

Chapter 4: Existing Roadway System

Roads make up the largest part of the region's transportation system and are the most used by residents. The movement of goods and people within the region requires the road network to allow for the from origin to destination even when other modes of transportation are involved. The road network consists of a hierarchy that allow for movement over long and short distances. At the top is the Primary road system that includes the highways, interstates and other state routes that make up the National Highway System, these roads allow for high speed movement over long distances with minimal interruption. In the middle is the secondary road system that includes both major and minor arterials and collectors, these roads connect the primary system to the local system and serve as major roads in larger cities. And at the bottom is the local road system that connect directly to most homes or businesses.

The road network within RPA 15 consists of over 5,000 miles of road, this includes 381 miles of primary roads and 4,098 of secondary roads. Of the region's total mileage, 1,503 miles or 30% are farm-to-market roads. Compared to the entire statewide road mileage, the region contains about 5% of the road mileage.

Federal Functional Classification

Federal functional classification defines the road by the level of service it provides. An arterial provides a higher level of mobility and greater speed for longer distance travel. They do not provide direct access to every destination along the route. Collectors provide mid-level mobility and access and operate at lower speeds and for shorter distance travel than arterials. Collectors also serve to move traffic between arterials and local roads. Local roads provide the lowest level of mobility at the slowest speed but provide the most direct access to more destinations than any other classification.

Federal functional classification is used to determine eligibility for certain grant programs, such as the Surface Transportation Block Grant/SWAP program. It requires a road to have a classification of a minor collector or higher to be eligible for funding. Maps 4.1-4.5 show the federal functional classification for roads in each county and each urban area within the RPA. Figure 4.1 shows the mileage of roads within each county and urban area by classification level. It also shows the National Highway System Miles in each county and urban area. Figure 4.2 shows that the largest percentage of roads within the region are classified as local at 61%. Collectors, both major and minor make up the second largest share accounting for a combined 29% of the roads in the RPA.

Figure 4.1: Road Mileage by Federal Functional Classification - 2016

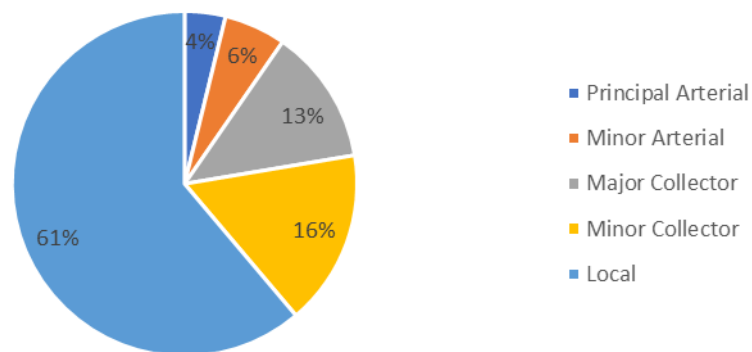
	Principal Arterial	Minor Arterial	Major Collector	Minor Collector	Local	Total	NHS Miles
Jefferson	35	10	126	153	486	808	35
Keokuk	26	96	116	215	662	1,114	26
Mahaska	55	29	113	180	663	1,039	55
Van Buren		74	104	159	529	866	0
Wapello	37	13	134	120	451	755	37
Fairfield	4	17	8		48	78	4
Oskaloosa	18	12	13		80	123	18
Ottumwa	17	41	23		150	226	17
Total	192	291	638	826	3,069	5,009	192

Source: Iowa DOT Mileage Report by Federal Functional Classification - January 1st, 2016

https://iowadot.gov/systems_planning/planning-resource-guide#26634639-mileage-reports

Retrieved: 4/30/19

Figure 4.2: Road Mileage by Federal Functional Classification - 2016



Traffic Volume

Use of the road network is determined by traffic volume, which is measured as Average Annual Daily Traffic or AADT. AADT represents average traffic volumes for a day over a given year. AADT is a useful measure because it gives engineers and planners a picture of traffic on a particular road segment. Areas with higher AADT are used by more vehicles and more often. This information can be used to determine areas that may experience increased wear, or need improvement 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 4-year cycle and southeast Iowa was last counted in 2014. Counts are obtained through a combination of observed counts, automated recorders and estimates. For 2017 counts on the state system are expanded upon using the 2014 counts and a formula. Counts on the secondary system are from when the road was last counted.

Map 4.6 shows the 2017 AADT for RPA 15 and maps 4.7-4.11 shows the 2017 AADT for each of the counties and urban areas within the RPA. Figure 4.4 shows the roads with the highest traffic volumes in the region. A majority of the road are four lane and many with higher volumes can be found in urban areas. The road segment with the highest volume is IA 149 over the Des Moines river which has 23,000 vehicles per day. The road segment outside of an urban area with the highest traffic volume is IA 163 between Oskaloosa and Eddyville which has a traffic county of 12,500 vehicles per day.

Figure 4.3: Roads with the Highest Traffic Volume in the Region - 2017

Road Segment	City/County	# of lanes	Traffic Volume
IA 149/ Wapello St Ext over DM River	Ottumwa	4	23,200
US 34 Venture Dr to IA 149	Ottumwa	4	18,300
IA 92 W of A Ave	Oskaloosa	4	12,600
IA 163 S of Oskaloosa to Eddyville	Mahaska Co	4	12,500
IA 163 N of Oskaloosa	Mahaska Co	4	11,500
Burlington Ave W of Highway 1	Fairfield	3	11,400
IA 92 E of A Ave	Oskaloosa	4	10,700
US 63 S of Ottumwa	Wapello Co	2	6,800
US 63 N of Oskaloosa	Mahaska Co	2	3,800

Source: Iowa Department of Transportation 2017 RAMS data

<http://public-iowadot.opendata.arcgis.com/datasets/rams-road-network>

Retreived: 7/18/18

An important subset of the AADT is the truck AADT, which shows the movement of freight through the region. Map 4.12 shows the truck AADT on roads within the region. Figure 4.4 lists the road segments with the highest truck volumes. The trucks counted on both map 4.12 and figure 4.4 include both single unit and combination truck classes. The segment with the highest truck traffic is IA 163 S of Oskaloosa to Eddyville with 1,997 trucks per day. Truck traffic volume can be used to determine areas that need

capacity improvements to maintain travel speed and time, or safety improvements to prevent conflicts between smaller vehicles and the large trucks.

Figure 4.4: Roads with the Highest Truck Traffic Volume in the Region - 2017

Road Segment	City/County	# of lanes	Truck Volume
IA 163 S of Oskaloosa to Eddyville	Mahaska Co	4	1,997
US 34 E of Ottumwa to Agency	Wapello Co	4	1,826
IA 163 N of Oskaloosa	Mahaska Co	4	1,728
IA 163 Ottumwa Bypass	Wapello Co	4	1,668
IA 163 E of Eddyville to Ottumwa	Wapello Co	4	1,534
US 34 W of Ottumwa	Wapello Co	2	625
US 63 N of Oskaloosa	Mahaska Co	2	614
US 63 S of Ottumwa	Wapello Co	2	574
IA 92 W of Oskaloosa	Mahaska Co	2	501

Source: Iowa Department of Transportation 2017 RAMS data

<http://public-iowadot.opendata.arcgis.com/datasets/rams-road-network>

Retrieved: 7/18/18

Pavement Conditions

The condition of a roadway's pavement is important, and a road's surface should be regularly inspected for wear, cracking and deterioration. Good pavement provides a better driving experience and is safer, while deteriorated pavement can lead to a poor driving experience, be unsafe and cause increased wear and damage to vehicles. The level of deterioration and the amount of cracks in a road is a factor in determining its priority for rehabilitation or reconstruction. It is the responsibility of the cities and counties to inspect and maintain the secondary roads under their jurisdiction while the primary roads are maintained by the Iowa DOT.

One tool that can assist cities and counties in determining the condition of their roads is the Iowa Pavement Management Program. This program inspects one half of the roads within the state each year and this data is available to the cities and counties at no cost. One method of rating the condition is Pavement Condition Index (PCI), which provides a score of a segments condition of zero to 100 with zero being very poor and 100 being excellent. Road segments rated using PCI are scored based on the number of cracks and patches compared to the length of the segment, segments with a higher number of cracks and patches to length have a lower score.

Maps 4.13-4.17 show the 2013 PCI ratings for the roads in each of the counties and urban areas, and maps 4.18-4.22 show the 2017 PCI ratings. Video logging of pavement conditions is also available through the IPMP and can be accessed online at: <http://rams.iowadot.gov/pathweb/> A comparison of the 2013 to 2017 ratings show that while the conditions of individual road segments may have changed, the overall condition of roads within the region stayed constant. In 2013 the average rating of all the state highways in the region was 69, in 2017 the average for the state roads was 70. The average for all of the paved county roads and city streets within the region from 2013 was 51, in 2017 it was 49. State roads also had a higher average rating than county roads and city streets.

Bridge Conditions

There are also 928 bridges that are part of the region's road network. A majority of these bridges are located on secondary roads and are the responsibility of the county for inspection, maintenance and replacement. Bridges located on roads maintained by cities are the responsibility of that city and bridges on primary roads are maintained by the Iowa DOT. Bridges are inspected regularly to determine their ability to remain in service and continue to perform their role. One way to measure this is by scoring bridges on a sufficiency rating.

The bridge sufficiency rating system provides a standard means of evaluating a bridge's condition in several categories. These categories are: bridge structure, traffic volume, road and lane widths, approach geometry, clearances and importance of the bridge. The sufficiency rating gives an overall measure of the bridge's condition, it is also used to determine the bridge's eligibility for Surface Transportation Block Grant program Bridge funds. Bridges with a sufficiency rating of 80 or below are eligible for funding to be rehabilitated, bridges with a rating of 60 or below are eligible to be replaced.

The table below shows the sufficiency ratings for all of the bridges in the region. A majority of the bridges, over half have a rating of 81 or higher. There are 169 or 18% of the bridges that have a rating between 61 and 80, these bridges are eligible for funding for rehabilitation. And there are 285 bridges or 31% that have a rating below of 60 or below and are eligible for funding for replacement. Maps 4.7-4.11 show the locations of the bridges in each county and their sufficiency rating.

Figure 4.5: Bridge Sufficiency Ratings for the Region - 2018

Rating	Jefferson Co	Keokuk Co	Mahaska Co	Van Buren Co	Wapello Co	Total	Pct
81 - 100	85	105	105	60	107	462	48%
61 - 80	19	48	40	31	35	173	18%
0 - 60	55	43	90	70	60	318	33%
Total	159	196	235	161	202	953	

Source: Iowa Department of Transportation 2018 Iowa Bridge Lines

<http://data.iowadot.gov/datasets/bridges>

Accessed: 10/11/18

Crashes

In 2018 there were a total of 1,254 crashes within the RPA. Over half of the crashes were multi-vehicle crashes and only eighteen involved pedestrians. A majority (70%) of the crashes resulted in property damage only. There were 180 crashes that resulted in an injury and nine crashes that were fatal. Figure 4.6 below shows the percentage of crashes by severity for the RPA. Crashes will be discussed in more detail, including locations and high crash areas, in Chapter 8: Safety and Security.

2018 Crash Summary

By Type:

Single Vehicle – 48.3%

Multiple Vehicle – 51.6%

Vehicle / Pedestrian – 18

By Severity:

Fatal – 10

Major Injury – 41

Minor Injury – 115

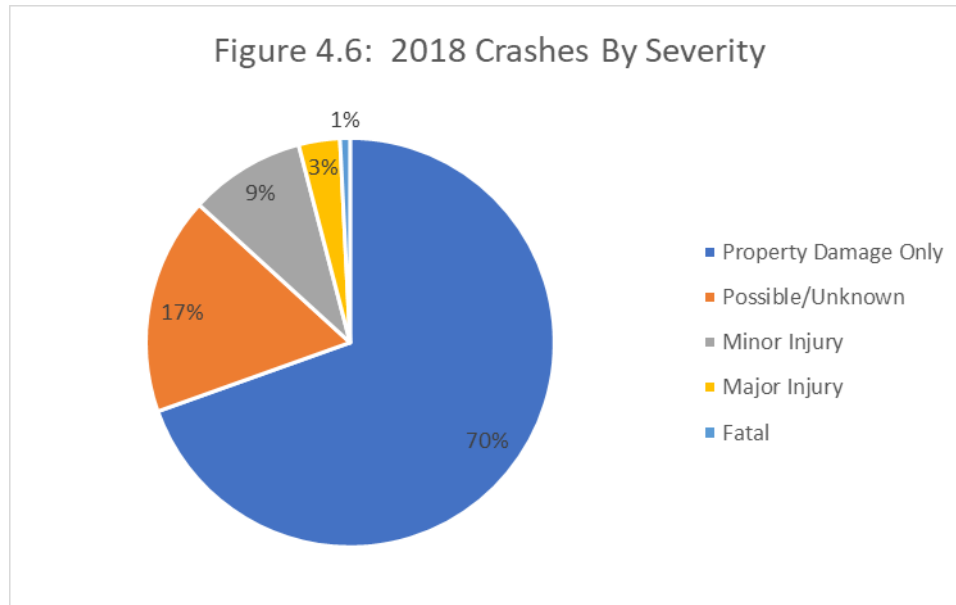
Possible Injury – 216

Property Damage Only - 872

Source: Iowa Crash Analysis Tool.

<https://icat.iowadot.gov/> Accessed:

January 20th, 2019.



Source: Iowa DOT, Iowa Crash Analysis Tool

Future Roadway Improvements

Future road improvements are planned for through coordinated efforts between the RPA and local cities and counties within the region. RPA staff guide the Technical Advisory Committee and Policy Board through the planning process to develop long-range planning documents such as this one that establish goals and objectives and also identify short and long-term projects. This process also selects projects for funding assistance and inclusion in the Statewide Transportation Improvement Program. Short-short term road and bridge projects were identified through discussions with the TAC and review of the FY19-22 STIP. Long-term projects were identified through discussions with Technical Advisory Committee members.

Funding is necessary to implement the identified roadway improvements. There are a several of funding options available to cities and counties for funding road and bridge projects that come from local, state, and federal sources. Some funds, such as local taxes and franchise fees, may be used for both road and bridge projects, other transportation projects and non-transportation related purposes. Others, like the road use tax, farm-to-market fund, and transportation grants are more restricted in how the funding may be used. The Funding sources section and anticipated funding will discuss these sources.

Planned and Potential Improvements

Figure 4.7 identifies planned road and bridge projects within the region for the next five years. It includes information on the project's location, total cost, anticipated amount of grant aid, funding source of that aid, and the year it is programmed if it is. Map 4.23 shows the location of planned road and bridge projects within the region and identifies them by funding source. Figure 4.8 identifies potential road and bridge projects for beyond five years. These are projects that the cities and counties will be starting to develop in the next few years.

The needs of the state highway system within the region are identified in figure 4.9. These needs are identified in the State Long-Range Transportation Plan: Iowa In Motion 2045. The needs are divided into four categories: mobility and safety, freight, condition, bridge and stewardship. Mobility and Safety indicates a corridor where operational improvements can reduce traffic interruptions and the number of crashes. Corridors highlighted in the freight category have a bottleneck that hinders freight movement. The condition category identifies corridors that are ranked in the bottom 25 percent of the Infrastructure Condition Evaluation, which uses a composite rating to evaluate the road's structure and service condition. Bridge identifies corridors that have bridge(s) have are in the lowest 5 percent for bridge condition index of the bridges on the primary system. The bridge section also identifies several major bridge projects that need to occur in the next couple of decades, one of which is in RPA 15, the US 63 Ottumwa viaduct. The stewardship category identifies corridors targeted for routine pavement and bridge maintenance.

Figure 4.10 contains Iowa Department of Transportation District 5 projects for the region. These include both programmed and non-programmed projects, the non-programmed projects are the goals of the district.

Figure 4.7: Planned Road and Bridge Improvements within the Next Five Years

Project	Location	Cost	Aid	Funding Source	Programmed Year
IA 1/S Main widening from Fillmore to 200ft S of Libertyville Rd <i>Notes: also includes \$320k TAP and \$3.5m state</i>	Fairfield	\$4,200,000	\$240,000	STBG	2021 and 2022
IA 22 pavement rehab from IA 149 to Wellman	Keokuk Co	\$2,760,000	\$2,208,000	STBG	2019
IA 149 pavement rehab from IA 92 to IA 22 in Webster	Keokuk Co	\$1,640,000	\$1,312,000	STBG	2019
Bridge replacement on N 17th over Spring Creek	Oskaloosa	\$1,160,000	\$928,000	STBG-HBP	2019
Bridge replacement on 225th Ave over Middle Avery Creek	Wapello Co	\$475,000	\$380,000	STBG-HBP	2019
Bridge replacement on Grasree Ave over Lick Creek	Jefferson Co	\$570,000	\$490,000	SWAP-HBP	2020
Bridge replacement on 257th St	Jefferson Co	\$500,000	\$490,000	SWAP-HBP	2021
Bridge replacement on H43 over Big Cedar Creek	Jefferson Co	\$1,150,000	\$920,000	SWAP-HBP	2021
Bridge replacement on 148th St	Jefferson Co	\$570,000	\$456,000	SWAP-HBP	2022
Bridge replacement on IRIS Ave over Mitchell Creek	Jefferson Co	\$480,000	\$384,000	SWAP-HBP	2022
Pleasant Plain Rd HMA overlay from 167th to N Walnut Creek	Jefferson Co	\$1,485,000	\$570,000	STBG-SWAP	2020
W40 pavement rehab from 19th to 218th St	Jefferson Co	\$700,000	\$700,000	STBG-SWAP	2020
W40 pavement rehab from 150th to Washington Co line	Jefferson Co	\$2,350,000	\$220,000	STBG-SWAP	2021
Bridge replacement on 180th Ave over South Fork English River	Keokuk Co	\$865,000	\$692,000	STBG-SWAP	2019
Bridge replacement on 328th Ave over English River	Keokuk Co	\$365,000	\$365,000	SWAP-HBP	2020
Bridge replacement on 120th over English River	Keokuk Co	\$70,000	\$70,000	SWAP-HBP	2021
Bridge rehabilitation on 170th St	Keokuk Co	\$80,000	\$80,000	SWAP-HBP	2021
G29 paving from Mahaska Co line to IA 21	Keokuk Co	\$1,500,000	\$1,200,000	STBG-SWAP	2022
Bridge rehabilitation on V44 over English River	Keokuk Co	\$400,000	\$320,000	SWAP-HBP	2022
Bridge replacement on 100th St over Buckley Creek	Mahaska Co	\$225,000	\$180,000	SWAP-HBP	2019
Bridge replacement on 335th St over Cedar Creek	Mahaska Co	\$700,000	\$560,000	SWAP-HBP	2020
Bridge replacement on 110th St over Elk Creek	Mahaska Co	\$700,000	\$560,000	SWAP-HBP	2021
Bridge replacement on 160th St	Mahaska Co	\$300,000	\$240,000	SWAP-HBP	2021
Bridge replacement on T31	Mahaska Co	\$150,000	\$120,000	SWAP-HBP	2022
Grading paving widening on G71 from Galeston Ave to IA 163	Mahaska Co	\$5,000,000	\$2,750,000	STBG-SWAP	2019
Bridge replacement on J40 over Reeds Creek	Van Buren Co	\$900,000	\$900,000	SWAP-HBP	2019
Bridge replacement on 150th Rd over Holcomb Creek	Van Buren Co	\$200,000	\$200,000	SWAP-HBP	2020
Bridge replacement on 110th Rd over Lick Creek	Van Buren Co	\$680,000	\$680,000	SWAP-HBP	2020
Bridge replacement on 197th Rd over Wildcat Creek	Van Buren Co	\$300,000	\$300,000	SWAP-HBP	2021
Bridge replacement on Stone Ave	Van Buren Co	\$300,000	\$300,000	SWAP-HBP	2022
Bridge replacement on 235th St over Indian Creek	Van Buren Co	\$375,000	\$375,000	SWAP-HBP	2022
Bridge replacement on 200th Ave over South Avery Creek	Wapello Co	\$500,000	\$500,000	SWAP-HBP	2019
Bridge rehabilitation on Compentie Road over Cedar Creek	Wapello Co	\$250,000	\$250,000	SWAP-HBP	2019
Bridge replacement on 15th St over Brush Creek	Wapello Co	\$500,000	\$500,000	SWAP-HBP	2020
Bridge replacement on 180th Ave over Soap Creek	Wapello Co	\$500,000	\$500,000	SWAP-HBP	2021
Bridge replacement on Whiskey Ridge over Avery Creek	Wapello Co	\$500,000	\$500,000	SWAP-HBP	2022
4th Street HMA overlay from Broadway Ave to BNSF ROW	Fairfield	\$447,700	\$447,700	STBG-SWAP	2021
32nd Street HMA overlay from Jackpine Loop to Burlington Ave	Fairfield	\$768,000	\$768,000	STBG-SWAP	2021
Milner St grade and pave from Mary St to Burhus St	Ottumwa	\$2,036,885	\$1,629,508	STBG-SWAP	2020
Mary Street PCC reconstruction from Ferry St to Shaul Ave	Ottumwa	\$2,197,128	\$2,055,354	STBG-SWAP	2023
US 63 grade and pave and bridge replace J12 to US 34	Ottumwa	\$10,338,000	\$8,271,000	NHPP	2019 and 2020
IA 1 bridge deck overlay over Walnut Creek	Jefferson Co	\$517,000		PRF	2020
IA 1 bridge deck overlay over Walnut Creek	Jefferson Co	\$330,000		PRF	2022
IA 1 grade and pave S of Libertyville Rd to Fillmore Av	Fairfield	\$3,500,000		PRF	2022
IA 21 pavement widening Delta city limit to IA p2	Keokuk Co	\$398,000		PRF	2019
IA 92 bridge deck overlay over Clear Creek	Keokuk Co	\$338,000		PRF	2021
IA 78 bridge replacement over ICE RR	Keokuk Co	\$3,000,000		PRF	2022
IA 92 grade and pave IA 21 and V33 intersections	Keokuk Co	\$2,926,000		PRF	2022
IA 92 bridge replacement over Muchakinock Creek	Mahaska Co	\$3,899,000		PRF	2021
IA 92 bridge replacement over Skunk River	Mahaska Co	\$3,900,000		PRF	2022
IA 1 culvert replacement on Franklin St	Keosauqua	\$300,000		PRF	2021
IA 149 bridge replacement of Park Blvd	Ottumwa	\$1,402,000		PRF	2020
US 34 bridge deck overlay on Main St	Ottumwa	\$252,000		PRF	2021
US 34 bridge deck overlay over Bear Creek	Wapello Co	\$275,000		PRF	2022
US 34 bridge deck overlay over Bardell St	Ottumwa	\$390,000		PRF	2022

