

## CHAPTER 8

# TRANSPORTATION + MOBILITY

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# CHAPTER 8

## TRANSPORTATION + MOBILITY

*Transportation is a vital link within Dubuque's economic fabric. Investments in transportation promote City goals through improved access to jobs, services, and recreational opportunities via a range of modal options. A safe, robust, and balanced transportation system enhances the City's quality of life.*

### Introduction

In addition to economic and mobility considerations, efficient use of the transportation system is critical to the sustainability of Dubuque. The 2013 Dubuque Community Climate Action & Resiliency Plan found that transportation accounted for 23% of Dubuque's total greenhouse gas emissions. That plan identified many projects that would support reduced Green House Gas emissions, including:

- Complete Streets implementation
- The Jule Transit System redesign/fuel efficient buses
- Dubuque Intermodal Transportation Center (completed in 2016)
- Southwest Arterial (to be completed in 2019)
- Smarter City Intelligent Transportation Systems
- Roundabout conversions (first roundabout completed in 2016)

Transportation also plays a role in community health. A 2010 Green Dubuque, Inc. publication titled, *The Cost of Incomplete Streets* found that obesity and inactivity among Dubuque residents cost \$722 per person annually, costs that could in part be reduced with expanded bike and pedestrian facilities.

The remainder of this chapter will focus on the issues and ideas for improved transportation and mobility for Dubuque.



▲ Crosswalk and pedestrian sign outside of Wahlert High School

**An efficient transportation system is critical to the sustainability of Dubuque.**

**23%**

Of Dubuque's total Greenhouse Gas emissions are due to transportation.



**Transportation also plays a role in community health.**



**\$722**

Per person cost, spent annually on health and transportation needs due to obesity and inactivity.

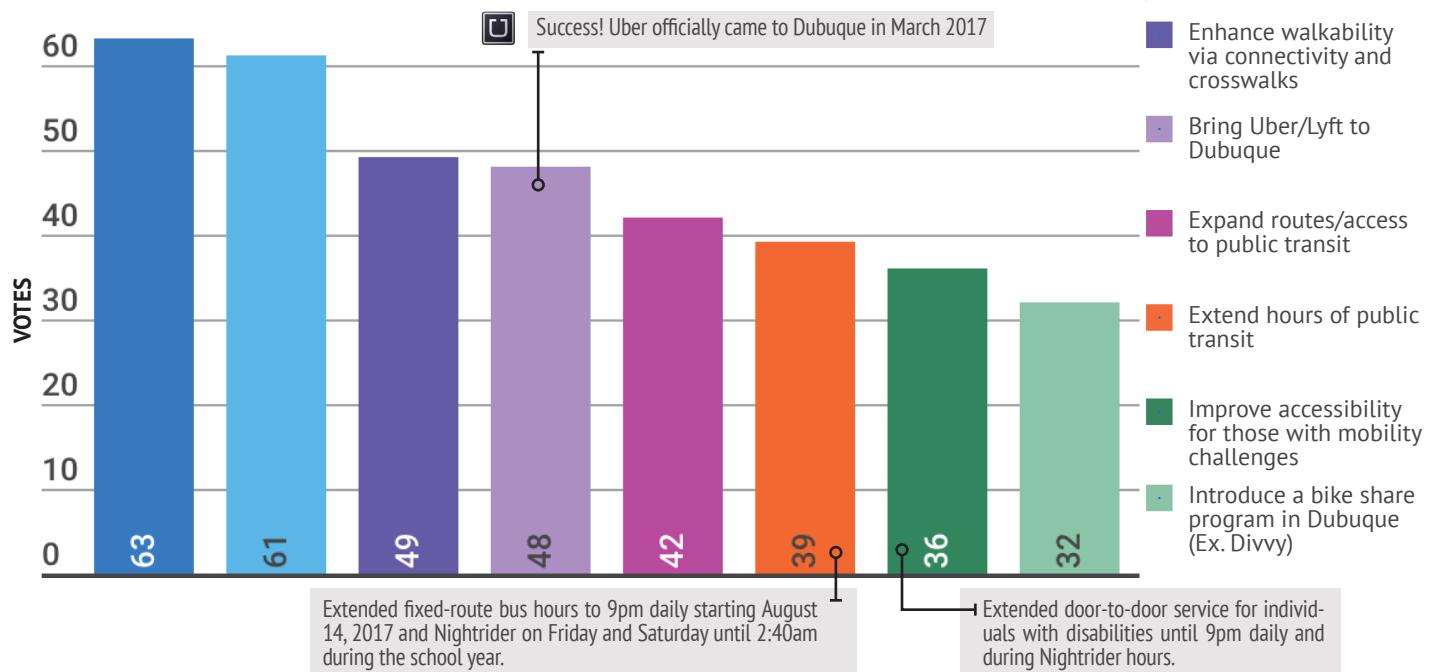


■ FIGURE 8.1

□ When it comes to mobility what do you want most for the future of Dubuque?

Figure 8.1 indicates that the general feedback received from this Quick Poll question, which centers on the desire for pedestrian, biking, Complete Streets, and transit initiatives. Additional feedback was supportive for general roads and infrastructure improvements as well.

- Enhance off-street trail network and connectivity
- Improve on-road bike lanes



## Input

The transportation approach to the Comprehensive Plan was framed by the input received from the community. The extensive and multifaceted public engagement approach described in Chapter 2 details the overall engagement process and describes how this input was solicited in greater detail. Additional transportation input received and polling results are included herein. Figure 8.1 (above) highlights the transportation strategies that ranked highest with residents of Dubuque from the Environmental Integrity Quick Poll.

Hundreds of comments were received on transportation issues and ideas over the course of community engagement for the Plan. The comments received most frequently related to the topics identified in Figure 8.1. The concerns of the community included most major modes of travel, with a heavy emphasis on bicycle, pedestrian, and transit modes.

## Vision

Based on input received and other relevant City planning studies conducted, the proposed transportation vision for Imagine Dubuque is:

***A convenient and connected transportation system for residents of all ages and abilities. The system will incorporate all modes, leverage technology, and promote new transportation ideas to foster strong neighborhoods and a thriving and sustainable city.***



## VISION GOALS

The proposed transportation goals that support this vision are outlined below:

- **Mobility**  
Expanded mobility for all system users.
- **Efficiency**  
Improve transportation system efficiency and reliability.
- **Economy**  
Provide a transportation system that enhances Dubuque's economy.
- **Sustainability**  
Provide a diverse, equitable and environmentally sustainable set of transportation options.
- **Safety**  
Enhance safety for all system users.

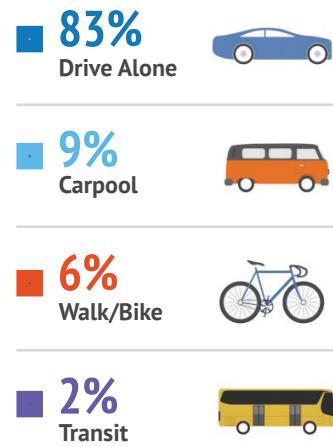
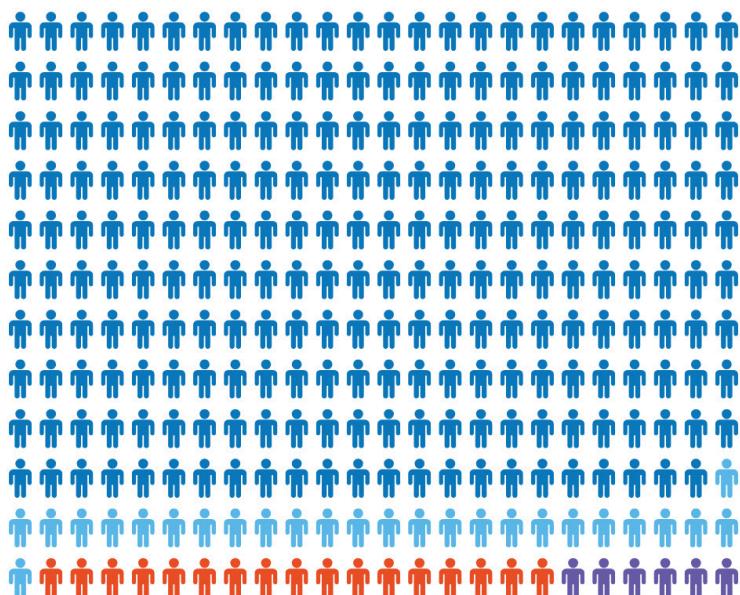
## Travel Patterns

To understand how the City currently travels, data from the U.S. Census Bureau were evaluated. Figure 8.2 shows the mode of travel residents of Dubuque use for their work commute.

■ FIGURE 8.2

### □ How do Dubuque residents currently get to work?

- 92% of residents drive to work alone in an automobile or carpool.
- 6% of residents walk or bike to work.
- 2% of residents take the bus to work.



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



## Commute Patterns

Commute patterns explain the relative strength of the Dubuque economy. The more non-residents that commute into the City to work, the larger the economic draw. Commute patterns highlight the importance of transportation connections beyond the City's boundaries. This chapter discusses many of the roadway, bus, and planned rail connections between Dubuque and surrounding communities and regions.

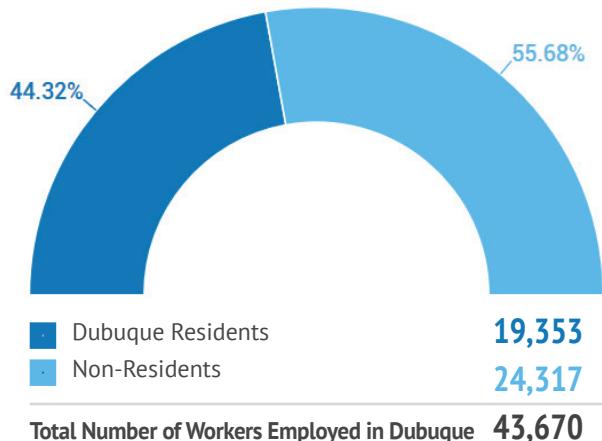
Data from the Longitudinal Employer-Household Dynamics program at the U.S. Census Bureau indicates that Dubuque is a net importer of workers. This means that there are more people that commute into Dubuque for work, than Dubuque residents that commute elsewhere for work. Figure 8.3 and Figure 8.4 show the breakdown of commute patterns in and out of Dubuque.

- As shown, nearly twice as many people commute into Dubuque (24,317) as those that commute elsewhere from Dubuque (12,437).

**FIGURE 8.3**

**Dubuque Workforce:**

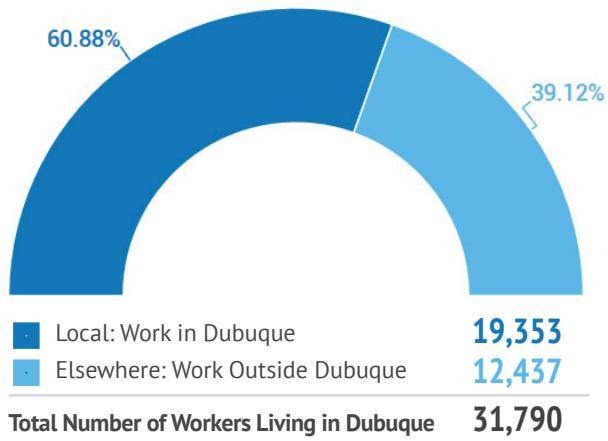
What is the ratio of residents to non-residents?



**FIGURE 8.4**

**Stay Local or Travel Elsewhere:**

Where do Dubuque residents work?



## QUICK FACT

Dubuque is a net importer of workers, with nearly twice as many workers from outside the City commuting into Dubuque for work, than Dubuque residents leaving the City limits for their jobs.

