-level detail for funding sources. Total cost estimates are inflated to year of expenditure (YOE) dollars as follows:

- 2024-2027: Programmed in the FY 2024-2027 TIP in YOE dollars
- 2028-2030: Inflated four percent annually to the year 2029 (multiplying current cost by 1.24)
- 2031-2040: Inflated four percent annually to the year 2035 (multiplying current cost by 1.48)
- 2041-2050: Inflated four percent annually to the year 2045 (multiplying current cost by 1.88)

Project costs are summarized by time periods and funding sources. Additional information on the projects can be found in Chapter 3.

Table 9.6: 2050 Long-Range Transportation Plan Fiscally Constrained Road and Bridge Projects

FY 2024-2030

	Jurisdiction	Project	Termini	Cost Estimate (YOE)	STBG	TAP	City Bridge	County Bridge	Local
101	Cedar Falls	Union Rd	W 27th St to University Ave	6,550,000	1,000,000				5,550,000
102	Elk Run Heights	Gilbertville Rd/Lafayette Rd	Elk Run Creek to Amber Ln	2,185,500	1,430,000				755,500
103	Evansdale	Lafayette Rd	Evans Rd to Elk Run Creek	6,095,000	1,707,000				4,388,000
104	Raymond	Lafayette Rd	2,750' W of Taylor Ln to 2nd St	3,913,000	1,230,000				2,683,000
105	Waterloo	La Porte Rd (Ph I)	E Shaulis Rd to Bopp St	14,196,000	4,386,427	151,328			928,245
106	Waterloo	La Porte Rd (Ph II)	Plymouth Ave to U.S. 218 slip ramp	11,160,000	2,830,500				259,600
107	Black Hawk Co.	Donald St (D16)	Sage Rd to Raymond Rd (V49)	2,050,000	448,000				1,602,000
108	Hudson	Washington St	50' south of Wood St to 240' north of 1st St	1,067,000	853,600				213,400
109	Waterloo	La Porte Rd (Ph III)	Bopp St to Plymouth Ave	7,558,000	2,711,900				1,176,100
110	Black Hawk Co.	Washburn Rd (D39)	U.S. 218 to Gilbertville WCL	2,450,000	1,328,711				1,121,289
111	Evansdale	W. Gilbert Dr	River Forest Rd to Grand Blvd	3,026,970	2,421,576				605,394
112	Black Hawk Co.	Raymond Rd (V49)	Conard Rd to Osage Rd	558,000	362,700				195,300
113	Black Hawk Co.	Dubuque Rd (D22)	Raymond ECL to Ordway Rd	620,000	403,000				217,000
114	Black Hawk Co.	Eldora Rd (D35)	Lincoln Rd to Hudson SCL	620,000	403,000				217,000
115	Cedar Falls	Ridgeway Ave BR	0.15 mi. west of Hudson Road, over South Branch of Dry Run Creek	824,600			824,600		0
116	Elk Run Heights	Plaza Dr	Gilbertville Rd to Dubuque Rd	806,000	523,900				282,100
117	Evansdale	Central Ave	River Forest Rd to Evans Rd	1,240,000	806,000				434,000
118	Gilbertville	5th St	20th Ave to 14th Ave	620,000	403,000	93,000			124,000
119	Gilbertville	20th Ave	5th St to 25th Ave	93,000		74,000			19,000
120	Waterloo	E. Ridgeway Ave	Kimball Ave intersection	2,480,000	1,612,000				868,000
			Total:		24,861,314	318,328	824,600	--	21,638,928
			Projected Funding Available:		28,285,583	2,896,329	--	--	243,769,141
			Balance:		3,424,269	2,578,001	--	--	222,130,213

FY 2031-2040

	Jurisdiction	Project	Termini	Cost Estimate (YOE)	STBG	TAP	City Bridge	County Bridge	Local
201	Black Hawk Co.	Raymond Rd (V49)	Gilbertville NCL to Raymond SCL	2,368,000	1,539,200				828,800
202	Black Hawk Co.	Washburn Rd (D38)	U.S. 218 to Gilbertville WCL	2,220,000	1,443,000				777,000
203	Black Hawk Co.	Union Rd (T75)	Cedar Falls NCL to Beaver Valley Rd (C67)	1,110,000	721,500				388,500
204	Black Hawk Co.	Ridgeway Ave (D19)	Hearst Rd to Cedar Falls WCL	740,000	481,000				259,000
205	Black Hawk Co.	Schrock Rd (D35)	Holmes Rd to Acker Rd	740,000	481,000				259,000
206	Black Hawk Co.	Indian Creek Rd	Evansdale CL to Raymond Rd (V49)	740,000	481,000				259,000
207	Black Hawk Co.	Union Rd (T75) BR	0.25 mi. south of Beaver Valley Rd, over Beaver Creek	3,552,000	1,552,000			1,000,000	1,000,000
208	Black Hawk Co.	Dubuque Rd (D22) BR	0.4 mi. east of Lafayette Rd, Over Poyner Creek	1,036,000	500,000			329,000	207,000
209	Cedar Falls	Cedar Heights Dr	Viking Rd to SCL	4,440,000	2,886,000				1,554,000
210	Cedar Falls	Greenhill Rd	Hudson Rd to ECL	6,660,000	4,329,000				2,331,000
211	Cedar Falls	Leversee Rd	Lone Tree Rd to NCL	3,700,000	2,405,000				1,295,000
212	Evansdale	Grand Blvd	Lafayette Rd to Gilbert Dr	8,584,000	4,500,000				4,084,000
213	Evansdale	Evansdale Dr/Plaza Dr	I-380 EB ramp to Gilbertville Rd	2,960,000	1,924,000				1,036,000
214	Evansdale	Evansdale Dr/Plaza Dr	I-380 EB ramp to Gilbertville Rd	3,700,000	2,405,000				1,295,000
215	Gilbertville	14th Ave BR	East of 5th St	481,000			481,000		0
216	Waterloo	W. Donald St	Broadway St to Logan Ave (U.S. 63)	9,620,000	4,000,000	500,000			5,120,000
217	Waterloo	Broadway St	E. Mullan Ave (U.S. 63) to Burton Ave	14,800,000	4,000,000	500,000			10,300,000
218	Waterloo	E. San Marnan Dr	Hammond Ave to Texas St	13,172,000	4,000,000	500,000			8,672,000
219	Waterloo	Newell St	Idaho St to N. Elk Run Rd	17,760,000	4,500,000	500,000			12,760,000
220	Waterloo	N. Elk Run Rd	Martin Luther King Jr Dr to Remington Rd	3,922,000	2,549,300				1,372,700
			Total:		44,697,000	2,000,000	481,000	1,329,000	53,798,000
			Projected Funding Available:		44,714,029	4,908,001	--	--	362,132,961
			Balance:		17,029	2,908,001	--	--	308,334,961

FY 2041-2050

	Jurisdiction	Project	Termini	Cost Estimate (YOE)	STBG	TAP	City Bridge	County Bridge	Local
301	Black Hawk Co.	Waverly Rd (V14)	Fitkin Rd to Bennington Rd	2,350,000	1,000,000				1,350,000
302	Black Hawk Co.	Dunkerton Rd (C66)	U.S. 63 to Sage Rd	2,350,000	1,000,000				1,350,000
303	Black Hawk Co.	Elk Run Rd (V43)	Dubuque Rd to Independence Ave (IA 281)	1,645,000	1,069,250				575,750
304	Black Hawk Co.	Washburn Rd (D38)	IA 21 to U.S. 218	3,760,000	1,000,000				2,760,000
305	Black Hawk Co.	Elk Run Rd (V43) BR	0.2 mi. north of Dubuque Rd, over Elk Run Creek	3,290,000	1,290,000			1,000,000	1,000,000
306	Black Hawk Co.	Union Rd (T75) BR	0.4 mi. south of Beaver Valley Rd, over Beaver Creek	3,384,000	1,384,000			1,000,000	1,000,000
307	Black Hawk Co.	Washburn Rd (D38) BR	West of 3rd St, over Cedar River	15,040,000	2,000,000			1,000,000	12,040,000
308	Cedar Falls	Hudson Rd	W. 1st St to University Ave	18,800,000	4,500,000				14,300,000
309	Cedar Falls	Prairie Pkwy/Viking Rd	Prairie Pkwy/Viking Rd Intersection	1,880,000	1,222,000				658,000
310	Cedar Falls	W. Ridgeway Ave	IA 58 to ECL	14,100,000	4,500,000				9,600,000
311	Cedar Falls	W. Ridgeway Ave	Hudson Rd to WCL	10,810,000	4,500,000				6,310,000
312	Gilbertville	5th St BR	South of 12th Ave	282,000			282,000		0
313	Waterloo	E. Shaulis Rd	Hawkeye Rd (IA 21) to La Porte Rd	12,718,200	4,500,000				8,218,200
314	Waterloo	Airline Hwy	Leversee Rd to U.S. 63	34,780,000	4,500,000	500,000			29,780,000
315	Waterloo	E. Orange Rd	Kimball Ave to Hess Rd	14,100,000	4,500,000				9,600,000
316	Waterloo	Kimball Ave	Orange Rd to San Marnan Dr	17,860,000	4,500,000				13,360,000
317	Waterloo	Ansborough Ave	Orange Rd to San Marnan Dr	17,860,000	4,500,000				13,360,000
318	Waterloo	W. Shaulis Rd	Hoff Rd to Hawkeye Rd (IA 21)	9,964,000	3,500,000				6,464,000
			Total:		49,465,250	500,000	282,000	3,000,000	131,725,950
			Projected Funding Available:		49,507,005	5,846,826	--	--	356,238,869
			Balance:		41,755	5,346,826	--	--	224,512,919

Chapter 10
Public Participation

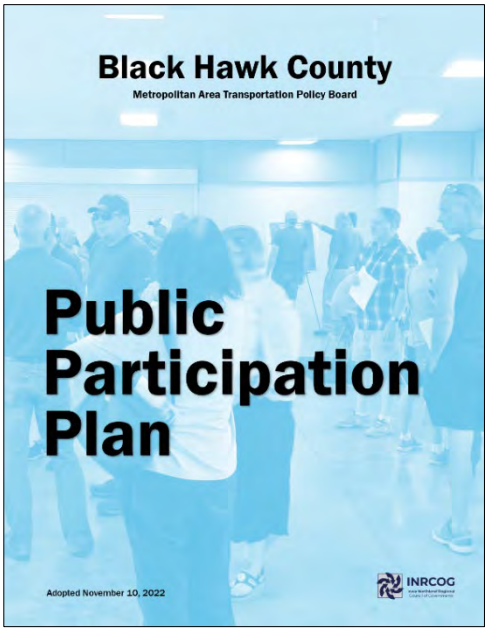
Chapter 10 – Public Participation

Public Participation and Why It Matters

Public Participation is a crucial and necessary step for all plans and projects administered by the MPO. Public participation provides opportunities for stakeholders to have a say in changes occurring in the community. Stakeholders include a wide array of people and groups who are involved in or impacted by a project. Stakeholders will vary based on a project, but typically include local community members, nearby business owners, local partnerships and organizations, planning agencies, and city staff. Black Hawk County MPO staff consistently strive to expand minority stakeholder involvement and overall community public participation. However, opportunities remain to shift the focus from merely *involving* the public to encouraging greater public *participation.*

Public Participation Plan

The Public Participation Plan (PPP) is updated every five years. The most recent plan was adopted November 2022. As detailed in the PPP, there are several federal and state requirements to ensure an open and transparent planning process. In addition, the MPO has several ongoing activities that form the basis of interaction with the public. These include:



- Monthly joint Policy Board and Transportation Technical Committee meetings which are open to the public.
- Work sessions, focus groups, open houses, public input meetings, and public hearings as applicable during the development of major transportation planning documents.
- Publication of transportation articles in the monthly INRCOG electronic newsletter *COG Connection*.
- Notices of opportunities for public input shared via MailChimp marketing program.
- Provision of information and interviews with area media as requested.
- Presentations to city councils, planning commissions, and county supervisors as needed.
- Information, transportation plans, and notices of opportunities for public input shared on the Black Hawk County MPO website, www.bhcmpo.org, and the INRCOG Facebook page.

The public involvement process utilized for the development of the 2050 Long-Range Transportation Plan was guided by the PPP which sets minimum requirements for public involvement opportunities. Public involvement actions required include the following:

- Draft LRTP
  - The draft LRTP will be developed by INRCOG staff with further input from jurisdiction representatives and the Iowa DOT, and oversight by the Policy Board and Transportation Technical Committee.
  - Input will be sought from individuals, affected public agencies, representatives of public transportation employees, freight shippers, private providers of transportation, representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle

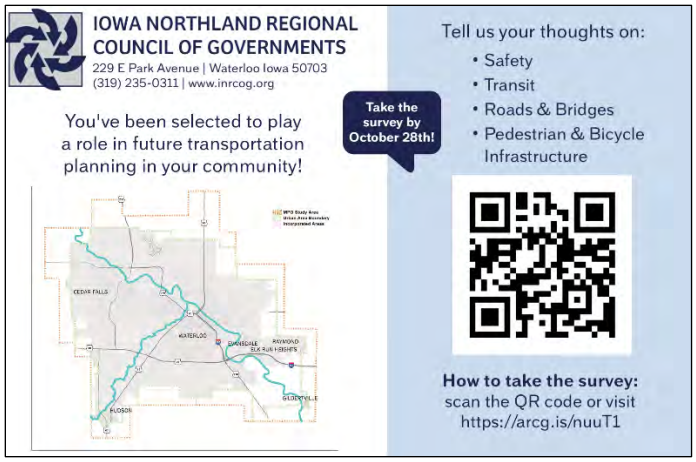
transportation facilities, representatives of the disabled, providers of freight transportation services, and other interested parties.
    - Focus groups will be utilized to represent all pertinent modes of transportation and issues. Focus groups may include transit, highway and land use, bicycle and pedestrian, safety and security, and environmental resources. Focus groups will be tasked with identifying issues and potential solutions and reviewing draft chapters pertinent to their area of expertise.
    - The draft document will be made available at INRCOG, on the BHC MPO website, and upon request.
- Notices and Public Meetings
    - A minimum of two public input sessions will be held regarding the draft LRTP.
    - At least one public input session will be held in an area identified as a low-income or minority neighborhood.
    - All meetings will be held in accessible facilities.
    - Notices for public input sessions will be advertised through local media sources. Notices may be posted at governmental offices, public libraries, post offices, on transit buses, at the INRCOG Center, on the BHC MPO and INRCOG website, and the INRCOG Facebook page. Notices may also be sent to organizations serving traditionally underserved populations, such as minorities, low-income, and elderly populations.
    - Any person with special communication or accommodation needs (i.e., sight, reading, or language barriers, request for online or phone participation, etc.) can contact the MPO (minimum 48 hours prior to the meeting) and arrangements will be made.
- Public Comment Period
    - Written and oral comments will be solicited during the public input sessions. The public will also have at least a 15-calendar-day comment period following the final public input session to submit comments via, letter, email, or in person.
    - A public hearing will be held at a regularly scheduled Policy Board meeting following the public input sessions to summarize public comments and responses. A notice of the public hearing will be published no more than twenty (20) calendar days and no less than four (4) calendar days before the date of the hearing.
- Final LRTP
    - Following the public hearing, the Policy Board will adopt a final LRTP, including a summary of public comments and responses.
    - The final LRTP will be submitted to the Iowa DOT, FHWA, and FTA.
    - The final LRTP will be available on the BHC MPO website, at INRCOG, and upon request.
    - The public participation process associated with the LRTP will be evaluated and updated as needed.
- Revisions
    - The LRTP may be revised between full document updates to reflect current project information.
    - Other amendments to the LRTP will be made as needed.
    - Amendments will require a public hearing to be held at a regularly scheduled Policy Board meeting. A notice of the public hearing will be published no more than twenty (20) calendar days and no less than four (4) calendar days before the date of the hearing.

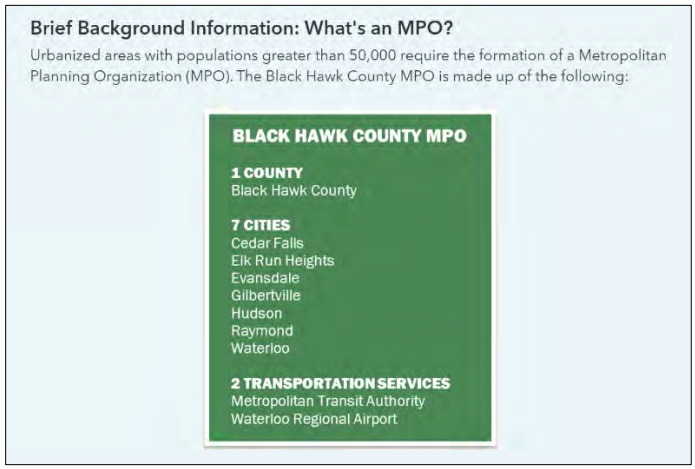
Recent Public Participation Efforts

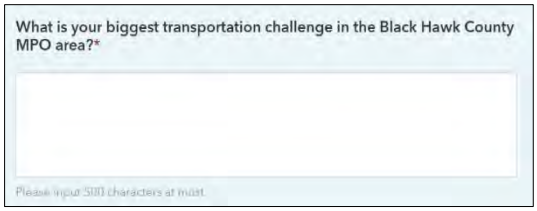
LRTP Statistically Significant Survey

As part of the 2050 Long-Range Transportation Plan, MPO staff conducted a statistically significant transportation survey for Black Hawk County metro area residents. Survey questions were related to safety, transit, roads, bridges, and pedestrian and bicycle infrastructure. The purpose of the survey was to identify the community's transportation needs and priorities to help guide future transportation planning. For the first round of survey collection, MPO staff purchased 1,000 randomly selected addresses within the MPO area to send postcards to. Each postcard contained a QR code linked to an online survey. Information on how to access paper surveys was included on the postcard for those without internet access.

Materials from the 2022 Public Input Survey







Mayor's State of the City Address

A second round of the Long-Range Transportation Plan Survey was conducted and open to all Black Hawk County metropolitan area residents. MPO staff attended the 2022 Mayor's State of the City Address in Waterloo, Iowa to further promote the second round of the survey, as well as to educate the public about the full range of services provided by INRCOG. Various plans, documents, and reports were shared with attendees, including the flyer above. Paper survey options were provided for residents without access to the internet. MPO staff further promoted the second round of the survey through MPO meetings, emails, the BHC MPO website, e-newsletter, and the INRCOG Facebook page.

MET Transit Study

MET Transit, the primary mass transportation provider for Waterloo and Cedar Falls, signed a contract with SRF Consulting Group in March of 2023 to conduct a Comprehensive Transit Study. The current route structure, travel times, and service hours do not meet the community's needs, leaving gaps for residents who do not have access to a car in an auto-oriented metro area. In response, MPO staff and MET Transit collaborated to implement a route restructuring project that integrates efficient out-and-back routes instead of a loop system. MET Transit plans to simultaneously implement the restructured routes and conduct a comprehensive transit study to analyze new routes, hours of service, after-hours service, community needs, and overall efficiency. The MET Transit study began in Spring of 2023 and is expected to take one year. The first public engagement piece consisted of an online, public survey that received over 230 english responses. Since a portion of MET Transit riders are made up of underserved and minority populations, MPO staff collaborated with Black Hawk County Public Health to provide additional surveys in Bosnian, French, Marshallese, and Spanish. The surveys were housed on the Black Hawk County MPO website. Additional public input efforts will be conducted throughout the course of the transit study, in which MPO staff and Black Hawk County Public Health will continue to conduct additional outreach to gather input from underserved and non-English speaking populations.

SS4A

As part of the Bipartisan Infrastructure Law, the Safe Streets and Roads For All (SS4A) grant program aims to achieve the National Roadway Safety Strategy and the U.S. DOT's goal of achieving zero deaths and serious injuries on our nation's roadways. Using the Iowa Crash Analysis Tool (ICAT), MPO staff analyzed serious-crash and high fatality corridors within the metro area and noted downtown Waterloo area as an area of opportunity. After applying for SS4A funding in January of 2023, the MPO was awarded funding to develop a comprehensive Safety Action Plan. This plan will include a safety assessment of high fatality and serious injuriy corridors, implemention activities to enhance roadway and user safety, and community and stakeholder collaboration. In-depth public outreach efforts are anticipated to be conducted in 2024 as part of the project's community outreach efforts.

Downtown Waterloo Railyard Relocation Feasibility Study

Located in downtown Waterloo between E 4th Street and Martin Luther King Jr Drive is Canadian National Railway Company's (CN) largest railyard in Iowa. The railyard poses longstanding issues related to environmental justice, community connection, and public safety. Stopped trains cause extensively blocked crossings that inhibit residents, downtown employees, school students, and a historically, disproportionately disadvantaged community of color. Public frustration with frequently blocked crossings has led to numerous safety concerns and serious injuries to pedestrians and motorists resulting in civil lawsuits filed against CN. To address these issues, the City of Waterloo applied to the Reconnecting Communities and Neighborhoods Program through the U.S. Department of Transportation to conduct a Railyard Relocation Feasibility study. If awarded, the study will analyze the social, environmental, and public safety impacts of the railyard's location. A major focus of the study is community testimonials regarding how CN's rail yard location and stopped trains inhibit the community. Comprehensive community outreach efforts will be conducted as the project moves forward.

Downtown Waterloo Walkability and Bikeability

Every year, MPO staff are federally required to hold two public Transportation Improvement Program (TIP) Meetings. The TIPs identify transportation projects scheduled to receive federal funding in the next four federal fiscal years. MPO staff take steps to ensure meetings are convenient and accessible to the public by offering in-person and zoom options, as well as morning and evening meetings, though participation from the public is typically sparse. The June 2023 TIP meeting was joined by a resident who identifies as a "non-recreational biker". While they did not have input specific to transportation projects in the TIP, they shared valuable input and suggestions regarding bicycling infrastructure with an emphasis in Waterloo:

- *"Connect strategic places of interests such as the library, commercial districts, retail anchors, plaza, Lincoln Park, etc."*
- *"Establish efficient routes between providing connectivity to areas of interest and residential areas. Focus on long, efficient corridors to increase usage and connectivity."*
- *"Get feedback loops from bikers."*
- *"4th Street is the most desirable street [for bike infrastructure] where people actually want to experience due to high density of retail/restaurants, great pedestrian accommodations and slow/safe moving traffic that people actually respect."*
- *"Both Jefferson and Commercial are wide enough [for bike infrastructure] and have destinations people want to go."*

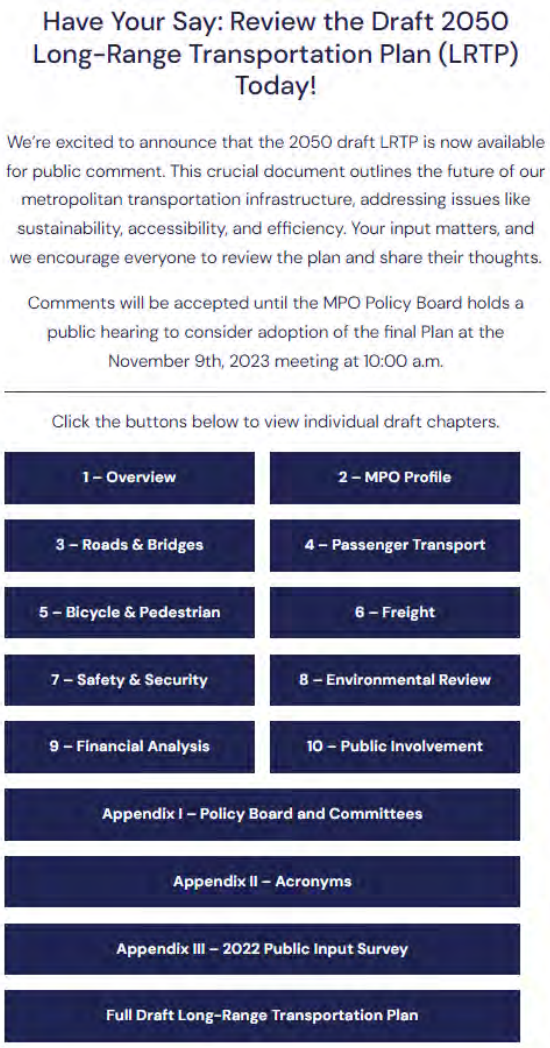
These comments were shared with MPO staff and with Waterloo Complete Streets. MPO staff strongly encourages and appreciates public feedback and actively work to incorporate it into existing and future project planning. Visit Current and **On-Going Projects – Park Avenue Bike Lanes Redesign** in Chapter 5 to see how these comments were incorporated into a project.

Northeast Industrial Access Study

The Northeast Industrial Area in Black Hawk County contains several industrial and manufacturing businesses, resulting in a high volume of freight traffic moving to and from the area. Concerns over safety, capacity, traffic access, and anticipated growth in future years led to a Planning Study that was completed in 2019. As part of this study, the consultant held two public information meetings, created a project website, and had help from AECOM to reach out to eighteen businesses in the study area to request freight industry comments. The NEIA Planning Study can be found on the Black Hawk County MPO website at https://bhcmpo.org/neia/. The next step for this project will be to conduct a National Environmental Policy Act (NEPA) review process. Additional information can be found under Chapter 6.

Website and Social Media

The Black Hawk County MPO website, www.bhcmpo.org, is commonly used to notify the public of current and ongoing MPO efforts. Information can be found on the homepage under the "News and Highlights" section or under the "Public Participation" tab underneath "Services." The Black Hawk County MPO website was also used throughout the development of this Plan. Draft chapters were posted on the website as they were completed, and staff contact information was provided to any person who wished to comment on draft materials. Other information on the transportation planning process and additional transportation documents are available on the website. The final LRTP will be posted online and will be available at the INRCOG office.