Source: RPA 15 2019-2022 Transportation Improvement Program, 2020-2023 STBG/SWAP applications

Figure 4.8: Potential Road and Bridge Projects Beyond Five Years

Project	Location
Old 34/Burlington Road resurfacing	Fairfield
Old 34/Bus 34 resurfacing East and West of Fairfield	Jefferson Co
Business 34 bridge replacement east of Fairfield	Jefferson Co
V45 repaving from Sigourney to Keswick	Keokuk Co
W15 repaving from Richland to 277th	Keokuk Co
G13 repaving from V44 to 215th	Keokuk Co
V67 repaving from IA 78 to Ollie	Keokuk Co
T38 repaving G78 to Blums Corner	Mahaska Co
G29 repaving US63 to Independence	Mahaska Co
G5T repaving Skunk River to US 63	Mahaska Co
G17 repaving US 63 to V13	Mahaska Co
J40 repaving Davis Co to Keosauqua	Van Buren Co
V64 repaving J40 to IA 16	Van Buren Co
<i>Source: RPA 15 Technical Advisory Committee</i>	

Figure 4.9: State Long-Range Transportation Plan Highway Needs

Route	Counties	Corridor	Type of Improvement				
			Mobility and Safety	Freight	Condition	Bridge	Stewardship
US 34	Monroe, Wapello	IA 5 to Ottumwa W CL					
US 34	Wapello	Ottumwa W CL to US 63					
US 34	Wapello, Jefferson	US 63, to IA 1					
US 34	Jefferson, Henry	IA 1 to US 218					
US 63	Davis, Wapello	MO Border to US 34					
US 63	Wapello	US 34 to IA 149					
US 63	Wapello, Mahaska	IA 149 to IA 92					
US 63	Mahaska, Poweshiek	IA 163 to I-80					
IA 1	Van Buren, Jefferson	IA 2 to US 34					
IA 1	Jefferson, Keokuk, Washington	US 34 to IA 92					
IA 2	Davis, Van Buren, Lee	US 63 to US 218					
IA 16	Lee, Van Buren, Davis, Wapello	US 218 to US 34					
IA 21	Keokuk	IA 78 to IA 92					
IA 21	Keokuk, Poweshiek	IA 92 to I-80					
IA 22	Keokuk, Washington	IA 21 to IA 1					
IA 23	Keokuk, Mahaska	IA 149 to IA 92					
IA 78	Keokuk	IA 149 to IA 1					
IA 78	Washington, Jefferson, Henry	IA 1 to US 218					
IA 81	Van Buren	MO Border to IA 2					
IA 92	Marion, Mahaska	IA 5 to US 63					
IA 92	Mahaska, Keokuk, Washington	US 63 to IA 1					
IA 137	Monroe, Wapello	IA 5 to US 63					
IA 146	Mahaska Poweshiek	US 63 to I-80					
IA 149	Wapello	US 34 to US 63					
IA 149	Wapello, Keokuk	US 63 to IA 92					
IA 149	Keokuk, Iowa	IA 92 to I-80					
IA 163	Marion, Mahaska	IA 14 to US 63					

Source: Iowa In Motion 2045: State Transportation Plan

<https://iowadot.gov/iowainmotion/>

Accessed: 5/04/19

Figure 4.10: Planned and Potential Iowa Department of Transportation District 5 Improvements

County	Route	Project Location	Type of Work	Letting
Jefferson	IA 1	From 227th St. S. of Fairfield bypass N. to Old US 34	Mill & Overlay	Not Programmed
Jefferson	IA 1	South Walnut Creek 5.7 mi S of IA 78	Bridge Deck Overlay	1/22/2020
Jefferson	IA 1	S of Libertyville Rd to Fillmore Ave in Fairfield	PCC Pavement - Grade and New	12/21/2021
Jefferson	IA 1	Middle Walnut Creek 3.1 mi S of S Jct IA 78	Bridge Deck Overlay	1/19/2022
Jefferson	IA 1	Big Cedar Creek 2.8 mi S of US 34	Bridge Rehabilitation	1/18/2023
Keokuk	IA 21	From NCL of What Cheer to N. of IA 85	HMA Resurfacing/Cold in Place Recycling	11/19/2019
Keokuk	IA 92	Within the City of Sigourney	Reconstruction	Not Programmed
Keokuk	IA 149	IA 78 to 0.25 mi. S. of W. Kelly St. in Sigourney	HMA Resurfacing	Not Programmed
Keokuk	IA 149	Within the City of Sigourney	Reconstruction	Not Programmed
Keokuk	IA 21	6th St in Delta to IA 92	HMA Paved Shoulder - New and Diamond grind.	2/19/2019
Keokuk	IA 21	N 1st St to 6th St in Delta	PCC Sidewalk/Trail (ADA Improvements)	12/17/2019
Keokuk	IA 21	N 1st St to 6th St in Delta	HMA Resurfacing with Milling	12/17/2019
Keokuk	IA 21	IA 149 to N 1st St in Delta	PCC Pavement - Replace	3/17/2020
Keokuk	IA 22	E Jct 149 to Wellman	HMA Resurfacing Hot inplace recycling with overlay	4/16/2019
Keokuk	IA 22	IA 21 to E Jct IA 149	Microsurfacing	11/17/2020
Keokuk	IA 78	ICE RR 8.8 mi E of IA 149	Bridge-Unspecified	11/16/2021
Keokuk	IA 78	Richland Creek 5.8 mi E of IA 149	Bridge-Unspecified	1/18/2023
Keokuk	IA 92	Clear Creek 2.5 mi W of Co Rd W15	Bridge Deck Overlay	1/20/2021
Keokuk	IA 92	IA 21 and Co Rd V33 Intersections	PCC Pavement - Grade and Replace	1/19/2022
Keokuk	IA 149	IA 92 to IA 22 in Webster	HMA Resurfacing Hot inplace recycling with overlay	4/16/2019
Mahaska	US 63	From Oskaloosa to New Sharon	Grade and Pave	Not Programmed
Mahaska	IA 23	Tributary of Cedar Creek 0.8 mi N of Co Rd T67	Bridge-Unspecified	1/18/2023
Mahaska	US 63	NW Bypass of Oskaloosa	Preliminary Engineering	Not Programmed
Mahaska	IA 92	Muchakinock Creek 1.3 mi W of IA 163	Bridge Replacement-PPCB	11/17/2020
Mahaska	IA 92	North Skunk River 2.2 mi E of E Jct Co Rd V13	Bridge-Unspecified	11/16/2021
Mahaska	IA 92	SE Oskaloosa Bypass	Preliminary Engineering	Not Programmed
Van Buren	IA 1	0.1 mi N of Franklin St in Keosauqua	Structures - Miscellaneous	10/20/2020
Van Buren	IA 1	Little Lick Creek 1.2 mi N of S Jct IA 16	Bridge-Unspecified	10/18/2022
Van Buren	IA 1	Fox River 1.5 mi E of Co Rd V64	Reconstruction - Bridge Deck Replacement	10/17/2023
Wapello	US 34	E of Wildwood Dr. to Roundabout	Pavement replacement from MP 187.62 to 189.74	Not Programmed
Wapello	US 34	In Ottumwa on US 34 from the Roundabout West to Wildwood Drive.	Reconstruction and other improvements	Not Programmed
Wapello	US 63	From Chillicothe to just S. of Oskaloosa (old sections)	CIP & HMA Resurface	Not Programmed
Wapello	US 63	Village Creek 3.1 mi S of US 34	Reconstruction - Bridge Widening	11/15/2022
Wapello	US 63	From Bloomfield to Ottumwa	Super 2 Highway	Not Programmed
Wapello	IA 149	Des Moines River to N. Mclean St.	Pavement replacement from MP .53 to MP 1.34	Not Programmed
Wapello	IA 149	IA 163 to IA 23	Pavement replacement from MP 6.71 to MP 11.53	Not Programmed
Wapello	US 34	IA 149 Intersection in Ottumwa	PCC Pavement - Grade and New	1/22/2020
Wapello	US 34	E Main St 1.4 mi E of W Jct US 63 in Ottumwa	Bridge Deck Overlay	1/20/2021
Wapello	US 34	Bear Creek 1.2 mi W of Co Rd H35	Bridge Deck Overlay	1/19/2022
Wapello	US 34	Bardell St 0.5 mi E of IA 149 in Ottumwa (WB)	Bridge Deck Overlay	1/19/2022
Wapello	US 34	BNSF 1.2 E of W Jct US 63 in Ottumwa (EB/WB)	Reconstruction - Bridge Deck Replacement	10/17/2023
Wapello	US 34	South Avery Creek 0.7 mi E of Co Rd T61	Bridge Deck Overlay	3/21/2023
Wapello	US 63	SB/NB US 63 Over Drainage Ditch 0.3 mi S of Ottumwa	Bridge Replacement-CCS	9/17/2019
Wapello	US 63	River Rd / Co Rd J12 to US 34 in Ottumwa	PCC Pavement - Grade and New	9/17/2019
Wapello	US 63	US 63 Over Bike Trail 0.1 mi S of Ottumwa	RCB Culvert New - Single Box	9/17/2019
Wapello	US 63	Village Creek 3.1 mi S of US 34	Reconstruction - Bridge Widening	11/15/2022
Wapello	US 63	Little Soap Creek 1.9 miles N of Davis Co	Reconstruction - Bridge Deck Replacement	11/15/2022
Wapello	US 63	Local Rds / Detour Route in Ottumwa	HMA Paved Shoulder - New	5/21/2019
Wapello	IA 149	W Park Blvd 1.4 mi N of US 34 in Ottumwa	Bridge Replacement-PPCB	11/19/2019
Source: Iowa Department of Transportation District 5 Planner				
Obtained: 4/22/19				

Funding Sources and Anticipated Funding

Cities and Counties have three main sources of funding for road and bridge projects. These are: local taxes, road use taxes and state and federal grants. Local taxes are collected by the city and county and may include property taxes, sales taxes and franchise fees. Funds raised through these taxes do not have to be used for transportation, however many jurisdictions allocation a portion of the revenue from the taxes collected for transportation including road and bridge maintenance.

Road use taxes are collected from the sale of gasoline and diesel, and the sales tax on cars and trucks and vehicle registration fees. Twenty percent of the funds are raised are allocated to the City Street Fund, 24.5% to the Secondary Road Fund, eight percent to the Farm-to-Market fund and 47.5 is put into the Primary Road Fund. Every city in the state receives funding from the City Street Fund and every county from the Secondary Road Fund and the Farm to Market fund. City Street Fund money may be used by a city for the construction and maintenance any road in the city. The Secondary Road fund may be used by a county for the construction for maintenance of secondary road. Money from the Farm-to-Market fund may be used to construct or maintain a road or bridge on the Farm-to-Market system.

In 2008 the TIME 21 fund was established by changing some vehicle registration fees and schedules and increasing the trailer and title fees. Sixty percent of the revenue raised by TIME 21 is allocated to the state, 20% to secondary roads and 20% to city streets. The shares allocated to secondary roads and city streets are combined with each county's Secondary Road Fund amount or each city's City Street Fund amount. This funding stream was designed to address a shortfall for road maintenance and construction.

In 2020 it is estimated that the cities within the region will receive a combined \$21,432,093 from the City Street Fund. The five counties within the RPA are estimated to receive an estimated \$26,101,965 from the Secondary Road Fund and \$5,067,778 from the Farm-to-Market fund. Figure 4.11 shows the estimated non-federal aid revenues for cities and counties within the region for 2020-2023.

Figure 4.11: RPA 15 Forecasted Non Federal-aid Revenues

	2020	2021	2022	2023
Farm to Market	\$4,785,844	\$4,881,561	\$4,979,192	\$5,078,776
Secondary Road Fund	\$29,150,036	\$29,733,037	\$30,327,697	\$30,934,251
City Street Fund	\$19,624,358	\$20,016,845	\$20,417,182	\$20,825,526
Total Non Federal-aid Revenues	\$53,560,238	\$54,631,443	\$55,724,072	\$56,838,553
<i>Based off of 2018 FM, Secondary Road and City Street reports</i>				
<i>Assumes 2% revenue growth per year</i>				

Cities and counties may also apply to the Regional Planning Affiliation for up to 100% reimbursement on eligible activities from the Surface Transportation Block Grant/SWAP program. The RPA sub-allocates the STBG/SWAP funds received to the five counties, three urban areas, 10-15 regional transit, special projects and planning. The special projects category is used to fund projects in smaller cities with populations under 5,000 that do not receive a sub-allocation or to contribute to Iowa DOT projects in the region.

Figure 4.12 shows the funding for the region and each of the counties and urban areas for the next four years. The RPA is estimated to receive \$2,734,957 in STBG/SWAP for projects in 2020.

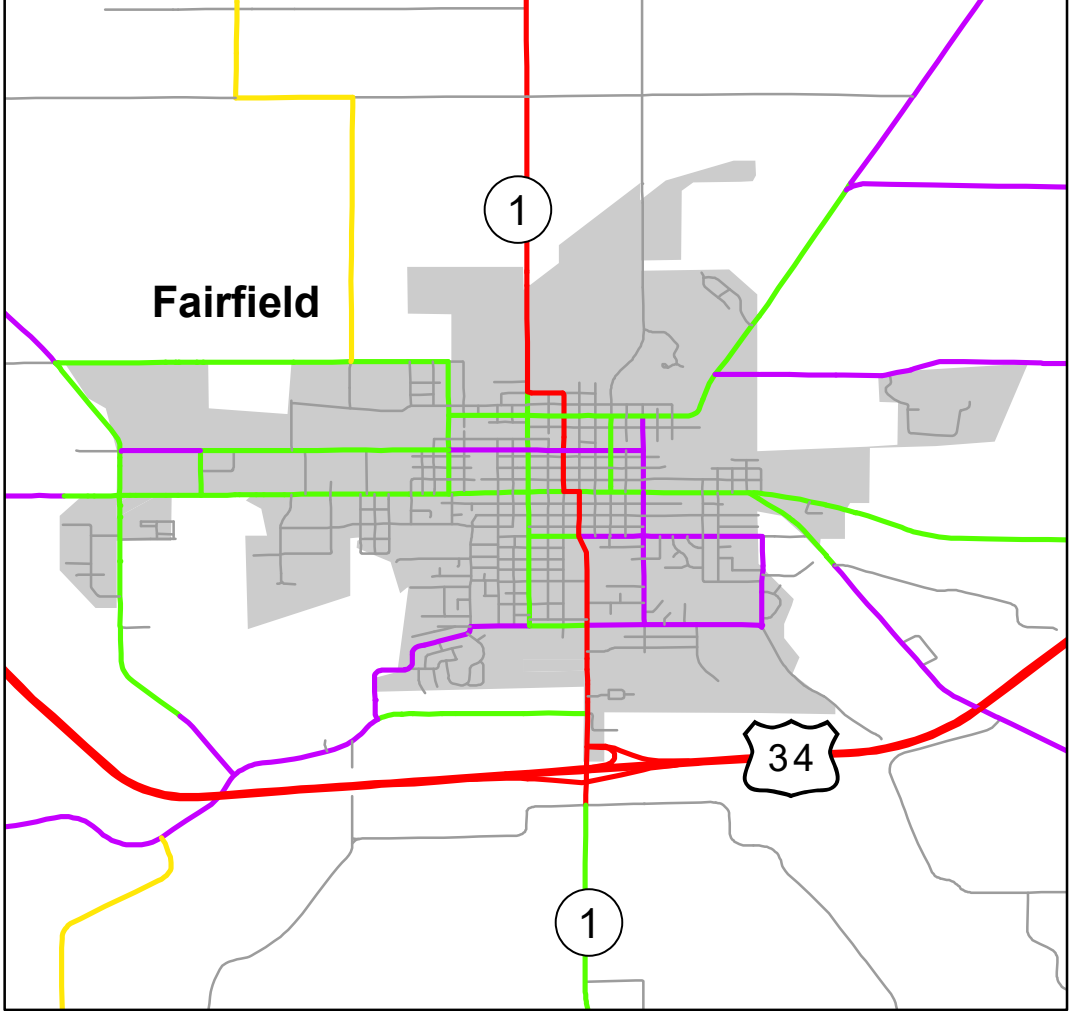
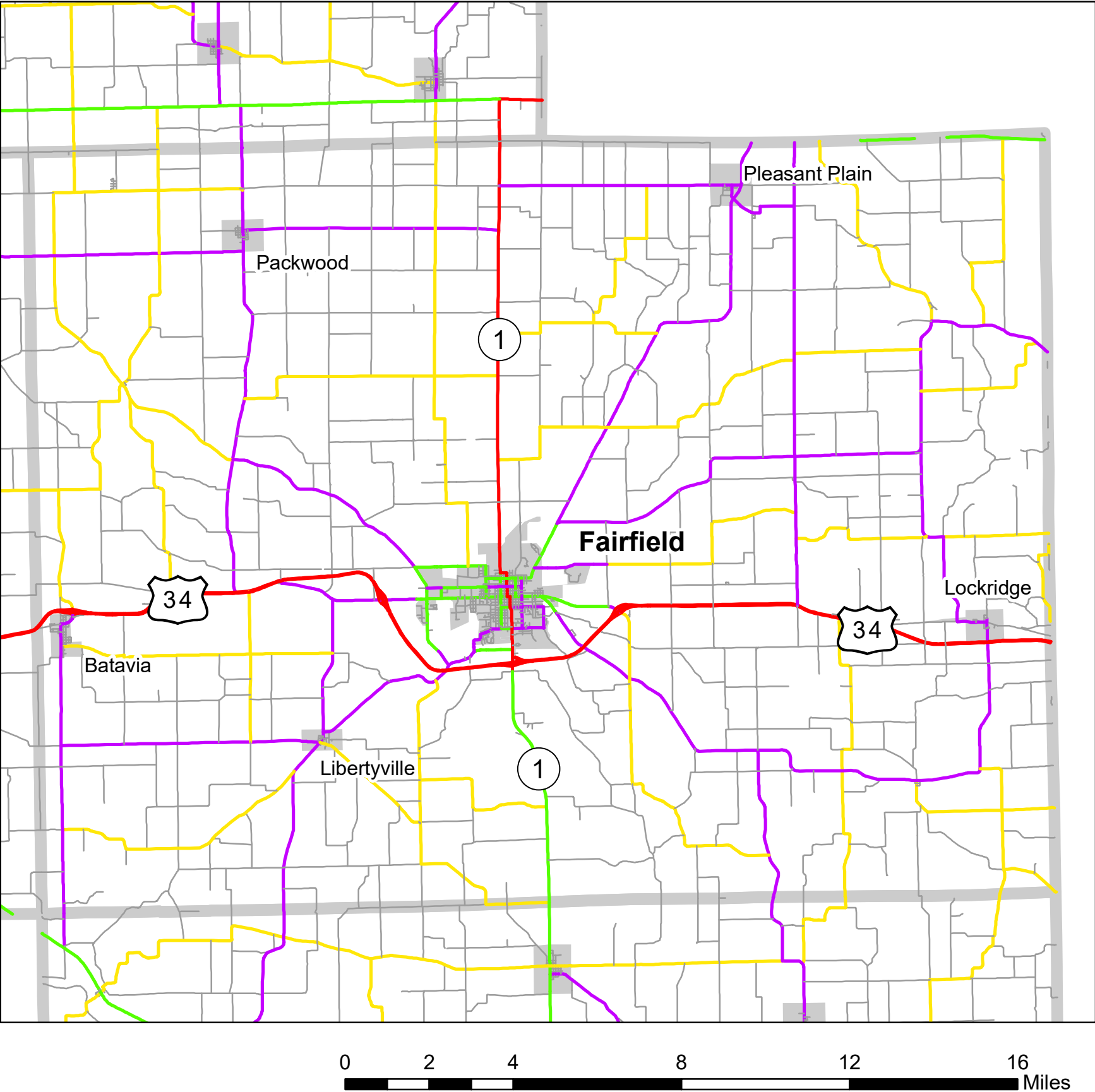
Figure 4.12: STBG/SWAP Funding Targets

