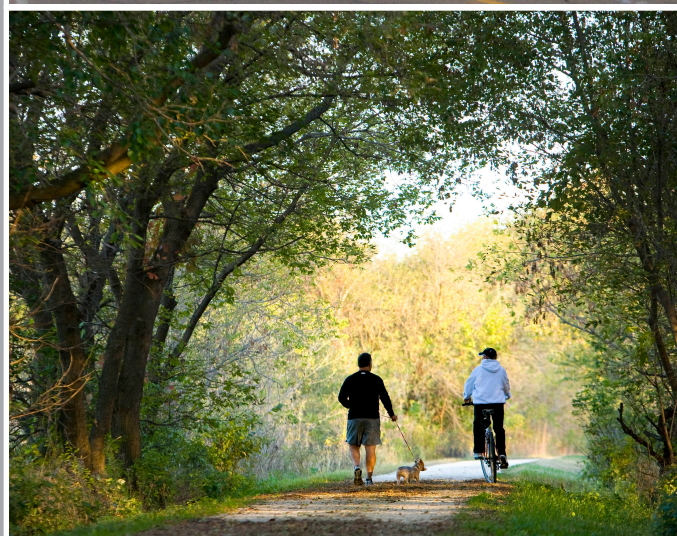


RPA 8

2040 LONG RANGE TRANSPORTATION PLAN



East Central
Intergovernmental Association
7600 Commerce Park
Dubuque, IA 52002



On the Cover. From the Top.

1. “Highway 52 South” by Phil Roeder <https://www.flickr.com/photos/tabor-roeder/> is licensed under CC BY 2.0, <https://creativecommons.org/licenses/by/2.0/>
2. “Gateway Bridge (Illinois-Iowa) by CTF83 <https://commons.wikimedia.org/wiki/User:CTF83!> is licensed under CC BY-SA 3.0 <https://creativecommons.org/licenses/by-sa/3.0/>
- 3 UP Ral Crossing, Low Moor. Photo Courtesy of ECIA.
4. Heritage Trail, Dyersville. Photo Courtesy of the Dubuque Chamber of Commerce.

REGIONAL PLANNING AFFILIATION 8

2040 LONG RANGE TRANSPORTATION PLAN

ADOPTED MAY 25, 2017

This report was prepared in cooperation with the U.S. Department of Transportation, Federal Highway Administration, the Federal Transit Administration, and the Iowa Department of Transportation. The contents of this report reflect the views of the author who is responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Iowa Department of Transportation or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation



**REGIONAL PLANNING AFFILIATION 8 (RPA 8)
POLICY COMMITTEE**

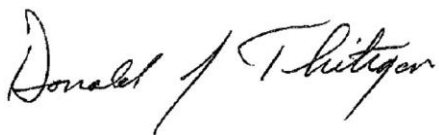
RPA 8 RESOLUTION 2017-05

RE: APPROVAL OF YEAR 2040 LONG-RANGE TRANSPORTATION PLAN

- WHEREAS** Fixing America's Surface Transportation (FAST) Act authorizes funding to improve our nation's transportation system for the 5-year period of 2016-2020; and
- WHEREAS** the Regional Planning Affiliation 8 (RPA 8) is the Regional Planning Organization (RPO) for the Clinton, Delaware, Dubuque and Jackson Counties excluding Dubuque Metropolitan Area Transportation Study (DMATS), and the Policy Committee has the specific responsibility to direct and administer the continuing rural transportation planning process; and
- WHEREAS** sections included in FAST Act requirements to Metropolitan Planning Organization (MPO) extended to RPA's by Iowa Department of Transportation (IADOT) require RPA's in conducting a continuing, comprehensive and coordinated transportation planning process in Rural Planning Areas (RPA), which include the development of a Long-Range Transportation Plan for the RPA 8; and
- WHEREAS** the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) provide regulations and guidance initiating from FAST Act for MPO's extended to RPA's by IADOT to follow and implement a transportation planning process that leads to the development of strategies/actions that will lead to the development of an integrated multimodal transportation system to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand; and
- WHEREAS** the RPA 8 Policy Committee adopted a Year 2040 Long-Range Transportation Plan (LRTP) on May 25, 2017, which discusses the issues and strategies for RPA 8 to follow a planning process for the coordination and implementation of transportation improvements in the RPA 8 region;
- NOW, THEREFORE, BE IT RESOLVED**
that the Policy Committee adopts RPA 8 Year 2040 LRTP to comply with IADOT guidance and regulations.

Approved this 25th day of May 2017.

Attest:



Don Thiltgen, RPA 8
Chairperson



Kelley Deutmeyer, ECIA
Executive Director

CHAPTERS

INTRODUCTION, 6

HUMAN ENVIRONMENT, 11

ROADS AND BRIDGES, 21

BICYCLE AND PEDESTRIAN, 33

TRANSIT, 44

SAFETY AND SECURITY, 49

FREIGHT, 71

ENVIRONMENTAL, 83

PUBLIC INPUT, 91

FINANCIAL, 94

IMPLEMENTATION, 112

1

INTRODUCTION

RPA 8 ORGANIZATION AND MANAGEMENT

The East Central Intergovernmental Association Regional Planning Affiliation was established on February 2, 1994 through the adoption of Articles of Agreement by the participating organizations in the region. It is one of the 18 RPA's in the state that were formed as part of the Iowa Department of Transportation's implementation of Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), particularly in regard to meeting the statewide planning and programming aspects of the legislation.

This cooperative, comprehensive, and continuing transportation planning process was established by an agreement between the state and local governments in compliance with the provisions of the ISTEA. The planning process is implemented through a committee structure. Committees forward their recommendations to the Policy Board for consideration and final action. At this time, the only standing committee is the Technical Advisory Committee (TAC). The TAC was formed by the Policy Board at its first meeting on February 2, 1994.

The East Central Intergovernmental Association Regional Planning Affiliation (RPA) membership is made up of 56 local cities and counties in a four county area in eastern Iowa. All member jurisdictions have signed a 28E agreement to conduct transportation planning and the programming of federal transportation funds as determined by the Iowa Department of Transportation. The City of Dubuque and the surrounding area is excluded from the RPA, as it is part of a separate transportation planning area - the Dubuque Metropolitan Area Transportation Study (DMATS). The DMATS region includes the Cities of Dubuque, Asbury, Sageville, Peosta, Centralia and Durango, as well as portions of Dubuque County.

The RPA is staffed by the East Central Intergovernmental Association (ECIA), which has no formal membership on either the RPA Policy Board or the TAC. At their request, the Iowa Department of Transportation, Federal Transit Administration (FTA) and Federal Highway Administration (FHWA) are only advisory members of the RPA Policy Board and TAC. Map 1.2 shows the region and 56 local jurisdictions.

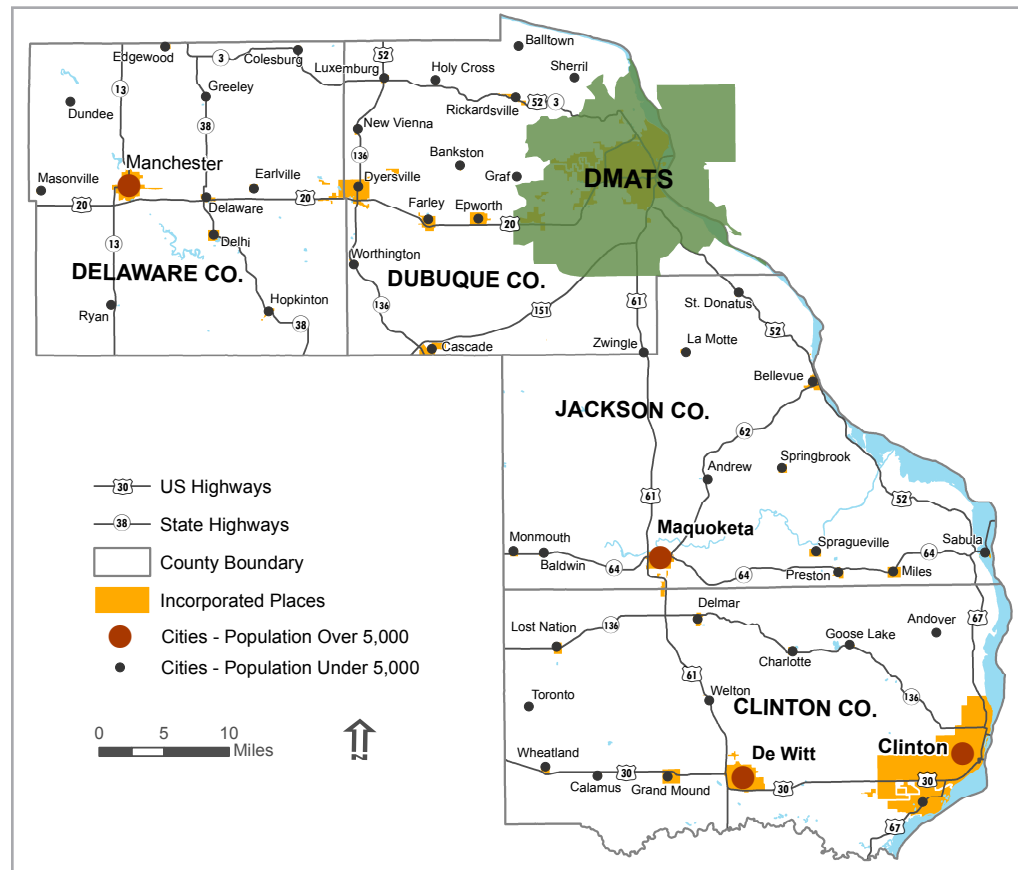
The 56 member local jurisdictions include four counties and four urban areas (population greater than 5,000). The four urban areas are the Cities of Clinton, DeWitt, Manchester, and Maquoketa. Members of the RPA include:

CLINTON	DELAWARE	DUBUQUE	JACKSON
Andover	Colesburg	Balltown	Andrew
Calamus	Delaware	Bankston	Baldwin
Camanche	Delhi	Bernard	Bellevue
Charlotte	Dundee	Cascade	LaMotte
Clinton	Earlville	Dyersville	Maquoketa
Delmar	Edgewood	Epworth	Miles
DeWitt	Greeley	Farley	Monmouth
Goose Lake	Hopkinton	Graf	Preston
Grand Mound	Manchester	Holy Cross	St. Donatus
Lost Nation	Masonville	Luxemburg	Sabula
Low Moor	Ryan	New Vienna	Spragueville
Toronto		Rickardsville	Springbrook
Welton		Sherrill	
Wheatland		Worthington	
		Zwingle	

The purpose of the RPA is to enhance and improve the rural transportation planning consultation process between IADOT and those local governments responsible for transportation planning in the rural areas. The RPA gives the rural governments of the region a united voice in addressing safety issues, long range transportation needs and transit needs.

Figure 1.2 RPA 8 Region

Source: Iowa DOT, 2017



THE RPA 8 VISION

To promote development of a coordinated multi-modal transportation system that preserves and enhances mobility, economic development and safety within the region.

The system is fiscally sustainable, driven by a collaboration of involvement by citizens and key stakeholders, promotes areas of concentrated growth, manages both demand and capacity, employs the best technology, and unites air, bicycle, pedestrian, rail, roadway, mass transit, and waterway facilities into one fully interconnected network.

RPA 8 has created specific goals along with priorities and objectives for each goal according to the area's transportation needs. These goals, priorities and objectives are as follows:

GOALS, OBJECTIVES, AND PERFORMANCE MEASURES

This plan is structured around three basic building blocks: goals, objectives and performance measures. They all sound somewhat similar, but each has a different role in the federal transportation planning process.

Goals are broad statements that describe the way things should be. For example, if you were to say "I want to get better transportation system in RPA 8 area," this would be a general description of how you want to improve transportation system in the future. You have not said how you are planning to do it and what the resources you need to do it are. The LRTP is built around eight goals that, similarly, provide a general overall direction for the region's transportation system.

Objectives are specific, measurable steps to be taken to reach a goal. An example would be saying "We will improve the system by coordinating signals." This objective makes the abstract goal of "improvement" into something specific. Each of the LRTP's six goals has distinct, measurable objectives associated with it.

Performance Measures are the means by which progress will be gauged. Performance measures are quantifiable. In the case of improving signal coordination, the performance measure could be the travel delay through the signalized intersections by time of day. Each objective in the LRTP has a performance measure associated with it.

Taking into consideration the federal requirements outlined in FAST ACT, the local planning efforts described above, and feedback from the RPA 8 members and the public, the RPA 8 staff identified eight goals for transportation investments in the RPA 8 region over the next 30 years. These goals are can be summarized as follows.

Priority: Transportation projects that place emphasis on maintaining and improving the existing transportation system than on expanding.

Goal: Strategically preserve our existing infrastructure and focus future investment in areas that are already served by significant public infrastructure investments.	Objective 1: Preserve and maintain pavement.	Performance Measure : Pavement Condition: Percentage of road system in poor condition (Note: 2016 data will be established as a baseline. The RPA 8 Policy and Technical boards can choose to establish targets)
	Objective 2: Preserve and maintain bridges.	Performance Measure : Bridge Condition: Percentage of structural deficit condition bridges (Note: 2016 data will be established as a baseline. The RPA 8 Policy and Technical boards can choose to establish targets)
	Objective 3: Preserve and maintain pedestrian facilities:	Performance Measure : Trail: No of trail users (Note: 2017 data will be established as a baseline. The RPA 8 Policy and Technical boards can choose to establish targets)
	Objective 4: Assist communities in our planning area in creating, maintaining, and utilizing asset management systems.	Priority: Transportation projects that improve safety and security in the region.

Goal: Increase the safety, security, and resiliency of the transportation system.	Objective 1: Reduce serious injuries and fatalities from vehicle crashes.	Performance Measure : Number of Annual Crashes: Number of annual injuries and fatalities from vehicle crashes exempting animal and DUI related crashes (Note: 2016 data will be established as a baseline. The RPA 8 Policy and Technical boards can choose to establish targets)
	Objective 2: Reduce pedestrian and bicycle crashes.	Performance Measure : Number of Annual Crashes: Number of annual Pedestrian and Bicycle crashes (Note: 2014 SAVERS data will be used to establish a baseline. The RPA 8 Policy and Technical boards can choose to establish targets)

Priority: Transportation projects that support new development.

Goal: Support transportation Improvements and projects that promote existing and future economic development.	Objective 1: Identify potential connections to support existing and future business operations within and outside the RPA 8.	Performance Measure: Annual transportation investment that is used to expand existing and attract new businesses (Note: RISE funds for the area will be tracked and reported annually. The RPA 8 Policy and Technical boards can choose to establish targets)
	Objective 2: Improve access to jobs for both residents and employers in RPA 8 region.	Performance Measure: Annual transportation investment that is used to improve access to job sites (Note: RISE, STBG-BROS, and STBG funds for the area will be tracked and reported annually. The RPA 8 Policy and Technical boards can choose to establish targets)

Priority: Transportation projects that promote biking, walking and water trails.

<p>Goal: Provide a high degree of multi-modal accessibility and mobility for individuals. This should include better integration and connectivity between modes of travel.</p>	<p>Objective 1: Provide more on-road bicycle facilities throughout the community.</p>	<p>Performance Measure : Increase in total miles of on-road trails (Note: Data collected from County Conservation Boards and City Park and rec for 2017 will be used as a base year data. The data will be collected annually through trail county program. The RPA 8 Policy and Technical boards can choose to establish targets)</p>
	<p>Objective 2: Provide more trails to connect destinations throughout the community, including the completion of existing regional and local trail systems.</p>	<p>Performance Measure : Increase in total miles of trails within the region (Note: Data collected from County Conservation Boards and City Park and rec for 2017 will be used as a base year data. The data will be collected annually through trail county program. The RPA 8 Policy and Technical boards can choose to establish targets)</p>
	<p>Objective 3: Identify and preserve right-of-way for future bicycle and multi-use trails.</p>	<p>Performance Measure : Increase in right-of-way for multi-use trail within the region (Note: Data collected from County Conservation Boards and City Park and rec for 2017 will be used as a base year data. The data will be collected annually through trail county program. The RPA 8 Policy and Technical boards can choose to establish targets)</p>

Priority: Projects that facilitate efficient movement of freight.

<p>Goals: Support Efficient Freight system in the region</p>	<p>Objective 1: Maintain adequate infrastructure conditions on primary freight Corridors</p>	<p>Performance Measure : Pavement Condition and roughness index on primary freight corridors (Note: Data from Institute for Transportation (INTRANS) will be used to create base line for designated freight corridors (freight corridors from freight study) in 2017. The data received from INTRAS will be used annually. The RPA 8 Policy and Technical boards can choose to establish targets)</p>
	<p>Objective 2: Maintain a high degree of reliability on primary freight corridors.</p>	<p>Performance Measure : Implementation of recommendations from freight study</p> <p>Performance Measure : Annual commodity flow by tonnage through the region</p>
	<p>Objective 3: Reduce congestion on primary freight corridors.</p>	<p>Performance Measure : Overall travel time during peak and off peak on primary freight corridors</p>

2

HUMAN ENVIRONMENT

INTRODUCTION

Understanding the transportation needs of a community requires an understanding of how community residents make travel decisions. Travel behavior is made up of thousands of decisions made by individuals on how, when, and where to travel. Individuals make these decisions based on many factors such as family size, work location, travel time, and available modes.

Chapter 2 of the RPA 8 LRTP focuses on building a community profile based on demographic and socioeconomic data that provides a general understanding of travel behavior in the RPA 8 area. The process of acquiring and checking this data involved coordinated efforts by all the transportation and planning departments in the region.

POPULATION

RPA 8's four counties combined for a total population of 180,381 in the 2010 Census. Dubuque County has the largest population of the four; however, a large portion of that population resides within the DMATS MPO boundary. In 2010, 75,085 people, or about 80 percent of the total county population lived inside the DMATS boundary. Figure 2.1 shows the 2010 Census population of the four RPA 8 counties.

**Figure 2.1 2010 Census
Population for RPA 8 Counties**

County	Population
Clinton	49,116
Delaware	17,764
Dubuque	93,653
Jackson	19,848
Total	180,381

Source: US Census Bureau, 2010
Decennial Census.

Figure 2.2 Median Age

County	2000	2010
Clinton	38.2	41.4
Delaware	37.1	42.1
Dubuque	36.5	38.6
Jackson	39.1	44

Source: US Census Bureau, Decennial
Census 2000 and 2010.

AGE

In the ten years between the 2000 and 2010 censuses, the population of the RPA 8 area became older on average. In 2000, the median age of RPA 8 counties ranged from 36.5 to 39.1 years. In 2010, the median age had increased to a range of 41.4 to 44 years. Figure 2.2 contains the 2000 and 2010 median age by county.

The increase in median age is primarily the result of the aging of the baby boom generation. The United States saw a considerable increase in the birth rate in the years following World War II. Children born between 1946 and 1964 are now in their mid-fifties to early seventies. As this generation continues to age, their large numbers will continue to push the median age up over the next ten to twenty years. Figure 2.3 shows 2000 and 2010 population for the RPA 8 region in five-year age cohorts. The figure shows a decrease in ages 30 – 44 and increase in ages 45 – 69 that is associated with the baby boomers. As RPA 8 plans for the future, it should be aware of this age trend and its potential impacts on future transportation.

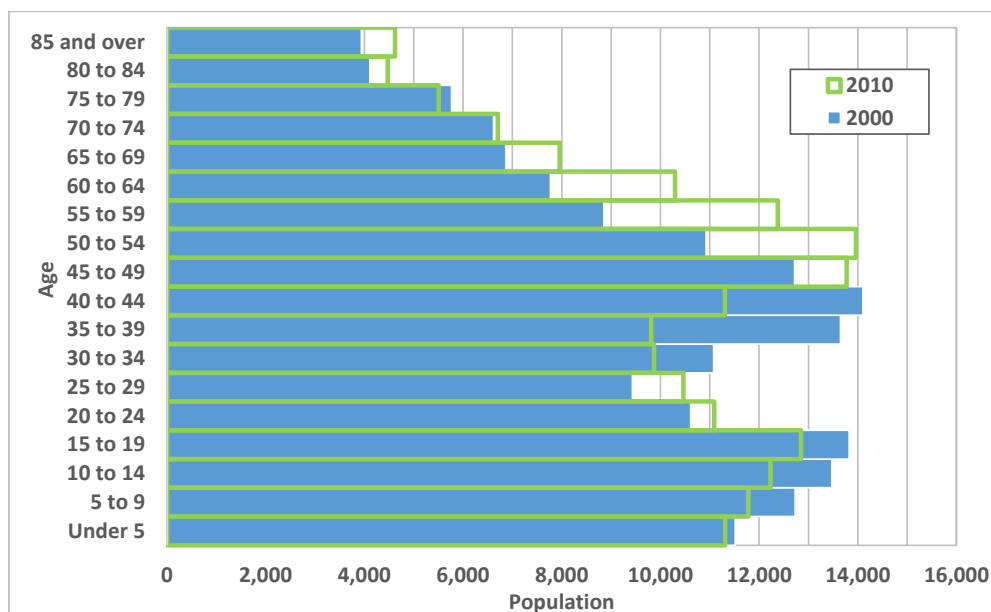


Figure 2.3 Age
Source US Census
Bureau, Decennial
Census 2000 and 2010.

RPA 8 POPULATION PROJECTION

Accurate knowledge of past and future demographic conditions is vital to efficient distribution of transportation resources. Understanding population characteristics helps communities determine the adequacy of existing transportation facilities, land use patterns, economic arrangements, and community facilities. Between 1970 and 1980, the population of the RPA 8 region increased by over 5,000. Between 1980 and 1990 there was a significant decrease in population caused by poor economic conditions that affected many communities in Iowa. The region's population rebounded some in 2000 and decreased slightly in 2010. Figure 2.4 shows the historical population of RPA 8 counties between 1970 and 2010.

The RPA 8 LRTP uses population forecasts created by the Iowa DOT for the Iowa Statewide Traffic Analysis Model (iTRAM). The 2010 Census population serves as the base for the projection. Figure 2.4 shows the historical population of RPA 8 counties between 1970 and 2010, and future population projections out to 2040. As seen in Figure 2.4, the combined population of the four counties remains stable over the coming years, growing to 198,017 by 2040 with much of the growth occurring in the DMATS area.

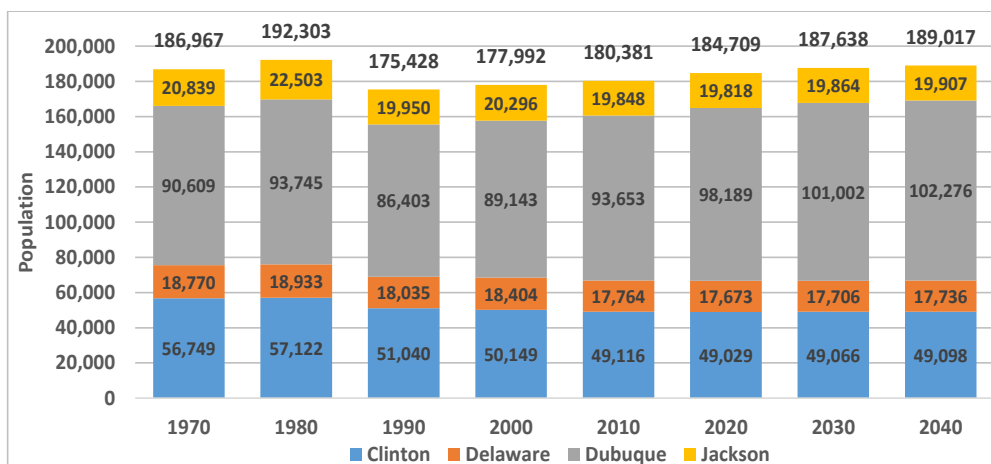


Figure 2.4 Historical and Projected Future Populations for RPA 8 Counties
Source: Woods and Poole Economics, Inc. via the State Data Center of Iowa and Iowa DOT, iTRAM Data.

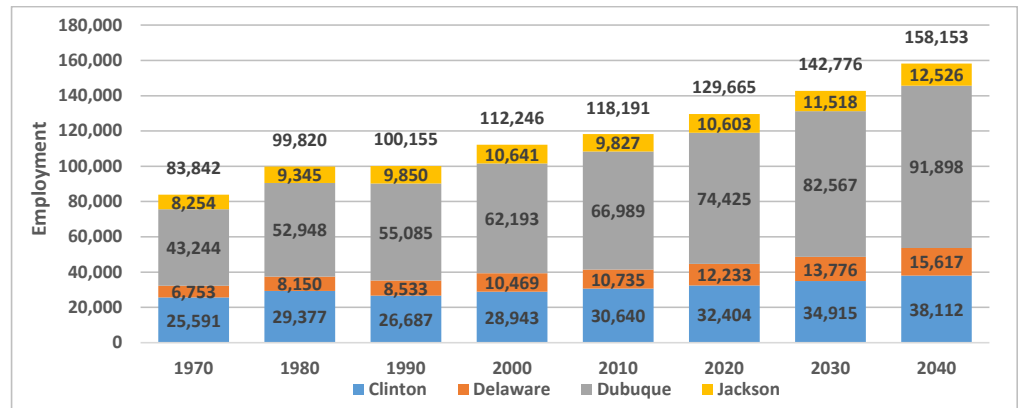
EMPLOYMENT

Monitoring the number and location of jobs in the RPA 8 area is critical to the long range planning process. Commuting to and from work is the number one reason for travel, so knowing the number of jobs and where they are located can help RPA 8 plan future transportation investments.

Figure 2.5 charts historic and projected future employment for RPA 8 counties. The State Data Center of Iowa provided the historical employment data from Woods and Poole Economics. Future projections come from the Iowa DOT's iTRAM data. Dubuque County includes all county employment including jobs located in the DMATS area.

The area's total employment has grown at a faster rate than its population. Future projections assume that this trend will continue. This trend is likely the result of several factors including an increased number of part time jobs, increased labor force participation by women, and increased commuting from outside the region for work.

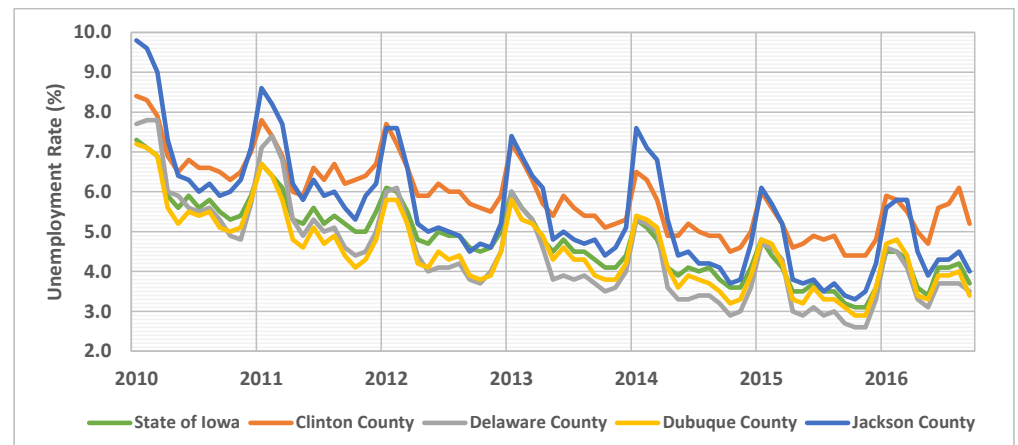
Figure 2.5 Historic and Projected Future Employment
Source: Woods and Poole Economics, Inc. via the State Data Center of Iowa and Iowa DOT, iTRAM Data.



UNEMPLOYMENT RATE

Figure 2.6 charts the region's unemployment rate from January 2010 to September 2016. The monthly unemployment rate can help demonstrate seasonal changes in employment. All areas see an increase in unemployment in the winter months with seasonal workers being temporarily out of work. However, in Jackson and Clinton counties the winter unemployment increase is higher when compared to other areas. These seasonal unemployment changes likely result in for some seasonal variation in traffic and public transit ridership and should be considered in the long range planning process.

Figure 2.6 Unemployment Rate
Source: Iowa Workforce Development, Local Area Unemployment Statistics (LAUS), 2016



INCOME

Income is one of the most important components of individual mobility. The personal vehicle is the most popular mode of transportation in the RPA 8 area, but for some, owning and operating a vehicle is too expensive. Low-income families are often dependent on public transportation, walking, and bicycling. With these unique transportation needs, understanding the size and location of the low income population is important to the long range planning process. Figure 2.7 shows the median household income for RPA 8 counties and the State of Iowa in 2015 inflation adjusted dollars. The data shows little change, and even decline in the median household income since 1989.

Year	Clinton	Delaware	Dubuque	Jackson	State of Iowa
1989	\$48,569	\$49,233	\$54,048	\$42,982	\$50,135
1999	\$53,241	\$52,878	\$56,312	\$49,123	\$56,151
2010	\$50,185	\$51,172	\$52,797	\$46,184	\$53,122
2015	\$50,498	\$58,274	\$54,605	\$49,028	\$53,183

*Values Adjusted for inflation using the Consumer Price Index

Figure 2.7 Median Household Income in 2015 Dollars*

Source: 2011-2015
American Community
Survey 5-Year Estimates

Income can greatly affect people's ability to move around their community. Lower income households may not be able to afford a car and be more dependent on public transit to get to work or school. Figure 2.8 shows the distribution of household income across the RPA 8 area.

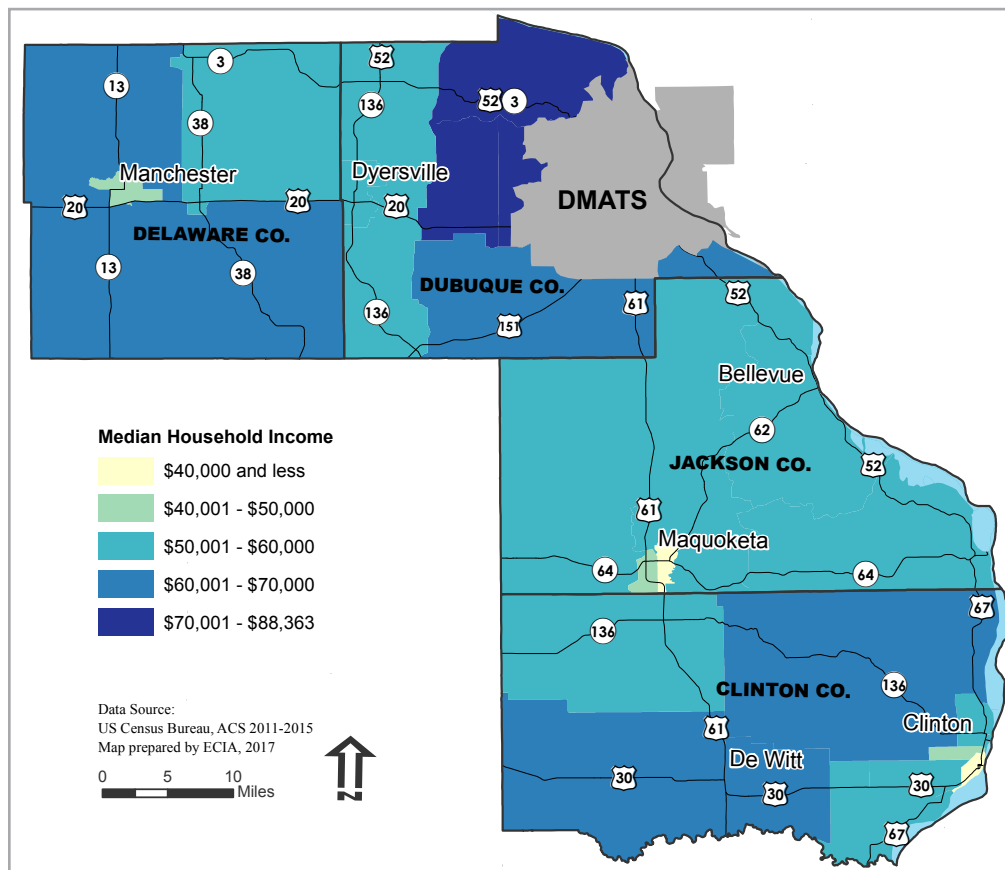
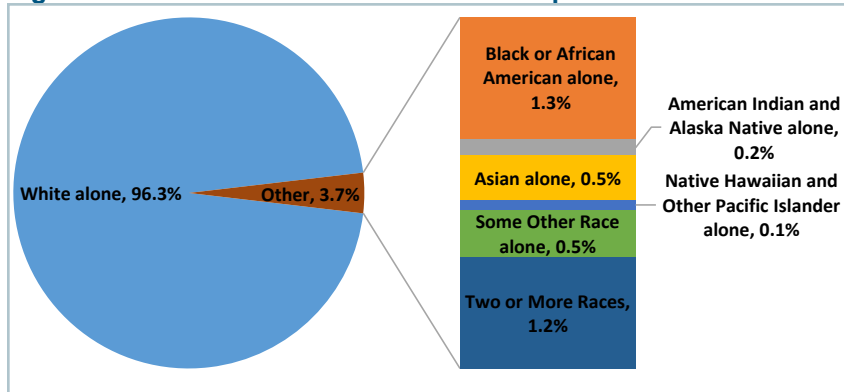


Figure 2.8 RPA 8 Median Household Income

Source: 2011-2015
American Community
Survey 5-Year Estimates

RACE AND ETHNICITY

Figure 2.9 Race - Percent of Total RPA 8 Population



Source: US Census Bureau, Decennial Census, 2010.

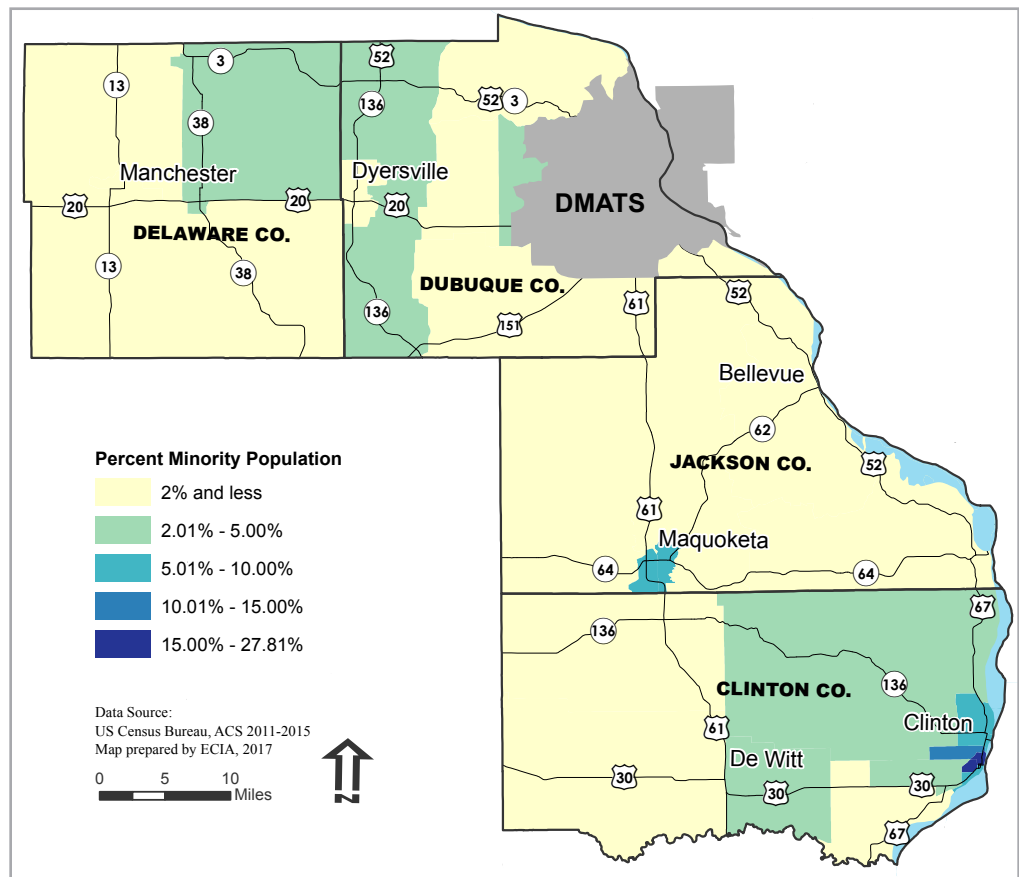
Historically, minority populations have made up a very small segment of the RPA 8 population, but recent census data shows an increasingly diverse population. In 2000, racial minorities accounted for 2.1% of the RPA 8 population, but by the 2010 Census, the percentage of racial minorities had grown to 3.7%.

The racial composition of RPA 8's population is shown in Figure 2.9. The region is just over 96 percent White, with African-

Americans making up 1.3% of the population and Asians 0.5%. 2010 Census figures indicate that minority races account for 3.7 percent of the total population. About 1.67% of the population identifies as Hispanic or Latino. Figure 2.9 maps proportions of minority populations by census tract within the region. To estimate minority population numbers for the RPA 8 area in Dubuque County, staff subtracted population numbers from the cities of Dubuque, Asbury, and Peosta from the Dubuque County total.

Figure 2.10 Percent Minority Population

Source: 2011-2015
American Community
Survey 5-Year Estimates



LIMITED ENGLISH PROFICIENT POPULATION

People with limited English proficiency (LEP) often work in lower-wage jobs that require few communication skills, and rely on public transportation because they cannot afford a car. These populations may have difficulty learning about public transit options in their community if information is primarily communicated in English.

Mapping the location of LEP populations can help transportation officials target language services to the areas where they are most needed. According to FTA Circular C 4702.1B, “Limited English Proficient (LEP) persons refers to persons for whom English is not their primary language and who have a limited ability to read, write, speak, or understand English.”

Figure 2.11 shows the LEP population in the RPA 8 Area. Spanish is the most common language spoken by LEP populations in the RPA 8 area. RPA 8 does not have a defined LEP population above the Department of Justice’s Safe Harbor threshold. The Department of Justice defines the Safe Harbor threshold as, “1,000 persons OR 5% of the total population for a particular language, whichever is less, requiring vital document translation.” The highest concentration of LEP people in the RPA 8 area is Census Tract 4 in the City of Clinton, which has a 2.41% LEP population.

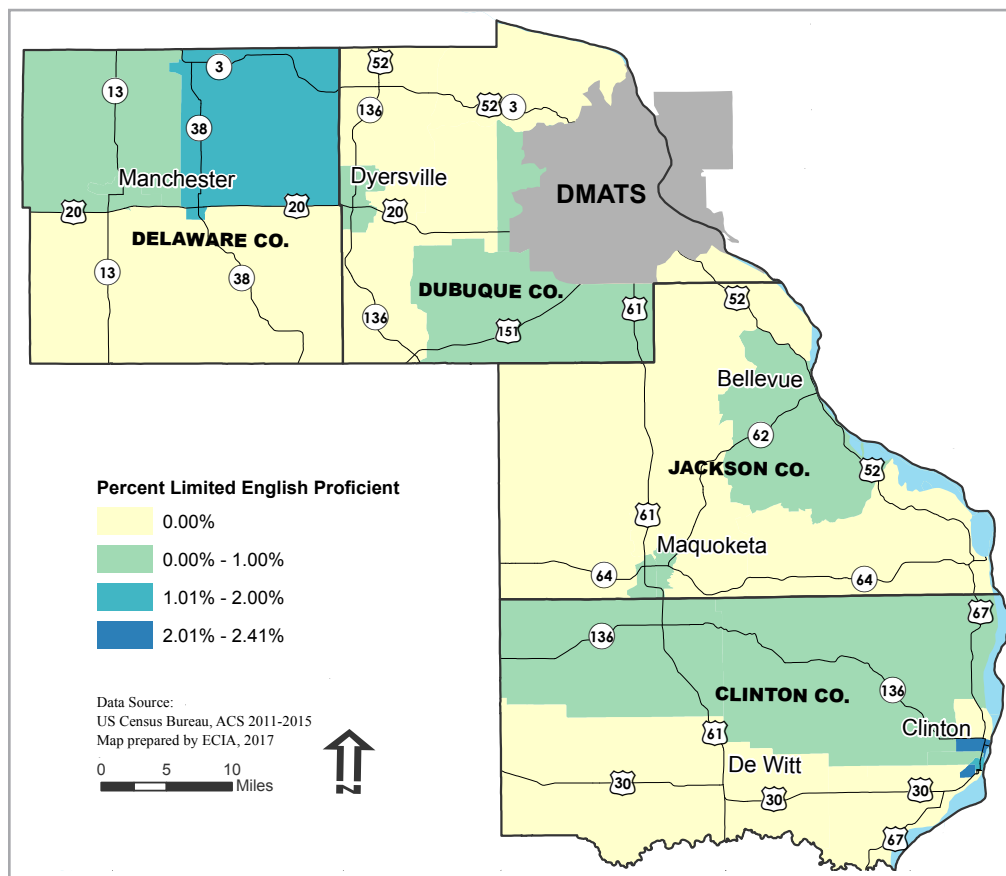


Figure 2.11 Limited English Proficient Population

Source: 2011-2015

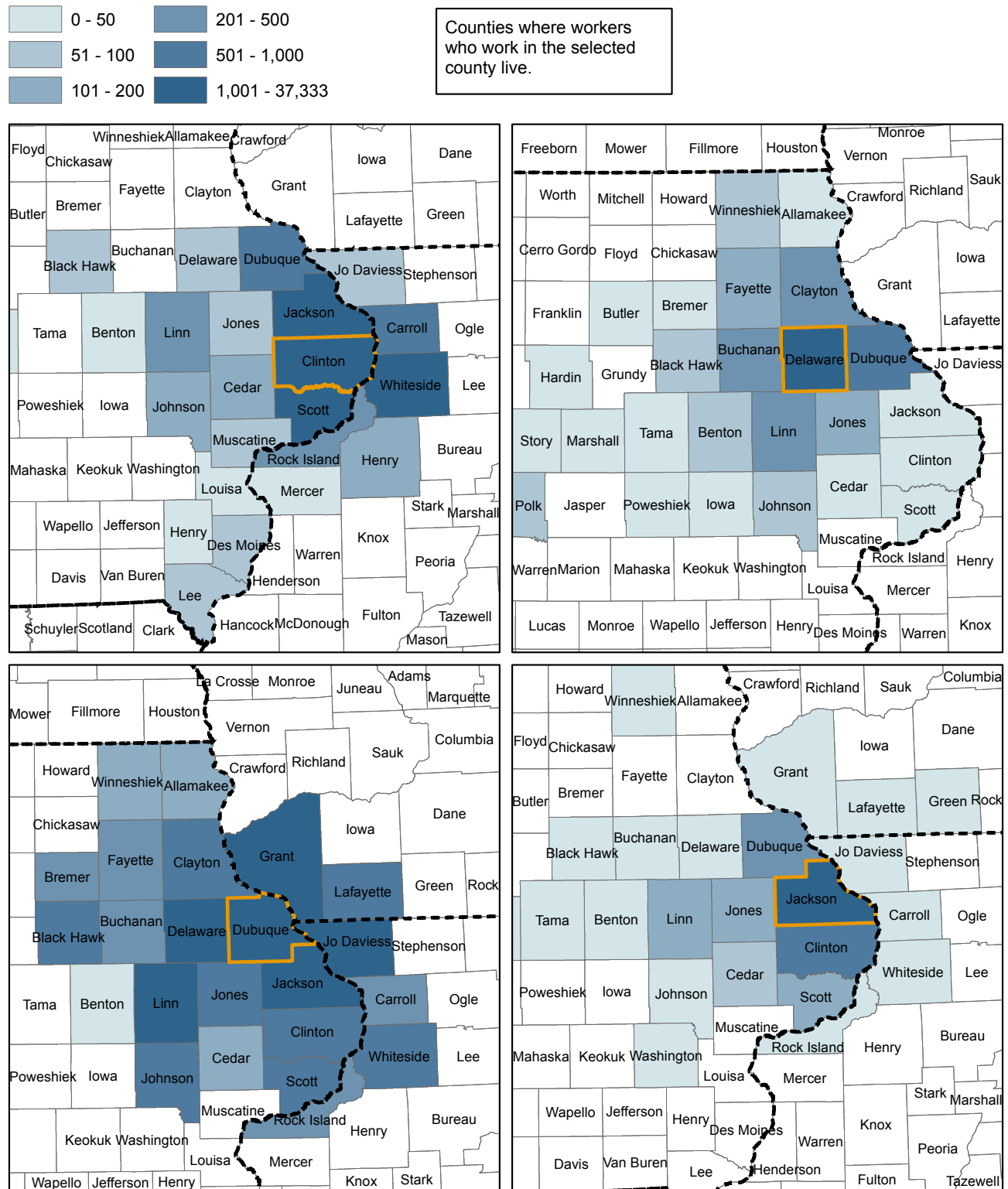
American Community Survey 5-Year Estimates

COMMUTING PATTERNS

The RPA 8 area is made up of rural and urban areas. While the homes of the region’s workers are spread across the area, the region’s jobs are more concentrated in the urban areas and small cities. The region’s economy relies on the transportation network to move workers safely and efficiently.

The commuting data mapped in figures 2.12 and 2.13 illustrates the importance of regional transportation planning. Figure 2.12 shows inward commutes. The map shows counties where workers who work in the selected county live.

