MPOJC METROPOLITAN PLANNING ORGANIZATION OF JOHNSON COUNTY

FUTURE FORWARD

2045 LONG RANGE TRANSPORTATION PLAN

MPOJC

Metropolitan Planning Organization of Johnson County
410 E. Washington St. ■ Iowa City, Ia 52240

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RESOLUTION NO. 2017-01

RESOLUTION ADOPTING THE 2017-2045 MPOJC LONG RANGE TRANSPORTATION PLAN.

WHEREAS, the U.S. Department of Transportation and Federal Highway Administration through the provisions of federal transportation legislation requires all metropolitan planning organizations to have adopted long range transportation plans for their urbanized area; and

WHEREAS, said plan is to be updated at least every five years; and

WHEREAS, MPOJC has updated its long range transportation plan to include enhanced demographic, environmental, and congestion analysis, performance measures, and other pertinent information and visualization techniques including GIS maps to improve local transportation planning decision for all modes of transportation; and

WHEREAS, the 2017-2045 MPOJC Long Range Transportation Plan has been subjected to the approved MPOJC public participation process, and all public comments have been forwarded to the MPOJC Transportation Technical Advisory Committee and MPOJC Urbanized Area Policy Board for consideration and/or integrated into the Plan,

NOW, THEREFORE, BE IT RESOLVED BY THE MPOJC URBANIZED AREA POLICY BOARD OF THE METROPOLITAN PLANNING ORGANIZATION OF JOHNSON COUNTY, THAT:

1. The 2017-2045 MPOJC Long Range Transportation Plan is adopted.

2. The 2017-2045 MPOJC Long Range Transportation Plan shall be used by MPOJC member entities as a guide for transportation planning and programming decisions.

It was moved by Dickens and seconded by Donahue that the Resolution be adopted. The motion passed on a vote of 10 affirmative, 0 negative, and 0 abstaining.

Passed this 31st day of May, 2017

Susan Mims
Chairperson Mims, MPOJC Urbanized Area Policy Board

Urbanized Area Policy Board

Jill Dodds	Coralville City Council
Tom Gill	Coralville CIty Council
Kingsley Botchway II	Iowa City City Council
Rockne Cole	Iowa City City Council
Terry Dickens	Iowa City City Council
Susan Mims, Chair	Iowa City City Council
Pauline Taylor	Iowa City City Council
John Thomas	Iowa City City Council
Mike Carberry	Johnson County Board of Supervisors
Janelle Rettig	Johnson County Board of Supervisors
Terry Donahue	Mayor, North Liberty
Vacant	North Liberty City Council
Steve Berner, Vice-Chair	Mayor, Tiffin
Louise From	Mayor, University Heights
David Ricketts	University of Iowa
Chris Lynch (ex-officio)	Iowa City Community School District

MPOJC Staff

Kent Ralston	Executive Director
Darian Nagle-Gamm	Senior Transportation Engineering Planner
Brad Neumann	Asst Transportation Planner
Emily Bothell	Asst Transportation Planner
Sarah Walz	Asst Transportation Planner

Transportation Technical Advisory Committee

Vicky Robrock	Manager, Coralville Transit
Dan Holderness	City Engineer, Coralville
Kelly Hayworth	City Administrator, City of Coralville
Chris O'Brien	Director of Resource Management, Iowa City
Ron Knoche	Director of Public Works, Iowa City
Jason Havel	City Engineer, Iowa City
Mark Rummel	Asst. Director, Resource Management., Iowa City
Geoff Fruin	City Manager, Iowa City
Dean Wheatley	Planning Director, North Liberty
Louise From	Mayor, University Heights
Doug Boldt	City Administrator, Tiffin
Greg Parker	Engineer, Johnson County
Tom Brase	Director, Johnson County Seats
Brian McClatchy	Manager, University of Iowa Cambus
David Kieft	Business Manager, University of Iowa
Sadie Griener	Facilties Management, University of Iowa
Terry Dahms	MPOJC Regional Trails and Bicycle Committee Rep.
Cathy Cutler (ex-officio)	Planner, Iowa DOT
Darla Huggaboom (ex-officio)	Federal Highway Administration, Ames
Brock Grenis (ex-officio)	East Central Iowa Council of Governments
Mark Bechtel (ex-officio)	Federal Transit Administration, Kansas City

Regional Trails and Bicycling Committee

Louise From	City of University Heights
Terry Dahms	Johnson County Trails Foundation
Doug Boldt	City of Tiffin
Brian Loring	Bicyclists of Iowa City
Becky Soglin	Johnson County
Sherri Proud	City of Coralville
Michelle Ribble	University of Iowa
Shelly Simpson	City of North Liberty
Juli Seydell Johnson	City of Iowa City
Anne Duggan	Think Bicycles of Johnson County

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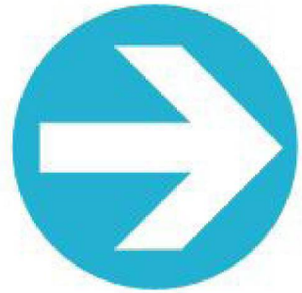

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The Metropolitan Planning Organization

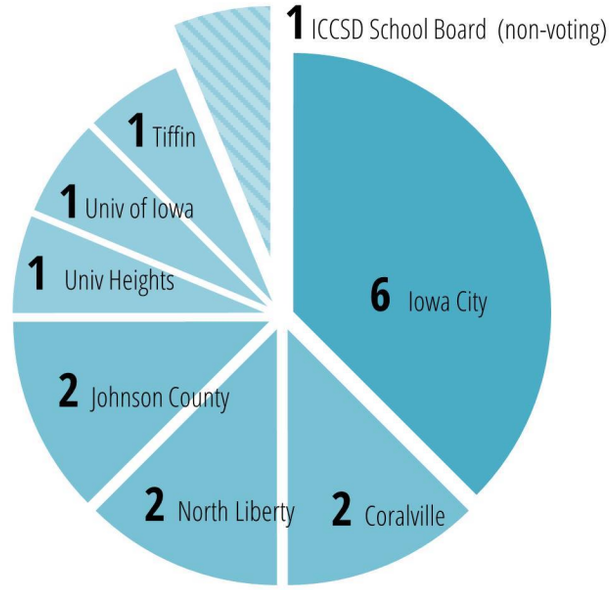
Federal legislation requires any urbanized area with a population over 50,000 to have a metropolitan planning organization (MPO) to ensure that existing and future expenditures of Federal funding for transportation projects and programs are based on the continuing, cooperative, and comprehensive ("3-C") planning process. This helps to ensure that metropolitan region-wide plans are developed through intergovernmental collaboration, rational analysis, and consensus-based decision making. Transparency through public access to participation in the planning process and electronic publication of plans is now required by federal law.

The Metropolitan Planning Organization of Johnson County (MPOJC) provides transportation planning services for the Iowa City urbanized area, including Iowa City, Coralville, North Liberty, University Heights, Tiffin, Johnson County, and the University of Iowa. The MPO facilitate collaboration of governments, interested parties, and residents of the metro area in the planning process.

Meetings of the Urbanized Area Policy Board allow representatives of the MPO entities to discussed shared goals.

Source: Photo courtesty Channel 4

- Smart transportation investment means allocating scarce federal and other transportation funding resources to the areas of greatest need.
- Planning for the metro area should reflect the region's shared vision for its future and requires a comprehensive examination of the region's future and investment alternatives.
- The MPO facilitates collaboration between governments, interested parties, and residents.

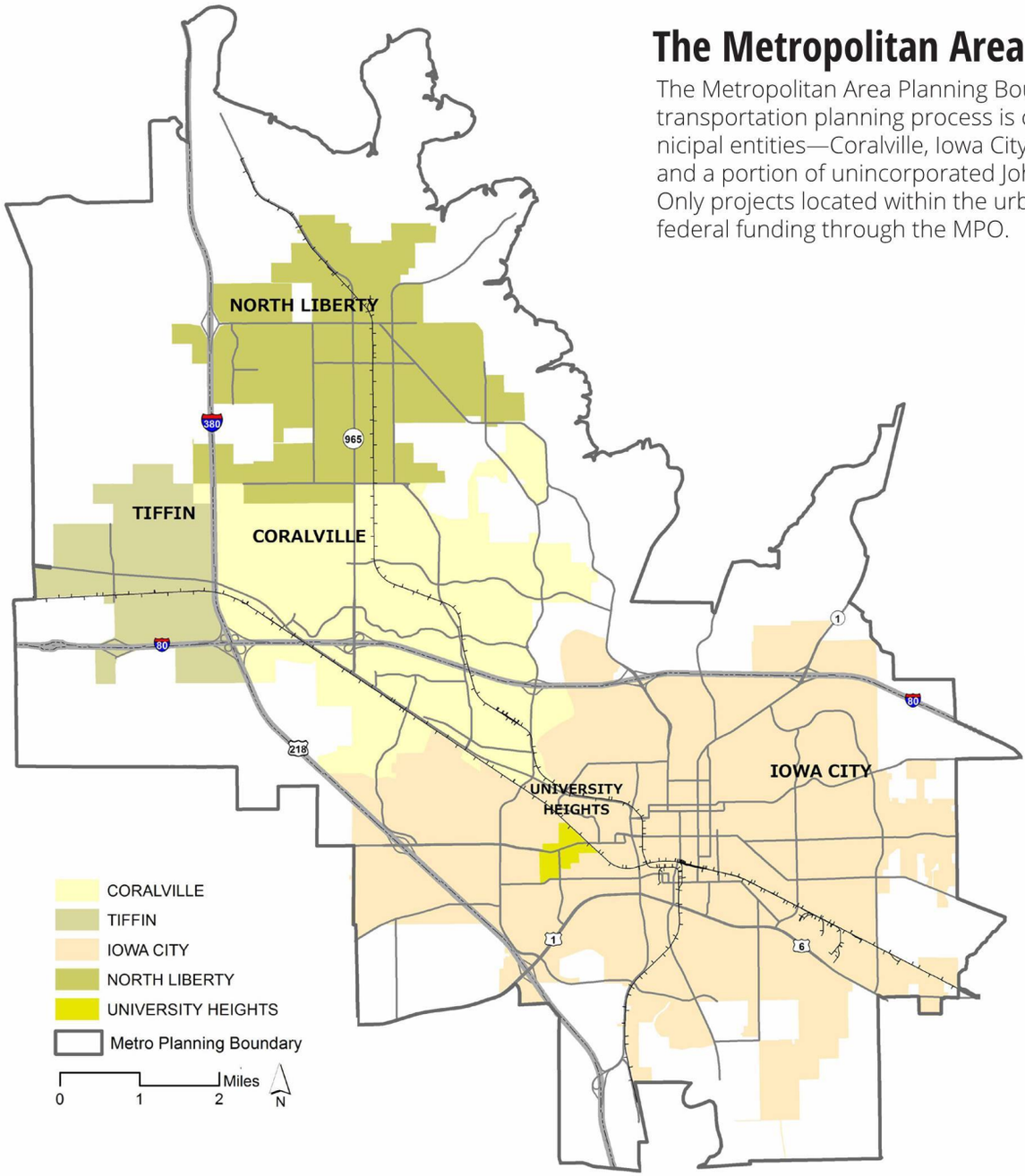


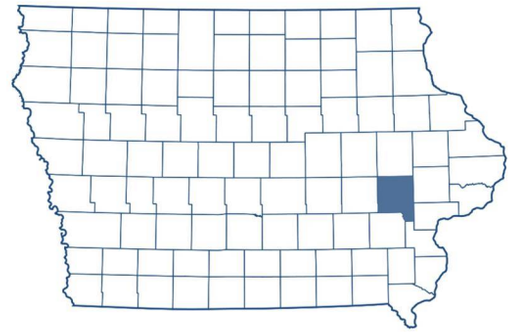
The Urbanized Area Policy Board is organized to conform with the federal requirements of the MPO. The Board is composed of 15 voting members made up of elected officials from each of the member entities plus 1 representative appointed by the president of the University of Iowa. Representation is proportional to population of the entity, however Iowa City is limited to 6 members to avoid having a majority of the seats on the Board.

The Iowa City Community School District has one non-voting school board member.

The Metropolitan Area

The Metropolitan Area Planning Boundary is the area in which the metropolitan transportation planning process is carried out. The boundary includes the five municipal entities—Coralville, Iowa City, North Liberty, Tiffin, and University Heights—and a portion of unincorporated Johnson County directly adacent to the metro area. Only projects located within the urbanized area planning boundary are eligible for federal funding through the MPO.





FUTURE FORWARD

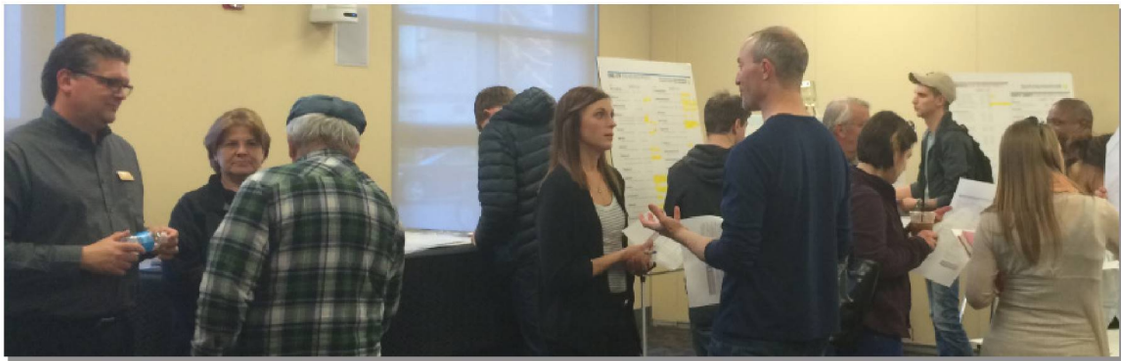
2045 LONG RANGE TRANSPORTATION PLAN

The development and adoption of a Long Range Transportation Plan (LRTP) is required by the U.S. Department of Transportation (DOT) for all urbanized areas in order to receive federal funding under the Fixing America's Surface Transportation Act (FAST Act). The FAST Act is the most current federal legislation (adopted 2015) that establishes federal transportation funding programs for surface transportation modes.

The Plan must represent all municipalities in MPOJC's long range planning area and be comprehensive, considering all modes of surface transportation. It should coordinate transportation issues among and between adjacent municipalities and attempt to address conflicting perspectives. The Plan should be continuing in its evolution and be updated as community priorities change, but at least every five years according to Federal requirements.

The LRTPd parties have adequate opportunity to comment on the provisions of the proposed plan. The Plan should reflect priorities for the community that can be translated into politically viable and financially reasonable transportation projects during the life of the plan.

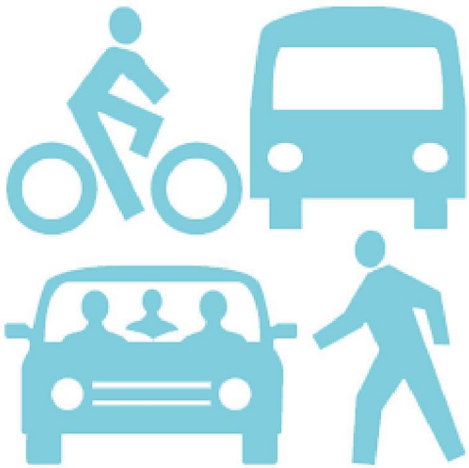
The LRTP is the transportation vision for the metro area in the same way that a comprehensive plan is the land use vision for a municipality. A comprehensive plan provides the basis for subsequent zoning and subdivision laws in a municipality, and a long range transportation plan should provide a similar basis for the programming of projects for all modes of transportation. To maximize effectiveness, a transportation plan should be consistent with the land use plans of the individual entities.



THE VISION:

To ensure the strategic use of public investments and policies for the creation of a safe, efficient, and equitable transportation network that enhances economic opportunity and growth while preserving our environment and quality of life.

Public meetings for the LRTP were held in Iowa City, North Liberty, and Coralville during April and May of 2016.



Guiding Principles:

- **Economic Opportunity**
- **Environment**
- **Quality of LIfe**
- **System Preservation**
- **Efficiency**
- **Choice**
- **Safety**
- **Health**
- **Equity**

What's New?

The *Future Forward 2045 Long Range Transportation Plan* was developed with an emphasis on nine guiding principles, an increased focus on multi-modal and active transportation, and the development of performance measures to better assess how the transportation network is performing now and in the future.

GUIDING PRINCIPLES

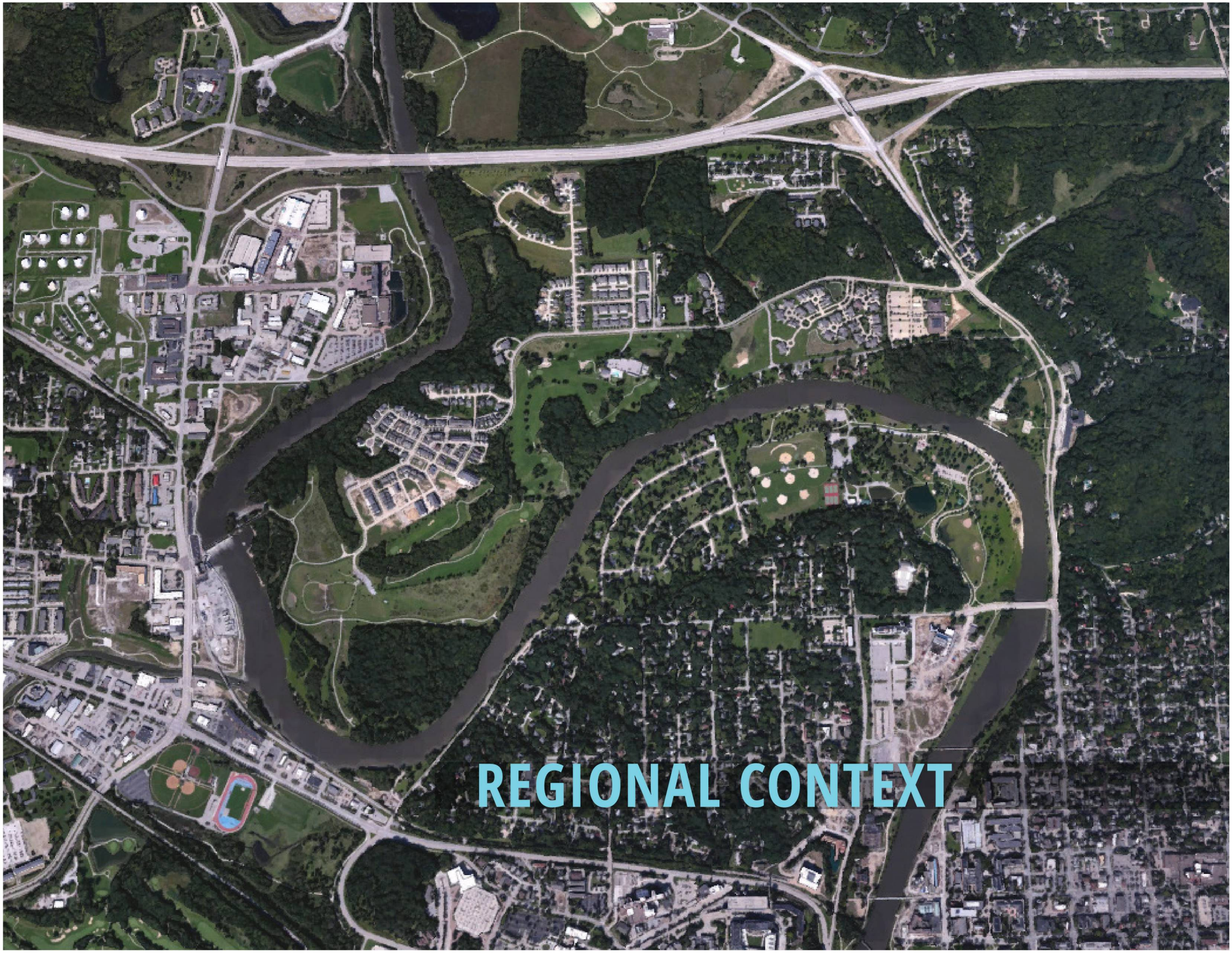
The Future Forward 2045 Plan is based on a set of nine guiding principles (see pages 30-52) that set the tone and spirit from which to assess metro area capital transportation infrastructure needs against expected future project costs and funding allocations. These principles were derived from past/present local planning efforts, giving credence to Federal Highway Administration (FHWA) and Iowa DOT directives and national trends in transportation planning.

INCREASED FOCUS ON MULTI-MODAL AND ACTIVE TRANSPORTATION

In recent years, there has been an increased emphasis on multi-modal transportation planning from the federal, state, and local perspective. Concerns about sustainability, climate change, air quality, health and well-being, active living, an aging population, and safety are a few reasons for the increased focus. The Millennial generation (which makes up 42% of metro area population) is leaning more towards active transportation nationally and here in Johnson County. This Plan continues to build on its predecessor, including a more robust review of transportation trends to help guide local decision making.

PERFORMANCE MEASURES

The FHWA defines Transportation Performance Management (TPM) as a strategic approach that uses system information to make investment and policy decisions to achieve national performance goals. The development of performance measures also allow us to more effectively measure how well the transportation network is meeting the needs of the metro area and help determine the best use of scarce transportation funding. Required performance measures are expected to be determined by the FHWA and Iowa DOT in the future, however they have not been fully developed at the time of plan adoption. Nevertheless, MPOJC understands the value in evaluating the performance of our network and has proactively included 25 performance measures within this Plan, as they relate to the nine guiding principles.



REGIONAL CONTEXT

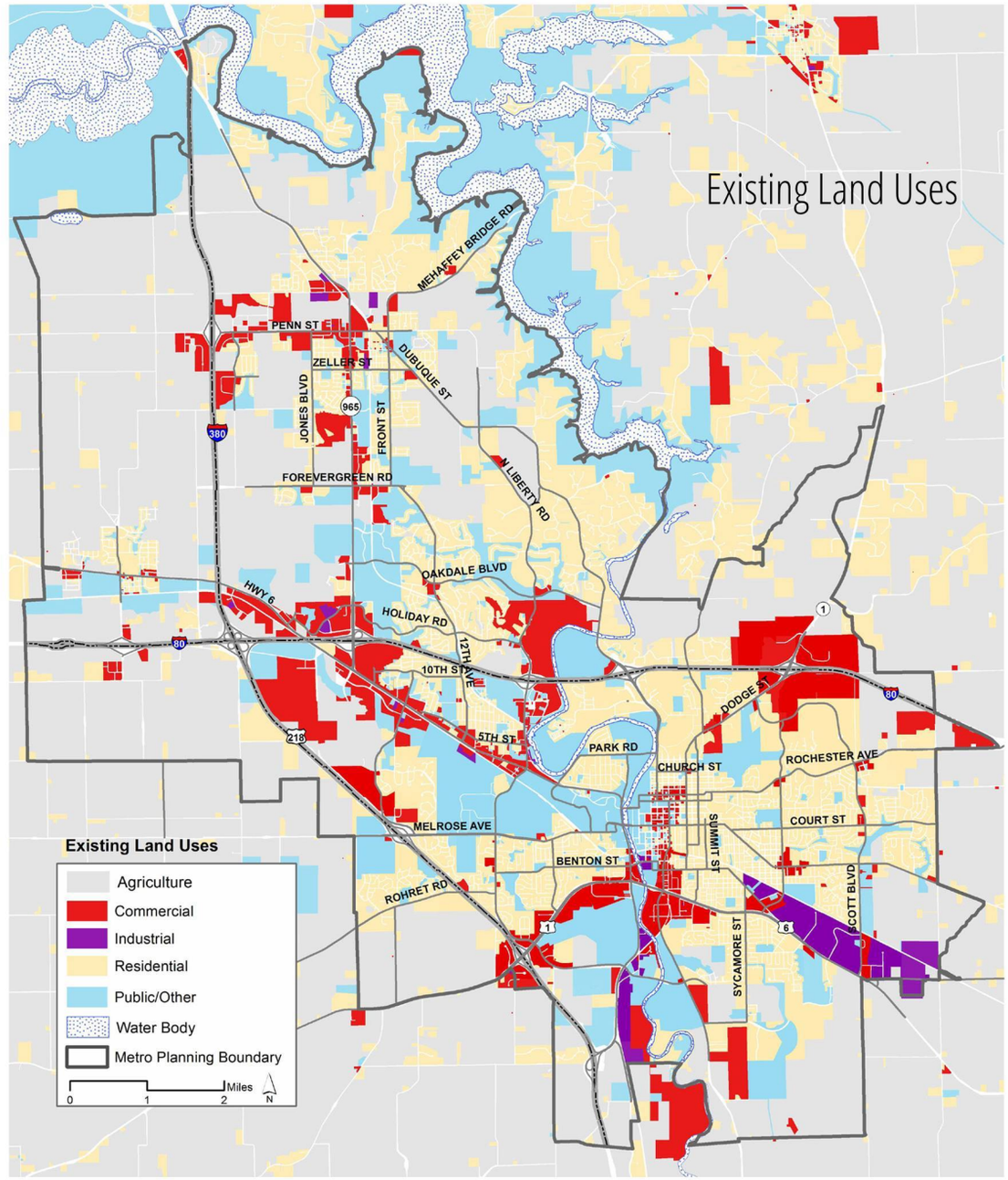
The Metropolitan Area

The Iowa City urbanized area is situated at the crossroads of Interstate 80 / Interstate 380 / Highway 218 / Highway 1 and Highway 6 in Johnson County Iowa. In addition, the area is served by two rail lines, the Iowa Interstate Railroad and the CRANDIC Railroad. Iowa City and Coralville are home to the University of Iowa and the University of Iowa Hospitals and Clinics, which are the major employers in the metro area.

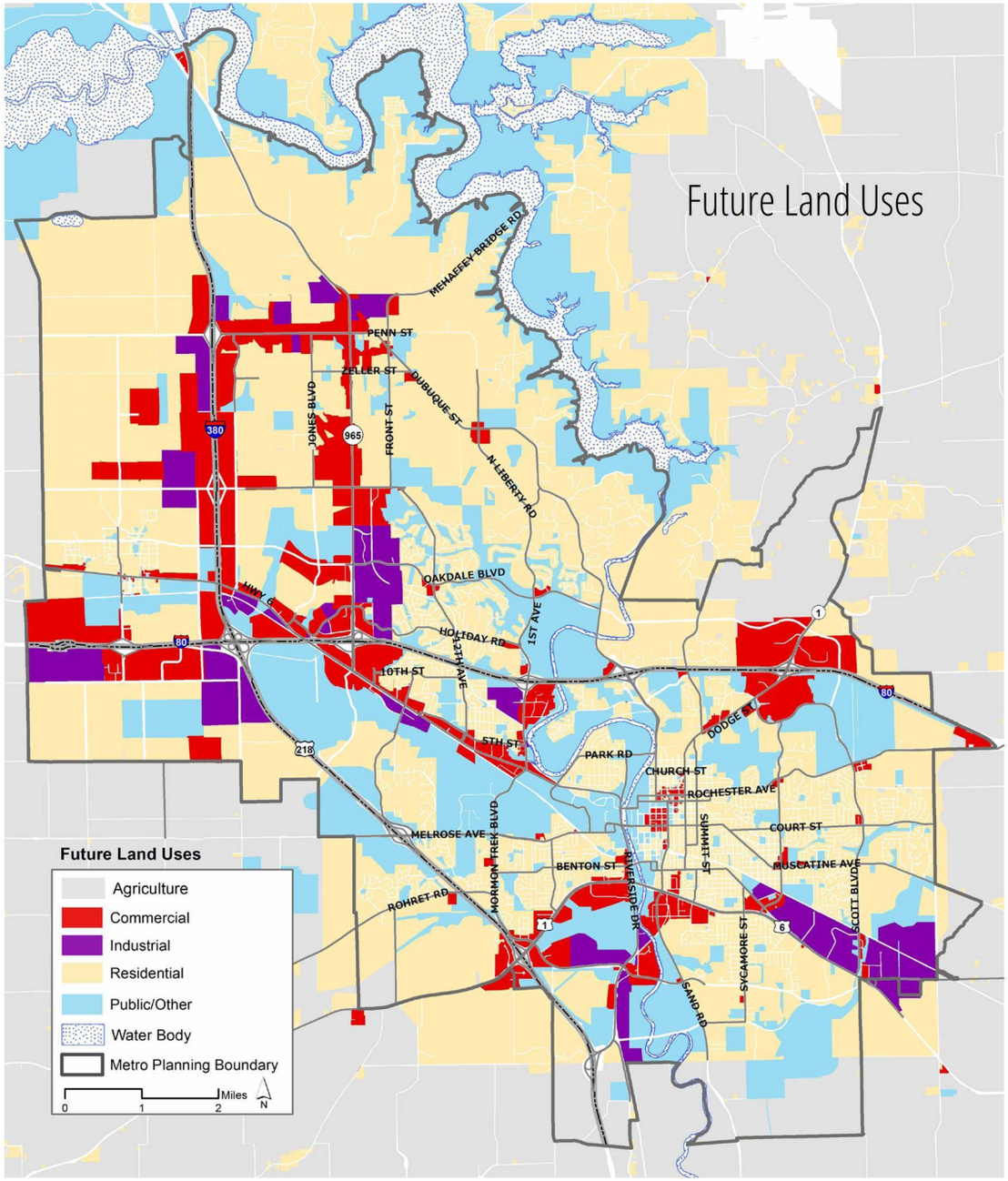
Metro area cities are consistently ranked as ideal places to live, work, and locate a business. Over the past five years our metro communities have received national attention as best places to raise a family, retire, find a job, or start a business and rank highly as healthy and safe communities. It is, therefore, no surprise that Johnson County is the second fastest growing county in the state.

People are attracted to Johnson County for its low unemployment rate, diverse economic sectors, and educational opportunities, including a high performing public school system. Yet despite its many assets, Johnson County, also ranks high in the percentage of cost-burdened and extreme cost-burdened households— with an estimated 34.7 percent of households spending more than 30% of their income on housing in 2010.[1]

[1] University of Iowa Public Policy Center http://ppc.uiowa.edu/housing/affordability/iowa



Note: Land use designations based on County property tax assessment classification.

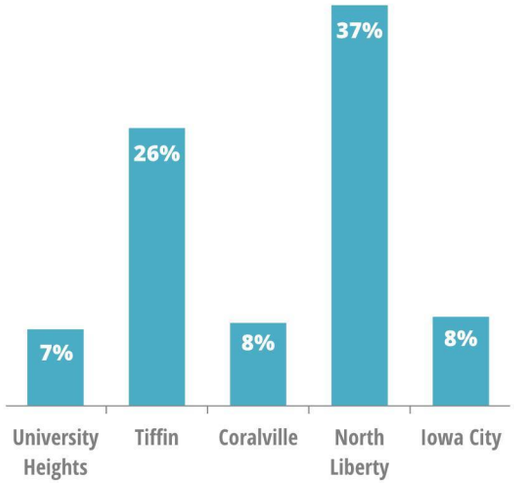


Note: Land use designations derived from future land use plans and documents for each community.

These land use maps provide a general sense of where municipalities have planned for urban growth and development and the types of land uses anticipated. Land use categories represented on these maps are simplified in order to make broad comparisions between the municipalities, especially with regard to transportation intensive uses such as industrial and commercial areas. These maps should not be relied upon to make decisions about whether a particular land use may be allowed on a specific property or to draw conclusions about land values or development potential of specific properties.

Liberty High School under construction will open in North Liberty for the 2017-2018 school year.

Population change by community 2010-2014



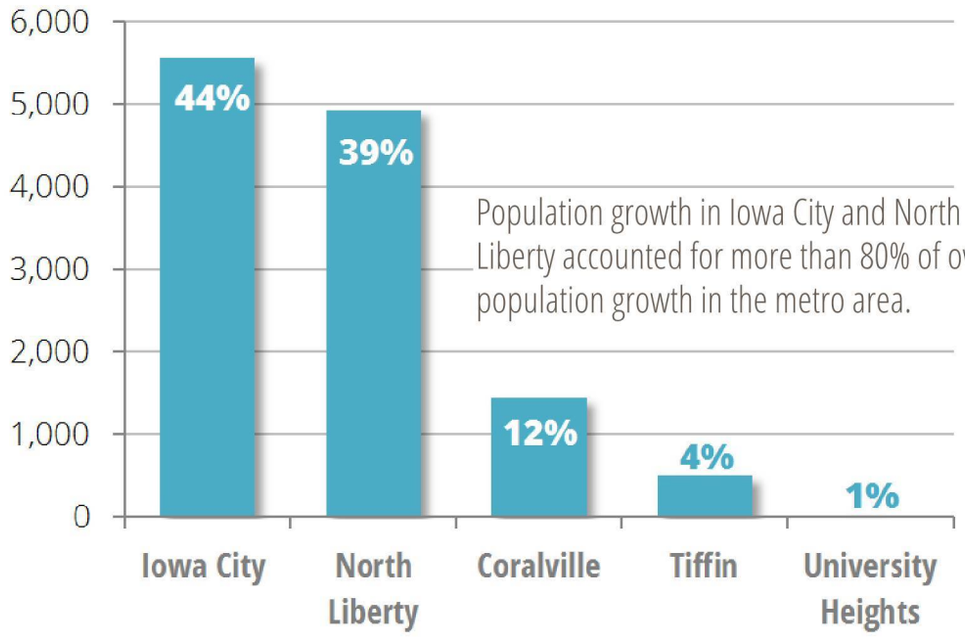
The rate of growth for population at the community level presents a somewhat different picture from overall metro growth, with population in North Liberty growing by over one third, and Tiffin growing by a quarter between 2010 and 2014. This level of local population growth often presents challenges for the transportation system.

Population Growth

The Iowa City Metropolitan Area is one of the fastest growing regions in the state. Between 2010 and 2014, the Census Bureau estimates the region has grown by nearly 12,500 residents—a 12% increase in four years.

Iowa City has experienced the greatest growth with 5,500 additional residents (44% of metro population growth), while North Liberty has added nearly 5,000 new residents (39% of growth). Coralville's population increased by 1,500 residents (12% of growth), Tiffin's population grew by approximately 500 residents (4% of growth), and University Heights has grown by 74 persons (1% of metro population growth).

Allocation of total Metro Area Population Growth 2010-2014



Source: U.S. Census Bureau, 2010 Census and American Community Survey 2014 population estimates and North Liberty Special Census (2015).

Current Population

Year	State	Johnson County	Iowa City	Coralville	North Liberty*	Tiffin	University Heights	Metro Population
2010 Census	3,046,355	130,882	67,862	18,907	13,374	1,947	1,051	103,141
2014 Census Estimate	3,107,126	142,421	73,415	20,349	18,299	2,444	1,125	115,632
Net Pop. Growth	60,771	11,539	5,553	1,442	4,925	497	74	12,491
% Growth	2%	9%	8%	8%	37%	26%	7%	12%
Annual Growth Rate	0.5%	2.2%	2.0%	1.9%	9.2%	6.4%	1.8%	3.0%
% of Metro Area 2014			63%	18%	16%	2%	1%	100%
% of Metro Growth 2010 - 2014			44%	12%	39%	4%	1%	100%

* North Liberty performed a special census population count in 2014; all other population figures are 2014 census estimates.

POPULATION PROJECTIONS

ENTITY	2014 CENSUS ESTIMATE	2025	2035	2045
Iowa City	73,415	80,700	88,200	95,700
Coralville	20,349	24,500	28,200	32,000
North Liberty	18,299	25,000	32,000	38,500
Tiffin	2,444	4,690	6,800	8,800
University Heights	1,125	1,200	1,300	1,400
Johnson County (in MPO Boundary)	9,906	11,791	13,505	15,219
Metro Population	**125,538**	**147,881**	**170,005**	**191,619**

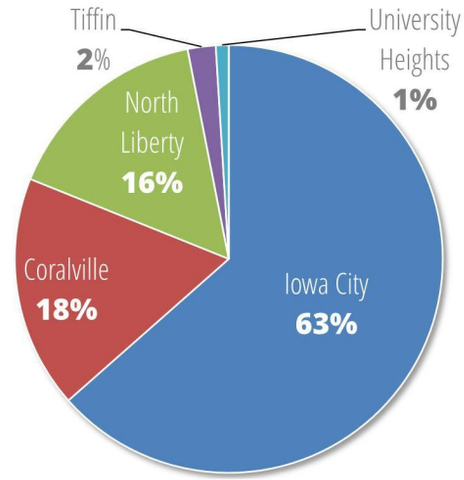
* Linear growth trends based on years 2000, 2010, and 2014 census population data/estimates
* North Liberty and Tiffin's growth trends deviated from linear growth trends based on local knowledge/municipal staff
* Sources: US Census Bureau, Community comprehensive plans, 2045 MPOJC Travel Demand Model

Trends and Projections

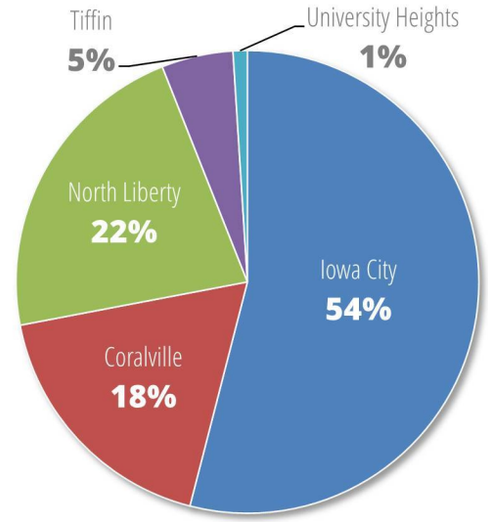
MPOJC developed long-term population projections based on linear growth trends from 2000 to 2014. Based on these trends, the percentage of metro population residing in Iowa City by the year 2045 is expected to decrease to 54% , while North Liberty's proportion of the metro population is expected to increase to 22%. All other municipalities are projected to maintain relatively similar proportions of metro area population.

By the year 2045, growth trends indicate that the metro area will grow by 53%, or 67,770 people, to approximately 176,400 persons. Long-range transportation planning is therefore an essential tool for ensuring the transportation network of today can meet the needs of tomorrow as population growth will place increasing demands on our transportation network.

% Metro Area Population 2014



% Metro Area Population 2045



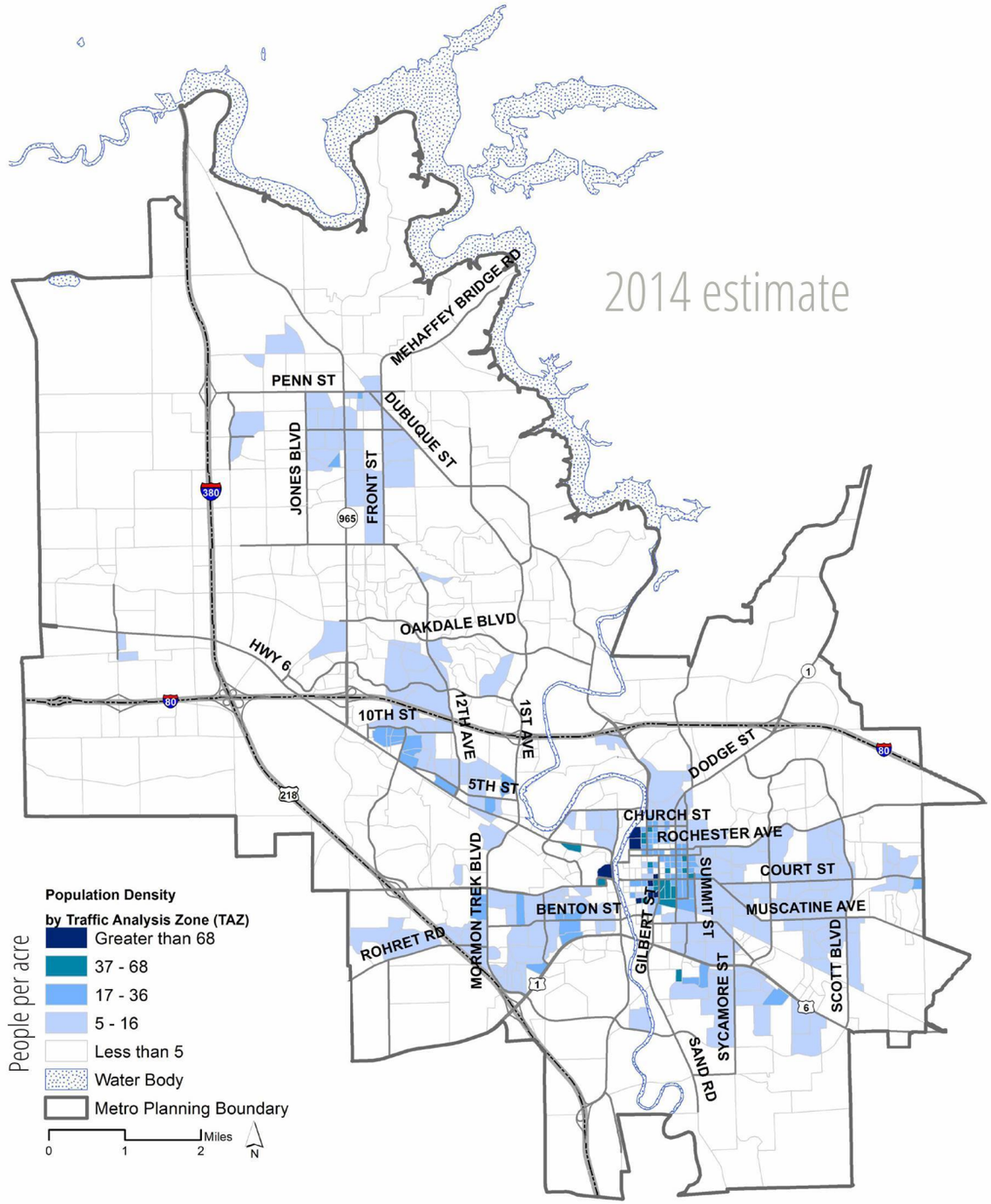
Population Density

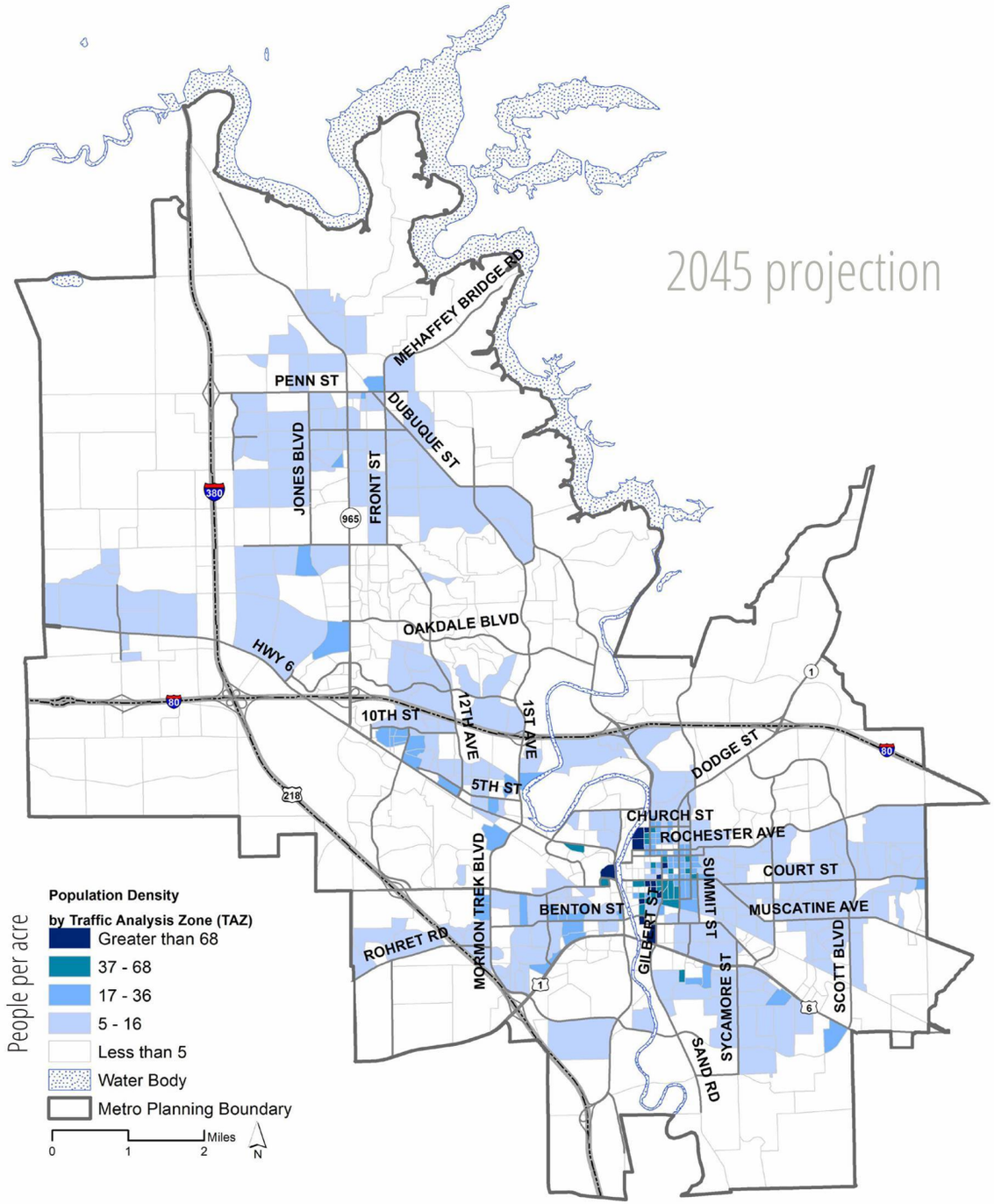
In 2014, the areas with the greatest population densities tend to be centered near the University of Iowa Campus, in Downtown Iowa City, and along major metro arterial corridors.

TAZ maps

A traffic analysis zone (TAZ) is the unit of geography used in transportation modeling. The spatial extent of zones depicted on these maps ranges from fairly large areas in a suburban or rural context to as small as a few city blocks in the central parts of Iowa City.

Zones are constructed from census block information. Typically these blocks are used in transportation models by providing socio-economic data. Most often the critical information is the number of automobiles per household, household income, and employment within these zones. This information helps to further our understanding of trips that will be produced and attracted within the zone.





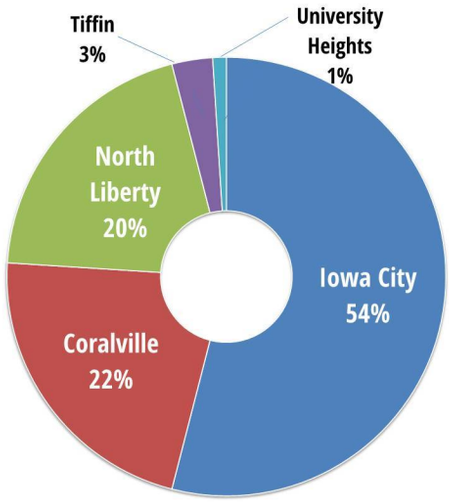
Significant population and housing growth is also expected in North Liberty, the west area of Coralville, in Tiffin, and the periphery of Iowa City. The greatest densities of population (people per acre) in 2045 are expected near downtown Iowa City and in the Riverfront Crossings district as a result of policies aimed at increasing population density and continual redevelopment.

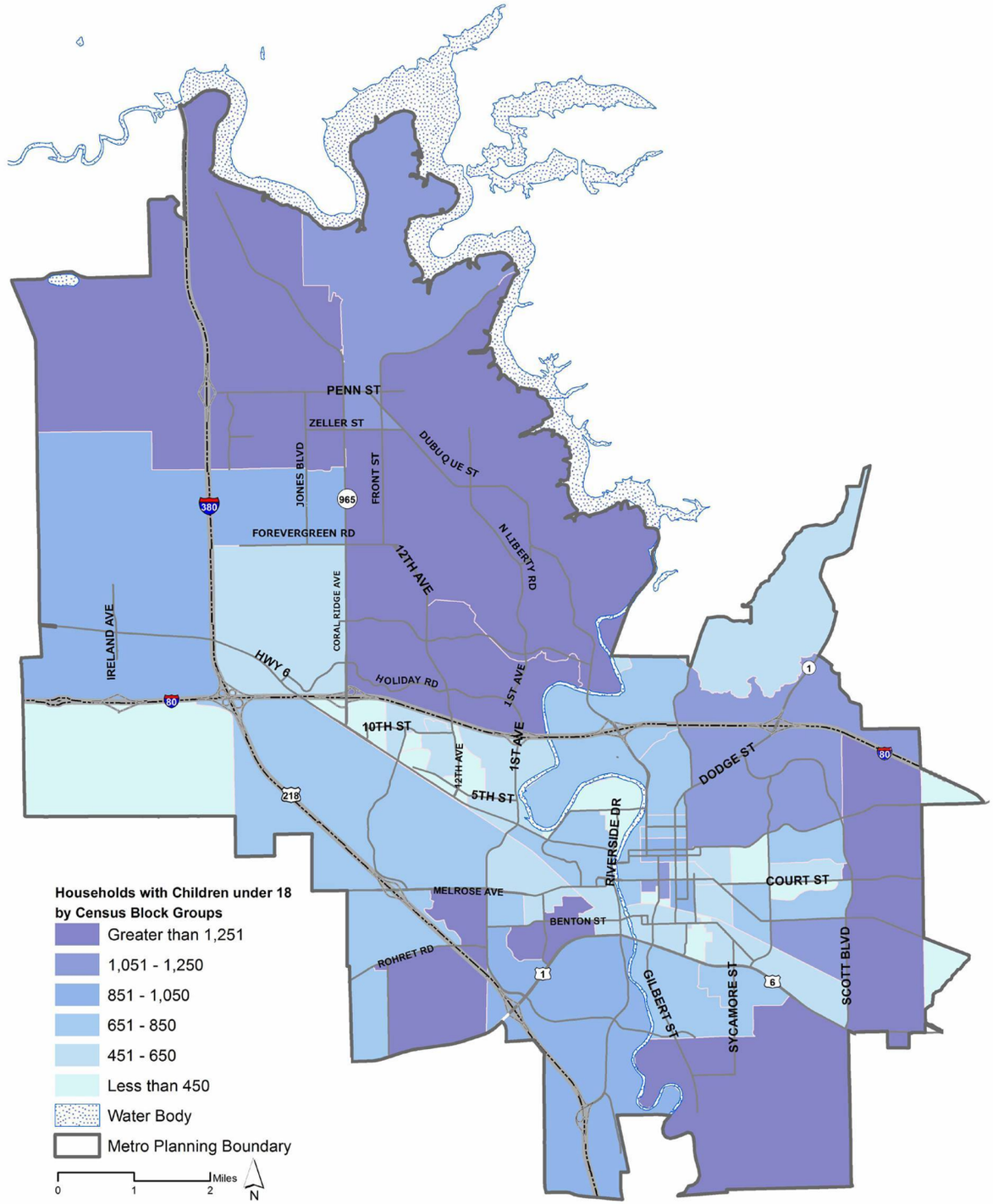
To prepare for future population growth, a new high school will be opened in North Liberty in the fall of 2017. Two new elementary schools will be open on the south and east periphery of Iowa City. A new elementary school was recently built near Highway 6 and Park Road in Tiffin, and an additional elementary school and middle school are planned for the same site. Tiffin also has recently constructed a new high school and utilized the old high school as a middle school. Much of this investment in school infrastructure has occurred in undeveloped "greenfields", therefore it is expected that these schools will be catalysts for housing growth.