	2019	2020	2021 - 2023
10-15 Transit	\$50,000	\$50,000	\$50,000
Planning	\$22,000	\$22,000	\$22,000
Special Projects	\$100,000	\$100,000	\$100,000
Fairfield	\$206,684	\$215,387	\$199,708
Oskaloosa	\$250,340	\$260,882	\$241,891
Ottumwa	\$546,476	\$569,489	\$528,033
Jefferson Co	\$276,779	\$284,892	\$270,277
Keokuk Co	\$301,186	\$310,015	\$294,111
Mahaska Co	\$320,372	\$329,763	\$312,846
Van Buren Co	\$273,602	\$281,621	\$267,174
Wapello Co	\$302,054	\$310,908	\$294,958
Total	\$2,649,492	\$2,734,957	\$2,581,000

Source: FFY2020-2023 STBG targets, RPA 15 Balance sheet

Counties also receive an allocation of STBG-B/SWAP funds for bridge projects each year. Each county's target is based on their balance from the previous year, the projects the county anticipates letting in the coming year and the expected funding levels for the state. There is also bridge funding available to cities that may be applied for by submitting a letter to the Iowa Department of Transportation for an eligible bridge describing the project and the cost.

Map 4.1: Federal Functional Classification of Jefferson County Roads



Legend

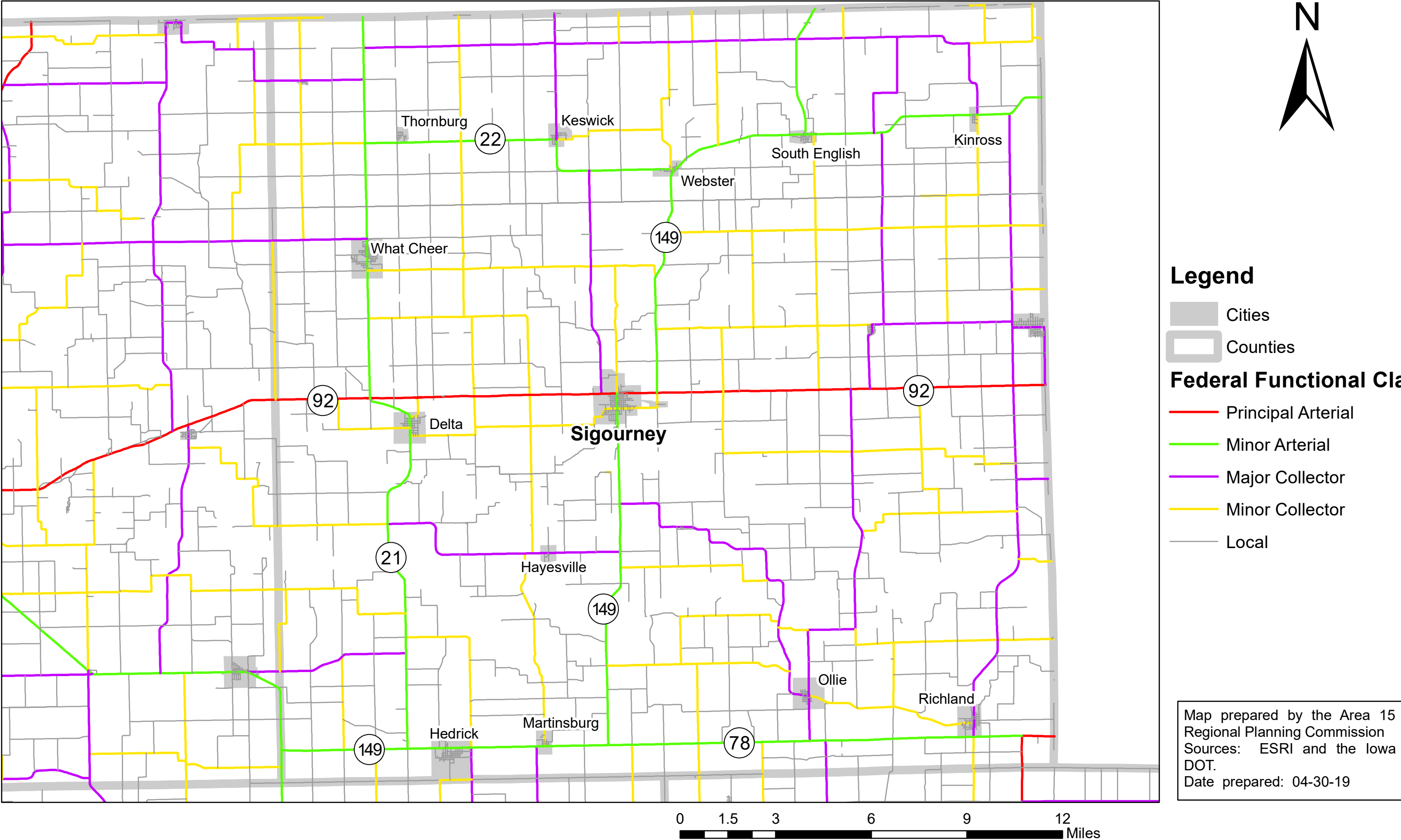
- Cities
- Counties

Federal Functional Class

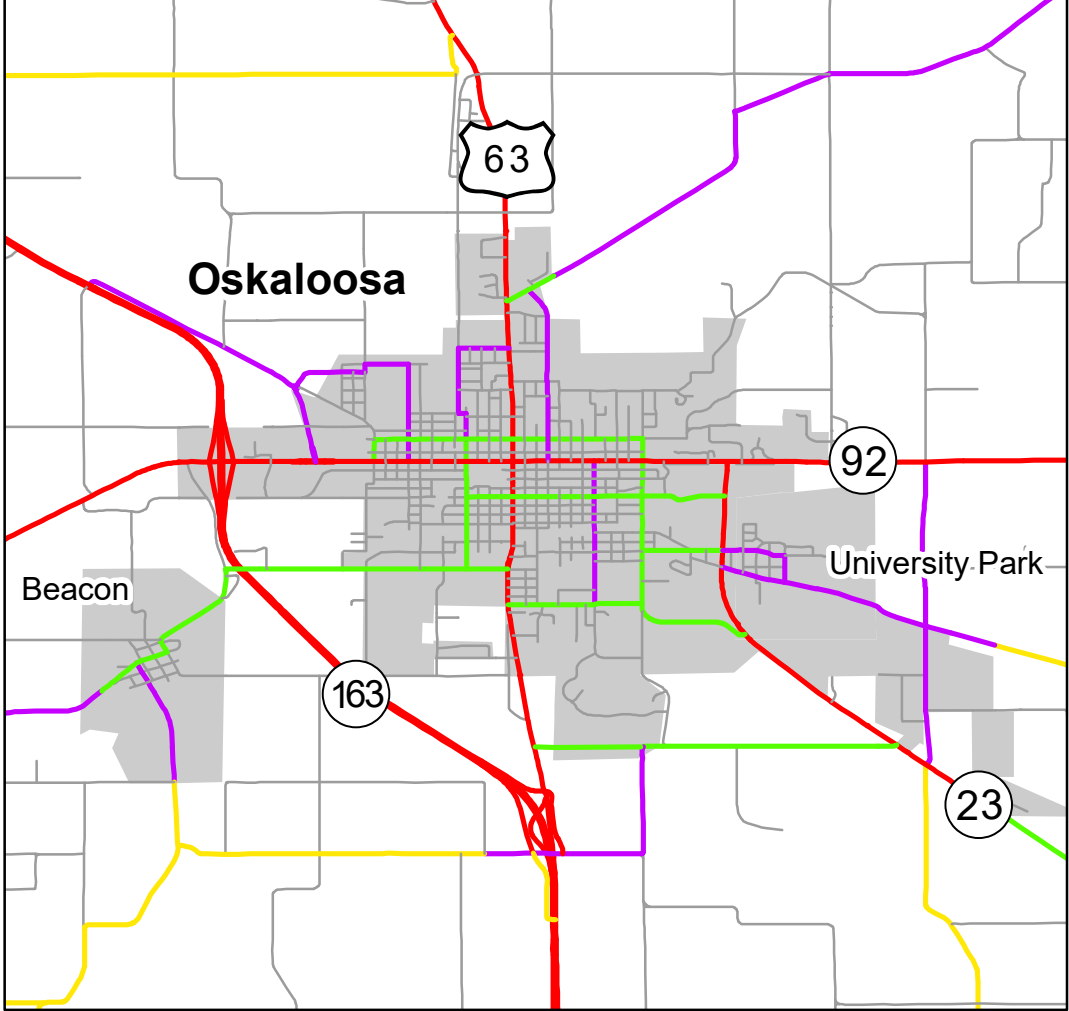
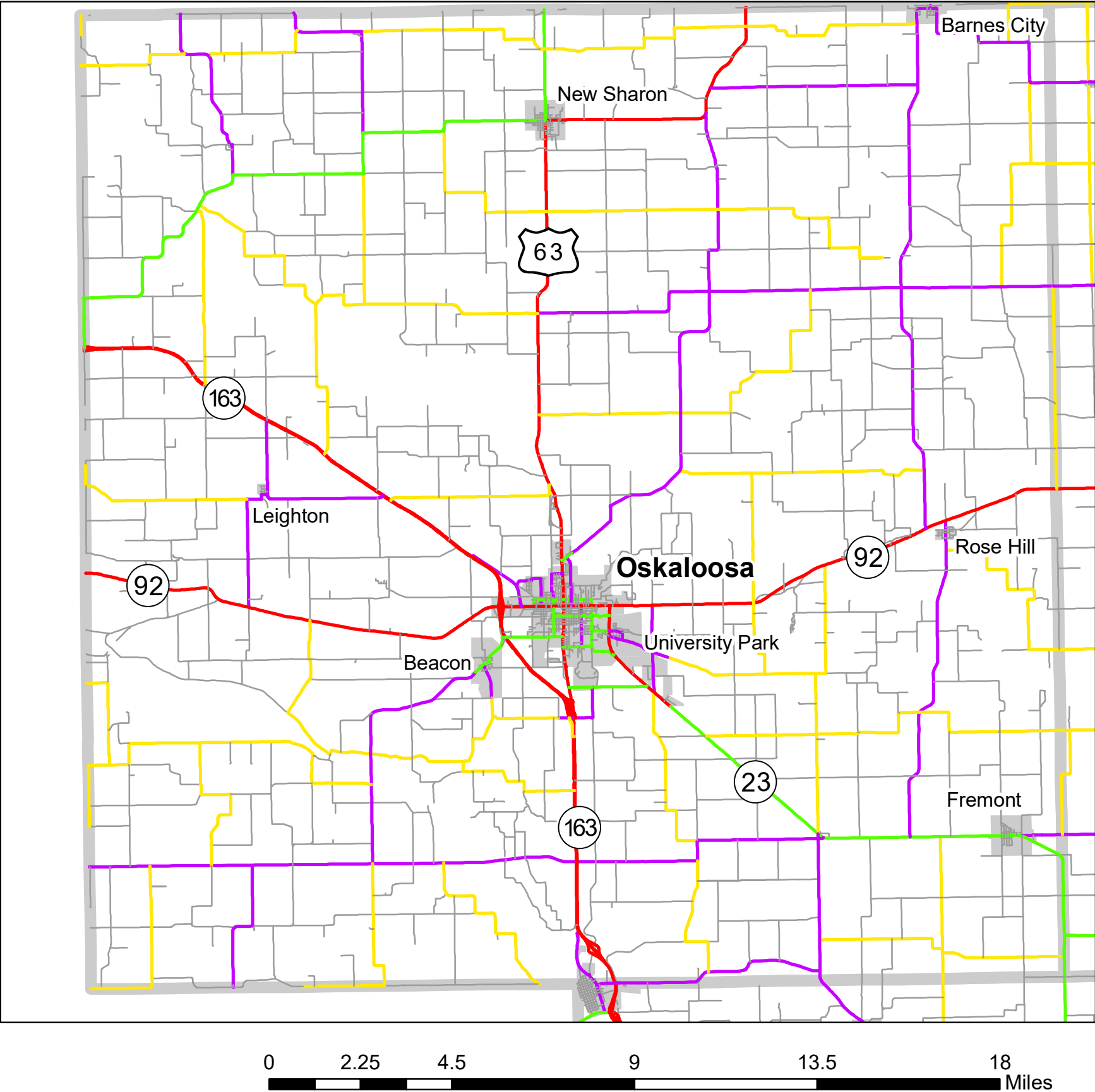
- Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local

Map prepared by the Area 15
Regional Planning Commission
Sources: ESRI and the Iowa
DOT.
Date prepared: 04-30-19