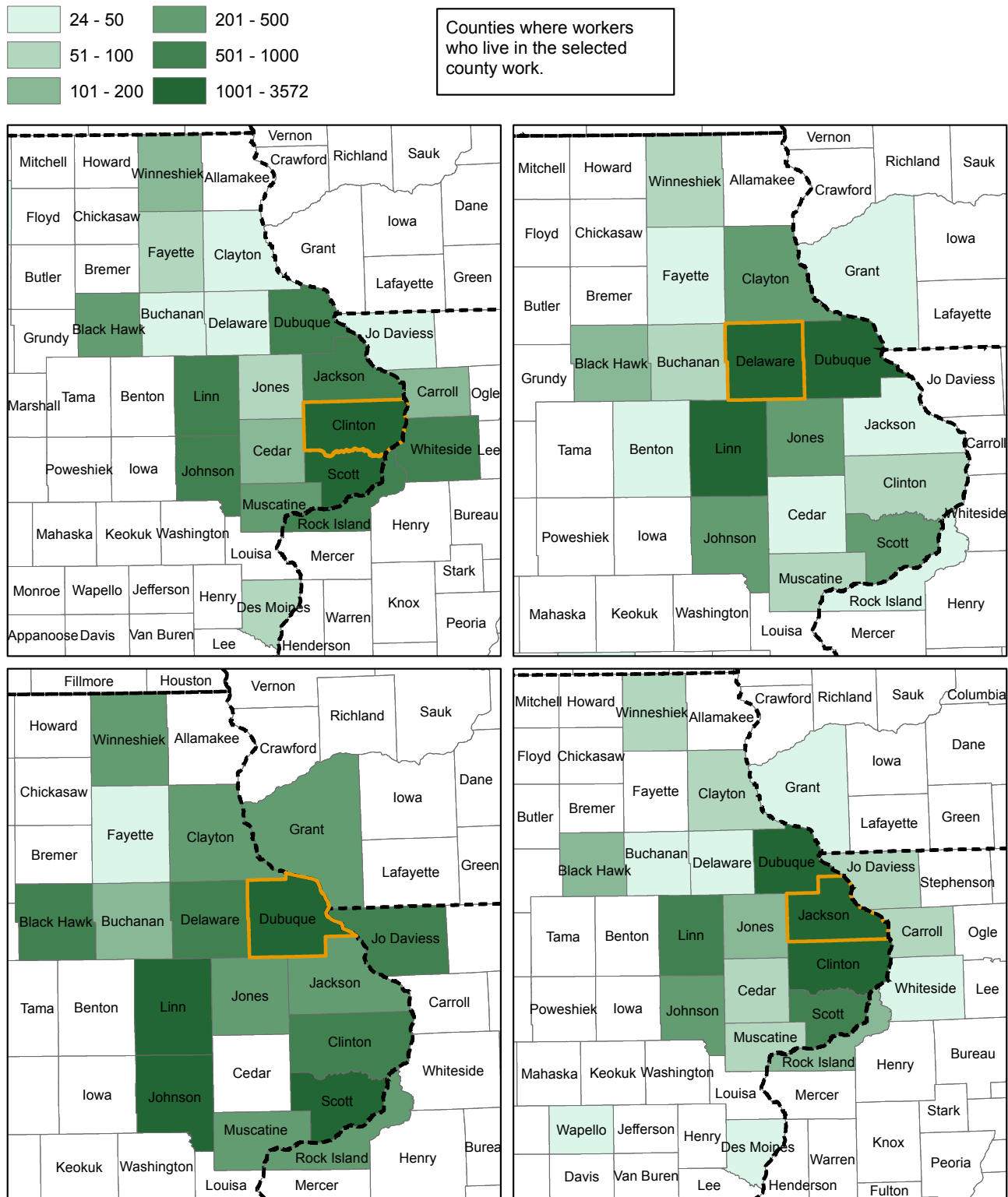
Figure 2.12 Inward Commutes by County



Source: U.S. Census Bureau, Center for Economic Studies, [www.http://onthemap.ces.census.gov/](http://onthemap.ces.census.gov/), 2014

Figure 2.13 shows outward commutes. The map shows the counties where workers who live in the selected county work. Both maps illustrate the regional nature of the area's workforce and a high level of commuting between counties.

Figure 2.13 Outward Commutes by County



Source: U.S. Census Bureau, Center for Economic Studies, [www.http://onthemap.ces.census.gov/](http://onthemap.ces.census.gov/), 2014

MODE TO WORK

Most workers in the RPA 8 area drive themselves to work. The Census estimates most workers that live in the area drive alone to get to work. Figure 2.14 charts means of transportation to work for RPA 8 counties and the State of Iowa. All RPA 8 Counties and the State have similar mode use patterns, with Driving Alone and Carpooling being the most popular. Mode share is an important factor in future transportation planning. While driving accounts for most of the areas trips, RPA 8 is committed to accommodating all modes of transportation in its planning process.

Figure 2.14 Means of Transportation to Work for Workers 16 Years and Over

*Source: 2011-2015
American Community
Survey 5-Year Estimates*

Means of Transportation	Iowa	Clinton County	Delaware County	Dubuque County	Jackson County
Drove Alone	80.6%	83.9%	82.5%	82.1%	82.0%
Carpooled	8.8%	8.1%	5.4%	7.7%	8.3%
Public Transportation (Excluding Taxi Cab)	1.1%	0.9%	0.1%	1.0%	0.5%
Taxicab	0.1%	0.0%	0.0%	0.1%	0.0%
Motorcycle	0.2%	0.3%	0.0%	0.1%	0.0%
Bicycle	0.5%	0.1%	0.0%	0.3%	0.2%
Walked	3.5%	2.5%	2.6%	3.8%	3.1%
Other Means	0.7%	0.8%	0.5%	0.4%	0.7%
Worked at Home	4.5%	3.4%	8.8%	4.4%	5.2%

TRAVEL TIME TO WORK

Commute time to work is an important measure of the regional transportation system. Travel times vary across the RPA 8 counties. Figure 2.15 shows the average travel time to work for workers 16 years and over who did at work at home. Travel times in the region's two more rural counties, Jackson and Delaware are a bit longer while travel times in Dubuque and Clinton are shorter. Rural residents are more likely to travel outside the immediate area for work, while urban residents may be more likely to live and work in the same community.

Figure 2.15 Average Travel Time to Work

*Source: 2011-2015
American Community
Survey 5-Year Estimates*

Area	Average Travel Time (Minutes)
Iowa	18.87
Clinton County	19.53
Delaware County	22.00
Dubuque County	16.88
Jackson County	23.11

Figure 2.16 charts the distribution of travel times for RPA 8 counties and the State of Iowa. While the distributions follow a similar pattern, the chart shows more 30 to 59 minute travel times for Jackson and Delaware, and more 5 to 19 minute travel times for Dubuque and Clinton.

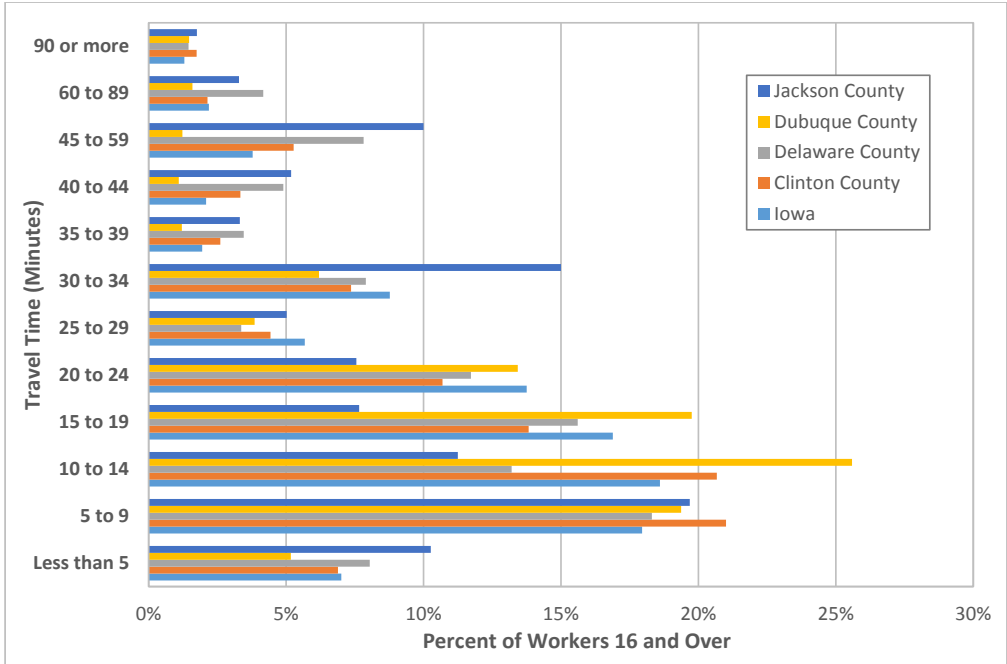


Figure 2.16 Travel Time to Work for Workers 16 Years and Over
Source: 2011-2015 American Community Survey 5-Year Estimates

NUMBER OF VEHICLES PER HOUSEHOLD

The number of vehicles available to households provides a means to estimate future travel demand, as research has shown that households with more vehicles tend to generate more vehicle trips. A high number of zero vehicle households could indicate the need for bicycle, pedestrian, or transit services. The American Community Survey asks respondents to specify the number of vehicles that are kept at home and available for the use of household members. Figure 2.17 shows the number of vehicles available to households in the RPA 8 area. The chart shows that 94.1% of households have at least vehicle available.

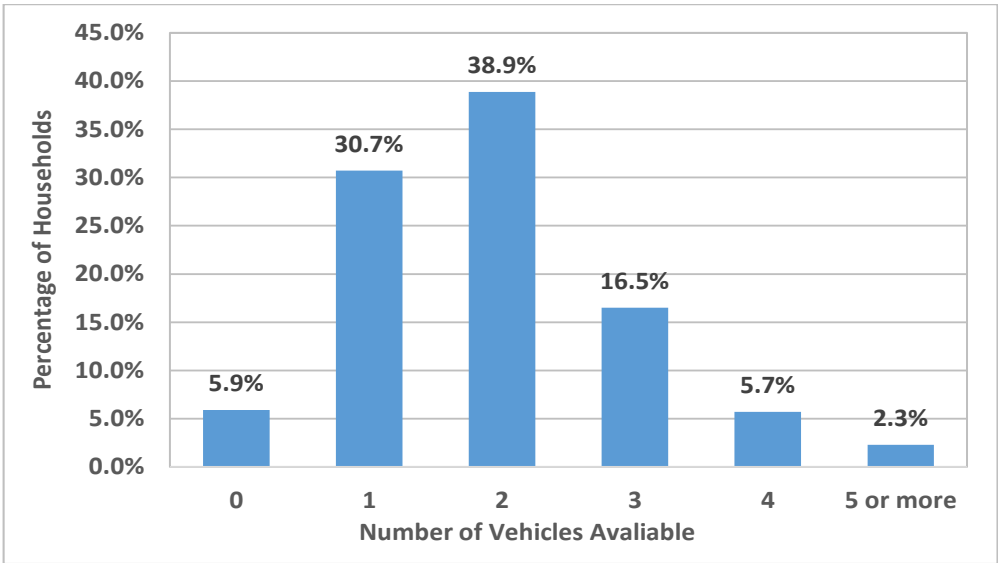


Figure 2.17 Number of Vehicles Available to RPA 8 Households
Source: 2011-2015 American Community Survey 5-Year Estimates

3

ROADS AND BRIDGES

The Transportation Network Profile chapter is designed to assess the current conditions of the transportation network in the RPA 8 area. The Chapter includes data on the area transportation network including traffic volumes, level of congestion and Bridge Conditions.

ROADS

The RPA 8 region's transportation system works extremely well for the majority of users. Most commuters in our planning area drive alone to work. Five major US highways, US 20, US 30, US 52, US 151 and US 61, pass through Clinton, Delaware, Dubuque, and Jackson counties. These facilities, along with a dense network of State, County, and local roads, make it possible for commuters in private vehicles to get from one part of the region to the other efficiently. Freight transportation also benefits from our relatively uncongested Highway facilities and other major roadways. The roads section of the chapter describes the roadway system in the RPA 8 area in terms of its functional classification, existing capacity, congestion, and safety.

FUNCTIONAL CLASSIFICATION

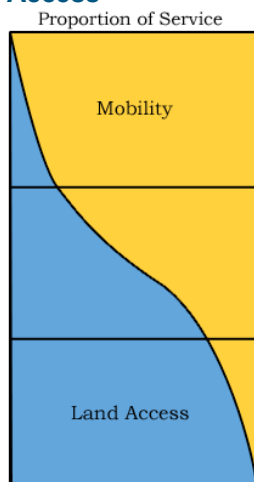
The RPA 8 region contains a number of individual streets and street types, each serving a different purpose within the transportation network. A Functional Classification system is used to group and describe roads according to the type of service they provide and their role in the network.

The functional classification for a given roadway is determined based on its setting (urban or rural) and whether its main role is providing connectivity, mobility, or accessibility. The number of vehicle miles traveled (VMT), average annual daily traffic (AADT), and adjoining land uses of a roadway are also considered. Traditionally, the roadway functional classification system has been used to describe how travel flows through the regional roadway network and to determine project eligibility for inclusion in different transportation planning projects and grants. The arterial streets form the backbone of the network. Local roads feed the collectors, which in turn feed the arterials.

The functional classification categories found in the RPA 8 area include Principal Arterial, Minor Arterials, Major Collectors, Minor Collectors, and local streets.

Principal Arterial roadways primarily serve a mobility function with minimal land access. The primary purpose of principal arterials is the rapid movement of people and goods for extended distances. Principal arterials are high capacity, high speed roadways with restricted access. US Highway 20, 30, 52, 61 and 151 are example of a principal arterial in the RPA 8 area.

Relationship of Functionally Classified Systems in Serving Traffic Mobility and Land Access



Minor Arterials interconnect with and augment principal arterials. Minor arterials within urban areas serve inter-community trips of moderate length. Although the primary use of the minor arterial is mobility, this functional class provides more land access than a principal arterial. Iowa Highway 38 in Delaware County, Iowa Highway 136 in Dubuque County, and Iowa Highway 64 in Jackson County are some of the local examples of minor arterials.

Collector streets channel trips between the local street system and the arterials. Collectors serve a balance between mobility and land access. Parking and direct driveway access to the street are typically allowed on collectors. Collectors are usually wider, have higher capacity, and permit somewhat higher speeds than the local street network. Collectors are divided into two subcategories Major Collectors and Minor Collectors.

Local Streets primarily provide local land access and offer the lowest level of mobility. Characteristics of local streets include uncontrolled intersections, posted speed limits of 25 miles per hour or less, and few restrictions on parking. Local streets are not a significant consideration in regional planning and this plan does not address them in any systematic fashion.

The Federal Highway Administration uses functional classification to determine if a roadway is eligible for federal funds. Federal-aid eligible routes include: Principal Arterials, Minor Arterials, Major Collectors, and Urban Minor Collectors. Rural Minor Collectors and Local Streets are not Federal-aid eligible. Over 24% of RPA 8 roads are eligible to use federal funds. Figure 3.1 breaks down RPA 8 area routes by classification, and Figure 3.2 maps the routes.

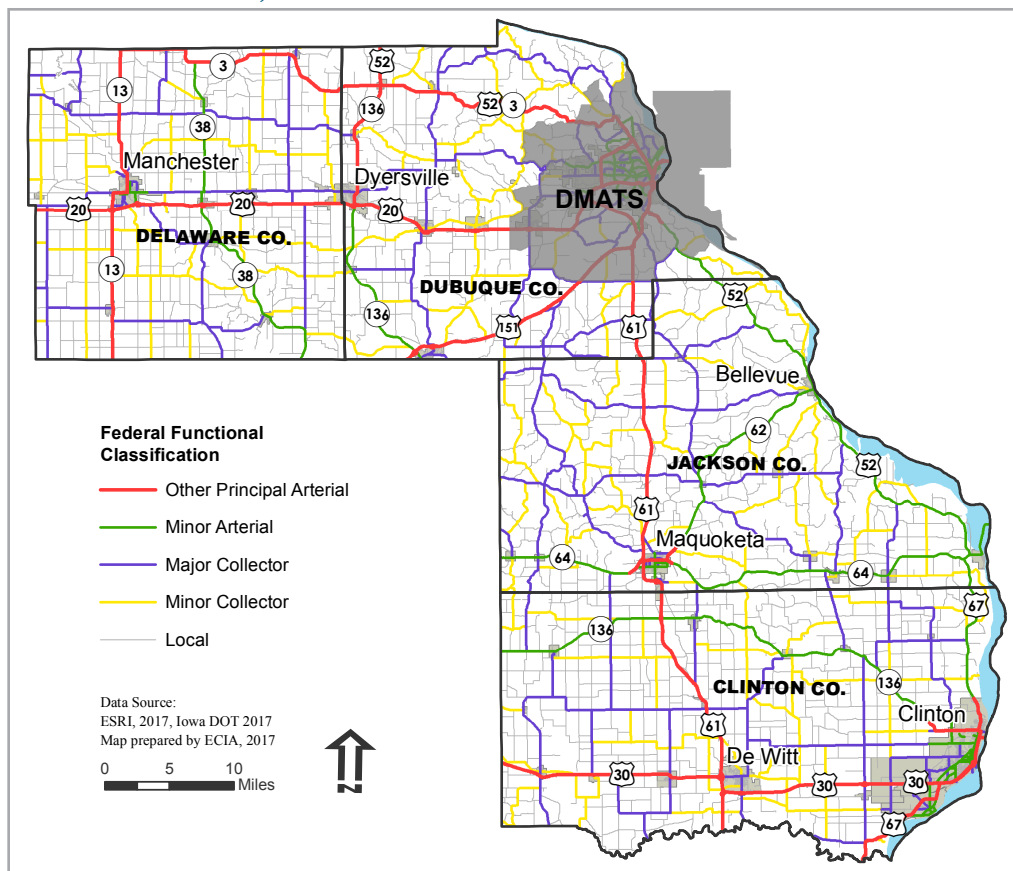
Figure 3.1: Roadway Lane Miles by Functional Classification

Source: Iowa DOT 2017,

Classification	Lane Miles	Percent
Principal Arterials	235	5%
Minor Arterials	234	5%
Major Collectors	587	13%
Minor Collectors	704	16%
Local Streets	2,633	60%
Total	4,393	

Figure 3.2: Federal Functional Classification

Source: Iowa DOT 2017, ESRI 2017.



TRAFFIC VOLUME

Traffic volume data helps to determine the number, movements, and classifications of roadway vehicles at a given location. This data can help identify critical flow time periods, determine the influence of large vehicles on vehicular traffic flow, or document traffic volume trends. Volume data is important in planning future updates to current roadways as well as designing new roads.

The measurement of traffic volume is one of the core functions of highway planning and management. Traffic counts provide the most commonly employed measure of roadway usage and are needed for the majority of traffic engineering analyses. A majority of roadway lane miles in RPA 8 carry less than 1,000

vehicles per day. Higher traffic volumes are typically found on the region's primary road system. AADT numbers are based on traffic counts that local and Iowa DOT engineers periodically collect on area roads. This plan reports most recent data provided by Iowa DOT. Figure 3.3 provides roadway lane miles by AADT. Figure 3.4 maps AADT on RPA 8 roadways.

Figure 3.3: Roadway Lane Miles by Average Annual Daily Traffic

Source: Iowa DOT
GIMS, 2015

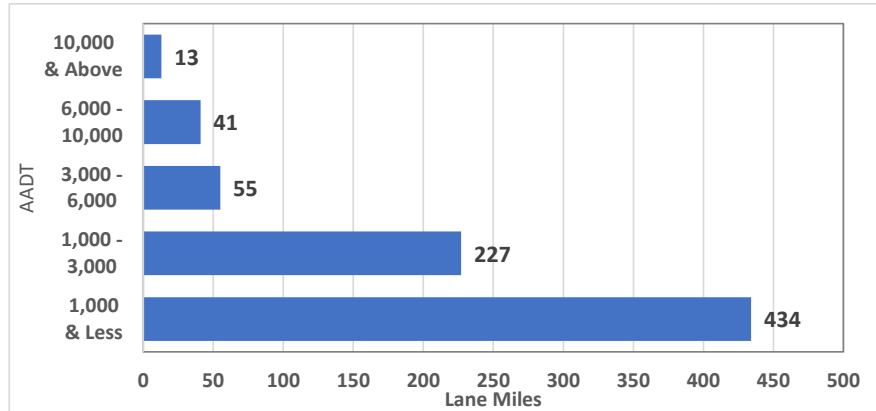
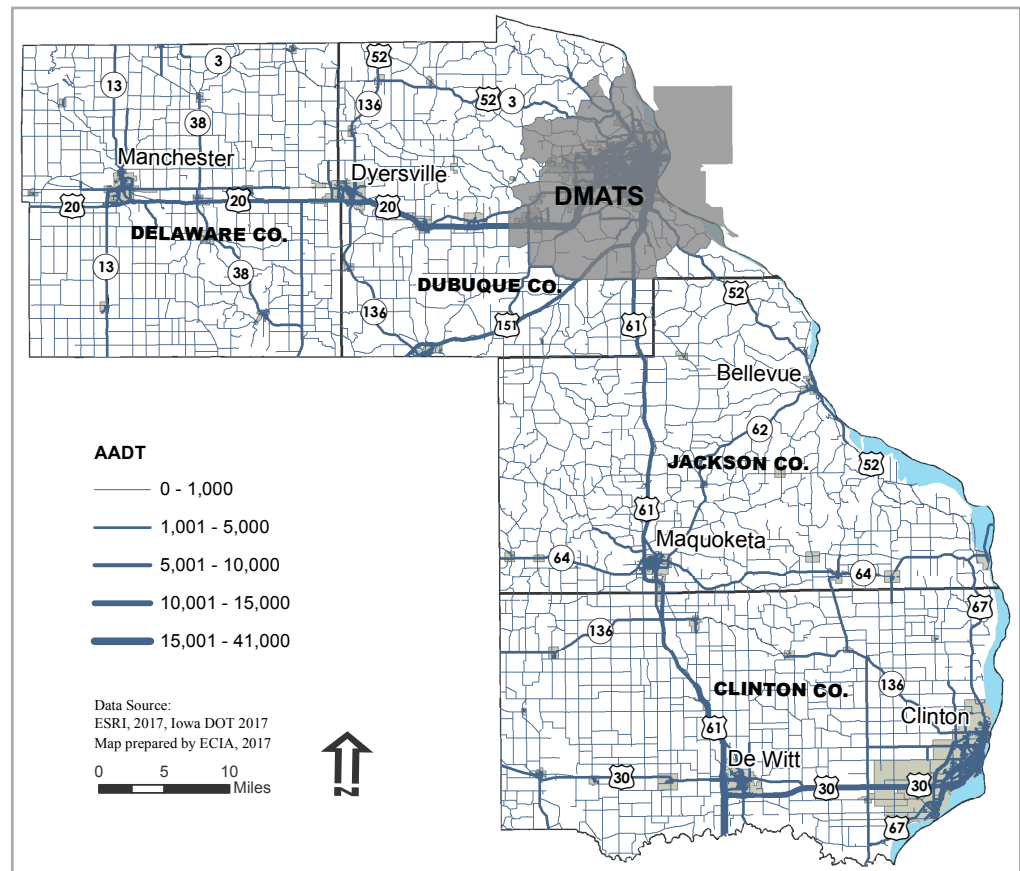


Figure 3.4: Average Annual Daily Traffic

Source: Iowa DOT
GIMS, 2015



CONGESTION

Monitoring traffic congestion is an essential component of planning process. Two variables commonly used measure congestion are Volume to Capacity Ratio (V/C) and Travel Time Index (TTI). V/C ratio is a measure of the average traffic volume compared to the service volume or capacity of a given facility. For example, a state highway is designed to carry more vehicles per hour, per lane, than a local street. The Iowa DOT's Iowa Traffic Analysis Model (iTRAM) has the ability to forecast future the V/C ratios on major arterials within the region. iTRAM forecasts that RPA 8 roadways will continue to have sufficient capacity to accommodate future traffic in out to the year 2040. Figure 3.5 maps the iTRAM 2040 V/C ratio on RPA 8 primary routes.

Travel Time Index (TTI) is the ratio of travel time during the peak periods to the time necessary to make the same trip at free-flow speeds. The TTI is a useful measurement because it provides an easily calculated and readily understandable congestion measure. Most RPA 8 roadways do not see much difference between peak and off peak travel times. Some urban areas may experience a small peak time delay, but these delays do not result in an TTI that meets the congestion threshold.

With little anticipated growth in future congestion levels, RPA 8 communities will likely direct the majority of available road and bridge funding to maintenance of existing facilities rather than adding additional capacity. However, targeted capacity improvements may be necessary to improve safety or address a traffic bottleneck. RPA 8 will continue to monitor and reevaluate congestion levels as needed.

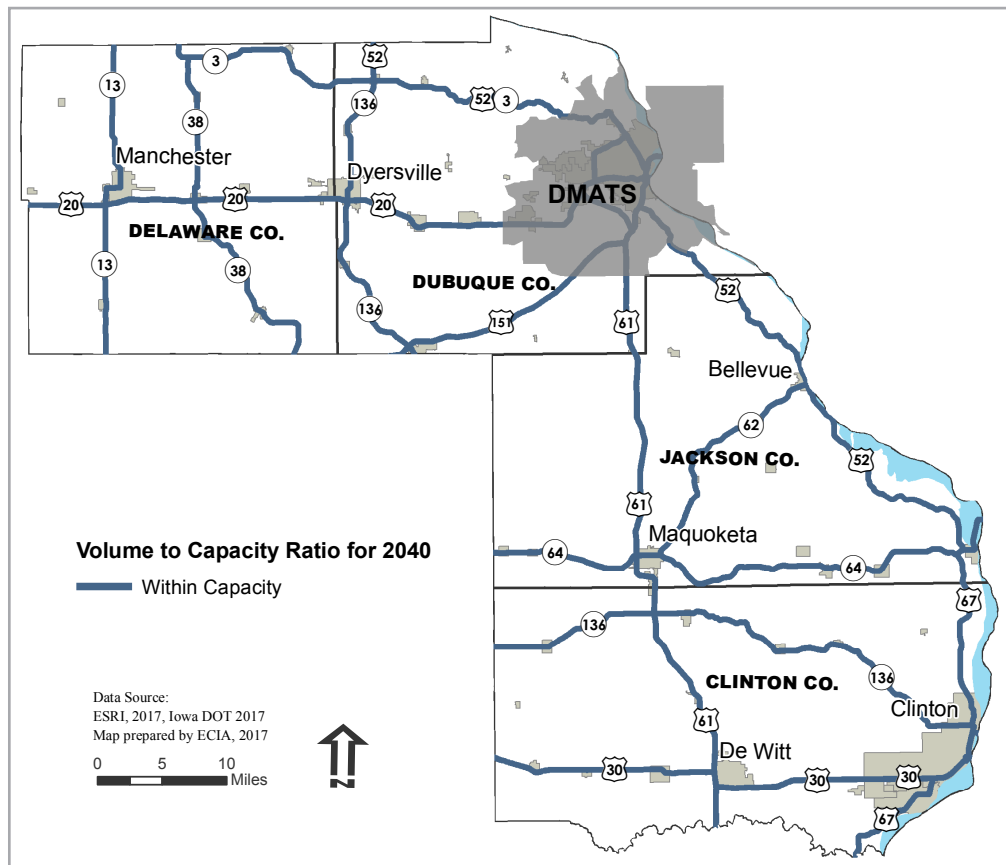


Figure 3.5: Volume to Capacity on Primary Routes for year 2040

Source Iowa DOT
iTrams Model, 2017.

PAVEMENT

Rough roads are about more than just an uncomfortable ride. The roughness of a road is one indicator of how soon a road needs maintenance or reconstruction, which is tied to federal and state budget allocations. Furthermore, rougher roads can decrease the efficiency of a vehicle, increasing fuel use and greenhouse gas emissions.

The roughness of roads is regularly measured by state and federal officials. Measurements are compared using two standard scales: Pavement Condition Index (PCI) and International Roughness Index (IRI). These scales are one of the criteria officials use to prioritize roads for maintenance and distribute funding appropriately. The primary road system is rated using IRI system and the secondary road system is rated using PCI system.

PAVEMENT CONDITION INDEX (PCI)

Figure 3.6 Roadway Lane Miles by Pavement Condition Index

Source: Iowa DOT

PCI	Category	% of RPA Secondary Road Lane Miles
0 - 20	Very Poor	3%
20.01 - 40	Poor	18%
40.01 - 60	Fair	30%
60.01 - 80	Good	29%
80 +	Excellent	20%

The RPA 8 has 2,907 miles of secondary roads including both federal aid and non-federal aid eligible routes. These secondary road system is divided into five categories based on their PCI values. Figure 3.6 provides the breakdown of secondary road lane miles by PCI value.

Overall 79% of the secondary road system is in fair to excellent condition and 21% of the system is in poor to very poor condition. Figure 3.8 maps PCI system rating of secondary road system.

INTERNATIONAL ROUGHNESS INDEX (IRI)

Figure 3.7 Roadway Lane Miles by International Roughness Index

Source: Iowa DOT

IRI	Category	% of RPA Primary Road Lane Miles
0 - 100	Good	36%
100.01 - 250	Fair	63.6%
250 +	Poor	0.4

The RPA 8 primary road system consists of all federal aid eligible routes and includes 269 lane miles of roadway. The primary road system is divided into three categories based on IRI values. Figure 3.7 provides a breakdown of primary road lane miles by IRI. Figure 3.7 provides the breakdown of primary road lane miles by IRI value. Figure 3.9 maps the primary road IRI ratings of the primary road system. Overall 99.63% of the primary system in RPA 8 falls under fair to good conditions.

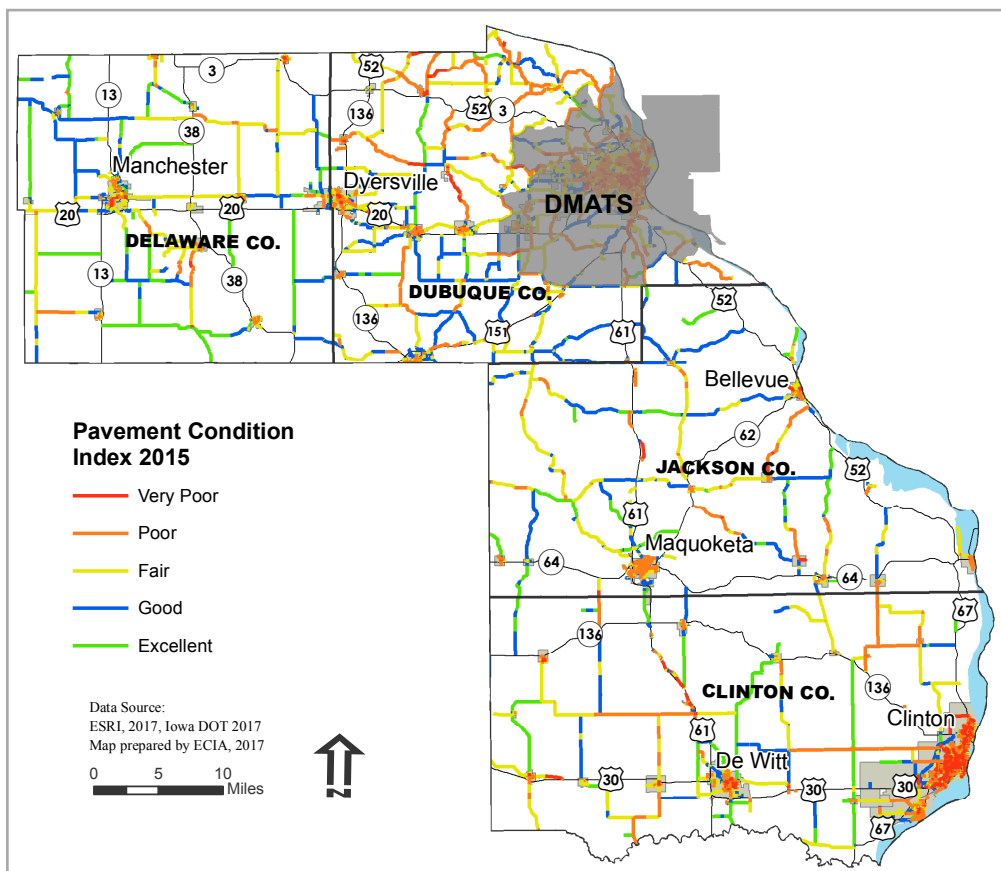


Figure 3.8 Pavement Condition Index
Source: Iowa DOT, 2017

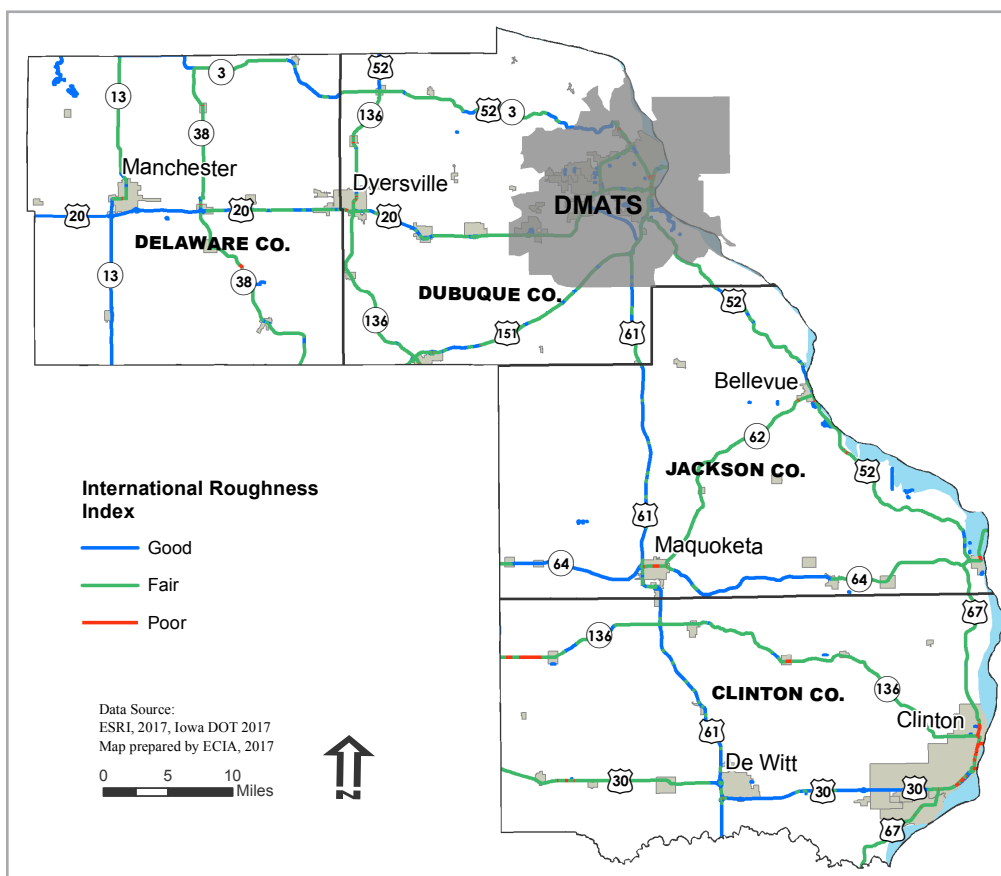


Figure 3.9 International Roughness Index
Source: Iowa DOT, 2017

ROAD SYSTEM OPERATION & MAINTENANCE COSTS

RPA 8 has developed a method to estimate the operation and maintenance costs of a roadway over a 25-year period. The analysis uses methods and data from the Wisconsin Department of Transportation and the Iowa Department of Transportation. The analysis includes distribution functions for specific activities and per mile costs of individual maintenance activities. The frequency of occurrence is assigned for each activity. Activity unit costs and frequency are listed in Figure 3.10.

The unit cost includes labor plus benefits, equipment and materials cost. The administrative costs were removed for this analysis. The cost for each activity is inflated at 4% per year to assess the future cost to conduct the activity. Bridge projects are estimated using cost per square foot. The analysis does not consider the AADT on each corridor as it is difficult to develop an algorithm that can create a correlation between AADT and O&M.

RPA 8 uses this cost estimation method to forecast future operation and maintenance costs for the LRTP. Based on this method, RPA 8 needs \$543 million to operate and maintain the federal aid system, excluding the primary road system. Figure 3.11 provides cost of maintaining federal aid system excluding the primary road system within RPA 8.

Figure 3.10 Road System Maintenance Activities

Activity Group	Maintenance Activity Description	Cost	Units	Frequency
Roadway Surface				
Asphalt	Spot Repair / Pothole Repair/ Crack Filling	\$3,000	Lane Mile	Every 3 years
	3 in Milling & 3 in HMA resurfacing	\$150,000	Lane Mile	Every 15 years
	Pavement Replacement	\$600,000	Lane Mile	Every 60 years
Concrete	Full Depth Patch	\$5,000	Lane Mile	Every 5 years
	3" thick resurfacing	\$150,000	Lane Mile	Every 20 years
	Pavement Replacement	\$600,000	Lane Mile	Every 60 years
Roadside Maintenance				
Litter	Sweeping Pavement	\$58	Centerline mile	Every year
	Litter Pickup	\$254	Centerline mile	Every year
Drainage				
	Vegetation Control	\$84	Centerline mile	Every year
	Roadside Drainage	\$96	Centerline mile	Every year
Sign Repair				
	Sign Maintenance	\$500	Centerline mile	Every Year
Traffic				
	Pavement Marking	\$237	Lane Mile	Every 5 years
Snow and Ice Control				
	Phase I Snow and Ice Control	\$653	Lane Mile	Every year
	Phase II Snow and Ice Control	\$222	Lane Mile	Every year
	Abrasives and Chemicals	\$575	Lane Mile	Every year
	Equipment Cleanup and storm prep	\$117	Lane Mile	Every year
	Other Snow and Ice Activities	\$211	Lane Mile	Every year
	Anti-Icing	\$12	Lane Mile	Every year

Year	Roadway Surface	Roadside Maintenance	Drainage	Sign Repair	Traffic	Snow and Ice Control
2017	\$0	\$238,558	\$115,972	\$322,000	\$0	\$2,304,928
2018	\$2,446,579	\$258,025	\$125,435	\$348,275	\$0	\$2,493,010
2019	\$0	\$268,346	\$130,453	\$362,206	\$0	\$2,592,730
2020	\$3,123,522	\$279,079	\$135,671	\$376,694	\$356,624	\$2,696,439
2021	\$2,752,069	\$290,243	\$141,098	\$391,762	\$0	\$2,804,297
2022	\$0	\$301,852	\$146,742	\$407,433	\$0	\$2,916,469
2023	\$0	\$313,926	\$152,611	\$423,730	\$0	\$3,033,127
2024	\$3,095,703	\$326,483	\$158,716	\$440,679	\$0	\$3,154,452
2025	\$3,800,243	\$339,543	\$165,065	\$458,306	\$433,888	\$3,280,631
2026	\$0	\$353,125	\$171,667	\$476,639	\$0	\$3,411,856
2027	\$3,482,245	\$367,249	\$178,534	\$495,704	\$0	\$3,548,330
2028	\$0	\$381,939	\$185,675	\$515,532	\$0	\$3,690,263
2029	\$0	\$397,217	\$193,102	\$536,154	\$0	\$3,837,874
2030	\$204,393,234	\$413,106	\$200,826	\$557,600	\$527,891	\$3,991,389
2031	\$0	\$429,630	\$208,859	\$579,904	\$0	\$4,151,044
2032	\$0	\$446,815	\$217,214	\$603,100	\$0	\$4,317,086
2033	\$4,406,151	\$464,688	\$225,902	\$627,224	\$0	\$4,489,769
2034	\$0	\$483,275	\$234,938	\$652,313	\$0	\$4,669,360
2035	\$174,383,906	\$502,606	\$244,336	\$678,405	\$642,260	\$4,856,135
2036	\$4,956,321	\$522,711	\$254,109	\$705,542	\$0	\$5,050,380
2037	\$0	\$543,619	\$264,274	\$733,763	\$0	\$5,252,395
2038	\$0	\$565,364	\$274,845	\$763,114	\$0	\$5,462,491
2039	\$5,575,187	\$587,978	\$285,838	\$793,638	\$0	\$5,680,991
2040	\$6,844,022	\$611,497	\$297,272	\$825,384	\$781,407	\$5,908,230
Total	\$419,259,182	\$9,686,875	\$4,709,155	\$13,075,102	\$2,742,070	\$93,593,675

**Figure 3.11 RPA
8 Road System
Operation and
Maintenance Costs**

BRIDGES

Figure 3.12 Bridges Located Over

Waterway	1,077	90.1%
Highway	78	6.5%
Railroad	15	1.3%
Other	15	1.3%
Railroad/ Waterway	6	0.5%
Highway/ Waterway	4	0.3%
Highway/ Waterway/ Railroad	1	0.1%
Total	1,196	

Source: FHWA. National Bridge Inventory

The members of RPA 8 give high priority to the preservation and maintenance of the region's existing bridges. A good network of bridges is essential in facilitating residents' access to activities, goods, and services. Preservation, improvement, and expansion of bridges will bolster the region's economic development potential and the mobility of its residents. RPA 8 has 1,196 bridges of which, 50% are on local roads, 30% are on Collector streets, 6% are on Minor Arterial streets, and 14% are on Principal Arterials. 90% of RPA 8 bridges are located over waterways. Figure 3.12 lists bridges by what they cross over.

The Federal Highway Administration (FHWA) requires all public bridge owners (state, city, and county) to inspect and report information on their bridges for inclusion in the National Bridge Inventory (NBI).

The FHWA uses the NBI for preparing the selection list of bridges both on the federal and non-federal system. A bridge sufficiency rating is calculated based 55% on structural evaluation, 30% on design obsolescence, and 15% on public importance. Bridges with a rating less than 80 are eligible for repair funding. Bridges with a rating less than 50 are eligible for replacement funding.

Figure 3.13 categorizes RPA 8 bridges based on bridge sufficiency rating. Figure 3.14 provides the bridge locations that are eligible for replacement or rehabilitation. If the condition it is poor enough that a bridge can no longer carry its intended traffic loads, it may be weight-restricted or closed. Figure 3.15 maps bridges across the RPA 8 area by operational status.

Figure 3.13 Bridge Sufficiency Rating

Source: FHWA. National Bridge Inventory



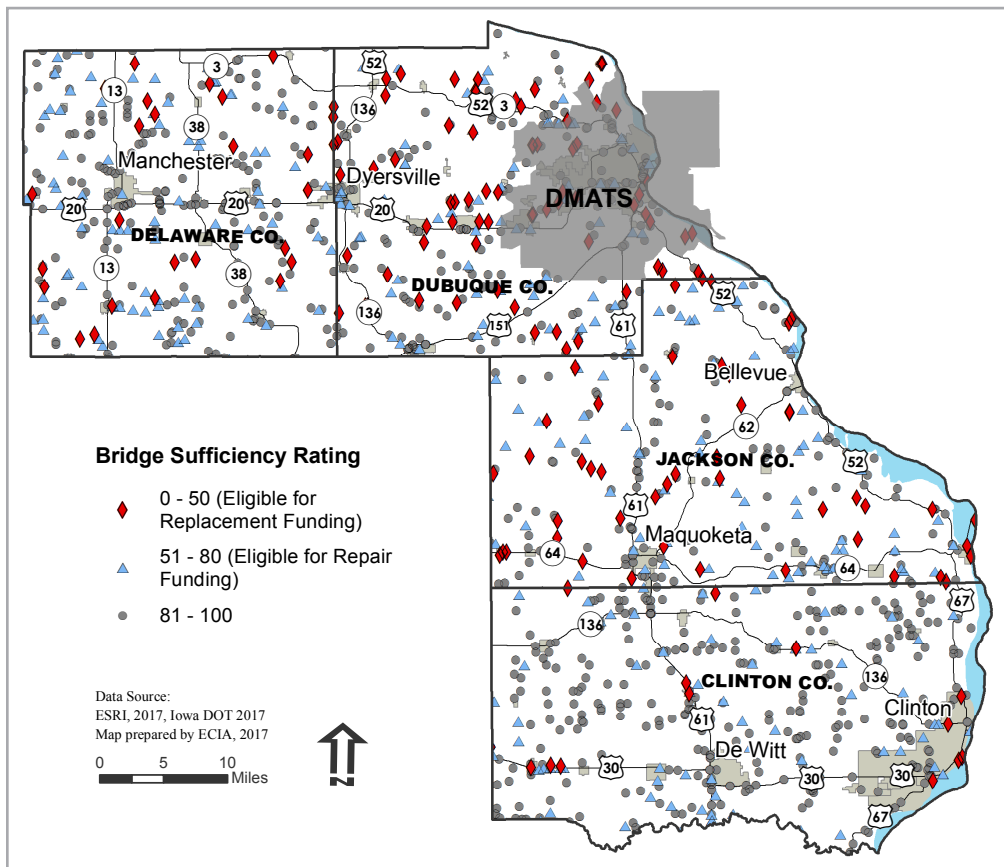


Figure 3.14
Bridges Eligible
for Replacement or
Rehabilitation.
Source: Iowa DOT

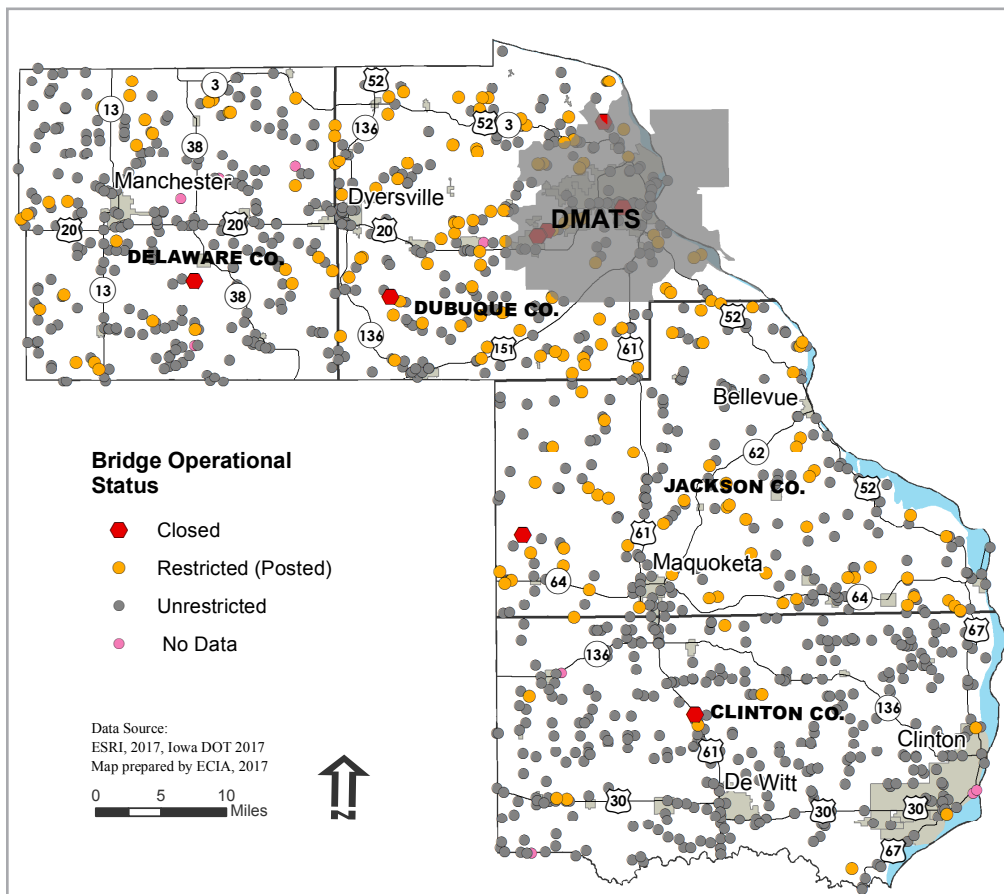


Figure 3.15 Bridge
Status.
Source: Iowa DOT

BRIDGE SYSTEM MAINTENANCE COSTS

RPA 8 has developed a method to estimate the operation and maintenance costs of bridges on federal aid system over a 25 year period. RPA 8 did not include local and primary system bridges as the funding analysis for future projections did not take into consideration funding spent on the local system.