## Complete Streets

***The objective of Complete Streets is to provide safe and convenient transportation options for all modes of transportation and system users.***

This includes all user ages and abilities and also incorporates all modes of transportation; including pedestrians, cyclists, public transit users, motorists, and freight vehicles. Complete Streets are most effective when integrated into all phases of project planning and development. They are important elements of the Comprehensive Plan and should be considered to further establishing the role of Complete Streets in Dubuque.

Established nearly two centuries ago, Dubuque has a long history of streets that have served more than just automobiles. Like much of America, its development pattern and street design became more automobile-focused following World War II. Feedback received from a wide cross-section of the Dubuque community indicates that the City should make it a high priority to plan and design streets that better accommodate pedestrians and bicyclists.

### Recent Developments

Three major Complete Streets developments that have occurred in recent years include:

- The City Council passed a resolution adopting a Complete Streets Policy for Dubuque in 2011. The policy encourages an expanded use of Complete Streets principles in street planning and design.
- The City Council made the Complete Streets Policy part of the Unified Development Code for new subdivisions in 2012.
- The \$7.7 million Historic Millwork District Complete Streets project was completed in 2012. Elements included curb bulb outs to reduce pedestrian crossing distances, sustainable materials, street furniture, bike racks, handicapped-accessible design, and historic preservation elements.



### Connecting the First and Last Mile

More than just reliable and accessible transit, Complete Streets relies on the successful integration of trails and trail heads with bus stops and transfers to allow people to travel the “first and last mile” to/from transit.

Bike and ped connections are essential for transit routes to be effective. If you can't cross the street because it's unsafe, you may have to board the bus just to get from one destination to another even if they're just 40 feet apart.

▲ Millwork District Complete Street Treatments

## Guiding Principles

As the City continues to implement Complete Streets, three primary guiding principles should be considered:

- During each stage of a street's maintenance cycle and project development, identify opportunities to plan, design, fund, and implement Complete Streets elements.
- Make Complete Streets investments that consider the wider network of Complete Streets.
- Not all roadways are good candidates for Complete Streets.
- Motorist education is an important component of making roadway corridors safer for all modes of transit.

## Roadways Not Ideal for Complete Streets

- ✖ **Arterials:** Roads that carry high vehicular traffic volumes and serve inter-regional traffic (such as US 20 and the Southwest Arterial) are often best served by limited and separate pedestrian facilities like sidewalks and trails.
- ✖ **Limited ROW:** Additionally, many streets in Dubuque have limited public right-of-way (ROW), particularly in the older portions of the community. This often limits the range of modes and activities that can be accommodated within the street environment.
- ✖ **Topography:** In many Dubuque corridors, steep grades can limit a large portion of the cycling population from biking.



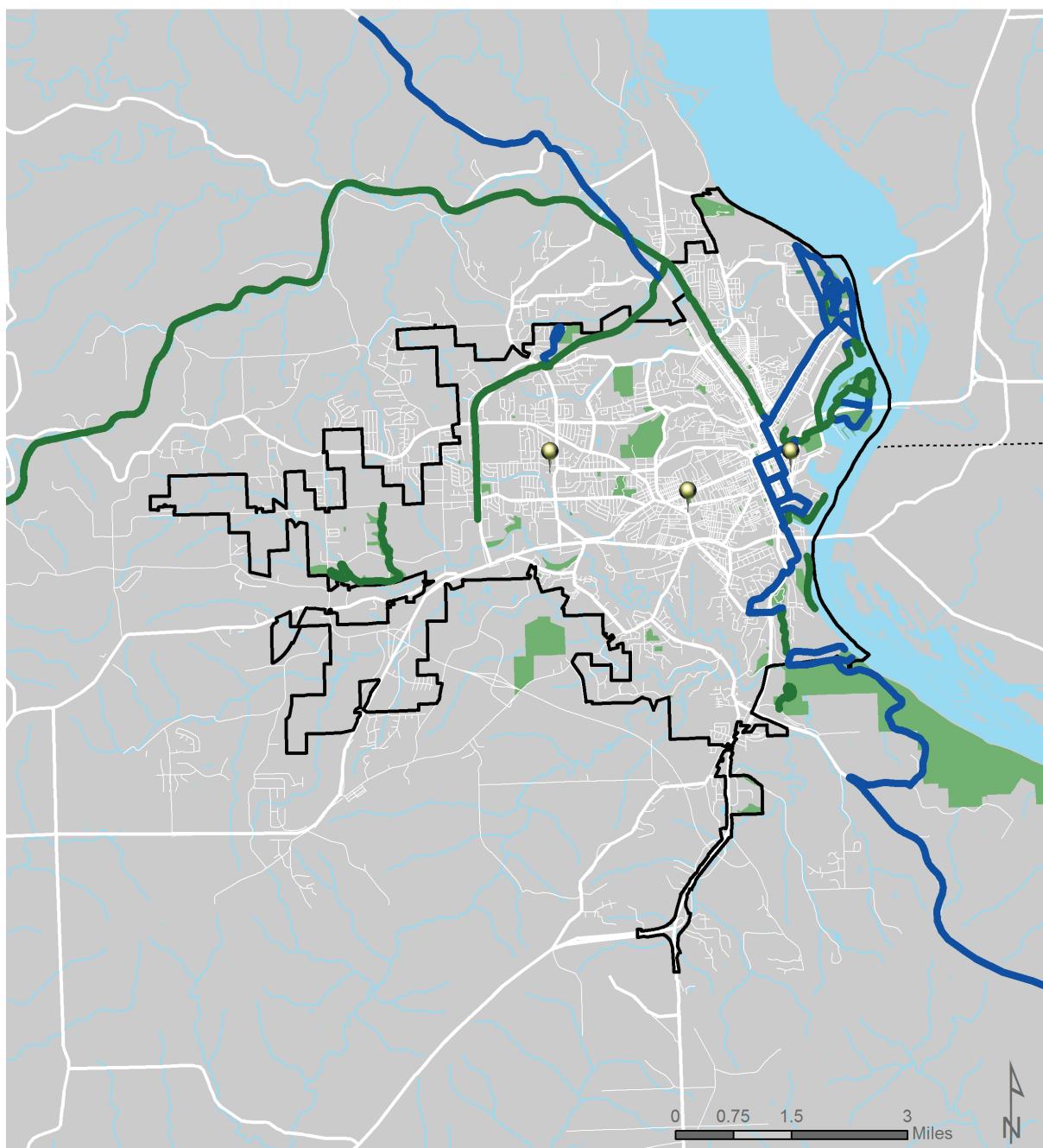
**“Get on your feet Dubuque!  
Walk, dance, stand, etc.  
Health begins with  
even walking one block.  
Walkable cities are more  
equitable and sustainable.”**

- Idea shared via the project website

## ■ FIGURE 8.5

### □ Existing and Proposed Future Trails and On-Street Bike Routes

The current trail and on-street bike system is shown in Figure 8.5, along with proposed future trails.



## Existing Bike Facilities

### Bike Facilities

Off-Street Trails  
On-Street Bike Routes

Parks

Bus Transfer Stations

Dubuque City Limits



## John F. Kennedy Road Corridor: Complete Streets Case Study

*To illustrate the opportunities a Complete Streets approach might provide, the John F. Kennedy Road (JFK) corridor is presented as a case study in this section.*

JFK between Dodge Street (US 20) and Asbury Road is a corridor that was noted by many Dubuque residents for its barriers to safe and convenient pedestrian and bicycle travel. The general transportation characteristics noted in the JFK corridor included:

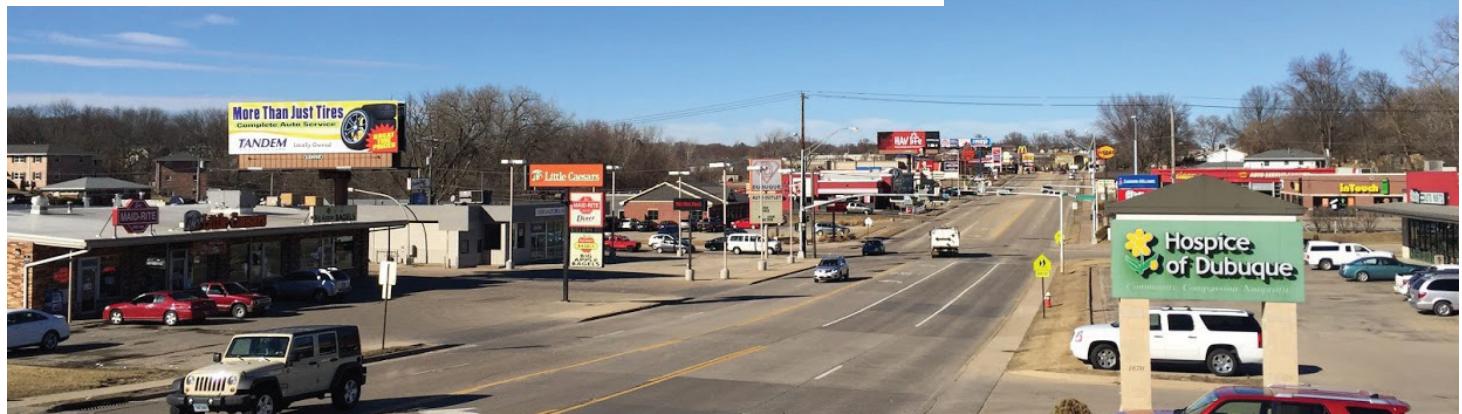
### Characteristics

- **Fast:** Relatively high vehicular travel speeds (35 miles per hour).
- **Broken:** Discontinuous sidewalk facilities.
- **Impediments:** Utilities and signage placed in the middle of sidewalks.
- **Unsafe:** No boulevard separation between the street and pedestrian.
- **Barriers:** Limited opportunities for safe pedestrian crossings.
- **Topography:** High levels of driveway access to the street.

As with many corridors, Complete Streets opportunities are not easily attained. There are implementation barriers to overcome for many of the corridor's Complete Streets elements. JFK is a minor arterial street that carries relatively high traffic volumes.

### Average Daily Traffic

According to the Iowa Department of Transportation traffic volume maps, average daily traffic volumes in the JFK corridor range between 12,900 just south of Asbury to 23,800 just north of Pennsylvania. For this reason, much of the corridor warrants a 5-lane cross section based on traffic capacity. These high volumes overlay the segment of JFK with the narrowest public right-of-way; south of Pennsylvania Avenue, the street right-of-way (ROW) is approximately 70 feet wide. This limited ROW is relatively narrow to accommodate five (5) travel lanes and sidewalk amenities.