Map 4.2: Federal Functional Classification of Keokuk County Roads



Map 4.3: Federal Functional Classification of Mahaska County Roads



Legend

Cities

Counties

Federal Functional Class

Principal Arterial

Minor Arterial

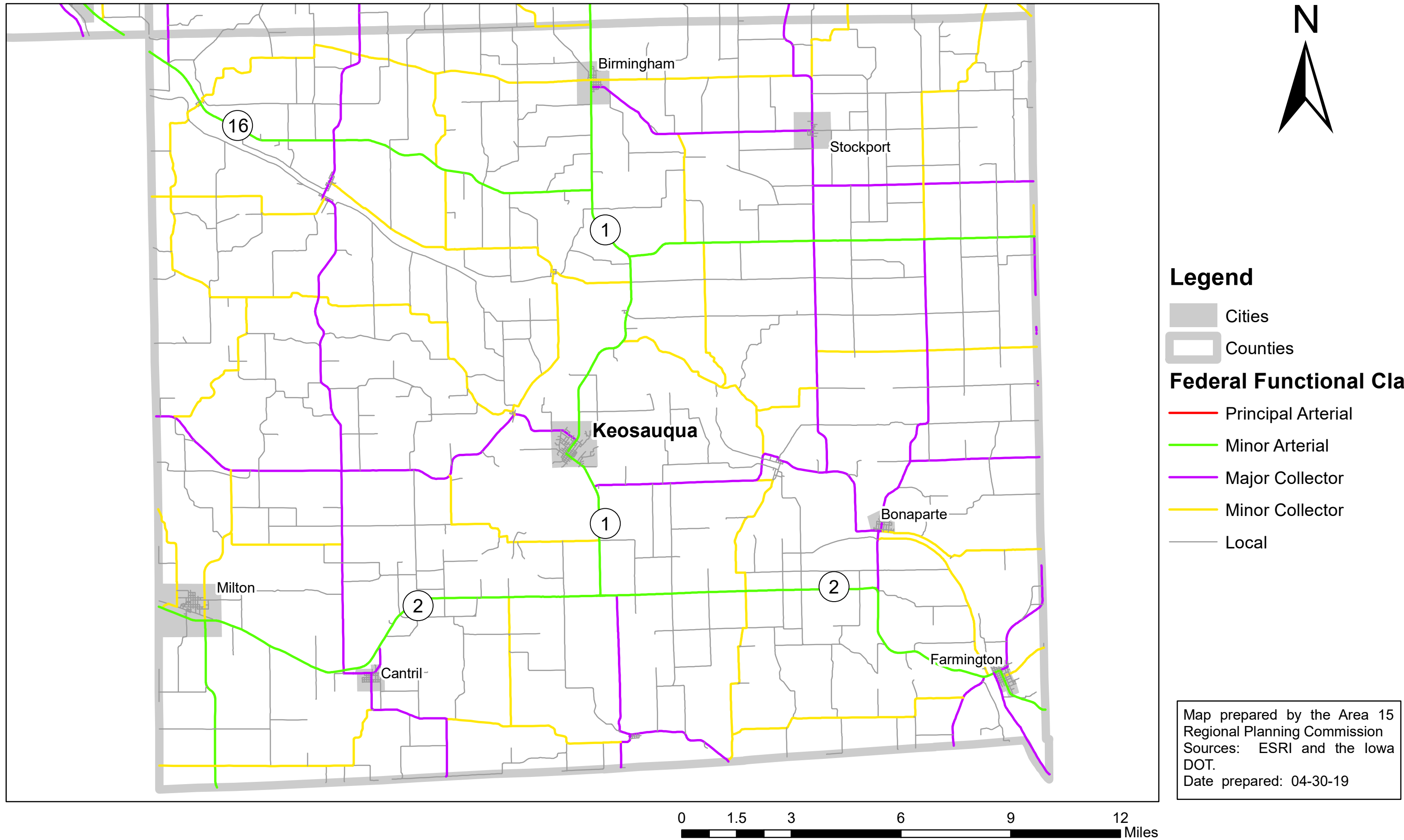
Major Collector

Minor Collector

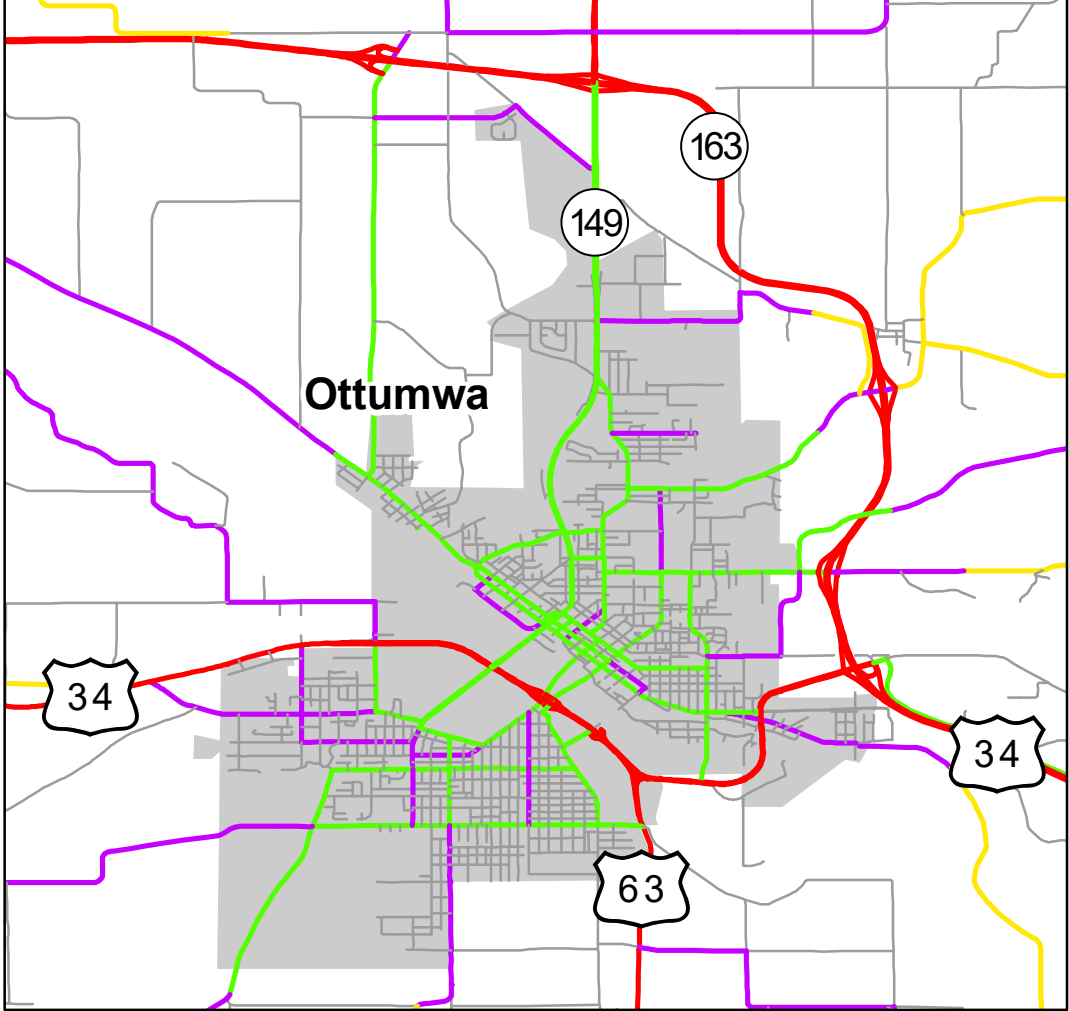
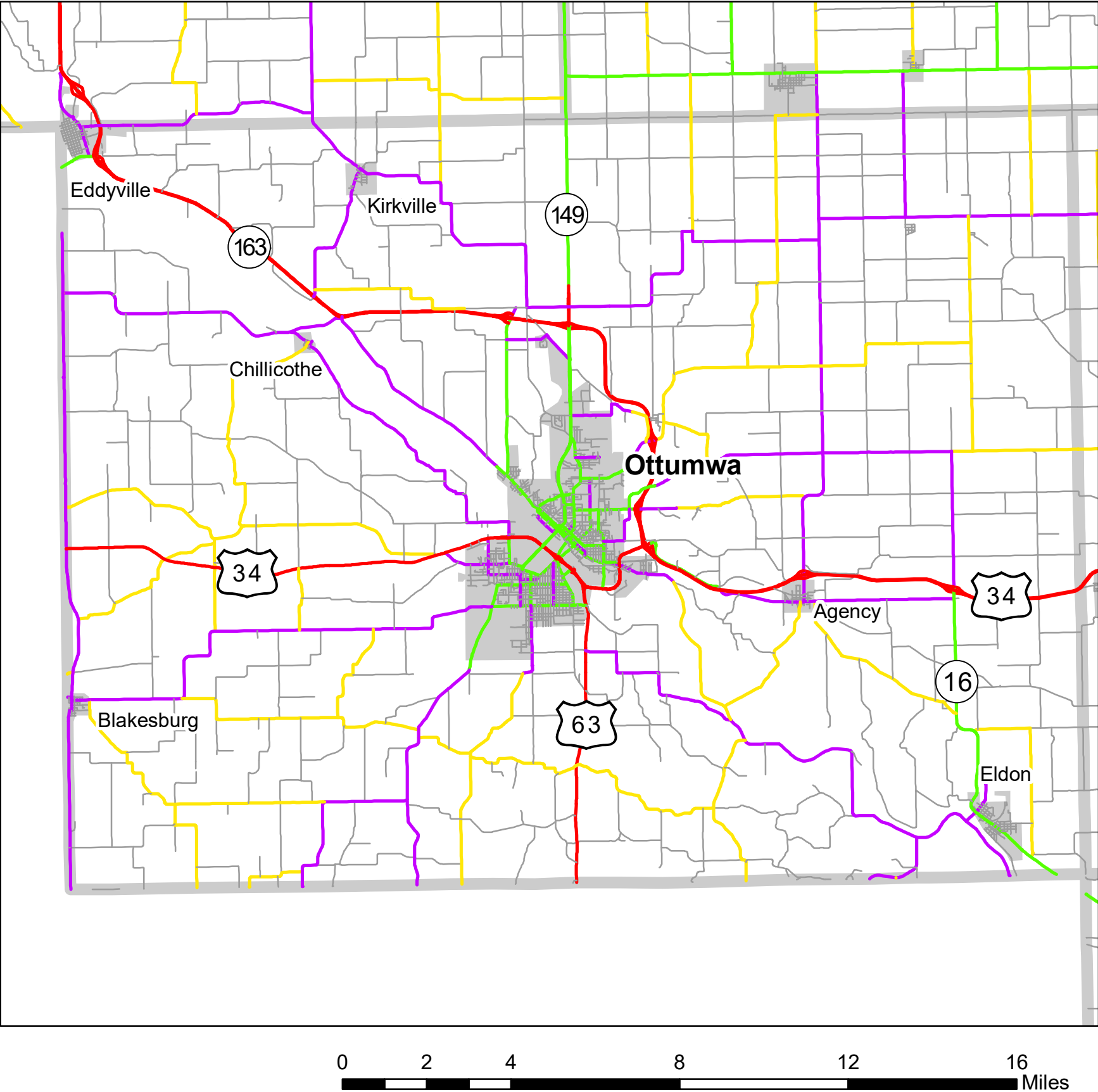
Local

Map prepared by the Area 15
Regional Planning Commission
Sources: ESRI and the Iowa
DOT.
Date prepared: 04-30-19

Map 4.4.: Federal Functional Classification of Van Buren County Roads



Map 4.5: Federal Functional Classification of Wapello County Roads



Legend

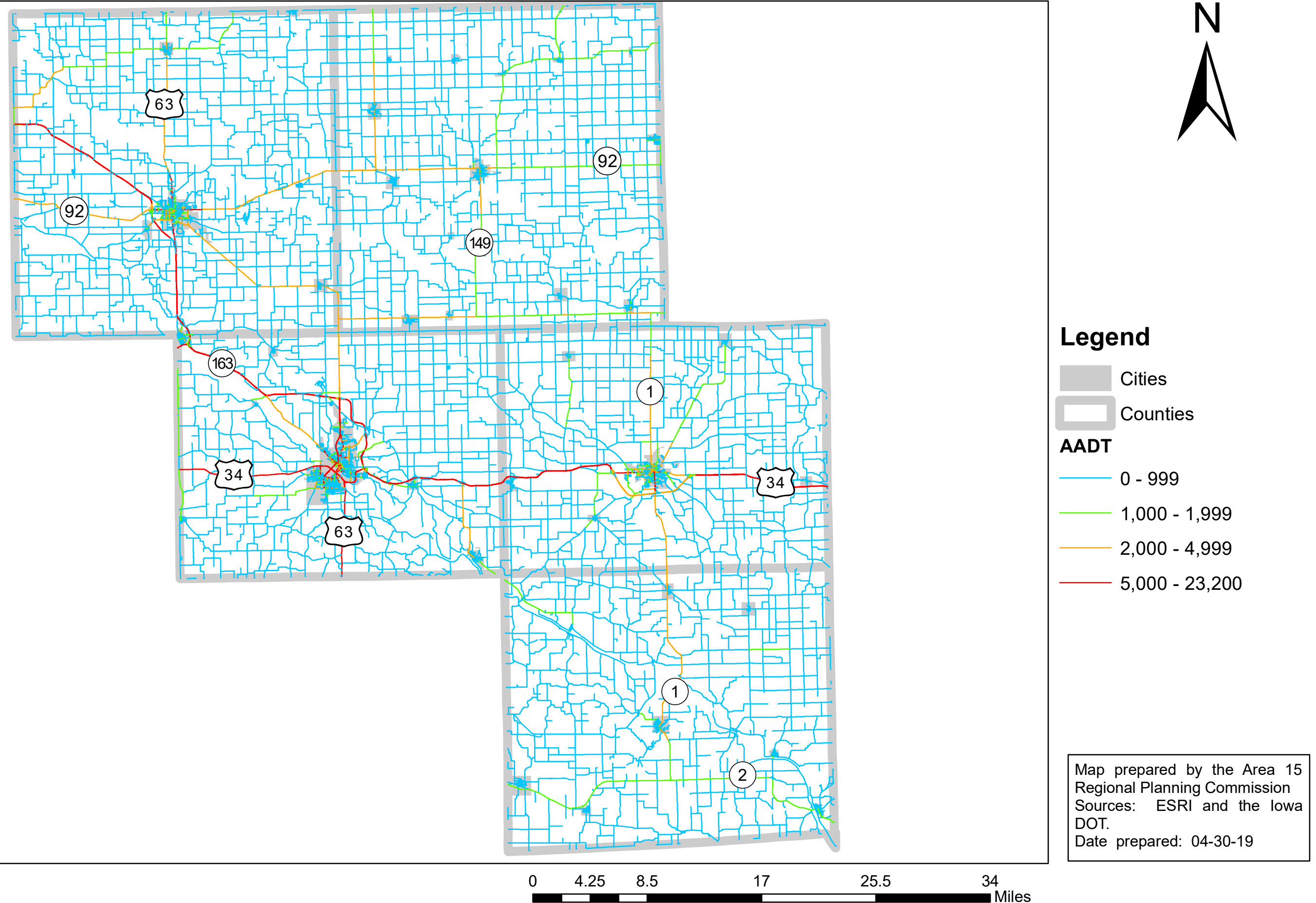
- Cities
- Counties

Federal Functional Class

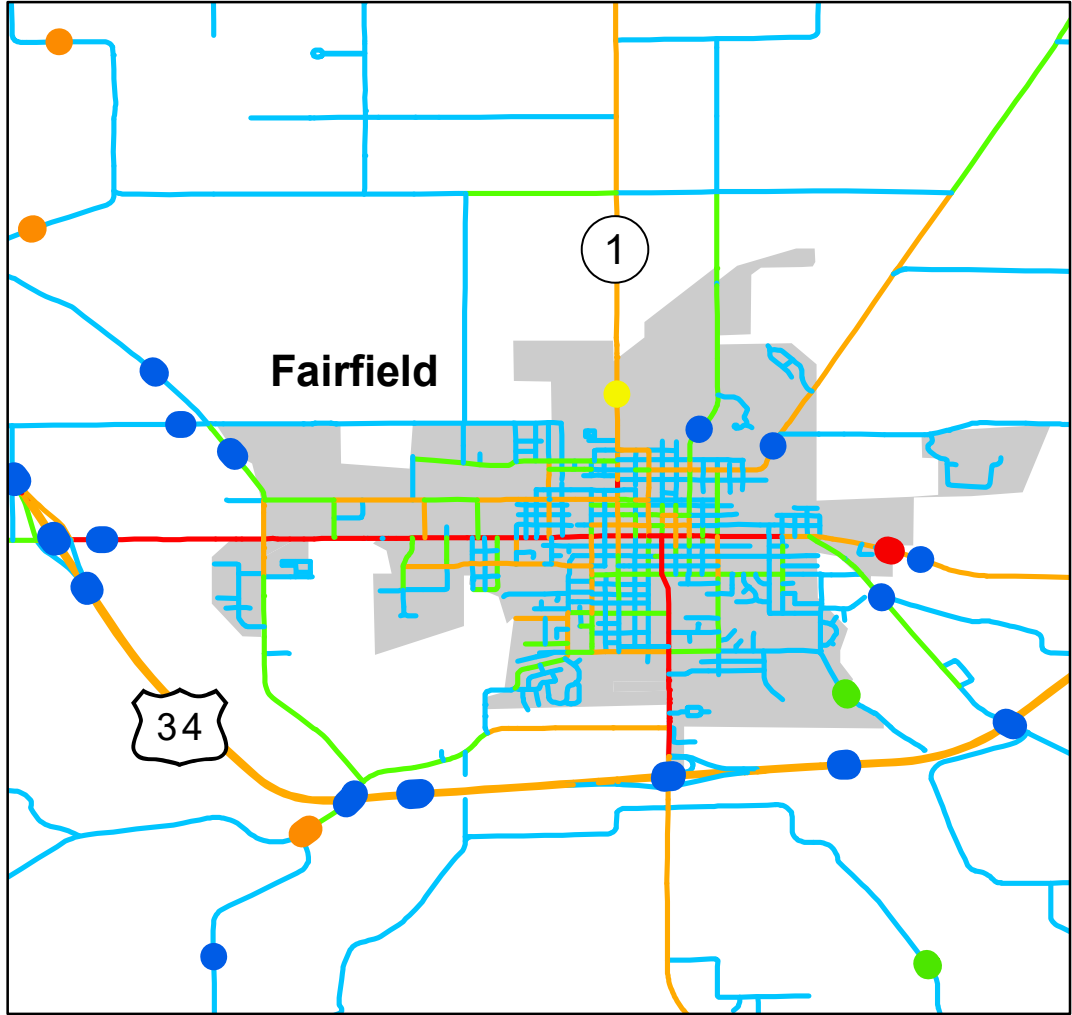
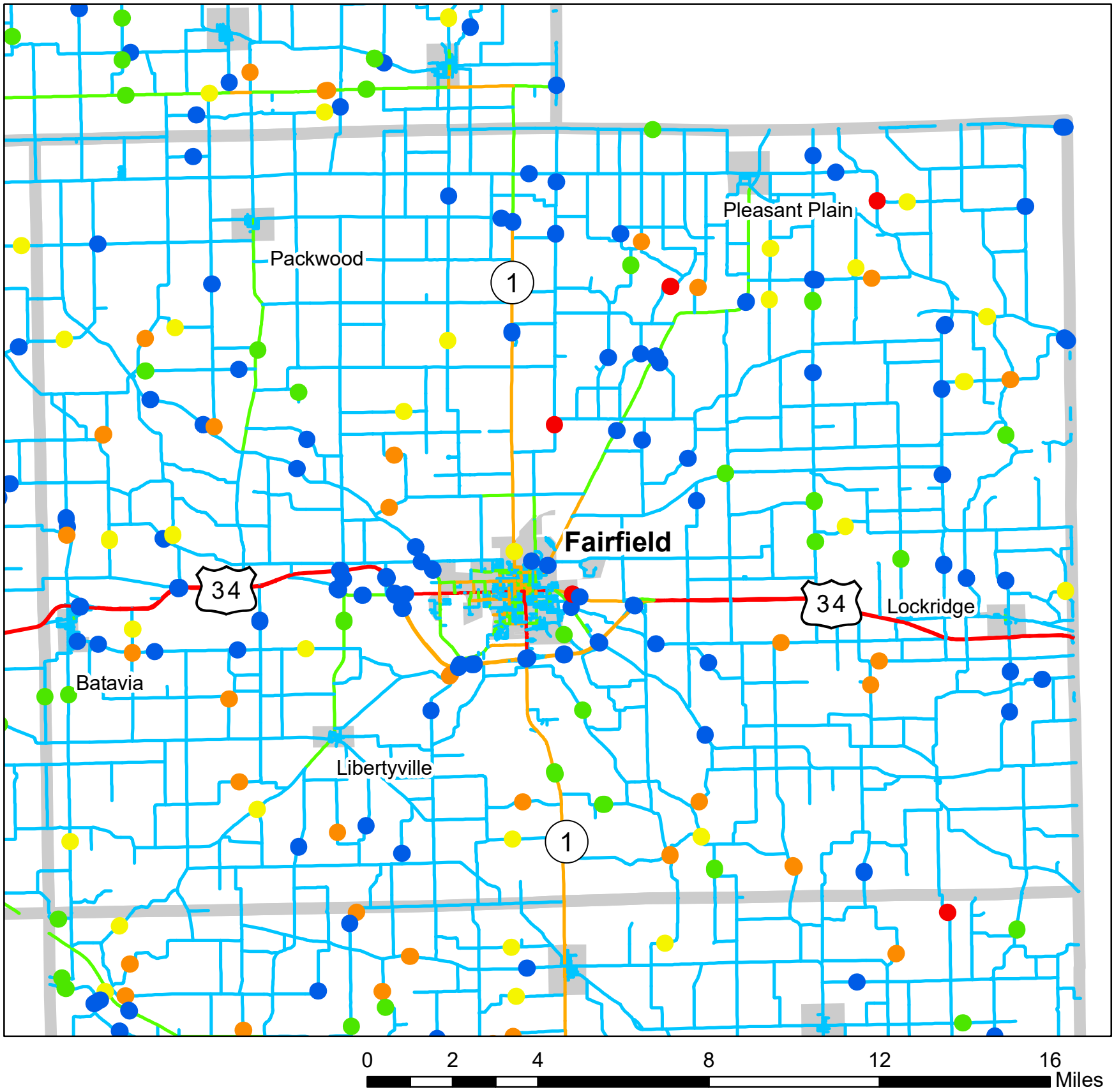
- Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local

Map prepared by the Area 15
Regional Planning Commission
Sources: ESRI and the Iowa
DOT.
Date prepared: 04-30-19