The analysis uses data and methods from the Wisconsin Department of Transportation and the Iowa Department of Transportation. The data analysis includes distribution functions for specific activities and per square foot costs of individual maintenance activities. The frequency of occurrence is assigned for each activity. Cost per square foot and frequency of each activity are listed in Figure 3.16.

The unit cost per square foot includes labor plus benefits, equipment and materials cost. The administrative costs were removed for this analysis. The cost for each activity is inflated at 4% per year to assess the future cost to conduct the activity. The analysis does not consider the AADT on each bridge as it is difficult to develop an algorithm that can create a correlation between AADT and O&M.

Based on the analysis, RPA 8 needs \$119.5 million to operate and maintain bridges on the federal aid system excluding bridges on the primary road system. Figure 3.17 provides the cost of maintaining the federal aid system excluding primary road system within RPA 8.

Figure 3.16 Bridge System Maintenance Activities

Maintenance Activity Description	Cost	Units	Frequency
Deck Repair (Patching)	\$25	Per Sq ft	5-10 years
Repair Bridge Structure	\$175	Per Sq ft	Every 50 years
Intensive Bridge Inspection	\$1	Per Sq ft	Every year
Other Bridge Maintenance Activities	\$1	Per Sq ft	8-10 years

Figure 3.17 RPA 8 Bridge System Operation and Maintenance Costs

Year	Deck Repair (Patching)	Repair Bridge Structure	Intensive Bridge Inspection	Other Bridge Maintenance Activities
2017	\$7,227,223	\$0	\$144,544	\$173,453
2018	\$0	\$0	\$156,339	\$0
2019	\$0	\$0	\$162,593	\$0
2020	\$0	\$0	\$169,097	\$0
2021	\$0	\$0	\$175,860	\$0
2022	\$0	\$0	\$182,895	\$0
2023	\$0	\$0	\$190,211	\$0
2024	\$0	\$0	\$197,819	\$0
2025	\$0	\$0	\$205,732	\$0
2026	\$0	\$0	\$213,961	\$0
2027	\$11,125,978	\$77,881,846	\$222,520	\$267,023
2028	\$0	\$0	\$231,420	\$0
2029	\$0	\$0	\$240,677	\$0
2030	\$0	\$0	\$250,304	\$0
2031	\$0	\$0	\$260,316	\$0
2032	\$0	\$0	\$270,729	\$0
2033	\$0	\$0	\$281,558	\$0
2034	\$0	\$0	\$292,821	\$0
2035	\$0	\$0	\$304,533	\$0
2036	\$0	\$0	\$316,715	\$0
2037	\$16,469,165	\$0	\$329,383	\$395,260
2038	\$0	\$0	\$342,559	\$0
2039	\$0	\$0	\$356,261	\$0
2040	\$0	\$0	\$370,511	\$0
Total	\$34,822,366	\$77,881,846	\$5,869,359	\$835,737

CONCLUSION

The operation and maintenance of roads and bridges within the RPA 8 region is very crucial for safety and future development in the region. RPA 8 needs \$662.4 million by year 2040 to meet the requirements of the existing system. Lack of funding was one of the top concerns for our communities and using federal funding on small scale projects is not deemed viable by communities because of the increase in cost of the project due to federal regulation.

4

BICYCLE AND PEDESTRIAN

Walking and biking are important modes of transportation for the RPA 8 area. Walking or biking instead of driving can reduce traffic congestion, improve air quality, and improve physical health. Through its goals and objectives, the RPA 8 LRTP supports programs that increase the number of people walking and biking in the area by creating interconnected bicycle and pedestrian networks and making walking and biking safer and more convenient.

Walking and biking currently account for a small share of all trips in the RPA 8 area. While data is not available for all trips, the census provides data for work trips. 2011-2015 American Community Survey (ACS) data shows that across the RPA's counties, between 2.54% and 3.81% of residents currently walk to work. The ACS data shows that less than one percent of workers bicycle to work in the four RPA 8 counties. Figure 4.1 shows the means of transportation to work for RPA 8 residents.

Figure 4.1 Means of Transportation to Work For RPA 8 Counties

U.S. Census Bureau, ACS 5-Year Estimates 2011-2015

Mode	State of Iowa	Clinton County	Delaware County	Dubuque County	Jackson County
Bicycle	0.53%	0.13%	0.00%	0.33%	0.16%
Walked	3.53%	2.54%	2.62%	3.81%	3.14%

Existing bicycle and pedestrian facilities in the RPA 8 area fall into three main categories: off-street trails, on-street routes, and sidewalks. The following section provides a description of each category.

OFF-STREET TRAILS

The RPA 8 region has several off-street trails. Most trails in the area are classified as multi-use trails. These trails typically are concrete, asphalt, or packed crushed rock and are usually between 8 feet and 10 feet wide. Multi-use trails are physically separated from motorized traffic by an open space or barrier and can be in an independent right of way or within a highway right-of-way. Multi-use trails usually accommodate both bicyclists and pedestrians and are suitable for most age groups and abilities.

In addition to multi-use trails, the RPA 8 region also has several trails that are geared to more specific types of uses including: hiking and mountain biking. These trails are usually unpaved, steeper, and narrower than a multi-use trail, and as a result may require a relatively higher level of physical ability.

ON-STREET BICYCLE ROUTES

In addition to trails, the RPA 8 area has on-street bicycle routes. With an on-street route, bicyclists share the roadway with vehicle traffic. Street design can include specific design improvements to direct bicycles and vehicles and improve safety for all users. Design improvements include signage, sharrows, bicycle lanes, separated bicycle lanes, and protected bikeways. The design element used depends on vehicle speed, vehicle traffic volume, and space available in the right-of-way. Streets with higher vehicle speeds and volumes will usually call for elements like buffered bicycle lanes or separated bikeways that offer more protection to bicyclists. Streets with slower speeds and lower traffic volumes are generally safer for bicyclists and are good candidates for less protective elements such as bicycle signage or sharrows. In many cases, local streets are suitable for biking without any additional design elements. Local streets located in primarily residential neighborhoods with low traffic volume and low speeds could be good candidates for bicycle routes.

SIDEWALKS

Sidewalks are an important part of the pedestrian network. Sidewalks provide necessary walking connections to homes, businesses, transit services, and other activities. Many streets in the region have sidewalks, but there are gaps in the sidewalk network. Unlike trails or on-street bicycle routes, private property owners usually maintain sidewalks. This can create challenges, as property owners can vary greatly in their ability or desire to maintain sidewalks. Street designers can also use design improvements to improve pedestrian safety. Design improvements include curb extensions, enhanced street crossings, and reduced vehicle lane width.

Together all three facility types make up the RPA 8 bicycle and pedestrian network. While trails may be the most desirable option for walkers and bikers, cost and available land will not allow a community to build a comprehensive network out of trails alone. Sidewalks and on-street bicycle routes are important facilities that can help fill in the gaps in the trail network and make sure that the entire region is connected to the bicycle and pedestrian network.

FUTURE BICYCLE AND PEDESTRIAN

RPA 8 is committed to creating more opportunities for walking and biking by improving its bicycle and pedestrian network. Over the past several years, communities in the RPA area have continued to add to the regional network of on and off street walking, hiking, and biking routes. While the area has made progress, RPA 8 still has work to do to reach its goal of developing an integrated bicycle and pedestrian network. Through the LRTP RPA 8 has developed plans for future bicycle and pedestrian improvements. Future bicycle and pedestrian improvements fit into the following three priority areas:

- Improve pedestrian safety
- Continue to expand the regional trails network
- Improve On-Street Bicycle Safety

IMPROVE ON-STREET BICYCLE SAFETY

Improving safety for all users of the transportation system is one of the most important priorities established of the RPA 8 LRTP. On-street biking allows bicyclists to access destinations that they would not be able get to using the off-street trail system alone. However, safety is an important consideration with on-street bicycling. Bicyclists are more exposed and vulnerable to injury than people in cars, and are bicyclists are more likely to interact with cars when riding on streets. To improve bicycle safety, communities need to consider the needs of bicyclists in the transportation planning process and integrate design improvements into existing streets.

IMPROVE PEDESTRIAN SAFETY

Like biking, walking is a transportation mode that combines mobility and physical activity. Walking is also the only means of transportation for many people who are unable to drive. But, pedestrians, like bicyclists, are also exposed and more vulnerable to injury if they are involved in a vehicle crash. To improve safety for pedestrians, communities can plan and design streets in ways that will improve safety for pedestrians. Figure 4.3 shows that the risk of pedestrian death increases with increasing vehicle speeds.

Figure 4.3 Impact Speed and a Pedestrian's Risk of Injury or Death

Source: Federal Highway Administration, "Small Town and Rural Multi Modal Networks" December 2016.



BICYCLE AND PEDESTRIAN CRASHES

To illustrate the need for bicycle and pedestrian safety improvements, RPA staff mapped the locations of bicyclist and pedestrian injuries that resulted from a vehicle crash. From 2009 to July 2014, there were 211 bicyclists and pedestrians injured in vehicle crashes. The total injuries included 3 fatalities and 17 incapacitating injuries. Figure 4.4 shows the location and severity of the injuries. The location of pedestrian and bicycle crash injuries can provide information on where safety improvements are needed.

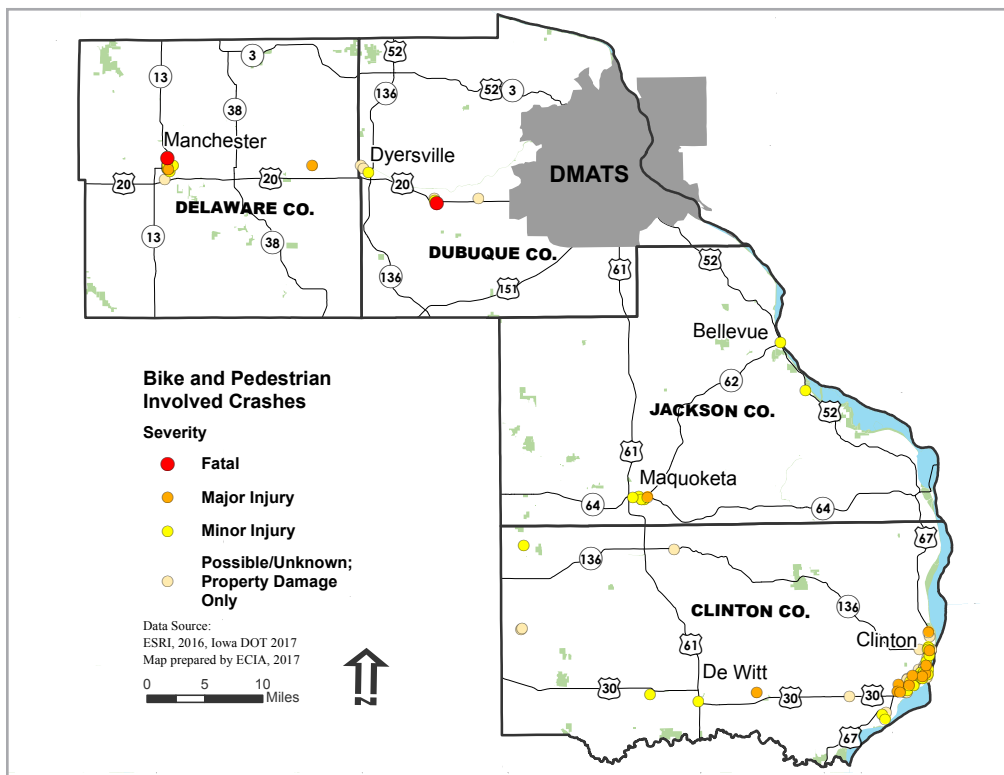


Figure 4.4 Bicycle and Pedestrian Involved Crashes 2012-2016

Source: Iowa Department of Transportation, 2017

IMPROVEMENTS

Communities have many design options at their disposal for improving pedestrian and on-street bicycle safety. The design elements chosen for implementation will be unique to each street. Streets with more vehicle traffic and higher vehicle speed will require more protection to the bicyclist, while low speed, low volume streets may require no additional intervention. For pedestrians, sidewalks and crossings are important design elements.

The Federal Highway Administration has produced or recommended several design guidance documents that can help communities select the appropriate bicycle design elements. Guidance documents include the AASHTO Guide to Bikeway Facilities, the Manual on Uniform Traffic Devices (MUTCD), the Federal Highway Administration's Small Town and Rural Multimodal Network Guide, and the National Association of Transportation Officials (NACTO) Urban Bikeway Design Guide, and Urban Street Design Guide. The following section provides a brief description of some possible improvements. The illustrations in figures 4.6 -4.8 are intended to provide examples of possible improvements. The actual design of facilities will depend on the context into which the facility is being installed.

NO IMPROVEMENT NEEDED

Many streets with low traffic volumes and speeds do not require any safety improvements for bicyclists and pedestrians. Most bicyclists and pedestrians can typically share the roadway safely with vehicle traffic on streets with annual daily traffic of less than 1,000 and vehicle speeds less than 25 miles per hour.

Figure 4.5 Example of a low volume low speed street

Source: ECIA Stock Photo

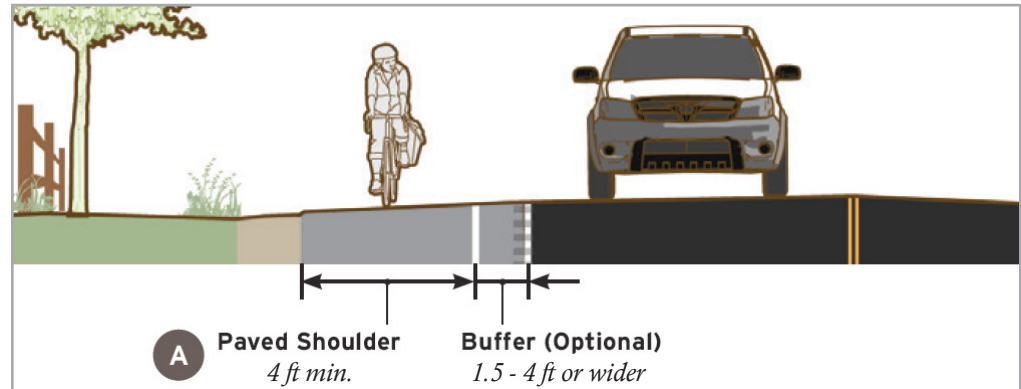


PAVED SHOULDER

Roadway shoulders can be enhanced to serve as space for pedestrians and bicyclists. Paved shoulders are appropriate on roads with moderate to high traffic volumes and speeds.

Figure 4.6 Paved Shoulder

Source: Federal Highway Administration, "Small Town and Rural Multi Modal Networks" December 2016. p. 3-5.

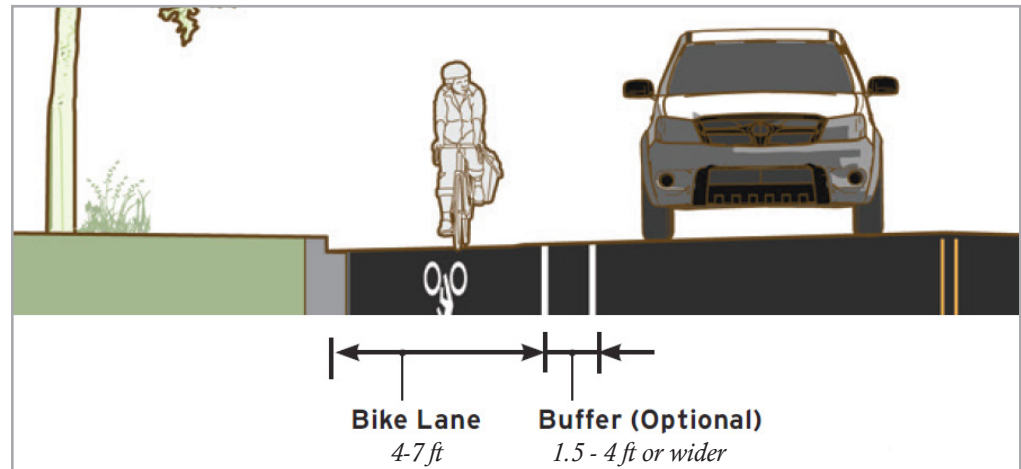


BIKE LANE AND SEPARATED BIKE LANE

Bike lanes provide a dedicated space for bicyclists on the edge of a moderate to high speed and traffic volume roadway. Bike lanes are similar to paved shoulders. The difference is that bike lanes are intended for more urban applications and have additional pavement markings and signage.

Figure 4.7 Standard Bike Lane

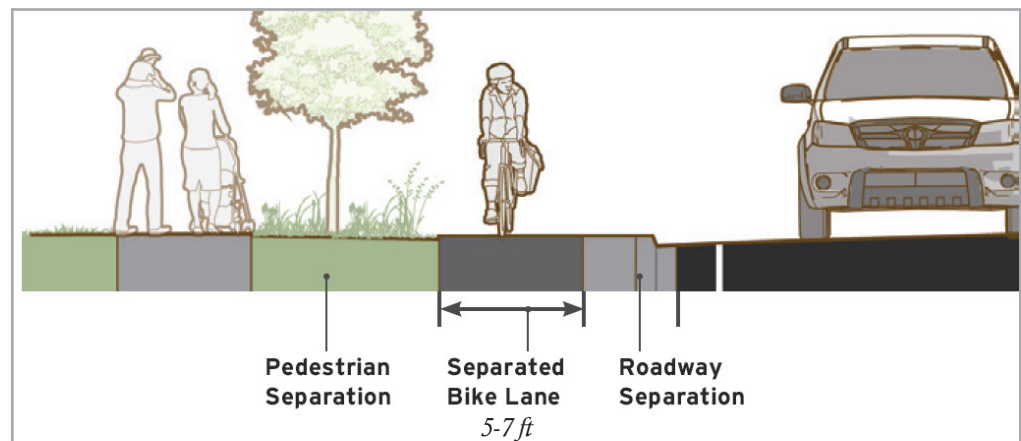
Source: Federal Highway Administration, "Small Town and Rural Multi Modal Networks" December 2016. p. 3-13.



Sometimes referred to as protected bike lanes, separated bike lanes offer additional separation from vehicle traffic. Typically, the bike lane is separated by a vertical element such a curb, parked cars, decorative planting, or flex post.

Figure 4.8 Separated Bike Lane

Source: Federal Highway Administration, "Small Town and Rural Multi Modal Networks" December 2016. p. 4-27.



PEDESTRIAN CROSSING IMPROVEMENTS

Sidewalks are a great way to improve pedestrian safety. However, even when sidewalks are present, pedestrians can encounter dangerous situations when crossing the street. Improvements such as crosswalks, curb extensions, and median islands can help improve safety at pedestrian crossings.

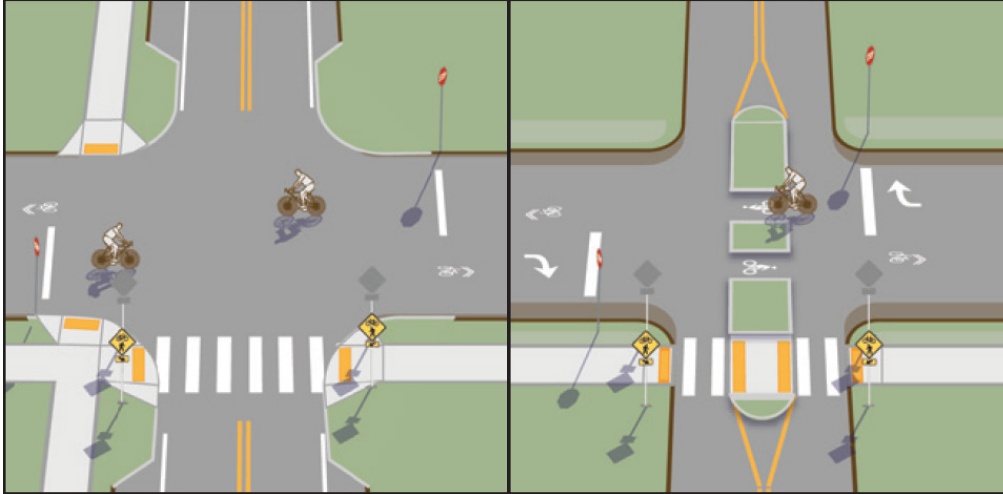


Figure 4.9
Crosswalks, Curb
Extensions, and
Median Islands

Source: Federal Highway Administration, "Small Town and Rural Multi Modal Networks" December 2016. p. 2-14..

INTERIM IMPROVEMENTS

Full reconstruction of a street can take several years from planning to final construction. A community may need to add safety improvements more quickly. Interim improvements use low cost, temporary materials to enable faster project delivery. The interim approach also allows the community to test the effectiveness of the improvement before committing to the full cost of reconstruction. Figure 4.10 an example of painted curbs installed by the city of Minneapolis to help improve pedestrian crossing safety.



Figure 4.10
Minneapolis Painted
Curbs

Source: City of Minneapolis. <http://www.minneapolismn.gov/pedestrian/projects/WCMS1P-151213>

CONTINUE TO EXPAND THE REGIONAL TRAILS NETWORK

Off-street trails provide walking and biking based mobility and recreation. Off-street trails are also a good option when traffic volume and vehicle speed make on-street facilities too dangerous. Off-Street trails are a RPA 8 communities have worked to expand the regional trail network over the past several years. The Heritage Trail, the Discovery Trail, the Jackson County Recreation Trail, the Copper Creek Trail and the Manchester River Trail are a few examples of successful trail projects in the area. RPA 8 communities have made plans to expand the network and to improve existing trails by implementing projects such as adding additional amenities and improving wayfinding signage.

PLANNED FACILITIES

RPA 8 members have used several criteria to locate areas of high demand for bike and pedestrian facilities, and to identify barriers to walking and biking. RPA 8 uses land use maps, commuter patterns, and crash data to develop a list of future projects. RPA 8 is working to improve its planning process by developing a trail count program. Infrared trail counters and will be deployed by RPA 8 cities and counties beginning in Summer 2017. The hope is that collecting count data will help RPA 8 make improvements in areas where they are most needed. RPA 8 has funded the purchase of trail counters and is working on collecting baseline data and developing the full count program.

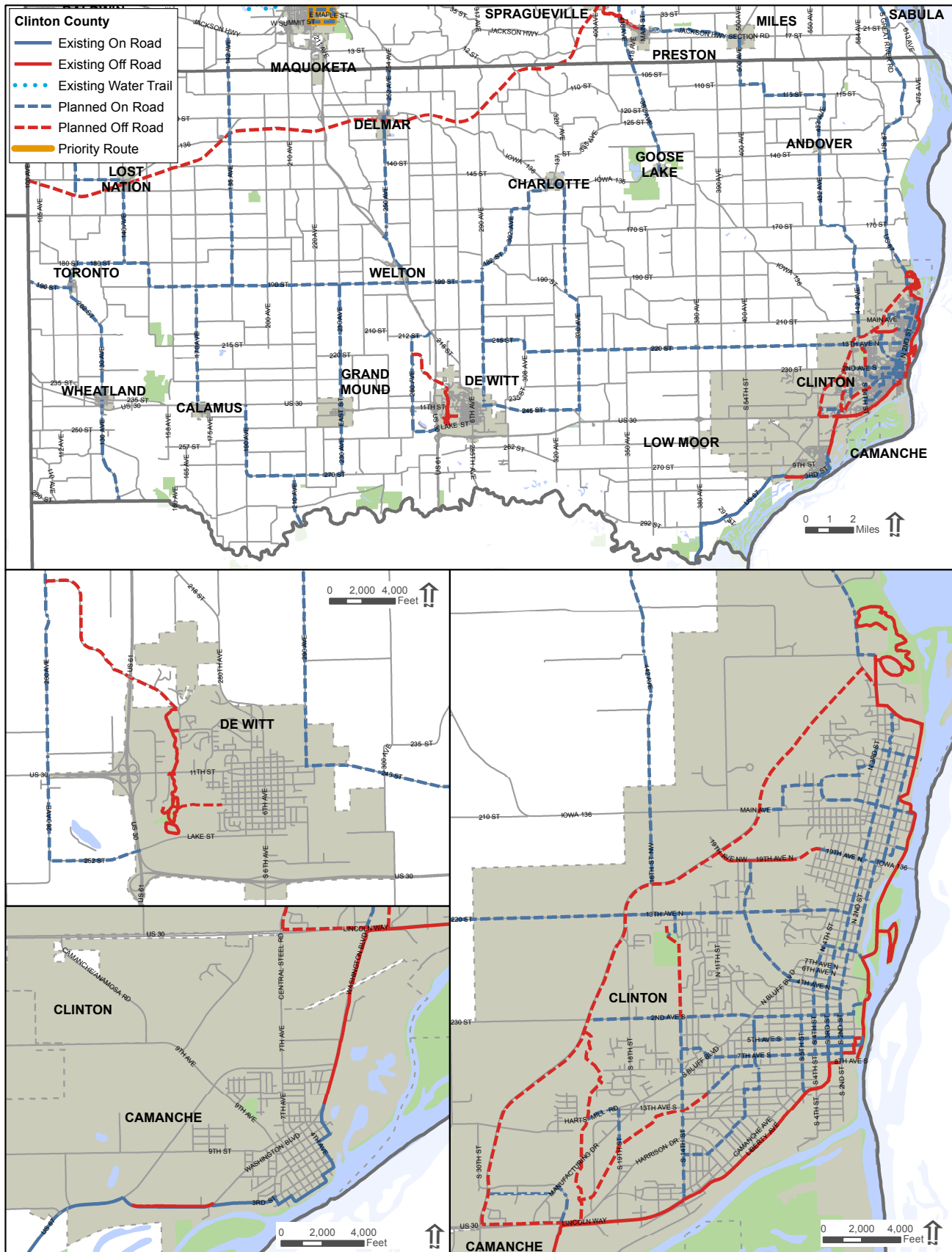
Figure 4.11 – 4.12 show the existing and planned bike and pedestrian facilities in the RPA 8 area. All projects in the maps are regarded as illustrative, as none have a dedicated source of funding. For planned facilities, the planning process has been completed and the projects are awaiting funding.

The maps identify several orange highlighted priority routes. While all planned facilities included in the maps are important, RPA 8 communities have identified the priority routes as the most important. Priority routes provide key connections in the bike and pedestrian network and are good candidates for implementation in the next five years.

CONCLUSION

Improving bicycle and pedestrian transportation is important to many residents of the area, and RPA 8 is working to create more opportunities for walking and biking by improving its bicycle and pedestrian network. Through the LRTP RPA 8 is working reach its goal of developing an integrated bicycle and pedestrian network.

Figure 4.11 Clinton County Existing and Future Bicycle and Pedestrian Facilities



[illegible]

Figure 4.13 Dubuque County Existing and Future Bicycle and Pedestrian Facilities

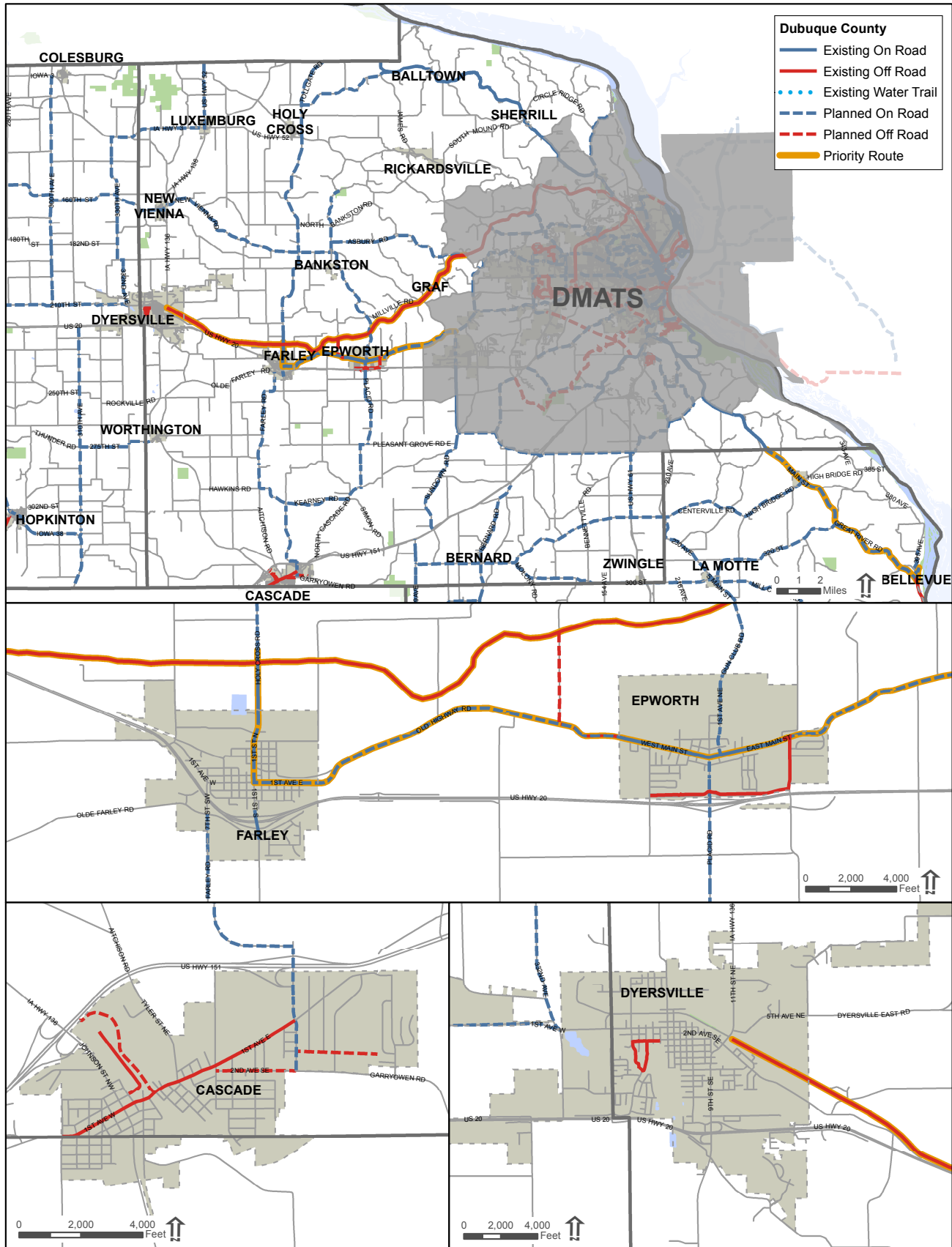
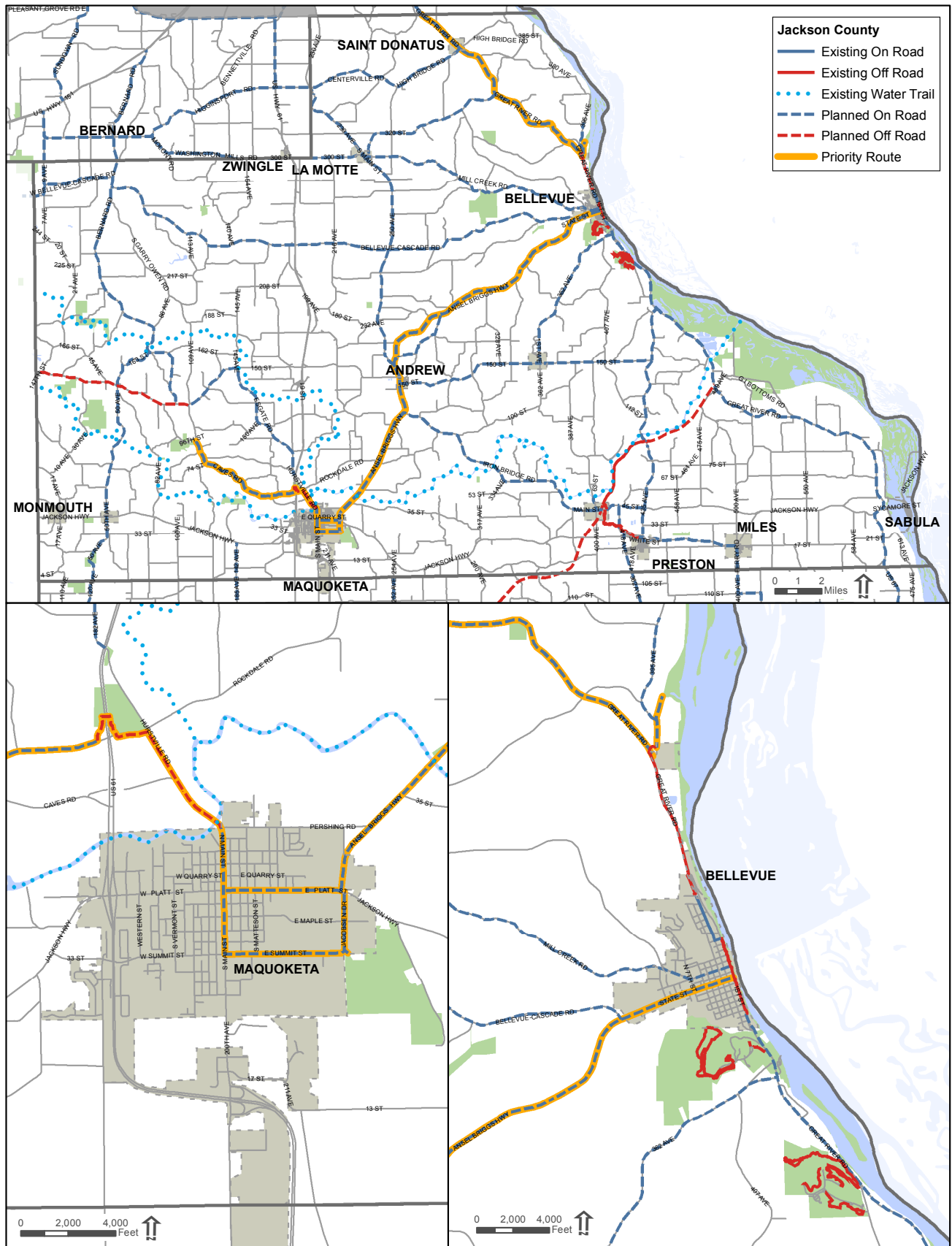


Figure 4.14 Jackson County Existing and Future Bicycle and Pedestrian Facilities



5

TRANSIT

INTRODUCTION

Public transit is an important component in the transportation network. Public transit providers within RPA 8 provide access to many opportunities for their citizens. The economic and social links provided by transit allows access to work, school, medical care, and leisure activities. It provides many individuals the mobility that allows them to continue their self-improvement, independence, and quality of life. Transit not only provides an alternative mode of transportation, but also provides the only available means of transportation to many youth, elderly, disabled, and economically disadvantaged citizens.

RPA 8 TRANSIT PROVIDERS

RPA 8 is served by three transit systems: Regional Transit Authority 8 (RTA 8), Clinton Metropolitan Transit Authority (MTA), and Riverbend Transit. Figure 5.1 maps each provider's service area.

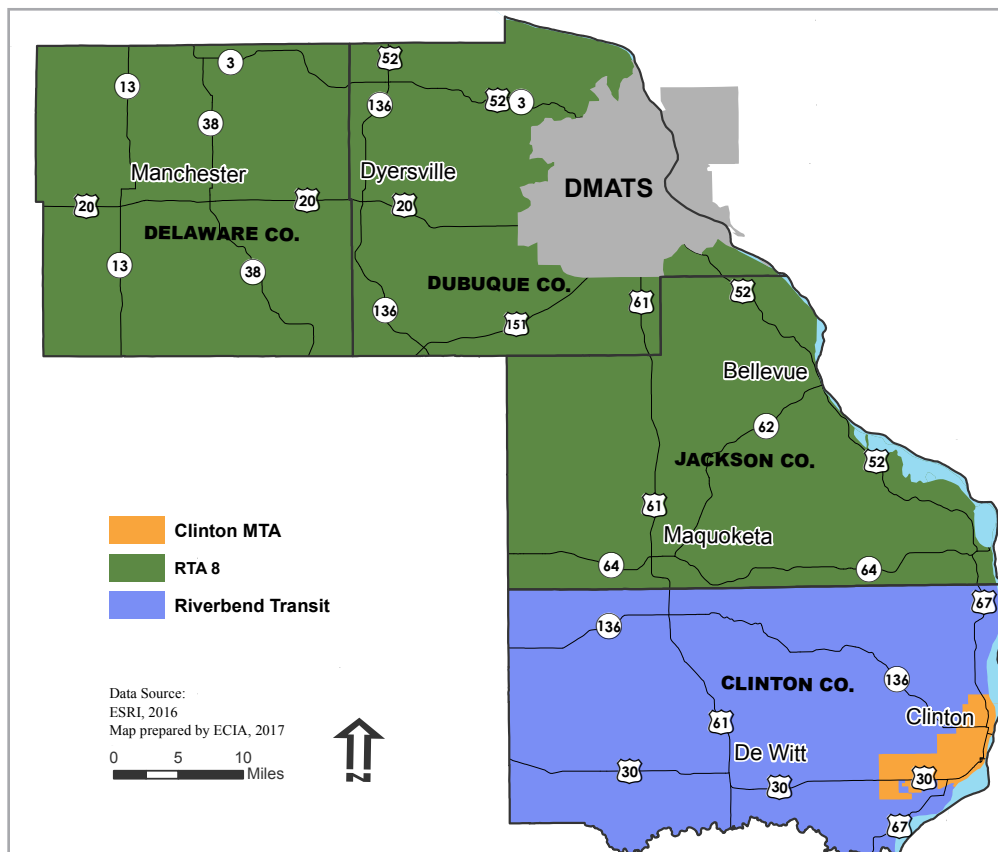


Figure 5.1 RPA 8 Transit Providers

Source: ESRI, 2016.

RTA 8

The RTA 8 provides accessible, safe, convenient, and efficient transportation for all residents in the cities, communities, and rural areas of Delaware, Dubuque, and Jackson Counties. RTA vehicles are ADA accessible and equipped to accommodate the general public, including children, the elderly, and people with disabilities.

The RTA 8 manages a fleet of twenty-five light duty buses and accessible mini-vans. RTA 8 provides more than 150,000 annual passenger trips serving over 2,500 individuals in the three-county region. To expedite customer service, the RTA maintains garages in Dubuque, Manchester, Dyersville, and Maquoketa. The RTA employs three full-time drivers, twenty-six part time drivers, and thirteen volunteer drivers. The RTA contracts with East Central Intergovernmental Association (ECIA) for management services and office space. Figure 5.2 provides additional information on RTA 8's vehicles and staff.

Figure 5.2 Vehicle Fleet and Staff

Source: RTA 8

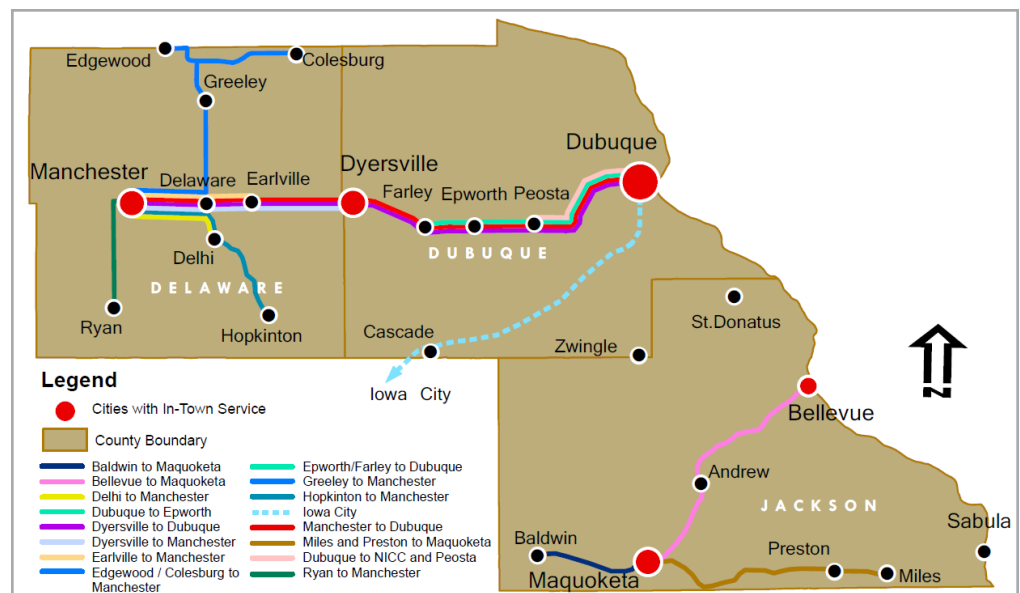
Number of Vehicles	25
Number of Vehicles with Lifts or Ramps	25
Number of Vehicles to ADA Standards	25
Number of Full-Time Drivers	3
Number of Part-Time Drivers	26
Number of Volunteer Drivers	13

The RTA provides transportation to a variety of destinations in Delaware, Dubuque, and Jackson counties. All services are based on the demand of clients and are open to the general public, including people with disabilities. Most RTA routes are door to door unless specified. Reservations for service are required 24 hours in advance, and dispatch hours are 5am-5pm. Figure 5.3 maps the RTA's services.

Figure 5.3 RTA 8 Service Map

Source: RTA 8

The map is intended to illustrate some of RTA 8's services. The RTA does not operate fixed routes. All services are based on the demand of clients.



RTA 8 has provided approximately 150,000 rides or more in each of the last six years. Figure 5.4 charts RTA 8's annual ridership.

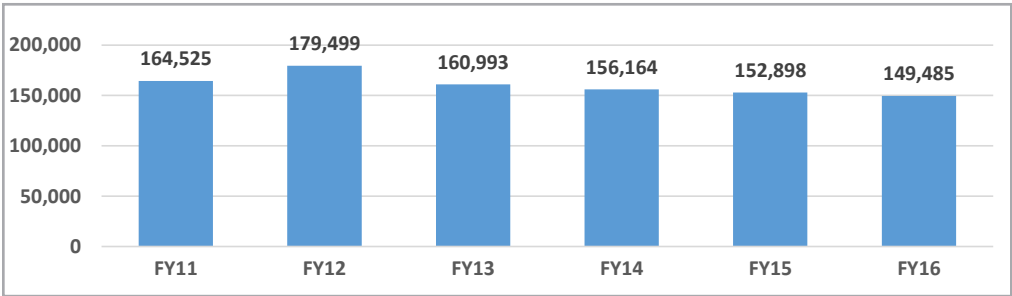


Figure 5.4 RTA 8 Annual Ridership
Source: RTA 8

RPA 8 staff worked with RTA 8 staff and advisory groups including the regional Transit Action Group (TAG) to develop a list of future projects and priorities. The TAG is a community group, coordinated by RTA 8, that meets quarterly to address regional transportation issues. TAG membership is comprised of human service providers, transit providers, and transportation professionals. TAG members represent all communities served by RTA 8 in Delaware, Dubuque, and Jackson Counties.

RTA 8 TOP PRIORITIES

- Explore coordination opportunities between the Jule and RTA.
- Encourage employers to utilize current public transit systems.
- Provide services on an on call basis.
- Collaboration with human service agencies, dialysis, and Medicaid brokers.
- Expand hours to include late afternoons, evenings, weekends and holidays for all three counties.
- Recruitment and retention of drivers.
- Expand Travel Training Program.
- Transportation from Dubuque to Peosta.
- Expand Mobility Management services.

CLINTON MTA

The Clinton Municipal Transit Administration (MTA) is responsible for providing safe, accessible, economical, and efficient public transportation service to the citizens of the City of Clinton. MTA provides its own para transit service. All routes are fully ADA accessible. Clinton MTA operates its fixed route service Monday – Friday from 6 a.m. to 6 p.m. and Saturday from 8 a.m. to 3:30 p.m. The City of Clinton Transportation Director is responsible for the transportation department. The Clinton City Council provides policy direction for the MTA. All services are open to the general public. The MTA offers fixed route for the general public and para transit door-to-door service for ADA eligible passengers. Figure 5.5 lists MTA's service fares. MTA has thirty full and part-time employees and a fleet of twenty-three vehicles.

Figure 5.6 provides additional information on MTA's vehicle fleet and staff. Clinton MTA operates six regular fixed routes. Figure 5.7 contains a map of Clinton MTA's Routes.