Families with Children

Not all households are considered families. Under the U.S. Census Bureau definition, *family households* consist of two or more individuals who are related by birth, marriage, or adoption, although they also may include other unrelated people. Over half of the total metro area families with children are located in Iowa City; 22% are located in Coralville, and 20% in North Liberty. This is roughly proportional to the population of metro area communities.

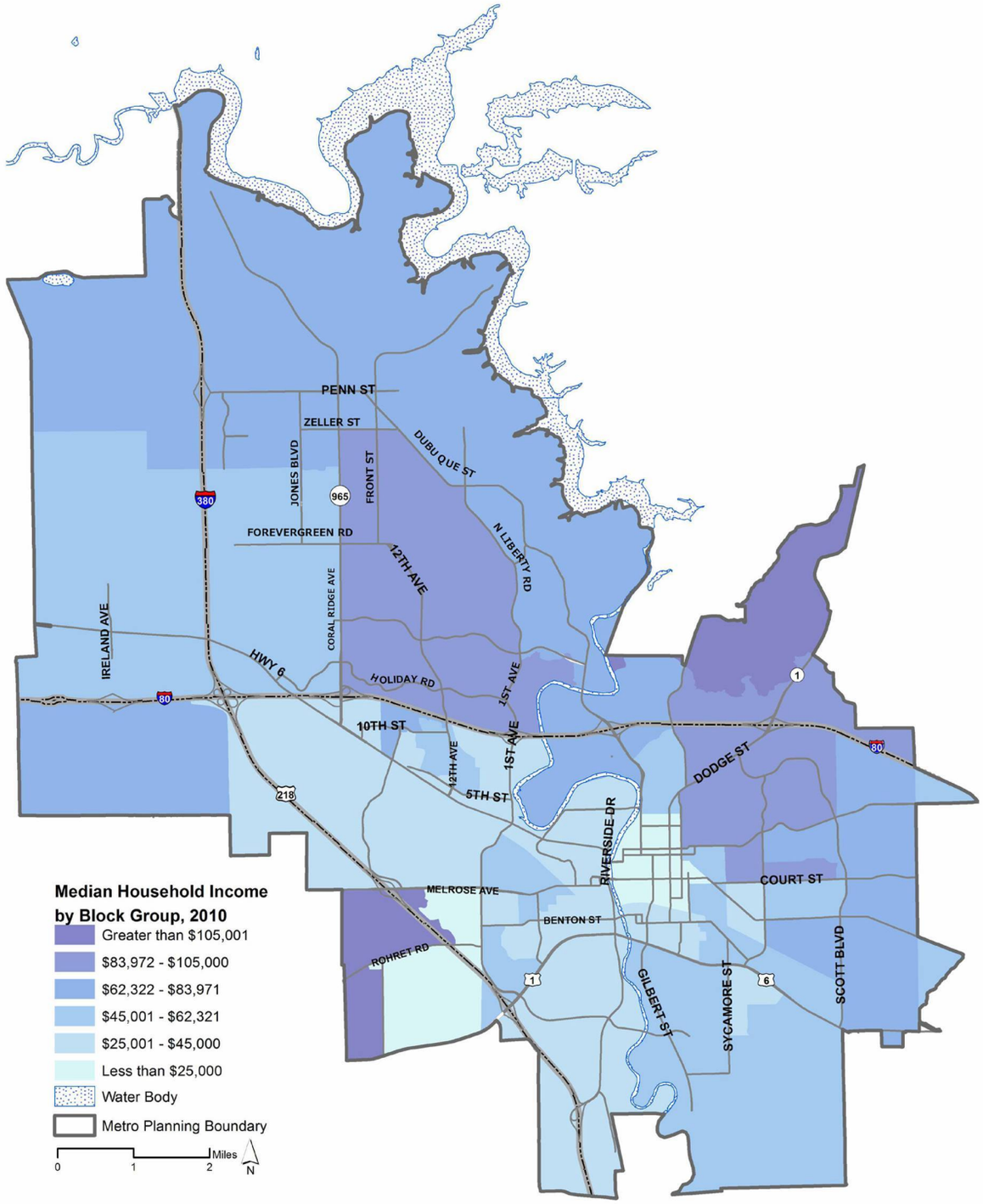
Proportion of Metro Area Families with Children





Source: American Community Survey 2011-2015 5-year estimates, MPOJC, Johnson County

Date prepared: January 2017



Household Income

Households located in auto-dependent locations, such as suburban or rural locations, may spend upwards of 55% of their incomes on transportation costs. Housing that is located closer to employment, shopping, restaurants and other amenities can reduce household transportation costs to as little as 9% of household income.*

Thoughtful coordination of land use and transportantion priorities can lead to wiser investments in road infrastructure that reduce transportation costs for households.

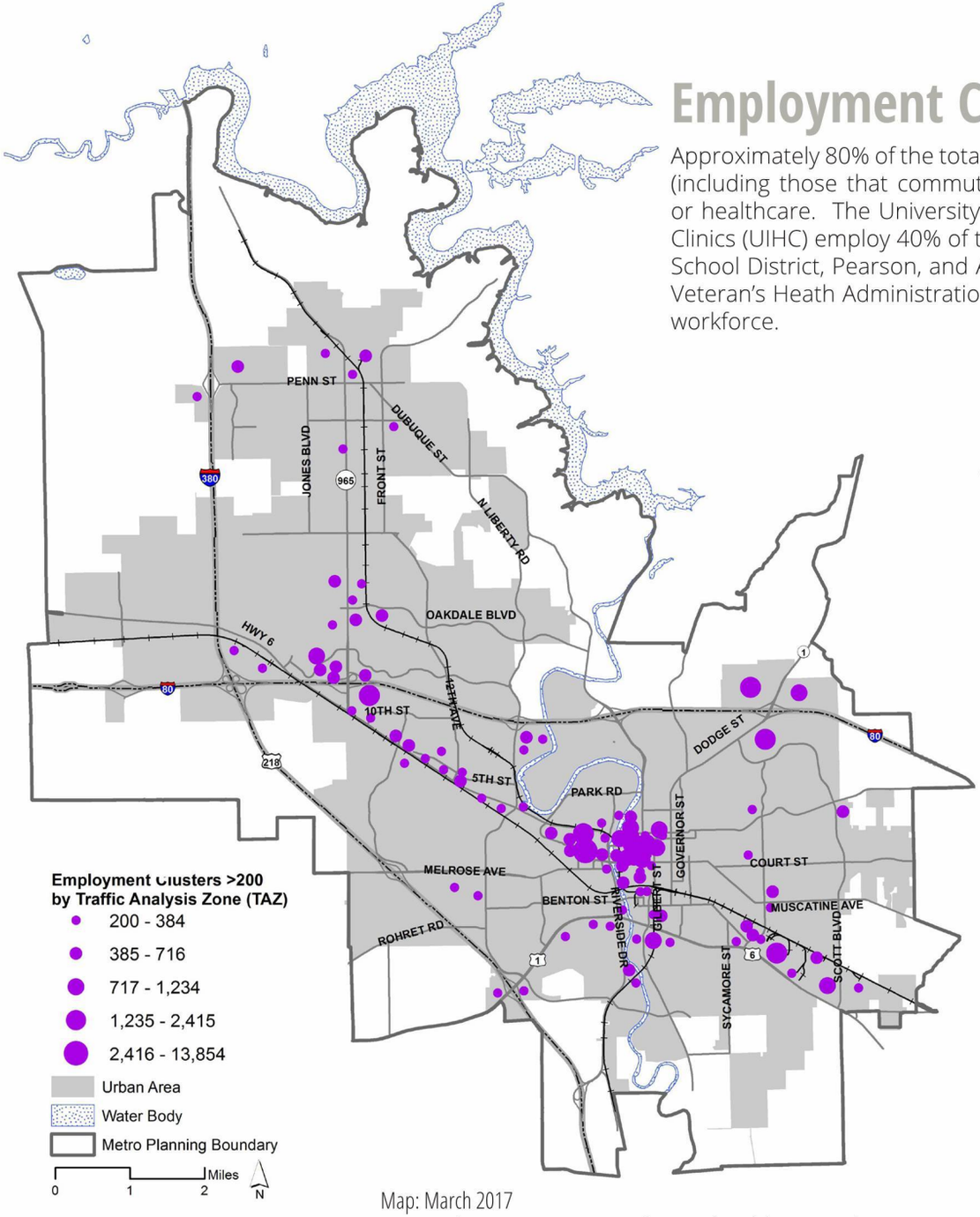
* FHWA Transportation and Housing Costs Fact Sheet. http://www.fhwa.dot.gov/livability/fact_sheets/transandhousing.cfm

American Community Survey 5-Year estimates Median Household Income Estimates (2011-2015)	
Iowa City	$ 42,375
Coralville	$ 58,744
North Liberty	$ 72,451
Tiffin	$ 57,125
University Heights	$ 52,386
Johnson County	$ 55,700
State of Iowa	$ 53,183

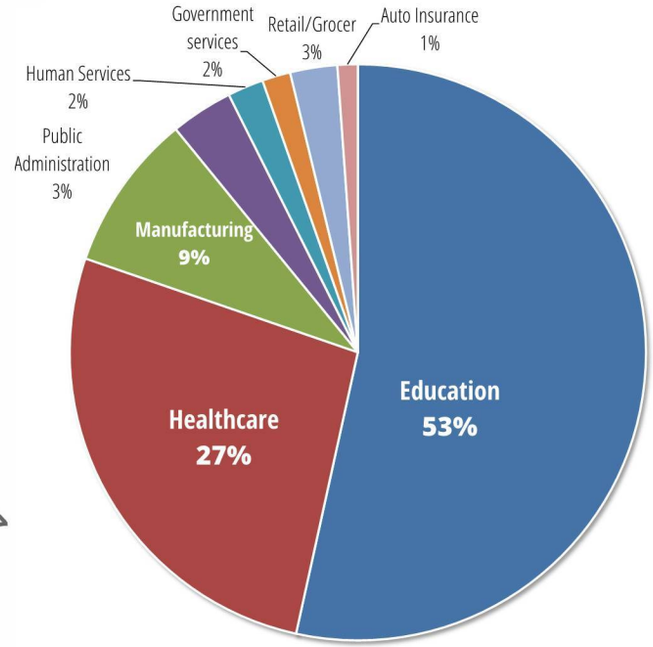
Date prepared: January 2017

Employment Clusters

Approximately 80% of the total workforce (over age 16) residing in the metro area (including those that commute from adjacent counties) work in the education or healthcare. The University of Iowa and the University of Iowa Hospitals and Clinics (UIHC) employ 40% of the total workforce, while the Iowa City Community School District, Pearson, and ACT, Inc employ another 7% of the workforce. The Veteran's Heath Administration (VA) and Mercy Iowa City employ 4% of the total workforce.



Map: March 2017
Source: InfoUSA 2014; MPOJC Travel Demand Model, MPOJC, Johnson County



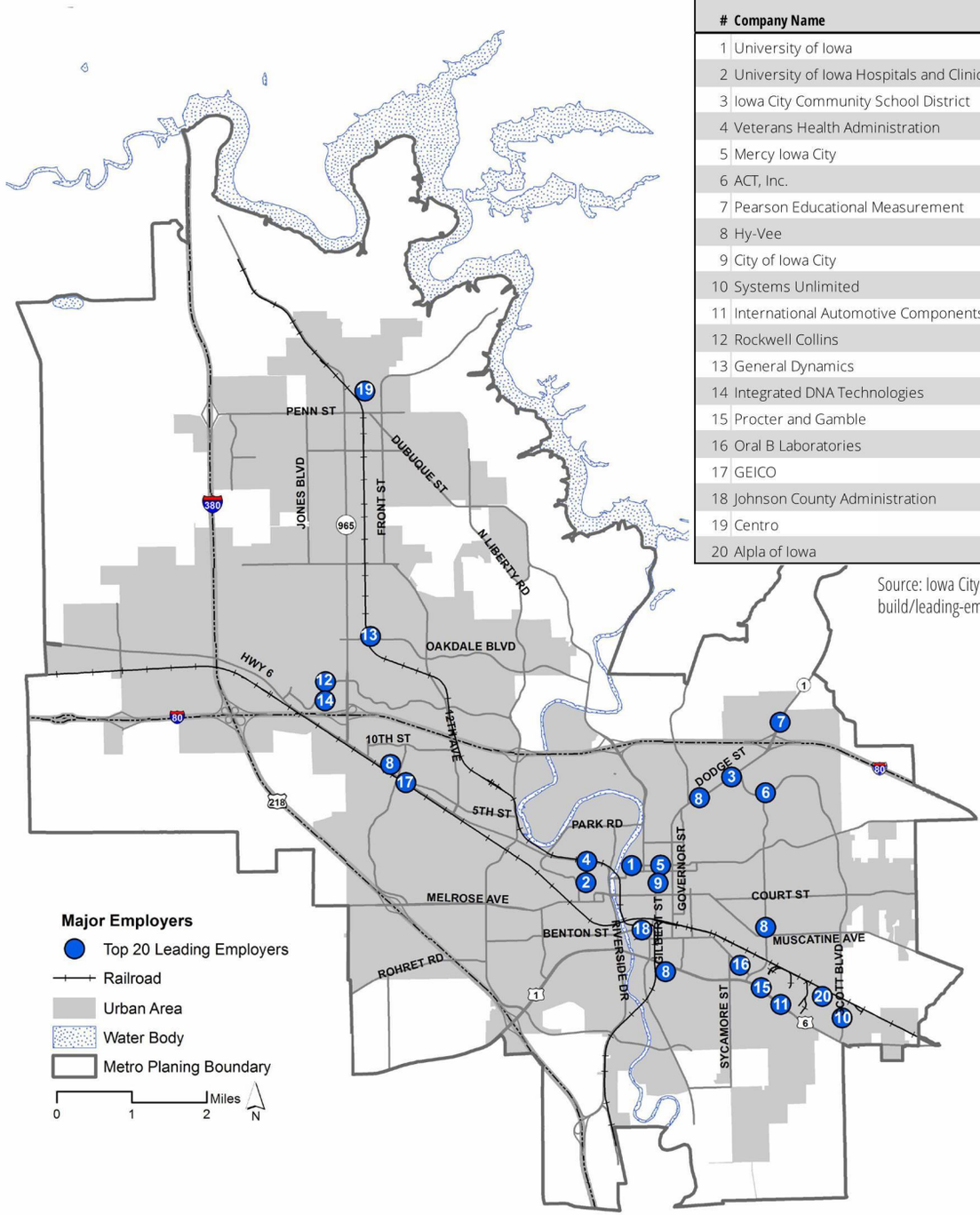
	2015
Metro Area Workers > 16 yrs of age	61,248
Commuters into Johnson County	15,955
Commuters out of Johnson County	(8,850)
Est'd Daily Workers in Metro Area	68,353

Source: American Community Survey 2010
Census Transportation Planning Package 2010

Major Employers

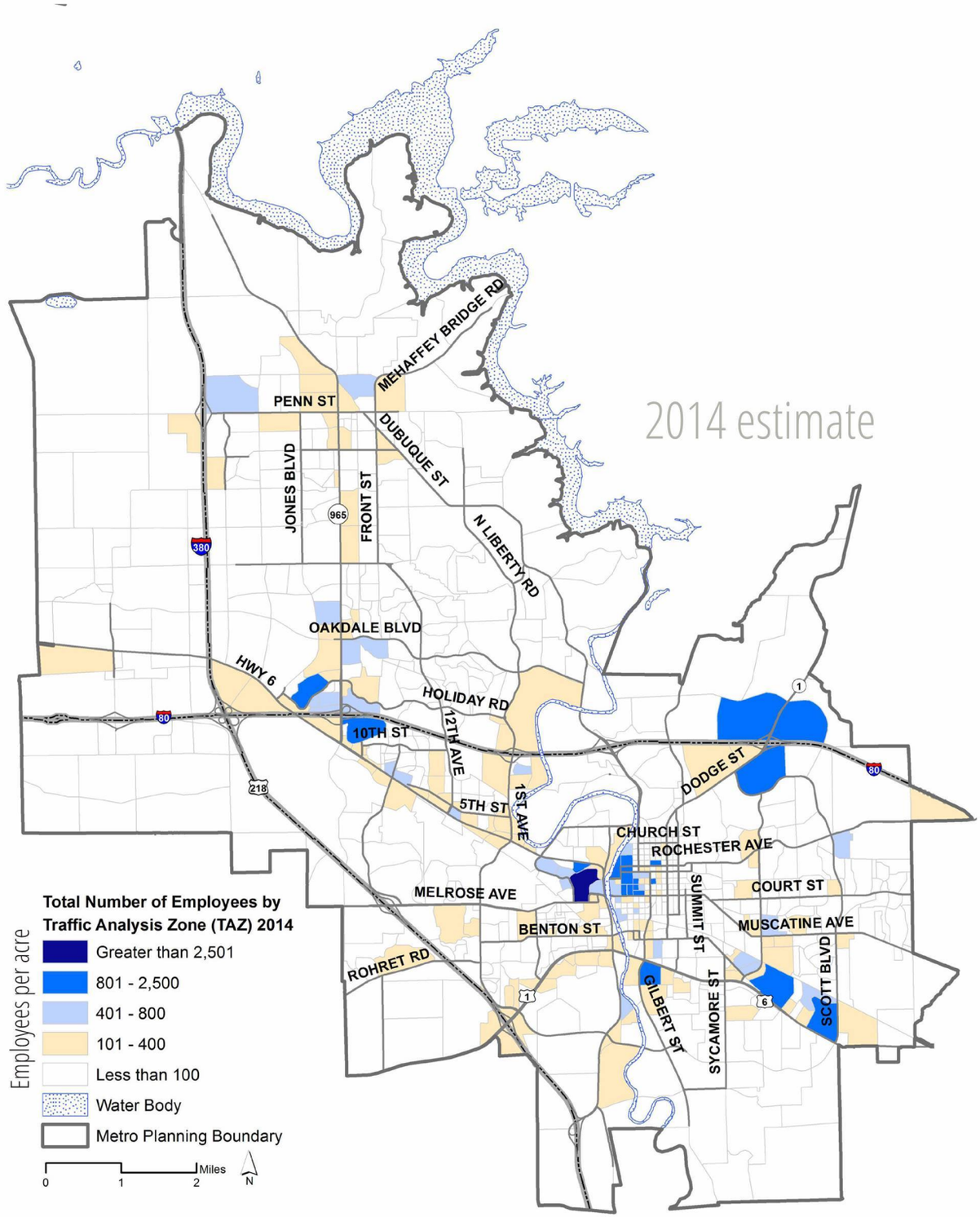
#	Company Name	Location	Sector	# Employees (year)	% of Ttl Workforce
1	University of Iowa	Iowa City	Post-secondary education	18,650 (2011)	27%
2	University of Iowa Hospitals and Clinics	Iowa City	Healthcare	8,704 (2014)	13%
3	Iowa City Community School District	Iowa City	Education	2,346 (2014)	3%
4	Veterans Health Administration	Iowa City	Healthcare	1,562 (2011 CBJ)	2%
5	Mercy Iowa City	Iowa City	Healthcare	1,559 (2014)	2%
6	ACT, Inc.	Iowa City	Educational testing services	1,350 (2016)	2%
7	Pearson Educational Measurement	Iowa City	Educational testing services	1,200 (2016)	2%
8	Hy-Vee	Iowa City, Cville	Retail/Grocer	1,166 (2006)	2%
9	City of Iowa City	Iowa City	Public administration	1,108 (2014)	2%
10	Systems Unlimited	Iowa City	Human services	890 (2011 - CBJ)	1%
11	International Automotive Components	Iowa City	Manufacturing - Automotive	750 (2016)	1%
12	Rockwell Collins	Coralville	Manufacturing - Electronics	700 (2016)	1%
13	General Dynamics	Coralville	Government services	700 (2011)	1%
14	Integrated DNA Technologies	Coralville	Manufacturing - Biotech	620 (2016)	1%
15	Procter and Gamble	Iowa City	Manufacturing - Personal care	530 (2016)	1%
16	Oral B Laboratories	Iowa City	Manufacturing - Personal care	530 (2016)	1%
17	GEICO	Coralville	Auto Insurance	500 (2016)	1%
18	Johnson County Administration	Iowa City	Public administration	435 (2014)	1%
19	Centro	North Liberty	Manufacturing - Plastics	399 (2014)	1%
20	Alpla of Iowa	Iowa City	Manufacturing - Plastics	360 (2011)	1%

Source: Iowa City Area Development Group january 2017 (ICAD) http://www.iowacityareadevelopment.com/build/leading-employers.aspx



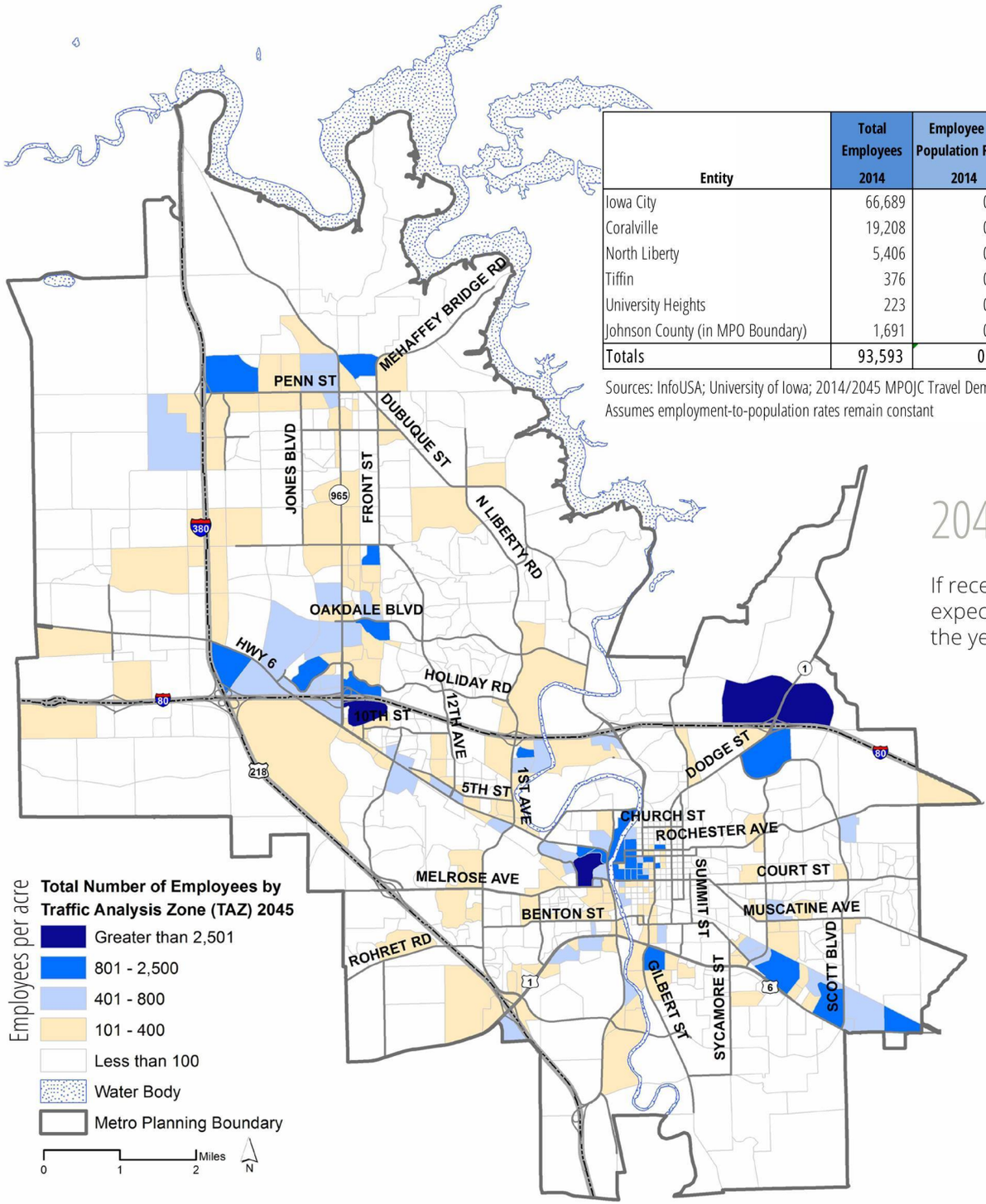
Employment Density

The greatest density of employment is located in central Iowa City where the main University campus and UIHC are located. The bulk of metro area commercial retail is located adjacent to Highway 6 and Coral Ridge Avenue in Coralville. The greatest density of industrial uses is located in southeastern Iowa City along Highway 6 and north of Penn Street in North Liberty. There is a cluster of office park employment in northeast Iowa City near Interstate 80 (ACT Inc campus, Pearson campus, and the Northgate Office Park) and in the Oakdale Research Park near Coral Ridge Avenue in Coralville.



Entity	Total Employees 2014	Employee to Population Ratio 2014	Employment Projections 2025	2035	2045	Net Change 2014 - 2045	% Change 2014 - 2045
Iowa City	66,689	0.94	76,150	83,227	90,304	23,615	35%
Coralville	19,208	0.94	22,960	26,428	29,989	10,781	56%
North Liberty	5,406	0.33	8,219	10,520	12,657	7,251	134%
Tiffin	376	0.15	716	1,039	1,344	968	257%
University Heights	223	0.22	261	283	305	82	37%
Johnson County (in MPO Boundary)	1,691	0.17	2,013	2,305	2,598	907	54%
Totals	93,593	0.77	110,319	123,802	137,197	43,604	47%

Sources: InfoUSA; University of Iowa; 2014/2045 MPOJC Travel Demand Model
Assumes employment-to-population rates remain constant

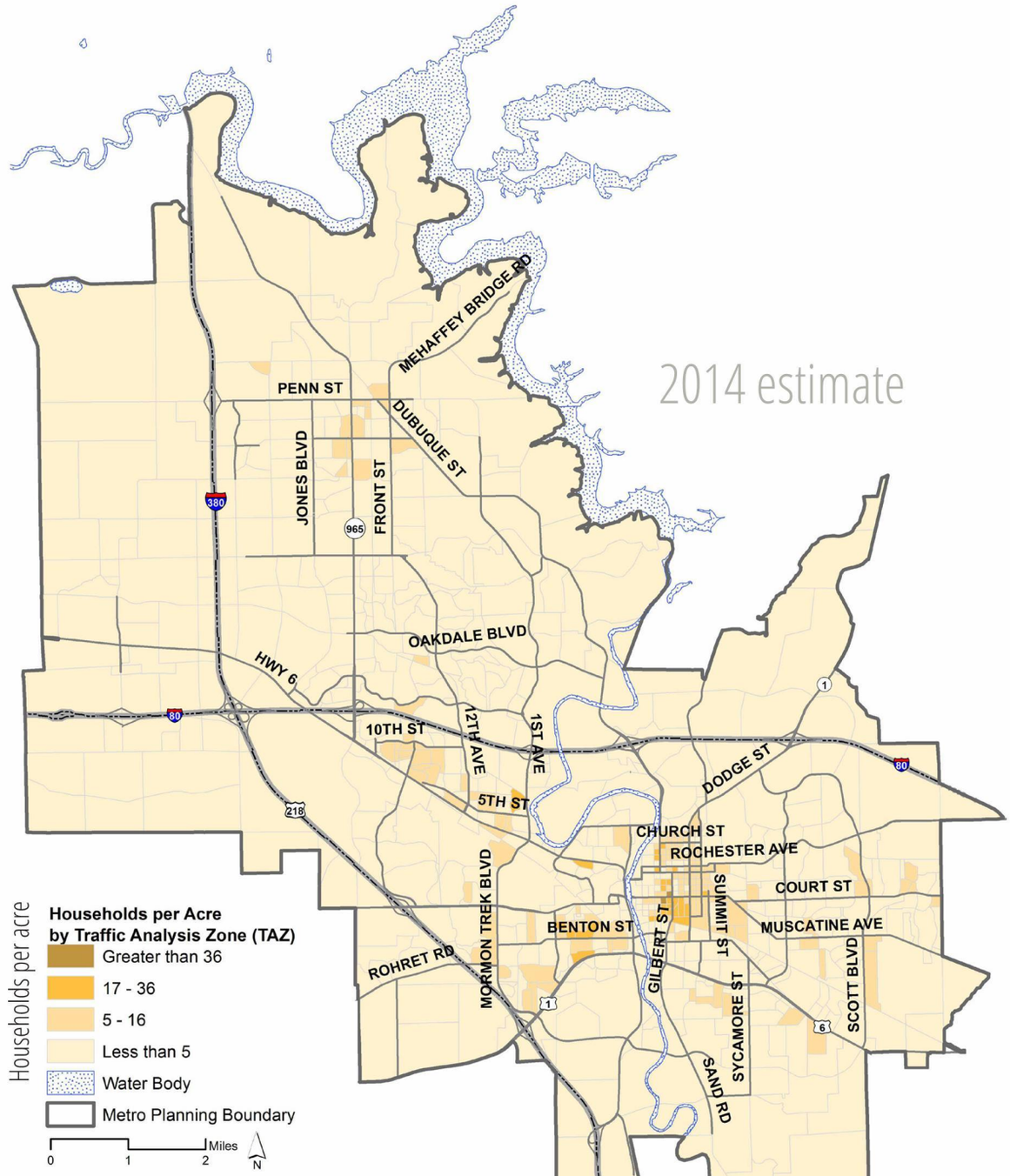


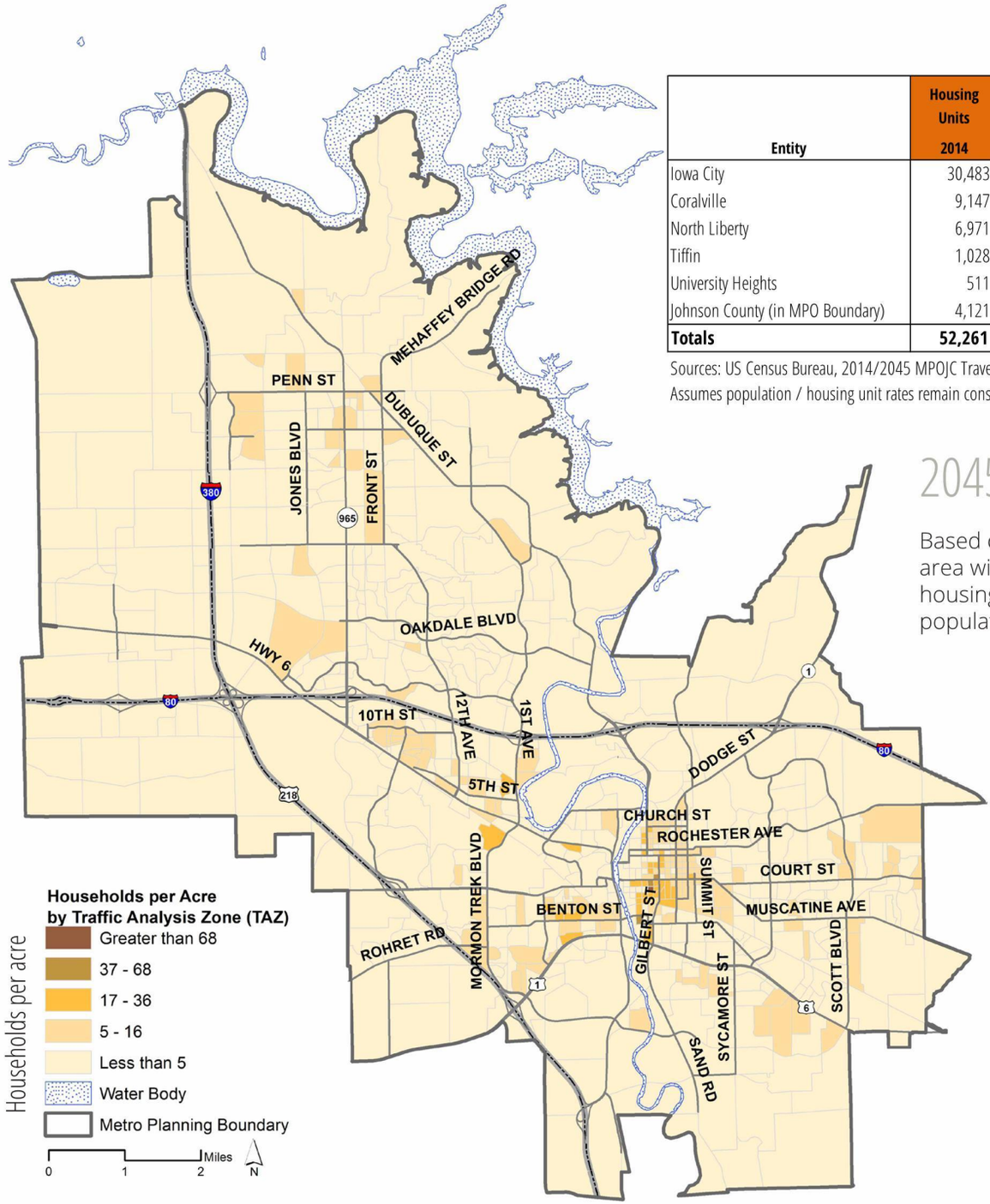
2045 projection

If recent trends hold, the metro area can expect over 43,600 new jobs to be created by the year 2045.

Housing Density

Transportation and land use are inextricably connected. The density and mix of land uses and other features shape the transportation needs and habits of residents. Higher-density mixed-use areas tend to be associated with greater use of modes other than personal vehicles. Transit tends to be more feasible and desirable in compact areas, where large numbers of people can be served efficiently. Car trips tend to be shorter, and ride sharing is also more feasible because there is a greater likelihood that individuals are traveling to and from similar locations.





Entity	Housing Units 2014	Population Per Housing Unit 2014	Housing Unit Projections 2025	2035	2045	Net Change 2014 - 2045	% Change 2014 - 2045
Iowa City	30,483	2.32	34,807	38,042	41,277	10,794	35%
Coralville	9,147	2.24	10,934	12,585	14,281	5,134	56%
North Liberty	6,971	2.36	10,598	13,566	16,321	9,350	134%
Tiffin	1,028	2.39	1,958	2,839	3,674	2,646	257%
University Heights	511	2.00	599	649	699	188	37%
Johnson County (in MPO Boundary)	4,121	2.40	4,905	5,618	6,331	2,210	54%
Totals	**52,261**	**2.32**	**63,802**	**73,299**	**82,583**	**30,322**	**58%**

Sources: US Census Bureau, 2014/2045 MPOJC Travel Demand Model
Assumes population / housing unit rates remain constant

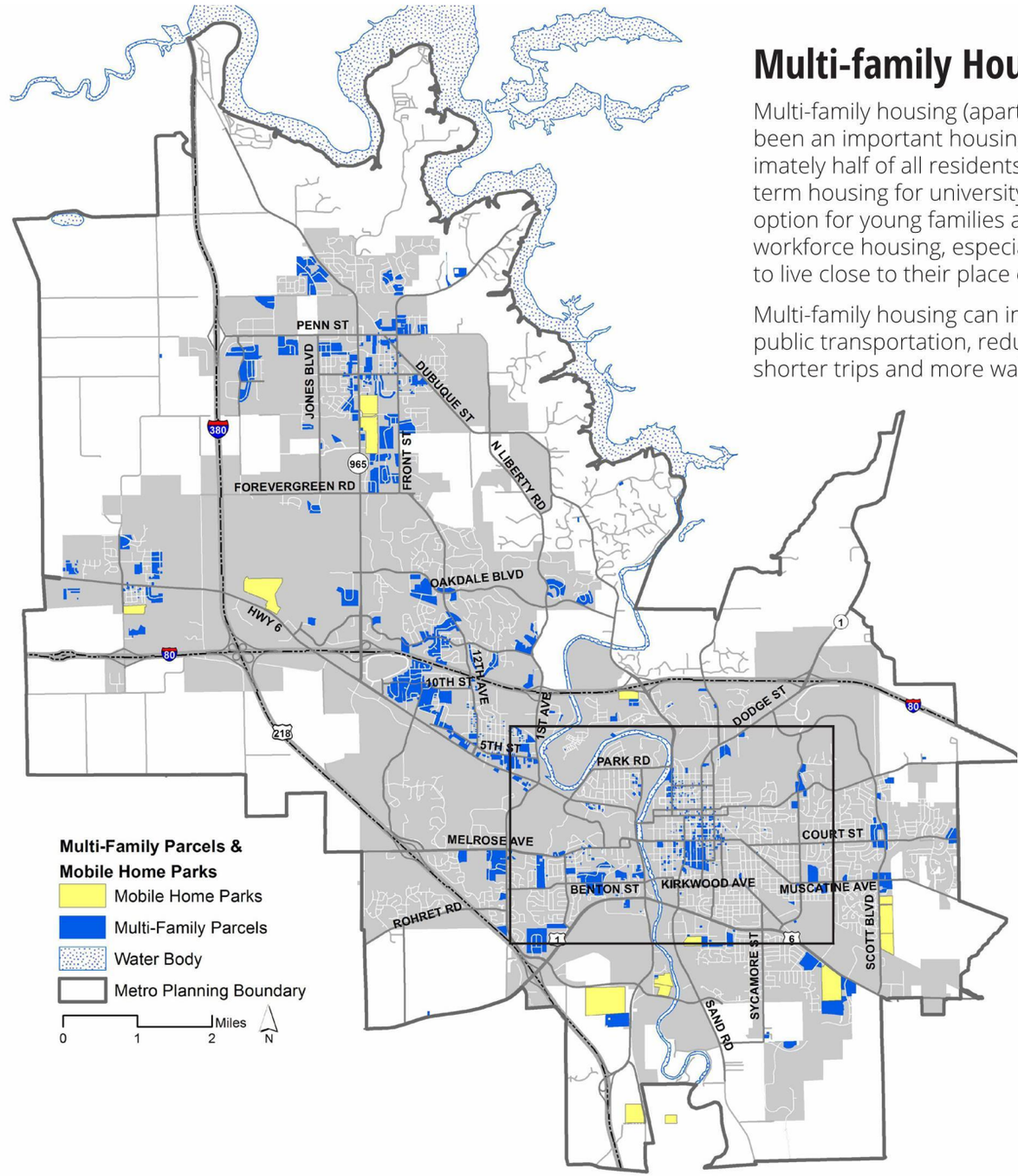
2045 projection

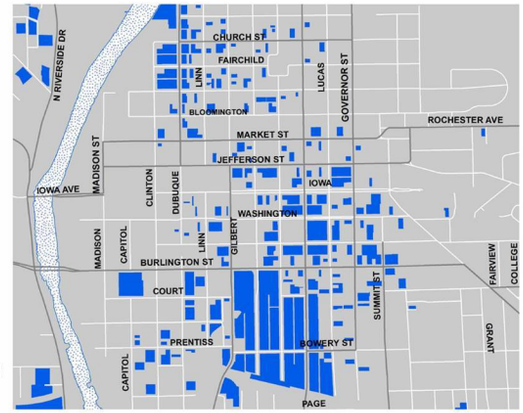
Based on current growth trends, the metro area will add more that 30,000 new units of housing (58% increase) in order to support population growth.

Multi-family Housing

Multi-family housing (apartments, townhomes, and duplexes) has long been an important housing option in the metro area, where approximately half of all residents rent. Multi-family housing provides short-term housing for university and college students and a more affordable option for young families and retirees. It is an increasingly popular for workforce housing, especially for those young professionals who prefer to live close to their place of employment or in the downtown center.

Multi-family housing can increase housing densities to better support public transportation, reduce public infrastructure costs, and allow for shorter trips and more walkable communities.





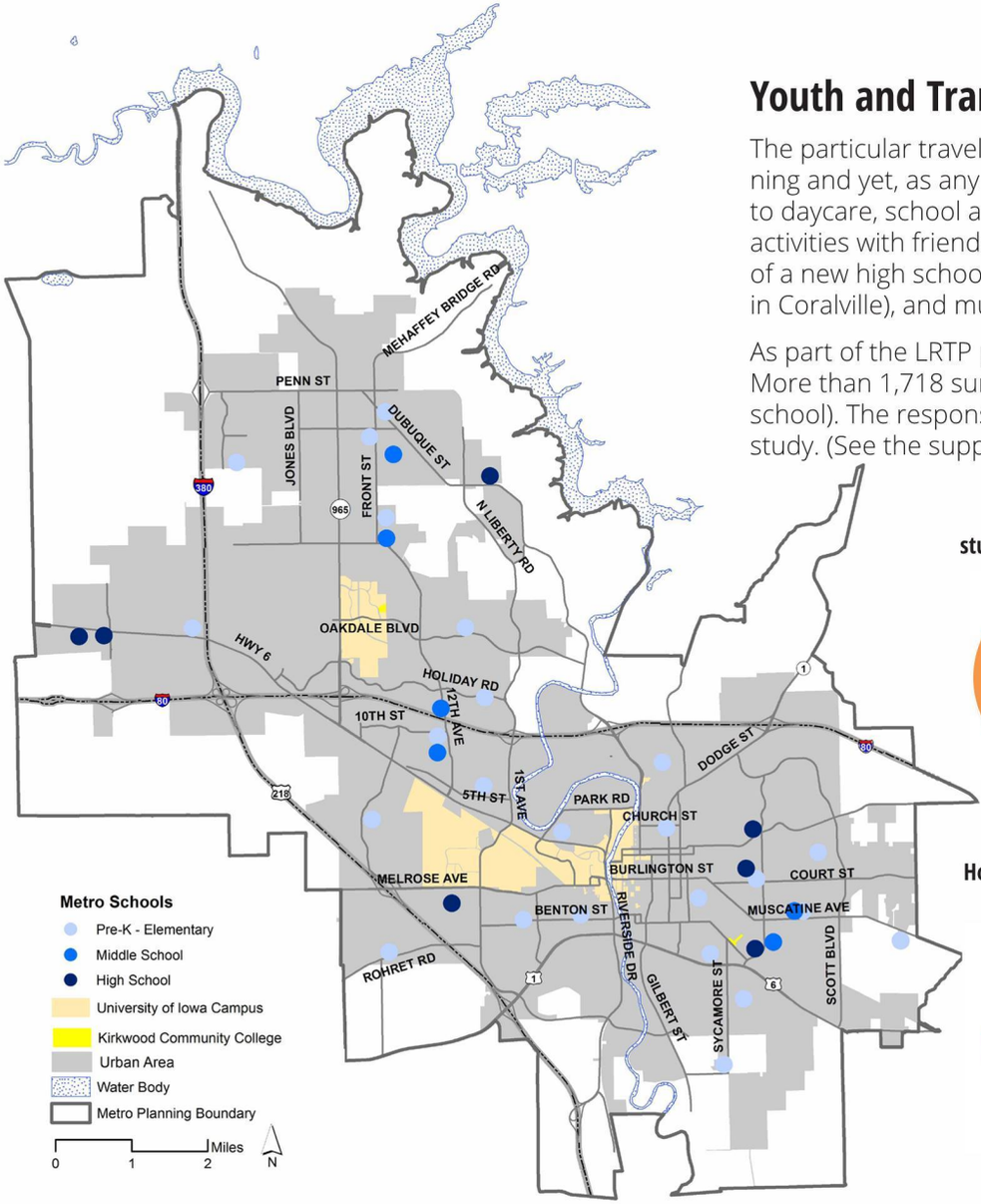
Note: Iowa City does not classify duplex (two-family) units as multi-family housing, therefore dulplexes are not reflected on the Iowa CIty portion of the map, though they are included for other communities.

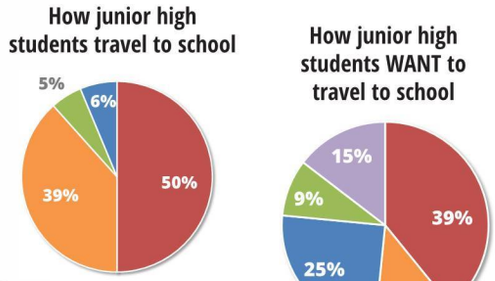
Sources: Johnson County, North Liberty, Coralville, Tiffin, Iowa City. Date prepared: January 2017

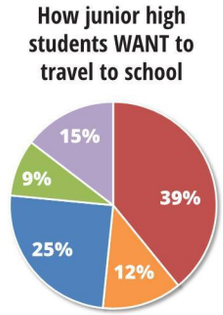
Youth and Transportation

The particular travel behaviors and needs of young people are not often considered in planning and yet, as any parent can attest, children generate much of family travel demand: travel to daycare, school and after school activities (e.g. clubs, sports, arts), appointments, and social activities with friends. Understanding youth travel seems relevant at this time with the addition of a new high school in North Liberty, three new elementary schools (two in Iowa City and one in Coralville), and much public discussion in the area regarding school redistricting.

As part of the LRTP process, the MPOJC conducted its first ever youth transportation survey. More than 1,718 surveys were completed (342 K-6th elementary; 666 junior high; 710 high school). The responses raise a number of interesting issues worthy of further consideration or study. (See the supporting documentation for additional detail on the Youth Survey.)

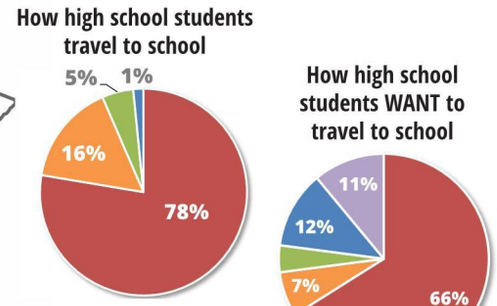


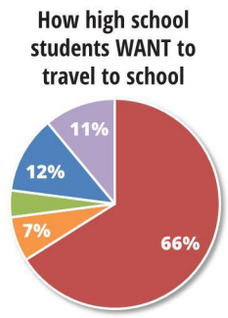




Among junior high students:
13% reported that they are unable to participate in after school activities due to difficulty getting to and from the places they need to go.

Of those who do participate in after school activities, 23% reported having difficulty getting to and from after school activities.





Among high school students:
17% of respondents indicated they are unable to participate in after school activities because of difficulties getting to and from the places they need to go.

Of those who do participate in after school activities, 20% reported difficulty getting to and from the after school activities.

■ Car ■ Bus ■ Bicycle ■ Walk ■ Motorcycle / Moped

"With members of the Millennial generation and others expressing the desire to live in walkable communities with access to multiple transportation options, the nation has an opportunity to make significant strides towards reducing congestion, improving transportation system efficiency, and reducing the external impacts of driving—if only we can realign public policy to support Americans in realizing those desires." —Milennials in Motion: Changing Travel Habits of Young Americans and the Implications for Public Policy. (Rep.). (n.d.). US PIRG.

Millennials in Johnson County

155%
increase in bicycle commuting. Vehicle commutes reduced by 7.4% (2008 -2013)

17%
commute by single occupant vehicles compared with Millennials across the state

6% increase in commuting by transit (2008-2013)

Generational Differences: Millennials vs Baby Boomers

Millennials (those born between 1983 and 2000) and Generation X (born between 1965 and 1983) are leaning towards more active transportation both nationally and here in the Johnson County metro area. Less car-focused than older Americans and previous generations of young people, Millennials have also experienced lower overall employment, increased schooling, and are delaying marriage, family, and homeownership. This combination of factors has lead to transportation behaviors that reduce their overall reliance on the automobile.[1]

Between 2001 and 2009, the average number of miles driven by 16-34 year olds dropped nationally by 23% as younger drivers took fewer trips, shorter trips, and a larger share of trips by modes other than driving. Drivers licensing among youth has continued to decline – from 85% in 1996 to 73% in 2010. Millennials consistently report greater attraction to less auto intensive lifestyles than older generations: urban living, residence in "walkable" communities, and openness to the use of non-driving modes of transportation. Millennials are also more familiar with new technologies including smartphone based "apps" that enable car or ride sharing services, such as Uber or Lyft or Zipcar.

Some of these changes may be attributed to the severe economic recession, stagnation in wages, rapid growth and dissemination of new technology, and the availability of new transportation alternatives. Whether these generational differences will persist over time remains uncertain. However, planning efforts aimed at offering more modal choice coupled with land-use patterns and urban design that offer people more choices as they age and form families, may sustain more permanent changes that support less car-oriented lifestyles and aging in place.

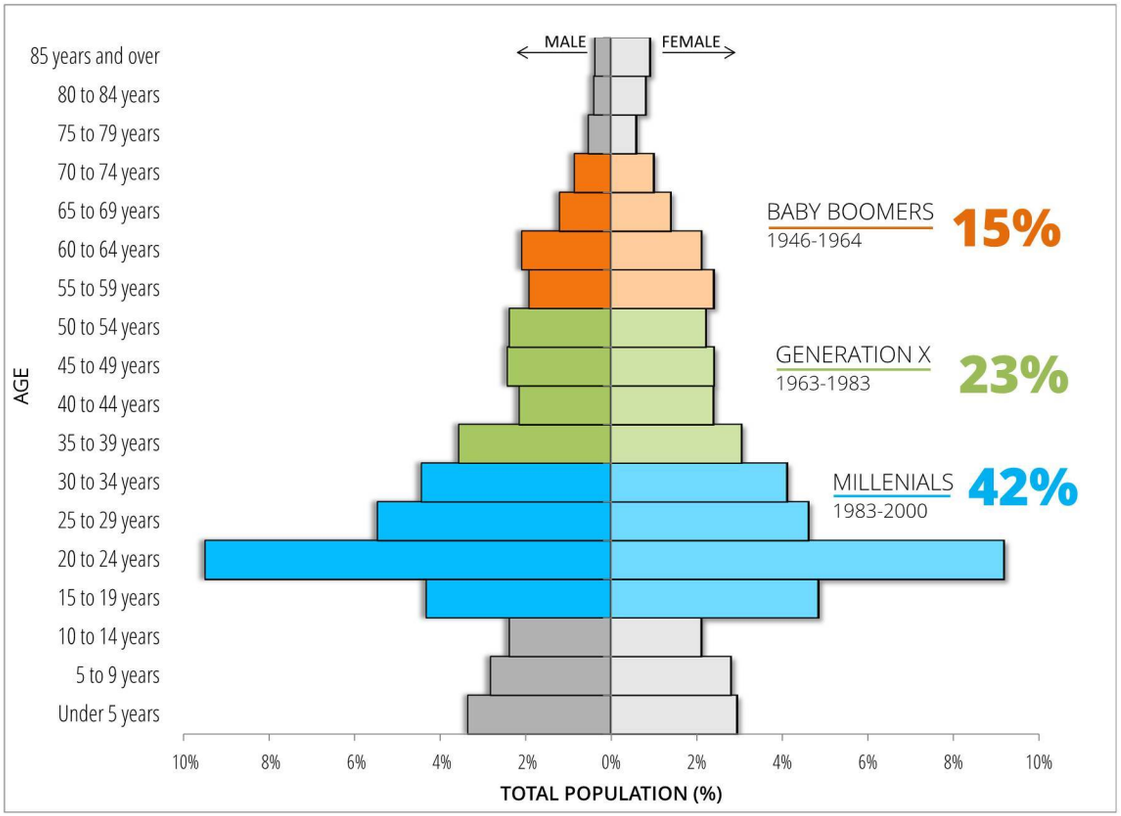
	JOHNSON COUNTY IOWA				STATE OF IOWA			
Means of Transportation to Work	**Baby Boomers (%)**		**Millennials (%)**		**Baby Boomers (%)**		**Millennials (%)**	
	2008	**2013**	**2008**	**2013**	**2008**	**2013**	**2008**	**2013**
DRIVE ALONE	73.19	75.80	62.73	59.66	80.91	82.68	73.58	76.66
CARPOOL	8.96	8.55	8.48	6.20	8.92	7.47	11.37	9.97
TRANSIT	4.44	2.87	8.30	8.82	0.87	0.72	1.72	1.81
BICYCLE	1.74	2.17	1.08	2.81	0.41	0.35	0.55	0.90
WALK	3.26	3.84	18.46	17.84	2.72	2.56	8.80	6.67
OTHER MEANS	2.39	1.04	0.00	2.57	0.92	0.98	0.92	1.36
WORK AT HOME	6.02	5.73	0.94	2.10	5.23	5.23	3.06	2.63

[1] Census Transportation Planning Package "2015 Generations Profiles – Johnson County, Iowa" using American Community Survey Data http://download.ctpp.transportation.org/profiles_2015/transport_profiles.html

Millennials in Johnson County commute by single-occupancy vehicles 17% less than Millennials across the state. This is due to the presence of the University of Iowa, the large number of Millennials and college-aged adults in the metropolitan area, and the unique travel habits of students in a University-centered community. Students and college-aged adults tend to use transit, walk, and bicycle at a greater rate than non-students.

