ATURA 2050

Long Range Transportation Plan

2021-2026

PREPARED BY RPA 14/ATURA STAFF

RPA 14/ATURA
Transportation Planning Affiliation

Southern Iowa Council of Governments
SICOG

ADOPTED BY RPA 14/ATURA POLICY BOARD ON 11/09/2021

RESOLUTION

ADOPTION OF THE RPA 14/ATURA LONG-RANGE TRANSPORTATION PLAN – ATURA 2050

WHEREAS, The RPA 14/ATURA Transportation Planning Affiliation is organized to provide transportation planning recommendations for Region 14, and;

WHEREAS, the RPA 14/ATURA Transportation Planning Affiliation has undertaken the development and update of its long-range transportation plan, and;

WHEREAS, there have been numerous opportunities throughout this process for the public to provide input into the planning process and to participate in the review of this updated plan; and

THEREFORE, BE IT RESOLVED, that the RPA 14/ATURA Transportation Planning Affiliation adopts the RPA 14/ATURA Long-Range Transportation Plan – ATURA 2050.

Adopted by the RPA 14/ATURA Policy Board on November 9th, 2021.

Signed: _____

Merlin Dixon, Supervisor, Adams County
RPA 14/ATURA Chairperson

Signed: _____

Colby Holmes, Supervisor, Ringgold County
RPA 14/ATURA Vice-Chair/Secreta

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1. INTRODUCTION

The ATURA Regional Transportation Planning Affiliation 14 (ATURA) has developed and followed a comprehensive and coordinated planning process in the development of this Long-Range Transportation Plan (LRTP) for the ATURA Region. The name ATURA comes from the counties served by the affiliation: Adams, Taylor, Union, Ringgold, and Adair Counties. This LRTP serves as a mechanism to examine the existing transportation networks, including highway, transit, air, rail, and bicycle/pedestrian modes, and to provide the area with a transportation planning vision and initiatives for the upcoming twenty-year period ending in the year 2050.

The regional transportation system is composed of many parts that work together to move people and goods within and through the region. The long-range regional transportation plan represents the vision for that system now and in the future. It proposes policies, initiatives, and projects designed to achieve regional goals within the limits of expected funding and governance.

WHO?

RPA 14/ATURA POLICY BOARD MEMBERS

John Twombly	Adair County Board of Supervisors, Member
Merlin Dixon	Adams County Board of Supervisors, Member, Chair
Colby Holmes	Ringgold County Board of Supervisors, Member, Vice-Chair/Secretary
Ron Fitzgerald	Taylor County Board of Supervisors, Member
Ron Riley	Union County Board of Supervisors, Member
Gabe Carroll	City of Creston, Mayor

Policy Board members govern the ATURA organization, with assistance from the Technical Committee. The Policy Board consists of an elected Supervisor from each of the five counties in the region and a representative from each City with a population over 5,000 (The City of Creston is the only city with a population over 5,000 in the ATURA region). The Policy Board generally meets every other month and is responsible for final approval of the RPA's planning activities and plans, including this LRTP.

RPA 14/ATURA TRANSPORTATION TECHNICAL COMMITTEE (TTC) MEMBERS

Nick Kauffman	Adair County Engineer, Chair
Travis Malone	Adams County Engineer, Vice-Chair/Secretary
Jared Johnson	Ringgold County Engineer
J.D. King	Taylor County Engineer
Christian Boehmer	Union County Engineer
Greg Maggard	City of Creston Public Works Director
Leesa Lester	Southern Iowa Trolley, Transit Director
Scott Suhr	Iowa DOT Representative (non-voting), Ex-oficio

The Transportation Technical Committee consists of the five county engineers and the public works director of each city with a population over 5,000 (The City of Creston is the only city with a population over 5,000 in the ATURA region). Non-voting, ex-officio members of the Transportation Technical Committee include the manager of the regional transit agency (Southern Iowa Trolley), and a representative of the Iowa Department of Transportation. This committee meets and makes recommendations to the Policy Board on a variety of matters as needed.

SOURTHERN IOWA COUNCIL OF GOVERNMENTS

The Southern Iowa Council of Governments (SICOG) provides professional staff for the development and maintenance of ATURA planning and programming responsibilities. SICOG is the coordinating body responsible for the submission of various transportation documents to the Iowa DOT and for public distribution. SICOG works with the ATURA Policy Board and Transportation Technical Committee to fulfill the transportation planning and program requirements of federal legislation, such as the FAST Act. Area citizens are provided the opportunity to comment on all aspects of the transportation planning process through ATURA Policy Board meetings, focus groups, public hearings, and individual correspondence. SICOG facilitates the development of the LRTP process and creation of this document.

Timothy Ostroski	Executive Director
Caleb Whitehouse	Transportation/Regional Planner
Jessica Hagen	Planning Technician
Judy Brimm	Financial Director
Jeremy Rounds	Regional Planner
Rana Scarlett	Regional Planner

IOWA DEPARTMENT OF TRANSPORTATION

The Iowa Department of Transportation, in particular the Systems Planning Bureau and Program Management Bureau, provide technical assistance and guidance for the work carried out by RPA 14/ATURA Transportation Planning Affiliation in its duties and the process of this LRTP.

WHAT?

The ATURA Transportation Planning Affiliation (RPA 14) is a five-county (Adair, Taylor, Union, Ringgold and Adams Counties in Iowa) transportation planning affiliation that was organized in 1994. RPA 14/ATURA coordinates planning and programming efforts, public input, and fosters partnerships with state and local officials, Federal Highway Administration, Federal Transit Administration, neighboring RPAs and Southern Iowa Trolley.

RPA 14 receives federal funds to develop regional transportation plans and programs and to coordinate technical and policy studies on a wide range of transportation issues. RPA 14 works in cooperation with the Iowa Department of Transportation (IDOT), local governments and transit providers. Southern Iowa Council of Governments (SICOG) provides administration of RPA 14/ATURA. SICOG works with the RPA 14/ATURA Policy Board and Transportation Technical Committee to fulfill the transportation planning and program requirements of federal legislation. Area citizens are provided the opportunity to comment on all aspects of the transportation planning process through RPA 14/ATURA Policy Board meetings, public hearings, individual correspondence and planning meetings. This administration includes the following transportation planning activities:

- Direct and oversee activities of RPA 14/ATURA
- Prepare all required planning documents
- Act as liaison between Department of Transportation and RPA 14/ATURA
- Perform accounting functions
- Administer Transportation Planning Work Program
- Perform clerical and record keeping duties
- Assure opportunities for public participation in RPA 14/ATURA
- Prepare agendas for meetings and provide notification to interested parties
- Assist counties and cities in the region with transportation related activities
- Distribute information relative to transportation issues, meetings, and programs
- Coordinate transit and human service transportation planning

The purpose of transportation planning is to develop and maintain a transportation system that will provide a safe, efficient, and economic means of moving people and goods. The system should promote the movement using multiple modes. It should provide an easy transition from the local system within a community to the wider regional system. It should also enhance alternative modes for non-drivers including public transportation and bicycle and pedestrian systems.

WHEN?

This LRTP serves as a mechanism to examine the existing transportation networks, including highway, transit, air, rail, and non-motorized modes, and to provide the area with a transportation planning vision and initiatives for the upcoming thirty-year period ending in the year 2050. The purpose of such a long timeframe is to enable a thoughtful planning process that considers the needs of the future, not just the present. Having this planning document in place helps enable local jurisdictions to make prudent decisions that will help reach ATURA's long-term goals. While it is impossible to predict exactly what will happen in the next twenty years, this document is based on the area's history and assumes current trends will continue in a similar fashion. This document will be updated every five years to incorporate new trends, regulations, and changes within the region.

WHERE?

The RPA 14/ATURA Transportation Planning Affiliation was organized in February 1994 to carry out transportation planning for a five-county region in Southern Iowa. ATURA is one of eighteen non-metropolitan planning areas in the state of Iowa, and is composed of the following Iowa counties: Adair, Adams, Ringgold, Taylor, and Union and covers 2,489 square miles. The name ATURA comes from the names of these counties. Figure 1-1 shows the location of the ATURA region. The ATURA affiliation serves as the regional transportation planning agency for the Iowa Department of Transportation's (Iowa DOT) Region 14 for coordinating planning and programming efforts in the region. ATURA cooperates with a number of agencies including the Iowa DOT, the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), Southern Iowa Trolley (SIT), Southern Iowa Council of Governments (SICOG), health and human service agencies who are members of the Family Ties group in Union County and Ringgold County, RPA 14/ATURA's member counties and cities, as well as citizens of the region in fulfilling its transportation planning responsibilities.

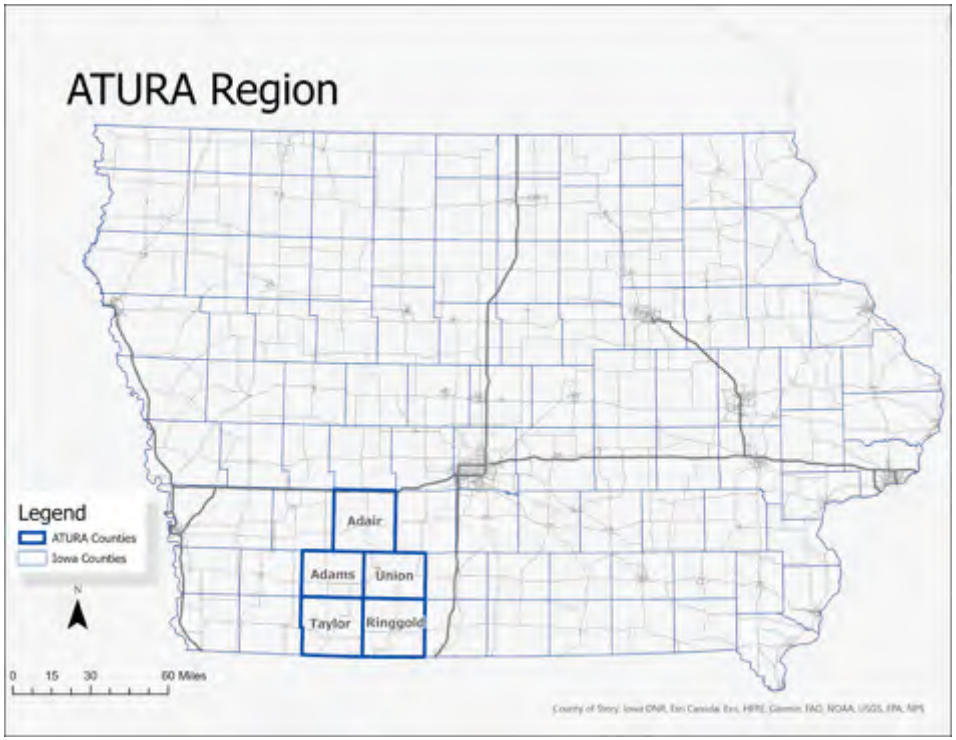


Figure 1-1: Location of the ATURA region.

WHY?

Moving Ahead for Progress in the 21st Century Act (MAP-21) federal legislation enacted in 2012 and Fixing America's Surface Transportation Act (FAST Act) legislation in 2015 both mandate the preparation of Statewide Transportation Plans. To this end, the Iowa DOT has asked each regional transportation planning agency to prepare transportation plans that will be coordinated and considered when developing the statewide transportation plan. Regional plans were asked to prescribe long-term and short-term strategies leading toward he development of an integrated, intermodal transportation system to move people and goods in the region. This document is intended to cover a variety of modes of transportation in concert with each other in the region's transportation system:

- Aviation
- Rail
- Bicycle/Pedestrian
- Roads and Bridges
- Public Transit
- Intermodal, Multimodal, and Freight

The purpose of this LRTP is to review trends, strengths, weaknesses, opportunities, and threats of the transportation system in the region over a 20-year horizon. The majority of

the transportation system has been in maintenance mode in recent years. No new major construction or development has been completed nor is any anticipated in the near term. Emphasis has been placed on rehabilitation and reconstruction of facilities to meet travel demand needs and current safety standards. The majority of transportation related dollars have been spent on upgrades to existing roadways and bridges. The LRTP has designated goals and objectives to address the limitations and shortcomings of the region while building on its strengths.

HOW?

In addition to gathering data and statistics, information from the RPA 14/ATURA Policy Board and Transportation Technical Committee, input into this document has been sought from a variety of other sources. These sources include elected and appointed officials, resource agencies, county conservation groups, economic development organizations, transportation providers and users, as well as from the general public through the process described in the RPA 14/ATURA Public Participation Plan.

Information and input for this document was obtained through a variety of methods, including online surveys, personal and telephone contact, ATURA website, social media, and the SICOG newsletter, *The Windmill.* In addition, meetings with ATURA TTC members were conducted to provide input on specific issues.

ATURA staff created an online survey that was distributed to the public. The survey was available for a period of 2 months. In addition to the online survey, a hardcopy survey was distributed for respondents with technological barriers.

The public involvement process was designed to be proactive and provide complete information, timely public notice, full public access to key decisions, and opportunities for early and continuing involvement. It was the intent of the ATURA staff to provide participation by the public in the regional planning process within the limitations of staff time and financial resources as currently available, as follows:

- Provide adequate public notice of public participation activities and time for public review and comment at key decision points and notify interested and affected individuals and agencies.
- Provide timely notice and reasonable access to information about transportation issues and processes.
- Hold public meetings at convenient and accessible locations and times.

- Seek out and consider the needs of those traditionally underserved by existing transportation.
- Review the effectiveness of the procedures and strategies contained in the participation plan to ensure a full and open participation process at least every five years.
- Work to ensure that no person is excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving
- Federal financial assistance on the basis of race, color, national origin, sex, disability, or religion.
- Written and oral comments will be provided to the Policy Board prior to action being taken.
- Programs, policies, and activities that affect human health or the environment should identify and avoid disproportionately high and adverse effects on minority and low-income populations.
- Ensure that no racial, ethnic, or socioeconomic group bears a disproportionate share of negative environmental consequences resulting from government programs and policies.

GOALS AND OBJECTIVES

Early on in the LRTP process, RPA 14/ATURA adopted the following goals (broad statements of desired outcomes for transportation within the region) and objectives – for this LRTP. These goals confirm and reinforce many goals supported by federal transportation legislation. On the local level, these goals provide guidance for future programming of projects within the region. It is desired that projects developed by the RPA will align with one or more of these objectives and will support these goals while meeting the needs of the region by addressing priorities identified through this LRTP process. They are not listed in order of priority.

1. **Support the economic vitality of the region, state, and United States especially by enabling global competitiveness, productivity, and efficiency.**
    - **a.** Promote accessibility to transportation network when economic development opportunities are present.
2. **Increase the safety and security of the transportation system for motorized and non-motorized users.**
    - **a.** Emphasize safety improvements in all modes of transportation when rehabbing existing or constructing new portions of the transportation system.
3. **Increase the accessibility and mobility of people and for freight.**
    - **a.** Expand services when necessary, without jeopardizing continuity of existing services. Encourage use of alternative transportation modes, and support improvements to infrastructure for pedestrians, bicyclists and people with disabilities when feasible.
    - **b.** Promote accessibility to transportation network when economic development opportunities are present.
4. **Protect and enhance the environment, promote energy conservation, and improve quality of life.**
    - **a.** Consider environmentally friendly alternatives when constructing, rehabbing, or upgrading the transportation system.
    - **b.** Enhance the quality of our communities through transportation.
5. **Enhance the integration and connectivity of the transportation system, across and between modes throughout the region and state, for people and freight.**
    - **a.** Focus attention to safety improvements when various transportation facilities converge.
6. **Promote efficient system management and operation.**
    - **a.** Support allocation of regional transportation funding to ensure adequate funds are available for local transportation network links.

   b. Maintain safe and reasonable levels of service on highway, rail, transit, trail/sidewalk, and aviation facilities.

7. **Emphasize the preservation of the existing transportation system.**
   a. Limit unnecessary expansion of the transportation network – emphasize the preservation of existing facilities.

2. REGIONAL PROFILE

2.1 DEMOGRAPHIC BACKGROUND

TOTAL POPULATION

The ATURA Region population totals slightly under 35,000 individuals with the highest concentration of residents found in Adair County and Union County (including Creston). Creston is the only city in the region that has over 5,000 residents and it has a larger population than all of the counties individually. A breakdown of population by major entities in the Region is shown in Figure 2-2.

POPULATION DECLINE

Since 1900, the ATURA region has experienced consistent total population decline. In the last 120 years, the region has experienced a population decline of almost 50,000 people. In the last 30 years, the region has experienced a loss of about 4,000 people. This trend of population decline is not expected to change much over the lifespan of this plan, but it may be plausible that the region will see a plateau in population loss within the next twenty years with the slope of the line in Figure 2-1 appearing to move closer to zero (horizontal) in recent decades.

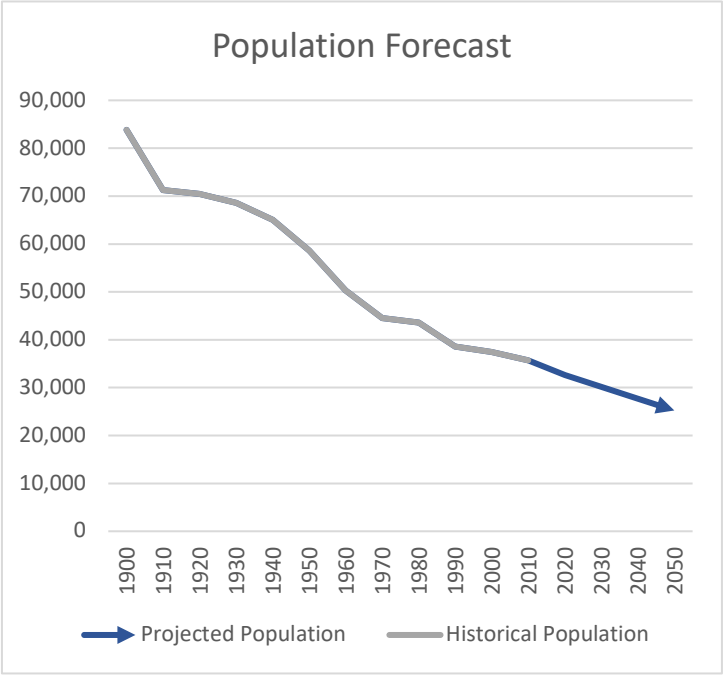


Figure 2-1: Projected population through 2050. ***Data from US Census Bureau.***

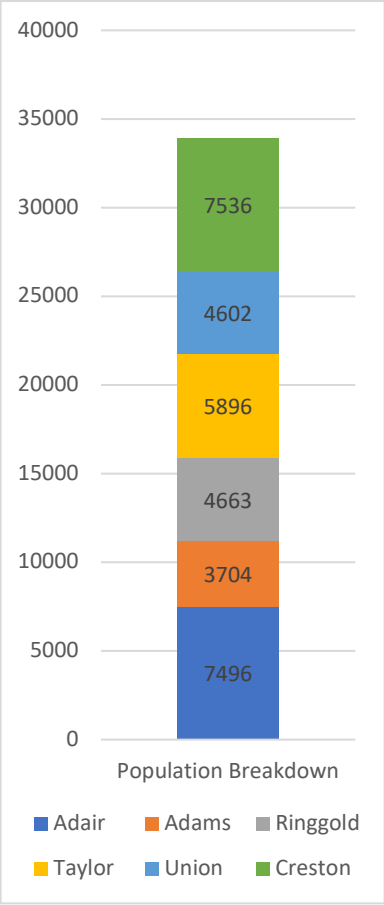


Figure 2-2: Population breakdown by location. ***Data from US Census Bureau.***

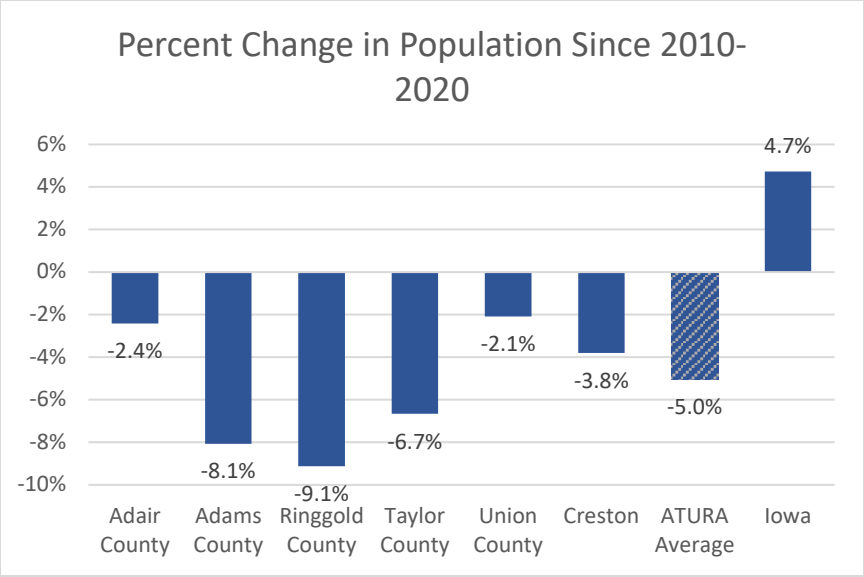


Figure 2-3: Change in population by location between 2010 and 2020. ***Data from US Census Bureau.***

Since 2010, the ATURA region has experienced an overall population decline of 3.4 percent. In Adair County and Adams County, this decline is more than double as seen in Figure 2-3. Creston is the only major entity that has not significantly declined in population since 2010 with a 0 percent change in population. This is the opposite of trends in Iowa and the Midwest overall where population has grown 2.8 percent and 1.6 percent, respectively, since 2010.

AGE

The population pyramid for the ATURA region (Figure 2-4) shows two major peaks (60 to 64 years and 5 to 9 years) and one minor peak (35 to 39 years). While the major peaks are on opposite sides of the graph, they have characteristics in common such as dependency on other drivers and utilization of alternative modes of travel (trails and sidewalks). As the younger generations grow up and the older generations become less independent in terms of transportation, it will be important to develop a transportation infrastructure that provides for their needs. This is especially important to consider if the region wants to retain the younger generations as they become adults.

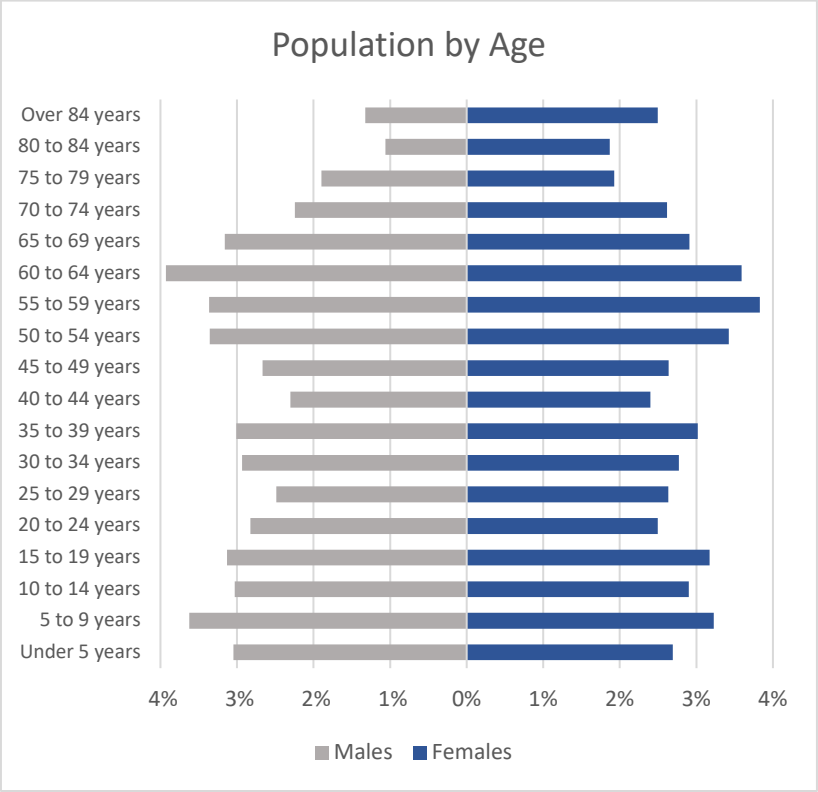


Figure 2-4: The ATURA region's population by age. ***Data from US Census Bureau, 2018 ACS.***

RACE, ETHNICITY, AND LIMITED ENGLISH PROFICIENCY

As seen in Figure 2-6, residents of the ATURA Region are almost 97 percent White. Much like the State of Iowa overall, residents of the Region are also primarily non-Hispanic/Latino. See Figure 2-5 for a comparison of Hispanic/Latino populations between the Region and the State of Iowa. The highest percentage of Hispanic/Latino residents can be found in Taylor County (7.9 percent). A similar pattern emerges when looking at English proficiency in the Region (Figure 2-7) where there is a larger concentration of Limited English-speaking households in Taylor County (2.1 percent) with all of those households speaking primarily Spanish.

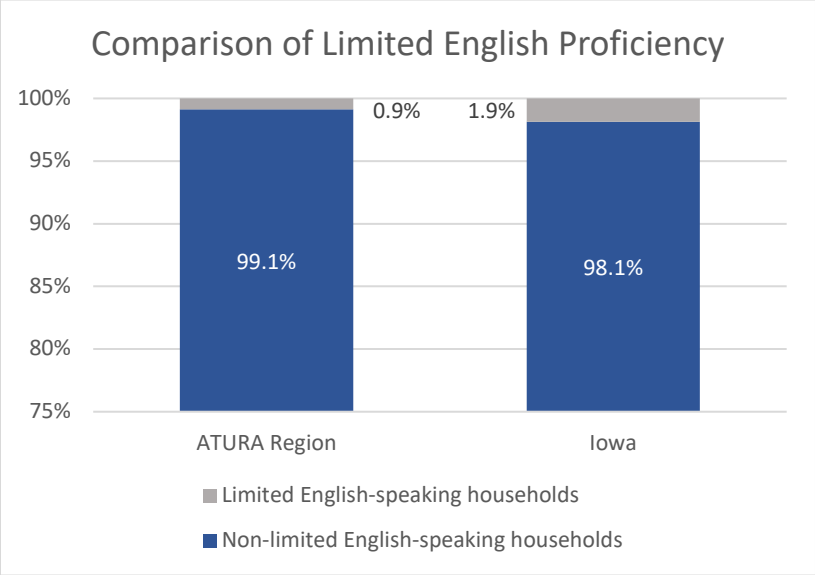


Figure 2-7: Limited English proficiency population in the ATURA region and Iowa. ***Data from US Census Bureau, 2018 ACS.***

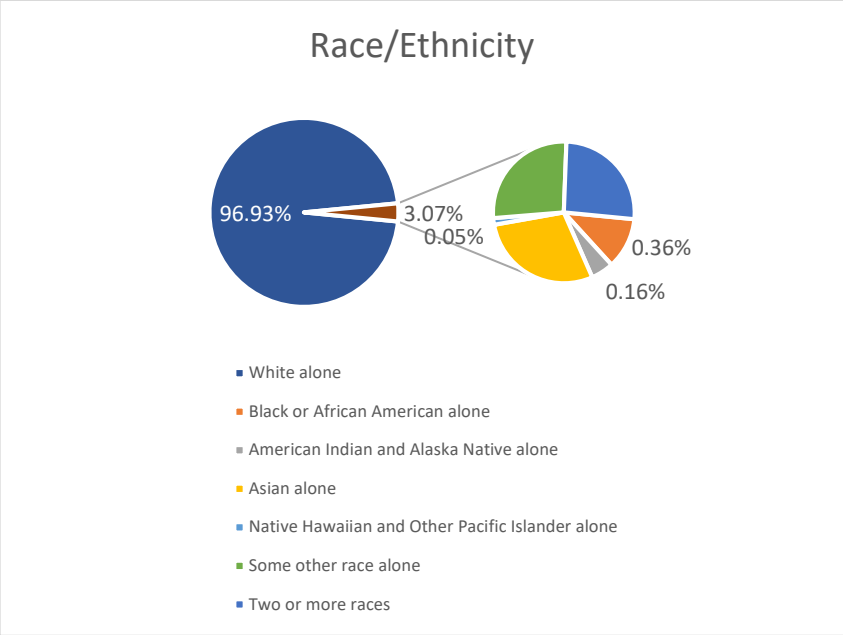


Figure 2-6: Race and ethnicity of ATURA region residents. ***Data from US Census Bureau, 2018 ACS.***

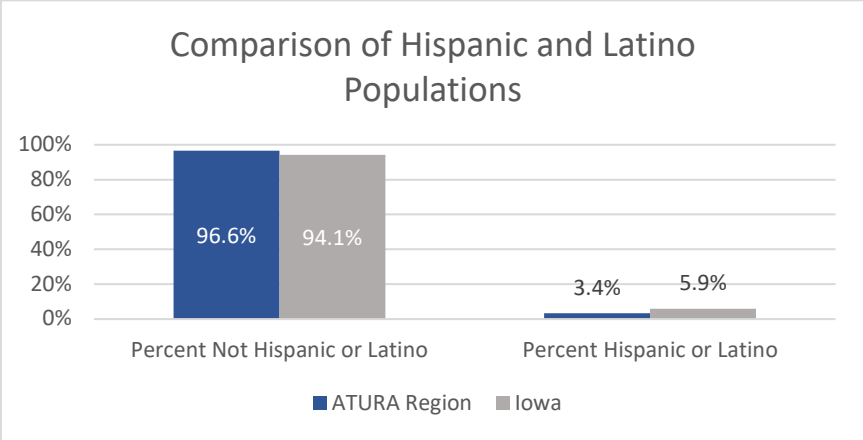


Figure 2-5: Hispanic and Latino populations in the ATURA region and the state of Iowa. Data from US Census Bureau, 2018 ACS.

RURAL FLIGHT

The Region has experienced high levels of depopulation overall, however, the majority of this population loss has been from rural flight while the population of the cities have experienced much slower decline. Figure 2-8 shows the declining populations of rural and city populations in the region along with the percentage of residents in the Region that live in cities from 1900 to 2010. Some of the causes of rural flight include improvements in agriculture technology that lower the demand for labor, and lack of job opportunities in many industries for professionals.

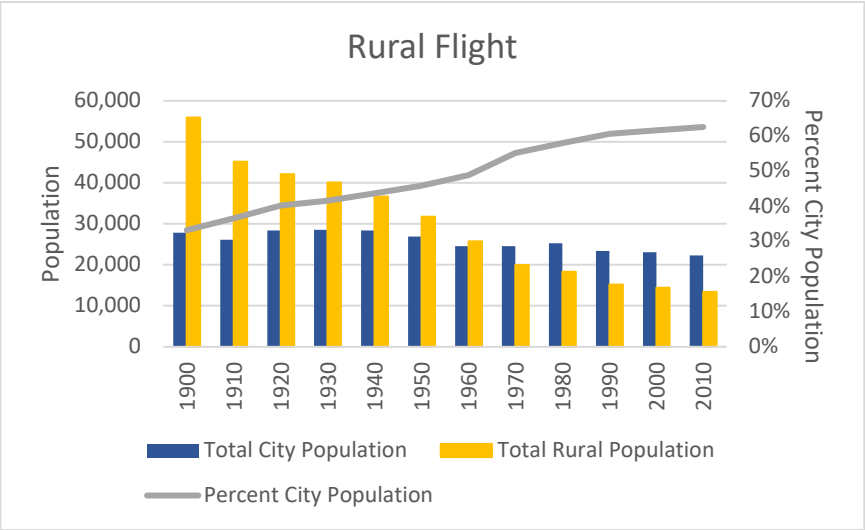


Figure 2-8: Rural to urban migration in the ATURA region. *Data from the US Census Bureau, 2010.*

It is also worth noting how the role of the largest city, Creston, has changed over time. Figure 2-9 shows Creston's population since 1900 and the percent of the regional population Creston has occupied each year. Similar to the overall trend of city and rural populations in the region, Creston has grown very little since 1900 but it has become significantly larger comparatively to the rest of the region population-wise. In 1900, Creston residents accounted for about nine percent of the regional population but in 2020, this percentage reached 22 percent. It is not expected that this trend in the Region, and Creston, will change much over the life of this plan.

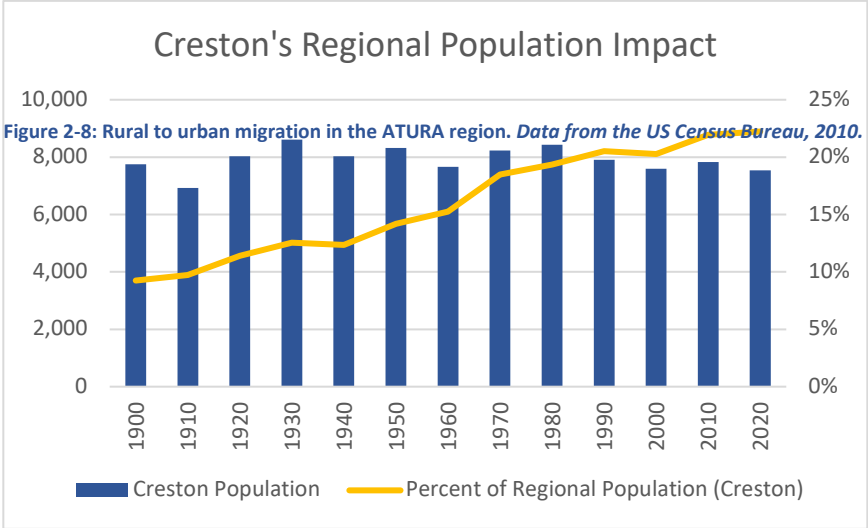


Figure 2-9: Change in Creston's share of the region's population over the last 120 years. *Data from US Census Bureau, 1900-2020.*

2.2 ECONOMIC BACKGROUND

TOTAL EMPLOYMENT

There are about 12,000 full-time employed individuals in the ATURA region. Union County (35.1 percent) and Adair County (22.8 percent) are responsible for a majority of the regional full-time workforce but, as seen in Figure 2-10, Creston alone is the second highest contributor at 22.6 percent of total regional full-time workers.

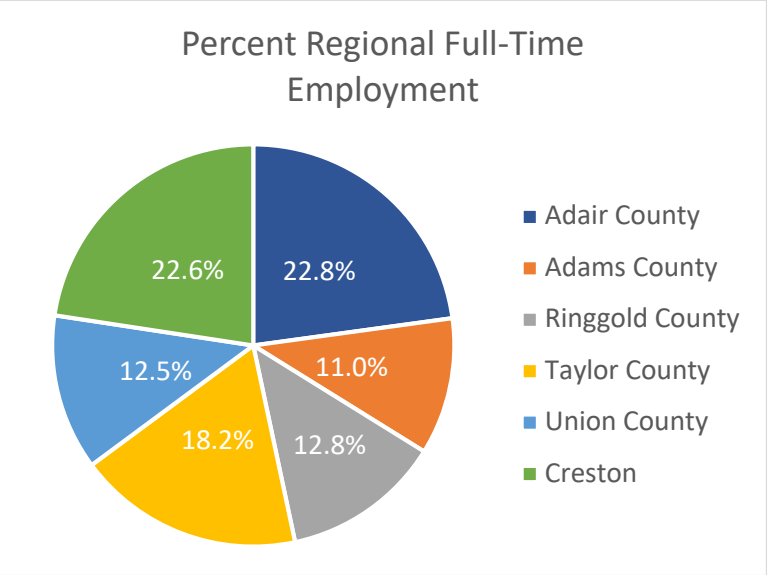


Figure 2-10: Employment by county. ***Data from US Census Bureau, 2018 ACS.***

EMPLOYMENT BY SECTOR

Employment by sector in the ATURA region is similar to many rural areas. As seen in Figure 1-11, *Educational services, health care, and social assistance* is the most common employer of full-time workers in the region at almost 25 percent. The 2nd most common, *Manufacturing*, is about 20 percent, but the rest of the sectors, except for *Retail trade,* each account for less than 10 percent of total full-time regional employment. Considering the impact of these industries on the transportation network and the impact of the transportation network on those industries in the planning process is vital, given that the top three industries combine to make up over 50 percent of jobs in the region.

It is also apparent from Figure 2-11 that the region has a slightly different industry mix compared to the state overall. The Region has a higher concentration of manufacturing workers than Iowa overall but a lower concentration of workers in the education, health care, and social assistance. However, there is a significantly higher concentration of workers in the *Agriculture, forestry, fishing, hunting, and mining* industry, which is expected in a rural area. Jobs in this sector are transportation intensive, and the industry relies heavily on the region's infrastructure.

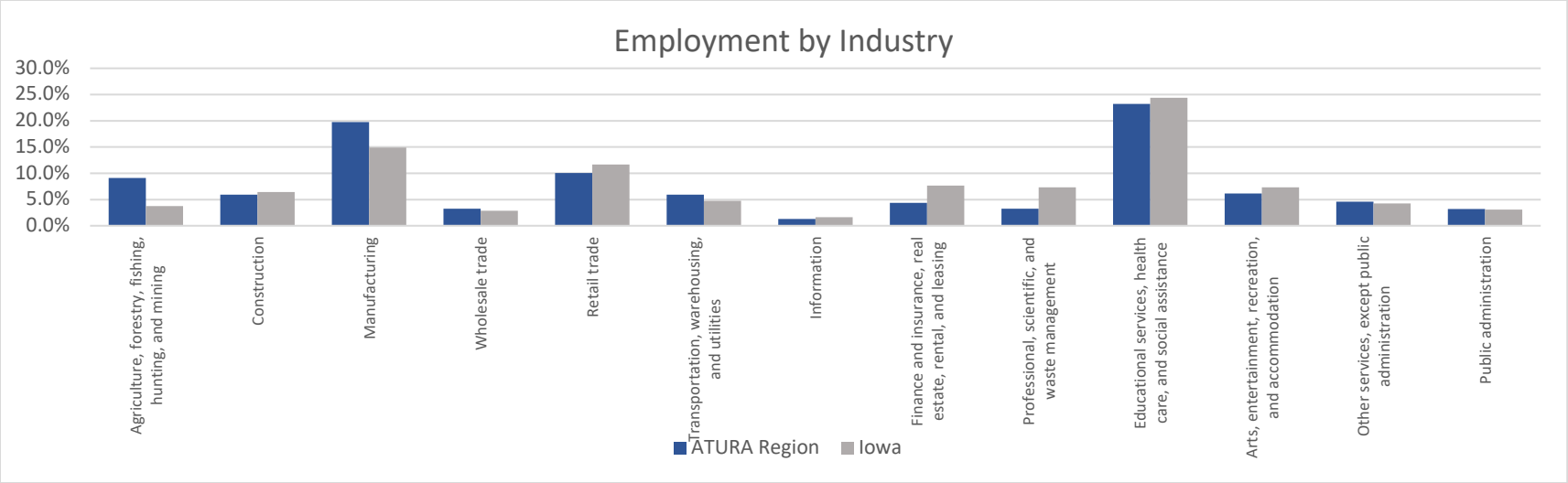


Figure 2-11: ATURA region employment by industry. ***Data from US Census Bureau, 2018 ACS.***

PER CAPITA INCOME

As seen in Figure 2-12, per capita income of the counties in the ATURA region is generally below the statewide average with the exception of Adams County and Adair County, according the US Bureau of Economic Analysis. Adams County, in particular, is significantly higher, however, it is also the least populous county in Iowa, which may cause some issues with the data or may give an inaccurate depiction of the current conditions. Higher per capita income may also indicate a lower proportion of unemployed residents, kids, or retirees who either have no incomes or incomes that are much lower than the average. The most populous county in the ATURA region, Union, has the lowest per capita income at just under $40,500. Data was unavailable for the residents of Creston.

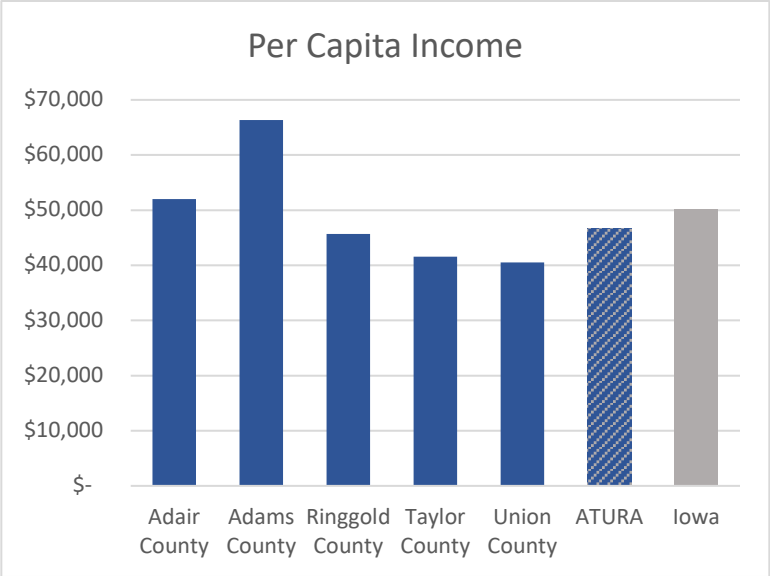


Figure 2-12: Per capita income of ATURA region residents by county. ***Data from US Census Bureau, 2018 ACS.***

HOUSEHOLD INCOME

Median household income in each county of the ATURA region is similar to per capita income, however, all counties are below the statewide median of $58,580. In fact, only two counties, Adair and Ringgold, have median household incomes over $50,000. Figure 2-14 illustrates this disparity between the region and the State. Consideration of the generally lower incomes of the region is important in transportation planning as it gives a glimpse of the ability of local taxes to sustain a complex transportation network.

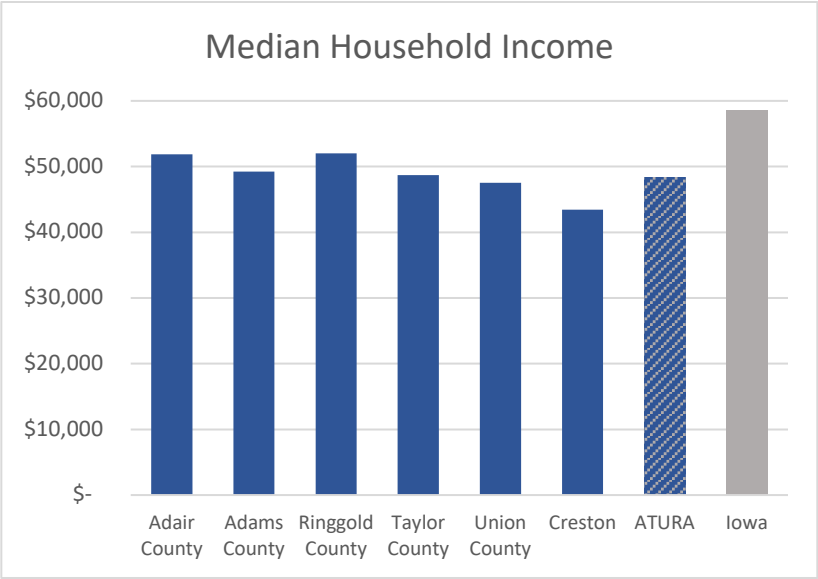


Figure 2-14: Median household income of ATURA region households. ***Data from US Census Bureau, 2018 ACS.***

GROSS DOMESTIC PRODUCT

Since 2001, the gross domestic product (GDP) of the ATURA Region has grown steadily. In 2018, the regional GDP was just below $1.7 billion. If trends continue, the regional GDP should be almost $2.4 billion by 2030. Figure 2-13 shows the regional GDP as well as the impact of each county on the regional GDP.

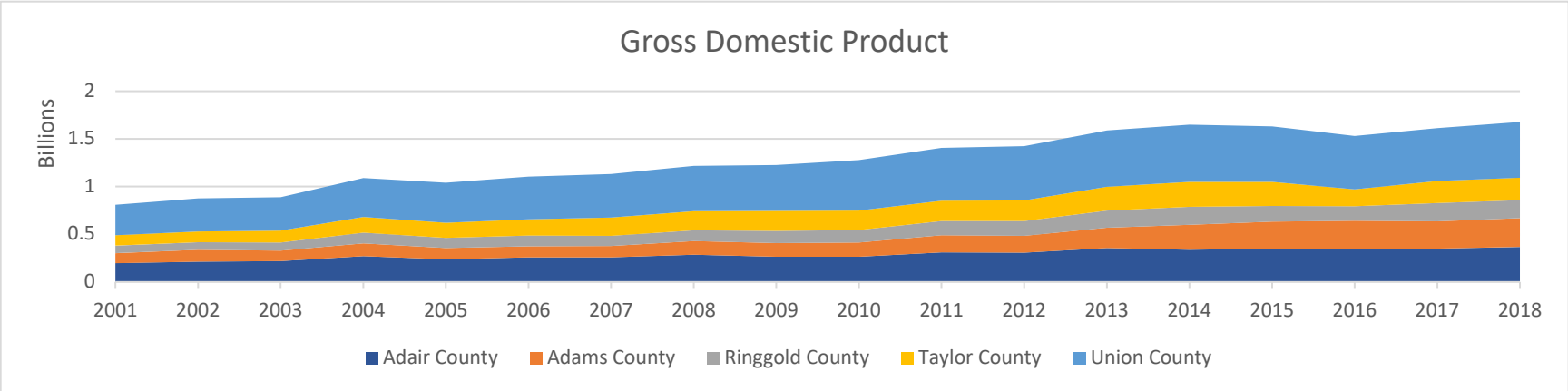


Figure 2-13: The GDP within the ATURA region, as well as the impact of each county on the regional GDP. ***Data from US Census Bureau, 2018 ACS.***

2.3 TRANSPORTATION BACKGROUND

VEHICLES PER HOUSEHOLD

In the ATURA Region, most households have at least two vehicles available for use. This is similarly true in Iowa overall. However, the Region has a 3 percent edge over the State in this category. In other words, it is more common to find households in the Region that have more than two vehicles available than in the State overall. It is likely that this is a common trend in rural areas where walkability is frequently lower, public transit is largely unused by the general population, and there are fewer critical amenities reachable by alternative (non-personal vehicle) modes of transportation. Figure 2-16 shows a comparison of vehicle availability between the Region and the State overall. Within the Region, the patterns are largely the same with *2 vehicles available* as the most popular followed by *1 vehicle available*, *3 vehicles available*, *4 or more vehicles available*, then *No vehicle available*. The major difference lies in Creston. In Creston, it is more common to find households with only one vehicle available than it is to find households with two vehicles available. This is likely due to the higher concentration of population, critical amenities, and jobs. Additionally, more vehicles are required by farmers which make up a larger share of the region's rural population. Figure 2-15 shows the internal comparison of vehicles available per household in the Region.