Long-Range Transportation Plan Public Input Meetings

In September 2023, two public input meetings were held for the draft 2050 Long-Range Transportation Plan. To be more inclusive and accommodating to various schedules, two public input meetings were held. The first meeting was held in the third-floor conference room at INRCOG, and the second one was held virtually. The meetings were advertised via a news release, flyers posted at public places, the MPO website, INRCOG Facebook page, and an email blast through MailChimp to the INRCOG mailing list. There were a variety of displays related to the LRTP available for review. Attendees were also given the opportunity to submit formal written comments.

External Stakeholder Consultation

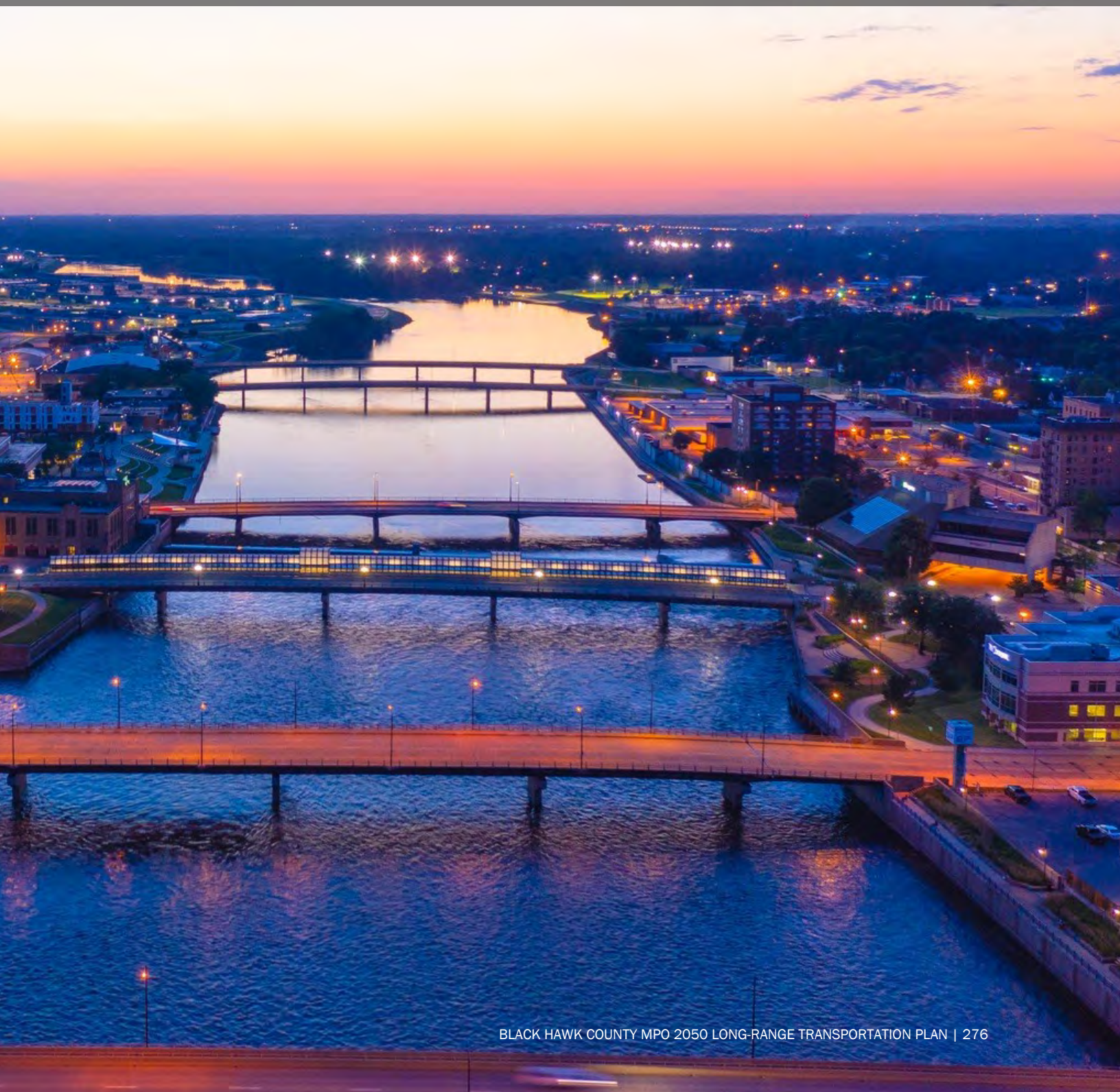
Several Federal, State, Tribal, and local government agencies were notified when the draft LRTP document was available for review (see Chapter 8). Feedback on topics relevant to their field of expertise was requested and incorporated into this document.

Going Forward: How Can We Improve?

There is no single approach to gathering successful public participation. Nowadays, public participation can be difficult to obtain due to varying schedules, lifestyles, and opportunities. Successful public participation requires a creative combination of methods, locations, and platforms to not only receive a wide range of feedback, but to ensure minority representation. MPO staff practices a mixed-use approach for projects included in this plan, ranging from paper and online surveys, presentations, social media, to more active approaches such as open houses and public events. Multiple sessions, languages, and accommodations help to achieve a rich public participation process that the MPO strives for.

Source: VectorStock

Appendices



APPENDIX I – MPO POLICY BOARD & COMMITTEES

Policy Board (as of 11/9/2023)

Representing	Name	Title	MPO Membership
City of Cedar Falls	Rob Green	Mayor	Member **(Vice-Chair)**
	Gil Schultz	Councilperson	1st Alternate
	Simon Harding	Councilperson, Mayor Pro Tem	2nd Alternate
City of Elk Run Heights	Lisa Smock	Mayor	Member
	Heather Sallis	Councilperson	1st Alternate
			2nd Alternate
City of Evansdale	DeAnne Kobliska	Mayor	Member **(Chair)**
	Justin Smock	Councilperson, Mayor Pro Tem	1st Alternate
	Jeff Bergman	Councilperson	2nd Alternate
City of Gilbertville	Mark Thome	Mayor	Member
	Scott Becker	Councilperson, Mayor Pro Tem	1st Alternate
			2nd Alternate
City of Hudson	George Wessel	Mayor	Member
	Gail Bunz	Councilperson, Mayor Pro Tem	1st Alternate
			2nd Alternate
City of Raymond	Gary Vick	Mayor	Member
			1st Alternate
			2nd Alternate
City of Waterloo	Quentin Hart	Mayor	Member
	Noel Anderson	Com. Planning & Dev. Director	1st Alternate
	Aric Schroeder	City Planner	2nd Alternate
Black Hawk County	Daniel Trelka	Supervisor	Member
	Tavis Hall	Supervisor	1st Alternate
			2nd Alternate
MET Transit Board	Rosalyn Middleton	Board Member	Member
	Bob Seymour	Chair	1st Alternate
	Sharon Droste	Vice-Chair	2nd Alternate
Waterloo Regional Airport Board	Scott Voight	Chair	Member
	Keith Kaspari	Director of Aviation	1st Alternate
			2nd Alternate

Transportation Technical Committee (TTC) (as of 11/9/2023)

Representing	Name	Title	MPO Membership
City of Cedar Falls	David Wicke	City Engineer	Member
	Ben Claypool	Civil Engineer II	1st Alternate
			2nd Alternate
City of Elk Run Heights	Julie Eastman	City Clerk	Member
	Mark McChane	Councilperson	1st Alternate
			2nd Alternate
City of Evansdale	Chris Schares	Public Works Director	Member
			1st Alternate
			2nd Alternate
City of Gilbertville	Rob Werner	Public Works Director	Member
	Al Even	City Maintenance	1st Alternate
			2nd Alternate
City of Hudson	Chrissi Wiersma	City Administrator/City Clerk	Member
	Jake Hovey	Public Works Director	1st Alternate
			2nd Alternate
City of Raymond	Becky Pint	Councilperson	Member
			1st Alternate
			2nd Alternate
City of Waterloo	Jamie Knutson	City Engineer	Member
	Wayne Castle	Associate Engineer	1st Alternate
	Matt Schindel	Associate Engineer	2nd Alternate
Black Hawk County	Ryan Brennan	Assistant County Engineer	Member
			1st Alternate
			2nd Alternate
MET Transit	David Sturch	General Manager	Member
			1st Alternate
			2nd Alternate
Waterloo Regional Airport			Member
			1st Alternate
			2nd Alternate

Bicycle and Pedestrian Advisory Committee (BPAC) (as of 11/9/2023)

Representing	Name	Title	MPO Membership
City of Cedar Falls	Stephanie Sheetz	Director of Community Dev.	Member
	Chris Sevy	City Planner	1st Alternate
			2nd Alternate
City of Elk Run Heights	Julie Eastman	City Clerk	Member
	Mark McChane	Councilperson	1st Alternate
			2nd Alternate
City of Evansdale	Chris Schares	Public Works Director	Member
			1st Alternate
			2nd Alternate
City of Gilbertville	Rob Werner	Public Works Director	Member
	Al Even	City Maintenance	1st Alternate
			2nd Alternate
City of Hudson	Chrissi Wiersma	City Administrator/City Clerk	Member
	Jake Hovey	Public Works Director	1st Alternate
			2nd Alternate
City of Raymond	Becky Pint	Councilperson	Member
			1st Alternate
			2nd Alternate
City of Waterloo	Jamie Knutson	City Engineer	Member
	Wayne Castle	Associate Engineer	1st Alternate
	Matt Schindel	Associate Engineer	2nd Alternate
Black Hawk County	Cathy Nicholas	County Engineer	Member
			1st Alternate
			2nd Alternate
MET Transit	David Sturch	General Manager	Member
			1st Alternate
			2nd Alternate
George Wyth State Park	Lori Eberhard	Park Manager	Member
			1st Alternate
			2nd Alternate

APPENDIX II – ACRONYMS

3-C	Continuing, Cooperative, and Comprehensive
AADT	Average Annual Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
ADAS	Advanced Driver Assistance Systems
ADT	American Discovery Trail
AIP	Airport Improvement Program
ALO	Waterloo Regional Airport
ATTAIN	Advanced Transportation Technologies and Innovative Mobility Deployment
BIL	Bipartisan Infrastructure Law
BPAC	Bicycle and Pedestrian Advisory Committee
CAT	Community Attraction and Tourism
CAV	Connected and Automated Vehicles
CE	Categorical Exclusion
CIP	Capital Improvement Program
CMAQ	Congestion Mitigation and Air Quality
CPFM	Continuous Pavement Friction Measurement
CRFC	Critical Rural Freight Corridors
CRP	Carbon Reduction Program
CSAP	Comprehensive Safety Action Plan
CUFC	Critical Urban Freight Corridors
CVAST	Cedar Valley Association for Soft Trails
DI	Diversity Index
DMS	Dynamic Message Sign
DNR	Department of Natural Resources
DOT	Department of Transportation
EA	Environmental Assessment
ECP	Existing, Committed, and Planned
EIS	Environmental Impact Statement
EMA	Emergency Management Agency
EV	Electric Vehicle
EVRP	Electric Vehicle Readiness Plan
FAA	Federal Aviation Administration
FAC	Freight Advisory Council
FAF	Freight Analysis Framework
FBO	Fixed Base Operator
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FFC	Federal Functional Classification
FM	Farm to Market
FONSI	Finding of No Significant Impact
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GDL	Graduated Driver's License
GTSB	Governors Traffic Safety Bureau
HFST	High Friction Surface Treatment
HPMS	Highway Performance Management System
HSIP	Highway Safety Improvement Program
ICAAP	Iowa Clean Air Attainment Program
ICAT	Iowa Crash Analysis Tool
ICE	Infrastructure Condition Evaluation
ICS	Incident Command System
IEDA	Iowa Economic Development Authority
IIJA	Infrastructure Investment and Jobs Act
IMFN	Iowa Multimodal Freight Network

INRCOG	Iowa Northland Regional Council of Governments
InTrans	Institute for Transportation
IRI	International Roughness Index
IRVM	Integrated Roadside Vegetation Management
ISMS	Iowa Standardized Model Structure
iTRAM	Iowa Travel Analysis Model
ITS	Intelligent Transportation Systems
LEP	Limited English Proficiency
LOS	Level of Service
LOST	Local Option Sales Tax
LOTTR	Level of Travel Time Reliability
LPI	Leading Pedestrian Interval
LRSP	Local Road Safety Plan
LRTP	Long-Range Transportation Plan
LTAP	Local Technical Assistance Program
MET	Metropolitan Transit Authority
MIPRC	Midwest Interstate Passenger Rail Commission
MPO	Metropolitan Planning Organization
MUTCD	Manual on Uniform Traffic Control Devices
NACTO	National Association of City Transportation Officials
NAICS	North American Industry Classification System
NEIA	Northeast Industrial Access
NEPA	National Environmental Policy Act
NHFN	National Highway Freight Network
NHFP	National Highway Freight Program
NHPP	National Highway Performance Program
NHS	National Highway System
NHTS	National Household Travel Survey
NHTSA	National Highway Traffic Safety Administration
NIMS	National Incident Management System
NMFN	National Multimodal Freight Network
NPDES	National Pollutant Discharge Elimination System
NRF	National Response Framework
PCI	Pavement Condition Index
PCR	Potential for Crash Reduction
PHFS	Primary Highway Freight System
PHMSA	Pipeline and Hazardous Materials Safety Administration
PTASP	Public Transportation Agency Safety Plan
PPP	Public Participation Plan
PRF	Primary Road Fund
PSC	Proven Safety Countermeasure
PTP	Passenger Transportation Plan
RAISE	Rebuilding American Infrastructure with Sustainability and Equity
RAMS	Roadway Asset Management System
REAP	Resource Enhancement and Protection
RISE	Revitalize Iowa's Sound Economy
RRFB	Rectangular Rapid Flashing Beacons
RSA	Road Safety Audit
RTA	Regional Transportation Authority
RUTF	Road Use Tax Fund
SHSP	Strategic Highway Safety Plan
SLRTP	State Long Range Transportation Plan
SPR	State Planning and Research
SRTA	Safe Routes to School
SS4A	Safe Streets and Roads for All
STA	State Transit Assistance
STB	Surface Transportation Bureau
STBG	Surface Transportation Block Grant

STRACNET	Strategic Rail Corridor Network
STRAHNET	Strategic Highway Network
SUDAS	Statewide Urban Design and Specifications
TAC	Transit Advisory Committee
TAM	Transit Asset Management
TAMP	Transportation Asset Management Plan
TAP	Transportation Alternatives Program
TAZ	Traffic Analysis Zone
TDM	Travel Demand Model
TEAP	Traffic Engineering Assistance Program
TERM	Transit Economic Requirements Model
TIFF	Tax Increment Finance Funding
TIP	Transportation Improvement Program
TMC	Traffic Management Center
TPWP	Transportation Planning Work Program
TSIP	Traffic Safety Improvement Program
TTC	Transportation Technical Committee
TTTR	Truck Travel Time Reliability
TWLTL	Two-Way Left-Turn Lane
ULB	Useful Life Benchmark
UNI	University of Northern Iowa
USBR	United States Bike Route
VCAP	Value, Condition, and Performance
VHT	Vehicle Hours Traveled
VMT	Vehicle Miles Traveled
VRM	Vehicle Revenue Miles
YOE	Year of Expenditure

APPENDIX III – 2022 PUBLIC INPUT SURVEY REPORT

This document presents the results of Round One and Round Two of the Public Input Survey that was conducted as part of the 2050 Long-Range Transportation Plan for the Black Hawk County Metropolitan Planning Organization (MPO). The MPO includes Waterloo, Cedar Falls, Elk Run Heights, Evansdale, Gilbertville, Hudson, and Raymond, and portions of unincorporated Black Hawk County.

The purpose of the survey was to help identify transportation challenges, needs, and priorities in the Black Hawk County MPO region. The survey was created and administered by MPO staff. Two rounds of the survey were conducted to gather additional responses. The questions and format of each survey were the same, but Round One utilized a random selection process while Round Two was open to the public.

Round One

A mailing list of 1,000 households in the MPO region was purchased through the mailing list consultant LeadsPlease. The geography was selected manually using all MPO cities. According to 2022 U.S. Census Bureau Estimates, there are 58,930 households in the region. The LeadsPlease database had 53,850 total available leads. The list of names and addresses was randomly generated.

The survey was administered through the mail via a postcard containing a QR-code leading to the survey. The survey consisted of 33 questions related to roads, bridges, transit, air travel, pedestrian and bicycle infrastructure, and road safety. Respondents also had the opportunity to pinpoint their greatest transportation challenge area on a map, answer open-ended questions, and provide additional written comments. Paper copies were provided as an option for residents without internet access. Round One was open from September 23rd to October 28th, 2022.

A total of 1,000 surveys were mailed to residents in the region; 26 surveys were returned, resulting in a 2.6 percent response rate. Staff noted the timing of the surveys coincided with the 2022 elections, which may have contributed to a low response rate due to an influx of media advertisements. To gather more responses, MPO staff conducted a second round of the survey for the public to participate.

Round Two

The second round was carried out through INRCOG's various media platforms, including emailing lists, the INRCOG website, E-newsletter, and Facebook page. The timing of Round Two also coincided with the 2022 Mayor's State of the City Address, detailed in Chapter 10, which MPO staff attended to further promote the survey as a public input opportunity. The survey had the exact same format and types of questions as Round One but had three times the response rate. Round Two was open from November 10th to December 9th, 2022. The results of both rounds are respectively labeled and shown below.

This document details the results for each question and a listing of written comments. On the following pages, "N/A" stands for no answer. This means either the individual surveyed did not write a response; or their response was incomplete, irrelevant, or a misinterpretation of the question asked. All written comments were included in this report except for comments such as "N/A" or "I do not know".

ROUND ONE: RANDOMLY GENERATED

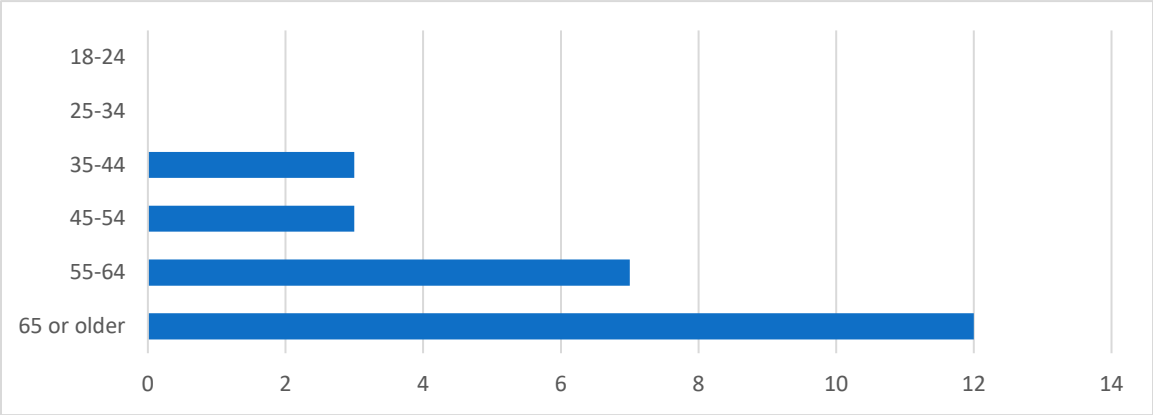
1. Where do you live?

- Answered: 25
- Skipped: 0

- Cedar Falls (19)
- Waterloo (4)
- Hudson (2)

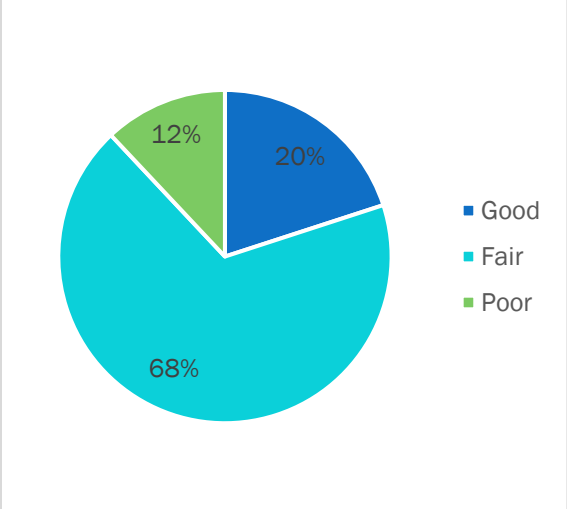
2. Which age group are you in?

- Answered: 25
- Skipped: 0



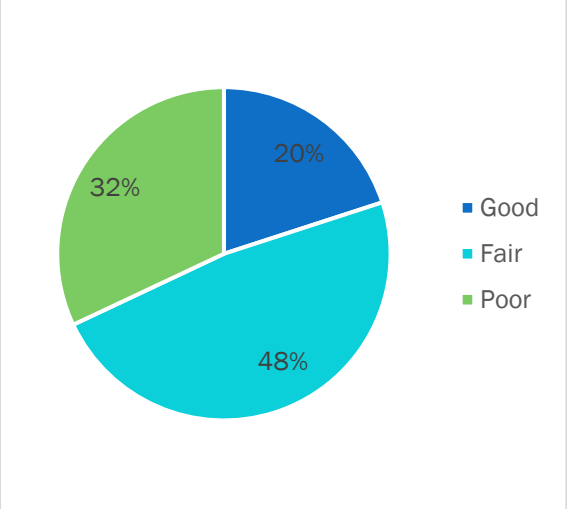
3. How would you rate the physical condition of our roads?

- Answered: 25
- Skipped: 0



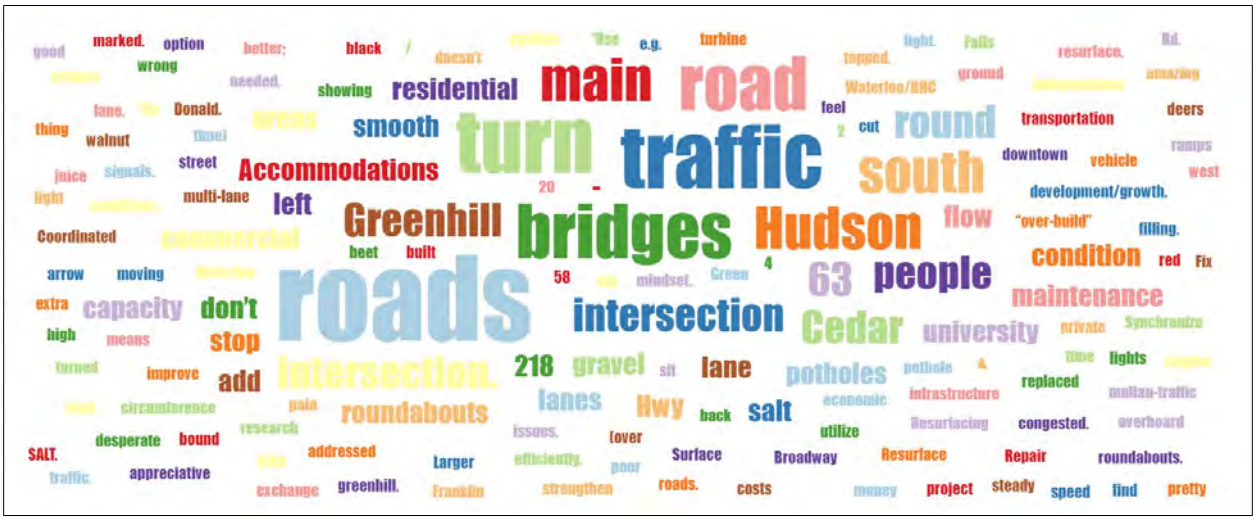
4. How would you rate the physical condition of our bridges?

- Answered: 25
- Skipped: 0



5. How could our roads and bridges be improved? (E.g., conditions, connectivity, capacity, etc.)

- Answered: 21
- Skipped: 4



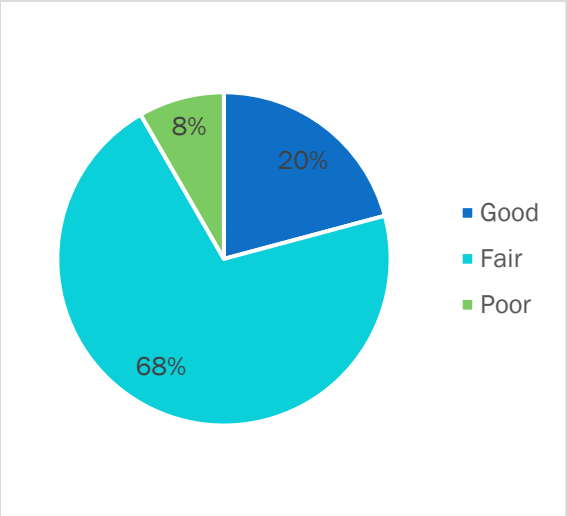
Worded responses:

- "Waterloo/BHC seem to be of the "over-build" mindset. For example, in downtown Waterloo, we have several multi-lane roads, which do not help our economic development/growth. There is much research showing that if more infrastructure is built, it doesn't improve traffic flow issues. We need more on street accommodations for cyclists, which could (over time) help with moving traffic more efficiently. Accommodations for people who utilize other means of transportation than a private vehicle needed."
- "Surface conditions. Coordinated traffic signals. Larger circumference of Roundabouts."
- "Some roads need to be either replaced or ground down and black topped. The main bridges are being addressed now."
- "Resurfacing, especially Broadway, Independence, Donald. Keep up with pothole filling. Synchronize traffic lights better; one should not have to stop at a red light at every intersection."
- "Resurface some roads Greenhill on ramps to university from Greenhill. Roundabout at E 4th, walnut intersection. Green arrow turned back on for west bound Franklin traffic turbine left at E Mullan-traffic gets too congested. Roundabout at 63 south and 218 where intersection with w commercial near John Deer or out stop light. Also at this intersection only have one left turn lane to turn south onto 63 at w commercial people get cut off all the time from others trying to turn from wrong lane."
- "Repair potholes, strengthen, bridges, smooth, gravel, roads, more gravel on the roads. We are going overboard with all the roundabouts. Don't need that many don't have to have one at every intersection."
- "Regular maintenance - I know - costs money."
- "Mostly, some of the main roads, e.g., Hudson Road south of Cedar Falls to Hudson is in desperate need of a resurface. The HWY 63 project was amazing, the same thing needs to be done for Hudson Rd."
- "I've actually been appreciative of roundabouts as it creates a steady flow of traffic. I do find some of our intersections / interchanges confusing. I had high hopes for an improved and smooth intersection at Hwy 58 and Viking Road but the exchange is rather confusing and poorly marked. Embedded reflectors and iridescent pain may be helpful."
- "It seems that with university avenue, cedar heights, and south main improvements we are in pretty good shape."

