

EXISTING REGIONAL TRANSPORTATION SYSTEM

STRENGTHS AND WEAKNESSES

I. Overview

Similar to the rest of Iowa, SRTPA is well served by multiple transportation links. The region enjoys the luxury of having multiple major highways, several railroads whose services impact the entire country, and is accompanied with the potential for barge traffic through the Missouri river nestled along the region's southwestern border.

A. Highways

SRTPA's transportation network consists of approximately 6,300 miles of road. The FHWA has created a road identification system, where roads are assigned to one of seven different Federal Functional Classifications¹ (FFC). The mileage distribution of roads via FFC is listed in the following table and displayed in the following map.

SRTPA Federal Functional Classification (FFC)	
FFC	Miles
Interstate	35
Other Principal Arterial	162
Minor Arterial	278
Major Collector	793
Minor Collector	847
Local	4,185
Total	6,300

Source: IDOT Office of Systems Planning FFC Classification

The range in Annual Average Daily Traffic (AADT) amongst SRTPA's transportation network is similar to the FFC hierarchy. Interstate is the highest FFC classification and has the highest AADT within SRTPA. The AADT decreases with each FFC with Local roads recording the lowest AADT. The different levels of AADT amongst SRTPA is displayed on the following SRTPA AADT map, page three.

¹ Key Traits of each FFC in the SRTPA FFC table is listed in the following:

Interstate: Designed with mobility and long-distance travel in mind. Link major urban areas in the U.S.

OPA: Serve major centers of metropolitan areas, provide a high degree of mobility through urban and rural areas.

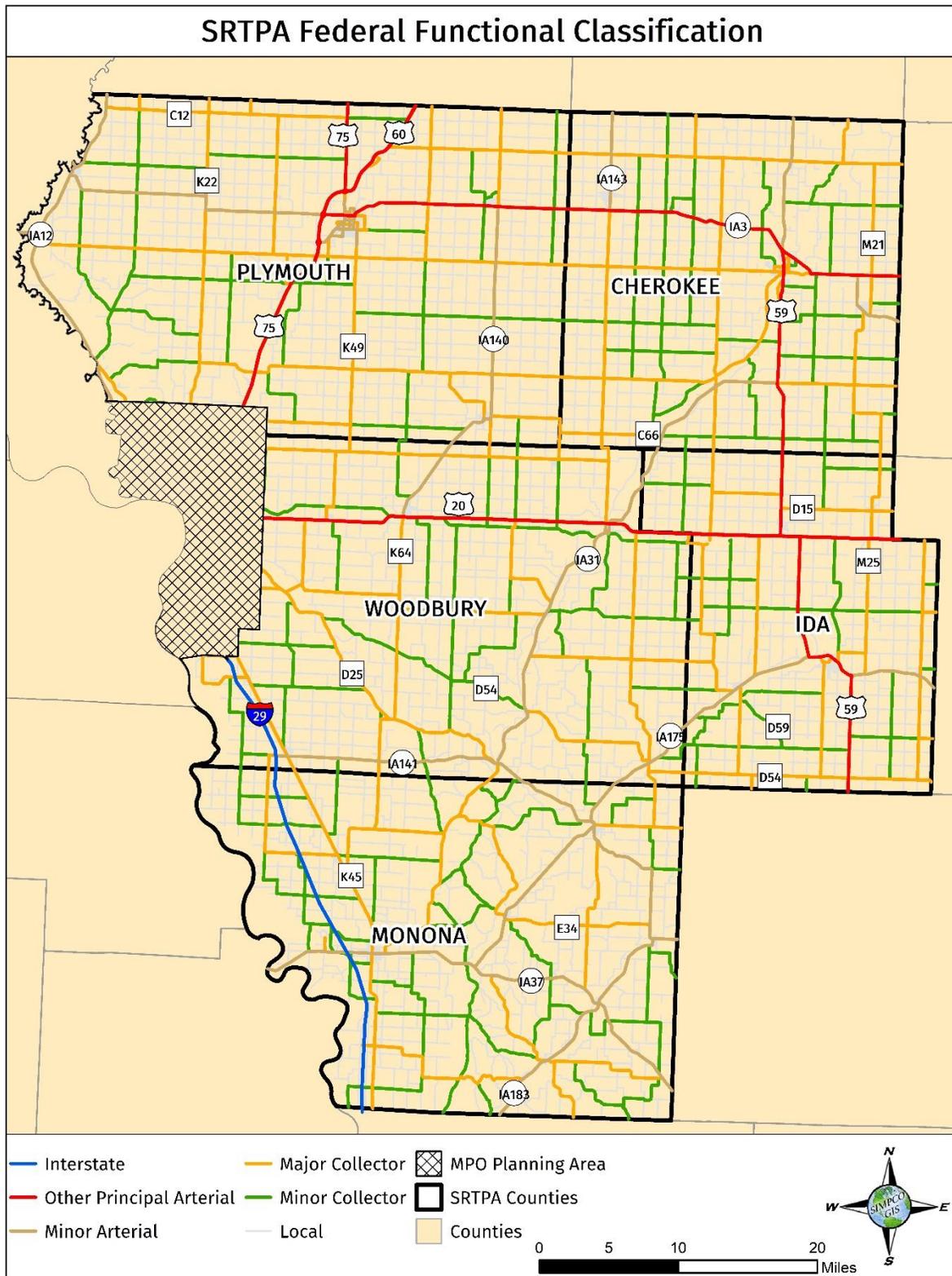
Minor Arterial: Provide service for trips of moderate length and offers connectivity to the higher Arterial system.

Collector: Gathers traffic from Local Roads and funnels them to the Arterial Network.