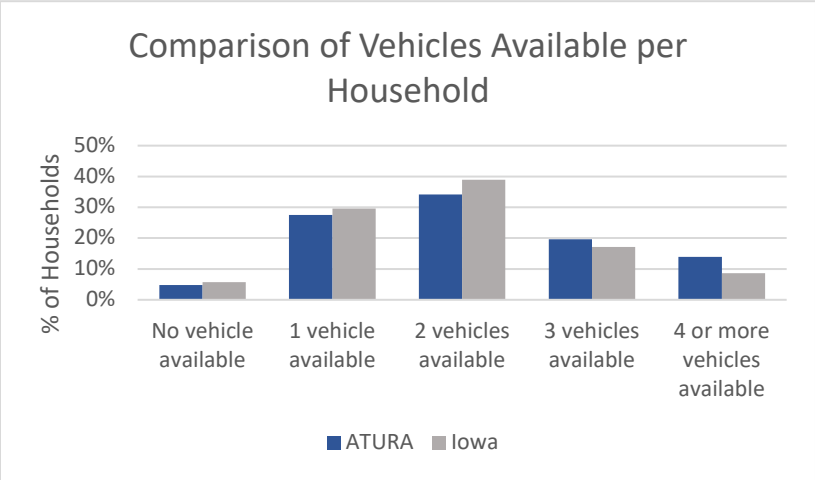


Figure 2-16: Vehicle availability between the ATURA region, and the State of Iowa. ***Data from US Census Bureau, 2018 ACS.***

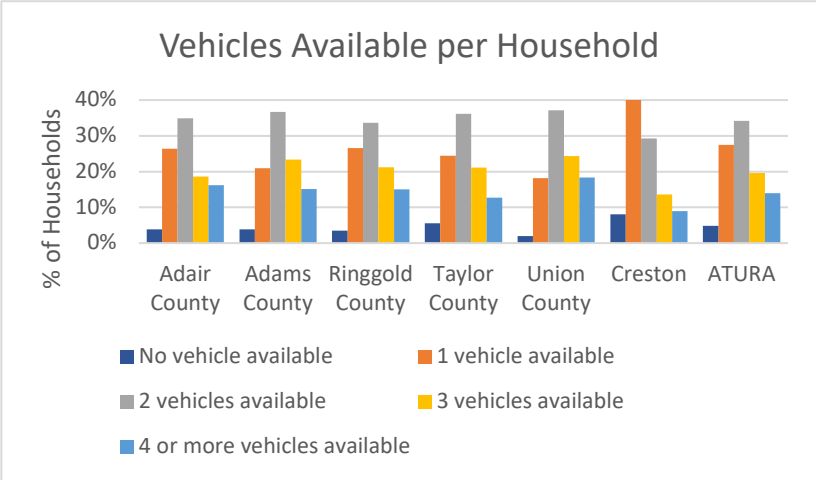


Figure 2-15: Internal comparison of vehicles available per household in the ATURA region. ***Data from US Census Bureau, 2018 ACS.***

VEHICLES AND POPULATION

Table 2-1 shows the number and percentage of different vehicle types in the ATURA region and the State of Iowa. Much like the rest of Iowa, the ATURA Region has more registered vehicles than people. However, in the ATURA region, there are about 15 percent more vehicles per person in than in the state overall. Most of this disparity is found in the difference in proportion of trucks in the total fleet. The ATURA region's truck fleet is almost 30 percent of the total fleet while the state's truck fleet only makes up about 17.5 percent of the total state fleet. This is likely a common feature of rural areas but it is important information moving forward in the planning process, as it is more evidence of a reliance on personal vehicles instead of alternative modes of transportation. It is also worthwhile to note that there are 1.55 vehicles per licensed driver in the Region compared to 1.40 vehicles per licensed driver in the state overall. Most recent data indicate that there are a little over 26,000 licensed drivers in the ATURA region. In fact, the number of licensed drivers in the Region has stayed steady around 26,000 since 2014, as seen in Figure 2-17. This flattening of licensed driver numbers could indicate a rate of expiration among the older generations (primarily Silent Generation and Baby Boomers)

	ATURA Region	***Iowa***
Population	34,488	3,131,499
Licensed Drivers (% of population)	26,185 (75.9%)	2,313,375 (73.9%)
Autocycle (% of fleet)	13 (0.03%)	432 (0.01%)
Automobile (% of fleet)	12,751 (31.4%)	1,256,287 (38.8%)
Moped (% of fleet)	220 (0.5%)	18,152 (0.6%)
Motorcycle (% of fleet)	2,665 (6.6%)	191,578 (5.9%)
Multi-purpose (% of fleet)	13,086 (32.3%)	1,203,576 (37.2%)
Truck (% of fleet)	13,373 (29.1%)	626,682 (17.5%)
Vehicles per person	*1.18*	*1.03*
Vehicles per licensed driver	*1.55*	*1.40*

Table 2-1: The type of vehicle and percent of the total fleet in the ATURA region. ***Data from Iowa DOT.***

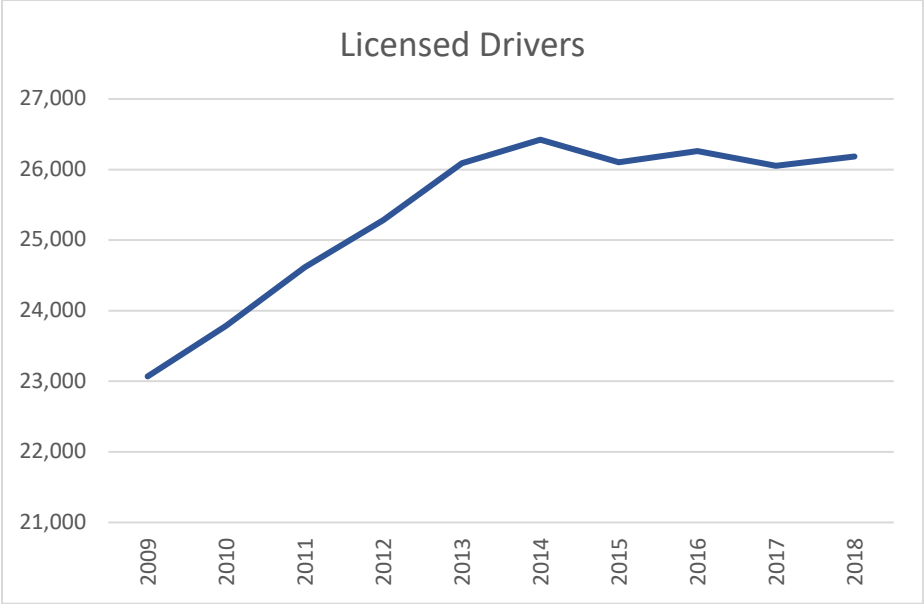


Figure 2-17: The number of licensed drivers in the ATURA region between 2009 and 2018. ***Data from Iowa DOT.***

that is equal to the rate of newly licensed drivers among the younger generations (primarily Generation Z).

MODE OF TRANSPORTATION TO WORK

Like the rest of Iowa, the primary mode of transportation to work for residents of the ATURA region is alone by personal vehicle. The second most common mode of transportation to work in the state and the ATURA region is carpooling in a personal vehicle. Interestingly, and as seen in Figure 2-19, the ATURA region has a higher proportion of this commuting mode than the state overall. This could be related to the region's proximity to the Des Moines metropolitan area that is located northeast of the region. It is reasonable to assume that many of the residents that carpool to work are commuting to Des Moines and use carpooling as a way to save money. The ATURA region also has a higher percentage of residents who walked to work and worked at home. The latter of which may increase due to the expedited technological and cultural advancement related to remote work due to the COVID-19 pandemic. It is difficult to predict how a long-term increase in remote work will impact a transportation network but some possibilities include significant changes in funding levels, increased need for sidewalk and trail infrastructure, and decreased traffic along major regional corridors.

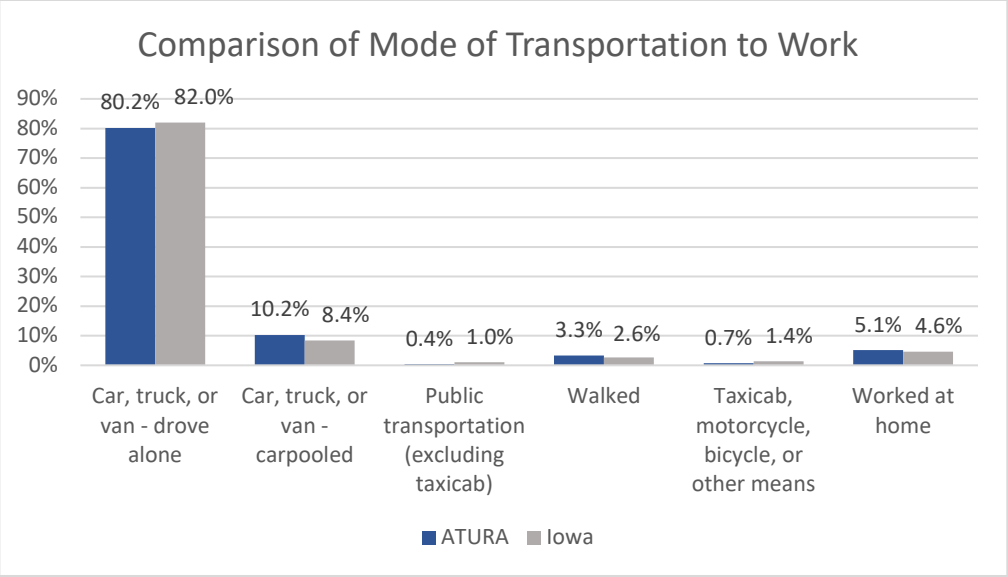


Figure 2-19: The breakdown of transportation mode between the ATURA region and the state of Iowa. ***Data from US Census Bureau, 2018 ACS.***

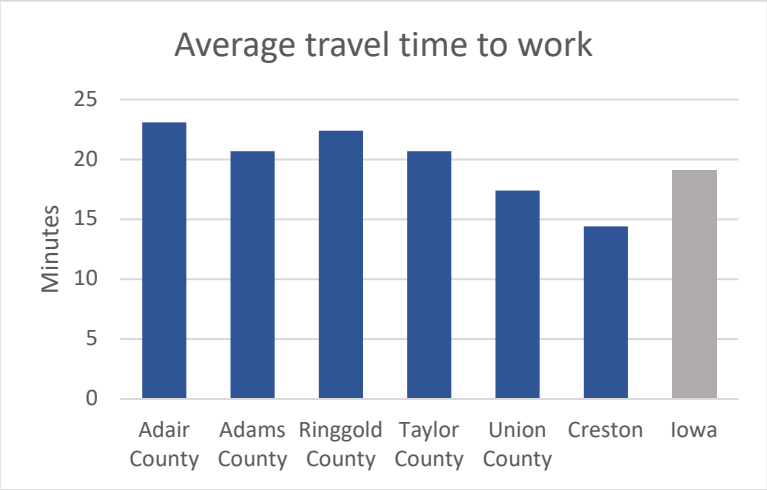


Figure 2-18: Average commute time among ATURA workers and the State of Iowa overall. ***Data from US Census Bureau, 2018 ACS.***

COMMUTING TIMES

Commuting times in the ATURA region are similar to the state average. Four of the six major entities have commuting times slightly higher than the state average and two of the six major entities have commuting times slightly lower than the state average, as seen in Figure 2-18. This is expected due to the population/employment centers within and around the region. Creston is the only "major" population/employment center in the region, so it is logical that Union County and Creston commuting times are lower. It is also logical that the other counties have higher average commute times because of their proximity to Creston and the Des Moines metropolitan area as well as their lack of a major regional population/employment center.

SAFETY/CRASHES

As seen in Figure 2-20, crashes in the ATURA region have gone up in recent years, but in the last ten years, the number of crashes per year have not changed. Fatal crashes and crashes with injuries have remained flat for the last ten years and average crash severity has gone slightly down since 2009 but has not changed significantly. A more in-depth crash analysis is shown in Chapter 3.

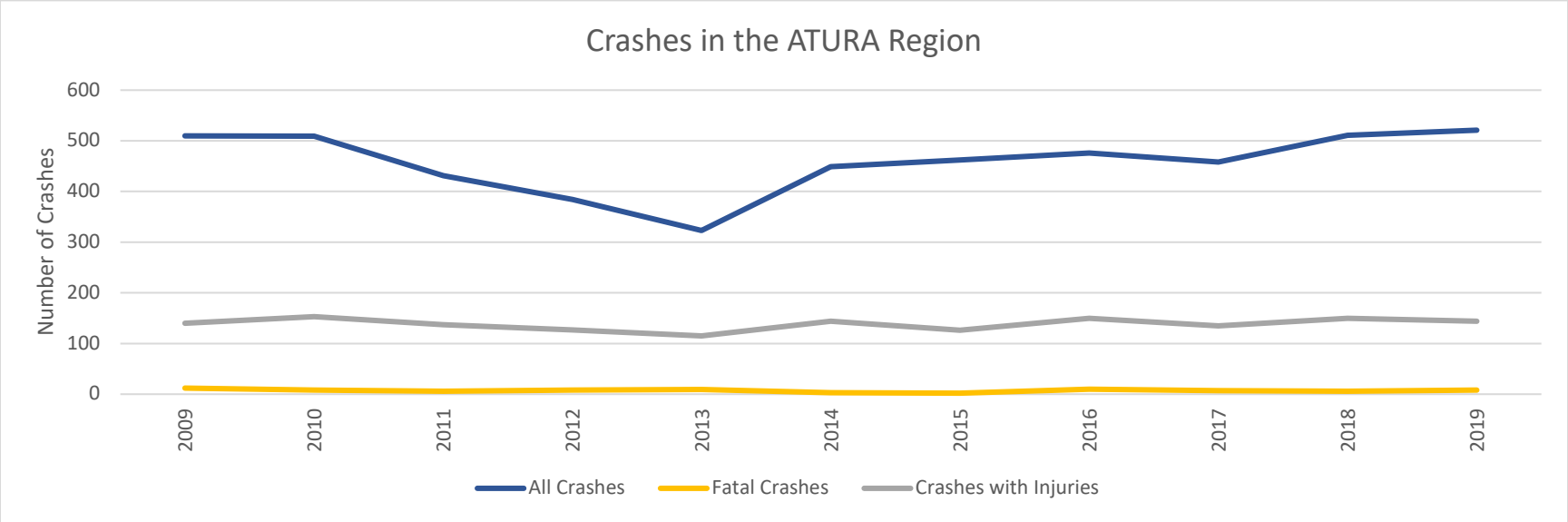


Figure 2-20: Crashes within the ATURA region between 2009 and 2019. ***Data from Iowa DOT.***

VEHICLE-MILES-TRAVELED

Vehicle-miles-traveled (VMT) is a metric that measures the number of miles traveled in a geographic area for a period of one year. As seen in Figure 2-21, the ATURA region totals about 550,000 VMT. A majority of the VMT is from Interstate-80, rural primary roads, and rural secondary roads. Overall, there has been a steady rise in VMT in the Region, however, the data suggests that rural primary road VMT has been much more volatile than the VMT for other road classifications. This can be seen in Figure 2-23.

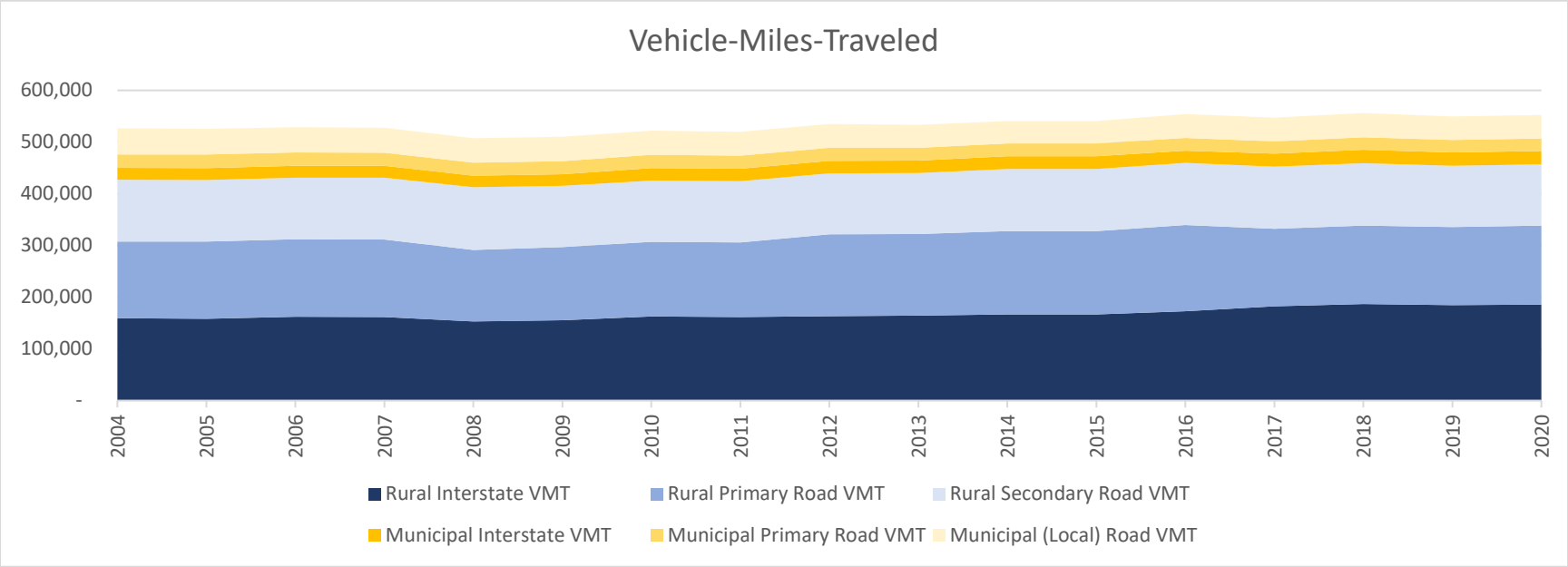


Figure 2-21: Vehicle miles traveled in the ATURA region by road class. ***Data from Iowa DOT.***

It also worthwhile to note the city of Creston's impact on the municipal VMT. In 2019, Creston accounted for about 42 percent of the total non-interstate municipal VMT in the Region. This proportion is visualized in Figure 2-22.

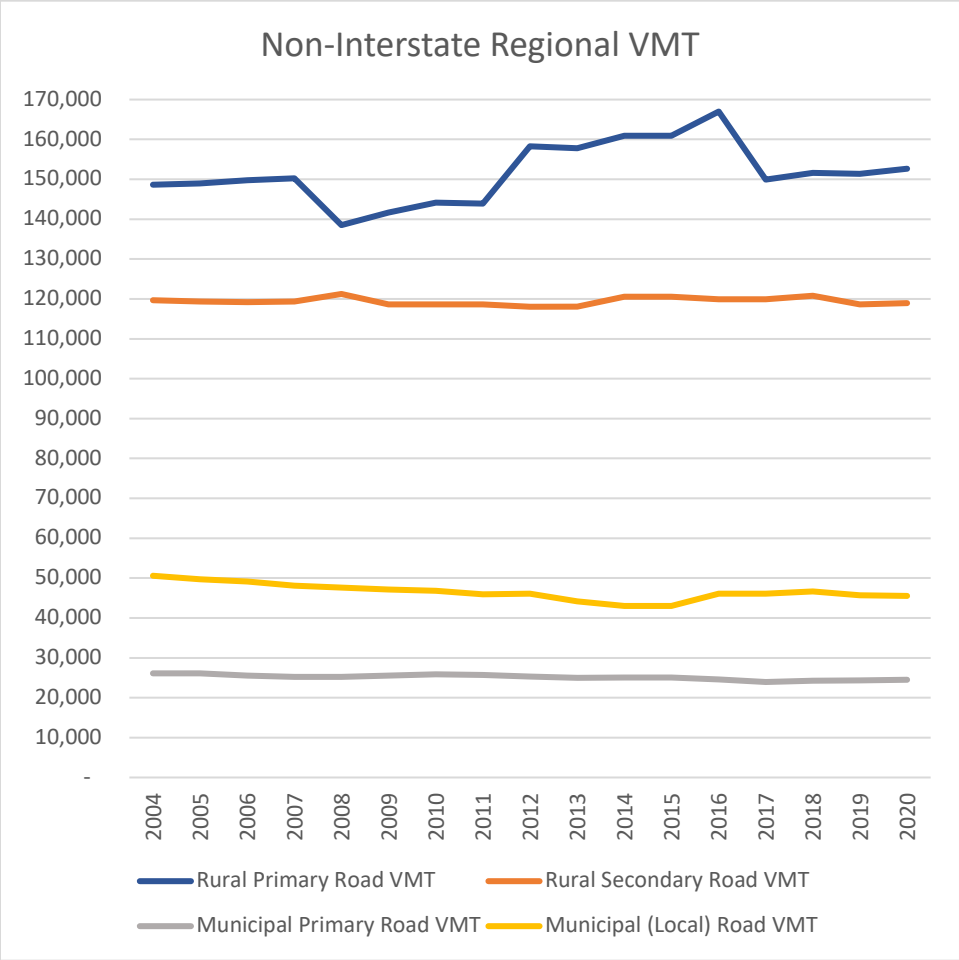


Figure 2-23: Vehicle Miles Traveled on Non-Interstate roads within the ATURA region. ***Data from Iowa DOT.***

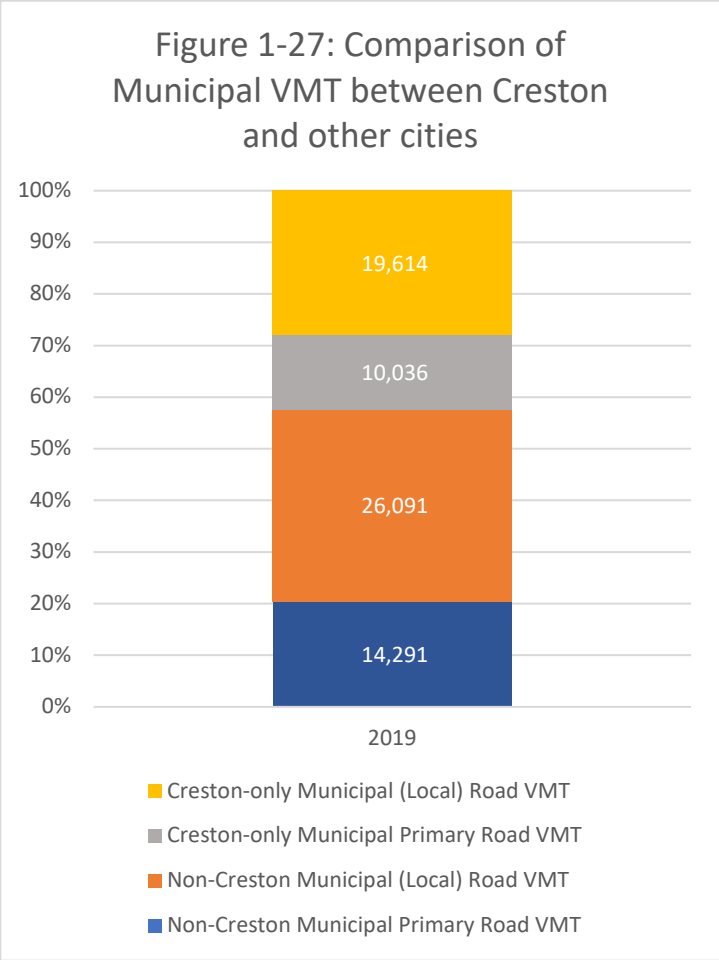


Figure 2-22: Creston's proportion of the municipal Vehicle Miles Traveled. ***Data from Iowa DOT.***

2.4 KEY CONCLUSIONS AND IMPLICATIONS

- The ATURA region is experiencing an aging and declining population.
- There is a low proportion of LEP households.
- Population loss has been found more in rural areas than urban areas.
- Urban populations have been relatively steady since 1900.
- Creston and Union County have an outsized impact on the regional economy with Creston pulling the most weight.
- Schools, hospitals, government social assistance organizations, manufacturing, and agricultural industries have major impacts on the regional economy.
- Income is generally lower in the ATURA region than the State of Iowa overall.
- GDP is slowly growing with Union County as the biggest contributor.
- Most households have more than one vehicle available.
- The number of licensed drivers has stabilized over the last eight years at about 26,000.
- Personal vehicles dominate the way in which residents commute to work.
- Commute times are generally lower than the state with the exception of Union County.
- Vehicle crash frequencies and severity have remained relatively stable over the last 10 years.
- Crash frequency and severity increase during winter months.
- Total VMT has seen a steady increase over the last 16 years.
- Rural primary route VMT has been much more volatile over the last 16 years when compared to other classifications.

3. SYSTEM OVERVIEW

To help plan for the future, it is important to understand the current structure and usage of the multimodal transportation system. This chapter provides an overview of each mode of transportation, focusing on four aspects: planning efforts, inventory, trends, and key conclusions. The following elements make up the regional system:

- Aviation
- Rail
- Bicycle and Pedestrian
- Roads and Bridges
- Public Transit
- Intermodal, Multimodal, and Freight Transportation
- Traffic Safety

This inventory provides a baseline and will assist in making decisions for and creating visions of the transportation system of the future.

Figure 3-1: Creston Municipal Airport from above.

3.1 AVIATION

PLANNING EFFORTS

The Iowa Statewide Aviation Systems Plan (SASP)[1] is the primary guiding document for aviation planning in the State of Iowa. There have been no regional aviation plans done through ATURA. The IASP provides a detailed overview of the Iowa aviation system and contains individual reports for each airport located in the state along with standardized goals and recommendations. The SASP is due to be updated in 2021. Table 3-1 displays information pulled from each airport's individual report.

	Bedford Municipal	***Corning Municipal***	***Creston Municipal***	***Greenfield Municipal***	***Mount Ayr Municipal***
Airport Type	Local Service	Local Service	General Service	Basic Service	Local Service
Based Aircrafts	4	8	23	27*	4
Hangar Parking Spaces	8	8	23 (5 can hold multiple aircrafts)	30	5
Security Plan	No	Yes	Yes	No	No
Emergency Response Plan	No	Yes	Yes	No	No
Last Airport Layout Plan Update	No ALP	No ALP	2015	2004	No ALP
Local Height Zoning	No	Yes	Yes	Yes	Yes
Inclusion in Local Comprehensive Plan	No	No	Yes	No	No
Direct and Indirect Economic Output	$19,500	$22,200	$255,700	$166,400	$14,300
Induced Economic Output	$13,200	$15,100	$168,100	$113,000	$9,700
Eligible for Federal Funding?	No	No	Yes	Yes	No
Pavement Conditions Index (2018)	N/A	76	63	85	N/A

Table 3-1: Data from local airport reports outlining their service capabilities and facilities. Source: Iowa DOT and Airport Managers. | *12 of the 23 based aircrafts are inactive and located in the Iowa Aviation Museum.

It is clear from Table 3-1 Creston Municipal and Greenfield Municipal are the largest and most impactful airports in the region. In total, the Region's airports contribute almost $800,000 to the economy through direct, indirect, and induced economic output as estimated by the Iowa DOT.

[1] https://iowadot.gov/aviation/studiesreports/systemplanreports

Iowa in Motion 2045[2], the State LRTP, lists the following as key issues regarding aviation transportation:

- Approach obstruction mitigation is needed to improve the percent of primary runways with clear approaches.
- Height zoning is needed to encourage compatible land use around airports.
- Continuation of aviation weather observing stations maintenance and operation is needed for pilot safety and weather information dissemination.
- Strategic planning is needed for airport sponsors to incorporate business and local concerns in airport planning.
- Increased funding is needed to improve the percent of airports meeting recommended facility targets.
- Recommended service targets should be met to provide services adequate to meet user needs.
- Air service changes should be monitored to identify potential impacts to communities in Iowa.
- Continued safety initiatives are needed, including wildlife mitigations, pilot safety programs, pavement marking, and maintenance.

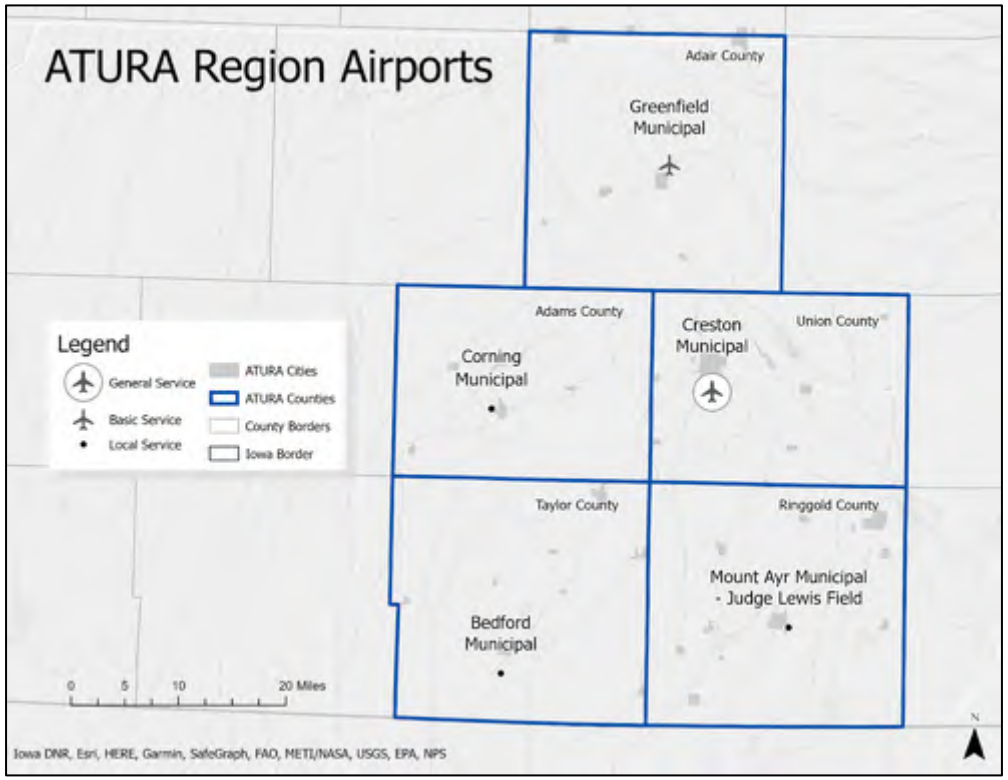


Figure 3-2: Map showing the location of airports within the ATURA region. ***Data from Iowa DOT.***

INVENTORY

In the ATURA region, there are a total of five airports and three types of airport's: General Service, Basic Service, and Local Service. These types are defined below.

[2] https://iowadot.gov/iowainmotion/files/IIM-2045-Full-Plan.pdf

- **General Service**: Airports with a paved runway 4,000 feet or longer with facilities and services to support twin- and single-engine general aviation aircrafts, as well as some business jets. General Service airports are important economic assets for their communities. Creston Municipal Airport is the only General Service airport in the Region.
- **Basic Service**: Airports with a paved runway 3,000 feet or longer with facilities and services to support single-engine aircrafts, as well as some smaller twin-engine aircrafts, and provide fuel. Greenfield Municipal Airport is the only Basic Service airport in the Region.
- **Local Service**: Airports with runways less than 3,000 feet, many of which are turf runways, and have little or no airport services. There are three such airports in the Region that meet this criterion; Corning Municipal Airport, Bedford Municipal Airport, and Mount Ayr Municipal Airport.

Figure 3-2 shows the location of the airports located within the ATURA region.

TRENDS

There are not many sources of information that would indicate any aviation trends in the ATURA region. As seen in Table 3-2, only two airports in the region currently have over 10 based aircrafts and only one is projected to reach 10 based aircrafts by 2050. The projection methodology, where airports with 1 to 30 based aircrafts are assigned 250 operations per aircraft, airports with 31 to 99 aircrafts are assigned 350 operations per aircraft, and airports with 100 or more aircrafts are assigned 450 operations per aircraft, was created by the Iowa DOT and utilized in their 2010 Airport System Plan Reports. Using this methodology, it is projected that the Creston airport will continue to grow at a rate much higher than the rest of the airports in the Region. It should be noted that this is only one forecast that utilizes limited data and variables. It is unlikely that all of the airports will grow to the extent that is projected, however, this is a possibility that should be considered.

	Bedford		***Corning***		***Creston***		***Greenfield***		***Mount Ayr***	
	Based Aircrafts	Operations	Based Aircrafts	Operations	Based Aircrafts	Operations	Based Aircrafts	Operations	Based Aircrafts	Operations
2020	5	1,250	7	1,750	26	6,500	18	4,500	0	0
2025	5	1,250	7	1,750	28	7,000	19	4,750	1	250
2030	6	1,500	8	2,000	29	7,250	20	5,000	1	250
2035	6	1,500	8	2,000	31	10,850	22	5,500	1	250
2040	6	1,500	9	2,250	33	11,550	23	5,750	1	250
2045	7	1,750	10	2,500	35	12,250	25	6,250	1	250
2050	7	1,750	10	2,500	38	13,300	26	6,500	1	250

Table 3-2: List of the region's airports and their operations. ***Data from Iowa DOT and airport managers.***

KEY CONCLUSIONS

- Aviation operations will continue to grow, especially at the Creston Municipal Airport.

3.2 RAIL AND PIPELINES

PLANNING EFFORTS

The Iowa State Rail Plan (ISFP)[3] is the overall guiding planning document for the State of Iowa regarding rail transportation. It was adopted in 2021 and is intended to guide the Iowa Department of Transportation 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. This plan resulted in the following goals:

- 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

Iowa in Motion 2045, the State LRTP, lists the following as key issues regarding rail transportation:

- Additional funding is needed to support necessary capital expenditures
- The network has steadily decreased in miles, and additional rail capacity is needed to meet future demand
- Rail improvements will be needed to accommodate businesses and industries wanting to locate or expand in Iowa
- There is need for enhanced rail access throughout Iowa
- There are operational, regulatory, and infrastructure bottlenecks to be addressed for the rail system
- Growing highway and rail traffic is increasing delays and conflicts
- There are safety concerns related to rail infrastructure and highway-railroad crossings
- Passenger rail service is limited, with no service to Iowa's larger population centers
- Energy production and transport is changing

[3] https://iowadot.gov/iowainmotion/railplan/2017/IowaSRP2017_Complete.pdf

INVENTORY

ACTIVE RAIL

In the ATURA region, there are two active main rail lines and one active rail spur in Creston. The two main lines are the Iowa Interstate Railroad (IAIS), which dips into the northeast and northwest corners of Adair County near Interstate-80, and the Burlington Northern Santa Fe (BNSF), which runs across southern Iowa from Burlington to Council Bluffs and the Omaha Metropolitan Area. Both railroad companies also own small spurs in the Region. The IAIS owns a half-mile spur that runs south from the main line just west of Stuart while the BNSF owns a small spur that runs a few miles north from Creston to an industrial area. In total, the IAIS owns about 12 miles of active lines in the Region while the BNSF owns about 104 miles of tracks in the Region. Figure 3-3 shows a breakdown of the active track types in the Region. The average age of active tracks in the Region is 135 years.

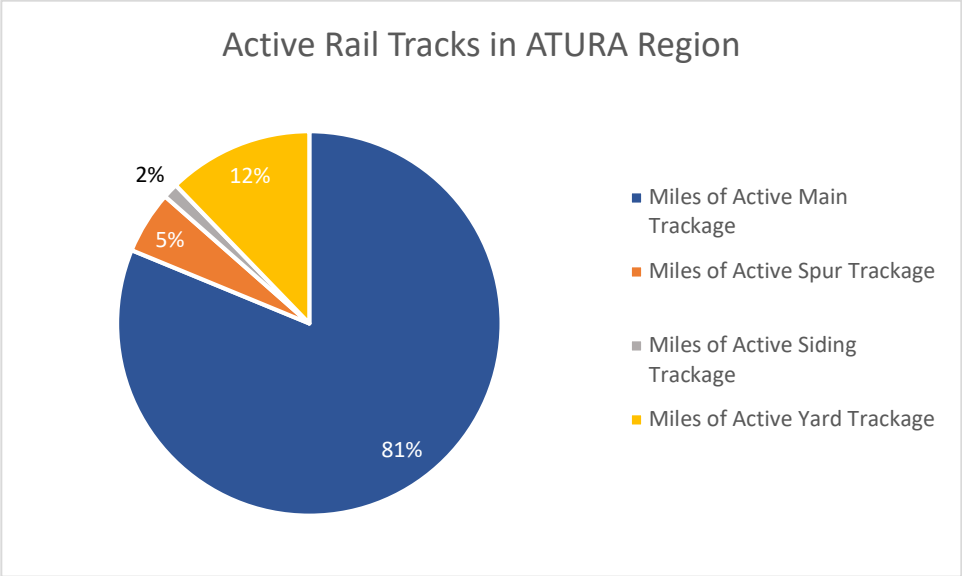


Figure 3-3: A breakdown of active track types. ***Data from Iowa DOT.***

ABANDONED RAIL

In addition to the 116 miles of active rail lines in the Region, there are about 255 miles of abandoned rail lines. A majority of these miles of abandoned lines are found in Ringgold County and Taylor County. Many of these abandoned lines connect county seat cities in the Region

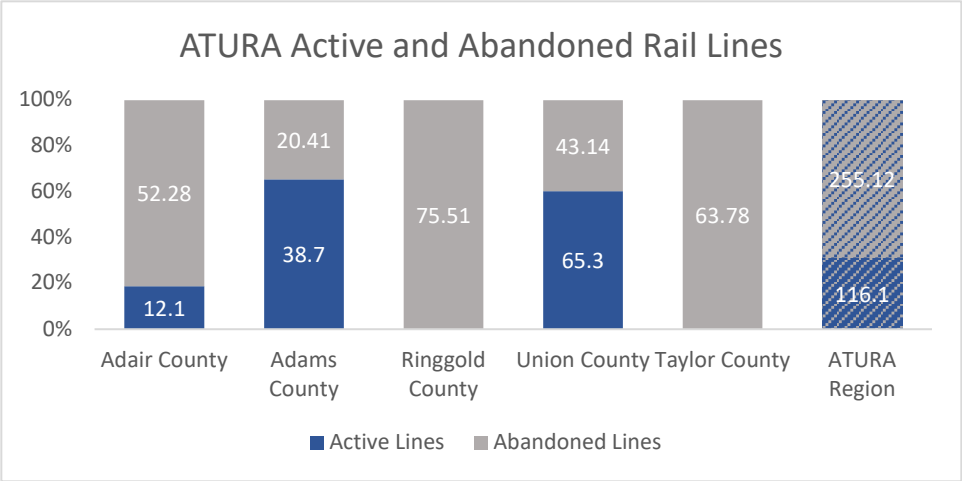


Figure 3-4: A breakdown of active and abandoned rail lines. ***Data from Iowa DOT.***

as well as other smaller cities. These abandoned lines could likely be utilized for rails-to-trails conversions either partially or wholly to connect the cities in the Region not only to each other but to the Des Moines Metropolitan Area, the Omaha Metropolitan Area, and various other cities/amenities. Figure 3-4 shows a breakdown of active and abandoned rail lines in the Region and Figure 3-5 shows a map of the active and abandoned rail lines in the region.

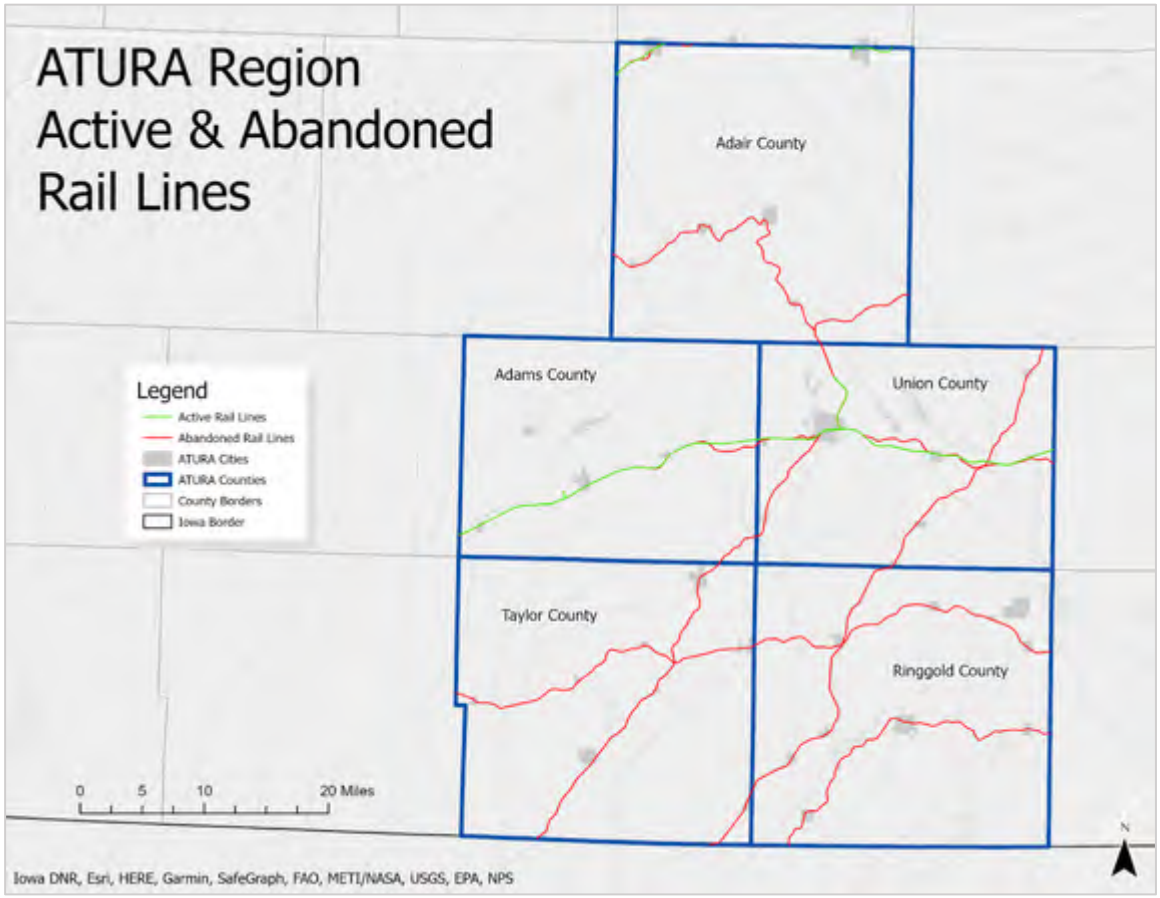


Figure 3-5: Map of the active and abandoned rail lines in the region. ***Data from Iowa DOT.***

FREIGHT RAIL

Railroads are absolutely essential for some Iowa freight commodities, including corn, soybeans, chemicals, motor vehicles and other equipment, wood and paper products, minerals and ores, coal, and biofuels. Railroads in Iowa are owned and operated by private companies. The railroads ability to haul large volumes, as an energy-efficient, environmentally sound network is a major factor in moving freight in a safe and secure manner. Figure 3-6 shows the current rail tonnage of rail lines that pass through the ATURA region.

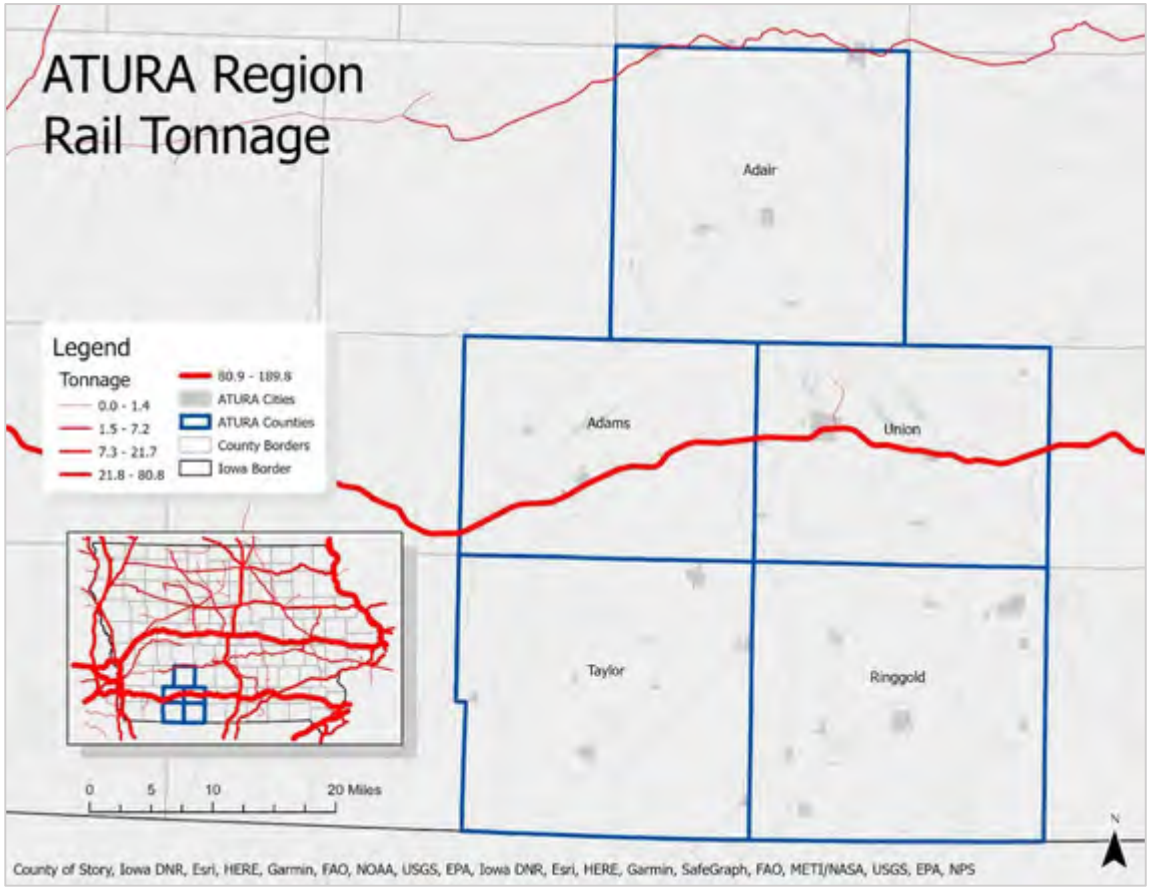


Figure 3-6: Current rail tonnage of rail lines that pass through the ATURA region. ***Data from Iowa DOT.***

PASSENGER RAIL

In addition to the active freight rail lines in the Region, there is one active passenger rail line, Amtrak's California Zephyr route. This route runs from Chicago to the California Bay Area without a transfer. On the way to the Bay Area, the train makes stops in Omaha, Denver, Salt Lake City, and Sacramento. The Iowa portion of the route runs along the BNSF mainline stopping in Creston. In FY 2019, there were 1,678 departures and 1,603 arrivals from the Creston Amtrak station, which lead to $265,734 in revenue. This equates to about $81 per rider. Figure 3-7, below, shows a comparison of revenue (y-axis), ridership (x-axis), and revenue per rider (size of bubble) in Iowa along the California Zephyr route. While the Creston station has both the lowest ridership and the lowest revenue, it has the third highest revenue per rider in the state of stations that have stops on the California Zephyr route. The most common destinations or origins for riders who use the Creston station are shown in Table 3-3. Figure 3-8 shows the route of the California Zephyr through the ATURA region.

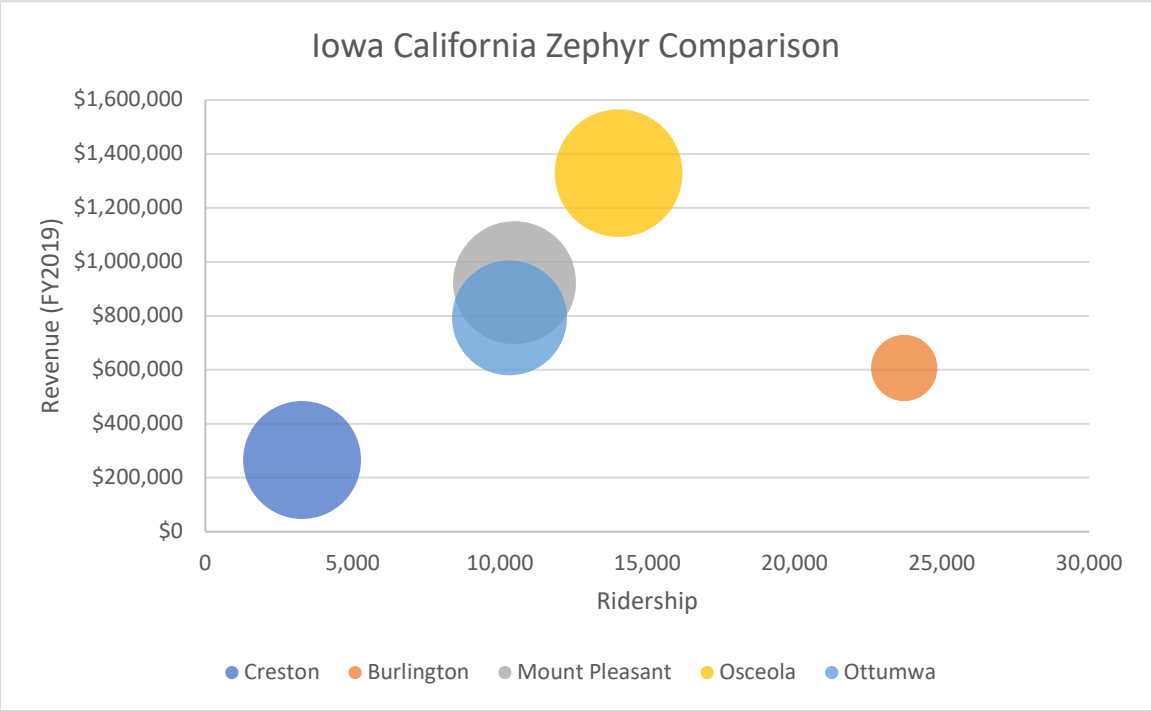


Figure 3-7: shows a comparison of revenue (y-axis), ridership (x-axis), and revenue per rider (size of bubble) in Iowa along the California Zephyr route.