- “It seems like the condition of the roads are getting traveled to a higher capacity yet not updated regularly. Connectivity is great!”
- “Increased capacity.”
- “I feel that the residential streets have been neglected as the round abouts and other main roadways have been redone.”
- “Hudson road is my backyard. It is getting really worn out from 20 to Greenhill road.”
- “Fix potholes and bumps.”
- “Continue redoing residential roads in Cedar Falls. Rebuild bridges in poor condition in areas outside the metro area.”
- “Bridges and roads refreshed and repaired.”
- “Better maintenance.”
- “Add some overpasses at Greenhill Road and 218.”
- “Add more lanes, increase speed limits in some areas.”
- “*Re-surfacing NOT patching. *Use the beet juice derivative that Minnesota uses instead of SO MUCH SALT. The salt 'eats' the metal on the bridges, damages road surfaces & salt leeches into the waterways. *More use of an extra right hand turn lane at busy intersections. You have to sit and wait for people wanting to go straight, when you want to turn right. This backs up traffic unnecessarily when a right turn option should be made available. *Go from 2 to 4 lanes whenever possible/feasible.”

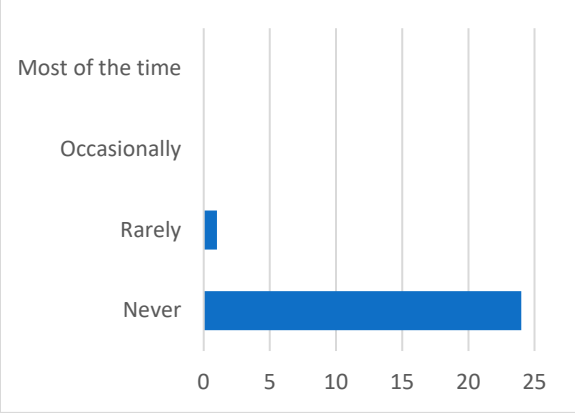
6. How would you rate our public transit?

- Answered: 24
- Skipped: 1



7. How often do you ride public transit?

- Answered: 25
- Skipped: 0



8. How could our public transit be improved? (E.g., availability, connectivity, efficiency, hours of operation, etc.)

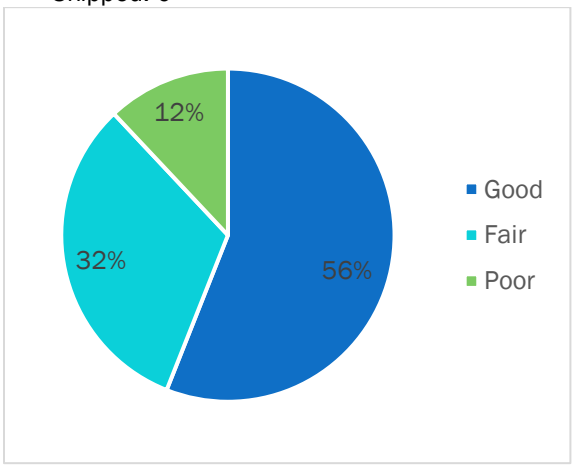
- Answered: 9
- Skipped: 16

Worded Responses:

- “Using smaller buses so it's cheaper to operate. Big buses drive around mostly empty. Buses are very important to have for people without a car, though.”
- “Transit to and from the airport, University and maybe some routes to the industrial park in Cedar Falls. Have a bike trail system that John Deere PEC and Engine Works.”
- “Not sure. I know with so many shopping areas out south of town, I wonder how accessible transit is to that area, the unity point /western home community, Uni campus, university avenue and downtown areas are to the most vulnerable who need those areas for health care, shopping, etc.”
- Include direct routes from residential facilities (men and women) for those not able to drive to get to bigger work such as Tyson, Bertch cabinets, foundries, Deeres, Hyvee, businesses over by cattle congress, omega cabinets, other larger businesses.”
- “I'm not sure I've ever seen the MET transportation here in Hudson”
- “As I don't typically ride the bus, I'm cautious providing my opinion addressing most of these issues. However, I've received feedback that the system is limited with staff currently - much like many other local businesses. I would love to see a successful public transit system.”
- “As far as I know, I would have to walk about 6 blocks to get to a bus. I think we should focus on driverless cars that can pick you up at your place.”
- “All of the examples would benefit our transit. A large problem is that most people don’t know how to use it, the routes, or schedules. I have friends who didn’t even know we have public transit. And with people who do know about it, many see it as an option that is only utilized by those who don’t have a vehicle.”
- “*Provide more customer pickup stations. *Provide cover/shelter from the weather for inclement weather: Snow, rain, etc. People do not want to stand out in the rain/wind/snow. *Los Angeles uses some hydrogen cell buses-larger cities do too. Gov't grants are available to help with the cost of the hydrogen cell buses. *Better promotion of public service. Where can you find a schedule???? How easy is it to find out where/when to catch a bus??”

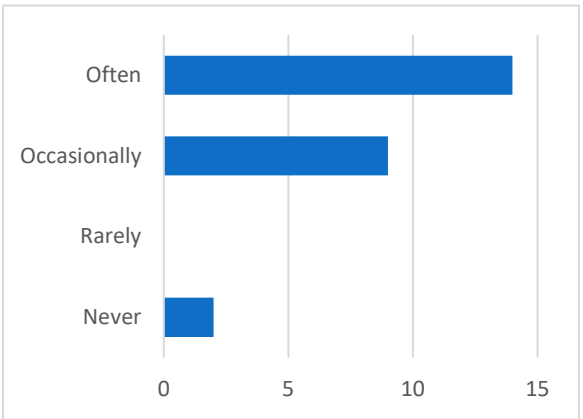
9. How would you rate our pedestrian infrastructure?

- Answered: 25
- Skipped: 0



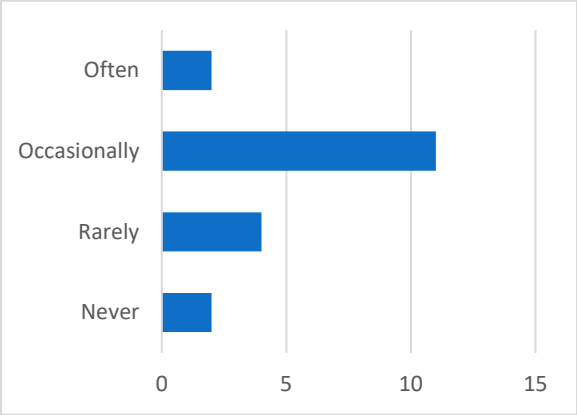
10. How often do you walk?

- Answered: 25
- Skipped: 0



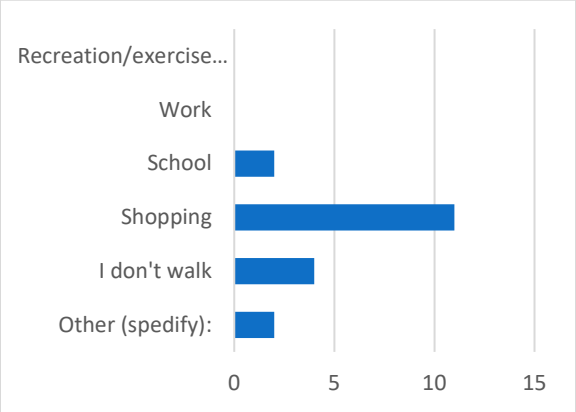
11. How often do you walk to a destination instead of taking a car or bus?

- Answered: 25
- Skipped: 0



12. Where do you walk to? Select all that apply.

- Answered: 25
- Skipped: 0

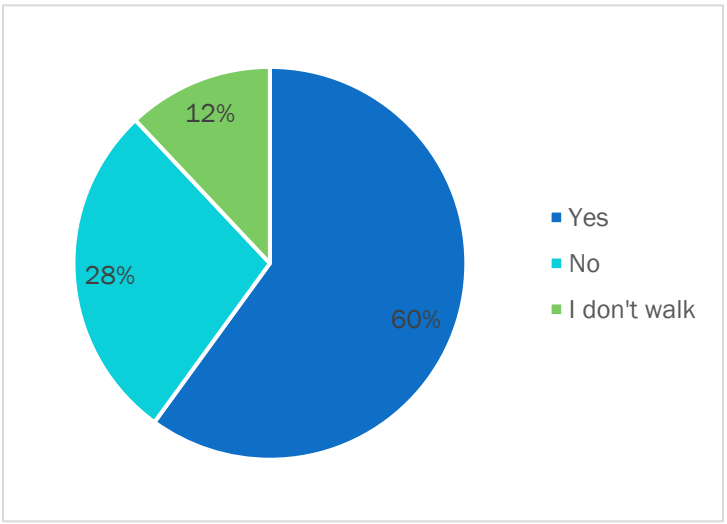


Other (specify):

- "Shopping mall at College Square. It's a great resource."
- "Our downtown."
- "Library, entertainment, pay bills."
- "Eating out, events."

13. Do you feel like you can safely walk to your preferred destination? (In terms of existing infrastructure, speed limits, protected intersections, lighting, etc.)

- Answered: 25
- Skipped: 0



14. If you responded no, explain your answer below.

- Answered: 11
- Skipped: 14

Worded Responses:

- “Would like a wide sidewalk on progress between Greenhill to university and more street lighting throughout the city in the neighborhoods, more city surveillance throughout the city neighborhood.”
- “There are no sidewalks in my area. Walking on the streets is neither pleasant nor safe.”
- “Some of the roads are broken up. No sidewalks to walk on. All the new trails are being built on the newer side of town and the older neighborhoods are being left behind.”
- “People are so CRAZY about hurrying in their cars. You literally take your life in your hands trying to cross some streets: EX: Hudson Road intersections, Univ. Ave intersections, the public just doesn't look out for people on foot. Or if they do, they don't yield or give a DARN. Its toooooo dangerous to walk anywhere that there is somewhat heavier traffic. ***Hey CF police: how about enforcing the cell phone usage laws?? Ridiculous amounts of usage while driving. Dangerous.”
- “Most of my destinations are farther than 2 miles.”
- “Lighting.”
- “In some areas there are no pedestrian crossings/sidewalks. At times you have to walk on the road or across lawns.”
- “I don't walk because there is nothing within walking distance of my house. However, the sidewalks I have been on do seem generally to be in good repair.”
- “But I do think some roads need a lower speed limit due to pedestrian traffic. As in University Avenue to Viking rd on Hudson rd should be reduced from 45mph to 35 mph. Due to increased housing development and human traffic on sidewalks.”
- “A small stretch of road on 12th street near the high school and cemetery would benefit from sidewalks.”
- “A good friend was crossing at a crosswalk downtown Waterloo a few years ago and was struck. Our downtown has far too many lanes of traffic on several streets. Slowing traffic by narrowing streets and turning current 1-ways back to 2-ways would be beneficial to pedestrians, cyclists, and businesses. Vibrant, walkable downtowns do not look like ours (current). Putting a speed limit on a multi-lane 1-way road (or any wide rd) is pointless. People go as fast as the road is built to accommodate.”

15. If there was one road you could improve for walking, which would it be? How would you improve it? (E.g., sidewalks, lighting, crosswalks, etc.)

- Answered: 21
- Skipped: 4

Worded Responses:

- “Wide sidewalk on progress between University and Greenhill. Also more lighting.”
- “What there is in Hudson is really nice.”
- “Washington Street. Ideally, removing and rerouting Highway 218 to go around the city would reconnect neighborhoods and downtown, as well as improve the quality of life for many citizens within at least a mile, due to the excess noise, light pollution, and dangerous conditions for pedestrians/cyclists. At the very least, enforcing the engine brake ordinance would help with noise. A crosswalk is needed at the end of the exits off of the highway, as traffic barely slows at the stoplights.”
- “University Avenue west of College Square.”
- “The problem is that many people who do walk don't use the available sidewalks and walk in the road instead.”
- “Streets leading to University Ave. Walking on University is great, but getting there is not.”
- “More lighted streets.”
- “Main St north of the river.”
- “Lightning.”
- “It has improved by HWY 63 from Logan to Franklin needs more accessible walking in some areas.”
- I'm gonna list ALL of them: Hudson Road, Univ. Ave, 1st Street (ALL IN CEDAR FALLS) College St., 18th “St., 12th St., Main St. Again: ALL IN CEDAR FALLS. Brighter lights for dusk/evening. MUCH BETTER marked crosswalks, AND cameras to record & fine motorists that do not yield to pedestrians. Catch the violators and

ticket them with a substantial fine for making it dangerous for those walking and those who violate pedestrian rights. If enough people get ticketed, the 'word' would get around."

- "Hudson road sidewalks for walkers and bikers are very narrow."
- "Hudson Road."
- "Hudson rd from viking to university Ave Reduce speed limit, designate one side for pedestrian and bicycle traffic. One for pedestrian only or increase width of sidewalks to accommodate both."
- "Green hill road by Kwik star. Needs pedestrian crossing lights."
- "Grand Blvd - sidewalks and lighting."
- "First street, Cedar Falls."
- "Cedar Heights and Rainbow."
- "A lot of improvement has been done recently to fix problem areas for walking (University Ave, etc) Can't think of a road that doesn't have a sidewalk now that is a main road."
- "12th street. Also, the interchange at Hwy 58 and Viking Road has some curb cutouts indicating it may be friendly for bikes and pedestrians, but it's certainly not. It would be nice to connect them with consistent sidewalks along Ansborough. There's a stretch north of University with no sidewalks. Also, the west side of Hudson road between 4th and 1st streets and 18th and 12th could benefit from sidewalks."

16. How could our pedestrian infrastructure be improved?

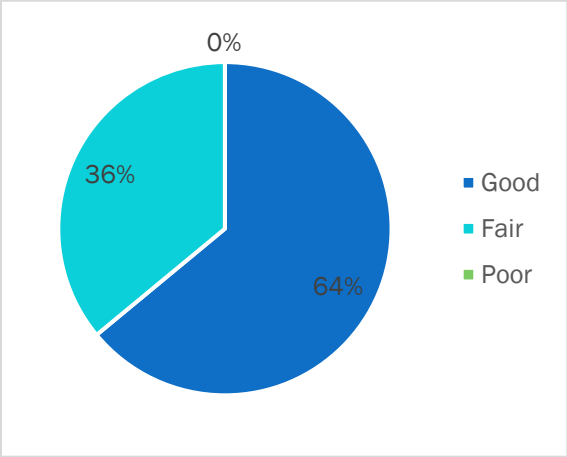
- Answered: 16
- Skipped: 9

Worded Responses:

- "Wider sidewalks."
- "There are places where the bike trails just "end". Connections are critical. Also. trails through parks or less traveled areas are not conducive to walking alone."
- "Seal off parts of town (like the Parkade in CF and College Hill district) and recreational areas so that motor vehicles are NOT ALLOWED IN THESE AREAS. Its just way too dangerous around here on foot if there are cars/trucks in the same areas. Motorists just don't seem to give a damn about people on foot. See the box just above. Same ideas."
- "Pedestrian bridges near Franklin and e 11th, Franklin and E Mullan/e 1st, 11th and Washington (both north and south), San Maran and pennys, La Porte by San Marnan."
- "No eBikes on sidewalks/walkways in the future."
- "Narrowing roads, adding bump outs to wide intersections, other traffic calming implementation, but most importantly emphasizing pedestrian safety over automobile convenience. This would take a change in mindset with city/county department heads."
- "More sidewalks."
- "More light."
- "More and wider sidewalks."
- "Maintain areas such as Prairie Lakes not just patches."
- "Louder beeps at the lights to indicate wait, walk, etc."
- "Lightning and monitoring of breaks in the surfaces."
- "Keep sidewalks in good shape."
- "I'm pleased that there seems to have been some effort in constructing sidewalks along areas where they previously weren't available such as along Hudson Road between 8th street and 12th streets. I'm looking forward to more deficits being addressed."
- "Corner of Rownd and Orchard in Cedar Falls isn't safe for pedestrians, bikes, or cars. We see near miss after near miss. People on Orchard either run the stop sign, or seem to think it is a four way stop and stop and then go even though people are coming on Rownd Street. Next to bus stop for Peet Junior High, kids have to cross there, kids walking to Orchard Hill School. There needs to be flashing stop signs on Orchard, painted crosswalk on street. "
- "Better walking trails and more accessibility."

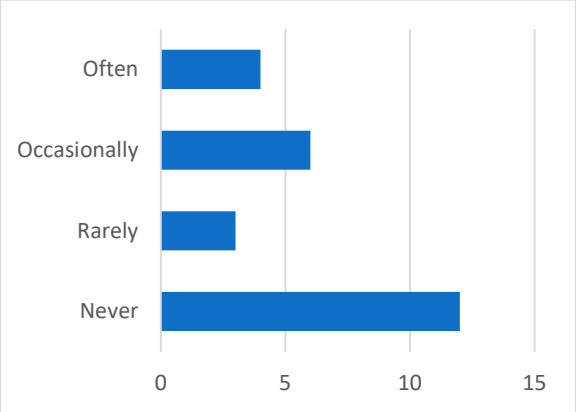
17. How would you rate our bicycle infrastructure? (E.g., trails, lanes, paths, sharrows, bike routes, etc.)

- Answered: 25
- Skipped: 0



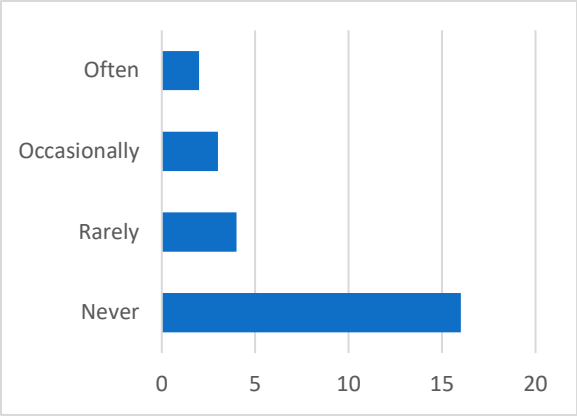
18. How often do you use bicycle infrastructure?

- Answered: 25
- Skipped: 0



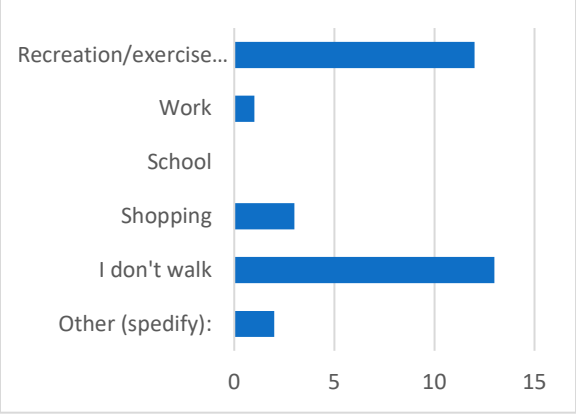
19. How often do you bike to a destination instead of taking a car or bus?

- Answered: 25
- Skipped: 0



20. Where do you bike to? Select all that apply.

- Answered: 25
- Skipped: 0

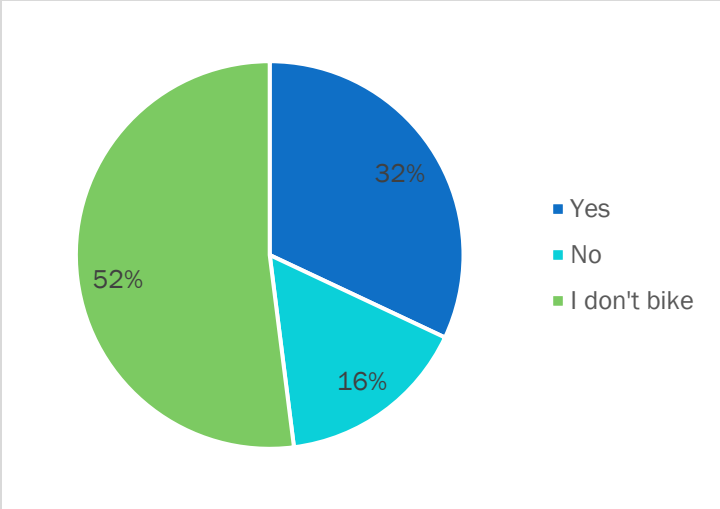


Other (specify):

- "Downtown for entertainment events."
- "Appointments, social gatherings, events, recycling, chores, errands."

21. Do you feel like you can safely bike to a destination instead of taking a car or bus? (In terms of existing infrastructure, speed limits, protected intersections, lighting, etc.)

- Answered: 25
- Skipped: 0



22. If you responded no, explain your answer below.

- Answered: 9
- Skipped: 16

Worded Responses:

- “The older neighborhoods are being left behind and do not always have decent sidewalks or bike trails to access other areas.”
- “Problem with knees does not allow for biking.”
- “I would have biked to work at John Deere PEC if there was a safer route not on the street.”
- “I think bikes should pay a fee to help maintain the bike trails.”
- “Hudson is too far to bike to that.”
- “Because of the way that our city/county has built infrastructure, the emphasis is always on cars. This affects how people driving view cyclists and pedestrians: in the way. Much of the cycling infrastructure is fine for recreational cycling, but if a person wants to get somewhere, there is generally no accommodation for that. A good example is Crossroads area. There are no sidewalks and no marked way to get there. We are experienced, so we take streets. But most would not feel safe.”
- “Again, motorists DO NOT GIVE A DARN to a person on foot, on a bike-anything but a car/truck/motorcycle.”
- “Again, most people I see on bicycles are in the road, or I should I say in the middle of the road. Bicyclists always cry "Share the Road!" but they don't reciprocate.”
- “12th Street between Hudson and Main Streets is a consistent concern. It's easy to gain speed heading east. Too often people at the cross street stop signs don't look for bicyclists and pull out - multiple near misses. Some drivers don't seem to appreciate sharing the road with bicyclists brushing by me nearly making contact as they pass. The painted bicycle lanes do nothing to deter this. A structured path allowing a safer transition from Hudson to Main would be lovely.”

23. If there was one road you could improve for bicycling, which would it be? How would you improve it? (E.g., bike lanes, reducing traffic speeds, lighting, etc.)

- Answered: 18
- Skipped: 7

Worded Responses:

- "With the new cedar falls high school, 27th street will need wide bike lanes adjacent."
- "University, I avoid this road when I bike."
- "University Avenue west of College Square."
- "Not just ONE ROAD, all roads that allow bikes. All the above: EX--bike lanes , reducing traffic speed [HA!!! what a joke statement that is!!] REDUCE SPEEDS?? !! YOU CAN'T BE SERIOUS."
- "More lighting."
- "Main Street."
- "Hudson Road. Wider sidewalks for walkers and bikers."
- "Hudson rd wider sidewalks. More larger signage to inform cyclists that there are laws governing intersections. And cross buttons that work ."
- "First street, Cedar Falls."
- "Even along Shaulis Rd, where there is a lovely bike trail, I see more bicyclists in the road than on the bike trail. I rarely see anyone biking in downtown, even after the bike lanes were established. 1
- "Crossing University Avenue at Rownd Street on a bike feels unsafe due to turning traffic and incline of street."
- "Cedar Heights south of Green Hill Rd."
- "Cedar Heights and Rainbow Drive. Bike Lanes/Bike Paths/Sidewalks."
- Bike trail from Greenhill down Cedar Heights, down Deere road, connect to Viking rd, and bike trail down ridgeway."
- "Bicycles should stay off public highways and on bike trails."
- "Besides 12th street, I'd say the intersection of Hwy 58 and Viking as well as Hwy 58 and Ridgeway. Avoiding these intersections is best. The trails heading south beyond McElroy are confusing as well."
- "4th Street Waterloo. Bike lanes all the way. That would be the ideal street for a bike lane. It would benefit so many people and businesses."