* Millenials in Motion: Changing Travel Habits of Young Americans and the Implications for Public Policy. U.S. PIRG Education Fun, Frontier Group. October 2014. http://www.uspirg.org/sites/pirg/files/reports/Millennials%20in%20Motion%20USPIRG.pdf

"Are Millenials Really the 'Going Nowhere' Generation?" McDonald, N.C. Journal of the American Planning Association. July 2015.



Due to the presence of the University of Iowa, there is a significant number of young adults in the metro area. Millennials (those born between 1983 and 2000) make up the largest demographic group in the metro area.

"Over the longer term, land use planners and state and local policymakers can make public transportation more accessible to an aging population by encouraging mixed-use development around rail and bus station areas. This could enable older residents to remain in their communities, perhaps in smaller homes, and increase their access to transit and other community services. This transit-oriented development (TOD) should be appropriately scaled for the setting and may take the form of . . . low to moderate density as exemplified by La Crosse, Wisconsin's downtown, mixed-use transit center."

Source: "Impact of Baby Boomers on U.S. Travel, 1969 to 2009", McGuckin et. al. AARP Public Policy Institute

Average Midwest Fuel Price 2012

$3.75 per gallon

Average Midwest Fuel Price 2015

$2.53 per gallon

Source: US Energy Information Administration www.eia.gov/petroleum/gasdiesel

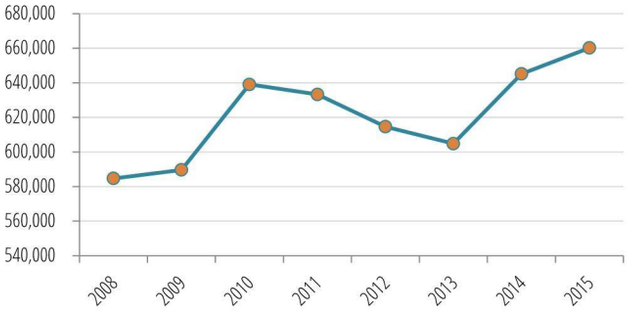
Vehicle Miles Traveled

Vehicle miles traveled (VMT) is an estimate of the miles traveled by all vehicles within a specific region each year. VMT has been generally trending upward since the Great Recession of 2008. In 2015, VMT in the metro area reached an all-time high of 660 million miles traveled. A number of factors influence VMT including income, household vehicle ownership, number and length of trips, costs of transportation (in time and money), demographic changes, and the built environment.

VMT helps us understand generally how trends in vehicle use and congestion change over time. VMT is also used to calculate the environmental effect of the transportation system, such as deriving greenhouse gas emission estimates.

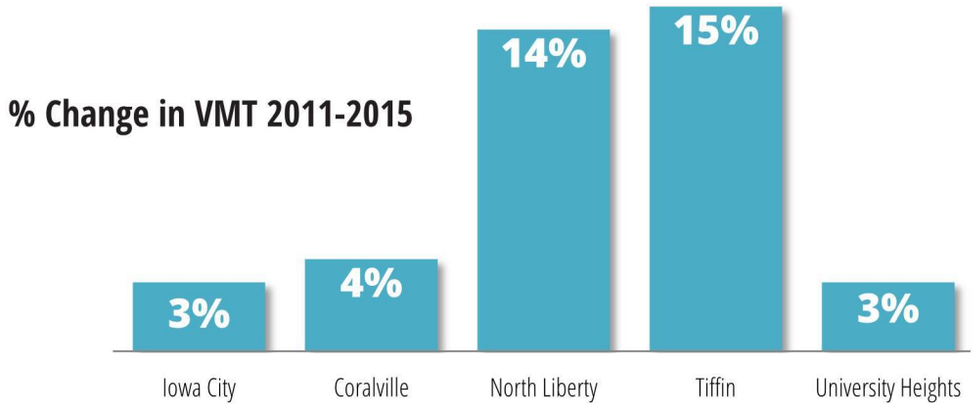
At the local level, Tiffin and North Liberty's population and VMT grew at significantly faster rates than other metro communities. Both have higher vehicle commuting rates because they have further distances to travel to get to major employment centers and other regional destinations.

Metro Vehicle Miles Travelled (1000s)



Vehicle Miles Travelled (1000's of miles)								
	2008	2009	2010	2011	2012	2013	2014	2015
Iowa City	309,655	310,196	322,868	319,489	317,831	309,788	322,448	328,790
Coralville	205,222	206,252	234,052	232,576	217,004	216,616	234,896	240,699
North Liberty	35,765	39,062	47,481	46,672	46,410	45,080	49,700	51,647
Tiffin	30,014	30,099	30,856	30,812	29,653	29,742	34,336	35,206
University Heights	4,033	3,993	3,787	3,715	3,705	3,585	3,759	3,852
Metro	**584,689**	**589,602**	**639,044**	**633,264**	**614,603**	**604,811**	**645,139**	**660,194**

Source: Iowa DOT (http://www.iowadot.gov/maps/msp/vmt/VMT_by_city.htm#country1)



Commuting to Work

According to the 2015 American Community Survey, 73% of workers who live in the metro area commuted by personal vehicle. Of those, 63% drove alone while 9% carpooled. 11% of residents walked to work while 8% used public transportation. Another 3% of metro area residents rode a bicycle to work, while less than 2% took a taxicab, motorcycle, moped, or other means.

Use of active transportation such as walking, bicycling, or taking transit for commuting to work is increasing in the metro area: 14% more people walked to work in 2015 compared to 2011; 21% more people ride bikes to work over the same time period. The number of residents taking transit increased 11%, while the number of those taking a taxicab, riding a motorcycle, or moped increased 31%. (This is likely attributed to the increasing popularity of mopeds or scooters.)

	University Heights	Tiffin	North Liberty	Coralville	Iowa City	Metro Area	Iowa
Workers 16 years and over	644	1,429	9,255	10,614	39,306	61,248	1,546,601
MEANS OF TRANSPORTATION TO WORK							
Car, truck, or van	53%	93%	89%	82%	66%	73%	89%
Drove alone	53%	88%	80%	70%	57%	64%	81%
Carpooled	0.3%	4.5%	9.0%	11.6%	8.9%	9.2%	8.8%
Public transportation (except taxis)	3.4%	1.6%	0.6%	9.2%	9.9%	8.1%	1.1%
Walked	21%	0.9%	1.2%	4.20%	16%	11%	3.50%
Bicycle	15%	0.4%	1.6%	1.0%	3.7%	3.0%	0.5%
Taxicab, motorcycle, or other means	0.5%	0.6%	4.3%	0.5%	1.2%	1.5%	1.0%
Worked at home	6.7%	3.8%	3.3%	3.4%	3.5%	3.5%	4.5%

Source: American Community Survey: 2015

VEHICLES AVAILABLE	2011	2012	2013	2014	2015
No vehicle available	3.2%	3.4%	3.7%	3.8%	4.3%
1 vehicle available	26%	27%	29%	29%	29%
2 vehicles available	47%	47%	45%	45%	45%
3 or more vehicles available	24%	23%	22%	22%	22%

Source: American Community Survey: 2015

Reliance on automobiles for work trips increases as the distance from the University of Iowa's main campus and hospital increases:

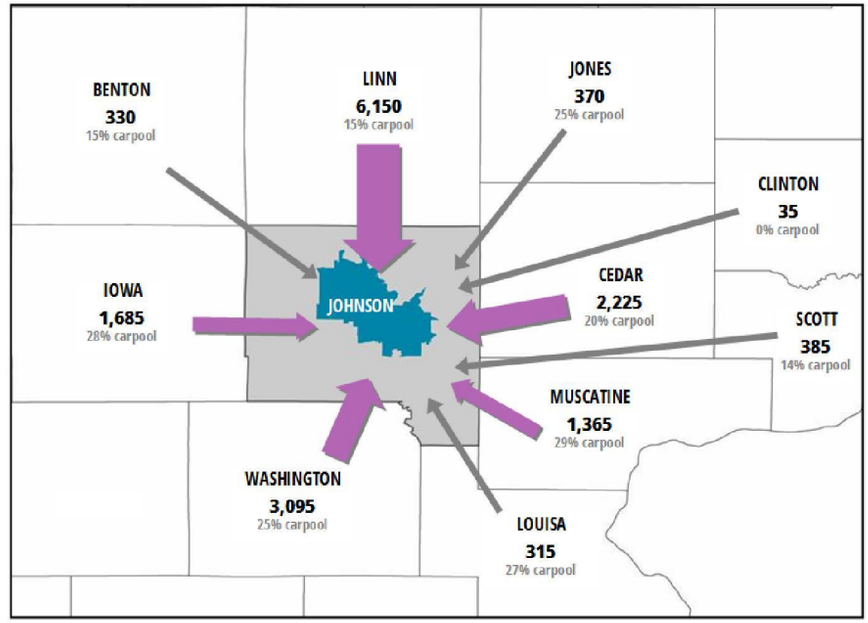
Highest rates of pedestrian and bicycle commuters: University Heights, 21% and 15%

Highest rates of commuting by automobile: Tiffin 93%, North Liberty 89%

34% increase in the percentage of metro area households with no vehicle (from 2011 to 2015)

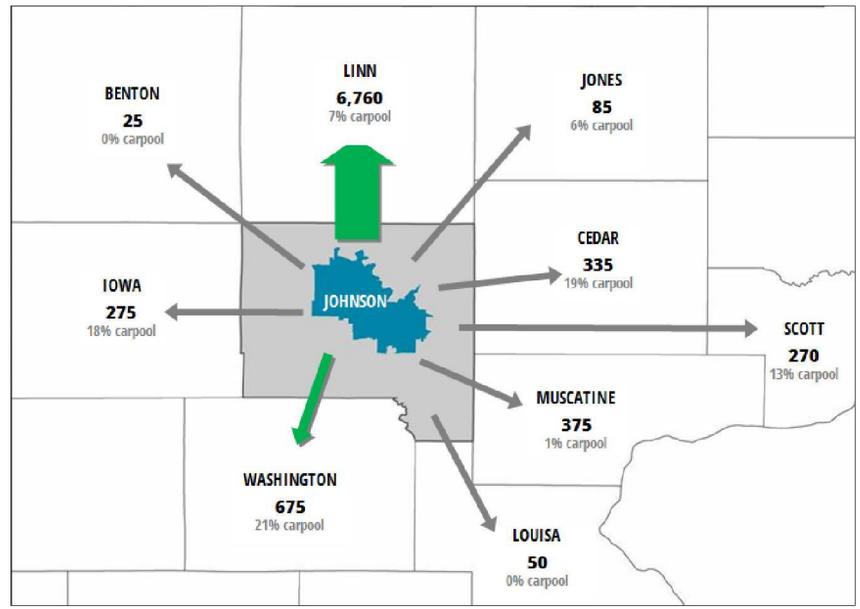
16,000 commuters ENTER Johnson County everday for work.

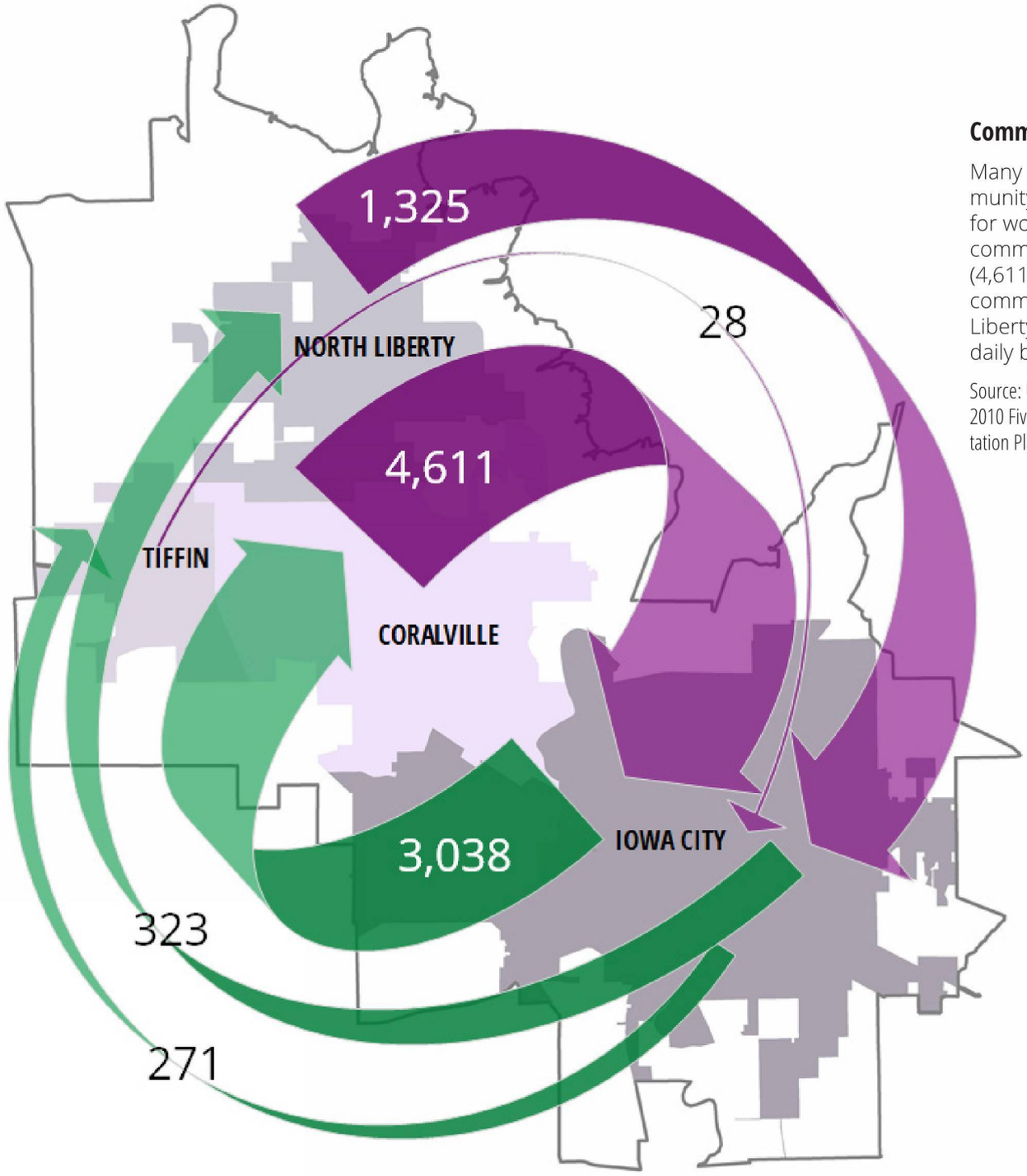
As of 2010, nearly 16,000 people commute into Johnson County on a daily basis. Approximately 40% of the commuting workforce comes from Linn County (Cedar Rapids), 19% from Washington County (Washington), and 14% from Cedar County (West Branch). 78% of commuters arrive by single-occupancy vehicle, with the remaining commuters mostly carpooling or taking a bus.



8,900 commuters LEAVE Johnson County everday for work.

Nearly 8,900 Johnson County residents commute to adjacent counties on a daily basis, with 76% traveling to Linn County and 8% traveling to Washington County. 90% of those trips are by single-occupancy vehicles while the remaining commuters mostly carpool.





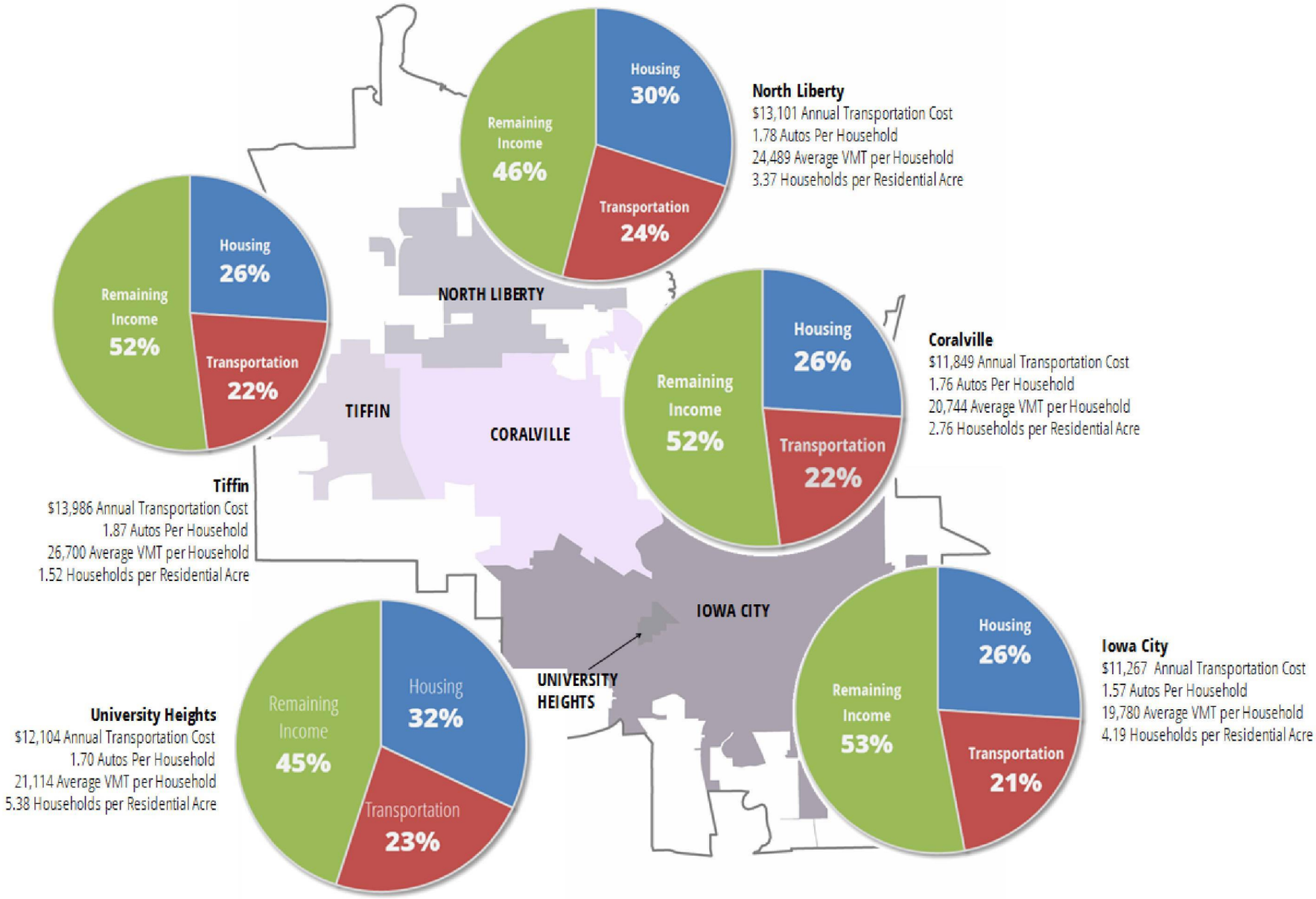
Commuting within the Metro Area for Work

Many metro area residents live in one community but travel daily to another community for work. The greatest number of inter-city-commuters travel from Coralville to Iowa City (4,611), followed by Iowa City residents who commute to Coralville (3,038), and North Liberty residents who travel to Iowa CIty on a daily basis for work (1,325).

Source: U.S. Census Bureau, American Community Survey 2006-2010 Five-year estimates. Special Tabulation: Census Transportation Planning

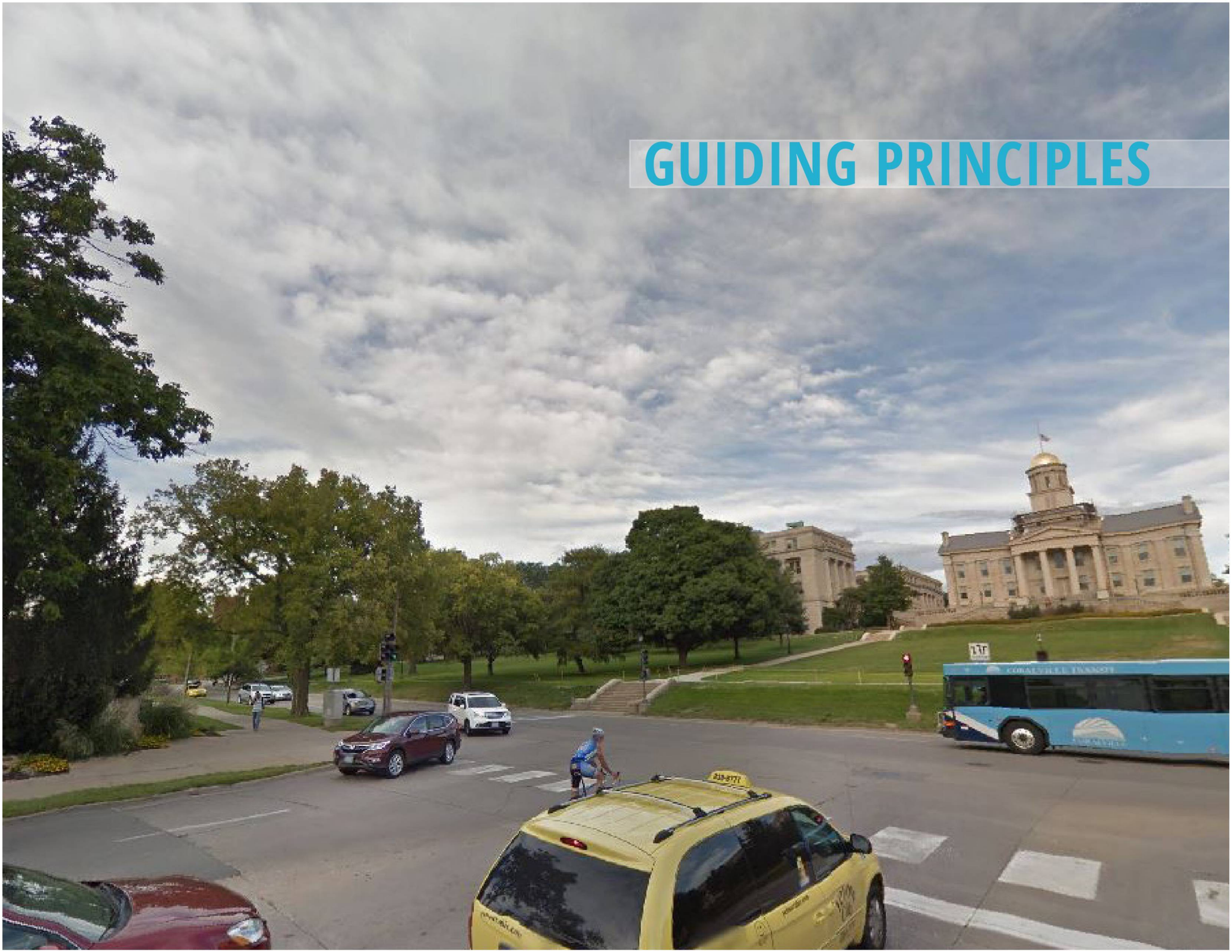
The Big Picture:

Average Housing + Transportation Costs as Percent of Household Income



Source: Housing and Tranpsortation Fact Sheets, Center for Neighborhood Technology. Based on data from the American Community Survey: 2015. http://htaindex.cnt.org/

GUIDING PRINCIPLES



GUIDING PRINCIPLE #1

Economic Opportunity

Supports growth, innovation, job creation, and productivity

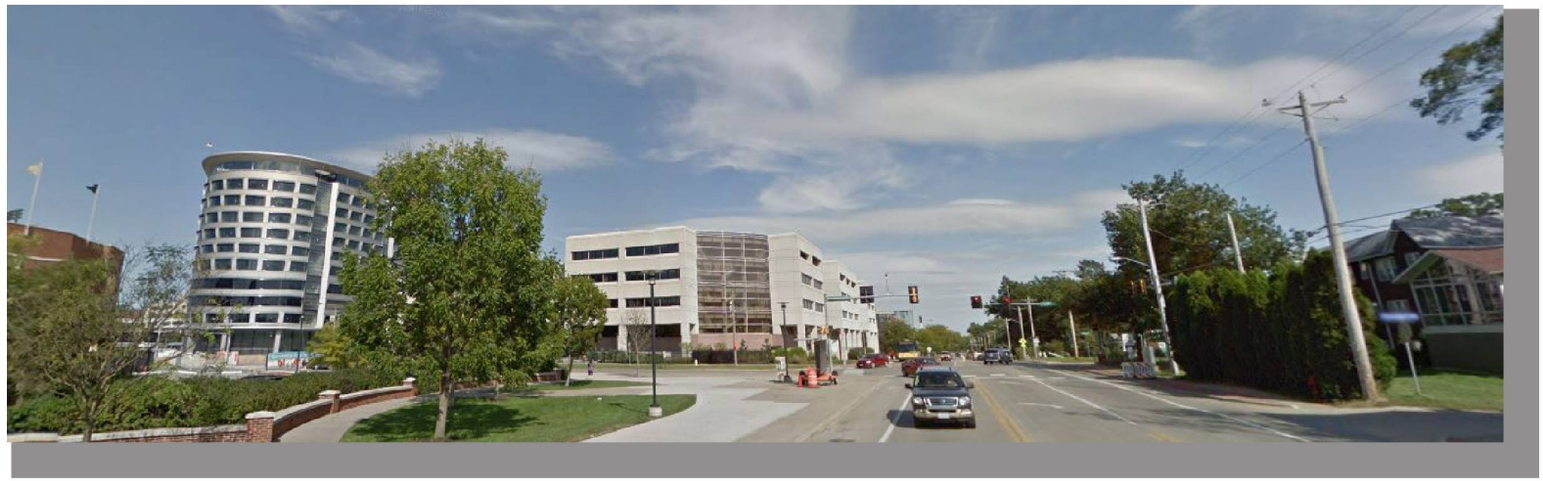
An efficient, reliable, and accessible transportation network is an essential component for fostering economic opportunity—one that connects suppliers with producers; businesses with workers and customers; and people with employment centers, education, and services. A true multi-modal transportation network, where all modes of transportation are considered and provided, ensures the flexibility to support a variety of industries and businesses while providing a ladder of opportunity for residents seeking employment.

In many ways, the transportation system in the Iowa City Urbanized Area performs very well. Geographically, the region benefits from being situated at the crossroads of Interstates 80 and 380, Highway 1, and Highway 6. Our metro area is also served by several longstanding railways that currently serve industrial areas but are also ideally located to offer future passenger service between major employment centers, medical facilities, and educational institutions in the corridor. In addition, local efforts have produced one of the most heavily utilized public transit systems in the country (ridership per capita) as well as a robust biking and pedestrian culture.

When compared with peer communities, the region boasts minimal congestion on roadways as shown by very low delays per auto commuter – at 25% less than the national average [2015 American Community Survey]. Maintaining minimal road congestion, and providing access to job centers of the future will be a key component of ensuring economic opportunity throughout the region for both commuters and freight alike.

The Metro Area transportation network:

- 500 miles of roads
- 24 miles of Interstate Highway
- 29 miles of state highway
- 66 miles of arterial streets
- 333 miles of local roads
- 36 miles of rail line
- 414 miles of transit routes
- 70 miles of separated trails or wide sidewalks (side paths) in Johnson County
- 6 miles of bike lanes



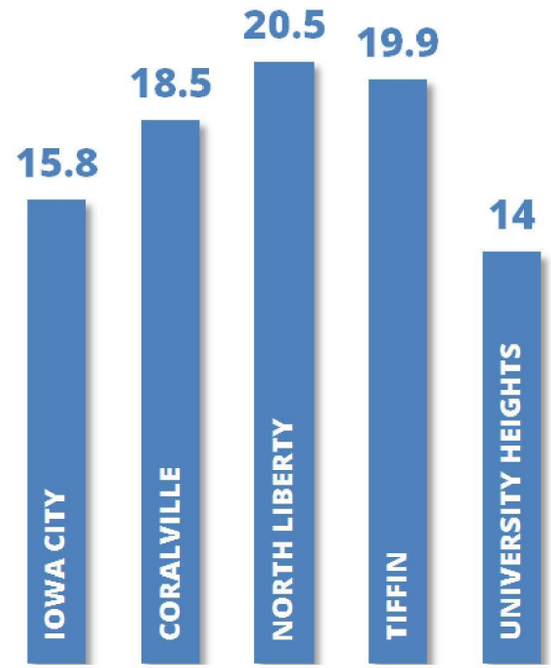
With more than 1,600 physicians and dentists and more than 9,200 non-physician staff members, the UIHC are a major employer in the metro area. Annually, more than 35,000 patients are admitted to the hospital. This is in addition to more than 900,000 clinic visits at the main campus and outreach clinics located throughout the metro area. All this activity presents a significant challenge for transportation, including parking and transit.

Source: https://uihc.org/basic-facts

Strategies to Enhance Economic Opportunity:

- Focus transportation dollars to areas of greatest need.
- Direct investments towards areas that encounter significant congestion
- Encourage use of intelligent transportation technologies and efficient intersection design to improve corridor efficiency
- Employ strategies that improve multi-modal access to employment centers
- Perform transportation engineering evaluations upon request to aid in maximizing efficiency at spot locations
- Facilitate the annual Traffic Signal Timing program and provide updated signal timing recommendations at least once every five years

PERFORMANCE MEASURE	DEFINITION	DESIRED TREND	BASELINE
Travel time to work	Average travel time to work	Decrease ↓	18.5 minutes
Transit access to employment	Percent of metro employees within 1/4 mile of transit route	Increase ↑	93%



Average Commute Time in Minutes

Many Metro Area communities enjoy lower average commute times to work when compared with the state (18.8 minutes) and national (24.8 minutes) averages.

GUIDING PRINCIPLE #2

Environment

Preserves and protects our natural resources, including land, water, and air

While pollutant emissions from motor vehicles have dropped dramatically over the last three decades, air quality problems remain a concern in metropolitan areas, in part due to growth in VMT. Research has linked air pollution with public health problems and led the U.S. Environmental Protection Agency (EPA) to establish lower thresholds for acceptable levels of air pollution. On a global scale, climate change has focused attention on the environmental impacts of the transportation sector, which contributes more than 25% of our nation's greenhouse gas (GHG) emissions.[1]

Transportation, land use, and development patterns have a signficant impact on our environment. While the MPO has prioritized preserving and improving existing transportation infrastructure to address congestion and safety issues, the long-range plan considers more broadly how to minimize these conflicts as the metro area grows.

How we use our land impacts the type and design of transportation infrastructure and determines the feasibility of travel modes. While it is important to recognize differences in local and regional land use and economic development objectives, coordinating land use with transportation goals is an essential step in addressing many environmental concerns.

- Using land efficiently conserves farmland and environmentally sensitive areas, such as wetlands and woodlands that absorb and filter stormwater, reduce localized flooding and its impacts, and provide opportunities for recreation and scenic views that enhance quality of life and economic development in our communities.
- Encouraging compact development with well connected street patterns that accomodate pedestrians and bicyclists helps to reduce travel demand by reducing the length and number of trips necessary to meet daily needs and by allowing people more options in how they travel.
- Mixed use development at appropriate locations can reduce travel times and distances for residents to access their daily needs.
- Locating residential areas near destinations like employment centers, schools, and daily shopping can reduce the length and number of trips.

[1] (Source: U.S. DOT Transportation and Climate Change Clearinghouse https://climate.dot.gov/about/transportations-role/overview.html.)

Land Use Patterns and Carbon Emissions

Substantial reduction in VMT can be achieved through land use changes alone. Compact development can reduce the need to drive by 20 to 40 percent, as compared with traditional suburban development patterns, resulting in a 7-10% reduction in CO_2 transportation related emissions by 2050.

The term "compact development" does not imply high-rise or even uniformly high density, but rather higher average "blended" densities. Compact development also features a mix of land uses, development of strong population and employment centers, interconnection of streets, and the design of structures and spaces at a human scale.

Source: "Growing Cooler: The Evidence for Urban Development and Climate Change." Urban Land Institute. R. Ewing, et. al. (2007)

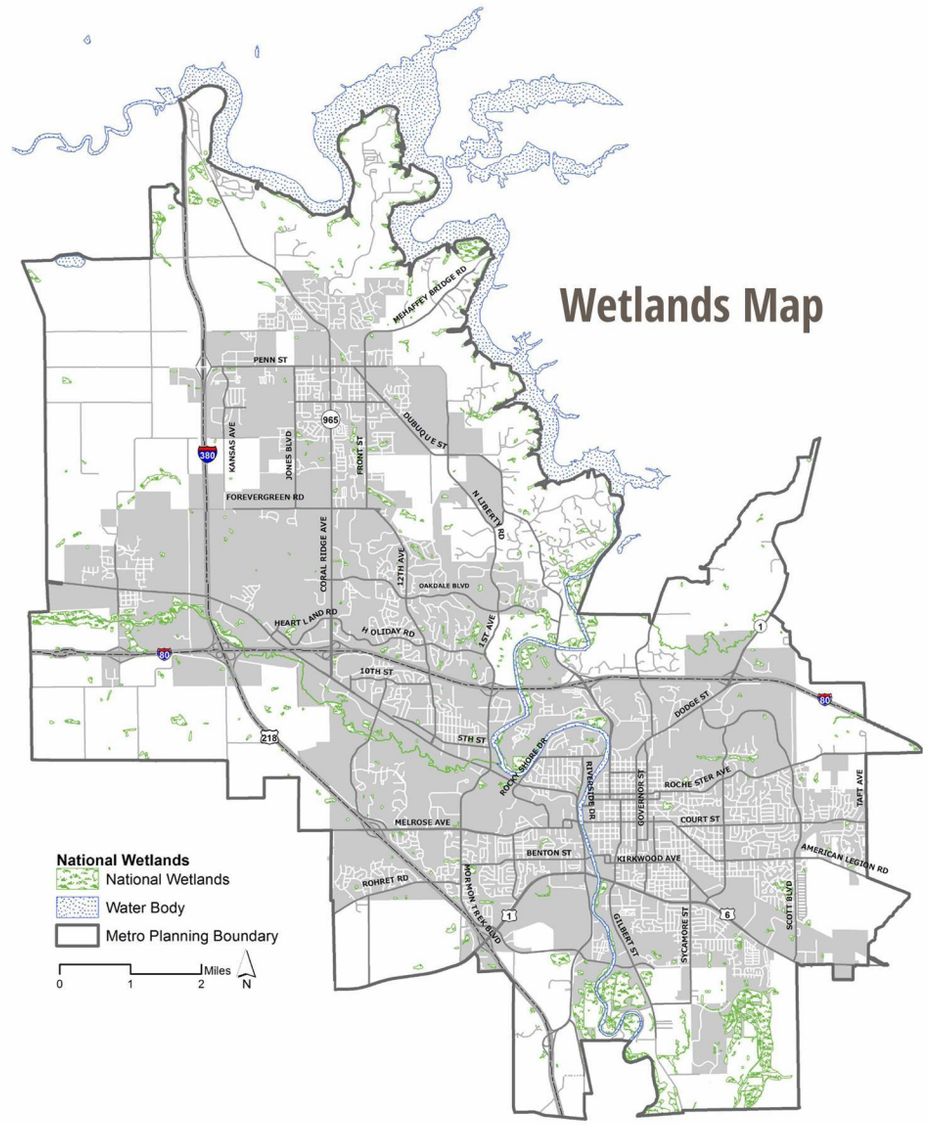
Attention to the natural and social environment should be demonstrated during transportation project development. Projects included in the LRTP are often years away from final design; therefore detailed environmental review may not be feasible at the early stages of the planning process. However, the MPO can identify potential impacts to natural and historic resources which can help ensure that transportation projects have minimal impacts on the environment.

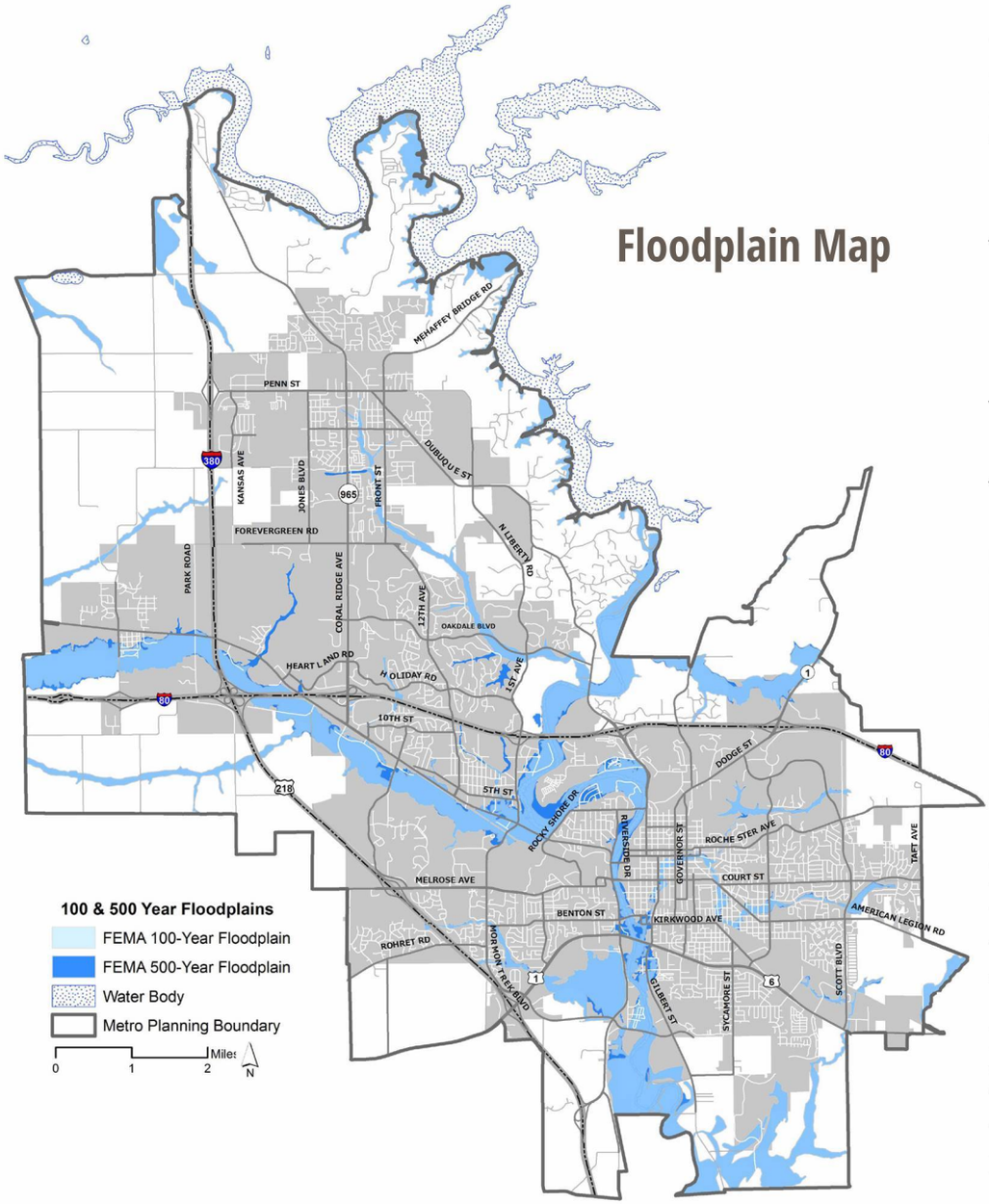
Environmental Consultation

Federal code outlines requirements for MPOs regarding environment consultation. During project development, MPOJC encourages its member entities to strive to avoid or minimize any detrimental effects that transportation projects may have on the environment. The MPO encourages member entities to follow the steps used to define mitigation in 40 CFR 1508.20, which are:

1. Avoid the impact altogether by not taking a certain action or parts of an action
2. Minimize impacts by limiting the degree or magnitude of the action and its implementation
3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment
4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
5. Compensating for the impact by replacing or providing substitute resources or environments

Avoiding negative impacts to the environment should always be a primary goal during project implementation. When this cannot be achieved, minimizing impacts and compensating for those impacts that cannot be avoided can help to ensure that negative environmental externalities are factored into the costs of a project.





To help understand potential environmental impacts of transportation projects, MPOJC consults with the following local, regional, and statewide organizations which have an interest in environmental issues in our area:

Iowa Department of Natural Resources

Johnson County Soil and Water Conservation

Iowa Valley Resource Conservation and Development

Iowa State University Extension and Outreach

Iowa City Sierra Club

Johnson County Environmental Advocates

Iowa Corps of Engineers

Johnson County Heritage Trust

Environmental Justice

To ensure that local transportation projects/policies adhere to the principals of environmental justice as directed in Executive Order 12898, the maps on pages 13 and 51 (reference median household income and non-white population map page numbers) illustrate social and environmental factors that will be considered during the development of transportation projects. These figures provide general information; more detailed investigations of specific project impacts will be analyzed during the project-level studies and subsequent National Environmental Protection Agency processes.

Strategies to Safeguard the Environment:

- Avoid impacts to environmentally sensitive features, such as woodlands and wetlands, early in the planning process when planning for and designing and building new infrastructure.
- Expand context sensitive and sustainable solutions in the planning and design of transportation infrastructure.
- Continue to monitor National Ambient Air Quality Standards thresholds for fine particulate mater (PM 2.5) and improve air quality when possible.
- Reduce pollution emissions, including CO_2
- Integrate land use and economic devleopment goals with transportation planning. Encourage and support land use plans and policies to enhance overall transportation efficiency, including compact and mixed use development.
- Follow adopted MPO "Complete Streets" Policy.

PERFORMANCE MEASURE	DEFINITION	DESIRED TREND	BASELINE
VMT	Metro Area vehicle miles traveled	Decrease ↓	660,194 (1000's of miles)
Housing density	Metro area housing units per acre	Increase ↑	1.4
Air quality	Annual average concentration of PM 2.5 in Johnson County	Decrease ↓	9.3-9.6 (EPA annual standard = 12)

Improvements to 5th Street in Coralville included green infrastructure to filter stormwater.

Long Range Transportation Plans should include:

"Discussion of the types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions accepted by the metropolitan transportation plan. This discussion may focus on policies, programs, or strategies, rather than at the project level. The discussion shall be developed in consultation with Federal, State, and Tribal land management, wildlife, and regulatory agencies."

Source: Federal Code section 23 CFR Section 450.322

Metro Priorities

1. Improve or expand transit routes/options.
2. Add more sidewalks/trails/ ADA accessible routes.
3. Reduce congestion/travel times on roadways.
4. Provide more on-street bike facilities.
5. Provide carpooling/vanpooling options.

The information above represents selected results from on-line surveys posted by the MPOJC (January-March 2016). A total of 1,271 responses to the General Transportation survey were received along with 215 responses to the Private Vehicle Survey. Results are not statistically significant.

GUIDING PRINCIPLE #3

Quality of Life

Enhances livability and creates vibrant and appealing places that serve residents throughout their lives.

Transportation affects the daily life of every resident in the metropolitan area. When poorly designed, transportation infrastructure can act as a barrier, isolating neighborhoods and limiting access to community destinations, including schools, parks, and recreation. As a result, travel may require more time and expense than is necessary. On the other hand, a well-designed and coordinated transportation network can enhance all travel modes, allowing residents to fully participate in the social and economic life of their neighborhood and community regardless of their economic status or physical ability.

The ease and comfort with which people are able to move through their community or neighborhood has benefits that are difficult to quantify. Streets that are attractive and safe for all users, encourage social interaction, build neighborhood cohesion, and contribute to the physical health and well-being of residents. Context sensitive designs and aesthetic enhancements foster a sense of identity and safety that attracts investment. Low stress travel routes with few conflict points and reliable speeds can determine whether the commute to and from work or daily errands is a frustrating or pleasant experience.

As the metropolitan area grows and travel needs evolve, we must invest wisely to ensure that the infrastructure of today has the flexibility to serve the needs of tomorrow. Planning for infrastructure investment should consider the unique needs of the community while reflecting a vision for how the community hopes to grow. We want our transportation dollars to generate jobs, housing, and business opportunities, but to do so we must ensure safe, reliable, clean, and healthy travel experiences for everyone. In this way we can enhance the quality of life in our metropolitan area.

Walking school bus for Lincoln Elementary School in Iowa City. Courtesy Iowa City Press Citizen

Strategies to Enhance Quality of Life:

- Promote projects that enhance connections between existing neighborhoods, jobs, and local services.
- Provide accessible, safe, and low-stress solutions in all transportation modes.
- Promote more transportation choices to enhance each person's quality of life.
- Reduce combined housing and transportation costs by encouraging coordinated land use and transportation planning.
- Provide more transit training for transit users to increase ridership and access.
- Promote mobility technology.
- Implement supportive services that encourage personal responsibility.
- Continue to incorporate safety issues in transportation planning for all modes.
- Continue to support Complete Streets designs and recommendations.
- Provide pedestrian-friendly streets and recreational trails.
- Built with seniors and children in mind.
- Support efforts in areas with high growth/high density development potential that justify transportation infrastructure investments.

PERFORMANCE MEASURE	DEFINITION	DESIRED TREND	BASELINE
Travel delay to work	Annual hours of delay per auto commuter	Decrease ↓	6 hrs / yr
Trail access	Percentage of metro area within 1/4 mile of trail system	Increase ↑	80%

Bike to Work Week is an annual event supported by MPO communities that encourages people to commute to work by bicycle and to raise awareness of area trails and bicycle facilities.

Costs rise as road conditions decline

Allowing the lane-mile to deteriorate and then making major repairs more than doubles the cost of that lane-mile over 25 years.

Costs rise as the road network expands

Each new lane-mile constructed will require regular maintenance and preservation treatment for its entire lifetime. The more lane-miles a system has, the higher the overall maintenance costs. In addition to maintaining the surface pavement, additional miles of road also increase costs for snow removal, restriping, and other operational aspects that keep a roadway functioning.

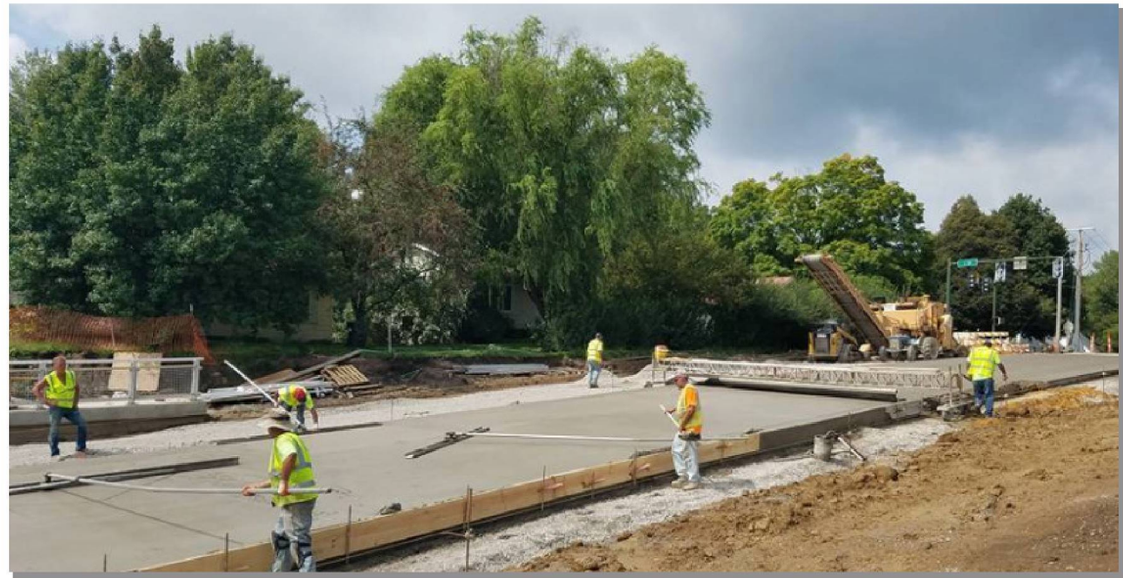
GUIDING PRINCIPLE #4

System Preservation

Maintain the existing facilities in good and reliable condition

Across the Iowa City Urbanized Area, deficient bridges and deteriorating pavement impact thousands of trips made every day. Recent trends (FY07-FY17) indicate that the region is funding reconstruction and capacity improvements of existing roads compared to new construction by a factor of 4:1. This emphasis on the reconstruction of roadways has set the bar for future investments as our existing system ages. In order to continue to invest in repair and preventative maintenance of roadways, the Future Forward 2045 plan identifies strategies that focus on the planning, maintenance, and financing of the area's transportation system and equipment to ensure it remains in good and reliable condition.

With scarce funding and an aging system, it is more important than ever to focus on advancing the existing system through repair and preventative maintenance by maximizing results from each dollar spent. Rehabilitating a road that has deteriorated is substantially more expensive than keeping that road in good condition. According to the American Association of State Highway and Transportation Officials, every $1 spent to keep a road in good condition avoids $6-$14 to rebuild the same road once it has deteriorated significantly.



Reconstruction of First Avenue for grade separation under the Iowa Interstate Railroad.

Strategies to Ensure System Preservaton

1. Effectively manage and maximize exisiting transportation assets by prioritizing rehabilitation and replacement of aging infrastructure over system expansion.
2. Focus investment on roadways with the highest traffic volumes.
3. Establish achievable pavement condition targets.
4. Ensure investments are adequate to improve bridge and pavement conditions, keep transit fleet in good state of repair, and maintain bicycle and pedestrian facilities.
5. Include cost-benefit analysis when evaluating future road investments.

PERFORMANCE MEASURE	DEFINITION	DESIRED TREND	BASELINE
Bridges	Percent of bridges (IDOT, County, & City) in Johnson County rated as being deficient	Decrease ↓	20.0% (2015)
Pavement Condition Index	Percent of pavement measured at fair or better condition	Increase ↑ Increase ↑	93% (2014) State/Federal 70% (2013) Local Federal Aid Routes

Job Creation

Repair and preservation projects create opportunities for a variety of workers, require less spending on land acquisition, and get through the planning and permitting phases more quickly. These factors put more people to work faster.

Savings to drivers

Vehicles get better gas mileage travelling on smooth roads, and go farther on a single tank of gas. Smooth roads are also gentler on tires and suspensions, reducing repair costs.

Costs to drivers

Allowing roadways to deteriorate and remain in poor condition has a cost to individuals as well. Vehicle owners pay as much as $746 annually in additional vehicle operating costs in areas with a high concentration of rough roads, more than twice the annual cost for the average American driver.

Source: American Association of State Highway and Transportation Officials (AASHTO) and The Road Information Project. (2009). "Rough Roads Ahead: Fix Them Now or Pay for It Later." http://roughroads.transportation.org/

Complete Streets Policy

"Complete Streets" are rights of way designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities.

MPOJC's Complete Streets policy, which was strengthened in 2015, applies to projects funded with federal Surface Transportation Block Grant (STBG) and Transportation Alternative funds and is part of the evaluation for all road projects. The stated goals of the policy are:

1. Creating a comprehensive, integrated, and connected transportation network that supports compact, sustainable development, and creates livable communities.