Top Destinations/Origins by Ridership (2019)
Chicago, IL
Galesburg, IL
Denver, CO
Lincoln, NE
Naperville, IL

Table 3-3: The most common destinations or origins for riders who use the Creston Amtrak Station. Data from railpassengers.org.

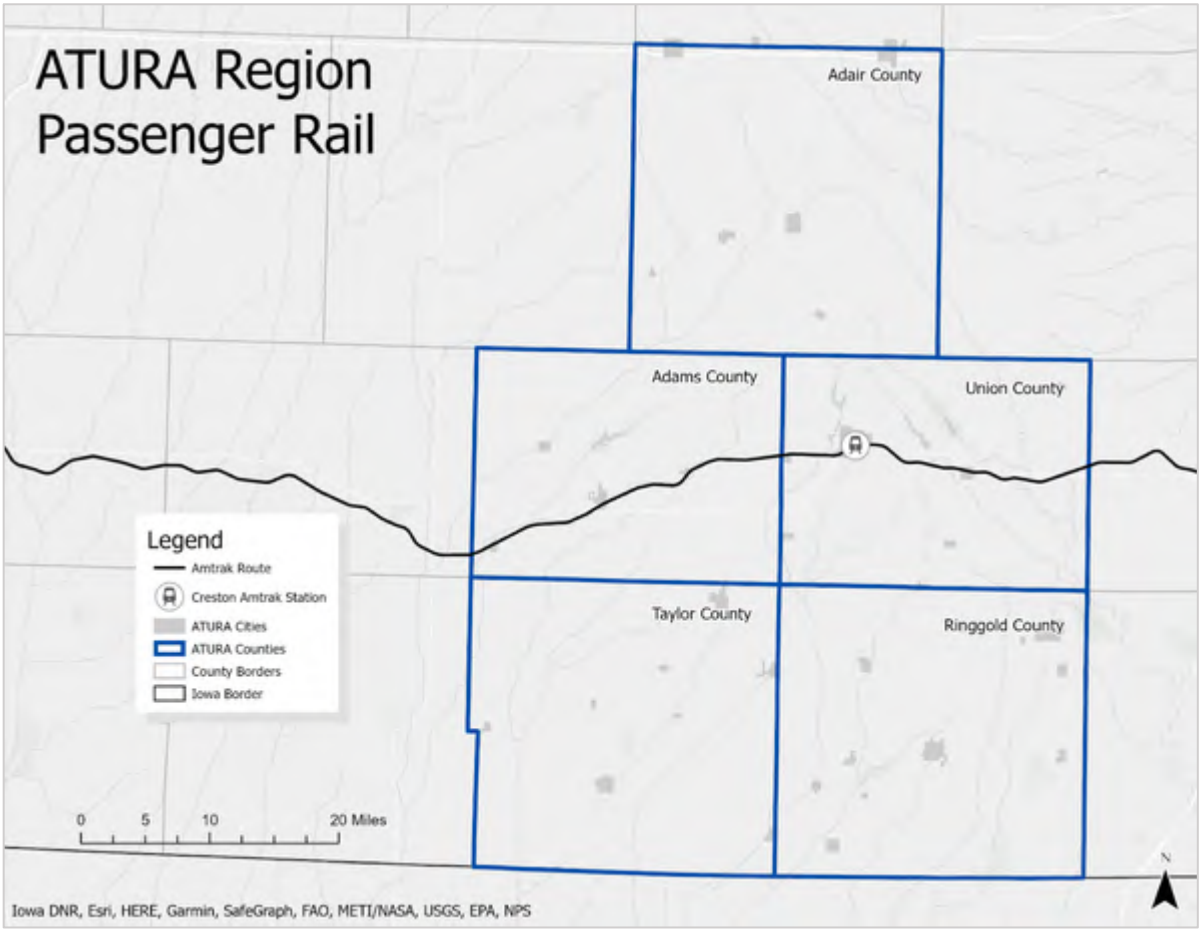


Figure 3-8: A map of Amtrak's California Zephyr line and its path through the ATURA region. ***Data from Iowa DOT.***

PIPELINES

Three companies operate liquid petroleum pipelines in the ATURA region. Those companies are the Amoco Oil Company, Kinder Morgan, and the Williams Pipeline Company. None of the three companies operate a liquid petroleum terminal in the region.

Two primary natural gas pipelines pass through the region. The Natural Gas Pipeline Company of America and Alliant Energy own the pipelines. Five service lines break off the Natural Gas Pipeline to serve the communities of Prescott, Lenox, Bedford (Sharpsburg), and Clearfield. Service lines from the Alliant Energy pipeline serve the communities of Lorimor and Mount Ayr. Figure 3-9 shows the pipelines in the ATURA region.

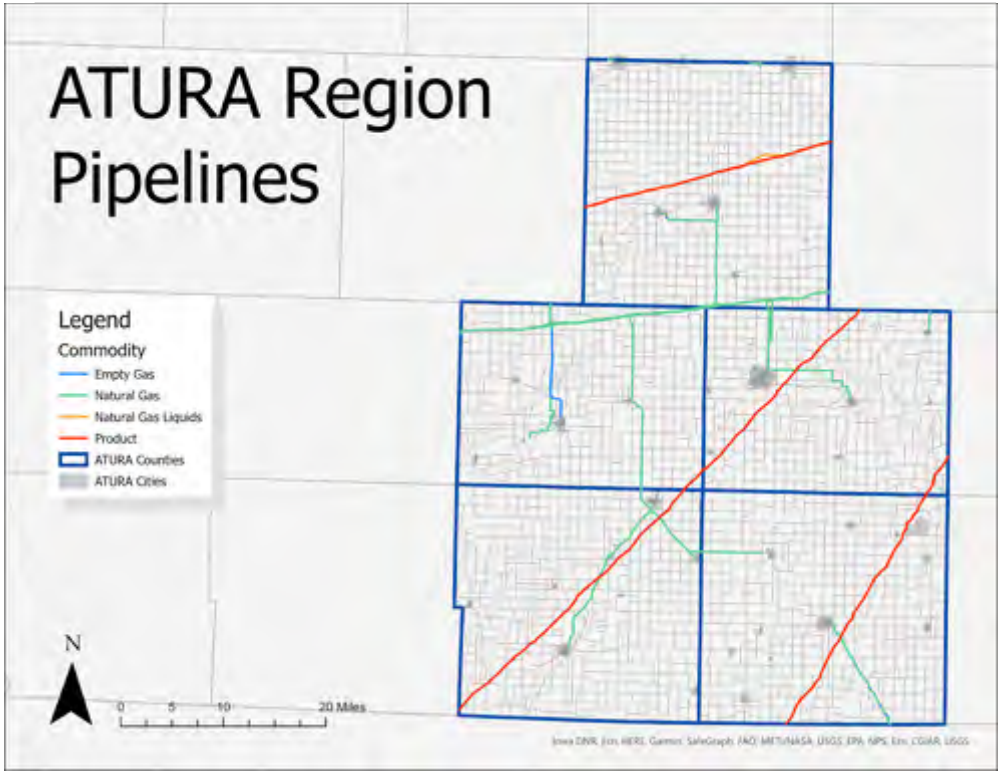


Figure 3-9: Map of pipelines in the ATURA region. ***Data from the National Pipeline Mapping System (NPMS).***

TRENDS

Freight rail in the region has grown slightly over the last 20 years as seen in Figure 3-11, which depicts railroad tonnage east and west of Creston. Tonnage is a measure of the amount of cargo that has been transported with the railroad. It is apparent that, railroad tonnage has slightly increased over the last 20 years in the ATURA region. However, there has largely been stagnation in railroad tonnage along the single BNSF line since 2006.

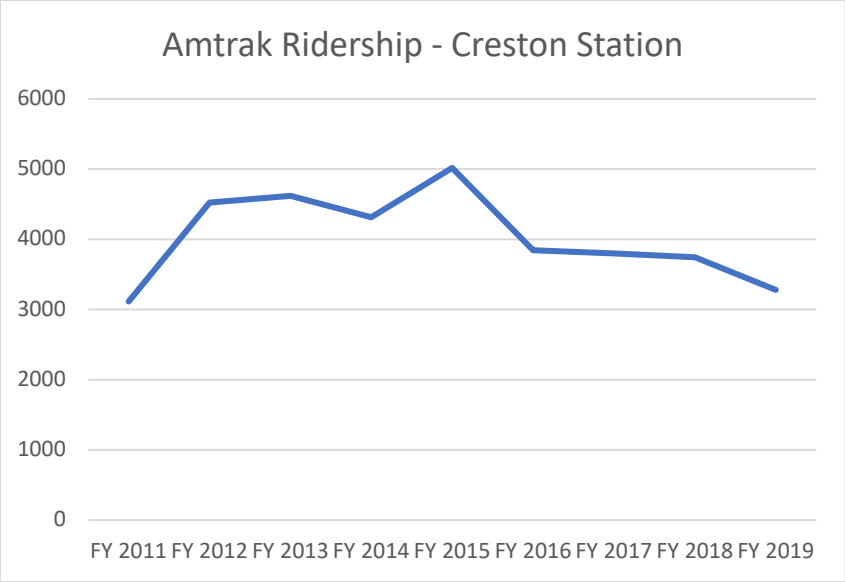


Figure 3-11: Annual ridership data to or from Creston's Amtrak station. *Data from Iowa DOT.*

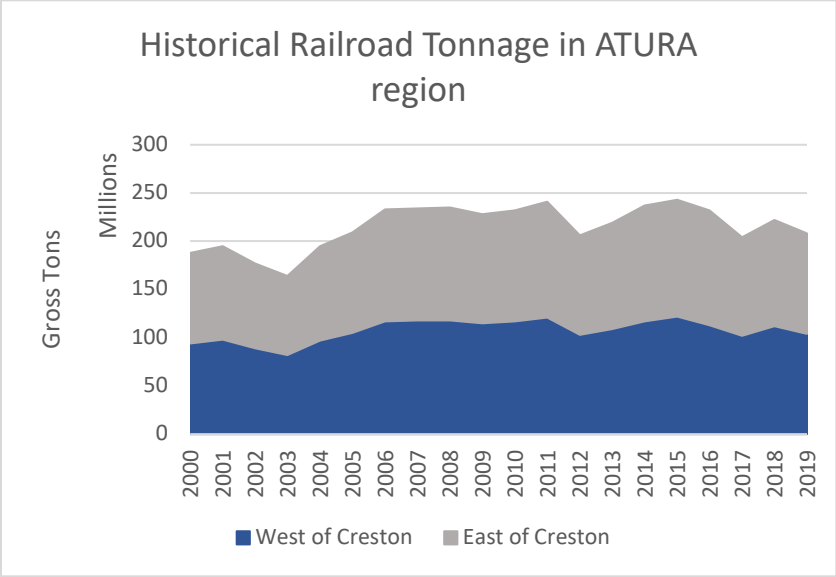


Figure 3-10: Railroad tonnage east and west of Creston. *Data from Iowa DOT.*

PASSENGER RAIL

According to data supplied by Amtrak, the Creston station has experienced a decline in ridership in recent years, but this is following a slight peak as seen in Figure 3-10. In FY 2015, ridership peaked at 5,017 but then declined to under 4,000 in FY 2016. Since FY 2016, it has decreased at a lower rate. It is not expected that the station will see any significant turnaround in ridership due to the increasingly smaller population in the region and the realities of the COVID-19 pandemic, which has resulted in significant layoffs at Amtrak and cuts to long-distance service through the Region. It is unclear at this time whether Amtrak will be able to rebound to daily service in Creston (cut to three times per week in early fall of 2020) or if it will have just simply found a new equilibrium.

KEY CONCLUSIONS

- Freight rail tonnage will continue to plateau.
- Freight rail lines will most likely not expand further in the region.
- Amtrak passenger rail service may not return to daily service.

Figure 3-12: Ringgold Trailway in Mount Ayr.

3.3 BICYCLE AND PEDESTRIAN

PLANNING EFFORTS

The Iowa Bicycle and Pedestrian P

lan (IBPP)[4] is the guiding document for Bicycle and Pedestrian planning in the State of Iowa. The three main purposes of the plan are to serve as the primary guide for Iowa DOT decision-making regarding bicycle and pedestrian programs and facilities, help achieve improved project-level coordination within the Iowa DOT, and provide consistency and mobility for bicycle and pedestrian users statewide. The goals that were developed as part of this planning process are as follows:

- Ensure that policy makers, roadway designers and planners, law enforcement officials, motorists, bicyclists, and pedestrians recognize that bicycling and walking are valid modes of transportation.
- Improve the safety and friendliness of Iowa's roads and trails to accommodate on-road bikeways and sidewalks, reduce crashes, and eliminate fatalities.
- Improve coordination between the Iowa DOT Central Office, each Iowa DOT District, regional agencies, and local partners to streamline maintenance and the implementation of programs, policies, and infrastructure projects, and to increase consistency.
- Enact policies and develop infrastructure to create an interconnected network of on-road bikeways, sidewalks, multi-use trails, and end-of-trip facilities that uses the appropriate facility type to connect people to their destinations.
- Increase the overall level of funding for bicycle and pedestrian infrastructure and programs, explore the flexibility of funding sources, and maximize the efficiency of funding to bridge the gap between what is needed and what is available.
- Establish guidelines for the design of on-road bikeways, sidewalks, and multi-use trails to ensure they are comfortable, sustainable, convenient, and consistent.
- Promote opportunities for active and sustainable lifestyles that include walking and bicycling on a daily basis.

Iowa in Motion 2045, the State LRTP, lists the following as key issues regarding bicycle and pedestrian transportation:

- Additional funding is needed for a system expansion and maintenance.
- Many communities are not bicycle- and pedestrian-friendly, which could be partially addressed through the expansion of complete streets policies at the local and state level

[4] https://iowadot.gov/iowainmotion/files/Bike-and-Pedestrian-Plan.pdf

- Infrastructure improvements are needed to address deficiencies and ongoing maintenance problems.
- Bicycle and pedestrian fatalities and injuries are too prevalent.
- Improved coordination and cooperation are needed to better connect Iowa's trail systems.
- Additional education is needed, including safety programs for bicyclists and pedestrians and training on the health benefits of bicycling and walking.
- Legislative issues continue to be debated, such as safe passing laws.

INVENTORY

Only two of the ATURA region's 5 counties have a trail network (Union and Ringgold). The trails that do exist serve as short distance, recreational features within city parks. Approximately 20-30 years ago, Burlington Northern Santa Fe Railroad abandoned a branch rail line running from north of Creston through Orient to Greenfield. The overwhelmingly negative response of adjacent landowners and special interest groups, together with a lack of public support for a Rail-to-Trail program on that right of way resulted in plans for the program being dropped. Since that time developing long distance trail facilities has not been a priority within the ATURA region, although support for local trails within communities has become more popular. Table 3-4 gives more information about the region's trails.

Trail Name	*County*	*Surface Material*	*Length (mi)*
High Lakes Trail	Union	Asphalt/Concrete	15.04
Afton Walking Trail	Union	Asphalt/Concrete	0.75
Fogle Recreation Area Trail System	Ringgold	Granular	1.29
Mapleleaf Pathway	Ringgold	Granular	1.56
Ringgold Trailway	Ringgold	Asphalt	2.07

Table 3-4: ATURA trail systems and length (NOTE: A trail project in Adams County is scheduled to begin in fiscal year 2022. For more information, please read the RPA 14/ATURA FY 2022-2025 Transportation Improvement Program). *Data from Iowa DOT.*

As mentioned before, most trails in the region are completely contained within local parks. The trails listed in Table 3-4 are only the trails that are outside or partially outside park boundaries. Figure 3-13 shows the ATURA region's trail systems.

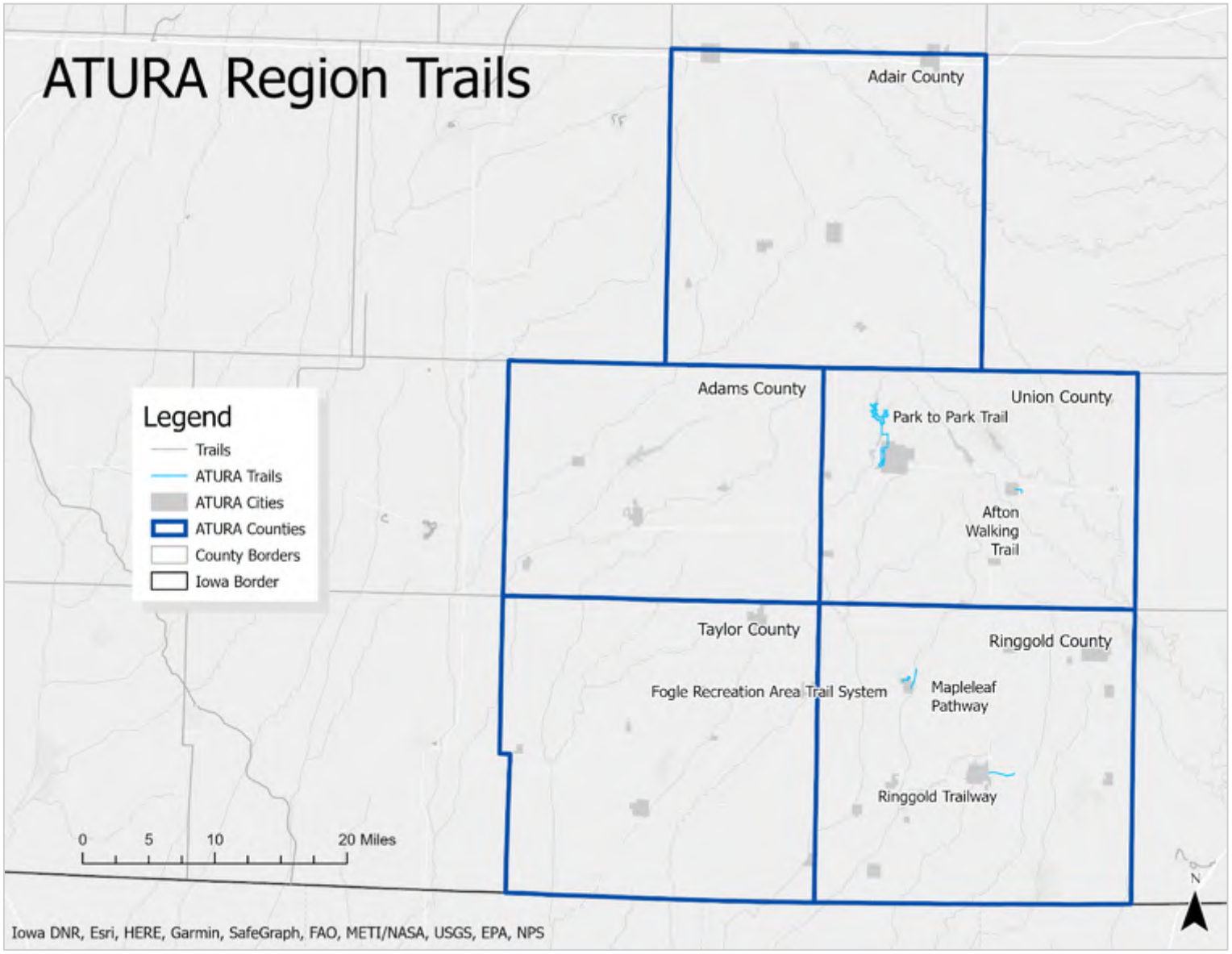


Figure 3-13: A map of the ATURA region's trail systems. ***Data from Iowa DOT.***

UNION COUNTY TRAILS

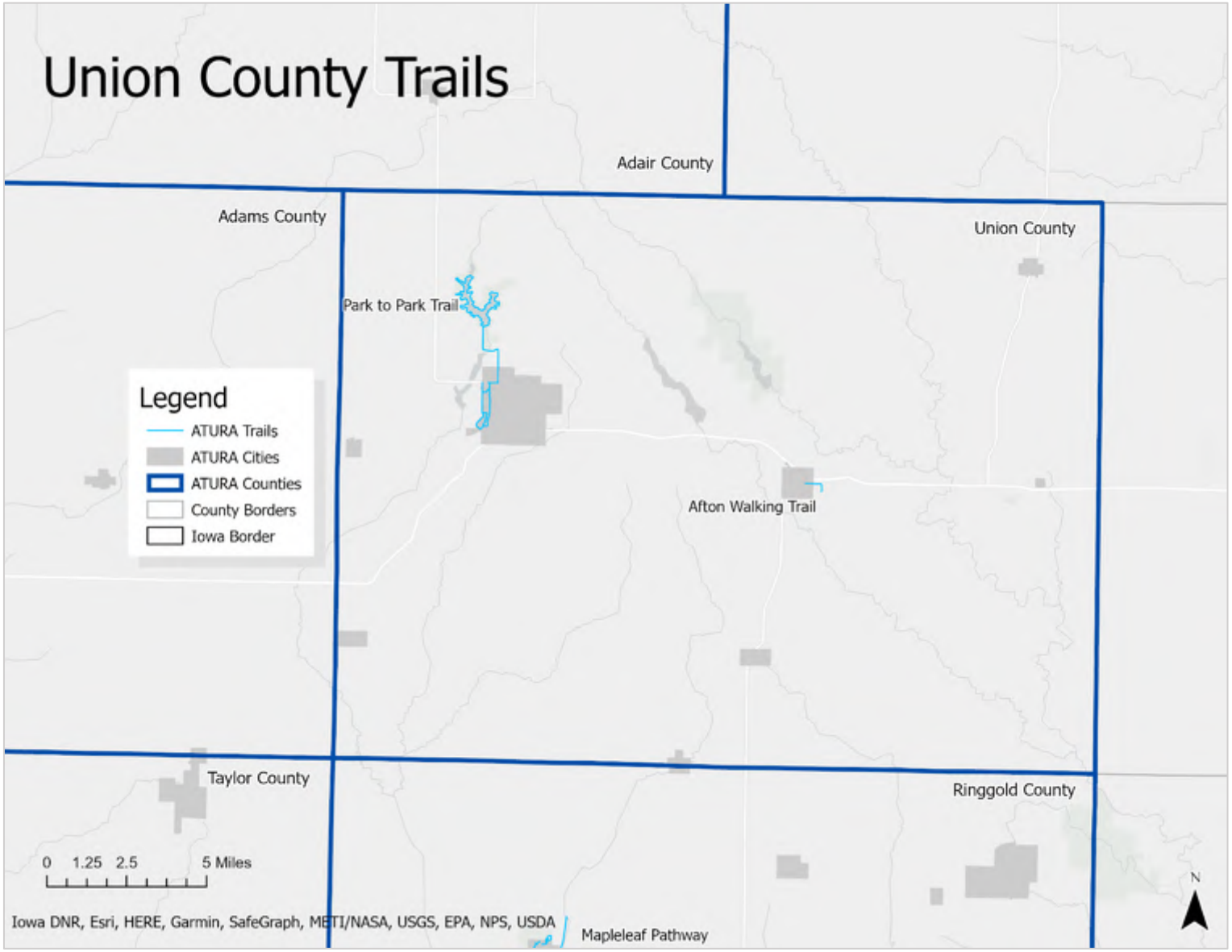
HIGH LAKES TRAIL[5]

This trail connects Green Valley State Park and McKinley Park in Creston. In the past 5-years, an additional path was added to the network on the Southwest Iowa Community College Campus. Local trail advocates aim to expand the trail network to Uptown Creston and throughout all of Union County to the other state parks and the city of Afton. The trail is paved for the majority of its route, but is turf for portions within Green Valley State Park. The route of the High Lakes Trail is shown in Figure 3-14.

[5] The High Lakes Trail used to be named the Park-To-Park Trail before it was renamed in 2020.

AFTON WALKING TRAIL

The original .75 of a mile trail was started in 2006 and finished in early 2007. The original trail committee raised funds and the City received grants to build this trail. It was stopped at the Recreation fields across from the High School. There is new interest in building more trails and extending the current trail back into town along East Grand Street. The City agreed recently to form a new trail committee to lead this project. The trail surface is paved. The Afton Walking Trail is shown in Figure 3-14.


Union County Trails
Adair County
Adams County
Union County
Park to Park Trail
Legend
ATURA Trails
ATURA Cities
ATURA Counties
County Borders
Iowa Border
Afton Walking Trail
Taylor County
Ringgold County
0 1.25 2.5 5 Miles
Iowa DNR, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA
Mapleleaf Pathway
N

RINGGOLD COUNTY TRAILS

FOGLE RECREATION AREA TRAIL SYSTEM

The Fogle Recreational Area Trail system is a one-mile trail that surrounds the lake at the Fogle Recreation Area in Diagonal. The five-foot wide trail has a crushed rock surface.

MAPLELEAF PATHWAY

Mapleleaf Pathway was built on part of the Chicago Northwestern Railroad system that formed the outline of a maple leaf on the rail map. This 1.5-mile trail is scenic with a small marsh and creek running alongside. Adjacent agricultural use and natural features prevent trail expansion. The Mapleleaf Pathway is shown in Figure 3-15.

RINGGOLD TRAILWAY

Ringgold Trailway was acquired in 1978 and built on an old railroad bed. The trail connects Mount Ayr and Poe Hollow Park. It was originally a cinder path and was later paved with asphalt. There has been quite a bit of interest in extending this trail out to Ramsey Farms. Ringgold County Conservation surveyed landowners and all but one was willing to donate land to extend the trail. The Ringgold Trailway is shown in Figure 3-15.

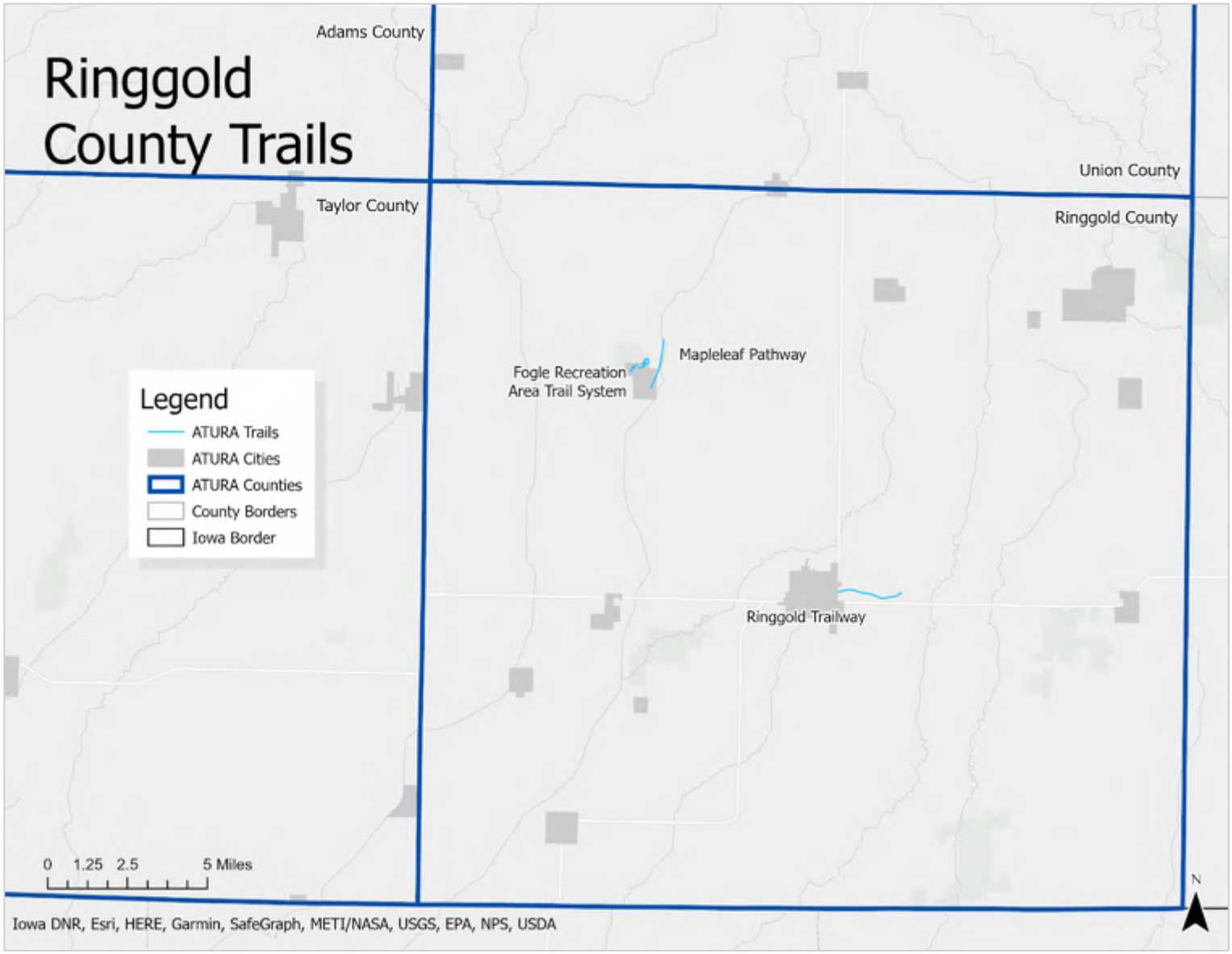


Figure 3-15: A map of Ringgold County's trails. ***Data from Iowa DOT.***

TAYLOR COUNTY TRAILS

BIBBINS PARK TRAIL

This trail links Bibbin's City Park with the Bedford Municipal Reservoir. The one-mile hiking and biking trail is 8 feet wide and has a gravel surface.

LENOX CITY TRAIL

This trail connects the Lenox railroad depot and the Lenox Community High School. RPA 14/ATURA Transportation Alternatives Program (TAP) funds were used to construct a loop of trail around the Lenox High School and Elementary School, connecting other community facilities.

CLEARFIELD WALK TRAIL

This trail is 0.51 miles long and 8 feet wide. It is located on the east side of Clearfield between Jackson Street and Yellowstone Avenue in Clearfield. Funding for the trail came from the Clearfield Lions Club and RPA 14/ATURA TAP funds.

OTHER TRAILS

The following trails are also within the region, but are within the boundaries of a state, county, or city park, and are generally used for recreation exclusively.

KEN SIDEY NATURE AREA

The three-mile walking trail has a six-foot surface. The trail connects with the trail network around Lake Greenfield and Nodaway Lake, and is maintained by the city of Greenfield.

LAKE ORIENT RECREATION AREA

The walking trail is one mile long and provides fishing access. Most of the trail is turf, with a small section on a gravel park road.

MIDDLE RIVER FOREST AREA

This county park contains a 3/8-mile turf trail that provides walking access to the Middle River for fishing and canoeing.

LAKE ICARIA

The six-mile recreational trail is surfaced with gravel, turf, and wood chips. The route connects the visitor parking lots, camping areas, boat ramps, a swimming beach, and public facilities while winding around the west and south side of the lake. A .18 mile handicapped accessible trail is located within the Lake Icaria Trail system.

BOONE WOODS TRAIL

Turf trail located within a 311-acre natural timber area located southwest of Redding.

FIFE'S GROVE PARK TRAIL

A turf trail, located in a 52-acre park one mile north of Mount Ayr.

SANDS TIMBER RECREATION AREA

1.2-mile hiking and biking trail with an 8-foot-wide wood chip surface.

LAKE OF THREE FIRES STATE PARK

Contains 8 miles of marked turf trails for hiker, horseback riders, and snowmobiles. A future vision for extending a trail from the City of Bedford to Lake of Three Fires is being discussed within the community.

TRENDS

Trail development is ongoing, but uncoordinated. New trails are generally within city limits, near parks, and shorter in distance. Despite growing interest, trail development has stagnated. Most of the trail mileage was created in the 20th century, and recent long-distance trail projects have fizzled out due to lack of support or lack of funding.

KEY CONCLUSIONS

- Trails remain a popular transportation and outdoor recreation feature.
- Existing trails are well maintained, and used by their communities.
- The region's trail network is sparse and unconnected.
- Funding is a big barrier for trail advocates.
- The region would benefit from regional coordination and a Regional Trail Plan.

3.4 ROADS AND BRIDGES

PLANNING EFFORTS

A majority of the transportation network in Iowa, and the Region, is composed of roads and bridges. Accordingly, a majority of planning efforts are focused on roads and bridges. This includes specific corridor plans, the state freight plan (which will be addressed later in this chapter), and Iowa in Motion 2045. Iowa in Motion 2045, the State LRTP, lists the following as key issues regarding the road and bridge transportation network:

- Many high-cost bridge structures have major deficiencies.
- Urban and commuter route congestion is growing.
- Rural and urban interstate congestion is becoming more prevalent.
- Safety needs exist on the system.
- Additional on-road accommodations are needed for bicycle and pedestrian trips.
- Sustainable funding is needed to maintain acceptable condition ratings for roadways and bridge structures.

TRANSPORTATION ASSET MANAGEMENT PLAN

In July 2012, the U.S. Congress passed a transportation bill referred to as Moving Ahead for Progress in the 21st Century (MAP-21). This legislation requires every state DOT to develop a risk-based transportation asset management plan (TAMP)[6] to improve and preserve the condition of assets of the National Highway System (NHS). While the TAMP focuses on bridges and pavements, the transportation network includes a variety of other assets. Iowa DOT works to maintain all of these assets in order to keep travelers safe, promote mobility, and make progress towards state and national transportation goals. The following process improvement initiatives were developed as part of the Transportation Asset Management (TAM) self-assessment effort in the 2019 TAMP:

- Implement an asset management governance structure. Iowa DOT has already made progress on this item as described in this TAMP.

[6] https://iowadot.gov/systems_planning/fpmam/IowaDOT-TAMP-2019.pdf

- Develop an asset management communications plan that describes how Iowa DOT will communicate with key stakeholders regarding asset management. The plan, which is already under development, will address the strengths, weaknesses, opportunities, and threats to implementing TAM.
- Develop an asset management training plan that identifies who needs asset management training and defines a training strategy for each group.
- Develop asset management procedures for each asset class. The goal of this initiative is to advance each asset class into a mature state so that Iowa DOT can eventually incorporate all assets into its performance-based planning framework.
- Develop a maintenance quality assurance program to apply to the assets managed by Iowa DOT's Districts. This effort focuses on assets beyond bridges and pavements. The goal of the effort is to understand the performance of Iowa DOT's maintenance operations and relate outcomes to expenditures.
- Develop an asset management data governance strategy to identify the data and analytical capabilities required to support asset management practices and define an approach to meet these needs in the most efficient and effective manner.
- Develop a formal risk management process to enable Iowa DOT to formally consider risk in investment decisions.
- Develop procedures for managing bridges and pavements throughout their whole life and for incorporating whole-life costs into Iowa DOT's decision-making process.
- Develop a method for performing risk-based tradeoffs between investments in bridges and pavements in order to optimize budget allocations.

INVENTORY

ROADS

Highways and roads form the backbone of the transportation network within the region, as well as throughout the state and country. The movement of goods and people require a road network to allow efficient transport from origin to destination. Even movement by other modes of transportation, such as air, rail, and trails, often require the use of roads to move between the airport, railhead, and trailhead and their origin and destination. Roads allow the transport of people and goods over long or short distances. Highways and interstates that make up the National Highway System allow for highspeed vehicle movement over long distances with few

interruptions and make up the primary road network. A system of major/minor arterials and collectors form the secondary road system and connect the primary roads to the local street system. The interconnection of these three networks allows for the seamless movement of goods and people throughout the region and beyond.

FEDERAL FUNCTIONAL CLASSIFICATION (FFC)

Federal Functional Classification is the process by which public streets and highways are classified into different groups based on the character of service they provide. Roadways fall into one of four major categories:

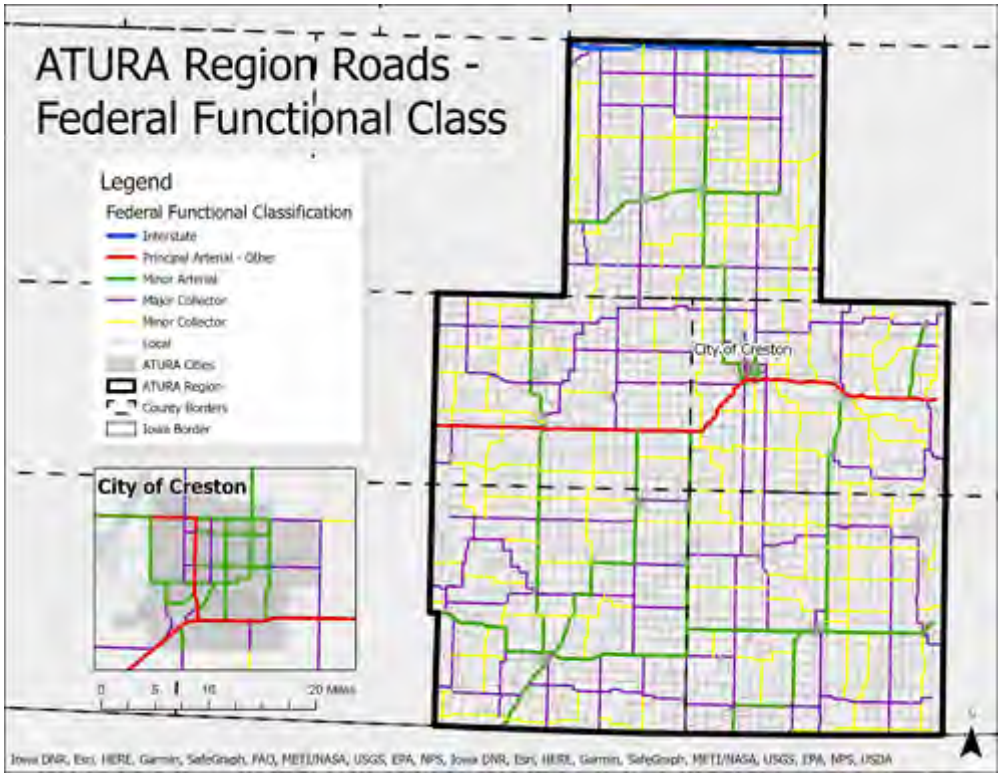


Figure 3-16: Map of the ATURA region's roads and their Federal Functional Classifications. *Data from Iowa DOT.*

- Interstates: Interstates are the highest classification of Arterials and were designed and constructed with mobility and long-distance travel in mind. Access is controlled.
- Major Arterials: These roadways serve major centers of metropolitan areas, provide a high degree of mobility and can also provide mobility through rural areas. Unlike access-controlled Interstates, abutting land uses can be served directly.
- Minor Arterials: Minor Arterials provide service for trips of moderate length, serve geographic areas that are smaller than their higher Arterials counterparts and offer connectivity to the higher Arterial system.
- Major and Minor Collectors: In the rural environment of the region, Collectors generally serve primarily intra-county travel (rather than statewide) and constitute local secondary roadways.

Figure 3-16 shows a map of the RPA 14/ATURA region's roads and their Federal Functional Classifications. Table 3-5 lists the road miles of each road class. Federal funding is often limited to work on roadways that have been designated with a federal functional classification of major collector or above. Rural minor collectors are not eligible.

Road Miles Per Federal Functional Class (FFC)	*Interstate*	*Principal Arterial – Other*	*Minor Arterial*	*Major Collector*	*Minor Collector*	*Local*	*Total*
Adair	55.8	-	47.5	135.7	135.8	752.3	**1,127.1**
Adams	-	24.2	24.7	88	105.7	543.1	**785.7**
Ringgold	-	-	64.5	137.9	153.7	636.5	**992.6**
Taylor	-	-	74.2	138.0	114.9	704.3	**1,031.4**
Union	-	28	42.1	103.4	146.3	518.6	**838.4**
Total	**55.8**	**52.2**	**253**	**603**	**656.4**	**3,154.8**	**4,775.2**

Table 3-5: The mileages of the different Federal Functional Classes in each ATURA county. ***Data from Iowa DOT.***

ANNUAL AVERAGE DAILY TRAFFIC (AADT)

AADT is a useful tool in determining traffic patterns. AADT is a measurement providing the approximate number of vehicles per day on a given roadway section over a one-year period. AADT is a useful measure because it gives engineers and planners a picture of traffic on a particular road segment. This information can be used to determine areas that may experience increased wear or need improvements to handle the existing/projected traffic volume and maintain a level of service. AADT can also be used with crash information to determine segments and intersections that may have safety issues.

The Iowa DOT measures AADT on one quarter of the state's road system each year, measuring the entire state over a four-year cycle. These measurements are available for use at the state, regional, and local level in planning and implementing improvements across the road network.

Table 3-6 shows the AADT for each county in the ATURA region, as well as the whole region and the state of Iowa. Figure 3-17 illustrates the data in Table 3-6 using a bar graph. Figure 3-19 shows a map of the ATURA region and the AADT of each road.

	Interstate	*Principal Arterial*	*Minor Arterial*	*Major Collector*	*Minor Collector*	*Local*	*Total Average*
Iowa	29,520.2	10,404.7	5,110.6	1,438.5	175.0	304.5	**2,679.7**
Adair	19,483.3	-	2,266.4	1,020.8	84.7	130.4	**2,281.1**
Adams	-	2,417.8	1,976.7	288.9	226.9	104.5	**306.0**
Ringgold	-	-	1,679.2	319.9	46.1	89.1	**194.0**
Taylor	-	-	1,203.9	264.8	40.1	91.9	**105.6**
Union	-	5,257.3	2,136.7	549.1	112.4	207.0	**555.9**

Table 3-6: Shows the Annual Average Daily Traffic for the ATURA counties, and the state of Iowa. ***Data from Iowa DOT.***

PAVEMENT CONDITIONS

The RPA 14/ATURA region includes slightly more than 356 miles of primary highway routes through the region's rural and municipal jurisdictions. This network of roadways that serve the residents, businesses, and travelers in the area includes one Interstate Highway (Interstate 80), two US Highways (US 34 & US 169), and seven State Highways (Iowa 2, 25, 49, 66, 92, 148, & 259).

The condition of a roadway's pavement is an important factor. Good Pavement makes for a more pleasant experience and is safer, while deteriorating or poor pavement can be uncomfortable for vehicle occupants, unsafe, and a contributing factor in crashes. It can also cause increased wear and damage to vehicles. Because of this, all roads are regularly inspected for wear, cracking, and

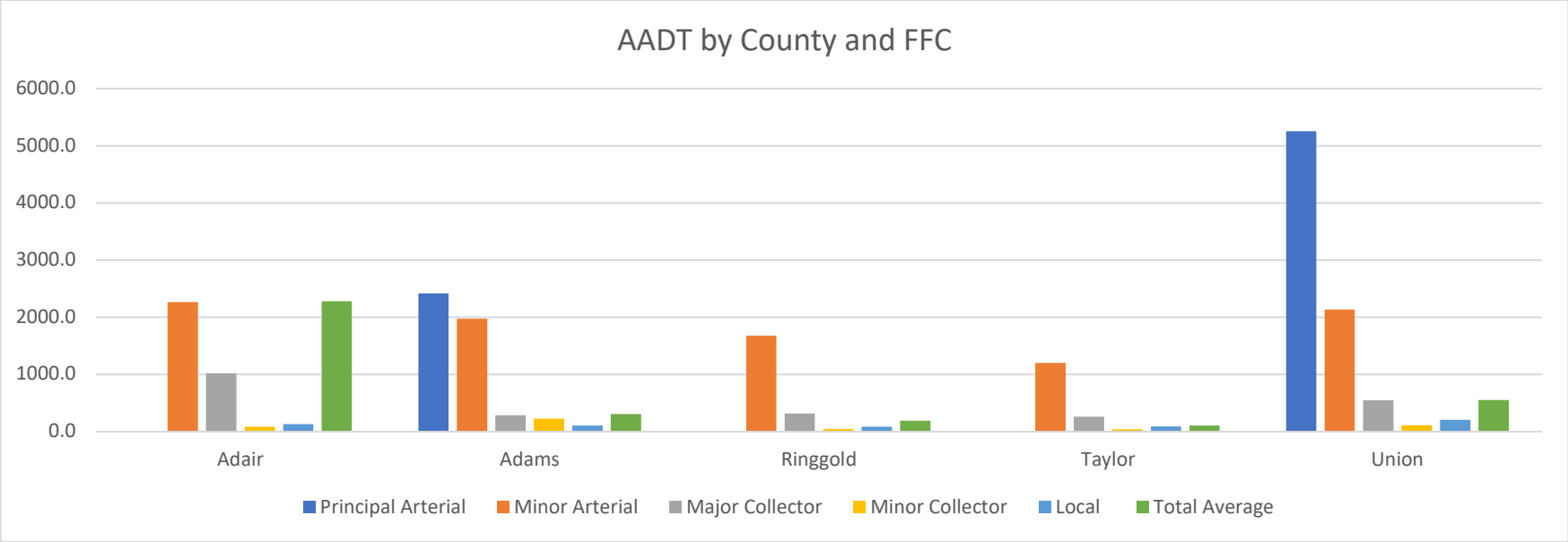


Figure 3-17: An illustration of AADT in the ATURA region by county and FFC. ***Data from Iowa DOT.***

deterioration. The amount of cracking and level of deterioration is a factor in determining priority for road reconstruction and rehabilitation. County secondary road departments inspect the secondary and local roads under their jurisdiction to determine which road segments are most in need and program them into their county 5-year program as funding allows.

The Iowa Department of Transportation uses several metrics to gauge road conditions. The two primary metrics are International Roughness Index (IRI) and Pavement Condition Index (PCI). Using IRI, the state of Iowa rates primary roads numerically based on pavement smoothness. Pavement Condition Index also measures pavement smoothness but uses statistical regression analysis to create a numerical rating system. Figure 3-18 shows the IRI of the primary roads in the ATURA region. Figure 3-20 shows the PCI of the primary roads in the ATURA region.