Map 4.6: 2017 Traffic Volume on RPA 15 Roads



Map 4.7: Traffic Volume and Bridge Sufficiency on Jefferson County Roads



Legend

AADT

- 0 - 999
- 1,000 - 1,999
- 2,000 - 4,999
- 5,000 - 23,200

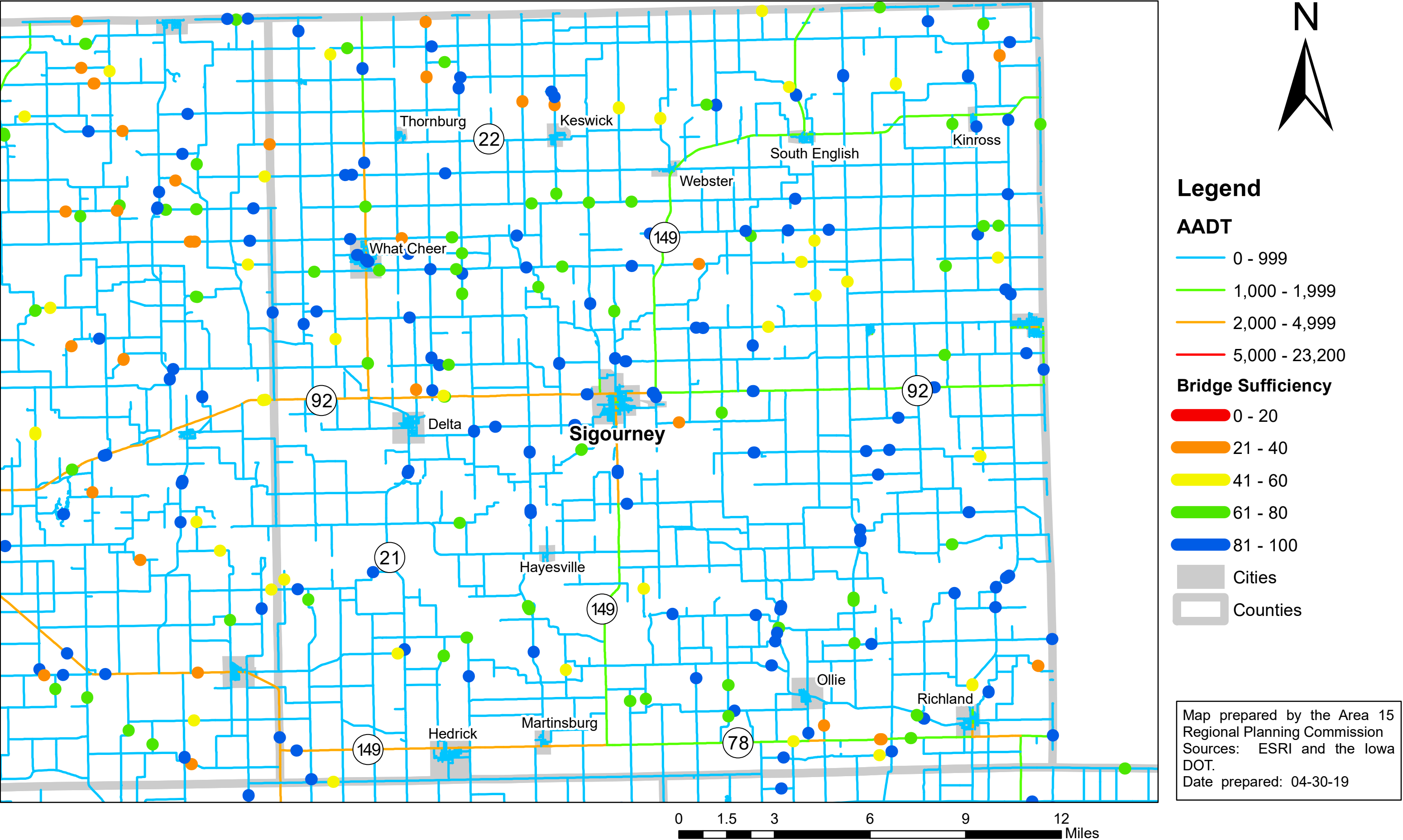
Bridge Sufficiency

- 0 - 20
- 21 - 40
- 41 - 60
- 61 - 80
- 81 - 100

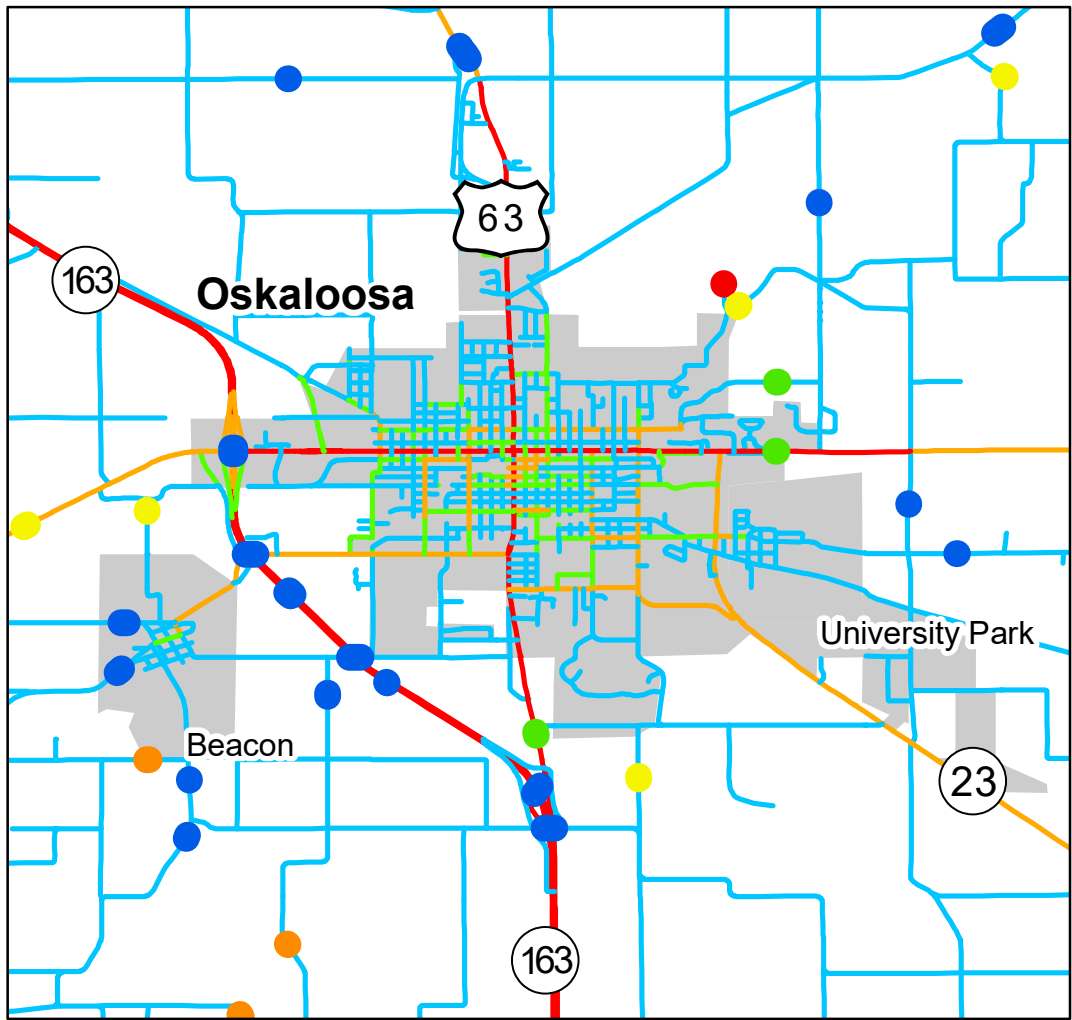
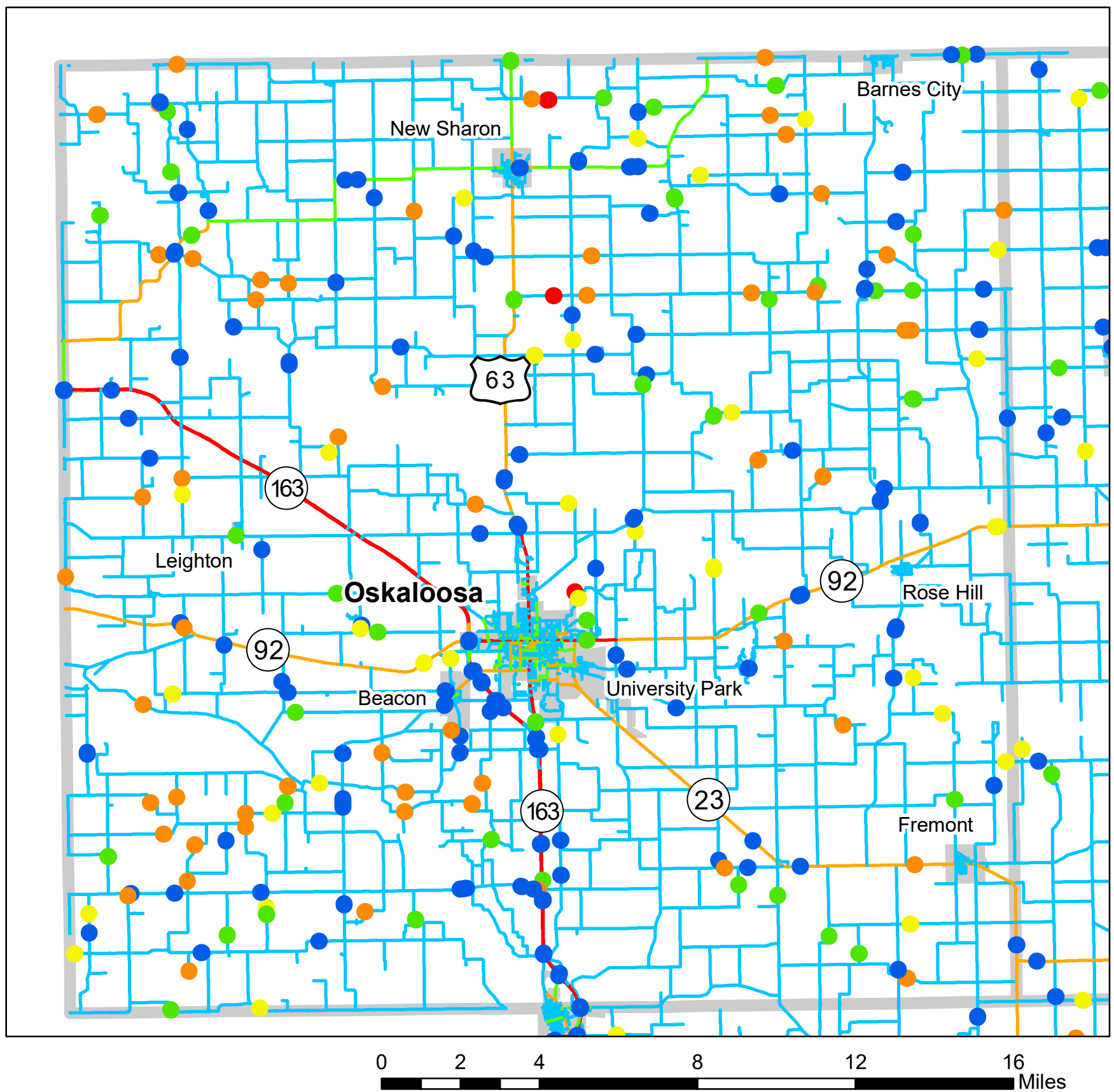
- Cities
- Counties

Map prepared by the Area 15
Regional Planning Commission
Sources: ESRI and the Iowa
DOT.
Date prepared: 04-30-19

Map 4.8: Traffic Volume and Bridge Sufficiency on Keokuk County Roads



Map 4.9: Traffic Volume and Bridge Sufficiency on Mahaska County Roads



Legend

AADT

- 0 - 999
- 1,000 - 1,999
- 2,000 - 4,999
- 5,000 - 23,200

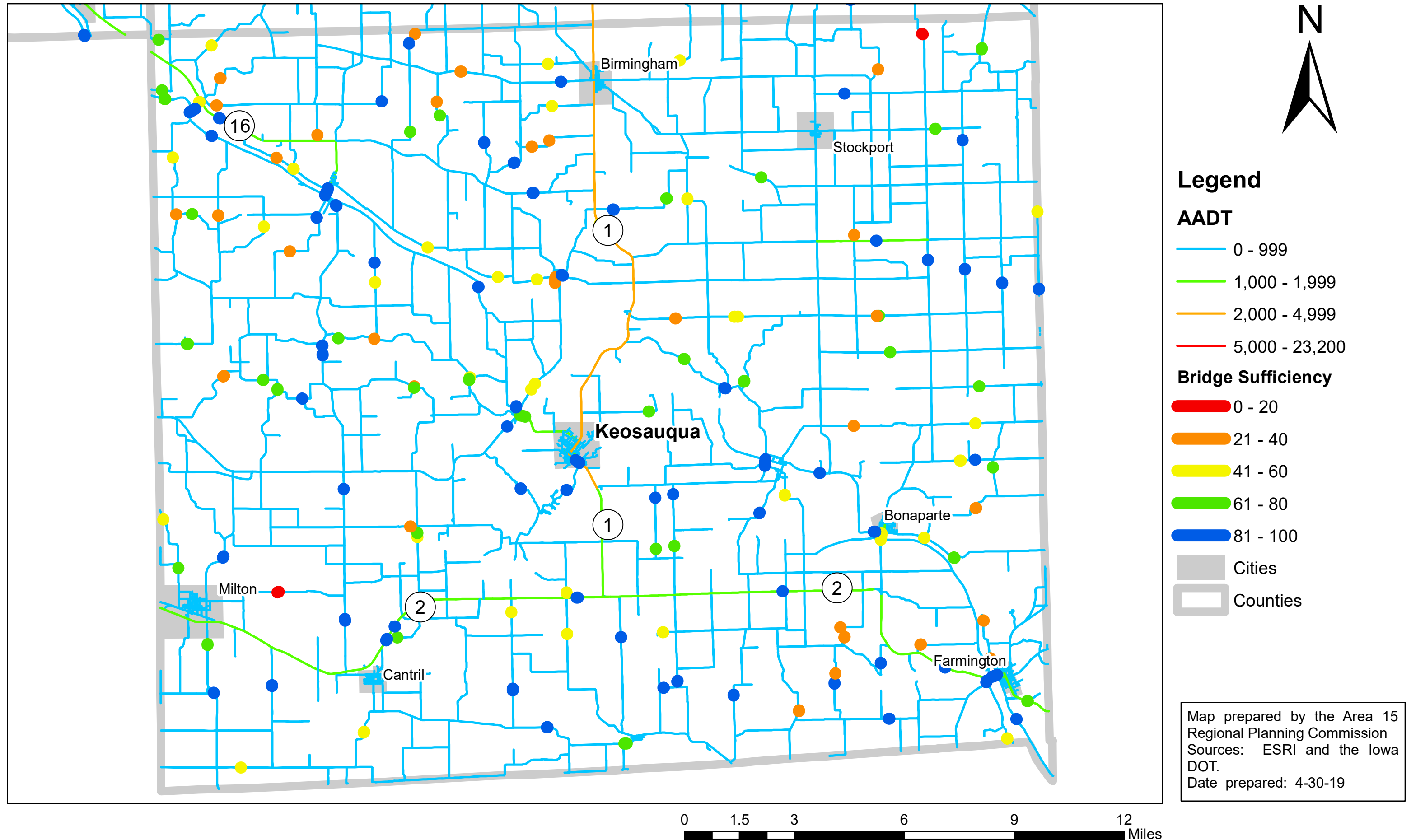
Bridge Sufficiency

- 0 - 20
- 21 - 40
- 41 - 60
- 61 - 80
- 81 - 100

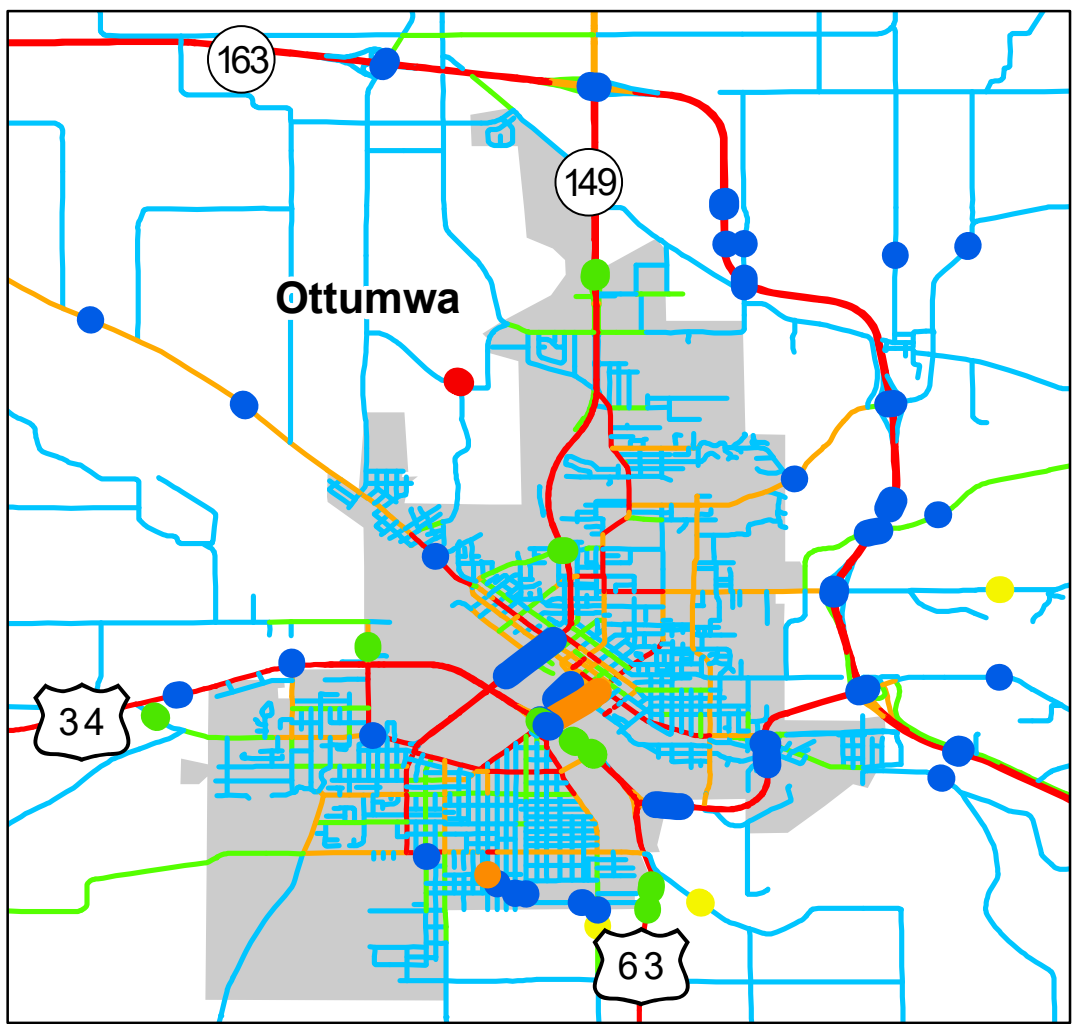
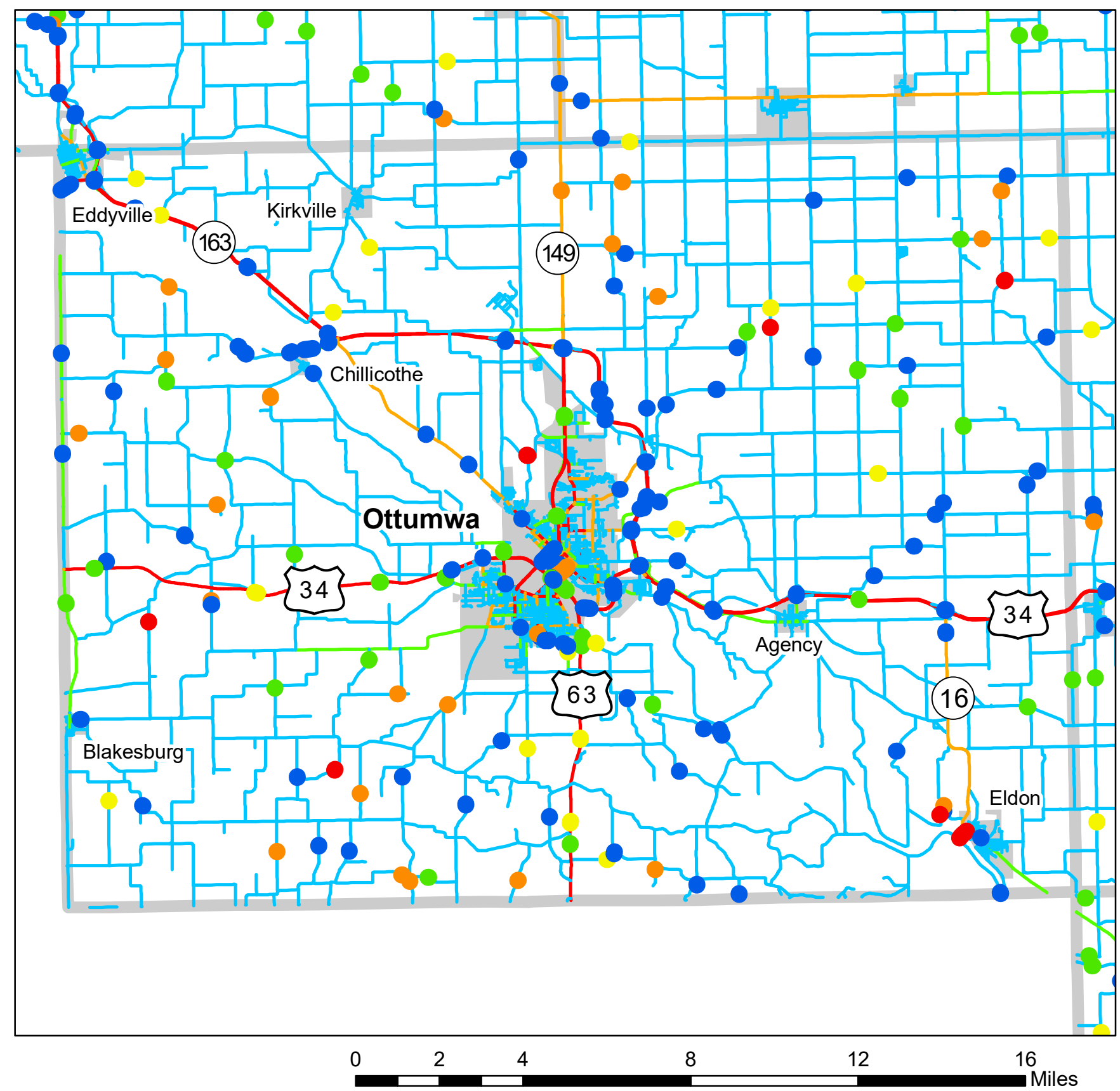
- Cities
- Counties