24. How could our bicycle infrastructure be improved?

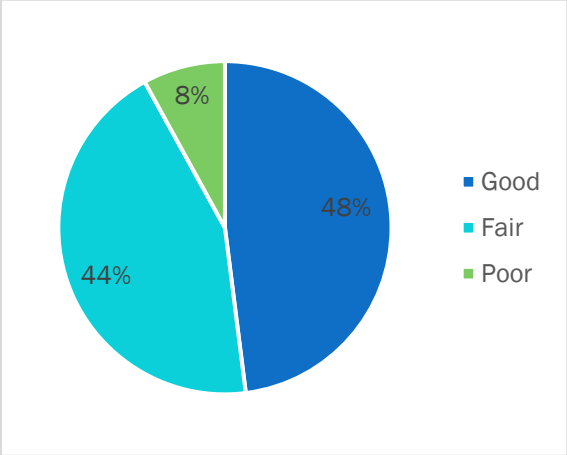
- Answered: 12
- Skipped: 13

Worded Responses:

- "When first street was reconstructed they did not continue the bike trail to downtown. This was a mistake and should be corrected if you really want connectivity. Union road bike trail is a nice addition but it, too, should be connected in a better fashion. "
- "We see little kids riding to Orchard Hill School on Rownd Street in the bike lane who would be safer riding on the sidewalk. Drivers speeding, lots of traffic, cars parked in bike lane, etc."
- "The bridges along the seargent road path are scheduled for repair. More reserve money for repairs so trails and paths aren't out of service for long periods of time."
- "Share the road is a good theory, but more dedicated bike lanes would be so much more safe for everyone."
- "Seal off access to bike areas from vehicle traffic. I will not bike around here. I don't want to get hit."
- "More trails."
- "More lighting and security cameras on trials."
- "It could go to places people actually go."
- "I absolutely enjoy the bike paths. There are a few bugaboos en route. Again, a route from Hudson to Main avoiding local traffic would be beneficial. Ansborough could benefit from more sidewalks to allow connecting trails."
- "Get bicycles off main roads. They are dangerous."
- "For Hudson it's good."
- "Careful monitoring of breaks or unsafe areas."

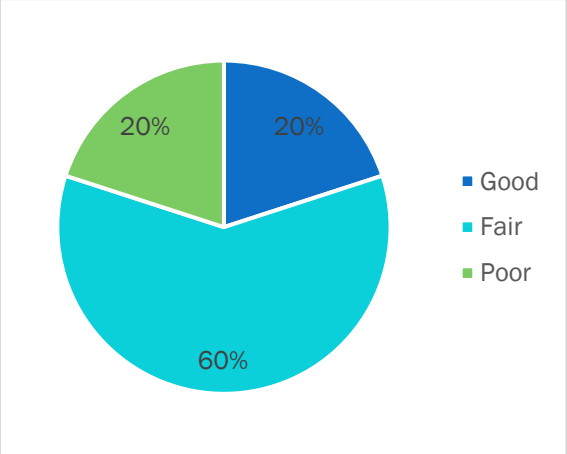
25. How would you rate the overall safety of our streets?

- Answered: 25
- Skipped: 0



26. "Complete Streets" serve ALL road users by providing options for cars, transit, bicyclists, and pedestrians alike. An example is shown below. How do our streets rate based on this concept?

- Answered: 25
- Skipped: 0



27. If there was one road you could improve to serve ALL road users, which would it be? How would you improve it?

- Answered: 22
- Skipped: 3

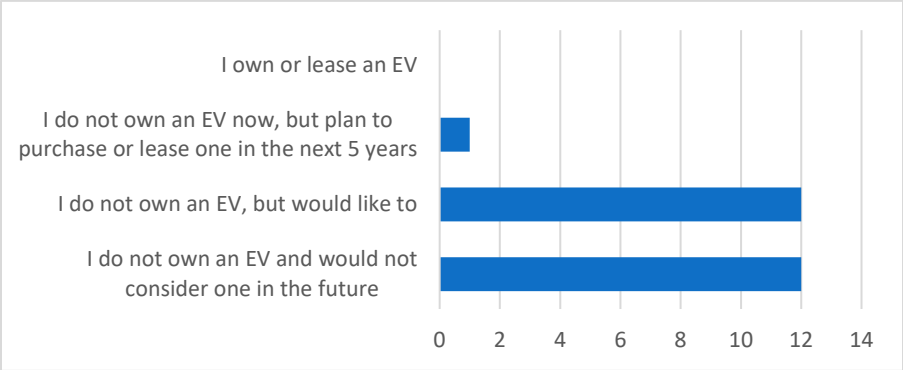
Worded Responses:

- "Washington Street. Turn it into a complete street and move the highway to the edge of town, where it belongs. Or Logan Ave."
- "Unsure if it's been beneficial where it's applied. It doesn't seem to change the mindset of drivers that may not appreciate bicycles sharing the road."
- "The best way to improve multi use roads is to crack down on speeding, running of red lights/stop signs/yield signs, and mostly bust people on their cell phones while driving."
- Streets are too busy with all that going on. Too many roundabouts don't need them at every intersection."
- "Safety first. Hard to put bicyclists and pedestrians on same road with vehicles."
- "Roads that "share" with bicycles vary. There does not seem to be consistency. This poses danger to bicycles."
- "None - too dangerous."
- "Main Street or Hudson road."
- "Main Street."
- "Main st. Wider sidewalks so bikes can be on the sidewalks too, Like trails are. The roads not safe for bikes. The road by pineccale Prairie, people driving down the wrong way! These one way roads are badly marked and have to much landscaping to be safe. I've almost been hit several times by wrong way driver!"
- "LaPorte Road in Waterloo needs to be redone for cars, not safe right now for pedestrians and bikes."
- "I think the bike lanes should be on both sides of the road. Making the road wider on one side and calling it a bike lane is ridiculous. It should be smaller and on both sides with marks. The road should be even for cars on both sides. What we have on 12th street is not useful for bikes and cars."

- “I really dislike and am uncomfortable with the center turning lane. More separate bike lanes.”
- “Hwy 63.”
- “Hwy 57, keep bicyclists off public highways to avoid accidents, most of them ignore traffic laws.”
- “Hudson Road and the intersection with Greenhill--for all users. Make allowance for a right turn when there is a red light. There is a sign along Hudson, on the east side of the road stating "Thru traffic in the inside lane". Another joke. Those that want to continue north on Hudson Rd. stay frozen in the outside lane and make NO ALLOWANCE for someone that wants to turn right (east) onto Greenhill. What a bottle neck this creates. The city REALLY missed the chance.”
- “Hudson rd cedar falls, widen sidewalks, reduce speed limit.”
- “Hawthorne.”
- “Grand Blvd.”
- “Franklin/broadway/Dubuque roads.”
- “Cedar Heights to Rainbow Drive.”
- “Broadway Ave. from Donald/Logan to George Wyth. A lot of Allen Employees live in CF and there is no safe way to jog/bike from CF to the Logan area.”

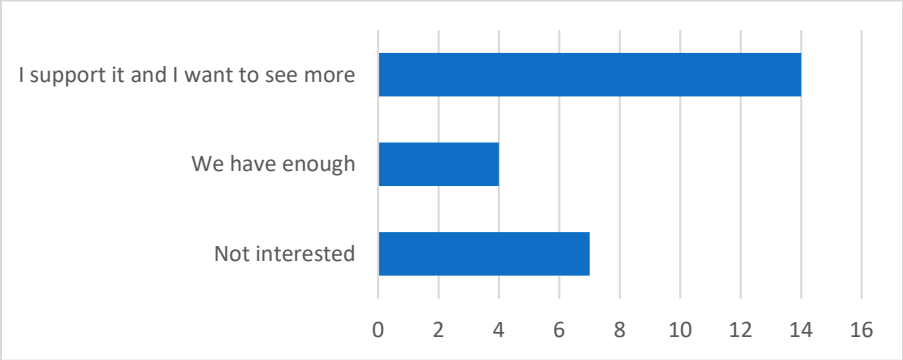
28. Which of the following applies to you about Electric Vehicles (EVs)?

- Answered: 25
- Skipped: 0



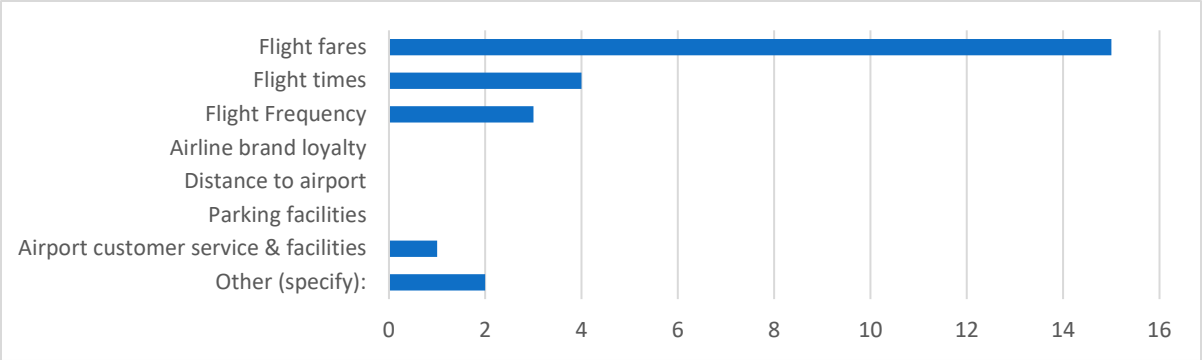
29. What role do you want Iowa to have in electric vehicle infrastructure?

- Answered: 25
- Skipped: 0



30. When deciding whether to fly from Waterloo Regional Airport or a different airport, which of the following is the biggest factor that influences your decision?

- Answered: 25
- Skipped: 0



Other (specify):

- "No one reason – might be the rates; might be the flight times; might be the airline brand; depends on where/what I am going."
- "Destination and connection flights."

31. What is your biggest transportation challenge in the Black Hawk County MPO area?

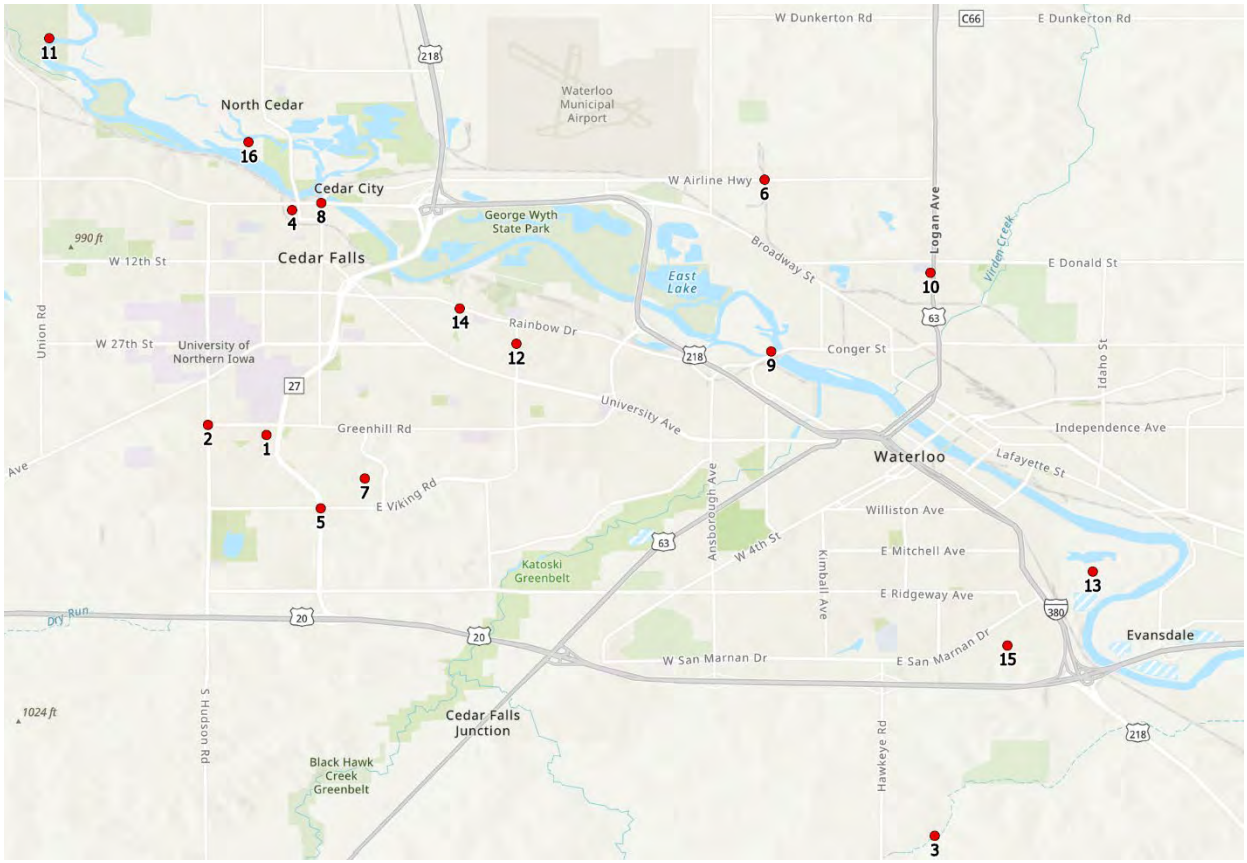
- Answered: 24
- Skipped: 1

Worded Responses:

- "We should try to get a second tenant airline at Waterloo Airport as AA does a poor job."
- "Too many uncontrolled intersections."
- "The bad roads. I feel like my vehicles take an unnecessary beating because of the poor road surfaces - potholes, humps (like on Donald St west of Allen Hospital for instance), really rough railroad crossings - especially by Alter's on Airline Hwy."
- "Roundabouts for me when driving. EV's are out of the question with cost and then charging right now - no real challenges. Be alert, be safe. Drive when the time is the best (not too busy). Keep from putting too much traffic in too small a space. We drive only."
- "Potholes."
- "Potholes throughout the MPO."
- "People speeding through roundabouts speed is posted at fifteen mph and most drivers go through At an estimated speed of 30 to 40 mph, change lanes in the roundabouts, change lanes to salom through when they are speeding. Need more center turning lane."
- "Not sure other than how safe are the bridges."
- "Not enough Waterloo flights."
- "No competitive price to depart from Waterloo. Not enough flights and the price is not competitive with Cedar Rapids or Des Moines."
- "Lack of rail or more frequent air service to the Cedar Valley."
- "Keeping the roads maintained in good condition."
- "I would love to have more flights to more destinations. Not a single hub. Not everyone want to fly through or to Chicago. And you don't want to be grounded if your single flight of the day is cancelled. (Which happens often.)"
- "I personally have no transportation challenges in BH county."

- “I don’t feel challenged, but if the cycling infrastructure and public transit were better, it would increase our quality of life. We have been riding on unfriendly streets for a long time, but others who haven’t, would/do find it very intimidating.”
- “I do not have problems. I'm healthy, can walk or drive to needed destinations. When doing construction to improve, try to NOT cut off all routes out of a specific neighborhood.”
- “Hmm… the EV questions seem to be approached with bias. How unfortunate and disappointing. I think somewhere between the desire to own an EV vehicle and complete dismissal may be a large share of the population optimistic that some of the current "bugs" in the EV system may improve. The vehicles are expensive, battery replacement is expensive and the vehicles aren't as readily available or "handy" for long trips.”
- “Guess I missed something. What is MPO? Waterloo has 'red light runner/speeding cameras'. CONGRATULATIONS!! Cedar Falls needs the same cameras. Red light/stop light running violation is epidemic here in CF. Speeding is common place. Why post speed limits? Most don't give a darn. People cut in front of you, cut you off, no turn signals.”
- “Getting around all the current construction zones.”
- “Finding safe travel from Cedar Heights/Rainbow to a bike trail.”
- “C57 and Highway 63 need to be elevated like 218 and C57 because it is a dangerous intersection.”
- “Bumpy roads.”
- “Biking or walking to the Walmart area of stores.”
- “Airport is way too limited in flights.”

32. Are there any other transportation problem areas in the Black Hawk County MPO area related to roads, bridges, bicycle and pedestrian facilities, or safety? Use the map to pinpoint a specific location and explain your answer below.



Worded Responses:

1. “Need overpass here.”
2. “No allowance for right hand turn to go east. (there is one left hand turn option to go west on Greenhill, but not for a right hand turn.”
3. “Fix bridge over sink creek on Hammond so people can get to Hawkeye driving building from orange road instead of having to drive to Washburn.”
4. “The speed limit on Hwy 57 between the Thunder Ridge area and downtown is too low, appears often to just be a speed trap.”
5. “Viking Road and 58 intersection is new, but is very confusing. It's hard to tell from markings what lane goes where and what to do.”
6. “Railroad crossing.”
7. “Lack of sidewalks.”
8. “Turning traffic at the intersection of Main St. and 1St causes issues during busy times.”
9. “Too many rail crossings in the city.”
10. “Again, accessing Allen via bike or walking, while improved, still needs work.”
11. “Union Road heading north from 1st street: Windy road, narrow shoulders, speeding drivers - often leaving the clubhouse after drinking. I say a prayer every time I drive this route. I say many prayers and light a candle when I know my kids will be traveling this road at night.”
12. “There are no sidewalks or bike paths for people riding bikes to get safely to an actual bike path
13. “Safety of our older bridges.”
14. “Sidewalk has big bump that I tripped on.”
15. "There are no accommodations for pedestrians or cyclists in this area. Also, people come into town and stay at a hotel out there and are forced to use a car.”
16. “Cottage Row to Franklin St bridge. Bike (walking) too close to road to be safe.”

33. Any additional comments?

- Answered: 6
- Skipped: 19

Worded Responses:

- “Would like stop signs at all intersections on progress between university and greenhill. Nice to have bike trail to down Hess rd to mall area to Hawkeye cc, 218. More bike trials in general (wider paths).”
- “We need to involve business to build out the electric vehicle charging infrastructure. Change the laws and get the utilities and any restrictions removed!”
- “University Avenue is SO much better now for pedestrians, bikes, and bus riders.”
- “Thanks for asking.”
- “Thank you for giving people an opportunity to give feedback and input.”
- “I mentioned this above: But Cedar Falls needs to put in red light violation cameras, speeding violation cameras-like Waterloo & Cedar Rapids. It would make driving safer, reduce accidents and generate a LOT of $$$ for the city. I'm most concerned about the reckless/chance takers that run red lights, race down the roads probably 10-20+ MPH over the speed limit. Hudson Rd is 45 MPH, but south of University Ave---hold on to your butt! Hwy 58 south of Greenhill- same thing. Race track.”

ROUND TWO: PUBLIC

1. Where do you live?

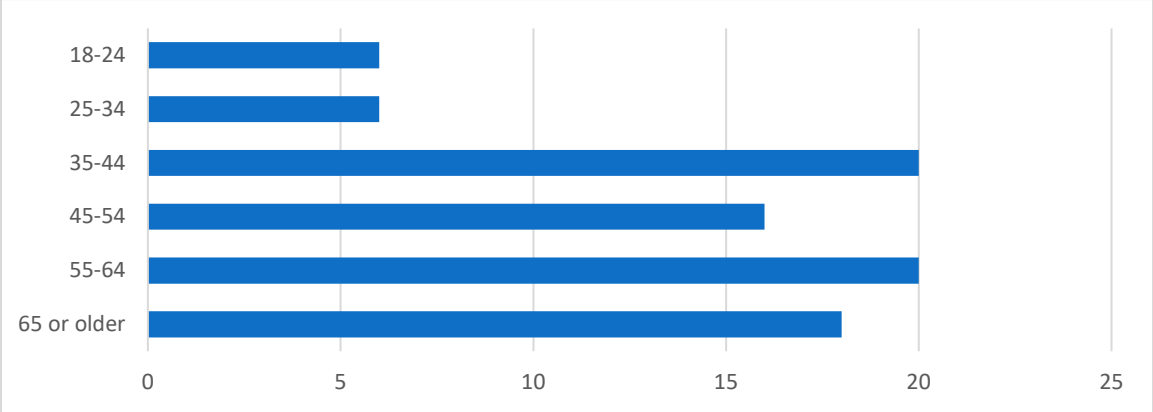
- Answered: 86
- Skipped: 0

- Waterloo (46)
- Cedar Falls (17)
- Raymond (10)
- Elk Run Heights (3)
- Evansdale (3)

- Hudson (2)
- Gilbertville (1)
- Rural Black Hawk County (2)
- Other (2)

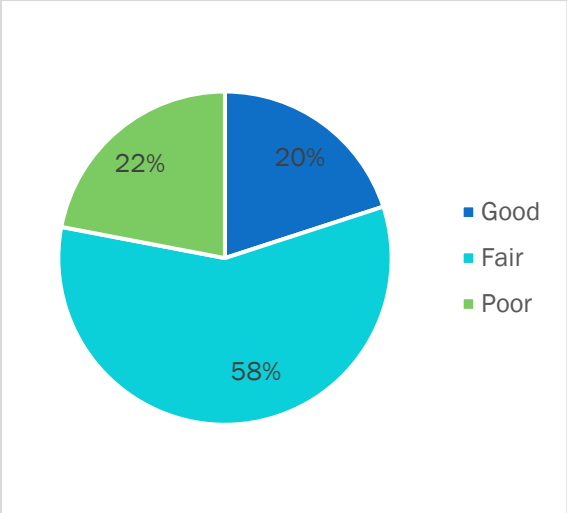
2. Which age group are you in?

- Answered: 86
- Skipped: 0



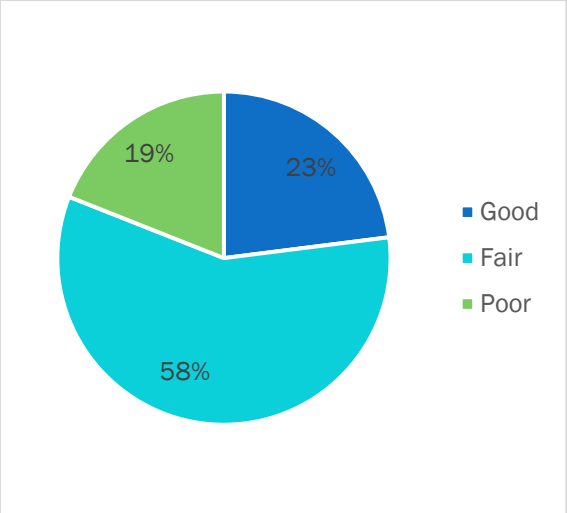
3. How would you rate the physical condition of our roads?

- Answered: 86
- Skipped: 0



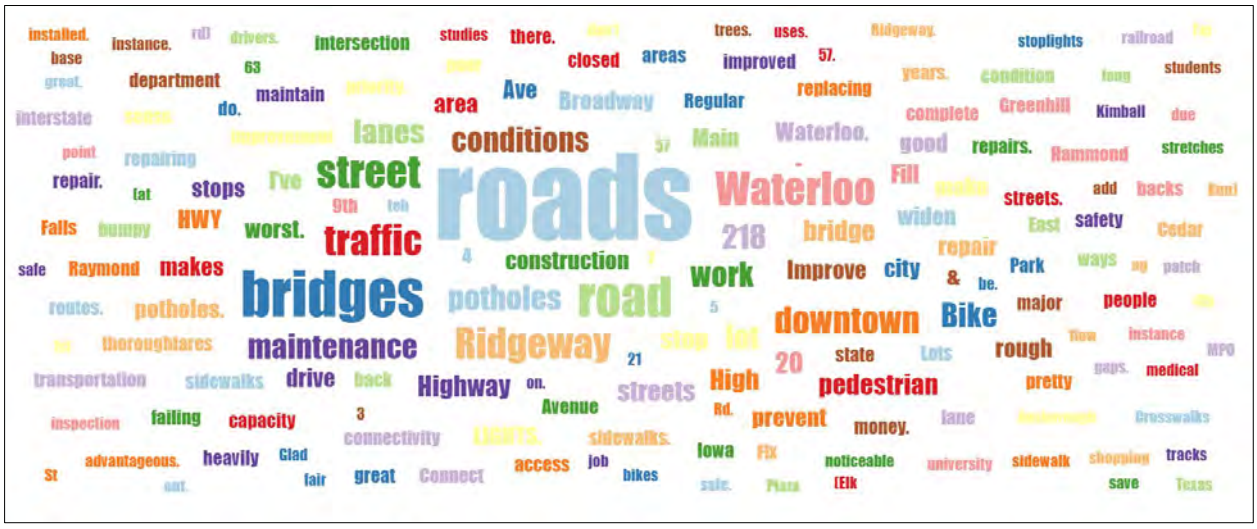
4. How would you rate the physical condition of our bridges?

- Answered: 86
- Skipped: 0



5. How could our roads and bridges be improved? (E.g., conditions, connectivity, capacity, etc.)

- Answered: 62
- Skipped: 24



Worded responses:

- “With regular maintenance, inspection, and studies to improve traffic flow would be the most advantageous.”
- “We need to widen back roads within the city and even out old roads that have been given patch job repairs.”
- “We need more complete streets. Main thoroughfares such as 1st street and Waterloo Road could have more street trees.”
- “We are replacing bridges all around so that is great. We need more connectivity for bikes and non drivers.”
- “Two are being improved right now and they were the worst.”
- “There has been noticeable improvement in major roads like university and 57. My only wish is to widen Ridgeway.”
- “There are a lot of sidewalk gaps. Ridgeway from Kimball to Ansborough has few to no sidewalks, for instance. Crosswalks and stoplights on long road stretches would also help - for instance, from the medical park to the shopping area on Ridgeway, if one hasn't already been installed. Last but definitely not least, a pedestrian bridge over the railroad tracks on 4th Street would help keep East High students safe.”
- “There are a fair number of Waterloo bridges are in need of repair and maintenance that if addressed soon, will prevent expensive and extensive repairs. Easton, Texas, and Ridgeway Avenue (at 9th Street) need replaced and should be enlarged for either road capacity and/or water passage. 1
- “Synchronized signals on 218 through downtown Waterloo. Very frustrating to drive through the area.”
- “Street-side handrails or barrier-wall on the bridge sidewalks. It will make it safer.”
- “Specifically for Raymond, widen Lafayette Rd and include sidewalks. This road is extremely rough and dangerous due to high traffic patterns to Enterprise (Elk Run) Road.”
- “Roads seems rough in downtown Waterloo and on Broadway St, Ridgeway Ave, Ranchero Rd and Butterfield Rd from what I’ve traveled recently.”
- “Roads and bridges in the MPO area should be appropriately sized, i.e., not overbuilt capacity wise. They should also accommodate all modes of transportation, and consider safety as a high priority.”
- “Road conditions and safe bridges need a lot of attention and money. Harsh winters and hot summers take such a toll.”
- “Repairing and smoothing the surface areas.”