▲ JFK Corridor

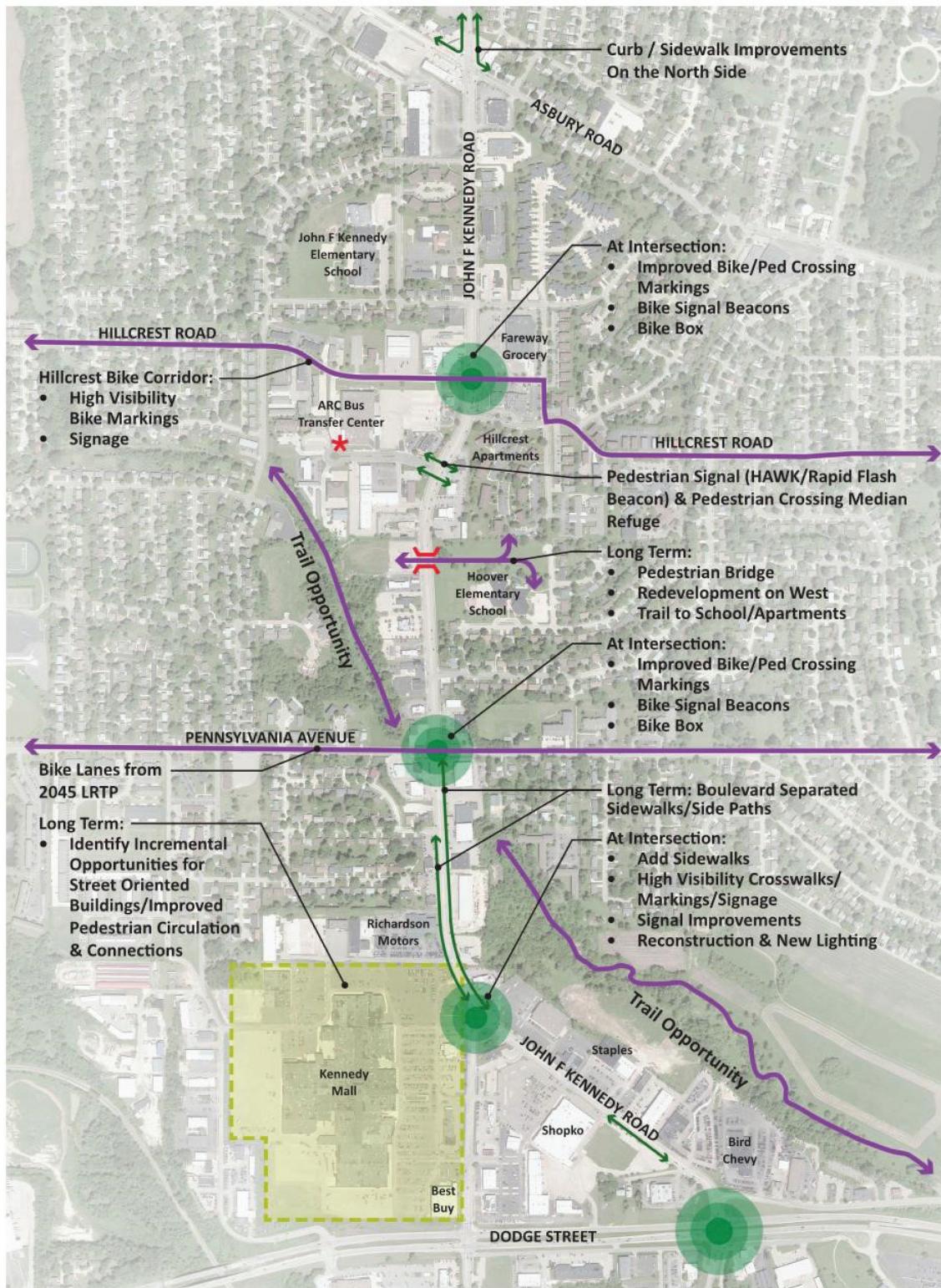
At the Environmental Integrity Community Workshop on February 21, 2017, the JFK corridor was discussed to get input on issues and opportunities for improved mobility and safety. Planning staff also evaluated the corridor.



■ FIGURE 8.6

□ Potential Complete Streets Opportunities in JFK Corridor

Based on the input received, and an evaluation of the challenges in the corridor, potential solutions are illustrated in Figure 8.6. Highlights of some of those solutions are discussed below.



## Improved Pedestrian Crossings at Intersections

Pedestrian crossings of JFK's signalized intersections should be designed in a manner that provides as short of a crossing distance as possible, while making the pedestrian as visible as possible to drivers. Some potential improvement elements for pedestrian crossings at intersections include:

- **Complete sidewalk networks** represent the backbone of a safe pedestrian network. By completing sidewalk connections to the intersections, clear direction is provided to pedestrians as to where they should cross. Opportunities to fill in JFK sidewalk gaps were identified in Figure 8-6, particularly south of Pennsylvania.
- **Effective crosswalks are highly visible.** This provides a cue to drivers that it is the pedestrians' space and that drivers should yield to pedestrians during the appropriate signal phases. High visibility crosswalk markings, as shown in the adjacent photo, provide a more visible pedestrian environment and often improve pedestrian safety. As noted in Figure 8.6, there are opportunities to incorporate crosswalk striping improvements at the JFK intersections with Wacker, Pennsylvania, Hillcrest, and Asbury. LED lights can also be embedded into the crosswalk for enhanced visibility as shown in the image below.
- **Where possible, provide tight corner radii.** Tighter corner radii at intersections improve pedestrian safety by providing shorter crossing distances, slower vehicle turning speeds, and place pedestrians closer to drivers' line-of-sight. This design consideration can be a trade-off in many corridors with high heavy commercial vehicle volumes. Large trucks often require wider turn radii to navigate intersections.



▲ Illustration of Mid-Block Crossing (Source: NACTO)

## Midblock Pedestrian Crossings

Midblock pedestrian crossings assist with safe pedestrian crossings at desired locations that do not have proper access provided by the street network.

**Midblock crossings are warranted where:**

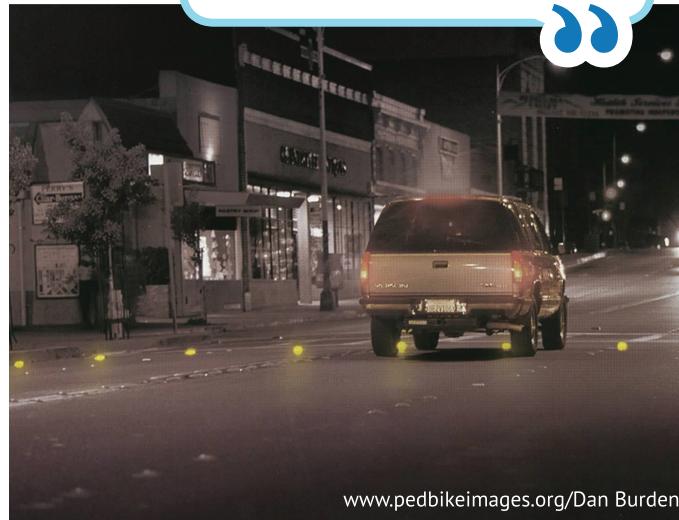
- Streets are wider
- Blocks are longer
- Vehicle speeds are higher
- Pedestrian traffic generators are nearby

On corridors like JFK with 5-lanes, signalized crossings should be considered, along with refuge island medians.

Based on the characteristics of the corridor, a midblock pedestrian crossing should be considered at a location between Carter Road and Hillcrest Road, to connect Hoover Elementary, Luther Manor, and the Hillcrest apartments on the east side of JFK with the ARC Bus Transfer Center and retail destinations on the west side of JFK. Potential locations are shown in Figure 8.6. A grade-separated pedestrian crossing concept, shown below, is likely a longer-term option in the corridor.

*“Better connected neighborhoods through multiuse trails. For example getting to Eisenhower School from Carter Road or Heritage Trail to JFK via 32nd St.”*

- Idea shared via the project website



[www.pedbikimages.org/Dan Burden](http://www.pedbikimages.org/Dan Burden)

▲ JFK Corridor near Carter Road

## On-Street Bike Routes

The Dubuque Metropolitan Area Transportation Study is the federally-recognized regional planning organization for Dubuque and its surrounding communities.

### Pennsylvania Avenue Improvements

The 2045 Long Range Transportation Plan identifies Pennsylvania Avenue as a candidate to incorporate bike accommodations between Seippel Road and University Avenue, which includes pavement markings throughout, and bike lanes between Vizaleea Drive and University Avenue. To improve bicyclist safety as the bike corridor is implemented, intersection improvements should be provided where the Pennsylvania bike corridor crosses the JFK corridor. These could include:

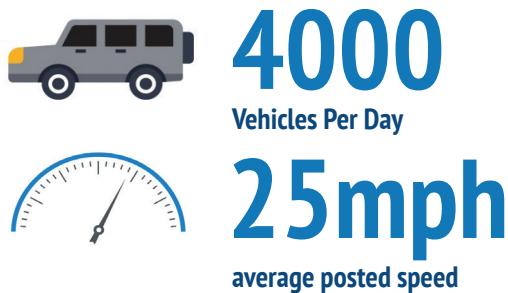
- High visibility bike markings at Pennsylvania and JFK
- Bike signals at the Pennsylvania and JFK



▲ Bike Signal Example (Source: NACTO)



▲ Intersection Crossing Markings Example (Source: NACTO)



According to the Iowa Department of Transportation, Hillcrest carries approximately 4,000 vehicles per day near JFK, with volumes decreasing farther west. The corridor is posted at 25 miles per hour, and is relatively narrow with on-street parking, encouraging slower travel speeds. Elements in this corridor could include:

- On-Street "Sharrows" markings
- "Share the Road" signage
- Wayfinding signage to bike generators (Hill Crest Park, Hoover Elementary, etc.)
- High visibility bike markings at Hillcrest and JFK
- Bike signals at Hillcrest and JFK intersection
- Implementation of bike route could be in phases, starting first with pavement markings and signage, with the intersection signalization improvements coming later

“

***“Eliminate barriers of biking from anywhere – to anywhere by putting in new connecting bikeways where there is no easy way to get from here – to there... currently!”***

***“Extend transit hours at night”***

***“Run Jule bus routes on ALL major streets. Coat streets on the west side, the new alleys look better than the street in front of my house.”***

*- Ideas shared via the project website and app.*

”

## Additional JFK Corridor Considerations

*There are a range of additional improvements that can facilitate a more complete street with higher levels of mobility in the JFK corridor.*

### Intelligent Transportation Systems

Intelligent Transportation Systems projects would make vehicular travel more efficient and reliable, without any street widening. A key recommendation from Dubuque Metropolitan Area Transportation Study 2045 Long Range Transportation Plan is to add fiber optics and conduit between US 20 (Dodge) and Pennsylvania Avenue, and between Asbury Road and the NW Arterial. This communications upgrade will allow the system to be “smarter” by allowing larger amounts of data to travel quickly, providing opportunities for greater management and optimization of traffic flow in the corridor.

As redevelopment opportunities occur, there are two primary opportunities in this corridor:

■ **Secure more public space for sidewalks and trails as properties redevelop.** Through a combination of lane narrowing (for instance, going to 11-foot travel lanes instead of 12-foot lanes) and more public right-of-way, a more sufficient pedestrian way can be provided. As illustrated in Figure 8.7, a range of street cross-section options, using both the existing 70-foot public right-of-way (ROW), and options with additional public ROW are possible on JFK south of Pennsylvania. Options like these would provide space for improved pedestrian facilities. These improved facilities would include a landscaped boulevard, which provides enhanced aesthetics and potentially improved redevelopment opportunities.

The options that secure additional right-of-way would allow for boulevard-separated side paths that could accommodate bicycles.

■ **Reorient development towards the street level,** rather than separating the building and the street with a parking lot. By orienting buildings to front the street environment, and providing parking behind the buildings, the activity is moved to the street, allowing efficient, safe pedestrian access, which in turn promotes additional pedestrian activity in the corridor.

As a large property in the corridor, incremental changes at Kennedy Mall are a particularly significant opportunity. In the long term, as new buildings and small-scale redevelopment opportunities emerge, this activity should continue to be provided as street-oriented, pedestrian friendly development.

### Bike Parking

Encouraging expanded bike parking in the corridor is critical to supporting expanded bicycling. Placing bike parking at major shopping, residential, and school generators allows cyclists to safely and securely store their bike while at their activity. Bike parking can also complement transit ridership at transit stops, also assisting bus operational performance by allowing riders to avoid the time-consuming process of utilizing on-bus bicycle racks. The ARC transfer center on JFK Circle would benefit from expanded bike parking.