2. Providing a connected network of facilities accommodating all modes of travel.

3. Identifying opportunities to repurpose rights-of-way to enhance connectivity for all modes to commercial, recreation, education, public services, and residential destinations.

GUIDING PRINCIPLE #5

Choice

Offer multi-modal transportation options that are affordable and accessible

An integrated and comprehensive network of pedestrian and bicycle facilities help to expand transportation choice and complement transit services. Though a majority of residents may choose private motor vehicles for most of their daily trips, nearly everyone relies on other modes to meet some of their needs, whether it is walking to a bus stop or neighborhood park; catching a bus to school, work, or special events (such as Hawkeye sports); or accessing a trail system for recreation.

For individuals who do not own or have limited access to a private vehicle, these facilities are invaluable. For low-income residents, affordable and efficient transportation options are a stepping stone to economic opportunity. For people with disabilities, transportation choice allows for full participation in community life. For children and youth, a sizeable but often overlooked part of the population, choice allows for independent access to schools, libraries, parks, and other activities.

Time and convenience are the primary factors that influence how most people travel. It follows that transportation choice is greater in areas where development is relatively compact and destinations that serve residents' daily needs are nearby (e.g. schools, employment, shopping, parks). While housing density is essential for efficient transit services, a safe and comfortable pedestrian network is essential to enable access to alternative transportation.

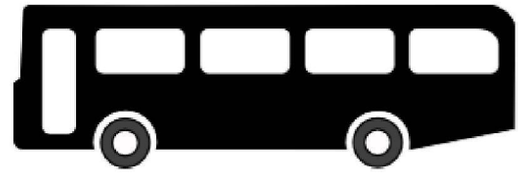
The reconstruction of 5th Street in Coralville includes new mixed-use development and a streetscape designed with transit, pedestrian, and bicycle facilities.

Strategies to Ensure Transportation Choice:

1. Ensure compliance with the MPO Complete Streets Policy and Americans with Disabilities Act (ADA) requirements.
2. Coordinate land use with planning to optimize multi-modal transportation, focusing investment in areas adjacent to compact and mixed use development.
3. Enhance access to activity centers (e.g. commercial areas, schools, parks and recreation, and employment centers) by ensuring transit service and safe, low-stress pedestrian routes and bike facilities are available.
4. Assist communities with achieving Bike Friendly and Walk Friendly status as well as implementation of Safe Routes to School projects.
6. Follow FHWA, National Association of City Transportation Officials (NACTO), and AASHTO best practices when planning and developing

PERFORMANCE MEASURE	DEFINITION	DESIRED TREND	BASELINE
Mode Split	Percentage of workers commuting via walking, biking, transit, or rideshare	Increase ↑	14.9% (2015)
Facilities	Miles of roadway that include bike lanes	Increase ↑	6.2 miles
	Percentage of roadway miles that do not include sidewalks	Decrease ↓	13 miles

Future Forward 2045 General Transportation Survey (2016)



50% of respondents would like to ride the bus more often.

34% would like to commute by bike more often.

Travel time and convenience are the top criteria for choosing how to travel to work.

GUIDING PRINCIPLE #6

Safety

Transportation network designed and maintained to enhance the safety and security of all users

The safety of motorists, bicyclists, and pedestrians is a top priority in transportation planning. Motor vehicle collisions result in premature deaths, serious injuries, and are a cause of major economic losses and disruptions to the transportation system. Safety concerns can discourage residents from utilizing active transportation such as bicycling, walking, and transit.

Planning for transportation safety should be a comprehensive, system-wide, multi-modal process that integrates safety into surface transportation decision-making. MPOJC supports these processes through:

- Maintaining the metro collision report, which identifies problem areas and provides countermeasures
- Performing transportation engineering studies
- Conducting road safety audits
- Evaluating pedestrian and bicycle accommodations
- Inventorying ADA facilities
- Reviewing traffic signal timings and operations
- Assisting MPO entities with safety-related grant funding applications

Grant funding scoring criteria used by the MPO Urbanized Area Policy Board helps support safety initiatives, placing a greater weight on capital infrastructure projects that address documented safety issues.

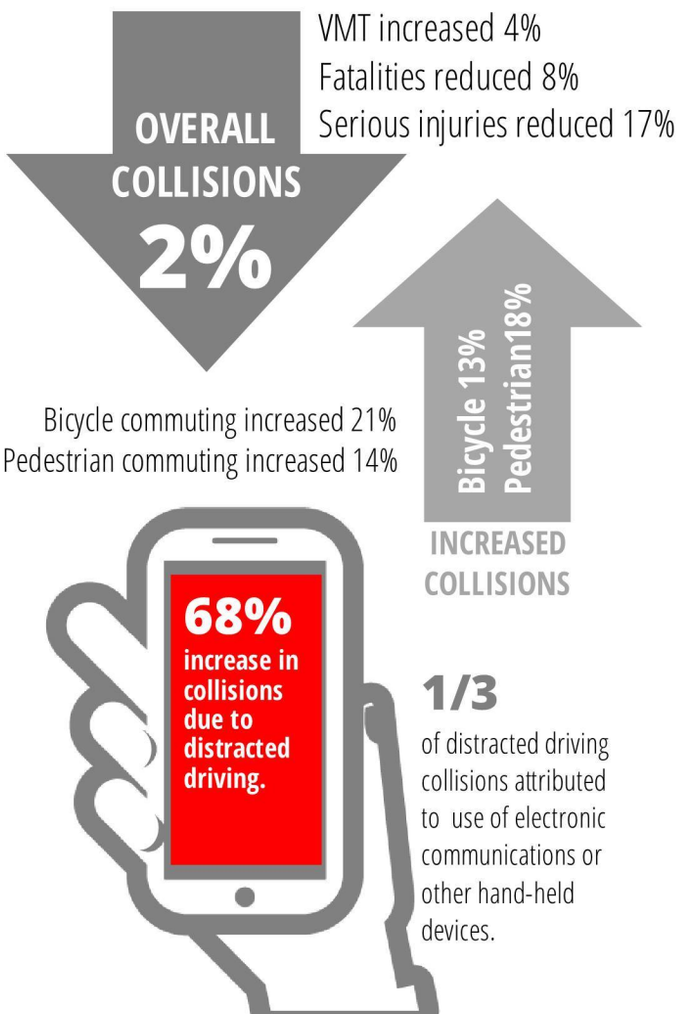
Increasing Population and VMT

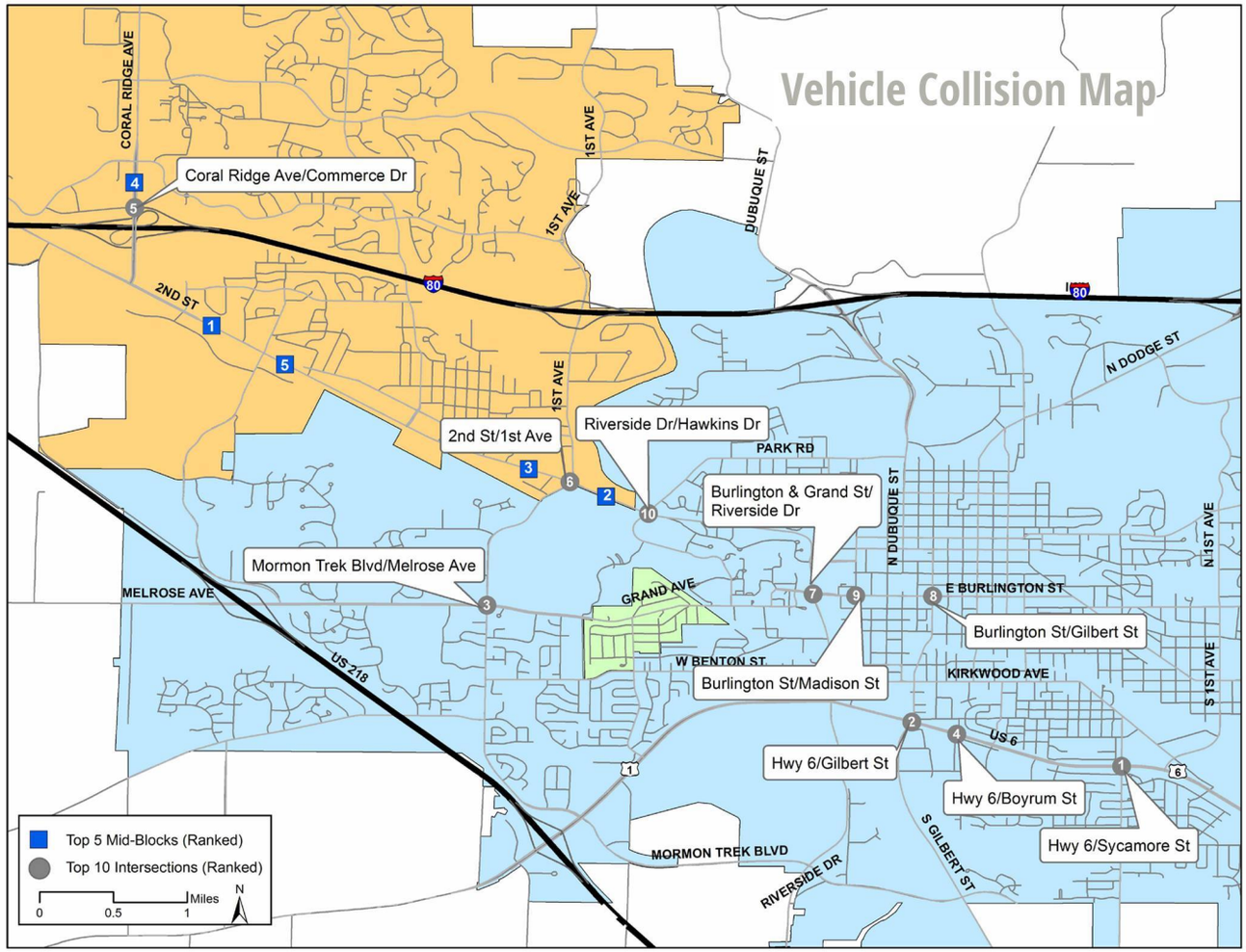
From 2010 to 2014, metro area population increased 12% while metro VMT increased by only 4%. Population growth is outpacing VMT growth as drivers are, on the whole, driving fewer miles and/or shifting trips to other modes of transportation. During the same period, overall collisions decreased by 2%, fatal collisions reduced by 8%, and serious injury collisions reduced by 17%.[1] The reduction in collision rate and severity could be attributed to a variety of factors such as infrastructure safety and efficiency improvements, intelligent transportation systems, in-vehicle technologies, and educational outreach campaigns.

1 Iowa Department of Transportation SAVER: 2006-2010 and 2011-2015 comparison.

Metro Area Collisions

2006-2010 and 2011-2015 comparison





Collision Trends

While the number of metro area collisions due to drug/alcohol impairment has remained relatively flat, distracted driving collisions in the metro area have increased 68%. Of the distracted driver collisions, 51% were caused by drivers under the age of 24. The increase in distracted driving collisions represents a major safety challenge and places drivers, passengers, and more vulnerable road users at an increased risk of serious injury or death.

Highest Collision Intersections:

1. Highway 6 & Sycamore St (Iowa City)
2. Highway 6 and S Gilbert St (Iowa City
3. Mormon Trek Blvd & Melrose Ave (Iowa City)
4. Highway 6 and Boyrum St (Iowa City)
5. Coral Ridge Ave and Commerce Dr (Coralville)
6. 2nd St and 1st Ave (Coralville)
7. W Burlington St/Grand Ave & S Riverside Dr (Iowa City)
8. E Burlington St & Gilbert St (Iowa City)
9. Burlington St & Madison St (Iowa City)
10. Riverside Dr & Hawkins Dr (Iowa City)

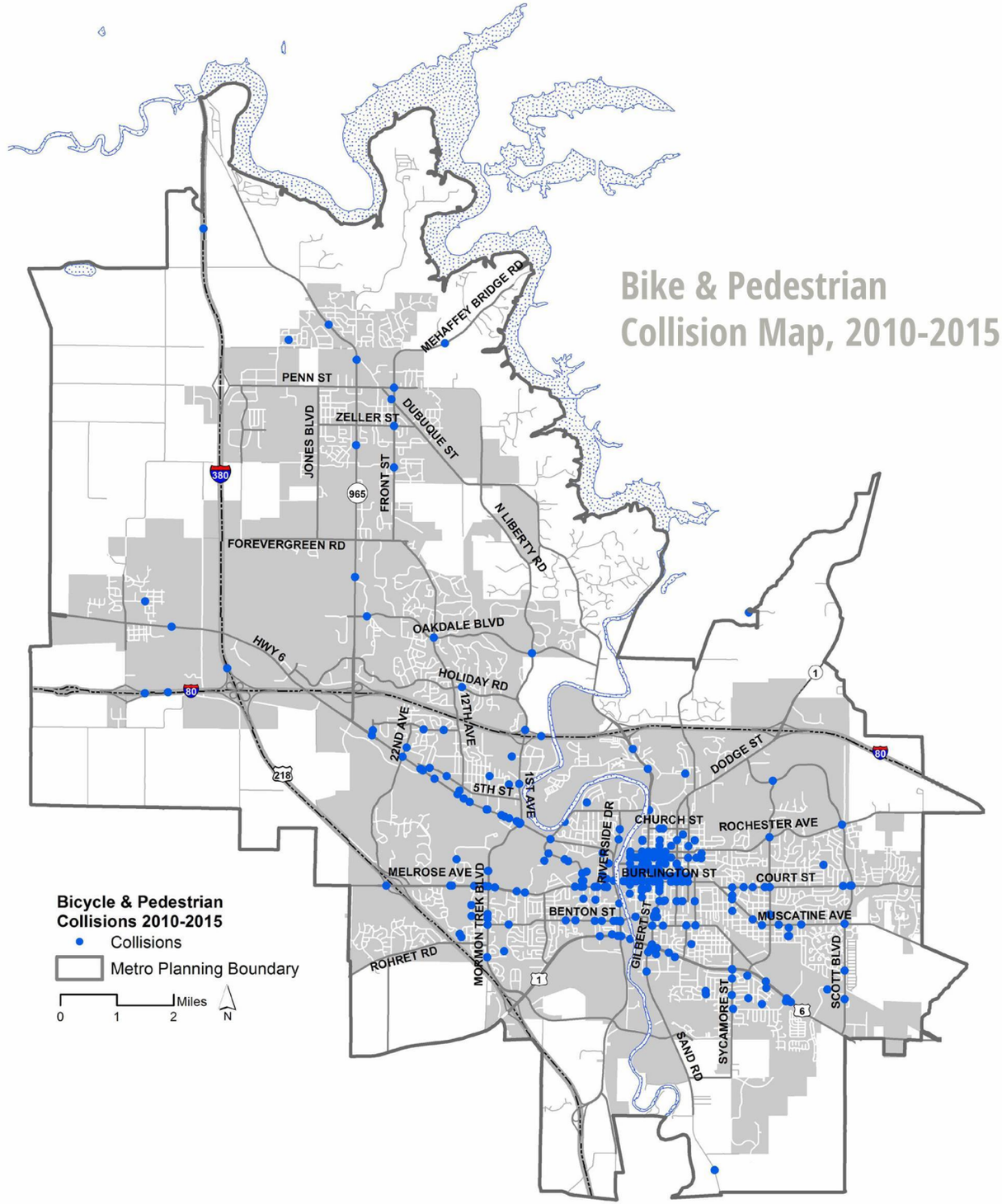
Highest Collision Mid-Block Locations

1. 2nd St between 25th Ave & 23rd Ave (Coralville)
2. 2nd St between 1st Ave & Hawkins Dr/ Rocky Shore Dr (Coralville)
3. 2nd St between 4th Ave & 1st Ave (Coralville)
4. Coral Ridge Ave between Commerce Dr & Holiday Rd/Heartland Dr (Coralville)
5. 2nd St between Camp Cardinal Blvd & 20th Ave (Coralville)

Collision Trends

Bicycling, walking, and transit are becoming increasingly popular ways for residents to meet their transportation needs. Between 2011 and 2015, the number of bicycle commuters in the metro area increased 21%, pedestrian commuters increased 14%, and transit commuters increased 11%.

Although metro area collisions are trending down, there has been a 13% increase in bicycle collisions and 18% increase in pedestrian collisions. Between 2011 and 2015, four pedestrians were killed in collisions in the metro area. During the same time period there were no bicycle fatalities and only 5% of all bicycle crashes resulted in major injury (8 bicyclists).



Since Iowa first enacted a seat belt law in July of 1986, 6,766 people have escaped serious injury or death because prior to a crash, they chose to wear a seat belt.

PERFORMANCE MEASURE	DEFINITION	DESIRED TREND	BASELINE
Fatalities	Number of fatalities (5-year total)	Decrease ↓	24
	Rate of fatalities per 100 million vehicle miles traveled (VMT)	Decrease ↓	0.761
Serious Injuries	Number of serious injury accidents (5-year total)	Decrease ↓	127
	Rate of serious injury collisions per 100 million VMT	Decrease ↓	4.023
Nonmotorized Fatalities/injuries	Number of non-motorized fatalities/ injuries (5-year total)	Decrease ↓	32
	Rate of non-motorized fatalities and serious injuries per 100 million VMT	Decrease ↓	1.016
Bicycle Collisions	Total Collisions	Decrease ↓	170
Pedestrian Collisions	Total Collisions	Decrease ↓	154

Iowa Department of Transportation SAVER: 5-Year Total, 2011-2015
FWHA Safety Performace Measures: http://safety.fhwa.dot.gov/hslp/spm/safety-pm-fs.cfm
Iowa Department of Transportation SAVER: 2006-2010 and 2011-2015 comparison.
Governors Traffic Safety Bureau

Strategies to Improve Safety:

- Continue metro area collision reporting and recommend countermeasures.
- Provide transportation engineering services upon request to member entities.
- Provide information on top collision trends such as distracted or impaired driving, and incidents involving bicycles and pedestrians.
- Provide recommendations for facilities based on Statewide Urban Design Standards (SUDAS), FHWA, NACTO, and AASHTO best practices and design principles that have proven to be safe and reliable.
- Continue to produce road, pedestrian, and bicycle safety audits as requested by member entities.
- Assist the Policy Board in evaluating safety considerations during the grant funding process.
- Assist MPO entities in identifying and applying for safety related grant funds.
- Assist in development of Traffic Incident Management Plans.
- Partner with local and state agencies on safety education and outreach campaigns to address safety issues such as distracted and imparied driving.

Prior to the construction of the First Avenue railroad overpass in Iowa City, traffic congestion and delay was a signficant issue along this important north-south corridor in Iowa City.

In 2014 4% of roads are congesting or significantly congested during peak hours.

In 2045 19% of roads are expected to be congesting or significantly congested if no additional capacity investments are made.

In 2045 17% of roads are expected to be congesting or significantly congested if investments are targeted towards areas of greatest need.

GUIDING PRINCIPLE #7

Efficiency

Builds a well-connected transportation network with coordinated land use patterns to reduce travel demand and delay, miles traveled, and energy consumption

An efficient transportation network is essential to support the economy and livability of our metro area. The ease with which people, goods, and services move across the metro area is perhaps the most perceptible hallmark of a healthy transportation system. An inefficient transportation network with excessive congestion, delays, indirect routes, and few transportation choices limits mobility, increases frustration for users, and increases costs in terms of time, delay, fuel consumption, and vehicle emissions.

Improving the efficiency of our transportation network should be a multi-faceted approach whereby we seek to promote shared mobility by improving access to transit, reducing barriers to active transportation such as bicycle and walking, promote land use patterns that support efficient movement of goods services, and making smart investments in infrastructure and intelligent transportation systems and efficient intersection design (e.g. roundabouts) to help traffic move more efficiently. Priorities should be given to transportation infrastructure projects that improve the efficiency of the existing network for vehicles, pedestrians, and bicycles.

Vehicular Traffic Congestion

According to the 2014 MPOJC Travel Demand Model, the metro area has relatively few areas of major congestion: Level of Service (LOS) E or F. However, there are significant daily bottlenecks during peak travel periods along Coral Ridge Avenue and Highway 965 in Coralville and North Liberty, Penn Street in North Liberty, multiple interstate ramps along I-80 and Highway 218, and at major arterial intersections.

In 2014, approximately 4% of road miles are considered congesting or significantly congested (LOS D, E, or F). By 2045, we expect this number to increase to 19% if no additional capacity investments are made to the network. If investments are targeted to the areas where congestion is greatest, the metro area can reduce the miles of roadway that are congesting or significantly congested to 17% by 2045. For a more information on road network congestion please see the Road and Bridge Network chapter, beginning on page 60.

A roundabout at 12th Avenue and Holiday Road in Coralville has reduced congestion and travel delay at this busy intersection.

PERFORMANCE MEASURE	DEFINITION	DESIRED TREND	BASELINE
Congestion	Percentage of major road mileage at LOS of C or better at peak hours	Increase ↑	96.40%
Vehicle Miles Traveled	Local VMT per capita (annual, 1000's of miles)	Decrease ↓	5709 (2015)

Calculated using 2014 Travel Demand Model (existing roads).

Strategies to Improve Network Efficiency:

- Encourage land-use patterns that support efficient movement of goods, services, and people to reduce travel times, fuel consumption, and vehicle emissions.
- Support multi-modal transportation by reducing obstacles for active transportation or shared mobility.
- Facilitate the annual review of metro area traffic signal timings to improve coordination and vehicle progression, thereby reducing travel times in key arterial corridors.
- Provide traffic engineering expertise including multi-modal LOS analyses to member entities upon request.
- Promote Intelligent Transportation Systems (ITS) technologies such as GPS-based advanced vehicle locators for metro wide transit (BONGO), traffic signal coordination, use of smartphone “apps” for multi-modal wayfinding, vehicle sharing, and route planning;.
- Encourage telecommuting and staggered shift times to reduce peak hour road congestion.
- Provide metro area decision makers with systems-level road performance and LOS to help direct transportation investments to the areas of greatest need.
- Support incident management programs to speed the clearing of incidents.

Why walk?

78% walk for health or exercise

AESTHETICS

75% of respondents think walking in their neighborhood is a pleasant experience

DESTINATIONS

MULTI-MODAL

16% Regularly take the bus as part of their commute to work or school.

23% Occasionally take the bus as part of their commute

Source: MPOJC Future Forward 2045 online pedestrian survey.

GUIDING PRINCIPLE #8

Health

Invites and enhances healthy and active lifestyles

Historically, our transportation system was designed to move people and goods efficiently with little regard to the impact on community health. Today there is growing awareness across communities that transportation systems impact quality of life and health. Walkable, bikeable, and transit-oriented communities are associated with healthier populations that experience more physical activity, lower body mass index, lower rates of traffic injuries, and less air pollution.[1]

The way cities are planned and designed is strongly associated with the resulting levels of physical activity and health on both individual and community levels.[2] In order to plan for a regional transportation system that invites and enhances healthy and active lifestyles, we look to build off of our multi-modal transportation options in order to generate active and motorized transportation systems that are safe, well-maintained, and provide connectivity to destinations. The region's transportation system influences public health through four primary ways:

1. **Active Transportation** – People's participation in active transportation (walking, bicycling, and transit, to some degree) is influenced by the built and natural environment in which they live. Transportation networks that encourage active transportation with continuous and convenient sidewalks and crosswalks, bicycle facilities, and transit access can help people increase their level of physical activity resulting in health benefits and disease prevention.
2. **Safety** – All road users should be safe with minimal risks of injury. Well-designed multi-modal transportation network designs that consider all users can reduce conflicts and improve safety.
3. **Air Quality** – Air quality is an important component of transportation planning for communities, especially for at-risk groups including children and elderly persons. Increased numbers of vehicle trips and vehicle miles traveled are associated with higher levels of air pollutants resulting from vehicle emissions, which can negatively impact respiratory health.
4. **Connectivity / Accessibility** – The transportation network should allow people to efficiently access the places they need in order to live a healthy and active lifestyle such as grocery stores, places of work, hospitals, recreation facilities, and schools.

1. 2010 American Public Health Association Transportation Fact Sheet.
2. 2006 "Obesity, Physical Activity, and the Urban Environment"; *Environmental Health*. Sept. 2006.

Ensuring safe routes to schools and ensuring that schools, parks, and recreation centers are well-served by a network of sidewalks, trails, and transit routes provides opportunity for youth to travel independently.

PERFORMANCE MEASURE	DEFINITION	DESIRED TREND	BASELINE
Physical activity	Percent of adults in Johnson County who are physically active	Increase ↑	17.6% (2013)
Seat belt use	Percent of adults reporting to always use seat belts	Increase ↑	86% (2013)

1. Physical Activity. 2013. Policy Map. www.policymap.com
2. Seatbelt Use. 2013. Policy Map. www.policymap.com (Dec. 2016)

Strategies to Foster Health:

1. Promote active transportation through the creation of a safe and convenient transportation network throughout the region.
2. Prioritize infrastructure improvements near transit stops and public transportation facilities.
3. Encourage active lifestyles through way-finding signs, maps, and other educational materials.
4. Improve elements of the transportation network that are seen as unsafe such as the scarcity of sidewalks, crosswalks and bicycle facilities, in order to encourage active transportation and increase safety.
5. Reduce injuries associated with motor vehicle crashes through the improvement of roadway facilities and availability of transportation options.
6. Encourage active transportation to minimize air pollution from motor vehicles, and the fuels used to operate them.
7. Address transportation needs and prioritize critical gaps to ensure equity and comprehensiveness in efforts to enhance active living.
8. Ensure all people have access to safe, healthy, convenient, and affordable transportation options regardless of age, income, and other socioeconomic factors.

GUIDING PRINCIPLE #9

Equity

Provide access and opportunity for all people and all neighborhoods

In order to be equitable, transportation planning must consider the unique needs and circumstances that impact mobility or access for individuals or neighborhoods to determine appropriate level investments. On a programmatic (micro) level, this includes the type and design of infrastructure or services necessary to ensure all members of the community can meet their daily needs. On a structural (macro) level, land use and transportation policies should support compact, multi-modal development, including a range of affordable housing types located in areas with convenient proximity to employment, education, and essential services.

The transportation network exerts a profound influence on people's economic and social opportunities. At a broad level, transportation is necessary for individuals to access employment, education, housing, health care, recreation, and other daily activities. Individuals who are low-income, minority, elderly, limited English proficiency, youth, and persons with disabilities often face transportation challenges. The costs of transportation may represent a major share of household budgets. Inadequate or unreliable transportation is a significant obstacle to gaining and retaining employment and, for the elderly and people with disabilities, can lead to social isolation. For children, reliable transportation is key in ensuring good school attendance and the opportunity to participate in extracurricular activities and recreation.

MPOJC efforts to support equitable transportation planning include:

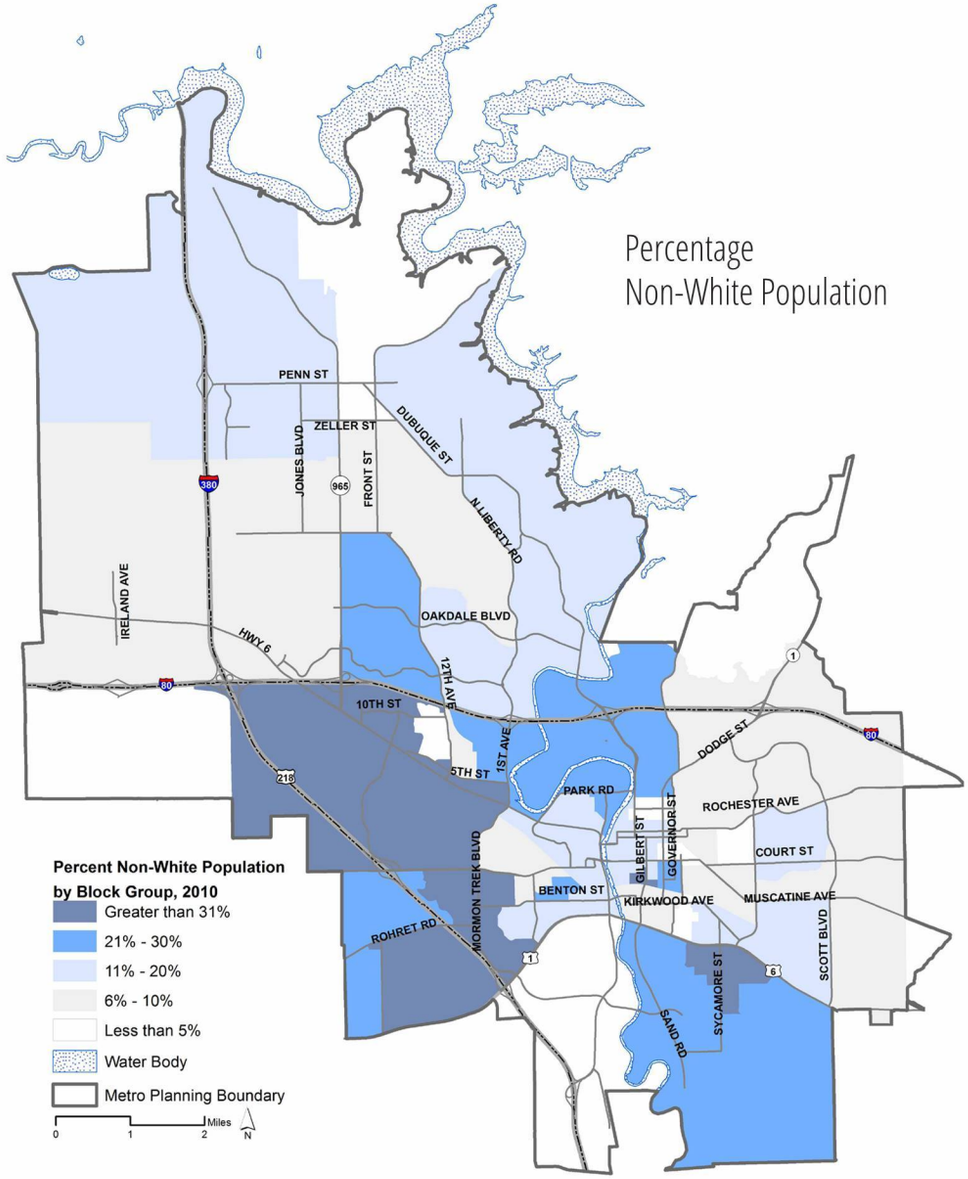
- Development of a Complete Streets Policy whereby all travel modes are accomodated in the design of streets that receive federal funding. Maximizing opportunities for non-mortorized transit to lower costs and increase access to all households.
- Completion of a comprehensive ADA sidewalk ramp inventory, which will allow MPO communities to target accessiblity improvements and services, such as paratransit, to assist individuals with limited mobility.
- Development of grant funding criteria for MPO-funded projects that consider improvements to ADA compliance and mode choice as well as improved access for roadways that service multi-family development or other special populations.
- Partnering with Johnson County, ECICOG, local human services agencies, for the development of a Mobility Coordinator - a position dedicated to working person in need of special transportation assistance.
- Assessment of signalized intersections to assist with prioritization of audible Accessible Pedestrian Signal (APS) enhancements.

Challenges to Mobility & Access

- 24% of Americans living in poverty do not own an automobile.
- Because low-income individuals are less likely to own a car, they are more likely to walk, wheel, or bike, even when conditions are not ideal.
- Low income and minority populations are less likely to live near or travel along roads with safe, accessible, and high-quality pedestrian and bicycle facilities.
- Low-income, minority, or immigrant individuals are more likely to have jobs that require them to commute outside of traditional '9 to 5' business hours, often in the dark and when or where transit services are not operating.
- Adults with disabilities are more than twice as likely as those without disabilities to have inadequate transportation (31% versus 13%).
- Children, older adults, and individuals with physical or cognitive disabilities may be unable to drive and are, more reliant on non-motorized travel modes.
- As individuals age, they are increasingly likely to depend on public transit for their primary transportation.

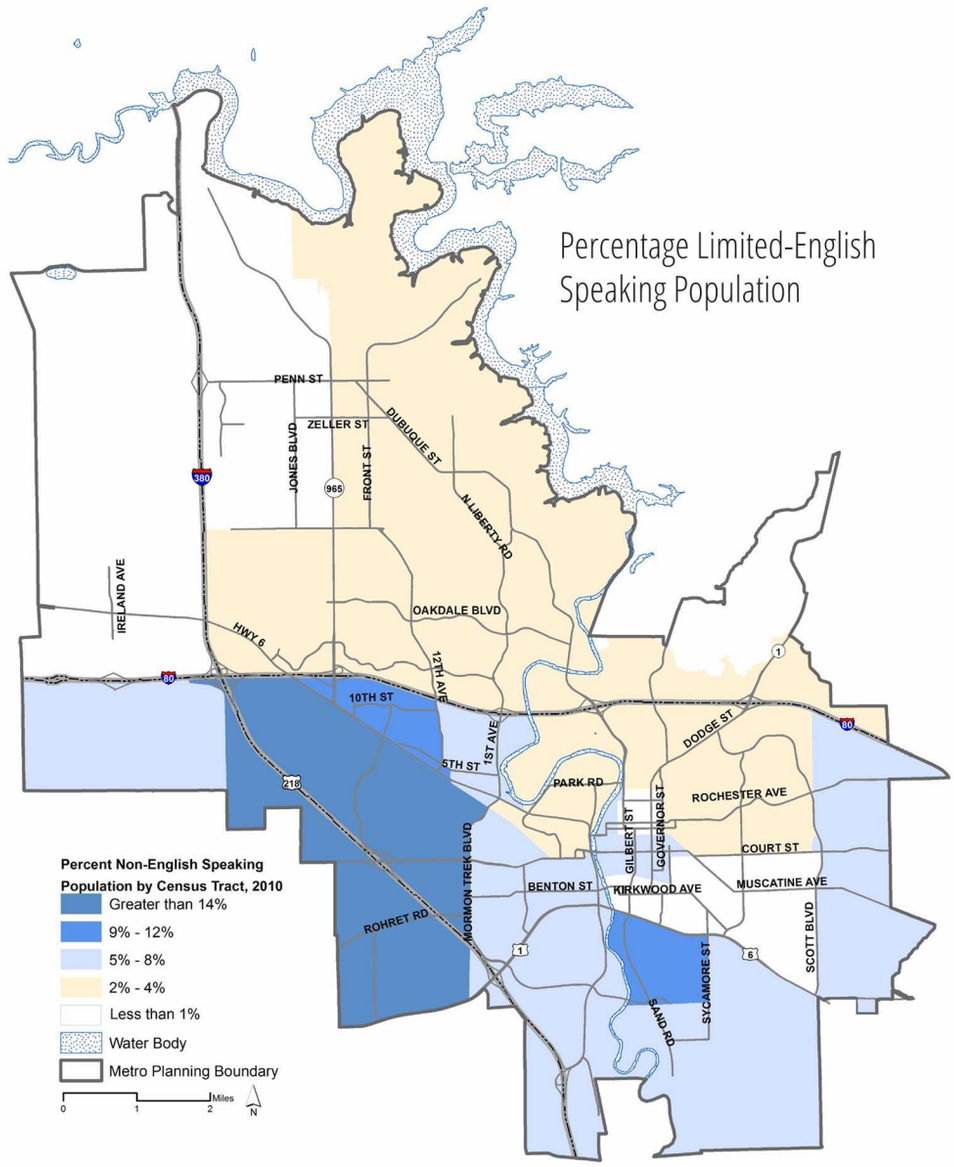
Source: 2014 National Household Travel Survey.

Percentage Non-White Population



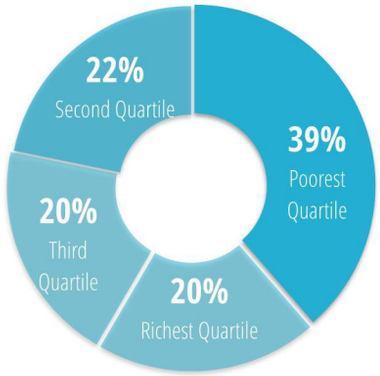
Source: American Community Survey 5-year estimates 2011-15; Johnson County; MPOJC

Percentage Limited-English Speaking Population

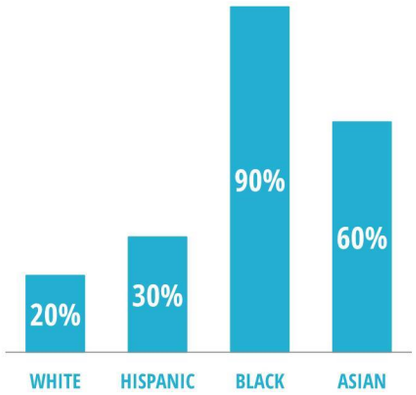


Source: American Community Survey 5-year estimates 2011-15; Johnson County; MPOJC

Equity and National Biking Trends



BICYCLE COMMUTING IN THE UNITED STATES BY INCOME QUARTILE



CHANGE IN U.S. BIKING AS A SHARE OF PERSONAL TRIPS, 2001-2009

Source: 2001-2009 National Household Transportation Surveys. (Included in "Building Equity" a report from People for Bikes)

Strategies to Ensure Equity:

1. Ensure a range of affordable transportation options for all people and neighborhoods.
2. Maximize the safety, convenience, and reliability of the public transit system.
3. Prioritize the expansion and improvement of the sidewalk and multi-use trail network, especially for direct access from multi-family or mixed use development.
4. Support land use and development policies that support safe and convenient access between housing and employment areas, schools, recreation, and commercial areas.
5. Provide targeted LOS evaluation for non-motorized travel to evaluate transportation services and infrastructure serving low-income and disadvantaged neighborhoods.
6. Prioritize projects that create or enhance multi-modal access to employment, education, or recreational facilities.

Performance Measures	Definition	Desired Trend	Baseline
Housing & transportation costs	Average proportion of household income devoted to housing and transportation costs	Decrease ↓	49% metro average

TRANSPORTATION FUNDING

Fiscal constraint is a required component of long-range planning. Transportation expenditures included in this plan should not exceed revenue estimates during the life of the plan. Simply put, this plan includes only those transportation improvements that can be realistically completed based on anticipated revenues.

Future Transportation Funding

Financial Planning Overview

A sound financial plan demonstrating how the unified vision for our regional transportation system can be achieved is a critical element of Future Forward 2045. While this long range transportation plan is not a programming document, FHWA regulations require that the plan be 'fiscally constrained'. To accomplish this, an analysis of fiscal constraint was undertaken for the life of the Plan (2017-2045). This analysis fulfills the requirements of the current Federal 'FAST Act' transportation legislation outlined in 23 CFR 450.322 (10).

Financial Planning Overview

Following are brief descriptions of the primary funding sources used to forecast future funding targets. While there are many additional State and Federal funding sources available, this list includes only those that the MPOJC urbanized area has been successful in obtaining through competitive grant processes.

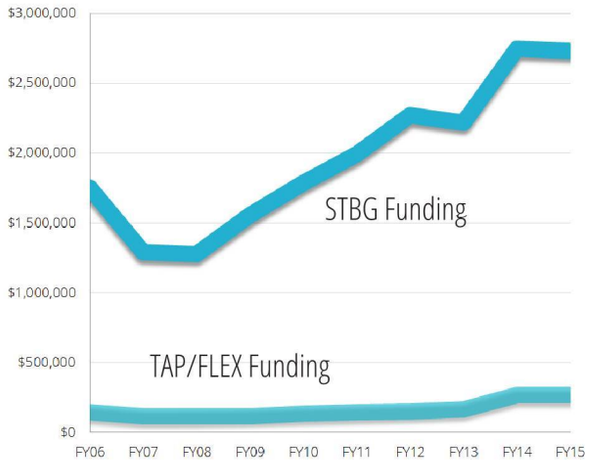
LOCAL FUNDING SOURCES

In addition to road use tax revenue, a municipality's general fund is often the primary funding source for operations and maintenance costs. Funding for capital improvements on public roads typically comes from the sale of bonds. General operating funds typically support public transit capital and operations. Other local funding sources that help fund transportation improvements include Tax Increment Financing (TIF) district revenues, fare or user fees and assessments, transit levies, and property tax revenue.

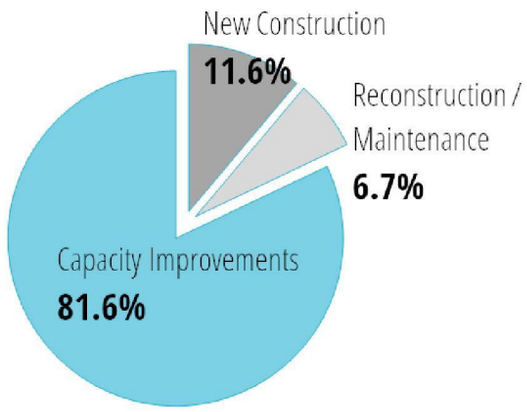
STATE FUNDING SOURCES

- **State Recreational Trails Program (SRT):** Established to create recreational trails in Iowa for the use, enjoyment and participation of the public.
- **Revitalize Iowa's Sound Economy (RISE):** Promotes economic development in Iowa through the construction or improvement of roads.
- **Transportation Safety Improvement Program (TSIP):** Funds roadway safety improvements, research, studies or public information initiatives aimed to increase safety on public roads.
- **Primary Road Fund (PRF):** Funds the establishment, construction, and maintenance of DOT facilities, state institutional roads, state park roads, and restoration of secondary roads and municipal streets used as primary road detours.

MPOJC Formula Funding by Program 2006-2015



STBG Project by Type (FY2012-2017)



FEDERAL FUNDING SOURCES

- **National Highway Performance Program (NHPP):** Funding for resurfacing, restoring, and rehabilitating, routes on the Eisenhower National System of Interstate and Defense Highways.
- **DOT Surface Transportation Block Grant (STBG):** Funds improvements to any roadway or bridge on the federal-aid system, transit capital projects, bicycle and pedestrian facilities, enhancement projects, environmental restoration, and the establishment of native species.
- **Regional Surface Transportation Block Grant (STBG):** Funds improvements to any roadway or bridge on the federal-aid system, transit capital projects, bicycle and pedestrian facilities, enhancement projects, environmental restoration, and the establishment of native species. Regional STBG funds are formula funds that are provided to MPOJC and programed by the Urbanized Area Policy Board using a competitive grant process.
- **Regional Transportation Alternatives Program (TAP):** Funds enhancement activities that have a direct relationship to surface transportation facilities including: facilities for bicycles and pedestrians (including safety and educational activities), landscaping and other scenic beautification, historic preservation, and the preservation of abandoned railway corridors for bicycle and pedestrian uses. Regional TAP funds are formula funds that are provided to MPOJC and programed by the Urbanized Area Policy Board using a competitive grant process.
- **Congestion Mitigation & Air Quality Improvement (CMAQ):** Flexible funding for transportation projects and programs tasked with helping to meet the requirements of the Clean Air Act. These projects can include those that reduce congestion and improve air quality.
- **Federal Recreational Trails Program (FRT):** Funding for public recreational trails. The recipient must use funding for trail projects that are part of a local, regional, or statewide trails plan.

Financial Forecast

To forecast future state and federal dollars available for Future Forward 2045 projects and programs, we establish a 10-year historic average of funding programs and apply a 4% inflation rate recommended by the FHWA for each fiscal year covered by this plan. (2017-2045)

Will there be sufficient funding for all our transit (bus) needs?

TRANSIT REVENUE AND OPERATING COSTS (2017-2045)

IOWA CITY TRANSIT

	2017-2025	2026-2035	2036-2045
State Transit Assistance	$5,432,932	$8,772,758	$12,985,825
Urbanized Area Formula (5307	$15,232,177	$24,595,964	$36,408,035
Special Needs Formula (5310)	$1,266,803	$2,045,554	$3,027,919
Local Tax/Transit Levy	$36,008,670	$58,144,542	$86,068,126
Fare Revenue	$15,662,664	$25,291,088	$37,436,988
Contracts/Other	$9,394,009	$15,168,856	$22,453,613
Total Revenue	$82,997,255	$134,018,761	$198,380,506
Total Operating	$69,775,491	$112,669,087	$166,777,772

CORALVILLE TRANSIT

	2017-2025	2026-2035	2036-2045
State Transit Assistance	$2,998,540	$4,841,854	$7,167,127
Urbanized Area Formula (5307	$4,116,178	$6,646,546	$9,838,512
Special Needs Formula (5310)	$351,243	$567,165	$839,543
Local Tax/Transit Levy	$4,107,056	$6,631,816	$9,816,708
Fare Revenue	$5,221,996	$8,432,151	$12,481,643
Contracts/Other	$1,975,808	$3,190,411	$4,722,587
Total Revenue	$18,770,820	$30,309,944	$44,866,121
Total Operating	$18,210,790	$29,405,641	$43,527,532

UNIVERSITY OF IOWA CAMBUS

	2017-2025	2026-2035	2036-2045
State Transit Assistance	$7,974,761	$12,877,143	$19,061,318
Urbanized Area Formula (5307	$5,746,722	$9,279,447	$13,735,848
Special Needs Formula (5310)	$1,778,693	$2,872,121	$4,251,441
Local Tax/Transit Levy	$22,216,653	$35,874,057	$53,102,368
Fare Revenue	$0	$0	$0
Contracts/Other	$143,714	$232,061	$343,507
Total Revenue	$37,860,543	$61,134,830	$90,494,483
Total Operating	$35,093,936	$56,667,486	$83,881,722

4% increase/year

How much funding has each MPO entity received?

Municipality	Population 2000	Population 2010	Population Change	MPOJC STP Funds FY2002-2018	**MPOJC STP Funds per capita**	MPOJC TAP Funds FY2002-2018	**MPOJC TAP Funds per capita**
Coralville	15,123	18,907	3,784	$ 11,365,000	**$ 601**	$ 786,000	**$ 42**
Iowa City	62,220	67,862	5,642	$ 23,016,759	**$ 339**	$ 1,360,000	**$ 20**
North Liberty	5,367	13,374	8,007	$ 4,230,000	**$ 316**	$ 367,000	**$ 27**
Tiffin	975	1,947	972	$ 820,000	**$ 421**	$ 490,000	**$ 252**
University Heights	987	1,051	64	$ 420,000	**$ 400**	$ 215,000	**$ 205**
Johnson Co.*	n/a	3,132		$ 1,055,000	**$ 337**	$ 195,000	**$ 62**

Funding is not allocated based on population. Please see following page for more details on the fudning allocation process.

* MPOJC estimated unincorporated population within Metro Planning Boundary

Will there be sufficient funding for all our transportation infrastructure needs?

Anticipated Funding & Needs (2017 - 2045)

Cost Band / Funding Period	Bike & Ped Funding	Bike & Ped Needs	Road & Bridge Funding	Road & Bridge Needs	Total Funding	Total Needs	Revenue Shortfall 2017 - 2045
Short-Term (FY17-25)	$9,645,474	$9,744,562	$78,046,421	$137,141,028	$87,691,895	$146,885,590	-$59,193,694
Mid-Term (FY26-35)*	$14,227,998	$20,014,098	$115,125,947	$192,407,063	$129,353,945	$212,421,161	-$83,067,216
Long-Term (FY36-45)*	$17,923,582	$6,481,440	$145,028,790	$182,428,683	$162,952,373	$188,910,123	-$25,957,750
TOTAL	**$41,797,055**	**$36,240,100**	**$338,201,158**	**$511,976,774**	**$379,998,213**	**$548,216,874**	**-$168,218,661**

*Adjusted for inflation

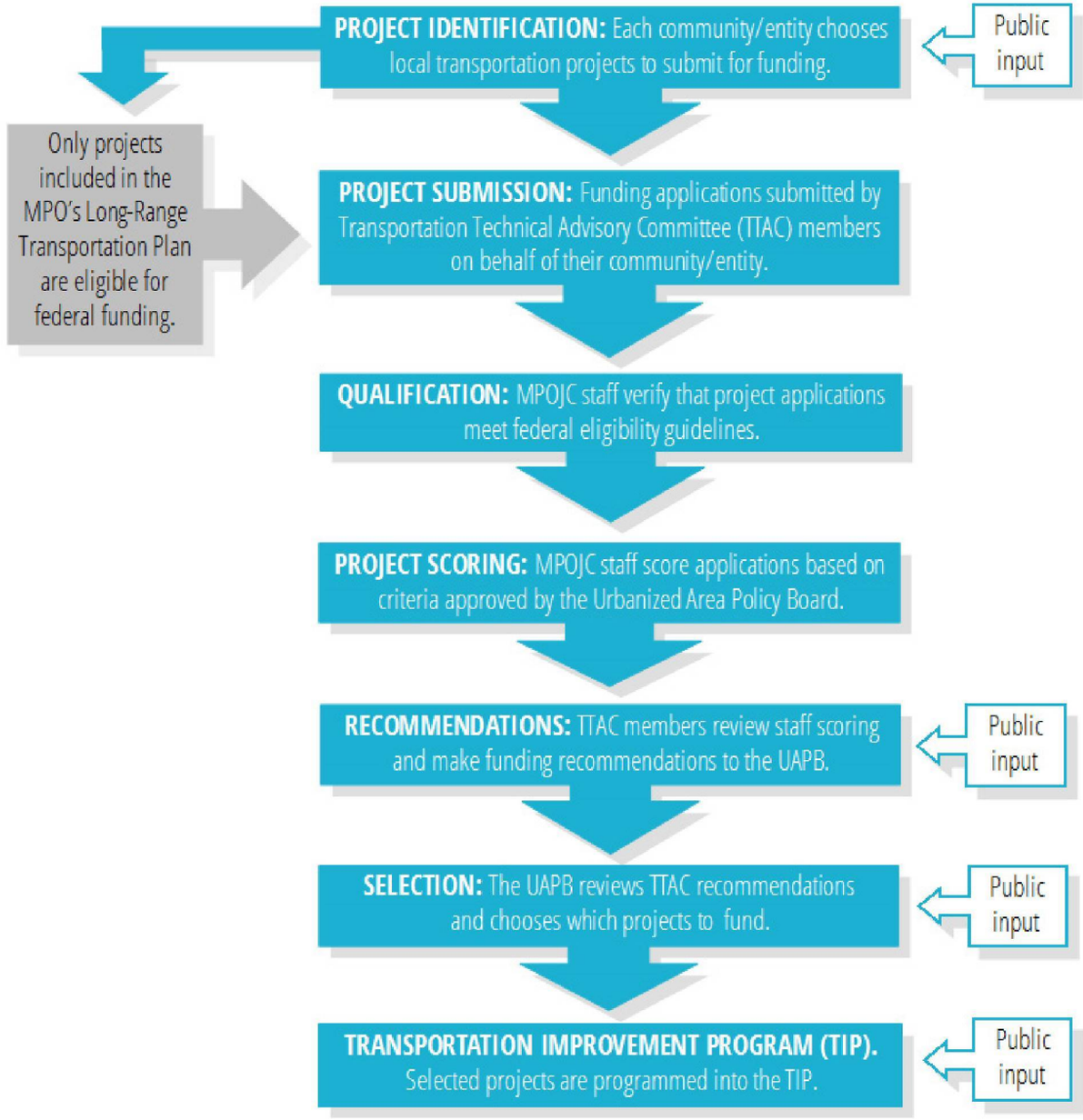
4% inflation rate; year of expenditures considered to the the mid-year of funding period. Historically a 40% match is typcial for projects that receive state and federal funding. For more information on state and federal funding see Supporting Documents.

Funding Allocation Process for Surface Transportation Block Grant and Alternatives Funds

STBG and Transportation Alternatives Set-Aside funds are federal formula funds distributed annually by the Iowa DOT.