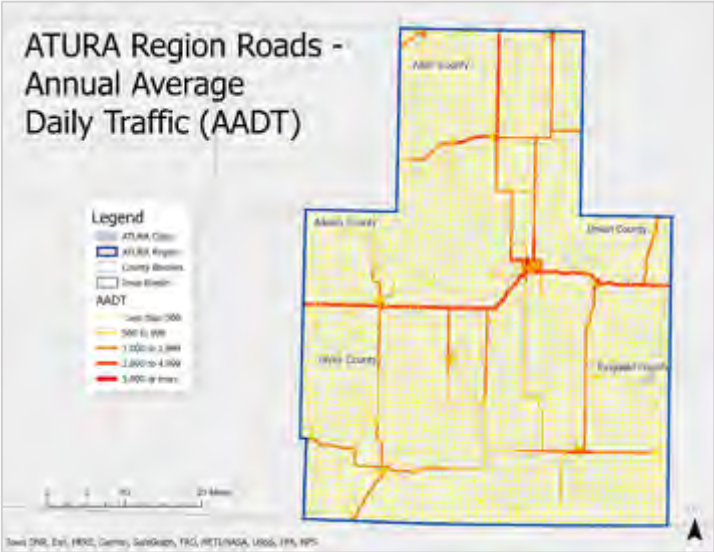


Figure 3-19: A map of the ATURA region's road and their AADT. *Data from Iowa DOT.*

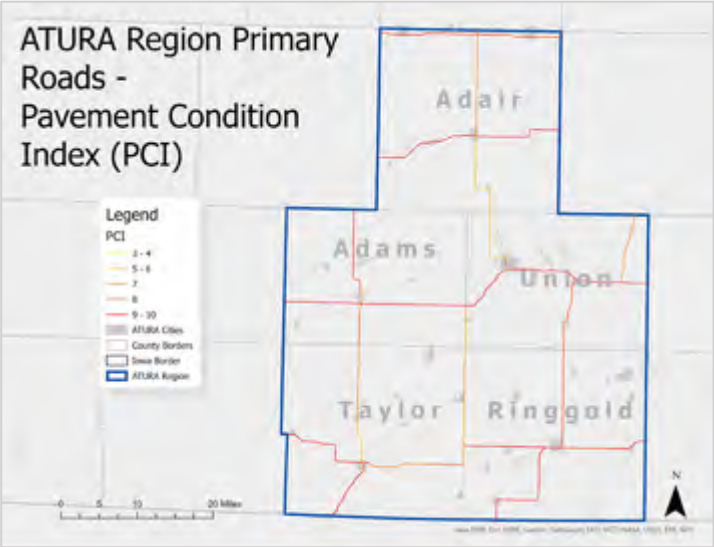


Figure 3-20: The Pavement Condition Index of the primary roads in the five ATURA counties. *Data from Iowa DOT.*

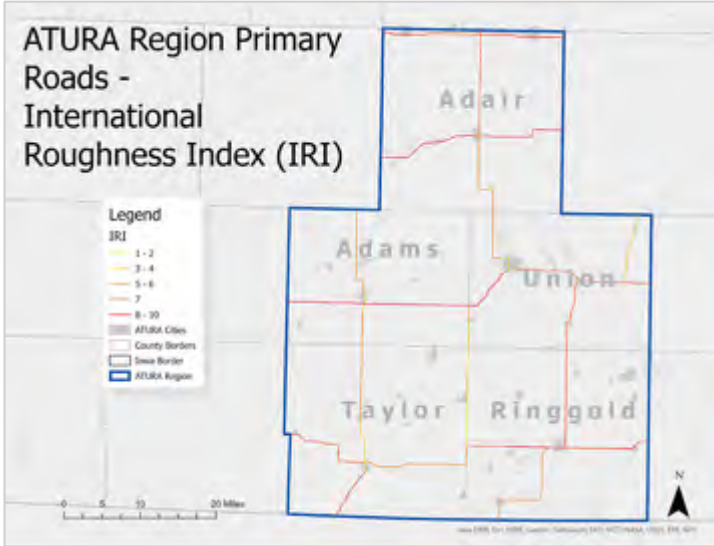


Figure 3-18: The International Roughness Index of the primary roads in the five ATURA counties. *Data from Iowa DOT.*

BRIDGES

Bridges are a critical part of the transportation infrastructure of the RPA 14/ATURA region, as well as of the state and national transportation system. These structures allow the spanning of depressions, lakes, rivers, streams, and valleys. They also provide for grade-separated crossings of roads and rail lines. Bridges may also be built for a specific transportation mode, such as bicycles and pedestrians, rail, or vehicles to cross an obstacle. The Iowa Department of Transportation defines a bridge as a structure that has a span of over twenty feet. Smaller spans over obstacles are typically crossed using culverts.

There are currently 1,128 road and highway bridges within the ATURA region. Most of the bridges are located on secondary roads and the county has responsibility for maintenance and replacement. The Iowa DOT maintains bridges on the primary roads. Each City or County is responsible for the bridges within the jurisdiction that are not located on primary roads.

All bridges are inspected on a one- or two-year cycle. These inspections are used to determine the bridge's sufficiency rating, which reflects its ability to remain in service and continue to perform its role without failure. The sufficiency rating formula uses four separate factors to obtain a numeric value which is indicative of bridge sufficiency to remain in service. The bridge sufficiency value is a percentage where 100 percent represents an entirely sufficient bridge and zero percent represents an entirely insufficient bridge. The formula considers the structural adequacy; functional obsolescence and level of service; and essentiality for public use.

Bridges with a sufficiency rating below 50 are generally considered to be in poor condition and are monitored more closely for further deterioration. This does not necessarily mean that the bridge needs to be replaced, only that it needs to be monitored and evaluated further to determine if the bridge needs to be rehabilitated or replaced, or if it can be stabilized through abutment repairs or load

posting. Figure 3-21 shows the locations and sufficiency rating of the ATURA region's bridges. Rail bridges will not be included in this section, as they are privately owned and operated by the rail companies.

There are over 1,000 bridges in the ATURA region of varying quality and age. Table 3-7 shows the number of bridges, their quality, and city/county breakdown of all the bridges in the ATURA region. Table 3-8 shows the breakdown of good, fair, and poor bridges as percentages. Adair county has the greatest number of bridges, and the highest average bridge condition of any other county in the region. Adams county has the lowest average bridge quality. The city of Creston only has 7 bridges.

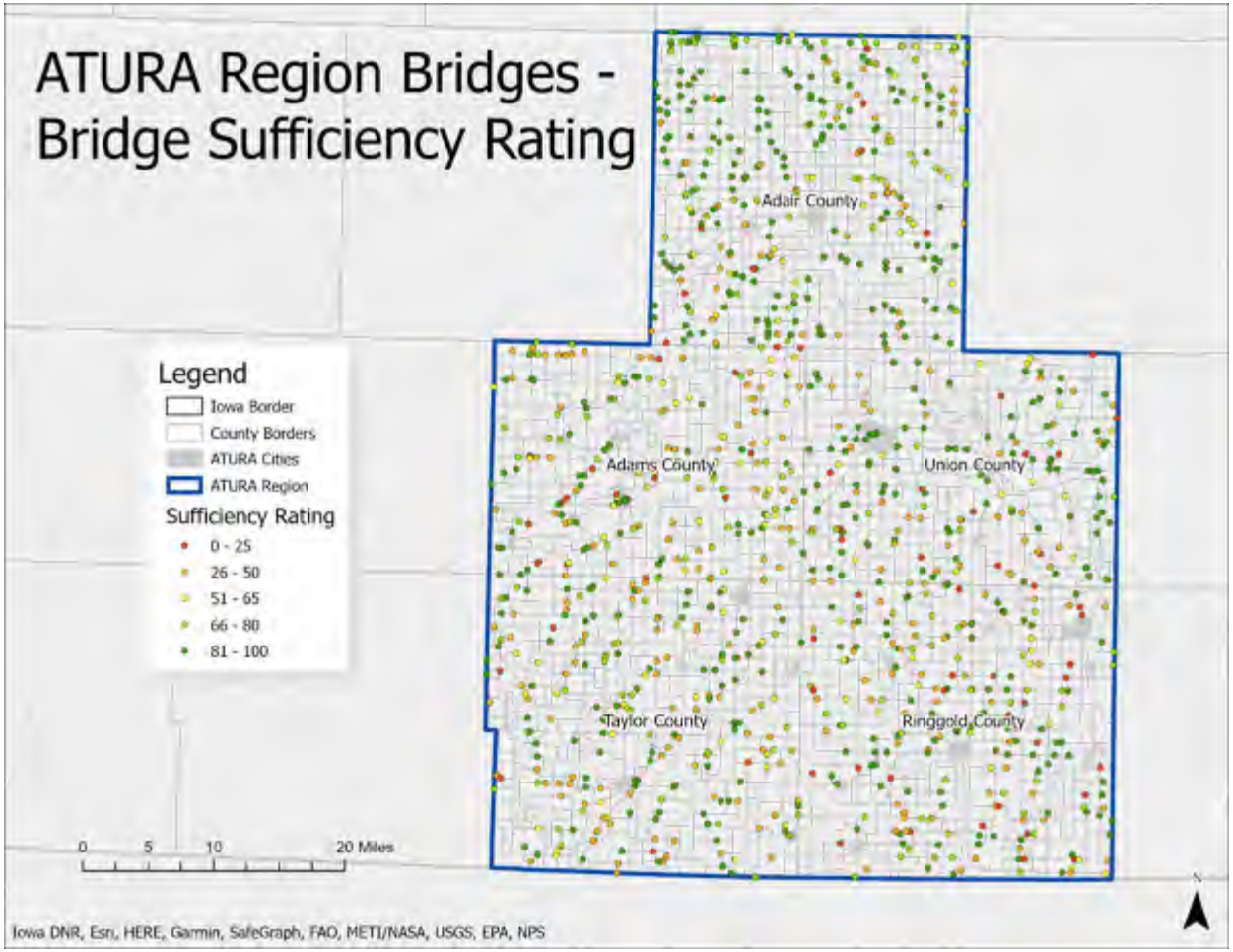


Figure 3-21: Shows the locations and sufficiency rating of ATURA region's bridges. ***Data from Iowa DOT.***

	ATURA Region	Adair	Taylor	Union	Ringgold	Adams	Creston
Avg Bridge Condition:	57.45	64	54.98	59.60	55.04	50.20	67.53
Total Bridges	1,128	309	228	168	230	186	7
Number of Good	322	143	47	52	57	20	3
Number of Fair	438	117	94	64	68	92	3
Number of Poor	364	49	83	52	105	74	1
County-Only	1,098	300	228	165	227	178	0
City	30	9	0	3	3	8	7

Table 3-8: Shows the number of bridges, their quality, and city/county breakdown of all the bridges in the ATURA region. *Data from Iowa DOT.*

	ATURA Region	*Adair*	*Taylor*	*Union*	*Ringgold*	*Adams*	*Creston*
Percent Good	29%	46%	21%	31%	25%	11%	43%
Percent Fair	39%	38%	41%	38%	30%	49%	43%
Percent Poor	32%	16%	36%	31%	46%	40%	14%

Table 3-7: Shows the percentages of good, fair, and poor bridges in the ATURA region. *Data from Iowa DOT.*

	Secondary Road	Gravel Roads	Farm-To-Market Roads
2005	4299.028	2979.788	1345.347
2007	4279.102	2973.823	1347.982
2009	4276.550	2967.868	1348.200
2011	4270.765	2950.863	1348.764
2013	4265.844	2951.944	1350.692
2015	4270.765	2950.863	1348.764
2017	4265.037	2957.864	1354.203
2019	4265.187	2962.041	1355.092

Table 3-9: Road miles by type in the ATURA region (Note: some minor changes in mileage between years may be attributed to changes in how mileage is measured). *Data from Iowa DOT.*

TRENDS

ROAD TRENDS

Road mile totals have barely changed in the last 15 years. Between 2005 and 2019, the region has lost only 33.8 miles of secondary roads, 17.7 miles of gravel roads, and has gained 9.7 miles of farm-to-market roads. Loss of secondary road mileage is the result of counties turning over ownership of roadways to adjacent landowners. This is a trend that may continue. The greatest lost in secondary

road mileage in the ATURA region was between 2005 and 2007. In that time, the region lost 19.9 miles of secondary roads. Loss of road mileage is not necessarily a negative, as the region may be transitioning towards a more fiscally sustainable road network. Table 3-9 shows the road mileage in the ATURA region between 2005 and 2019.

BRIDGE TRENDS

The number of bridges in the ATURA region has plateaued in the last two decades. Figure 3-22 shows the number of bridges built each decade, and the total number of bridges. As you can see, bridge construction peaked in the 1950s and 1960s with 204 and 171 new bridges, respectively. The average age of ATURA bridges is 48.68 years. The median age is 51 years, and the most common age is 63 years old. As bridges continue to age, more and more will need to be repaired or replaced, putting a larger and larger burden on the region. As culvert technology has improved, counties have been replacing short-span bridges with culverts. Culverts are cheaper to implement, but have a shorter lifespan than a bridge.

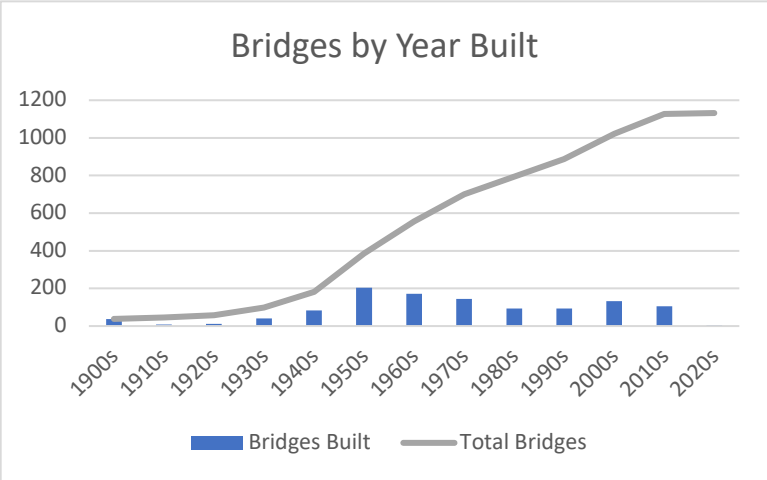


Figure 3-22: The number of bridges built each decade and the total number of bridges. ***Data from Iowa DOT.***

According to county engineers, bridge failures will become an issue that the ATURA region will need to deal with. At the time this plan was written, in Union County alone, over a third of the bridges will exceed their expected lifespan within the next 5-years (2021-2026). As shown in Table 3-7, Union County has the second highest average bridge condition of the ATURA counties. It can be assumed that

KEY CONCLUSIONS

- Road miles are neither increasing nor decreasing in a significant manner.
- Pavement condition continues to be an issue throughout the region.
- Bridge construction has slowed since the 1950s and 1960s.
- Bridge quality continues to be an issue throughout the region.

3.5 PUBLIC TRANSIT

PLANNING EFFORTS

The Iowa Public Transit Long-Range Plan[7] is the guiding document for public transit planning in the State of Iowa. It was adopted in 2020 and divides the vision, *"A public transit system that supports the physical, social, and economic wellbeing of Iowans, provides enhanced mobility and travel choices, and accommodates the unique needs of dependent and choice riders through rightsized solutions,"* the four service areas are service, partnering, facility (fleet and personnel), and funding. Each of these goal areas has a series of strategies as well.

The RPA-14/ATURA Passenger Transportation Plan[8] is the guiding regional document for public transit planning in the ATURA region. It was also adopted in 2020 by the ATURA Policy Board and resulted in the following priorities and strategies:

- Priority 1: Hire and retain long-term employees
- Priority 2: Maintain and enhance existing services
- Priority 3: Decrease costs
- Priority 4: Maintain and improve SIT facilities, vehicles, and equipment
- Priority 5: Expand and modernize services to increase revenue
- Priority 6: Maintain a connection with the public and increase awareness of services
- Priority 7: Undergo an annual action planning process to set specific goals and objectives for the year

Iowa in Motion 2045, the State LRTP, lists the following as key issues regarding public transit:

- Additional operational and capital funding is needed
- Older buses require more maintenance and repairs
- Transit ridership cost per trip is increasing
- Seamless transfers are needed between the 35 transit systems and intercity bus service

[7] https://iowadot.gov/iowainmotion/transitplan/Iowa-Public-Transit-Plan-PRINT.pdf
[8] http://www.sicog.com/wp-content/uploads/2020/03/Final-FY-2021-2026-Passenger-Transportation-Plan-PTP.pdf

- Expanded transit services, including additional hours and weekend service, are needed
- More coordination is needed between transit systems, human service organizations, and school districts
- Indoor bus parking facilities are needed
- The public is generally reluctant to use transit services

INVENTORY

The primary transit provider for the RPA 14/ATURA region is Southern Iowa Trolley (SIT), the regional public transit provider. All of the counties in the ATURA region are served by SIT. In addition, SIT serves Clarke and Decatur counties located outside the ATURA region. The seven-member SIT Board of Trustees is composed of county supervisors appointed from each county served by the agency. The organization operates under an intergovernmental agreement (28E) of the seven counties that it serves. The Agency office and maintenance facility is located in Creston. Figure 3-23 shows the Southern Iowa Trolley service area.

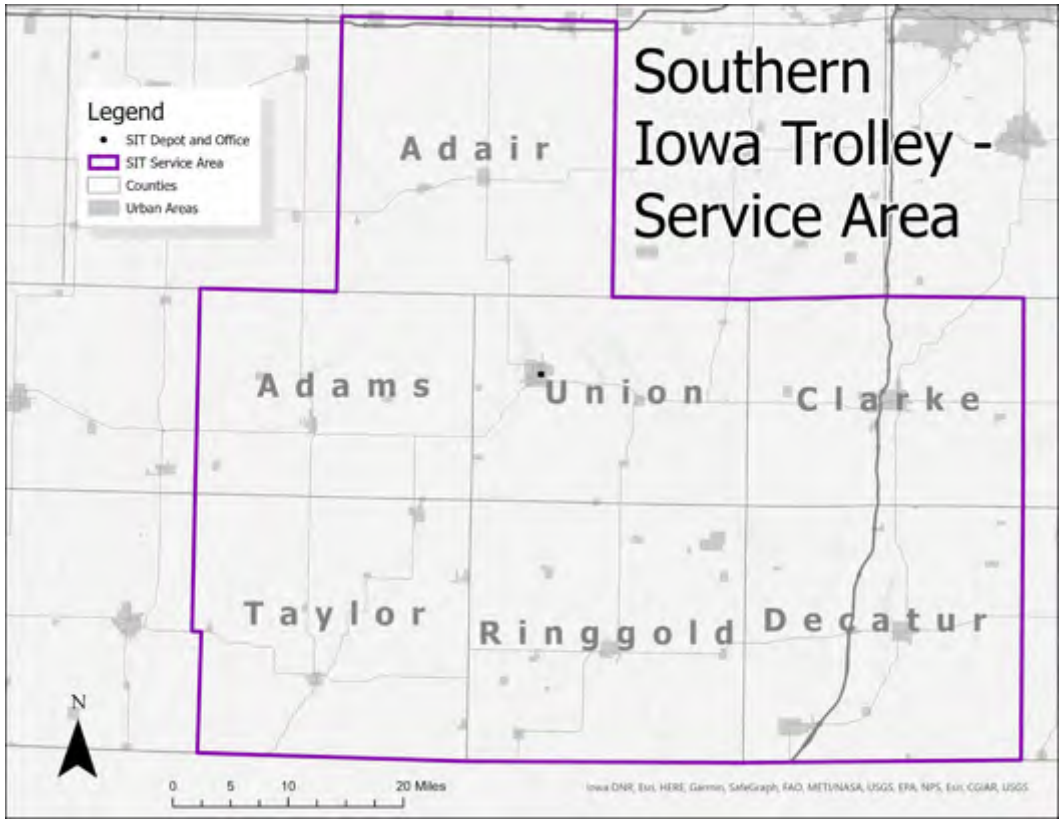


Figure 3-23: The SIT service area and office location.

All general public services are demand-response, meaning that door-to-door service is provided upon request. Dispatching is handled out of the Creston facility. Radio communication is used by the dispatcher to contact vehicle drivers.

Although SIT's operations have traditionally served transportation services for elderly, handicapped, low-income, and student riders, SIT provides and markets its services to the general public. SIT has forty-six vehicles used in its operations. Vehicles are based in Corning, Creston, Greenfield, and Mt. Ayr within the ATURA region, as well as in Lamoni, Leon, and Osceola which are located outside the region but within the service area of SIT. SIT operates demand-response routes throughout the region. SIT also arranges regularly scheduled pickups to accommodate the needs of riders, particularly for group home residents or consumers of job training or assisted employment programs and school children. At this time, demand does not warrant general public fixed route services within the region. No taxi services currently operate within the region.

Southern Iowa Trolley is open to the general public. There are no age or income requirements. Office hours of SIT are 6:00 am until 5:00 pm, Monday through Friday. Door-to-door service is available in most communities from 7:00 am until 4:00 pm Monday through Friday.

All SIT vehicles are accessible to the mobility impaired. Same day service is available as SIT's service allows, but twenty-four-hour advance notice is preferred. Mobility impaired or frail may be accompanied by one passenger care attendant who may ride free of charge.

Transportation service for the elderly is provided throughout the region and has remained relatively constant, as has the funding available for such services over the past few years. The Connections Area Agency on Aging has provided funding that supplements the rides of the elderly. The primary destinations of the elderly are congregate meal sites, grocery stores and medical facilities. With the increasing elderly population in the region and rising vehicle purchase and upkeep prices, services provided to elderly may be expected to increase.

The Southern Iowa Trolley has various prices depending on the ride desired and the user's age. In town rides are $38.50 for a one-way monthly pass. Town to town rides are $50.00 for a one-way monthly pass. Children ages 0-2 ride for free in town. A single town to town rides is $2.50 for students (including college students) and $3.50 for the general public. Town to town rides for seniors are free, but there is a suggested $2.00 donation per ride. Every Friday is "fifty cent Friday" for seniors where every ride is $0.50. There are also monthly scheduled trips to Des Moines for $30.00 round trips.

FUNDING

Each year Southern Iowa Trolley takes into consideration the various federal, state and local funding streams available, as well as anticipated revenues to meet the operation expenses and capital expenses for the agency over the coming four-year period. Funds are programmed to meet the anticipated purchases necessary to operate the organization and to replace or expand rolling stock within that time period.

Financial support for the planning and delivery of public transit services comes from a variety of sources, including funding from the counties served. However, the primary sources are federal and state programs supporting transit and transit planning. Listed below are possible funding sources for transit services. They are not all necessarily used by or available to SIT.

Federal Transit Assistance Programs

- Statewide Transportation Planning Program (Section 5304)
- Special Needs Formula Program (Section 5310)
- Rural Training Assistance Program (RTAP) (Section 5311 (b)(3))
- Intercity Bus Assistance Program (Section 5311(f))
- Urbanized Area Formula Grants (Section 5307)
- Bus and Bus Facilities Formula Grants (Section 5339)

State Transit Assistance (STA) Programs

- STA Formula Program
- STA Fellowship Program
- STA Coordination Special Projects
- STA Statewide Special Projects
- Public Transit Infrastructure Grant Program
- Capital Match Loan Program (Amoco Loans)
- Iowa's Clean Air Attainment Program (ICAAP)

Federal Flexible Funds Available to Transit

- Surface Transportation Block Grant (STBG)

Finding new or additional financial resources has been an ongoing challenge for agencies involved in transportation. The costs and time required of staff to administer and run such programs in the RPA 14/ATURA area would need to be considered, especially taking into consideration the relatively low population, small employers, and the widespread distribution of employees. As transportation

providers raise rates to cover their increased cost of providing services, they risk losing their current or potential new riders due to high fares.

The affordability of transportation services relates not just to individual riders but to the health and human services organizations that use public transit services for their consumers. Costs of vehicles, maintenance, fuel, and insurance continue to rise, as do wages for staff to drive and dispatch vehicles. Funding for such services must keep pace with the costs in order to continue to provide or increase transit services.

TRENDS

The costs of transportation services are expected to increase, but the funding sources currently being used by the Southern Iowa Trolley and area health and human service agencies that must pay for much of these services are not expected to increase and may even decrease. New sources of funding and better coordination of services must be continually explored in order to better meet the needs of the region. The Southern Iowa Trolley is dependent upon federal and state funding, as revenues generated by the services provided fall short of meeting the needs for operation. Local funds are also needed in order to provide the required local match for federal and state funds.

Each year the seven counties in which Southern Iowa Trolley operates contribute an annual allocation to support transit operations. The amount of funding requested is determined by the Southern Iowa Tolley Board of Trustees with significant input from board members who are also county supervisors.

Expanding services to longer hours or more locations would increase the expenses of operation of SIT significantly. The relatively low population of the area and the distances involved outside of the towns limit the amount of income generated by increasing hours of service or expanding service to more areas. The ability of riders to afford existing service has already been identified as one of the key problems for residents of the area and increasing rates to pay for expanded services could impact ridership negatively.

SIT continues to measure the demand for evening and week-end services within the region. The organization works together with human service organizations to determine what funding opportunities are available and to discuss pooling financial resources to accomplish service expansion. If deemed financially feasible and the need sufficient to justify the expansion of services, planning to expand services will be pursued.

RIDERSHIP

The SIT is a demand-response transit system; therefore, it may be assumed that the demand for transit services is fairly steady, although efforts to increase ridership are ongoing. Figure 3-24 shows the SIT's ridership within the ATURA region by fiscal year. Before 2020 ridership has remained fairly steady in spite of decreases in 2012 and 2013. The region's aging population will most likely continue to grow. Combined with low-income residents, it is likely that the region's transit dependent population will also continue to grow. Transit dependency is generally defined as a person who is elderly, disabled, low-income, and/or without a vehicle. These factors are more likely to occur together (ex., an elderly person is more likely to be disabled, and a low-income person is more likely to not have a vehicle).

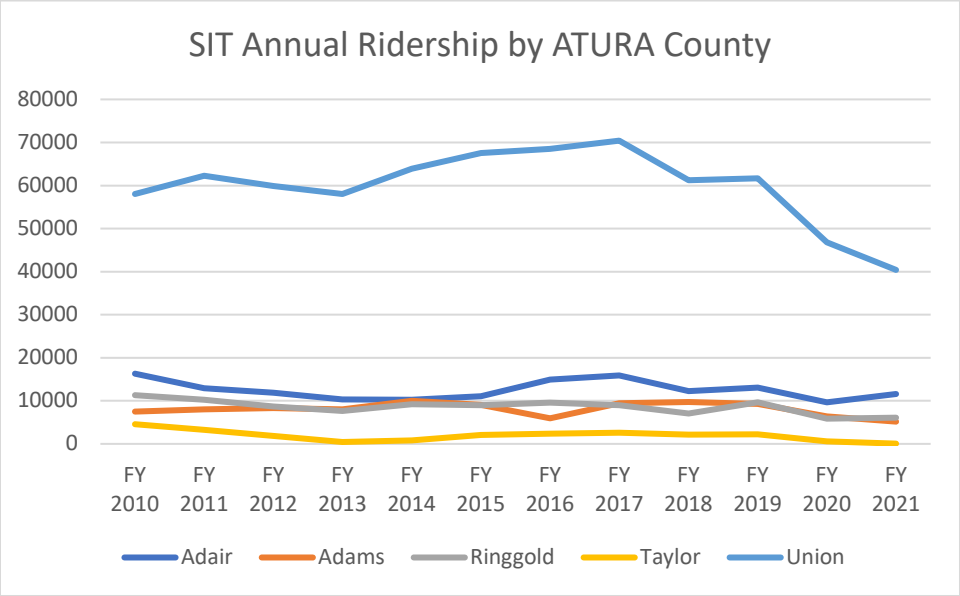


Figure 3-24: Graph showing the annual SIT ridership within the ATURA region. ***Data from Southern Iowa***

Efforts to increase ridership have included offering the "Summer Fun Bus" program that provides a reduced fare rate to students during the summer months. This promotion is used to familiarize parents and students with public transit ridership and increase transit usage. In addition, advertising SIT's services in area newspapers and a Southern Iowa Trolley presence in various community parades have been used to get the word out to the region that transit is for everyone.

FACILITIES

The Southern Iowa Trolley offices and garage are currently operated out of a leased building. The SIT organization has discussed alternatives to remaining in this facility. In recent years, long-term planning by SIT has been proposed and will need to be implemented to determine the most feasible place for the SIT operation to be housed into the future. This may mean constructing or purchasing a new transit facility, continuing to lease a facility, or purchasing their current facility. If a facility is to be purchased or constructed, it is desired that it meets SIT's needs for office space, a maintenance garage, staff and visitor parking, and a more secure, perhaps covered parking area for transit vehicles. If planning for a new facility is determined to be the desired course of action, SIT should develop an action plan to select a site, develop a feasibility study, estimate the costs of such a facility, and then seek capital funding for such a facility. If the SIT Board of Trustees seeks to move forward with a new facility, it is recommended that funding to assist with the cost be sought. Possible funding sources to be investigated include Bus and Bus Facilities (Section 5339) and Public Transit Infrastructure Grant (PTIG) funding.

COVID-19 IMPACTS

Predictably, the COVID-19 pandemic has drastically reduced ridership totals across the whole region. Figure 3-25 shows the impact in total ridership from January of 2020 to June of 2021. There was a sharp drop-off in ridership during March and April. Ridership began to recover over the summer of 2020, before beginning to decline again in the early summer of 2021. Overall, ridership is increasing but very gradually. It is unclear at this time when ridership will return to pre-pandemic totals, or whether the pandemic will have a lasting impact on ridership.

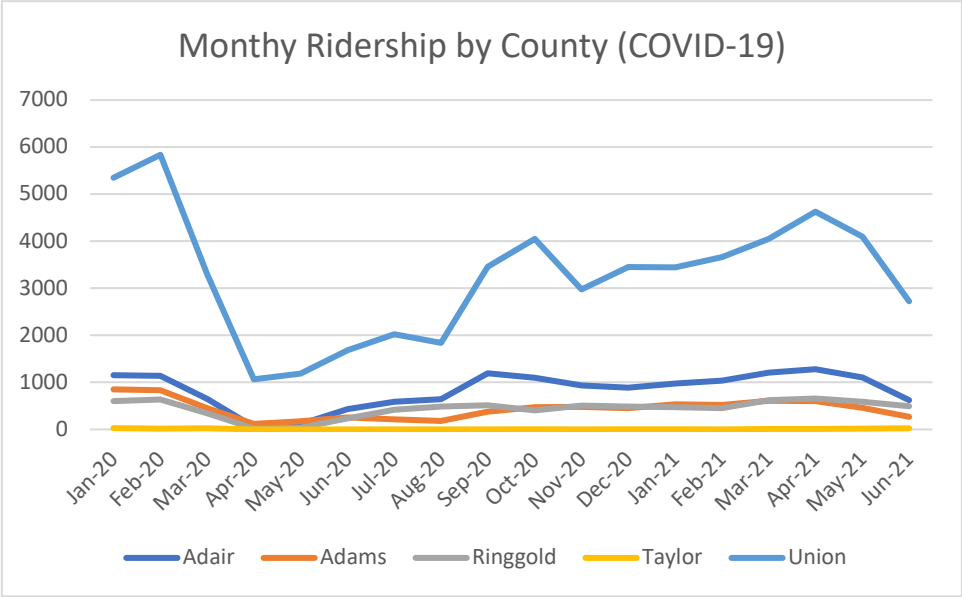


Figure 3-25: Graph showing the monthly SIT ridership during the COVID-19 pandemic. ***Data from Southern Iowa Trolley.***

CENTRAL IOWA RIDESHARE

Des Moines Area Regional Transit Authority (DART) offers alternatives to driving alone for employees working in the Des Moines Metro area. DART's Central Iowa Rideshare program helps commuters locate other people to share rides in carpools and vanpools. DART's Vanpool Program uses full-size passenger vans to transport a maximum of 15 passengers each weekday morning from Creston, Greenfield, and Adair to their West Des Moines, Urbandale, or Des Moines work locations. They return to those cities each evening. Vans also transport workers to the Des Moines area from Osceola, which although located east of the RPA 14/ATURA region, is within 30 miles of Creston. RideShare also offers one-time, or occasional, ride service to or from Des Moines from these cities on a space available basis. Round trips fares are $25, payable by credit or debit card by 2pm the day prior to the scheduled ride.

COMMERCIAL BUS CARRIERS/TAXI SERVICE/UBER

The RPA 14/ATURA region is not served by public commercial bus carriers and there are no taxi services operated within the region. The nearest taxi is operated out of Osceola in Clarke County. The lack of taxi service within the area is a hardship on those who must depend on public transit, particularly during evening and weekend hours. Uber offers no drivers in the region either. The nearest bus stop for commercial bus carrier Jefferson Lines is located in Osceola. Jefferson Lines runs north to Des Moines and South to Kansas City. Greyhound operates along Interstate 80 across the northern edge of Adair County, although it has no scheduled stops within Adair County, but can be accessed in Des Moines. Transportation may be arranged through the Southern Iowa Trolley from the RPA 14/ATURA region to the bus terminal in Osceola, if a rider was willing to travel during daytime hours and the cost was not prohibitive. Lack of access to both intercity bus and taxi service puts citizens of the RPA 14/ATURA region at a disadvantage when it comes to accessing both intercity and national bus travel. Figure 3-26 shows the commercial bus connections available in Iowa that can be accessed just outside of the ATURA region.

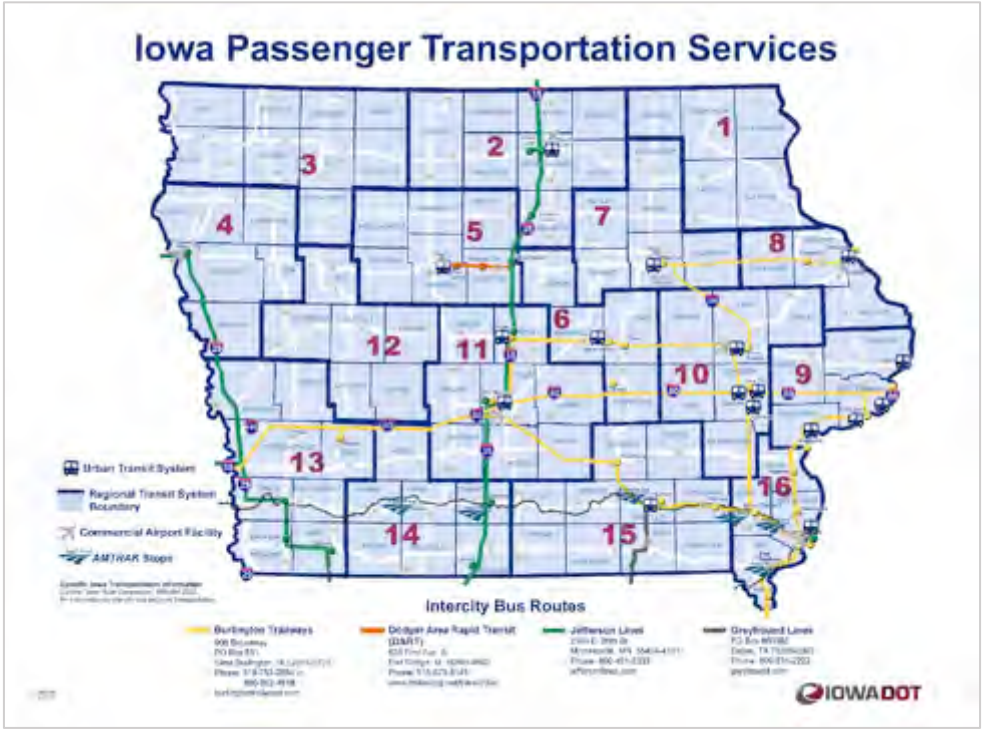


Figure 3-26: Map of the commercial bus connections available in Iowa that can be accessed just outside of the ATURA region.

KEY CONCLUSIONS

- Southern Iowa Trolley (SIT) ridership was remaining steady until 2020.
- The effects of the pandemic on the long-term ridership are still unknown.
- The need for transit will most likely grow as the region's population gets older.
- The SIT will need a new bus maintenance facility and office building in the near future.

3.6 INTERMODAL, MULTIMODAL, AND FREIGHT TRANSPORTATION

The term freight can be defined as "the transport of goods from one place to another". The State of Iowa has a large and diverse economy that demands the efficient transport of freight. There is a growing need to move freight safely, securely, and efficiently. Iowa's transportation system of highways, railroads, waterways, and airports play a major role in supporting the state's economy. An efficient multi-modal system for moving freight to, from, and within the state is critical to Iowa's economic competitiveness and directly affects our quality of life. Like many other states, most of the freight in, out, and around Iowa is moved by truck and rail, both of which have experienced steady growth over the past two decades. Iowa has the advantage of a vast network of highways and railroads to serve these movements.

PLANNING EFFORTS

The 2014 Iowa Park and Ride System Plan[9] is an intermodal-specific plan that is used by the Iowa DOT to plan, evaluate, and develop a formal state-owned-and-operated system of park and ride facilities. The primary objective of the plan was to provide a location-specific, priority-based park and ride system that allows for coordinated planning and implementation of park and ride facilities. No park and ride locations were determined to be necessary in the ATURA region as a result of this plan.

The Iowa State Freight Plan[10] is a multi-modal and intermodal plan developed by the Iowa DOT that provides the strategies that the agency will use to achieve or move towards the national freight goals established by the FAST Act and listed below:

- Identify and invest in infrastructure improvements, policies, and operational innovations
- Improve the safety, security, efficiency, and resiliency of multimodal freight transportation
- Achieve, maintain, and improve the state of good repair on the National Multimodal Freight Network
- Use innovation and advanced technology to improve the safety, efficiency, and reliability of the National Multimodal Freight Network
- Improve the economic efficiency and productivity of the National Multimodal Freight Network

[9] https://iowadot.gov/iowainmotion/files/StatewideParkandRideSystemPlanFINAL.pdf
[10] https://iowadot.gov/iowainmotion/files/Iowa-State-Freight-Plan-Update-2018.pdf

- Improve the reliability of freight transportation
- Improve the short- and long-distance movement of goods
- Improve the flexibility of states to support multi-state corridor planning and the creation of multi-state organizations to increase the ability of states to address multimodal freight connectivity
- Reduce the adverse environmental impacts of freight movement on the National Multimodal Freight Network
- Pursue the goals described in this subsection in a manner that is not burdensome to state and local governments

Besides the plans detailed above, there have not been many intermodal transportation-specific or multi-modal transportation-specific plans developed at the state level and none at the Regional level, however, some degree of intermodalism and multi-modalism is considered in each plan. Multi-modal transportation can be simply defined as transportation involving multiple modes of transportation. Passenger transportation examples of this include an individual commuting to work using a bike and a bus or traveling to an airport in a car, boarding a plane to travel somewhere else, then taking a taxi from the airport to the hotel. A freight transportation example of this includes shipping farm products by truck to a railroad, which then ships the farm product to a facility that manufactures the farm product into a new product. Intermodal transportation is defined as the way in which two or more modes of transportation connect. In other words, these are facilities that enable multi-modal transportation to occur. Passenger transportation examples of this includes bus stops, bus-mounted bike racks, airports (and their parking lots), and airport taxi stations/drivers. A freight transportation example of this includes transload facilities, intermodal container facilities, warehouses, and distribution centers.

INVENTORY

According to BNSF and Iowa Interstate Railroad Ltd. (IAIS), no official intermodal facilities exist within the ATURA region. However, the use of the intermodal term does not directly consider the operation of grain elevators. There are grain elevator sites within the region that have direct access to both highway and rail facilities. All are served by BNSF (the largest grain transporter by rail in North America)

and adjacent to the US 34 Highway corridor (part of the Iowa Commercial Industrial Network). Figure 3-27 shows the ATURA regions ethanol plants, freight processing, and grain facilities.

The region, being agricultural in nature, should take special interest in these sites when engaged in transportation planning. Value-added agriculture business development is being seen as a profitable way to increase the value of regional products. Access to cost effective and efficient long-distance bulk transportation will become a key to value-added business development in the future.

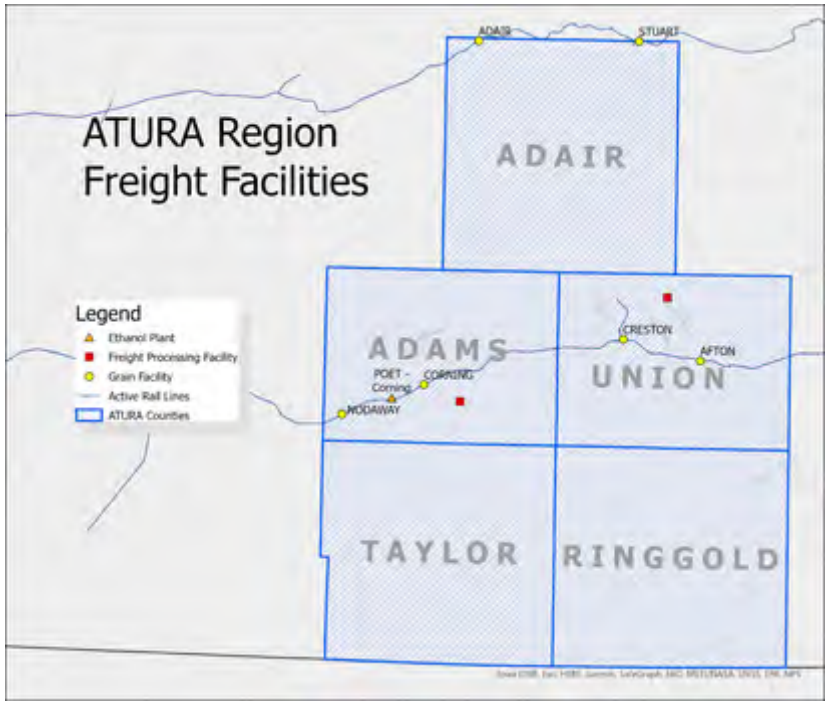


Figure 3-27: Shows the ATURA regions, ethanol plants, freight processing, and grain facilities. ***Data from Iowa DOT.***

TRENDS

Iowa's rail system and service has been evolving over time relative to its size, financial conditions, and competition from other modes. Changes in Iowa's freight transportation system and service over the last 25 years can be characterized by the following key rail freight trends:

- Slightly fewer miles being operated;
- railroads serving Iowa has remained the same;
- more rail freight traffic;
- more tons hauled per car;
- higher average rail rates per ton-mile since 2002;
- more cars and tons hauled per locomotive; and
- more ton miles per gallon of fuel consumed.

KEY CONCLUSIONS

- There is a need for a transload facility in the region to reduce shipping costs of road material. Creston has been identified as the best location for such a facility.

3.7 TRAFFIC SAFETY

Safety is a major concern on streets and highways within the RPA 14/ATURA region. Highway crashes are very complex. Contributing factors can include a roadway's design, pavement conditions (e.g., rain, snow, ice), a vehicle's mechanical condition (e.g., tires, brakes, lights), a driver's behavior (e.g., speeding, inattentiveness and seat belt usage), as well as the driver's condition (e.g., alcohol use, age-related conditions, physical impairment).

As such, highway safety needs go beyond just physical improvements to a specific roadway or intersection and include changes to driver behavior. These are best addressed with a multidisciplinary approach using engineering, enforcement, emergency response, and education strategies. The Iowa DOT provides a number of tools available to evaluate the safety of the roadways within the region: Safety, Analysis, Visualization and Exploration Resource (SAVER), Crash Mapping Analysis Tool (CMAT), and the Safety Improvement Candidate List. These resources and others help the region analyze the safety of streets and highways and assist in prioritizing projects to enhance safety on the roadways.

PLANNING EFFORTS

2019-2023 IOWA STRATEGIC HIGHWAY SAFETY PLAN (SHSP)

On December 4th, 2015, President Obama signed into law the Fixing America's Surface Transportation (FAST) Act, which continued many of the comprehensive approaches to highway safety from the previous legislation, Moving Ahead for Progress in the 21st Century Act (MAP-21), including the Highway Safety Improvement Program (HSIP). A key planning component of HSIP is the required Strategic Highway Safety Plan (SHSP)[11]. The purpose of the SHSP is to identify effective safety strategies to address areas of greatest need to make roadways safer. The SHSP was written using a data-driven, innovative and proactive planning process that addresses the Five E's of roadway safety:

- Engineering
- Education

[11] https://iowadot.gov/traffic/pdfs/IowaSHSP.pdf

- Enforcement
- Emergency medical services
- Everyone

The last E is a reminder that safety is everyone's responsibility. The SHSP outlines key strategies and sets targets to move Iowa toward its 2023 goal.

CRASH ANALYSIS

The Iowa Department of Transportation created the Iowa Crash Analysis Tool (ICAT) for public officials to examine crash reports by location, severity, cause, and other variables. Between the years 2011 and 2020, there were 7,052 crashes in the ATURA region. The number of crashes is trending upward from 649 in 2011 to 807 in 2019. Figure 3-28 shows the total annual crashes and a predicted trendline. Figure 3-29 shows the total number of crashes in each county by year. Figure 3-30 shows the number of crashes per capita in each county by year. It is important to note that Adair County has a higher number of crashes per capita because it is the only county with an interstate.