A rendering of a potential transformation near the intersection of JFK and Wacker is shown in Figure 8.8.



▲ Example Bike Parking (Source: NACTO)



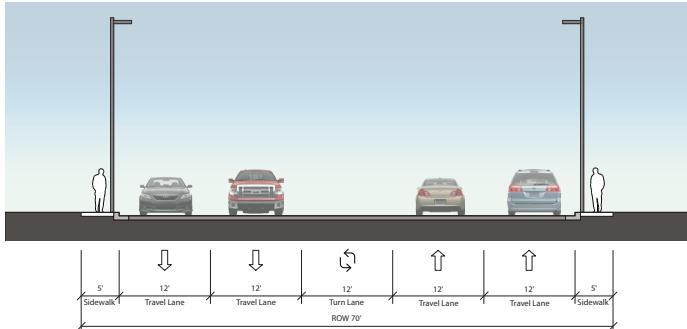
▲ Photo submitted via website from resident with comment that notes the desire for “functional art” around town such as bike racks.

## ■ FIGURE 8.7

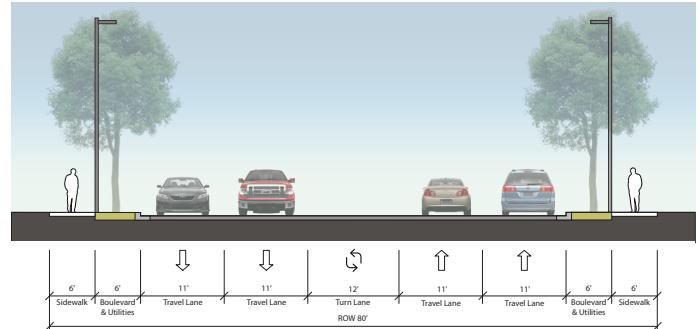
### □ Existing and Potential Cross-Section Enhancement Options, JFK South of Pennsylvania Avenue

Based on the input received, and an evaluation of the challenges in the corridor, potential solutions are illustrated in Figure 8.6. Highlights of some of those solutions are discussed below.

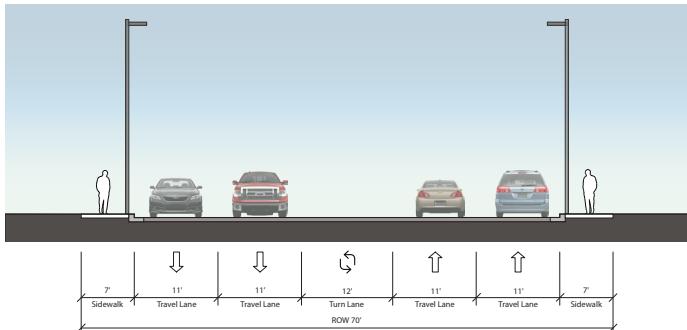
Existing Cross-Section (where sidewalks are present)



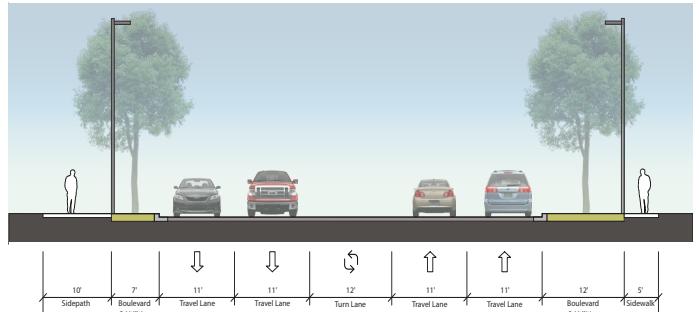
Potential 80' ROW Option (5' additional ROW each side)



Reduced Lane Width - Existing 70' ROW Option



Potential 90' ROW Option (10' additional ROW each side)



#### SIDEWALK TREATMENTS

Sidewalk width and parkway treatments such as landscaping and fencing can have a significant positive impact on actual and perceived safety of pedestrians, by buffering them from traffic and providing a more hospitable and welcoming environment.



■ FIGURE 8.8

□ Potential Transformation at JFK – Wacker Intersection



**BEFORE**

**AFTER**



## Complete Streets Across The City

As noted previously, not all streets are good Complete Streets opportunities. However, the types of improvements outlined here in the JFK corridor could be applied across the City.

### Central Avenue

The Central Avenue corridor was an additional corridor noted for Complete Streets opportunities during community engagement. There is a current study in progress by Iowa State University Extension that is examining Complete Streets opportunities for the Central Avenue corridor. As a part of the Southwest Arterial project, jurisdiction of Central Avenue will be transferred from the State of Iowa to the City. After that occurs, there will be an opportunity to evaluate the possibility of converting Central Avenue to a two-way street and to implement some Complete Streets elements.

### Northwest Arterial

Northwest Arterial is another corridor where potential pedestrian improvements could be considered. More urban amenities such as curb and gutter and other Complete Streets amenities outlined above can improve pedestrian safety in the corridor. Enhanced pedestrian and bike crossings of the Northwest Arterial and major intersections should be explored.

### Kerper Boulevard

Kerper Boulevard would be another example of an existing roadway that could be redesigned using complete street principals to benefit both industry and the community.

### East-West Corridors

The City is also working to incorporate more Complete Streets elements into its east-west corridors, particularly along the Asbury, Pennsylvania, Loras, and University corridors.

### Trail Projects

Future trail projects currently planned include:

- Bee Branch Creek Trail
- Southwest Arterial Trail
- Northwest Arterial Trail connection to Southwest Arterial via a Chavenelle Road trail



*“I'd like to see Dubuque implement the Complete Streets Policy to help reduce greenhouse gas emissions and contribute to overall community health & wellbeing.*

*The policy we've adopted is not being implemented to the extent it needs to in order to really make an impact. There needs to be accountability and action steps written into the comprehensive plan to make Dubuque more bike friendly in all neighborhoods.”*

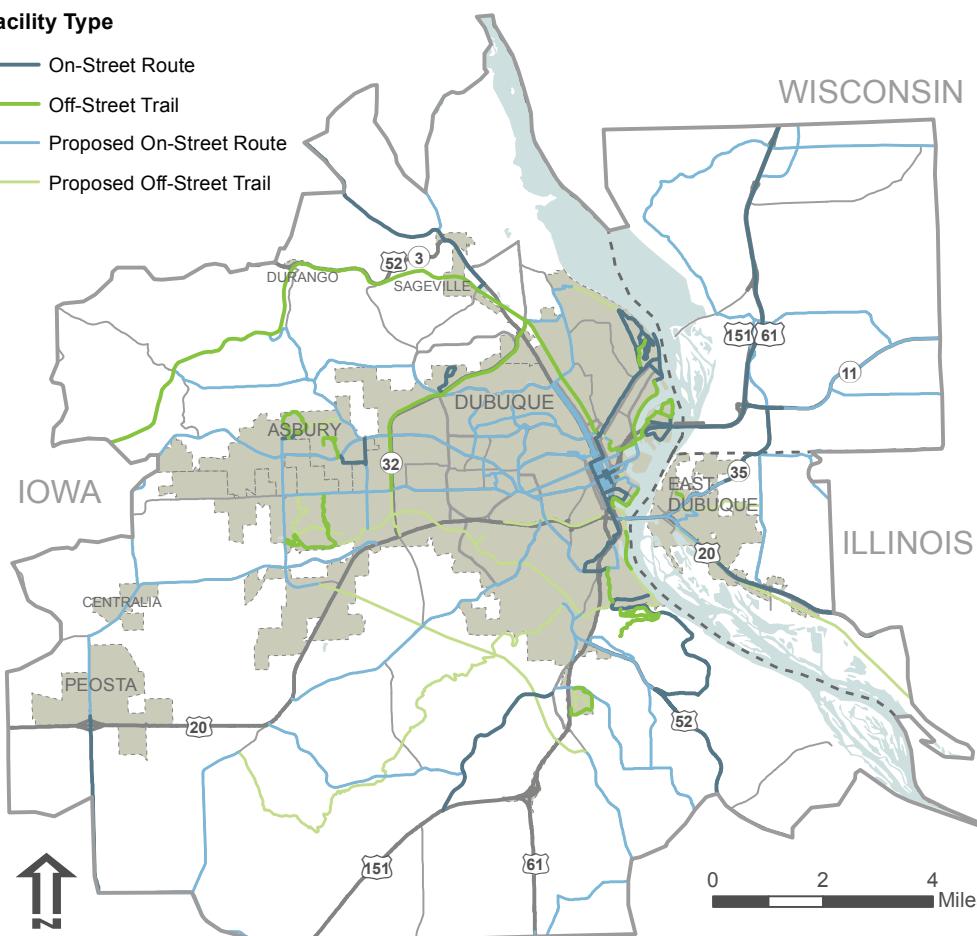
*- Idea and photo shared via the project website.*

## ■ FIGURE 8.9

### □ Future Bicycle and Pedestrian Facilities

#### Facility Type

- On-Street Route
- Off-Street Trail
- Proposed On-Street Route
- Proposed Off-Street Trail



Source: Dubuque Metropolitan Area Transportation Study 2045 Long Range Transportation Plan

#### Bike paths and sidewalks along the Bee Branch Corridor



**Figure 8.9** shows the planned and proposed bike and pedestrian facilities in the Dubuque Metropolitan Area Transportation Study area. All projects in the map 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. Proposed facilities are also awaiting funding, but projects are in the early stages of the planning process.

For a detailed description of planned and proposed bicycle and pedestrian facilities, please see the Tri-State Area Integrated Walking, Bicycling and Hiking Network Plan (2008).



A smart phone app was suggested to promote local trail and bike system use.

## Public Transportation

**The Jule is the public transit service provided by the City of Dubuque, which provides a full set of mobility options for citizens. The Jule provides both fixed-route bus service and paratransit (or dial-a-ride) door-to-door service called Minibus.**

### Fixed-Route Service

The Jule's fixed-route service has undergone changes in recent years in an effort to optimize service levels. The Intermodal Transportation Center located in the Millwork District opened in 2015. The Intermodal Transportation Center is the downtown hub for the Jule, the bus station for intercity bus service, and includes a large parking garage with bike lockers for park and ride trips. Construction is currently underway for a new bus storage and maintenance facility near the Intermodal Center, which replaces the current facility that is over 100 years old.

Fixed-route service is based on a hub-and-spoke model. A conceptual map of the fixed-route system and its service areas is shown in Figure 8.10. As shown in the generalized map, the system includes three "hub" transfer stations from which routes radiate or loop.

#### Jule fixed-route service includes:

- 13 daytime and 9 evening routes operating until 9pm Monday-Saturday.
- Nightrider service that circulates between various parts of Dubuque until 2:40AM on Fridays and Saturdays during the school year.
- Free summer trolley connecting downtown and riverfront.
- Bike racks on all buses, each capable of carrying 2 bikes.
- Americans with Disabilities Act (ADA)-compliant ramps and/or lifts to accommodate wheelchairs.