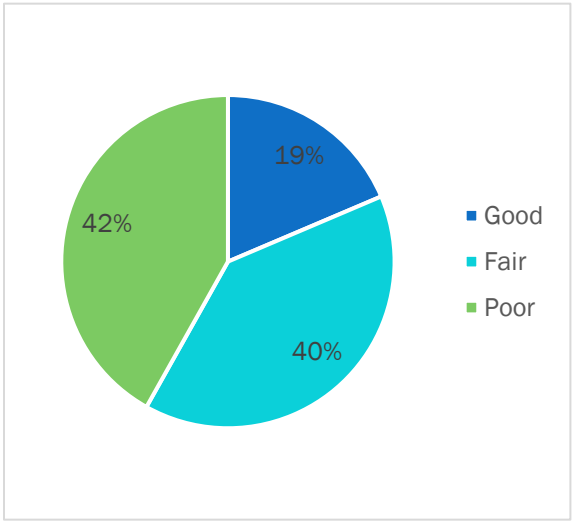
- “Repainted lines more often would help.”
- “Rehabilitation is needed on several of Evansdale's roads as well as Waterloo.”
- “Regular maintenance is to be done to prevent the road from getting worst.”
- “Quicker turn around with road construction.”
- “Potholes need to be taken care of, some roads need entirely new surfaces. Bridges need to be updated to prevent catastrophic failure.”
- “Potholes don’t seem to be filled. Downtown bike trails are a bumpy embarrassment.”
- “Our roads and bridges could be improved by repairing or rebuilding failing city streets and thoroughfares with consideration for bicycle and pedestrian accommodations. Roundabouts should be considered where appropriate to improve safety and traffic flow.”
- “One bridge on Hammond Avenue has been closed for 5 years.”
- “Needing repair.”
- “More pedestrian access and walkways, more public transportation.”
- “More complete streets. Take 4 lane roads down to 2 and add bike lanes and pedestrian lanes.”
- “More bike lanes.”
- “Monthly maintenance on roads, fill potholes.”
- “Many roads and bridges aging out. Continuing to develop outward instead of focusing on existing infrastructure makes it difficult to maintain what we already have.”
- “Many in town roads are in poor state of repair, with lots of potholes. The temporary patches being used seem to work for days rather than months. There is progress being made but there is a lot of catching up to do. I am not an engineer. The quality of a bridge isn't really something you can tell just by driving over it, so I would defer conversation about our bridges to experts not opinions.”
- “Lots of patched wholes in the roads that have been there for years. They just keep coming back. Downtown Waterloo should be a priority. Glad for the Ridgeway Ave new road!!!”
- “Keep semis on the roads they are allowed to use…and off the city of Raymond roads.”
- “Improve pavement conditions and in some cases, lane configuration such as at Plaza Drive.”
- “If you would do preventive maintenance, you’d save money. “
- “I think many of our roads and streets within urban areas are overbuilt. I realize several of these are overseen by the state, but I would like to see the behemoth US 218 through Waterloo removed and become a boulevard. The is an extreme example of a road dividing a community in more ways than physical.”
- “I keep reading and hearing about assessments of our Iowa bridges reporting they are failing, lacking or inadequate. I don't have any specific suggestions other than to start replacing the worst ones like Park Ave and 11th St. in Waterloo. Surely there is a hierarchy in the reports of which ones are the worst.”
- “Highway 58/27 to Hwy 20 intersection; Move away from a stoplight at Greenhill and 58/27. (by pass would be best- people drive to fast and too close to work for a traffic circle to work well here).”
- “Highway 57 from Highway 20 north is deteriorating to the point you can see chunks being kicked up from tires.”
- “Forget bike lanes and fix the roads! They don't need to be pretty just safe!”
- “Focus on building good roads and stop holding up protects for sidewalks that go no where and no one uses.”
- “Fix potholes”
- “Fill potholes.”
- “Fill in potholes/ damaged asphalt/cement. 4 way stops should be changed to round abouts if possible or traffic lights. Traffic lights should have sensors rather than timer.”
- “Fewer potholes. Use of eco-materials such as Glassphalt or recycled shingles within the asphalt mixes.”
- “Discontinue allowing the ag and construction overload proclamations by Iowa governor!!!!!!! 1
- “Connectivity. Some highways have limited access points which makes it hard to get into and out of neighborhoods.”
- “Connect south-central & north-central Waterloo (Hwy 21 to the Hwy 63 & 218 interchange). Prioritize Ridgeway, Greenhill, Broadway, Ansborough/Conger, Mullan/Logan, & W 9th (or Hammond) as dominate through-ways. Connect Shaulis to Hudson Rd. Stop tiny fixes that make major and side

streets so bumpy!!! Increase efficiency in road repair. Contract labor that includes overnights so we don't end up in construction for 3 years at a time! Bike lanes don't make sense. Expand your snow-removal fleet!"

- "Conditions, rennovate the potholes downtown near the police department and East High."
- "Conditions are my main issue and not everyone travels the same routes. county roads in my opinion are in good shape, old HWY 20 (dubuque rd) is not great."
- "Conditions."
- "Common sense. You engineers need to acually drive on the roads work on."
- "Clean the streets and gutters. A lot glass on 3rd street and accident prone intersections."
- "By fixing the bridges and resurfacing roads ."
- "Bumps and cracks and holes, you know where they are."
- "Better street connectivity within neighborhoods and to arterial street network - makes walking and biking easier and reduces the miles we have to travel to get to destinations."
- "Basically the condition needs improvement."
- "At the intersection of Hammond and Ridgeway in Waterloo please consider stop lights. I've witnessed too many people blow through those stop signs and traffic backs up there. More bridges or tunnels around rail roads along and near 218. 3x I've waited 30+ minutes while the train stops then backs up then pulls forward then stops again. Often I'm trapped between cars and can't back out to find alternate routes. Not sure if this is your department but PLEASE MORE STREET LIGHTS. My street is so dark."
- "All of our roads need to be paved or new black top."
- "All good except when they're closed for repair. Fortunately we have a lot of bridges in downtown Waterloo that it's not a huge issue."
- "A larger tax base so there are ample resources to maintain the roads and bridges."
- "218 is going to need some work out by teh airport soon. South (east) bound lanes by Broadway exit are pretty rough. Also probably relocated Highway 20 in Cedar Falls - presume that's the next let to do."
- "Some roads are in decent- great condition, while there are others in quite a poor condition. Some roads, including the 218 interstate, are heavily cracked, bumpy, and textured in ways that a road should not be. I am originally not from this area and was surprised to see just how rough the interstate here is, as well as many of heavily trafficked roads here. The intersection of 18th and Main in Cedar Falls, has a naturally occurring raise, resembling a speed bump that shouldn't be there."

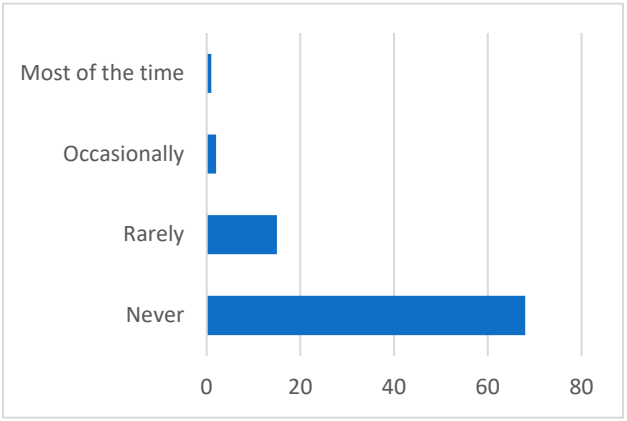
6. How would you rate our public transit?

- Answered: 86
- Skipped: 0



7. How often do you ride public transit?

- Answered: 86
- Skipped: 0



8. How could our public transit be improved? (E.g., availability, connectivity, efficiency, hours of operation, etc.)

- Answered: 52
- Skipped: 34

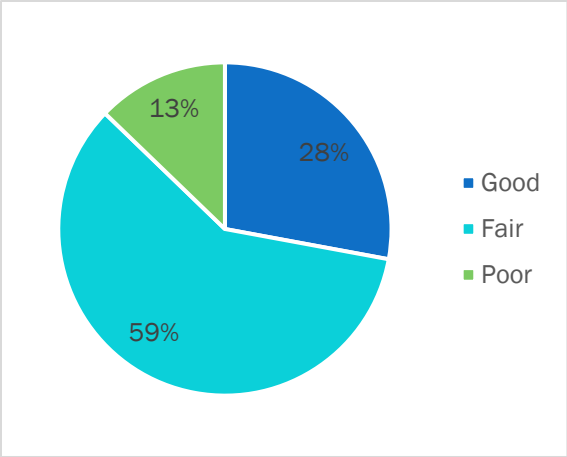
Worded Responses:

- “Connectivity.” (x3)
- “To be practical for a commuter they need to reach bus stops at a greater frequency. I understand this is a chicken and egg issue where ridership levels don't justify greater frequency, though ridership may not ever get up there unless frequency is high enough for a good amount of time for people to change their commuting paradigm. The City and Metro need to coordinate efforts to create more meaningful nodes where frequent bus stops are better justified by greater intensity development.“
- “They don’t service my home area but there’s not a need either.”
- “There needs to be bus routes to Tyson's. Tyson's hires many disadvantaged people who have no transportation. It's hard to get to and from Tysons to keep those jobs.”
- “Since I don't use it, it's hard for me to say, but I would imagine the hours that it's available need to be expanded, and perhaps smaller buses so they were more efficient-I doubt they are ever full.”
- “Seems to run fairly regular. Patrons need a better way to find out the routes in the city and which busses go where. Where do you even find the routes and bus stop sites? Online? Newspaper? Can brochures be left at area businesses?”
- “Public Transit is not hitting the populations of highest need such as low income housing complexes in Evansdale and Waterloo. How is low in come person supposed to get home from work before transportation stops at 6pm?”
- “Public transit is needed to ensure all people can get to work and to appts.”
- “Provide reliable transportation with routes that serve the majority of the citizens.”
- “Pick up locations could be added. There are no routes to Raymond so it’s really not viable for me to use public transit.”
- “Our residents would really like to have access to the MET system. Adding a couple strategic stops to Evansdale and Elk Run Heights would be a huge benefit to our communities.”
- “New buses, preferably electric. Better shelters. Anything to destigmatize public transit and make it both more pleasant for captive riders and more enticing to choice riders, This might increase ridership and make it possible to offer more routes, more frequently. I'm looking forward to the new routes since my return trip from work would be much faster. Also, train drivers to be less draconian about where to stand at bus stops (often poorly marked) or whether to drop people off between stops.”
- “Need public incentives to help promote more public transit.”
- “Need a loop system for workers and better connectivity, hours of operations, efficiency, etc.”
- “More! I never take public transport because it is not efficient and too limited.”
- “more signage along the routes to know when and where the bus stops more frequent pick up times.”
- “More routes, more stops.”
- “More roues that connect with destinations or connectivity. Redo the routes so they are shorter or greater efficiency from the riders' point of view.”
- “more riders are needed in order to justify more routes and more frequent runs.”
- “More busses, more visible stops, more routes that connect neighborhoods and destinations.”
- “Modernize and maintain! Our buses look old and dirty. Our bus stops - the few we have - look old and dirty. More bus stops with clearly marked schedules and routes that include centralized locations in residential areas. And again, MODERNIZE THE LOOK! We look like we're operating straight out of 1987. Aesthetic means a lot more than you might think.”
- “Marketing? public outreach? i rode in grade school coming from a very small town. it was confusing and intimidating.“
- “Make the scheduling of paratransit available online.”
- “Longer hours of operation to Hawkeye CC.”
- “It would have been nice to have a route to John Deere PEC/Engine Works when the snow was super deep.”

- “It does not work for me to get to work. I better off getting a bike to get to work.”
- “I understand the challenges to having public transportation in a community without the density to fully support options. I have live two other similar sized MPOs where one community only operated on a call a bus system. I think MET does a decent job considering the challenges it faces.”
- “I know it's a chicken and egg thing - need more riders to afford more connectivity/hours versus need more hours/connectivity to get more riders. I've seen smaller buses running and that seems like a good efficiency.”
- “I haven’t utilized our public transit system so I feel inadequate to respond with the available options but in downtown Cedar Falls there needs to be better parking for events. I know there’s discussion about a parking ramp but maybe for large events you can offer free parking at the UNI dome then shuttle people to downtown with public trans vehicles leaving every half hour or hour.”
- “I have never used public transit. The above is not applicable to me.”
- “I feel the routes and times are not efficient for employment opportunities for our residents.”
- “I don't use it enough to tell. I do believe that the number of stops between Wloo, CF and UNI has gone down since a few years ago.”
- “I am lucky enough to ride my bike.”
- “Hudson has NO form of transportation.”
- “How well does MET serve the UNI campus? I recall a route was dropped many years ago.”
- “Hours of operation. Need to run later at night for those who work at night.”
- “Get Trams/light rail.”
- “From what I hear, it takes a long time to get places using busses. There should be benches and enclosed areas (with trash cans) at bus stops, specifically in church row neighborhood.”
- “Frequency and hours of operation.”
- “Everything: increases to availability, connectivity, efficiency, hours, number of routes/buses. I've never taken public transit simply because it won't get me where I need to go at a time I need to go.”
- “Efficiency. I have looked into taking public transit to work before in order to reduce my gas emissions, but the bus would take me 1 hour and 45 minutes to get to my office. It takes 15 minutes when I drive. That huge time difference is much too big for me to reasonably take the bus.”
- “Efficiency.”
- “Consider use of electric busses where feasible.”
- “Better routes to underserved communities; better scheduling options with connectivity to areas where workers without individual transportation can get to and from work during peak shift changes hours.”
- “Availability, lower wait times between buses, better promotion of the service.”
- “Availability in terms of routes.”
- “All of the above; buses do not serve those who most need it. Needs overhaul.”
- “A comprehensive transit study needs to be done to identify needs, efficiencies, etc. The large transit vehicles currently used, seem to be a way to spend funds versus actually meeting the needs of the MPO.”
- “1) Go to locations that are actually needed, tyson, theme park, downtown wl and cf, john deere locations, UNI 2) Go at times that would, actually help people right now, the buses do not actually help the people that need to use the bus. 3) Cover the bus stops. We have a lot of ice and snow, COVER them so people are more inclined to use them.”

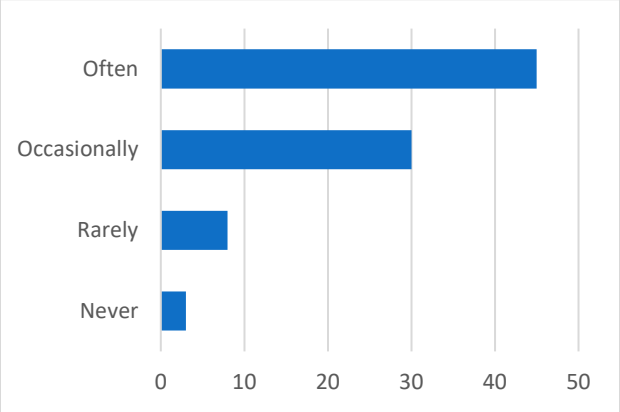
9. How would you rate our pedestrian infrastructure?

- Answered: 86
- Skipped: 0



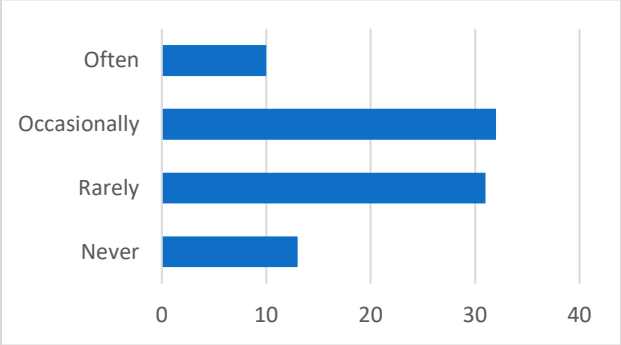
10. How often do you walk?

- Answered: 86
- Skipped: 0



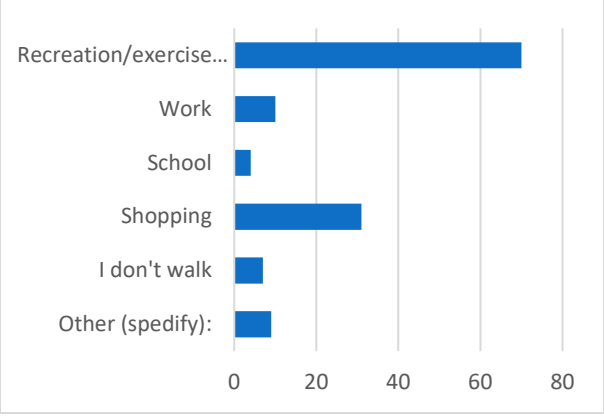
11. How often do you walk to a destination instead of taking a car or bus?

- Answered: 86
- Skipped: 0



12. Where do you walk to? Select all that apply.

- Answered: 86
- Skipped: 0

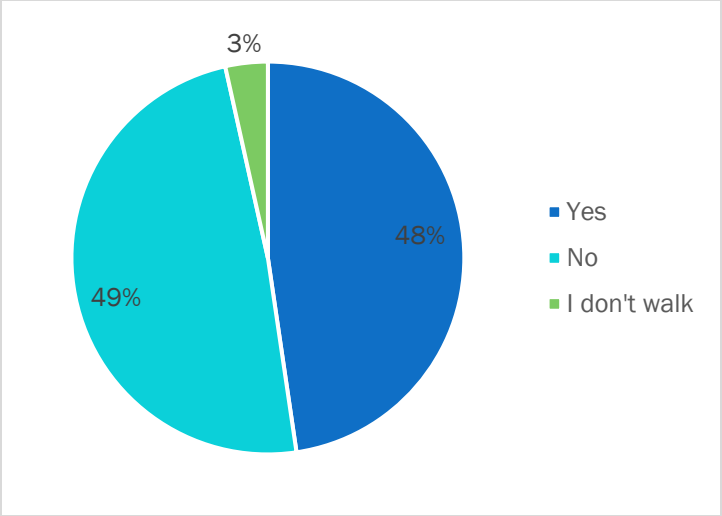


Other (specify):

- "When I'm out for an evening, festivals downtown tourism."
- "When attending fireworks or a downtown event."
- "To transact business."
- "Relatives, friends, visits."
- "Post office, coffee shop, gas station store."
- "Post office"
- "For services, such as doctor and auto services."
- "Downtown events and entertainment business."
- "Bars and recreational events. Also, I don't necessarily walk "to" places. I just walk for leisure."

13. Do you feel like you can safely walk to your preferred destination? (In terms of existing infrastructure, speed limits, protected intersections, lighting, etc.)

- Answered: 86
- Skipped: 0



14. If you responded no, explain your answer below.

- Answered: 42
- Skipped: 44

Worded Responses:

- "Would like to walk from 6 corners area to Ansborough HyVee, but few sidewalks in the area. No sidewalks on W 4th or Ridgeway Ave."
- "Within Hudson is good waking. But to Waterloo/Cedar Falls nothing."
- "Where walking has been made a priority, such as walking/biking trails, the safety is excellent. My neighborhood (Greenbrier) isn't connected to the bike trails and doesn't have sidewalks. So it isn't safe, convenient, or easy. I do still walk to recreation areas from home. Mostly I walk from work to shopping/visits or I DRIVE to a recreation area and then walk. Downtown waterloo and cedar falls are good for walking too."
- "Where I live we only have a few sidewalks. They only go so far before they cut off."
- "Town is still built to move autos as fast as possible. Crossing the southboudn 218 access road downtown is pretty scary."
- "There is a shortage of safe sidewalks on busy streets- W 4th. Ridgeway, etc."
- "There are many gaps in the sidewalk system. Sidewalks are generally well maintained but there are areas where I have to walk in the street due to gaps."
- "There are many areas where there are no sidewalks which hampers seniors, children, and others without individual transportation to get to the areas needed for daily existence."
- "The street lights are sparse, especially in certain areas. There are too many people shooting at each other. Sidewalks are in poor condition."
- "The sidewalks are terrible. Trees in the curbstrip grow unattended. Their roots lift and break the concrete. Residents are not held responsible to maintain accessibility so foliage often creates overgrowth. Many sidewalks are too narrow for two people to walk."
- "The sidewalk has gaps between my house and me preferred destination. The street is very busy, and even though I could walk in the grass alongside the street, I feel like I am trespassing in someone's yard."
- "The path does not have any tree cover."
- "The lighting in church row neighborhood is terrible. There are light fixtures but they don't work- maybe burned out bulbs? I don't walk once the sun sets."
- "The lighting at nighttime events is good. The crossings at intersections don't get repainted as quickly as lane markings on the street. I definitely criss at the designated corners and inside the crossing/walking lane."
- "The crosswalk light does not work when the button is pushed, I have to take my chances across three-lane traffic if I want to get to my destination."
- "Specifically in the San Marnan/Crossroads area, there are few sidewalks/crosswalks. Heavy traffic adds to the challenge of walking in that area."

- “Some of my usual walking routes are safe but some aren't. I can't safely walk along Ridgeway from Kimball to Ansborough. The route through the Prospect neighborhood is pretty but long and confusing.”
- “Some of my routes are safe. Others are not because of lack of sidewalks or poorly maintained sidewalks.”
- “Sidewalks maintained by city are never cleared of snow.”
- “Sidewalks in poor condition. City too spread out. Downtown 4th street pretty good.. No sidewalks in Audubon Park & on Trent Lane.”
- “San Marnan Dr and Crossroads area has very little support for walkers.”
- “Roads are too narrow and if widened it would be easier and safer to walk.”
- “Pedestrians need to be prioritized over cars and roads. many destinations within Blackhawk are "walkable", but I do not feel able to walk to these places because the pedestrian walkways are inefficient and unsafe compared to driving.”
- “Not enough sidewalks along arterials between neighborhoods and destinations.”
- “No sidewalk or safe shoulders to walk on.”
- “No sidewalk and deep ditch.”
- “My neighborhood has limited sidewalks.”
- “Missing sidewalks in many critical areas make it difficult and unsafe to walk. Some areas with good public sidewalk lack private walks to make safe connections from the public sidewalk to businesses (like through the parking lot of a business).”
- “Many sidewalks are in bad shape or non-existent in some neighborhoods and you have to walk in the street. There needs to be a bike trail/sidewalk on Ridgeway!”
- “Many residential Streets were developed without sidewalks which does not encourage walking in neighborhoods. All new developments should be required to have sidewalks ; older neighborhoods should be evaluated with attempts to construct sidewalks to provide walkable neighborhoods. “
- “Many residential streets are lacking enough lighting in the evening.”
- “Intersections can be hard to cross, unsure where sidewalks are.”
- “In Raymond where I live there are no sidewalks and people like to speed all the time down our road.”
- “In most neighborhoods, there are so few sidewalks, so people have to walk in the street. More infill is needed.”
- “If I leave my house at night it is incredibly dark. There are too few street lights in my neighborhood (Lafayette Park).”
- “I feel that our sidewalks are not well connected, additionally, it does not feel safe to walk on the sidewalk, especially in the evening, We Need wider sidewalks and also need more pedestrian-scale lighting, which enhances pathways.”
- “I do not feel safe walking along certain roads as the speed limits are too fast, and not enough lighting during dawn and dusk times. I also feel like there could be better pedestrian crossings as well, that make cars yield.”
- “Homeless people living near a trial often walk. 63 Fletcher area. I have seen them doing drugs. They leave garbage Broken glass on the trail. I take a big dog for protection.”
- “Gaps need to be filled in.”
- “Even areas with pedestrian crosswalks and timers are intimidating. BHC road projects always prioritize drivers. Our efforts are lacking in trying to become more of a walkable community. As a result, drivers are not used to looking out for pedestrians. Myself and most people I know have almost been hit as a pedestrian in BHC.”
- “Been attacked while walking to work.”
- “Along Hudson Road, sidewalks on both sides would be wonderful so you don't have to cross to stay on the walking/biking trail. Some parts of Cedar Falls have sidewalks to nowhere or none at all. Many intersections are not protected for walkers and cars often drive too fast.”

15. If there was one road you could improve for walking, which would it be? How would you improve it? (E.g., sidewalks, lighting, crosswalks, etc.)