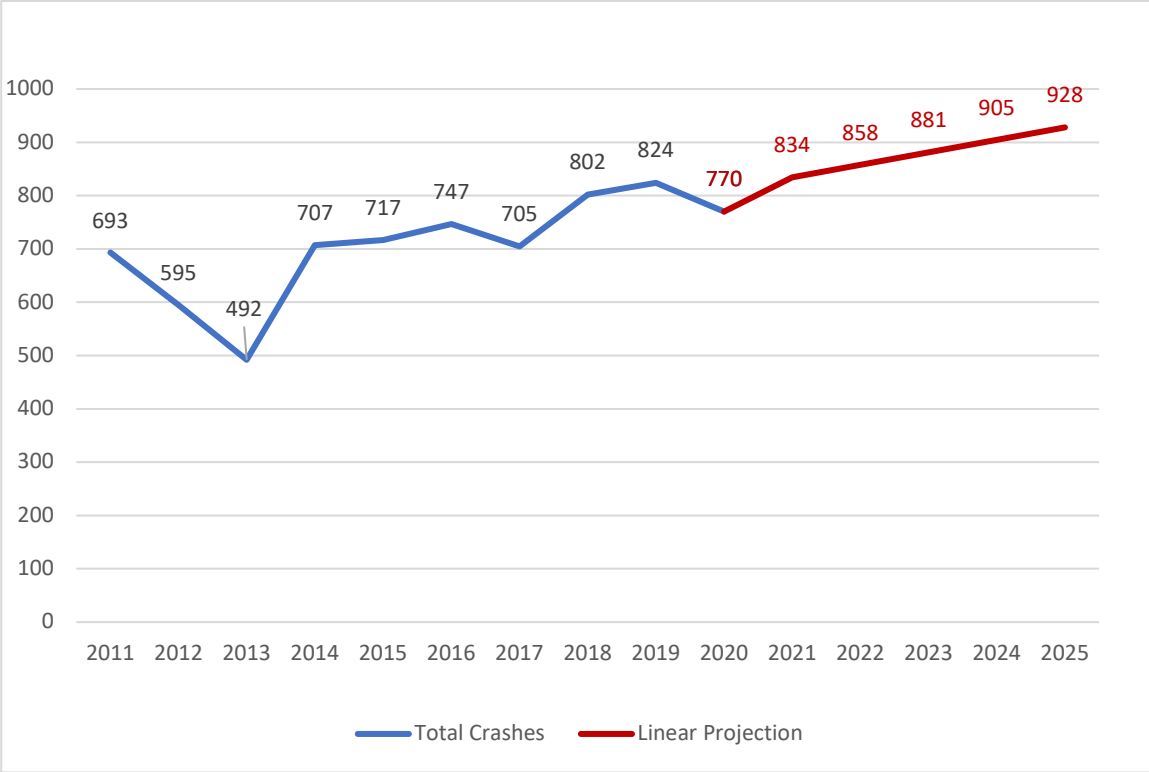


Figure 3-28: The total crashes in the ATURA region by year, and a projection towards 2025. ***Data from Iowa DOT Crash Analysis Tool.***

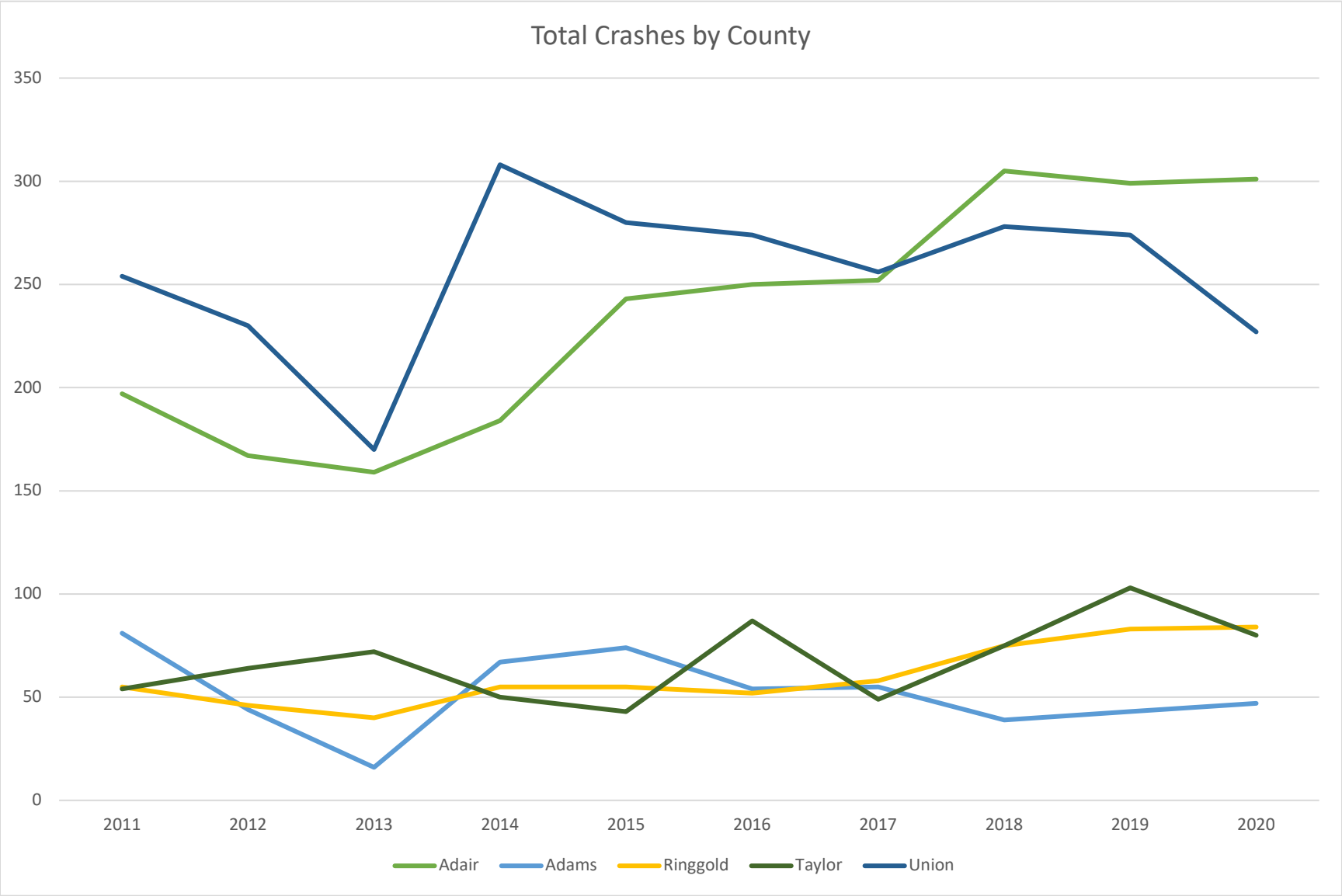


Figure 3-29: The total crashes in each of the ATURA counties by year. ***Data from Iowa DOT Crash Analysis Tool.***

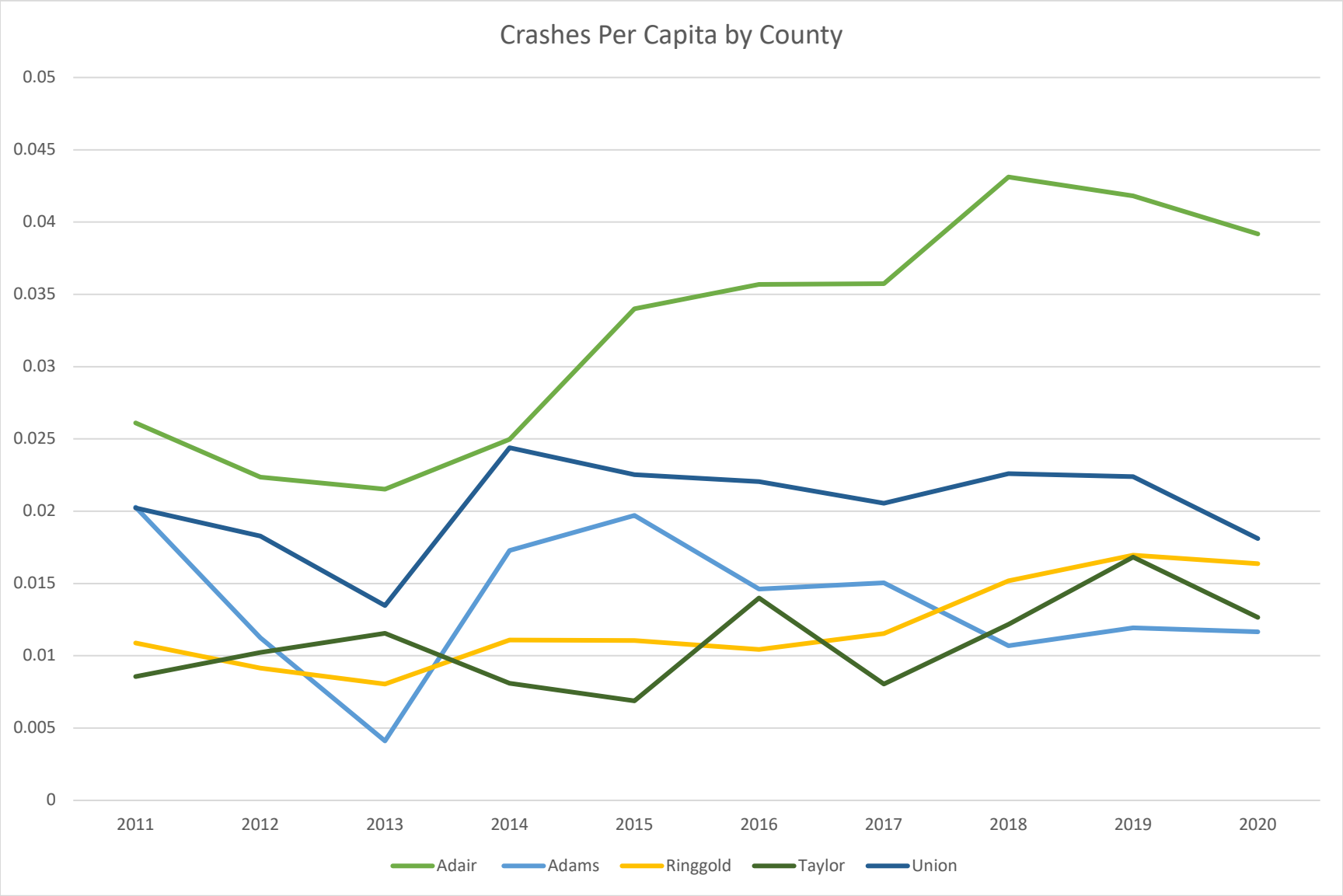


Figure 3-30: The crashes per capita in each of the ATURA counties by year. ***Data from Iowa DOT Crash Analysis Tool.***

CRASH SEVERITY

Another consideration for planning is the severity of each crash. ICAT crash severity categories are as follows

- Fatal
- Suspected Serious Injury
- Suspected Minor Injury
- Property Damage Only
- Possible/Unknown Injury

Figure 3-31 shows the locations of non-motorist crashes within the ATURA region during the same time frame. Figure 3-32, Figure 3-33, Figure 3-34, Figure 3-35, and Figure 3-36 show the annual number of crashes in each county in the ATURA region.

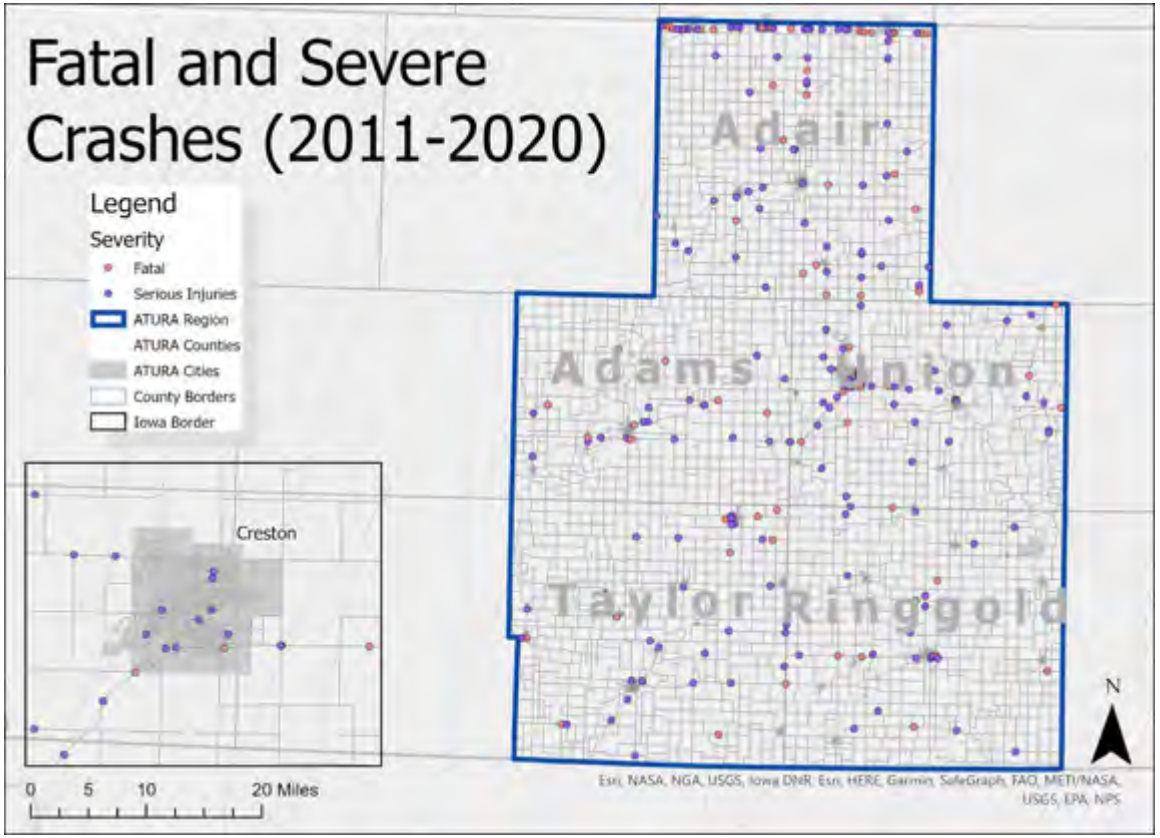


Figure 3-31: The locations of fatal and severe crashes between 2011 and 2020. ***Data from Iowa DOT Crash Analysis Tool.***

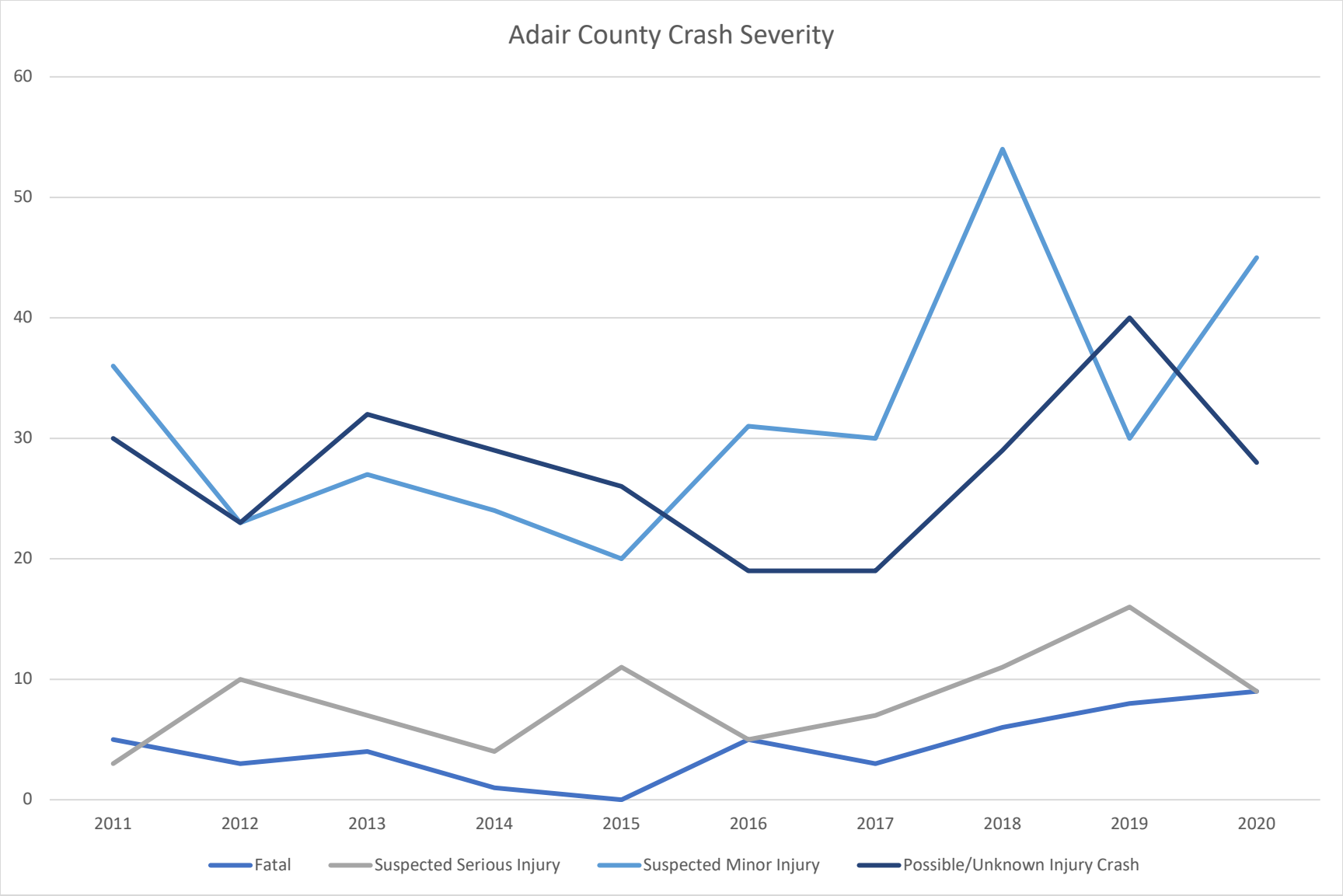


Figure 3-32: The number of crashes in Adair county by severity and year. ***Data from Iowa DOT Crash Analysis Tool.***

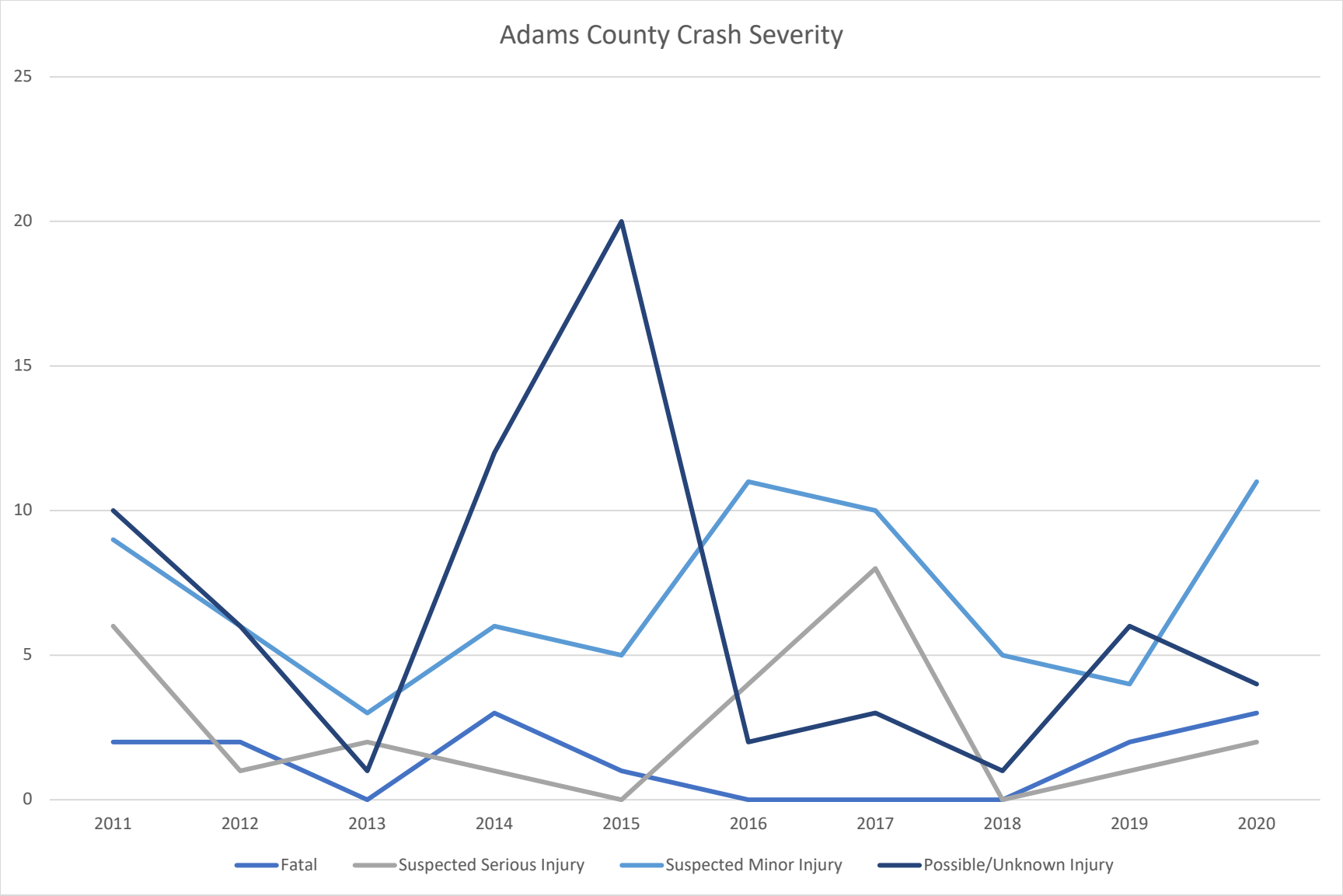


Figure 3-33: The number of crashes in Adams county by severity and year. ***Data from Iowa DOT Crash Analysis Tool.***

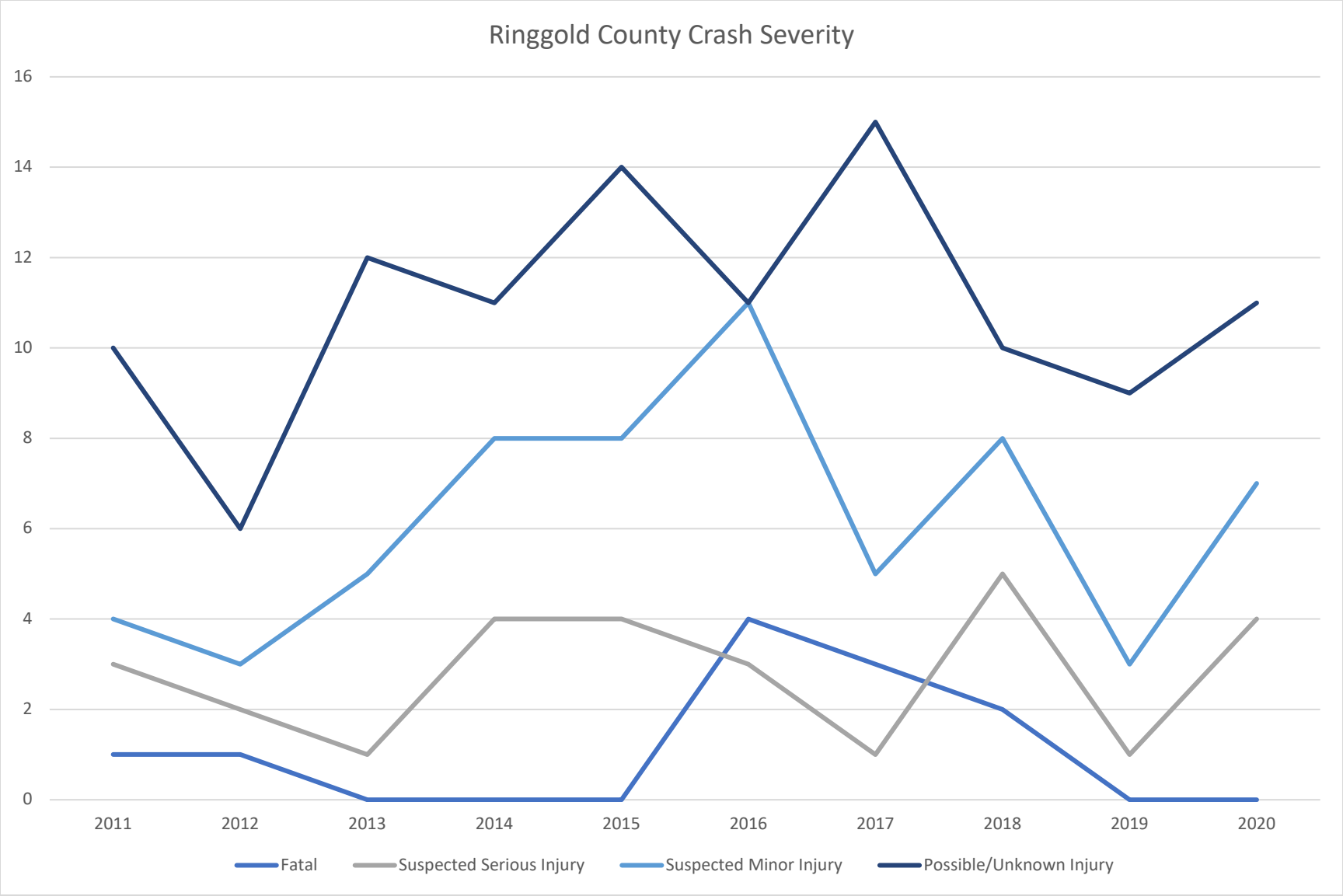


Figure 3-34: The number of crashes in Ringgold county by severity and year. ***Data from Iowa DOT Crash Analysis Tool.***

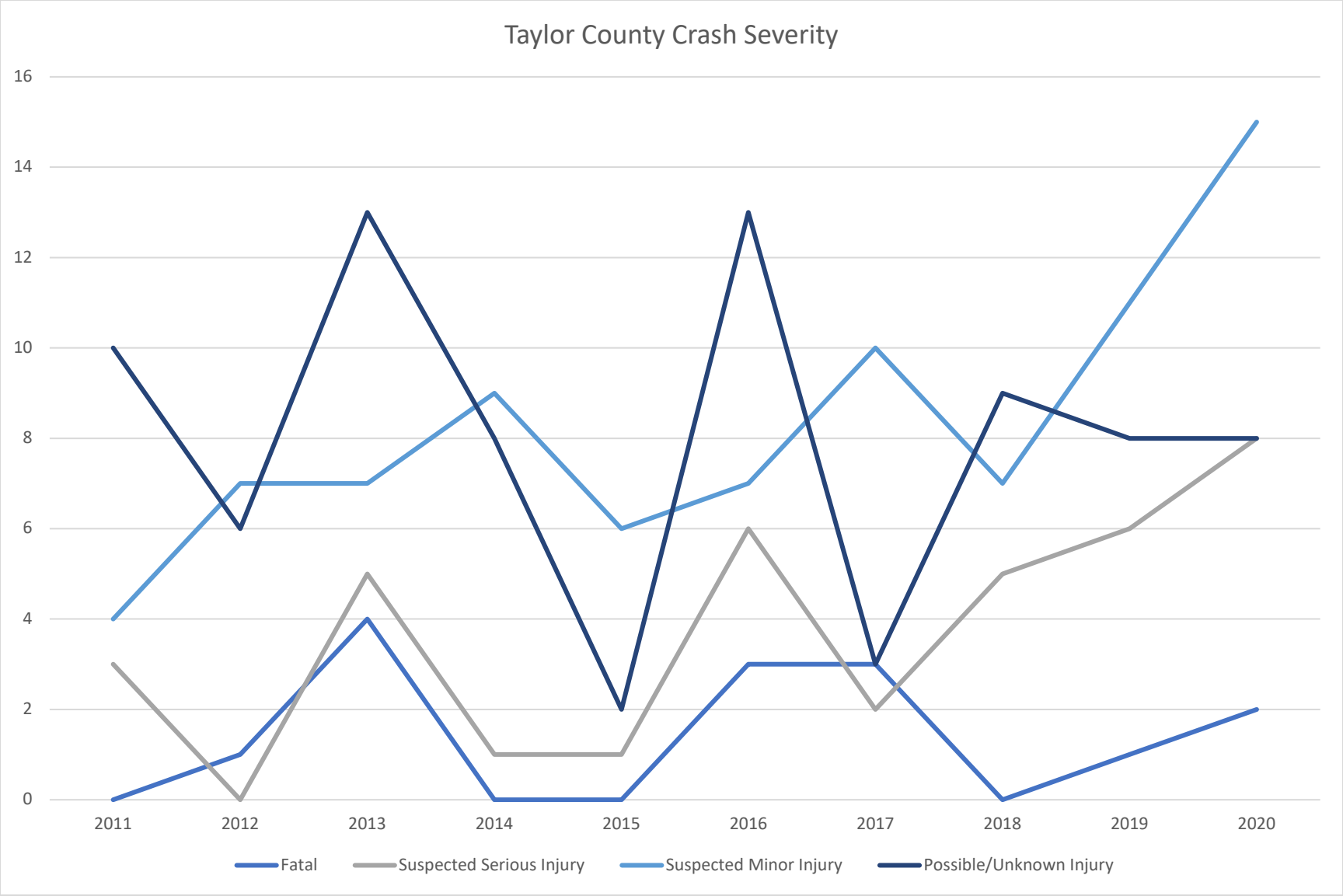


Figure 3-35: The number of crashes in Taylor county by severity and year. ***Data from Iowa DOT Crash Analysis Tool.***

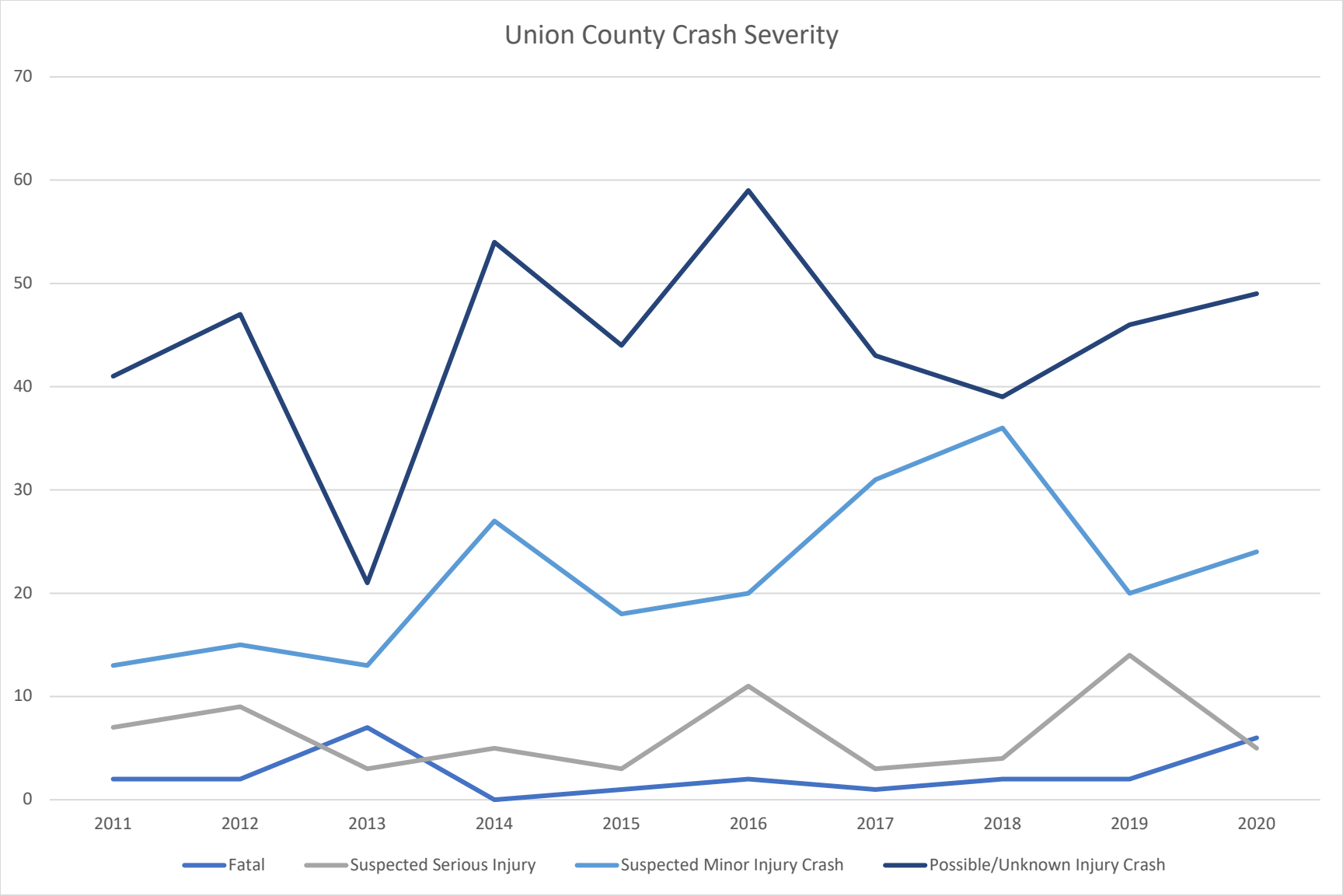


Figure 3-36: The number of crashes in Union county by severity and year. ***Data from Iowa DOT Crash Analysis Tool.***

Table 3-10 shows the total number of fatalities and serious injuries in the ATURA region between 2011 and 2020. Within that timeframe, there were 154 fatal crashes and 236 fatalities (about 1.5 deaths per fatal crash). In addition, there were also 298 serious injury crashes and 395 serious injuries (1.33 injuries per serious injury crash).

Year	*Fatalities*	*Fatal Crash Rate*[12]	*Serious Injuries*	*Serious Injury Crash Rate*
2011	19	7.9	44	15.81
2012	35	8.71	40	13.83
2013	22	8.25	22	11.3
2014	28	4.05	26	11.15
2015	3	1.49	22	10.91
2016	57	12.51	56	18.51
2017	15	7.39	26	10.84
2018	13	6.48	42	15.95
2019	17	8.43	42	20.33
2020	27	11.21	75	20.96

Table 3-10: The total numbers of fatalities and serious injuries between 2011 and 2020. ***Data from Iowa DOT's Crash Analysis Tool.***

HOTSPOT ANALYSIS

To better examine crash trends by location, crashes were assigned a number according to the severity. Table 3-11 shows how each crash severity was quantified. Using the quantified data, a hotspot analysis was conducted to show which locations within the ATURA region are hotspots for severe crashes. The hotspot analysis accounts for the both the proximity of the

[12] The Fatal Crash Rate and Serious Injury Crash Rate are calculated by dividing the number of fatal or serious injury crashes by the annual vehicle miles traveled (VMT) times 100 million. VMT data for 2020 was not available at the time this plan was written, so the VMT for that year is a projection.

crash, as well as the severity of the crash. Hot spots tend to have more severe crashes, while cold spots tend to have less severe crashes. Figure 3-37 shows the ATURA region's hotspot analysis.

Crash Severity	Quantified Value
Possible/Unknown Injury	1
Property Damage Only	2
Suspected Minor Injury	3
Suspected Serious Injury	4
Fatal Injury	5

Table 3-11: How crash severity was quantified.

The colors of the points shown in Figure 3-37 indicate whether the point is part of a hot spot or cold spot. Hot spots tend to be locations where crashes are more severe than cold spots. This analysis can be used to identify intersections that should be improved to increase the safety of drivers.

While many crashes occur within the Creston area, those crashes tend to be less severe than crashes elsewhere in the region. In fact, the most severe crashes tend to occur outside of cities. This is presumably because of lower speed limits within cities, which reduces the force of a collision. Generally speaking, severe crashes tend to occur at rural intersections.

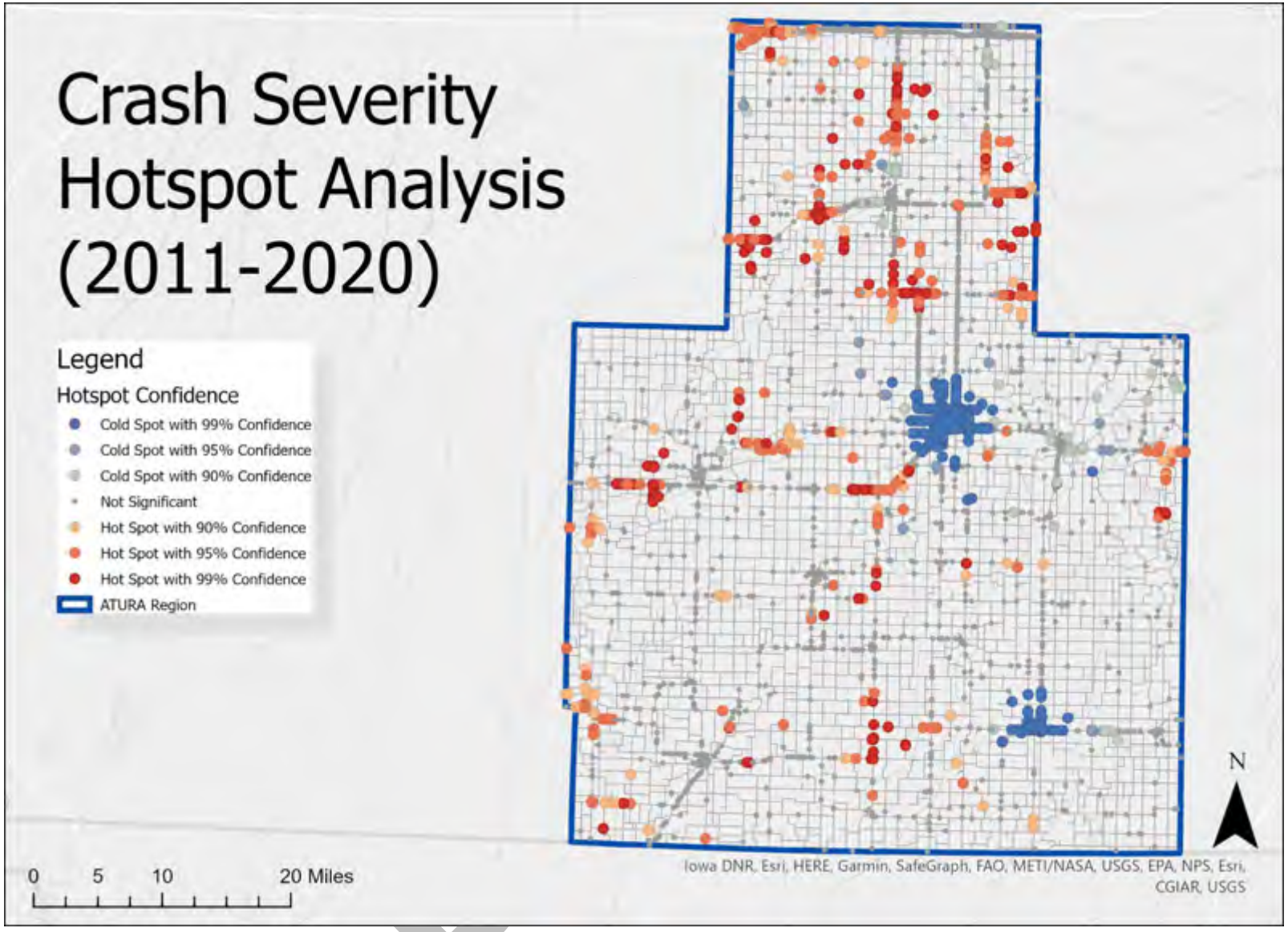


Figure 3-37: Crash severity hotspot analysis. ***Data from Iowa DOT Crash Analysis Tool.***

NON-MOTORIST CRASHES

Non-motorist crashes are important to examine in addition to vehicular crashes. All of the crashes that occurred in the ATURA region between 2011 and 2020 involving a non-motorist also involved a vehicle. It should be noted that many non-motorist crashes go unreported, especially crashes that do not result in a serious injury. This could be because a law enforcement officer is not called to the scene to file the report or if an officer is at the scene, they might be reluctant to write a crash report.

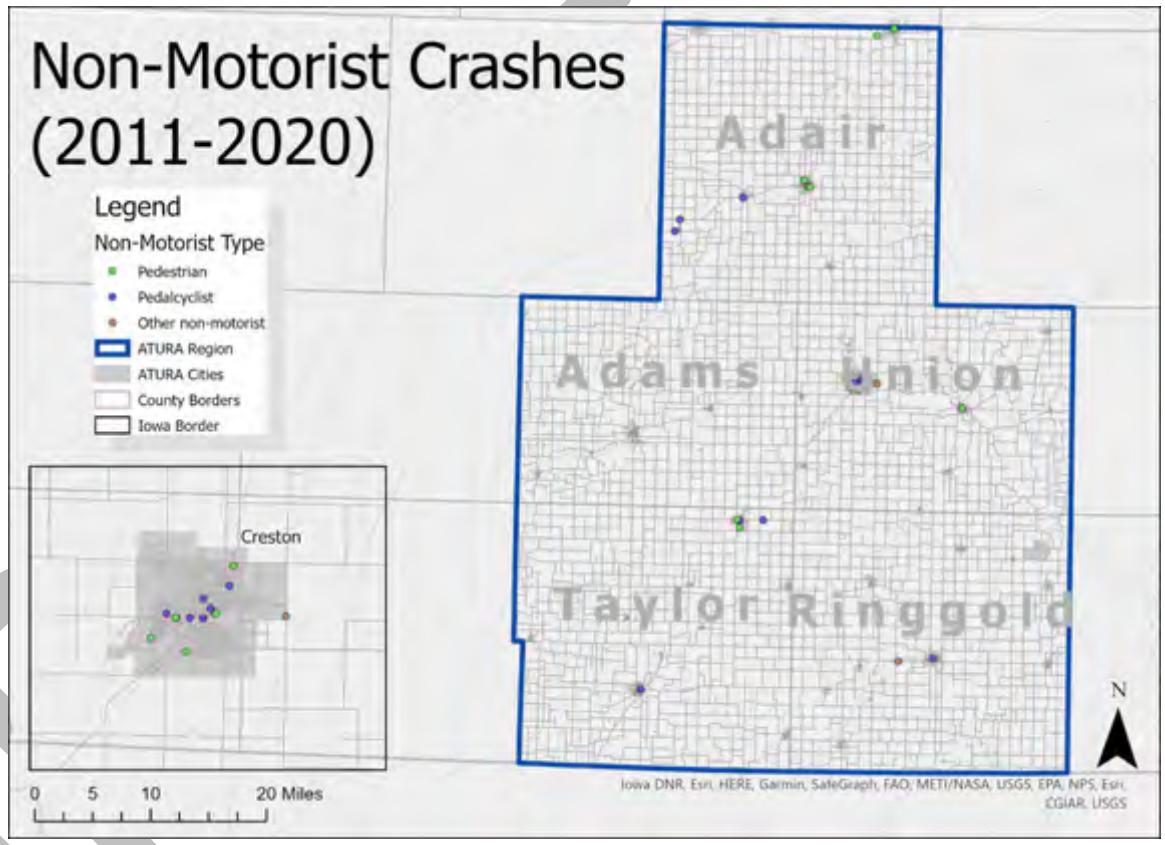


Figure 3-38: Locations of non-motorist crashes between 2011 and 2020 in the ATURA region categorized by non-motorist type. ***Data from Iowa DOT Crash Analysis Tool.***

Between 2011 and 2020, there were 31 reported crashes involving a non-motorist. Of that number, 13 crashes involved a cyclist, 14 involved a pedestrian, and 4 involved some other non-motorist. Figure 3-38 shows the locations of non-motorist crashes between 2011 and 2020 within the ATURA region. Table 3-12 shows the number of fatalities and serious injuries between 2011 and 2020 within the ATURA region. In that timeframe, there were 2 fatalities and 9 serious injuries.

Year	Non-Motorist Fatalities	Non-Motorist Serious Injuries
2011	0	2
2012	0	0
2013	1	0
2014	0	0
2015	0	1
2016	0	0
2017	0	1
2018	0	1
2019	1	2
2020	0	2

Table 3-12: Non-motorist fatalities and serious injuries within the ATURA region between 2011 and 2020. ***Data from Iowa DOT's Crash Analysis Tool.***

KEY CONCLUSIONS

- Total crashes continue to increase.
- Crash severity is greater along rural roads and rural intersections.
- Non-motorist crashes tend to be more severe than motorist crashes.
- While it cannot be proven, non-motorist crashes are most likely underreported.

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4. PLANNING CONSIDERATIONS

A wide variety of issues must be considered as RPA 14/ATURA plans for the future. While several far-reaching subjects are identified in this chapter, these planning considerations do not represent an exhaustive list, and new issues are likely to arise over the life of the Plan. As these issues continue to develop, the ATURA's transportation network will need to adapt. These issues help inform the needs and goals of this plan, as well as the input of the public. This chapter will cover the following planning topics:

- Economic Vitality
- Energy
- Environmental Justice
- Environmental Mitigation
- Mobility
- Land Use
- Maintenance
- Management and Operations
- Safety
- Technology
- Public Input

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4.1 ECONOMIC VITALITY

One consideration critical to the transportation planning process is economic vitality. Throughout Iowa's history, economic growth has occurred along thoroughfares of all forms, from rivers to railroads to highways. While the relationship between transportation improvements and economic growth seems rather straightforward, many professionals and academics would argue it is not yet fully understood. Regardless, it is critical that the potential economic impacts of transportation projects are considered during the planning process.

According to Figure 2-11, the ATURA region's primary industries by employment are education, manufacturing, and agriculture. The transportation demands of education are important considerations for local governments, but because that sector is less demanding of transportation overall than other sectors, it will not be examined here.

Transportation is a vital component for both the manufacturing and agriculture sectors. Manufacturing facilities use both roads and rails to ship products from the region. Sound road facilities are crucial for supporting local farmers and providing access to and from fields.

Another source of economic vitality that the region is tourism. The region's lakes and parks are attractive for tourists to come fish, boat, and camp. While those tourists visit the region's recreation amenities, they may also shop at its stores and eat at its restaurants. This sector requires transportation infrastructure to operate, but is not demanding on the region's infrastructure as other sectors.

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4.2 ENERGY

Energy issues are another important consideration in transportation planning. Areas where energy and transportation overlap include the cost and availability of fuel, the production and movement of different types of fuel, and the impact of alternative fuel vehicles on transportation.

IOWA ENERGY PLAN

The Iowa Energy Plan[13] was developed in 2016. The plan is a joint initiative between the Iowa DOT and the Iowa Economic Development Authority. Iowa's energy plan is a means to set state priorities and provide strategic guidance for decision-making while working to encourage energy, economic, and environmental benefits through goals and recommendations. It includes an assessment of current and future energy supply and demand, examines existing energy policies and programs, and identifies emerging energy challenges and opportunities. The plan synthesizes the existing state energy goals and strategies that are beneficial for the state, and outlines new objectives and strategies to position Iowa for the future.

The plan was built on four foundational pillars, one of which is transportation and infrastructure. The other three are economic development and energy careers, Iowa's energy resources, and energy efficiency and conservation.

FUEL SUPPLY AND COST

Both the supply and cost of fuel can directly affect many facets of the transportation industry. For example, when the cost of fuel fluctuates noticeably, driving behavior can change and create an immediate impact on the transportation system through variations in number of miles driven and changes in mode of travel. Such changes in behavior can also have more far-reaching impacts, as notable increases or decreases in travel can affect transportation-related revenues such as those derived from fuel taxes. Fuel tax is an important revenue stream for many infrastructure projects.

[13] http://www.iowaenergyplan.org

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4.3 ENVIRONMENTAL JUSTICE (EJ)

On February 11, 1994, Executive Order (EO) 12898 was signed into law by President Clinton and required "each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States." It is through EO 12898 that the policies set forth in the Civil Rights Act of 1964 and Title VI of the National Environmental Policy Act of 1969 are clarified and enforced. While federal regulations do not specifically require environmental justice (EJ) to be considered in the development and content of a LRTP at the regional level, RPA 14/ATURA believes that the importance of this issue warrants inclusion in the Plan.

EJ DEFINED

According to the U.S. Environmental Protection Agency, EJ is defined as:

"The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local and tribal programs and policies."

EJ is the term used to describe the uneven environmental and social hardships that disadvantaged groups bear. EJ is a broad and multifaceted social welfare issue with the goal of improving the disparate or unequal impacts of growth and development, such as crime, hazardous waste sites, and pollution. It also aims to ensure equitable access to physical and social opportunities, such as clean air and water, education, food, jobs, and transportation.

EJ AND TRANSPORTATION PLANNING

Within the realm of transportation consideration of EJ is important given that impacts of transportation can be both beneficial (e.g., improved access and mobility) and burdensome (e.g., noise and congestion). Because of the diverse and potentially uneven

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transportation impacts, it is important that EJ be included throughout the transportation planning process, including short-range and long-range planning and public participation outreach efforts. Specifically, by identifying the transportation patterns of socially disadvantaged groups (e.g., minority and low-income) and involving them in the public participation process, the needs of these groups can be determined and assessed to guide transportation investment and ensure impacts are distributed as evenly as possible. RPA 14/ ATURA creates and uses the Public Participation Plan (PPP) which outlines the necessary public input processes and opportunities.

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4.4 ENVIRONMENTAL MITIGATION

Transportation has a negative impact on the environment. This is not only from vehicle emissions during operation, but also from the impact that the infrastructure has on the environment. Understanding these impacts is critical to making informed decisions when reviewing transportation projects.

PROTECTED AREAS

The ATURA region is home to several protected areas. These range in designation, which in turn dictates the facilities and uses available to the public. Table 4-1 shows the wildlife management areas in the region, and their areas in acres. Table 4-2 shows the total area of wildlife management and outdoor recreation areas in the ATURA region.