Map prepared by the Area 15
Regional Planning Commission
Sources: ESRI and the Iowa
DOT.
Date prepared: 04-30-19

Map 4.10: Traffic Volume and Bridge Sufficiency on Van Buren County Roads



Map 4.11: Traffic Volume and Bridge Sufficiency on Wapello County Roads

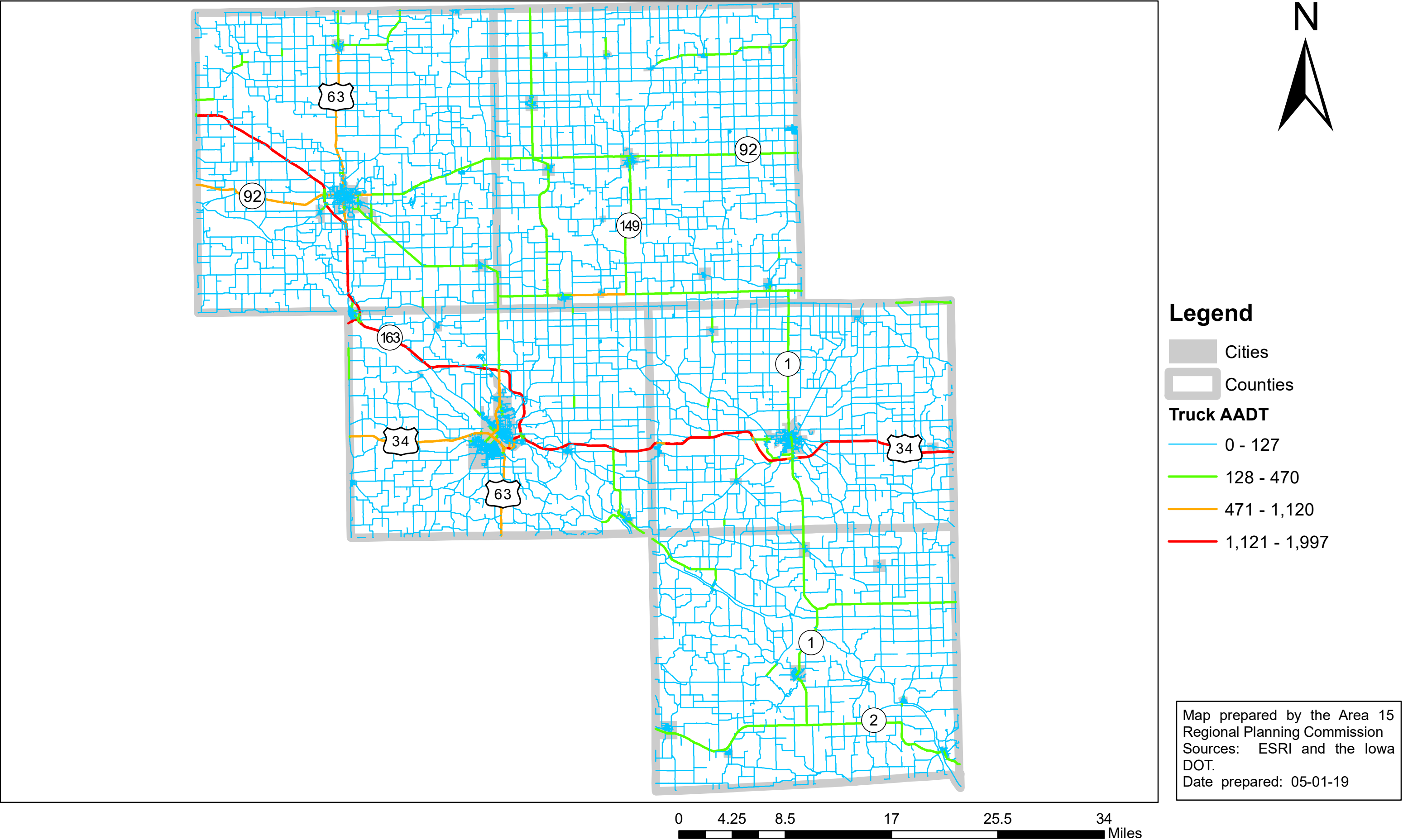


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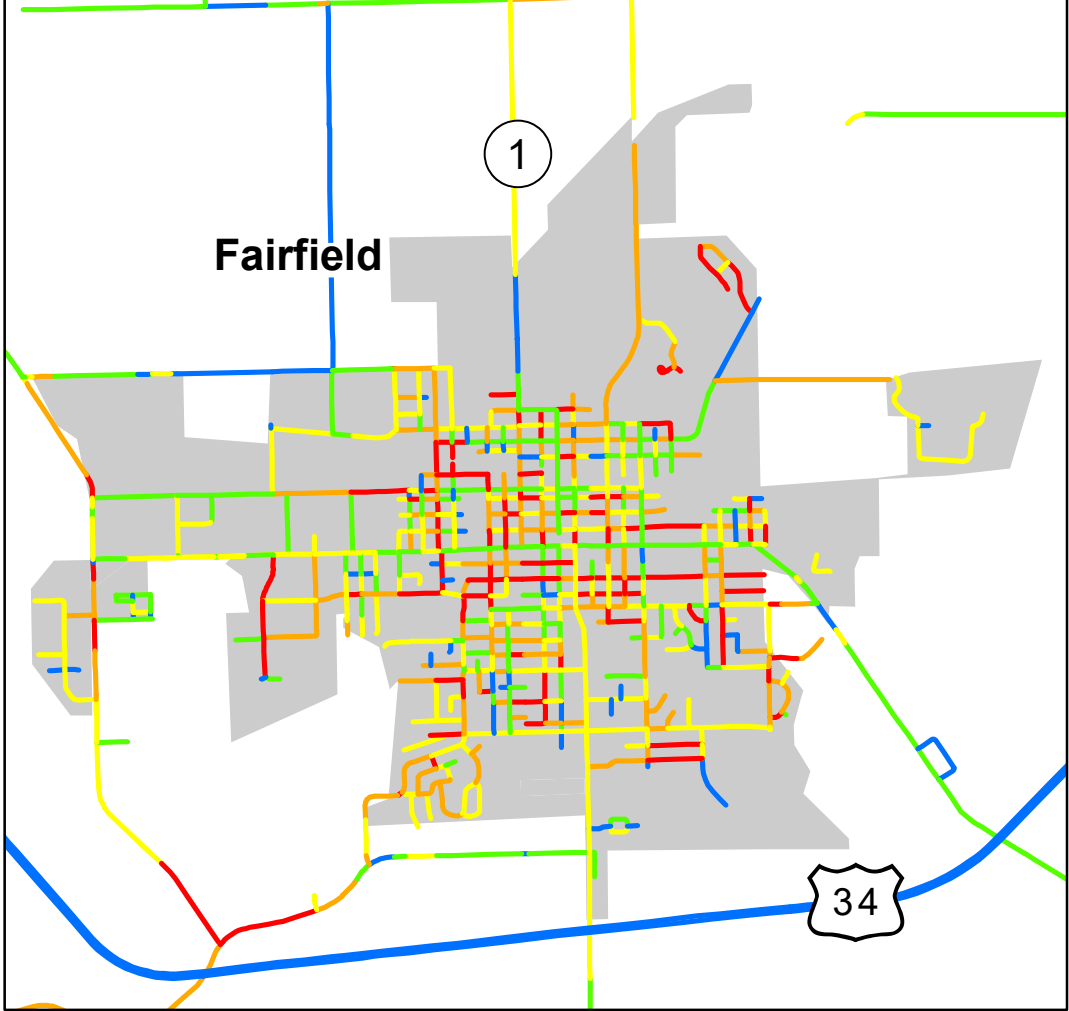
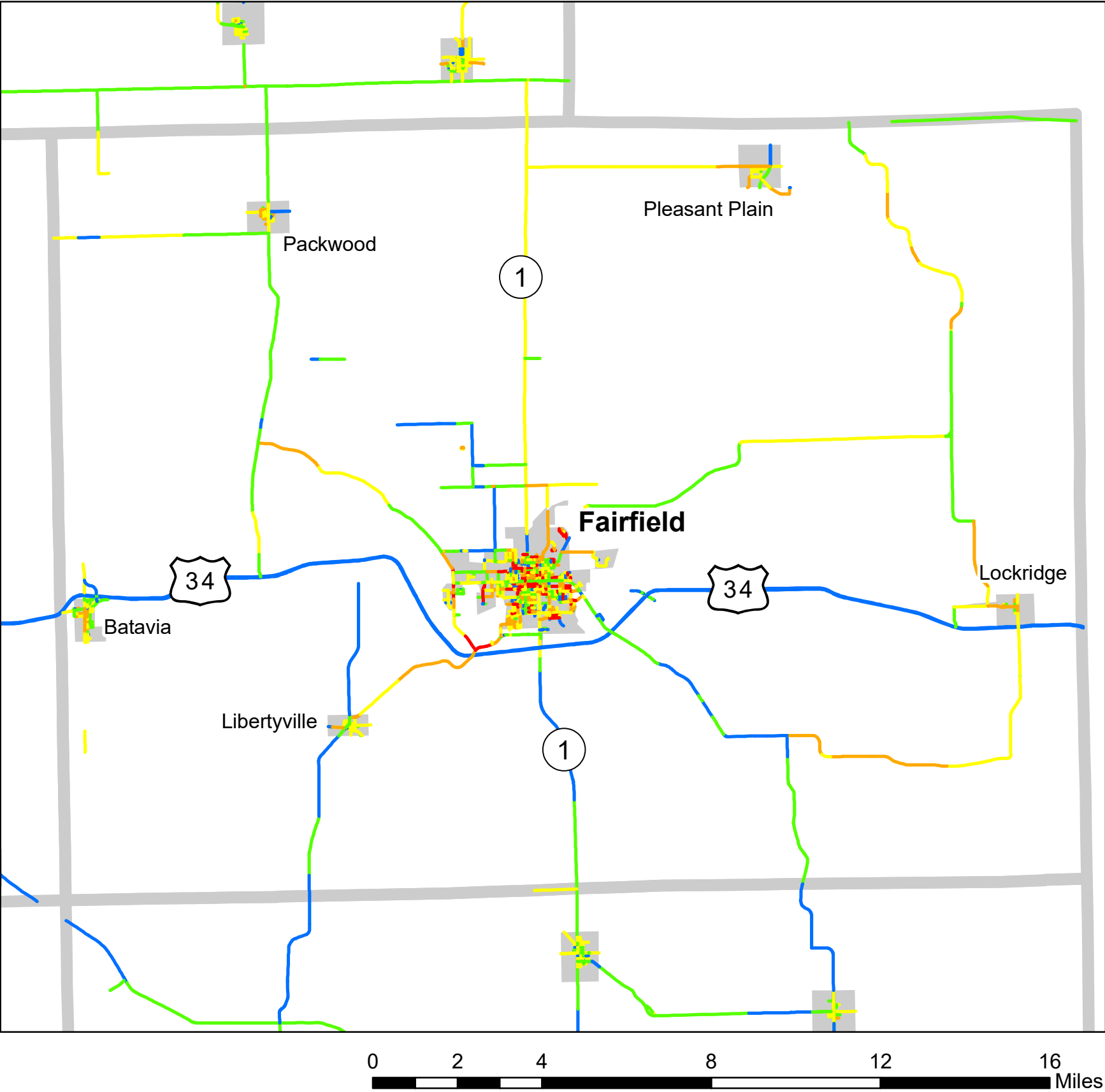
AADT	Bridge Sufficiency
0 - 999	0 - 20
1,000 - 1,999	21 - 40
2,000 - 4,999	41 - 60
5,000 - 23,200	61 - 80
	81 - 100
	Cities
	Counties

Map prepared by the Area 15
Regional Planning Commission
Sources: ESRI and the Iowa
DOT.
Date prepared: 04-30-19

Map 4.12: 2017 Truck Traffic Volume on RPA 15 Roads



Map 4.13: 2013 Pavement Conditions of Jefferson County Roads



Legend

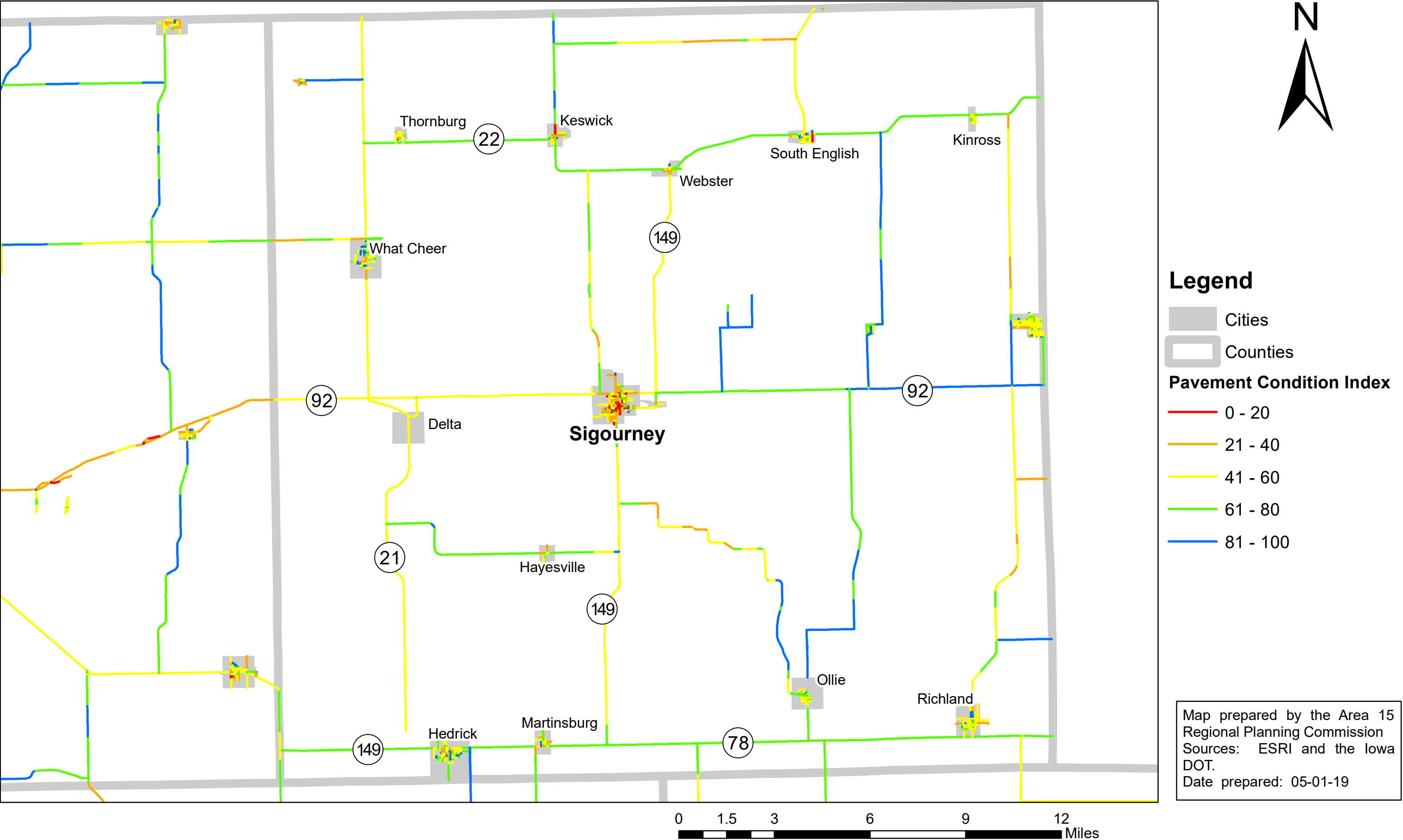
- Cities
- Counties

Pavement Condition Index

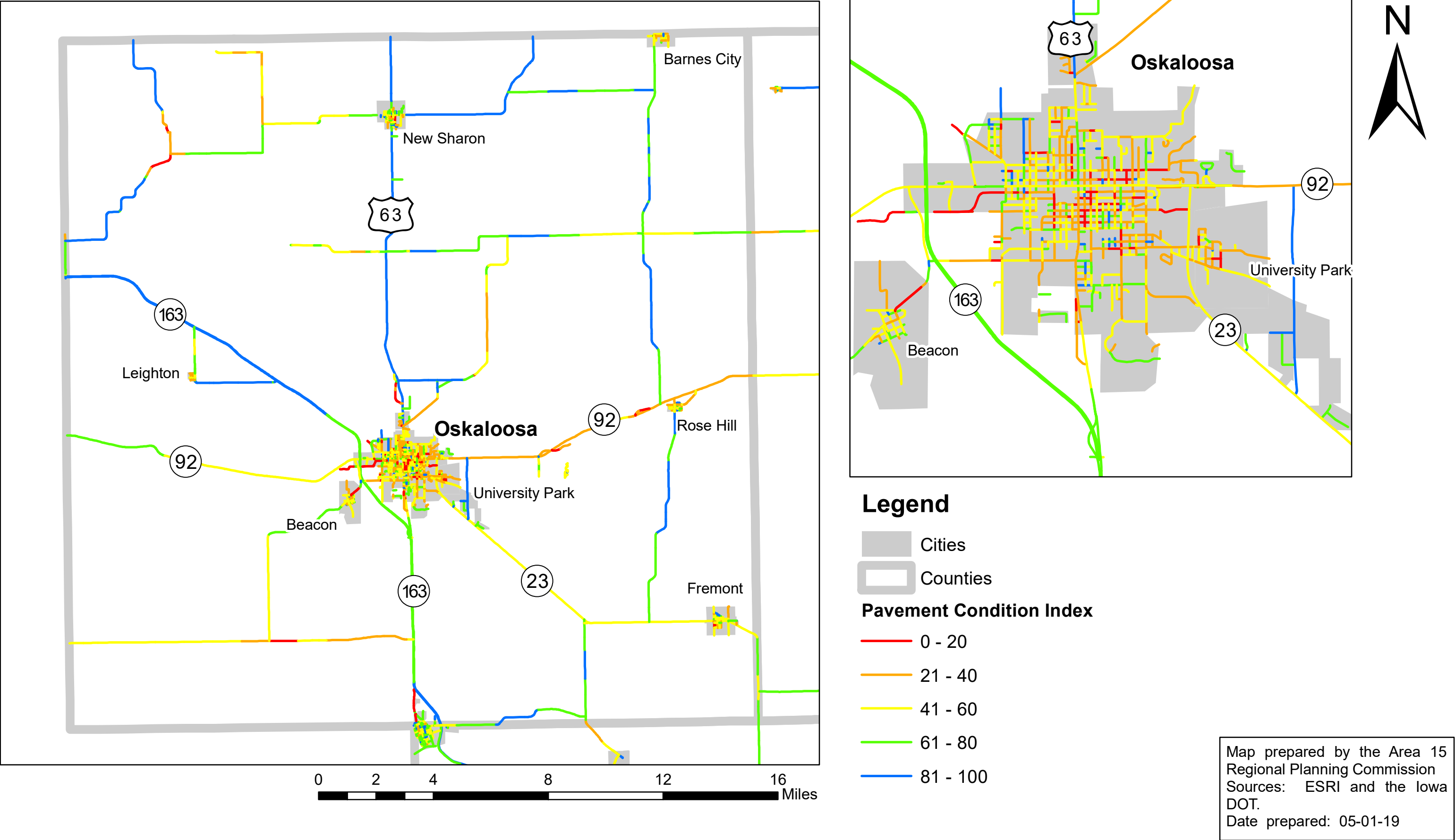
- 0 - 20
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- 41 - 60
- 61 - 80
- 81 - 100