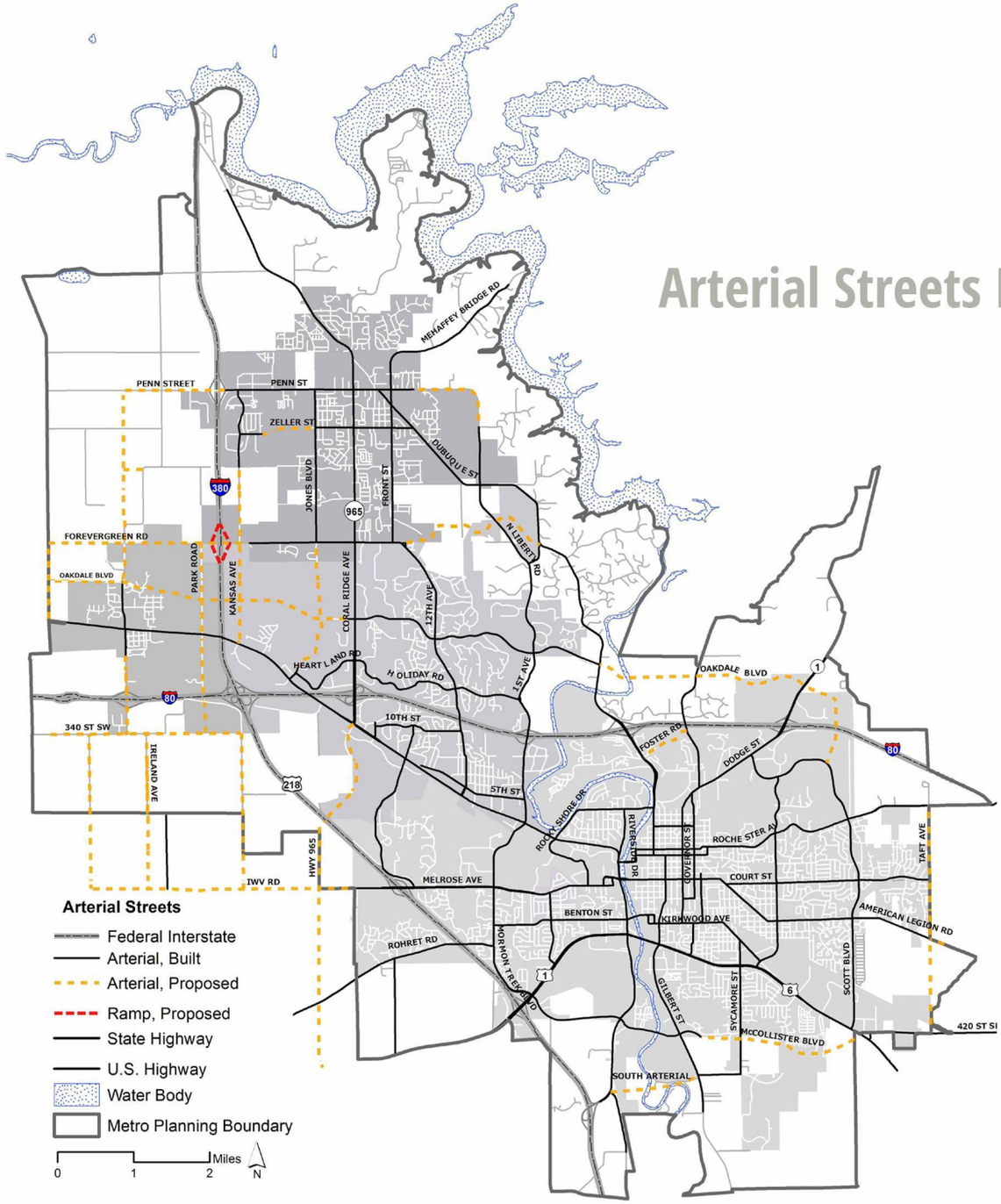
Allocation of federal funds from STBG, (formerly STP) and Transportation Alternatives funding Set-Aside (formerly TAP) is a primary responsibility of MPOJC.

MPOJC entities and other stakeholders work cooperatively through committees and the Urbanized Area Policy Board, which includes elected officials from each MPOJC community, to make decisions regarding which transportation projects will receive funding.



ROAD AND BRIDGE NETWORK

Arterial Streets Map



ROAD AND BRIDGE NETWORK

Vision

To create a comprehensive, integrated, and connected road network, accomodating mulitple modes of travel, to support sustainable growth and development and enhance quality of life.

Transportation Network

The nearly five-hundred mile metropolitan area roadway network is the backbone of the transportation system in the urbanized area. The arterial street network provides multi-modal access to neighborhoods, commercial and industrial areas, schools, and parks. Arterial streets are the main routes for commercial deliveries, emergency service vehicles, school buses, and public transit vehicles provide the most direct routes for bicyclists and pedestrians. Local roads provide direct access to households, carry the lowest amount of traffic, have the lowest speeds, and tend to be most popular with pedestrians and bicyclists.

Arterial Streets

The MPOJC Arterial Streets Map (see opposite page) reflects the metropolitan area arterial streets including the U.S. Highway, State Highway, and Interstate System, and shows where future arterial street extensions are expected. Future arterial streets show the general location and connectivity of an arterial street corridor; the exact location will be determined through the design and engineering process. Future arterial corridors are identified by metro area entities. The Arterial Streets Map is approved by the MPOJC Urbanized Area Policy Board coincident with the adoption of the LRTP.

24 miles
Interstate Highway

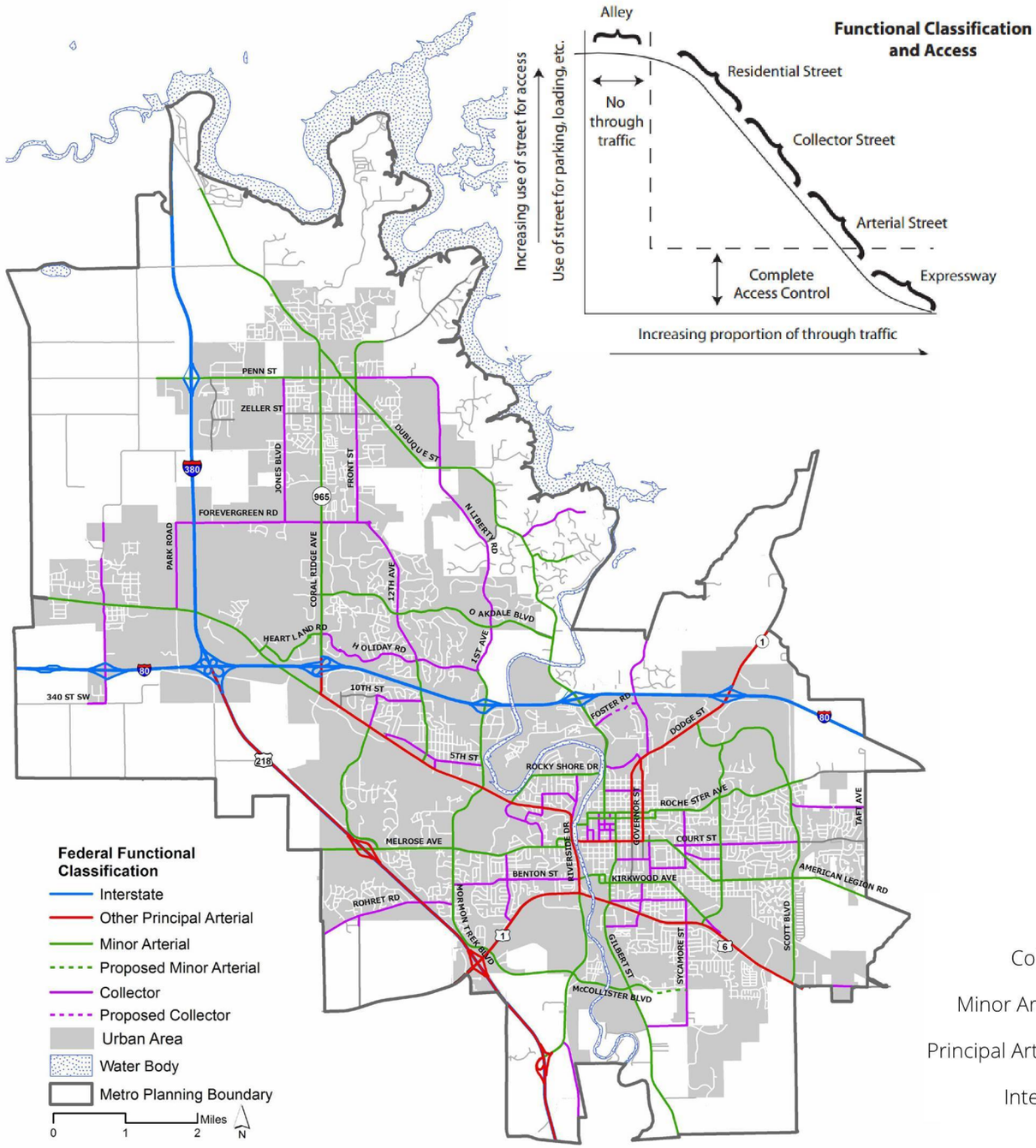
29 miles
Principal arterials
(state highways)

66 miles
Major arterials

45 miles
Collector streets

333 miles
Local roads

497 total centerline miles
in the Metro Area

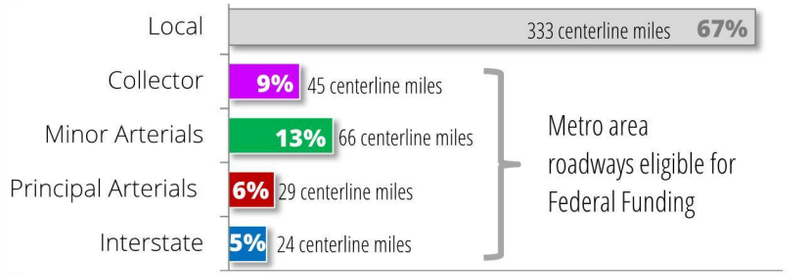


Functional Classification

Functional classification is a tool used to define the role of roadways within the larger transporation network. Each classification fits within a hierarchy based on the level of mobility and access that the particular roadway is intended to provide. Roadways with higher classifications better serve mobility and provide less access to individual properties, whereas roadways with lower classifications provide better access to individual properties and provide less overall mobility. Vehicles are able to move with the highest speeds and least delay on higher-order roadways, such as expressways, while bicyclists and pedestrians tend to move with the greatest ease on lower-order streets, such as residential, local, and collector streets.

Classification of Metro Area Roadways

The MPO works with local jurisdictions, the Iowa DOT, and the FHWA to determine the federal functional classification of metro area roadways. Approximately 35% of the metro area roadways are classified on the Federal Functional Classification map (see left). This designation is significant as federal funding can only be spent on roadways functionally classified as collector or higher.

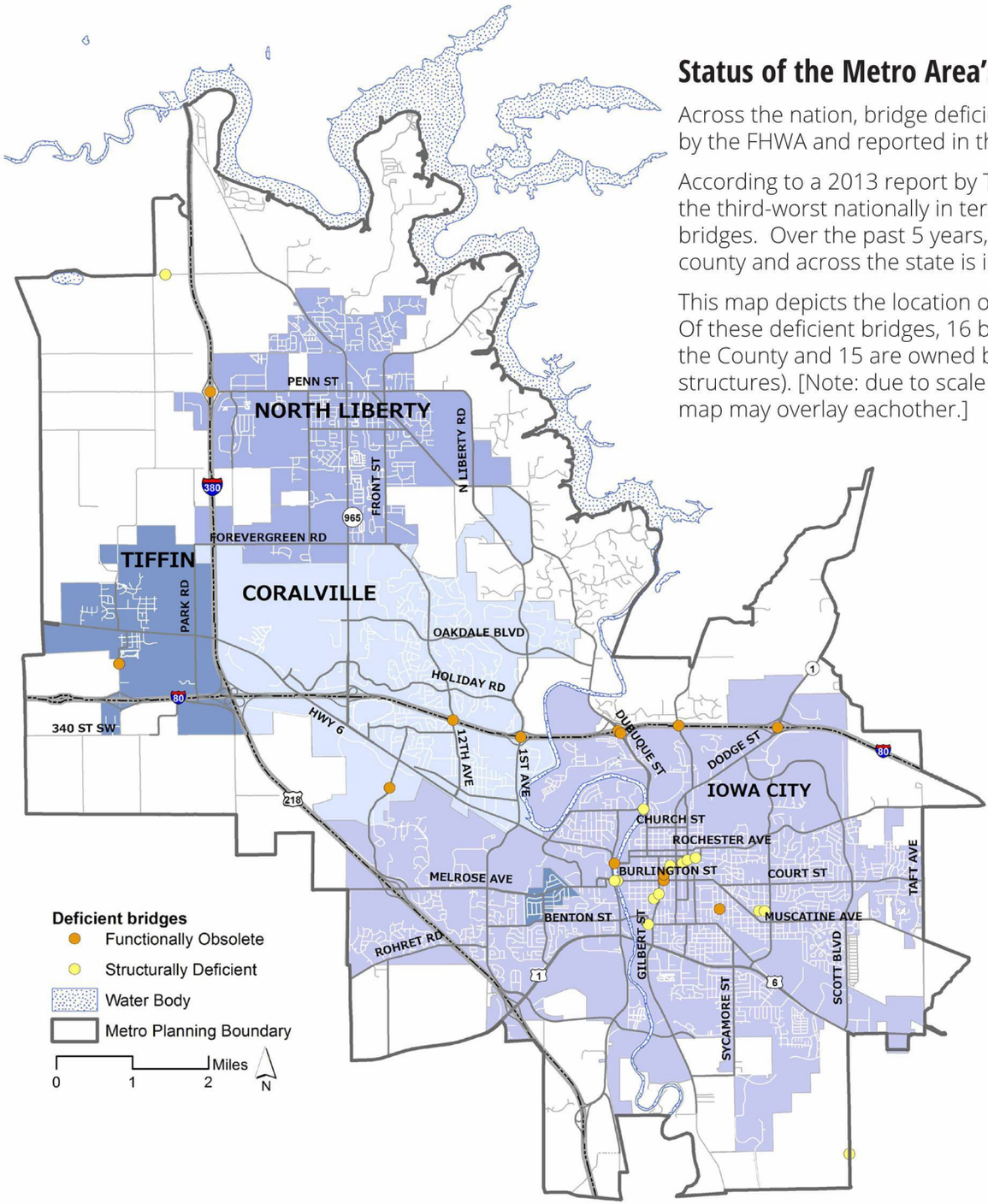


Status of the Metro Area's Bridges

Across the nation, bridge deficiency is rated using a standard methodology defined by the FHWA and reported in the National Bridge Inventory.

According to a 2013 report by Transportation for America, Iowa's bridges ranked the third-worst nationally in terms of the overall percentage of structurally deficient bridges. Over the past 5 years, the percent of deficient highway bridges in the county and across the state is increasing.

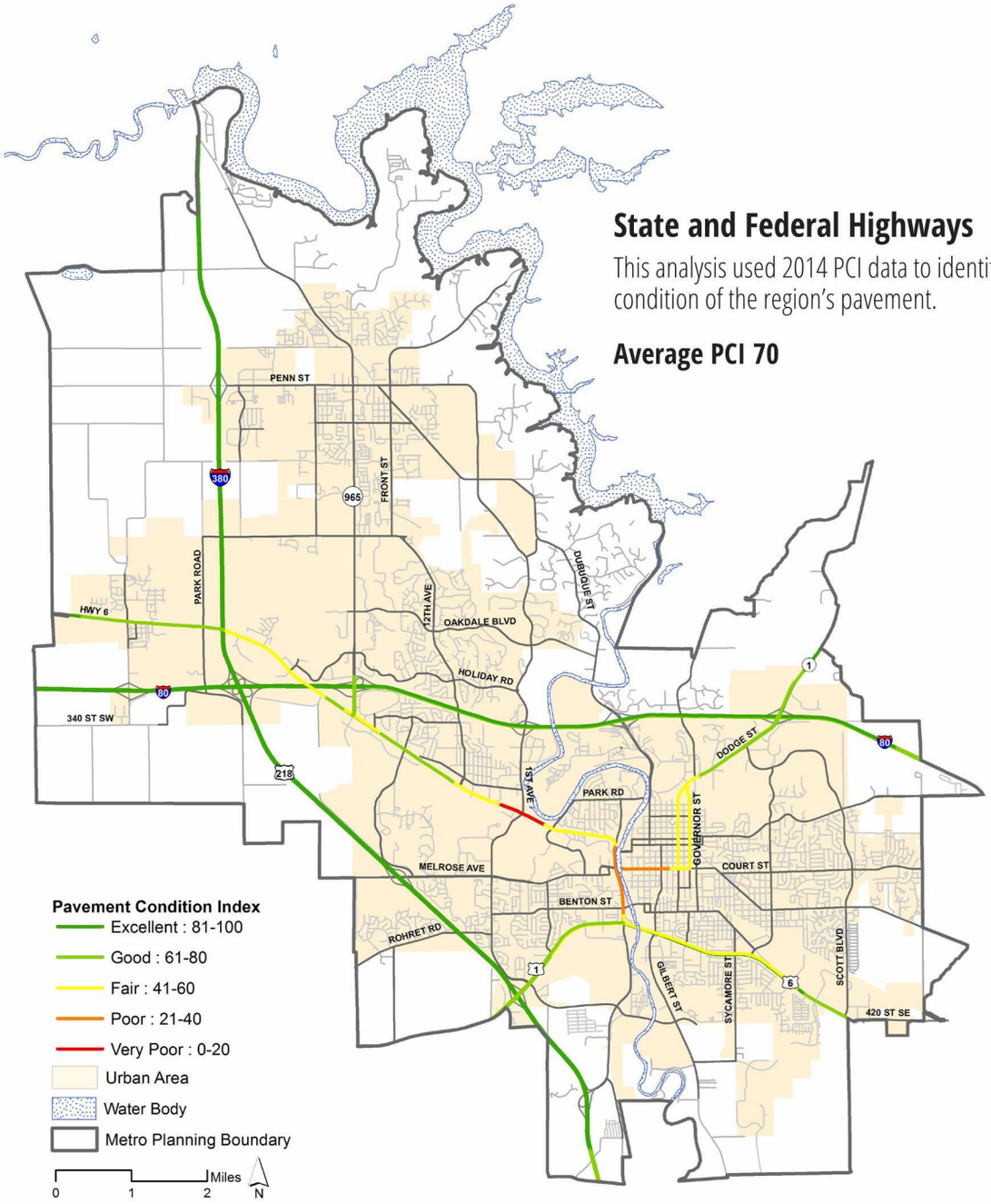
This map depicts the location of the deficient bridge structures in Johnson County. Of these deficient bridges, 16 bridges are owned by the Iowa DOT, 34 are owned by the County and 15 are owned by Cities (not including pedestrian or railroad bridge structures). [Note: due to scale of the map, dots for multiple bridges in small areas map may overlay eachother.]



There are two types of bridge deficiencies. A bridge deficiency does not imply a bridge is unsafe.

Structurally-deficient - A bridge having deterioration to one or more major components, but the bridge is not unsafe.

Functionally Obsolete– The geometric design of a bridge does not meet the current design standards.



State and Federal Highways

This analysis used 2014 PCI data to identify the condition of the region's pavement.

Average PCI 70

Pavement Condition

The condition of our region's infrastructure is monitored using a numerical rating called Pavement Condition Index (PCI). PCI measures the type, extent, and severity of pavement surface distress and the smoothness and comfort of the road. PCI monitors motorist safety, condition of the surface of roads, and identifies maintenance and rehabilitation needs. PCI rates the condition of the surface of a road network from 0-100, where 0 is very poor and 100 is excellent.

PCI for State and Federal Highways:
Pavement condition data for state and federal highways in Iowa is collected by the Iowa DOT and is shown on the map to the left. The pavement condition of all state and federal highways in the metro area averages 70, which means roads are generally in good condition.

93% of State and Federal Highways are in fair to excellent condition.

7% are are in poor or very poor condition.

PCI for Local Federal Aid Routes:

Pavement condition of local roads eligible for federal aid is collected through the Institute for Transportation at Iowa State University (InTrans) and is shown in the map to the right. The pavement condition of all Federal Aid eligible roadways is in relatively good condition averaging 61. [Information on pavement condition by community and for local streets can be found in the Supporting Documents section of this plan.]

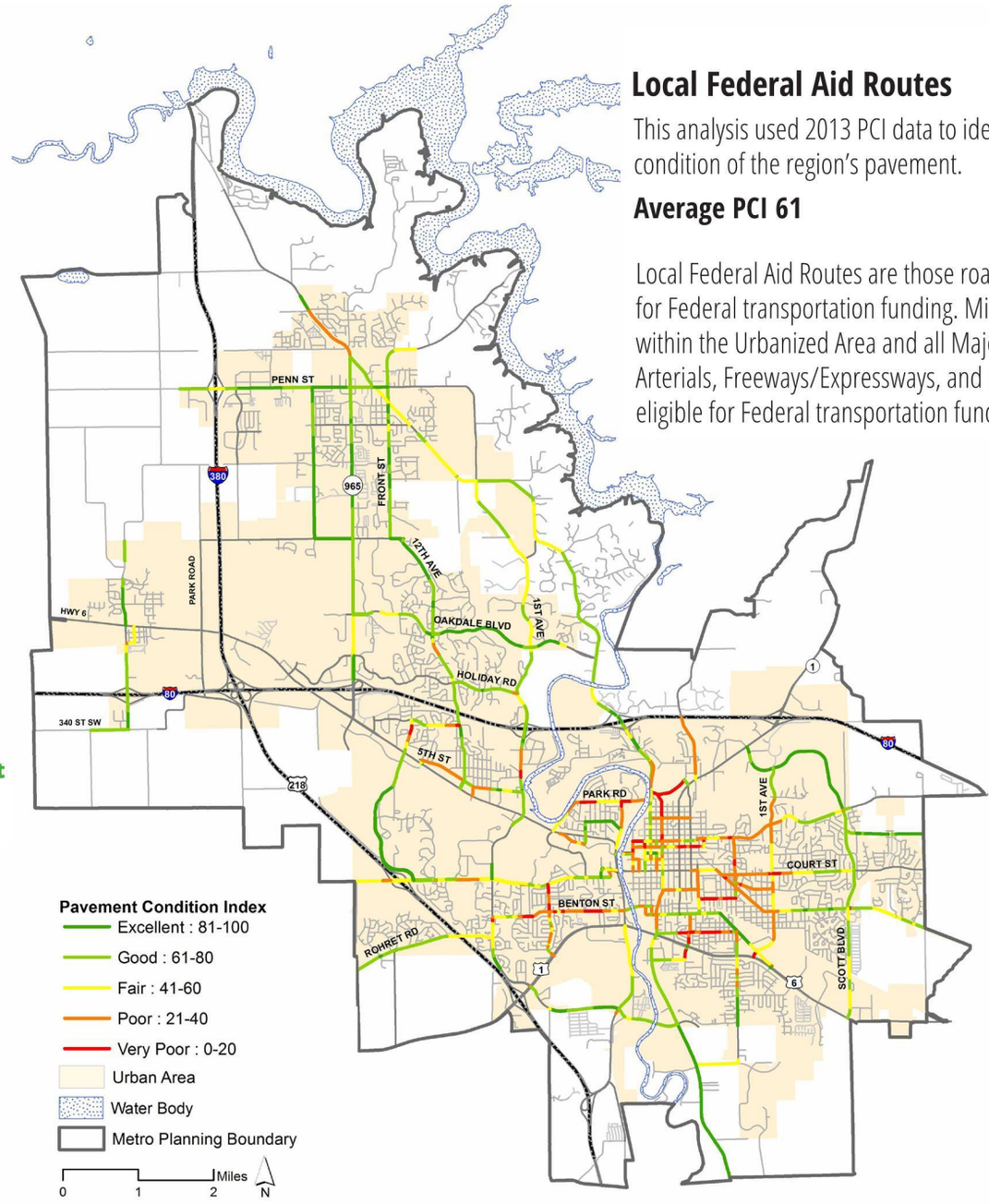
Within the metro area, 70% of local Federal Aid routes are classified as as being in fair or excellent condition; which can be attributed to the region's continued investment in the repair and maintenance of our roadways. The region's pavement condition will be tracked over time in order to measure performance and help prioritize improvements.

very poor **excellent**

70% of Local Federal Aid Routes are in fair to excellent condition.

30% are are in poor or very poor condition.

NOTE: The PCI numbers obtained from the Iowa DOT and InTrans are not comparable values as they are derived from different equations.



Local Federal Aid Routes

This analysis used 2013 PCI data to identify the condition of the region's pavement.

Average PCI 61

Local Federal Aid Routes are those roadways eligible for Federal transportation funding. Minor Collectors within the Urbanized Area and all Major Collectors, Arterials, Freeways/Expressways, and Interstates are eligible for Federal transportation funds.

Bicycle and Pedestrian Level of Service

MPOJC also evaluates bicycle and pedestrian LOS at specific locations at the request of our member entities. This allows for comparison of the experience of drivers, pedestrians, and bicyclists simultaneously at specific locations.

Bicycle and pedestrian LOS considers conditions including pavement width, number of travel lanes, traffic speeds, average daily traffic (ADT), delay, presence of heavy vehicles, corner circulation area, and the presence of pavement markings or other facilities specific to bicyclists and pedestrians.

Vehicular Level of Service

MPOJC uses the Level of Service (LOS) method to evaluate the delay vehicle drivers experience.

The Iowa DOT and MPOJC have adopted LOS E as the design capacity for the purposes of vehicular traffic modeling and planning. LOS E represents the "ultimate theoretical capacity" of roadways. As traffic approaches LOS E, drivers experience congestion and delays, and some begin to divert to adjacent, less congested routes.

Level of Service	Technical Description	Peak Hour Delay
A	Free flow, unencumbered movement. No restriction on speed or maneuverability.	NONE
B	Reasonable flow. Slight restriction on maneuverability.	SLIGHT
C	Stable flow. Some restriction on speed. Drivers must be careful when changing lanes.	MINIMAL
D	Approaching unstable flow. Density of traffic is increased. Speed declines. Maneuverability is limited.	MINIMAL
E	Operating at capacity; unstable flow. Vehicles are closely spaced with little room to maneuver.	MODERATE
F	Very congested. Speeds vary; unpredictable.	POTENTIAL GRIDLOCK

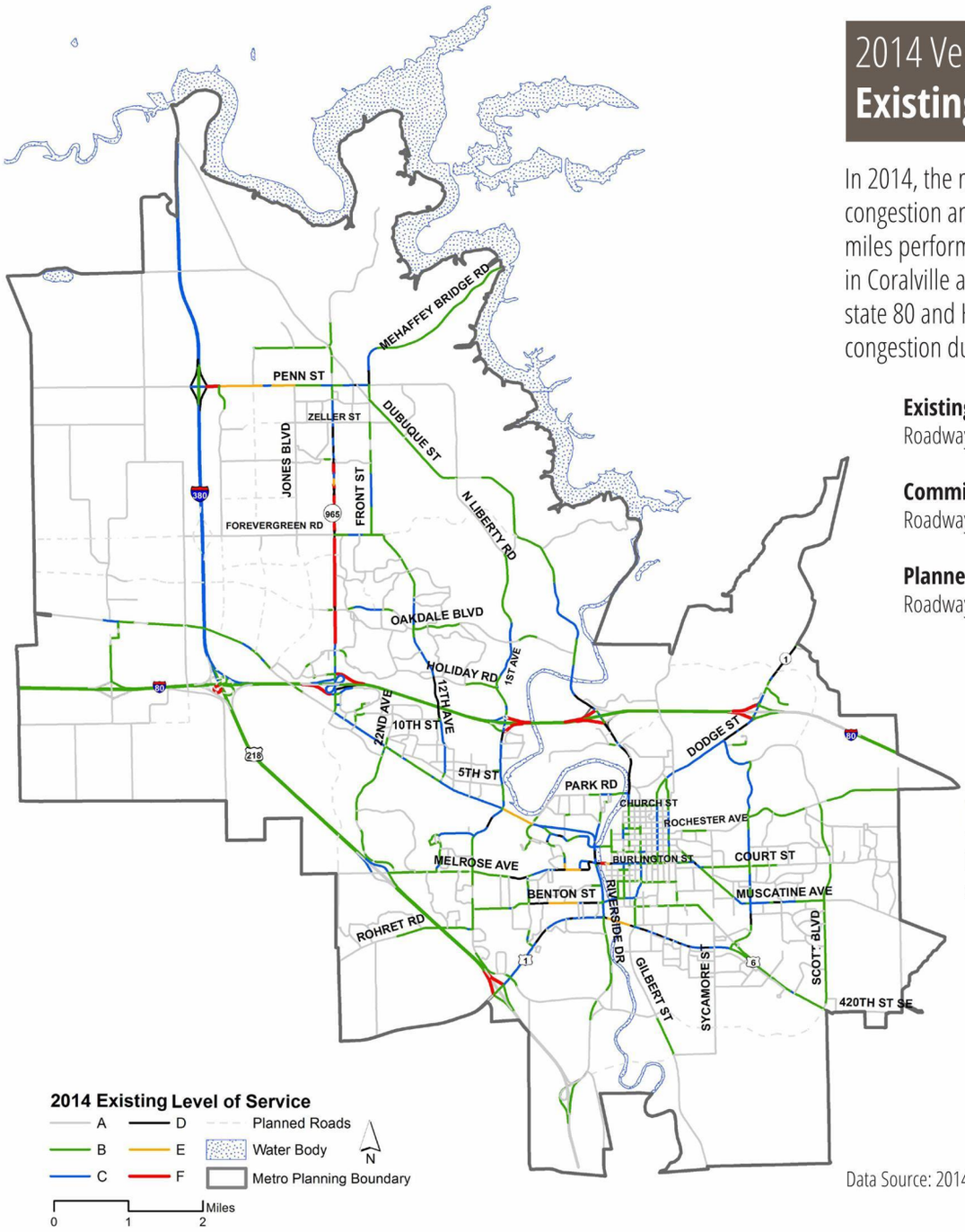
2014 Vehicular Level of Service
Existing Roadways

In 2014, the majority of roads in the metro area experience relatively little congestion and high levels of service during peak hours. Over 96.4% of road miles perform at LOS A, B, or C. That said, Coral Ridge Avenue and Highway 965 in Coralville and North Liberty, Penn Street in North Liberty, and some Interstate 80 and Highway 218 interchange ramps regularly experience significant congestion during peak hours performing at LOS E or F.

Existing Roads
Roadways that are built and operational as of 2014.

Committed Roads
Roadway projects that have programmed funding but are not yet built.

Planned Roads
Roadway projects that are not funded or built, but are anticipated for the future.



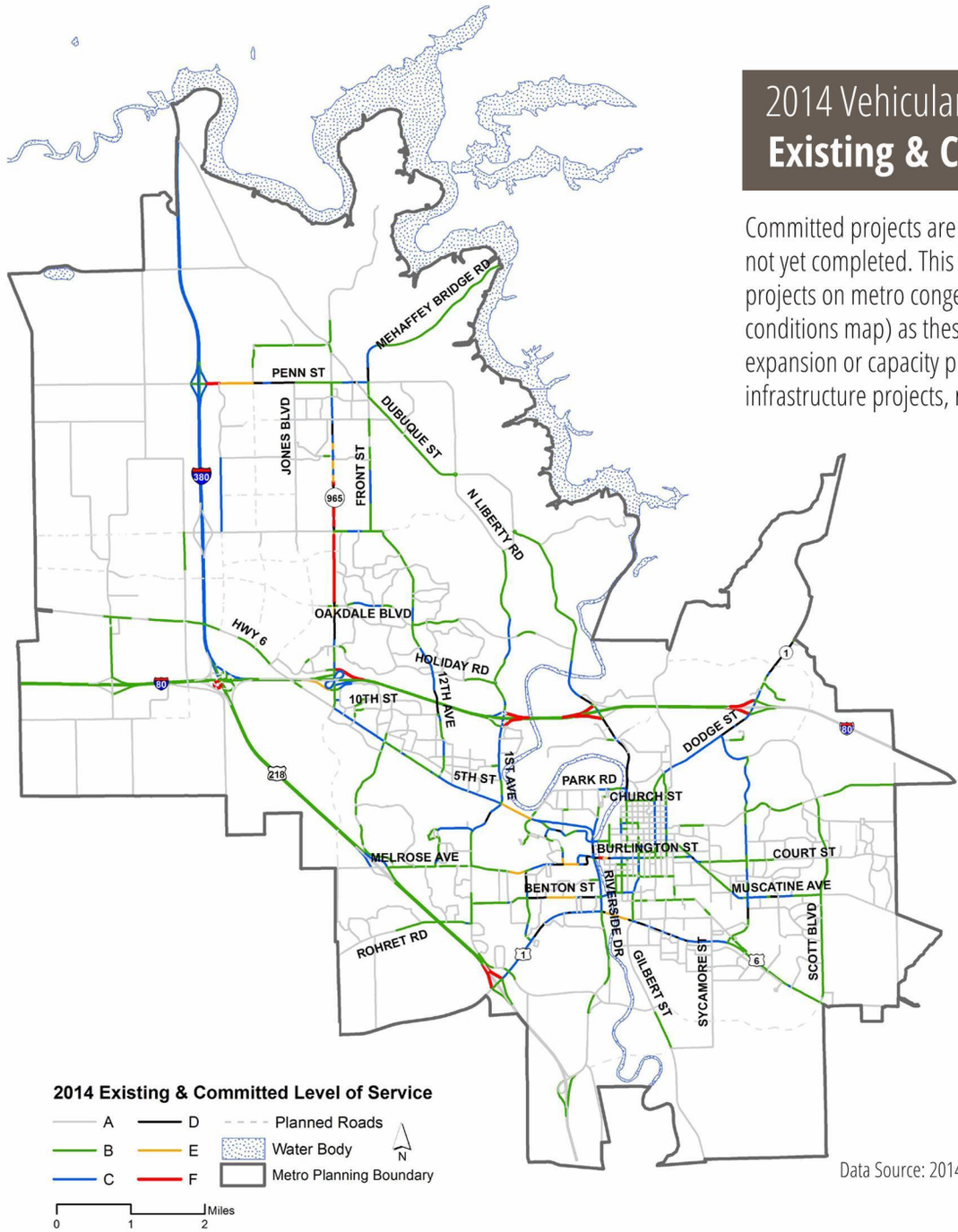
PEAK HOUR TRAFFIC CONGESTION

LOS is used to indicate areas where traffic congestion may be problematic during peak travel periods.

Data Source: 2014 MPOJC Travel Demand Model

2014 Vehicular Level of Service
Existing & Committed Roadways

Committed projects are those that had funds programmed in 2014, but were not yet completed. This map shows that the relative impact of these few projects on metro congestion is minimal (when compared to the "existing" conditions map) as these projects were not intended to be significant system expansion or capacity projects. For more information on proposed capital infrastructure projects, refer to pages 79-90.



Data Source: 2014 MPOJC Travel Demand Model

The MPOJC Travel Demand Model

The MPOJC has developed two traffic models in conjunction with the Iowa DOT's Office of Systems Planning. The "Base" model, calibrated to the year 2014, is used to represent exisiting traffic patterns. The "Future" model is designed to represent forecasted travel patterns in the year 2045.

The model is used to:

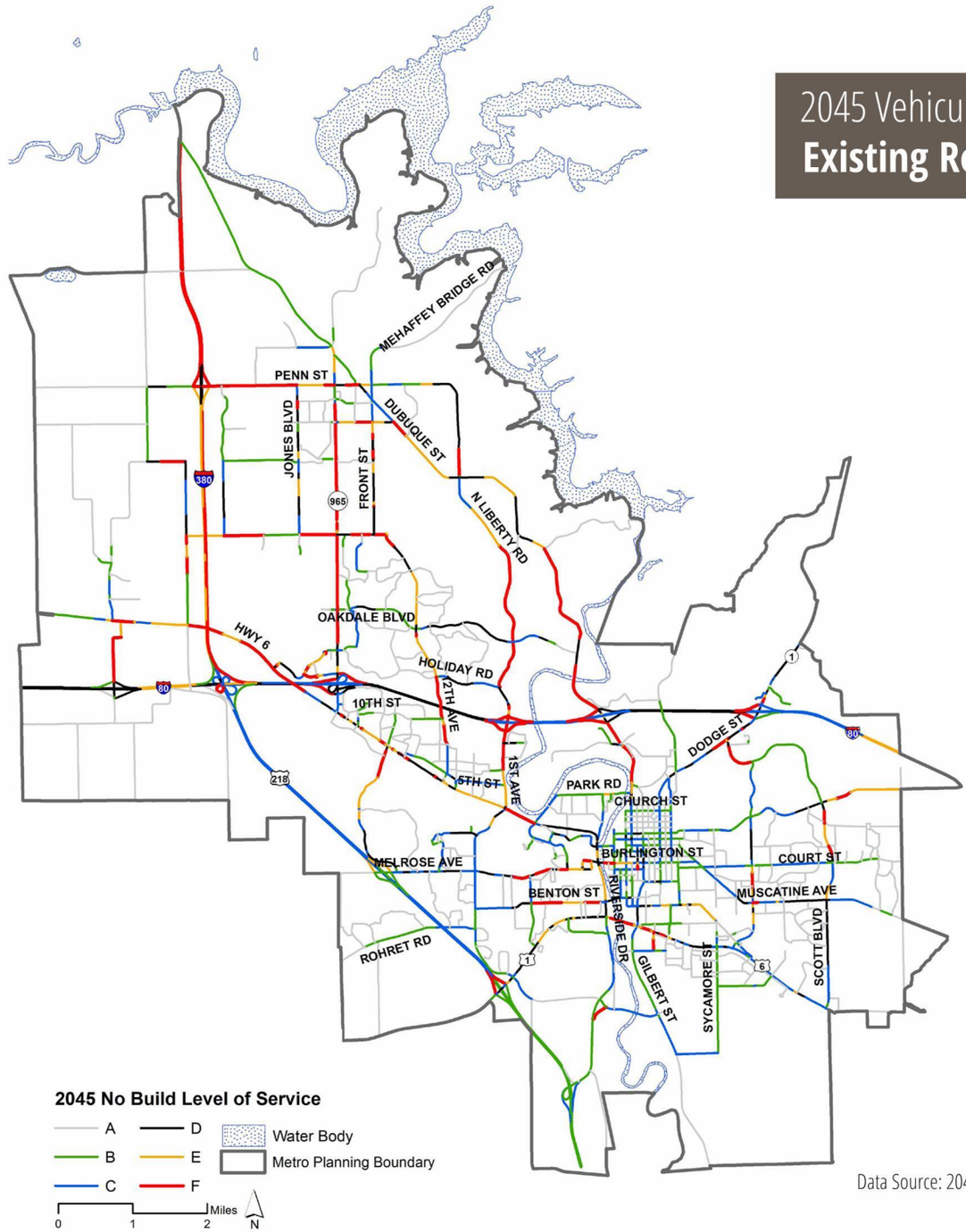
- Estimate average daily traffic;
- Identify future problem areas;
- Test various infrastructure and land use scenarios;
- Make recommendations about appropropriate roadway capacity;
- Provide travel time/emergency response time analysis;
- Evaluate changes in traffic patterns over time.

2045 Vehicular Level of Service
Existing Roadways: "No Build Scenario"

In the instance that no additional projects were funded in the metro area transportation network by the year 2045, the map shows that congestion would increase significantly.

During peak hours, it is estimated that 15.2% of major road mileage would be significantly congested during peak hours at LOS E or F. The corridors with the greatest impacts Interstate 380, Coral Ridge Avenue/ Highway 965 in Coralville/North Liberty, Penn Street in North Liberty, 1st Avenue, Highway 6, and 12th Avenue in Coralville, North Dubuque Street in the unincorporated portion of Johnson County, Dubuque Street, Burlington Street, Melrose Avenue, Benton Street, Highway 6, Scott Boulevard in Iowa City, and Ireland Avenue in Tiffin.

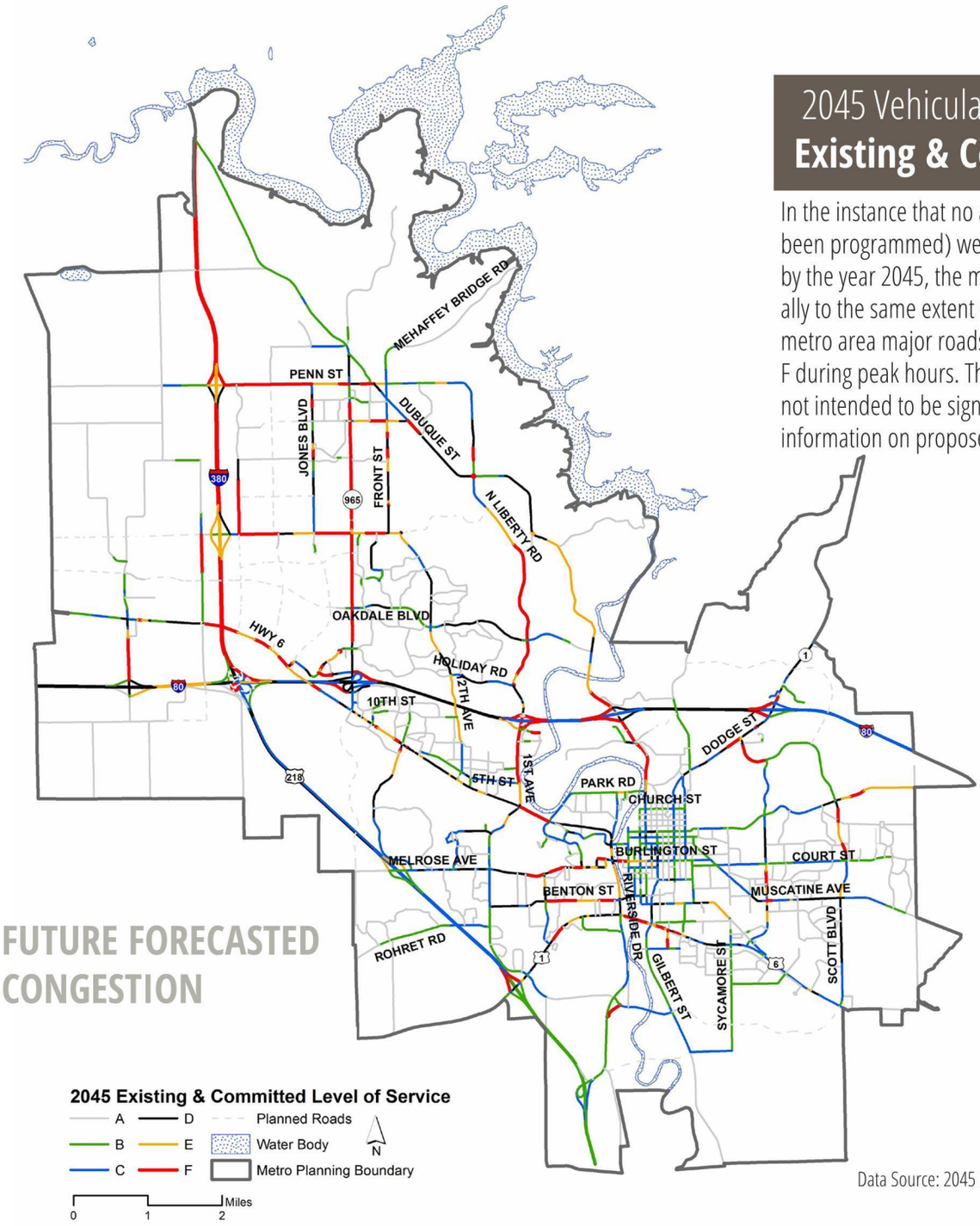
For more information on proposed capital infrastructure projects, refer to pages 79-90.



Data Source: 2045 MPOJC Travel Demand Model

2045 Vehicular Level of Service
Existing & Committed Roadways

In the instance that no additional road projects (outside of what has already been programmed) were developed in the metro area transportation network by the year 2045, the map shows that congestion would be extensive – virtually to the same extent as in the "no build" scenario. Approximately 13.4% of metro area major roads would experience significant congestion at LOS E or F during peak hours. This indicates that the current "committed" projects are not intended to be significant system expansion or capacity projects. For more information on proposed capital infrastructure projects, refer to pages 79-90.



FUTURE FORECASTED CONGESTION

Limitations of the Travel Demand Model

Traffic models are best used for general indications of traffic patterns.

Traffic forecasts are generated with the best information available, but no model software can predict future political, cultural, and economic decisions including:

- Local decisions related to annexation and zoning patterns;
- Private sector decisions on where to locate high traffic generation land uses;
- Cost of fuel;
- Individual decisions of preferred transportation mode.

Data Source: 2045 MPOJC Travel Demand Model

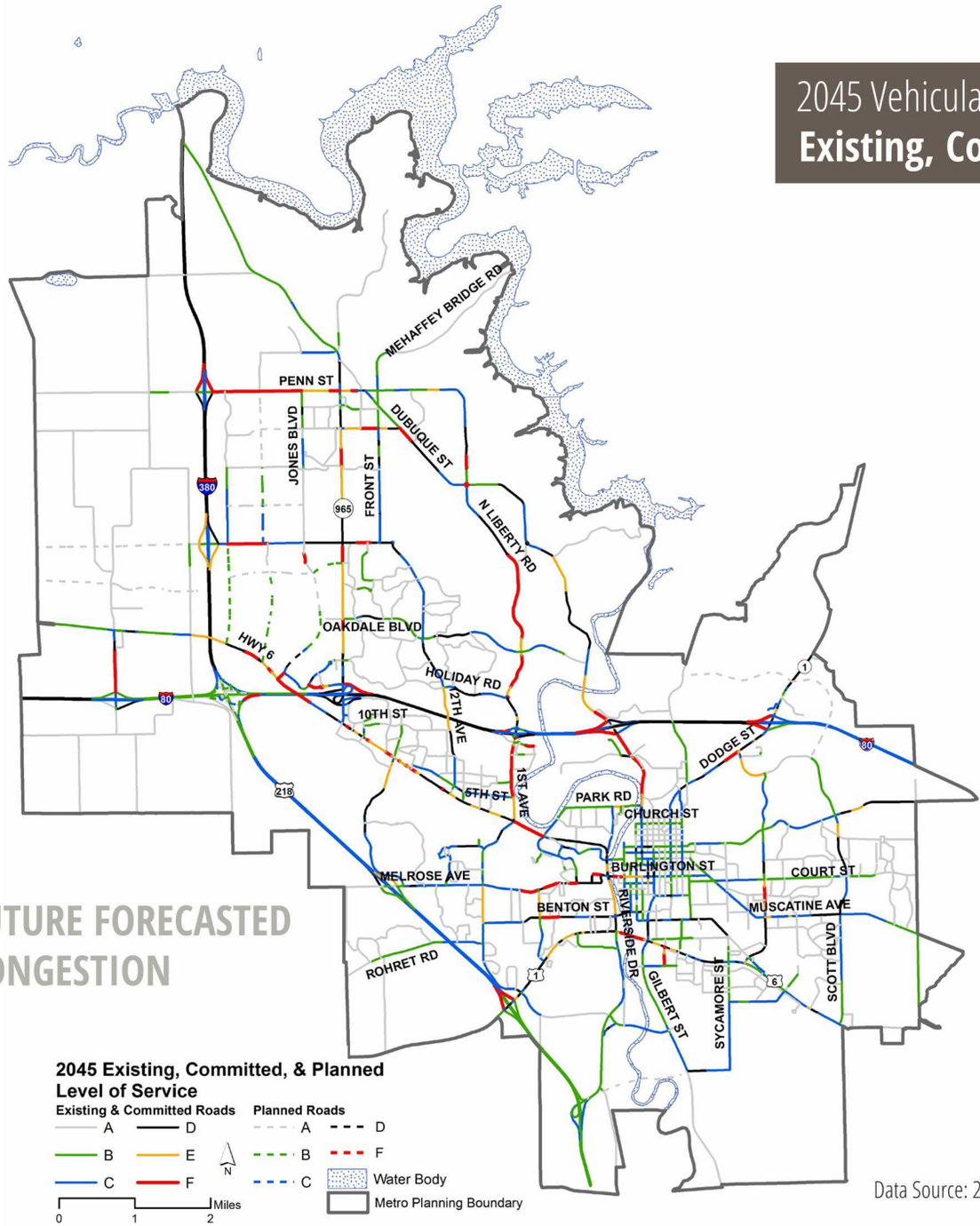
2045 Vehicular Level of Service
Existing, Committed, & Planned Roadways

If federal funds continue to be distributed to the metro area for investment in the transportation network as expected, and planned road/capacity projects are able to be completed, peak hour congestion in the metro area would be lessened to a degree (compared to a "no build" scenario). The increase shown on the map is due primarily to forecasted population growth.

Approximately 6.5% of major roads are expected to have significant congestion during peak hours by the year 2045 including the Coral Ridge Avenue / Highway 965 and Penn Street corridors, 1st Avenue and North Dubuque Street north of Interstate 80, portions of Highway 6 in Iowa City and Coralville, portions of Burlington Street, Melrose Avenue, Benton Street, Dodge Street and Scott Boulevard in Iowa City, Ireland Avenue north of Interstate 80, and multiple Interstate 80, Interstate 380, and Highway 218 interchange ramps.

For more information on proposed capital infrastructure projects, refer to pages 79-90.

FUTURE FORECASTED CONGESTION



Data Source: 2045 MPOJC Travel Demand Model

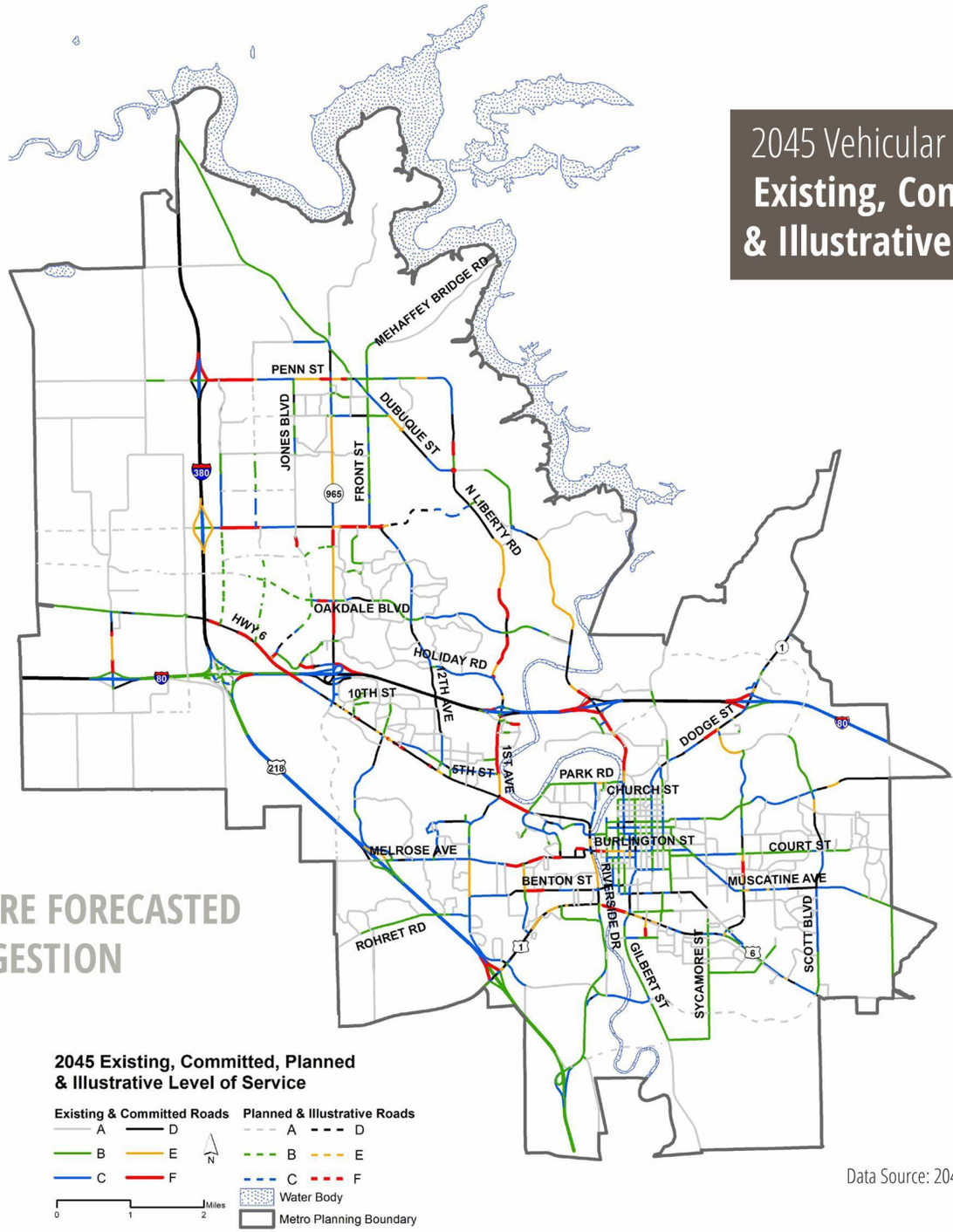
2045 Vehicular Level of Service
Existing, Committed, Planned, & Illustrative Roadways

Illustrative projects are those that do not currently have a funding source identified. These may be projects which did not score high enough to be including in the fiscally constrained list of projects, or those which have other non-federal funding sources identified. Although there are no funding sources currently identified for illustrative projects, metro area entities expect these will be completed by the year 2045.