Name	*Type*	*Acres*
Mount Pisgah Cemetery State Preserve	State Preserve	0.98
Adair WMA	State Wildlife Management Area	337.69
Fogle Lake WMA	State Wildlife Management Area	358.97
Kellerton Bird Conservation Area WMA	State Wildlife Management Area	2091.98
Lake Icaria WMA	State Wildlife Management Area	1126.69
Meadow Lake WMA	State Wildlife Management Area	316.89
Mitchell Marsh WMA	State Wildlife Management Area	301.12
Mt Ayr WMA	State Wildlife Management Area	1530.46
Ringgold WMA	State Wildlife Management Area	2710.11
Sand Creek WMA	State Wildlife Management Area	3601.17
Summit Lake WMA	State Wildlife Management Area	276.48
Three Mile Lake WMA	State Wildlife Management Area	2675.3
Twelve Mile Lake (Union) WMA	State Wildlife Management Area	1483.52
Boone Woods	WMA	312.92
Don & Connie Huff Wildlife Area	WMA	304.28
E. Rex Sullivan Wildlife Area	WMA	154.27
French Nature Preserve Wildlife Refuge	WMA	80.47
Groesbeck County Wildlife Area	WMA	108.11
Hamilton Prairie	WMA	13.57
Hoskins Wildlife Area	WMA	115.85
Hoskinson Wildlife Area	WMA	63.48
Jensen-Butler Wildlife Area	WMA	60.67

Ken Sidey Nature Area	WMA	101.52
Kent ROW	WMA	3.51
Lorimor Wildlife Area	WMA	5.6
Middle River Forest Area	WMA	43.63
Siam Tract	WMA	104.78
Simmons WMA	WMA	84.21
Talmage Hill Wildlife Area	WMA	209.43
Talty Wildlife Area	WMA	99.16
Wright Timber Wildlife Area	WMA	240.15

Table 4-1: State and locally owned wildlife management areas. *Data from Iowa Department of Natural Resources (DNR).*

County	***Total Acres***
Adair	2,106
Adams	2,103
Ringgold	7,699
Taylor	1,754
Union	6,859
Total	**20,521**

Table 4-2: Total area of all wildlife management and outdoor recreation areas in the ATURA region. *Data from Iowa DNR.*

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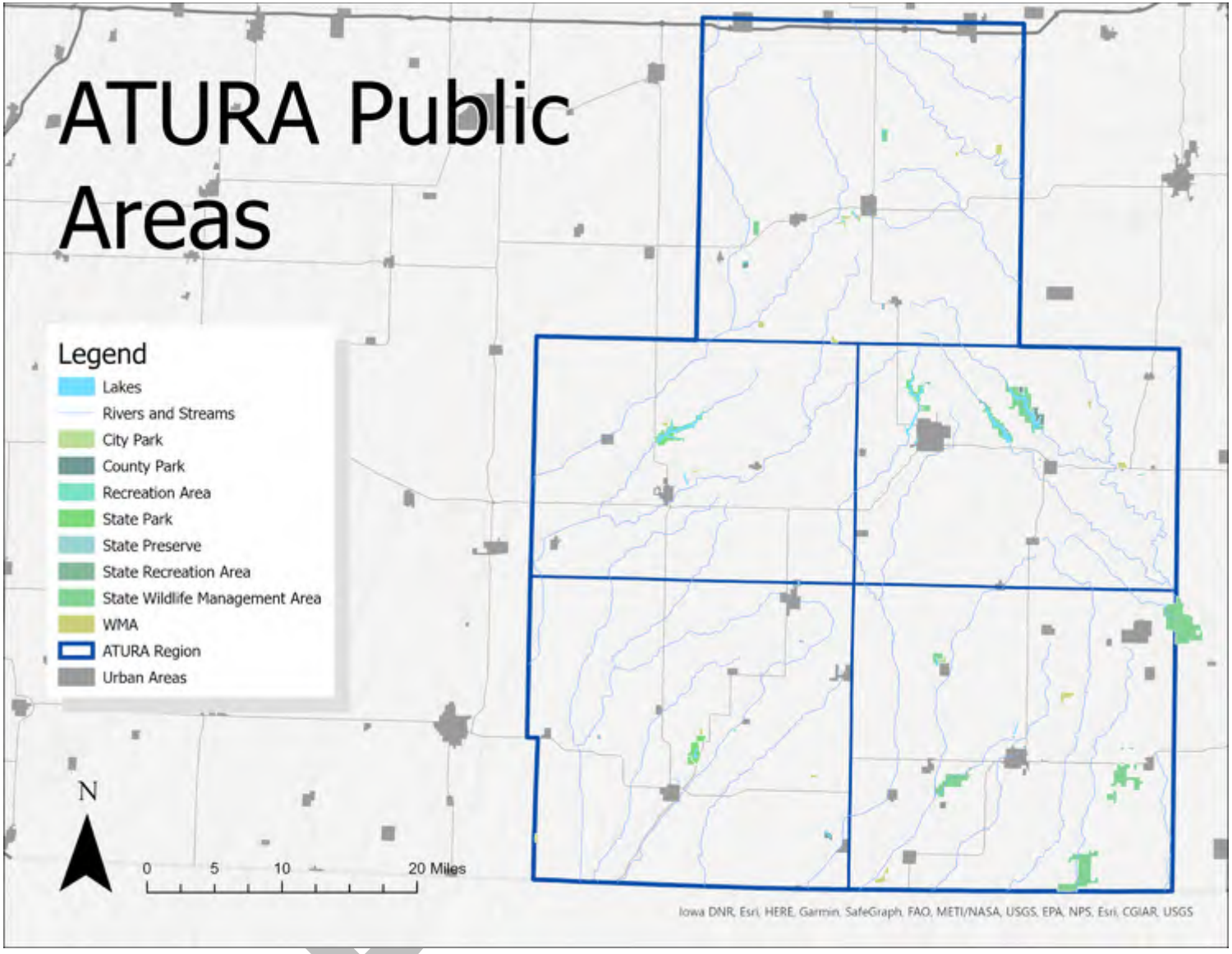

Figure 4-1: Map of the wildlife management and outdoor recreation areas in the ATURA region. ***Data from Iowa DNR.***

AIR QUALITY

According to weareiowa.org, only 13 electric vehicles are registered in the ATURA region[14]. This means that petroleum is still the primary fuel source in the region. According to the Environmental Protection Agency, the transportation sector accounted for 29% of all greenhouse gas emission in 2019[15]. In order to reduce emissions RPA 14/ATURA should encourage alternative modes of transportation, such as electric vehicles, and/or encourage different travel behaviors, such as carpooling and ridesharing.

WATER RESOURCES

Roads increase precipitation runoff and compact adjacent soil. This prevents water from infiltrating into the groundwater and increases the volume in streams. Brake dust, engine oil, and other contaminants are carried into the stream instead of being filtered by the soil. Bridges and culverts can create a bottleneck in a stream that may increase streambank erosion.

With 71,665 miles of streams and rivers and more than 161,000 acres of lakes, ponds, and wetlands, it seems as if Iowa is rich in water resources. However, less than one percent of the state's land area is covered with water. Therefore, it is vital that this limited resource, both above and below ground, be protected from pollution and available for Iowans to use for drinking water, recreation, and industries. Protecting the safety of Iowans and the quality of Iowa's waters are the two main goals of the Iowa DNR water quality bureau. The bureau sets standards for the quality of our surface waters; issues permit to limit pollution; and provides technical assistance and training to communities, industries, and homeowners. Many of Iowa's programs are based upon federal laws administered by the United States Environmental Protection Agency.

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[14] https://www.weareiowa.com/article/travel/the-future-is-electric-ev-cars-tesla-charging-stations-technology-in-iowa-midamerican-energy-dmacc-chevy-nissan/524-3be33953-f292-4397-80a7-8ef1976f4e37

[15] https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions

RIVERS AND LAKES

The ATURA region is not drained by one major river. There are several rivers that begin or cross the region. The main rivers are the Thompson river (sometimes called the Grand river), Middle Nodaway River, Grand River, Platte river, and the One Hundred and Two river. Figure 4-2 shows the rivers and lakes of the ATURA region.

The region also contains several water reservoirs (called lakes) that are used for flood control, water sources, and recreation areas. The region's lakes are shown in Figure 4-2 and Figure 4-4.

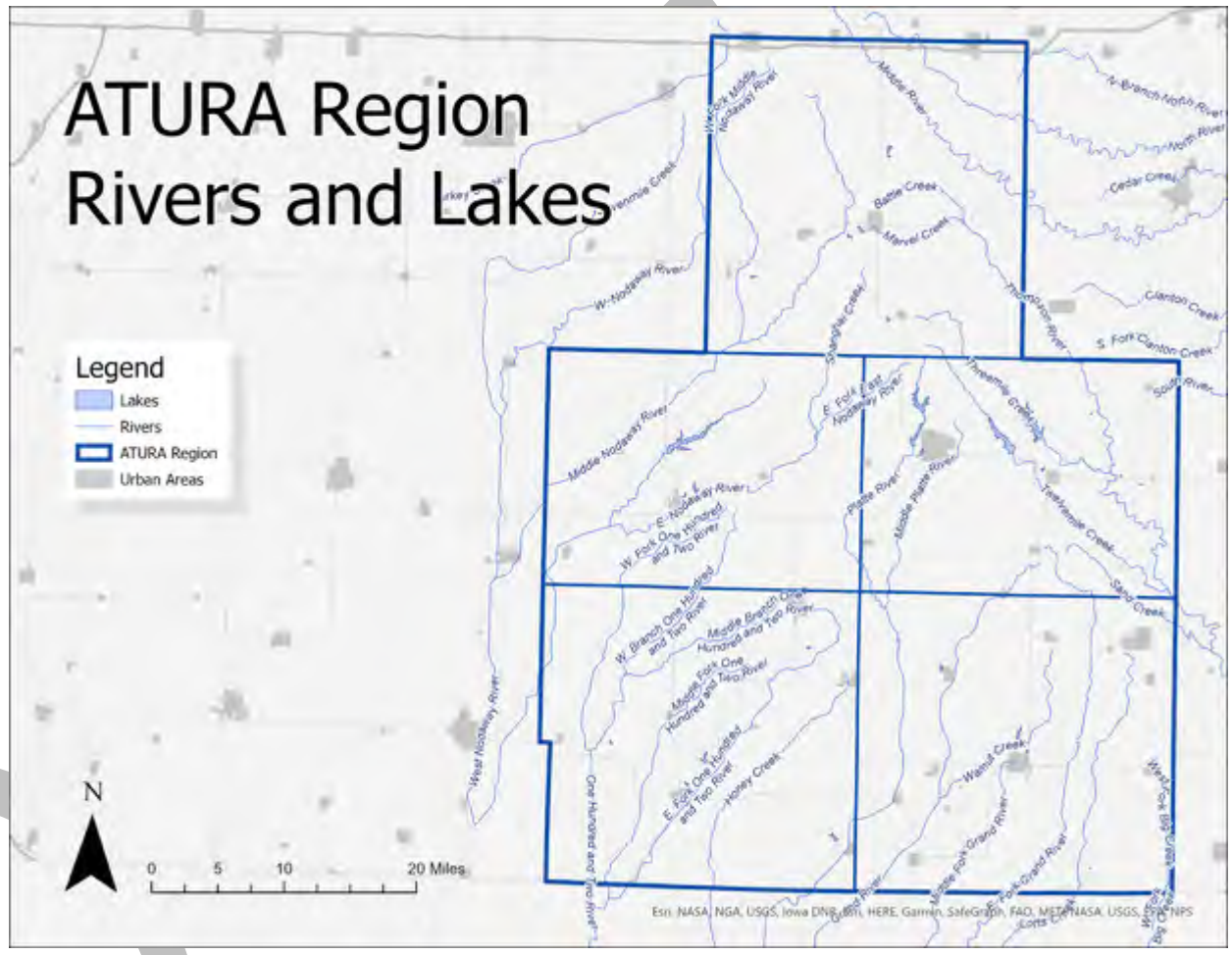
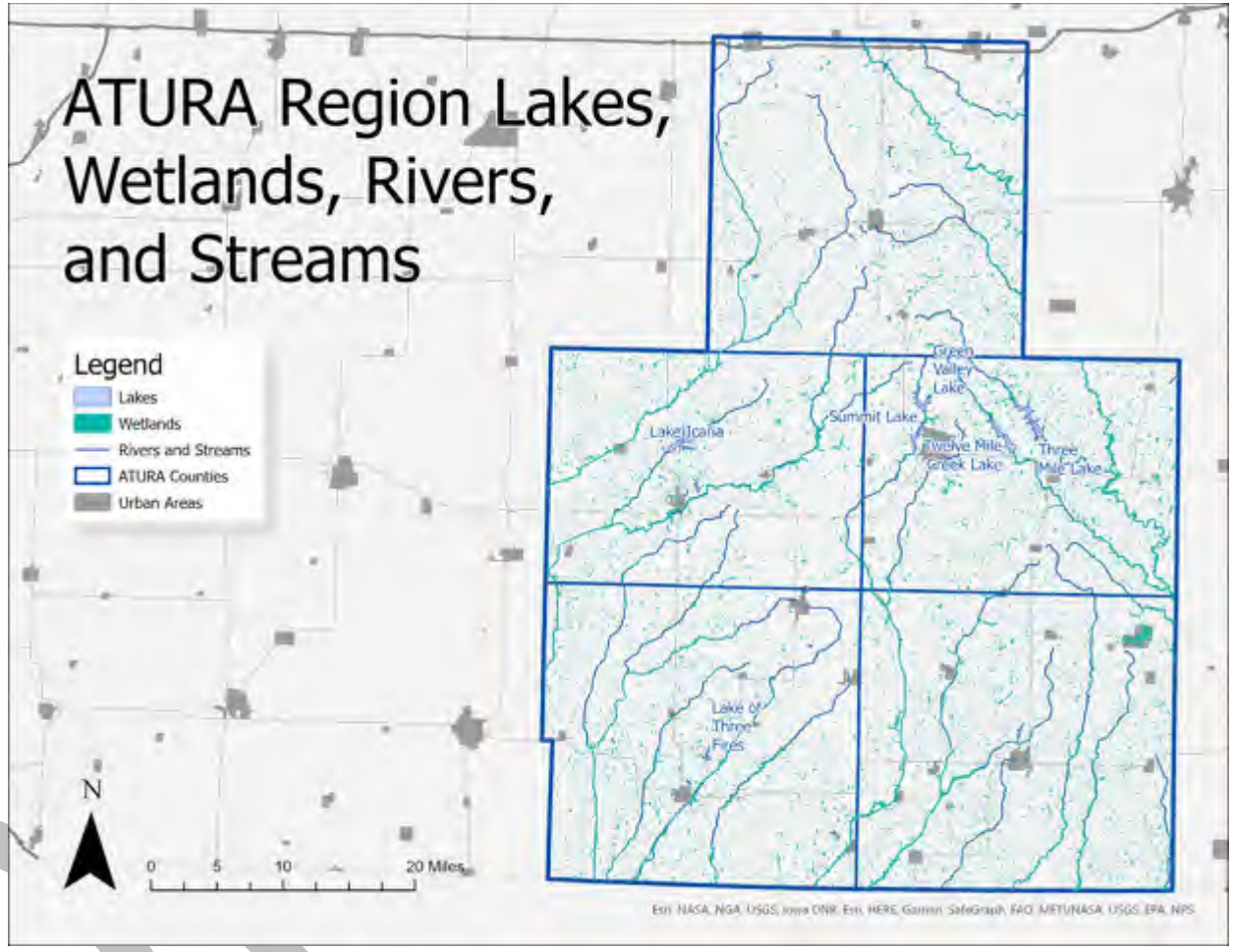


Figure 4-2: The rivers of the ATURA region. *Data from Iowa DNR.*

WETLANDS

Wetlands are the link between land and water. They are the transition zones where the flow of water, the recycling of nutrients and the energy of the sun meet to produce a unique ecosystem. Wetlands are a place where plants and animals live amid standing water or saturated soils, housing the majority of Iowa's endangered species. Many invertebrate species are adapted to live in freshwater wetlands. Wetlands are valuable for people too. In the past 150 years, however, the majority of

wetlands have been destroyed. In Iowa alone, over 90 percent of wetlands have been drained for agriculture and development. Wetlands and riparian areas are part of hydrological, ecological, and cultural systems that function within watersheds. Based on National Wetlands Inventory (NWI) data, the largest percentage (approximately 59.9 percent) of Iowa's existing wetlands and riparian areas are vegetated wetlands (such as marshes, potholes, sloughs, fens, and riparian forests). Approximately 30 percent of Iowa's wetlands and riparian areas are pond, lake, and reservoir habitats. The remaining 10.1 percent of Iowa's wetlands and riparian areas are river and stream habitats. The ATURA region contains 35,717.7 acres of wetland areas (according to the National Wetlands Inventory). Figure 4-4 shows the region's wetlands, lakes, and rivers.



WATERSHEDS

A watershed is the area of land that drains into a lake or stream. Water traveling over the surface or through groundwater may pick up contaminants like sediment, chemicals, and waste and deposit them in a body of water. Watersheds come in all sizes; they can cover entire states and regions, like the Mississippi River watershed, or they can be as small as a few city blocks or farm fields. Careful management of watersheds is an effective way of protecting property from flood damage, controlling erosion, and preserving wildlife. Watersheds are classified according to Hydrologic Unit Code (HUC), which is followed by a number representing the "tier" of that watershed. HUC 2 watersheds are the largest, and HUC 12 watersheds are the smallest.

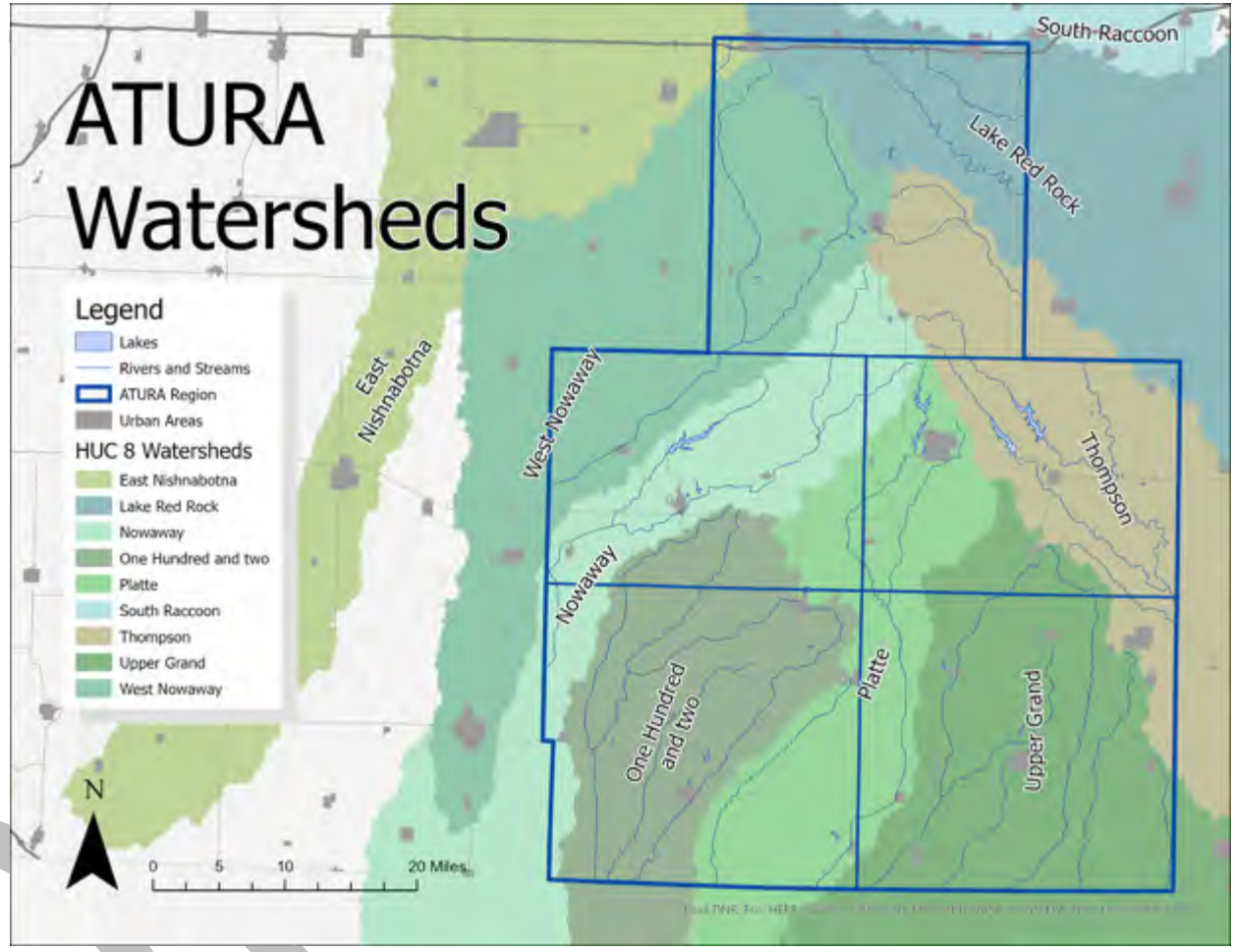


Figure 4-3: The HUC 8 watersheds of the ATURA region. *Data from Iowa DNR.*

The ATURA region is split between two major watersheds: the Missouri and Mississippi. Most of the region's area drains towards the Missouri River (which drains into the Mississippi), while northeastern Adair county and a small portion of northeastern Union county drain towards the Mississippi river through Lake Red Rock.

Watershed management projects are keeping pollutants from reaching the regions rivers. One of the largest projects, Three Mile Lake, has a 23,230-acre watershed stretching from northern Union County into southern Adair County. The Three Mile Lake Erosion and Water Quality Project focused on controlling sediment delivery to the lake by helping control actively eroding gullies. Three Mile Lake provides drinking water to seven counties.

FLOODPLAINS

The Iowa Department of Natural Resources (DNR), along with the Iowa Flood Center and other partners, has created new, comprehensive, accurate floodplain maps for Iowa cities and counties. These work maps show the boundaries of flooded areas with the 1 percent annual chance (formerly 100-year) and 0.2 percent annual chance (formerly 500-year) floods. The data is shown in Figure 4-5.

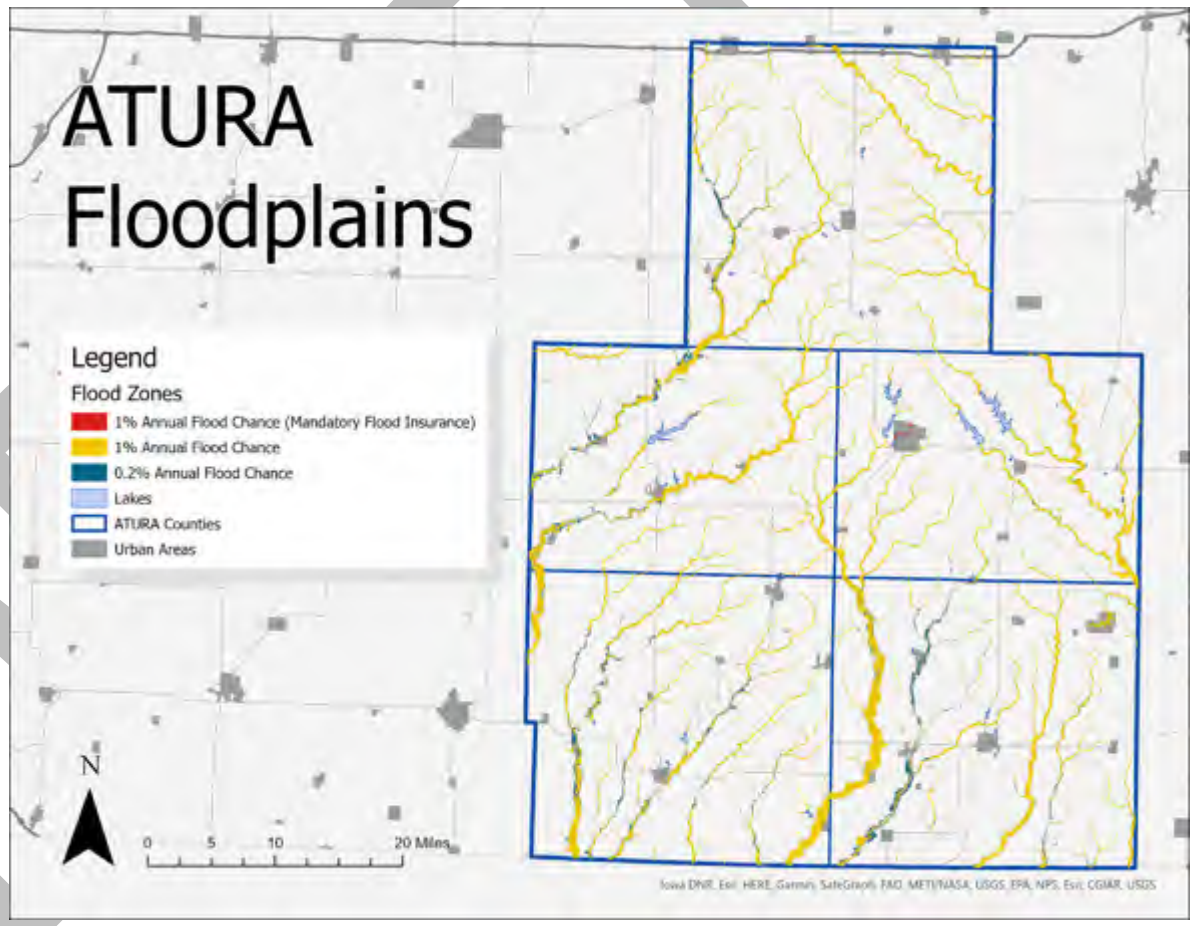


Figure 4-5: Floodplain designations within the ATURA region. ***Data from Iowa DNR and Iowa Flood Center.***

IMPAIRED WATERS

Lakes and stretches of streams and rivers in Iowa have specific designations, based on what they are used for, such as recreation, drinking water, or maintaining a healthy population of fish and other aquatic life. Iowa must report on its progress in meeting water quality

goals to the U.S. Environmental Protection Agency every two years. "If the water quality in the stream or lake prevents it from fully meeting its designated use, it does not meet Iowa's water quality standards and is considered "impaired." This is named after section 303(d) of the federal Clean Water Act and means that the stream or lake needs a water quality improvement plan written (also known by a technical name, Total Maximum Daily Load, or TMDL)". According to the DNR, the ATURA region has 5 impaired rivers and 13 impaired lakes. The impaired waters can be found in Figure 4-6. Once the US EPA approves a water quality improvement plan, the body of water is moved off the 303(d) list. Even though the water body is no longer on the 303(d) list, it is still considered impaired until an assessment shows that it meets water quality standards.

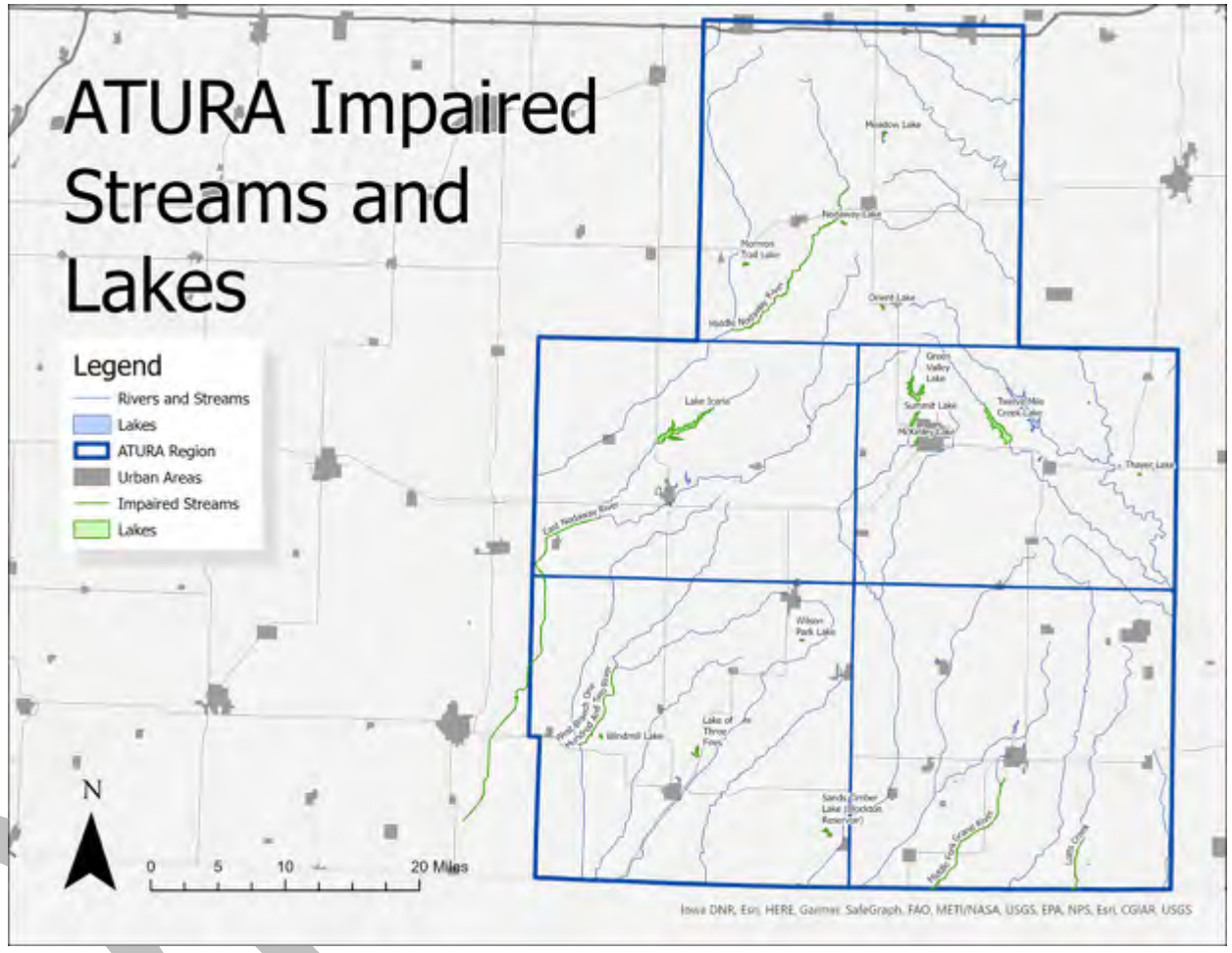


Figure 4-6: The impaired waters of the ATURA region. ***Data from Iowa DNR.***

HISTORIC AND ARCHEOLOGICAL RESOURCES

The ATURA region is rich in history and American heritage. Buildings, structures, Native American historic and archeological sites, as well as prehistoric artifact areas dot the landscape. The FAST Act continues its effort to protect these resources, as does the basic tenet of this plan. Projects that use federal funding mandate a study for historical sites that may be affected or disrupted by the introduction of a new transportation facility of the major improvement to an existing transportation element.

The National Register of Historic Places is the Nation's official list of cultural resources worthy of preservation. Authorized under the National Historic Preservation Act of 1966, the National Register is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources.

There are numerous districts, sites, buildings, structures, and objects located with the ATURA region listed in the Register as significant in American history, architecture, archeology, engineering, and culture. Table 4-3 lists the historic places within the ATURA region.

County	Property Name	Address Description	City
Adair	Adair Viaduct	Business 80 over IAIS Railroad	Adair
	Adair County Courthouse	Courthouse Sq, Iowa Ave and 1st St	Greenfield
	Warren Opera House Block and Hetherington Block		Greenfield
	Loucks Grove Church	7 mi N of jct SR25 & SR92, 3 mi E, 1.5 mi N on unnamed co rd	Greenfield
	Hotel Greenfield	SW corner of Iowa Street and 1st Street	Greenfield
	Adair County Democrat/Adair County Free Press Building		Greenfield
	Greenfield Public Square Historic District	102-362 Public Sq, 201-215 S 1st St, 107-110 E Iowa	Greenfield
	Catalpa	2 mi. S. of Jct P33 and G53, on P33; Then 1 mi W.	Orient
	Chicago, Rock Island and Pacific Railroad: Stuart Passenger Station		Stuart
Adams	Corning Opera House		Corning
	Adams County Jail		Corning
	Snider Bridge	4.2 mi W of Corning over unnamed stream	Corning
	Corning Commercial Historic District	513-824 Davis Ave, 701-829 Benton Ave and cross sts	Corning
	Odell, Noah, House		Nodaway
Ri ng	Beaconsfield Supply Store		Beaconsfield
	Buck, W. J., Polygonal Barn	3 mi SE of Diagonal	Diagonal

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	Shay, Lee, House	1.5 mi NE of Maloy	Maloy
	Ringgold County Courthouse		Mount Ayr
	Ringgold County Jail		Mount Ayr
	Middle Fork Methodist Episcopal Church	4.5 mi SE of Redding	Redding
Taylor	Lenox Round Barn		Bedford
	Taylor County Courthouse	Court Ave between Pearl and Jefferson	Bedford
	Bedford Oil Company Service Station		Bedford
	Bedford Public Library		Bedford
	Bedford Commercial Historic District	200-500 bl Main St, 500-600 bl Court, 500 bl Central	Bedford
	Bedford House		Bedford
	Lenox Hotel		Lenox
Union	Odd Fellows Block		Afton
	Grand River Bridge	9.1 miles E of Arispe over Grand River	Arispe
	Iowana Hotel		Creston
	U.S. Post Office	222-224 N Maple St	Creston
	Chicago, Burlington, and Quincy Railroad: Creston Station		Creston
	Jefferson Elementary School		Creston

Table 4-3: National Historic Register places within the ATURA region. ***Data from National Register of Historic Places.***

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THREATENED OR ENDANGERED SPECIES

The flora and fauna of a region provide any area with a diverse and unique setting. Woodland animals, birds, fish, landforms, and even insects provide an area with a certain signature and coexist with the people who live there.

Transportation projects can sometimes infringe on the natural habitat of non-human species and the natural environment. Endangered species, indigenous species and relevant issues related to their habitat will be mitigated as required to maintain their existence while still allowing for transportation improvements that are within the region. According to the U.S. Fish & Wildlife Service, the following animals and plants found within the ATURA region are considered threatened or endangered.

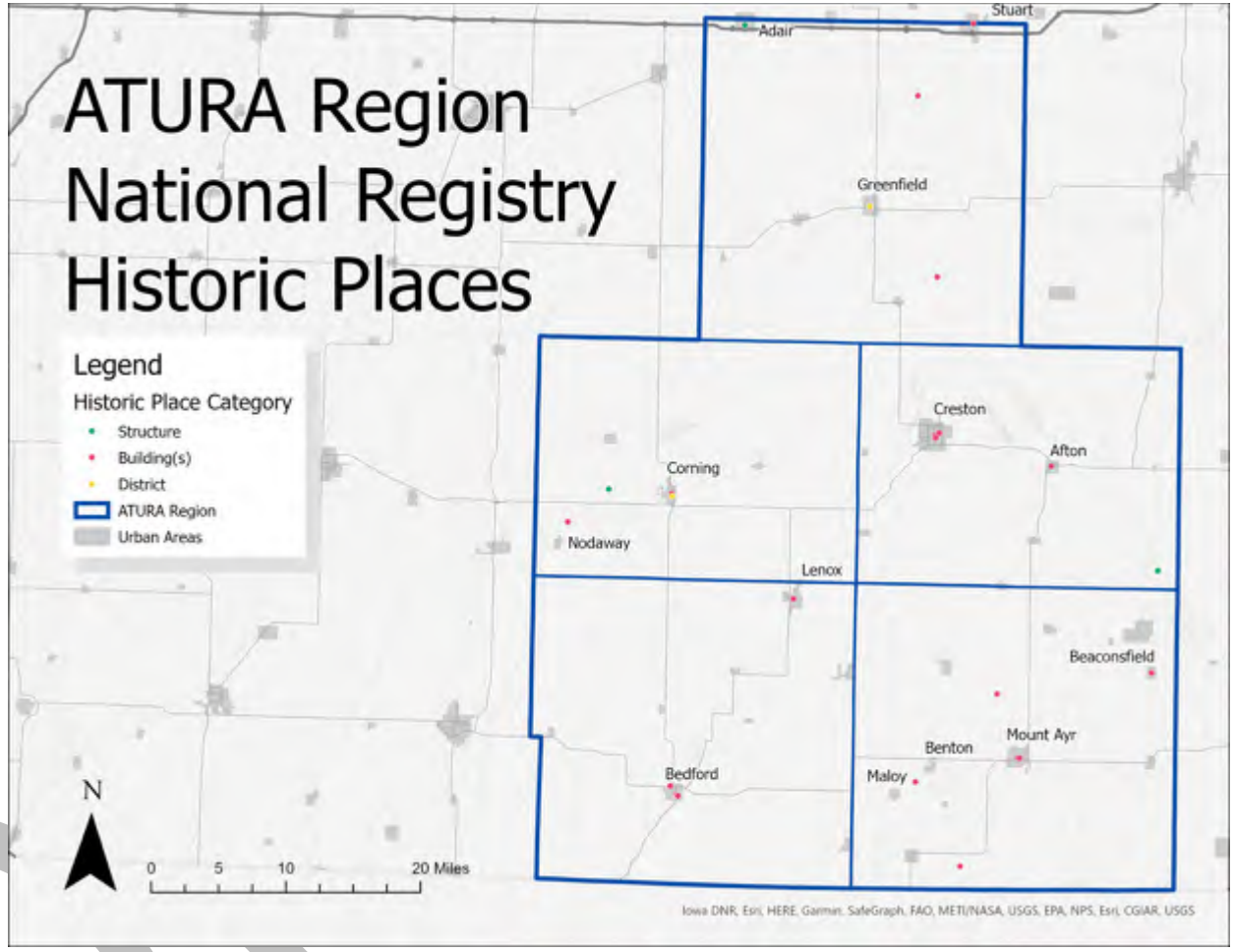

Figure 4-7: Locations listed on the National Register of Historic Places within the ATURA region. ***Data from National Register of Historic Places.***

Name	Group	Scientific Name	Status
Monarch Butterfly	Insects	*Danaus plexippus*	Candidate
Prairie bush-clover	Flowering Plants	*Lespedeza leptostachya*	Threatened
Indiana bat	Mammals	*Myotis sodalis*	Enangered
Northern Long-Eared Bat	Mammals	*Myotis septentrionalis*	Threatened
Western prairie fringed Orchid	Flowering Plants	*Platanthera praeclara*	Threatened
Mead's milkweed	Flowering Plants	*Asclepias meadii*	Threatened
Eastern prairie fringed orchid	Flowering Plants	*Platanthera leucophaea*	Threatened

Table 4-4: Threatened and endangered species within the ATURA region. ***Data from U.S. Fish and Wildlife Service.***

TRANSPORTATION PLANNING AND THE ENVIRONMENT

In the ATURA region, it is important to preserve and protect the natural and cultural resources that make the area unique. Protection should occur not only to comply and follow environmental regulations, but also to maintain the benefits of any special areas and resources within the region. RPA 14/ATURA has no intention to developed any existing or planned projects that would require any mitigation activities. Our primary environmental goal is to locate and build projects without adverse impacts.

The overwhelming priority is to maintain the current roads and bridges, and reduce infrastructure where possible. Limited transportation alternatives funds should create extensions from existing trails where appropriate, as well as be used to complete trails to select projects that continue building the trail networks. Currently, ATURA is not aware of any significant mitigation actions that should be done due to a large future construction project. There may need to be some mitigation projects along US Highway 34 if a four-lane project or Super 2 goes across Adams and Union County in the future. There do not appear to be flooding or wetland problems. ATURA should consider the following related to any multi model transportation project:

- Act to completely eliminate any adverse environmental impact during the construction of or as a result of the operation of a project.
- Minimizing impact by altering the design of a project
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment

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- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
- Compensating for the impact by replacing or providing substitute resources or environments.
- Abandoning a project if proper mitigation activities are impossible, and/or the environmental impact of the project is too severe.

If the environmental impact of a project is unknown by RPA 14/ATURA staff or Transportation Technical Committee members, RPA 14/ATURA will consult with the conservation director of the county where the project is located for the precise impact of the project and suggestions for mitigation activities.

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4.5 MOBILITY

Mobility is an issue within the ATURA region at all scales. A large portion of the region's population does not live within an urban area, and the services available vary from town to town. This makes it difficult to reach hospitals, grocery stores, and other important locations. As the region's population continues to age, mobility issues will continue to worsen.

In addition, bicycle and pedestrian infrastructure is lacking all across the region. Sidewalk networks are non-existent in smaller towns, and inconsistent in larger cities. In many situations, pedestrians must walk on the street or cross without a crosswalk.

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4.6 LAND USE

Transportation Improvements presented in this LRTP will be planned and engineered taking into consideration the land use requirements of each local jurisdiction. Compatibility and coordination among different jurisdictions will be encouraged and considered in the programming stage of the transportation improvement.

Actions and policies presented by this LRTP will act to guide transportation officials to work with local governments to provide cooperation and coordination of transportation planning and land use activities. The region is rural and depends on the agriculture industry, with most communities having less than 2,500 persons. Creston is the exception, having 7,536 in the 2020 Census. The six largest communities in the region have land use plans; however, most plans have not been updated within the last 5 years and many do not have current land use maps available in digital format. These are not official city maps and may not reflect recent changes. Cities would need to be contacted to obtain updated and accurate information.

In some areas of the region there is concern about the development of property that lies outside corporate boundaries and in rural subdivisions that create a demand for public services. Providing roadways capable of handling the quantity and type of traffic generated by these developments must often be considered. Large animal confinement facilities cause a dilemma because, while they contribute to the region's economy, they can also add contaminates to the region's lakes, rivers, and wetlands through runoff, and may affect the air quality for their neighbors. The heavy truck traffic generated by these facilities is often a concern. Likewise, ethanol plants entail a great need for water and generate heavy truck traffic but provide a local market for farmers. Concerns over this type of developed point to an increasing call for serious discussions and up-to-date land use plans throughout the region. Although most of the larger towns in the region have land use planning, the rural areas do not.

LAND COVER

The National Land Cover Database (NLCD) provides nationwide data on land cover and land cover change at a 30m resolution with a 16-class legend. NLCD offers 8 datasets of land cover for years 2001, 2004, 2006, 2008, 2011, 2013, 2016, and 2019. The data is presented as a grid 30-meter by 30-meter cells, and each cell is given a land cover classification based on the area within each cell. Because the cells are so large the data is somewhat imprecise, but it is useful at larger scales. Figure 4-8, Figure 4-9, Figure 4-10, and Figure 4-11 show the land cover of the ATURA region between 2011 and 2019.

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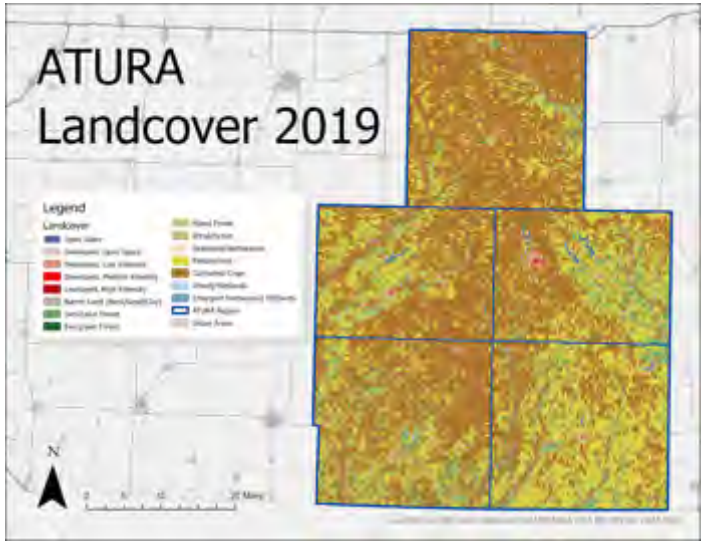

Figure 4-8: Land cover in the ATURA region from the 2019 NLCD. *Data from the Multi-Resolution Land Characteristics Consortium (MRLC).*

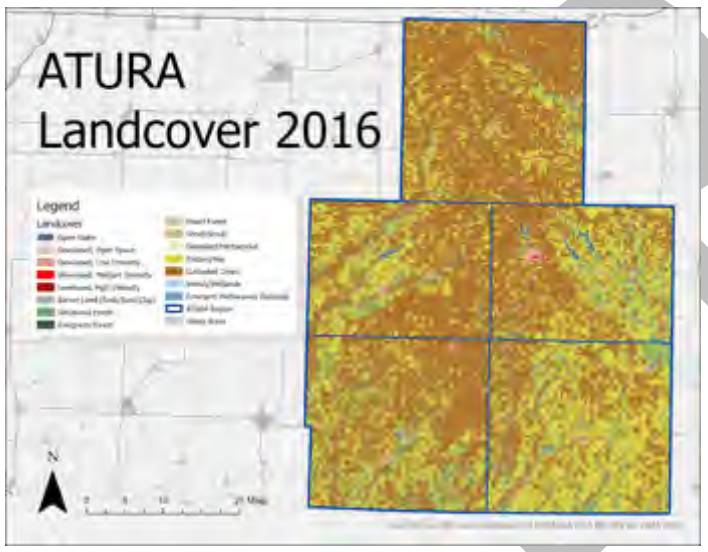

Figure 4-9: Land cover in the ATURA region from the 2016 NLCD. *Data from MRLC.*

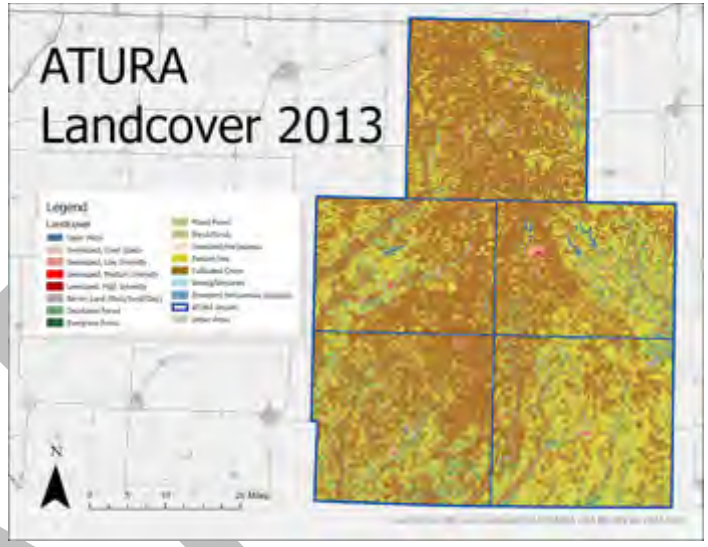

Figure 4-10: Land cover in the ATURA region from the 2013 NLCD. *Data from MRLC.*

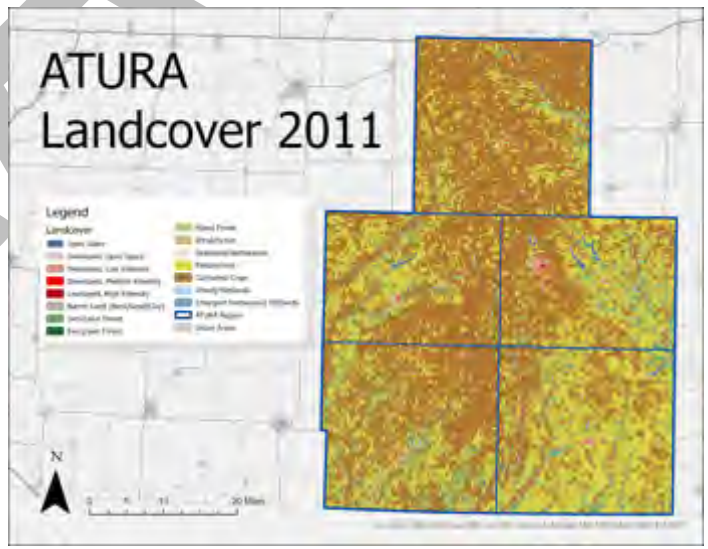

Figure 4-11: Land cover in the ATURA region from the 2011 NLCD. *Data from MRLC.*

According to NLCD data, between 2011 and 2019 the ATURA region lost almost 473-acres of cultivated crop/pasture/hay land. This lost represents a change of only -0.03% of the region's agriculture land. This change is most likely due to smart farming practices such as farm ponds, grassed waterways, buffer zones that aim to decrease runoff into the region's water bodies. In the same time, the region gained 370-acres (3.59%) of open water, 274-acres (0.38%) of developed area, and 70-acres (0.54%) acres of wetlands. Despite the -0.03% change in agricultural land, that land cover will likely remain dominant across the region for the foreseeable future.

Sudden and unrestrained urban sprawl is also unlikely, given the region's rural quality and declining population. While the region's urban areas have not been expanding horizontally, the intensity of development in the region's cities is increasing. Between 2011 and 2019, the region experienced a 4% decrease of developed open space, a 21% increase of medium intensity development, and 23% increase in high intensity development. This shift would indicate that the region's cities are becoming more urban, which would put less of a strain on the region's roads, but could increase runoff into the region's water bodies.

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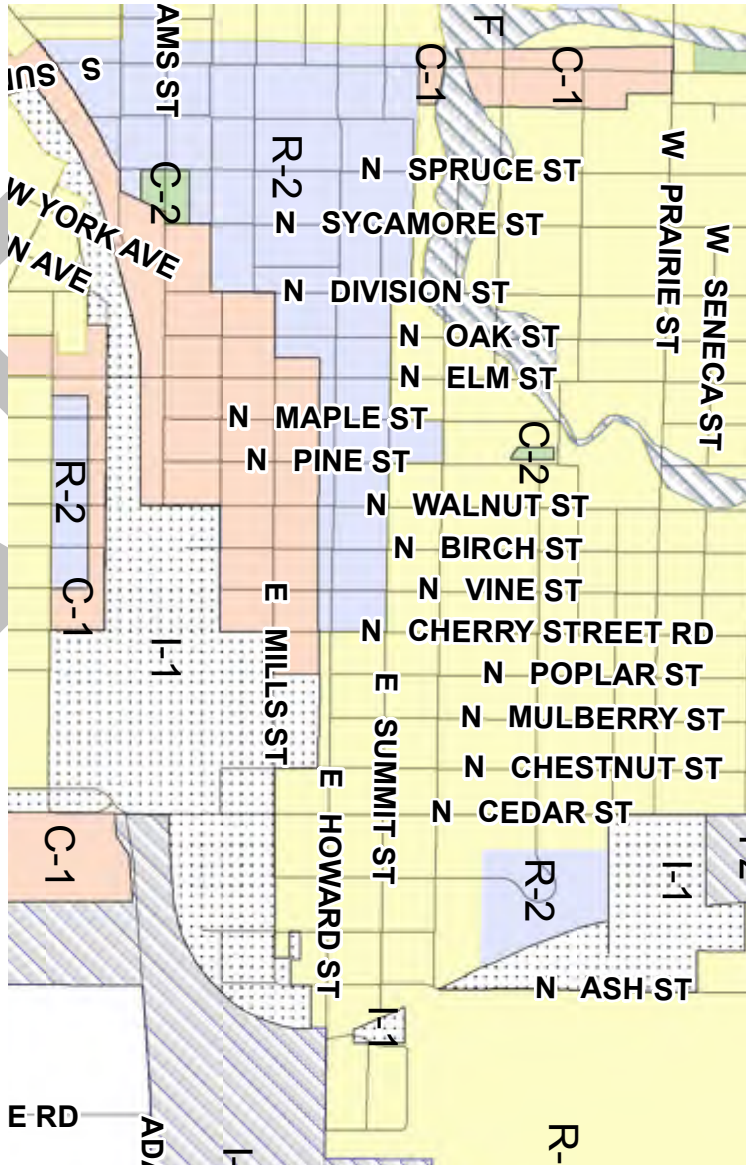
Land use can be defined as the human management of land. In land use planning, areas are often classified to accommodate a variety of uses, such as residential, commercial, industrial, agricultural, and more. Land use decisions cause a chain reaction that impact transportation mode, and infrastructure necessity. Sprawling cities create a larger dependence on personal vehicles and functionally eliminate walking or cycling as a viable mode.