- Answered: 79
- Skipped: 7

Worded Responses:

- "West Donald Street."
- "West 4th. Add sidewalks or bike path."
- "West 4th street near Byrnes park and golf needs consistent sidewalks."
- "West 4th needs a side walk from Sheridan to Ansbourgh."
- Washington St in Waterloo is a major road with little pedestrian safety. If this road could have better pedestrian access I believe it would make it easier to walk to destinations within Waterloo."
- "W 4th st waterloo. This is a main thoroughfare and there are barely any sidewalks or bike lanes all the way down to Shaulis."
- "W. 9th st. Lighting could be improved."
- "There is a supposedly a broken crosswalk sign near the Grout Museum District. Due to construction of the museum, we are to park under that bride and use that crosswalk to get to work. According to many, it needs to be fixed. We have many students as well, and this could potentially be a danger if it is not resolved."
- "The sidewalks on W 2nd St in Cedar Falls. This is a dominate walking path to and from Main Street for a lot of people because it's adjacent to 1st St and run the full length along those businesses (Music Station, 4 Queens, Papa Johns, McDonald's, etc and into the downtown district."
- "The corners and street crossings around 5th and 6th streets downtown. Add painted lines and pedestrian crossing signs."
- "The area around Washington Park in Waterloo needs more lighting and safer crossing options for Park Avenue and Washington Street."
- "Side walks to Lafayette Rd. in Raymond."
- "See above. Also it's a little intimidating walking some recreational trails with speeding swarms of bicyclists sometimes. I'd prefer dedicated walking or running trails. Also the trial by the Cattle Congress along the dike shoudl be widened."
- "San Marnin Drive, around the heavy shopping area. Adding pedestrian/bicycling paths to make it safer for walkers/bikers to get around to the shopping areas would be a huge improvement. For folks that live nearby who walk to get groceries and such, it would make it much safer for them. I breaks my heart seeing someone with a stroller have to cross the San Marnin and Flammang intersection and then push the stroller on the grass just to get to Walmart for groceries."
- "San Marnan/Crossroads area."
- "San Marnan, near the mall and shopping areas."
- "San Marnan needs sidewalks and crosswalks and trails."
- "Ridgway avenue with sidewalks."
- "Ridgeway-sidewalk, better lights."
- "Ridgeway. Sidewalks from Kimball to Ansborough and probably other locations as well. Crosswalks at retail locations (such as across from the medical park) that are an inconvenient distance from the nearest intersection."
- "Ridgeway from Ansborough to Kimball needs sidewalks."
- "Ridgeway Avenue. Add sidewalks."
- "Ridgeway Avenue in waterloo. Sidewalks (or trails) on both sides with crossings and pedestrian signals where appropriate."
- "Ridgeway Avenue from Kimball to West 4th - sidewalks/bike trail would be fantastic."
- "Ridgeway."
- "Progress."
- "Please improve pedestrian access along shopping corridors of E San Marnan Dr to Walmart, Aldi, Hyvee, etc. Car is king in Waterloo. People who do not have cars should at least be able to access key

locations like grocery stores by foot. I often see people walking along the grass, hurrying along the (unsafe) intersections."

- "Pedestrian crossing signals along 1st in Cedar Falls, between the hill and sun direction it's hard to see people trying to cross and the traffic flow alternates directions so there I've seen people get" stuck " in the middle turn lane."
- "Over the downtown Waterloo bridges."
- "More sidewalks."
- "More lighting and sidewalks, increased safety measures such as boxes along walking routes with a button that can be pushed in emergencies."
- "Many of the sidewalks in older districts of Cedar Falls, and also neighborhoods built around the 1950s with few or no sidewalks."
- "Lighting on walk / Bike path."
- "LaPorte Road Waterloo."
- "Laporte Road corridor needs sidewalks and crosswalks."
- "Lafayette through Evansdale from Evans to McCoy road needs to have clearly defined walking/biking paths."
- "Lafayette Road..widen it."
- "Lafayette Road in Raymond - add sidewalks. It's incredibly dangerous right now."
- "Lafayette Road."
- "Lafayette Rd in Raymond. Wider with decent shoulder to walk on."
- "Lafayette."
- "La Port Rd."
- "Kimball Avenue needs connected sidewalks."
- "Kimball Avenue from San Marnan Drive to 6 Corners. Continued improvement of the pedestrian infrastructure."
- "Kimball ave. Add trail connections from shaulis to Orange road."
- "Kimball Ave and crossing near Ivan Hoe."
- "Independence Ave from Century Ave to Skyview Rd. 4th Street from Ansborough Ave to Sheridan."
- "I'm not sure we have quite a few."
- "I would like to see Laffeyete Rd. In Evansdale get actual sidewalks the whole stretch, included in this would be some distance away from the road as currently, you walk on the shoulder of the road. Improved crossing safety would be nice in the school zone near Bunger. Lighting would be useful for those walking around dawn and dusk."
- "I feel in the San Marnan area there could be more crosswalks and sidewalks to make that area easier to walk."
- "I feel I'm being subjective because it is where I live but Rhey St. in Waterloo."
- "Hudson Road - Put round-abouts with walking areas in some intersections instead of so many stop lights (W. 8th St.); continue the sidewalk on the east side of Hudson beyond 19th Street (I think there are plans for this?). Continue sidewalk on west side of street from W. 12th to where sidewalk begins again."
- "Hammond, adding sidewalks."
- "Hammond we need more sidewalks on that busy of a street."
- "Greenbush Dr. add sidewalks."
- "Franklin Street between 11th Street and Evansdale."
- "Feel safe throughout. I would like to see dedicated bike paths if possible between Hudson road and Main Street in cedar falls."
- "Connectivity along Ansborough by Olympic and San Marnan to trails, Kwik Star, etc."
- "Cedar Heights Drive between Pleasant Drive and University Avenue."
- "Cedar Heights Drive."
- "Can I have two ? :) W 4th Street from Ansborough Avenue to Kimball Avenue and Ridgeway Avenue from W 4th Street to Kimball Avenue. A good start would be to include sidewalk in both corridors, with appropriate lighting and crosswalks!"
- "Both sides of green hill and Hudson."

- “Another crosswalk on 1st St in Cedar Falls around 4 Queens/ adding a RRFB around that area for safer crossing by the hill.”
- “Ansborough- sidewalks.”
- “All.”
- “Airline Hwy sidewalk or bike path.”
- “Add sidewalks within the college square mall.”
- “Add sidewalks on Gilbertville Road from Dubuque Rd to Lafayette.”
- “63 218 to ridgeway Trim trees and better lighting.”
- “4th Street. Sidewalks.”
- “4th Street west. Fix lighting and add bus stop stations with benches/ trash cans/ weather protection canopy.”
- “4th street from fletcher to ansborough, sidewalks.”
- “1st Street; I would plant street trees and have more mid-block crossings.”
- “1st Street needs more street trees and buffer between traffic and sidewalks, better crosswalks.”
- “18th and Waterloo Road crossing.”
- “1. Extend the sidewalk on the east side of Main Street all the way to University Ave. 2. Waterloo Rd from the 58 Interchange out to University Ave. 3. La Porte Rd the entire length.”
- “Widen sidewalk for bike and pedestrian access.”
- “Lighting.” (2)

16. How could our pedestrian infrastructure be improved?

- Answered: 57
- Skipped: 29

Worded Responses:

- “More sidewalks.” (3)
- “Widen roads or put in sidewalks.”
- “Waterloo needs sidewalks along the major and minor arterials to allow residents to move between neighborhoods and shopping, recreation spots, and schools.”
- “Walkable Communities! Hence why bigger cities are so popular and why CF downtown is so successful! People want to be able to leave their cars behind and have access to food, stores, entertainment, as well as "third places" -- public places where you can sit with others without having to spend $ to be there. Most of BHC is so scattered and car dependent. We will continue to be car dependent, but we can enhance our towns by creating more walkable communities/corridors.”
- “There is a constant and prevailing mindset with most governmental officials - Give people what we think they need, not give them what they need. The old adage says "For those who make the rules, the

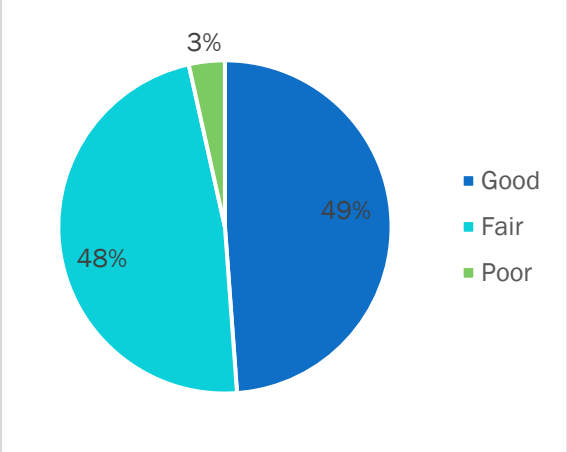
rules don't apply." Talk with the residents of the areas impacted. They live, work, and exist in these areas; most of the officials making the rules, don't."

- "There are many gaps in the sidewalk system. Sidewalks are generally well maintained but there are areas where I have to walk in the street due to gaps"
- "The sidewalks are terrible. Trees in the curbstrip grow unattended. Their roots lift and break the concrete. Residents are not held responsible to maintain accessibility so foliage often creates overgrowth. Many sidewalks are too narrow for two people to walk. Many prime pedestrian locations lack sidewalks altogether, notably ones that run along major streets!"
- "Some areas could use better lighting."
- "Sidewalks are missing in many mid-20th century neighborhoods, particularly in commercial areas. There needs to be better connectivity between residential and commercial areas."
- "Several trails that were built in 80's, 90's, and 2000 and up need to be rehabilitated. Evidence of cracking and weeds growing up through the trail system."
- "Safety is a big issue too - adding cameras, etc. to reduce any crime and deter crime."
- "Provide or add wider sidewalks."
- "Provide a sidewalk for each street, even just one side would be great. W. 7th/8th near high school don't have sidewalks. Might encourage walkers??"
- "Organize volunteers, community service workers or street departments to drive the paths annually and prune the overgrowth for visibility and accessibility. "
- "Once the Park Avenue bridge is done, what about making East Fourth a ped mall from Mulberry-Sycamore? It's pretty congested for cars in there anyway. Keep the parking on Sycamore and Lafayette, maybe do angle parking Mulberry by Lincoln Park. That stretch of East Fourth is closed anyway durng Irish Fest."
- "No suggestions except more street lights."
- "Need more pedestrian scale lighting and make sidewalks wider to accommodate at least two people side by side."
  More tree cover."
- "More street trees and parkway space between traffic lanes and sidewalks - makes more pleasant, safe, and comfortable to walk. Better connectivity of streets (smaller blocks) makes for more direct routes to destinations making it more feasible to walk."
- "More sidewalks. Prospect Blvd needs a sidewalk to Ridgeway."
- "More sidewalks, especially along busy roads. Pedestrian bridges over busy at-grade rail crossings if putting the rail lines below grade isn't an option."
- "More sidewalks in neighborhoods by Kittrell elementary."
- "More sidewalks and adequate lighting."
- "More sidewalk infill is needed."
- "Making sure roads are large enough for bike lanes and sidewalks."
- "Make walking a safer option for high-traffic shopping areas, ESPECIALLY for those disadvantaged individuals who do not have a car. For many of the areas, that means installing a footpath, like what was done on university ave, because there isn't a sidewalk at all, or if there is on it hasn't been kept well and it's difficult to push a stroller across it."
- "Make sure the are wide enough for at least walk side by side comfortable."
- "Make me feel Safer."
- "Lighting, security cameras."
- "Just Ridgeway, really."
- "Just More!!"
- "Infill projects."
- "Increased sidewalks, ensure crosswalk buttons work."
- "Increase connectivity such as sidewalk/bike trail on Ridgeway and south to Hoover/LH."
- "In small town raymond there are no sidewalks on lafayette or road that goes through center of town from highway to store and coffee shop. that would be a great addition. I heard something about sidewalks being added but lost track of where it ended up."
- "Implement sidewalk repair programs in smaller communities."

- “I think a marketing campaign would be good. Also a reminder to use the cross walks vs crossing the roads midway for everyone's safety.”
- “Have the city pay for city wide sidewalks.”
- “Have more of it.”
- “For Raymond, the pedestrian infrastructure is sufficient.”
- “Fix walk buttons on Washington Street that are broken so unable to push.”
- “Due to lack of sidewalks many people walk on street or on grass (e.g., kimball).”
- “Create longer walk signals across Franklin Street.”
- “Continue to work towards a connected pedestrian network, which includes sidewalk infill and sidewalk accommodation with new roadway construction or reconstruction.”
- “Connecting more bike paths.”
- “Connect ALL neighborhoods to the trail system, not just the rich or new ones.”
- “Build more sidewalks. Require commercial development to have better pedestrian connections from street to the door of the business.”
- “Better painted lines and pedestrian crossing signs.”
- “Better maintained and more extensive sidewalks, clearly marked cross walks, drivers more tolerant of walkers.”
- “Better connectivity and lighting between the metro areas main walkways!”
- “Adding sidewalks and ADA intersections.”
- “Add sidewalks.”
- “More connected trails!!”

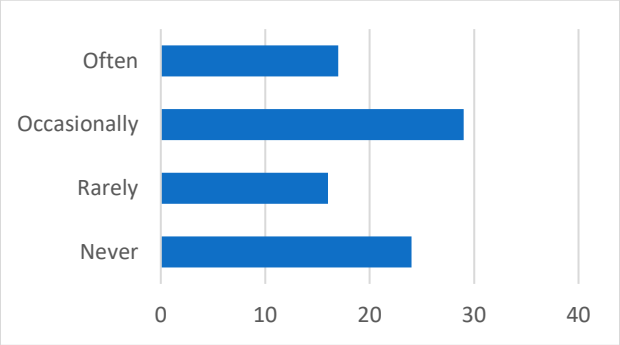
17. How would you rate our bicycle infrastructure? (E.g., trails, lanes, paths, sharrows, bike routes, etc.)

- Answered: 86
- Skipped: 0



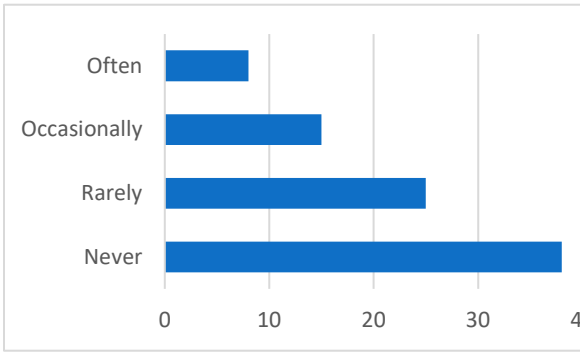
18. How often do you use bicycle infrastructure?

- Answered: 86
- Skipped: 0



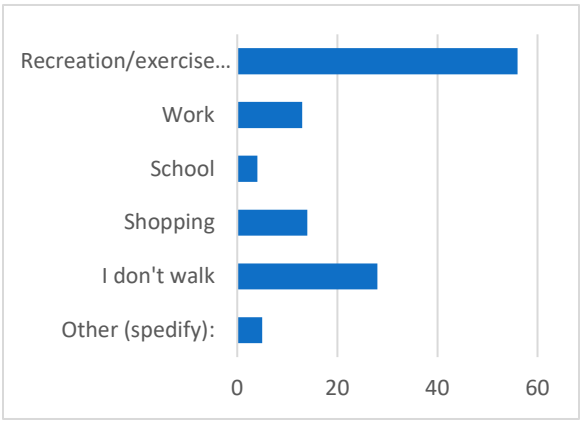
19. How often do you bike to a destination instead of taking a car or bus?

- Answered: 86
- Skipped: 0



20. Where do you bike to? Select all that apply.

- Answered: 86
- Skipped: 0

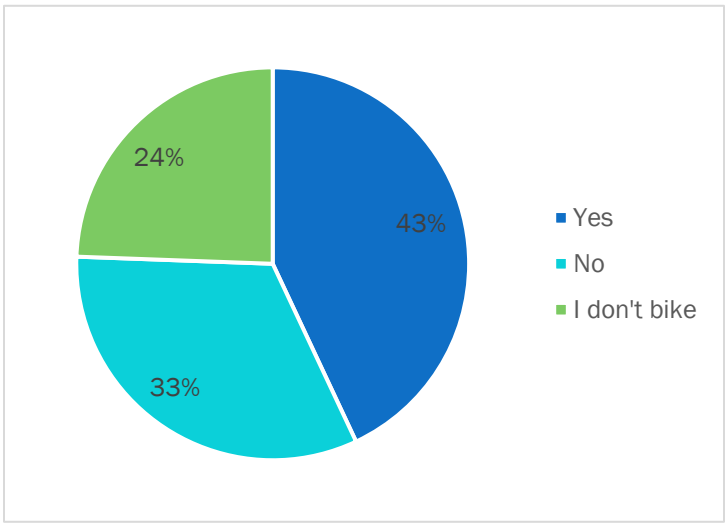


Other (specify):

- "To and from entertainment venues, downtown areas and festivals."
- "Restaurants in downtown Cedar Falls and Waterloo."
- "Restaurants."
- "Downtown events."
- "Business destinations."

21. Do you feel like you can safely bike to a destination instead of taking a car or bus? (In terms of existing infrastructure, speed limits, protected intersections, lighting, etc.)

- Answered: 86
- Skipped: 0



22. If you responded no, explain your answer below.

- Answered: 31
- Skipped: 55

Worded Responses:

- “The older neighborhoods are being left behind and do not always have decent sidewalks or bike trails to access other areas.”
- “We use bike trails.but roads are too busy and narrow to bike to the trails.”
- “We need to shift our focus away from trails and more towards adequate and well designed on-road bicycle accommodations. Consider a complete streets approach when funding projects through the MPO.”
- “Usually take a car to the areas needed for existence. If more accessibility becomes available, maybe, biking would be a viable option.”
- “Too many downtown intersections feel unsafe. They may well be safe, but they are intimidating.”
- “The Bike Network is not fully marked nor is it connected to neighborhoods and destinations.”
- “Southbound 218 access road crosswalk downtown is intimidating if you're on bike or on foot.”
- “Not in Raymond. No bike trails.”
- “Not enough bike lanes.”
- “No due to my previous answer to the previous question: at night it’s too dark. “
- “No bike trail on Ridgeway, and a pedestrian bridge over Hwy 63 around 3rd St. would be excellent.”
- “Most streets do not have bike lanes and most drivers ignore people on bicycles.”
- “Most of the main arteries through Waterloo are not bike friendly. The trails are very good but limited on where they go.”
- “More light crossings at roundabout roads.”
- “Lots of progress has been made but we don't have enough bike lanes and the ones we have in downtown Waterloo need to be re-paved.”
- “I've worked out a route from my home to work that's reasonably safe, though it goes a bit out of my way. I take 7th St north to downtown rather than Kimball or Baltimore.”
- “It really depends on where I am going. There are wonderful recreational trails in the area but could use more on-road bike accommodations in some areas.”
- “Intersection of W. 12th & Hudson Rd is not safe at the northeast corner where a retaining wall was built that blocks drivers from easily looking north to see if there are bikers/walkers waiting to cross. Drivers often turn right w/ or without a green light without looking north. Intersection at W. 18th & Hudson is not safe because if you want to stay on the trial you have to cross the intersection. Again, drivers from W. 18th turning north often do not notice walkers/bikers.”
- “I live a 10-15 minute drive from basic groceries and shopping or 30 minute bike ride which is a bit more time and effort and not practical.”
- “I find it unsafe to bike on roads in Waterloo. Cars don't want to share road with bicyclists.”
- “I don’t bicycle anymore. But I’d appreciate more control of keeping bicycles and scooters off of downtown sidewalks. I have almost been hit three times coming out of shops. Thank goodness for friends stopping me in time.”
- “I am happy to see work occurring to repair bridges on hwy 63 Seargent road trails.”
- “I actually feel the answer is yes AND no. Some routes are great, but biking on the street (even a sharrow) can be chancy. The solution is to change driver attitudes.”
- “Here on the east side of Waterloo we don’t have many bike trails. Especially out by Donald and highway 63, going north or east.”
- “Great trails, but not all easy to access from residential neighborhoods. Not safe riding on most busy streets.”
- “Getting to a trail can be problematic. Trails are often closed near downtown.”
- “Getting out of my neighborhood to the trail system is very stressful. The proper thing is to bike on the road but many drivers are too distracted so I feel safer on the sidewalks. With the two/sometimes three bridges out in downtown Waterloo, I did not bike as much as I did in downtown this summer as I wasn't able to access the river trail to make my trips more efficient and safe.”

- “Clean up the glass. I have lost 3 tires this year. Also rapid repair on trails. Sergeant trail bridges being out for 2 years is not good.”
- “Biking to work at John Deere PEC on Cedar Heights is hazardous.”
- “Bike lanes fragmented.”
- “Again, Greenbrier is not connected to the trails. The roads between are high traffic, poor condition, and not safe. So I don't walk or bike from home to anywhere. I drive to George Wyth, UNI, or another park and then walk or bike from there. I *wish* I could bike from home. I wish the kids in my neighborhood could walk or bike safely to school, Kwik Trip, or the park like I did when I was little in the Hamond area of Waterloo.”
- “Bike lanes in Waterloo are confusing. Would never ride the bike lanes in Cedar Falls.”

23. If there was one road you could improve for bicycling, which would it be? How would you improve it? (E.g., bike lanes, reducing traffic speeds, lighting, etc.)

- Answered: 67
- Skipped: 19

Worded Responses:

- “West Fourth by Byrnes.”
- “West Donald Street and/or Broadway.”
- “West 4th Street with bike lanes.”
- “Waterloo Road; bike lanes.”
- “W. Gilbert Drive. Very busy street. It would be nice to widen sidewalk so both pedestrians and bikers could enjoy.”
- “Viking Rd. in Cedar Falls near WalMart/Target. The crossing for bicyclists is not safe. Yellow lights flash but drivers don't stop for yellow lights. I would recommend a signaled crosswalk w/ a stop light at that site. I imagine drivers would hate it, but that place for bikers and walkers is dangerous.”
- “University Ave,Viking 58 and 58 and greenhill.”
- “University Ave was on my list but it has been done.”
- “The Park street bike trail is a huge embarrassment. Bumpy, with manhole and other hazards.”
- “The bike lanes that switch places with turn lanes in downtown Waterloo are confusing and dangerous!”
- “San Marnan/Crossroad area.”
- “San Marnan.”
- “Roads and paths are sufficient for bike use by all ages.”
- “Ridgeway needs connected sidewalks.”
- “Ridgeway from Kimball to West 4th.”
- “Ridgeway Avenue with off-street accommodations. Do not mix vehicles and bikes on this road.”
- “Ridgeway Ave. Add a protected bike lane all the way through the city.”
- “Ridgeway Ave. A wide bike path along the side going all the way up Ridgeway would be a huge improvement! For many people who bike to work, it will create a more direct path to get there and also keep them off of the 4 lane road. When it's early in the morning and dark out, this will massively improve safety for those people who want to bike to work.”
- “Ridgeway Ave.”
- “Rainbow Drive needs to be wider.”
- “Quit wasting money on bike lanes and bike traffic lights downtown Waterloo. I travel downtown several times a day and they are never used.”
- “Protected bike lanes, slower traffic, but mostly a better driver ethic.”
- “Park Street near Washington. The bike lane moves across traffic and parking is on middle of street target than by curb where bike lane is (near experience waterloo).”
- “Park Avenue has designated bike lanes, but they are in terrible shape--barely decent for a car. Rebuilding Park Avenue would help.”
- “Old hwy 20.”
- “More bike lanes on MAIN throughfares.”

- “Make it OBVIOUS that bicycles are not allowed on downtown Waterloo sidewalks and that bicyclists need to obey the traffic laws and rules of the road.”
- “Make 20th Street a bike boulevard between trailhead and College Hill.”
- “Main street - bike lanes, signage, lighting, intersection improvement. “
- “Lighting.”
- “LaPorte, adding bike lanes.”
- “Laporte Road Corridor needs bike lanes or trails.”
- “LaPorte Road.”
- “Lafayette Road..widen or put on sidewalks.”
- “Lafayette Road - needs bike lanes.”
- “Lafayette rd. Raymond to Elk Run.”
- “Lafayette Rd in Evansdale and Elk Run Heights.”
- “Kimball Avenue.”
- “Kimball ave.”
- “Increased traffic speeds.”
- “I'd add bike lanes to 4th St.”
- “I am a believer in the fact that bicycles should be reserved for bicycling areas, and low traffic areas. However, many use their bike in high traffic areas. I suppose light up signs or something very distinctive like a genuine unavoidable bike lane, to allow bicyclists to safely pass-through traffic could be helpful. In truth, I am bothered by treating a bicycle equal to a vehicle and wish that scenario was avoidable entirely.”
- “Having bicycles ride in their lane and not in the road and fine them if they do not stop in a controlled intersection.”
- “Greenhill Road.”
- “Focus on-road bicycle accommodation in the downtown areas.”
- “Fletcher, the bridge between the dikes is a choke point.”
- “Fletcher Ave.”
- “Fix roads.”
- “Finish Shaulis Rd. connection.”
- “East Donald. I would try and widen the road, bike lanes, lighting, etc. “
- “Dubuque Road.”
- “Downtown Waterloo and keeping bicycles off of the sidewalks.”
- “City streets.”
- “Center St in Cedar Falls north to Janseville add a paved bike lane.”
- “Bike Lanes 4th and 5th Streets to go in and out of downtown Waterloo into neighborhoods and connect to greenbelt trails.”
- “Better lighting and lower speeds.”
- “As well as pedestrian access, improve bicycle access along E San Marnan to grocery stores so people who don't or can't drive can bike to key destinations. Could also incorporate into key Ridgeway corridors. Improve access, incorporate lanes where possible, decrease speeds to make bicyclists feel safer.”
- “Any of the roads that run east to west in downtown Waterloo to have bike lanes with signs. Independence to Jefferson Street, your choice.”
- “Any.”
- “Ansborough avenue needs wider and longer bike path.”
- “Ansborough.” (2)
- “All.”
- “Airline Hwy Bike path.”
- “Additional bike lanes, improved lighting.”
- “Add a bike lane to Hammond Ave. so that bikers could get places quicker.”
- “3rd/hey 63.”
- “1st St in CF - Sidewalks aren’t ideal for biking, no bike lane either.”