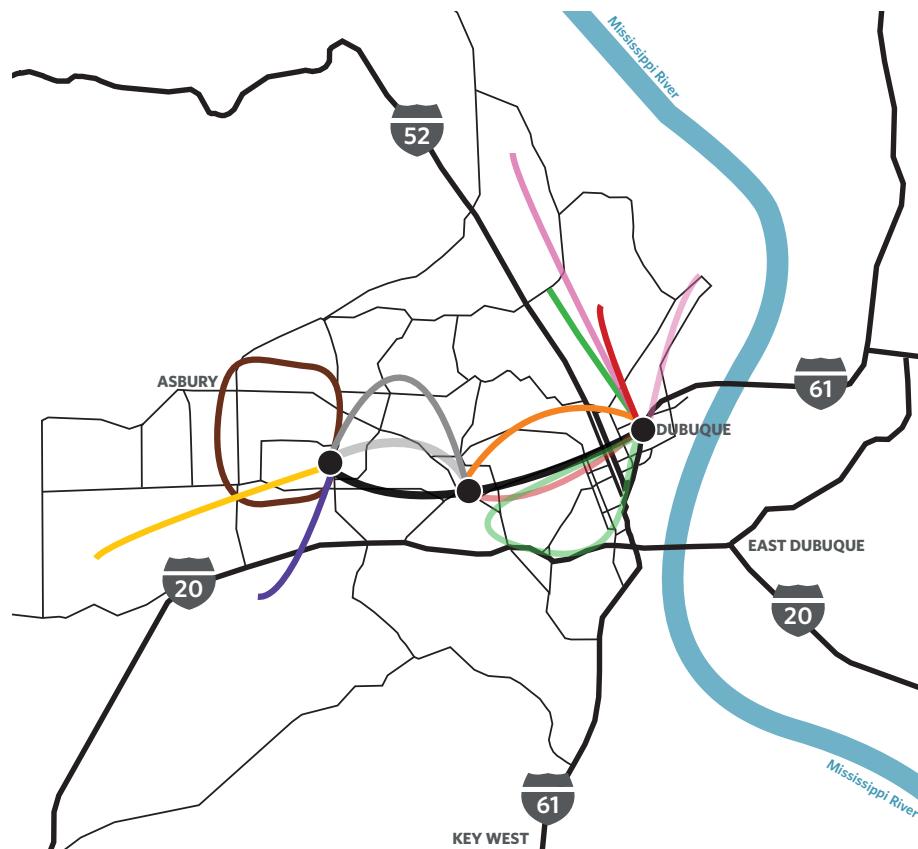
Annual ridership on the fixed-route bus and paratransit systems are provided in Figure 8.11.

■ FIGURE 8.10

#### □ Generalized Map of Jule Fixed-Route Service Coverage

##### Legend

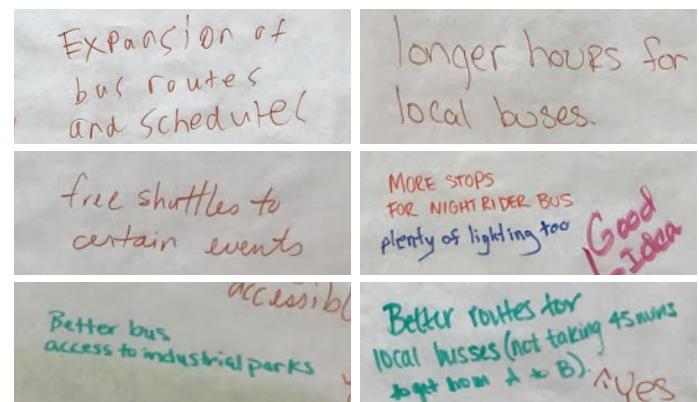
- **X1 Express**
- **GREEN 1** 32nd St
- **GREEN 2** Mercy/S. Locust
- **GREY 1** Kane
- **GREY 2** Hillcrest
- **ORANGE 1** Clarke
- **ORANGE 2** Key West
- **ORANGE 3** Fremont
- **RED 1** Linwood
- **RED 2** Mercy/Loras
- **PINK 1** Point/Mystique
- **PINK 2** Terrace Heights
- **YELLOW 1** MA West DICW
- **BROWN 1** Shopper North
- **PURPLE** Shopper South



As noted in Figure 8.11, fixed-route ridership has increased steadily over the past several years, increasing by nearly 66% since 2009. As part of the “Smarter Sustainable Dubuque” initiative, the area launched a Smarter Travel study. In collaboration with IBM Watson Research Center, data were collected through smartphone technology on how, when, and where people in Dubuque were traveling. Part of that study helped an evaluation of optimized transit routes for Dubuque. The Jule implemented route changes in 2015 that improved directness and efficiency, and transitioned to the current hub and spoke system with increased transit frequency.

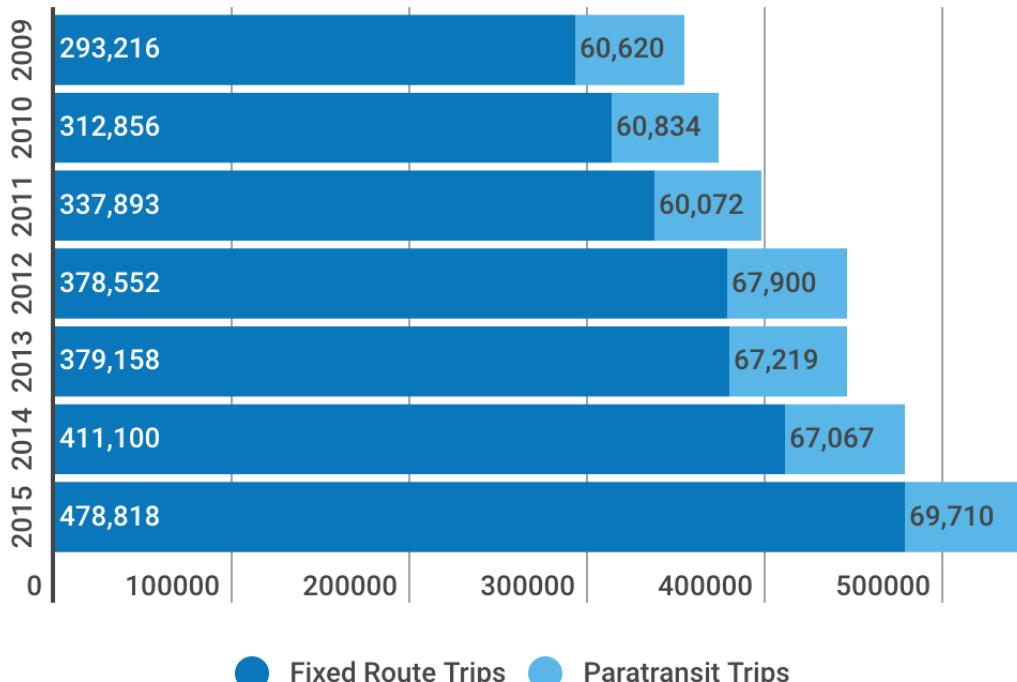
In 2017, the Dubuque City Council approved the bus system proposal to extend evening service hours, funded in part through reduced Saturday fixed-route service.

***The Jule's plan to extend evening service hours is consistent with comments heard during the community engagement process of Imagine Dubuque and the Mobility objective to “expand transit operating hours”.***



▲ Transportation ideas shared at the Imagine Dubuque Equity Workshop

**■ FIGURE 8.11**  
**□ Dubuque Annual Fixed-Route and Paratransit Trips, 2009-2016**



#### Physical Infrastructure Improvements

- The City of Dubuque currently has a Capital Improvement Project underway to add lighting and seating at more bus stops. Rhomberg Ave was the first area to have such installed in the summer of 2017. Lighting is solar powered to reduce installation and long-term operating costs.
- All bus stops are also being evaluated for ADA compliance with a goal to install ramps for future bus purchases rather than lifts. Ramps provide more independence for individuals with mobility impairments and seniors while improving on-time performance as ramp deployment is much quicker.

## Paratransit Service

The Jule offers door-to-door public transit via the Minibus service. Individuals must qualify under the Americans with Disabilities Act, and can ride to and from any location in the City or East Dubuque. The bus driver can assist the passenger with getting on and off the bus. Fares are \$3 per trip and trips must be scheduled at least one day in advance. Starting August 2017, hours of operation will be 6 AM to 9:15 PM Monday through Thursday, with extended hours on weekends that vary depending on whether or not the colleges are in session.

DuRide is a partner organization of the Jule that offers senior transportation options in Dubuque for residents 65 or older. Similar to the Minibus service, the bus driver can assist the passengers getting on and off the bus. The service is provided 365 days a year and staffed by volunteer drivers.

As noted in Figure 8.11, paratransit ridership has increased slightly since 2009. As paratransit services are typically offered to a relatively fixed, transit-dependent population, increases in ridership are not as much of a performance indicator as the ridership increases seen with the fixed-route service.



*"My vision for Dubuque is to ensure people can get where they need to go in a timely fashion, shift resources from Jule mass transit and create an Uber fleet. Combine with DuRide. Price and maintenance of reliable cars are increasingly out of reach for lower wage earners. Would also reduce constant need for parking, which often is responsible for demolition of historic downtown buildings."*

- Idea shared via the project website and app.



▲ Jule Bus | Source: City of Dubuque

## Connections to Other Regions

*One theme that residents and the business community voiced often during the Comprehensive Plan engagement process was the need for better connections to other regions, particularly Chicago. This included the desire for rail connections, and expanded commercial airline options from the Dubuque Regional Airport. The biggest desire for air service was additional carriers, and more options for destinations beyond just Chicago. This section discusses Dubuque's passenger and freight connections to other regions.*

### Rail Service: Freight Rail

Chicago, Central & Pacific Railroad operates through Dubuque on the Canadian National Railway's line. It runs east-west through the area, generally connecting to Chicago and Rockford in Illinois and Waterloo to the west. There are three (3) stations within the City. As of January 2017, the Federal Rail Administration estimates this line carries three (3) through trains a day. According to Iowa Department of Transportation, this line carries 11.94 million annual gross tons per mile to the west of Dubuque, and carries 13.7 million annual gross tons per mile to the east of Dubuque.

Dakota, Minnesota and Eastern R.R. Co. operates through Dubuque along the Mississippi River on the Canadian Pacific Railroad's rail line. It has one (1) stop within the City. It generally runs north-south through the area, connecting to Clinton and Davenport to the south and Minneapolis/St Paul to the north. As of January 2017, the Federal Rail Administration estimates this line carries four (4) through trains a day. According to Iowa Department of Transportation, this line carries 21.39 million annual gross tons per mile north and south of Dubuque.

### Rail Service: Passenger Rail

Passenger rail service to Chicago, via Rockford, was offered on the "Black Hawk" line until 1981. There have been recent efforts to revive passenger rail service on the Black Hawk line. Planning efforts were underway to revive service, anticipated for 2015. In Dubuque, significant work went into planning for a rail station, with the vision that it could be part of the Intermodal Center. The Illinois DOT had a \$223 million project to restart the service, with two daily round trips eventually targeted. Work to restart passenger service on the Black Hawk line has been halted due to funding issues in Illinois. Residents expressed a desire for a return of passenger service to Chicago during the Imagine Dubuque planning process.