Map prepared by the Area 15
Regional Planning Commission
Sources: ESRI and the Iowa
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Date prepared: 11-07-18

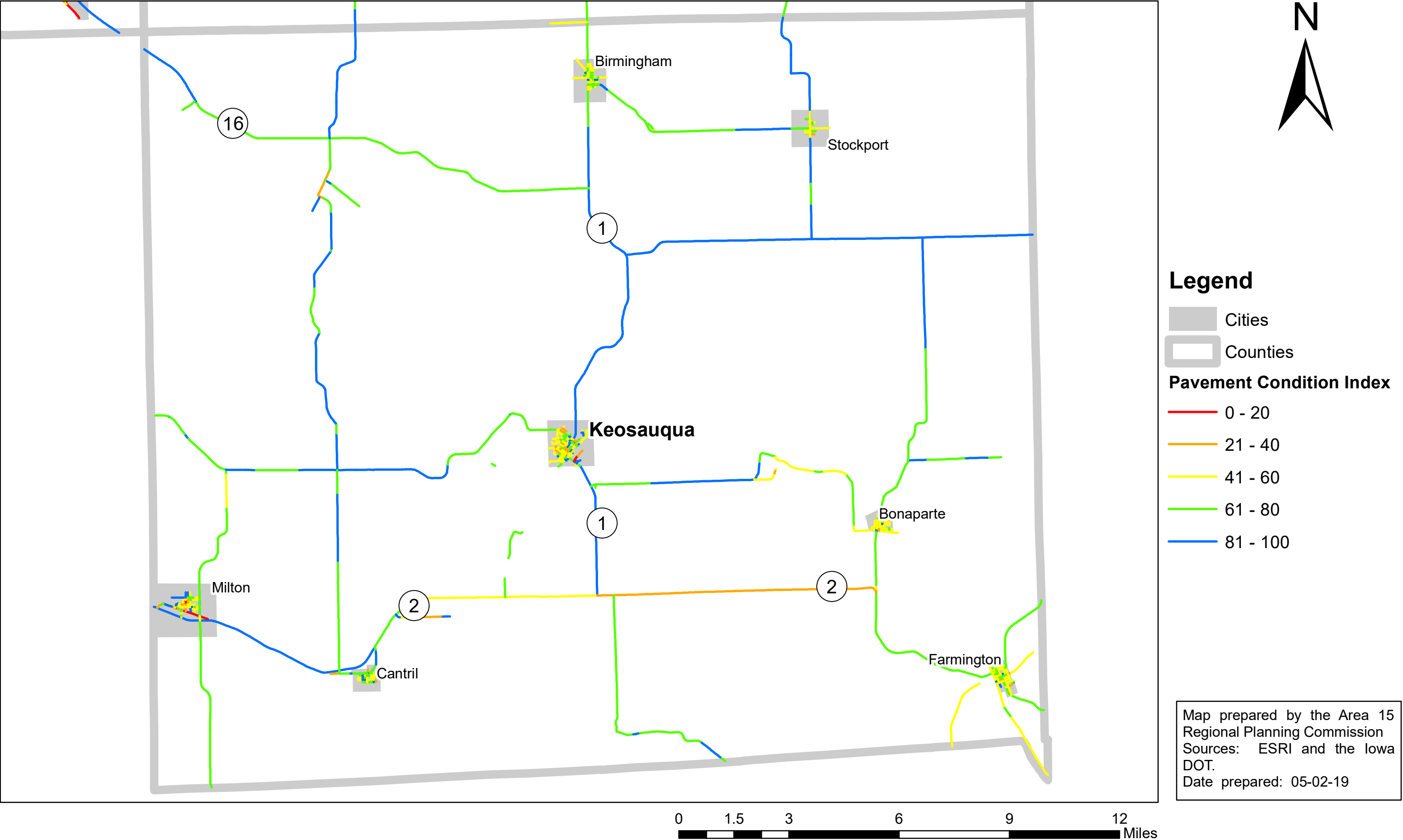
Map 4.14: 2013 Pavement Conditions of Keokuk County Roads



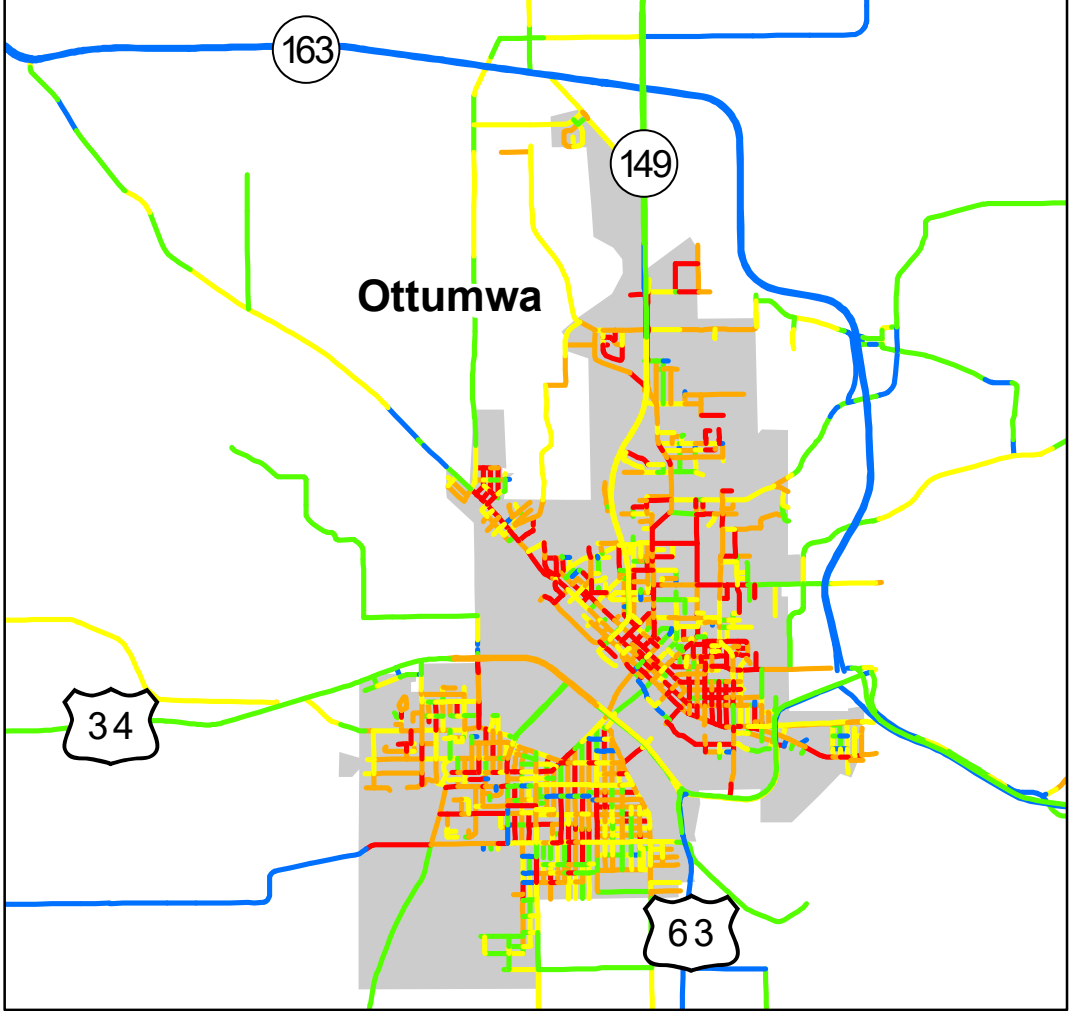
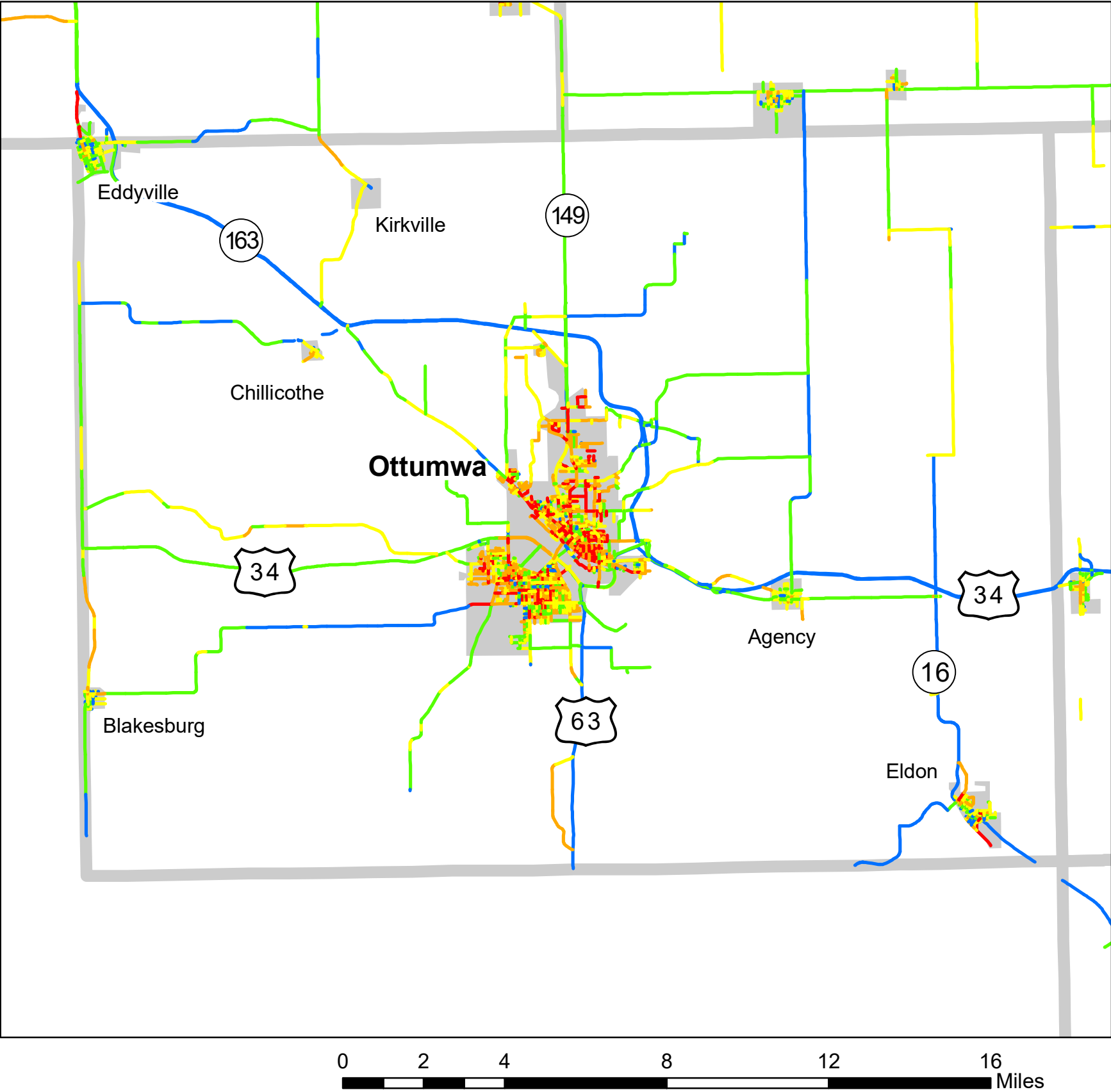
Map 4.15: 2013 Pavement Conditions of Mahaska County Roads



Map 4.16: 2013 Pavement Conditions of Van Buren County Roads



Map 4:17: 2013 Pavement Conditions of Wapello County Roads



Legend

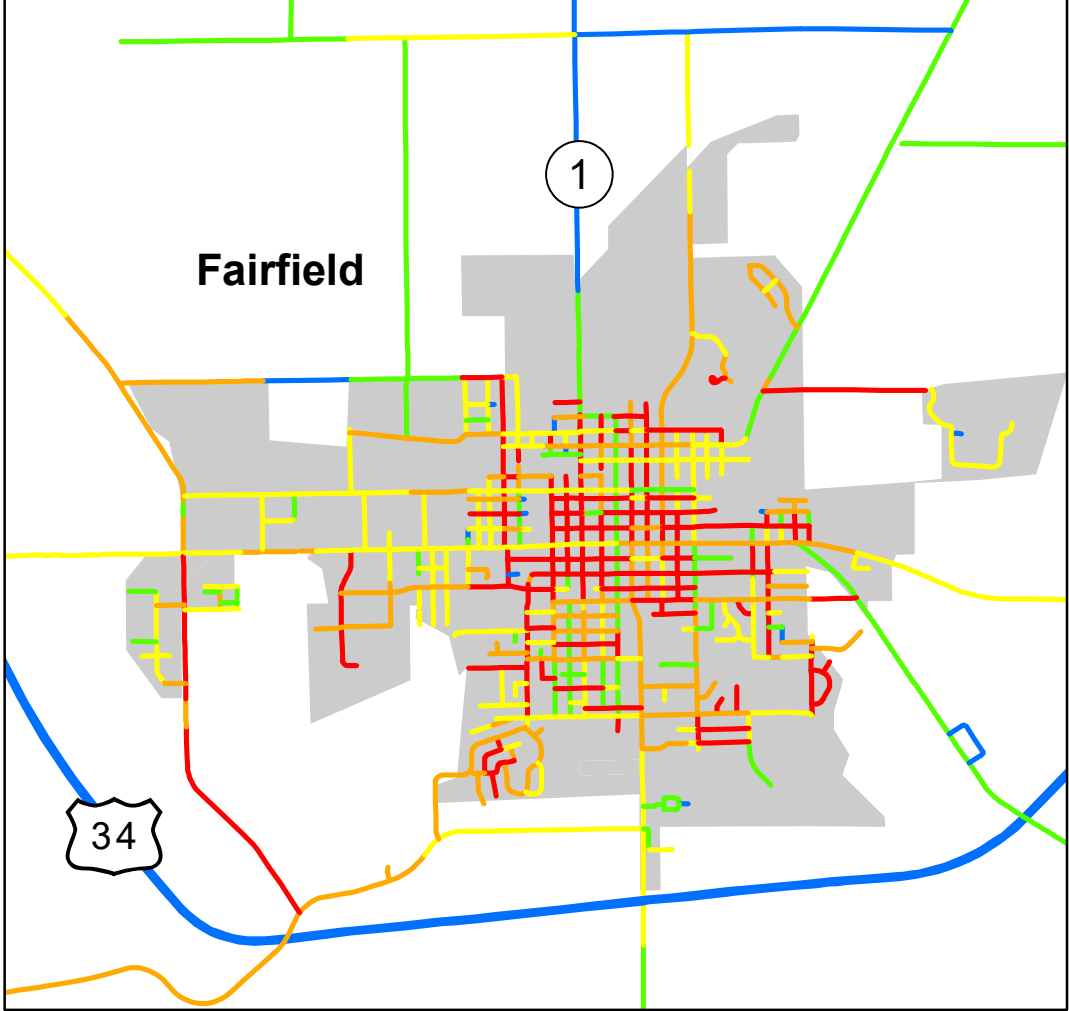
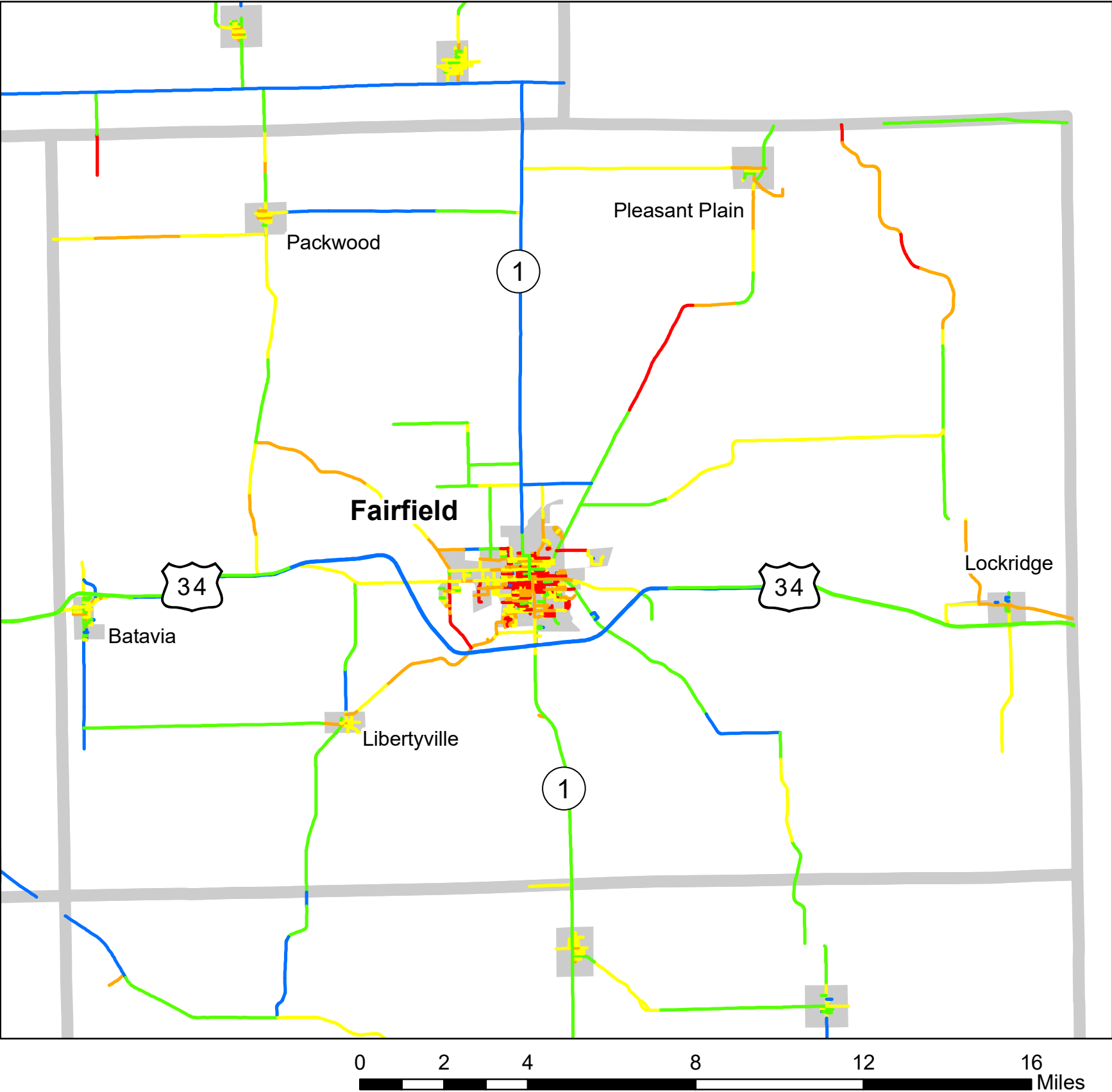
- Cities
- Counties