Figure 5.5 MTA Fares
Source: Clinton MTA

Adult	\$1.00
Senior Citizens	\$0.75, Free with purchase of Senior ID
Disabled	\$0.75
Students	\$0.75, Free with current school ID
Shuttle	\$0.75
Para Transit, ADA Eligible	\$2.00 each way
Para Transit, General Public	\$10.00 each way

Figure 5.6 MTA Vehicle Fleet and Staff
Source: Clinton MTA

Number of Vehicles	22
Number of Vehicles with Lifts or Ramps	18
Number of Vehicles to ADA Standards	18
Full-Time Employees	12
Part-Time Employees	18
Volunteers	0

Figure 5.7 Clinton MTA Routes
Source Clinton MTA

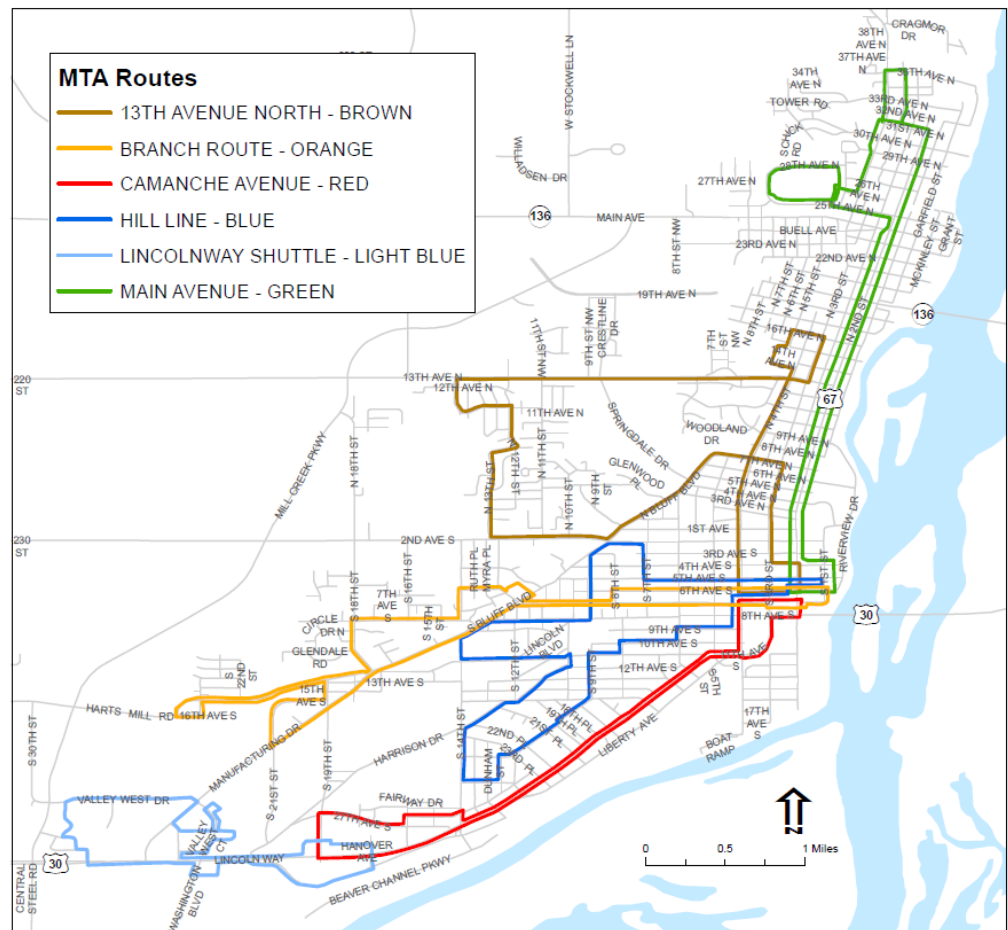


Figure 5.8 charts Clinton MTA's annual ridership from 2012 to 2016.

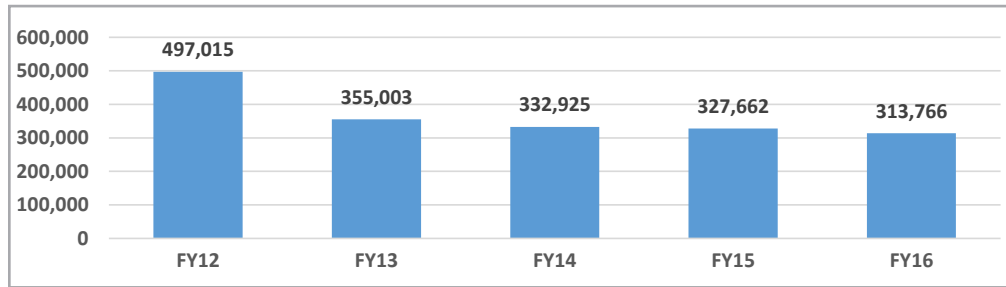


Figure 5.8 Clinton MTA Annual Ridership.
Source Clinton MTA

CLINTON MTA OBJECTIVES AND ACTION STEPS

Clinton MTA has developed objectives and action steps for the future. A summary of the objectives and action steps is listed below.

- A. Running later on weekdays and Saturday
- B. Sunday service
- C. Service to Royal Pines
- D. 2nd and 3rd shift service
- E. Service to Camanche and Fulton
- F. Service to riverfront and west side
- G. Service to marina and hotels

RIVER BEND TRANSIT

River Bend Transit (RBT) provides transit services to residents in Cedar, Clinton, Muscatine, and Scott counties. The majority of RBT's service area falls within RPA 9 Bi-State Regional Commission. Because of this, Bi-State Regional Commission conducts most RBT planning activities, including the LRTP. For additional information of RBT, see the RPA 9 Long Range Transportation Plan.

TRANSIT OPERATIONS AND MAINTENANCE COSTS

RPA 8 has developed a method to estimate the operation and maintenance costs of the region's transit systems over a 25-year period. The analysis looks at the past five year's operations and maintenance and capital expenditures for RTA and Clinton MTA. The analysis projects these costs into the future using a 3 percent growth rate. Figure 5.9 includes the historical expenditures, and Figure 5.10 includes the future projected costs.

Figure 5.9 Transit Historical Operations and Maintenance and Capital Costs

Operations and Maintenance				Capital			
Year	MTA	RTA	Total	Year	MTA	RTA	Total
2012	\$1,782,011	\$1,567,635	\$3,349,646	2012	\$525,000	\$85,000	\$610,000
2013	\$1,669,383	\$1,526,563	\$3,195,946	2013	\$525,000	\$85,000	\$610,000
2014	\$1,718,332	\$1,508,821	\$3,227,153	2014	\$525,000	\$85,000	\$610,000
2015	\$1,640,013	\$1,574,536	\$3,214,549	2015	\$525,000	\$85,000	\$610,000
2016	\$1,629,222	\$1,807,294	\$3,436,516	2016	\$525,000	\$85,000	\$610,000
% Annual Growth	1.01%	5.15%	3.02%	% Annual Growth	0.00%	0.00%	0.00%
Average Annual	\$1,687,792	\$1,596,970	\$3,284,762	Average Annual	\$525,000	\$85,000	\$610,000

Figure 5.10 Transit Future Operations and Maintenance and Capital Costs

Operations and Maintenance				Capital			
Year	MTA	RTA	Total	Year	MTA	RTA	Total
2017	\$1,739,000	\$1,645,000	\$3,384,000	2017	\$541,000	\$88,000	\$629,000
2018	\$1,790,000	\$1,693,000	\$3,483,000	2018	\$558,000	\$91,000	\$649,000
2019	\$1,841,000	\$1,741,000	\$3,582,000	2019	\$575,000	\$94,000	\$669,000
2020	\$1,892,000	\$1,789,000	\$3,681,000	2020	\$592,000	\$97,000	\$689,000
2021	\$1,943,000	\$1,837,000	\$3,780,000	2021	\$609,000	\$100,000	\$709,000
2022	\$1,994,000	\$1,885,000	\$3,879,000	2022	\$626,000	\$103,000	\$729,000
2023	\$2,045,000	\$1,933,000	\$3,978,000	2023	\$643,000	\$106,000	\$749,000
2024	\$2,096,000	\$1,981,000	\$4,077,000	2024	\$660,000	\$109,000	\$769,000
2025	\$2,147,000	\$2,029,000	\$4,176,000	2025	\$677,000	\$112,000	\$789,000
2026	\$2,198,000	\$2,077,000	\$4,275,000	2026	\$694,000	\$115,000	\$809,000
2027	\$2,249,000	\$2,125,000	\$4,374,000	2027	\$711,000	\$118,000	\$829,000
2028	\$2,300,000	\$2,173,000	\$4,473,000	2028	\$728,000	\$121,000	\$849,000
2029	\$2,351,000	\$2,221,000	\$4,572,000	2029	\$745,000	\$124,000	\$869,000
2030	\$2,402,000	\$2,269,000	\$4,671,000	2030	\$762,000	\$127,000	\$889,000
2031	\$2,453,000	\$2,317,000	\$4,770,000	2031	\$779,000	\$130,000	\$909,000
2032	\$2,504,000	\$2,365,000	\$4,869,000	2032	\$796,000	\$133,000	\$929,000
2033	\$2,555,000	\$2,413,000	\$4,968,000	2033	\$813,000	\$136,000	\$949,000
2034	\$2,606,000	\$2,461,000	\$5,067,000	2034	\$830,000	\$139,000	\$969,000
2035	\$2,657,000	\$2,509,000	\$5,166,000	2035	\$847,000	\$142,000	\$989,000
2036	\$2,708,000	\$2,557,000	\$5,265,000	2036	\$864,000	\$145,000	\$1,009,000
2037	\$2,759,000	\$2,605,000	\$5,364,000	2037	\$881,000	\$148,000	\$1,029,000
2038	\$2,810,000	\$2,653,000	\$5,463,000	2038	\$898,000	\$151,000	\$1,049,000
2039	\$2,861,000	\$2,701,000	\$5,562,000	2039	\$915,000	\$154,000	\$1,069,000
2040	\$2,912,000	\$2,749,000	\$5,661,000	2040	\$932,000	\$157,000	\$1,089,000
Total	\$55,812,000	\$52,728,000	\$108,540,000	Total	\$17,676,000	\$2,940,000	\$20,616,000

CONCLUSION

RTA 8 and Clinton MTA provide critical transportation services for people in the RPA 8 region. The operation and maintenance of these transit systems will be important for the future development of passenger transportation in the region. Operating and maintaining these systems through 2040 will require \$108 million in operations and maintenance expenditures and \$20 million in capital expenditures.

6

SAFETY AND SECURITY

RPA 8 is committed to improving safety and security throughout the transportation system. This chapter includes a safety component and security component. The safety section focuses on reducing the number of transportation related deaths and injuries in the region. The security section focuses on preparing the RPA 8 transportation system for incidents such as natural disasters, hazardous material spills, or major vehicle crashes.

SAFETY

The United States has seen significant reductions in motor vehicle related deaths over the past decade. U.S. Department of Transportation data shows that the number of overall traffic fatalities reported at the end of 2015 is the second lowest level since 1954. The fatality data for 2015 placed the highway fatality count at 35,092 a drop of 19.35 percent — compared to the 43,510 deaths reported in 2005. Safety analysts attribute this success to a number of factors, including increased seatbelt use and fewer alcohol-related crashes. High fuel prices and poor economic conditions have also lead to a downturn in the number of vehicle miles traveled. According to early projections, the fatality rate, which takes into account the number of miles traveled, reached the lowest level ever recorded. Figure 6.1 shows fatalities and fatalities per 100 million vehicle miles traveled in the U.S.

While the decline in fatalities has been encouraging, the trend may be starting to move in the wrong direction. Preliminary US DOT data from 2016 shows more than 40,000 fatalities, which would be a 14 percent increase from 2015. The trend has also been observed in Iowa data. RPA 8 will continue to monitor crash data and work to reduce the number of roadway fatalities.

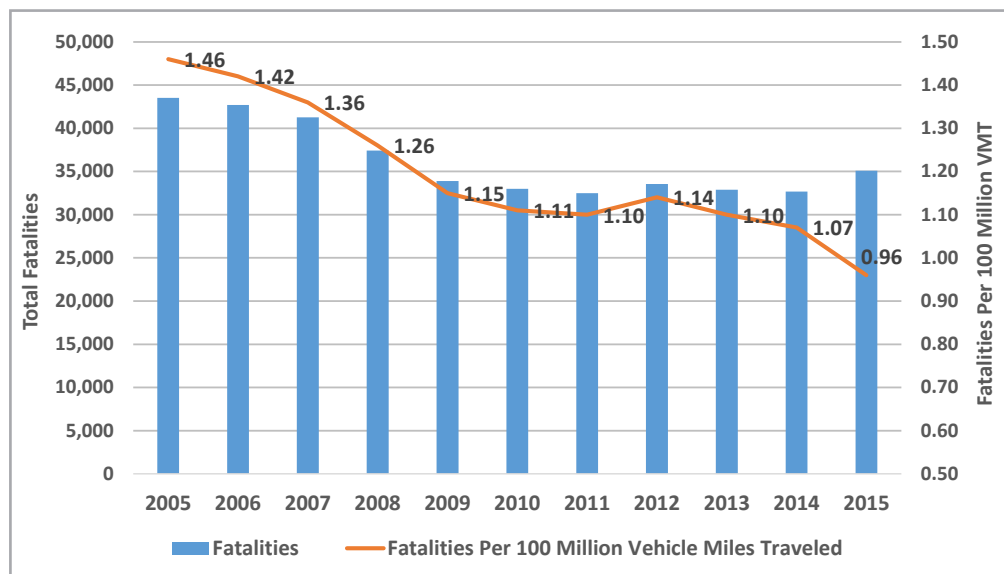


Figure 6.1 US Total Fatalities and Fatalities per 100 Million Vehicle Miles Traveled

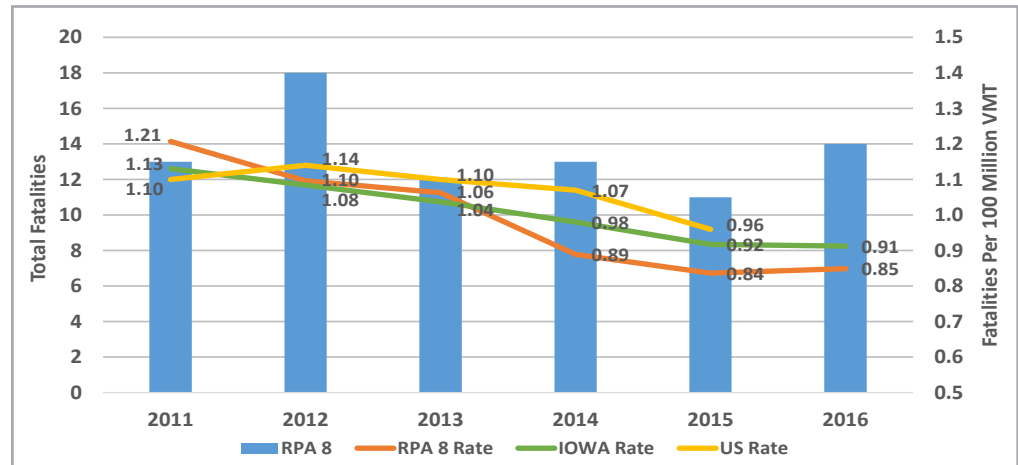
Source: National Highway Traffic Safety Administration 2005-2015

COMPARISON OF FATALITY RATES

RPA 8 uses the nationally accepted performance measure of fatalities per 100 Million VMT to compare fatalities at the local, state, and national level. The data used is from 2011 to 2016, came from National Highway Traffic Safety Administration and Iowa Department of Transportation. The main findings are as follows: (1) the US fatality rate decreased from 2012 to 2015. (2) the State of Iowa rates decreased steadily from 2011 to 2016 and less when compared to the national rate. (3) the RPA 8 rate decreased from 2011 to 2016 and was low when compared to national and State of Iowa rates. Figure: 6.2 provides the comparison of RPA 8 Fatalities per 100 Million Vehicle Miles Travelled with a comparison to state and nation rates.

Figure 6.2 RPA 8 Total Fatalities and Fatalities per 100 Million Vehicle Miles Travelled for RPA 8, State of Iowa, and United States

Source: National Highway Traffic Safety Administration & Iowa Department of Transportation 2011-2016

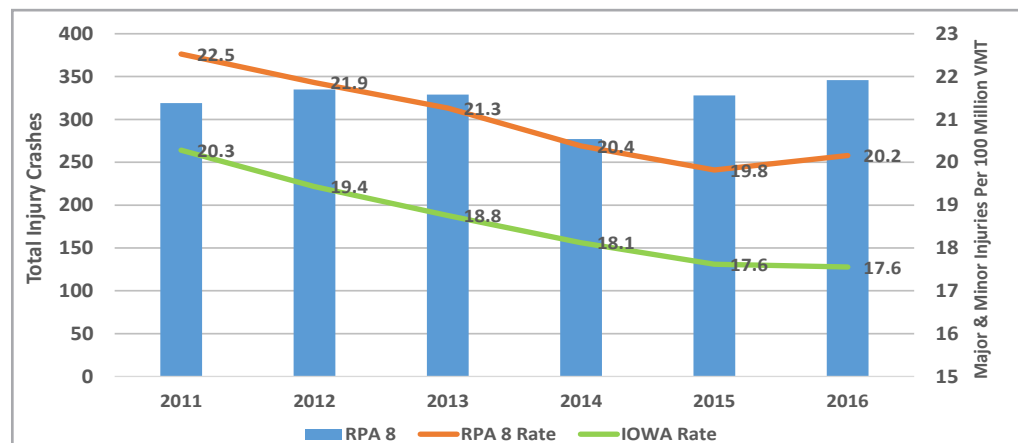


EVALUATION OF TRANSPORTATION SAFETY DATA

The primary source for transportation safety data is the crash report that a law enforcement officer fills out at the scene of a crash. The crash report is a valuable tool that summarizes the details of a crash including contributing factors or driver behaviors that caused the crash, location of the incident, driver characteristics, vehicle characteristics, and other information needed to analyze transportation safety. The data is important in identifying high crash locations, issues that may require public education, and specific demographics prone to collisions. For this analysis staff converted crashes of each RPA 8 members to crash rates for 100 million vehicle miles travelled to compare crash rates of RPA 8 to State of Iowa. The Iowa DOT office of Traffic and Safety collects and distributes the crash data for use by local public safety agencies from 2011 to 2016. Figure 6.3 provides injury crashes. The injury crashes do include major and minor injuries.

Figure 6.3 Injury Crashes between 2011-2016 in the RPA 8 area

Source: Iowa Department of Transportation



The RPA 8 region had 322 injuries on an average between 2011 and 2016. The RPA 8 had a decrease in injury accidents between 2013 to 2015. However, the crashes are on a rise in 2016. Overall the crash rates for RPA 8 are always above the Iowa state rate.

VEHICLE CRASHES

As shown above RPA 8 is doing good on fatality rates when compared to the nation and State of Iowa. However, the results are not the same with injury crashes. RPA 8 is committed to improving transportation safety through the goals and objectives of the RPA 8 LRTP. Reducing vehicle crashes, and the injuries and fatalities that result from crashes, is a top priority for RPA 8. RPA 8 has mapped the crashes to illustrate the distribution of fatal and major injury crashes and locations experiencing the most crashes. RPA 8 uses these maps along with input from local engineers and law enforcement to help identify locations that may need safety improvements. RPA 8 conducted a more detailed safety location analysis.

Figure 6.4 maps the location of all fatal and major injury crashes that occurred from 2009 – 2014. The 70 fatal crashes occurred during this time period seem to be spread across the region on more rural sections of the region's state highways. The 241 major injury crashes from this time are also spread across the region but seem to be more frequent in urban areas.

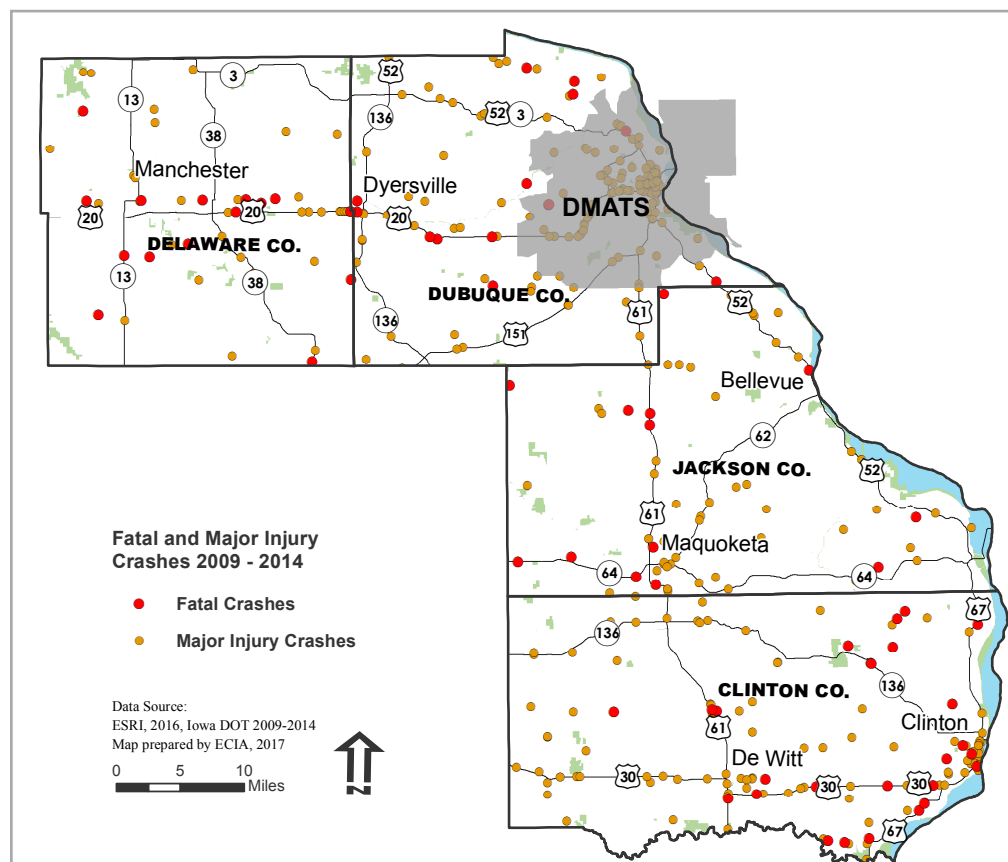


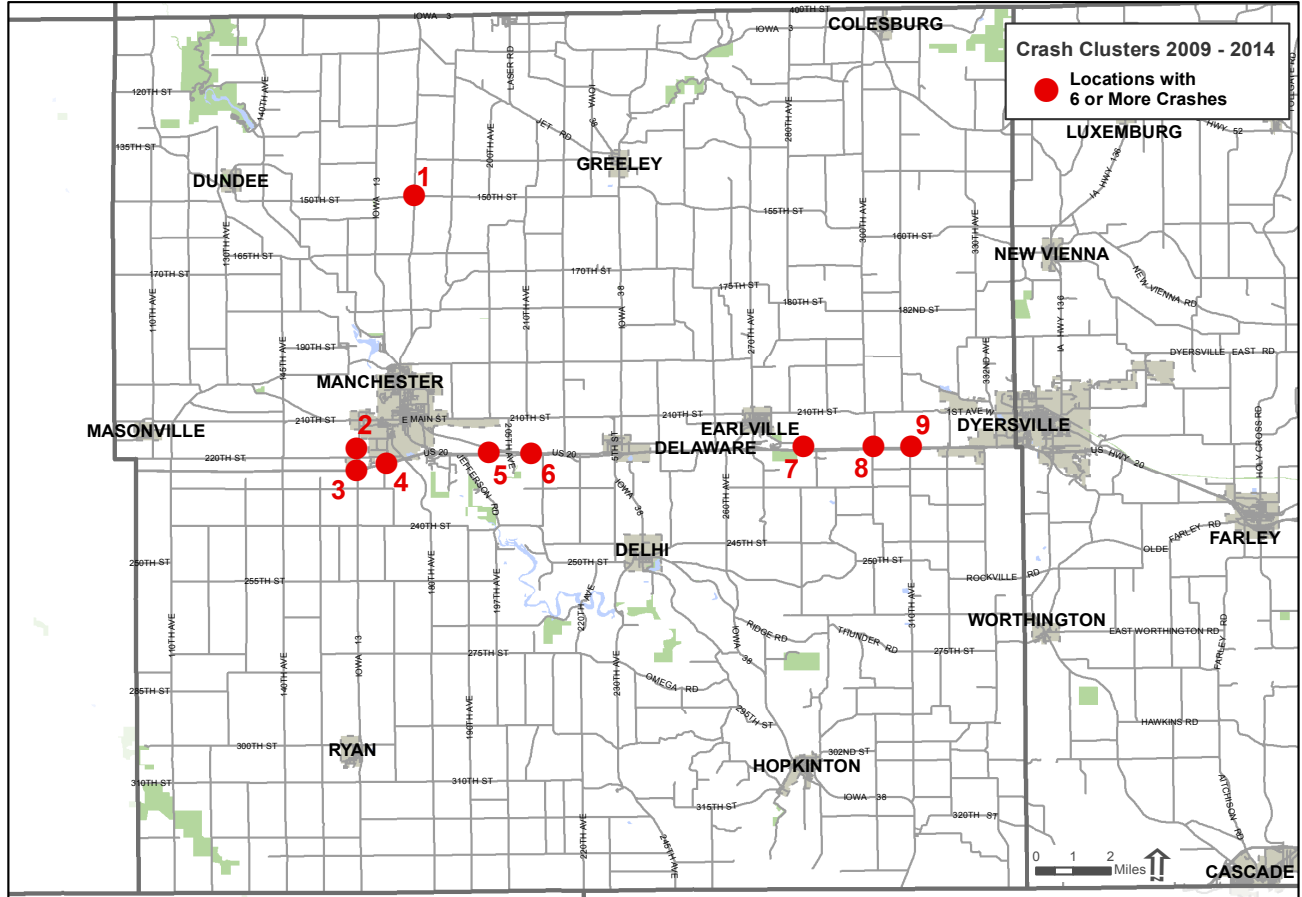
Figure 6.4 Fatal and Major Injury Crashes

Source: Iowa DOT Crash 2009 – July 2014

To illustrate where clusters of crashes have occurred, 30 foot buffers were created in GIS around all crash locations in RPA 8. Any overlapping buffers were then merged together to create a cluster region, and the number of crashes occurring in each cluster region was calculated. The data illustrates areas that had the highest concentration of crashes in the six-year period. Figures 6.5 to 6.12 map locations for all counties and cities with population more than 5,000. The crash cluster analysis showed that most crash locations are located in cities or on a primary road system.

Figure 6.5 Delaware County Locations with the Most Total Crashes 2009-2014

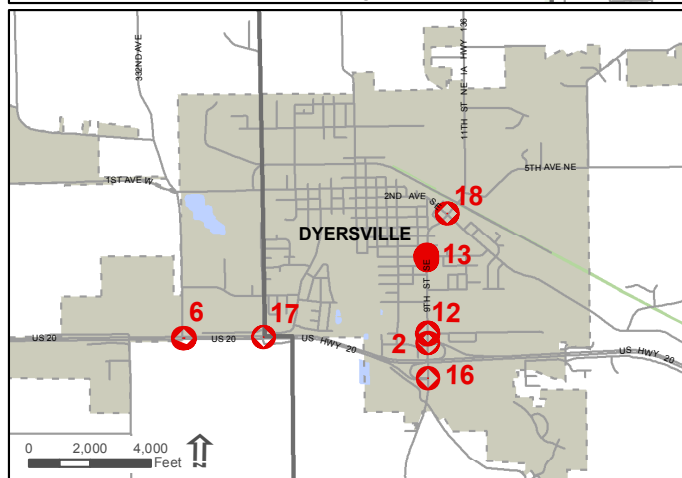
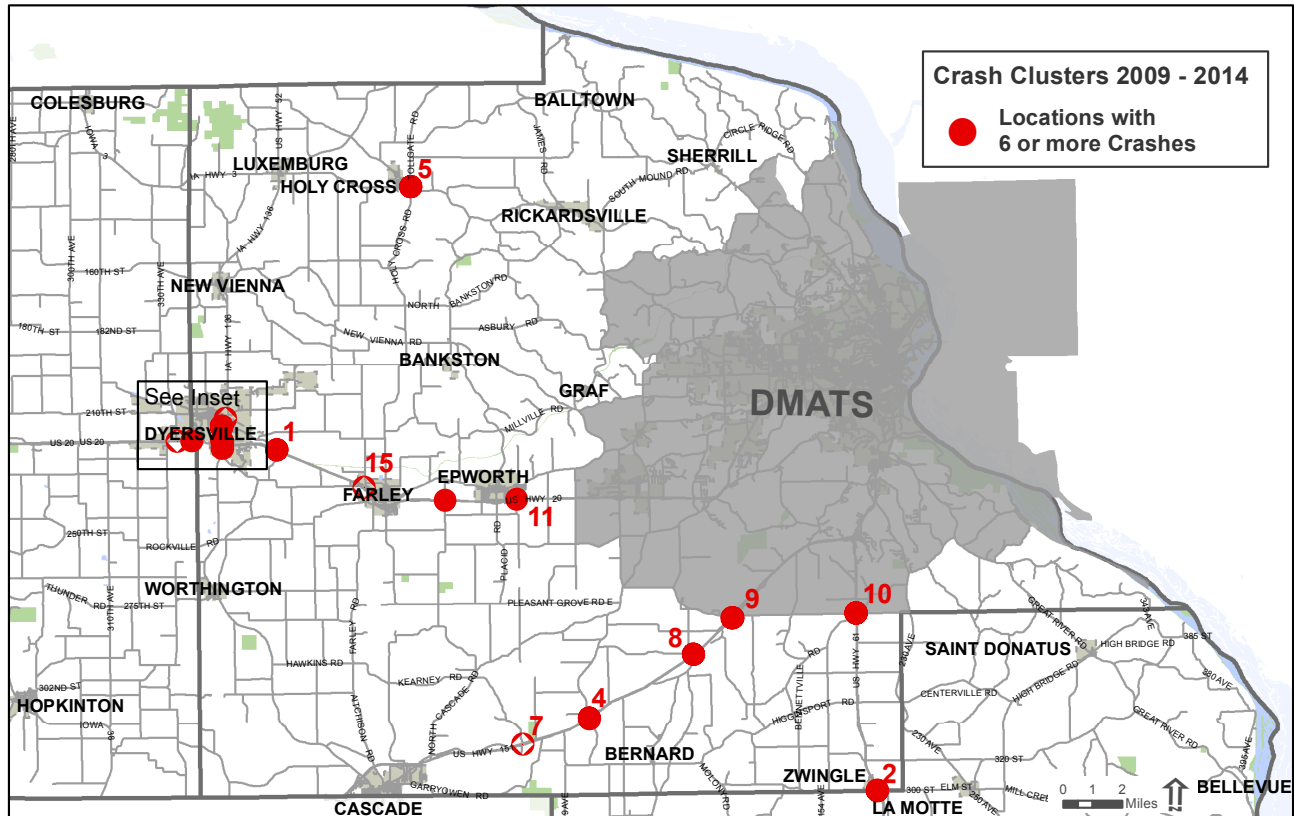
Source: Iowa DOT Crash Data 2010-2014



Crash Cluster Locations Delaware County	
1.	150th St at 180th Ave
2.	IA 13 at 220th St
3.	IA 13 at US 20 Interchange
4.	US 20 1/2 Mile East of IA 13
5.	US 20 1/3 Mile West of 205th St
6.	US 20 1/2 Mile East of 205th St
7.	US 20 1 Mile East of Earlville Interchange
8.	US 20 at 300th Ave
9.	US 20 at 310th Ave

Figure 6.6 Dubuque County Locations with the Most Total Crashes 2009 - 2014

Source: Iowa DOT Crash Data 2010-2014



Crash Cluster Locations

1.	US 20 and Wuchter Rd
2.	US 20 Interchange (WB) at IA 136 interchange (Dyersville, IA)
3.	US 52 and Washington Mills Rd (Zwingle, IA)
4.	US 151 at Driscoll Rd
5.	US 52/IA 3 at Holy Cross Rd
6.	US 20 at 221 St (Dyersville, IA)
7.	US 151 at Simon Rd
8.	US 151 at Twelve Mile Rd
9.	US 151 at Skyline Rd
10.	US 61 and Feeney Rd
11.	US 20 at Bierman Rd (Epworth, IA)
12.	IA 136/9th St SE at 15th Ave SE (Dyersville, IA)
13.	IA 136/9th St SE at 8th Ave SE (Dyersville, IA)
14.	US 20 at Hartbecke Rd
15.	US 20 at 1st Ave SW (Farley, IA)
16.	US 20 (EB) at IA 136 interchange (Dyersville, IA)
17.	US 20 at 7th St SW (Dyersville, IA)
18.	IA 136/9th St SE at Old Hawkeye Rd (Dyersville, IA)

Figure 6.7 Jackson County Locations with the Most Total Crashes 2009 -2014

Source: Iowa DOT Crash Data 2009-2014

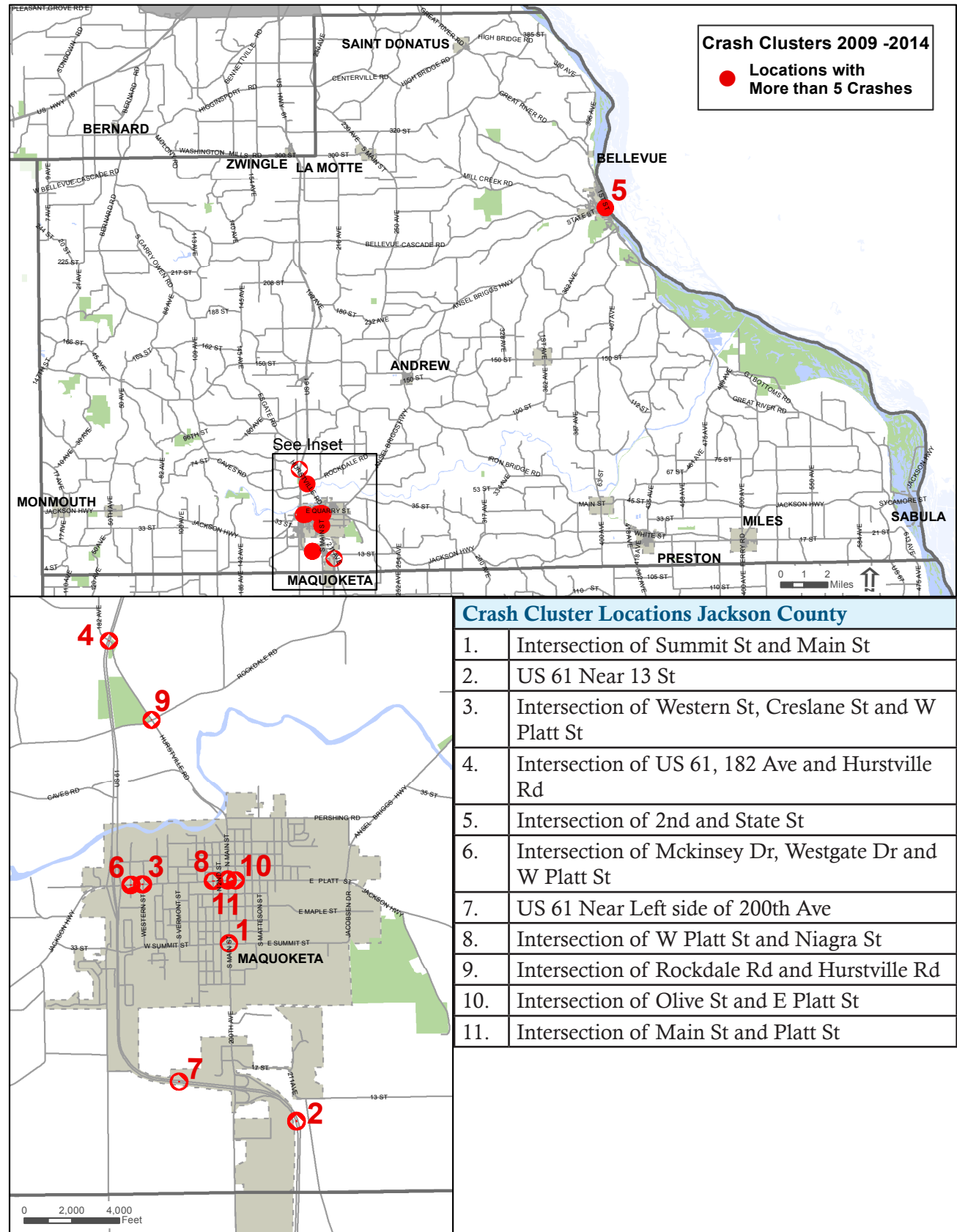


Figure 6.8 Clinton County Locations with the Most Total Crashes 2009 - 2014

Source: Iowa DOT Crash Data 2009-2014

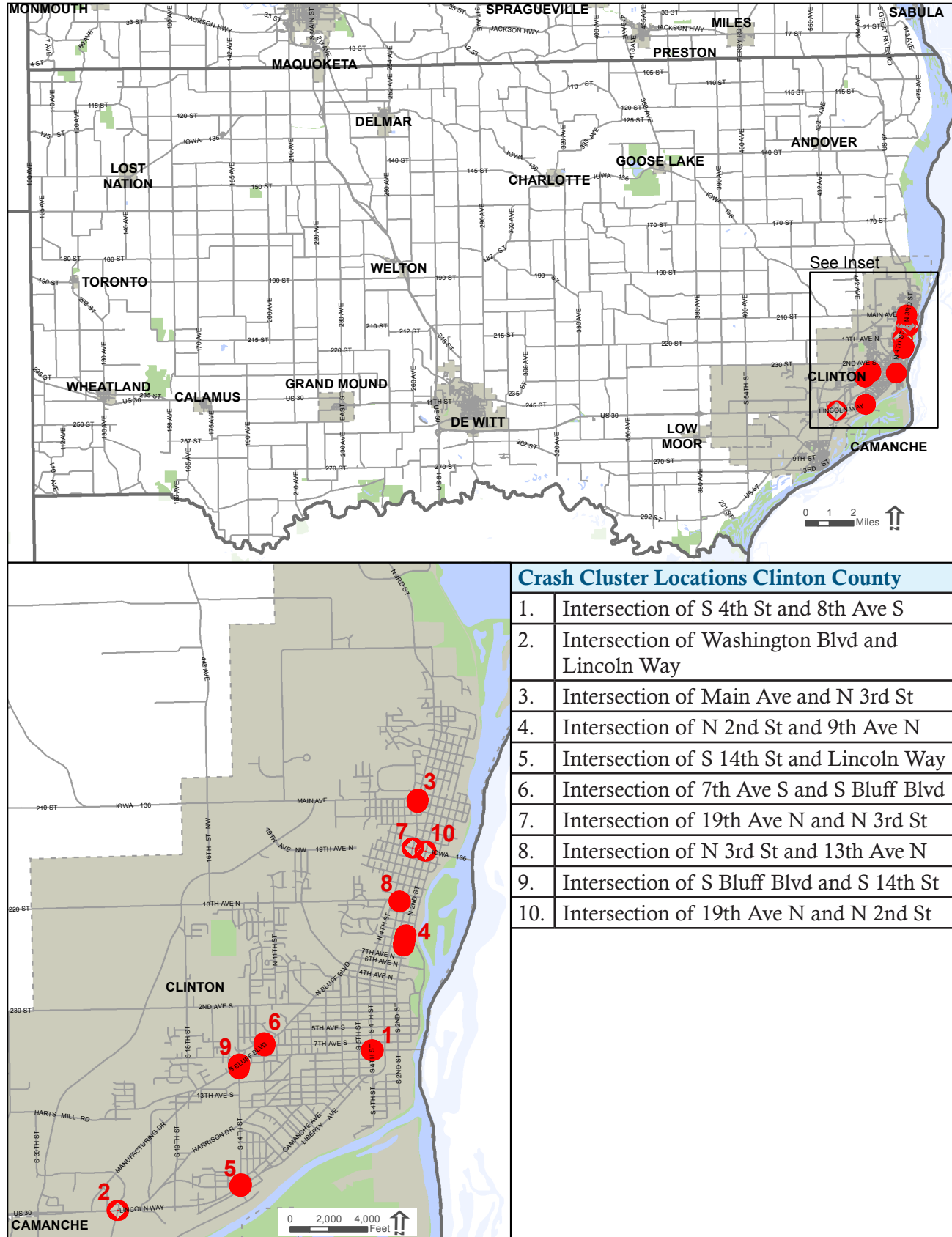
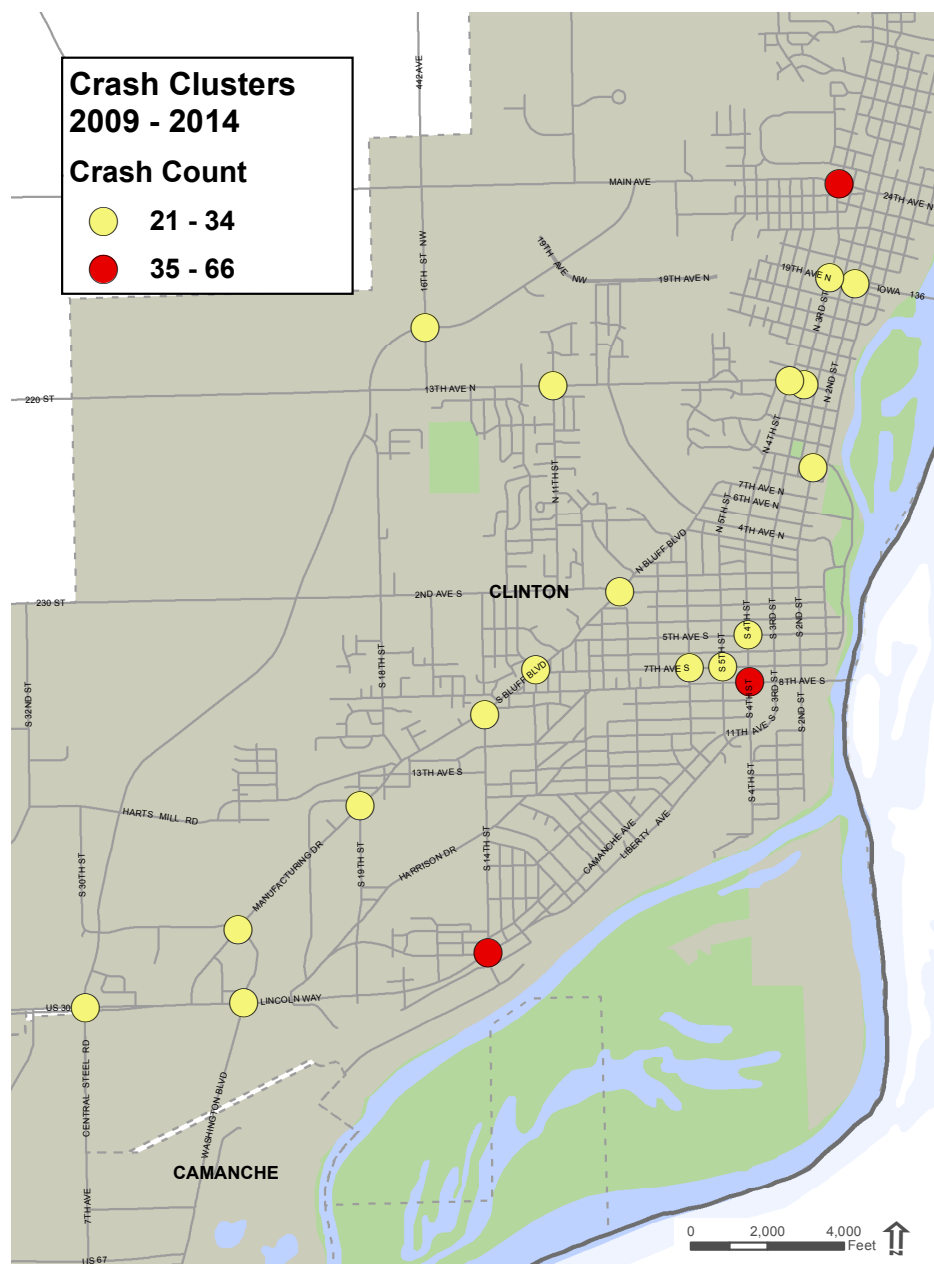


Figure 6.9 City of Clinton Locations with the Most Total Crashes 2009 - 2014
Source: Iowa DOT Crash Data 2009-2014



Top Ten Crash Locations by Number of Crashes in the City of Clinton		
Rank	Crashes	Location
1	66	South 4th / 8th Ave S
2	42	South 14th St / Liberty Ave
3	40	North 3rd St / Main Ave
4	34	Washington Blvd / Lincoln Way
5	34	South Bluff Blvd / South 12th St
6	29	13th Ave N / N 3rd St
7	28	19th Ave N / N 3rd St
8	28	North 3rd St / 9th Ave N
9	27	South 14th St / South Bluff St
10	25	Central Steel Rd/ Mill Creek Parkway