24. How could our bicycle infrastructure be improved?

- Answered: 42
- Skipped: 44

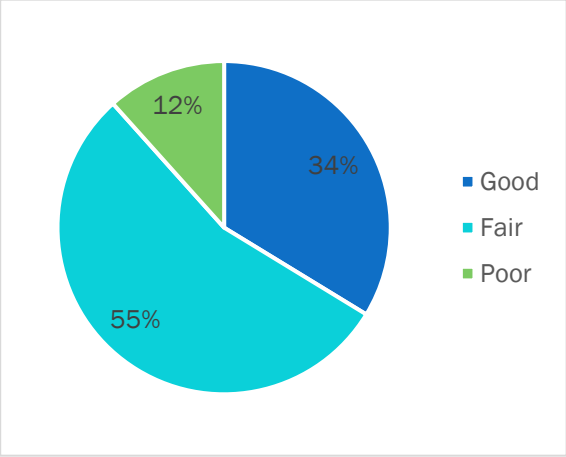
Worded Responses:

- “Where the trails are, they are awesome. This is a shining star of our community but there are still parts of the community not connected. I wish all had equal access.”
- “Talk with the population who bike and take their input seriously.”
- “Take out all asphalt and put in concrete. Put more trees, most areas you ride in complete sun.”
- “Seems like bicycles are favored over pedestrians, probably because bicyclists are more organized and lobby the cities more. Bicyclists interests aren't always pedestrians' interests and there's just as much if not more risk from a pedestrian being hit by a bicycle. The city of Waterloo also could be little more vigilant keeping sidewalks and crosswalks passable in winter. Some folks don’t shovel or thaw their walks at all. And sidewalk curb cuts need to be shoveled after plows go through.”
- “Rehabilitation of current infrastructure and adding infrastructure for connectivity.”
- “Pruning the trails of overgrowth and weeds encroaching on the paths”
- “Provide more commuting infrastructure. Recreationally there are a great many options, but commuting options are limited.”
- “Program funds for new construction and required maintenance of existing bikeways.”
- “More tunnels so bikes could avoid dangerous intersections. Bike paths between neighborhoods and grocery stores.”
- “More trees along South 63 bike path.”
- “More trails and paths just for walking/biking.”
- “More loops.”
- “More funding for expansions of trail networks into neighborhoods, either designated trails or on-street accommodations.”
- “More education. More bike parking outside of buildings. More bike lanes on streets near the trail systems.”
- “More busy streets could use dedicated bike lanes.”
- “More bike trails.”
- “More bike tails for recreation.”
- “More bike routes markings on roadways or signage.”
- “More Bike Lanes, better marking of the designated network, remove the flashing lights and install better crossing infrastructure especially on West 1st Street, University Ave, Viking Rd, Center St, Main St, Hudson Rd”
- “More bike lanes (reduce width of travel lanes). Reduce vehicle lane widths to accommodate bike lanes, when reasonable to do so. 11-foot travel lanes are appropriate.”
- Lots of progress has been made and I hope the bike lanes to be smooth and better marked and extended.”
- “Lighting.”
- “Less sharrows, more bike lanes or multi-use trails.”
- “It’s fine for the number of people who actually bike in Raymond.”
- “Increase the number of bike lanes.”
- “Increase connectivity.”
- “I don't think sharrows are very effective. Helping drivers and bikers understand them could be beneficial. While infrastructure is important, educating drivers is also important.”
- “Get ride of the bike lanes on park. They are confusing. Either a straight lane or non. I have been clipped using the lane or people park in the lane. They need to be re done correctly.”
- “Get rid of those stupid bike lanes in downtown waterloo.”
- “Follow the plan.”
- “Fix the bike lanes and the bike bridges along highway 63.”
- “Don’t do any more stupid stuff like Park Avenue.”
- “Continued connectivity whenever possible. Appreciate the new trail on union road. Keep it going!”

- “Continue to provide routes for bicycles in neighborhoods.”
- “Continue efforts to safely accommodate bicycling on-road, while maintaining the trail network.”
- “Connectivity.”
- “Clear the trails of snow in the winter.”
- “Bike or walking area along the road. Longer stoplight to cross the road walking or by bike.”
- “Bicycle lanes in downtown Waterloo.”
- “Adding more distance between the car lanes and the bike lane.”
- “A dedicated bike lane/path in shopping areas. What you did along University Ave was so really fantastic! I would love to see a similar setup for San Marnin and Ridgeway.”
- “*Our bicycle trail network is GREAT. Our on-road bicycle network is very poor. Since we prioritize cars and speed, many people do not feel safe biking on the road. Separate bike trails are great, but not possible everywhere (space and $$$). Bicycle infrastructure can be improved by creating on street connections (waterloo and cf downtown) through bike lanes, signed sharrows, and reduced speeds which will naturally lead to more bicyclist awareness.”

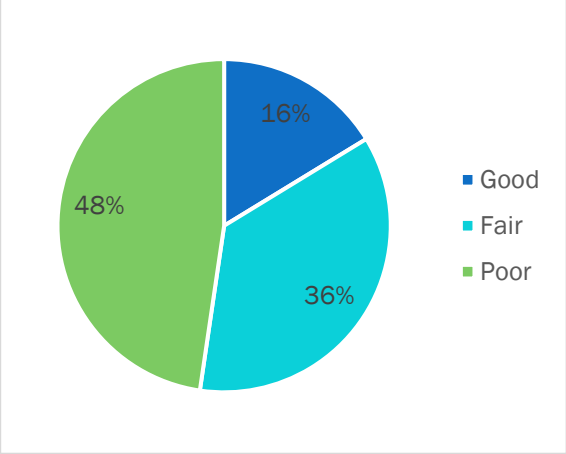
25. How would you rate the overall safety of our streets?

- Answered: 86
- Skipped: 0



26. “Complete Streets” serve ALL road users by providing options for cars, transit, bicyclists, and pedestrians alike. An example is shown below. How do our streets rate based on this concept?

- Answered: 86
- Skipped: 0



27. If there was one road you could improve to serve ALL road users, which would it be? How would you improve it?

- Answered: 73
- Skipped: 13

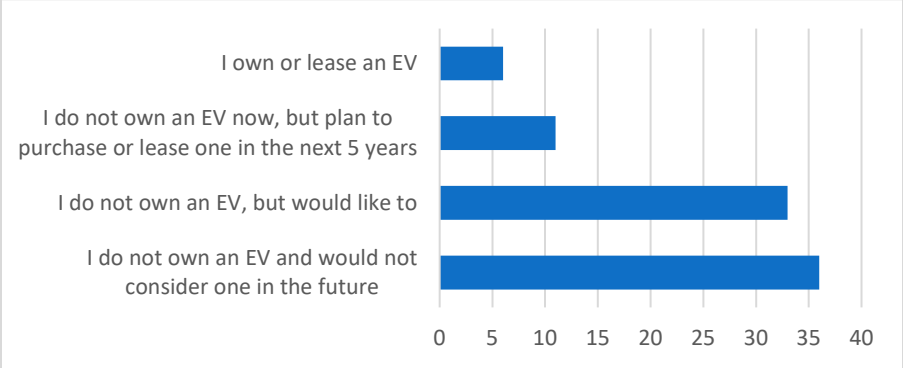
Worded Responses:

- “Ridgeway Avenue.” (6)
- “Ridgeway Avenue. Sidewalks, crossings, bus stops, lighting.”
- “Ridgeway avenue in waterloo. Add trails and sidewalks for pedestrians and bikers to move along the corridor.“
- “Ridgeway Avenue in Waterloo from W 4th/Ansborough Avenue to Kimball Avenue. Reduce the lanes to three and provide bike lanes, sidewalks and roundabouts. Secondly, :) Shaulis Road from Ansborough Avenue to Hess Road is a good candidate for a roundabout corridor, before it gets built out. This would provide a much safer traffic corridor.”
- “Ridgeway Avenue in Waterloo.”
- “Ridgeway avenue could be widened with designated lanes.”
- “Ridgeway Ave. If Ridgeway could operate like University Ave, that would be amazing.”
- “Ridgeway Ave especially around KImball-Ridge and West High.”
- “Waterloo Road.” (2)
- “San Marnan.” (2)
- “Wherever people gather/popular corridors. CF downtown, Waterloo E San Marnan shopping plazas.”
- “We're making progress… slowly. Main street is being redone as a complete street, and as other streets reach their due date for reconstruction I think they will also be complete streets.”
- “Waterloo Rd and the how - Bike Lanes and better intersection treatment.”
- “Washington Street in downtown Waterloo. Not pedestrian friendly at all. With "complete streets," pedestrians can be hit by a bike just stepping off a curb. Not all bicyclists follow rules. Despite traffic cameras all over town it seems like folks drive 10-plus MPH over the speed limit all the time. Also some roundabout education/etiquette may be in order as more roundabouts are built in Waterloo. Lot of folks speed through roundabouts instead of slowing; others treat it like an all-way stop.”
- “Washington st.”
- “W. Gilbert Dr. adding bike/pedestrian lane east of Elk Run Creek. San Marnan Dr. in Waterloo needs to be rehabilitated and possibly adding a bike lane.”
- “University Ave.”
- “The streets around 5th and 6th downtown. Better lane markings and crossing signs.”
- “The roads in Raymond are sufficient. Focus on the life span of existing roads.”
- “The picture on the right is excellent. Ridgeway and San Marnan should be updated to this model.”
- “The complete streets idea on Park Lane in Waterloo is not a concept the general public is adapting to very well. I hate parking away from the curb because my children are exiting the vehicle in a bike path or traffic path.”
- “S. Main St., University Ave.”
- “Rainbow Drive.” (2)
- “Park lane is to confusing with the bike lane.”
- “Park Avenue and 4th Street. Smoother surfaces, better lights.”
- “Park Ave.”
- “Old hwy 20.”
- “My first thought is Main Street but that will be happening next year. Waterloo Road in Cedar Falls.”
- “Mullan/Logan.”
- “Maybe Viking Road?.”
- “LaPorte Road. Add area for walking and bikes.”
- “Laporte Road. Add bike lanes or trails and sidewalks/crosswalks.”
- “LaPorte Road.”
- “Lafayette Road.”

- “Lafayette Rd from Williston to Gilbertville Rd.”
- “Lafayette.”
- “La Porte Road/San Maran in Waterloo.”
- “Kimball Ave, 4th Street, Ridgeway Ave.”
- “Kimball ave.”
- “I would say Laffeyette Rd, as it does take you from Waterloo, into Raymond. It is a major artery with many businesses, houses and neighborhoods present on the road. By adding better sidewalks, bike lanes, center turn lanes, and appropriate lighting for all forms of transit would help improve the road. Another thing would be improved crossing on Laffeyete, Waterloo has done a fair job on that, however the suburbs are lacking on that front.”
- “I would not know where to begin.”
- “I would feel safer if bike lanes were off the main road or combined with sidewalk.”
- “I think they are getting better. We still have some work to do.”
- “Hudson Road.”
- “Hammond Ave. I would add a bike lane and a continuous sidewalk on this busy street.”
- “Hammond.”
- “Franklin Street, make it 3 lanes with a turn lane and bike lanes. Make the walk signals to cross longer.”
- “East San Marnan. More crosswalks and bike lanes.”
- “Downtown Waterloo. There has been some work there but could use more.”
- “Downtown Waterloo.” (2)
- “Complete streets NEEDS to be giving updates to the city far more often. Citizens do NOT know what is going on with our streets. With REGUALR updates people could see the good happening.”
- “Broadway.”
- “Bike trails need maintenance, main roads and main streets need smoothed out often.”
- “Any road that serves as a bus route needs to have the walking accommodations also so once people get off the bus they can finish getting where they are going without being left to wait in grass spots. need sidewalks, crosswalks, signals, benches, lights, trash cans.”
- “All. Get rid of bike lanes. Make roads wider. Center turn lanes. Have sidewalks.”
- “Airline Hwy.”
- “6 corners. It’s so confusing.”
- “4th/5th Street.”
- “4th Street.” (2)
- “4th St, since it's heavily used and spans much of the City. I'd add continuous bike lanes and a pedestrian bridge at the rail crossing - or better yet put the rail below grade. If the neighborhood and East High population were more white, the obstacles would not have seemed insurmountable, and they would've found the will to improve that crossing decades ago.”
- “1st St in Cedar Falls.” (2)
- “South Street in Waterloo has a lot of issues. It is a heavily trafficked side street, with little space to get through. The intersection at 9th and South Street, could arguably use a traffic light. It is incredibly stressful nearing that intersection. I see lots of road rage, stress and hecticness at that specific intersection on a daily basis.”

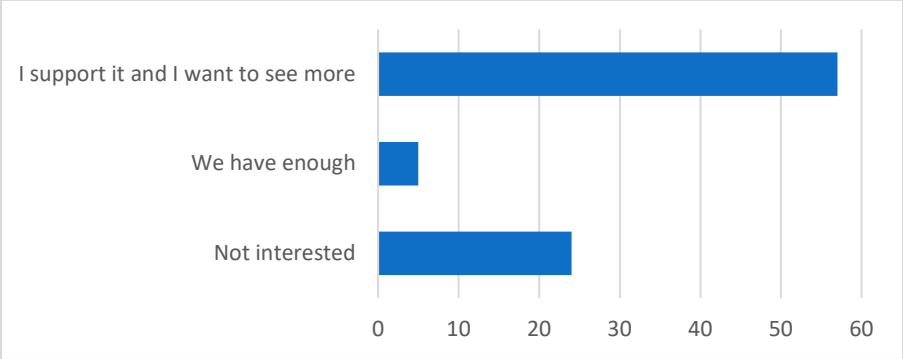
28. Which of the following applies to you about Electric Vehicles (EVs)?

- Answered: 86
- Skipped: 0



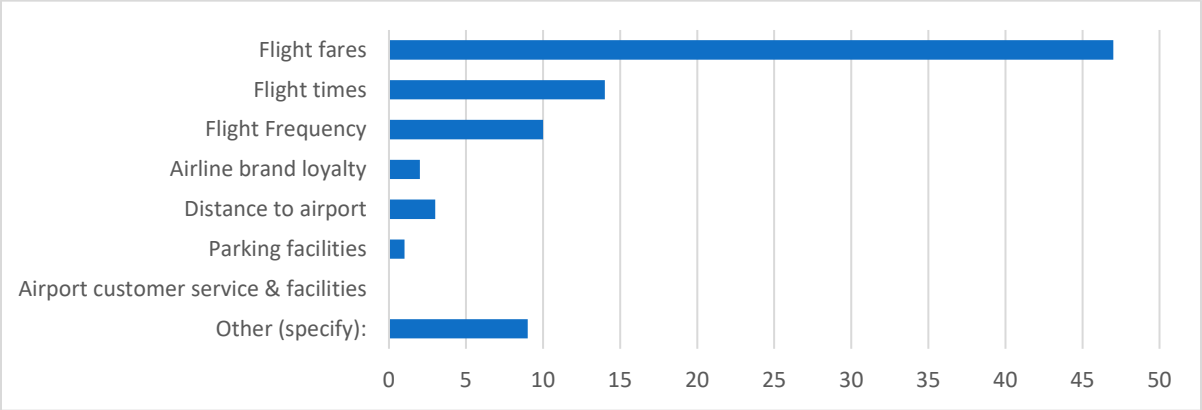
29. What role do you want Iowa to have in electric vehicle infrastructure?

- Answered: 86
- Skipped: 0



30. When deciding whether to fly from Waterloo Regional Airport or a different airport, which of the following is the biggest factor that influences your decision?

- Answered: 86
- Skipped: 0



Other (specify):

- "No nonstop."
- "I like direct flights."
- "Flight options – direct flights to other airports than Chicago."
- "Direct flights."
- "Destination."
- "Cost AND is the flight actually going to happen. So many times the Waterloo flight is canceled and then the last minute they want me to drive to Cedar Rapids, that isn't always an option."
- "Convenience of connections to other destinations."
- "Connection delays or failures at Chicago O'Hare are a problem when flying from Waterloo."
- "As of current, I have no experience flying- but if I did, it would likely come down to cost and convenience fares."

31. What is your biggest transportation challenge in the Black Hawk County MPO area?

- Answered: 77
- Skipped: 9

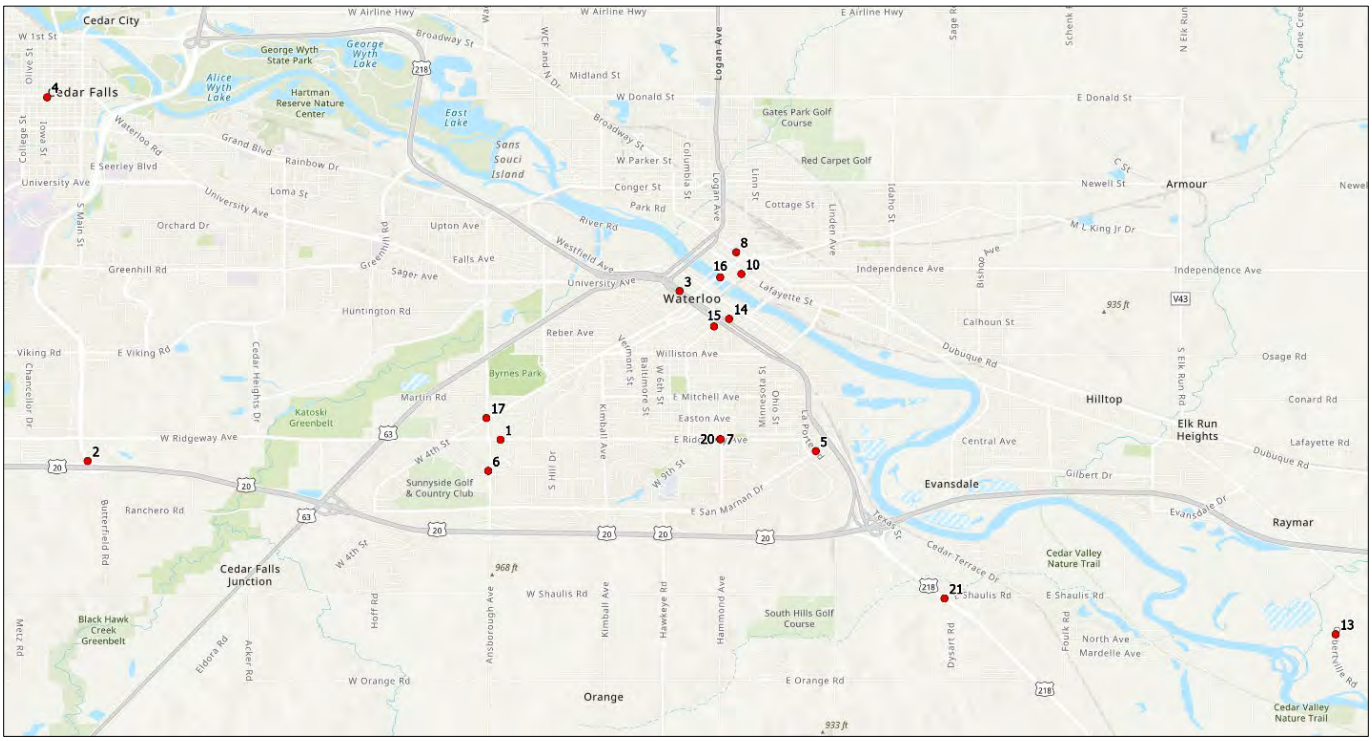
Worded Responses:

- "Road conditions." (2)
- "Potholes!" (2)
- "Would really appreciate if Waterloo airport could provide more flights, more destinations and more reasonable prices."
- "Winter driving in commercial areas."
- "We need to be good stewards of scarce resources and not reconstruct roads that do not warrant reconstruction or increased capacity. Focus on "right sizing" our roads and consider all modes of transportation early in the design phase!"
- "Waterloo lacks a decent airport due to lack of flights and hubs. One airline to one location is not an effective route. Close Waterloo and concentrate on Eastern Iowa Airport."
- "Walking/biking across Waterloo."
- "Walking."
- "W. Gilbert Dr. in Evansdale needs pedestrian trail from Elk Run Creek bridge to Mc Coy. San Marnan needs rehabilitation."

- “Transportation in suburbs of waterloo and cedar falls.”
- “Transportation for the older citizens to Wateroo/Cedar Falls who don't or can't drive.”
- “Trains and congestion. I have lives here my whole life and it’s only in the past couple of years that I feel like we have started to have “rush hours.” And when a train is thrown in the mix we get backed up often for long periods of time and people get overwhelmed and make poor driving decisions. I’ve witnessed people running through red lights on 218, briefly driving down the wrong way to get around a stopped train, semis not having enough space to turn due to backed up traffic, etc.”
- “Timing of some of the traffic signals could be better.”
- “The lack of trains from this area to major metropolitan areas like Chicago and Minneapolis.”
- “The all-way stop at Ridgeway and Hammond is challenging. A roundabout would be great here.”
- “The airport doesn’t have enough flights and those flights are canceled on a whim.”
- “That everyone feels they have to use a car or vehicle to get around.”
- “Speeding and people driving bigger and bigger vehicles which tear up our roads and block vision for other drivers as well as those within the vehicle.”
- “Sometimes the timing of the stops lights are off coming through downtown.”
- “Sidewalks and bike lanes and are not well connected Snow removal needs to be given more attention… if I decide to bike or walk to work or shopping, I need that year round.”
- “Seems to be maintaining the roads we have, especially downtown Waterloo.”
- “Safely biking to shopping areas.”
- “Safe walking trails.”
- “Rough roads.”
- “Roads not being safe for bicyclists.”
- “Road conditions .”
- “Public Transportation options.”
- “Public transportation is very inadequate and non-existent in most neighborhoods.”
- “Providing service to those who need it.”
- “Potholes.”
- “Potholes, rough roads.”
- “Poor road conditions.” (2)
- “People not understanding 4 way stops.”
- “People hanging out in the left lane of the highway at slower speeds.”
- “Pedestrians and bikers going and coming to work along Airline Hwy.”
- “One way streets and stop lights that are not on sensors (left turn on red only should be flashing yellow).”
- “Once the Cedar Falls High School is open what happens to Hudson road when both UNI and CFHS are having large events at the same time? Are there sidewalks or trails along 23rd street.”
- “Never-Ending Road Construction.”
- “Need additional flights to other cities.”
- “My biggest challenge is driving over 50 miles a day through the Metro area going from one side to the other. Allowing bud services or complete roads routes from Cedar Falls, to Raymond would be beneficial to the future of the Community.”
- “Mass transit accessibility and scheduling.”
- “Maintenance of existing transportation infrastructure.”
- “Limited bus service. Improvements might require raising fares for the first time in 20 years or so, which would mean working with social service agencies to distribute bus passed to people who need them. Employers like Best Western, HyVee, McDonalds etc. should also step up and help employees with bus fare.”
- “LaPorte Road.”
- “Lack of public transportation.”
- “Lack of good public transit.”
- “Lack of flights. I always fly out of Cedar Rapids or Minneapolis.”
- “Lack of connectivity with dead-end streets. “
- “Keeping up with all of the changes and different needs.”

- “Iowa 58 and Greenhill Road. The traffic on IA 58 is high speed. I think an interchange would help make this intersection safer someday.”
- “Integrating all users.”
- “I'm not sure I have any big or major challenges.”
- “I would like to take more public transit but the efficiency and frequency of buses is not conducive with how quickly I need to get places.”
- “I wish that the elevated highway that runs along the south edge of downtown Waterloo did not have traffic lights. I also wish it wasn't elevated.”
- “I realize we will always be auto-oriented, but we have opportunity to expand our walkability and create walkable corridors. How can we revitalize downtown Waterloo? How can we make transit work efficiently for those who need it? How can we make the necessary connections by bike/foot for those who don't have a car? How can we focus on what we do have (empty space at Crossroads!) and make something out of that instead of developing further outward? This will make people want to stay and live here.”
- “I find this area heavily overpopulated in traffic. The number of vehicles on the road at the same time is stressful. I have also noticed that some of the stoplights change incredibly fast- in turn influencing people to speed a bit quickly to make it to the other end, before missing their chance at making through. Visitors of the area are unfamiliar with this behavior, and I believe it creates an odd dynamic. Slow driving visitors who are unfamiliar with the territory vs. quick paced citizens.”
- “Hydrogen fuel cell cars are the future. Ears are not viable and are bad for the earth. Especially with CFU coal plant.”
- “Getting side streets plowed in a timely manner.”
- “Funding.”
- “Frustration over traffic signals in Waterloo that seem unnecessary or should be adaptive so there is less wait time.”
- “Frequent construction that takes all summer.”
- “Flying.”
- “Finding a safe ride home after a night of drinking, more cabs/taxies and or ubers.”
- “Drives not "seeing" walkers and bikers and not understanding walkers/bikers can use the streets as well as cars.”
- “Describing navigation to tourists and other visitors. Are there multiple names for some roads? Such as Mullen, 1st, Sergeant road hwy 63. Washington, 218, avenue of the saints.”
- “Currently that the crosswalk sign near my job doesn't work.”
- “Connectivity.”
- “Condition of the roads in Waterloo especially during winter. The potholes get worse and cause greater damage to our car. The Waterloo Street Department does not have the capabilities to plow every street within 24 hours of a snowstorm ending, and my employees suffer from not being able to drive on unplowed roads.”
- “Can't easily walk from my neighborhood to the existing trails without taking streets.”
- “Bus service for low income people .”
- “Bike connectivity, more direct flights out of airport to more cities, not enough public transport options.”
- “Being able to get around without a car.”
- “Bad drivers.”
- “218 through downtown Waterloo. Too many lights.”

32. Are there any other transportation problem areas in the Black Hawk County MPO area related to roads, bridges, bicycle and pedestrian facilities, or safety? Use the map to pinpoint a specific location and explain your answer below.