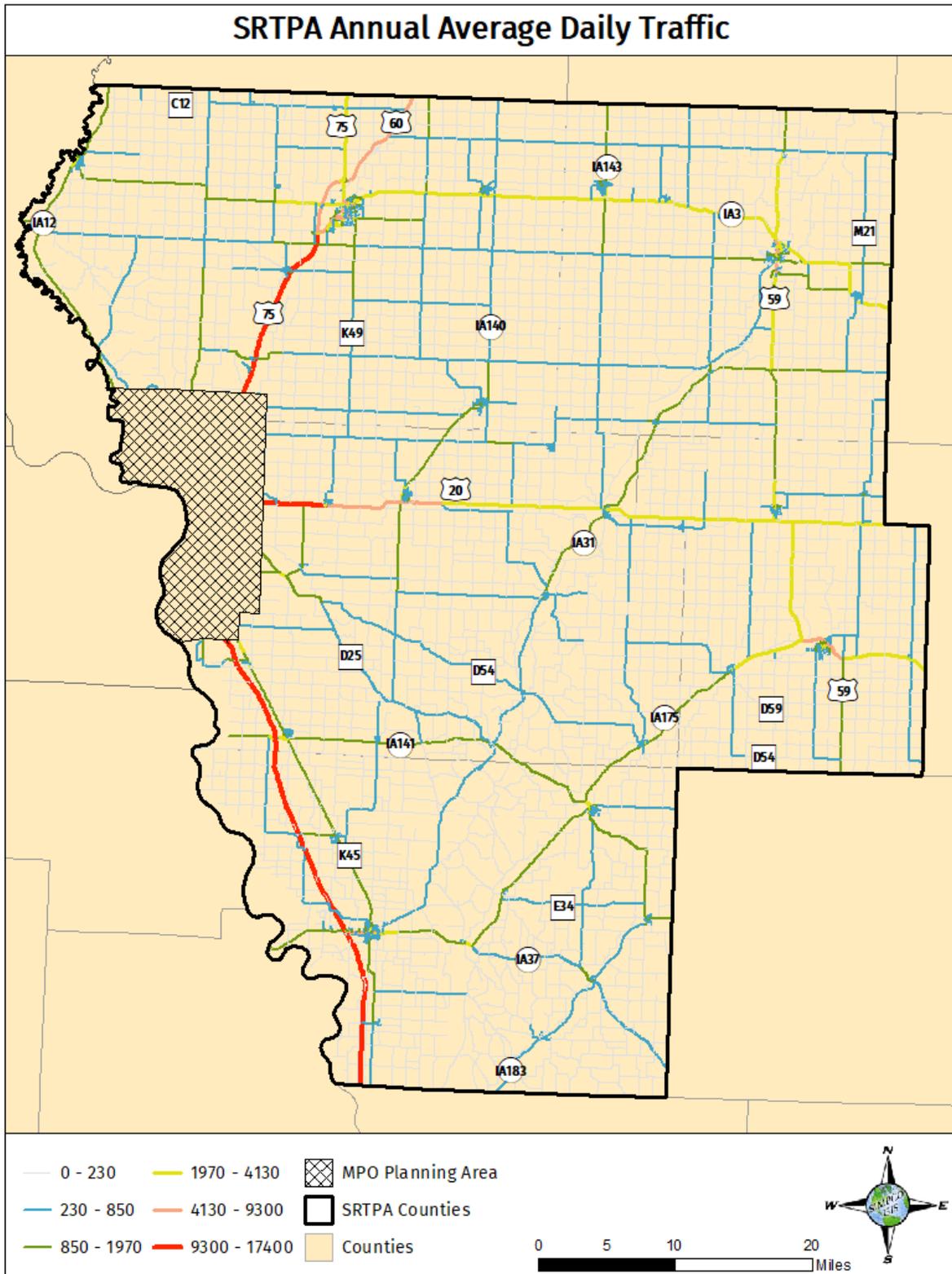
Major Collector: Longer routes, higher speed limits, higher traffic volumes, and more lanes than a Minor Collector.

Minor Collector: Offers more access than a Major Collector.

Map IV.1



Map IV.2



SRTPA has approximately 105 miles of four-lane freeway or expressway type roads with 39 of those miles being Interstate 29 in the southwest section of the region. Interstate 29 serves as principal north – south route through the area connecting Sioux City with Sioux Falls SD, Fargo ND and Winnipeg MB, CA to the north and Council Bluffs, IA, Omaha, NE, Kansas City, MO and points to the south. Four lane expressway sections run along US Highways 75 and 20 as well as Iowa Highway 60. Then there is a two lane, US highway 59, runs north – south from Laredo, Texas up to Landcaster, Minnesota.

US Highway 75 runs north – south through the area roughly paralleling I-29 but servicing the more populated Iowa towns such as Le Mars and Sioux Center versus Jefferson, Elk Point and Beresford, SD on its way north to Minnesota and Manitoba. Southwards, it passes through Sioux City towards Omaha and the South.

Iowa Highway 60 serves the very important role of connecting the recreational area around the Iowa Great Lakes region and southwestern Minnesota to the Sioux City area and points southwest. It runs from Le Mars northward to I-90 in Minnesota further continuing as Minnesota 60 towards the Twin Cities region.

US Highway 20, the longest road in the United States runs coast to coast from Boston, MA to Newport, OR. In the region it is a principal east – west arterial roadway linking the main communities and also serves as the principal thoroughfare to north central and eastern Iowa from the region.

US Highway 59 runs north – south through Cherokee and Ida Counties in the region. Before US Highway 59 held its current path from Laredo, Texas to Landcaster, Minnesota, it started in Port Arthur, Texas and used to end in Pembina, North Dakota.