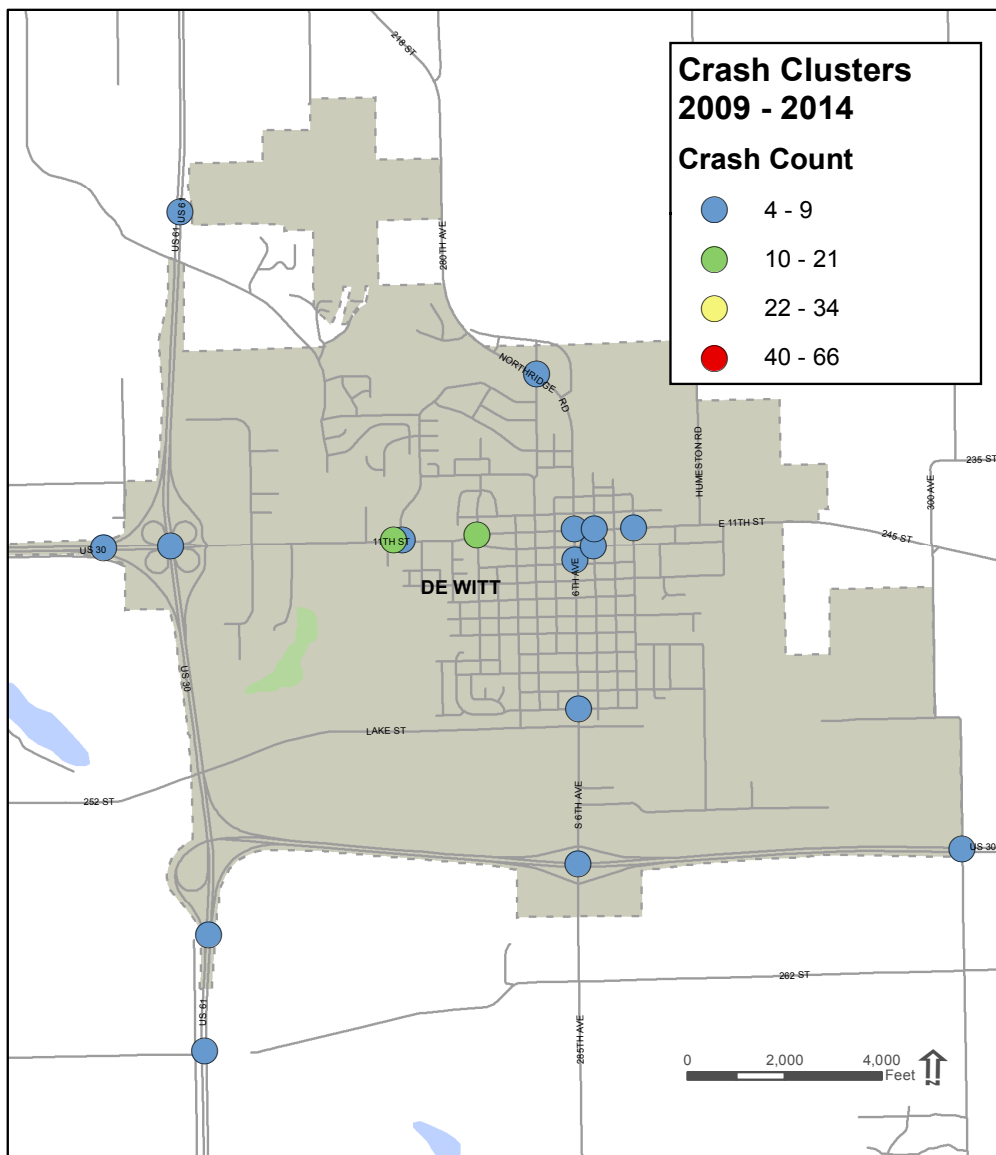
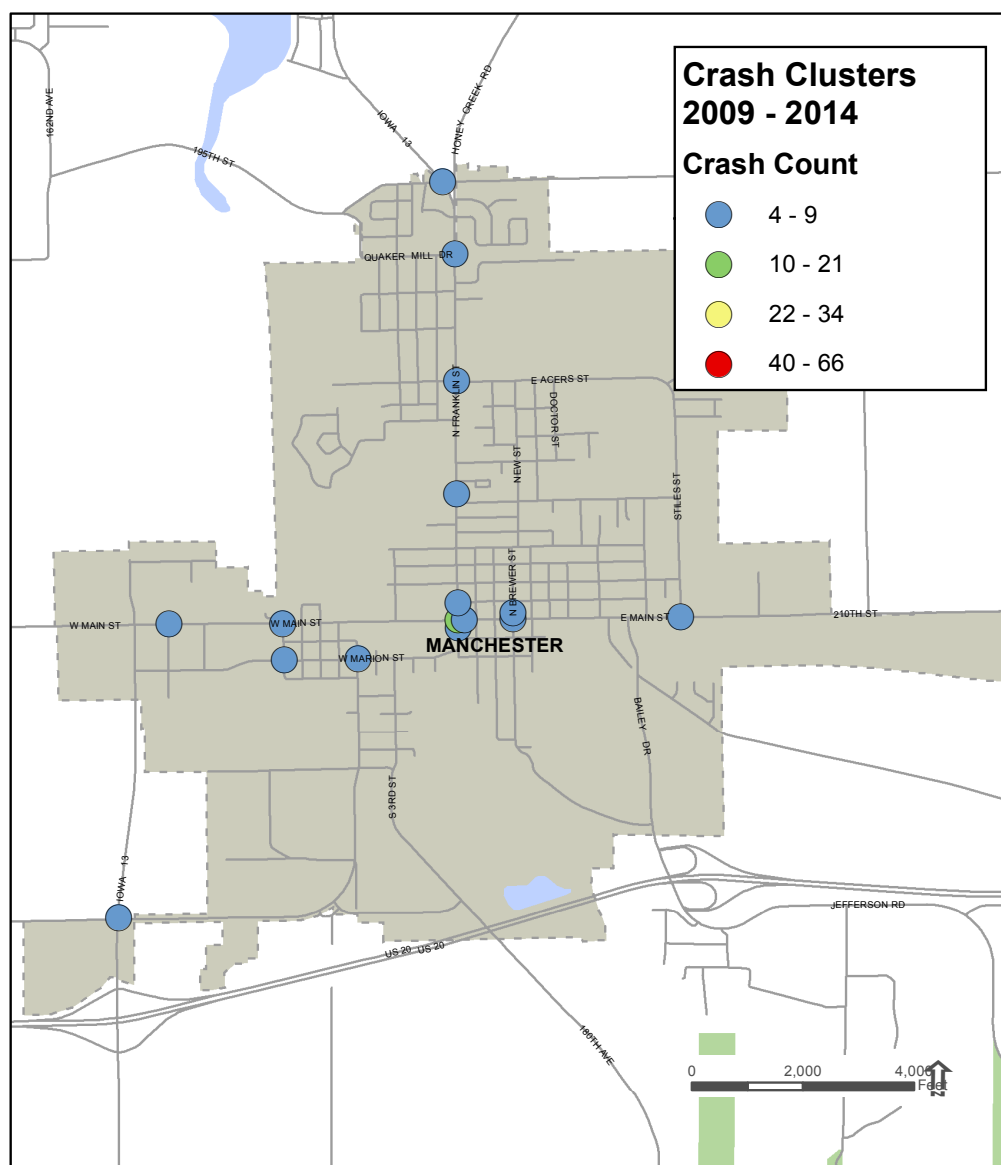


Figure 6.10 City of DeWitt Locations with the Most total Crashes 2009 - 2014
Source: Iowa DOT Crash Data 2009-2014

Top Ten Crash Locations by Number of Crashes in the City of DeWitt		
Rank	Crashes	Location
1	18	16th Ave E / 11th St
2	12	11th St / 11th Ave
3	7	US 61 / 225th AVE
4	6	6th Ave / 11th St
5	6	5th Ave / 11th St
6	6	3rd Ave / 11th St
7	6	Northridge rd / 8th Ave
8	5	10th St / 5th Ave
9	5	11th St / Maynard Way
10	5	US 30 / 260 Ave

Figure 6.11 City of Manchester Locations with the Most Total Crashes 2009-2014

Source: Iowa DOT Crash Data 2009-2014



Top Nine Crash Locations by Number of Crashes in the City of Manchester		
Rank	Crashes	Location
1	16	W Main St / N Franklyn St
2	8	W Acers St / N Franklyn St
3	7	W Fayette St / N Franklyn St
4	7	S Franklyn St close to W Main St
5	7	W Main St / S 9th St
6	5	E Main St / N Brewer St
7	5	E Main St / Stiles St
8	5	W Main St / S 12th St
9	5	W Marion St / S 5th St

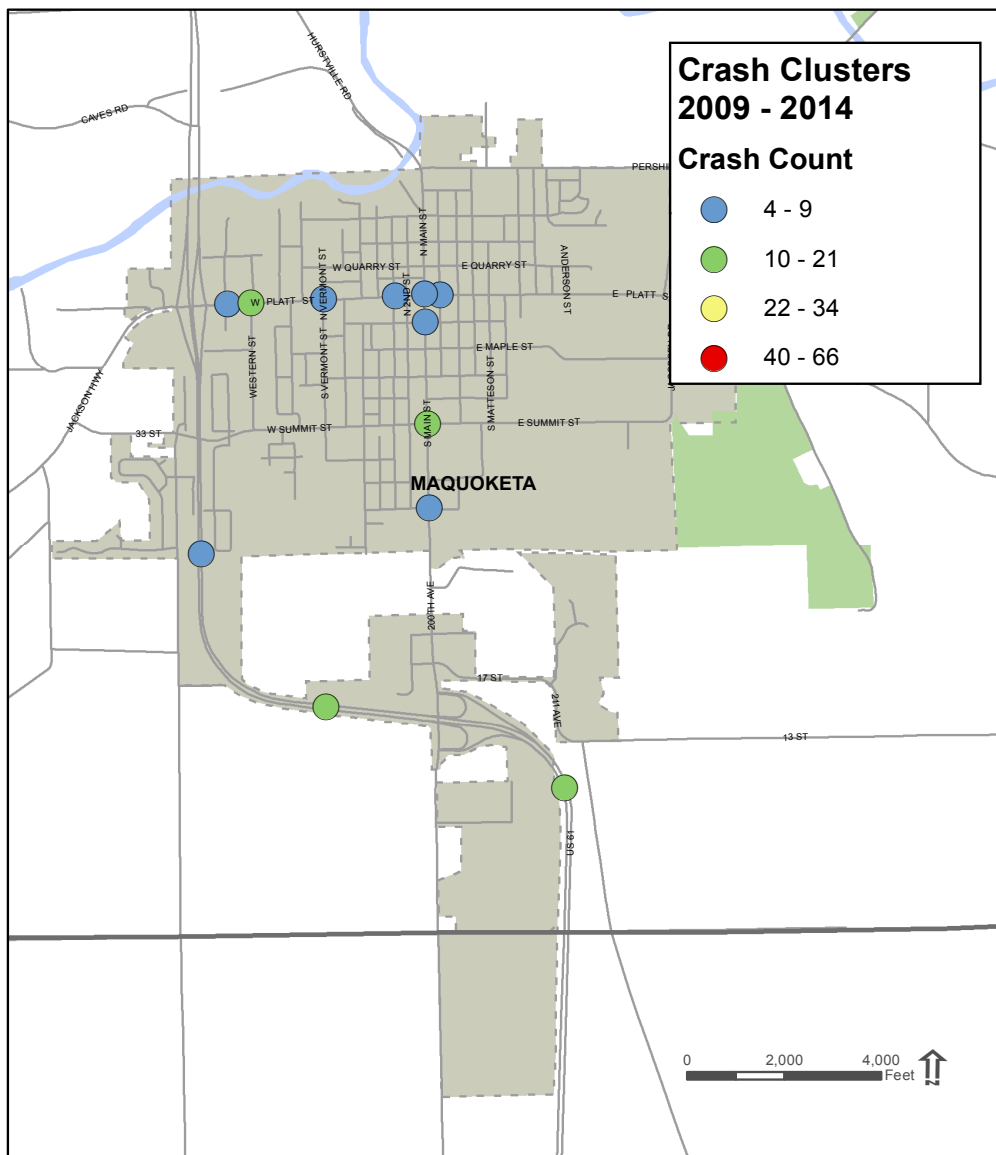


Figure 6.12 City of Maquoketa Locations with the Most Total Crashes 2009-2014

Source: Iowa DOT Crash Data 2009-2014

Top Nine Crash Locations by Number of Crashes in the City of Maquoketa		
Rank	Crashes	Location
1	13	US 61 Walmart Ramp
2	12	S Main St / W Summit St
3	11	W Platt St / Western St
4	11	US 61 Curve between North and South Ramp
5	9	W Platt St / McKinsey Dr
6	6	W Platt St / N Niagra St
7	6	E Platt St / N Olive St
8	6	US 61 before North Ramp
9	5	S Main St / W Summit St
10	5	S Main St / W Pleasant St

CURRENT TRANSPORTATION SAFETY EFFORTS

SAFE ROUTES TO SCHOOL AND BIKE & PEDESTRIAN PLANS

RPA 8 has developed a plan to address the infrastructure and safety needs of bicyclists and pedestrians through the RPA 8 Trail plan, City of Clinton Bike and Safety Plan, and the Western Dubuque school system, Jackson County, Delaware County, and Clinton County Safe Routes to School Plans. These plans will analyze the area's needs and include recommendations and action steps to enhance the safety of children walking to school, and bicyclists and pedestrians. The outcome of these plans are to come up with a list of infrastructure and Non-infrastructure improvements. Examples of eligible projects are:

- Sidewalk improvements
- Traffic calming efforts
- Speed reduction initiatives
- Pedestrian and bicycle crossing improvements
- On street/off street bicycle and pedestrian facilities
- Secure bike parking
- Traffic diversion programs around schools
- Educational programs in and around school systems

CLINTON MULTI-DISCIPLINARY SAFETY TEAM

Collaboration is critical to the implementation of a safe and efficient transportation system. Time, money and personnel are limited, and public safety agencies need to work together to eliminate duplication of services and ensure that response efforts have the greatest impact on the region's transportation safety problems. In 2005, the Clinton County public safety agencies came together to form a Multi –Disciplinary Safety Team (MDST). The MDST has undertaken a variety of strategies to improve Clinton County transportation safety.

It is the goal of the Clinton County MDST to collaborate and cooperate with other agencies to improve safety in the region. The four areas the group focuses on to improve safety are education, engineering, enforcement, and emergency services.

EDUCATION

Education involves informing users about unsafe behaviors and suggests ways to improve safety when they use the transportation system. Police, fire, and engineering departments across the region use education as a transportation safety tool.

ENGINEERING

Local public works departments or state departments of transportation often implement engineering strategies to improve roadway safety. In most cases, infrastructure solutions are low-cost, reactionary improvements that focus on crash hot spots or corridors. However, engineers and planners are beginning to use a proactive approach to improve transportation safety. Under this approach,

small safety improvements are implemented in the planning stages of a project. This proactive method takes a system wide approach to addressing transportation safety issues that will prevent accidents through incremental changes on a corridor level. A good safety plan will include a balance of reactionary and proactive improvements.

ENFORCEMENT

Law enforcement officers play a valuable role in maintaining the region's transportation safety and security. Their presence can encourage appropriate driving behaviors, prevent motor vehicle collisions, and deter criminal acts. Enforcement officers also are the source of most transportation safety data — typically crash data. In addition, these individuals must coordinate traffic flow around incidents that may create congestion and motorist delays along the region's roadways.

EMERGENCY SERVICES

Emergency services personnel help prevent additional deaths and injuries from occurring after an initial incident. This professional sector includes emergency medical services paramedics, first responders, trauma room nurses, and doctors. Other services such as motorist assist, which helps drivers with vehicle problems contribute to transportation safety by limiting the length of time vehicles are stopped on the highway. Their efforts, in coordination with regional transportation management systems, help prevent traffic delays and secondary crashes.

IOWA STRATEGIC HIGHWAY SAFETY PLAN

Iowa DOT has created a Strategic Highway Safety Plan (SHSP). According to the US Department of Transportation, “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 effective safety strategies to address areas of greatest need in order to make our roadways safer.” The Iowa SHSP outlines key strategies that the state intends to deploy over the next three years. The SHSP sets targets to move the state towards its collective goal of a 15 percent reduction in fatalities and major injuries on Iowa highways by 2020.

RPA 8 will examine, evaluate, and implement the strategies contained in the Iowa Strategic Highway Safety Plan (SHSP). This section includes the safety strategies listed in the SHSP, and will use the SHSP's data driven process to evaluate these strategies at the RPA 8 level. The data analysis in this chapter will help RPA 8 identify general area-wide trends. RPA 8 staff used Iowa DOT's Crash Mapping Analysis tool to generate crash data for RPA 8 region.

SAFETY STRATEGIES

The SHSP Safety Strategies focus on strategies that have the greatest potential to reduce fatalities, major injuries, minor injuries and unknown injuries on public roadways. These strategies will be implemented in locations chosen using criteria such as crash history, system characteristics, and population demographics.

EDUCATION SAFETY AREA: MULTIMEDIA EDUCATION CAMPAIGN CHALLENGES

More than 90 percent of crashes are behavior-related, and it affects all age groups. Young drivers are involved in more than one-third of severe crashes. Ex-

perienced drivers often get too comfortable behind the wheel. Many drivers take risks that put them and other road users in danger because they don't understand the impacts of those risks. Data shows that the top behavioral causes of injuries are speeding, impaired driving, distraction, and not buckling up. These are choices drivers make. These are choices drivers can be convinced not to make.

DIRECTION

Iowa drivers must be informed about their vital role in eliminating preventable crashes and injuries through communication, education, and community outreach.

STRATEGIES

- Develop a strategic communication plan integrating the FHWA's Toward Zero Deaths initiative.
- Deliver safety messages to multimedia networks (television, radio, newspaper, social media).

EDUCATION SAFETY AREA: ENHANCE DRIVER EDUCATION CHALLENGES

Young drivers (14 -24 years of age) accounted for 34.55 percent of injuries in RPA 8. This fact has been linked to young drivers' inexperience and/or driving habits. It has also been associated with distracted driving. Figure 6.13 crashes for drivers within age group 14-24 in RPA 8.

**Figure 6.13 RPA 8
Crashes Drivers Age
14-24**

*Source: Iowa DOT,
Safety, Analysis,
Visualization and
Exploration Resource
Tool*

Year	Fatal	Major	Minor	Unknown Injury	Property Damage Only	Total
2011	4	14	55	118	419	610
2012	3	22	64	110	390	589
2013	3	17	55	94	415	584
2014	2	10	42	120	417	591
2015	5	11	76	104	370	566
2016	1	13	59	113	385	571
Total	18	87	351	659	2396	3,511

DIRECTION

Target enhancements to strengthen driver education courses.

STRATEGIES

- Involve parents in driver education courses.
- Require more behind-the wheel instruction time.
- Require a diversity of driving conditions (all weather conditions, daytime and nighttime, all road surfaces).

ENFORCEMENT SAFETY AREA: HIGH VISIBILITY ENFORCEMENT CHALLENGES

Choosing to drive while impaired, distracted, unbelted, drowsy or in any other way altered is a behavioral risk. High-visibility, targeted enforcement serves as a deterrent for high-risk driving behavior. More officer hours are needed in order to

provide more visible enforcement. Between 2007 and 2016 speed related crashes accounted for 42 fatalities, 149 major injuries, 413 minor injuries, and 648 unknown injuries in RPA 8 region. Figure 6.14 lists the speed related crashes that occurred in RPA 8 from 2011 to 2016.

Year	Fatal	Major	Minor	Unknown Injury	Property Damage Only	Total
2011	6	24	64	96	291	481
2012	10	34	66	113	320	543
2013	4	26	80	98	375	583
2014	7	22	57	128	356	570
2015	8	22	76	104	317	527
2016	7	21	70	109	300	507
Total	42	149	413	648	1959	3,211

Figure 6.14 RPA 8 Speed Related Crashes

Source: Iowa DOT, Safety, Analysis, Visualization and Exploration Resource Tool

DIRECTION

Seek reductions of behavior-based fatalities and major injuries through educational and enforcement methods.

STRATEGIES

- Support additional officer hours on roadways.
- Increase special enforcement campaigns.

ENFORCEMENT SAFETY AREA: DEPLOY STATE-OF-THE-ART TECHNOLOGY

CHALLENGES

Getting safety messages quickly and efficiently to the public when they are in a vehicle is difficult. Dynamic message signs can reach drivers and passengers regardless of what they're listening to or attending to in their car.

Along with many other public agencies, enforcement budgets are tight. Finding ways to enhance efficiency is critical.

DIRECTION

Seek reductions of behavior-based fatalities and major injuries through educational and enforcement methods.

STRATEGIES

- Use dynamic message signs to convey safety messages.
- Equip law enforcement with state-of-the-art technology for compliance.
- Promote technologies to gather commercial vehicle information.

ENFORCEMENT SAFETY AREA: EXPAND IMPAIRED ENFORCEMENT PROGRAMS

CHALLENGES

Impaired driving has been recognized as a problem for decades, yet it remains a significant issue. Choosing to drive while intoxicated or altered is a behavioral risk. From 2011-2016 RPA 8 region had 29 fatalities, 54 major injuries, 101

minor injuries and 107 unknown injuries. Figure 6.15 shows the impaired driving related crashes that occurred from 2011 to 2016.

DIRECTION

Continue to reduce impaired driving through educational and enforcement methods.

Figure 6.15 RPA 8 Impaired Driving Crashes

Source: Iowa DOT, Safety, Analysis, Visualization and Exploration Resource Tool

Year	Fatal	Major	Minor	Unknown Injury	Property Damage Only	Total
2011	4	12	10	14	49	89
2012	8	15	16	25	61	125
2013	5	15	22	14	51	107
2014	6	5	18	27	51	107
2015	4	2	10	17	34	67
2016	2	5	25	10	49	91
Total	29	54	101	107	295	586

STRATEGIES

- Expand law enforcement training to effectively identify impaired drivers.
- Launch a drowsy driving program within the Iowa DOT's Office of Motor Vehicle Enforcement.

ENGINEERING SAFETY AREA: PREVENT LANE DEPARTURE CRASHES CHALLENGES

Most of severe crashes involved a lane departure. These crashes may be caused by driver behaviors, such as drowsy driving, impaired driving, distraction, and speeding. The primary goal of rumble strips and larger, brighter signage is to return the driver's focus to the roadway to prevent the vehicle from departing its lane. The goal of paved shoulders and roadside barriers is to minimize the severity of injuries if the vehicle leaves the roadway. From 2011 to 2016 RPA 8 region had 34 fatalities, 86 major injuries, 213 minor injuries and 290 unknown injuries related to lane departure crashes. Figure 6.16 provides lists the crashes related to lane departure that occurred in RPA 8 from 2011 to 2016.

DIRECTION

Continue to implement engineering countermeasures to keep vehicles on roadways and mitigate the severity of results if vehicles leave the roadway.

Figure 6.16 RPA 8 Lane Departure Related Crashes

Source: Iowa DOT, Safety, Analysis, Visualization and Exploration Resource Tool

Year	Fatal	Major	Minor	Unknown Injury	Property Damage Only	Total
2011	5	12	29	44	126	216
2012	9	16	40	44	135	244
2013	4	18	39	54	153	268
2014	4	13	28	60	141	246
2015	5	13	45	43	132	238
2016	7	14	32	45	131	229
Total	34	86	213	290	818	1,441

STRATEGIES

- Centerline rumble strips
- Shoulder/edgeline rumble strips
- Curve delineation
- Shoulder treatments
- Cable barrier rail

ENGINEERING SAFETY AREA: IMPROVE INTERSECTIONS

CHALLENGES

Intersection crashes account for 27.49 percent of all severe crashes. Sixty percent of intersection crashes occur in urban areas leaving 40 percent of intersection crashes to occur in rural settings. Two challenges exist: (1) how to improve or reconfigure signalized intersections in urban areas; and (2) how to improve stop controlled (or uncontrolled) intersections on the rural system. RPA 8 region had 16 fatalities, 57 major injuries, 300 minor injuries and 557 unknown injuries between 2011 and 2016. Figure 6.17 lists the intersection related crashes that occurred in RPA 8 between 2011 and 2016.

DIRECTION

Reduce the chances for intersection crashes and mitigate the severity of injuries if crashes occur in intersections.

Year	Fatal	Major	Minor	Unknown Injury	Property Damage	Total
2011	6	9	46	90	298	449
2012	3	12	51	101	301	468
2013	2	8	48	90	305	453
2014	1	7	38	86	282	414
2015	2	13	60	97	274	446
2016	2	8	57	93	291	451
Total	16	57	300	557	1751	2,681

Figure 6.17 RPA 8 Intersection Crashes

Source: Iowa DOT, Safety, Analysis, Visualization and Exploration Resource Tool

Strategies

- Urban
- Innovative intersection designs
- Traffic signal modifications
- Rural
- Intersection lighting
- Stop controls

POLICY SAFETY AREA: ENHANCE MULTIAGENCY COLLABORATIVE EFFORTS

CHALLENGES

Each public agency has limited resources and many responsibilities. Agencies need to work together and pool resources to communicate a unified safety message to the public, educate drivers on our roadways, and encourage policy changes that will enhance traffic safety.

DIRECTION

Continue partnering efforts to spread a unified message to Iowa drivers about their role in eliminating preventable crashes. Continue partnering efforts to support traffic safety initiatives in both agency policy and the legislative arena.

STRATEGIES

- Work with the MDST group to carry out safety strategies.
- Engage professionals across disciplines and systems to participate and create a unified message.

POLICY SAFETY AREA: STRENGTHEN LEGISLATIVE POLICIES

Challenges

Changing or enacting legislation is a substantial objective. Public agencies must choose the messages they will focus efforts on with great care. Working together to focus efforts may result in greater outreach to representatives. Multiple agencies supporting a particular initiative should also show legislators its importance.

Direction

Continue partnering efforts to support traffic safety initiatives in legislation.

Strategies

- Support primary seat belt legislation for all positions.
- Support inclusion of distracted driving as a primary offense.
- Support increased penalties for impaired driving violations.

Research and Data Safety Area: Safety Data Improvement

Challenges

Data is the foundation of a strategic plan to reduce fatalities and major injuries. Crash records are just one data set out of the six needed for a complete picture of traffic safety. The other five are: vehicle, driver, roadway, citation, and medical outcome records. Sharing of data is a priority to gain a more complete picture to assist planning efforts. A single data portal must be developed and maintained in order to fully analyze all factors in a crash.

Direction

Continue partnering efforts to improve traffic safety data quality and availability. Multiple agencies supporting data sharing will provide for the most comprehensive data analysis.

Strategies

- Expand statewide electronic crash reporting through Traffic and Criminal Software (TraCS).
- Develop a Web portal to increase safety data availability.
- Support creation of a web based analytical tool.

SECURITY

Transportation and personal security have received greater attention across the country since the terrorist attacks in New York City on September 11, in 2001. The hurricane and resulting flooding along the Gulf Coast in 2005 demonstrated the importance of transportation facilities and services in an emergency event. Transportation facilities and systems are critical to maintaining the region's economy and everyday quality of life, and responding to natural and manmade disasters.

In 2015, Fixing America's Surface Transportation Act (FAST Act) was signed into law and continued many of the programs established in previous transportation bills. The FAST Act reflects the renewed interest in security issues with transportation infrastructure.

OVERVIEW

All County Emergency Managements within RPA 8 maintains a forum that engages the region's fire protection, law enforcement, emergency medical services, public health, emergency management, public works, and emergency communication agencies. Through preparedness planning efforts, evacuation and incident management plans have been adopted. The plan guides the work of the coordinating committee and other groups in the evaluation of risks and identification of actions and investments to reduce them or increase response capabilities. The region's evacuation plan and incident management plan incorporates these most probable risks.

HIGHWAY

The Strategic Highway Network system of public highways provides access, continuity, and reliability during emergency conditions. RPA 8 roadways are designated as major routes in the region for use in times of evacuations and other emergency situations. In RPA 8 there are seven major highways that connect to urban and rural areas within the region, and provide commerce routes into the State of Illinois and Wisconsin. The system should be protected from any attacks as this is the life line for the region.

INCIDENT MANAGEMENT MANUAL

In 2005 the Dubuque County Multi-Disciplinary Safety Team (MDST) adopted an Incident Management Manual. The manual outlines a traffic assistance program designed to aid agencies in rerouting vehicle traffic in the event of a road closure. Road closures can occur at any time due to a variety of different situations including hazardous material spill, aviation disaster, or major vehicle crash. The traffic assistance program is designed to safely reroute traffic around the area affected by an incident and prevent any secondary injuries or property damage.

FUTURE SECURITY NEEDS

The Evacuation Plan and Incident Management Manual address public safety and security during an emergency. RPA 8 is working on incorporating transportation security directly into the metropolitan transportation planning process, particularly in project selection and prioritization. RPA 8 includes police, fire, other emergency, and transit agencies in transportation project design. The hope

is that including emergency personnel early in the planning process will result in a transportation system that is more secure overall.

RPA 8 and its partners continue to work on projects and activities that will improve the security of the regional transportation system. The following section lists ongoing transportation security projects activities and security projects that have been completed since the previous LRTP was adopted.

ONGOING SECURITY PROJECTS

- Ensure that roads and bridges remain passable during an emergency.
- Train all personnel in emergency response procedures and protocols, and conduct annual refresher training.
- Establish an ongoing means of communication with fire, sheriff, and police departments and the County EMS to ensure sharing of crime and security information among all concerned.
- Work with safety teams and County EMS regarding security and emergency preparedness plans.
- Improve safety for children who walk and bike to school.
- Review evacuation plans in the region, focusing on transit security plans. Plan review will ensure compatibility and clarification regarding responsibility and procedures in the event of an incident.
- Review security measures against checklists developed by the Federal Transit Administration (FTA) and the Iowa Public Transit Administration (IPTA).
- Create an action plan with County Sheriff and City Police Department to request random patrols of transit systems headquarters, the bus depot, and “hot spots” on Friday and Saturday evenings.
- Work with Safety teams and County EMS regarding security and emergency preparedness plans, and ensure that all are familiar with the basic operation of a bus, and are aware of the bus depot’s layout.
- Establish an ongoing means of communication with Fire and Police Departments and the County EMS to ensure sharing of crime and security information among all concerned.
- Define transit systems role in non-transit emergencies.
- Train all personnel in emergency response procedures and protocols, and conduct annual refresher training.
- Conduct at least one emergency exercise annually.
- Coordinate transportation and operational agencies with the county emergency and hazard mitigation plans.
- Ensure continued cooperation between transportation agencies and transit systems.

- Work closely with the Iowa DOT Rail Division on planning studies and project development activities.
- Continue use of incident management patrols, coordination with law enforcement agencies, and implementation of safety and mobility projects by the members to respond to safety and security trends and issues.

COMPLETED SECURITY PROJECTS

- Install cameras on buses that are equipped with a “panic button” that will capture a higher quality of video footage.
- Purchase newer buses to be equipped with full time cameras.
- Equip buses with mobile data terminals and GPS systems.
- Install security cameras at transit offices and bus depots.
- Transit offices secured with passcard swipe locks.
- Install full-time cameras on all buses.

DISASTER PREPAREDNESS

Each county in RPA 8 has an emergency management office. The county office of emergency management develops and maintains disaster plans for the area. The office also works to prepare residents, businesses, industries, and governmental agencies for all types of hazards and emergencies.

Disaster plans for the area are developed in coordination with transportation, law enforcement, and operational agencies. These plans address issues such as evacuation, containment, and first-responder actions, and are grouped under the heading of the Emergency Management Plan.

Publicity steps are targeted to residents, businesses, and various agencies, and include information about evacuation and preparation. Individuals and families should be prepared for self-sufficiency for at least three days including providing for one’s own shelter, first aid, food, water, and sanitation.

RPA will participate in emergency management planning by providing socio economic projections and long range improvement plans for the region. This will help emergency management officials to look to the future when making and implementing emergency management plans.

RECOMMENDATIONS

1. Reduce the number of fatalities and decrease the economic impact from highway-related accidents
2. Encourage city and county implementation of bicycle and pedestrian improvements, services, and programs.
3. Encourage local government participation and continue RPA participation in bicycle and pedestrian safety education and outreach activities.
4. Continue use of incident management patrols, coordination with law

enforcement agencies, and implementation of safety and mobility projects by the members to respond to safety trends and issues.

5. Address roadway operational issues on routes receiving significant freight movement, including roadway geometry, intersection configurations, and capacity.
6. Work closely with the IADOT Rail Division on planning studies and project development activities for rail safety projects, including rail grade separations at targeted locations.
7. Encourage transit systems to secure funding for full-time cameras on all buses.
8. Encourage transit systems to secure funding for automated vehicle locator system.
9. Encourage transit systems to contact the fire department and county emergency management regarding security and emergency preparedness plans, and ensure that all are familiar with bus basics and are aware of the depot layouts.
10. Suggest that transit systems develop and execute at least one emergency exercise annually.
11. Encourage cities and counties to continue to implement bicycle parking and encourage its installation by developers, business owners, schools, and other institutions.
12. Transportation and operational agencies should continue to coordinate with the county emergency and hazard mitigation plans
13. Transportation and operational agencies should continue to work closely with transit systems.

CONCLUSION

Following September 11, 2001 and more recent events, security of our nation's transportation system has become an important issue. The focus of transportation officials has been to determine ways technology can assist in making transportation systems more secure. Although the immediate organizational response to security incidents and disasters will be the responsibility of security and public safety agencies, there is an important role that RPA 8 can play in promoting coordinated planning in anticipation of unexpected events or natural disasters. RPA 8 can play an important role in improving the coordination and communication among the many different operating agencies in the region.

7

FREIGHT

The efficient movement of goods is one of the keys to effective competition in a world market system. As a result, RPA 8 has recognized that providing efficient systems for moving goods will help create a competitive advantage in the global market. This chapter focuses on four freight modes: truck, rail, water-borne, and air freight. Although each of the freight shipping options are described separately, the different modes are often used in combination, which is referred to as intermodal freight. This element of the RPA 8 LRTP will focus on the current and predicted freight movement patterns as well as existing air, barge, and rail facilities in the region.

INBOUND DOMESTIC FREIGHT

The RPA 8 LRTP uses data from the Iowa DOT Freight Model and Freight Analysis Framework (FAF) to create a comprehensive picture of freight movement in and out of the region. Understanding these movements will help RPA 8 plan for future transportation investments. Iowa DOT provided data for the top ten inbound and outbound commodities for 2015 and projected data for the year 2040.

Figure 7.1 illustrates the top ten inbound commodities for 2015 and 2040. The top inbound commodities are cereal grain and gravel. Eight of the top ten inbound commodities such as chemical products (106%), animal feed (67%), and inbound shipments of cereal grains (66%) are expected to increase by 2040. Other commodities will see rapid growth, albeit totaling less in tons than the three mentioned above. These are natural sands, nonmetal products, gravel, waste scrap, and other agricultural products. Coal is the commodity that is expected to see the largest decrease over the coming decades. In 2040, coal tonnages are expected to decline 24% from what they were in 2015.

OUTBOUND DOMESTIC FREIGHT

Figure 7.2 illustrates top ten outbound commodities for 2015 and 2040. The top outbound commodities are cereal and gravel. Outbound commodities expected to increase by 2040 include machinery (90%), other agricultural products (84%), and outbound shipment of natural sand (64.5%). There are many commodities that will see rapid growth, albeit totaling less in tons than the three mentioned above. These are natural sands, animal feed, cereal grain, chemical products, and nonmetal mineral products.

The data in Figures 7.1 and 7.2 show that the top commodities in and out of the RPA 8 region will see the fastest growth. Many of the commodities that have the fastest growth rates are commodities typically associated with high values per ton, such as chemical products, manufactured products, transport equipment, machinery, and electronics.

Figure 7.1 Top Ten Inbound Commodities to the RPA 8 Region 2015 and Projected 2040

Source: Iowa DOT

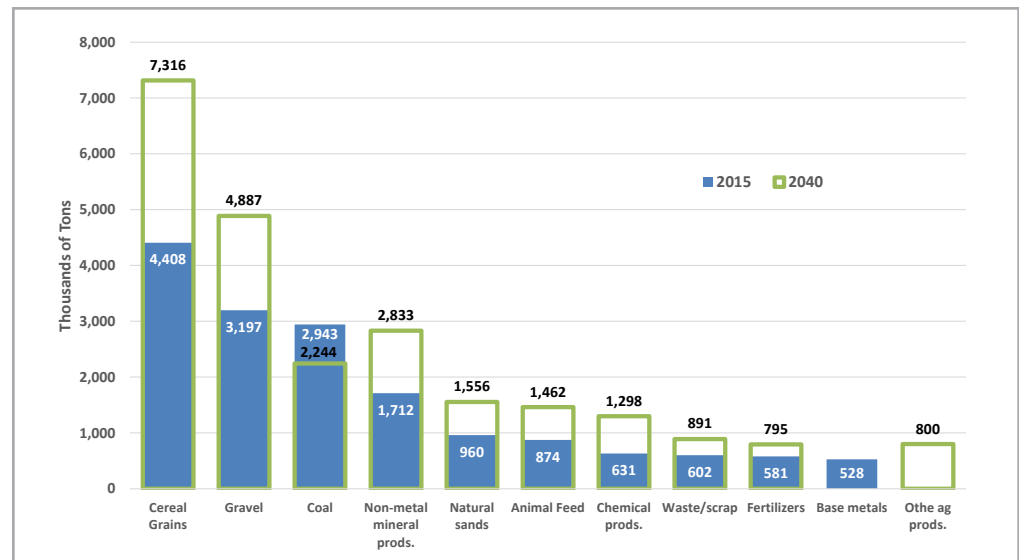
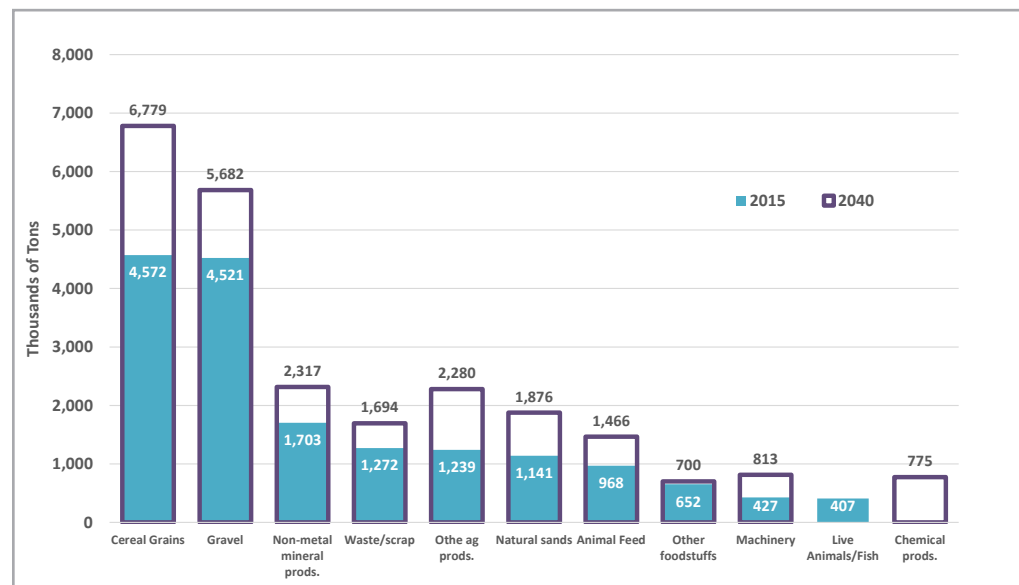


Figure 7.2 Top Ten Outbound Commodities from the RPA 8 Region - 2015 and Projected 2040

Source: Iowa DOT



MODAL USE

The region's highways connect the region's businesses to the rest of the state and the nation. US Highway 20, US Highway 151/61, US Highway 30, US Highway 67, and US Highway 52 provide important connections for freight that is moved by truck. Trucking is the dominant mode of transportation for freight and is expected to remain dominant in the future. Rail and water modes carry far fewer tons than trucks; however, primary commodities such as cereal grain use water and rail in combination with truck. Intermodal shipping combining different modes, such as truck-water or truck-rail, for example, is expected to grow for out-

bound freight over the coming years, but there is an expected decrease in inbound traffic. Figure 7.3 provides current and future tonnage by mode.

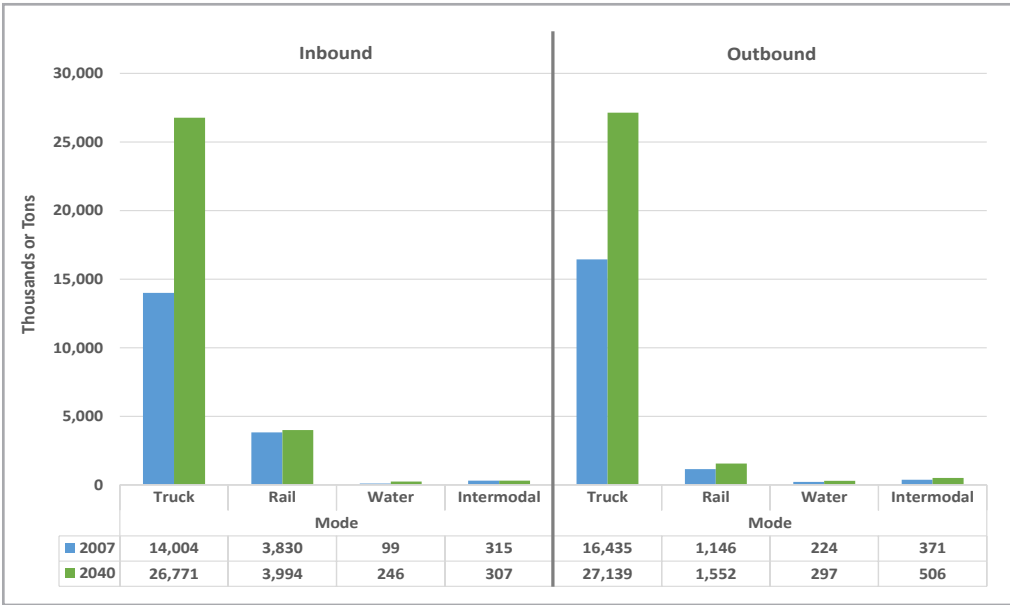


Figure 7.3 Current and Future Tonnage by Mode

Source: Iowa DOT

Figure 7.4 maps 2015 truck traffic on the RPA 8 region’s primary highways. The map shows that US Highways 20, 151, 61, and 30 carry the most freight traffic. As freight volume continues to grow, these routes will continue to be critical segments of the region’s freight network.

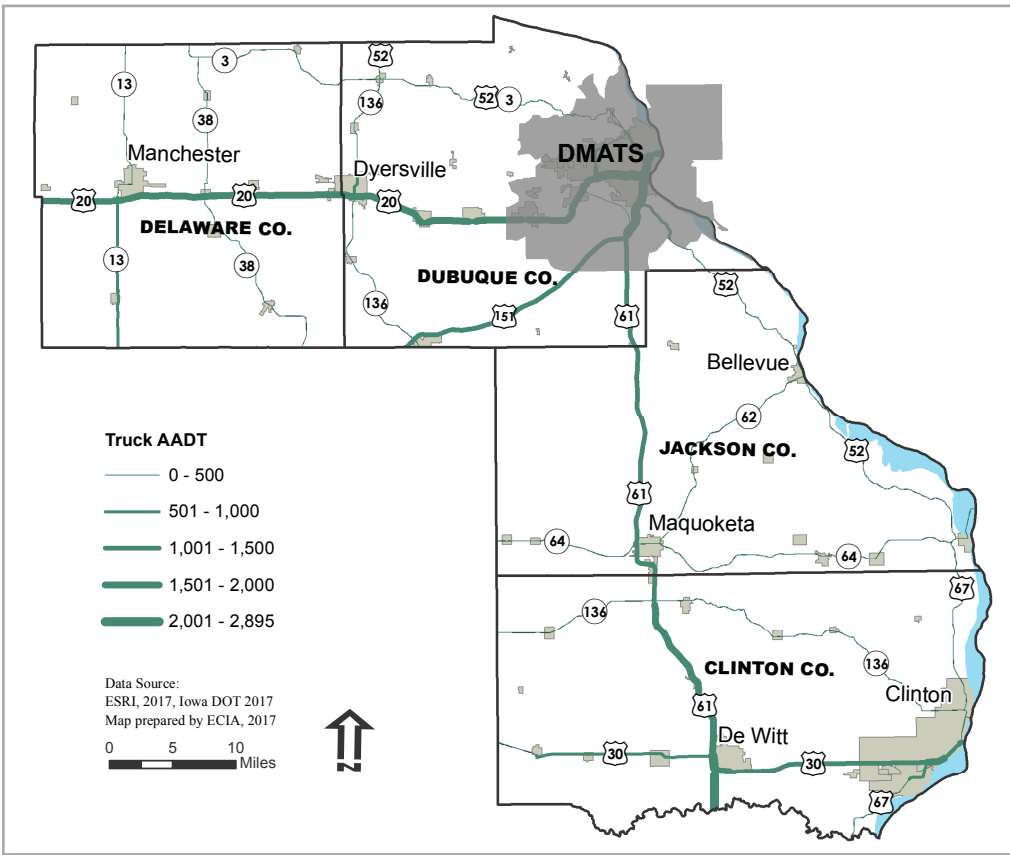


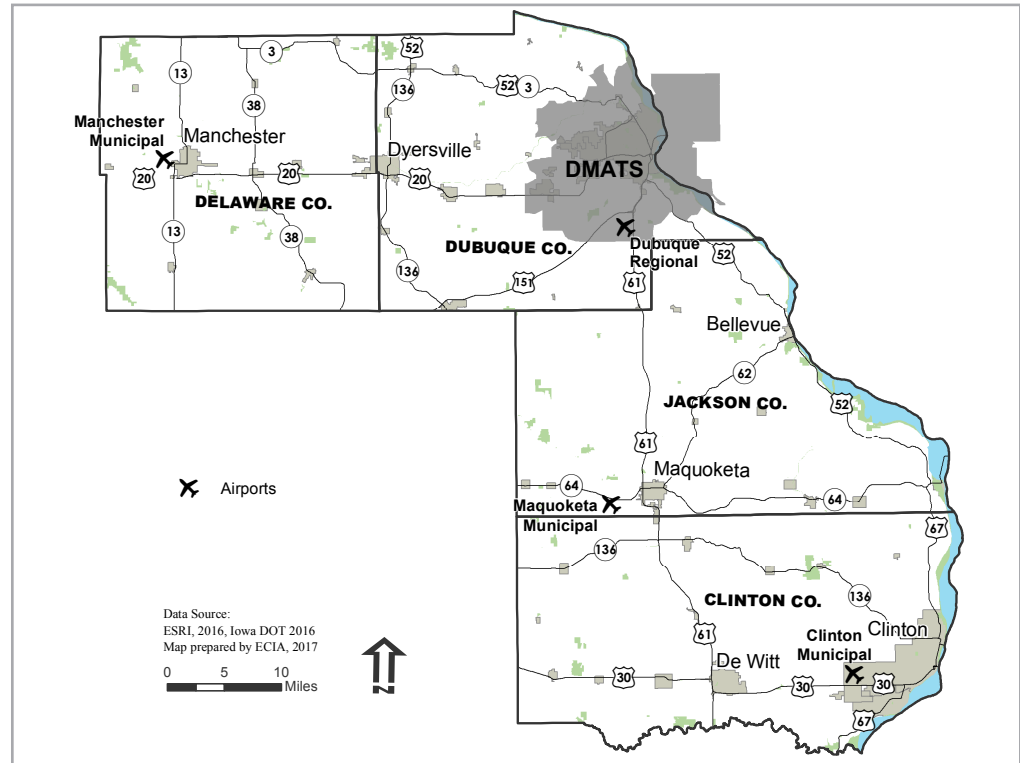
Figure 7.4 Truck AADT.

Source: Iowa DOT, 2015

AIRPORTS

The RPA 8 area is served by one commercial airport in Dubuque, and municipal airports in Manchester, Maquoketa, and Clinton. Currently, the freight transportation through the region's airports is limited, as Cedar Rapids, IA and Rockford, IL are located within reasonable driving distance and both serve as major air freight hubs for the surrounding area. However, airports could provide an opportunity for future freight expansion through projects such as the Clinton Railroad. Figure 7.5 maps the location of airports in RPA 8 region.

Figure 7.5 Airports
Source, Iowa DOT, 2017



Clinton Municipal Airport. The Clinton Municipal Airport is owned and operated by the City of Clinton. The Clinton Municipal Airport serves the general aviation needs of the City of Clinton and Clinton County. The Iowa Aviation System Plan identifies the Clinton Municipal airport as an Enhanced Service airport. Enhanced Service airports have runways 5,000 feet or greater in length with facilities and services that accommodate a full range of general aviation activity, including most business jets. The airport serves business aviation and is a regional transportation and economic center in the state. There were 25 single engine and 2 multi engine aircrafts based at Clinton (in 2010) generating approximately 11,550 annual operations. These figures are projected to increase to 42 aircraft and 14,700 annual operations by 2030.