If all planned projects, including illustrative, are completed by the year 2045 the metro area is still expected to experience congestion in the Coral Ridge Avenue / Hwy 965 and Penn Street corridors, 1st Avenue and North Dubuque Street north of Interstate 90, portions of Highway 6 in Iowa City and Coralville, portions of Burlington Street, Melrose Avenue, Benton Street, Dodge Street, and Scott Boulevard in Iowa City, Ireland Avenue north of Interstate 80 in Tiffin, and at multiple interstate interchanges.

For more information on proposed capital infrastructure projects, refer to pages 79-90.

FUTURE FORECASTED CONGESTION



Data Source: 2045 MPOJC Travel Demand Model

Successes 2012 - 2017

Between FY2012 and FY2017, over $15,560,000 in federal Surface Transportation Program funds were distributed through the MPO and invested in the metropolitan area road network. More than 88% of the funds were dedicated to improving the existing transportation network—this includes reconstruction, overlay projects, addition of travel lanes, spot improvements, and other investments in existing infrastructure. The remaining 12% of federal funding was allocated toward construction of new roadway connections. In addition to the major road projects listed to the left, the metro area has applied many creative stretagies to address transportation issues, including:

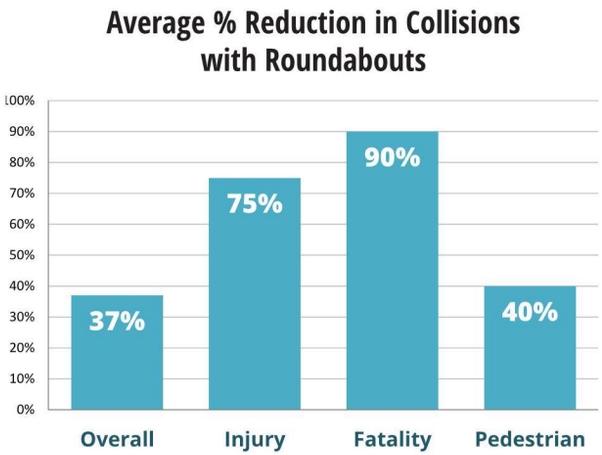
Road Diets / Lane Reductions: Several "road diets" were executed, funded, or scheduled for completion in the metro area, including South Sycamore Street, Lower Muscatine Road, Mormon Trek Boulevard, and First Avenue in Iowa City. A road diet, also referred to as a lane reduction or 4-to-3 lane conversion, reduces the number of travel lanes and/or effective width of the road in order to enhance safety, mobility, and access for all road users. Reclaimed space may be allocated for turn lanes, bus lanes, pedestrian refuge islands, bike lanes, sidewalks, bus shelters, parking, or landscaping.

Coordination of Traffic Signals: Traffic signals in the high-volume 2nd Street (Highway 6) corridor in Coralville were coordinated to reduce vehicular travel time and delays, especially during peak periods. Other metro area arterial corridors that had existing coordinated traffic signal systems received updated timings/coordination plans based on current traffic patterns.

One-Way to Two-Way Conversions: Sections of Governor and Washington Streets in Iowa City were reverted from one-way to two-way traffic. Current literature on urban street network design stresses that two-way streets are associated with higher levels of economic activity, improve livability in downtown areas, are more predictable for the travelling public, provide greater access to adjacent properties, and result in reduced VMTd and fuel consumption.

Examples of capital infrastructure projects completed 2012-2017 funded in-part through MPOJC

- First Avenue railroad grade separation project – Iowa City
- South Sycamore Street reconstruction and roundabout – Iowa City
- Continued expansion of Coral Ridge Avenue corridor from two to four lanes – Coralville
- Reconstruction of 1st Avenue including center turn lane – Coralville
- Expansion of the Penn Street corridor from two to four lanes – North Liberty
- Reconstruction of Highway 965 and signalization of Scales Bend intersection – North Liberty
- Extension of Ireland Avenue to Highway 6 - Tiffin
- Wide sidewalk constructed on north side of Melrose Avenue – University Heights
- Sunset Street wide sidewalk project – University Heights
- Mehaffey Bridge Trail – Johnson County
- Oakdale Boulevard extension to Dubuque Street – Johnson County / Coralville



Source: Federal Highway Administration and the Insurance Institute for Highway Safety.

The MPOJC Complete Streets Policy helps to ensure that road projects serve all users. Rendering of improvements to Highway 965 in North Liberty include improved safety accomodations for pedestrians at a busy intersection.

Rendering of a roundabout for the intersection of North Dubuque Street and North Liberty Road near the new Liberty High School.

Roundabouts: Ten new roundabouts were constructed in Coralville, Iowa City, and North Liberty in the last five years. Roundabouts are increasingly seen as safer and more efficient alternatives to traditional intersection traffic controls, such as stop signs or traffic signals. Roundabouts have been proven to reduce collision fatalities by 90 percent and injury collisions by 75 percent at intersections while also reducing vehicle delay.

On-street Bicycle Facilities: Dedicated bicycle lanes were installed on the Market Street and Jefferson Street one-way corridors, Sycamore Street, Camp Cardinal Boulevard, and Rohret Road, and are planned for Mormon Trek Boulevard, Clinton and Madison Streets, and First Avenue in Iowa City. Bicycle lanes are designated by a white stripe, a bicycle symbol, and signage that alerts road users that a portion of the roadway is for exclusive use by bicyclists. Bike lanes enable bicyclists to travel at their preferred speed and facilitate predictable behavior and movements between bicyclists and motorists.

Complementary Pedestrian/Bicycle Bridge or Underpass Facilities: Dedicated pedestrian/bicycle bridges were constructed at the Dubuque Street and Dodge Street interchanges with Interstate 80 in order to extend the trail network and improve access to recreational facilities and employment centers. A pedestrian underpass was constructed for Coral Ridge Avenue north of Holiday Road in Coralville, and for Highway 965 near Cherry Street in North Liberty. Pedestrian/bicycle bridge facilities were also added to the Butler Bridge in Iowa City, and the Mehaffey Bridge in Johnson County.

Road and Bridge Infrastructure Challenges

Aging Infrastructure: As the metropolitan region continues to grow, the transportation network must be continuously maintained and modernized. The emphasis on expansion of the road network during the last half of the twentieth century overlooked the resources necessary to replace and rehabilitate aging facilities and equipment. As population increases on the periphery of the metropolitan area, there is a higher demand placed on the roadway network, especially in outlying areas. The challenge is to provide adequate capacity to provide a reasonable LOS for vehicular traffic and keeping the system in a state of good repair.

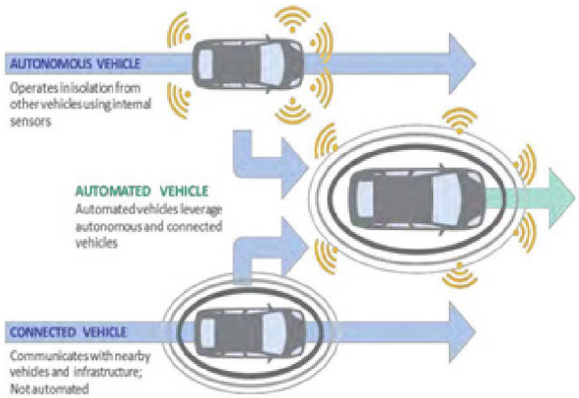
Projected Funding Shortfall: As the metropolitan region continues to grow, the transportation network must be continuously maintained and modernized. The need for repair, preservation, and capacity improvements continues to far outweigh available funding. This represents a major challenge in meeting the needs of our growing metropolitan area and keeping the system in a state of good repair. It is estimated that capital transportation infrastructure needs in the metro area 2017 - 2045 total nearly $550 million dollars, yet it is estimated that only $380 million in federal funds will be available, creating a shortfall of $168 million dollars (MPOJC Needs Assessment – 2016).

Safety: Improving the safety of our transportation network is an on-going mission. Overall collisions across the metro area have slightly decreased (-2%) or remained relatively steady. In recent years, even though VMT is increasing (comparing the five year periods 2006 – 2010 and 2011 – 20150. However, collisions related to distracted driving have increased 68%. One third of all distracted driving collisions are attributed to the use of electronic communication or other hand-held devices.

Another trend to be aware of is the increase in vehicle collisions with bicyclists and pedestrians in the metro area, 13% and 18% respectively. This may be partly attributed to the increase in distracted driving collisions and also due to the increase in bicycle and pedestrian commuting across the metro area. While collisions can and do cause serious injuries for vehicle passengers, bicyclists and pedestrians are amongst the most vulnerable of road users. It is important that attention be given to strategies that aim to reduce conflicts between modes of transportation.

The MPO will continue to support safety efforts with the update of the semi-annual metro collision report and the provision of transportation engineering studies as requested. Additional in-depth collision analysis on distracted driving, bicycle/pedestrian collisions, and other collisions trends (using the Iowa DOT's web-based SAVER application) could supplement these initiatives and help support safety planning. Public outreach/educational campaigns designed to educate on the dangers of distracted driving or to provide tips for safely negotiating the roadway near bicyclists and pedestrians would complement the MPO's safety planning services.

$168 million shortfall between metro area capital transportation needs and expected funding by the year 2045.



VMT Increasing: Metro area VMT has increased 7% from 2012 to 2015. While there are many factors that influence changes in VMT such as population growth and changes in the built environment, fuel prices also play a role. In the Midwest, the increase in VMT may be in-part attributed to a 31% decrease in Midwest fuel (US Energy Information Administration). As fuel prices decrease, there is less incentive for drivers to seek alternative forms of transportation, carpool, or make fewer trips.

Automated Vehicle Technologies: 94% of collisions in the United States can be attributed to choices drivers make behind the wheel (National Highway Traffic Safety Administration, 2017). Proponents of automated vehicle technologies tout them as the next revolution in roadway safety because they have the potential to greatly reduce driver errors and improve safety. In recent years there has been considerable advancement with automated vehicles technologies aimed to reduce collisions and improve the efficiency of our transportation network.

Automated vehicle technologies fall into two categories: connected (communication between vehicles) and autonomous (vehicle sensors) technologies. Connected technologies allow vehicles to communicate with other vehicles and the world around them – this concept is more about supplying useful information to a driver or a vehicle to help the driver make safer or more informed decisions. Examples of connected technologies include the ability to adjust to the pace of traffic, changes in speed, or maintaining position within the lane. Autonomous vehicle technologies range from self-parking or auto-collision avoidance (braking) technologies, to vehicles that do not require a human driver at all —completely relying on computer technology.

Automated vehicle technologies have the potential to significantly reshape the transportation landscape of the metro area. Iowa has taken a leadership role in assisting with the study of these technologies. In October 2016, the Iowa DOT agreed to transform the heavily used I-380 corridor, between the Cedar Rapids and Iowa City metro areas, into a test site for autonomous vehicle technologies. Such studies will help answer important questions about how transportation agencies prepare for and facilitate the adoption of automated vehicle technologies.

Climate Change:

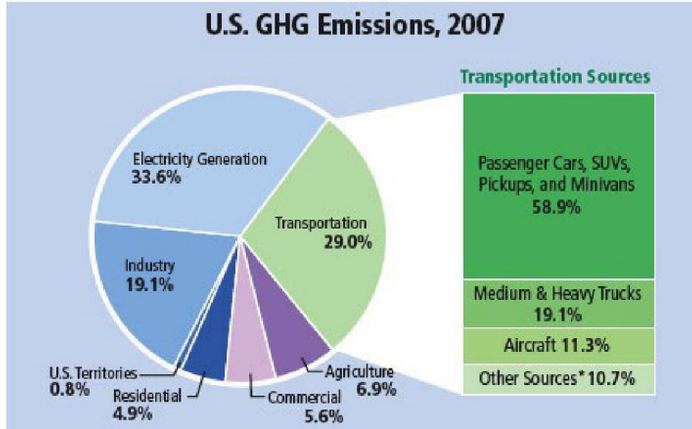
Climate change and an increase in global mean temperatures have been linked to greenhouse gas emissions. These emissions are responsible for almost all of the increase in greenhouse gases over the last 150 years, are primarily sourced from burning fossil fuels for electricity, heat, and transportation (International Panel on Climate Change, 2007). Climate change should be considered from two different perspectives relating to transportation – how climate change affects the transportation network and how transportation contributes to climate change.

How Climate Change Affects the Transportation Network:

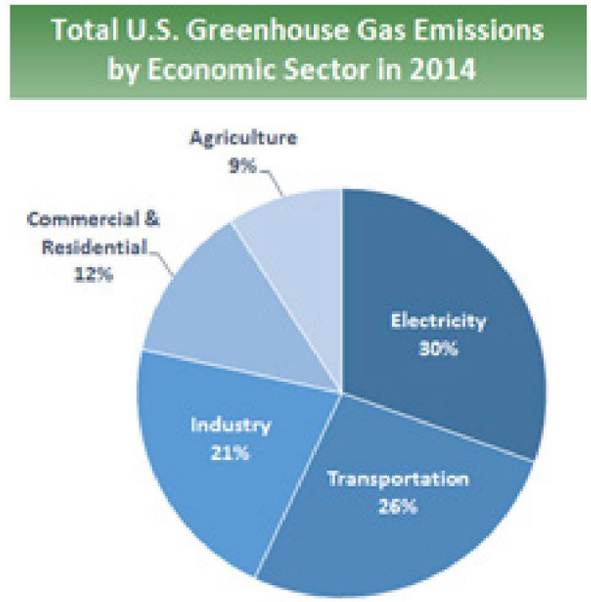
Climate change poses an immediate and long-term threat in terms of increased extreme weather events that affect the reliability and capacity of the local transportation network. Flooding results in road closures, damage to infrastructure, disruption of traffic patterns, and an increase in travel times and VMT as drivers seek alternate routes. The metropolitan area has been significantly affected by flooding of the Iowa River and its tributaries in recent years, including a major flood in 2008 and several smaller flood events in years following. The expectation is that the area will continue to experience both small and large scale flooding events. Metro transportation planners should seek strategies to make the transportation network more resilient against such events. The Iowa City Gateway Project, expected to be completed in FY2018, is an example of such a project. The project will raise Dubuque Street above the 100-year flood plain and reduce backwater caused by the current Park Road bridge to help reduce Dubuque Street closures and lessen the effect of future flooding events on the metro transportation network. As new and rehabilitated transportation systems are developed, climate change impacts should be routinely incorporated into planning for these systems.

How Transportation Contributes to Climate Change:

Transportation accounts for 27% of total U.S. GHG emissions (US National Climate Assessment, 2010). Transportation contributes to changes in the climate through the burning of fossil fuels and carbon emissions. Strategies aimed at reducing VMT such as improved land-use/transportation planning and coordination, more efficient land use and transportation network patterns, increased density of the built environment, and support of active transportation and vehicle sharing can reduce vehicular travel demand and result in decreased emissions. Increasing fuel efficiency in fossil-fuel dependent vehicles and seeking of alternative fuels that are renewable or burn cleaner should also be priorities for reducing the transportation sector's impact on GHG emissions and climate change.



Source: FHWA



U.S. Environmental Protection Agency (2014).
U.S. Greenhouse Gas Inventory Report: 1990-2014.

STRATEGIES:
IMPROVING THE ROAD AND BRIDGE NETWORK

	Economy	Environment	Quality of Life	System Preservation	Efficiency	Choice	Safety	Health	Equity
Preserve and maintain existing transportation infrastructure	✓			✓					✓

Use Pavement Condition Index (PCI) to help direct investments to areas of greatest need.

Consider revising grant funding criteria to prioritize system preservation.

Ensure investments are adequate for improving bridge and pavement conditions.

	Economy	Environment	Quality of Life	System Preservation	Efficiency	Choice	Safety	Health	Equity
Prioritize implementation of Complete Streets policy	✓	✓	✓			✓	✓	✓	✓

Ensure all projects meet minimum Complete Streets standards.

Provide educational and planning assistance to local governments to fully realize Complete Streets principles.

Approach every transportation project as an opportunity to improve transportation for all users.

Consider reallocating extra space in right-of-way for use by other modes.

Consider bicycle and pedestrian Level of Service (LOS) along with vehicular LOS in traffic studies.

Support policies and programs that improve pedestrian and bicycle safety and access.

	Economy	Environment	Quality of Life	System Preservation	Efficiency	Choice	Safety	Health	Equity
Identify and report on transportation safety issues			✓			✓	✓	✓	

Distribute bi-annual metro collision and countermeasures report.

Raise awareness of the dangers of distracted driving and walking.

Utilize multi-disciplinary safety teams to identify improvements in the right-of-way.

	Economy	Environment	Quality of Life	System Preservation	Efficiency	Choice	Safety	Health	Equity
Reduce traffic congestion and fuel consumption	✓	✓	✓		✓				

Support projects that reduce metropolitan area Vehicle Miles Traveled (VMT).

Encourage use of Intelligent Transportation Systems (ITS) to reduce congestion.

Include analysis of fuel consumption within capacity and Level of Service analysis.

Consider the installation of roundabouts as an alternative to traditional traffic control.

Promote policies and projects that encourage alternatives to single-occupancy vehicle travel.

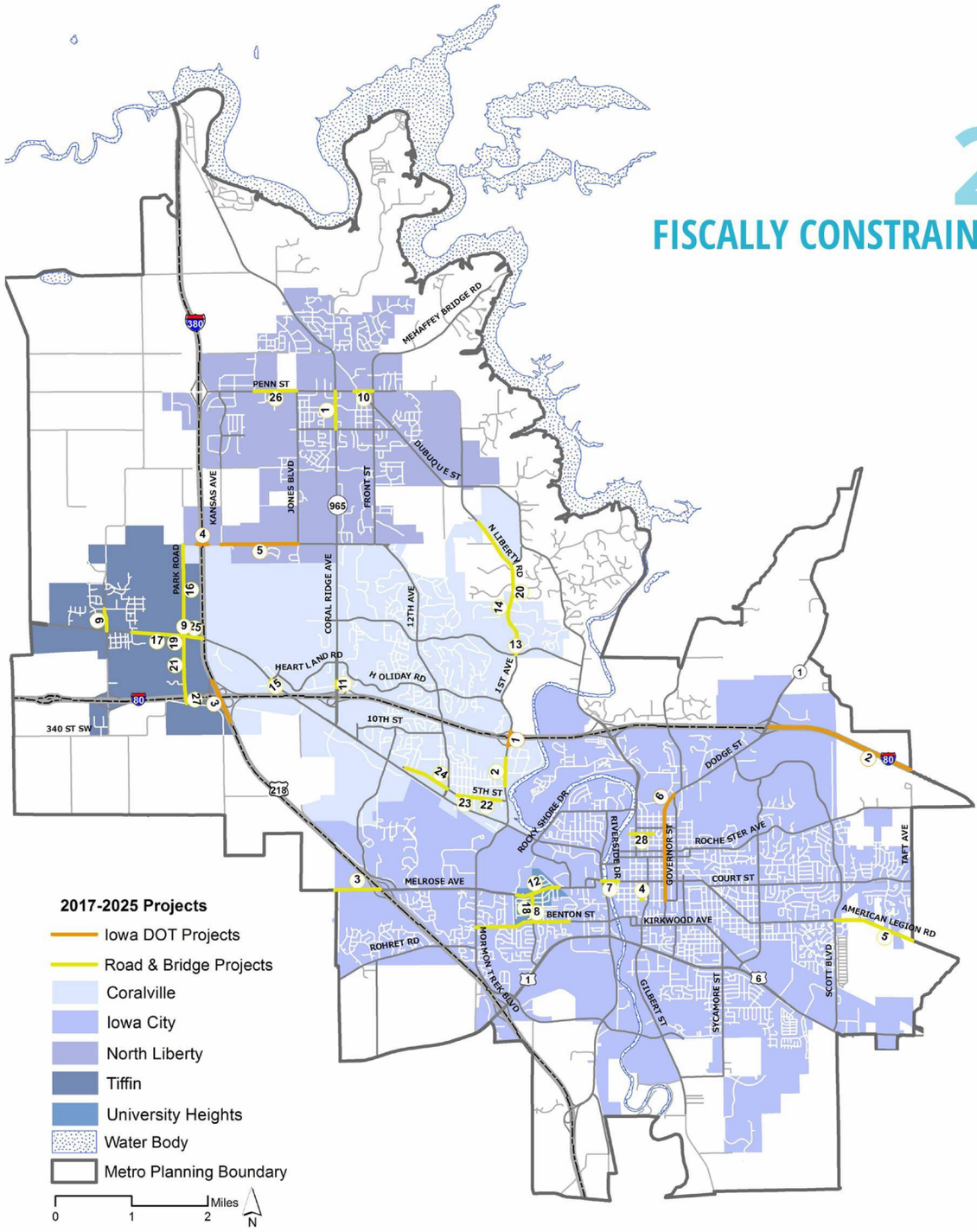
	Economy	Environment	Quality of Life	System Preservation	Efficiency	Choice	Safety	Health	Equity
Provide a transporation system that is resilient to natural hazards	✓		✓	✓			✓		

Evaluate potential impacts of extreme weather and other climate-related stressors.

Support projects that address risks due to flooding or other natural hazards.

Develop detour routing plans based on travel demand analysis.

2017-2025
FISCALLY CONSTRAINED ROAD AND BRIDGE PROJECTS



Capital infrastructure projects that did not make the fiscally-constrained approved list of projects (due to a lack of forecasted funding) are included in the Supporting Documents section of this plan. Projects descriptions and cost estimates for 2017-2025 road and bridge projects are provided on the following pages.

Fiscal constraint is a required component of long-range planning. This plan includes only those projects that can be realistically completed based on anticipated revenues.

The Urbanized Area Policy Board has approved the inclusion of the forthcoming capital infrastructure projects in the fiscally-constrained list of projects that become eligible to receive federal funding through the MPOJC. For more information on the process by which these projects were selected for inclusion in the LRTPn, please refer to the Financial Planning chapter on page 53.

FUTURE FORWARD
2045 LONG RANGE TRANSPORTATION PLAN

Fiscally Constrained Road & Bridge Projects 2017-2025

ID	Project Title	Project Description	$ Cost Estimate at Construction	Entity
1	**965 Phase 3 (FY18)**	Penn Street to Zeller Street. Final corridor improvements including utility relocations, water quality BMP's, curb & gutter and storm sewer system, landscaping, and trail	$5,000,000	North Liberty
2	**1st Ave from 6th St to 9th St (FY18)**	0.4 mile reconstruction of 1st Avenue between 6th Street and 9th Street	$9,500,000	Coralville
3	**Melrose Ave Improvements (FY20)**	Reconstruct Melrose Avenue between Highway 218 & city limits	$4,640,000	Iowa City
4	**Prentiss St Bridge Replacement (FY18)**	Reconstruct the Prentiss Street Bridge	$1,334,000	Iowa City
5	**American Legion Rd-Scott Blvd to Taft Ave (FY20)**	Reconstruct American Legion Road to urban standards	$9,048,000	Iowa City
6	**Roberts Ferry (FY18)**	Grade and pave street, install curb, gutter, and sidewalks or trails	$970,920	Tiffin
7	**Burlington & Madison Intersection Improvements (FY18)**	Reconstruct the intersection of Burlington and Madison Streets to add turn lanes on Madison Street, signal improvements and utility upgrades. This project also includes pavement improvements from Riverside Drive to Capitol Street.	$2,944,688	Iowa City
8	**Benton St Rehabilitation Project (FY21)**	PCC patching and HMA overlay of Benton Street from Mormon Trek Boulevard to Greenwood Drive including bike lanes and updating ADA curb ramps	$2,929,116	Iowa City
9	**Park Road and Hwy 6 Roundabout (FY18)**	Construct two-lane Roundabout at Intersection of Park Road and Hwy 6	$2,204,000	Tiffin
10	**Penn St Improvements - CRANDIC RR to Front St**	RR to N Front Street Operational improvments including widening, turn lanes, and signals or roundabout, with wide sidewalk	$2,320,000	North Liberty
11	**Traffic Signal Improvements**	Fiber optic installation, traffic signal upgrades, and signal coordination on Coral Ridge Avenue and 1st Avenue	$1,450,000	Coralville

Projects highlighted in green have funding programmed in the Transportation Improvement Program (TIP).

Fiscally Constrained Road & Bridge Projects 2017-2025

ID	Project Title	Project Description	$ Cost Estimate at Construction	Entity
12	**Melrose Ave Preventative Maintenance**	Pavement repair within city limits	$116,000	University Heights
13	**1st Ave & Oakdale Blvd Intersection**	Reconstruction of the 1st Avenue & Oakdale Boulevard. intersection as either a roundabout or turn lanes with traffic signals, includes 1st Avenue to southerly E. Grantview Drive intersection	$2,900,000	Coralville
14	**1st Ave North Phase 1**	0.7 mile reconstruction of 1st Ave. between southerly E. Grantview Dr. and Meade Dr. from rural to urban cross section	$4,060,000	Coralville
15	**Hwy 6/Jones Blvd Intersection**	Traffic signalization	$319,000	Coralville
16	**Park Rd (Hwy 6 to Forevergreen Rd)**	Grade & Pave Street, Install Curb, Gutter and Sidewalks or Trails	$8,700,000	Tiffin
17	**Hwy 6 (Stephans St to Park Road)**	Grade & Pave Street, Install Curb, Gutter and Sidewalks or Trails and Install Center Turn Lane	$2,320,000	Tiffin
18	**Sunset Street Preventative Maintenance and Crosswalk Improvements**	Pavement repair between Benton Street and Melrose Avenue, and Oakcrest Avenue crosswalk visibility improvements	$116,000	University Heights
19	**Park Road (Hwy 6 south to Clear Creek Bridge) Phase One**	Grade & Pave Street, Install Curb, Gutter and Sidewalks or Trails	$1,160,000	Tiffin
20	**1st Ave North Phase 2**	0.9 mile reconstruction of 1st Avenue (and North Liberty Road) between Meade Drive and the future Forevergreen Road Extension	$5,220,000	Coralville
21	**Park Rd (Bridge to I-80) Phase Two**	Grade & Pave Street, Install Curb, Gutter and Sidewalks or Trails	$1,160,000	Tiffin
22	**5th St Reconstruction #1**	0.35 mile reconstruction of 5th Street between 2nd Ave. and 6th Ave.	$1,522,500	Coralville
23	**5th Street Reconstruction #2**	0.25 mile reconstruction of 5th Street between 6th Ave. and 10th Ave.	$1,087,500	Coralville
24	**5th St Reconstruction #3**	0.6 mile reconstruction of 5th Street between 12th Ave. and 20th Ave.	$2,610,000	Coralville

Fiscally Constrained Road & Bridge Projects 2017-2025

ID	Project Title	Project Description	$ Cost Estimate at Construction	Entity
25	**Hwy 6 (Park Road to I-380)**	Grade & Pave Street, Install Curb, Gutter and Sidewalks or Trails	$1,160,000	Tiffin
26	**Penn St Widening**	Alexander Way to Jones Boulevard. Reconstruct and widen existing roadway, with wide sidewalk.	$2,162,240	North Liberty
27	**Park Rd (1-80 to 340th)**	Grade & Pave Street, Install Curb, Gutter and Sidewalks or Trails	$406,000	Tiffin
28	**Fairchild Brick Street Reconstruction**	This project will reconstruct multiple blocks of brick street on Fairchild Street and will include complete removal of the existing pavement, salvage of existing bricks, and construction of new a 7 inch concrete pavement base with asphalt setting bed and brick surface	$377,000	Iowa City
		Total Costs 2017 - 2025	$77,736,964	
		Estimated Funding	$78,046,421	
		Remaining	$309,457	

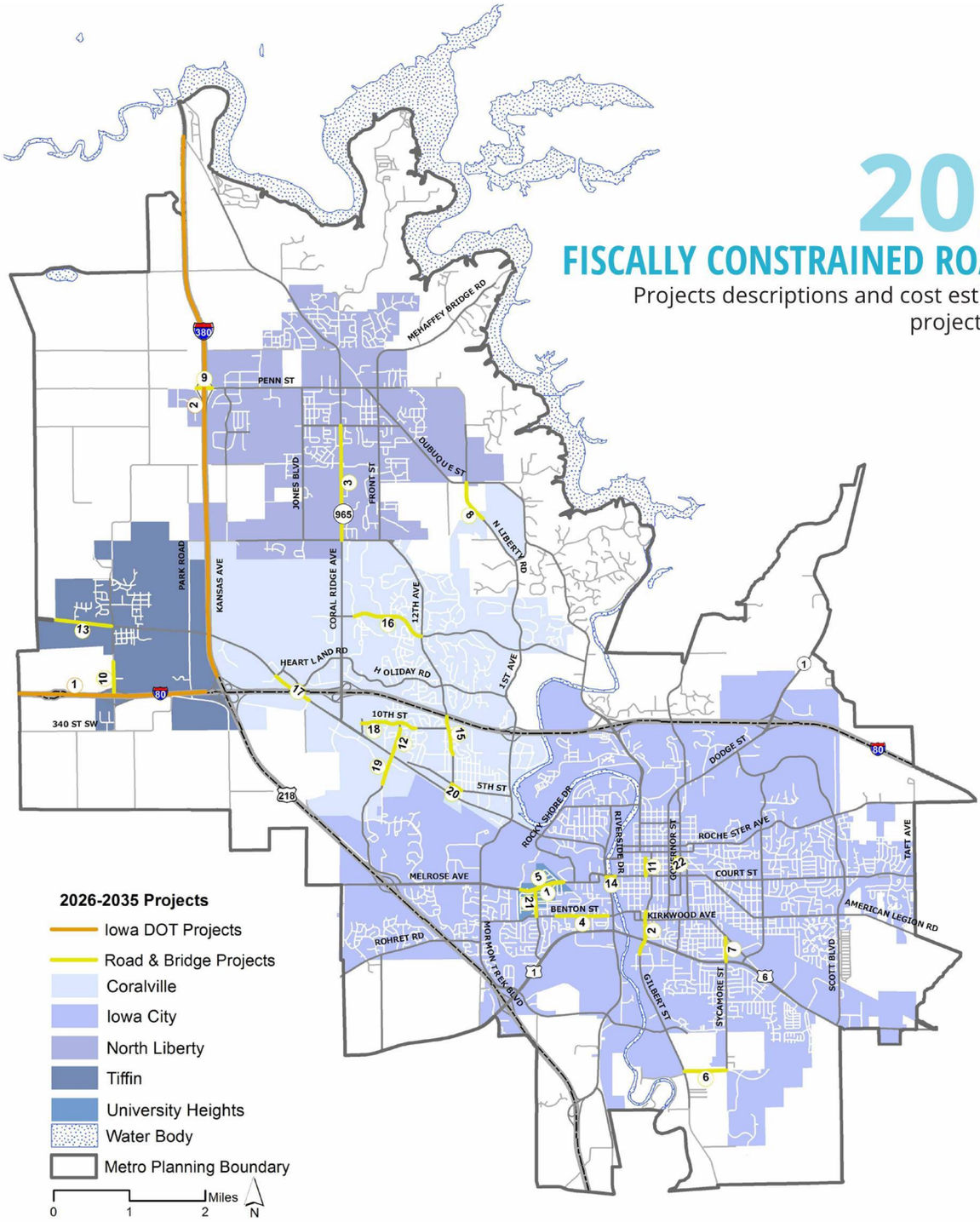
Fiscally Constrained Iowa DOT Projects 2017 - 2025

ID	Project Title	Project Description	$ Cost Estimate at Construction	Entity
1	**Reconfigure I-80/1st Ave Interchange**	Upgrade to Diverging Diamond Interchange	$27,161,400	DOT
2	**I-80 6-Lane Project (East)**	Six lane I-80 from east of Iowa Hwy 1 to eastern MPO boundary	$18,560,000	DOT
3	**I-80/I-380/Highway 218 Interchange**	Reconfiguring I-80/I-380/Hwy218 interchange including I-380 six lane project from I-80 to Forevergreen Road	$348,000,000	DOT
4	**I-380 and Forevergreen Interchange**	Build interchange	$19,720,000	DOT
5	**Forevergreen Rd Reconstruction**	Kansas Avenue to Jones Blvd. Replace rural section roadway with widened urban section, with trail. In conjunction with IDOT and interchange project	$5,800,000	DOT / North Liberty
6	**Dodge St - Governor to Bowery**	Street reconstruction and storm sewer improvements. This is a joint project with Iowa City	$12,425,920	DOT / Iowa City
		Total Costs 2017 - 2025	$431,667,320	
		Estimated Funding	$431,667,320	
		Remaining	$0	

2026-2035

FISCALLY CONSTRAINED ROAD AND BRIDGE PROJECTS

Projects descriptions and cost estimates for 2026-2035 road and bridge projects are provided on the following pages.



FUTURE FORWARD
2045 LONG RANGE TRANSPORTATION PLAN

Fiscally Constrained Road & Bridge Projects 2026-2035

ID	Project Title	Project Description	$ Cost Estimate at Construction	Entity
1	**Melrose Ave East Improvements**	Streetscape, storm water and intersection improvements, utility relocations and construction of bike lanes east of Sunset St. (0.35 mile)	$912,000	University Heights
2	**South Gilbert St Improvements**	Reconstruction from Benton Street to Stevens Drive. This project does not include improvements to the Gilbert St. / Highway 6 intersection.	$6,575,520	Iowa City
3	**965 Phase 4-7**	Zeller Street to Forevergreen Road. Final corridor build-out including utilities, 5-lane build out, storm sewer system, landscaping & trail	$15,200,000	North Liberty
4	**Benton St - Orchard to Oaknoll**	This is a capacity related improvement identified by the Arterial Street Plan	$7,828,000	Iowa City
5	**Melrose Ave Preventative Maintenance**	Pavement repair within city limits	$152,000	University Heights
6	**Sycamore St - East/West Leg from "L" to South Gilbert Street**	This project will reconstruct Sycamore Street to arterial standards using the Complete Streets Policy; This phase will be the east-west leg of Sycamore Street	$4,620,800	Iowa City
7	**Sycamore St - Highway 6 to Highland**	This project involves additional lanes to improve capacity and storm sewer improvements	$1,140,000	Iowa City
8	**1st Ave North Phase 3**	0.9 mile reconstruction of North Liberty Rd. between future Forevergreen Rd. Extension and Dubuque St.	$6,840,000	Coralville
9	**I-380/Penn St Overpass**	Widen bridge deck over I-380 for additional lanes plus bike/ped facility	$10,640,000	North Liberty
10	**Ireland Ave (I-80 to Interstate RR)**	Grade & Pave Street, Install Curb, Gutter and Sidewalks or Trails	$2,280,000	Tiffin
11	**Linn St Reconstruction - Burlington St to Iowa Ave**	Part of the downtown streetscape master plan, this project reconstructs Linn St from Burlington St to Iowa Ave. Project also improves sidewalk pavement, addresses critical update to water main, replaces and relocates storm sewer between Washington & Iowa	$2,941,200	Iowa City
12	**22nd Ave Reconstruction**	0.45 mile reconstruction of 22nd Avenue between Hwy 6 and 10th St.	$2,565,000	Coralville

Fiscally Constrained Road & Bridge Projects 2026-2035

ID	Project Title	Project Description	$ Cost Estimate at Construction	Entity
13	**Hwy 6 (Ireland Ave to West City Limits**	Grade & Pave Street, Install Curb, Gutter and Sidewalks or Trails and Install Center Turn Lane	$3,040,000	Tiffin
14	**Burlington St Bridge - South**	This project is a replacement of the Burlington Bridge over the Iowa River that will also increase the number of lanes	$24,320,000	Iowa City
15	**12th Ave Reconstruction #2**	0.5 mile reconstruction of 12th Avenue between 8th St. and Interstate 80	$2,850,000	Coralville
16	**Oakdale Blvd Reconstruction #1**	1 mile reconstruction of Oakdale Boulevard between 12th Ave. and Crosspark Rd.	$5,700,000	Coralville
17	**Highway 6 - Deer Creek Rd to Jones Blvd**	0.52 mile reconstruction of Hwy 6 between Deer Creek Rd. and Jones Blvd., conversion from rural to urban cross section	$7,904,000	Coralville
18	**10th St Reconstruction #2**	0.75 mile reconstruction of 10th Street between 20th Ave. and 25th Ave.	$4,275,000	Coralville
19	**Camp Cardinal Blvd Reconstruction #1**	0.38 mile reconstruction of Camp Cardinal Blvd. between Hwy 6 and Clear Creek	$2,888,000	Coralville
20	**5th St Reconstruction #4**	0.15 mile reconstruction of 5th Street between 10th Ave. and 12th Ave.	$380,000	Coralville
21	**Sunset St Preventative Maintenance**	Pavement repair between Benton St. and Melrose Ave.	$152,000	University Heights
22	**Iowa Ave Culvert Repair**	This project will repair a box culvert that carries Ralston Creek under Iowa Ave.	$528,960	Iowa City
		Total Costs 2026 - 2035	$113,732,480	
		Estimated Funding	$115,125,947	
		Remaining	$1,393,467	

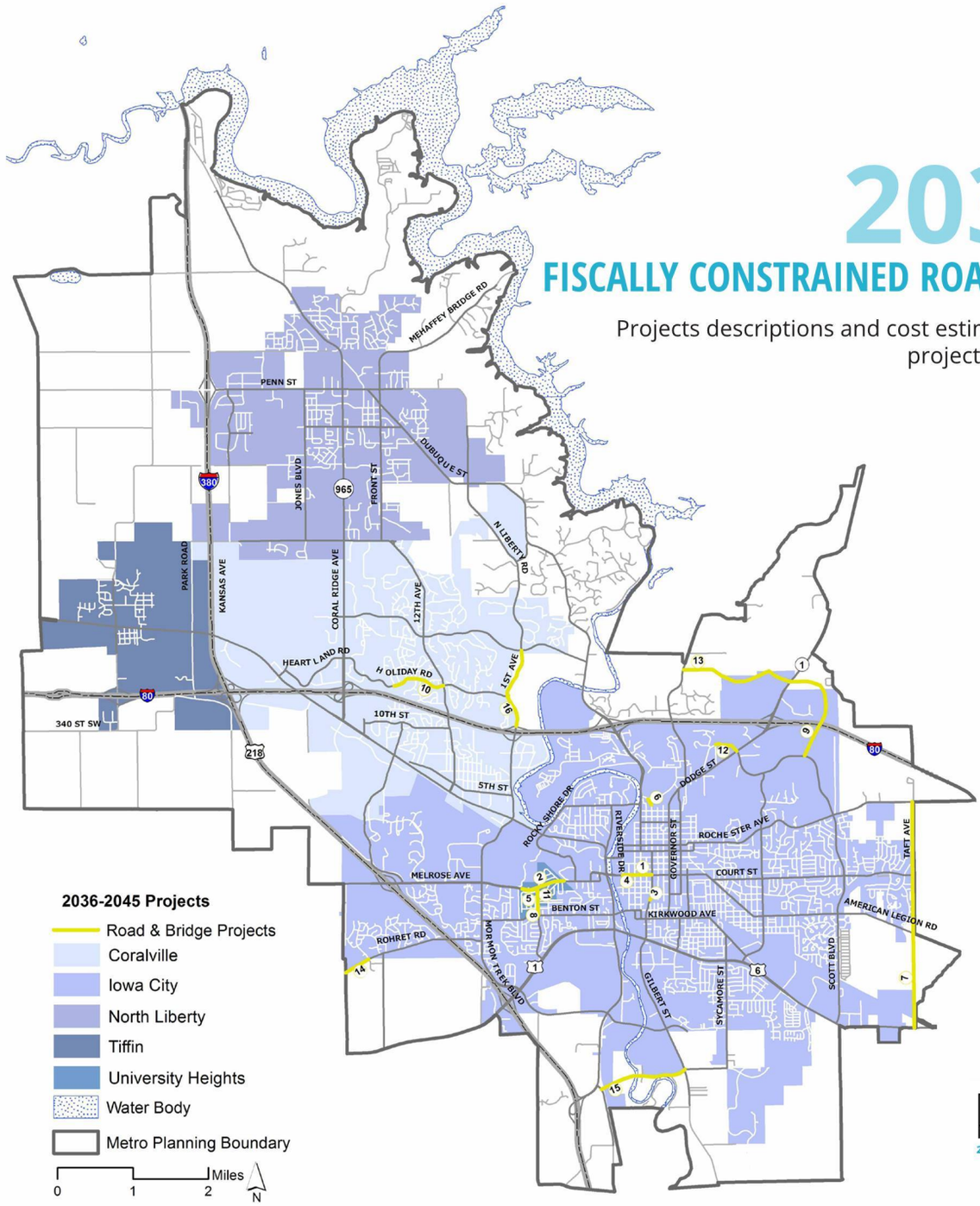
Fiscally Constrained Iowa DOT Projects 2026 - 2035

ID	Project Title	Project Description	$ Cost Estimate at Construction	Entity
7	**I-80 6-Lane Project (West)**	Six lane I-80 from 80/380 west to the western MPO boundary	$88,800,000	DOT
8	**I-380 6 Lane Project (North)**	Six lane I-380 from North of Forevergreen Rd to the North MPO boundary	$88,800,000	DOT
		Total Costs 2026 - 2035	$177,600,000	
		Estimated Funding	$177,600,000	
		Remaining	$0	

2036-2045

FISCALLY CONSTRAINED ROAD AND BRIDGE PROJECTS

Projects descriptions and cost estimates for 2036-2045 road and bridge projects are provided on the following page.



FUTURE FORWARD
2045 LONG RANGE TRANSPORTATION PLAN

Fiscally Constrained Road & Bridge Projects 2036-2045

ID	Project Title	Project Description	$ Cost Estimate at Construction	Entity
1	**Burlington St Median**	Construct the Burlington Street median from Gilbert Street to Madison Street. Project includes relocation of water and sewer utilities. This project will require a traffic signal preemption system. (Part of the Riverfront Crossings amendment to City- URA).	$7,342,080	Iowa City
2	**Melrose Ave Preventative Maintenance**	Pavement repair within city limits	$192,000	University Heights
3	**Gilbert St IAIS Underpass**	This project relocates the sidewalks of the Gilbert St. underpass at the IAIS Railroad. The sidewalks are moved further from the street and existing erosion problems are addressed.	$627,840	Iowa City
4	**Traffic Signal Pre-Emption System**	This project will install a city-wide Geographic Information System based traffic signal pre-emption system for emergency vehicles. This system is necessary if the Burlington St Median Project is constructed between Madison St and Gilbert St.	$2,344,320	Iowa City
5	**Melrose Ave West Improvements**	Streetscape and storm water improvements, utility relocations and construct bike lanes west of Sunset St. (0.2 mile)	$960,000	University Heights
6	**North Gilbert St Paving**	This project will reconstruct the 900 block of North Gilbert Street to improve the pavement form a chip seal to concrete pavement with curbs, gutters, and sidewalks.	$1,426,560	Iowa City
7	**Taft Ave**	Herbert Hoover Hwy to 420th Street.	$33,406,080	Iowa City
8	**Sunset St Improvements**	Streetscape and storm water improvements, utility relocations and construct bike lanes south of Melrose Ave. (0.35 mile)	$768,000	University Heights
9	**Oakdale Blvd - Highway 1 to Scott Blvd**	This project would construct an extension north across I-80 to a new intersection with Iowa Hwy 1.	$28,800,000	Iowa City
10	**Holiday Rd Reconstruction #2**	0.8 mile reconstruction of Holiday Road between 12th Ave. and Parkway Dr.	$5,760,000	Coralville
11	**Sunset St Preventative Maintenance**	Pavement repair between Benton St. and Melrose Ave.	$192,000	University Heights

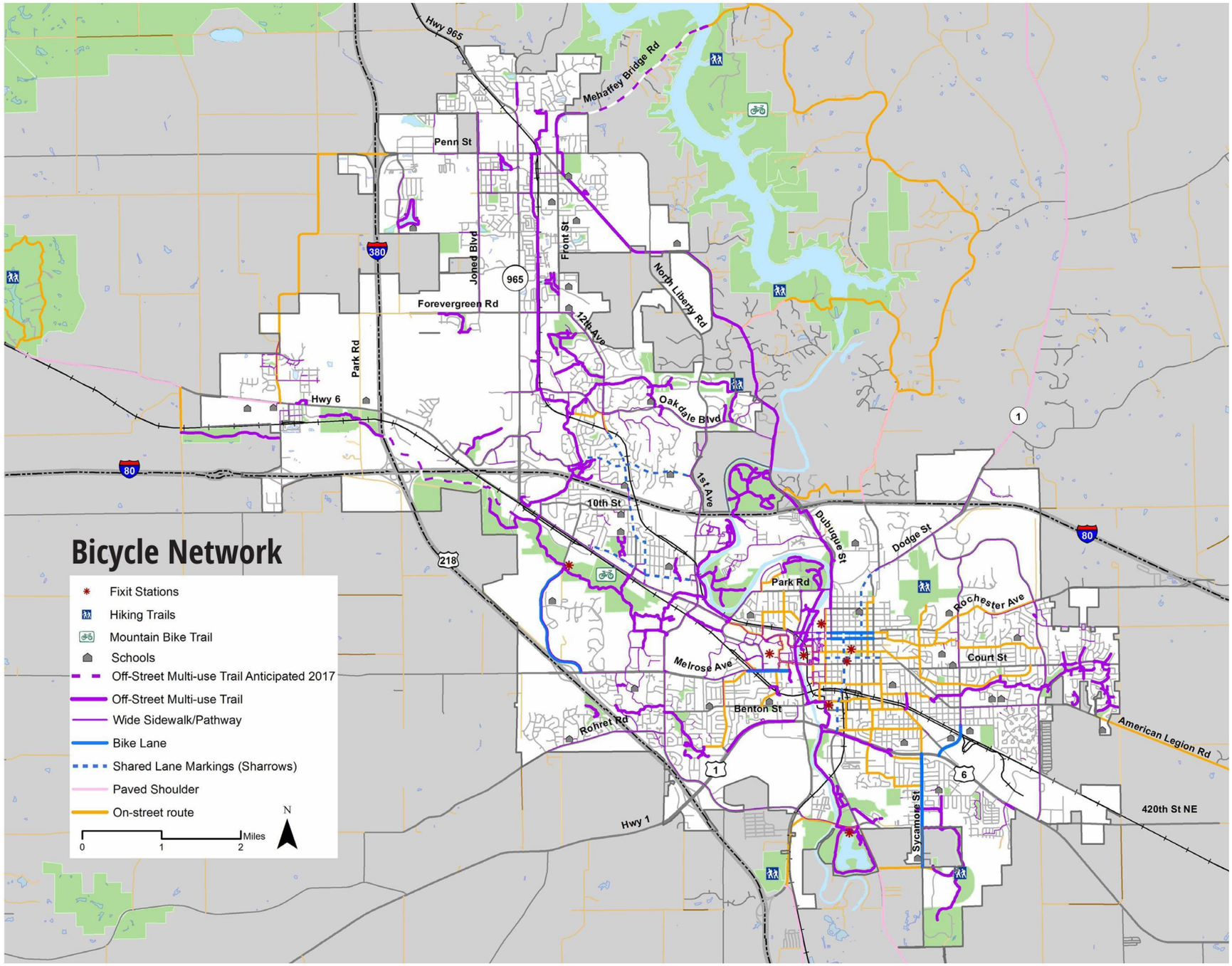
Fiscally Constrained Road & Bridge Projects 2036-2045

ID	Project Title	Project Description	$ Cost Estimate at Construction	Entity
12	**Dubuque Rd - Bristol to Dodge**	Reconstruct and upgrade to urban cross sections.	$2,570,880	Iowa City
13	**Oakdale Blvd - Highway 1 to Prairie du Chien**	This project would construct Oakdale Blvd from Hwy 1, west to Prairie Du Chien Road.	$15,820,800	Iowa City
14	**Rohret Rd - Lake Shore to City Limits**	Project will reconstruct Rohret Rd to urban standards.	$3,480,960	Iowa City
15	**South Arterial and Bridge - US 218 to Gilbert St**	Construction of a south arterial street and bridge over the Iowa River, connecting from Old Hwy 218/US 218 interchange on the west side of the Iowa River to Gilbert Street/Sycamore 'L' intersection .	$30,695,040	Iowa City
16	**1st Ave Reconstruction**	1.1 mile reconstruction of 1st Avenue between Interstate 80 and Oakdale Blvd.	$10,560,000	Coralville
		Total Costs 2036-2045	$144,946,560	
		Estimated Funding	$145,028,790	
		Remaining	$82,230	

Fiscally Constrained Iowa DOT Projects 2036 - 2045

ID	Project Title	Project Description	$ Cost Estimate at Construction	Entity
		Total Costs 2036 - 2045	$0	
		Estimated Funding	$0	
		Remaining	$0	

BICYCLE & PEDESTRIAN NETWORK


Bicycle Network
Fixit Stations
Hiking Trails
Mountain Bike Trail
Schools
Off-Street Multi-use Trail Anticipated 2017
Off-Street Multi-use Trail
Wide Sidewalk/Pathway
Bike Lane
Shared Lane Markings (Sharrows)
Paved Shoulder
On-street route
N
0
1
2
Miles
Hwy 965
Mehaffey Bridge Rd
Penn St
Joned Blvd
Front St
North Liberty Rd
Forevergreen Rd
12th Ave
Park Rd
Hwy 6
Oakdale Blvd
1st Ave
10th St
Dubuque St
Dodge St
Park Rd
Rochester Ave
Court St
Melrose Ave
Benton St
Rohret Rd
American Legion Rd
420th St NE
Hwy 1
Sycamore St
380
965
80
218
1
6

Bicycle and Pedestrian

Vision

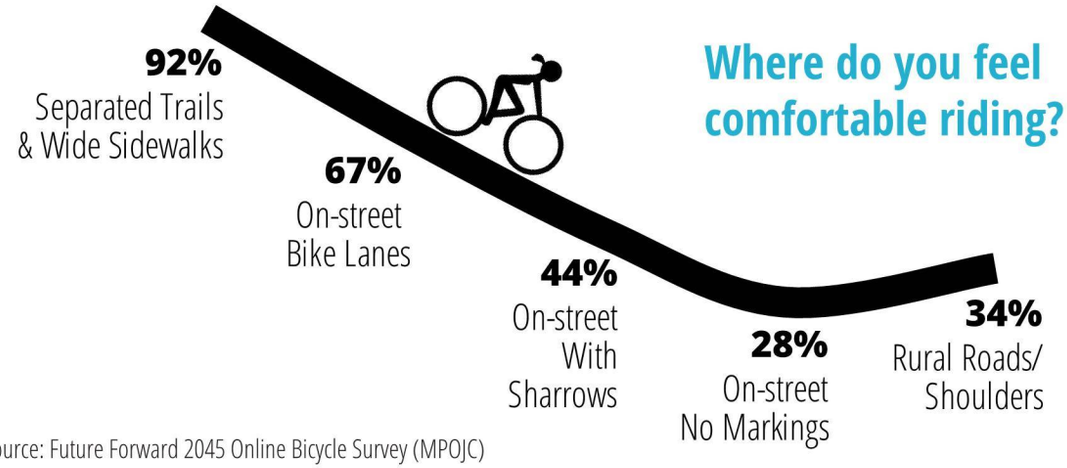
To create an accessible, well coordinated bicycle and pedestrian network that allows people to safely bike and walk to community destinations and to meet their daily needs.