Coordinating land use and transportation planning is essential in creating more sustainable, vibrant, and well-connected communities. In addition to creating healthier, safer, and more efficient communities, sensible land use decisions are essential to Iowa's economy, where urban expansion can permanently destroy valuable farmland. Urban sprawl also creates an increased burden on taxpayers, as cities must provide utilities to new, low density development.



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4.7 MAINTENANCE

Routine maintenance refers to the daily functions and activities that provide for an acceptable level of service on the transportation system. Typical highway activities, for example, may address maintenance needs related to potholes, pavement markings, roadway shoulders, snow removal, traffic signs, and signals. Maintenance activities usually address immediate system needs, but they do not address underlying infrastructure deterioration due to time and usage.

In recent years, especially in light of limited funding and increasing costs, the efficient management of Iowa's existing transportation system has been identified as the priority investment path. Iowa's citizens have overwhelmingly expressed their support of this stewardship philosophy and keeping the existing system in a state of good repair before pursuing expansion needs. Iowa has the 7th highest road miles per capita in the United States. Funding limitations will make maintaining and preserving the existing system at an acceptable level a challenge and with the ATURA region's declining population, counties will need to choose between closing roads and bridges or allowing them to deteriorate. In addition, the weight of new farm equipment continues to increase, putting a greater and greater stress on public roads and bridges.

ASSET MANAGEMENT

As defined by the American Association of State Highway and Transportation Officials' (AASHTO) Subcommittee on Asset Management, "transportation asset management is a strategic and systematic process of operating, maintaining, upgrading, and expanding physical assets effectively through their life cycle. It focuses on business and engineering practices for resource allocation and utilization, with the objective of better decision-making based upon quality information and well-defined objectives." Given the challenges posed by issues such as aging infrastructure and escalating construction and operating costs, tools such as asset management are increasingly valuable when seeking to balance funding realities with public needs and expectations.

The Iowa DOT has begun an effort to develop and implement asset management strategies. The Iowa DOT believes asset management is necessary to continue providing a high level of service for infrastructure users while balancing maintenance and improvement costs of Iowa's transportation system. The Moving Ahead for Progress in the 21st Century (MAP-21) Act and the FAST Act include the requirement for states to develop transportation asset management (TAM) plans.

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While the TAM plan[16] focuses on bridges and pavements, the transportation network includes a variety of other assets. Iowa DOT works to maintain all of these assets in order to keep travelers safe, promote mobility, and make progress towards state and national transportation goals. The following process improvement initiatives were developed as part of the TAM self-assessment effort in the 2019 TAM plan:

- Implement an asset management governance structure. Iowa DOT has already made progress on this item as described in this TAMP.
- Develop an asset management communications plan that describes how Iowa DOT will communicate with key stakeholders regarding asset management. The plan, which is already under development, will address the strengths, weaknesses, opportunities, and threats to implementing TAM.
- Develop an asset management training plan that identifies who needs asset management training and defines a training strategy for each group.
- Develop asset management procedures for each asset class. The goal of this initiative is to advance each asset class into a mature state so that Iowa DOT can eventually incorporate all assets into its performance-based planning framework.
- Develop a maintenance quality assurance program to apply to the assets managed by Iowa DOT's Districts. This effort focuses on assets beyond bridges and pavements. The goal of the effort is to is to understand the performance of Iowa DOT's maintenance operations and relate outcomes to expenditures.
- Develop an asset management data governance strategy to identify the data and analytical capabilities required to support asset management practices and define an approach to meet these needs in the most efficient and effective manner.
- Develop a formal risk management process to enable Iowa DOT to formally consider risk in investment decisions.
- Develop procedures for managing bridges and pavements throughout their whole life and for incorporating whole-life costs into Iowa DOT's decision-making process.
- Develop a method for performing risk-based tradeoffs between investments in bridges and pavements in order to optimize budget allocations.

[16] https://iowadot.gov/systems_planning/fpmam/IowaDOT-TAMP-2019.pdf

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FUNDING

As mentioned in Chapter 2 the ATURA region's population will continue to decline, and so with it will funding. This will create a disparity between the need to repair and maintain the region's infrastructure, and the funding available. Current funding levels are based off of both population, and road miles. As population decreases, road mileage will become the primary funding source. Any reduction in road mileage (which will reduce maintenance costs and move the region towards a financially sustainable equilibrium) will reduce overall funding. It is likely that the region will become more and more dependent on infrequent federal infrastructure legislation, instead of consistent state funding.

4.8 MANAGEMENT AND OPERATIONS

Traffic on Iowa's roadways has steadily grown over time, which has also increased the potential for crashes and congestion. Optimizing performance of the system is critical to keep traffic flowing in a safe and efficient manner. This is embodied in the strategic approach of transportation systems management and operations (TSMO). The aim of TSMO is to proactively manage and fine-tune the performance of the state's transportation system, particularly by managing or mitigating congestion and incidents. This includes current Iowa DOT strategies such as monitoring the system through traffic cameras and speed sensors, quickly deploying response resources to incidents, and providing traveler information through platforms like Iowa 511. TSMO also includes efforts to prepare for and adapt to changing technology, such as connected and highly automated vehicles and proactively enabling "smart" highway corridors with data and communications capacity.

Mobility challenges occur on Iowa's roadways every day. Recurring congestion, due to issues like poor signal timing or bottlenecks, accounts for a portion of this issue. However, in Iowa the most significant of these challenges are temporary disruptions that take away part of the roadway from use, known as nonrecurring congestion. Primary cause of this type of congestion include bad weather, traffic incidents, and work zones.

Cost-effective TSMO strategies are used to improve service by "taking back" the transportation system capacity lost to congestion without necessarily adding lanes. TSMO is important because it deals directly with the root causes of congestion, offers the potential to improve safety and efficiency, and can help to maximize existing infrastructure capacity through cost-effective strategies. Ultimately, this improves the safety and mobility of the transportation system and helps Iowans travel to their destinations safely, efficiently, and conveniently.

TSMO PLANNING

There has been a significant TSMO planning effort at the Iowa DOT over the past several years. This has included the development of the overall TSMO plan, which has three levels: strategic, program, and service layer.

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TSMO STRATEGIC PLAN

The TSMO Strategic Plan[17] highlights Iowa's challenges, makes the case for TSMO, and describes the vision, mission, goals, and strategic objectives for TSMO. It focuses on the benefits of a comprehensive approach to TSMO to support Iowa DOT's vision, and provides a strategic direction for Iowa DOT's TSMO program and integration. The TSMO Strategic Plan lists six strategic goals that support the TSMO vision and mission, and provide specific direction for the TSMO Program. The six goals are:

1. **Safety** – Reduce crash frequency and severity
2. **Reliability** – Improve transportation system reliability, increase system resiliency, and add highway capacity in critical corridors
3. **Efficiency** – Minimize traffic delay and maximize transportation system efficiency to keep traffic moving
4. **Convenience** – Provide ease of access and mobility choices to customers
5. **Coordination** – Engage all DOT disciplines, and external agencies and jurisdictions to proactively manage and operate the transportation system
6. **Integration** - Incorporate TSMO strategies throughout DOT's transportation planning, design, construction, maintenance, and operations activities

The strategic goals and objectives set the overall direction for TSMO in Iowa and frame the priorities for developing a TSMO Program and for integrating TSMO throughout Iowa DOT. The TSMO Program is the primary mechanism for delivering these Goals, and the TSMO Program Plan articulates the specific organizational procedures and resources, activities, services, and projects needed to realize the strategic TSMO Goals.

TSMO PROGRAM PLAN

The TSMO Program Plan[18] is a companion to the Strategic Plan, which provides the structure for a comprehensive TSMO program. The Program Plan focuses specifically on program development within the Iowa DOT and bridges the TSMO strategic vision with the specific

[17] https://iowadot.gov/TSMO/TSMO-Strategic-Plan.pdf
[18] https://iowadot.gov/TSMO/TSMO-Program-Plan.pdf

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actions needed to achieve the vision. The programmatic focus provides the organizational, procedural, and resource framework needed to move TSMO from a group of ad hoc activities and services to an integrated approach.

SERVICE LAYER PLANS

Based on the program objectives and the recommended actions, the Service Layer Plans provide more detailed recommendations and actions for each of the eight service areas. The Service Layer Plans include discussion and analysis of opportunities and challenges, existing conditions assessment, gap analysis, recommendations, and a more detailed 5-year Serve Layer Plan cost estimate for each service later. As of the writing of this plan, 7 of the 8 Service Layer Plans are complete. The Service Layers and descriptions are:

- **Traffic Management Center[19]:** The round-the-clock hub of traffic coordination and management activities throughout the state.
- **ITS and Communications[20]:** Fixed and mobile traffic sensors, non-enforcement traffic cameras, dynamic message signs, highway advisory radio transmitters, and supporting communications infrastructure.
- **Traveler Information[21]:** Traveler information tools that communicate planned and prevailing traffic conditions, such as Iowa 511 and various social media.
- **Traffic Incident Management[22]:** The coordination of Iowa DOT and its partners' response to routine highway traffic incidents.
- **Emergency Transportation Operations[23]:** The coordination of Iowa DOT and its partners' response to large scale incidents (not necessarily highway related), such as flooding, tornadoes, epidemics, etc.
- **Work Zone Management[24]:** The planning and deployment of various strategies to maintain traffic flow and safety through highway work zones.
- **Active Transportation and Demand Management:** Innovative strategies to maximize available capacity of roadways, such as ramp metering, variable speed limits, lane control signing, active signal control, and time-of-day shoulder use.

[19] https://iowadot.gov/TSMO/TMC_Service_Layer_Plan.pdf
[20] https://iowadot.gov/TSMO/ServiceLayerPlan3.pdf
[21] https://iowadot.gov/TSMO/ServiceLayerPlan1.pdf
[22] https://iowadot.gov/TSMO/ServiceLayerPlan2.pdf
[23] https://iowadot.gov/TSMO/ServiceLayerPlan5.pdf
[24] https://iowadot.gov/TSMO/ServiceLayerPlan4.pdf

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- **Connected and Autonomous Vehicle[25]:** While still an emerging technology, this service layer considers the challenges and opportunities and vehicle-to-vehicle and vehicle-to-infrastructure connectivity and autonomous vehicles to improve vehicle safety and efficiency.

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[25] https://iowadot.gov/TSMO/IowaCAT.pdf

4.9 SAFETY AND SECURITY

Safety is a foundational consideration in this Plan. The department emphasizes safety in all efforts, including enforcement, education, engineering, and emergency response. Safety is most often thought of in terms of the highway mode, but each modal area is an important part of an interrelated transportation system. The overriding goal for all aspects of transportation safety is to reduce injuries and fatalities, thereby reducing personal and economic losses experienced by families, employers, and communities, and improving Iowa's quality of life. Educating users, designing safer facilities, and joining with partners in collaborative efforts can achieve this.

SAFETY TRENDS

Between 2015 and 2020, there were 69 fatalities on the ATURA region's roadways. Between 2015 and 2020, fatalities increased from two to twenty. Even treating 2015 as an anomaly, fatalities are trending upward.

Injury and fatality crashes involving pedestrians or pedalcyclists (defined as a bicycle, tricycle, unicycle, pedal car; a two-wheeled, nonmotorized cycle or a vehicle that has three or four wheels but is propelled by pedal power) are not a significant portion of crashes or fatalities. This is most likely tied to the lack of bicycle/pedestrian infrastructure in the region, not because of increased safety.

An in-depth analysis of crashes in the ATURA region can be found in Chapter 3.

FEDERAL LEGISLATION

The current federal surface transportation reauthorization legislation, the FAST Act, continued many comprehensive approaches to highway safety that started with previous reauthorization legislation. One key provision that has been continued under the FAST Act legislation is the Highway Safety Improvement (HSIP) [link], which was created "to achieve a significant reduction in traffic fatalities and serious injuries on public roads."

The Fast Act continues the mandated state Strategic Highway Safety Plan (SHSP) and requires each state's transportation department to lead diverse road safety disciplines, such as engineering, education, enforcement, and emergency response services, in collaborating to develop their state's plan. Proposed strategies are required to address safety needs of all public roads, include projects or strategies that are regularly evaluated, and to be reported annually to the US DOT secretary.

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IOWA'S SHSP[26]

According to the US DOT, a SHSP "is a statewide coordinated safety plan that provides a comprehensive framework for reducing highway fatalities and serious injuries on all public roads." The purpose of the SHSP is to identify and establish statewide goals, objectives, and a key emphasis area to address areas of greatest need to make roadways safer. The HSIP requires state transportation departments develop an SHSP that:

- Includes consultation from a variety of stakeholders during the development process.
- Analyzes and make effective use of crash data.
- Addresses the Four E's (engineering, enforcement, education, and emergency services) plus management and operation.
- Considers the safety needs of all public roads.
- Describes a program of projects or strategies to reduce or eliminate safety hazards.
- Is implement and evaluated.

In 2019, Iowa's traffic safety community finalized an update to Iowa's SHSP, which was previously updated in 2017. The implementation and progress of the SHSP is evaluated on an annual basis over the five-year planning period starting January 2019 and ending December 2023. The ultimate goal of the SHSP is zero fatalities, however, interim annual goals aligning with the HSIP performance measures will be developed during the plan period.

HAZARD MITIGATION

It is important the jurisdictions plan and prepare for possible emergencies that may occur in their area regardless of whether those emergencies are natural or man-made. While it is impossible to prepare for every emergency situation, a jurisdiction can plan ahead for the most common or most likely types. This planning and preparedness generally falls to the jurisdiction's emergency management team. Each of the five counties in the ATURA region has an emergency management team. This team maintains the county's emergency plans. The emergency management team also works with each agency in the county that would have a role in responding

[26] https://iowadot.gov/traffic/pdfs/IowaSHSP.pdf

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to an emergency, making sure that the responsibilities of each is clear and that they are able to communicate with other emergency response agencies.

One of the primary responsibilities of the emergency management team is to maintain an emergency preparedness plan for the county. This plan contains information on specific natural or man-made incidents that may occur within the county, identifying response measures and the public safety agencies responsible for those measures. In addition to having an emergency preparedness plan, it is also important to have an evacuation plan or evacuation maps to assist with protecting people if a large-scale disaster such as a chemical leak/spill or explosion were to occur. These plans outline critical infrastructure that needs to be protected, potential mitigation actions to reduce the loss of life and damage to facilities, and identifies vulnerabilities. It allows the county and cities involved in the plans to address potential disasters by safeguarding critical infrastructure and improving response capabilities.

All five counties in the region have Federal Emergency Management Agency (FEMA) approved Multi-jurisdictional Pre-Disaster Mitigation Plans in place. Each plan is scheduled for updating every five years in order to maintain FEMA eligibility.

SECURITY

Due to the multiple roles transportation plays in our society, the security of our transportation infrastructure is very important. Some modes of transportation are easier or more difficult to secure than others. Transit and aviation can attempt to secure the facilities critical to their operation in order to prevent any disruption of service. Securing other modes, such as road and rail are more difficult. In particular it is impossible to monitor or secure every mile of road or every mile of rail. Instead, key areas or structures may be checked and alternative routes planned in the event of a disruption. Security measures for any transportation mode are enacted by the operating agency in response to the federal and state mandates as well as perceived threats.

Aviation security plans have been established for many airports located in the State of Iowa. Airport details presented in the Aviation section of this document reference these plans for airports located in the ATURA region.

Southern Iowa Trolley (SIT) has worked to install surveillance cameras on all vehicles in its fleet. This permits the vehicle cabin to be monitored for safety and security issues. In addition to cameras on all of their vehicles, SIT has installed of surveillance cameras around

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their current facility. Should a new facility be constructed or acquired it is likely that there be a fence and surveillance cameras to provide additional security for their vehicles and equipment.

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4.10 TECHNOLOGY

Technology is rapidly changing in the field of transportation. These changes will affect more than just mode choice and auto ownership; the impacts will likely affect how the future economy will function. Although experts disagree with how quickly some innovations will be adopted., it is clear technology will continually be integrated into the transportation system and will change the way people travel. As the ways people travel and goods are transported continues to change, RPA 14/ATURA will continue to adapt to those changes and help ensure Iowa has a safe and reliable transportation system.

AUTOMATED TRANSPORTATION

Automated vehicle (AV) and connected vehicles (CV) technologies have been rapidly developing and are likely the most anticipated form of technological advancement in the transportation industry. Although both AV and CV technologies are often talked about synonymously, the two emerging technologies have several differences. AV use a combination of light detection and ranging (LIDAR), global positioning systems (GPS), optical cameras, and processing power to analyze the roadway and make decisions for the driver. Several car manufacturers are developing AV for commercial use including Tesla and Waymo. Tesla is the only manufacturer with an AV on the market.

CV use wireless communication in various forms such as vehicle to vehicle (V2V), vehicle to pedestrian (V2P), and vehicle to infrastructure (V2I) to inform the driver of changing conditions of the roadway via sensors. These communications are collectively called V2X and are intended to improve the safety and operation capacity of roadways. The sensor technology necessary for handling such dynamic and complex problem solving is becoming more commonplace and is expected to not only advance CV technology, but also result in large amounts of data gathering.

One of the biggest attractions of AV and CV technology is the potential to eliminate driver error. This would have substantial improvements to transportation safety, as the vast majority of crashes are at least partially caused by driver error. By eliminating human error, future AV and CV technology could result in substantial reductions in the number of vehicle crashes and the number crash injuries and fatalities. Not only could this technology reduce the amount of human suffering, but it could also reduce the amount of economic loss from property damage and physical injury.

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LEVELS OF AUTOMATION

Automation in vehicles exists at varying levels of complexity. Because of this, the US DOT's National Highway Traffic Safety Administration has defined the following five levels of automation.

- No automation (Level 0): The driver is in complete and sole control of the primary vehicle controls at all time.
- Function-specific automation (Level 1): Automation involves one or more specific control functions (e.g., electronic stability control or precharged brakes).
- Combined function automation (Level 2): Automation of at least two or more control functions designed to work in unison, relieving the driver of control of those functions (e.g., adaptive cruise control in combination with lane centering).
- Limited self-driving automation (Level 3): At this level of automation, the driver is not expected to constantly monitor the roadway. The vehicle monitors roadway and environmental conditions and controls the vehicle accordingly. The driver is expected to be available for occasional control during certain conditions with a sufficient level of transition time to regain control of the vehicle.
- Full self-driving automation (Level 4): The vehicle is designed to perform all safety critical driving functions and monitor roadway conditions for an entire trip and would not necessarily need a human driver for trips.

ELECTRIC VEHICLES

Electric vehicles (EV) have begun to emerge as an alternative to petroleum fueled vehicles. EV's produce no emission, and run off of batteries that can be recharged at charging stations or at the owner's home. Critics point out that EV's do not eliminate emissions, because the power used to charge the batteries generally comes from a coal or natural gas power plant.

In the ATURA region, charging stations are the main limiting factor that restricts the utility of EV's. The nearest charging station is in Winterset, Iowa, which is outside of the region. However, there are several stations available in the Des Moines and Omaha metropolitan areas. As the popularity of EV's grow, the need for charging stations within the ATURA region will increase. In addition, because EV's can be charged from the home, demand for electricity will increase drastically (especially in the evening when commuters return from work). Also, the need for gas stations will decrease.

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POTENTIAL IMPACTS

Emerging trends and technologies will likely have a range of benefits that apply to the field of transportation and beyond. The advancement of AV and CV technologies has the potential to increase the safety performance of roadways along with the operational capacity. It is believed this technology would result in numerous benefits such as fewer traffic incidents, increased reliability, reduced congestion, and more efficient use of the roadway system. Efficiency of operation coupled with clean energy technology could have substantial benefits to the environment. CV and AV may have significant effects for commercial industries, as they should help reduce costs and increase reliability and efficiency. In addition, full automation would potentially provide a solution to the increasing truck driver shortage in the country.

Examples of impacts could include changes in areas such as patterns of vehicle ownership, the amount of parking needed by cities and individual households, the distance people live from work, and many others. The potential impacts of technology and changing travel patterns lead to some types of projects being considered higher risk, in the sense that they may become less necessary or need to be re-evaluated. Examples of these types of projects include the following.

- High-dollar investments
- Purchasing right of way
- Roadside infrastructure (e.g., dynamic message signs, overhead sign trusses)

EV technology will also have major impacts on the region. As mentioned before, the need for charging stations throughout the region will grow, and the need for gas stations will fall. Also, the residential demand for electricity will increase, putting additional strain on the power grid.

Technology changes may have significant implications at not only the planning level, but at the project development level. Major projects take from several years to multiple decades to design and build, and the changing nature of transportation may require adaptation and scope refinement not just before, but also during the project development process.

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4.11 PUBLIC INPUT

A variety of outreach methods were employed in order to gather data, obtain information about the needs and desires of the public, and to identify the priorities of those who live and work in the ATURA region. Input was solicited through an online survey, as well as SWOT analysis interviews with RPA 14/ATURA Transportation Technical Committee members.

SWOT ANALYSIS

The goals and objectives included in the Action Plan were developed using and analysis of the strengths, weaknesses, opportunities, and threats (SWOT Analysis) of the region's transportation system. Because of time constraints, one-on-one interviews with Transportation Technical Committee (TTC) members were conducted, and handwritten notes were taken. Notes from these interviews can be found in [Appendix Reference].

A common strength identified by TTC members was the coordination between counties through RPA 14/ATURA and on their own. Other common responses are recreation amenities and grant writing. Lack of sufficient funding and declining local/regional population were common weaknesses expressed. TTC members expressed that the regions abandoned rail lines are an opportunity for a recreational trail network. RPA 14/ATURA's reliance on state funding was expressed as a weakness because the Iowa DOT could withdraw support for RPA's if they felt they was not working.

LRTP SURVEY

An online LRTP survey was used to gather input from residents of the region. In June of 2021 links to take a LRTP survey were emailed to each of the cities and counties in the region, as well as county conservation directors, chambers of commerce, economic development organizations, elected officials, ISU extension offices, public health departments, and interagency groups in order to obtain their input for this LRTP. The link to the survey was also shared in the Southern Iowa Council of Governments (SICOG) Newsletter. People who live in or work in the ATURA region were invited to take the survey that inquired about their opinions on how best to improve mobility, increase decisions. In total, 108 responses to the survey were received from across the region, from various age groups and from respondents with a variety of occupations and incomes. The hardcopy survey is shown in Appendix B.

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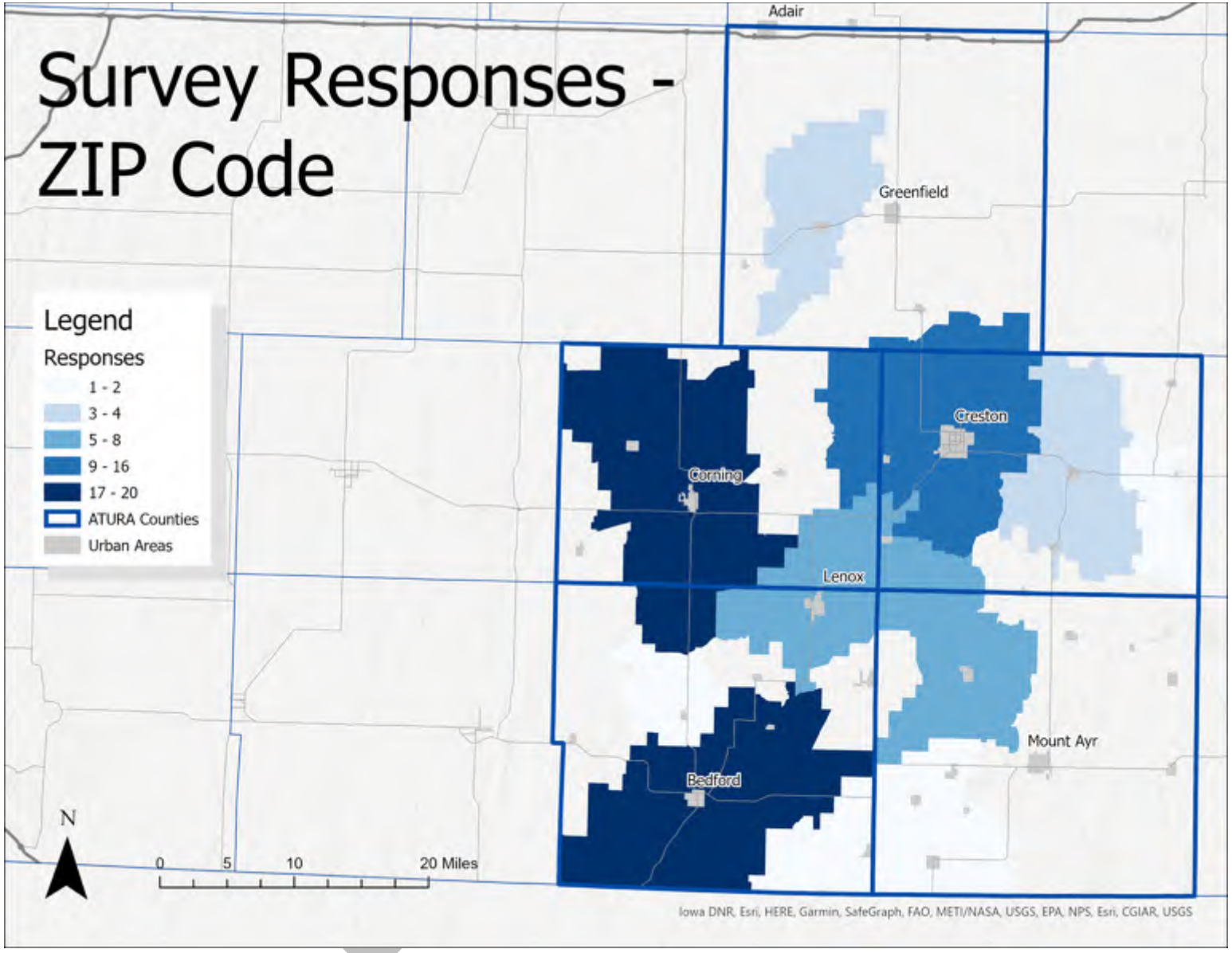

Figure 4-12: Survey responses by ZIP code. 77 percent response rate.

DEMOGRAPHICS

Respondents were asked demographic information at the end of the survey, resulting in lower response rates. Respondents were asked to give their ZIP code to ensure that they live within the ATURA region. Figure 4-12 shows the location of survey responses. Figure 4-13 shows the age of respondents, Figure 4-15 shows the gender of respondents, and Figure 4-14 shows the income of respondents.

Generally, respondents were older, wealthier, and generally female. Also, despite Creston being the largest city in the ATURA region, there were a larger amount of responses from the Corning and Bedford ZIP codes.

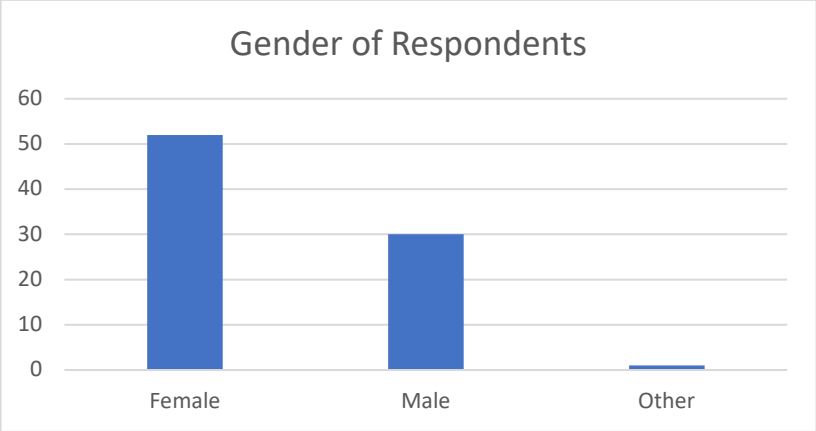

Figure 4-15: Gender of respondents. 77 percent response rate.

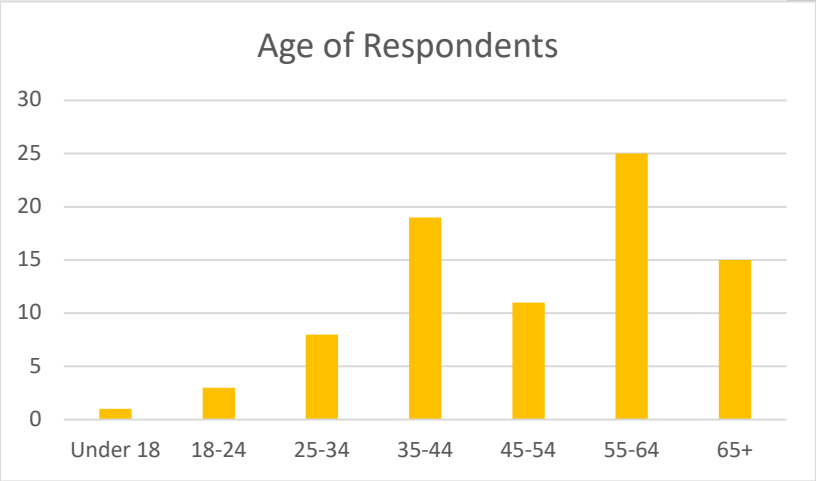

Figure 4-13: Age of respondents. 76% response rate.

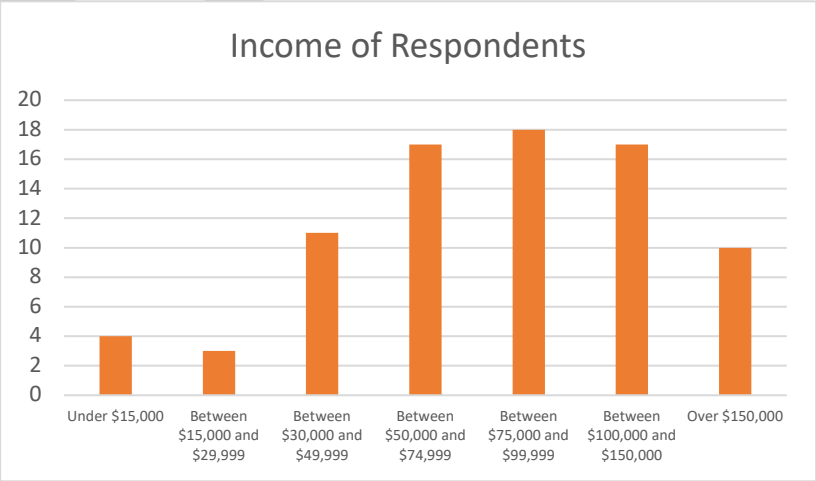

Figure 4-14: Income of responses. 76 percent response rate.

TRAVEL BEHAVIOR

The first questions of the survey are personal questions about the respondents travel behavior. Figure 4-17 shows the number of vehicles per household and Figure 4-16 shows the number of trips taken per day. Respondents were also asked their commute time. The average commute time of respondents was 15.56 minutes.

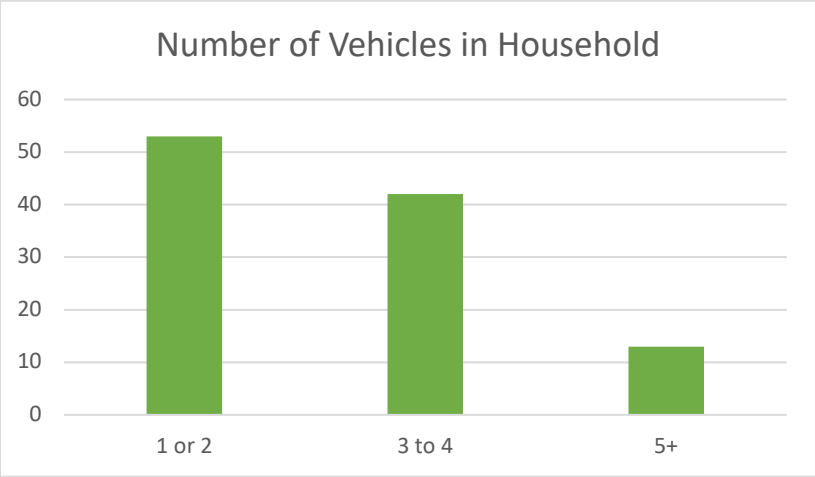

Figure 4-17: Shows the number of vehicles per household. 100 percent response rate.

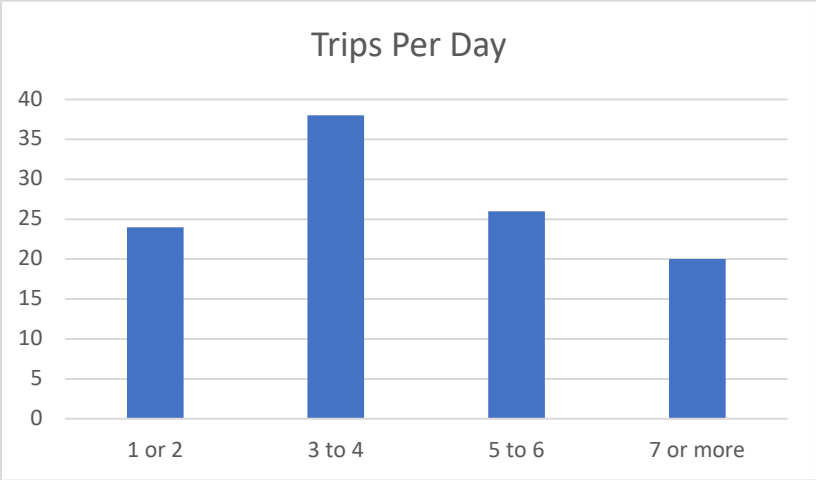

Figure 4-16: Shows the number of trips per day. 100 percent response rate.

This data shows that the ATURA region is very auto-dominated. This is most likely a result of the rural nature of the region. Many workers in the region commute between towns, counties, and some commute to workplaces outside of the ATURA region.

PUBLIC TRANSIT

Survey respondents were asked how often they use public transit (excluding Amtrak). 83 percent of respondents said never, 16 percent said very rarely, and less than one percent said 1-6 days a week or less than once a week. When asked why they do not use public transit, 68 percent stated that there is no public transit in their area, despite this not being true. 29 percent said they prefer to use another mode, and 3 percent said they are unsure how to use public transit.

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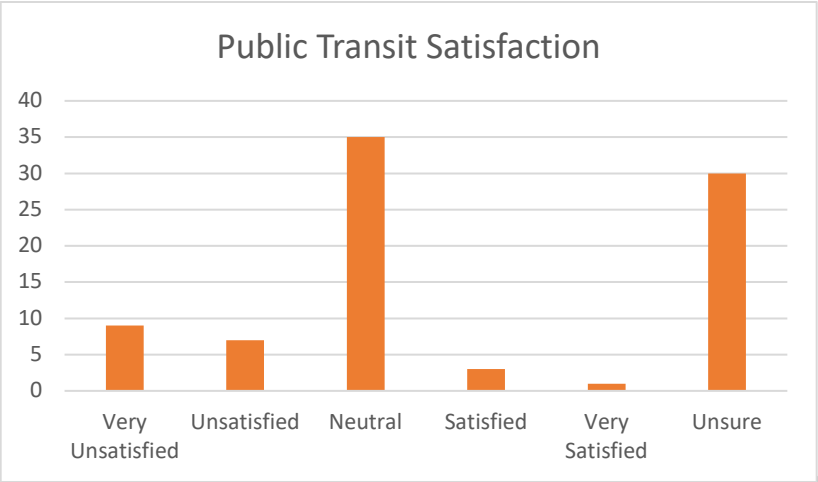

Figure 4-18: Public transit satisfaction using a LIKERT scale. 79 percent response rate.

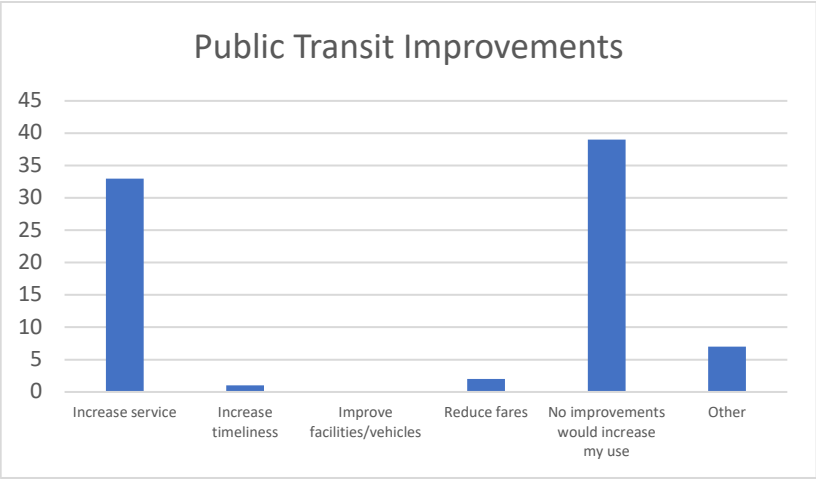

Figure 4-19: Respondents were asked which improvements would increase their use of public transit. 76 percent response rate.

Figure 4-18 shows the respondents satisfaction with public transit in the ATURA region. The use of public transit in the ATURA region is very low. As a result, many respondents marked a neutral or unsure response. Figure 4-19 shows the improvements that would increase the respondents use of public transportation. As was mentioned before, more than have of respondents mistakenly believe that there is no public transit in the ATURA region. This may explain the large number of responses for “increase service”.

BICYCLE AND PEDESTRIAN INFRASTRUCTURE

Survey respondents were also asked about the region’s bicycle and pedestrian infrastructure. To avoid using jargon, the survey uses the terms “sidewalks”, “crosswalks”, and “trails”. Figure 4-20 shows the respondents satisfaction with the region’s trails (bicycle infrastructure), and Figure 4-21 shows the respondents satisfaction with the region’s sidewalks (pedestrian infrastructure). There is a significant portion of respondents who are unsatisfied or very unsatisfied with the bicycle/pedestrian infrastructure in the region and especially sidewalks.

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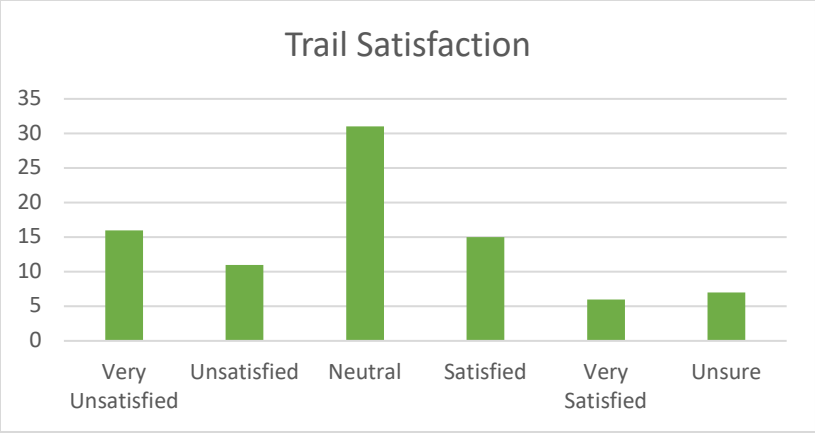

Figure 4-20: Respondents satisfaction with the region's sidewalks (pedestrian infrastructure). 83 percent response rate.

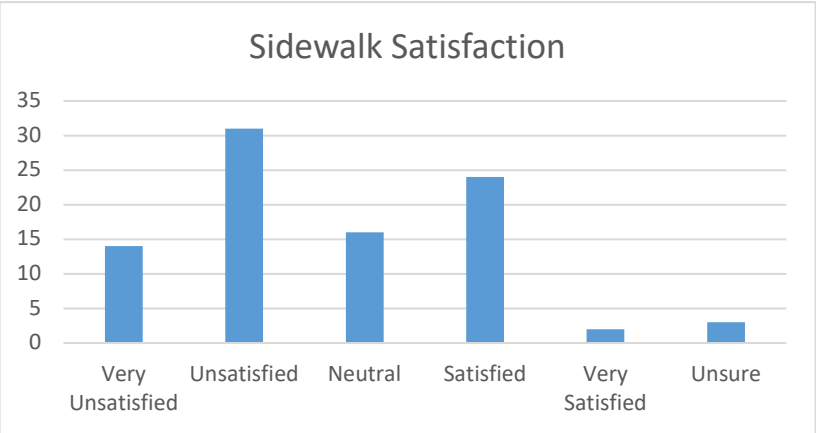

Figure 4-21: Respondents satisfaction with the region's trails (bicycle infrastructure). 80 percent response rate.

Respondents were also asked what improvements could be made to the region's bicycle/pedestrian infrastructure. Figure 4-23 and Figure 4-22 shows the improvements that respondents suggested. The majority of respondents said that building more trails and sidewalks would help, or improve existing sidewalks.

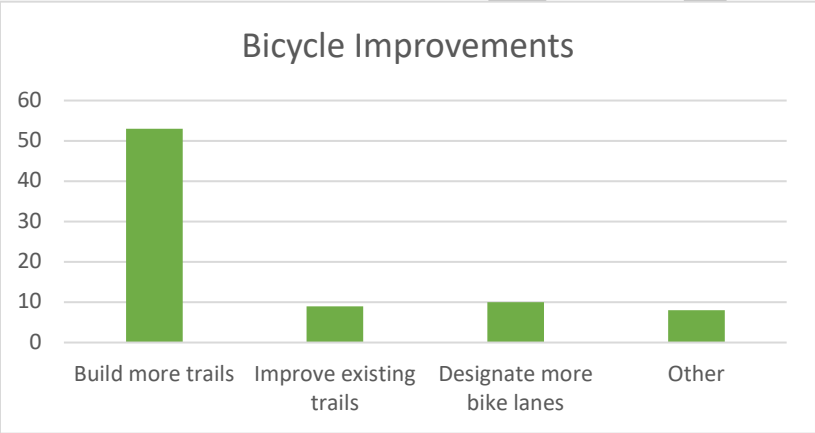

Figure 4-23: Respondents were asked what should be done to improve bicycle infrastructure. 74 percent response rate.

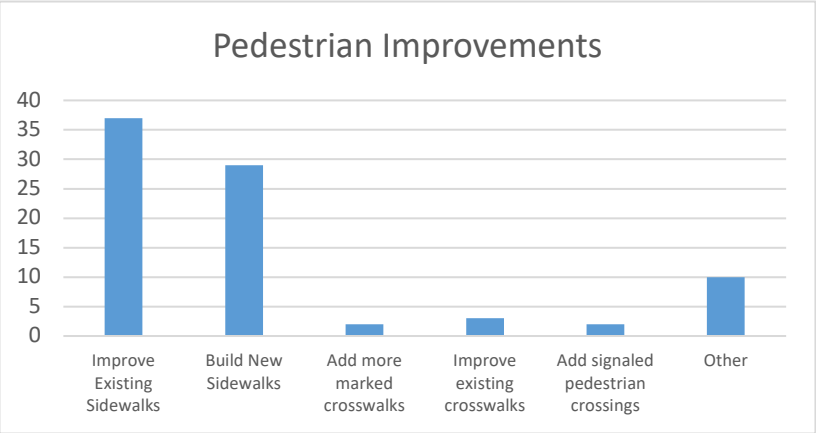

Figure 4-22: Respondents were asked what should be done to improve pedestrian infrastructure. 77 percent response rate.

ROADS

The issue of roads is much more straightforward than other issues. Respondents were asked to give the region's roads a star rating out of 5 stars. On average, the region's roads receive 2.62 stars. Figure 4-24 shows the class of road needing the most improvement according to respondents (no respondents said that interstates need improvement).

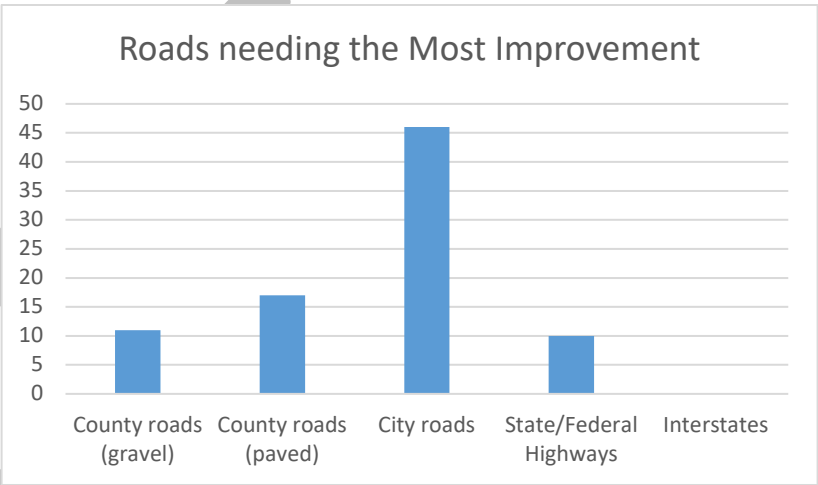

Figure 4-24: Roads needing the most improvement, according to respondents. 78 percent response rate.

PRIORITIES

Finally, respondents were asked to rate six different transportation categories based on priority. Figure 4-25 shows the results of this question. Respondents said that city roads, rural roads, and interstates are the biggest priorities. Respondents said that other transportation categories (public transit, rail/freight, and bicycle/pedestrian) are less of a priority. This is most likely due to the dominance of automobile transportation in the region, and the perception of the region's roads quality.