Worded Responses:

1. “Too narrow. Needs sidewalk, bike lane and lighting.
2. “Hwy 58/27 to Hwy 20
3. “The limited access highway is a needless divide to the community. This road was designed for a different era when the industrial uses around John Deere needed the capacity. the US 63 and US 218 is overbuilt and ruins the quality of life for those in the
4. “The mass transit accessibility is the key to vibrancy, especially in an industrial and university area.
5. “There is no safe way for people coming from these hotels to get to restaurants or shopping without getting into their vehicle.
6. “Little to no pedestrian or bike accommodations in this area.
7. “The all-way stop at Ridgeway and Hammond is challenging. A roundabout would be great here.
8. “Franklin St. is horrible to drive on. Needs to be totally reconstructed.
9. “More bike trails and sidewalks
10. “Waterloo downtown in general. How can we revitalize our downtown for the people who live here, visit here, work here?
11. “I believe that when the new high school opens in Cedar Falls that the capacity of the roundabout at University and Greenhill Road will be inadequate for the amount of traffic it will bear. And the roundabout in front of Wells Fargo/Burger King on Universi
12. “Please more street lights. This summer my house and my neighbors house was broken into a month apart. Our street is incredibly dark and since the break ins my sense of security after 30 years living in Waterloo has dwindled.
13. This road does not have enough speed limit signs posted and the speed limit is too high. The road also needs widened to accommodate walkers/runners.
14. "218/380 at Mitchell Avenue. Where the Washington Street south/east bound service road connects with the highway at about West Ninth Street. 218/63/University Avenue interchange downtown:

Where 63 north merges onto 218-Washington service road south. Terrible sigh distance from traffic merging from down the hill off 63 north onto 218 south."

15. “This is an incredibly busy intersection. I truly believe a stoplight here, would change the dynamic wonderfully. It is stressful just making your way up to the crossing for all transportation types but trying to cross this intersection or turn here is just miserable. Please consider taking a look at this intersection.”
16. “Downtown Waterloo needs more bike lanes and patrolled to keep them off of sidewalks.
17. “4th street is a mess”
18. “No pedestrian bridges to cross roads at Crossroads”
19. “Our downtown area needs a lot of work. Especially for bicycles. The on on Park is a death trap.
20. “I've addressed it in my previous answers, but I just wanted to add the 4th St/rail crossing for the record to the map. Also, the intersection of Ridgeway and Hammond is a hot mess. It could use either a stoplight or a roundabout.”
21. “Lat: 42.442378 Lon: -92.298941. I think this intersection will be an increasing problem for accidents. The Shaulis Road Trail will also be crossing from East to West in the future. I think trying to avoid pedestrian vs motorist crashes are important.”

33. Any additional comments?

- Answered: 16
- Skipped: 70

Worded Responses:

- “The bicycle lights downtown Waterloo are awesome! Please expand on that!”
- “Thanks for the well constructed survey.”
- “Thanks for the opportunity to provide input.”
- “Thanks for asking.”
- “Thanks for asking!”
- “Thank you for this survey for people who live outside of Waterloo.”
- “Thank you for the opportunity to comment! “
- “Thank you.”
- “Slow traffic down. Be very cautions about any changes on Main Street from University to Sixth in Cedar Falls. Losing lanes could cause traffic backups. Plenty of room for bikes on parallel streets. Not necessarily a fan of roundabouts, but one at Sixth and Main in CF at the south end of the Parkade might work.”
- “More attention to needs of persons with disabilities.”
- “I would like to know how much was spent on the Ridgeway study and why nothing was done to improve it. They just completed an overlay and didn’t improve anything.”
- “I LOVE the work that was done on University Avenue. If we can take that spirit and apply it to Ridgeway, I think you would see a lot more people biking to work and people would be much safer.”
- “I hope we can see some improvement soon. Thank you.”
- “Government should NOT be involved in electric car infrastructure. Leave it up to commercial ventures.”
- “Get normal common sense people in the planning phases not just people with "degree's".”
- “As previously mentioned, talk with the persons who are, presently, and, in the future, be affected by the decision made. Be cognizant of their needs, not your wants, in the final decision making process and to do this…talk with them!”

*Opportunities for **Public Input** on the*
2050 Update to the Black Hawk County MPO

Long-Range Transportation Plan (LRTP)

Tuesday, September 19th
12:00-1:30 p.m.
INRCOG Center
229 E Park Ave, Waterloo

Thursday, September 21st
3:30-5:00 p.m.
Virtual Meeting
www.microsoft.com/en-us/microsoft-teams/join-a-meeting
Meeting ID: 244 553 423 402
Passcode: cFRd5k

The LRTP documents the present state of transportation patterns and infrastructure across all modes and provides a plan for the maintenance and improvement of each mode based on anticipated needs and revenues.

Visit www.bhcmpo.org/lrtp to view the Draft Chapters

Comments or questions can be directed to Kyle Durant, Transportation Planner II
kdurant@inrcog.org or (319) 235-0311

Las reuniones públicas se discuten en este folleto son las necesidades actuales y futuras del sistema de transporte en el ámbito de las condiciones de Black Hawk County. Llame (319) 235-0311 si usted tiene preguntas acerca de estas reuniones.

INRCOG
Iowa Northland Regional Council of Governments

Please post this flyer in a public area

INRCOG
Iowa Northland Regional Council of Governments

NEWS RELEASE

DATE: August 28, 2023

RE: Black Hawk County Metropolitan Planning Organization (MPO)
Draft 2050 Long-Range Transportation Plan

CONTACT: Nick Fratzke, Director of Transportation
nfratzke@inrcog.org
(319) 235-0311

The MPO will hold public input sessions on the draft 2050 Long-Range Transportation Plan (LRTP). The purpose of the LRTP is to document the present state of transportation patterns and infrastructure in the Black Hawk County metropolitan area across all modes, and to provide a plan for the maintenance and improvement of each mode based on anticipated needs and revenues. The MPO includes the cities of Cedar Falls, Elk Run Heights, Gilbertville, Hudson, Raymond, and Waterloo, and parts of unincorporated Black Hawk County. Draft chapters are available at www.bhcmpo.org/lrtp.

An in person public input session will be held September 19th from 12:00-1:30 p.m. at the INRCOG Center, and a virtual public input session September 21st from 3:30-5:00 p.m. using the meeting link and ID below. The sessions will be in an open house format with no formal presentation.

Comments will be accepted until the MPO holds a public hearing and considers adoption of a final version on Thursday, November 9th at 10:00 a.m. at INRCOG. Comments and questions can be directed to Kyle Durant, Transportation Planner II: kdurant@inrcog.org.

www.microsoft.com/en-us/microsoft-teams/join-a-meeting

Meeting ID: 244 553 423 402
Passcode: cFRd5k

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INRCOG | PARTNERS FOR PROGRESS
Developing Strong Local Government through Regional Cooperation

229 E Park Avenue | Waterloo Iowa 50703 | P (319) 235-0311 | F (319) 235-2891 | www.inrcog.org

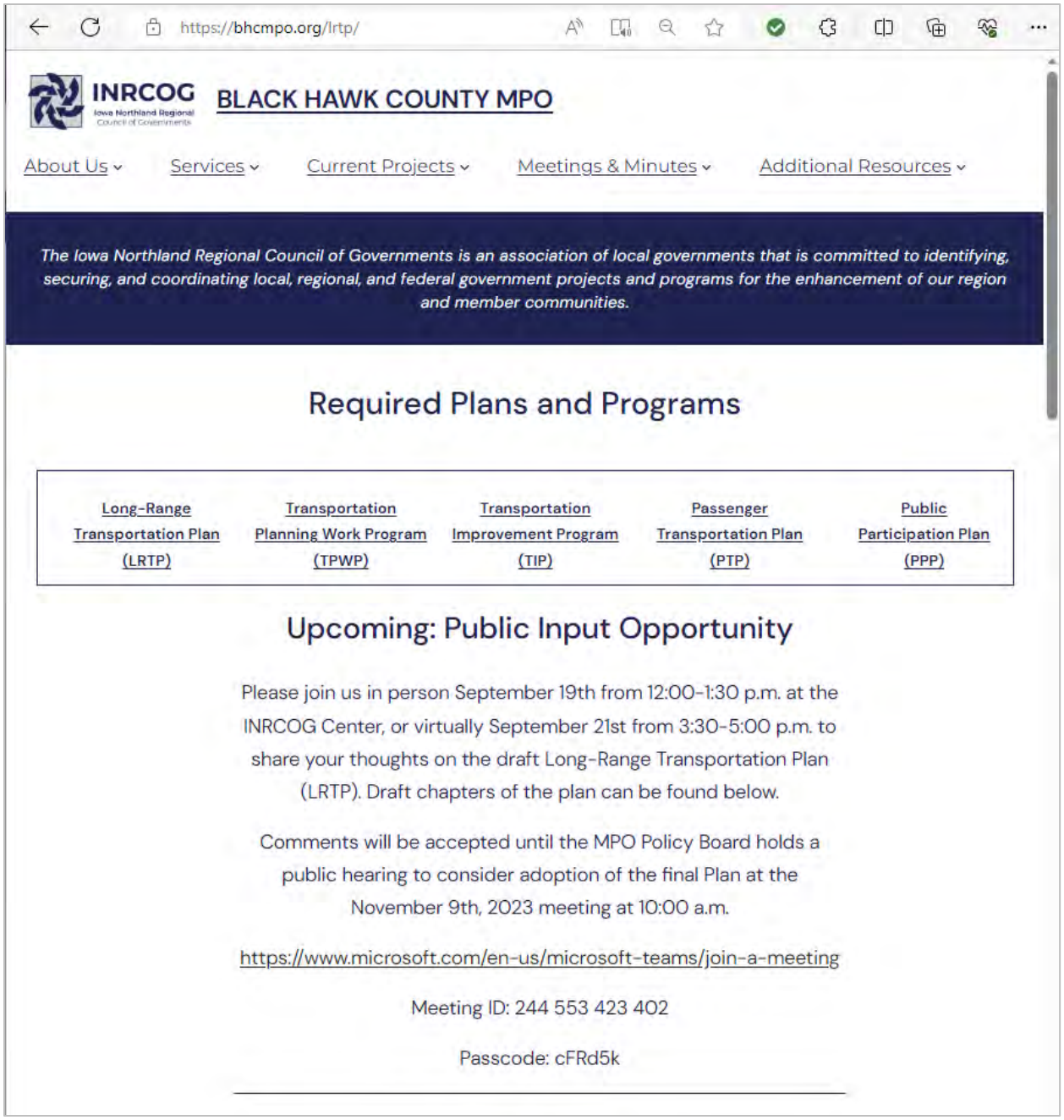
Long Range Transportation Plan Public Input Sessions

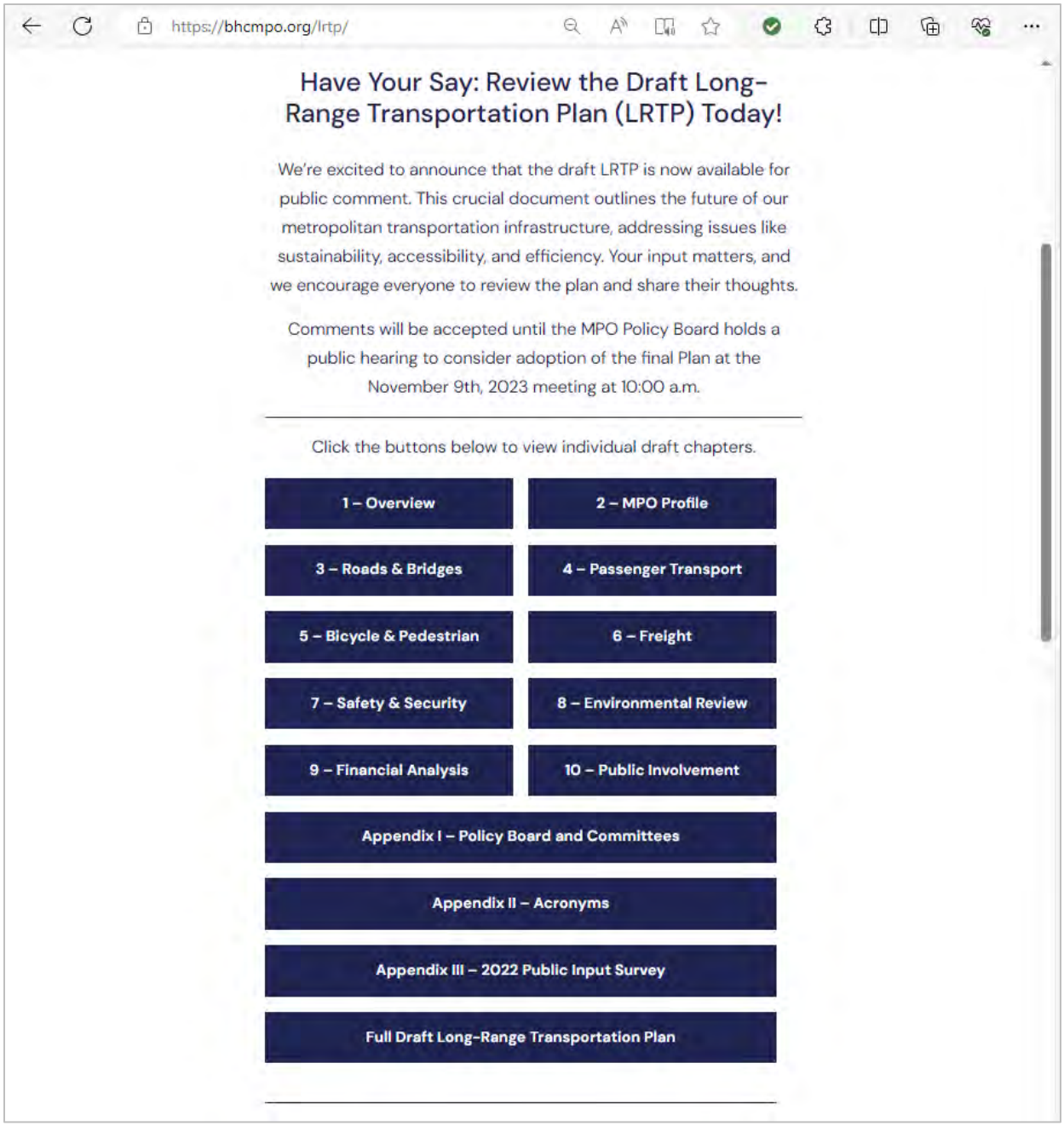
The Black Hawk County MPO is organizing meetings for the public to share their thoughts about the draft 2050 Long-Range Transportation Plan (LRTP). This Plan focuses on the current transportation situation and infrastructure for the metro area covering all types of transportation. It aims to create a strategy for maintaining and enhancing each mode of transportation, considering future requirements, and funding. You can find the draft sections of the plan at here.

An in-person public input session will be held September 19th from 12:00-1:30 p.m. at the INRCOG Center, and a virtual public input session on September 21st from 3:30-5:00 p.m. using the meeting link and ID below. The sessions will be in an open house format with no formal presentation.

Comments will be accepted until the MPO holds a public hearing and considers adoption of a final version on Thursday, November 9th at 10:00 a.m. at INRCOG. Comments and questions can be directed to Kyle Durant.

Link to Virtual Public Input Session:
www.microsoft.com/en-us/microsoft-teams/join-a-meeting
Meeting ID: 244 553 423 402
Passcode: cFRd5k


https://bhcmpo.org/lrtp/
INRCOG
Iowa Northland Regional Council of Governments
BLACK HAWK COUNTY MPO
About Us
Services
Current Projects
Meetings & Minutes
Additional Resources
The Iowa Northland Regional Council of Governments is an association of local governments that is committed to identifying, securing, and coordinating local, regional, and federal government projects and programs for the enhancement of our region and member communities.
Required Plans and Programs
Long-Range Transportation Plan (LRTP)
Transportation Planning Work Program (TPWP)
Transportation Improvement Program (TIP)
Passenger Transportation Plan (PTP)
Public Participation Plan (PPP)
Upcoming: Public Input Opportunity
Please join us in person September 19th from 12:00-1:30 p.m. at the INRCOG Center, or virtually September 21st from 3:30-5:00 p.m. to share your thoughts on the draft Long-Range Transportation Plan (LRTP). Draft chapters of the plan can be found below.
Comments will be accepted until the MPO Policy Board holds a public hearing to consider adoption of the final Plan at the November 9th, 2023 meeting at 10:00 a.m.
https://www.microsoft.com/en-us/microsoft-teams/join-a-meeting
Meeting ID: 244 553 423 402
Passcode: cFRd5k


https://bhcmpo.org/lrtp/
Have Your Say: Review the Draft Long-Range Transportation Plan (LRTP) Today!
We're excited to announce that the draft LRTP is now available for public comment. This crucial document outlines the future of our metropolitan transportation infrastructure, addressing issues like sustainability, accessibility, and efficiency. Your input matters, and we encourage everyone to review the plan and share their thoughts.
Comments will be accepted until the MPO Policy Board holds a public hearing to consider adoption of the final Plan at the November 9th, 2023 meeting at 10:00 a.m.
Click the buttons below to view individual draft chapters.
1 – Overview
2 – MPO Profile
3 – Roads & Bridges
4 – Passenger Transport
5 – Bicycle & Pedestrian
6 – Freight
7 – Safety & Security
8 – Environmental Review
9 – Financial Analysis
10 – Public Involvement
Appendix I – Policy Board and Committees
Appendix II – Acronyms
Appendix III – 2022 Public Input Survey
Full Draft Long-Range Transportation Plan

*** Proof of Publication ***

State of Iowa
Black Hawk County

NOTICE OF PUBLIC HEARING

Notice is hereby given that the Black Hawk County Metropolitan Area Transportation Policy Board (MPO) will hold a public hearing at the INRCOG Center, 229 E. Park Ave., Waterloo, Iowa, on Thursday, November 9, 2023 at 10:00 a.m.

The purpose of this hearing is to solicit public comment on the final MPO 2050 Long-Range Transportation Plan (LRTP). The purpose of the LRTP is to document the present state of transportation patterns and infrastructure in the Black Hawk County metropolitan area across all modes, and to provide a plan for the maintenance and improvement of each mode based on anticipated needs and revenues. The MPO includes the cities of Cedar Falls, Elk Run Heights, Evansdale, Gilbertville, Hudson, Raymond, and Waterloo, and parts of unincorporated Black Hawk County. The document can be viewed at the INRCOG office or at www.bhcmpo.org/lrtp.

It is your privilege to attend this hearing to express your views concerning the LRTP, or you may submit your written comments to the Iowa Northland Regional Council of Governments, 229 E. Park Ave., Waterloo, Iowa 50703, through the time and date of the hearing as specified above. Following the hearing, the MPO will consider all oral and written comments before adopting the final LRTP.

For additional information, you may contact Kyle Durant at (319) 235-0311 between 8:00 a.m. and 3:30 p.m. weekdays or at kdurant@inrcog.org.

Iowa Northland Regional Council of Governments

229 EAST PARK AVENUE
WATERLOO IA 50703

ORDER NUMBER 230547

The undersigned, being duly sworn, on oath, do depose and say that I am an authorized employee of the Waterloo Cedar Falls Courier, that The Waterloo Cedar Falls Courier is a weekly newspaper regularly published and printed in the English language in the City of Waterloo, Black Hawk County, Iowa, and has a general circulation in the said city and county; and that I personally know that the notice, a true copy of which is hereto affixed, was published in the Waterloo Cedar Falls Courier on the following days, to-wit:

Section: Legals
Category: 950 Legal Notice
PUBLISHED ON: 10/26/2023

TOTAL AD COST:	46.48
FILED ON:	10/26/2023

That the issues of said paper containing said notice were duly circulated in the regular manner.

NOTARIAL SEAL IOWA
DANINE GLASCOCK
Commission Number 810108
My Commission Expires
April 17, 2024

Danine Glascock
Notary Public in and for Said County

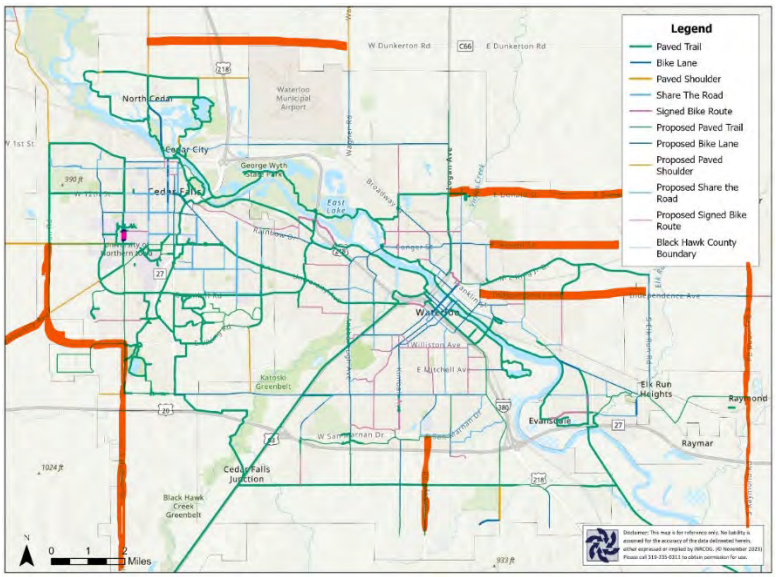
Public Comments

Gotta say, the plan is in great shape. Really appreciate the opportunity to provide feedback. I am offering remarks from a pedestrian/bicyclist lens. These are my views, but are likely consistent with Cedar Valley Cyclists (serving on its board).

Table 5.1 - as a runner, paved shoulders and bike lanes are certainly safer than all the tripping hazards on a sidewalk. It might be worth a footnote that runners can use these facilities (but by opposing traffic).

Map 5.2

- PINK - Hudson Rd needs trail continuity (preferably not alternating on opposite sides of the street - which causes unnecessary bike/vehicle conflicts).
- ORANGE - sections of Dunkerton Rd (CF), Union (CF) University Ave (CF), Hudson Rd (CF) East Donald (ALO), Newell (ALO), and Independence Ave (ALO) deserve paved shoulders.
- On the rural segments, it might be helpful to include recent studies that show paved shoulders cost less over the useful life of the road than soft shoulders that require annual maintenance. It is a travesty that secondary roads are being reconstructed without paved shoulders (Union Rd north of 1st Street). Even if it isn't a full bike lane, a partial shoulder is a life-saver.



I think that's it. I really love the planning efforts (beyond bikes and peds!) to improve our transportation systems for safety, efficiency, aesthetics and economic vibrancy.

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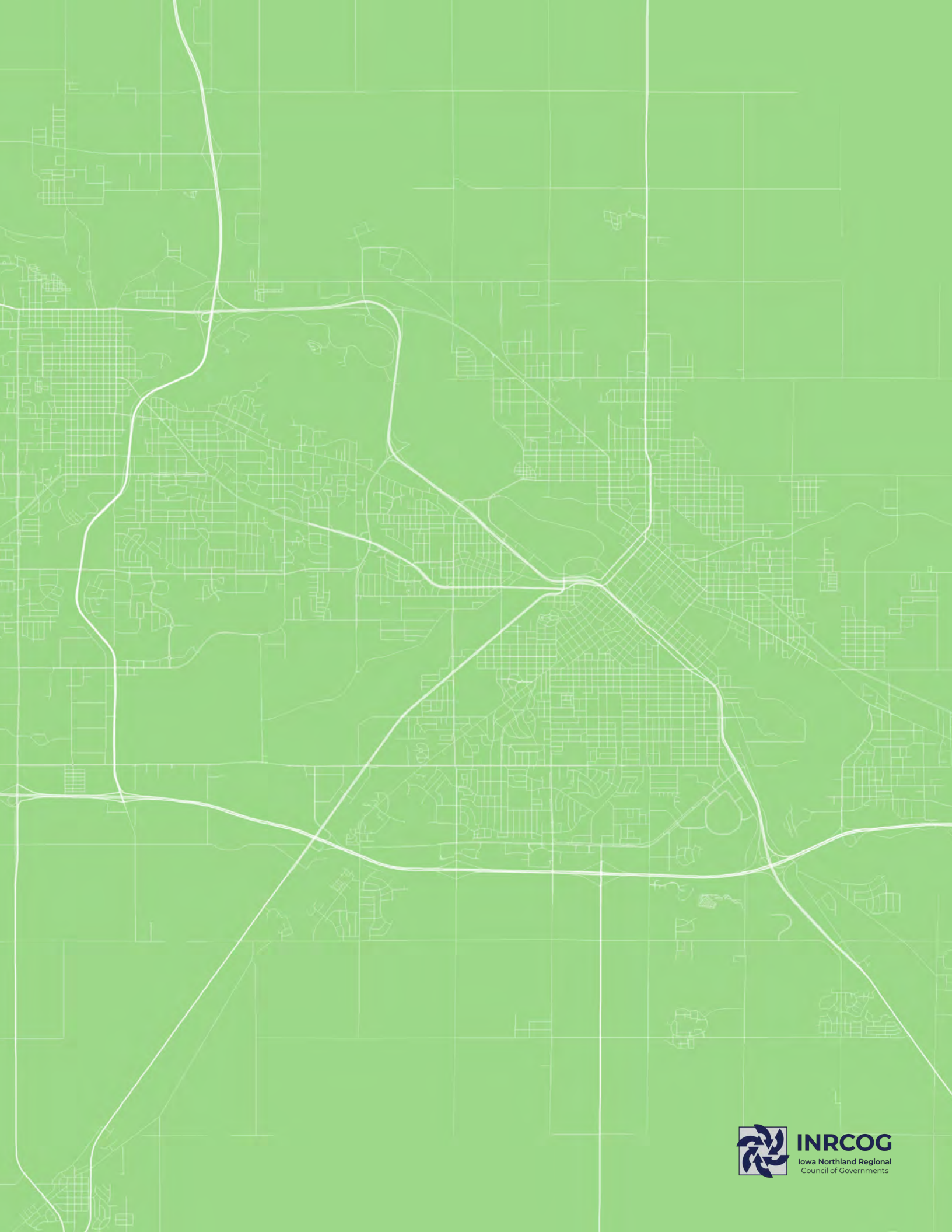

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