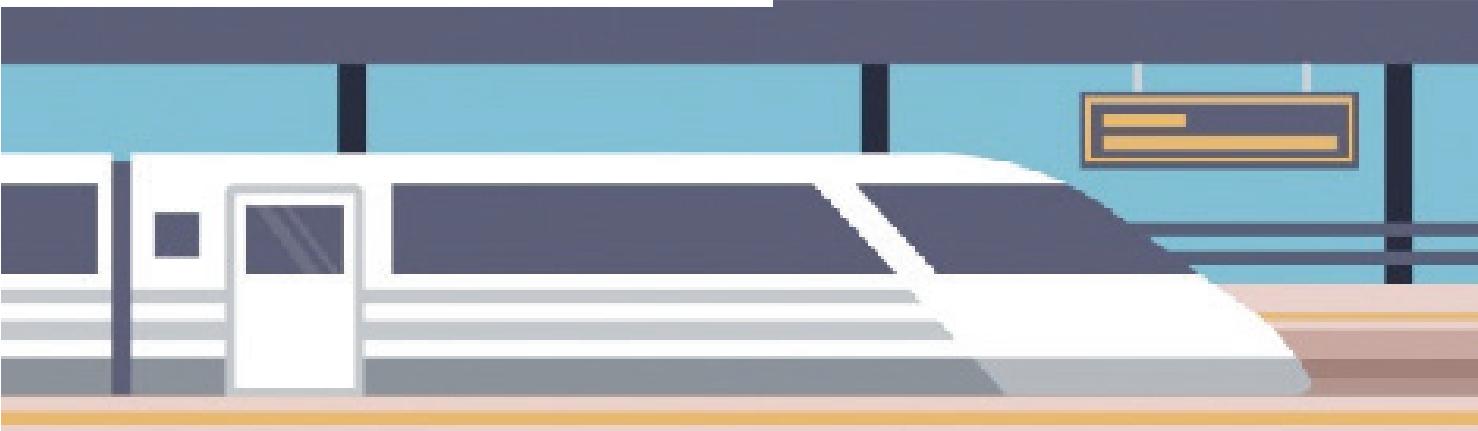
*“Train transportation to other cities like Chicago or Wisconsin Dells.”*

*“Train to Chicago!”*

*“Continue to work on train to Chicago”*

*“Improving transportation options including passenger train service.”*

*- Ideas shared via the project website and app.*



## Air Service

The Dubuque Regional Airport stands as a welcoming, dynamic gateway to the tristate area of Eastern Iowa, Southwest Wisconsin and Northwest Illinois. The new 33,000 square foot commercial airline passenger terminal, with its limestone façade and Mississippi River inlay flooring, gives the visitor their first and last impression of our community. This easily accessible airport features service by American Airlines, with one-stop to the world service through Chicago O'Hare International Airport. In 2016, American Airlines posted 36,843 enplanements and Sun Country Airlines had 890 enplanements on non-scheduled charter service to Laughlin, Nevada and Biloxi, Mississippi.

The Airport is served by two runways, Runway 13-31 is 6,498 feet long x 100 foot wide and Runway 18-36 is 6,325 feet long x 150 foot wide. The Airport is home to 52 single engine aircraft, 9 multi-engine aircraft, 1 helicopter, and 9 business jets. The University of Dubuque Aviation program also operates at the airport with 24 aircraft in their fleet which makes the Dubuque Regional Airport the second busiest in Iowa in overall operations. The historical commercial aircraft enplanements (number of passengers getting on an aircraft) since 2010 are shown in Figure 8.12. General aviation services are provided 24-hours a day, 7 days a week.

*There are 64 aircraft based at the airport, and an average of 138 aircraft operations a day.*

## Intercity Bus Service

Intercity bus service is offered by Greyhound Trailways. There are daily departures for the following buses to:

- Other cities in Iowa that leaves at 10:55 am
- Illinois/Chicago that leaves at 3:35 pm
- Madison, Wisconsin that leaves at 8:25 am

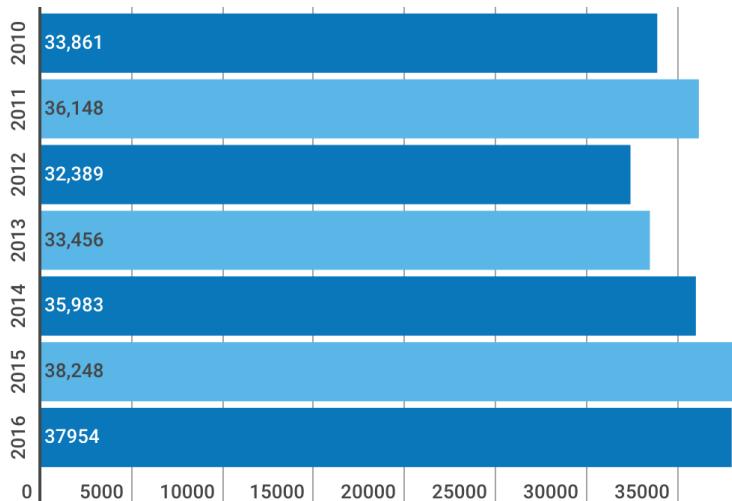
## Additional Connections

One of Dubuque's assets is the Mississippi River. In addition to the recreational and cultural opportunities provided by the river, inland waterway freight is moved via barge traffic on the river. This provides connections to destinations along the US inland waterways system, the largest of which is the Mississippi, navigable for approximately 1,800 miles from Minneapolis to the Gulf of Mexico near New Orleans .

There are several National Highway System connections for personal and freight travel between Dubuque and the rest of the country. Over the past several years, more and more of these connections across Iowa and adjacent states have been upgraded to four-lane highways.

### FIGURE 8.12

#### Historical Commercial Enplanements Dubuque Regional Airport



## The NHS connections to Dubuque include:

- **US Highway 20**, connecting east to Rockford/Chicago and west to Waterloo.
- **US Highway 52**, connecting to north to Decorah, Rochester, and the Twin Cities.
- **US Highway 61**, connecting to south to Davenport and north to La Crosse.
- **US Highway 151**, connecting east to Madison and west to Cedar Rapids.
- **State Highway 32** (Northwest Arterial) is a National Highway System route within Dubuque, but does not directly connect to communities beyond the immediate region.

A large segment of US Highway 20 between Dubuque and Rockford, Illinois, has not been widened to four lanes. An approximate 45 miles of the highway is still two-lanes from east of Galena to near Freeport. The Illinois Department of Transportation is planning to make the remaining segments a four-lane expressway with the "US 20 Freeport to Galena (Glacier Shadow Pass)" project. A complete four-lane connection would improve the safety and reliability of travel between Dubuque and Rockford, and ultimately Chicago via Interstate 90. A continuous four-lane highway connection to a major market like Chicago has the potential to improve economic development opportunities for Dubuque.

## Automobile Travel

*Dubuque Metropolitan Area Transportation Study provides a comprehensive, multimodal assessment of long-term transportation needs and prioritized projects every five years. This assessment, called the Long Range Transportation Plan, covers the City of Dubuque and surrounding communities, and is multimodal in nature. The Long Range Transportation Plan contains data on automobile travel that is particularly relevant to this Plan.*

### Existing System

Traffic volumes on the street system are counted by the Iowa Department of Transportation every four years. The volumes are beneficial in understanding how much vehicular activity occurs on each roadway in the City, what corridors might be good candidates for Complete Streets treatments, and how each corridor performs in terms of traffic congestion and delay. Figure 8.13 on the following page shows existing traffic flows in Dubuque, illustrated in terms of Annual Average Daily Traffic.

Dubuque Metropolitan Area Transportation Study maintains a travel demand model that generates traffic forecasts based on projections of future land use patterns and the existing and planned roadway network.

Traffic forecasts for the year 2045 are displayed in Figure 8.14, (page 8-25) based on the assumptions that went into the 2045 Long Range Transportation Plan. As shown in the figure, the Southwest Arterial is in place and anticipated to carry significant daily traffic volumes.



*Experience the Great River Road National Scenic Byway, the best scenic drive in America. The Great River Road follows the course of the Mississippi River for 3,000 miles through 10 states. The route travels through the Mississippi River Valley's rich history and inspiring natural beauty. Plan your Great River Road journey today!*

Source: <http://experiencemississippiriver.com/>

## The Great River Road through Iowa



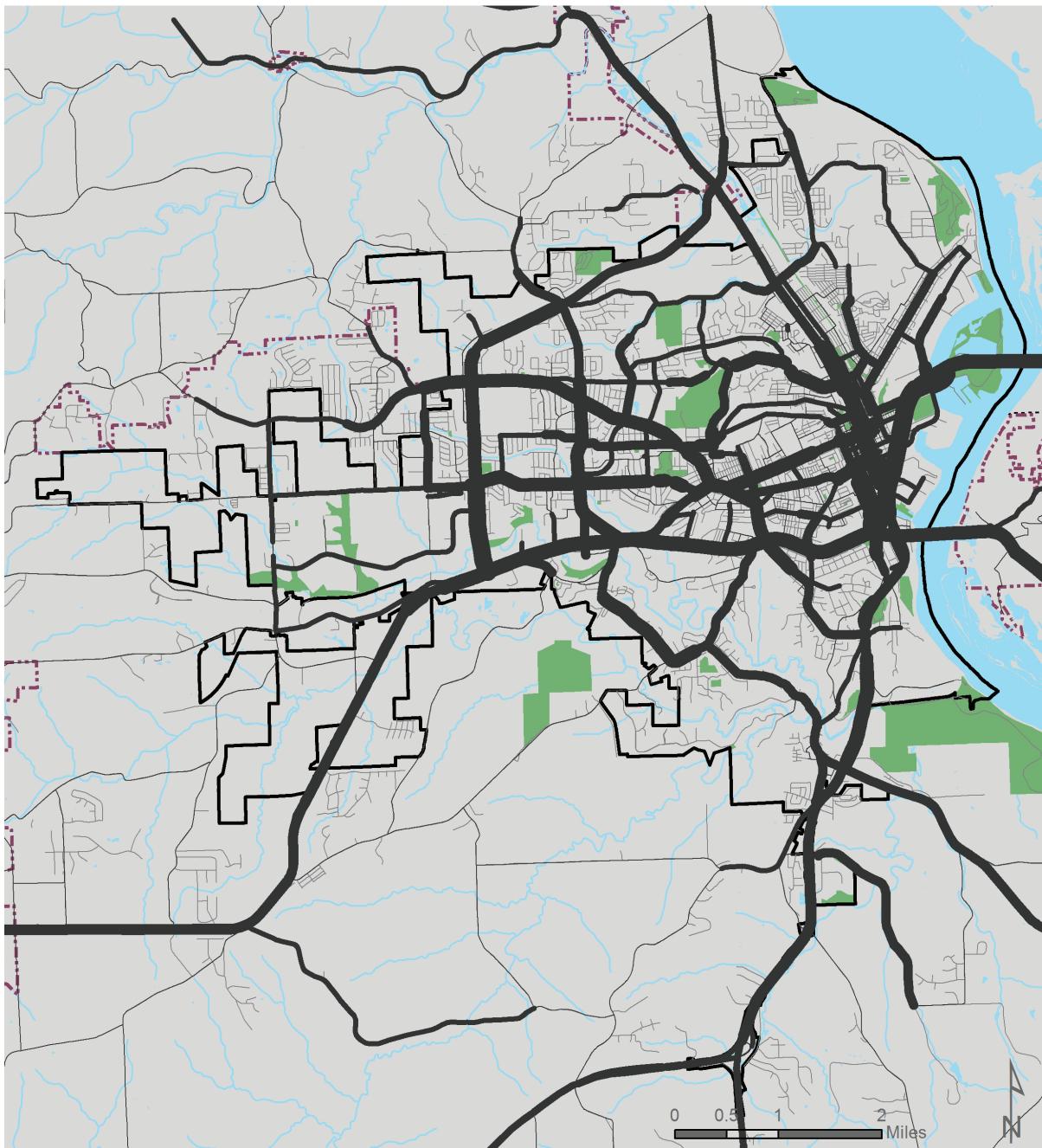
The Great River Road

This printable travel map is from  
Road Trip USA, seventh edition.  
[RoadTripUSA.com](http://RoadTripUSA.com)