Dubuque Regional Airport. The Dubuque Regional airport is owned by the City of Dubuque. The FAA recognizes the airport as playing a role in the national airport system and includes the airport in the National Plan of Integrated Airport Systems (NPIAS) as a non-hub primary commercial service airport. (A non-hub airport is one that enplanes more than 10,000, but less than 0.05 percent of the total U.S. passengers.) The airport is eligible for primary passenger entitlement funding. The Dubuque Regional Airport serves the aviation needs of the City of Dubuque, Dubuque County and surrounding counties.

There were 61 single engine, 11 multi engine and two jet aircraft based at Dubuque (in 2010) generating approximately 49,608 annual operations. These figures are projected to increase to 95 aircraft and 56,161 annual operations by 2030.

Manchester Regional Airport. The Manchester Municipal Airport is owned and operated by the City of Manchester. The Iowa Aviation System Plan identifies the Manchester Municipal Airport as a Basic Service airport. Basic Service airports have runways 3,000 feet or greater in length with facilities and services customized to meet local aviation needs. There were 14 single engine aircraft based at Manchester (in 2010) generating approximately 3,500 annual operations. These figures are projected to increase to 18 aircraft and 4,500 annual operations by 2030.

Maquoketa Regional Airport. The Manchester Municipal Airport is owned and operated by the City of Manchester. The FAA recognizes the airport as playing a role in the national airport system and includes the airport in the National Plan of Integrated Airport Systems (NPIAS) as a general aviation airport, which makes the airport eligible for federal funding. The Iowa Aviation System Plan identifies the Maquoketa Municipal Airport as a Local Service airport. Local Service airports have runways less than 3,000 feet or have turf runways as the primary runway. Local Service airports generally have limited, if any, airport services that support limited local aviation activity

There were 14 single engine and 5 multi engine aircraft based at Maquoketa (in 2010) generating approximately 3,750 annual operations. These figures are projected to increase to 19 aircraft and 4,750 annual operations by 2030.

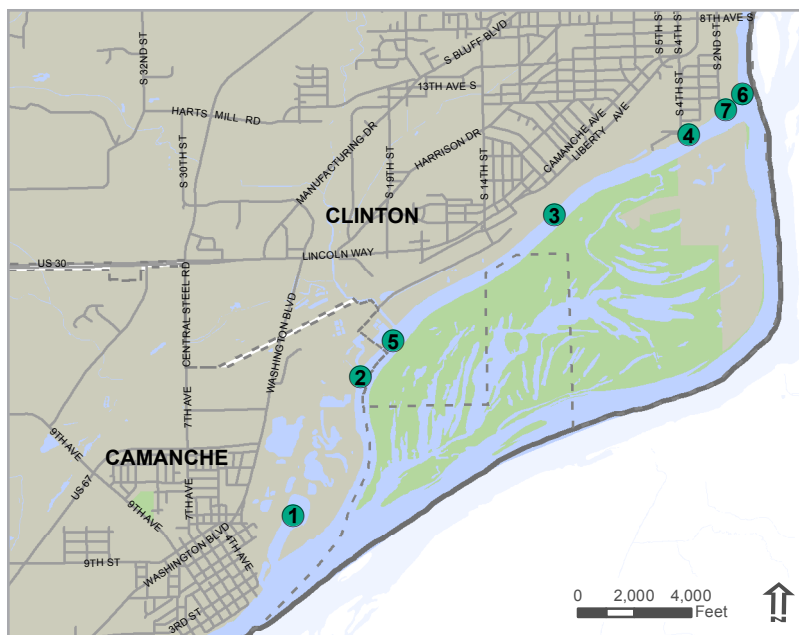
BARGE FACILITIES

The Mississippi River is a valuable asset to the RPA 8 region, providing direct connectivity to 10 states and numerous cities on its journey to the Gulf of Mexico. The river is currently being used for incoming and outgoing freight. The ports, terminals and fleeting areas in Iowa provide jobs and income for their communities and support Iowa industries dependent on the river for transportation. River transportation, including our harbors and terminals, are an engine for continued economic growth. Figure 7.6 provides the location of barge facilities in the RPA 8 region.

- 1) American River Transportation Company
 - Coal, steel, scrap, pig iron, salt, Scotts fertilizer, pipes, dry bulk, general cargo, and heavy lift capacity
- 2) Vertex Chemical Corporation
 - Receipt of coal for plant consumption
 - Plant trackage in rear connects with Burlington Northern Santa Fe Railway, Union Pacific Railroad and Iowa, Chicago & Eastern Railroad
- 3) ADM Corn Processing
 - Shipment of grain
 - Plant trackage in rear connects with Burlington Northern Santa Fe Railway, Union Pacific Railroad and I,C&E Railroad
 - Receipt of caustic soda, receipt and shipment of industrial and beverage alcohol, ethanol and crude and refined vegetable oil
 - Plant trackage in rear connects with Burlington Northern Santa Fe Railway, Union Pacific Railroad and I,C&E Railroad
- 4) ADM/Growmark
 - Mooring barges for cleaning, maintenance and repair; mooring barges for fleeting
- 5) M.L. Kapp Station
 - Shipment of corn pellets

Figure 7.6 Barge Facilities in RPA 8 Region

Source: Iowa DOT, 2017,
US Fish and Wildlife
Service, 2017



- 6) ARTCO Fleeting Services
 - Mooring barges for fleeting
 - Receipt of caustic soda
- 7) Clinton Municipal Dock
 - Receipt of coal; receipt and shipment of steel products and miscellaneous bulk materials; shipment of grain
 - One surface track serving under-track pit on apron and two serving warehouses in rear connect with Burlington Northern Santa Fe Railway, Union Pacific Railroad

RAIL FACILITIES

The rail network that passes through the region is another valuable freight resource for the region. Four Class I rail carriers serve the RPA 8 area. Class I railroads are national railroads that typically operate over thousands of route miles, employ thousands of people, and have revenues and capital budgets in the billions of dollars collectively. There are seven Class I railroads in the United States and Canada; some have transportation linkages to Mexico. The following describes the four carriers in general terms. Figure 7.7 provides the location of railroads in RPA 8 region. The description below provides details of each carrier and major rail projects in the region.

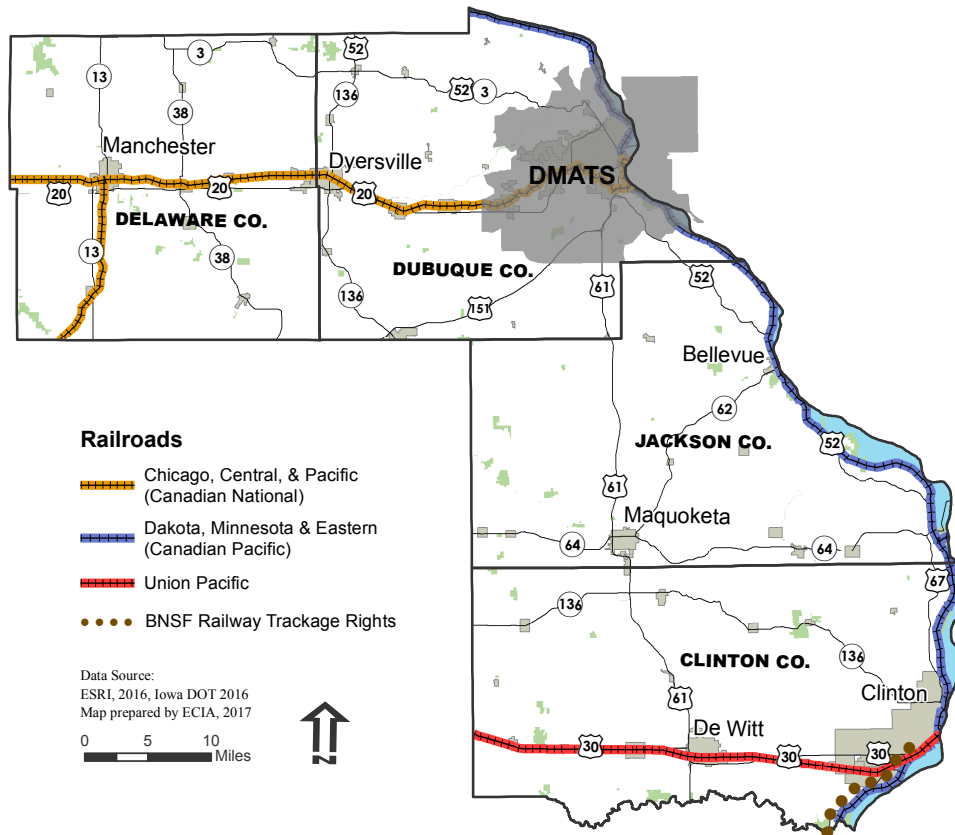


Figure 7.7 Railroads

Source: ESRI, 2016.

Iowa DOT, 2016.

Canadian Pacific (CP). CP operates in Iowa as the Dakota, Minnesota, and Eastern Railroad. CP's route through the RPA 8 area runs north and south following the Mississippi river through Dubuque, Jackson, and Clinton Counties. CP's route crosses the Mississippi River at Sabula heading towards Chicago. CP operates a railroad network in the United States and Canada with a total of 14,000 route-miles.

Burlington Northern Santa Fe (BNSF). BNSF Railway, a wholly owned subsidiary of Berkshire Hathaway, is a Fort Worth, Texas-based Class I railroad with a network of approximately 32,500 miles in the U.S. and Canada. BNSF does not operate many route miles within the RPA 8 area, but it does operate one the on the east side of the Mississippi River in Illinois, and on a line that runs between the Quad Cities and Camanche.

Canadian National (CN). CN operates in the RPA 8 area as the Chicago Central and Pacific Railroad. CN operates a route that runs east and west through

Delaware and Dubuque counties, and a route that runs north and south between Manchester and Cedar Rapids. CN is the only railroad which crosses the continent east-west and north-south, serving ports on the Atlantic, Pacific, and Gulf coasts.

Union Pacific. In the RPA 8 area Union Pacific operates a route that runs east and west across Clinton County. The route crosses the Mississippi River at Clinton. Union Pacific is the largest railroad in North America, operating in the western two-thirds of the United States. The railroad serves 23 states, linking every major west coast and gulf coast port and provides service to the east through its four major gateways in Chicago, St. Louis, Memphis, and New Orleans.

RAIL PLANNING ISSUES

The freight rail network will continue to play an essential role in the RPA 8 region's future economic growth. The following issues have been identified as important to the future of rail transportation in the region.

Railroad Access. Enhanced access to the Iowa railroad network will help the region's shippers to remain competitive in the global marketplace and to spur economic development and growth in employment and income. Enhanced railroad access could be provided through:

- Rehabilitation of existing railroad branch lines;
- Development of improved or new industrial spurs;
- Optimization of existing access to transload and intermodal facilities in and construction of additional such facilities to meet demand for multimodal transportation and to address numerous transportation challenges; and,
- Development of coordination and communication strategies for locating and securing available rail equipment a.

Bottlenecks. Bottlenecks exist throughout Iowa's railroad network, which constrain railroad operating capacity, efficiency, velocity, and safety, as well as freight mobility. The *Iowa State Rail Plan* includes an inventory of 36 rail bottlenecks across the state. The list includes the Union Pacific swing-span bridge over the Mississippi River at Clinton. The bridge closes for rail traffic to accommodate barge passage on the river during navigation season. The time typically required to stop trains, open the bridge for river traffic, return the bridge to its original position, and restore normal railroad operations cause major delays to UP

Port-Rail Needs and Opportunities. Investments in the connectivity between the region's railroads and barge facilities could provide the opportunity for enhanced multimodal transportation. Such investment could include the construction or rehabilitation of existing rail connections between principal railroad lines and river port properties and additional sidings, spurs, or yard tracks for switching, staging, and storing railcars at or near port facilities.

LINCOLNWAY RAILPORT

The Lincoln way railport is a project that The Lincolnway Railport project is the result of a partnership consisting of the Clinton Regional Development Corporation (CRDC), Union Pacific Railroad (UP), and the Iowa Department of Transportation (Iowa DOT). Lincolnway Industrial Rail and Air Park (LIRAP) is an important economic development and freight transpiration project planned for the City of Clinton. The LIRAP is a 1,000-acre+ industrial park, designed to attract both large and small industries that require rail and barge transportation. The LIRAP site is located 6 miles west of down town Clinton, directly south of the Clinton Municipal Airport and in between US Highway 30 and the Union Pacific (UP) east-west main line.

Figure 7.8 Lincolnway Railport Costs

Improvements	Cost
Land Acquisition	\$22,072,500
Roadway Improvements & Grading	\$17,470,500
Water	\$1,976,000
Sanitary Sewer	\$2,767,000
Storm Sewer	\$3,789,000
On-Site Park Improvements	\$48,075,000
Turn Lane Improvements	\$425,000
Water extension to site	\$3,000,000
Roadway improvements	\$5,000,000
Off-Site Park Improvements	\$8,425,000
Total Development Cost	\$56,500,000

LIRAP plans call for a 9,000-foot rail spur off the UP main line that will give the LIRAP's tenants the unique ability to ship products anywhere in the world. This project will create a national hub for an array of manufacturers, to receive raw materials and transport finished goods nationally and globally. The rail infrastructure is designed to accommodate transportation of large turbines and other large load wind industry components, thus removing these loads from the nation's roadways. The state of Iowa has awarded funding for the initial phases of the LIRAP. The City of Clinton and its project partners have been working to secure additional funding to complete construction on all phases of the project.

According to CRDC forecasts, within five years of its completion, the railport is expected to generate 1,000 jobs, increase wages by \$25 million, increase local spending by \$23.5 million, and encourage 180 million in new capital investment. The Railport is on UP's most congested mainline. To limit further impediments to traffic on the main line, UP required the construction of enough track to accommodate trains of over a mile in length. Total cost for both phases is estimated at \$14 million (Phase I = \$10.8 & Phase II = \$3.2). The CRDC expects the completion of Phases I and II within the next five years. Figure 7.8 provides the total estimated project cost for Linclonway Railport.

PIPELINES

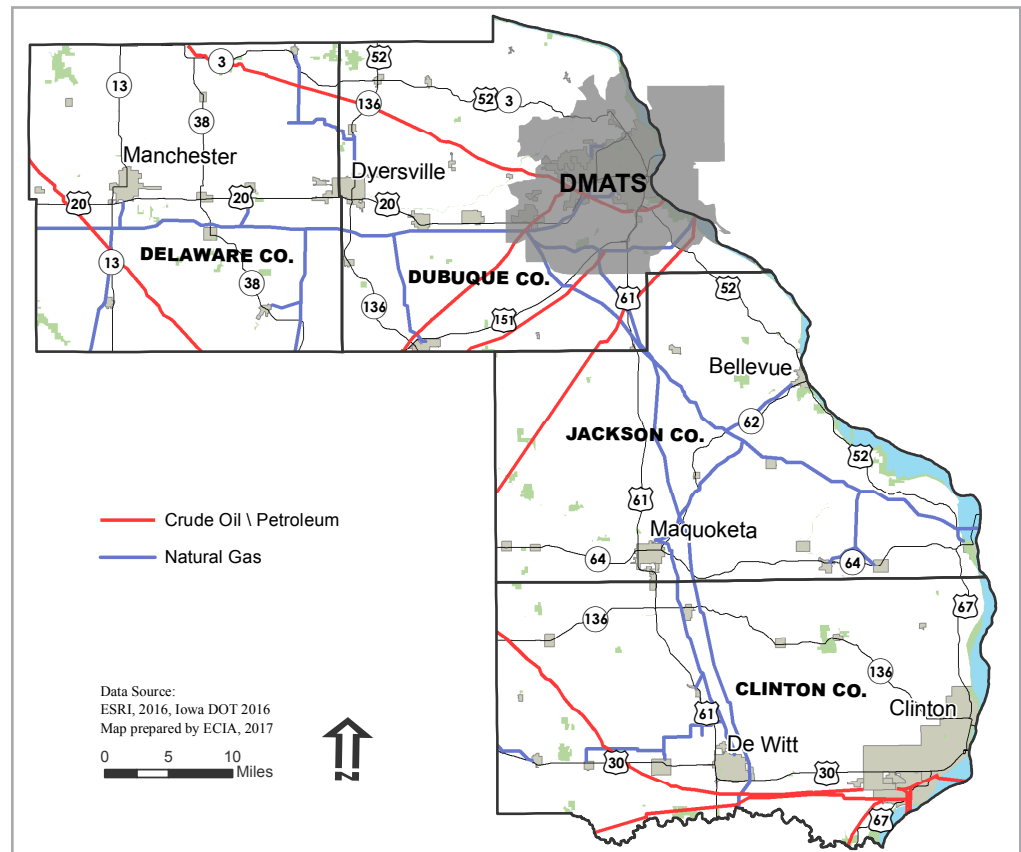
There are several pipelines that pass through the RPA 8 region shipping multiple commodities. Pipelines transport crude oil and natural gas to communities in RPA 8 from outside of the region. Figure 7.9 provides the location of pipelines in the RPA 8 region.

All pipelines in service in the RPA 8 region are privately owned. As such, individual owners will identify and rectify any deficiencies associated with the pipeline system. The RPA 8 will work to coordinate construction projects to maintain the integrity of the service offered by the pipelines. RPA 8 will also work with the pipeline vendors to provide multi-modal transfer of their respective services.

Figure 7.9 Pipelines

Source: ESRI, 2016.

Iowa DOT, 2016.



EIGHT COUNTY FREIGHT STUDY

RPA 8 is currently working with surrounding counties in Iowa and Illinois to prepare a multimodal, intermodal freight plan for the eight county Blackhawk Hills & East Central Intergovernmental Association (ECIA) region. When complete, the plan will identify future projects and policies that will enhance the mobility of both people and goods while mitigating the negative impacts on mobility, safety, environment, and quality of life. The region includes the Iowa counties of Clinton, Delaware, Dubuque, and Jackson; and the Illinois counties of Carroll, Jo Daviess, Stephenson, and Whiteside. The 2010 census population of the region was 324,655. Figure 7.10 provides a map of the study area.

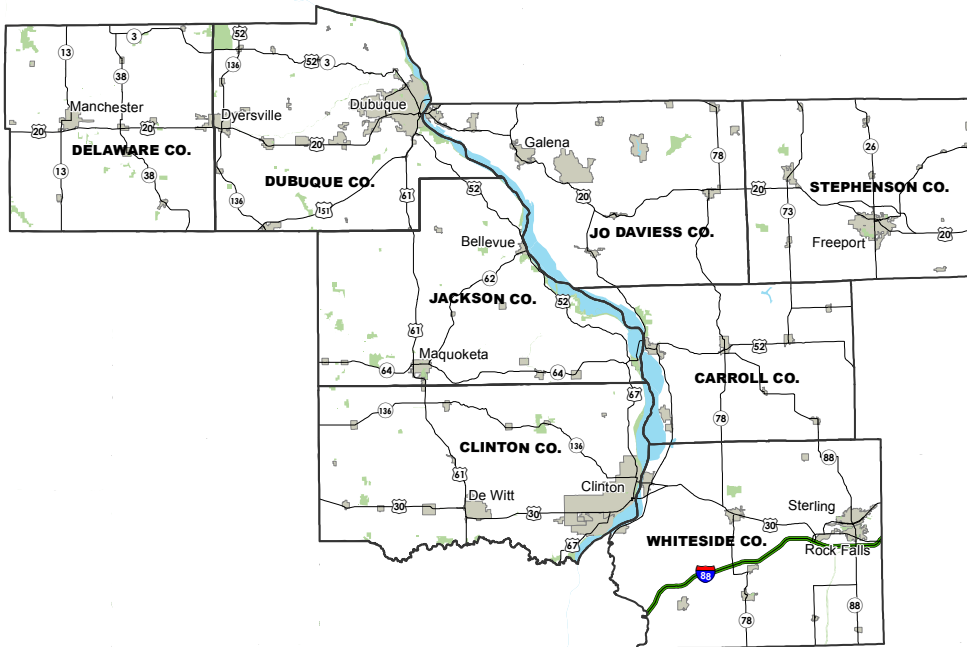


Figure 7.10 Freight Study Area

Project funders believe a broader study should be conducted for the entire region in light of changing conditions in transportation and the economy. The Freight Study will study the following objectives:

- Inventory regional freight facilities and characteristics.
- Preparation of study reports that inventory, forecast, evaluate, and identify freight needs and challenges facing the region.
- Development of a regional consensus on the priority of freight-related programs and projects.
- Prioritization of long, medium, and short-term improvements to improve freight movement.
- Evaluation of the costs and benefits of proposed solutions.
- Support the data needs necessary for Blackhawk Hills & ECIA region to move further towards the creation of a multimodal, intermodal freight component to the Regional Model.
- The Regional Model will develop a commodity flow database for exist-

ing and future freight flows in an easy to use/accessible format. The model will include key modes, freight corridors, commodities, tonnage, value, and origins and destinations at regional, state, and national levels. The model will provide the characteristics and magnitude of current freight activity - volume, type, and location

- Development of solutions that address challenges and facilitate efficient freight movement within, to, from, and through the region.
- Collection of base freight data that will support on-going regional freight planning activities.
- Provide key recommendations for existing and future roadways, rail, river, intermodal, and other freight facilities to be included in the 2040 Region 8 Long Range Transportation Plan in addition to other appropriate regional and local plans.

RECOMMENDATIONS

- Update 2040 Region 8 Long Range Transportation Plan with recommendations from Eight County Freight Study.
- Form an active freight committee with public and private sector members.
- Implement short and long range recommendations provided in Eight County Freight Plan
- Closely coordinate area roadway planning with freight objectives, including access and mobility in the context of other community planning objectives.

CONCLUSION

Freight movement is key to economic growth and prosperity in the region. It is important that policy makers, industry specialists, and transportation planners continue to acknowledge the importance of providing efficient systems for moving goods and creating a competitive advantage in this global market.

8

ENVIRONMENTAL

Transportation often generates negative externalities affecting safety, human health, and the natural environment. For this reason, the environment is one of the planning factors included in the RPA 8 LRTP. Negative externalities are caused by the construction and maintenance of infrastructure, and by the operation of motor vehicles. Infrastructure externalities include effects on water systems (dewatering, runoff, sediment loadings, and erosion), soil processes (material related pollution), and ecosystems (habitat destruction, degradation, and fragmentation).

Transportation infrastructure improvements typically make land more attractive for commercial and residential development. The pressure for land development is not as high in RPA 8 as it is in other jurisdictions. Yet, future development still represents a significant concern with regard to natural as well as other resources. In this context, transportation infrastructure projects in the RPA 8 region warrant the consideration of potential ecological and environmental effects. Various environmental regulations and mitigation measures that aim to minimize the impact of road projects are proposed in this chapter.

ENVIRONMENTAL SAFEGUARDS

Conservation, water, and air quality regulations are the most applicable environmental safeguards for transportation projects. Projects advanced by the Iowa DOT must comply with a number of environmental requirements. The National Environmental Policy Act (NEPA) requires an environmental review process when federal funds are applied to transportation projects.

Transportation projects vary in type, size, complexity, and potential to affect the human and natural environment. To account for the variability of project impacts, three basic “classes of action” are allowed and determine how compliance with NEPA is carried out and documented.

1. An environmental impact statement (EIS) is prepared for projects where it is known that the action will have a significant effect on the environment. The following are examples of actions that normally require EIS.
 - a. A new controlled access freeway.
 - b. A highway project of four or more lanes on a new alignment.
 - c. New construction or extension of fixed-rail transit facilities.

- d. New construction or extension of a separate roadway for buses or high-occupancy vehicles not located within an existing highway facility.
2. An environmental assessment (EA) is prepared for actions in which the significance of the environmental impact is not clearly established. Should environmental analysis and interagency review during the EA process find a project to have no significant impacts on the quality of the environment, a finding of no significant impact (FONSI) is issued. If during processing of the EA, it is determined that significant impact will occur; an environmental impact statement will be prepared.
3. Categorical exclusions (CEs) are issued for actions that do not individually or cumulatively have a significant effect on the environment.

ENVIRONMENTAL MITIGATION

The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.

During project development, RPA 8 members to work to avoid or minimize any detrimental effects transportation projects may have on the environment. RPA 8 encourages member entities to follow the steps used to define mitigation in the Council on Environmental Quality (CEQ) regulations (40 CFR §§ 1500-1508).

The CEQ regulations define mitigation as:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- 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.

Avoidance of negative impacts to the environment should always be the primary goal during project implementation. When this cannot be achieved, minimizing impacts and compensating for them can lessen negative environmental impacts resulting from transportation projects.

RPA 8 consults with several environmental resource agencies throughout its planning process. These organizations include: the Iowa Department of Natural Resources, the US Environmental Protection Agency, and several local agencies including county conservation departments and soil and water conservation districts.

ENVIRONMENTAL IMPACT SCREENING

A preliminary environmental impact screening can identify potentially serious impacts that could delay or completely shut down a project. Identifying such issues in the early planning stages provides local governments with the opportunity to avoid or mitigate undesirable environmental impacts through modification or elimination of the project. Early “fatal flaw” analysis of this type helps reduce the possibility that subsequent, more detailed analyses will uncover unexpectedly serious environmental impacts. This approach helps reduce the risks that are inherent in the transportation planning process, and helps ensure that local governments do not waste time and resources unnecessarily.

Since the transportation planning activities of RPA 8 are regional in scope, this environmental screening discussion does not provide a detailed analysis of individual projects within the LRTP, but rather offers a summary of the potential impacts on environmentally sensitive areas. RPA 8 conducts this analysis to identify conflicts between planned projects and environmentally sensitive areas. The analysis process is an effort to minimize negative effects that a project can have on environmentally sensitive areas.

RPA 8 staff preformed a qualitative screening to assess the potential environmental impacts of projects planned within the RPA 8 area. Staff created maps of sensitive environmental areas in each RPA 8 county. The maps are designed to provide general information to the public and to decision-makers as they consider transportation priorities in this LRTP and as they plan for future projects. Figures 8.1-8.4 include the environmental screening maps. The maps include the following factors: public lands, cemeteries, wetlands, and LUST Sites. Each item is described below.

- **Public Lands.** Park or recreational use impacts are identified using data from the Iowa DNR. In the early planning stages, it is not always possible to know if a project will affect an identified public area. All that can be known from this analysis is that there is a potential for such an impact.
- **Cemetery.** Cemetery impacts are identified using data from the Iowa DOT. In the early planning stages, it is not always possible to know if a project will affect an identified cemetery. All that can be known from this analysis is that there is a potential for such an impact.
- **Wetlands.** Wetland impacts were identified using the National Wetland Inventory. The maps identify known wetlands that could be impacted by transportation improvements. The maps do not include specific drainage or water quality assessments.
- **LUST Sites.** Leaking underground storage tank (LUST) sites are locations that contain contamination from petroleum products or other substances classified as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). A more detailed analysis is required if a project encroaches on one of these sites.

ADDITIONAL FACTORS

Staff was not able to map all environmental factors. In most cases, factors were not mapped because data was not available or because mapping is not practical

because a factor occurs frequently (e.g. farmland). While not mapped, these factors are still important and should be considered as part of an environmental analysis.

ENVIRONMENTAL JUSTICE

Environmental Justice is a concept intended to avoid the use of federal funds for projects, programs, or other activities that generate disproportionate or discriminatory adverse impacts on minority or low income populations. This effort is consistent with Title VI of the 1964 Civil Rights Act, and is promoted by the U.S. Department of Transportation (USDOT) as an integral part of the long-range transportation planning process. The environmental justice assessment is based on three basic principles, derived from guidance issued by the USDOT:

- The planning process should minimize, mitigate, or avoid environmental impacts (including economic, social, and human health impacts) that affect minority and low-income populations with disproportionate severity.
- The benefits intended to result from the transportation planning process should not be delayed, reduced, or denied to minority and low income populations.
- Any community potentially affected by outcomes of the transportation planning process should be provided with the opportunity for complete and equitable participation in decision-making.

As part of this LRTP update, RPA 8 staff identified the geographic distribution of low-income and minority populations in order to assess the effects of various transportation investments in the plan. Maps of low income and minority population are included in Chapter 2.

HISTORICAL/ARCHEOLOGICAL

The RPA 8 region has many historic properties such as bridges, barns, archaeological sites, places of religious or cultural significance, historic cemeteries, and historic districts. Early in the project planning process RPA 8 communities should work to identify historic properties potentially affected by a project, assess potential impacts of the project and seek ways to avoid, minimize or mitigate any adverse effects on historic properties. The Office of the State Archaeologist has online mapping resources available to help identify possible archeological and historic sites.

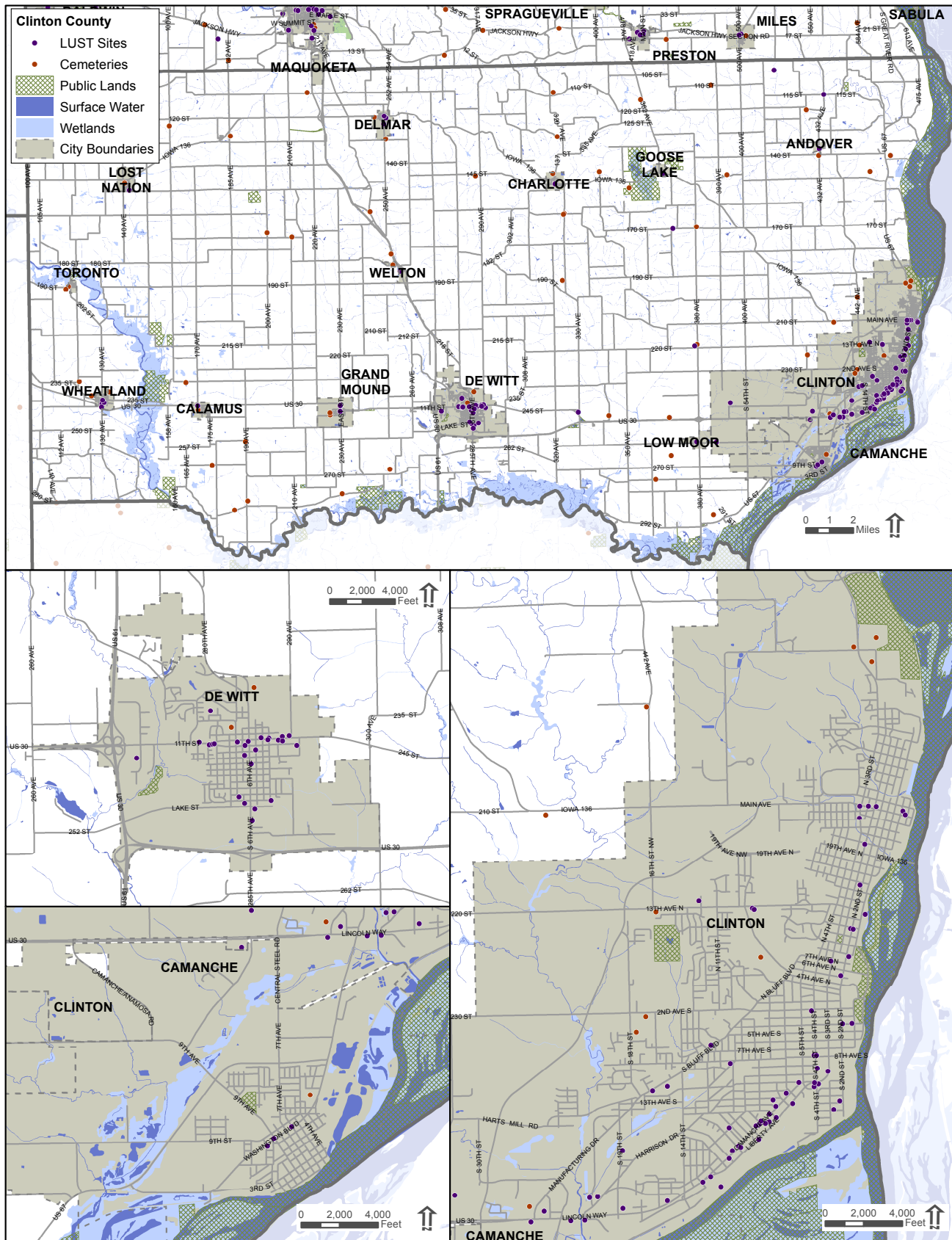
FARMLAND

Agriculture is an important part of the regional economy and much of the rural land in the region is used for farming. RPA 8 communities should work to minimize potential farmland impacts in cases where a project will require additional right-of-way.

CONCLUSION

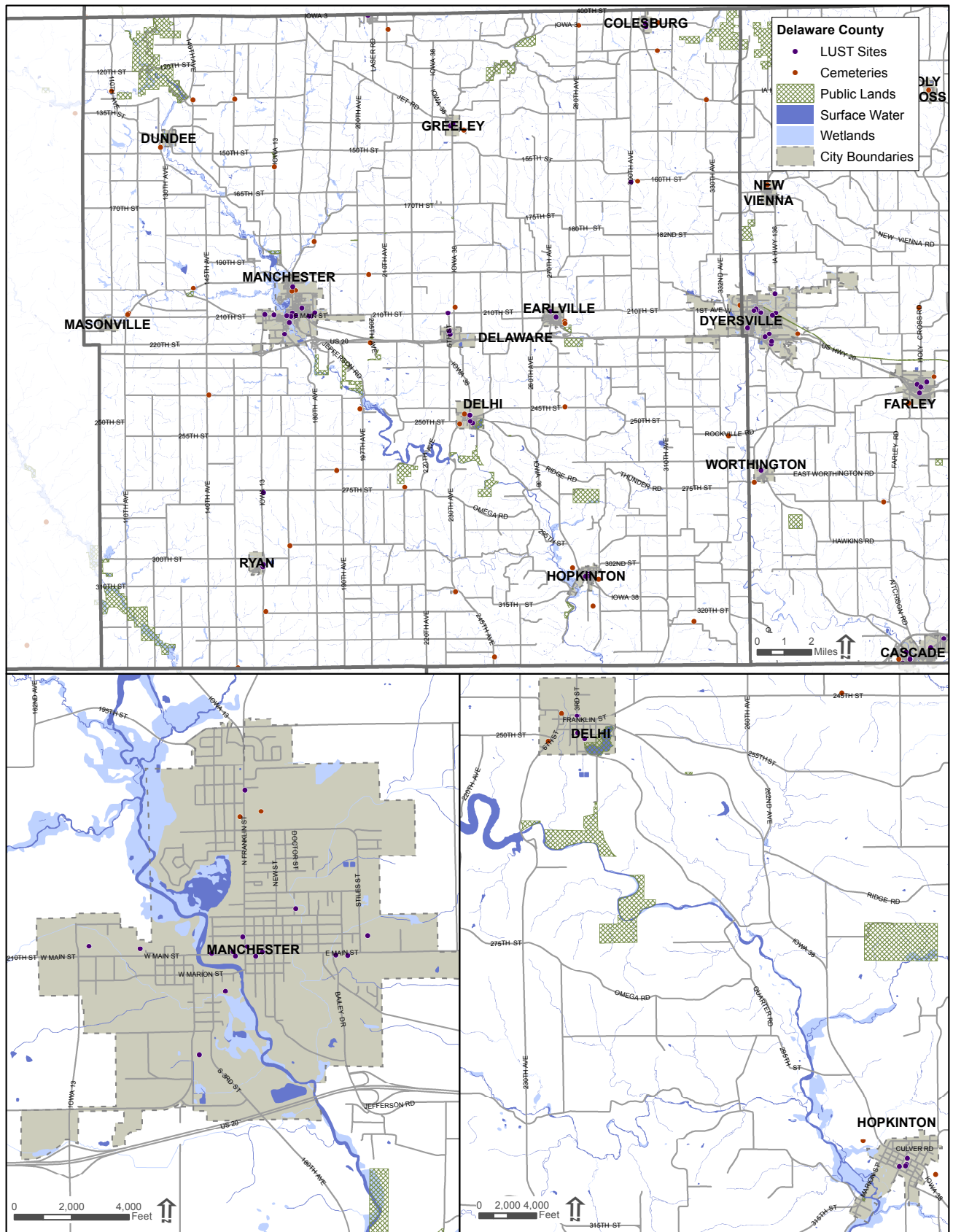
RPA 8 is committed to avoiding and mitigating the negative transportation impacts on the natural environment. The goals objectives, and analysis included in the LRTP will help RPA 8 communities ensure that future generations are able to enjoy the region's abundant environmental resources.

Figure 8.1 Clinton County Environmental



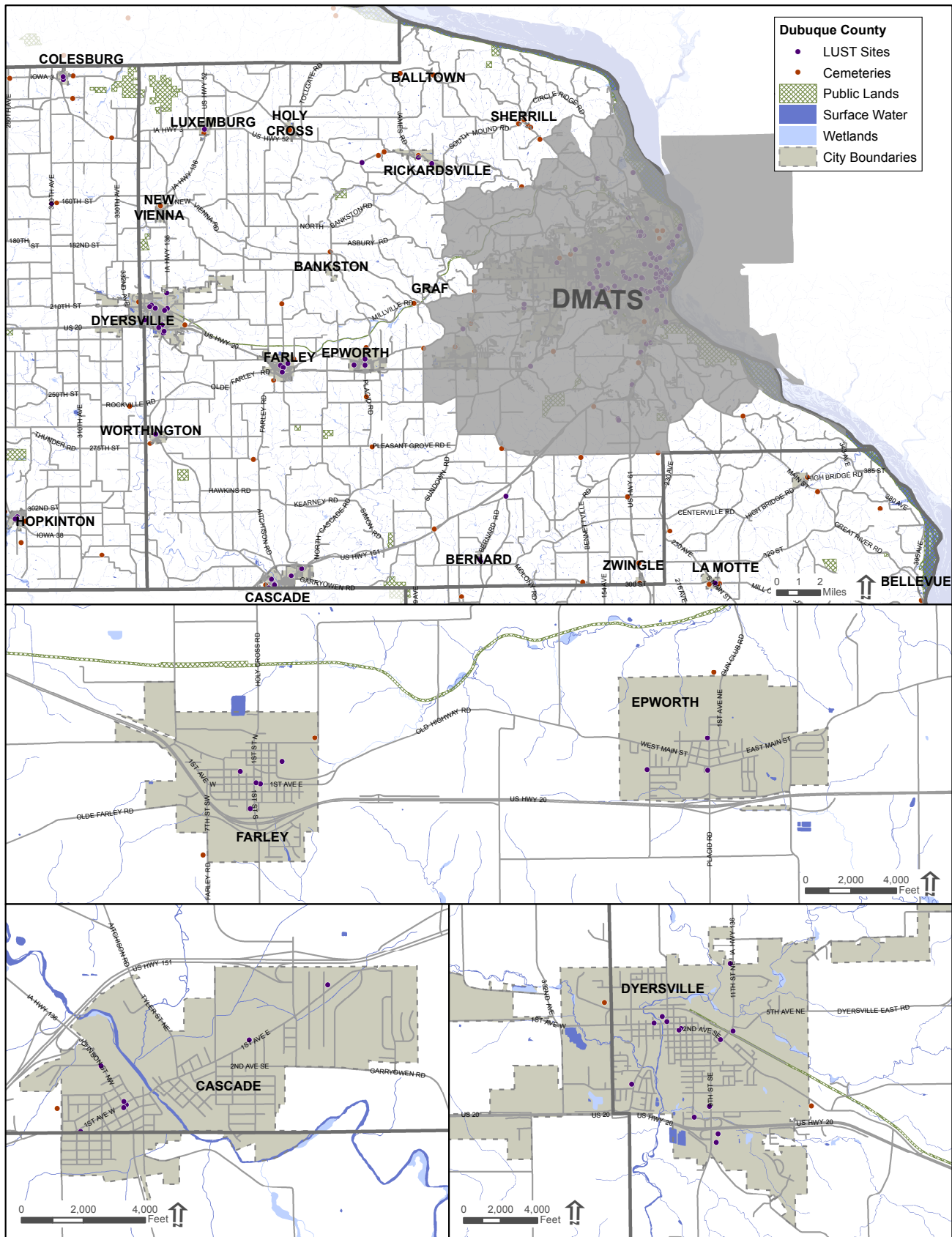
Data Source: Iowa DOT, 2017. Iowa DNR, 2017. US Fish and Wildlife Service, 2017.

Figure 8.2 Delaware County Environmental



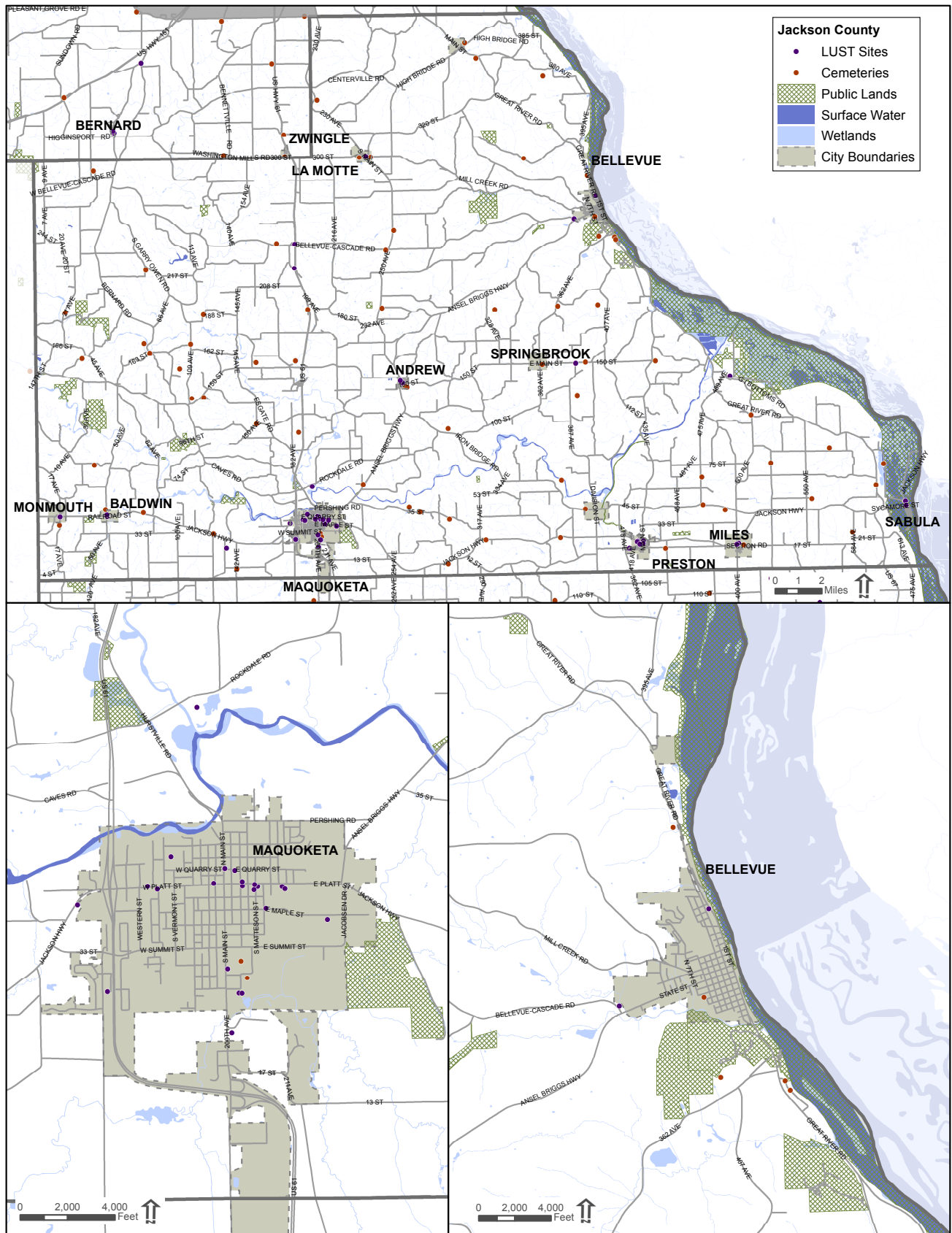
Data Source: Iowa DOT, 2017. Iowa DNR, 2017. US Fish and Wildlife Service, 2017.

Figure 8.3 Dubuque County Environmental



Data Source: Iowa DOT, 2017. Iowa DNR, 2017. US Fish and Wildlife Service, 2017.

Figure 8.4 Jackson County Environmental



Data Source: Iowa DOT, 2017. Iowa DNR, 2017. US Fish and Wildlife Service, 2017.

9

PUBLIC INPUT

Collecting public input is a crucial step in all RPA 8 planning activities including the LRTP. Public participation is an integral part of the transportation planning process. The information and perspectives provided through public participation assist decision-makers and lead to a more meaningful and comprehensive planning process. Good public participation techniques allow planners to identify issues and understand aspects of the transportation system that may be missed when considering a project from a purely technical or political point of view. Effective transportation planning must include the participation of those whose everyday lives are affected by how they are able to get to work, home, school, stores, and services.

RPA 8 PUBLIC INVOLVEMENT PLAN

The RPA 8 Public Involvement Plan (PIP) guides the public participation in the regional transportation planning process. The plan outlines recommended methods to engage the public during the transportation planning & decision making process and informs members of the public how they can be involved.

In keeping with the spirit of public involvement and participation, RPA 8 follows a systematic approach that allows the public to become involved in the transportation planning process. RPA 8 consistently adheres to established guidelines as a means of heightening public involvement. This includes the Title VI population, persons with a disability, the Limited English Proficiency (LEP) population, the Environmental Justice (EJ – low income and high minority) zone populations, and other traditionally underserved groups.

Utilizing various techniques to solicit public involvement has proven to be the most effective means by which to attract citizen involvement. RPA 8 remains committed to using a variety of resources to reach out to the public and attempt to encourage public participation. Figure 9.1 lists available participation methods.

Figure 9.1 Ways to Participate

	Public Meetings Attend and contribute at open public meetings (committees and community outreach events)
	Call us Call us at 563-556-4166 8:00 am - 5:00 pm Monday - Friday
	Write to us Dubuque Metropolitan Area Transportation Study 7600 Commerce Park, Dubuque, IA 52002
	Review documents Carnige Stout Library, Dubuque County library and East Central Intergovernmental Association
	Email us cravada@ecia.org dfox@ecia.org
	Visit our website www.eciatrans.org
	Visit us on socialmedia Twitter.com/ECIATransport Facebook.com/ECIATransportation

RPA 8 is committed to the concept of public participation and will work to ensure that the public plays an active role in transportation planning. The hope is that public participation will reduce unfavorable public opinions of transportation projects by incorporating public sentiment into the planning process.