Pavement Condition Index

- 0 - 20
- 21 - 40
- 41 - 60
- 61 - 80
- 81 - 100

Map prepared by the Area 15
Regional Planning Commission
Sources: ESRI and the Iowa
DOT.
Date prepared: 05-02-19

Map 4.18: 2017 Pavement Conditions of Jefferson County Roads



Legend

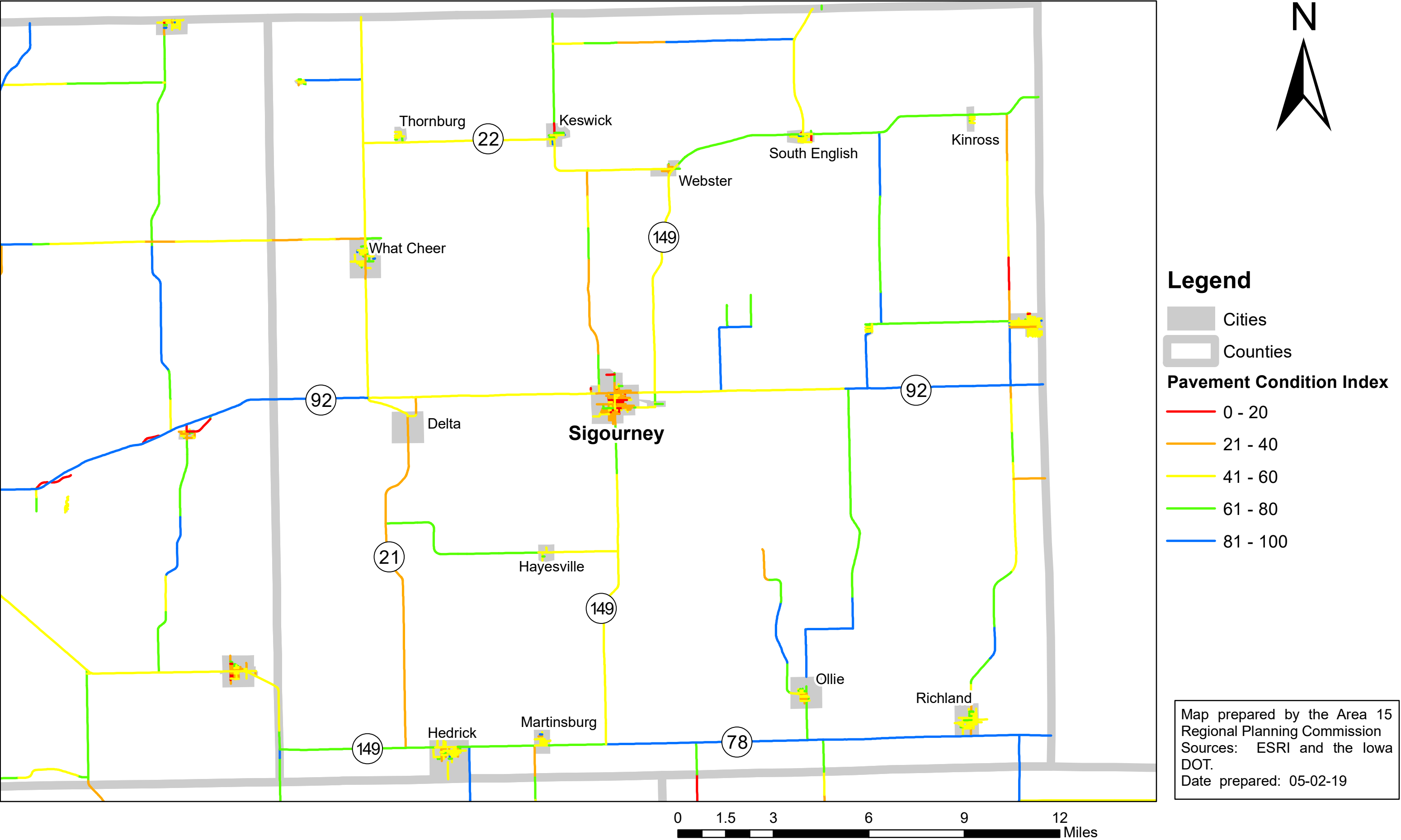
- Cities
- Counties

Pavement Condition Index

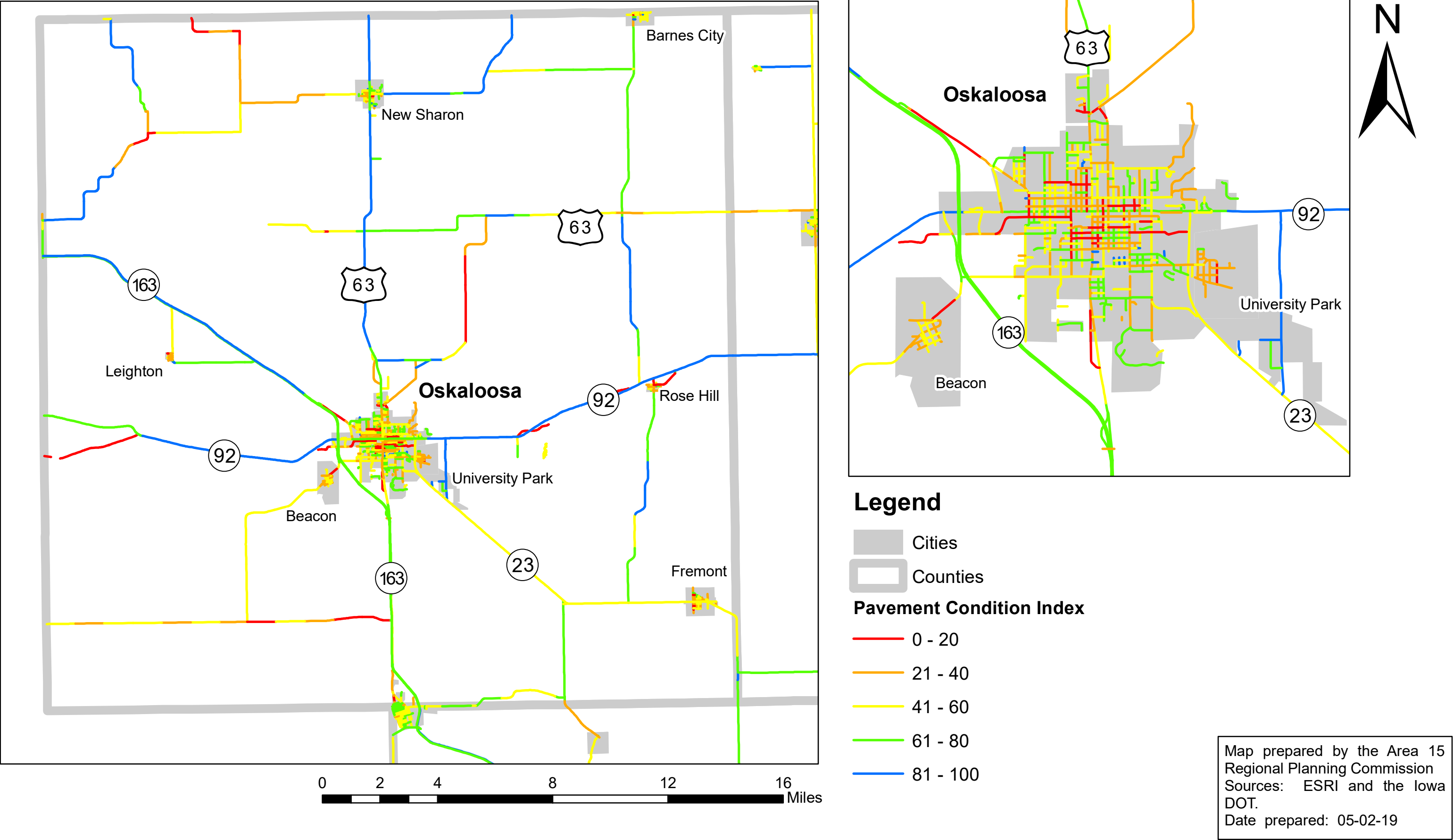
- 0 - 20
- 21 - 40
- 41 - 60
- 61 - 80
- 81 - 100

Map prepared by the Area 15
Regional Planning Commission
Sources: ESRI and the Iowa
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Date prepared: 05-02-19

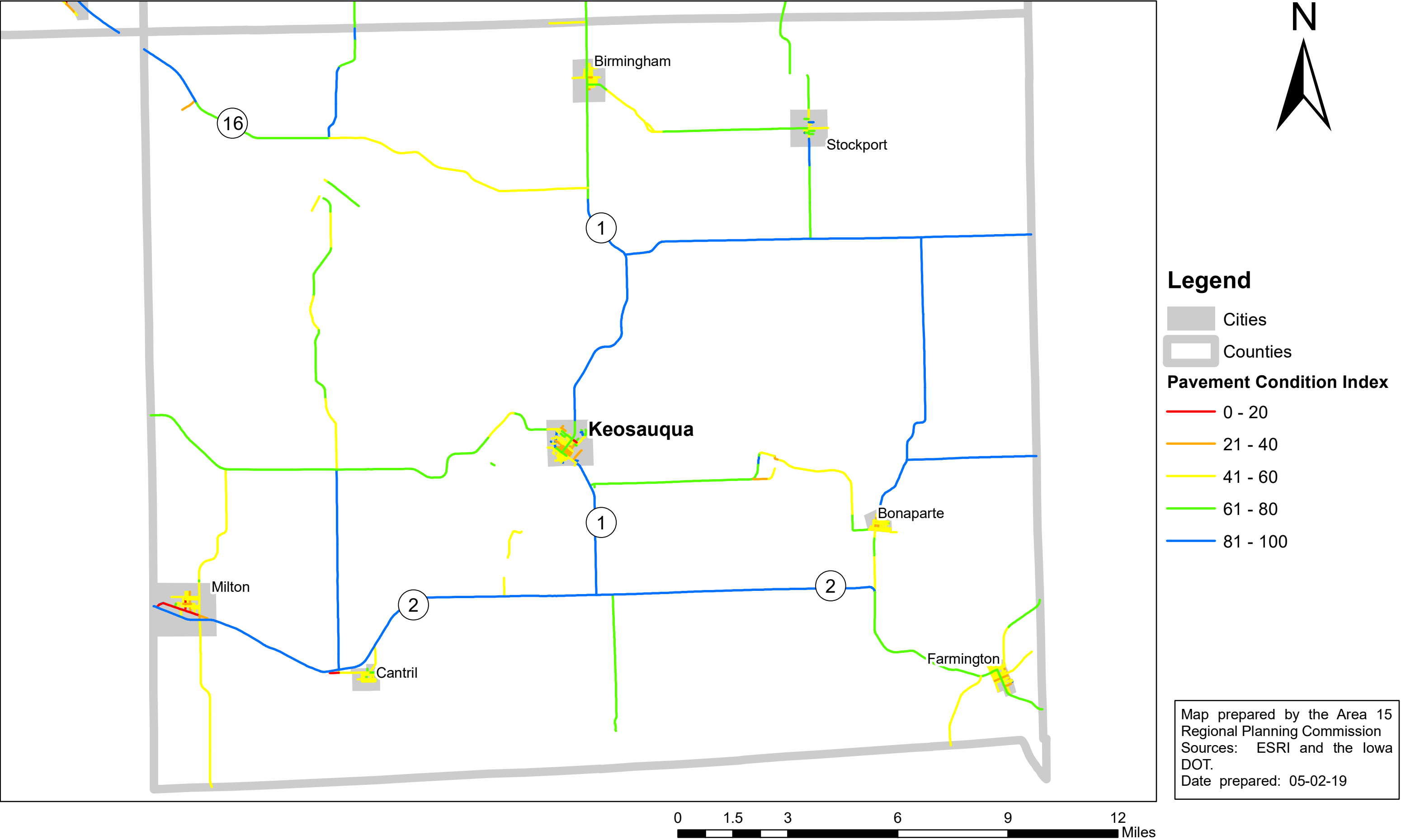
Map 4.19: 2017 Pavement Conditions of Keokuk County Roads



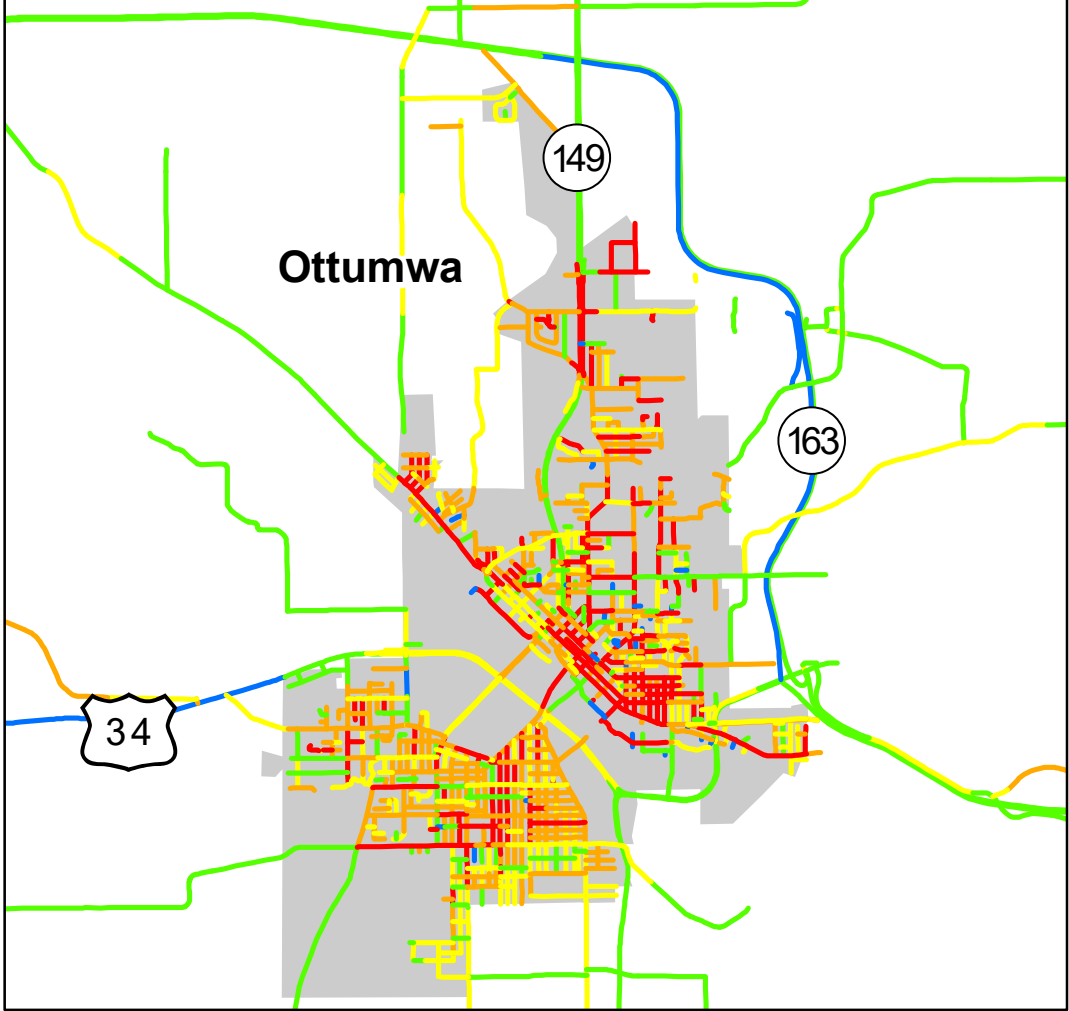
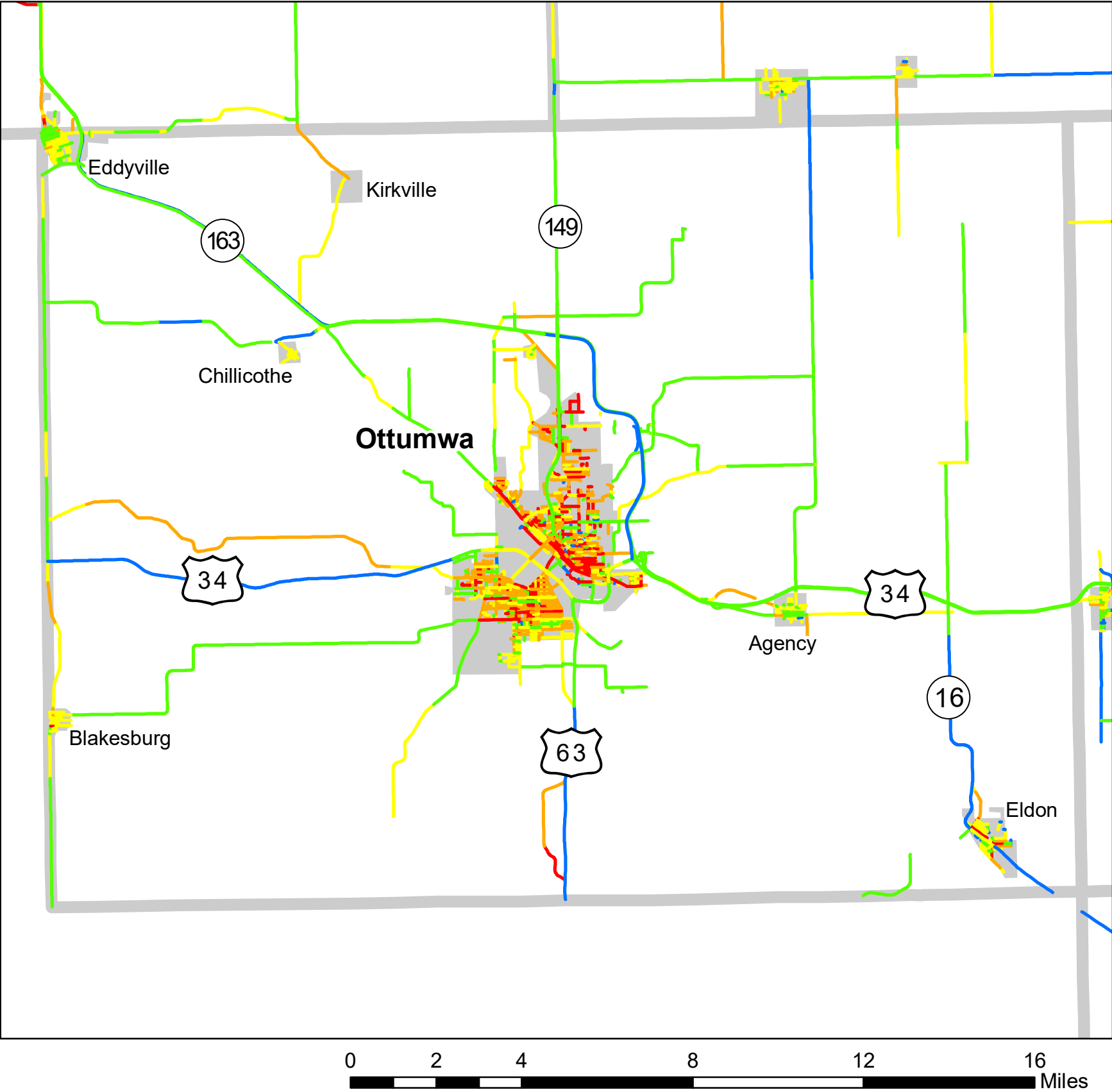
Map 4.20: 2017 Pavement Conditions of Mahaska County Roads



Map 4.21: 2017 Pavement Conditions of Van Buren County Roads



Map 4.22: 2017 Pavement Conditions of Wapello County Roads



Legend

- Cities
- Counties

Pavement Condition Index

- 0 - 20
- 21 - 40
- 41 - 60
- 61 - 80
- 81 - 100

Map prepared by the Area 15
Regional Planning Commission
Sources: ESRI and the Iowa
DOT.
Date prepared: 05-02-19

Map 4.23: Road and Bridge Projects within the Next Five Years