Other state and US Highways like Iowa Highways 3, 12, 31, 37, 140, 141, 143, 175, and 183 primarily service the intra-regional traffic and as access to the inter regional facilities mentioned above. Traffic counts range from approximately 2,000 to 15,500 AADT on the main facilities. I-29, unsurprisingly has the highest volumes with rural sections of US 20 in eastern Ida County carrying some of the lower volumes. Some of the state highways have AADTs of less than 1,000. Starting with SAFETEA-LU and continuing through FAST Act, emphasis has

been placed on preservation of the existing system. This is a challenge with many of the regional roadways and bridges in need of maintenance work like overlays, reshouldering, construction, etc.

SRTPA is home to a significant amount of bridges due to the general Loess topography with numerous streams, creeks and rivers draining into the Missouri River. Plymouth and Woodbury County accounted for the most bridges amongst SRTPA counties. Furthermore, Plymouth County has the third most County bridges amongst all counties in the U.S. Table IV.2 indicates the number of bridges by owning jurisdiction.

Table IV.2

	Location of Bridges via Route Type					
	Interstate Highway	U.S. Highway	State Highway	County Highway	City Street	Other
Cherokee	0	13	12	207	13	1
Ida	0	11	14	152	6	0
Monona	6	0	36	123	4	0
Plymouth	0	35	38	378	5	0
Woodbury	28	36	37	296	61	0
SRTPA	34	95	137	1156	89	1

Not surprisingly, Woodbury County has the most Interstate Highway and City Street bridges due to the influence of the MPO including Sioux City and Sergeant Bluff in the total figures with their correspondingly greater number of roadways and interstate access points. Given the large number of bridges described and in many areas, relatively low volume traffic of less than 500 vehicles per day, timely maintenance of these bridges is proving to be a significant challenge.

Regarding the condition and functionality of SRTPA's bridges, nearly a quarter have been rated as poor and structurally deficient by the Federal Highway Administration. An additional indicator on the state of SRTPA's transportation network, specifically the interstate and primary road segments, is the Pavement Condition Index (PCI) rating. PCI indicates the condition of pavement and the index rating is expressed as a value between 0 and 100, with 100 representing excellent condition. When determining the PCI rating of a road segment the IDOT uses a series of variables including age, percent of life used, high/moderate/low

severity longitudinal cracking, IRI, aggregate class durability, pavement thickness, friction value, moderate severity patching, total asphalt depth, relative structural ratio, and base thickness. The most recent PCI rating given to SRTPA's interstate and primary roads was 72.8. Amongst the five counties in the region, Ida County had the highest rating at 81.2 whereas Monona County had the lowest rating at 65. There were several large segments of primary roads whose PCI ratings were below 50. Large segments of primary roads with a PCI rating less than 50 featured Highway 20 segment stretching east from Merville, IA 175 segment stretching from the Ida County border through Danbury to the Woodbury County border, IA 137 segment stretching from Turin to Solider, and Highway 183 segment stretching from Soldier to Ute. Small road segments stretching through several communities had a PCI rating less than 50 as well which included IA 3 in Le Mars and Remsen, IA 143 in Marcus, US 59 in Cherokee, IA 175 in Mapleton, and IA 137 in Onawa. The condition and functionality of bridges and the PCI rating amongst each county is broken-down in the following table.

	Condition			Functionality			PCI
	Good	Fair	Poor	Not Deficient	Structurally Deficient	Functionally Obsolete	
Cherokee County	36%	36%	28%	67%	28%	4%	73.3
Ida County	41%	44%	15%	85%	15%	0%	81.2
Monona County	32%	39%	30%	64%	30%	7%	65
Plymouth County	46%	30%	24%	74%	24%	1%	73.1
Woodbury County	42%	34%	24%	73%	24%	2%	73.8
SRTPA	41%	35%	24%	73%	24%	3%	72.8

B. Safety

Similar to the other RPAs in Iowa, SRTPA's safety concerns are primarily related to rural highway segments. Primary safety concerns include roadway profiles, roadway signage, especially at intersections and the increasing average age of motorists in the region. Generally, it is noted that the crashes on the rural high speed two-lane segments tend to be more serious than the more frequent but lower severity incidents in and around the towns. This is evident through the difference in the number of crashes within the SRTPA boundary versus the MPO area where the ratio between fatal/major injury crashes and Property Damage Only (PDO)/minor injury crashes is significantly larger for the region.

IDOT created a Highway Safety Improvement Program (HSIP), whose role is to reduce traffic fatalities and serious injuries on public roads. In 2010 HSIP released a 5% most severe safety needs report, which describes no less than 5% of the state's highway locations that are

exhibiting the most severe safety needs. The whole idea of this plan is to raise public awareness of highway safety needs and challenges. Iowa's safety needs fall into the categories of; single vehicles running off the road, vehicles crossing the centerline on two-lane highways, vehicles crossing the medians on freeways, horizontal curves, intersections, unbelted drivers and passengers, impaired drivers, and speeding. There were only seven instances where SRTPA was affected by the 5% safety needs, a link of this map can be found in appendix C.

SRTPA Crash Type (2013-2018)						
	<u>Total</u>	<u>Fatal</u>	<u>Major Injury</u>	<u>Minor Injury</u>	<u>Possible or Unkown Injury</u>	<u>Property Damage Only</u>
2018	1370	3	17	108	274	968
2017	3115	19	73	293	590	2140
2016	3247	19	68	308	680	2172
2015	3136	19	74	284	585	2174
2014	2899	14	81	244	508	2052
2013	2838	18	68	250	486	2016