RPA 8 is required to prepare and update periodically a long-range plan for its planning area. It is an extensive plan that outlines the current 20-year planning horizon for the RPA 8. The LRTP is a living document in that it is constantly under revision and being updated to reflect the area's needs for transportation planning.

The RPA 8 is required by federal regulations to provide citizens, affected public agencies, representatives of transportation agency employees, private providers of transportation, and other interested parties with reasonable opportunity to comment on the LRTP and then publish the plan thereby making it readily available to the public for review.

One or more Public input meetings will be held to gather information during the planning process and one public input meeting will be held for draft plan approval and one for final plan approval.

In the event of revisions, developments and updates to LRTP, there will be a 45-day comment period for the general public to voice any comments pertaining to the proposed changes.

RPA 8 LRTP INPUT

The RPA 8 area is made up of distinct communities containing diverse populations that require different public services. To adequately serve the needs of these unique communities, and to ensure that all communities are represented in the LRTP, RPA 8 created a public input strategy where RPA 8 staff attended meetings of a variety of community groups including city councils and county boards of supervisors. Staff gave a short presentation on the LRTP and engaged in discussions with members of the group. City and County staff and elected officials attended several of the meetings and contributed to the discussion.

Staff provided meeting attendees with a one page handout that included basic information about RPA 8 and the LRTP, and directed people to additional sources of information including: staff email addresses, the RPA 8 website, and RPA 8 social media accounts.

In all, RPA 8 staff collected input at nine meetings during the winter and spring 2017. Figure 9.2 includes a list of the meetings attended. Appendix C includes detailed information from each meeting along with any other input collected on the LRTP.

Date	Meeting	Areas Covered
2/6/2017	Clinton County Board of Supervisors	Rural areas and small cities in Clinton County
2/9/2017	Parks to People	Communities in Jackson and Dubuque Counties
2/13/2017	Dubuque County Board of Supervisors	Rural areas and small cities in Dubuque County
2/13/2017	Delaware County Board of Supervisors	Rural areas and small cities in Delaware County
2/13/2017	Manchester City Council	City of Manchester
2/14/2017	Jackson County Supervisors	Rural areas and small cities in Jackson County
2/20/2017	DeWitt City Council	City of DeWitt
2/28/2017	Clinton City Council	City of Clinton
3/20/2017	Maquoketa City Council	City of Maquoketa

Figure 9.2 Meetings

CONCLUSION

Public participation is an integral part of the transportation planning process. The information and perspectives provided through public participation assist decision-makers and lead to a more meaningful and comprehensive planning process. Input collected through the planning process was integrated into the LRTP's Goals, Objectives, and Recommendations.

10

FINANCIAL

This chapter includes historical analysis and future funding projections for road, bridge, transit, and trail projects. RPA 8 developed projections of future anticipated federal formula funds based on funding amounts authorized in the FAST Act and on past funding levels. These projections represent a conservative estimate of federal formula funding that the region can reasonably expect over the next 20 years. In addition, RPA 8 projected future state and local funds based on historical trends. Combined federal, state and local funds comprise the vast majority of revenues available to maintain and operate the federal-aid transportation system in the region.

FUNDING OVERVIEW FOR ROADS, BRIDGES, AND TRAILS

RPA 8's transportation system improvements are funded through a combination of federal, state, and local funds. RPA 8 member governments and participating agencies utilize this combination of funds for demand management, operational management, and capital-intensive strategies. Federal funding for streets, highways, and bicycle and pedestrian facilities flow through RPA 8.

The following section lists the funding sources that can be used for projects within the region. The section includes the funding sources that the RPA 8 members receive every year and funding sources that are based on an application process.

SURFACE TRANSPORTATION BLOCK GRANT PROGRAM (STBG)

STBG (formerly Surface Transportation Program STP) funds represent the main source of federal funding that can be committed by RPA 8 to transportation improvements. The funding can be used to:

- aid public road jurisdictions with funding for road or bridge projects;
- provide funding for transit capital improvements;
- provide funding for bicycle and pedestrian facilities; and
- provide funding for transportation planning activities.

A minimum of 20 percent non-federal match is required (80 percent federal funding). Road projects must be on federal-aid roads, which includes all federal functional class routes except local and rural minor collectors. Bridge projects may be on any public road.

STBG Funding Estimate: RPA 8 has STP funding history from 2001 to 2015. Future year of expenditure funding was based on linear regression between 2017 and 2045. (\$96.4 million – year of expenditure Dollars) with an annual average of \$2,173,000 and a growth rate of 3.07%.

Transit capital improvement projects require adherence to approved transit procurement procedures and equipment specifications. Project candidates must be part of an approved five-year capital improvement program. Federally funded projects must comply with civil rights protection requirements.

STP HIGHWAY BRIDGE PROGRAM (STP-HBP)

While the Highway Bridge Program was eliminated in MAP-21, a portion of Iowa's STP will continue to be targeted directly to counties and dedicated specifically to county bridge projects. The STP-HBP provides for the replacement or rehabilitation of structurally deficient or functionally obsolete public roadway bridges. A portion of these funds are required to be obligated for off-system bridges. The remaining funds can be used on either on-system or off-system bridges.

The funding requires a local match of 20 percent (80 percent federal funding). The bridge candidate must be classified as structurally deficient or functionally obsolete according to federal guidelines. Bridge replacement candidates must have a structure inventory and appraisal (SI&A) sufficiency rating of less than 50 and average daily traffic of at least 25 vehicles. Bridge rehabilitation candidates must have an SI&A sufficiency rating of 80 or less and average daily traffic of at least 25 vehicles.

TRANSPORTATION ALTERNATIVES PROGRAM (TAP)

The Federal Transportation Alternatives Program (TAP) funds programs and projects defined as transportation alternatives, including: on- and off-road pedestrian and bicycle facilities; recreational trail projects; safe routes to school projects; and projects for planning, designing, or constructing boulevards and other roadways largely in the right-of-way of former divided highways. TAP replaced funding from pre-MAP-21 programs including the Transportation Enhancement Program (TE), Safe Routes to School Program, and National Scenic Byways Program. Minimum 20 percent or more local match is required for regional TAP projects as determined by RPA 8 policy board.

STP-HBP Funding Estimate: The RPA 8 has BR funding history from 2004 to 2016. Future year of expenditure funding was based on linear regression between 2017 and 2045. (\$93.4 Million – Year of Expenditure Dollars) with an annual average of \$2,123,000 and growth rate of 3.0 %.

TAP Funding Estimate: The RPA 8 has TAP/TE funding history from 2001 to 2016. Future year of expenditure funding is based on linear regression between 2017 and 2045. (\$8.9 Million – Year of Expenditure Dollars) with an annual average of \$190,500 and growth rate of 3.47%.

HISTORICAL REVENUE ANALYSIS FOR ROADS BRIDGES, AND TRAILS

Figure 10.1 provides the historical funds received by RPA 8 for streets, highways and bridges from 2001 to 2016. The table does not include funding that RPA 8 is eligible for but did not receive. A growth rate has been assigned to each funding using linear regression method. The growth rate is used to project future funding for the area.

Figure 10.1: Historic Revenue Analysis for Street, Highways & Bridges

Source: IADOT

Fiscal Year	Funding Sources		
	STBG	TAP & TAP Flex	HBP
2001	\$1,855,000	\$165,000	
2002	\$1,877,147	\$171,000	
2003	\$1,877,147	\$169,000	
2004	\$1,912,459	\$171,000	\$1,794,000
2005	\$2,029,429	\$182,024	\$4,048,000
2006	\$1,460,803	\$146,463	\$2,659,000
2007	\$1,464,146	\$148,743	\$3,968,000
2008	\$1,794,783	\$156,106	\$3,022,000
2009	\$2,049,361	\$167,160	\$320,000
2010	\$2,589,903	\$179,793	\$986,000
2011	\$2,628,540	\$190,358	\$1,826,000
2012	\$2,710,773	\$217,896	\$836,000
2013	\$2,587,600	\$206,415	\$1,943,000
2014	\$2,682,877	\$258,269	\$1,520,000
2015	\$2,634,434	\$260,243	\$2,320,000
2016	\$2,620,941	\$258,581	\$3,306,000

RPA 8 NON-FEDERAL FUNDS

Non-Federal Funding Sources

Cities:

- Road Use Tax Funds (RUTF)
- Other Road Monies Receipts
- Receipts, Debt Service

Dubuque County:

- Property Tax
- RUTF
- TJ Revenue
- FM Extension
- Time -21
- Misc. Receipts
- Farm to Market
- Local Option Sales Tax
- RISE

In addition to federal funds, there are a number of local and regional funding sources that are used for operating and maintaining the region's transportation system.

Non-federal funds can be used both on federal and non-federal aid route construction as well as system maintenance and preservation. The funds can also be used for other local usage. However, it is difficult to determine how much a community spent on federal and nonfederal aid routes in a specific year. Staff analyzed each member's financial profile and calculated the average amount of non-federal funding that each spends annually on a federal aid system. Staff then used these calculations as part of the RPA 8 future funding projection. The following sections present an overview of each member's revenues and expenditures. Appendix B includes detailed information on each member's past revenues and expenditures.

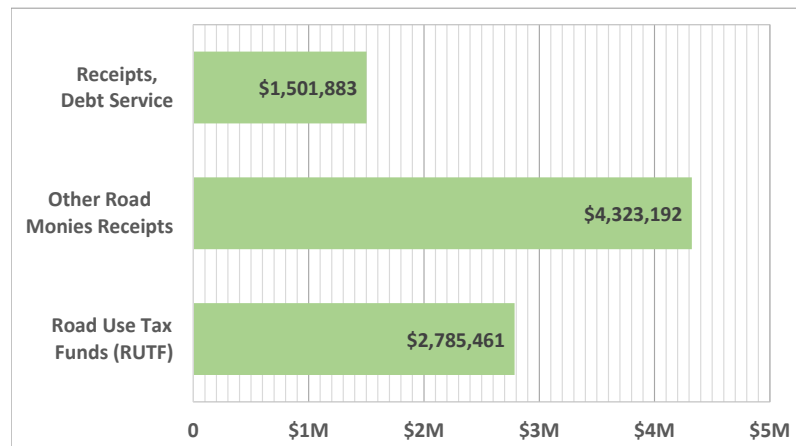
CITY OF CLINTON

REVENUE

With an average annual budget of \$8.61 million, the City of Clinton derives its revenues from several sources. Annual Road Use Tax Funds (RUTF) revenues averaged \$2.8 million.

Other road monies (local property tax support, grants, and other sources) averaged \$4.32 million. Receipts, debt service averaged \$1.5 million annually. On average, about 50.20% of the City's funding comes from local property tax support, grants, and other sources; 32.34 % comes from State road use tax funds; and the rest from receipts, debt service.

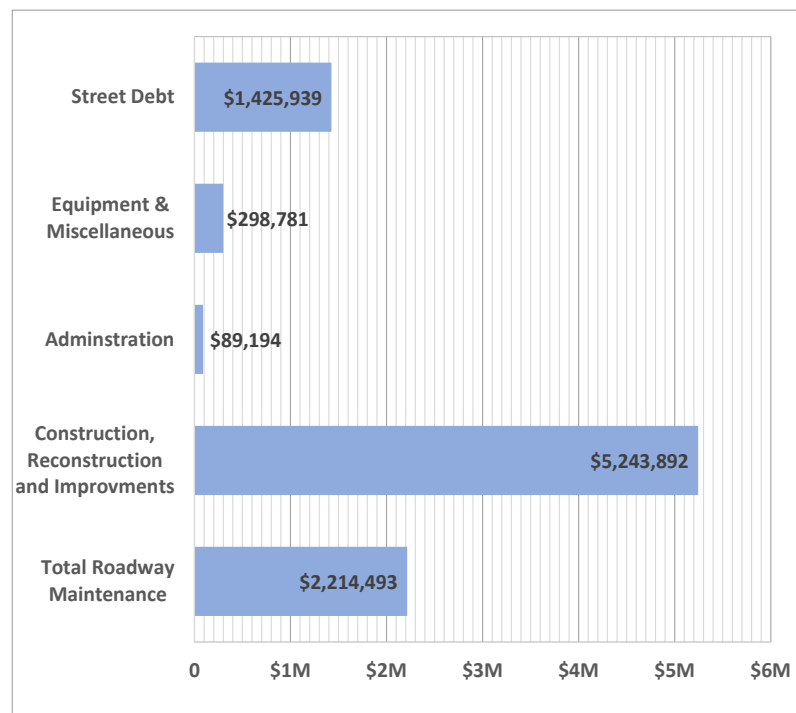
Annual Average Revenue: \$8.61 Million



EXPENDITURES

Annual City of Clinton expenditures averaged \$9.27 million. The City uses these funds to support the following activities: road maintenance, construction and reconstruction, administration, equipment, and to pay debt. The City's annual roadway maintenance expenditures averaged \$2.2 million; construction, reconstruction and improvements averaged \$5.2 million; administration costs averaged \$89,194; equipment costs averaged \$298,781; and debt service averaged \$1.4 million.

Annual Average Expenditures: \$9.27 Million



SPENDING ON THE FEDERAL AID SYSTEM

The City of Clinton has 160.44 lane miles of road, of which 37.84 miles (23.59%) is federal aid eligible routes and 122.60 miles (76.41%) are nonfederal aid eligible routes. It is assumed that the City will spend 23.59% of its \$9.27 million in annual expenditures on the federal aid system.

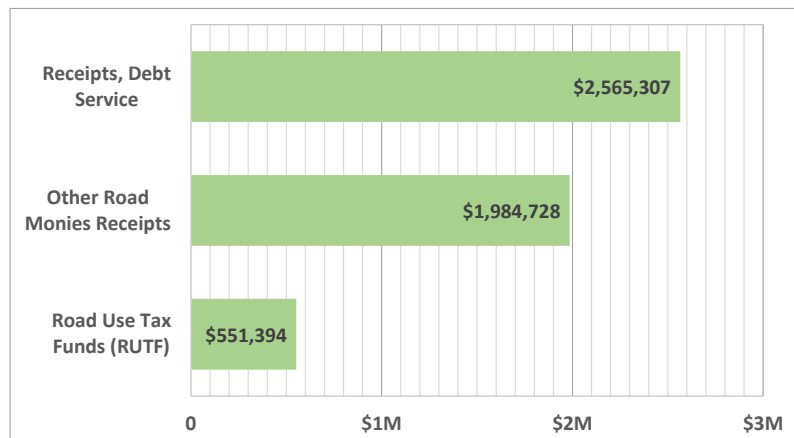
Average Annual Spending on Federal Aid Routes	
Total Roadway Maintenance	\$522,291
Construction, Reconstruction and Improvements	\$1,236,779
Administration	\$21,036
Equipment	\$70,468
Street Debt	\$336,310
Total	\$2,186,885

CITY OF DEWITT

REVENUE

With an average annual budget of \$5.1 million, the City of DeWitt derives its revenues from several sources. Annual Road Use Tax Funds (RUTF) revenues averaged \$551,394 Other road monies (local property tax support, grants, and other sources) averaged \$1.98 million. Receipts, debt service averaged \$2.57 million annually. On average, about 38.89 % of the City's funding comes from local property tax support, grants, and other sources; 10.84 % comes from State road use tax funds; and the rest from receipts, debt service.

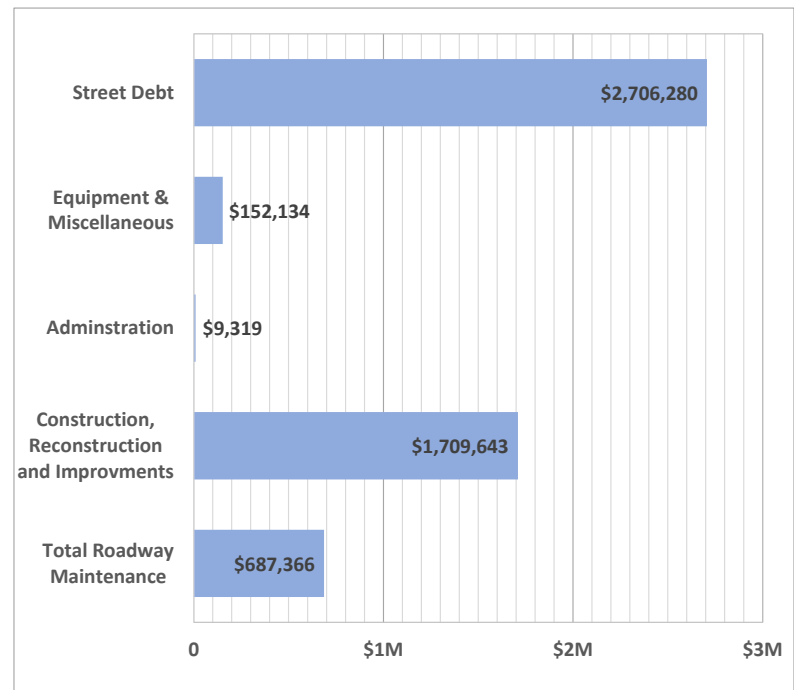
Annual Average Revenue: \$5.10 Million



EXPENDITURES

Annual City of DeWitt expenditures averaged \$5.26 million. The City uses these funds to support the following activities: road maintenance, construction and reconstruction, administration, equipment, and to pay debt. The City's annual roadway maintenance expenditures averaged \$687,366; construction, reconstruction and improvements averaged \$1.7 million; administration costs averaged \$9,319; equipment costs averaged \$152,134; and debt service averaged \$2.7 million.

Annual Average Expenditures: \$5.26 Million



SPENDING ON THE FEDERAL AID SYSTEM

The City of DeWitt has 37.48 lane miles of road, of which 6.69 miles (17.85%) is federal aid eligible routes and 30.79 miles (82.15%) are nonfederal aid eligible routes. It is assumed that the City will spend 17.85% of its \$5.26 million in annual expenditures on the federal aid system.

Average Annual Spending on Federal Aid Routes

Total Roadway Maintenance	\$122,691
Construction, Reconstruction and Improvements	\$305,163
Administration	\$1,663
Equipment	\$27,155
Street Debt	\$483,058
Total	\$939,731

CITY OF MANCHESTER

REVENUE

With an average annual budget of \$3.08 million, the City of Manchester derives its revenues from several sources. Annual Road Use Tax Funds (RUTF) revenues averaged \$536,578. Other road monies (local property tax support, grants, and other sources) averaged \$1.48 million. Receipts, debt service averaged \$1.05 million annually. On average, about 48.30% of the City's funding comes from local property tax support, grants, and other sources; 17.40 % comes from State road use tax funds; and the rest from receipts, debt service.

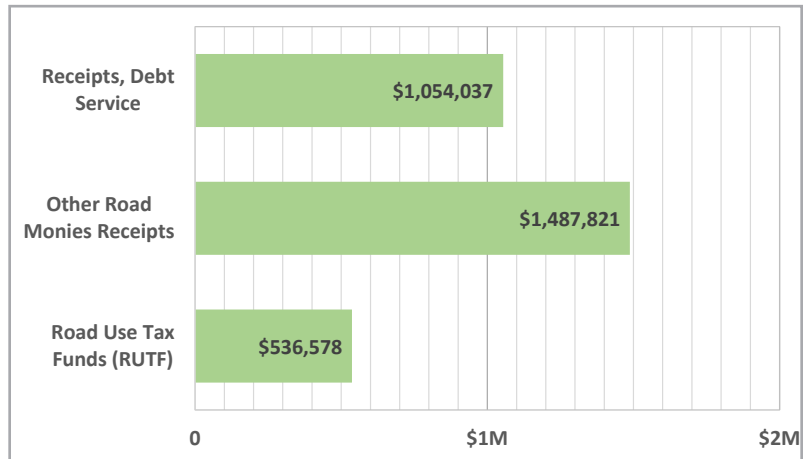
EXPENDITURES

Annual City of Manchester expenditures averaged \$3.11 million. The City uses these funds to support the following activities: road maintenance, construction and reconstruction, administration, equipment, and to pay debt. The City's annual roadway maintenance expenditures averaged \$576,889; construction, reconstruction and improvements averaged \$1.3 million; administration costs averaged \$75,058; equipment costs averaged \$95,590; and debt service averaged \$1.05 million.

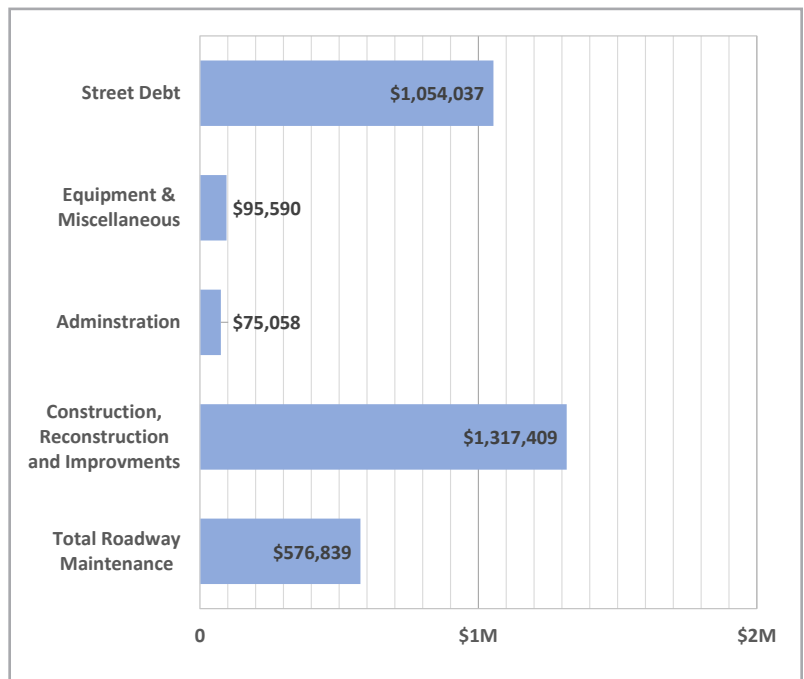
SPENDING ON THE FEDERAL AID SYSTEM

The City of Manchester has 36.57 lane miles of road, of which 9.09 miles (24.86%) are federal aid eligible routes and 27.49 miles (75.17%) are nonfederal aid eligible routes. It is assumed that the City will spend 24.86% of its \$3.11 million in annual expenditures on the federal aid system.

Annual Average Revenue: \$3.08 Million



Annual Average Expenditures: \$3.11 Million



Average Annual Spending on Federal Aid Routes

Total Roadway Maintenance	\$143,382
Construction, Reconstruction and Improvements	\$327,461
Administration	\$18,657
Equipment	\$23,760
Street Debt	\$261,996
Total	\$775,256

CITY OF MAQUOKETA

REVENUE

With an average annual budget of \$1.19 million, the City of Maquoketa derives its revenues from several sources. Annual Road Use Tax Funds (RUTF) revenues averaged \$636,344. Other road monies (local property tax support, grants, and other sources) averaged \$483,135. Receipts, debt service averaged of \$68,876 annually. On average, about 40.59 % of the City's funding comes from local property tax support, grants, and other sources; 53.46 % comes from State road use tax funds; and the rest from receipts, debt service.

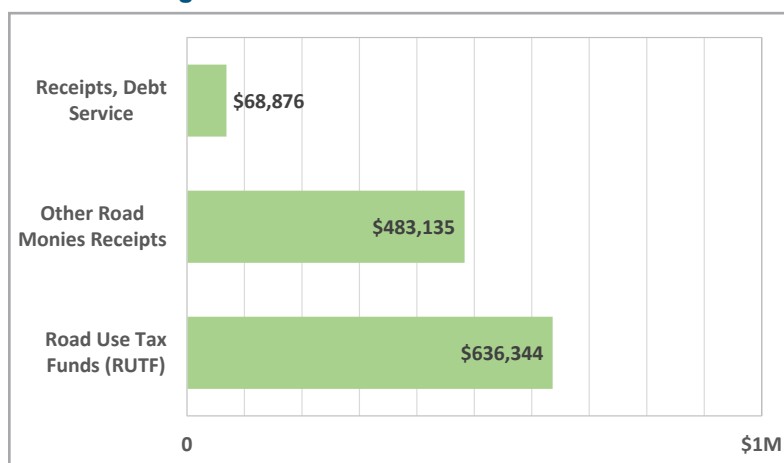
EXPENDITURES

Annual City of Maquoketa expenditures averaged \$1.17 million. The City uses these funds to support the following activities: road maintenance, construction and reconstruction, administration, equipment, and to pay debt. The City's annual roadway maintenance expenditures averaged \$305,150; construction, reconstruction and improvements averaged \$516,238; administration costs averaged \$71,926; equipment costs averaged \$204,701; and debt service averaged \$75,854.

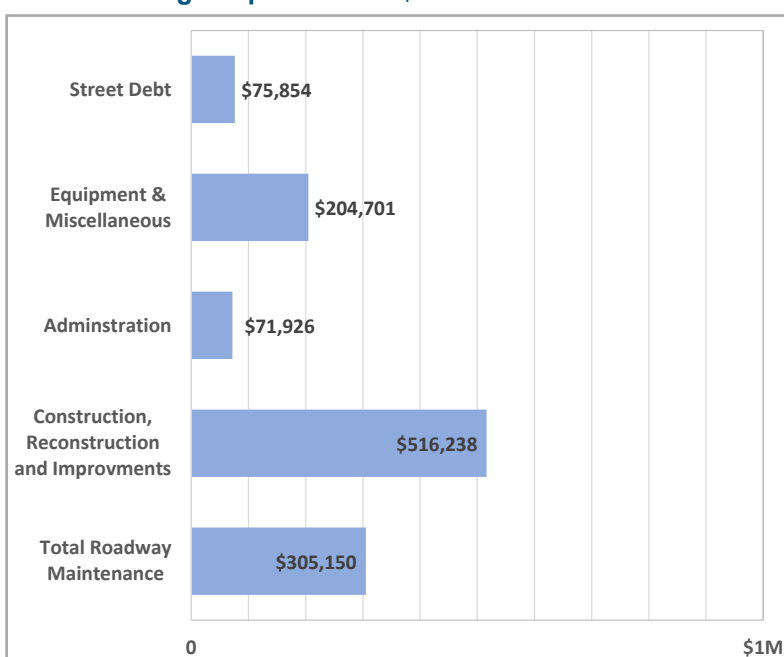
SPENDING ON THE FEDERAL AID SYSTEM

The City of Maquoketa has 37.26 lane miles of road, of which 9.21 miles (24.72%) are federal aid eligible routes and 28.05 miles (75.28%) are nonfederal aid eligible routes. It is assumed that the City will spend 24.72% of its \$1.17 million in annual expenditures on the federal aid system.

Annual Average Revenue: \$1.19 Million



Annual Average Expenditures: \$1.17 Million



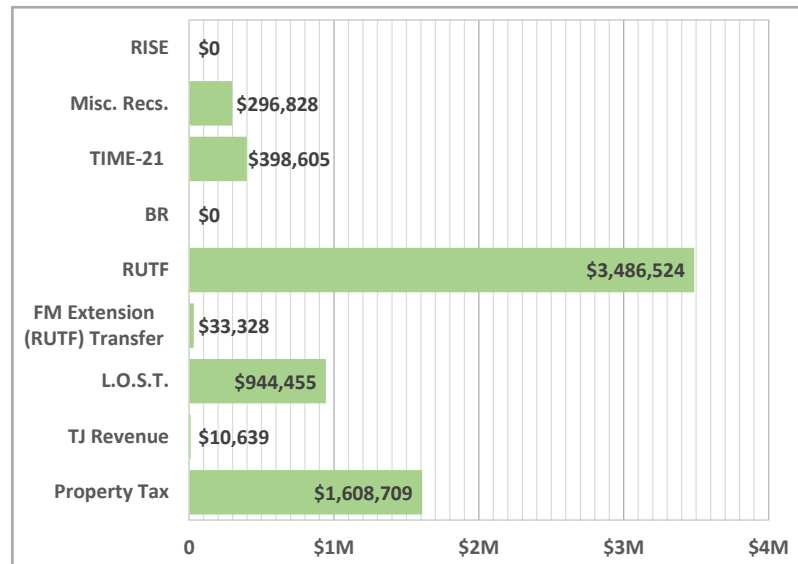
Average Annual Spending on Federal Aid Routes	
Total Roadway Maintenance	\$75,428
Construction, Reconstruction and Improvements	\$127,605
Administration	\$17,779
Equipment	\$50,598
Street Debt	\$18,750
Total	\$290,159

CLINTON COUNTY

REVENUE

With an average annual budget of \$6.78 million Clinton County derives its revenues from several sources. The County's property tax revenues averaged of \$1.6 million annually. Transfer of Jurisdiction (TJ) revenues had an annual average of \$10,600. Local Option Sales Tax (LOST) revenues had an annual average of \$944,000. Farm to Market (FM) revenues had an annual average of \$33,300. The Road Use Tax Fund (RUTF) revenue had an annual average of \$ 3.48 million. TIME-21 revenues had an annual average of \$399,000 and other miscellaneous funds had an annual average of \$297,000.

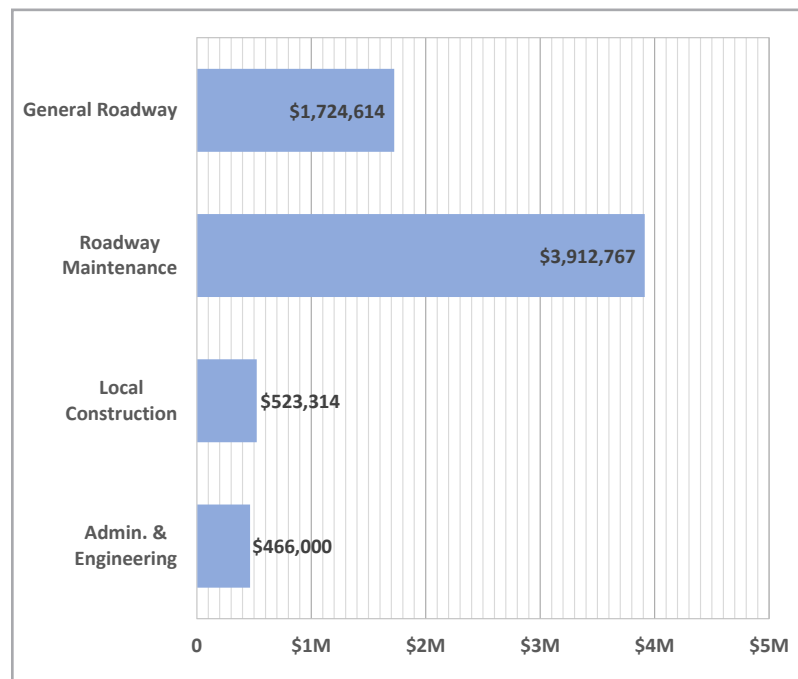
Annual Average Revenue: \$6.78 Million



EXPENDITURES

Annual Clinton County expenditures averaged \$6.62 million. The County's expenditures fall into four categories: roadway maintenance, local construction, administration and engineering, and general roadway. Annual county roadway maintenance expenditures averaged \$3.9 million; local construction averaged \$523,314; administration and engineering costs averaged \$466,000; and general roadway expenditures averaged \$1.7 million.

Annual Average Expenditures: \$6.62 Million



SPENDING ON FEDERAL AID SYSTEM

Clinton County has 1011.99 lane miles of road, of which 341.47 miles (33.74%) are federal aid eligible routes and 670.72 miles (66.26%) are nonfederal aid eligible routes. It is assumed that the County will spend 33.74% of its \$6.62 million in annual expenditures on the federal aid system.

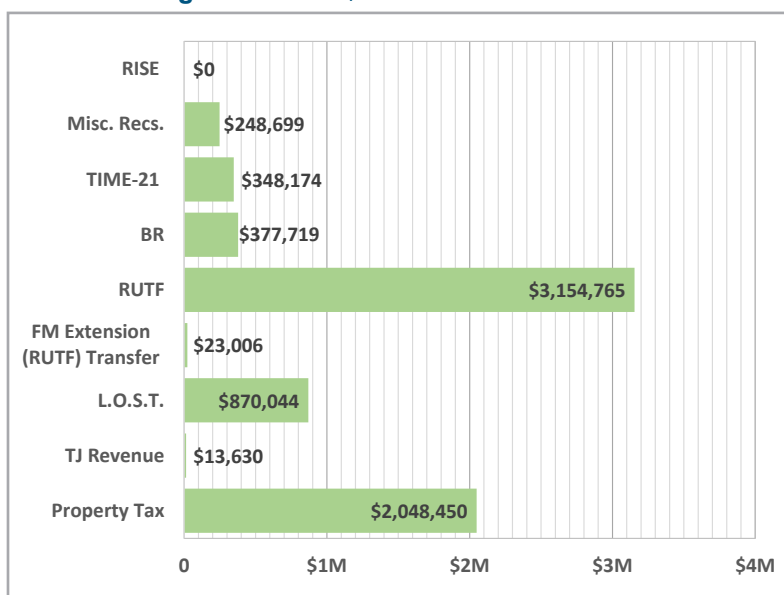
Average Annual Spending on Federal Aid Routes	
Admin. & Engineering	\$157,240
Local Construction	\$176,580
Roadway Maintenance	\$1,320,267
General Roadway	\$581,928
Total	\$2,236,015

DELAWARE COUNTY

REVENUE

With an average annual budget of \$7.08 million Delaware County derives its revenues from several sources. The County's property tax revenues averaged \$2.04 million annually. Transfer of Jurisdiction (TJ) revenues had an annual average of \$13,600. Local Option Sales Tax (LOST) revenues had an annual average of \$870,044. Farm to Market (FM) revenues had an annual average of \$23,006. The Road Use Tax Fund (RUTF) revenue had an annual average of \$3.15 million. TIME-21 revenues had an annual average of \$348,174 average annual Bridge Funds of \$377,719, and other miscellaneous funds had an annual average of \$248,699.

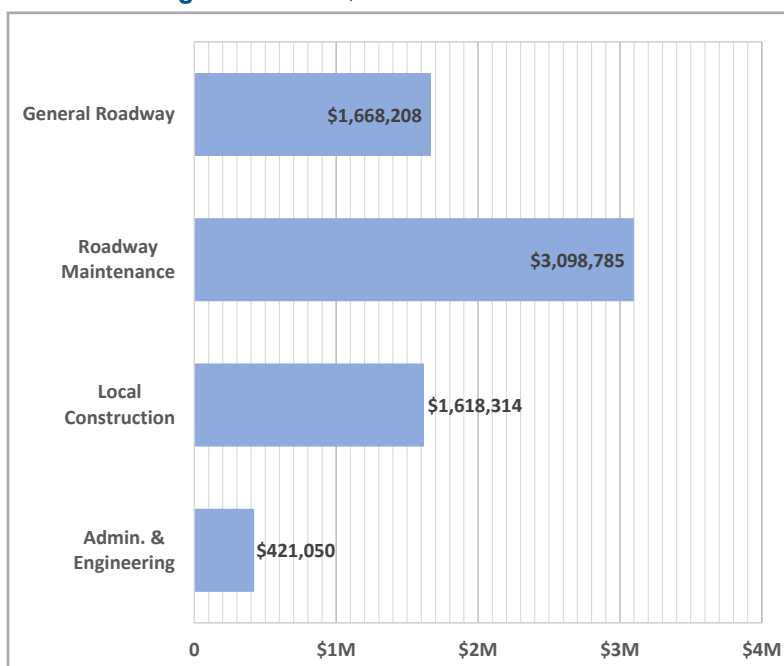
Annual Average Revenue: \$7.08 Million



EXPENDITURES

Annual Delaware County expenditures averaged \$6.8 million. The County's expenditures fall into four categories: roadway maintenance, local construction, administration and engineering, and general roadway. Annual county roadway maintenance expenditures averaged \$3.09 million; local construction averaged \$1.6 million; administration and engineering averaged \$421,000; and general roadway averaged \$1.66 million.

Annual Average Revenue: \$6.80 Million



SPENDING ON FEDERAL AID SYSTEM

Delaware County has 909.83 lane miles of road, of which 296.28 miles (32.56%) are federal aid eligible routes and 613.56 miles (67.44%) are nonfederal aid eligible routes. It is assumed that the County will spend 32.56% of its \$6.8 million in annual expenditures on the federal aid system.

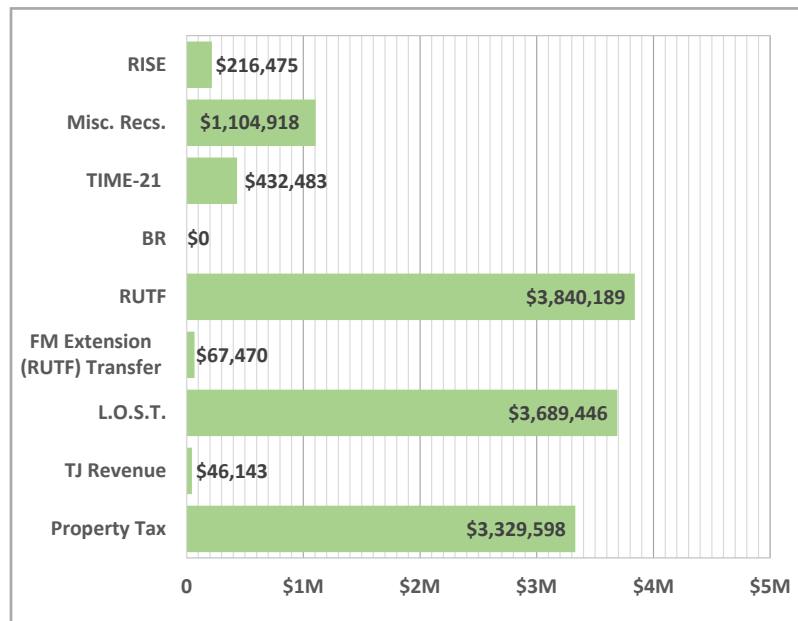
Average Annual Spending on Federal Aid Routes	
Admin. & Engineering	\$137,110
Local Construction	\$526,983
Roadway Maintenance	\$1,009,080
General Roadway	\$543,231
Total	\$2,216,404

DUBUQUE COUNTY

REVENUE

With an average annual budget of \$12.73 million Dubuque County derives its revenues from several sources. The County's property tax revenues averaged of \$3.3 million annually. Transfer of Jurisdiction (TJ) revenues had an annual average of \$46,143. Local Option Sales Tax (LOST) revenues had an annual average of \$3.7 million. Farm to Market (FM) revenues had an annual average of \$47,470. The Road Use Tax Fund (RUTF) revenue had an annual average of \$ 3.48 million. TIME-21 revenues had an annual average of \$432,483, and other miscellaneous funds had an annual average of \$1.1 million.

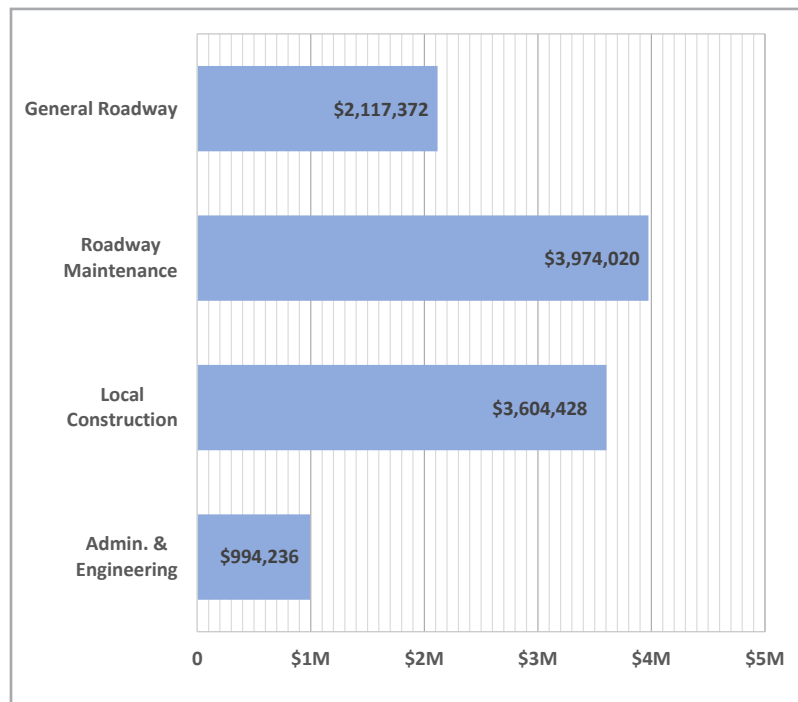
Annual Average Revenue: \$12.73 Million



EXPENDITURES

Annual Dubuque County expenditures averaged \$10.69 million. The County's expenditures fall into four categories: road maintenance, local construction, administration and engineering, and general roadway. Annual county roadway maintenance expenditures averaged \$3.09 million; local construction averaged \$1.6 million; administration and engineering costs averaged \$421,000; and the County's General Roadway averaged \$1.66 million.

Annual Average Expenditure: \$10.69 Million



SPENDING ON THE FEDERAL AID SYSTEM

Dubuque County has 441.39 lane miles of road, of which 176.85 miles (40.07%) are federal aid eligible routes and 267.54 miles (59.93%) are nonfederal aid eligible routes. It is assumed that the County will spend 40.07% of its \$ 10.69 million in annual expenditures on the federal aid system.

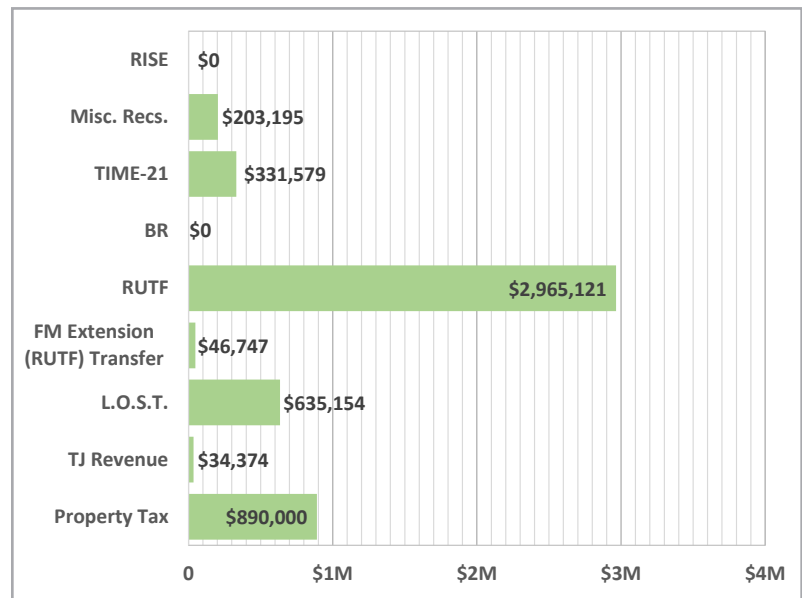
Average Annual Spending on Federal Aid Routes	
Admin. & Engineering	\$398,358
Local Construction	\$1,444,177
Roadway Maintenance	\$1,592,260
General Roadway	\$848,362
Total	\$4,283,157

JACKSON COUNTY

REVENUE

With an average annual budget of \$5.1 million Jackson County derives its revenues from several sources. The County's property tax revenues averaged of \$890,000 annually. Transfer of Jurisdiction (TJ) revenues had an annual average of \$34,374. Local Option Sales Tax (LOST) revenues had an annual average of \$635,154. Farm to Market (FM) revenues had an annual average of \$46,747. The Road Use Tax Fund (RUTF) revenue had an annual average of \$2.9 million. TIME-21 revenues had an annual average of \$331,579, and other miscellaneous funds had an annual average of \$203,195.

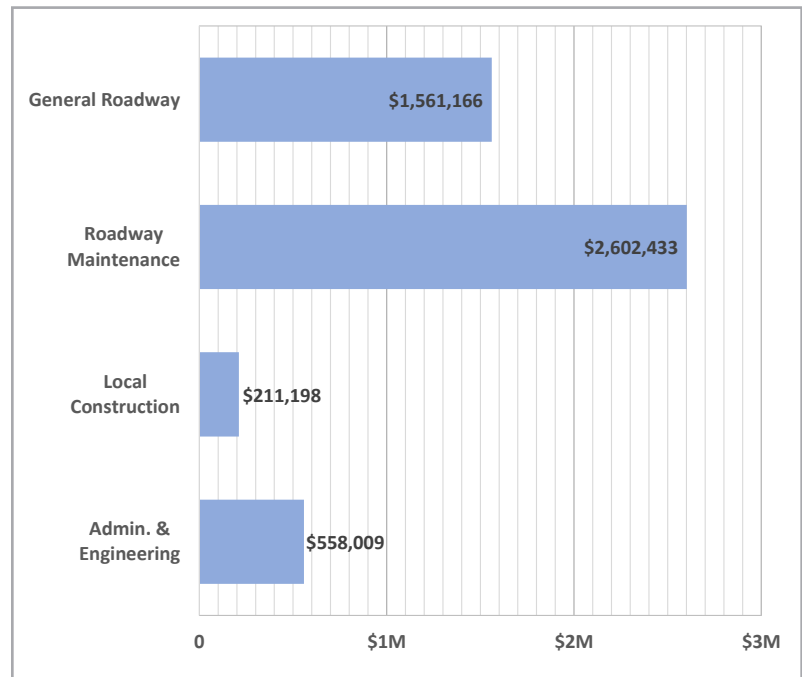
Annual Average Revenue: 5.1 Million



EXPENDITURES

Annual Jackson County expenditures averaged \$4.93 million. The County's expenditures fall into four categories: general roadway, roadway maintenance, local construction, and administration and engineering. The County's annual general roadway expenditures averaged \$1.5 million; annual roadway maintenance expenditures averaged \$2.6 million; annual local construction expenditures averaged \$211,198; and annual administration and engineering expenditures averaged \$558,009.

Annual Average Expenditure: \$4.93 Million



SPENDING ON THE FEDERAL AID SYSTEM

Jackson County has 838.54 lane miles of road, of which 344.61 miles (41.10%) are federal aid eligible routes and 493.61 miles (59.90%) are nonfederal aid eligible routes. It is assumed that the County will spend 41.10% of its \$4.93 million in annual expenditures on the federal aid system.