Source: Road Trip USA

■ FIGURE 8.13

□ Existing Daily Traffic Volumes



## Existing Daily Traffic Volumes

### Legend

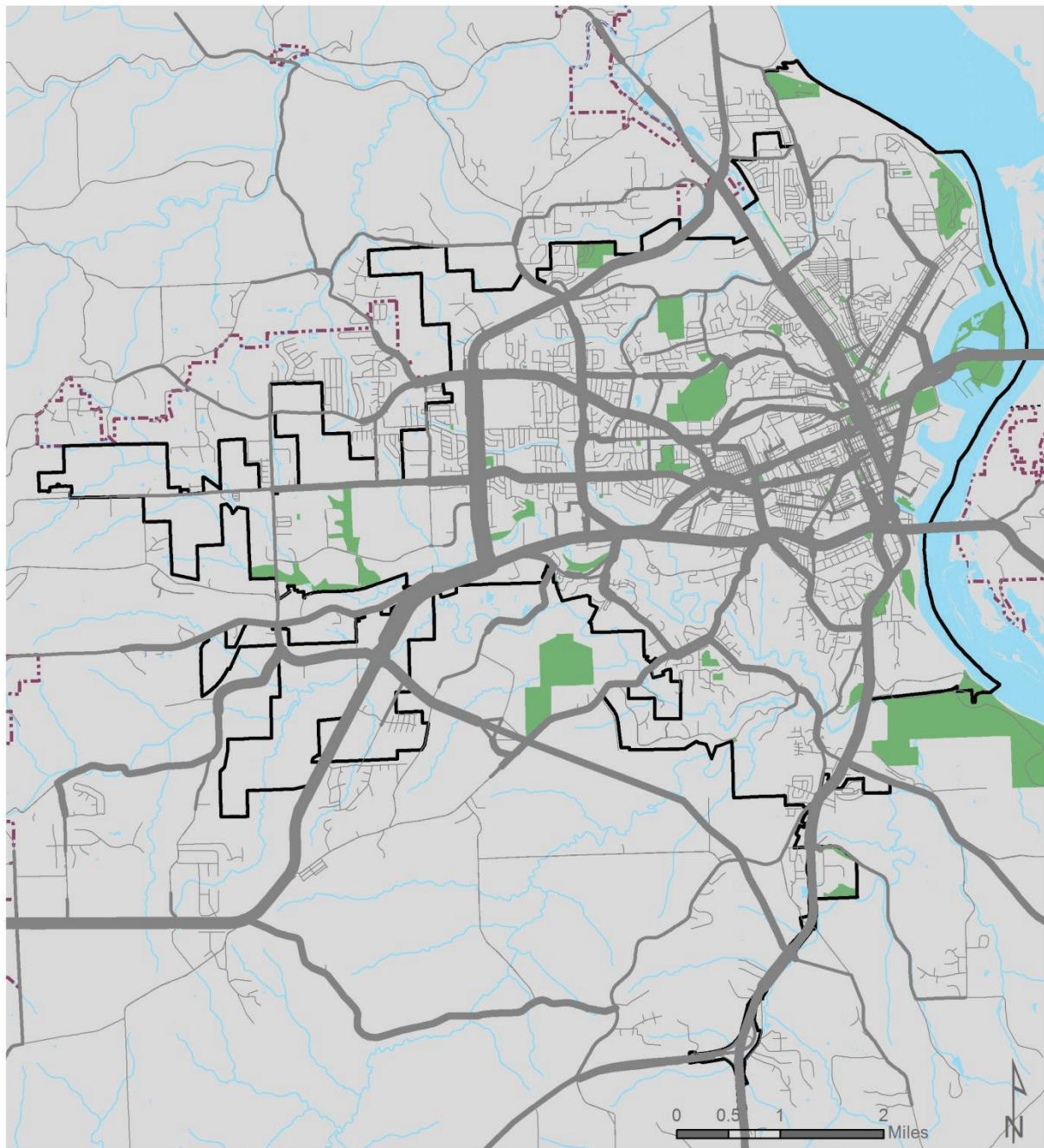
Daily Traffic Volume	5,000 to 10,000 Vehicles	Dubuque City Limits
2,000 or Fewer Vehicles	10,000 to 20,000 Vehicles	
2,000 to 5,000 Vehicles	More than 20,000 Vehicles	



Source: Dubuque Metropolitan Area Transportation Study Travel Demand Model

■ FIGURE 8.14

□ Future Daily Traffic Volumes



### Future Year 2045 Daily Traffic Volumes

#### Legend

2045 AADT	5,000 to 10,000 Vehicles	Dubuque City Limits
2,000 or Fewer Vehicles	10,000 to 20,000 Vehicles	
2,000 to 5,000 Vehicles	More than 20,000 Vehicles	



Source: Dubuque Metropolitan Area Transportation Study Travel Demand Model

## Ensuring Safe Mobility

Safe mobility for all system users is a priority for not only Dubuque, but also at the state and federal level. The 2045 Long Range Transportation Plan provides an assessment of high traffic crash locations, evaluating safety from a frequency and severity perspective. Bicycle and pedestrian crashes with vehicles were also assessed separately. Figure 8.15 shows the number of traffic crashes and bicycle/pedestrian crashes with motor vehicles.

**Intersection Improvements:** The Long Range Transportation Plan also evaluated the intersections in Dubuque with the most severe crashes (defined in terms of injuries and fatalities). The top five intersections ranked by Dubuque Metropolitan Area Transportation Study in order were:

- 1) Loras Boulevard and Iowa Street
- 2) Iowa 32/NW Arterial and US 52
- 3) Iowa 32/NW Arterial and John F Kennedy Road
- 4) Loras Boulevard and Locust Street
- 5) Old Highway Road and Seippel Road

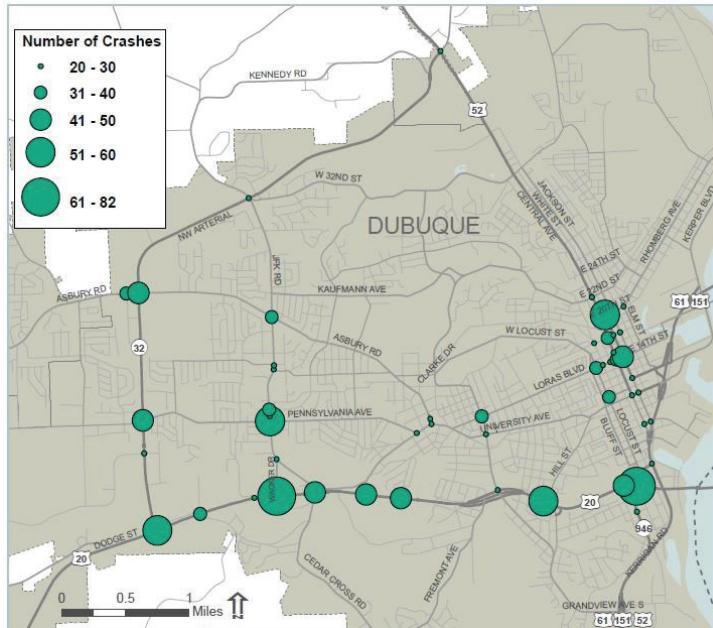
## Future Roadway Projects

To support the continued efficient and safe mobility of vehicular traffic across the Dubuque, Dubuque Metropolitan Area Transportation Study 2045 Long Range Transportation Plan identified several roadway projects to include on their recommended project list for construction through the year 2045. Those projects, including the ongoing construction of the Southwest Arterial, are illustrated in Figure 8.16.

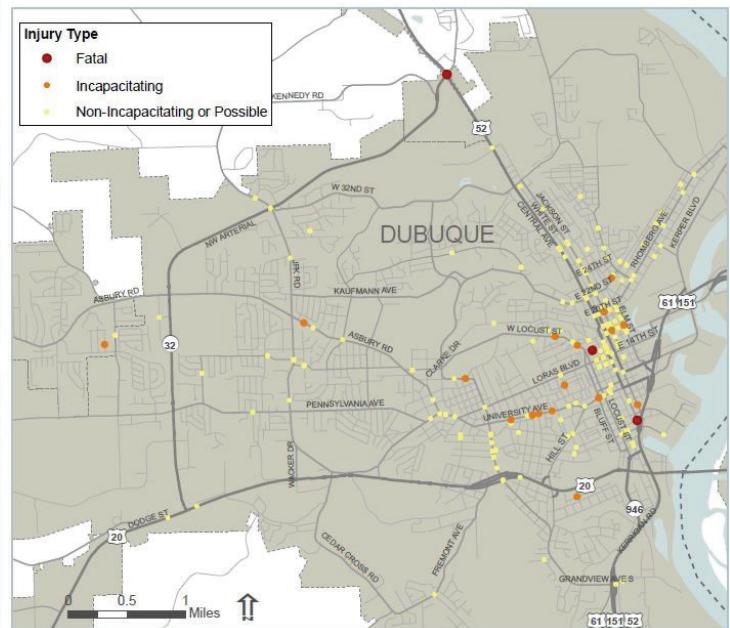
### FIGURE 8.15

#### Vehicular Crash Frequency and Locations of Bicycle and Pedestrian Crashes, 2009 to 2014

##### Vehicular Crash Frequency



##### Pedestrian and Bike Crashes



Source: Dubuque Metropolitan Area Transportation Study 2045 Long Range Transportation Plan

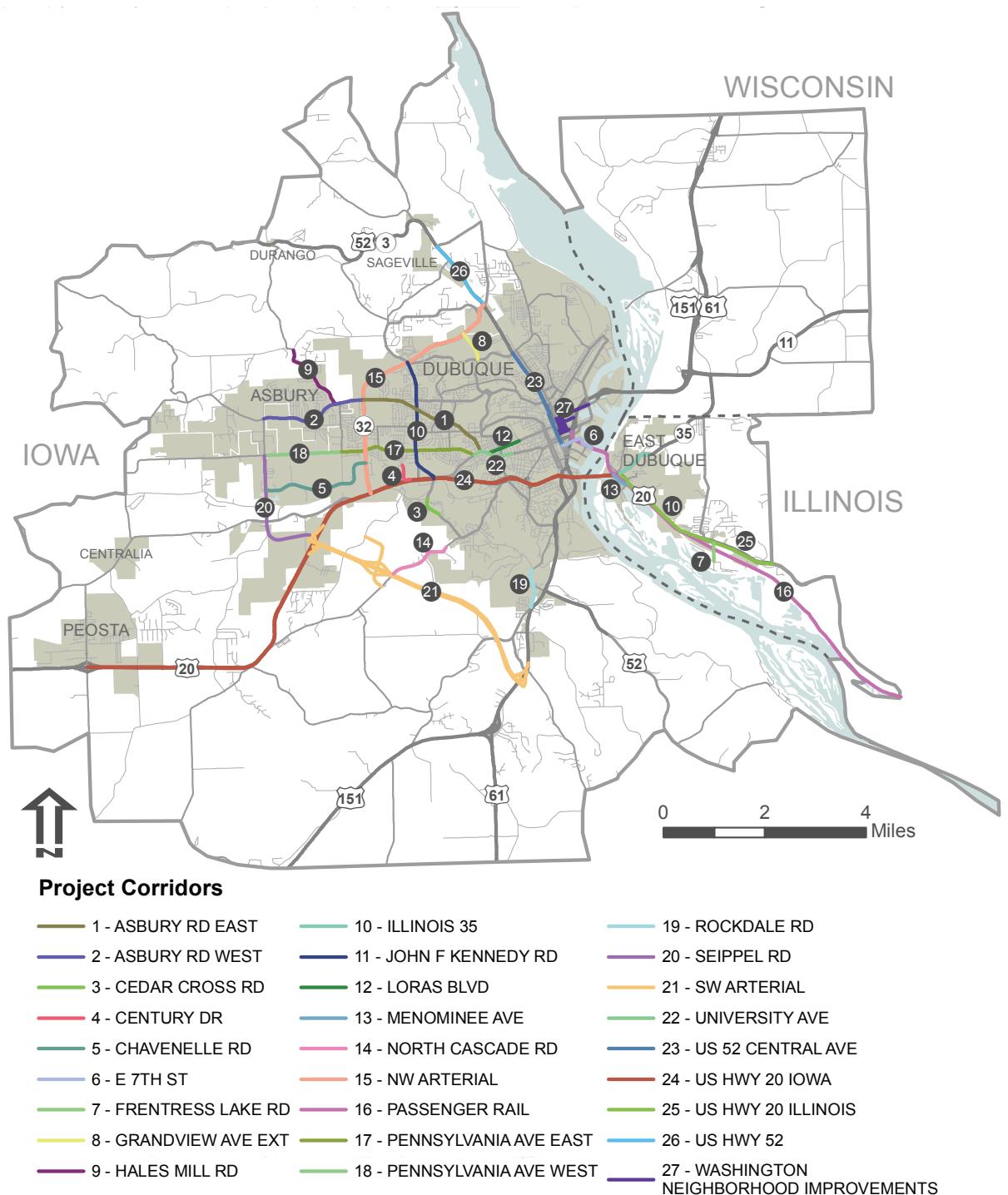
## Benefits of Transportation Technology

Efficient movement of traffic through the use of technology tools (fiber optic traffic light connections, traffic monitoring with cameras, artificial intelligence traffic management, etc.) and design improvements, like roundabouts, is not just a quality of life issue (spending less time in the car and having less frustrations while in the car) but it is also a safety issue, as it reduces traffic injuries and deaths, and an environmental issue, with less fuel being wasted and less air and water pollution.