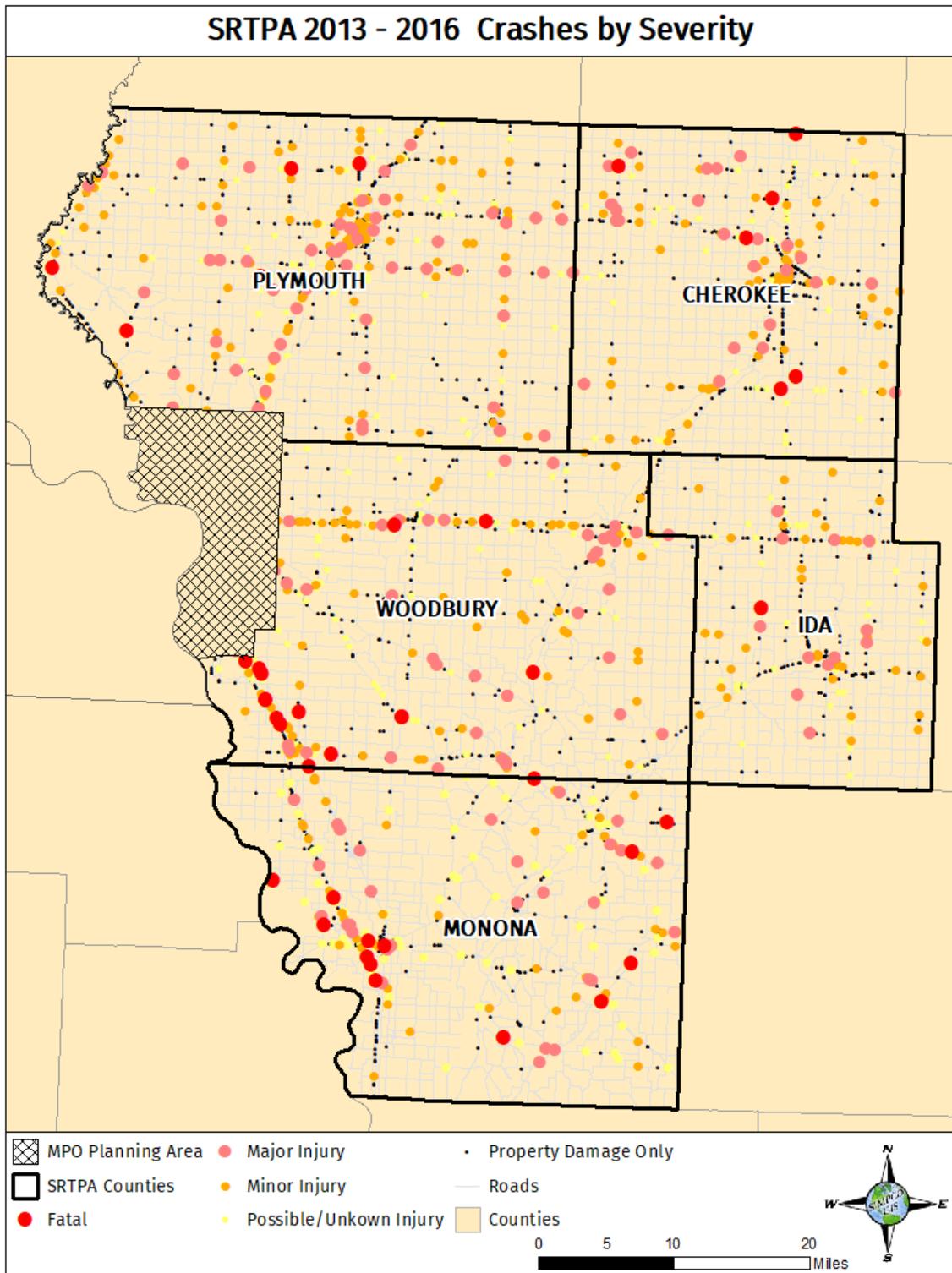
Source: Iowa Department of Transportation

Table IV.3 Crashes by County and Crash Type in SRTPA

Table IV.3 shows the total crashes by crash type throughout the region from the year 2013 to 2018. On the following page, the spatial distribution of crashes by

crash type is displayed in the SRTPA 2013-2016 Crashes by Severity map as well. The tendency to have more frequent but lower severity crash occurrences in areas with higher traffic volumes, slower speeds and more potential traffic conflicts is made evident in the map. The most severe crash type, Fatal, has a very-low frequency but occurs in areas and on roads with higher traffic volumes as well. Amongst the Fatal crashes (132) that occurred in 2018, more than half took place on SRTPA's interstate and primary roads. Interstate 29 had a significant amount of fatal crashes in comparison to the rest of SRTPA's primary roads, accounting for 16% of all fatal crashes. Interstate 29 recording the highest amount of fatal crashes contributed to Monona and Woodbury County recording the most as well at 27% and 26%. Plymouth County had a similar share of the total fatal crashes accounting for 21%. Plymouth County having a high share of fatal crashes is partially due to the amount of fatal crashes that occurred on US 75.

Map IV.3



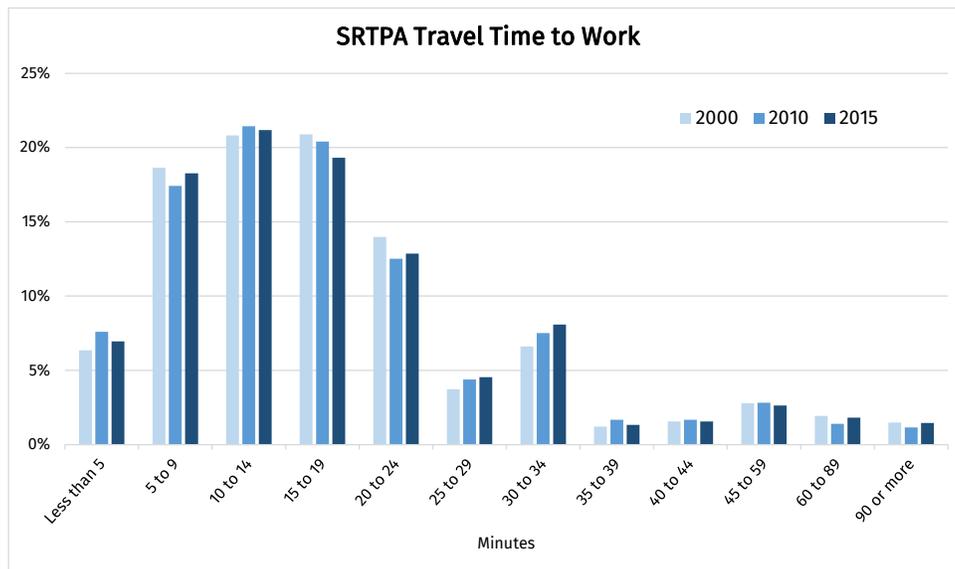
C. **Mobility**

No concerns regarding mobility exist amongst SRTPA. Excluding localized safety issues along highway alignments and intersections, no areas with low levels of service that would preclude mobility is present.