Average Annual Spending on Federal Aid Routes	
Admin. & Engineering	\$229,326
Local Construction	\$86,796
Roadway Maintenance	\$1,069,525
General Roadway	\$641,594
Total	\$2,027,241

OVERALL HISTORICAL FUNDS SPENT ON THE FEDERAL AID SYSTEM WITHIN RPA 8

Figure 10.2 below provides the amount spent for construction, reconstruction and engineering by members in the RPA 8 area by using information from the city and county tables above. The growth rate for each member is determined using revenue growth from 2012 -2016. The members within RPA 8 spent \$13.6 million on average annually. The revenue growth for the City of Clinton, City of DeWitt, City of Manchester, City of Maquoketa, Clinton County, Delaware County, Dubuque County and Jackson County are taken into consideration to establish an average growth rate for future projects as they have the majority of the federal aid system. RPA 8 prefers a conservative approach for projecting future revenues and uses an annual growth rate of 3% for future years.

Name	Average Amount Spent	Average Revenue Growth from 2012-2016
City of Clinton	\$1,759,071	8.93%
City of DeWitt	\$427,855	4.21%
City of Manchester	\$470,843	4.16%
City of Maquoketa	\$203,032	3.60%
Clinton County	\$2,236,015	0.97%
Delaware County	\$2,216,404	4.13%
Dubuque County	\$4,283,157	15.27%
Jackson County	\$2,027,241	6.06%
Total	\$13,623,617	-

Figure: 10.2 Average Historical Spending on Construction, Reconstruction and Engineering (2012-2016)

FUTURE FUNDING ANALYSIS FOR ROADS, BRIDGES, AND TRAILS

The RPA 8 LRTP financial estimates are derived from an economic climate that is neither stable nor predictable. Revenues for the long-range plan are estimated at a planning level, not the programmatic level, as with the Transportation Improvement Program (TIP). RPA 8 financial projections are reviewed and adjusted regularly to reflect future economic trends.

This analysis is subject to a number of inherent limitations:

- The projections are for a period of 30 years, during which time significant changes are possible in travel behavior and transportation finance.
- Financial estimates are based on future funding estimates, not project-specific estimates, as with the TIP's programmatic approach.
- The analysis lumps federal, state and local funding together and compares the total against the aggregate expenditures identified in the plan.
- Revenues from local sources are projected into future by historical trends and percentage growth. However, this may not account accurately for private-sector funding that could support transportation improvements.
- Projections of federal funding involve a great deal of uncertainty due to shifts in federal transportation budget and deficit-reduction policies and

because these funds are largely administered on a statewide basis.

- Ongoing maintenance costs were estimated by surveying state and local governments about current expenditures. Maintenance needs may be more accurately determined when region-wide pavement and bridge management/condition rating systems are in place.
- Cost estimates for many of the highway capacity projects may involve significant errors due to the long-range nature of the plan, the absence of detailed cost estimates based on actual design of the improvements, and the simplified methodology used to develop many of the estimates.

PROCEDURE FOR FUTURE PROJECTIONS

Transportation revenues rely on taxes and generally reflect the circumstances of the regional economy, and therefore fluctuate from year to year. Currently, the RPA 8 2045 LRTP's financial estimates are derived from information that exists as of today. Over the 30-year time horizon for RPA 8 2045 LRTP, there will likely be variation in the annual transportation revenues available to the region. However, for the purposes of the long-range plan, this variation is impossible to accurately predict, and requires a conservative approach in anticipating gross-level forecasts needed to demonstrate fiscal constraint.

These forecasts assume constant growth in potential revenues for all sources of funds. Future growth rates are estimated based on historical analysis of past years funding. They also assume a constant rate of inflation calculated by using historical data obtained from cities, counties and other sources within RPA 8. The future projections are calculated using a linear regression method using an annual growth rate and average annual funding as inputs. The projections are done for 30 years — between 2016 and 2045.

Overall RPA 8 will have \$198,810,000 in federal and \$618,592,000 in local funds.

FUTURE FEDERAL FUNDS

Figure 10.3 provides future federal funds for RPA 8 region using information from historical trends from Figure 10.1.

Year	RPA 8 Funds			Total Revenue
	STP	HBP	TAP & TAP Flex	
2016	\$2,241,000	\$2,187,000	\$198,000	\$4,626,000
2017	\$2,308,000	\$2,251,000	\$205,000	\$4,764,000
2018	\$2,375,000	\$2,315,000	\$212,000	\$4,902,000
2019	\$2,442,000	\$2,379,000	\$219,000	\$5,040,000
2020	\$2,509,000	\$2,443,000	\$226,000	\$5,178,000
2021	\$2,576,000	\$2,507,000	\$233,000	\$5,316,000
2022	\$2,643,000	\$2,571,000	\$240,000	\$5,454,000
2023	\$2,710,000	\$2,635,000	\$247,000	\$5,592,000
2024	\$2,777,000	\$2,699,000	\$254,000	\$5,730,000
2025	\$2,844,000	\$2,763,000	\$261,000	\$5,868,000
2026	\$2,911,000	\$2,827,000	\$268,000	\$6,006,000
2027	\$2,978,000	\$2,891,000	\$275,000	\$6,144,000
2028	\$3,045,000	\$2,955,000	\$282,000	\$6,282,000
2029	\$3,112,000	\$3,019,000	\$289,000	\$6,420,000
2030	\$3,179,000	\$3,083,000	\$296,000	\$6,558,000
2031	\$3,246,000	\$3,147,000	\$303,000	\$6,696,000
2032	\$3,313,000	\$3,211,000	\$310,000	\$6,834,000
2033	\$3,380,000	\$3,275,000	\$317,000	\$6,972,000
2034	\$3,447,000	\$3,339,000	\$324,000	\$7,110,000
2035	\$3,514,000	\$3,403,000	\$331,000	\$7,248,000
2036	\$3,581,000	\$3,467,000	\$338,000	\$7,386,000
2037	\$3,648,000	\$3,531,000	\$345,000	\$7,524,000
2038	\$3,715,000	\$3,595,000	\$352,000	\$7,662,000
2039	\$3,782,000	\$3,659,000	\$359,000	\$7,800,000
2040	\$3,849,000	\$3,723,000	\$366,000	\$7,938,000
2041	\$3,916,000	\$3,787,000	\$373,000	\$8,076,000
2042	\$3,983,000	\$3,851,000	\$380,000	\$8,214,000
2043	\$4,050,000	\$3,915,000	\$387,000	\$8,352,000
2044	\$4,117,000	\$3,979,000	\$394,000	\$8,490,000
2045	\$4,184,000	\$4,043,000	\$401,000	\$8,628,000
Total	\$96,375,000	\$93,450,000	\$8,985,000	\$198,810,000

Figure 10.3: Future Federal Funds for the RPA 8 Region

Source: RPA 8

FUTURE LOCAL REVENUES

Figure 10.4 provides future local funds for RPA 8 region using information from historical trends of RPA 8 members and from Figure 10.2.

Figure 10.4: Future Local Funds for the RPA 8 Region

Year	City of Clinton	City of DeWitt	City of Manchester	City of Maquoketa	Clinton County	Delaware County	Dubuque County	Jackson County	Total
Growth Rate	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	
2017	\$1,812,000	\$441,000	\$485,000	\$210,000	\$2,303,095	\$2,282,897	\$4,411,652	\$2,142,619	\$14,088,263
2018	\$1,850,000	\$454,000	\$500,000	\$217,000	\$2,370,175	\$2,349,389	\$4,540,147	\$2,257,998	\$14,538,708
2019	\$1,888,000	\$467,000	\$515,000	\$224,000	\$2,437,256	\$2,415,881	\$4,668,641	\$2,373,376	\$14,989,154
2020	\$1,926,000	\$480,000	\$530,000	\$231,000	\$2,504,336	\$2,482,373	\$4,797,136	\$2,488,754	\$15,439,600
2021	\$1,964,000	\$493,000	\$545,000	\$238,000	\$2,571,417	\$2,548,865	\$4,925,631	\$2,604,133	\$15,890,045
2022	\$2,002,000	\$506,000	\$560,000	\$245,000	\$2,638,497	\$2,615,357	\$5,054,126	\$2,719,511	\$16,340,491
2023	\$2,040,000	\$519,000	\$575,000	\$252,000	\$2,705,578	\$2,681,849	\$5,182,620	\$2,834,889	\$16,790,937
2024	\$2,078,000	\$532,000	\$590,000	\$259,000	\$2,772,658	\$2,748,342	\$5,311,115	\$2,950,268	\$17,241,382
2025	\$2,116,000	\$545,000	\$605,000	\$266,000	\$2,839,739	\$2,814,834	\$5,439,610	\$3,065,646	\$17,691,828
2026	\$2,154,000	\$558,000	\$620,000	\$273,000	\$2,906,819	\$2,881,326	\$5,568,104	\$3,181,024	\$18,142,274
2027	\$2,192,000	\$571,000	\$635,000	\$280,000	\$2,973,899	\$2,947,818	\$5,696,599	\$3,296,403	\$18,592,719
2028	\$2,230,000	\$584,000	\$650,000	\$287,000	\$3,040,980	\$3,014,310	\$5,825,094	\$3,411,781	\$19,043,165
2029	\$2,268,000	\$597,000	\$665,000	\$294,000	\$3,108,060	\$3,080,802	\$5,953,589	\$3,527,159	\$19,493,610
2030	\$2,306,000	\$610,000	\$680,000	\$301,000	\$3,175,141	\$3,147,294	\$6,082,083	\$3,642,538	\$19,944,056
2031	\$2,344,000	\$623,000	\$695,000	\$308,000	\$3,242,221	\$3,213,786	\$6,210,578	\$3,757,916	\$20,394,502
2032	\$2,382,000	\$636,000	\$710,000	\$315,000	\$3,309,302	\$3,280,279	\$6,339,073	\$3,873,294	\$20,844,947
2033	\$2,420,000	\$649,000	\$725,000	\$322,000	\$3,376,382	\$3,346,771	\$6,467,567	\$3,988,673	\$21,295,393
2034	\$2,458,000	\$662,000	\$740,000	\$329,000	\$3,443,462	\$3,413,263	\$6,596,062	\$4,104,051	\$21,745,839
2035	\$2,496,000	\$675,000	\$755,000	\$336,000	\$3,510,543	\$3,479,755	\$6,724,557	\$4,219,430	\$22,196,284
2036	\$2,534,000	\$688,000	\$770,000	\$343,000	\$3,577,623	\$3,546,247	\$6,853,052	\$4,334,808	\$22,646,730
2037	\$2,572,000	\$701,000	\$785,000	\$350,000	\$3,644,704	\$3,612,739	\$6,981,546	\$4,450,186	\$23,097,176
2038	\$2,610,000	\$714,000	\$800,000	\$357,000	\$3,711,784	\$3,679,231	\$7,110,041	\$4,565,565	\$23,547,621
2039	\$2,648,000	\$727,000	\$815,000	\$364,000	\$3,778,865	\$3,745,724	\$7,238,536	\$4,680,943	\$23,998,067
2040	\$2,686,000	\$740,000	\$830,000	\$371,000	\$3,845,945	\$3,812,216	\$7,367,030	\$4,796,321	\$24,448,512
2041	\$2,724,000	\$753,000	\$845,000	\$378,000	\$3,913,026	\$3,878,708	\$7,495,525	\$4,911,700	\$24,898,958
2042	\$2,762,000	\$766,000	\$860,000	\$385,000	\$3,980,106	\$3,945,200	\$7,624,020	\$5,027,078	\$25,349,404
2043	\$2,800,000	\$779,000	\$875,000	\$392,000	\$4,047,186	\$4,011,692	\$7,752,515	\$5,142,456	\$25,799,849
2044	\$2,838,000	\$792,000	\$890,000	\$399,000	\$4,114,267	\$4,078,184	\$7,881,009	\$5,257,835	\$26,250,295
2045	\$2,876,000	\$805,000	\$905,000	\$406,000	\$4,181,347	\$4,144,676	\$8,009,504	\$5,373,213	\$26,700,741
2046	\$2,914,000	\$818,000	\$920,000	\$413,000	\$4,248,428	\$4,211,168	\$8,137,999	\$5,488,591	\$27,151,186
Total	\$70,890,000	\$18,885,000	\$21,075,000	\$9,345,000	\$98,272,841	\$97,410,975	\$188,244,760	\$114,468,160	\$618,591,736

FUNDING OVERVIEW FOR TRANSIT

Transit systems in the RPA 8 area are funded through a combination of federal, state, and local funds. The RTA and Clinton MTA utilize this combination of funds for operational and capital strategies. Federal funding for transit programs and capital projects flow through RPA 8.

The FTA and Iowa DOT provide funding to, Iowa's MPOs and RPAs, and public transit providers to support public transit operations.

CAPITAL INVESTMENT PROGRAM (SECTION 5309/5339)

Section 5309 is a discretionary funding source that supports transit capital needs that exceed what federal formula programs can support. This program got replaced with 5339. The 5339 program is designed to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities.

Funding Estimate: The local transit systems received \$1.69 million in section 5309/5339 funding for years 2010 to 2015. The system received an annual average of \$243,000. Staff used 3% as annual growth rate for future projections.

SPECIAL NEEDS PROGRAM (SECTION 5311)

Section 5311 supports transit services in rural areas and communities with populations less than 50,000. These funds are allocated to Iowa based on the number of persons living outside urbanized areas.

Funding Estimate: The local transit systems received \$5.6 million in section 5311 funding from 2010 to 2015. The system received an annual average of \$807,000. Staff used 3% as annual growth rate for future projections.

STATE TRANSIT ASSISTANCE (STA)

All public transit systems in Iowa are eligible for funding under the STA program. STA funding is derived from four percent of the fees for new registration collected on sales of motor vehicle and accessory equipment.

Funding Estimate: The local transit systems have STA funding history from 2010 to 2015. Future year of expenditure funding was based on linear regression between 2016 and 2045 with an annual average of \$454,000. Staff used 3% as annual growth rate for future projections.

TRANSIT LEVY AND CONTRACTS

Iowa law authorizes municipalities to levy up to 95 cents per \$1,000 of assessed taxable property in order to support the cost of a public transit system. Most of Iowa's larger communities levy for support of their urban transit systems. A number of smaller communities use this authority to generate funding used to support services contracted from their designated regional transit system. Clinton MTA uses Transit Levy funds to fund capital improvements and operating expenses.

Most of the rural transit agencies do not have Transit Levy funds they generate their local funding through contract. Most of these contracts are with senior housing and assisted living agencies. RTA and Clinton MTA generate their local funds through contract.

Funding Estimate: The systems receive an average annual funding of \$331,600. Staff used 3% as annual growth rate for future projections.

FARES

Fees paid by the passengers are one of the most common sources of local support. This can include monies collected on-board the transit vehicle (usually called "farebox receipts"), as well as prepaid fares from sale of passes or tickets, or fares billed to the passenger after the fact.

HISTORICAL ANALYSIS OF TRANSIT REVENUE, OPERATIONS & MAINTENANCE COST

Figure 10.5 provides the historical funds received by the Clinton MTA and RTA 8 from 2010 to 2015 and Figure 10.6 provides historic operation and maintenance costs for the transit systems. A growth rate has been assigned to each funding source using the linear regression method. The growth rate is used to project future funding for the area.

Figure 10.5: Historic Funds Received by the Clinton MTA and RTA

Funding Source RTA	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Average Annual
Capital							
Section 5339	\$0	\$0	\$61,420	\$0	\$68,000	\$0	\$21,570
Local	\$0	\$0	\$15,355		\$17,000		\$5,393
Operations							
Section 5311	\$170,903	\$170,575	\$188,185	\$219,532	\$271,753	\$329,033	\$224,997
STA	\$234,483	\$217,699	\$246,380	\$266,095	\$261,667	\$272,341	\$249,778
Contracts	\$288,488	\$274,288	\$197,390	\$169,680	\$169,492	\$170,831	\$211,695
Total	\$693,874	\$662,562	\$631,955	\$655,307	\$702,912	\$772,205	\$686,469
Funding Source MTA	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Average Annual
Capital							
ARRA Funds		\$1,698,252	\$433,332				
Section 5339	\$534,520	\$1	\$1	\$149,445	\$323,569	\$318,532	\$221,011
Local	\$20,270	\$130,977	\$20,468	\$66,561	\$69,855	\$76,424	\$64,093
Operations							
Passenger Revenue	\$257,929	\$390,481	\$426,691	\$486,570	\$253,863	\$395,977	\$368,585
Contract and other revenue	\$21,094	\$272,020	\$336,140	\$14,932	\$21,230	\$53,994	\$119,902
Local Tax	\$666,939	\$645,533	\$756,365	\$756,459	\$723,953	\$652,679	\$700,321
Federal Transit Assistance (FTA)	\$588,581	\$497,531	\$497,507	\$563,803	\$738,731	\$602,123	\$581,379
State Transit Assistance (STA)	\$164,754	\$170,918	\$198,028	\$236,640	\$266,380	\$184,558	\$203,546
Total	1,699,297	\$1,976,483	\$2,214,731	\$2,058,404	\$2,004,157	\$1,889,331	

FUTURE FUNDING ANALYSIS FOR TRANSIT

Figure 10.7 provides future projections of transit system funding. Growth rate has been assigned to each funding using linear regression method. The growth rate is used to project future funding for the area. Overall, the local transit systems will have \$130.57 million for capital improvements, operation and maintenance between 2016 and 2045.

Figure 10.7: Future Projections for Clinton MTA and RTA

Year	Capital		Operations			Total Revenue
	Section 5339	Local	Section 5311	STA	Contracts	
2016	\$250,000	\$13,000	\$831,000	\$467,000	\$1,443,000	\$3,004,000
2017	\$258,000	\$16,000	\$856,000	\$481,000	\$1,486,000	\$3,097,000
2018	\$266,000	\$19,000	\$881,000	\$495,000	\$1,529,000	\$3,190,000
2019	\$274,000	\$22,000	\$906,000	\$509,000	\$1,572,000	\$3,283,000
2020	\$282,000	\$25,000	\$931,000	\$523,000	\$1,615,000	\$3,376,000
2021	\$290,000	\$28,000	\$956,000	\$537,000	\$1,658,000	\$3,469,000
2022	\$298,000	\$31,000	\$981,000	\$551,000	\$1,701,000	\$3,562,000
2023	\$306,000	\$34,000	\$1,006,000	\$565,000	\$1,744,000	\$3,655,000
2024	\$314,000	\$37,000	\$1,031,000	\$579,000	\$1,787,000	\$3,748,000
2025	\$322,000	\$40,000	\$1,056,000	\$593,000	\$1,830,000	\$3,841,000
2026	\$330,000	\$43,000	\$1,081,000	\$607,000	\$1,873,000	\$3,934,000
2027	\$338,000	\$46,000	\$1,106,000	\$621,000	\$1,916,000	\$4,027,000
2028	\$346,000	\$49,000	\$1,131,000	\$635,000	\$1,959,000	\$4,120,000
2029	\$354,000	\$52,000	\$1,156,000	\$649,000	\$2,002,000	\$4,213,000
2030	\$362,000	\$55,000	\$1,181,000	\$663,000	\$2,045,000	\$4,306,000
2031	\$370,000	\$58,000	\$1,206,000	\$677,000	\$2,088,000	\$4,399,000
2032	\$378,000	\$61,000	\$1,231,000	\$691,000	\$2,131,000	\$4,492,000
2033	\$386,000	\$64,000	\$1,256,000	\$705,000	\$2,174,000	\$4,585,000
2034	\$394,000	\$67,000	\$1,281,000	\$719,000	\$2,217,000	\$4,678,000
2035	\$402,000	\$70,000	\$1,306,000	\$733,000	\$2,260,000	\$4,771,000
2036	\$410,000	\$73,000	\$1,331,000	\$747,000	\$2,303,000	\$4,864,000
2037	\$418,000	\$76,000	\$1,356,000	\$761,000	\$2,346,000	\$4,957,000
2038	\$426,000	\$79,000	\$1,381,000	\$775,000	\$2,389,000	\$5,050,000
2039	\$434,000	\$82,000	\$1,406,000	\$789,000	\$2,432,000	\$5,143,000
2040	\$442,000	\$85,000	\$1,431,000	\$803,000	\$2,475,000	\$5,236,000
2041	\$450,000	\$88,000	\$1,456,000	\$817,000	\$2,518,000	\$5,329,000
2042	\$458,000	\$91,000	\$1,481,000	\$831,000	\$2,561,000	\$5,422,000
2043	\$466,000	\$94,000	\$1,506,000	\$845,000	\$2,604,000	\$5,515,000
2044	\$474,000	\$97,000	\$1,531,000	\$859,000	\$2,647,000	\$5,608,000
2045	\$482,000	\$100,000	\$1,556,000	\$873,000	\$2,690,000	\$5,701,000
Total	\$10,980,000	\$1,695,000	\$35,805,000	\$20,100,000	\$61,995,000	\$130,575,000

CONCLUSION

The public input process and projects programmed in RPA 8 Transportation Improvements program (TIP) for Federal Fiscal Year 2017-2020 shows that RPA 8 is more inclined to strategically preserve our existing infrastructure and focus future investment in maintaining areas that are already served by significant public infrastructure investments. The following pages include projects programmed in the FY 2017-2020 TIP

Figure 10.8 RPA8 2017-2020 Transportation Improvement Program

Regional Planning Affiliation 8 (FY 2017-2020 Final Transportation Improvement Program)											
FY 2017 (October 1, 2016 to September 30, 2017)					IOWA		Programmed Amounts in 1,000				
NO	PGM	SPONSOR	TPMS	PN	LOCATION	TYPE WORK	FY 17 TOTAL	FY 18 TOTAL	FY 19 TOTAL	FY 20 TOTAL	GRAND TOTAL
1	DEMO	Clinton	22302	STP-1415(625)-70-23	In the City of Clinton, 19th Ave North Phase III: From Approx. 1100' West of Randall to N. 2nd Street	Grade and Pave	\$ 4,306	\$ -	\$ -	\$ -	\$ 4,306
2	HSIP	DOT-D06-RPA08	35555	HSIP-52()-2H-49	US 52: S OF 395TH AVE TO DUBUQUE CO (STATE SHARE)	Pavement Widening	\$ 1,800	\$ -	\$ -	\$ -	\$ 1,800
3	HSIP	DOT-D06-RPA08	35532	HSIP-67()-2H-23	US 67: SCOTT CO TO S OF W 3RD ST IN CAMANCHE	Pavement Widening	\$ 1,713	\$ -	\$ -	\$ -	\$ 1,713
3	HSIP	DOT-D06-RPA08	35425	HSIP-64()-2H-49	On IA 64, from CO RD Z34 TO END OF BRIDGE OVER RR TRACKS	Pavement Rehab	\$ 5,563	\$ -	\$ -	\$ -	\$ 5,563
4	NHPP	DOT-D06-RPA08	29555	NHS-3()-11-31	On IA 3, from Tollgate Rd (Y13) to E Jct Pfeiler Rd	Grade and Pave, Right of Way	\$ 316	\$ 11,805	\$ -	\$ -	\$ 12,121
5	NHPP	DOT-D06-RPA08	33991	NHS-3()-11-31	On IA 3, from ECL Luxemburg to Tollgate Rd (Y13)	Grade and Pave, Right of Way	\$ -	\$ 225	\$ 8,058	\$ -	\$ 8,283
6	NHPP	DOT-D06-RPA08	35415	NHS-3()-11-31	IA 3: E JCT PFEILER RD TO 0.7 MI N OF BOY SCOUT RD	Grade and Pave, Right of Way	\$ -	\$ -	\$ 215	\$ 11,587	\$ 11,802
7	PRF	DOT-D06-RPA08	501	BRFN-30()-39-23	US 30: Mississippi River in Clinton	Bridge Rehabilitation	\$ 400	\$ -	\$ -	\$ -	\$ 400
8	PRF	DOT-D06-RPA08	29562	STPN-67()-2I-49	US 67: IA 64 INTERSECTION W OF SABULA	Grade and Pave	\$ 97	\$ -	\$ -	\$ -	\$ 97
9	PRF	DOT-D06-RPA08	33990	BRFN-136()-39-31	IA 136: NORTH FORK MAQUOKETA RIVER 2.0 MI N OF US 151	Bridge Replacement	\$ 1,817	\$ -	\$ -	\$ -	\$ 1,817
10	PRF	DOT-D06-RPA08	21988	NHSN-20()-2R-28	US 20: DYERSVILLE INTERCHANGE BETWEEN 330TH AVE AND 332ND AVE	Erosion Control	\$ 343	\$ -	\$ -	\$ -	\$ 343
11	PRF	DOT-D06-RPA08	25278	BRFN-20()-39-28	US 20: ABANDONED RR 0.4 MI W OF IA 38 (WB)	Bridge Deck Overlay	\$ 378	\$ -	\$ -	\$ -	\$ 378
12	PRF	DOT-D06-RPA08	25282	BRFN-52()-39-49	US 52: MAQUOKETA RIVER 3.2 MI S OF CO RD Z34	Bridge Deck Overlay	\$ 616	\$ -	\$ -	\$ -	\$ 616
13	PRF	DOT-D06-RPA08	25284	BRFN-61()-39-49	US 61: SOUTH FORK MAQUOKETA RIVER 0.5 MI N OF IA 64 (NB)	Bridge Deck Overlay	\$ 383	\$ -	\$ -	\$ -	\$ 383
14	PRF	DOT-D06-RPA08	25301	NHSN-136()-2R-23	On IA 136, from approximately 2.4 miles west of US 67 to Charlotte	Culvert Replacement, Wetland Mitig	\$ 802	\$ -	\$ -	\$ -	\$ 802
15	PRF	DOT-D06-RPA08	35431	STPN-136()-2I-31	IA 136: IN WORTHINGTON FROM SCL TO NCL (STATE SHARE)	Pavement Rehab	\$ 600	\$ -	\$ -	\$ -	\$ 600
16	PRF	DOT-D06-RPA08	35432	NHSN-136()-2R-31	IA 136: IN CASCADE FROM 1ST AVE TO NEAR NCL (STATE SHARE)	Grade and Pave	\$ 880	\$ -	\$ -	\$ -	\$ 880
17	PRF	DOT-D06-RPA08	35530	BRFN-30()-39-23	US 30: Mississippi River in Clinton	Bridge Rehabilitation, Bridge Clean	\$ 20	\$ 20	\$ 20	\$ 20	\$ 80
18	PRF	DOT-D06-RPA08	35531	NHSN-67()-2R-23	On US 67, from West Junction of IA 136 to 38th Ave North in the City of Clinton	Pavement Rehab	\$ 1,100	\$ -	\$ -	\$ -	\$ 1,100
19	PRF	DOT-D06-RPA08	35533	BRFN-136()-39-23	IA 136: MISSISSIPPI RIVER IN CLINTON (STATE SHARE)	Bridge Cleaning	\$ 20	\$ 20	\$ 20	\$ 20	\$ 80
20	PRF	DOT-D06-RPA08	35535	NHSN-3()-2R-28	IA 3: COLESBURG TO DUBUQUE CO	Pavement Rehab	\$ 330	\$ -	\$ -	\$ -	\$ 330
21	PRF	DOT-D06-RPA08	35537	NHSN-20()-2R-31	US 20: 0.5 MI E OF IA 136 IN DYERSVILLE	Grade and Pave	\$ 42	\$ -	\$ -	\$ -	\$ 42
22	PRF	DOT-D06-RPA08	35540	NHSN-52()-2R-31	US 52: KLEIN LANE TO JAMES RD IN RICKARDSVILLE	Pavement Rehab	\$ 400	\$ -	\$ -	\$ -	\$ 400
23	PRF	DOT-D06-RPA08	35542	NHSN-136()-2R-31	IA 136: IN DYERSVILLE FROM 15TH AVE TO S OF RR	Pavement Rehab	\$ 1,000	\$ -	\$ -	\$ -	\$ 1,000
24	PRF	DOT-D06-RPA08	35556	BRFN-52()-39-49	US 52: MISSISSIPPI RIVER IN SABULA (STATE SHARE)	Bridge Cleaning	\$ 15	\$ 15	\$ 15	\$ 15	\$ 60

Figure 10.8 RPA8 2017-2020 Transportation Improvement Program (Cont.)

Regional Planning Affiliation 8 (FY 2017-2020 Final Transportation Improvement Program)										
FY 2017 (October 1, 2016 to September 30, 2017)				IOWA		Programmed Amounts in 1,000				
NO	PCM	SPONSOR	TPMS	PN	LOCATION	TYPE WORK	FY 17 TOTAL	FY 18 TOTAL	FY 19 TOTAL	GRAND TOTAL
25	PRF	DOT-D06-RPA08	35557	STPN-61(0)-21-49	US 61: HURSTVILLE MARSH	Wetland Mitigation	\$ 55	\$ -	\$ -	\$ 55
26	PRF	DOT-D06-RPA08	33987	BRFN-20(0)-39-28	US 20: HATCHERY RD & SPRING BRANCH CREEK 2.8 MI W OF IA 38 (EB & WB)	Bridge Deck Overlay, Traffic Signs	\$ -	\$ 1,111	\$ -	\$ 1,111
27	PRF	DOT-D06-RPA08	29559	BRFN-62(0)-39-49	IA 62: LITTLE MILL CREEK 0.1 MI S OF CO RD D61	Bridge Deck Overlay	\$ -	\$ 349	\$ -	\$ 349
28	PRF	DOT-D06-RPA08	29560	BRFN-62(0)-39-49	IA 62: MILL CREEK 0.1 MI N OF CO RD D61	Bridge Deck Overlay	\$ -	\$ 348	\$ -	\$ 348
29	PRF	DOT-D06-RPA08	35461	BRFN-30(0)-39-23	US 30: S 6TH AVE 1.5 MI E OF S JCT US 61 (EB/WB)	Bridge Deck Overlay	\$ -	\$ -	\$ 880	\$ 880
30	STBG	Bellevue	35623	STP-U-0520(0)-27-49	In the city of Bellevue, On US 52 S, from Dubuque/Jackson County line to Northern City limits of Bellevue	Shoulder Grading	\$ 288	\$ -	\$ -	\$ 288
31	STBG	RPA-08	35624	RGTR-PA08(0)-ST-31	Replace four Regional Transit Authority 8 buses	Transit Investments	\$ 360	\$ -	\$ -	\$ 360
32	STBG	RPA-08	35625	RGTR-PA08(0)-ST-23	Replacing two buses for Clinton Municipal Transit Administration (MTA)	Transit Investments	\$ 180	\$ -	\$ -	\$ 180
33	STBG	La Moite	26639	STP-U-4080(601)-70-49	In the city of La Moite, On S Main St from Park Ave. south to the south city limits	Bridge Replacement, Culvert Replacement	\$ 435	\$ -	\$ -	\$ 435
34	STBG	Maquoketa	9625	STP-U-4742(619)-70-49	On N 2nd from W Platt st to W Quarry st including 1/2 block of James Street east of N 2nd and James St intersection.	Pavement Rehab	\$ 1,125	\$ -	\$ -	\$ 1,125
35	STBG	Clinton CRD	17644	STP-S-C023(106)-5E-23	On Welton East (E63) from Hwy 61 to Y70	Pavement Rehab	\$ 950	\$ -	\$ -	\$ 950
36	STBG	Jackson CRD	24844	STP-S-C049(69)-5E-49	Y46 (142nd Ave), Clinton County Line to IA 64	Pavement Rehab	\$ 700	\$ -	\$ -	\$ 700
37	STBG	RPA-08	478	RGPL-PA08(RTP)-ST-00	On ECIA Transportation Planning	Trans Planning	\$ 103	\$ 65	\$ 65	\$ 298
38	STBG	Worthington	33885	STP-136-3(48)-2C-31	In the city of Worthington, On HWY 136, from Milepost 81.71 to Milepost 82.30	Pavement Rehab	\$ 218	\$ -	\$ -	\$ 218
39	STBG	De Witt	34212	STP-U-1855(617)-70-23	In the city of De Witt, On S 6th Ave, from Lake St to S 5th St	Pavement Rehab	\$ -	\$ 940	\$ -	\$ 940
40	STBG	Dyersville	29670	STP-U-2160(0)-70-28	In the city of Dyersville, On 1st Avenue West Bridge Deck Overlay, Over Bear Creek, from X49/332nd Ave to Bellline Rd	Bridge Deck Overlay	\$ -	\$ 386	\$ -	\$ 386
41	STBG	Clinton CRD	32459	STP-S-C023(109)-5E-23	On F12, from Z-36 east to Mill Creek Road, S4 T81 RE6	Pavement Rehab	\$ -	\$ -	\$ 2,140	\$ 2,140
42	STBG	Delaware CRD	26843	STP-S-C028(0)-5E-28	On Robinson Road, from Linn County Line North 12.0 Miles to 220th Street	Pave, Subdrains	\$ -	\$ -	\$ -	\$ 3,018
43	STBG	Maquoketa	35632	STP-U-4742(0)-70-49	In the city of Maquoketa, On W Quarry St, from N 2nd Street to N Vermont	Pavement Rehab	\$ -	\$ -	\$ -	\$ 723
44	STBG	Clinton	35633	STP-U-1415(0)-70-23	In the city of Clinton, On Manufacturing Drive, from Bluff Blvd to Rail road tracks	Pavement Rehab	\$ -	\$ -	\$ -	\$ 2,426
45	STBG	Manchester	35683	STP-4682(0)-2C-28	HWY 13 from Intersection of HWY 13 and West Main St to Intersection of HWY 13 and Acres St	Pavement Rehab	\$ -	\$ -	\$ -	\$ 1,000
46	STBG	Jackson CRD	35330	STP-S-C049(0)-5E-49	On Z34 (435th Ave), from Preston North to Maquoketa River	Pavement Rehab	\$ -	\$ -	\$ -	\$ 1,902
47	STBG	Dubuque CRD	35684	STP-S-C031(0)-5E-31	On Tollgate Rd, from HWY 52 to Clayton County Line	Pavement Rehab	\$ -	\$ -	\$ -	\$ 1,750
48	STBG	Dubuque CRD	35685	STP-S-C031(0)-5E-31	On Ridge rd, from Tollgate rd to N Buena Vista rd	Pavement Rehab	\$ -	\$ -	\$ -	\$ 1,750

Figure 10.8 RPA8 2017-2020 Transportation Improvement Program (Cont.)

Regional Planning Affiliation 8 (FY 2017-2020 Final Transportation Improvement Program)												
FY 2017 (October 1, 2016 to September 30, 2017)						IOWA		Programmed Amounts in 1,000				
NO	PGM	SPONSOR	TPMS	PN	LOCATION	TYPE WORK		FY 17 TOTAL	FY 18 TOTAL	FY 19 TOTAL	FY 20 TOTAL	GRAND TOTAL
49	STBG	De Witt	35686	STP-U-1855(0)-27-23	In the city of De Witt, On S 6th Ave, from S 5th St to City Limits	Pavement Rehab		\$ -	\$ -	\$ -	\$ 418	\$ 418
50	STBG	Clinton CRD	35150	STP-S-C023(xx)-5E-23	On Z30, from Wapsipicon River to State Highway 67, S8 T80 RE5	Pavement Rehab		\$ -	\$ -	\$ -	\$ 1,220	\$ 1,220
51	STBG-HBP	Clinton CRD	26902	BROS-C023(100)-8J-23	On new road, from 235th Street to Hwy 30	Grading		\$ 725	\$ -	\$ -	\$ -	\$ 725
52	STBG-HBP	Clinton	29503	BROS-1415(628)-8J-23	In the city of Clinton, On W. Deer Creek Rd., Over Deer Creek	Bridge Replacement		\$ 900	\$ -	\$ -	\$ -	\$ 900
53	STBG-HBP	DOT-D06-RPA08	20855	BRF-52(1)-38-49	US 52: MISSISSIPPI RIVER OVERFLOW IN SABULA	Bridge Replacement, Right of Way		\$ 2	\$ 6,079	\$ -	\$ -	\$ 6,081
54	STBG-HBP	Delaware CRD	26942	BROS-C028(90)-8J-28	On 220th Ave, from 297th St North 0.3 Miles, S7 T87 R4	Bridge Replacement		\$ 490	\$ -	\$ -	\$ -	\$ 490
55	STBG-HBP	Jackson CRD	32807	BROS-C049(67)-8J-49	Lytle Creek bridge on 287th St	Bridge Replacement		\$ 525	\$ -	\$ -	\$ -	\$ 525
56	STBG-HBP	Jackson CRD	32800	BROS-C049(65)-5F-49	On 162nd street, Over Small Creek, S17 T85N R2E	Bridge Replacement		\$ 350	\$ -	\$ -	\$ -	\$ 350
57	STBG-HBP	Clinton CRD	35141	BROS-8235(601)-8J-23	On SEVEN DAY RD, Over SILVER CREEK(WEST), S0 T0 R00	Bridge New		\$ 450	\$ -	\$ -	\$ -	\$ 450
58	STBG-HBP	Jackson CRD	21843	BRS-C049(64)-60-49	On E29 (Division St), Over Beers Creek	Bridge Replacement		\$ -	\$ 900	\$ -	\$ -	\$ 900
59	STBG-HBP	Jackson CRD	24842	BRS-C049(70)-60-49	On E17 (150th St), Over Jessie Branch	Bridge Replacement		\$ -	\$ 800	\$ -	\$ -	\$ 800
60	STBG-HBP	Delaware CRD	19147	BROS-C028(0)-8J-28	190TH AVE: From 165th Street to 150th Street	Bridge Replacement		\$ -	\$ 550	\$ -	\$ -	\$ 550
61	STBG-HBP	Delaware CRD	23527	BROS-C028(0)-8J-28	Pioneer Rd: Hwy 38 W 0.25 MI	Bridge Replacement		\$ -	\$ -	\$ 350	\$ -	\$ 350
62	STBG-HBP	Jackson CRD	20486	BROS-C049(0)-5F-49	On 35th St Over Prairie Creek	Bridge Replacement		\$ -	\$ -	\$ 600	\$ -	\$ 600
63	STBG-HBP	Clinton CRD	29281	BRS-C023(1)-60-23	On Y-32, Over overflow, in NE S17 T82 R1	Bridge New		\$ -	\$ -	\$ -	\$ 400	\$ 400
64	STBG-HBP	Clinton CRD	32441	BRS-C023(108)-60-23	On Z36, Over SMALL STREAM, in S14 T82 RE5	Bridge Replacement		\$ -	\$ -	\$ -	\$ 280	\$ 280
65	STBG-HBP	Delaware CRD	26844	BROS-C028(0)-8J-28	On 285th Street, from 110th Ave East 0.2 Miles, S5 T87 R6	Bridge Replacement		\$ -	\$ -	\$ -	\$ 500	\$ 500
66	TAP	Epworth	34300	TAP-R-2405(603)-8T-31	In the city of Epworth, On Jacoby Drive East & Bierman Road, from South Center Avenue to Meadowlands Court	Lighting		\$ 111	\$ -	\$ -	\$ -	\$ 111
67	TAP	DOT-D06-RPA08	35629	TAP-U-US 52(0)-8J-49	On US 52, from Dubuque/Jackson Co line to Saint Donatus, from Saint Donatus to North end of City of Bellevue	Ped/Bike Paving		\$ 313	\$ -	\$ -	\$ -	\$ 313
68	TAP	Dyersville	35630	TAP-R-2160(614)-8T-31	10 foot side walk on 3rd street bridge over North fork creek of Moquoketa river	Ped/Bike Paving		\$ -	\$ 313	\$ -	\$ -	\$ 313

Figure 10.8 RPA8 2017-2020 Transportation Improvement Program (Cont.)

Regional Planning Affiliation 8 (FY 2017-2020 Final Transportation Improvement Program)													

Figure 10.8 RPA8 2017-2020 Transportation Improvement Program (Cont.)

Regional Planning Affiliation 8 (FY 2017-2020 Final Transportation Improvement Program)													
FY 2017 (October 1, 2016 to September 30, 2017)					IOWA			CLINTON MTA					
NO	Fund(s)	Sponsor	Transit #	Expense	Prj. Type	Obj. Type	Unit #	Desc	Add Ons	FY17_Ttl	FY18_Ttl	FY19_Ttl	FY20_Ttl
1	5311	Clinton	4143	Operations	Misc	Other		General Operations		\$ 2,064,352	\$ -	\$ -	\$ -
2	5339	Clinton	4144	Capital	Replacement	Vehicle	Unit#: 00-51	Light Duty Bus (176" wb)	Diesel, VSS, BioDiesel	\$ 103,000	\$ -	\$ -	\$ -
3	5339	Clinton	4145	Capital	Replacement	Vehicle	Unit#: 9743	Heavy Duty Bus (35-39 ft.)	Diesel, UFRG, VSS, Low Floor, BioDiesel	\$ 434,000	\$ -	\$ -	\$ -
4	5339	Clinton	4142	Capital	Replacement	Vehicle	Unit#: 0150	Light Duty Bus (158" wb)	Diesel, VSS, BioDiesel	\$ 98,000	\$ -	\$ -	\$ -
5	STA, STP	Clinton	4147	Capital	Replacement	Vehicle	Unit#: 0640	Light Duty Bus (176" wb)	Diesel, VSS, BioDiesel	\$ 103,000	\$ -	\$ -	\$ -
6	STA, STP	Clinton	4148	Capital	Replacement	Vehicle	Unit#: 564	Light Duty Bus (138" wb)	Diesel, VSS, BioDiesel	\$ 96,000	\$ -	\$ -	\$ -

11

IMPLEMENTATION

Implementing the Long Range Transportation Plan is crucial part of the planning process. RPA 8 communities can implement the plan investing in projects and implementing the policies included in the plan. Plan implementation also involves certain standard routine tasks that can be considered on two levels: project-related implementation, and concept-related implementation. These tasks are as necessary as fulfilling the goals and objectives and constructing transportation projects. Projects selected to receive capital funds through the Transportation Improvement Program (TIP) must be aligned with the goals and objectives of the LRTP. Projects funded with TIP money will address the project related implementation. Tasks that are generated to address concept related implementation will help staff in developing Transportation Planning Work program (TPWP).

The recommendations of each element of the 2040 RPA 8 LRTP listed below will help in generating tasks that can help in project related and concept related implementation. Implementation of these recommendations will be contingent upon a wide range of external factors, including but not limited to: funding availability, socio-economic trends, emergent technologies, political decisions, and environmental impacts.

RECOMMENDATIONS

ROADWAY AND BRIDGES

- Operation and maintenance of roads and bridges is a priority
- Apply context-sensitive design to reduce community impacts
- Promote street connectivity.
- Continue to partner with IA DOT to construct projects identified in the LRTP to meet current and future travel demand.
- Continue to partner with IA DOT in the early development of environmental documents for projects identified in the LRTP.

BICYCLE AND PEDESTRIAN

- Provide paved shoulders on roads with moderate to high traffic volumes and speeds.
- Continue to expand the regional trails network
- Continue the regional trail system
- Improve pedestrian safety
- Improve On-Street Bicycle Safety

- Expand bicycle route system to connect with surrounding counties,
- Cooperate with local partners (counties, cities and surrounding towns) to expand the use of shared use paths throughout the system.

TRANSIT - RTA

- Explore coordination opportunities between the Jule and RTA.
- Encourage employers to utilize current public transit systems.
- Provide services on an on call basis.
- Collaboration with human service agencies, dialysis, and Medicaid brokers.
- Expand hours to include late afternoons, evenings, weekends and holidays for all three counties.
- Recruitment and retention of drivers.
- Expand Travel Training Program.
- Transportation from Dubuque to Peosta.
- Expand Mobility Management services.

TRANSIT – CLINTON MTA

- Running later on weekdays and Saturday
- Sunday service
- Service to Royal Pines
- 2nd and 3rd shift service
- Service to Camanche and Fulton
- Service to riverfront and west side
- Service to marina and hotels

SAFETY AND SECURITY

- Sidewalk improvements
- Traffic calming efforts
- Speed reduction initiatives
- Pedestrian and bicycle crossing improvements
- On street/off street bicycle and pedestrian facilities
- Secure bike parking
- Traffic diversion programs around schools
- Educational programs in and around school systems

- Develop a strategic communication plan integrating the FHWA's Toward Zero Deaths initiative.
- Deliver safety messages to multimedia networks (television, radio, newspaper, social media).
- Involve parents in driver education courses.
- Require more behind-the wheel instruction time.
- Require a diversity of driving conditions (all weather conditions, daytime and nighttime, all road surfaces).
- Support additional officer hours on roadways.
- Increase special enforcement campaigns.
- Use dynamic message signs to convey safety messages.
- Equip law enforcement with state-of-the-art technology for compliance.
- Promote technologies to gather commercial vehicle information.
- Expand law enforcement training to effectively identify impaired drivers.
- Launch a drowsy driving program within the Iowa DOT's Office of Motor Vehicle Enforcement.
- Centerline rumble strips
- Shoulder/edgeline rumble strips
- Curve delineation
- Shoulder treatments
- Cable barrier rail
- Urban
 - o Innovative intersection designs
 - o Traffic signal modifications
- Rural
 - o Intersection lighting
 - o Stop controls
- Work with the MDST group to carry out safety strategies.
- Engage professionals across disciplines and systems to participate and create a unified message.
- Support primary seat belt legislation for all positions.
- Support inclusion of distracted driving as a primary offense.
- Support increased penalties for impaired driving violations.
- Expand statewide electronic crash reporting through Traffic and Criminal

Software (TraCS).

- Develop a Web portal to increase safety data availability.
- Support creation of a web based analytical tool.

FREIGHT

- Update 2040 Region 8 Long Range Transportation Plan with recommendations from Eight County Freight Study.
- Form an active freight committee with public and private sector members.
- Implement short and long range recommendations provide in Eight County Freight Plan
- Closely coordinate area roadway planning with freight objectives, including access and mobility in the context of other community planning objectives.

ENVIRONMENTAL

- Coordinate with resource agencies throughout the development of transportation plans and documents.
- Minimize impacts to environmental resources and minority and low-income populations through systems-level.
- Work with statewide partners to support and develop a statewide data system.

FINANCIAL

- Continue to monitor transportation funding needs.
- Identify shortfalls in funding sources and strategies to fill gaps.
- Seek alternatives and innovative ways to fund transportation improvements.
- Support efforts to increase federal and state revenue for transportation projects in the area.
- Continue to support local funding programs sufficient to obtain state and federal
- full-funding grant for planned projects.

CONCLUSION

By investing in transportation projects that support the objectives of this LRTP, the RPA 8 region would offer residents additional means to travel within and beyond their neighborhoods by embracing options to walk, bike, ride, and drive. The infrastructure investment decisions made by RPA 8 will further strengthen our existing communities. Transportation infrastructure enhancements for all modes of travel will have a positive impact on quality of life and the character of our communities within RPA 8. The RPA 8 LRTP must be updated at least every 5 years. However, a completed freight plan will prompt an amendment to the LRTP in 2018.