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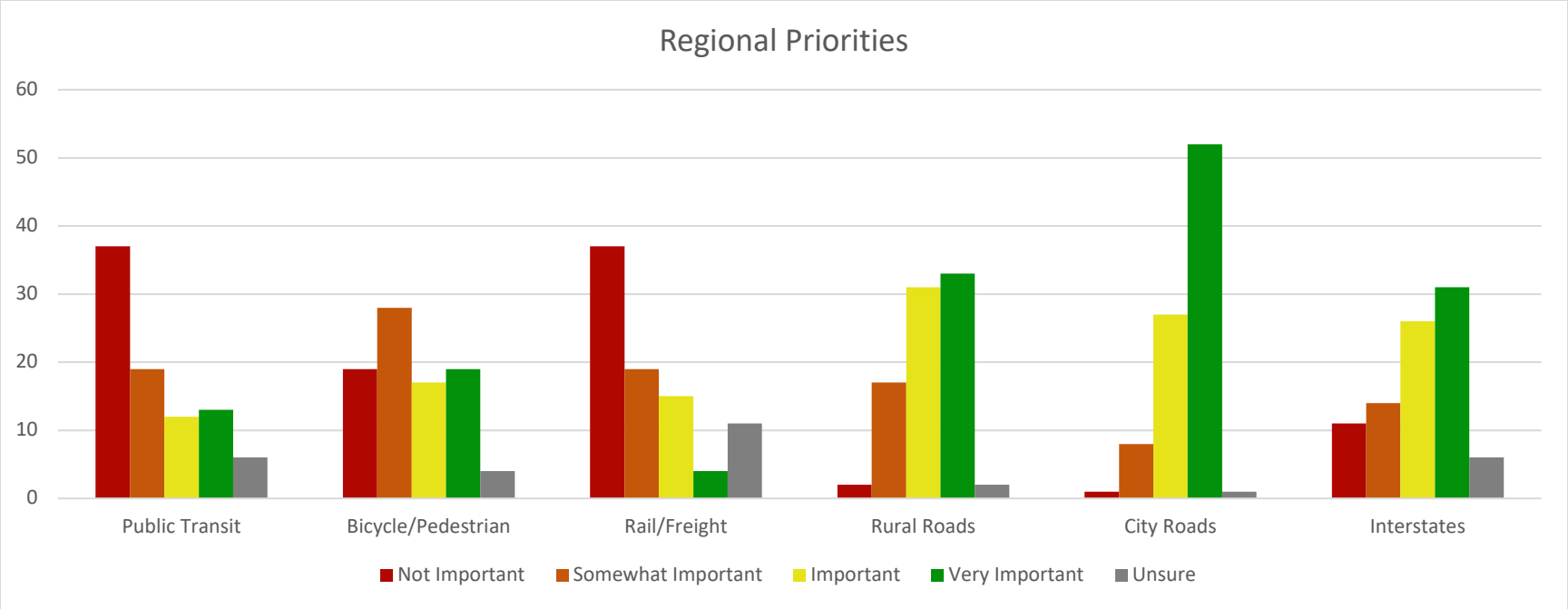

Figure 4-25: Regional priorities for different transportation categories. Response rate varies for each category from 82% to 79%.

4.12 KEY CONCLUSIONS

- Mobility is becoming more of an issue in the ATURA region.
- The ATURA region has overbuilt transportation assets, and needs to work to reduce maintenance costs.
- Electric and automated vehicles will transform transportation, and the region needs to adapt.
- ATURA counties struggle to maintain the region's roads and bridges due to a lack of funding.
- There is room to grow the region's trail network.
- Despite some support for trails, the public believes that roads are more of a priority.

5. VISION AND ACTION PLAN

The prior chapters have helped lay the foundation of what issues face Iowa's multimodal transportation system. Data on the existing system, input from the public and stakeholders, various planning considerations, and key issues must all be considered as RPA 14/ATURA determines what investment actions to take to help shape the region's transportation system needed over the coming years. This information has helped shape the vision for ATURA's transportation system. This chapter outlines the investment areas, strategies, and improvement needs that RPA 14/ATURA plans to pursue to achieve that vision.

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5.1 VISION

The decisions made by RPA 14/ATURA's Transportation Technical Committee and Policy Board regarding funding allocations and specific improvements will significantly affect what the transportation system looks like for decades to come. The vision of this plan is as follows:

TO CREATE AND MAINTAIN A SAFE AND EFFICIENT TRANSPORTATION NETWORK FOR ALL MODES THAT ENABLES THE WELLBEING OF ALL RESIDENTS, ADDRESSES THE ISSUES OF MOBILITY AND ENVIRONMENTAL IMPACT, IS FINANCIALLY SUSTAINABLE, AND ACCOMMODATES THE UNIQUE NEEDS OF URBAN AND RURAL AREAS.

This vision was crafted to be an all-encompassing statement that addresses the unique issues facing the ATURA region and the region's transportation network. It acknowledges the unique issues facing this region, and the need to adapt to new technologies.

RESILIENCE

Resilience means the ability to bounce back. Resiliency planning in transportation refers to how an area's transportation system responds or react to disturbance. A disturbance could be a natural disaster event, climate change, or economic shock. A resilient community is able to react appropriately to such a disturbance.

As the consequences of climate change continue to unfold, the ATURA region will need to adapt to increased temperature, and more inclement 0weather events. The region should focus on ensuring that there are enough tornado shelters for their residents, and that the temperature changes may also cause large scale crop failures, which could cripple the region's economy.

An over reliance on a small number of employers or a small number of industries is not a resilient economic system. One manufacturer deciding to move their operation to another location or automating the process could result in layoffs and loss of income. The trickle-down effect of such a disturbance could permanently cripple a community. As technology improves and industry adapts, the threat of automation grows. A resilient community has a diverse range of employers from a diverse range of industries so that the local economy does not rely on a sole employer.

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5.2 ACTION PLAN

The following improvements are identified needs and suggested improvements to the regional transportation network that were developed during this planning process. This Action Plan is not a list of programmed activities and is not project specific. It is intended as a tool to be used as justification for Transportation Improvement Program (TIP) project development over the next 20 years or more.

AVIATION

NEEDS

- Aviation facilities within the region generally meet the needs of business and industry; the only exception being the lack of regularly scheduled passenger air service.
- Regularly scheduled passenger air service must be obtained outside the RPA 14/ATURA region. The closest facilities offering the service area are in Des Moines, Omaha, or Kansas City.
- Creston and Greenfield should continue to pursue federal and state funds for planned improvements to their facilities. This will help them to continue to meet the needs of business and industry, and to attract new aviation-based services. Many smaller airports in the region struggle to fund the operations and improvements to their airports.

GOALS

- Support facility updates and expansions of the five public airports in the region.

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RAIL

NEEDS

- Rail lines see heavy use with considerable amounts of freight passing through the region. Rail access is important for large businesses and industry and should be preserved.
- Amtrak has reduced service along the California Zephyr line due to COVID-19, and daily service might not return.
- Make safety improvements to at-grade crossings when feasible, especially along high traffic roads.

GOALS

- Include railroads in decision-making process when applicable.
- Work with railroads to improve crossing safety, especially when improvements are being made on the regional transportation network.
- Support rail access development at new and existing industrial parks.
- Support expansion of passenger rail services within the region.

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PUBLIC TRANSIT

NEEDS

- Public transit is primarily provided within the region by the regional transit system – Southern Iowa Trolley.
- There is a need to expand public transit services and hours of service, but a deficit of funding prevents this expansion.
- Obtaining new and replacement vehicles is a high priority of Southern Iowa Trolley.
- The region's transit providers must maximize the use of existing resources and coordinate services with human service agencies in order to provide the most public transit capability throughout the region.
- The Southern Iowa Trolley has identified a need for a new facility to house its operations.
- Maintaining current transit operations and services, including funding to supplement rides for the elderly is desired.

GOALS

- Return SIT's ridership to pre-pandemic levels.
- Improve the public's trust in public transportation to encourage new ridership.
- Include Passenger Transportation Plan Advisory Group input in decision-making process when applicable.
- Replace the transit fleet as necessary and as funds allow.
- Support construction or acquisition of a new fleet maintenance/office facility for Southern Iowa Trolley that provides a secure (preferably covered) parking area, maintenance and vehicle washing facility, and adequate office space with parking if a feasible location and funding is found.

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BICYCLE AND PEDESTRIAN

NEEDS

- Trail development is gaining interest within the region for both recreation and transportation purposes. Most existing trails have been short, local trails within communities and there is no network of connected trails throughout the region.
- Funding assistance is essential for trail development and more funding is needed. Trail projects often lack the needed local match dollars due to sparse population and the high number of low-income residents in the region.
- Coordination among local jurisdictions and the Iowa DOT in order to make further trail and pedestrian improvements is encouraged.
- Most communities have areas where there are no or poor-quality sidewalks. Funding for sidewalk construction and replacement is desired in order to enhance safety and quality of life for the residents.

GOALS

- Fund and create a Regional Trail Plan that will use public input and collaboration from ATURA's county conservation departments. The plan would not only help determine specific priorities for trail development, but also open up opportunities for trail funding.
- Increase trail development and connectivity in all communities. Encourage and fund trail development between destinations and between communities.
- Place development priorities on trail facilities that address the greatest public use and need. Enhance the safety of cyclists and pedestrians to improve quality of life.
- Support the construction of new or replacement sidewalks to enhance walkability and enhance safe transportation, particularly in and near schools and activity centers.

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ROAD AND BRIDGE

NEEDS

- Maintenance of the existing regional highway network is a key need. As a complete network, preservation, reconstruction and rehabilitation, and safety improvements are a higher priority than capacity building and new facility construction.
- Obtaining adequate funding to maintain the existing roadways within the region is a great concern.
- Obtaining funding to construct transportation facilities that enhance economic development or result in job creation or retention is desired.
- The region has an exceptionally high number of bridges. Counties spend considerable time and money maintaining the numerous bridges within their jurisdictions. Additional funds are needed to help rehabilitate the many bridges, especially those located on the secondary roads system. The lack of funds to repair bridges is so severe it has already resulted in a few secondary roads in rural areas being closed.

GOALS

- Maintain the quality of the regional highway network, initiating improvements at the federal, state, county, and city level as needed.
- Reduce road mileage when necessary to make the network more financially sustainable.
- Replace, repair, and maintain existing bridges.
- Support roadway improvements or construction of new facilities tied to economic development or creation of jobs when feasible.
- Support innovative methods that reduce costs for county engineering and city public works.

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INTERMODAL TRANSPORTATION

NEEDS

- Increasing ownership of electric vehicles means that

GOALS

- Investigate the opportunities of intermodal facility development in the region with emphasis on value-added agriculture and economic development.

MISCELLANEOUS

GOALS

- Continued use of regional Transportation Alternatives Program (TAP) funding to support eligible projects. Place development priorities on facilities that address the greatest public use and need.
- Support continued development of Geographic Information Systems (GIS) services and other forms of technology throughout the region and further integrate them into the transportation planning process.
- Explore the development of a Regional Equipment Directory to reduce the equipment costs of county engineering departments.
- Encourage the installation of electric vehicle charging stations within the region.
- Work to further improve coordination across the region.

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5.3 IMPLEMENTATION

Input and participation by the region's stakeholders were very important in the development of this LRTP. Stakeholders such as elected officials, county engineers and public works directors, public and private organizations, interested citizens, companies, and development groups should continue participation during implementation of this plan to successfully guide and express the desires of those living in the area.

The most difficult aspect of long-range planning is developing future cost estimates. The level of difficulty increases when considering that public funding commitments to a mode are not perpetual and private funding develops its own spending priorities. The uncertainty of federal funding, even for the short term, makes programming a challenge in the current political and economic climate. The only reasonable assessment is that the cost of constructing, maintaining, and preserving transportation infrastructure will likely increase.

PLANNING

IOWA DEPARTMENT OF TRANSPORTATION

Iowa's highway network is the backbone of the state transportation system and accounts of the vast majority of investments. The Iowa DOT prepares and publishes highway transportation studies and plans to:

- Provide guidance for the expenditure of limited resources for highway improvements.
- Determine sufficiency ratings for the state primary road system.
- Determine improvement needs for the entire public road and street system.

The Iowa Department of Transportation's (DOT) long-range planning process is called Iowa in Motion. The Iowa DOT updates this Plan every five years in order to stay current with trends, forecasts, and factors that influence decision-making, such as legislation, funding, technological changes, and State priorities. The Plan currently being developed forecasts the demand for transportation infrastructure and services to 2050 based on consideration of social and economic changes likely to occur during this time. Iowa's dynamic economy and the need to meet the challenges of the future will continue to place pressure on the transportation system. With this in mind, the

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Plan provides direction for each transportation mode, and includes a continued emphasis on stewardship. The Iowa DOT views stewardship as efficient investment and prudent, responsible management of our transportation system.

As Iowa changes and the transportation system evolves, one constant will be that the safe and efficient movement of Iowans and our products is essential for stable growth in Iowa's economy. Iowa's extensive multimodal and multijurisdictional transportation system is a critical component of economic development and job creation throughout the state. The system is also a major contributor to Iowans' quality of life. The Iowa In Motion 2045 Plan contents include the following:

- **Trends:** An analysis of demographic, economic, passenger and freight trends, and what these trends mean for Iowa's transportation system.
- **System condition:** An overview of each mode within the transportation system.
- **Vision:** Broad statement that encapsulates the overall vision for Iowa's future transportation system.
- **Investment areas:** Overarching areas within which actions will be defined to implement the system vision.
- **Strategies and improvements:** Actions and initiatives that will be utilized by the department to implement the vision.
- **Costs and revenues:** An analysis of the anticipated costs and revenues for each transportation mode.
- **Implementation:** A discussion related to addressing any funding shortfalls, programming future investments, and continuous performance monitoring.

COUNTY FIVE-YEAR PLANS

Annually, each county within the RPA 14/ATURA region prepares a five-year plan of projects and spending for improvements to their network of roadways and bridges. This fiscally constrained plan is developed and approved through a process of open public meetings of the county board of supervisors.

RPA 14/ATURA TRANSPORTATION IMPROVEMENT PROGRAM (TIP)

Each year, the region prepares a Transportation Improvement Program (TIP) document that addresses federal spending on roadways, bridges, and enhancement projects within the region during the upcoming four-year period. Each of the five counties are asked to submit fiscally constrained roadway and bridge projects eligible for regional federal funding from their five-year plans. The City of

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Creston also submits fiscally constrained roadway and bridge projects eligible for regional federal funding for inclusion in the TIP. Development of the TIP is accomplished using target-funding estimates prepared by the Iowa DOT. Cities with populations less than 5,000, Southern Iowa Trolley, and sponsors of transportation alternatives projects may also submit applications to RPA 14/ATURA for Surface Transportation Block Grant (STBG) and Transportation Alternatives Program (TAP) funding for eligible projects as well. Projects approved by the Policy Board are included in the TIP. The TIP development process provides opportunities for public input and comments. The Final TIP document is approved following a public hearing at an open public meeting by the RPA 14/ATURA Policy Board[27].

The RPA 14/ATURA Transportation Technical Committee (TTC) recommends projects consistent with the region's LRTP to the Policy Board. A formula allocation of Surface Transportation Block Brant (STBG) and Transportation Alternatives Program (TAP) funds is made to each county and to the City of Creston to be used in funding many of these projects. Completion of STBG or TAP Application with review by the TTC and Policy Board is required prior to inclusion of a new project in the TIP. The TIP incorporates city, county, and state transportation projects of regional significance considered eligible for federal-aid funding using year of expenditure cost estimates. Cities with populations under 5,000, the regional transit agency and other eligible applicants are invited to submit applications to the RPA 14/ATURA TTC for funding consideration. Final approval of projects for inclusion in the TIP is the responsibility of the Policy Board.

RPA 14/ATURA submits the region's TIP to the Iowa DOT where it then becomes part of the Statewide Transportation Improvement Program (STIP). The STIP is then submitted to the FHWA/FTA so that the projects can receive federal funding.

TIP PROJECT SELECTION

The RPA 14/ATURA Transportation Technical Committee (TTC) recommends projects consistent with the region's LRTP to the Policy Board for inclusion in the TIP. The TIP has been formulated by incorporating city, county, and state transportation projects of regional significance considered eligible for federal-aid funding using year of expenditure (YOE) cost estimates. A formula allocation of federal STBG funds is made to each account and to the City of Creston based upon pre-ISTEA funding allocation formulas that consider, among other things, population and mileage of roadways within the county or the City of Creston.

[27] The FY 2022-2025 TIP can be found at https://www.sicog.com/wp-content/uploads/2021/07/FINAL-TIP-2022-2025-copy.pdf.

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Each year, all eligible entities are invited to submit eligible projects for consideration for Surface Transportation Block Grant (STBG) funding in the following fiscal year or beyond. The annual due date is February 15th. Invitations are made primarily through direct communication with parties that have shown previous interest, all possibly interested parties, and through SICOG-operated media channels (monthly newsletter, Facebook page, etc.). Applications and project eligibility information are available on the RPA-14/ATURA website as well as from the office of the Southern Iowa Council of Governments upon request. Each year, $50,000 is set aside from the total STBG fund to be used for projects sponsored by small cities (less than 5,000 or unincorporated) or transit projects. The Transportation Technical Committee (TTC) reviews all applications for STBG funds and scores each project based on the degree to which the proposed project:

- Supports the economic vitality of the region, state and United States especially by enabling global competitiveness, productivity, and efficiency. **[10 points maximum]**
- Increases the safety and security of the transportation system for motorized and non-motorized users. **[10 points maximum]**
- Increases the accessibility and mobility options available for people and freight. **[10 points maximum]**
- Protects and enhances the environment, promote energy conservation, and improve quality of life. **[10 points maximum]**
- Enhances the integration and connectivity of the transportation system, across and between modes throughout the region and state, for people and freight. **[10 points maximum]**
- Promotes efficient system management and operation. **[10 points maximum]**
- Emphasizes the preservation of the existing transportation system. **[10 points maximum]**

Other Considerations:

- Projects with an assured local match (non-federal funds) of more than the minimum (0 percent for swap-eligible projects and 20 percent for non-swap-eligible projects) or that leverage additional funding sources. **[30 points maximum, 1 point for every percent above the minimum]**
- Projects whose applicant has positive target balance, 10 points for every year of positive annual target balance. **[40 points maximum]** Example: $450,000 positive balance/ $150,000 annual target = 3 years of funding. 3 years x 10 points per year = 30 points.

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Also taken into consideration may be the applicant's history, geographic location of funding, and application's completeness or quality. Criteria and ranking information related to STBG applications are available on the RPA 14/ATURA website. Once scoring/ranking is completed, scores are forwarded from the Transportation Technical Committee to the Policy Board for a fiscally constrained funding decision.

Bi-annually, all eligible entities are invited to submit eligible projects for consideration for Iowa's Transportation Alternatives Program (TAP) funding in the following fiscal year or beyond. The bi-annual due dates are February 15th and August 15th. Invitations are made primarily through direct communication with parties that have shown previous interest, all possibly interested parties, and through SICOG-operated media channels (monthly newsletter, Facebook page, etc.). Applications and project eligibility information are available on the RPA-14/ATURA website as well as from the office of the Southern Iowa Council of Governments upon request. The Transportation Technical Committee (TTC) reviews all applications for TAP funds and utilizes a scoring process that takes into consideration the following items if more than one application is received:

- The degree to which the proposed project fulfills the intent of the Fixing America's Surface Transportation (FAST) Act and/or the goals and priorities of RPA-14/ATURA and its most recent LRTP.
- Description of any components that have already been funded and/or implemented from other funding sources; or how the proposed funded element would complete a larger project, concept, or plan.
- Documented financial support from entities other than just the applicant or demonstrated collaboration with community partners.
- Project that will have more than a local impact or benefit.
- Project development already accomplished at the time of this application.

Also taken into consideration may be the applicant's history, geographic location of funding, and application's completeness or quality. Criteria and ranking information related to STBG applications are available on the RPA 14/ATURA website.

Once scoring/ranking is completed, scores are forwarded from the Transportation Technical Committee to the Policy Board for a fiscally constrained funding decision.

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EXPENSE AND REVENUE PROJECTIONS

The annual program of projects is fiscally constrained by adjusting the region's program to match estimated targets of available federal funds over the next four years. Note how the funding balance of STBG (Table 5-1) and TAP (Table 5-2) funds never goes below zero from projects programmed in FY2022 through FY 2025. The STBG and TAP target amounts shown are estimated by the Iowa DOT, based on the funding they receive.

	FY 2022	***FY 2023***	***FY 2024***	***FY 2025***
STBG/SWAP Balance (Carryover from previous year)	$ 1,874,521	$ 62,686	$ 20,397	$ 1,178,108
STBG/SWAP Target	$ 1,146,000	$ 1,146,000	$ 1,146,000	$ 1,131,000
STBG-TAP Flex Target	$ 37,454	$ 37,000	$ 37,000	$ 37,000
Available for Programming	$ 3,057,975	$ 1,245,686	$ 1,203,397	$ 2,346,108
Total Regional STBG/SWAP Programmed	$ 2,995,289	$ 1,225,289	$ 25,289	$ 2,025,289
Balance of STBG/SWAP Funds	***$ 62,686***	***$ 20,397***	***$ 1,178,108***	***$ 320,819***

Table 5-1: STBG fiscal constraint table.

	FY 2022	***FY 2023***	***FY 2024***	***FY 2025***
TAP Balance (Carryover from previous year)	$ 286,196	$ 215,367	$ 264,367	$ 313,367
TAP Target	$ 49,171	$ 49,000	$ 49,000	$ 49,000
Available for Programming	$ 335,367	$ 264,367	$ 313,367	$ 362,367
Total Regional TAP Programmed	$ 120,000	$ -	$ -	$ -
Balance of Iowa TAP Funds	***$ 215,367***	***$ 264,367***	***$ 313,367***	***$ 362,367***

Table 5-2: TAP fiscal constraint table.

The amount of funds being used to operate and maintain both the federal aid and non-federal aid transportation system is tracked by the Iowa DOT. The information in Table 5-3 and Table 5-4 help demonstrate that there are adequate revenues available to perform these operations and maintenance functions during FY2022 and FY2025.

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	2022		2023		2024		2025	
	Operations	*Maintenance*	*Operations*	*Maintenance*	*Operations*	*Maintenance*	*Operations*	*Maintenance*
Adair	$ 462,640	$ 1,201,296	$ 481,146	$ 1,249,348	$ 500,392	$ 1,299,322	$ 520,407	$ 1,351,295
Adams	$ 428,767	$ 771,778	$ 445,917	$ 802,649	$ 463,754	$ 834,755	$ 482,304	$ 868,145
Ringgold	$ 447,302	$ 1,052,160	$ 465,194	$ 1,094,246	$ 483,802	$ 1,138,016	$ 503,154	$ 1,183,537
Taylor	$ 451,345	$ 836,628	$ 469,399	$ 870,094	$ 488,175	$ 904,897	$ 507,702	$ 941,093
Union	$ 409,421	$ 1,105,616	$ 425,798	$ 1,149,840	$ 442,830	$ 1,195,834	$ 460,543	$ 1,243,667
Creston	$ 37,051	$ 275,652	$ 38,533	$ 286,679	$ 40,074	$ 298,146	$ 41,677	$ 310,071
Cities with populations < 5,000	$ 66,000	$ 229,992	$ 68,640	$ 239,192	$ 71,386	$ 248,759	$ 74,241	$ 258,710
Regional Total	***$2,302,527***	***$ 5,473,123***	***$ 2,394,628***	***$ 5,692,048***	***$ 2,490,413***	***$ 5,919,730***	***$ 2,590,030***	***$ 6,156,519***
Non-Federal Aid Costs	*$5,681,475*	*$ 13,717,527*	*$ 5,908,734*	*$ 14,266,229*	*$ 6,145,083*	*$ 14,836,878*	*$ 6,390,887*	*$ 15,430,353*
Federal and Non-Federal Aid Costs	***$7,984,002***	***$ 19,190,650***	***$ 8,303,362***	***$ 19,958,276***	***$ 8,635,496***	***$ 20,756,607***	***$ 8,980,916***	***$ 21,586,872***

Table 5-3: ATURA federal-aid and non-federal-aid costs.

	2022	2023	2024	2025
Farm-To-Market Fund	$ 4,298,055	$ 4,469,977	$ 4,648,776	$ 4,834,727
Secondary Roads Fund	$ 23,142,812	$ 24,068,525	$ 25,031,266	$ 26,032,517
City Street Fund	$ 7,560,467	$ 7,862,886	$ 8,177,402	$ 8,504,498
Total Non-Federal-Aid Revenues	$ 35,001,334	$ 36,401,388	$ 37,857,444	$ 39,371,742

Table 5-4: Non-Federal-Aid Revenues

Annually, each county within the ATURA region and the Southern Iowa Trolley (SIT) prepares a five-year plan of projects and spending for improvements to their network of roadways, bridges, TAP, and public transit projects. This fiscally constrained plan is developed and approved through a process of open, public meetings of the county boards of supervisors. Projects are from FY2022 through FY2025. Table 5-5 shows the county road, bridge, and TAP projects. Table 5-6 shows the SIT projects.

Year	County	Program	TPMS #	Project Number	Name	Amount
2022	Taylor	SWAP-STBG	40141	STBG-SWAP-0487(604)--SG-87	State Street Rehabilitation	Total: $110,000 SWAP: $110,000
2022	Adams	STBG-TAP	45231	TAP-R-1590(604)--8T-02	Hull Street Trail	Total: $200,000 Federal Aid: $160,000 Local: $160,000
2022	Union	SWAP-STBG	37223	STBG-SWAP-C088()--FG-88	Osage Street Reconstruction	Total: $700,000 Regional: $700,000 SWAP: $700,000
2022	Union	SWAP-STBG	39079	STBG-SWAP-C088()--FG-88	High and Dry Paving	Total: $4,240,000 Regional: $2,120,000 SWAP: $2,120,000
2022	Ringgold	SWAP-HBP	45594	BRS-SWAP-C087()--FF-87	Grant 01	Total: $500,000 SWAP: $500,000
2022	Adair	PRF	37872	BRFN-25()--39-1		Total: $333,000
2023	Adair	SWAP-HBP	45663	BROS-SWAP-C001()--SE-01	IN32 Washington Bridge Replacement	Total: $1,500,000 SWAP: $1,500,000
2023	Union	SWAP-HBP	45074	BROS-SWAP-C088()--SE-88	Logan Bridge	Total: $528,000 SWAP: $528,000
2023	Ringgold	SWAP-HBP	23439	BRS-SWAP-C080()--FF-80	Benton 11 bridge removal	Total: $430,000 SWAP: $430,000
2023	Taylor	SWAP-STBG	37776	STBG-SWAP-C087(60)--FG-87	Dallas 25	Total: $1,200,000 Local: $1,200,000 SWAP: $1,200,000
2023	Ringgold	PRF	39345	BRFN-169()--39-80		Total: $997,000
2023	Union	PRF	39362	BRFN-169()--39-80		Total: $1,403,000
2024	Adams	SWAP-HBP	34368	BRS-SWAP-C002()--FF-02	Colony 19 Br Replacement	Total: $1,000,000 SWAP: $1,000,000
2024	Union	SWAP-HBP	45075	BROS-SWAP-C088()--SE-88	Cherry Street Bridge	Total: $370,000 SWAP: $370,000
2024	Ringgold	SWAP-HBP	34578	BHS-SWAP-C080()--FF-80	Clinton 06	Total: $700,000 SWAP: $700,000
2024	Ringgold	SWAP-HBP	39121	BRS-SWAP-C080()--FF-80	Benton 12	Total: $440,000 SWAP: $440,000
2024	Taylor	PRF	45325	BRFN-169()--39-80		Total: $580,000

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2024	Union	PRF	45331	BRFN169()--39-88		Total: $1,403,000
2025	Adams	SWAP-HBP	38949	BROS-SWAP-C002()--SE-02	Washington 8 replacement	Total: $340,000 SWAP: $340,000
2025	Ringgold	SWAP-STBG	35834	STBG-SWAP-CO080()--FG-80	P27 South Resurface	Total: $2,700,000 Local: $2,000,000 SWAP: $2,000,000
2025	Ringgold	SWAP-HBP	44944	BRS-SWAP-C080()--FF-80	Washington 24	Total: $1,460,000 SWAP: $1,460,000
2025	Adair	PRF	48445	BRFN-92()--39-1		Total: $490,000

Table 5-5: FY2022-FY2025 projects.

Fiscal Year	*Fund*	*Transit #*	*Description*	*Total*	*FA*	*SA*
2022	5317	2746	Light Duty Bus (158" wb)	$96,280	$81,838	
2022	5339	2750	Light Duty Bus (158" wb)	$96,280	$81,838	
2022	5339	3245	Light Duty Bus (158" wb)	$96,280	$81,838	
2022	STA, 5311	6187	General Operations - Southern Iowa Trolley	$788,207	$411,004	$377,203
2022	5339	3248	Minivan	$58,191	$49,462	
2022	5339	6198	Light Duty Bus (158" wb)	$96,280	$81,838	
2023	5339	3771	Light Duty Bus (176" wb)	$102,000	$86,700	
2023	5339	4138	Minivan	$60,418	$51,355	
2023	5339	4139	Light Duty Bus (176" wb)	$102,000	$86,700	
2023	5339	4629	Conversion Van	$62,737	$53,326	
2023	5339	4630	Light Duty Bus (176" wb)	$102,000	$86,700	
2024	5339	4630	Light Duty Bus (176" wb)	$107,834	$91,659	
2024	5339	4631	Light Duty Bus (176" wb)	$107,834	$91,659	
2024	5339	5333	Light Duty Bus (176" wb)	$107,834	$91,659	
2024	5339	3249	Light Duty Bus (176" wb)	$107,834	$91,659	
2024	5339	3250	Light Duty Bus (176" wb)	$107,834	$91,659	
2025	5339	6199	Light Duty Bus (158" wb)	$121,386	105,553	
2025	5339	6193	Minivan	$65,144	$55,372	
2025	5339	6194	Minivan	$65,144	$55,372	
2025	5339	6194	Light Duty Bus (176" wb)	$111,987	$95,189	
2025	5339	6195	Light Duty Bus (176" wb)	$111,987	$95,189	
2025	5339	6197	Light Duty Bus (158" wb)	$121,386	$105,553	
2025	5339	2330	Transit Facility	$2,400,000	$2,000,000	

2025	5339	5334	Light Duty Bus (176" wb)	$111,987	$95,189	
2025	5339	5335	Minivan	$65,144	$55,372	
2025	5339	5336	Minivan	$65,144	$55,372	
2025	5339	5337	Minivan	$65,144	$55,372	
2025	5339	5338	Minivan	$65,144	$55,372	
2025	5339	5716	Light Duty Bus (176" wb)	$111,987	$95,189	
2025	5339	6186	Light Duty Bus (158" wb)	$101,545	$86,313	
2025	5339	5332	Light Duty Bus (176" wb)	$111,987	$95,189	

Table 5-6: FY2022-FY2025 transit projects.

LONG-RANGE IMPLEMENTATION

The future transportation network within the region will most likely need to shrink to reflect the region's shrinking population and tax base. The current network of roads and bridges is well established and is accessible by most residents and businesses within the region, but is too large to maintain with the funds available. While vehicle travel is well established as the primary mode of transportation; alternatives such as rail, aviation, public transit, and recreational trails do exist and/or are being expanded upon. However, their usage is small in comparison. Scaling back is imperative to sustain a transportation network without sacrificing infrastructure quality. Network infrastructure in disrepair would increase transportation costs and decrease the safety of the network in the region. Therefore, a majority of resources spent towards transportation infrastructure in the future should go towards maintain the existing network while preserving the current services offered, and looking for opportunities to vacate roads and bridges.

YEARS 6-20 PRIORITIES

The following priorities are additional improvements suggested or needed in the RPA and are in addition to the previously listed inventory of Short-Range priorities for years 1-5. This is not a list of specific current or future projects, but rather a tool or framework to be used as justification for Transportation Improvement Plan project development over the next 20 years. Specific projects, their projected costs, and funding sources are not included for years 6 through 20 because this information cannot be reliably attained this far in advance. These priorities should be used as guidance for project selection during years 6-20.

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AVIATION

- Expand runways as needed to promote economic development.
- Support facility updates and expansions at airport facilities to ensure quality services.
- Search for opportunities to utilize current facilities.

RAIL

- Work with railroads to pursue safety improvements at rail crossings.
- Support rail access development to enhance economic development.
- Promote passenger rail opportunities throughout the region.

PEDESTRIAN AND BICYCLE FACILITIES

- Maintain and promote connection of existing trails.
- Promote community efforts to provide adequate sidewalks and trails for both safety and mobility.
- Enhance safety of pedestrians and cyclists.
- Fund and create a Regional Trail Plan.

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ROADS AND BRIDGES

- Continue ongoing rehabilitation of existing roads and bridges.
- Develop or improve roadways as needed to enhance economic development.
- Improve roadways as needed to enhance safety (i.e. wider shoulders, paved shoulders, etc.).

TRANSIT

- Provide safe, efficient, effective, and quality service.
- Replace or expand the Southern Iowa Trolley fleet as needed.
- Promote mobility.
- Find a new location for SIT's maintenance/storage facility and office.

INTERMODAL

Support opportunities of intermodal facility development in or near the region with emphasis on value-added agriculture.

Find a location for a transload facility within the region.

Develop ways to better communicate between organizations and governments to reduce the financial burden of the transportation network.

EXPENSE AND REVENUE PROJECTIONS

	2020	2025	2030	2035	2040	2045	2050
County Operations	$2,033,539	$2,114,881	$2,199,476	$2,287,455	$2,378,953	$2,474,111	$2,573,076
County Maintenance	$4,592,713	$4,776,422	$4,967,478	$5,166,178	$5,372,825	$5,587,738	$5,811,247
City Operations	$34,256	$35,626	$37,051	$38,533	$40,075	$41,678	$43,345
City Maintenance	$254,856	$265,050	$275,652	$286,678	$298,145	$310,071	$322,474
Total Operations & Maintenance	**$6,915,364**	**$7,191,979**	**$7,479,658**	**$7,778,844**	**$8,089,998**	**$8,413,598**	**$8,750,142**

Table 5-7: Forecasted operations and maintenance expenditures on the region's federal-aid system. *Data from Iowa DOT. Forecasts based on 2020 expenditures with a 4% annual increase.*

	2020	2025	2030	2035	2040	2045	2050
Farm to Market	$3,973,794	$4,053,270	$4,134,335	$4,217,022	$4,301,362	$4,387,390	$4,475,137
Secondary Road Fund	$21,396,832	$21,824,769	$22,261,264	$22,706,489	$23,160,619	$23,623,831	$24,096,308
City Street Fund	$6,990,077	$7,129,879	$7,272,476	$7,417,926	$7,566,284	$7,717,610	$7,871,962
Total Non-Federal-Aid Revenues	**$32,360,703**	**$33,007,917**	**$33,668,075**	**$34,341,437**	**$35,028,266**	**$35,728,831**	**$36,443,408**

Table 5-8: Forecasted non-federal-aid revenues. *Data from Iowa DOT. Forecasts based on 2020 revenues with a 2% annual increase.*

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STBG & TAP PROJECTIONS

Surface Transportation Block Grant (STBG) and Transportation Alternatives Program (TAP) funding are federal funds historically allocated to the region. Projections on what these allocations will be in the future are uncertain, as these amounts are dependent on federal government funding and subject to change over the long term. However, STBG funding is expected to increase 2% annually between 2021 and 2025 according to the FAST Act. The region has historically seen increases of approximately 1.8% annually in the period between 2000 and 2020. Therefore, projections of future STBG allocations based on an annual increase of 2% per year seem reasonable. TAP funding has historically shown little variation in recent years and the FAST Act does not assure increases in that funding. Therefore, there is no expectation for TAP allocations to increase in future years.

Fiscal Year	*STBG Allocation*	*TAP Allocation*
2010	$1,025,500	$62,922
2011	$1,148,155	$66,620
2012	$1,176,935	$75,208
2013	$1,129,996	$72,239
2014	$1,077,521	$49,637
2015	$1,103,337	$49,971
2016	$1,097,563	$49,689
2017	$1,130,564	$51,053
2018	$1,128,842	$49,892
2019	$1,219,765	$50,525
2020	$1,258,924	$49,711
2021	$1,210,908	$49,373

Table 5-10: Historical STBG and TAP Allocations. ***TAP funding was reduced starting in 2014 as a result of TAP Flex Funding being added to the STBG allocation.***

Fiscal Year	*STBG Allocation*
2025	$1,310,726
2030	$1,447,147
2035	$1,597,797
2040	$1,764,064
2045	$1,947,670
2050	$2,150,385

Table 5-9: Projected STBG Funding Allocations. ***Projections based on 2020 allocation with a 2% annual increase.***

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PLAN UPDATES

The RPA14/ATURA LRTP will be reviewed on a five-year cycle and updated or revised as needed to reflect changes in priorities, socioeconomic, spatial, or funding availability. Any and all revision, changes, or amendments shall be subject to the RPA 14/ATURA transportation planning process. This process includes review by the Transportation Technical Committee and Policy Board with opportunities for public input and comments, similar to those utilized in this LRTP. Procedures and actions concerning review and update of this document will conform to all specifications contained under federal or state mandates and the RPA 14/ATURA Public Participation Plan at that time.

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6. CLOSING SUMMARY

Throughout the planning and development of this document, many diverse transportation issues have been identified, analyzed, and discussed. The information presented in this document is meant to document the existing transportation system and then offer guidance for future transportation planning efforts within the region over the coming years.

A major and recurring issue identified in the development of this plan is a funding shortfall for maintaining the various modes of transportation. RPA 14/ATURA and the cities and counties located within the region face major challenges in ensuring funds are available for the maintenance of the exiting transportation system. The population within the region is relatively stagnant, with out-migration outpacing in-migration. Therefore, the necessity to construct new roadways in order to access rapidly expanding housing subdivision or to deal with increased congestion is extremely unlikely, except on local roads on a very small scale. Expansion of employment opportunities in the region is hampered by a lack of quality, affordable housing and insufficient workers to fill existing job openings, so large-scale industrial expansions requiring new roadway expansion is also not anticipated.

The jurisdictions in the region will complete as many projects as possible in an attempt to meet the goals and objectives set forth in this plan. However, due to funding shortfalls and the uncertainty of federal transportation funding into the future, RPA 14/ATURA acknowledges the limitations the region may face throughout the coming years.

Comments and questions from the public related to this LRTP are encouraged and invited. Please contact:

RPA 14/ATURA Regional Transportation Planning Affiliation
Southern Iowa Council of Governments
101 East Montgomery Street
Creston, IA 50801
641-782-8491
whitehouse@sicog.com

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7. APPENDIX

APPENDIX A - SWOT ANALYSIS NOTES

Interviews were conducted in person with Transportation Technical Committee members and certain Policy Board members. Handwritten notes were taken, and are compiled below.

GM- Greg Maggard, Creston Public Works Director
KW;CB- Keith Weiland, Union County Engineer; Christian Boehmer, Clarke County Engineer
NK- Nick Kauffman, Adair County Engineer
JS- Justin Savage, Taylor County Engineer
JJ- Jared Johnson, Ringgold County Engineer
GC- Gabe Carroll, Mayor of Creston
TM- Travis Malone, Adams County Engineer
LL- Leesa Lester, Transit Director, Southern Iowa Trolley

STRENGTHS:

- JJ- Capable office personnel for project design/planning
- JJ- Nature trail in Mount Ayr
- JS- Taylor County bridge crew
- JS- Better funding in the past
- NK- Coordination
- KW;CB, TM- Communication/coordination between counties
- KW;CB- Recreation
- KW;CB- SWICC
- KW;CB- Multimodal
- GM- Multi-modal mindset
- GM- Interest for bike/ped infrastructure
- GM- UCDA (Union County Development Corporation)
- GC- Well loved, supported, established trails
- GC- Heaviest travelled roads are state controlled
- GC- Minimal traffic infrastructure
- GC- Active volunteer base
- GC- Good grantwriting
- TM- Willingness to share resources

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WEAKNESSES:

- JJ, JS, GM, GB, TM- More things to fix than money available
- JJ, NK, KW;CB, TM- Declining population
- JJ- Lack of rail (in Ringgold County)
- JS- Large bridges requiring local funds (referring to Taylor County)
- JS- Trail and Sidewalks
- NK- Revenue sources
- NK- Lack of opportunities for young people
- NK- Daycare
- KW; CB- Intermodal
- GM- Competing interests
- GM- Road quality
- GB- Low-income/Low-value (property value) tax base
- GB- Aging population
- GB- Lack of regional trails
- GB- Lack of community pride
- LL- Low transit ridership
- LL- SIT depot needs to be repaired or replaced.
- TM- Remote region that values independence
- TM- Low population density
- TM- Low local contribution

OPPORTUNITIES

- JJ- Growth in public transit use
- JS, GC- Abandoned rail (for recreational trails)
- NK, TM- Telework, new residents from Des Moines and Omaha metro areas.
- NK- Renewable energy
- KW;CB- Cultural funding from feds
- KW;CB- River trails
- KW;CB- Wind power
- KW;CB- Solar power
- KW;CB- Leadership training programs
- GM- Blank slate opportunity
- GC- Collaboration across region
- LL- Taylor county has unusually low ridership and may be a market to further invest in.

THREATS:

- JJ- Climactic/weather changes impacting road conditions
- JJ, TM- STBG/TAP changes
- JS, NK- Declining population
- NK- Funding neglect for rural areas
- KW;CB- Implementing cultural funding
- KW;CB- Retaining brain power
- KW;CB- Increasing damage from farm equipment
- GM, GC- Reliance on a small number of employers and a small number of industries
- GC, TM- Reliance on state funding
- LL- Ridership may never recover from COVID-19
- TM- Rising fuel costs
- TM- Electric vehicles and hybrids
- TM- Shift in state priorities away from RPAs

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APPENDIX B - HARDCOPY LRTP SURVEY

This survey is being conducted by Regional Planning Affiliation 14/ATURA (Administered by the Southern Iowa Council of Governments located in Creston, IA). It is designed to seek input and opinions on transportation priorities within the five-county ATURA region (Adair, Taylor, Union, Ringgold, & Adams Counties). The information will be used in the development of a Long Range Transportation Plan (a 20-year outlook) for the region.

RPA 14 / ATURA 2016 Long Range Transportation Survey

SECTION 1: Travel Behavior

RPA 14 / ATURA 2016 Long Range Transportation Survey

1. About how many trips do you take on a regular day? (a trip is a journey from one destination to another. For example, a trip to the grocery store and back is two trips)

- ○ 0
- ○ 1 - 2
- ○ 3 - 4
- ○ 5 - 6
- ○ 7 or more

2. What is your primary mode of transportation? (Choose one)

	Primary method of Transportation	Secondary Method of Transportation	Occasional Method of Transportation	Never or infrequently used method of Transportation
Walking				
Bicycle				
Public Transit (Southern Iowa Trolley)				
Automobile				
Other (please specify)				

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3. How many working vehicles does your household own?

- ○ 0
- ○ 1 - 2
- ○ 3 - 4
- ○ 5 or more

4. How many licensed drives are in your household?

- ○ 0
- ○ 1 - 2
- ○ 3 - 4
- ○ 5 or more

5. How long is your commute to work? (In minutes)

_____

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SECTION 2 - Public Transit

The questions in this section do NOT refer to the Amtrak passenger rail system.

6. How often do you use public transportation?

- ○ 1-6 days a week
- ○ Less than once a week
- ○ Less than once a month
- ○ Very rarely
- ○ Never

7. If you do not use public transportation, why not? (Check all that apply)

- ○ I am unsure how to use public transit
- ○ Using public transit would inconvenience me
- ○ Public transit is too expensive
- ○ I prefer to use another mode
- ○ There is no public transit in my area
- ○ Other (Please specify) _____

8. Rate the following statements based on your satisfaction with the PUBLIC TRANSPORTATION SYSTEM in your area.

	Very Unsatisfied	Unsatisfied	Neutral	Satisfied	Very Satisfied	Unsure
How satisfied are you overall with the public transit in your area?						
How satisfied are you with the cost of public transit?						
How satisfied are you with the facilities						
How satisfied are you with the services offered?						

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9. What improvements could be made to increase your use of public transportation? (Check all that apply)

- ○ Increase service
- ○ Increase timeliness
- ○ Improve facilities/vehicles
- ○ Reduce fares
- ○ No improvements would increase my use
- ○ Other (Please specify) _____

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SECTION 3 – Bicycle and Pedestrian Infrastructure

10. How often do you use sidewalks?

- ○ 1-7 times a week
- ○ Less than once a week
- ○ Less than once a month
- ○ Never

11. How often do you use trails in your area?

- ○ 1-7 times a week
- ○ Less than once a week
- ○ Less than once a month
- ○ Never

12. For what purpose do you use trails or sidewalks? (Check all that apply)

- ○ Traveling to work
- ○ Recreation
- ○ Health/Wellbeing
- ○ To reach a destination besides work
- ○ Other (Please specify) _____

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13. Rate the following statements based on your satisfaction with the TRAILS that you use.

	Very Unsatisfied	Unsatisfied	Neutral	Satisfied	Very Satisfied	Unsure
How satisfied are you with the proximity to the nearest trail from your home or work?						
How satisfied are you with the length and condition of the existing trails in your area?						
How satisfied are you with the number of trails in your area?						
How satisfied are you overall with the multi-use trails in your area?						

14. Rate the following statements based on your satisfaction with the SIDEWALKS that you use.

	Very Unsatisfied	Unsatisfied	Neutral	Satisfied	Very Satisfied	Unsure
What is your overall satisfaction with the quality of the sidewalks you use?						
How satisfied are you with the quality of crosswalks and pedestrian signals?						
How satisfied are you with the number of sidewalks?						
How satisfied are you overall with the marked crosswalks and signals?						

15. How could the walking infrastructure in your area be improved? (Choose one)

- ○ Improve existing sidewalks
- ○ Build new sidewalks
- ○ Add more marked crosswalks
- ○ Improve existing sidewalks
- ○ Add signaled pedestrian crossings
- ○ Other (Please specify) _____

16. How could the bicycle infrastructure in your area be improved? (Choose one)

- ○ Build more trails
- ○ Improve existing trails
- ○ Designate more bike lanes
- ○ Other (Please specify) _____

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SECTION 4 – Rail and Freight

17. How often do you use passenger rail service such as Amtrak?

- ○ More than once a week
- ○ 1-4 times a month
- ○ Less than once a month
- ○ Never

18. Rate the following statements based on your satisfaction with PASSENGER RAIL AND FREIGHT SERVICE (truck or train) in your area. 14 / ATURA 2016 Long Range Transportation Survey

	Very Unsatisfied	Unsatisfied	Neutral	Satisfied	Very Satisfied	Unsure
How satisfied are you with the passenger rail service?						
How satisfied are you the freight service (truck or train)?						

19. What improvements could be made to increase your use of passenger rail (Choose one)?

- ○ More stops at more locations
- ○ Change of schedule
- ○ Faster service
- ○ Cheaper tickets
- ○ No improvements would increase my use
- ○ Other (Please specify) _____

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SECTION 5 – Roads

20. How would you rate the roads in your area? (Choose one)

- ○ Very good
- ○ Good
- ○ Neutral
- ○ Poor
- ○ Very poor
- ○ Unsure

21. Which class of road needs the most improvement in quality? (Choose one)

- ○ County roads (gravel)
- ○ County roads (paved)
- ○ City roads
- ○ State/Federal Highways
- ○ Interstates
- ○ Other (Please specify) _____

22. Keeping in mind that funding is limited, please rate the following categories according to the priority you feel they should be given in FUNDING DECISIONS for the region.

	Very Unsatisfied	Unsatisfied	Neutral	Satisfied	Very Satisfied	Unsure
Public Transit						
Sidewalks and Trails						
Rail/Freight						
Rural Roads						
City Roads						
Interstates						

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SECTION 6 – Demographic Information (Final Page)

23. What is your gender?

- ○ Female
- ○ Male
- ○ I prefer not to answer
- ○ Other (Please specify) _____

24. What is your age?

- ○ Under 18
- ○ 18-24
- ○ 25-34
- ○ 35-44
- ○ 45-54
- ○ 55-64
- ○ 65 or older

25. What is your annual household income?

- ○ Under $15,000
- ○ Between $15,000 and $29,999
- ○ Between $30,000 and $49,999
- ○ Between $50,000 and $74,999
- ○ Between $75,000 and $99,999
- ○ Between $100,000 and $150,000
- ○ Over $150,000

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26. What is your 5-digit zip code?

_____

27. Do you live in an incorporated city?

- ○ Yes
- ○ No

We welcome your involvement in this process. If you wish to be contacted about further involvement in the ATURA Long Range Transportation Planning process, please provide your contact information below. Otherwise, you do not need to provide this contact information.

RPA 14 / ATURA 2016 Long Range Transportation Survey

Name:

Company:

Address:

City, State & ZIP

Email Address:

Phone Number:

Thank you for taking time to answer these questions. Your opinion is very valuable and will be used in the planning process for the Long Range Transportation Plan. This survey may also be accessed online at https://www.surveymonkey.com/r/LRTP16

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Additional copies of this survey are available at the office of the Southern Iowa Council of Governments. Feel free to share this survey with anyone you feel might be interested. Surveys should be returned to Southern Iowa Council of Governments.

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