MPOJC and the Bicycle and Pedestrian Network

MPOJC staff coordinate bicycle and pedestrian planning within the urbanized area, including multi-use trails and other bike and pedestrian facilities, and assist communities with transportation grant applications for state and federal funds.

The MPOJC Regional Trails and Bicycling Committee (RTBC) brings together representatives from each MPOJC entity and bicycle advocacy groups to plan for improvements to the trail network and to make recommendations on metropolitan bicycle and pedestrian issues, including priorities for new infrastructure and policies such as the MPOJC Complete Streets Policy (adopted 2015). As part of a continuing effort to encourage bicycling, MPOJC prints an annual Metro Area Trails Map, illustrating all on-street bike accommodations and off-street multi-use trails.

In 2009, MPO member entities adopted a Metro Bicycle Master Plan, which set a foundation for creating a safe and accessible bicycle network, including targeted educational programs and other program policy recommendations. In 2017, Iowa City embarked upon a stand alone bicycle master plan.



Source: Future Forward 2045 Online Bicycle Survey (MPOJC)

12%

Johnson County commuters who bicycle or walk to work.

Source: U.S. Census Bureau, 2008-2012 American Community Survey.

34%

of respondents to the Future Forward 2045 General Transportation Survey indicated they would like to bike more often.

Obstacles:

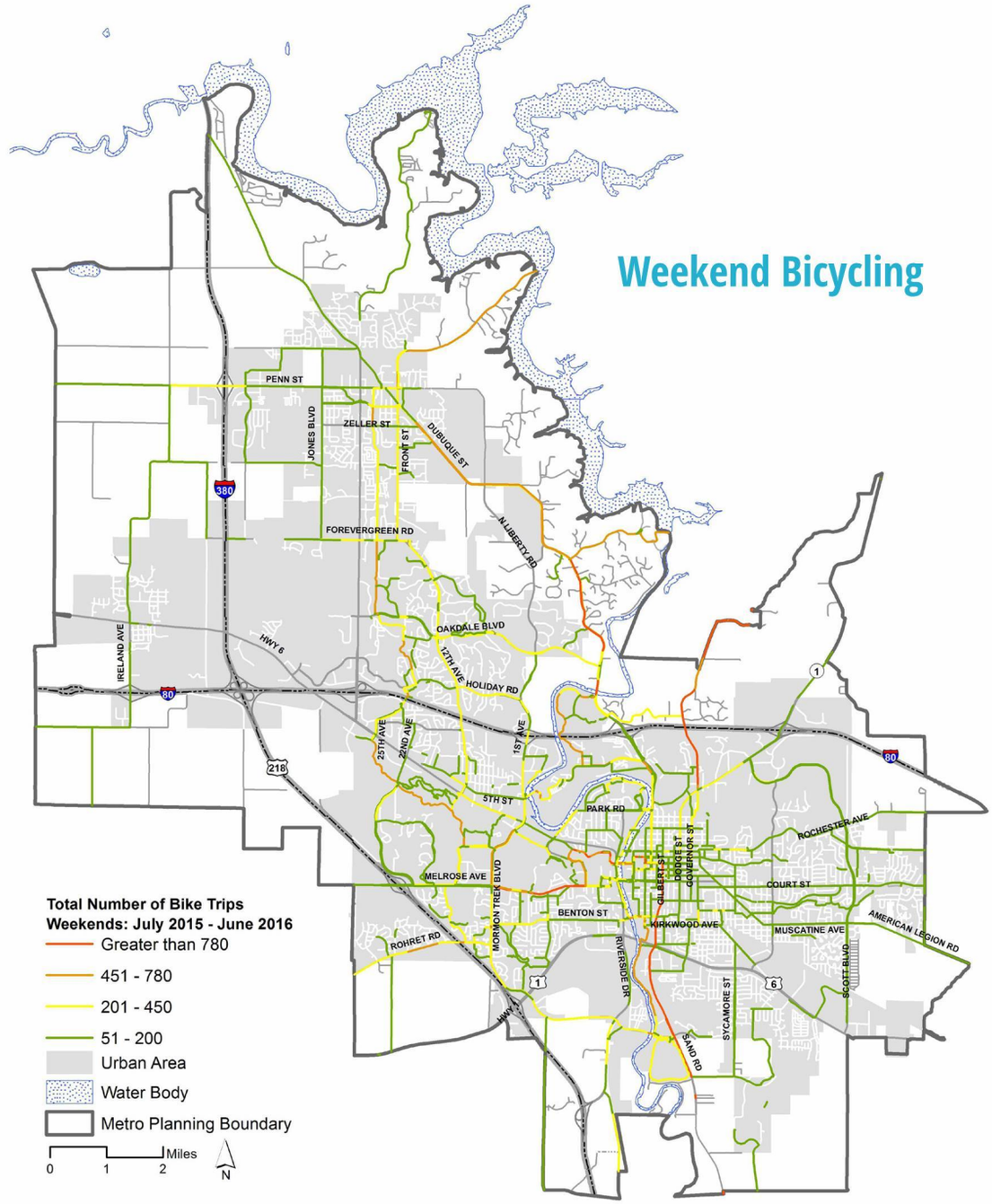
- Cars fail to yield to pedestrians
- Intersections difficult to cross
- Lack of snow and ice removal
- Traffic speeds

Source: Future Forward 2045 Pedestrian and Bicycle Surveys. (MPOJC)

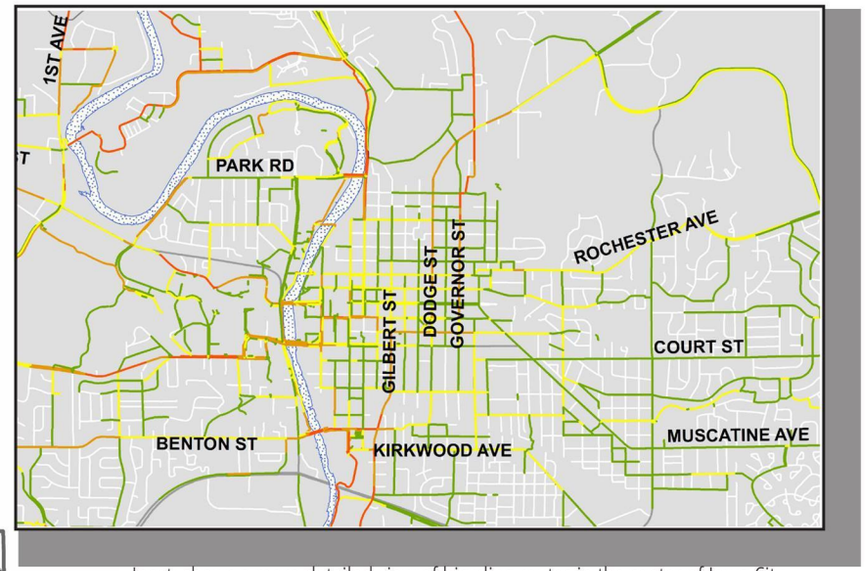
Understanding Bicycle Ridership

The MPO recently purchased Strava Metro's suite of data services. Strava is a website and mobile app used to track cycling activities using a smartphone or GPS device. Strava users track their rides with the Strava app on a smartphone or with a GPS device. Whether for commuting to/from work, recreation, or other purposes; these users record their speed, route, and other useful information. While Strava data represents a distinct subset of cyclsits (more avid recreational and competitive bicyclists), the information can help planners determine where popular cycling routes exist and gain an understanding of their relative level of use by time of day. The suite of data services includes ridership data collected over a 24-month period from July 2015 to June 2017.

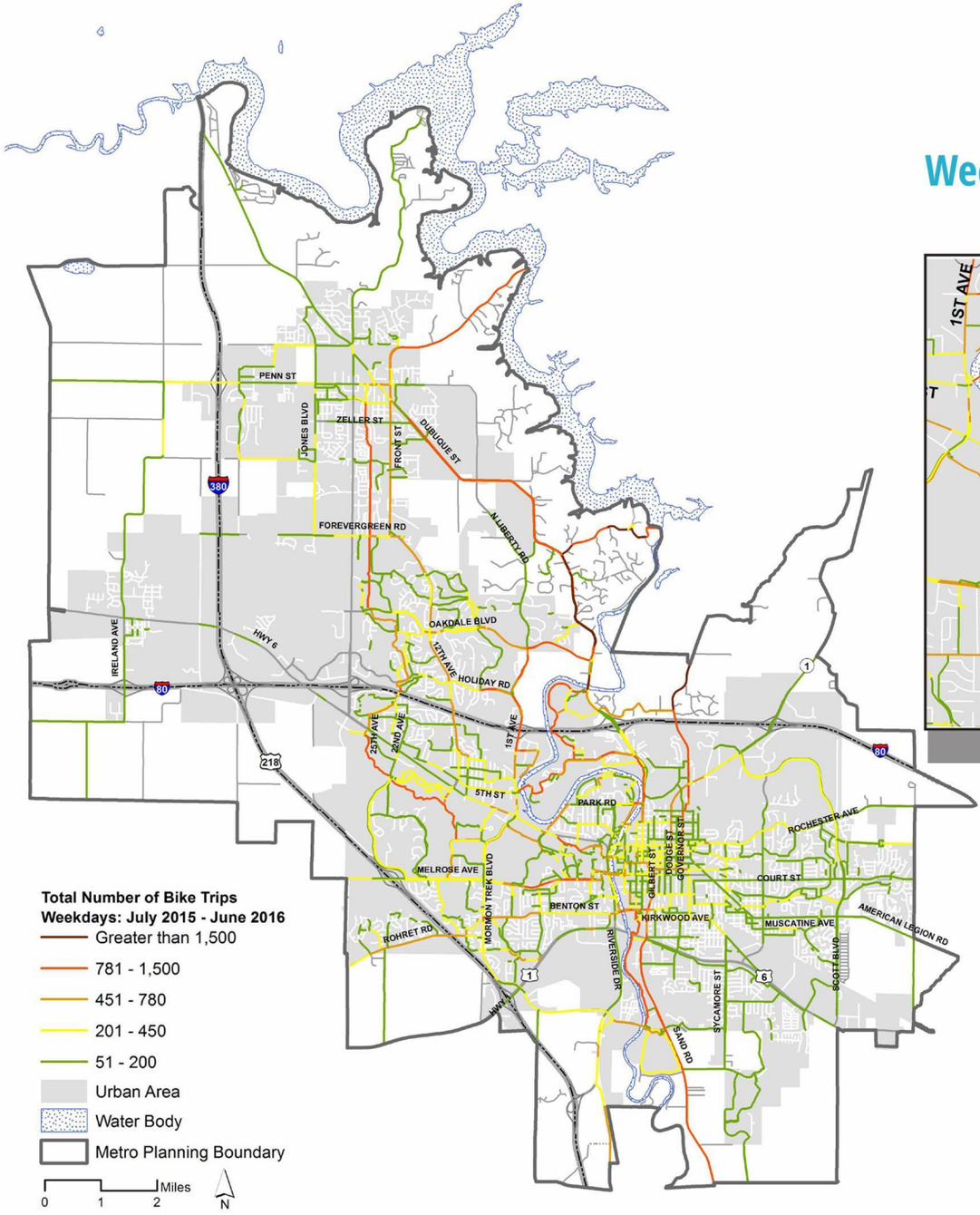
MPOJC has begun to analyze the Strava data to better understand general cycling routes to evaluate differences between commuter and recreation routes. The two maps included here represent the total number weekday bike trips and total number of weekend bicycle trips from July 2015 – June 2016.



Weekday Bicycling



Inset: shows a more detailed view of bicycling routes in the center of Iowa City during the weekday.



Examples of Trail and Pedestrian Projects Completed 2012-2017

- **Highway 1 Trail** from Orchard Street to Sunset Street (Iowa City)
- **North Dubuque Street Trail** Extension & Pedestrian/Bike Bridge over I-80 (Iowa City/DOT)
- **Clear Creek Trail** sections between Ireland and Jasper Avenue (Tiffin)
- **Mehaffey Bridge** repaving and separated trail (Johnson County)
- **Cherry Street wide sidewalk** from Stewart Street to Penn Meadows Park (North Liberty)

Coralville's recently completed reconstruction of 5th Street is a good example of the Complete Street principals with bicycle, pedestrians, bus, and automobile facilties integrated in a way that makes travel comfortable and safe for all users.

North Dubuque Street Pedestrian/Bike Bridge over I-80.

Successes 2012-2017

Complete Streets Policy: Adopted in January 2015, the MPOJC Complete Streets Policy applies to all projects using MPOJC-allocated funds—STBG or Transportation Alternatives Set-Aside Funds (formerly called the Surface Transportation Program and the TAP respectively). All new and reconstructed streets (except for roadways on which bicycling is prohibited) will consider bicycle facilities (e.g. bike lanes, shared lane arrows, and way-finding signs) and all sidewalks, curb ramps, and bus stops in the project corridor must be ADA-compliant. In addition, Iowa City and Coralville have adopted their own municipal Complete Streets policies.

ADA Facility Inventory: MPOJC completed a comprehensive inventory and evaluation of all sidewalk, curb ramp, and bus stop facilities in the Metro Area to identify potential deficiencies. More than 6,000 ramp locations within the urbanized area were evaluated and photographed by field technicians from 2012-2014. Each MPO community was provided data indicating all locations where ADA-compliant facilities are missing. As required by federal law, MPO communities must draft transition plans that outline methods and priorities for addressing these deficiencies over time.

Bike Friendly Communities: Currently, four MPO entities have earned Bicycle Friendly designations from the League of American Bicyclists: University Heights (Bronze), Iowa City (Silver) and University of Iowa (Silver), and Coralville (Bronze).

Bike Share: In 2017, the University of Iowa and the City of Iowa City will partner to create the first bike share program in Johnson County. Supported by a $135,000 grant through the DOT Iowa Clean Air Attainment Program, $50,000 from the Coca-Cola Foundation and additional funding from the University of Iowa, the first phase of the program calls for 30 bikes at three different bike stations located on or near the campus.

Challenges for Pedestrians and Bicyclists

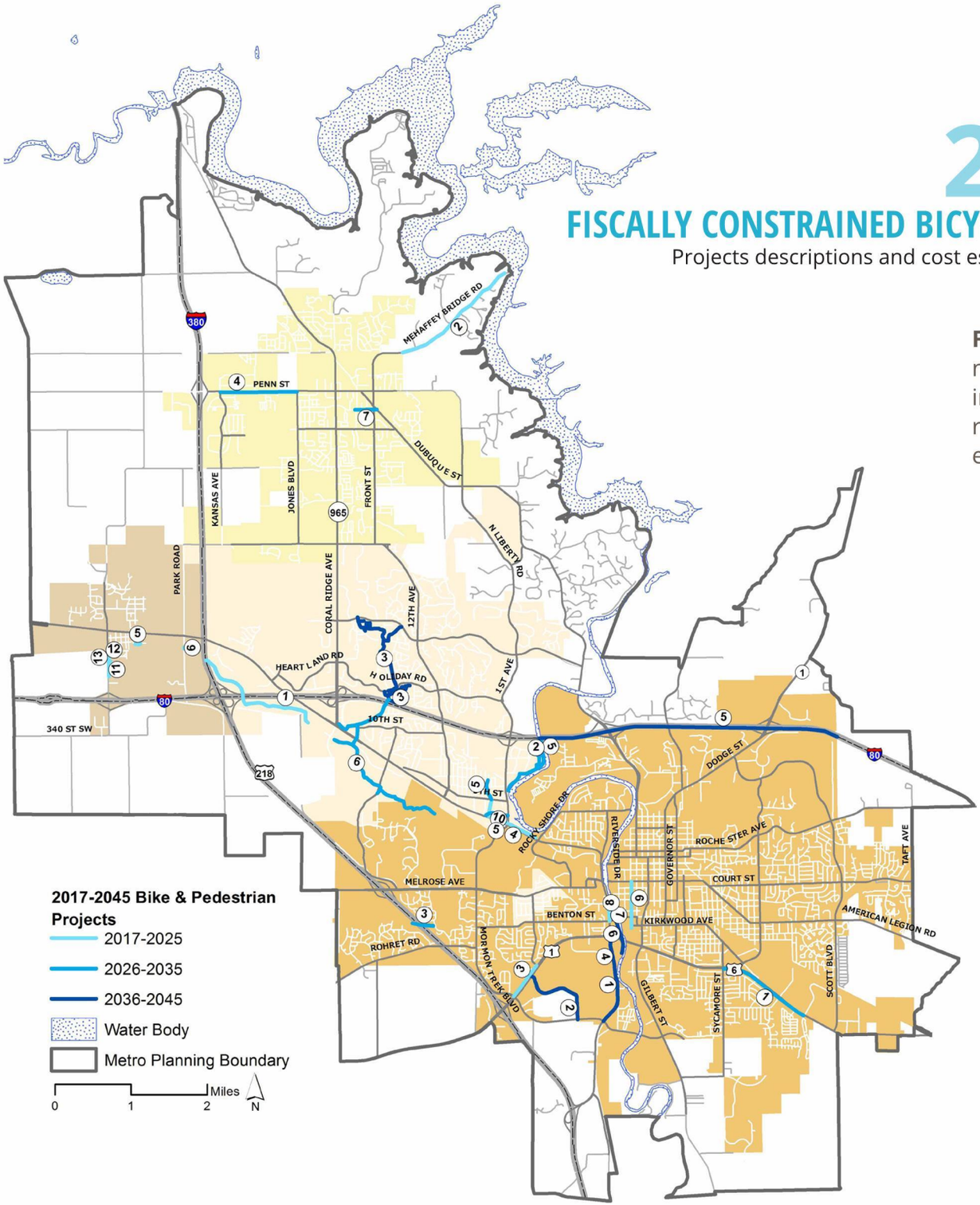
- The Iowa River and major roadways (I-80, I-380, Highways 1, 6, and 218) all present obstacles to providing a continuous bicycle network. Facitlities or other accomodations that allow for safer more accessbile commuting between the east and west sides of the river across highways and busy intersections remain a challenge.
- On-street bicycle facilities and routes are an essential part of a complete and continuous bicycle network, however, the real and perceived safety of bicycling on the street remains an obstcle for achieving higher rates of bike commuting, especially amoung youth.
- Seasonal maintenance of on- and off-street remains a challenge for keeping the bicycle and pedestrian network open and safe throughout the year.
- Wayfinding is consistently mentioned as an issue for bicyclists, especially in areas where there are gaps in the off-street trail network. A consistent and recognizabel system of signage, distances, and identification of multi-use trails and on-street routes is essential for helping bicyclists and pedestrians to navigate the network.
- Ensuring adequate and secure bicycle parking at major desitnations, both public and private, as well as in areas of multi-family or mixed use development will helps to encourage and enable bicycle ridership.

STRATEGIES:
IMPROVING BICYCLE AND PEDESTRIAN TRANSPORTATION

	GUIDING PRINCIPLES MET								
Reduce obstacles for non-motorized transportation		✓			✓	✓		✓	✓
Ensure compliance with Complete Streets policies for all new and reconstructed road projects.									
Continue to expand and enhance bicycle and pedestrian facilties, including the trail network.									
Prioritize ADA transition plans to bring all streets, sidewalks, and bus stops into compliance.									
Ensure routine maintenance and prompt repair to bicycle and pedestrian facilities.									
Improve bicycle and pedestrian safety					✓		✓	✓	
Design on-street facilities according to AASHTO and NACTO guidelines.									
Increase participation in Safe Routes to Schools programs.									
Develop educational programs to promote safe bicycling and walking.									
Evaluate intersections and corridors with high pedestrian or bicycle collision rates and develop a mitigation plan.									
Raise awareness of the dangers of distracted driving and walking.									
Maximize pedestrian and bike access	✓	✓	✓		✓	✓	✓	✓	✓
Ensure safe bicycle/pedestrian access to all commercial/employment areas, schools, and parks.									
Include connectivity as a criterion in land development processes.									
Adopt bicycle parking ordinances in all Metro Area municipalities.									
Recognize and promote the economic benefits of bicycling	✓		✓			✓			✓
Use bikability and walkability as tools to promote economic development and investment.									
Expand participation in Bike-to-Work Week and Bike month.									
Continue to pursue and promote "Bike Friendly" designations, including Bike Friendly Business designations.									

2017-2045
FISCALLY CONSTRAINED BICYCLE AND PEDESTRIAN PROJECTS

Projects descriptions and cost estimates for 2017-2045 bicycle and pedestrian projects are provided on the following pages.



Fiscal constraint is a required component of long-range planning. This plan includes only those projects that can be realistically completed based on anticipated revenues.

The Urbanized Area Policy Board (UAPB) has approved the inclusion of the forthcoming capital infrstructure projects in the fiscally-constrained list of projects that become eligible to receive federal funding through the MPOJC. For more information on the process by which these projects were selected for inclusion in the LRTP, please refer to the Financial Planning chapter.

Capital infrastructure projects that did not make the fiscally-constrained approved list of projects (due to a lack of forecasted funding) are included in the Supporting Documents section of this plan.

FUTURE FORWARD
2045 LONG RANGE TRANSPORTATION PLAN

Fiscally Constrained Bicycle & Pedestrian Projects 2017-2025

ID	Project Title	Project Description	$ Cost Estimate at Construction	Entity
1	**Clear Creek Trail Phase 6 and 7 (FY18)**	1.9 mile extension of Clear Creek Trail west to I-380	$1,726,534	Coralville
2	**Mehaffey Bridge Trail Extension (FY18)**	Construct trail from North Liberty City Limits to USACE Mehaffey Bridge Boat Ramp (2 miles)	$222,000	Johnson County
3	**Highway 1 Sidewalk/Trail (FY18)**	Construct 10' trail adjacent to Highway 1 between Sunset Street and Mormon Trek Boulevard	$873,480	Iowa City
4	**Iowa River Trail (FY20)**	From Rocky Shore Drive northwest .50 miles to Clear Creek	$1,019,640	Coralville
5	**Clear Creek Trail Phase 6 (FY19)**	From Kimberite Street south .10 miles to Brown Street	$245,920	Tiffin
6	**Clear Creek Trail (FY18)**	Over Iowa Interstate Railroad	$48,720	Tiffin
7	**Riverside Dr Streetscape**	Streetscape improvements on Riverside Drive between Myrtle Avenue and Benton Street	$87,000	Iowa City
8	**Riverside Dr Pedestrian Tunnel**	Construct a tunnel through the railroad embankment on the west side of Riverside Drive south of Myrtle Avenue	$1,803,468	Iowa City
9	**Clinton St Streetscape**	Improve Clinton Street Streetscape south of Burlington Street consistent with the Riverfront Crossings Plan. Minor pavement improvements and lane striping a part of project	$1,740,000	Iowa City
10	**Clear Creek Trail - 1st Ave to Biscuit Creek**	0.25 mile extension of Clear Creek Trail from 1st Ave. to Biscuit Creek	$290,000	Coralville
11	**Trail south on Ireland Ave (Clear Creek Trail to Villages Development)**	Grade and Pave .50 trail extension along Ireland Ave to Villages Development	$232,000	Tiffin
12	**Trailhead at Ireland**	Grade and Pave Trailhead	$34,800	Tiffin
13	**Trail south on Ireland Ave (Railroad to Clear Creek Trail)**	Grade and Pave .25 mile trail extension along Ireland Ave to connect to Clear Creek Trail	$116,000	Tiffin
		Total Costs 2017- 2025	$8,439,562	
		Estimated Funding	$9,645,474	
		Remaining	$1,205,912	

Projects highlighted in green have funding programmed in the TIP.

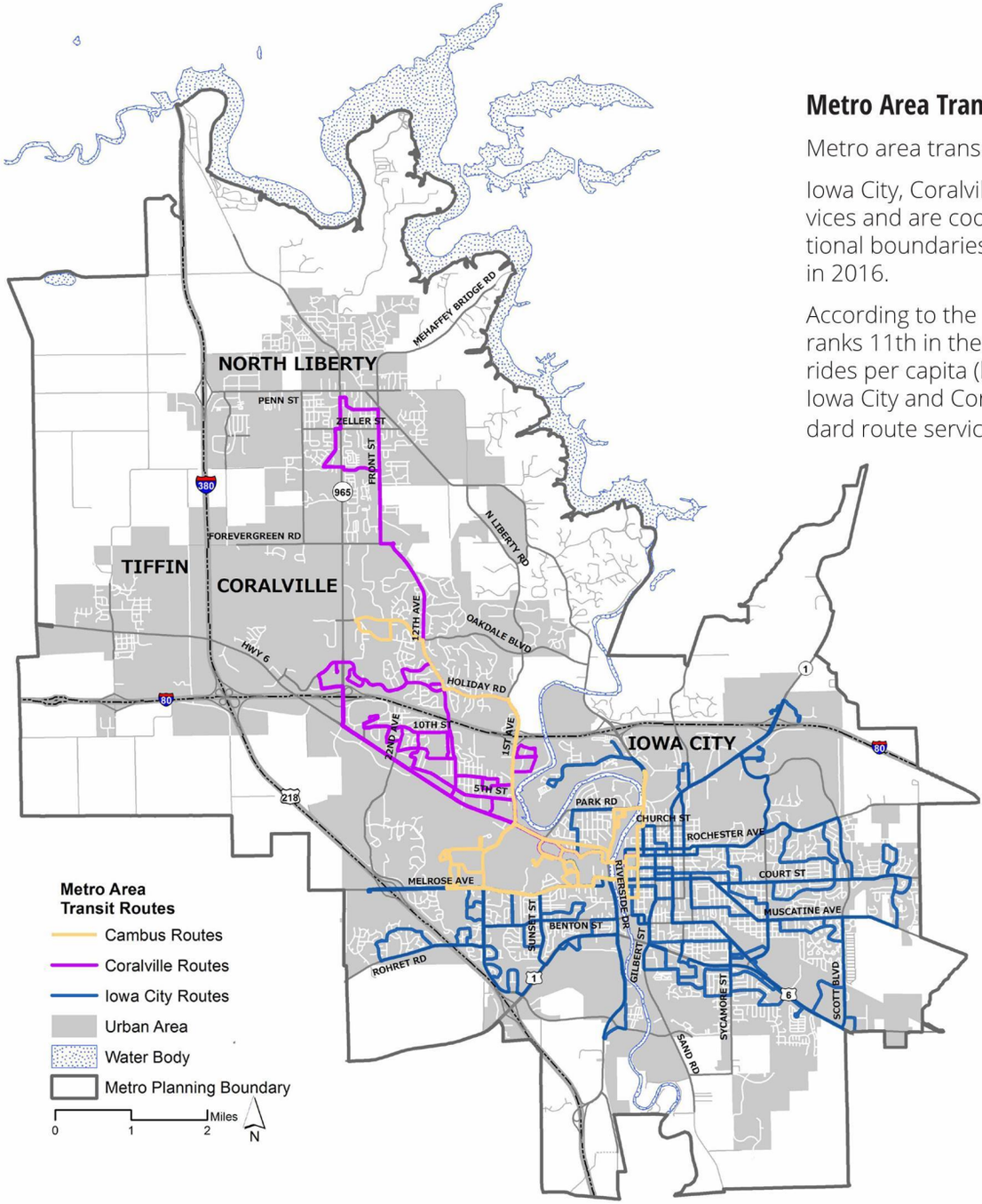
Fiscally Constrained Bicycle & Pedestrian Projects 2026-2035

ID	Project Title	Project Description	$ Cost Estimate at Construction	Entity
1	**Highway 6 Trail - Sycamore to Heinz**	Extend existing trail along Hwy 6 between Sycamore Street and Heinz Road.	$2,887,878	Iowa City
2	**Iowa Riverfront Pedestrian Bridge**	New pedestrian bridge over Iowa River just south of Interstate 80	$3,325,000	Coralville
3	**Willow Creek Trail - West**	Connect Willow Creek Trail from its current west terminus via a tunnel under Highway 218, to connect with the trail in Hunters Run Park and further west.	$4,277,280	Iowa City
4	**Penn Street Trail**	Jones Blvd to Kansas Ave. 10ft wide trail along ROW	$845,120	North Liberty
5	**Trail Construction - Coralville Zone 1**	Reconstruction of trails in Zone 1. Zone 1 is located east of 12th Avenue and south of I-80. Total length: 1.5 miles.	$802,560	Coralville
6	**Trail Reconstruction - Coralville Zone 2**	Reconstruction of trails in Zone 2. Zone 2 is located west of 12th Ave., south of I-80, and east of Coral Ridge Ave. Total length: 3.5 miles.	$1,662,500	Coralville
7	**Cherry Street Trail Corridor**	Penn Meadows Park to CRANIC RR. 10ft wide sidewalk.	$304,000	North Liberty
		Total Costs 2026 - 2035	$14,104,338	
		Estimated Funding	$14,227,998	
		Remaining	$123,660	

Fiscally Constrained Bicycle & Pedestrian Projects 2036-2045

ID	Project Title	Project Description	$ Cost Estimate at Construction	Entity
1	**Old Highway 218 Trail/Wide Sidewalk**	This project will construct an 8' wide sidewalk adjacent to Old Highway 218 between Sturgis Ferry Park and McCollister Boulevard.	$1,056,000	Iowa City
2	**Willow Creek Trail - Phase III**	Construct a trail from Willow Creek Drive, under Highway 1, around perimeter of airport, to connect with Iowa River Corridor (IRC) Trail.	$1,670,400	Iowa City
3	**Trail Reconstruction - Coralville Zone**	Reconstruction of trails in Zone 3. Zone 3 is located west of 1st Ave., north of I-80, east of Coral Ridge Ave., and south of Oakdale Blvd. Total length: 2.7 miles.	$1,620,000	Coralville
4	**Old Highway 218 Streetscape**	Streetscape improvements on Old Hwy 218 entrance - Sturgis Ferry Park to US Hwy 6. This project includes landscaping, lighting and sidewalk improvements. The project should be coordinated with Sturgis Ferry Park upgrade and /or Riverside Drive Redevelopment project.	$1,559,040	Iowa City
5	**Interstate 80 Aesthetics Improvements**	Landscaping and aesthetic treatments in the Interstate 80 corridor. The objective of this project is to mitigate the visual impact of the addition of a third lane to I-80 and to provide cohesive and pleasing feel to the Iowa City corridor.	$576,000	Iowa City
6	**Iowa River Trail - Benton to Sturgis Park**	Extend the Iowa River Trail from Benton Street to Sturgis Park on the west side of the Iowa River.	$2,619,280	Iowa City
		Total Costs 2036 - 2045	$9,100,720	
		Estimated Funding	$17,923,582	
		Remaining	$8,822,862	

PASSENGER TRANSPORTATION



Metro Area Transit Service

Metro area transit consists of buses and paratransit vehicles.

Iowa City, Coralville, and the University of Iowa provide transit services and are coordinated to provide connectivity across jurisdictional boundaries. North Liberty began providing intra-city service in 2016.

According to the American Community Survey, the metro area ranks 11th in the nation for the highest number of bus rides: 66 rides per capita (based on a metro population of 109,437). All Iowa City and Coralville buses include bike carrying racks on standard route service.

11TH AMONG U.S. METRO AREAS

bus rides per capita

PASSENGER TRANSPORTATION

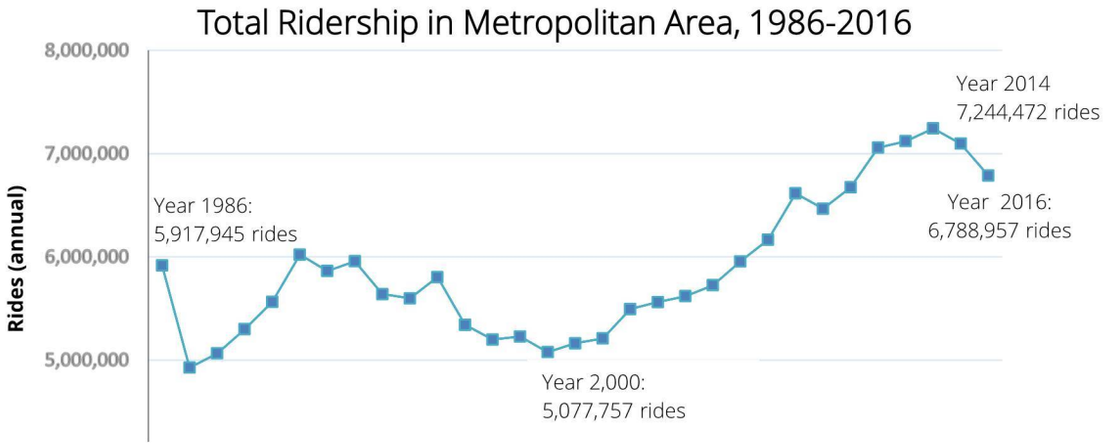
Vision

To deliver transportation services that support and promote a safe and comprehensive transit system in the metropolitan area and to enhance access to opportunities and quality of life for all individuals.

MPOJC and the Transportation Network

MPOJC provides transit planning and grant administration in the Iowa City Urbanized Area for Coralville Transit, Iowa City Transit, and University of Iowa CAMBUS. Coralville Transit and Iowa City Transit are municipal transit systems operated by the City of Coralville and the City of Iowa City, respectively. University of Iowa CAMBUS is an open-to-the-public transit system operated by the University of Iowa to serve University of Iowa facilities. Planning and programming activities are conducted by MPOJC for transit capital and operating grant programs of the Federal Transit Administration (FTA) and the Iowa DOT. These activities include:

- Production of planning documents necessary to implement the federally mandated planning process.
- Individual short-and long-range transit planning projects requested by MPOJC member agencies.
- Planning and administration associated with state and federal grant applications.



7.2 MILLION

Number of bus rides provided in the Iowa City metro in 2014. This represents almost 30% of the total rides in Iowa's urban areas.

20%

growth in metro bus ridership over the past decade.

3,634

Number of commuter trips from Cedar Rapids to Iowa City area per day on I-380.

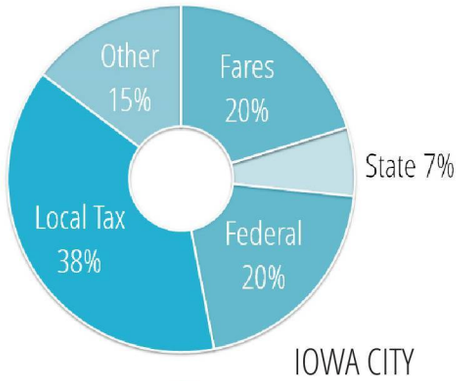
70

Number of employee vans operated by the University of Iowa serving the hospitals and campus.

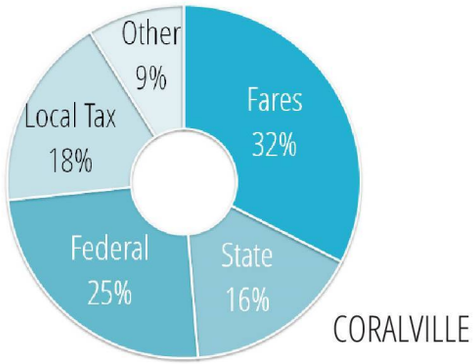
Proposed Capital Infrastructure Projects

The Iowa City Transit maintenance and bus storage facility has been at its current site at 1200 South Riverside Drive since 1984. Built on an old landfill site, the current facility does not allow for future expansion or growth due to the soil conditions, as well as air quality issues due to methane gasses. Remedial work has been completed over the years to stabilize the environmental issues, but the facility has become more expensive to operate. A new facility is estimated to cost $20 million.

How is transit funded?



IOWA CITY



CORALVILLE

Successes 2012-2017

Coralville Transit Intermodal Facility – Financed by the FTA and completed in 2015, this $12.9 million facility includes 425 parking spaces to serve park and ride customers and commercial users, 2 bus bays serving 30 buses daily, space for interstate bus service, waiting area, restroom/shower facilities, bike lockers, and offices for city staff and the Iowa Bicycle Coalition.

North Liberty Transit Service – Beginning in Fall 2016, fixed route bus service operated by Johnson County SEATS began serving North Liberty. The new service, which operates during off-peak hours (10:00am to 2:00pm) Monday-Friday, is intended to augment peak AM and PM services already provided by Coralville Transit, to serve residents seeking rides to human services and recreation programs, medical appointments, or shopping in North Liberty. Bus fairs are set at $2, including paratransit rides during service hours.

Van pool/car pool/Express Bus Service – In preparation for the Iowa DOT's I-80/I-380 interchange reconstruction project to begin in 2018, MPOJC is working with the Iowa DOT, the ECICOG, and other local stakeholders to develop three new transportation programs aimed at reducing traffic congestion on I-80 and I-380 during and after the interchange reconstruction project.

- Car Pool/Van Pool Programs: In 2016, the Iowa DOT's *RideConnect* began offering both vanpool and carpool options covering a 7-county region (ECICOG). The van pool program is operated by V-Ride, which already serves the VA Hospital in Iowa City. Iowa's Creative Corridor provides marketing for the program.
- Express Bus Service: Beginning in 2018, a fixed route bus service will operate for the duration of the I-80/I-380 interchange reconstruction project. The Iowa DOT will fund the service between Iowa City and Cedar Rapids for the entirety of the interchange project with the understanding that the service will be financed locally once the project is complete. Routes would serve downtown Cedar Rapids, Kirkwood Community College (Cedar Rapids), the Iowa City Downtown interchange, University of Iowa Hospital/campus, and the Coralville Transit intermodal Facility. More than 3,600 work related commuters use I-380 each day. Ridership for the express bus service is projected at 300 riders per day.

Car sharing – In 2015, the City of Iowa City and the University of Iowa brought Zipcar to the urbanized area. The car share program allows anyone to reserve a car online or by phone. Cars stations are provided at 5 locations in Iowa City and on the UI campus. Zipcar is available 24 hours per day at an hourly rate of $7 or a daily rate of $66.

Transportation Network Companies – In addition to the 10 taxi companies serving the urbanized area, Transportation Network Companies (TNCs), including Uber and Lyft, were permitted to be part of the transportation network in the urbanized area in 2016. These companies offer phone-based apps to dispatch drivers and include a GPS component for estimating driver arrival times.

Passenger Rail Service Studies

CRANDIC Corridor - Phase I of the Iowa City to Cedar Rapids Passenger Rail Conceptual Feasibility Study was completed in October 2015 by the CRANDIC, the Iowa DOT, and local stakeholders.The study explored the conceptual feasibility of a passenger rail service operating in the existing CRANDIC corridor between Iowa City and Cedar Rapids, considering potential types of passenger rail service, general capital, operating and maintenance costs, service frequencies, regulatory issues, and funding options.

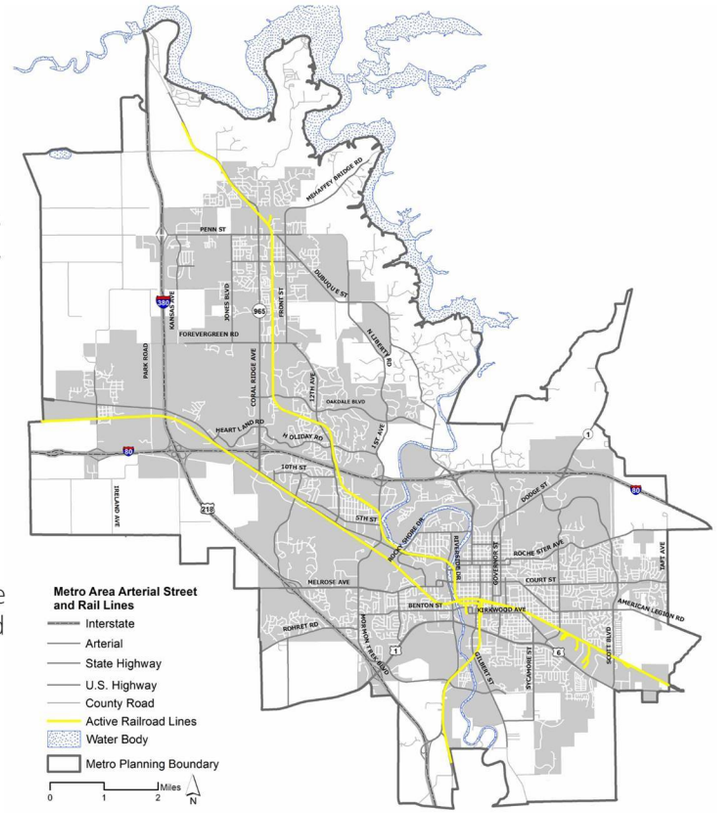
Phase II of the Iowa City-North Liberty Passenger Rail Conceptual Feasibility Study, focused on the conceptual feasibility of a passenger rail service operating between Iowa City and North Liberty. The conceptual capital cost for implementation of a passenger rail service between the two cities is $40.06 million, in 2016 dollars. Conceptual annual operations and maintenance costs for the first year of passenger rail operations are expected to be $1.39 million, in 2016 dollars.

Further study will evaluate the potential for implementation of passenger rail service on the Iowa City-North Liberty Corridor, including detailed analysis of ridership and revenue forecasts, modified cost estimates, benefit cost analysis and financial plan, availability of public and private funding, operating plans, conceptual station designs, and environmental fatal-flaws analysis and screening. The potential for phased implementation of passenger rail service, including additional frequencies in the Iowa City-North Liberty Corridor and the potential extension of services north to the Eastern Iowa Airport in Cedar Rapids and downtown Cedar Rapids will also be considered.

Amtrak – The Iowa DOT, in coordination with the Federal Railroad Administration (FRA) and the Illinois DOT, are evaluating intercity passenger rail service between Chicago and Council Bluffs-Omaha. Expanding passenger rail service through this corridor could reduce travel times, increase frequency of passenger rail service, and improve reliability versus other travel modes.

The Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study Tier 1 Environmental Impact Statement (EIS) was completed in 2012. The Tier I EIS focused on broad corridor and service level issues such as evaluating potential routes, levels of service, ridership potential, and environmental impacts. A Tier 2 EIS would include project level environmental study, preliminary designs, right-of-way acquisition, construction of infrastructure upgrades, and implementation of the service.

The State of Iowa, in conjunction with the State of Illinois, received FRA funding for a Chicago to Iowa City passenger rail service in which Iowa would implement the Quad Cities to Iowa City section of the project. The State of Iowa has not matched any of the grant funding at this time. Further implementation depends on the Governor's Office, the Iowa Legislature, and the FRA.



COST OF A NEW FIXED ROUTE BUS: $460,000 (FY17)

	Number of buses	Percent of buses beyond "useful life"
Iowa City Transit		
Fixed Route	31	52%
Paratransit	13	69%
Coralville Transit		
Fixed Route	10	50%
Paratransit	3	100%
University of Iowa Cambus		
Fixed Route/Paratransit	35	20%

Passenger Transportation Challenges

Lack of federal and state funding for large capital projects: Nation-wide transit programs continue to struggle with the lack of funding for both transit rolling stock and facilities. In Iowa alone, 63% of transit buses are operating beyond their useful life. The cost to replace transit buses beyond their useful life in Iowa is $161 million. Over the past five years, Federal funding for bus replacement has averaged just over $7 million per year*.

Funding for transit facilities, such as bus maintenance and storage facilities, is also an issue in Iowa and our metro area. Almost 88% of transit agencies in Iowa report a need for additional vehicle storage capacity and 64% report a need for additional maintenance space. Support for additional investment in bus fleet and bus facility infrastructure, at both the state and federal level, has become a priority for all transit agencies.

Lack of funding for additional bus service programs: Over the past twenty years the hourly cost to operate a fixed route transit bus in our metro area increased by about 70%**. As a result, certain services were either eliminated or never implemented. Sunday transit service is one program Iowa City and Coralville eliminated due to rising costs. Planned programs that target late night and weekend services have also been put on hold due to budget issues.

Improving coordination with human services providers: Johnson County is fortunate to have many social service options available for every need. Unfortunately, the need for transportation services is also very real for social service agencies. Even with existing efforts to bring human service organizations together to plan and coordinate transportation efforts, additional coordination is necessary. Coordination efforts should benefit from the hiring of a human services/transportation mobility coordinator.

How to adjust with the increase in private transportation options: TNCs, such as Uber and Lyft, and other ridesharing efforts will impact local transit service efforts and budgets as we go forward. Coordination with these programs will be necessary as the public trend toward transportation choice and need increases. These choices will become part of the transportation network in the urbanized area.

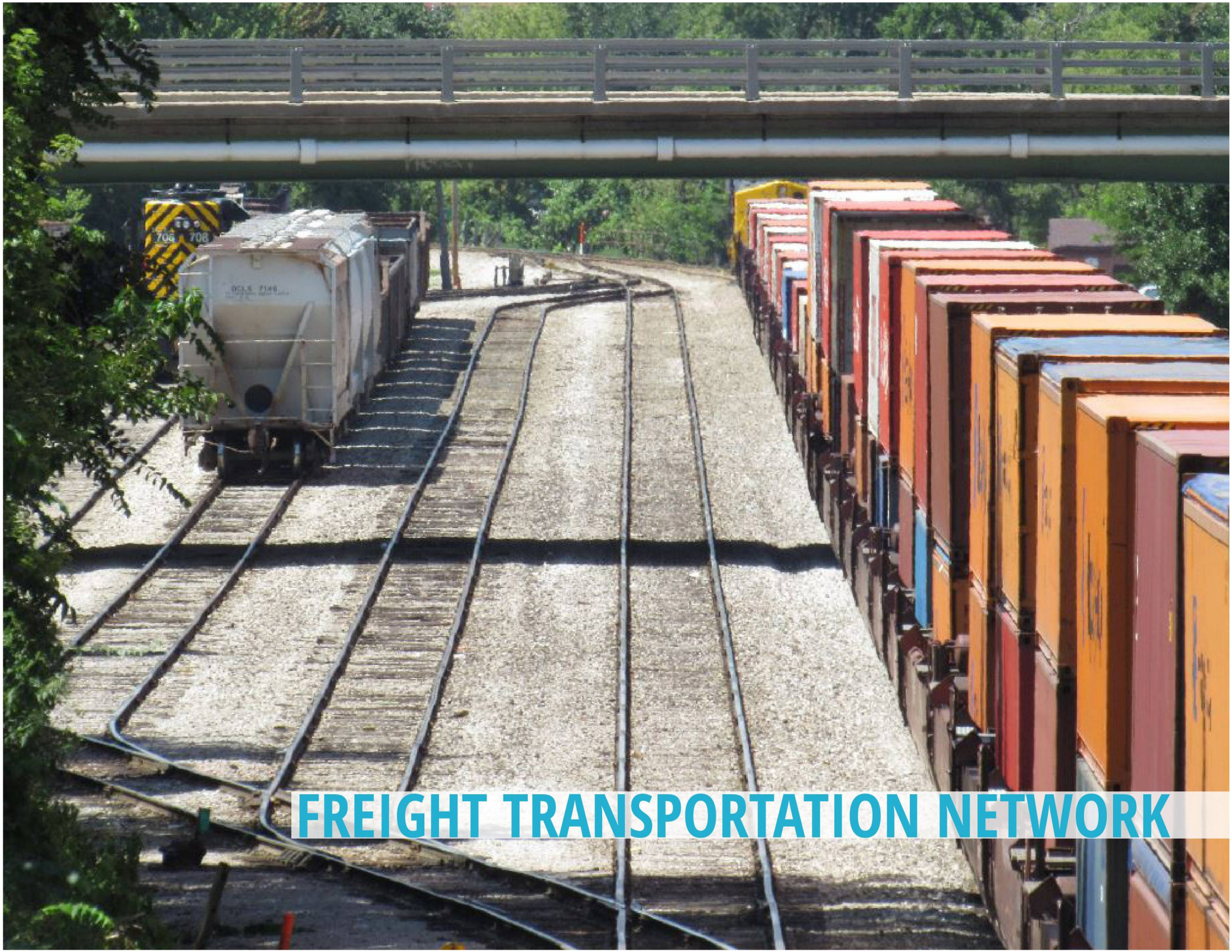
Avoid losing focus on long-term benefits of passenger rail service: Two separate passenger rail projects have been studied in the metro area. The local commuter passenger rail project on the CRANDIC rail line between Iowa City and Cedar Rapids has been studied three times in twenty years while the Amtrak project between Iowa City and Chicago (to Des Moines and Omaha) continues to be studied by the Iowa DOT. There is support locally for the concept of passenger rail service; but the financial support from state and federal sources is lacking. With so much uncertainty in capital and operating funding, support wanes and we limit our investment opportunities that come with passenger rail corridor service, such as Transit Oriented Developments.