In general, the commute time for employees throughout the region is relatively short as approximately two-thirds of employees have a commute time of 19 minutes or less. The region’s average commute time in 2015 was 18.1 minutes. Monona County averaged the longest commute time. The following table shows the changes to the proportion of commuter’s average time to work using twelve time intervals between the year 2000 and 2015 in the SRTPA. It must be noted that these figures incorporate MPO travel times in Woodbury County as well.

The changes to the average commute time amongst SRTPA counties has generally remained the same, but is still less than the mean travel time of both the nation (25.9 minutes) and state (18.9 minutes) according to the 2015 U.S. Census Bureau/American Community Survey.

Figure IV.1



D. Freight

Trucking is not directly under the planning jurisdiction of SRTPA. Given the agricultural nature of the area, a significant percentage of the freight traffic on the roadways involves distribution of agricultural products. Examples include heavy farm trailers pulled by agricultural tractors delivering corn and soybeans harvested with combines to storage depots or grain elevators. Trucking accounts for approximately 22% of the AADT amongst SRTPA's interstate and primary roads. Nearly a quarter of SRTPA's road segments had trucking account for at least 31% of the AADT. Roads that had trucking account for the highest proportion of AADT featured all of Interstate 29, a large segment of Hwy 20 stretching east from Merville to the Ida County border, Highway 75 from the MPO border to the Le Mars, and Highway 60 stretching north from Le Mars to the Plymouth County border.

Regular road tractor trailer combinations are also heavily used to shuttle grain products and live animals such as cattle, hogs and poultry to processing centers in nearby towns and cities. The Well's Dairy processing plant is located in Le Mars and is a significant source of trucks utilizing the region's roadways. Generally, raw material like milk solids, milk etc. is brought in via train and truck and the output products are trucked out to destinations nationally and internationally. Heavy equipment manufacturers shipping their asphalt paving equipment, trailers, etc. are significant users of the road network as well. Warehousing and distribution activity is well represented in SRTPA with major companies such as Hy-Vee having a distribution center in Cherokee and shipping grocery products in and out over the regional road network as well.

Long distance truck transportation poses additional demands on the region's roadways. As mentioned above, I-29 serves the region and is a major corridor for NAFTA traffic from Mexico and the Southeast, to central and western Canada. This traffic is anticipated to grow, particularly with the rise of Alberta as a significant energy and manufacturing center. Truck traffic from Minnesota to the Southwest and Mexico also places heavy demands, particularly along the Iowa Highway 60 corridor. Freight facilities and warehouses within the region include Big Soo Terminal, Burlington Junction Railroad, Cloverleaf Cold Storage, L.G. Everist, Le Mars Public Storage Inc., Big Soo Warehouse, Heyl Truck Lines, Jacobson Companies, and Nor-Am Cold Storage.

E. Airports

Residing within the SIMPCO MPO, Sioux Gateway Commercial Service Airport is the lone Commercial² Service Airport located in the immediate vicinity of the SRTPA region. Additional Commercial Service Airports that are in close proximity to the SRTPA region include Eppley Airfield located in Omaha, Joe Foss Airfield located in Sioux Falls, and Fort Dodge Regional in Fort Dodge, Iowa. The highest classified airports within the SRTPA boundary include multiple General³ and Local⁴ Service Airports residing amongst the towns of Cherokee, Ida Grove, Le Mars, and Mapleton. Amongst these airports, the Le Mars Municipal Airport sees important business traffic and accommodates small business jets on a regular basis.

Sioux Gateway is recognized by the Federal Aviation Administration as a non-hub primary commercial service airport, which encompasses airports that enplanes more than 10,000, but less than 0.05 percent of the total U.S. passengers. The airport is in operation twenty-four hours a day for seven-days a week. Sioux Gateway currently has nonstop flights to Chicago, IL and Dallas, TX.

Table IV.4 General Characteristics of the five main airports in SRTPA.

SRTPA Airport Characteristics				
City	Airport	Type	Runway Length & Width	Fuel Type
Cherokee	Cherokee County Regional	General Service	4,000 ft. (L) 75 ft. (W)	Jet A & 100LL
		Local Service	3,172 ft. (L) 50 ft. (W)	
Ida Grove	Ida Grove Municipal	General Service	4,600 ft. (L) 75 ft. (W)	100LL
Le Mars	Le Mars Municipal	General Service	4,600 ft. (L) 75 ft. (W)	Jet A & 100LL
		Local Service	2,801 ft. (L) 60 ft. (W)	
Mapleton	Mapleton - James G. Whiting Memorial Field	Commercial Service	9,002 ft. (L) 150 ft. (W)	Jet A, 100LL, & automobile fuel
Sioux City	Sioux Gateway	Commercial Service	9,002 ft. (L) 150 ft. (W)	Jet A, 100LL, & automobile fuel

Source: Iowa Aviation System Plan 2010-2030; IDOT Office of Aviation

There is no cargo traffic of significance at any of the regional airports mentioned. Sioux Gateway Airport in Sioux City does have minimal air cargo service provided as part of the commercial airline service to Chicago.