Finally, it is also a redevelopment tool as it makes it quicker to access downtown, the Historic Millwork District and the river-front making it more convenient to patronize businesses, restaurants, entertainment and special events in those areas and making it easier to commute to jobs in those areas. That leads to the acquisition and redeployment of buildings and new infill construction. Combining this with a robust public transit system and transit oriented development supports creating a viable, livable & equitable economy and environment.

■ FIGURE 8.16

□ Corridors of Future Dubuque Metropolitan Area Transportation Study projects through 2045



Source: Dubuque Metropolitan Area Transportation Study 2045 Long Range Transportation Plan

□ **Summary of Long Range Transportation Plan projects inside or adjacent to the City of Dubuque:**

Project Number	Project Name	LRTP Project Types						
		New Road or Bridge	Capacity	Preservation or Reconstruction	Bicycle / Pedestrian	Intelligent Transportation Systems	Safety	Rail Improvements
1	Asbury Road East		✓	✓	✓	✓	✓	
2	Asbury Road West			✓	✓	✓		
3	Cedar Cross Road			✓		✓	✓	
4	Century Drive			✓		✓		
5	Chavenelle Road				✓			
6	E 7th Street			✓	✓			
8	Grandview Avenue Extension	✓						
9	Hales Mill Road			✓				
11	John F Kennedy Road				✓	✓	✓	
12	Loras Boulevard				✓			
14	North Cascade Road			✓	✓			
15	NW Arterial		✓		✓	✓		
16	Passenger Rail & Intermodal Facility						✓	
17	Pennsylvania Avenue East				✓	✓	✓	
18	Pennsylvania Avenue West			✓	✓			
19	Rockdale Road			✓	✓			
20	Seippel Road			✓	✓			
21	SW Arterial	✓			✓	✓	✓	
22	University Avenue		✓	✓	✓		✓	
23	US 52: Central & White			✓	✓	✓	✓	
24	US 20		✓	✓				
26	US 52			✓				
27	Washington Neighborhood Improvements	✓		✓	✓			

▲ *Source: Information for this table came from Dubuque Metropolitan Area Transportation Study 2045 Long Range Transportation Plan.*



**For the 2045 Long Range Transportation Plan update, Dubuque Metropolitan Area Transportation Study created a public input strategy. They sought input from a wide range of community groups through this process. Groups included represented a variety of geographic areas and interests. In all, staff collected input at 18 meetings during the spring and summer of 2016.**

**PHOTO:** Participants review maps at a public input session in June 2016.



## Roundabouts

Roundabouts have been cited as an efficient, safe, and cost-saving approach to controlling operations at many intersections. They often are a better fit with neighborhood character than traffic signalized intersections. With the right combination of traffic patterns and neighborhood context, roundabouts can be an efficient and low-maintenance application. Vehicles and bicyclists can navigate the roundabout at low speeds, but without stopping. The designs can include medians and splitter islands that allow pedestrians short crossing distances and refuges while crossing. The City's first roundabout was constructed at the intersection of Grandview/Delhi/Grace in 2016, and has been well received by residents.

The City of Dubuque's East West Corridor Connectivity Study identified roundabouts as a strategy that provided a context-sensitive solution to mobility in the City. That study recommended constructing roundabouts at the intersections of University/Pennsylvania, University/Asbury, and University/McCormick. Right-of-way and engineering work is currently underway for the City's second roundabout at University and Asbury.

The East West Corridor Connectivity Study found that roundabouts at those three intersections would have less overall vehicle delay in the future compared to the intersections' current design/control, and that these designs would improve intersection safety. Additional roundabouts may be appropriate in other locations. When an intersection redesign is under consideration, a potential roundabout should be considered in the analysis.



▲ Ribbon-cutting ceremony for Dubuque's first roundabout at N Grandview Ave., Delhi St. and Grace St. | Source: City of Dubuque

## Ridesharing Services

Ridesharing is two or more people coordinating to share a vehicle for a trip. How ridesharing is coordinated can vary. Until recent technological advances, the concept of ridesharing was often a centrally-coordinated service where a public or private entity would match commuters for a carpool or vanpool trip. These ridesharing programs typically involve residents registering with the service, and the service identifying potential ridesharing candidates based on their proximity of their homes, workplaces, and compatibility of work schedules.

When effective, ridesharing can make the transportation system more efficient by transporting more people in fewer vehicles. Ridesharing services are a good supplement to existing modes of public transit and private vehicle ownership. They can extend beyond the hours of service of paratransit operations (like Minibus and DuRide), provide access to trip origins and destinations not served by fixed-route transit (such as the Jule), and provide personalized mobility connections to individuals who are unable to drive a vehicle. In communities with many effective mobility choices like transit, bicycle-friendly routes, and ridesharing services, the need to own an automobile is reduced; this can lead to fewer vehicle trips made with lower environmental impacts.

The concept of ridesharing has expanded somewhat in recent years. Smartphones and digital devices allow travelers to now arrange trips on-demand with drivers using an app. The companies that employ the drivers and provide the apps, called transportation network companies, like Uber and Lyft, match riders with drivers for on-demand, door-to-door trips via a simple set of steps on a smartphone. During the public engagement process, many citizens expressed the desire to have these transportation network companies in Dubuque. Often, these needs were identified to supplement mobility services for senior citizens and those with disabilities. During March of 2017, both Uber and Lyft began service in Dubuque.

## STREETS Initiative

Dubuque is embracing “Smart City” concepts by planning for smarter streets through technology. The objective of the STREETS (the Smart Traffic Routing with Efficient and Effective Traffic Signals) initiative is to develop a smart, managed traffic control system that leverages communications, technology, traveler information, and computing to optimize traffic flow across the Dubuque’s street system. Spearheaded by Dubuque Metropolitan Area Transportation Study, but heavily influenced by the City of Dubuque, the outcome of the STREETS initiative is to maximize the use of existing roadway capacities in the Dubuque metro area.

The project is currently in the first phase of planning. When complete, the system would strive to balance and distribute traffic evenly across the metro area, providing reduced congestion, improved travel reliability, improved travel times, and improved safety. The system is also expected to not only guide smoother traffic flow, but be capable of collecting information/data that will help assess how well corridors operate and which ones are in most need of improvement.



▲ Traffic signals at 22nd and Central Avenue



## VOICES OF DUBUQUE

*“Allow ride services like UBER to come to town to allow increased mobility and income to all. Taxis are too expensive in town!”*

*“The Millwork District needs a better pedestrian/bike connection to the Town Clock business area and south main bars.”*

*“The City should install a pedestrian overpass across Highway 20 by Kmart. There are always University of Dubuque students trying to cross the Highway and someone is going to get hit.”*

*- Ideas shared by residents via the project website and mobile app.*

## Transportation Recommendations

### Overall Transportation Planning Process

- Continue to work collaboratively in the region to create a safe, efficient, and connected multimodal network.
- Follow a performance-based planning process that evaluates all modes of travel when tackling corridor mobility and safety needs. Based on the visioning process, these objectives and associated goals provide a framework to that process:



▲ Asbury Road near Hacienda Drive, looking west. Source: City of Dubuque

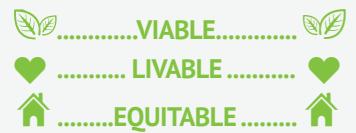
#### Transportation Objectives

	MOBILITY	EFFICIENCY	ECONOMY	GREEN	SAFETY
Expand transit operating hours during the week and weekends.	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Provide more complete street connections.	<input checked="" type="checkbox"/>				
Provide context-sensitive improvements that make east-west travel more efficient and reliable.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
Leverage technology and innovative approaches to improve mobility and safety.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
Improve connections between Dubuque and other cities in the wider region.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Promote active transportation in business districts and neighborhoods.	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Identify projects that preserve neighborhood character.	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Expand bicycle and pedestrian connections, including more trails and Complete Streets.	<input checked="" type="checkbox"/>				

# Transportation Recommendations

## Complete Streets

- In the JFK corridor, identify short-term and long-term opportunities to facilitate a more complete pedestrian network.   
- For Dubuque corridors, assess opportunities to plan and design complete street elements during each stage of maintenance and project development.   
- Work from the City's comprehensive network plan for Complete Streets, including the Tri-State Biking/Walking Plan and the Dubuque Metropolitan Area Transportation Study 2045 Long Range Transportation Plan, when making investment decisions in individual corridors.   
- When properties redevelop, as appropriate, work to re-orient development to the street level, rather than separated from the street by parking lots and pursue opportunities to acquire right-of-way where beneficial.   



*Each recommendation listed relates to making Dubuque more viable, livable, and equitable. The symbols noted above correspond to these guiding principals and are listed along with the recommendations they pertain to.*

## Public Transportation

- Continue to make improvements to the fixed-route bus service that provides efficient travel options; focus on high-performing transit corridors.   
- Continue to extend bus service hours where it is most effective and provides valued accessibility improvements to the community. Look for opportunities to provide more efficient and direct routes to connect residents to resources and amenities.   



## Air Transportation

- Given the current competitive nature of the airline industry, advocate for airline service expansion from the Dubuque Regional Airport. This includes continuing to leverage local incentive funding to target expansion of airline service.  
- Restrict new development around the airport to more compatible uses such as light industrial, warehousing, and agriculture. Uses such as residential are particularly sensitive to airplane operations noise.  



## Connections to Other Regions

- Understanding the critical importance surrounding communities play in staffing jobs in Dubuque, continue to collaborate with surrounding state Departments of Transportation to promote safe, efficient regional roadway connections.  
- Through political and funding channels, continue to advocate for passenger rail service and a complete four-lane highway connection to Chicago.  



## Automobile Travel

- Identify the required project development steps and funding to implement the City of Dubuque roadway projects prioritized in the Dubuque Metropolitan Area Transportation Study 2045 Long Range Transportation Plan.  
- Continue as a national leader in leveraging technology and other Intelligent Transportation Systems solutions to improve vehicular mobility and safety of the Dubuque street network.  