In addition to the airport facilities, there are multiple Heliports located within the SRTPA boundary. The four existing Heliports within the SRTPA boundary reside in the towns of

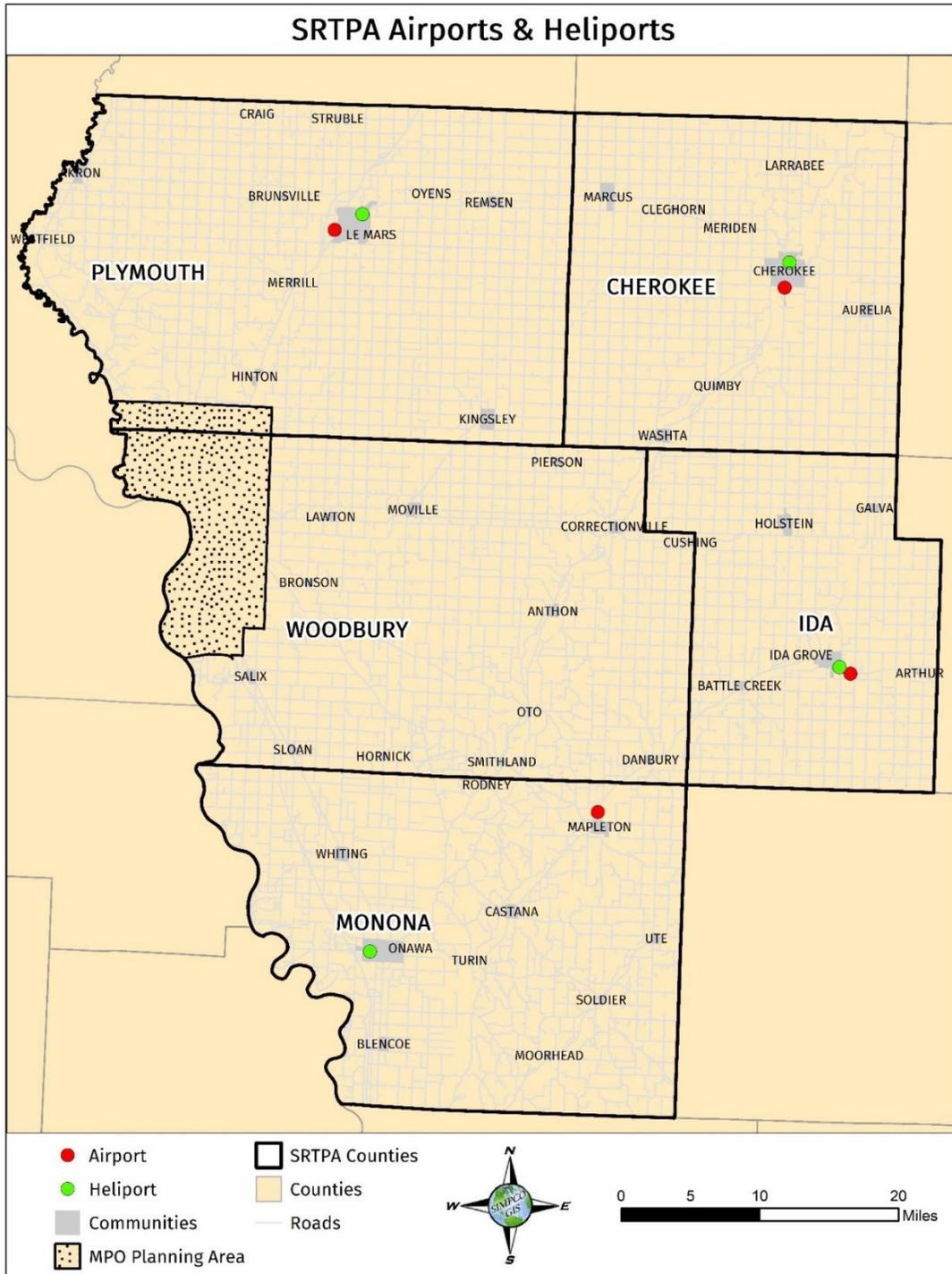
² Commercial Service Airport – Support some level of scheduled commercial airline service, support full range of aviation activity, meets most needs of the aviation system, and is an essential transportation/economic center of the state.

³ General Service Airport – Facilities/Services support most general aviation activity including small to mid-size business jets, and service as a community economic asset.

⁴ Local Service Airport – Support local aviation activity, offer few airport services, and have turf runways.

Cherokee, Ida Grove, Le Mars, and Onawa. There are two heliports located within the SIMPCO MPO boundary in Woodbury County as well. The geographic distribution of airports and heliports amongst SRTPA is displayed in Map IV.4.

Map IV.4 Airports

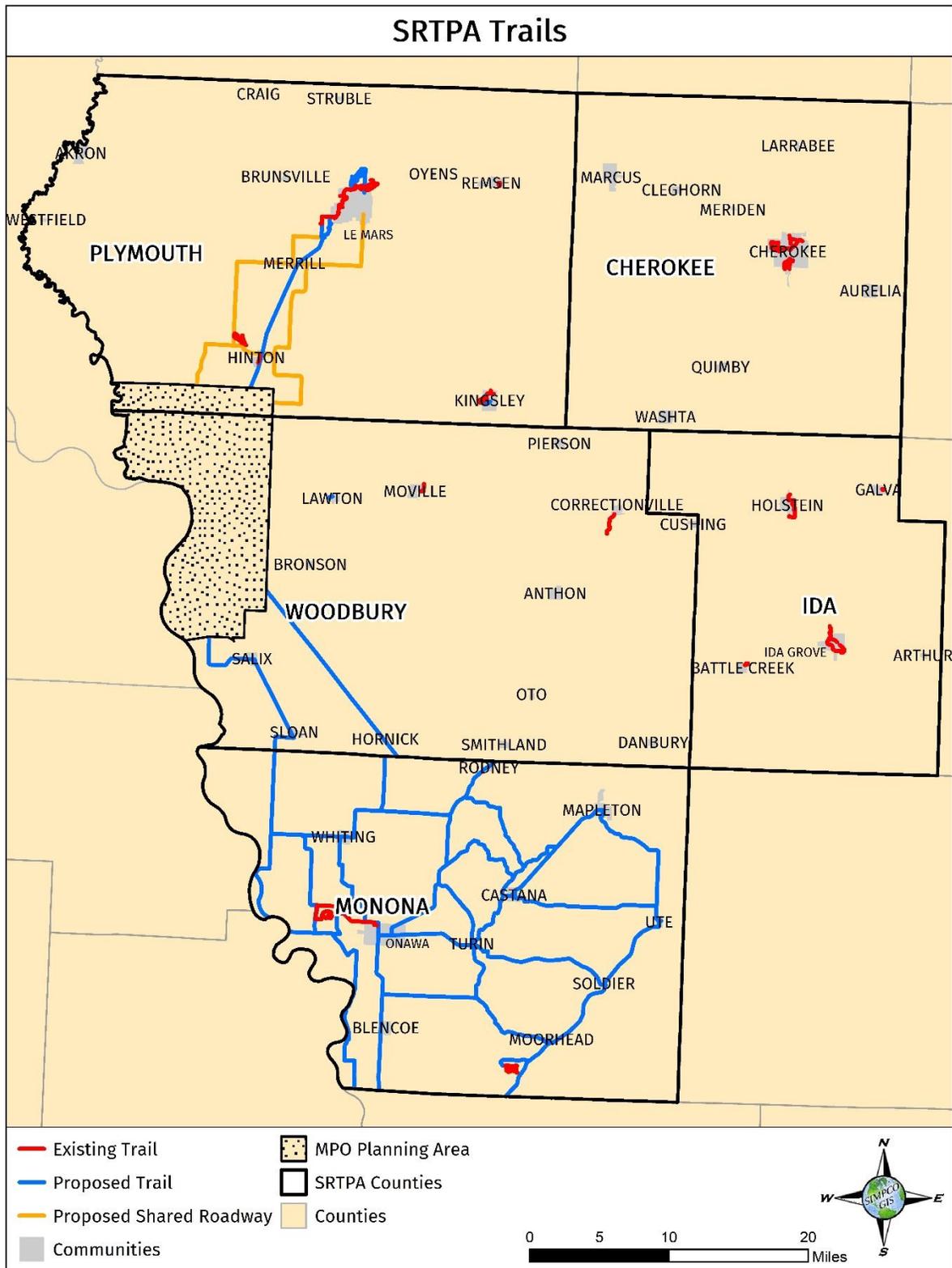


F. Trails

A variety of trails are distributed amongst communities within the SRTPA region. Communities and state parks are typically connected to aquatic centers, sporting facilities, and recreational uses by the existing trails. Exceptions to this general trend include the proposed Milwaukee Trail which would follow the right of way of the old Chicago, Milwaukee, St. Paul and Pacific Railroad which went defunct in the early eighties and the Lewis and Clark Multi-Use Trail along the Missouri River and the proposed PlyWood Trail that would follow a majority of US 75 right-of-way with the option of utilizing a section of old abandoned rail line in the area.

The Milwaukee Trail would run from the Sioux City environs southeast to the Woodbury County line. It may be possible for it to continue further south into Monona County where right of way is still available. The Lewis and Clark Multi-Use Trail is proposed to extend from its existing end location in south portion of the SIMPCO MPO and follow the Missouri River through Woodbury, Monona, Harrison, Pottawattamie, Mills and Fremont counties similar to the trail along the Mississippi in eastern Iowa. In 2013, landscape architecture students from Iowa State University developed a trails plan for Monona County. Students worked with the public and county officials in the development of the plan. The proposed trail plan for the county can be seen on Map IV.5.

Map IV.5 Trails



G. Barge – Waterborne Transport

No barge loading facilities of note exist within the SRTPA region. Located within the SIMPCO MPO boundary is CF Industries, a global leader in nitrogen fertilizer manufacturing, underwent an expansion in the Fall of 2013 was later completed in the Fall of 2016. The expansion featured the Missouri River as a means of transportation to ship super loads that weighed in at around 500 tons. Using the river virtually as a highway, CF Industries was able to ship materials in a timely and cost-effective manner. The river being a source of transit for the company was only temporary however. The key takeaway from CF Industries having the ability to use the Missouri River to transport products is that the potential of using barges to transport materials and supplies exists.

In 2009, the America’s Marine Highway Program (AMHP) was established by Section 1121 of the Energy Independence and Security Act of 2007 in an effort to reduce landside congestion through designating Marine Highway Routes. The routes that have formed the U.S. Marine



Highway System consist of navigable waterways including rivers, bays, channels, the Great Lakes, coastal, and open-ocean routes. Overseen by the U.S. Department of Transportation Maritime Administration, 25 all – water Marine Highway Routes have been designated through AMHP. In 2013, Marine Highway M-29⁵ was added to the U.S. Marine Highway System, establishing a connection between the middle section of the Missouri River in Sioux City, Iowa and the Marine Highway M-70 Route at Kansas City, Missouri. The approval on increasing freight transportation heading north to Sioux City through the Missouri River was finalized with the intent to slow freight traffic growth on local roads, Interstate 29, railroads, and bridges in the surrounding counties.

⁵ An overview on the U.S. Marine Highway System’s 25 Marine Highway Routes including M-29 detailing the applicant, supporters, landside routes served, route description, and attributes is provided in the following link. <https://origin-www.marad.dot.gov/wp-content/uploads/pdf/Marine-Highway-Route-Descriptions.pdf>

H. Rail

SRTPA is served by a three Class 1 railroads and one Shortline railroad. Class 1 railroads include the largest freight – hauling railroads whereas Shortline railroads are smaller railroads that include local railroads as well as railroads that primarily do car switching. The Class 1 railroads serving the region include BNSF Railway Co., Chicago Central & Pacific (CC&P) Railroad, and the Union Pacific Railroad. The lone Shortline railroad, Dakota & Iowa Railroad Co., serves the northwest corner of SRTPA in Plymouth County. The following table lists the tonnage and the communities that align with each railroad.

Primary Operator	Route Description	Communities	Tonnage
BNSF	From Hinton to Struble	Hinton & Merrill	36
Chicago, Central & Pacific Railroad	From Ida Grove to Arthur	Ida Grove & Arthur	1.41
	From Hinton to Auerlia	Hinton, Merrill, Le Mars, Oyens, Remsen Marcus, Cleghorn, Meriden, Cherokee, Aurelia	3.74
D & I Railroad Co.	Going along the Plymouth County border through Akron and Westfield	Akron & Westfield	2.33
Union Pacific Railroad	Going north from Le Mars	Le Mars	9.9
	Going south from MPO border to west border of Woodbury County		21.7
	From Salix to Blencoe	Salix, Sloan, Whiting, Onawa, Blencoe	19.8

Railroads are often shared between multiple companies. The roles of companies sharing a railroad include a Primary Operator and Trackage Rights Only. For the stretch of railroad aligning from Ida Grove to Arthur, and from Oyens to Aurelia, CC&P is the Primary Operator and Canadian National Railway Co. serves as the Trackage Rights Only company. CC&P is also the Primary Operator for the stretch of railroad aligning from Hinton to Le Mars, whereas Union Pacific Railroad serves as the Trackage Rights Only company. The Dakota and Iowa Railroad Co. controls the railroad servicing Akron, Westfield, Hawarden, and serves primarily as a channel for interchange traffic (grains, ethanol, aggregate) with the BNSF Railway. It should be noted that Sioux City acts as regional railroad hub and a source for interchange for all the railroad companies amongst SRTPA. There is no available passenger rail service available in the area as well. The alignment of railroads serving the SRTPA region is displayed in the following SRTPA Railroads map.

There is a total of 356 rail crossings in SRTPA. The degree of safety amongst SRTPA's rail crossings is high in regards to vehicle crashes. According to IDOT, vehicle crashes occurring at rail crossings have accounted for less than one-percent (77 incidents) of total crashes in SRTPA from 2008 to 2017. Although vehicle crashes occurring at rail crossing accounts for an insignificant amount of the total crashes in SRTPA, these crashes are concentrated in a particular location. At the County-level, approximately 69% of the rail crossing crashes have

I. Public Transit



Due to the consequent rural nature of development amongst a RPA region, public transit typically does not have a major role. The demand for public transit is not high within the SRTPA region, but still serves as a crucial source for individuals who are dependent on it. SRTS is a demand responsive transit system centered on the region’s main communities such as Le Mars and Cherokee. SRTS’s

inventory includes a fleet of light duty paratransit buses that primarily shuttle patrons to medical appointments, school, and other various needs. Patrons of SRTS typically include the elderly, disabled individuals, low income individuals, and those lacking a source of transportation. In the following tables, the type of service, fare rates, and SRTS operational figures is listed. SRTS is in operation between Monday and Saturday from 5:30 a.m. to 7:00 p.m.. Please note the City of Le Mars has specific rates⁶.

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Ridership	143,854	132,531	186,368	162,726	158,770	175,561	181,415	187,982	192,000	172,130
Miles	655,448	648,363	898,193	778,228	806,364	782,127	1,073,148	1,079,782	1,123,456	1,132,483
Hours	42,764	40,958	54,144	54,913	50,989	68,224	70,241	74,039	78,206	78,956
Vehicles	49	49	49	49	49	49	50	50	50	50

	Service	Fare
Within City Limits	Curb-to-Curb	\$4.00 per one way trip
	Door-to-Door	\$7.00 per one way trip
Outside City Limits	Curb-to-Curb	\$4.00 plus \$0.50 per mile
	Door-to-Door	\$7.00 plus \$0.50 per mile

⁶ Fare rates for destinations within the City Limits of Le Mars are as follows:
 Curb-to-Curb = \$3.50
 Door-to-Door = \$6.00

II. Summary

With every transportation system there are positive aspects that at the very least should be maintained and negative aspects that require improvements and change. Using this chapter's information, SRTPA's strengths and weaknesses is summarized in the following.

Strengths

- High mileage amongst SRTPA's major four-lane roads exists, which majority are new and/or in good condition.
- SRTPA has good rail capacity with expansion and upgrade (higher speeds for example) being feasible at a moderate cost.
- General and Local Service airports are adequately distributed throughout the SRTPA region. Several Commercial Service airports are in close vicinity to the region as well.
- Dependent on water levels, SRTPA has moderate access to waterborne transportation to facilitate commerce.

Weaknesses

- A significant proportion of bridges amongst SRTPA are in need of replacement or rehabilitation.
- A significant proportion of low – volume County and State roads are in need of rehabilitation.
- Extensive trail networks are established within numerous communities but at the regional scale, improvement to the connectivity of SRTPA's trail network is needed.
- Although the degree of north – south connectivity amongst SRTPA's four – lane facilities is excellent, the degree of east – west connectivity is far less developed, requiring thorough improvements. The connectivity of east – west transportation is critical as a significant proportion trade is facilitated in this direction in Iowa and the U.S.