*Iowa Public Transit Association legislative brochure/2016

**MPOJC Transit Performance Statistics

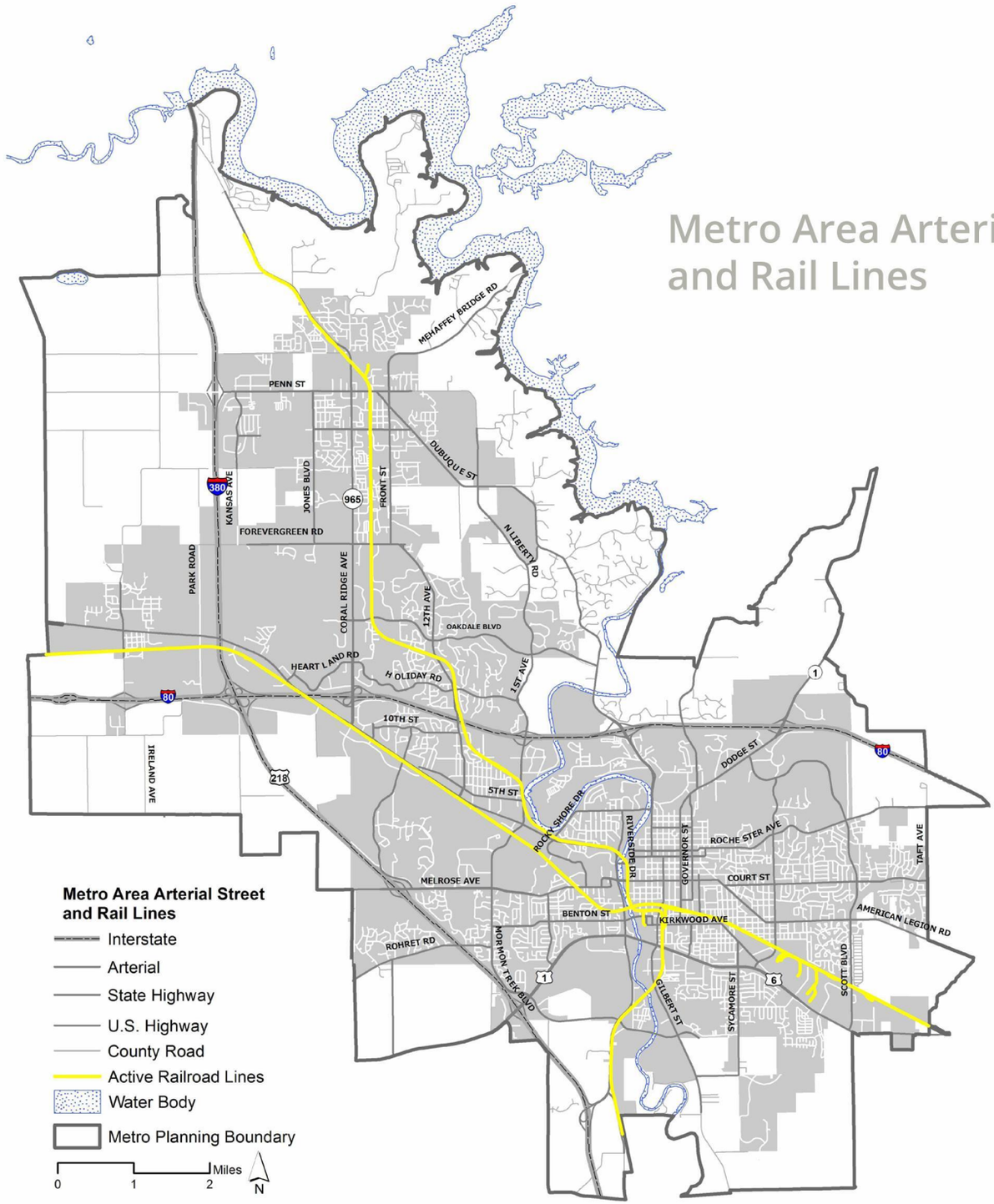
STRATEGIES
IMPROVING PASSENGER TRANSPORTATION

	Economy	Environment	Quality of Life	System Preservation	Efficiency	Choice	Safety	Health	Equity
GUIDING PRINCIPLES MET									
Increase transportation training/education/partnerships			✓	✓	✓		✓		
Establish a Mobility Coordinator position.									
Improve transit facilities and equipment	✓		✓		✓		✓		✓
Equipment purchase (buses).									
Construct Iowa City transit maintenance and bus storage facility.									
Improve bus shelters to be safe and pleasant.									
Concentrate development around transit corridors in density/mixed-use neighborhoods.									
Locate transit improvements in safe, walkable areas..									
Extend existing transit routes for jobs	✓		✓		✓				✓
Extend late night routes.									
Provide late night/weekends ADA cab service.									
Increase route frequency and reduce travel times.									
Provide real-time information.									
Use the new 2014 Travel Demand Model's transit component to assist with route planning.									
Extend/Create new transportation services	✓	✓	✓		✓	✓			
Complete passenger rail study (Iowa City to North Liberty).									
Complete Amtrak study (Chicago to Iowa City).									
Initiate express bus service (Iowa City to Cedar Rapids).									
Support car sharing/van pools/car pools.									



FREIGHT TRANSPORTATION NETWORK

Metro Area Arterial Street and Rail Lines



FREIGHT TRANSPORTATION NETWORK

Vision

Provide and maintain a system of roads and rails within the Iowa City Urbanized Area that will allow local industry to transport their goods safely and efficiently to other parts of Iowa, other states, and foreign markets.

MPOJC and the Freight Network

Within the Iowa City Urbanized Area motor carrier traffic is served by the Federal Interstate System, the network of Federal and State Highways, and the local arterial street system. Interstates 80 (east-west) and 380 (north-south) and U.S. Highways 6 (east-west) and 218 (north-south) comprise the major routes for motor carriers in the urbanized area. State Highway 1 serves as a major route in the southwest portion of the urbanized area, running east-west through south Iowa City. Together Highway 6 and Highway 1 provide access to the the heaviest industrial uses in the area.

Freight rail service is provided on the Iowa Interstate Railroad (IAIS) and the CRANDIC Railroad. IAIS is a Class 2 railroad that extends east-west through the Iowa City Urbanized Area between Omaha and Chicago. The CRANDIC is a Class 3 short line, extending between Cedar Rapids (through the Iowa City urbanized area) and Hills, and between Cedar Rapids and the Amana Colonies. CRANDIC's Iowa City to Hills line is leased by the IAIS. Most of CRANDIC's remaining rail service operates between Cedar Rapids and the Amana Colonies where it intersects with the IAIS. IAIS has constructed a switching yard and maintenance facility at this location.

Industrial and commercial land uses are the principal generators of truck and rail traffic. These are possible indicators of where it may be necessary to provide special accommodation on the street system and rail network for freight transportation. The location of railroad corridors and highways drive the location of commercial and industrial zoning and land uses. For the CRANDIC line, the main products moved are coal, grain, food products, and paper. The commodities moved along the IAIS nclude agricultural products, plastics, paper, steel, scrap, lumber, and coal. Ethanol and feed markets throughout the country depend on this rail line as this is one of the top carriers in these products.

MPOJC assists member governments with planning, programming, and funding improvements to the arterial street system that include special accommodations for large trucks. Improvements to the freight rail system are largely generated by the private sector, although MPOJC has assisted with rail system improvements through state and federal grant programs. Safety, security, and resiliency with respect to flooding and extreme weather events is an important consideration for the industry.

Freight Transportation Network Trends

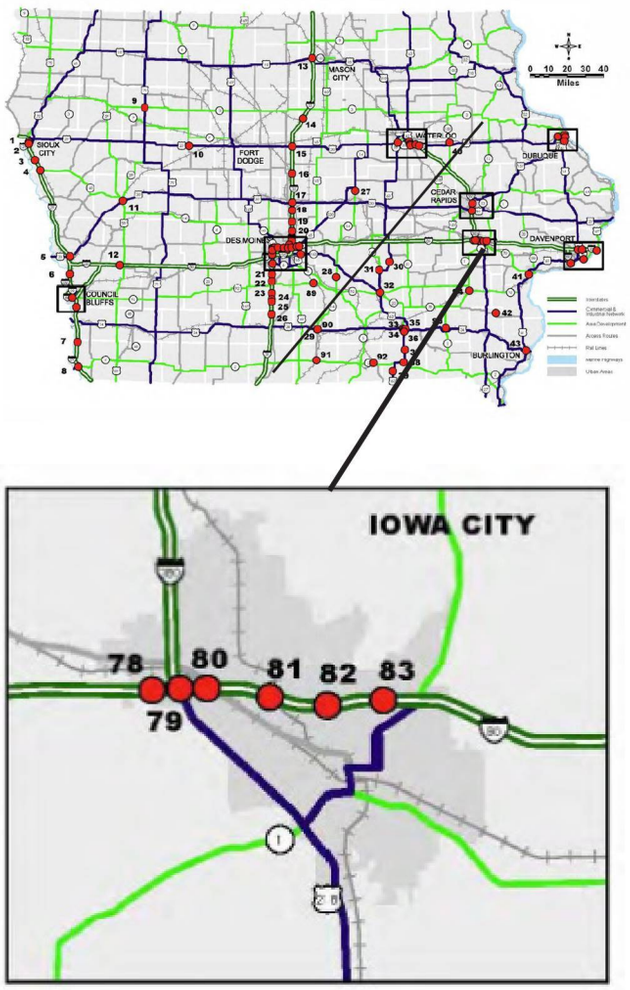
- Goods moving by truck are steadily increasing.
- Evolving and increasing oversize/overweight freight movements.
- Rail network miles continue to steadily decrease.
- Rail freight is increasing with larger rail cars and longer trains.
- Increased emphasis on rail safety.
- Record agricultural production and changing practices means reanalyzing the freight network.
- Growth in energy production.
- Growth in need for intermodal facilities to transfer shipment modes.
- Impact of E-commerce on market trends and freight movements.
- Automated/self-driving vehicles.
- Growth in Iowa's biorenewable chemical industry.
- Natural gas as a transportation fuel.

Freight Transportation Network Challenges*

- Financial
- Infrastructure
- Labor and driver shortages
- Freight operations
- Policy support and communication
- Regulation
- Transload and intermodal terminals

* Iowa Department of Transportation/Iowa State Freight Plan, 2016

Highway Freight Bottlenecks



Source: Frieght Advisory Council, Metropolitan Planning Organizations, Regional Planning Affiliations, Iowa Department of Transportation, INRIX

Successes

Iowa Clean Air Attainment Program (ICAAP): Over the last twenty years, the railroads have slowly relocated maintenance and switching facilties to locations outside the urbanized area. In the 1990s, a grant from the ICAAP was used to relocate the interchange between the IAIS and the CRANDIC Railroad from south Iowa City to the Amana Colonies, approximately 20 miles to the west of the Iowa City. The relocation reduced arterial street congestion in the south and east parts of Iowa City and improved air quality. The IAIS is now in the process of moving most of their switching/storage yard and maintenance facilities to the Amana Colonies. Another ICAAP funded initiative is the grade separation project elevating the IAIS over First Avenue in Iowa City, which has significantlyreduced congestion and travel delays along an important north-south travel corridor and one of only two.

Revitalize Iowa's Sound Economy (RISE): In the fall of 2010, Iowa City received just over $1 million in Iowa DOT's Rail Port Grant funding for a rail port project in Iowa City's newest industrial campus. The industrial park, located just off of Highway 6 at 420th Street on Iowa City's east side, includes two rail sidings and one rail spur on the IAIS rail line that bisects the industrial park. The $2.1 million project is intended to help market the property to potential industries that will locate to the 173-acre park.

Community Development Block Grant (CDBG): As part of their overall flood mitigation plan, the City of Coralville worked with the CRANDIC Railroad to elevate the rail bed for use as flood protection. The Clear Creek to Rocky Shore Drive portion of the CRANDIC line was raised seven feet with a flood gate at Rocky Shore Drive. Earthen embankments along with permanent and removable floodwalls were also constructed along the Iowa River between Clear Creek and the Iowa River Power Company parking lot.

Freight Challenges*

- How to maintain and improve multimodal system without weakening the economy .
- Infrastructure critical to the movement of freight are in need of significant improvements.
- Labor and driver shortages.
- Change in business operations: the development of large-scale farming and manufacturing.
- Developing and supporting competitive access to the global marketplace .
- Regulatory obstacles that hinder the movement of freight with all modes of transportation.
- Lack of transload and intermodal terminals.

*Iowa in Motion – State Freight Plan 2016

STRATEGIES:
IMPROVING FREIGHT TRANSPORTATION NETWORK

Support national freight goals	✓	✓	✓	✓	✓	✓	✓		

Improve the contribution of freight transportation system to economic efficiency, productivity, and competitiveness.

Reduce congestion of the freight transportation system.

Improve safety, security, and resilience of the freight transportation system.

Improve the state of good repair of the freight transportation system.

Use advanced technology, performance management, innovation, competition, and accountability in operating the freight transportation system.

Reduce adverse environmental and community impacts of the freight system.

Continue to participate in the DOT's Freight Advisory Council (FAC)	✓		✓	✓	✓		✓		

Provide input from local freight providers and users to (FAC).


AVIATION NETWORK

2 Iowa City Runways

36,900 Aircraft Takeoffs and Landings in Iowa City

Aviation in Iowa contributes approximately **$5.4 billion** to Iowa's economy while supporting an estimated **47,304 jobs** in Iowa with a payroll of **$2.7 billion** annually

AVIATION

Vision

Continue to provide aviation services that promote a safe and secure air transportation system in the metropolitan area through cooperative working partnerships.

Iowa City Municipal Airport

The Iowa City Municipal Airport is classified by the Federal Aviation Administration (FAA) as a general aviation airport. General aviation airports support local businesses, provide critical community access, allow for emergency response, and provide other specific aviation functions. General Aviation Airports should be capable of supporting most general aviation aircraft, including business jets. The 580-acre Iowa City Municipal Airport has 82 based aircraft, including 65 single-engine aircraft, 7 multi-engine aircraft, seven jets, 1 helicopter, and 2 ultra light/experimental aircraft. The airport currently uses 2 runways (5,004 feet and 3,900 feet) and accomodates an estimated 36,900 annual aircraft takeoffs and landings.

Airport Master Plan 2016/Strategic Planning Areas of Emphasis

The Airport Master Plan process evaluated many aspects of the airport facility. The following areas of emphasis have been specifically identified by the Airport Commission:

- Runway Alternatives
- Obstruction Evaluation
- Building Area Plan
- Surrounding Land Uses
- Financial Feasibility

Public and Agency Outreach

There were many forms of outreach throughout the Iowa City Municipal Airport Master Plan process:

- Development of a Master Plan Advisory Group (MPAG)
- Airport User Survey
- Public Open House
- Community Meetings

The Eastern Iowa Airport

The Eastern Iowa Airport is the primary air transportation gateway for eastern Iowa and parts of western Illinois. Classified as a small hub, primary commercial service airport, by the FAA, it is home to one fixed base operator (FBO) (Landmark Aviation), five airlines (Delta, United, American Airlines, Frontier Airlines, and Allegiant Air), the Transportation Security Administration (TSA), and four rental car companies. Several business that rely on air shipping are located on airport property, including Nordstrom, FedEx, UPS, and the Unites States Postal Service.

In 2014 the Eastern Iowa Airport updated its airport Master Plan. The previous plan was completed in 2005. Airport officials, community leaders, and the general public all played an important role in the Master Planning process. Airport staff and Commission officials were closely involved in the development of this Master Plan. A Master Plan Advisory Committee (MPAC) was also appointed to assist in the preparation of this Plan and met regularly throughout the study period to ensure a comprehensive, community-based perspective. Two public open houses were also held during the process to inform and engage the public.

The Quad Cities International Airport

The Quad Cities International Airport (QCIA) serves travelers from eastern Iowa and western Illinois regional areas. There are currently four airlines serving 10 nonstop hub cities. The QCIA enplaned 367,048 passengers in 2015. In 2006, the QCIA conducted a survey to find out where QCIA travelers were coming from. In the survey, the QCIA discovered that 67% of travelers using their facilities came from eastern Iowa; 5% from Johnson County.

The Eastern Iowa AIrport is located twenty miles north of the Iowa City urbanized area and five miles to the southwest of downtown Cedar Rapids near Interstate 380 and within the Cedar Rapids/Iowa City Technology Corridor.

The 3,288-acre facility can accommodate any plane regardless of size and is located within 500 miles of one-third of the US population.

The five airlines that serve the airport transported over 439,000 passengers into in 2011.

There are 130-170 based aircraft owned or leased by corporations and major employers in the Cedar Rapids area.

Aviation Network Challenges*

To move toward the vision set for the public aviation system, at least $821 million will be needed for development of Iowa's aviation system over the next 20 years ($493 million at commercial airports and $328 million at general aviation airports).

From the total anticipated improvement costs, an estimated:

- $387 million is needed to improve airfield facilities.
- $140 million is needed for vertical infrastructure improvements such as hangars, terminals, and maintenance buildings.
- $294 million is needed for runway safety areas, equipment, parking, communications, weather and other development.

Aviation Network Trends**

- Aircraft Trends: light sport aircraft, very light jets, and unmanned aerial vehicles.
- NextGen and FAA Database Changes: Transformation from ground based traffic control to satellite based system of traffic management.
- Aviation System Users: User trends for general aviation, business aviation, agriculture, commercial operations, and military operations.
- Sustainability and technologies: Reduce environmental impacts, maintain high levels of economic growth, and to remain consistent with the needs and values of local communities.
- Biofuels: Research, development, and use of sustainable fuels.

*Iowa Department of Transportation-Office of Aviation Vision for Iowa Airports
**Iowa Aviation System Plan/2010-2030

STRATEGIES:
IMPROVING AVIATION TRANSPORTATION NETWORK

Support the Iowa DOT's Vision for Aviation	Economy	Environment	Quality of Life	System Preservation	Efficiency	Choice	Safety	Health	Equity
Develop a system of enhanced airports to meet the needs of corporate aircraft.			✓	✓	✓	✓	✓		
Build hangars to meet the needs of based aircraft at all airports.			✓	✓	✓	✓	✓		
Identify and address obstructions to primary runway approaches at all airports.			✓	✓	✓	✓	✓		
Establish guidelines that help all airports and communities promote land use planning and compatible land use around airports.			✓	✓	✓	✓	✓		
Develop facilities and services at selected airports to meet the needs of personal and business travelers using airports around the state.			✓	✓	✓	✓	✓		

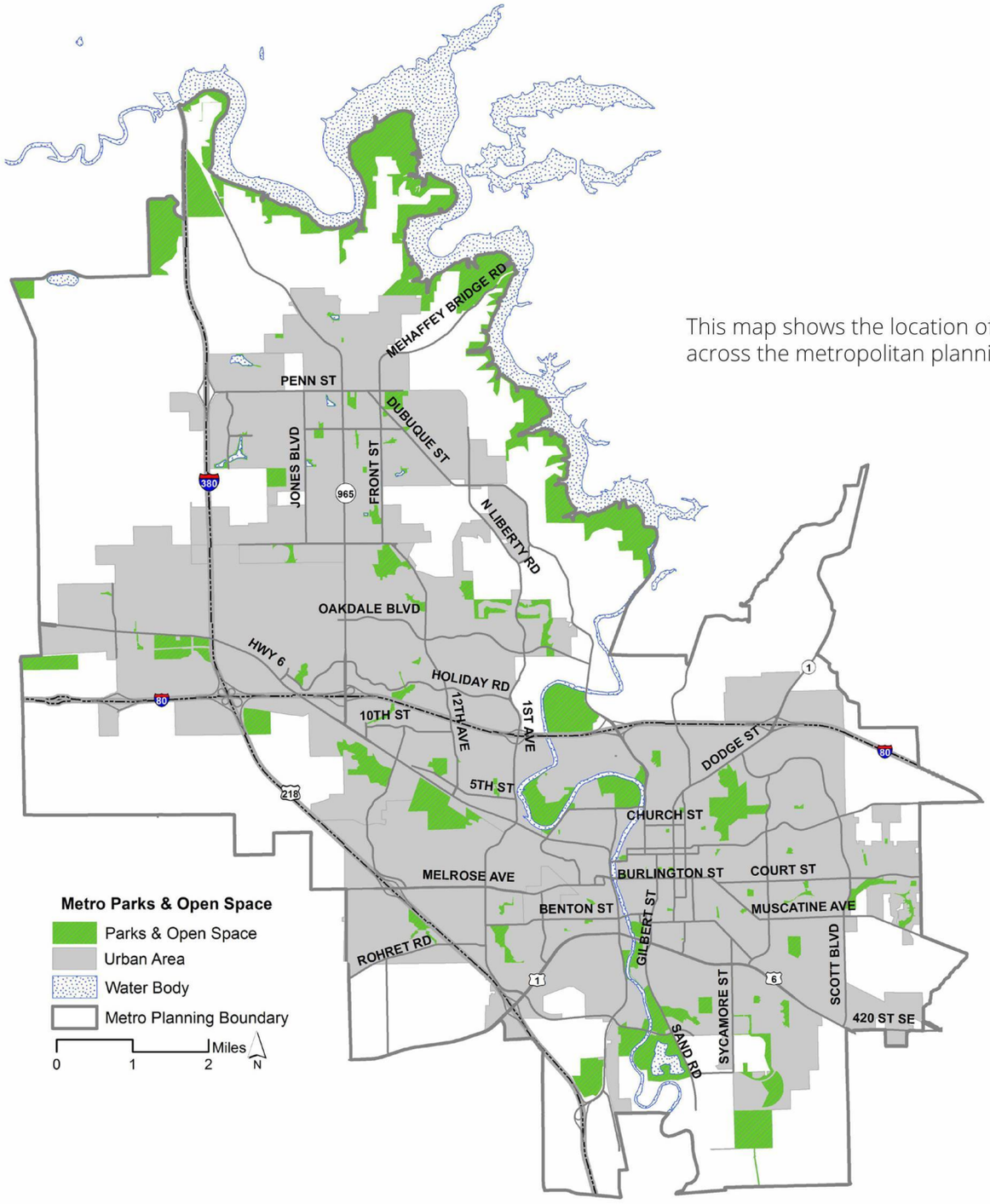
FUTURE FORWARD

2045 LONG RANGE TRANSPORTATION PLAN

SUPPORTING DOCUMENTATION

A. Regional Context

This map shows the location of parks and open space across the metropolitan planning boundary.



Forecast of State and Federal Transportation Dollars

To forecast future state and federal dollars available for Future Forward 2045 projects and programs, we establish a ten-year historic average of funding programs and apply a 4% inflation rate for each fiscal year covered by this plan (2017-2045). A 4% straight-line growth rate is recommended by the FHWA.

Table 1: Ten-Year Averages of State & Federal Funding Sources

YEAR	INTERSTATE MAINTENANCE	PRIMARY ROAD FUND	CONGESTION MITIGATION & AIR QUALITY IMPROVEMENT	RECRATIONAL TRAILS PROGRAM STATE-FED	SURFACE TRANSPORTION PROG (MPO)	TRANS ALTERNATIVES PROG	TRANS SAFETY IMPROVEMENT PROG	REVITALIZE IOWA'S SOUND ECONOMY
FY06	$601,000	$0	$215,442	$327,912	$1,751,000	$147,000	$500,000	$0
FY07	$23,622,000	$560,000	$0	$0	$1,289,000	$118,000	$500,000	$0
FY08	$12,415,000	$0	$0	$0	$1,278,000	$120,000	$0	$0
FY09	$10,432,000	$0	$0	$281,000	$1,554,000	$126,000	$0	$1,243,801
FY10	$28,219,000	$0	$0	$416,159	$1,785,930	$137,000	$0	$0
FY11	$5,063,000	$709,000	$0	$0	$1,991,000	$147,000	$12,595	$154,734
FY12	$0	$2,604,045	$0	$441,000	$2,270,000	$156,000	$0	$1,632,950
FY13	$8,972,997	$8,270,920	$180,500	$0	$2,220,000	$170,000	$21,500	$2,230,600
FY14	$2,072,457	$0	$408,100	$947,305	$2,746,982	$271,288	$700,000	$0
FY15	n/a	n/a	$0	$450,000	$2,732,816	$269,554	$1,000,000	$1,861,707
10 YR AVG	**$10,155,273**	**$1,349,329**	**$80,404**	**$286,338**	**$1,961,873**	**$166,184**	**$273,410**	**$712,379**

*DOT targets used as base projection for STBG (MPO) & TA Set-Aside / FLEX funding

Based on historical averages, the total amount of anticipated funding available from state and federal sources is identified in Figure XX. The federal funding programs utilized in this exercise include the National Highway Performance (NHPP) Program, Primary Road Funds (PRF), DOT Surface Transportation Block Grant Program (DOT STBG) funds, the Congestion Mitigation and Air Quality (CMAQ) Program, the Federal Recreational Trails (FRT) Program, Regional Surface Transportation Block Grant Program (MPO STBG) and Regional Transportation Alternative Set-Aside Program (MPO TA Set-Aside) funds. The state funding programs utilized include the State Recreational Trails (SRT) Program, the Revitalize Iowa's Sound Economy (RISE) Program, and the Transportation Safety Improvement Program (TSIP).

Table 2: Forecasted State & Federal Funding Summary by Program and Funding Period

	STATE AND FEDERAL FUNDING SOURCES								Local Source
	Discretionary Progams						Formula-Based Programs		
Cost Band / Funding Period	IM	PR & STP	SRT & FRT	TSIP	RISE	CMAQ	STP (MPO)	TAP/FLEX*	40% Match
Short-Term (FY17-25)	$106,021,050	$14,086,995	$2,989,365	$2,854,395	$7,437,239	$839,420	$28,386,360	$2,797,920	$28,300,202
Mid-Term (FY26-35)	$156,391,204	$20,779,667	$4,409,599	$4,210,506	$10,970,640	$1,238,225	$41,872,600	$4,127,200	$41,745,509
Long-Term (FY36-45)	$197,012,296	$26,176,983	$5,554,949	$5,304,144	$13,820,156	$1,559,841	$52,748,600	$5,199,200	$52,588,498
TOTAL	**$459,424,551**	**$61,043,644**	**$12,953,913**	**$12,369,046**	**$32,228,035**	**$3,637,486**	**$123,007,560**	**$12,124,320**	**$122,634,209**

For the purpose of this plan, we check that there is enough non-federal road use tax, special assessments, property tax, and interest revenue available (after operations and maintenance expenses) to provide a 40% local match for anticipated federal funds. To do this we average the last three years of City Street Finance Reports from the Iowa DOT and extrapolate the figures using a 4% inflation rate. Over the 29 year lifespan of this plan this comes to $410,120,361 which can accommodate the $122,634,209 minimum 40% local match projected to be necessary. Much of the remaining balance will be used for municipal road maintenance, repair, and related needs.

Table 3: Forecasted State & Federal Funding Forecast by year

	NHPP	Total DOT Funds	PR & STP (DOT)	TSIP	RISE	ICAAP	STP (MPO)	Road & Bridge 40% Match	Total Road & Bridge Funds	TAP/FLEX*	SRT & FRT	Bike & Ped 40% Match	Total Bike & Ped Funds	TOTAL
FY17	$10,155,273	$10,155,273	$1,349,329	$273,410	$712,379	$80,404	$2,719,000	$2,341,189	$7,475,711	$268,000	$286,338	$369,558	$923,896	$18,554,880
FY18	$10,561,484	$10,561,484	$1,403,302	$284,346	$740,874	$83,620	$2,827,760	$2,434,836	$7,774,739	$278,720	$297,791	$384,341	$960,852	$19,297,075
FY19	$10,967,695	$10,967,695	$1,457,275	$295,282	$769,370	$86,837	$2,936,520	$2,528,484	$8,073,768	$289,440	$309,245	$399,123	$997,808	$20,039,270
FY20	$11,373,906	$11,373,906	$1,511,248	$306,219	$797,865	$90,053	$3,045,280	$2,622,132	$8,372,796	$300,160	$320,698	$413,905	$1,034,764	$20,781,465
FY21	$11,780,117	$11,780,117	$1,565,222	$317,155	$826,360	$93,269	$3,154,040	$2,715,779	$8,671,825	$310,880	$332,152	$428,688	$1,071,719	$21,523,661
FY22	$12,186,328	$12,186,328	$1,619,195	$328,091	$854,855	$96,485	$3,262,800	$2,809,427	$8,970,853	$321,600	$343,605	$443,470	$1,108,675	$22,265,856
FY23	$12,592,539	$12,592,539	$1,673,168	$339,028	$883,350	$99,701	$3,371,560	$2,903,074	$9,269,881	$332,320	$355,059	$458,252	$1,145,631	$23,008,051
FY24	$12,998,749	$12,998,749	$1,727,141	$349,964	$911,845	$102,917	$3,480,320	$2,996,722	$9,568,910	$343,040	$366,512	$473,035	$1,182,587	$23,750,246
FY25	$13,404,960	$13,404,960	$1,781,114	$360,901	$940,341	$106,134	$3,589,080	$3,090,369	$9,867,938	$353,760	$377,966	$487,817	$1,219,543	$24,492,441
Sub-Total	**$106,021,050**	**$106,021,050**	**$14,086,995**	**$2,854,395**	**$7,437,239**	**$839,420**	**$28,386,360**	**$24,442,012**	$78,046,421	**$2,797,920**	**$2,989,365**	**$3,858,190**	$9,645,474	**$193,712,945**
FY26	$13,811,171	$13,811,171	$1,835,087	$371,837	$968,836	$109,350	$3,697,840	$3,184,017	$10,166,967	$364,480	$389,419	$502,599	$1,256,499	$25,234,637
FY27	$14,217,382	$14,217,382	$1,889,061	$382,773	$997,331	$112,566	$3,806,600	$3,277,665	$10,465,995	$375,200	$400,873	$517,382	$1,293,454	$25,976,832
FY28	$14,623,593	$14,623,593	$1,943,034	$393,710	$1,025,826	$115,782	$3,915,360	$3,371,312	$10,765,024	$385,920	$412,326	$532,164	$1,330,410	$26,719,027
FY29	$15,029,804	$15,029,804	$1,997,007	$404,646	$1,054,321	$118,998	$4,024,120	$3,464,960	$11,064,052	$396,640	$423,780	$546,946	$1,367,366	$27,461,222
FY30	$15,436,015	$15,436,015	$2,050,980	$415,582	$1,082,816	$122,214	$4,132,880	$3,558,607	$11,363,080	$407,360	$435,233	$561,729	$1,404,322	$28,203,417
FY31	$15,842,226	$15,842,226	$2,104,953	$426,519	$1,111,312	$125,431	$4,241,640	$3,652,255	$11,662,109	$418,080	$446,687	$576,511	$1,441,278	$28,945,613
FY32	$16,248,437	$16,248,437	$2,158,926	$437,455	$1,139,807	$128,647	$4,350,400	$3,745,902	$11,961,137	$428,800	$458,140	$591,293	$1,478,234	$29,687,808
FY33	$16,654,648	$16,654,648	$2,212,900	$448,392	$1,168,302	$131,863	$4,459,160	$3,839,550	$12,260,166	$439,520	$469,594	$606,076	$1,515,189	$30,430,003
FY34	$17,060,859	$17,060,859	$2,266,873	$459,328	$1,196,797	$135,079	$4,567,920	$3,933,197	$12,559,194	$450,240	$481,047	$620,858	$1,552,145	$31,172,198
FY35	$17,467,070	$17,467,070	$2,320,846	$470,264	$1,225,292	$138,295	$4,676,680	$4,026,845	$12,858,223	$460,960	$492,501	$635,640	$1,589,101	$31,914,393
Sub-Total	**$156,391,204**	**$156,391,204**	**$20,779,667**	**$4,210,506**	**$10,970,640**	**$1,238,225**	**$41,872,600**	**$36,054,310**	$115,125,947	**$4,127,200**	**$4,409,599**	**$5,691,199**	$14,227,998	**$285,745,149**
FY36	$17,873,280	$17,873,280	$2,374,819	$481,201	$1,253,787	$141,511	$4,785,440	$4,120,493	$13,157,251	$471,680	$503,954	$650,423	$1,626,057	$32,656,589
FY37	$18,279,491	$18,279,491	$2,428,792	$492,137	$1,282,283	$144,728	$4,894,200	$4,214,140	$13,456,280	$482,400	$515,408	$665,205	$1,663,013	$33,398,784
FY38	$18,685,702	$18,685,702	$2,482,765	$503,073	$1,310,778	$147,944	$5,002,960	$4,307,788	$13,755,308	$493,120	$526,861	$679,987	$1,699,969	$34,140,979
FY39	$19,091,913	$19,091,913	$2,536,739	$514,010	$1,339,273	$151,160	$5,111,720	$4,401,435	$14,054,336	$503,840	$538,315	$694,770	$1,736,924	$34,883,174
FY40	$19,498,124	$19,498,124	$2,590,712	$524,946	$1,367,768	$154,376	$5,220,480	$4,495,083	$14,353,365	$514,560	$549,768	$709,552	$1,773,880	$35,625,369
FY41	$19,904,335	$19,904,335	$2,644,685	$535,883	$1,396,263	$157,592	$5,329,240	$4,588,730	$14,652,393	$525,280	$561,222	$724,334	$1,810,836	$36,367,564
FY42	$20,310,546	$20,310,546	$2,698,658	$546,819	$1,424,758	$160,808	$5,438,000	$4,682,378	$14,951,422	$536,000	$572,675	$739,117	$1,847,792	$37,109,760
FY43	$20,716,757	$20,716,757	$2,752,631	$557,755	$1,453,254	$164,025	$5,546,760	$4,776,025	$15,250,450	$546,720	$584,129	$753,899	$1,884,748	$37,851,955
FY44	$21,122,968	$21,122,968	$2,806,604	$568,692	$1,481,749	$167,241	$5,655,520	$4,869,673	$15,549,479	$557,440	$595,582	$768,681	$1,921,704	$38,594,150
FY45	$21,529,179	$21,529,179	$2,860,577	$579,628	$1,510,244	$170,457	$5,764,280	$4,963,321	$15,848,507	$568,160	$607,036	$783,464	$1,958,660	$39,336,345
Sub-Total	**$197,012,296**	**$197,012,296**	**$26,176,983**	**$5,304,144**	**$13,820,156**	**$1,559,841**	**$52,748,600**	**$45,419,065**	$145,028,790	**$5,199,200**	**$5,554,949**	**$7,169,433**	$17,923,582	**$359,964,669**
TOTAL	**$459,424,551**	**$459,424,551**	**$61,043,644**	**$12,369,046**	**$32,228,035**	**$3,637,486**	**$123,007,560**	**$105,915,387**	**$338,201,158**	**$12,124,320**	**$12,953,913**	**$16,718,822**	**$41,797,055**	**$839,422,764**

Assumes a 4% annual growth rate.

* No local match included for NHPP, PRF, or TSIP

Regarding Total DOT Funds (2017-2025): The forecasts were supplemented with actual programmed/planned amounts, since the DOT has a higher than average volume of project dollars programmed in this area currently.

- The FY17-21 revenue forecast was replaced with the actual amount programmed in the DOT's 5-year program for the MPO area ($213,935,000).
- The FY22-25 revenue forecast was supplemented with the remaining cost for the I-80/I-380 interchange that is not currently programmed ($187,820,000), as it is anticipated that the project will continue to be funded.

Table 4: total Non-Federal Road Fund Receipts & Operations & Maintenance Costs FY17-45

	Urban Area Cities & Johnson County				
Fiscal Year	RUTF	Other Road Funds	Total Receipts	O&M	Total (recipts less O&M)
FY17	$14,492,434	$19,596,462	$34,088,896	$25,023,459	$9,065,437
FY18	$15,072,131	$20,380,320	$35,452,452	$26,024,398	$9,428,054
FY19	$15,651,829	$21,164,179	$36,816,008	$27,025,336	$9,790,672
FY20	$16,231,526	$21,948,037	$38,179,564	$28,026,274	$10,153,289
FY21	$16,811,223	$22,731,896	$39,543,119	$29,027,213	$10,515,907
FY22	$17,390,921	$23,515,754	$40,906,675	$30,028,151	$10,878,524
FY23	$17,970,618	$24,299,613	$42,270,231	$31,029,089	$11,241,142
FY24	$18,550,316	$25,083,471	$43,633,787	$32,030,028	$11,603,759
FY25	$19,130,013	$25,867,330	$44,997,343	$33,030,966	$11,966,377
Sub-Total	$151,301,011	$204,587,063	$355,888,074	$261,244,914	$94,643,160
FY26	$19,709,710	$26,651,188	$46,360,899	$34,031,905	$12,328,994
FY27	$20,289,408	$27,435,047	$47,724,454	$35,032,843	$12,691,612
FY28	$20,869,105	$28,218,905	$49,088,010	$36,033,781	$13,054,229
FY29	$21,448,802	$29,002,764	$50,451,566	$37,034,720	$13,416,846
FY30	$22,028,500	$29,786,622	$51,815,122	$38,035,658	$13,779,464
FY31	$22,608,197	$30,570,481	$53,178,678	$39,036,596	$14,142,081
FY32	$23,187,894	$31,354,339	$54,542,234	$40,037,535	$14,504,699
FY33	$23,767,592	$32,138,198	$55,905,789	$41,038,473	$14,867,316
FY34	$24,347,289	$32,922,056	$57,269,345	$42,039,411	$15,229,934
FY35	$24,926,986	$33,705,915	$58,632,901	$43,040,350	$15,592,551
Sub-Total	$223,183,484	$301,785,515	$524,968,998	$385,361,272	$139,607,727
FY36	$25,506,684	$34,489,773	$59,996,457	$44,041,288	$15,955,169
FY37	$26,086,381	$35,273,632	$61,360,013	$45,042,227	$16,317,786
FY38	$26,666,079	$36,057,490	$62,723,569	$46,043,165	$16,680,404
FY39	$27,245,776	$36,841,349	$64,087,124	$47,044,103	$17,043,021
FY40	$27,825,473	$37,625,207	$65,450,680	$48,045,042	$17,405,639
FY41	$28,405,171	$38,409,066	$66,814,236	$49,045,980	$17,768,256
FY42	$28,984,868	$39,192,924	$68,177,792	$50,046,918	$18,130,874
FY43	$29,564,565	$39,976,782	$69,541,348	$51,047,857	$18,493,491
FY44	$30,144,263	$40,760,641	$70,904,904	$52,048,795	$18,856,109
FY45	$30,723,960	$41,544,499	$72,268,460	$53,049,734	$19,218,726
Sub-Total	$281,153,220	$380,171,363	$661,324,582	$485,455,109	$175,869,474
TOTAL	$655,637,714	$886,543,941	$1,542,181,655	$1,132,061,295	$410,120,361

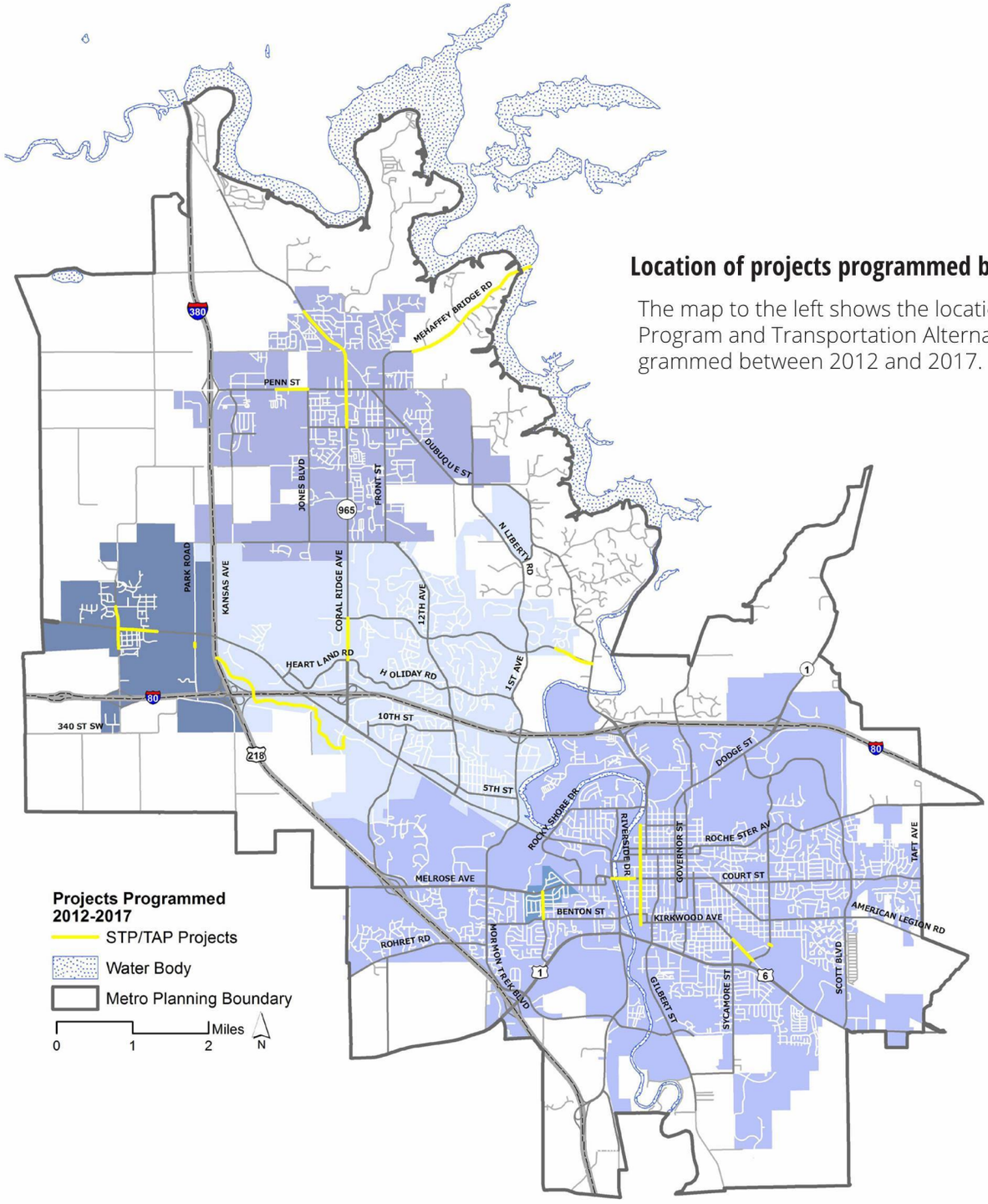
Assumes a 4% annual growth rate

TABLE 5: Total Non-federal Road Fund Receipts & Operations & Maintenance Costs, 2013-2015

	2013			2014			2015		
	RUTF	Other Road Funding	O&M	RUTF	Other Road Funding	O&M	RUTF	Other Road Funding	O&M
Tiffin		$2,108,600	**$433,005**	$194,415	$0	**$610,329**	$202,454	$42,590	**$206,813**
University Heights		$162,358	**$41,502**	$104,946	$233,541	**$85,646**	$109,286	$30,085	**$70,210**
North Liberty	$1,280,773	$2,911,514	**$2,695,526**	$1,335,444	$4,724,650	**$954,822**	$1,390,662	$3,834,781	**$1,103,997**
Iowa City	$6,508,053	$13,519,852	**$16,656,849**	$6,776,827	$12,856,911	**$14,568,241**	$7,056,460	$5,310,215	**$6,410,183**
Coralville	$1,832,109	$1,966,106	**$2,055,459**	$1,889,224	$1,264,074	**$1,742,140**	$1,965,997	$5,622,555	**$1,528,607**

	2013			2014			2015		
	RUTF	Farm to Market	O&M	RUTF	Farm to Market	O&M	RUTF	Farm to Market	O&M
Johnson County	$3,931,886	$1,330,188	**$8,657,854**	$4,214,626	$1,404,858	**$8,624,597**	$4,397,035	$1,466,507	**$8,624,597**

C. Road & Bridge



Location of projects programmed between 2012-2017

The map to the left shows the location of Surface Transportation Program and Transportation Alternatives Program projects programmed between 2012 and 2017.

Highest Collision Locations

The ten highest ranking intersections and five highest ranking mid-block locations in the Iowa City Urbanized Area for the years 2013 through 2015 are listed below. These are also shown on the location map on page XX.

Table 6: Ten Highest Ranking Intersections

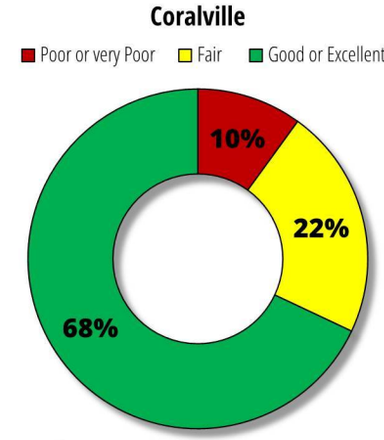
Jurisdiction	Intersection Location	Intersection Rank
Iowa City	Highway 6 & Sycamore Street	1
Iowa City	Highway 6 & S Gilbert Street	2
Iowa City	Mormon Trek Boulevard & Melrose Avenue	3
Iowa City	Highway 6 & Boyrum Street	4
Coralville	Coral Ridge Avenue & Commerce Drive	5
Coralville	2nd Street & 1st Avenue	5
Iowa City	W Burlington Street/Grand Avenue & S Riverside Drive	7
Iowa City	E Burlington Street & S Gilbert Street	7
Iowa City	E/W Burlington Street & Madison Street	9
Iowa City	Riverside Drive & Hawkins Drive	10

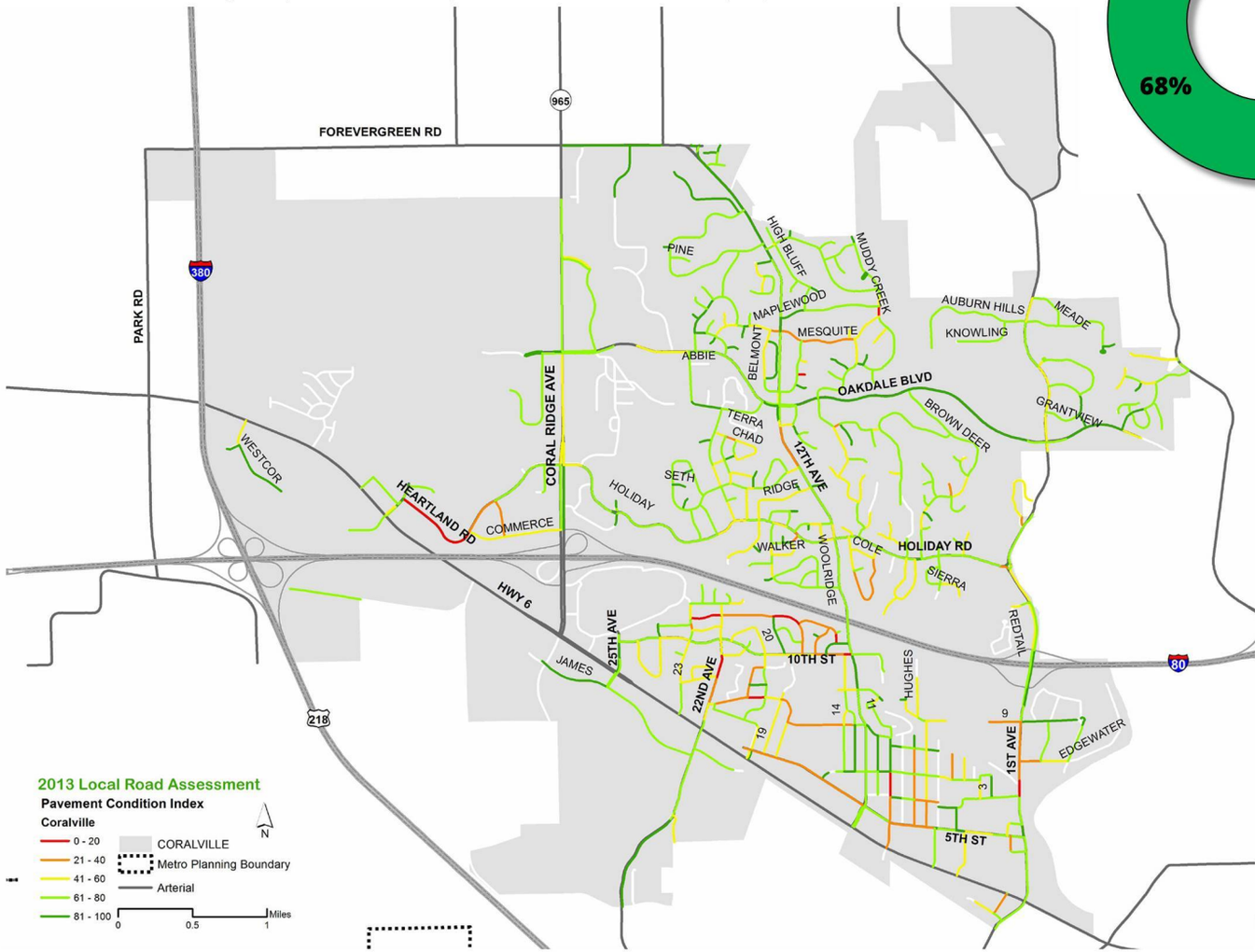
Table 7: Five Highest Ranking Mid-Block Locations

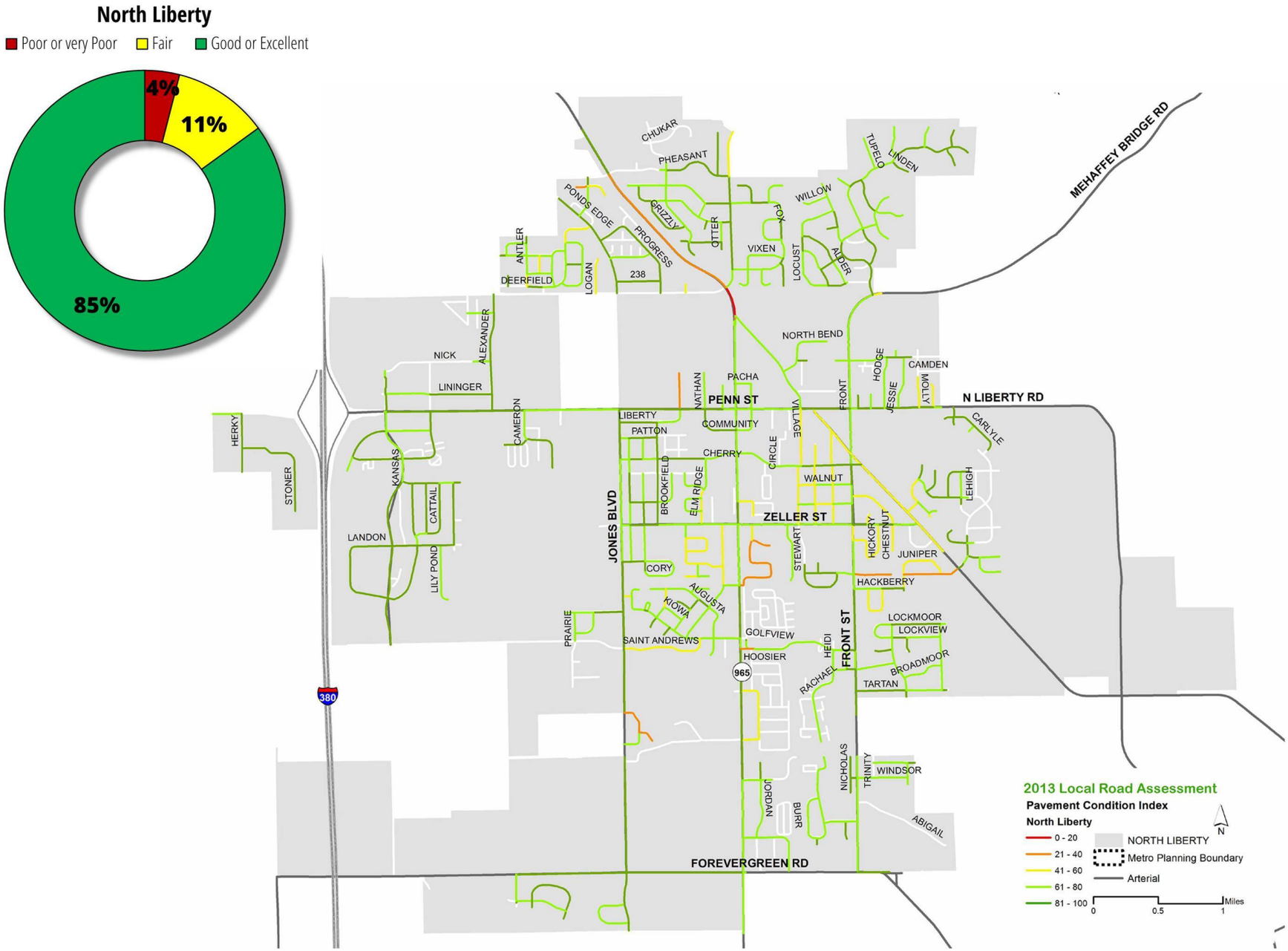
Jurisdiction	Mid-Block Location	Mid-Block Rank
Coralville	2nd Street between 25th Avenue & 23rd Avenue	1
Coralville	2nd Street between 1st Avenue & Hawkins Drive/Rocky Shore Drive	2
Coralville	2nd Street between 4th Avenue & 1st Avenue	3
Coralville	Coral Ridge Avenue between Commerce Drive & Holiday Road/Heartland Drive	4
Coralville	2nd Street between Camp Cardinal Boulevard & 20th Avenue	5

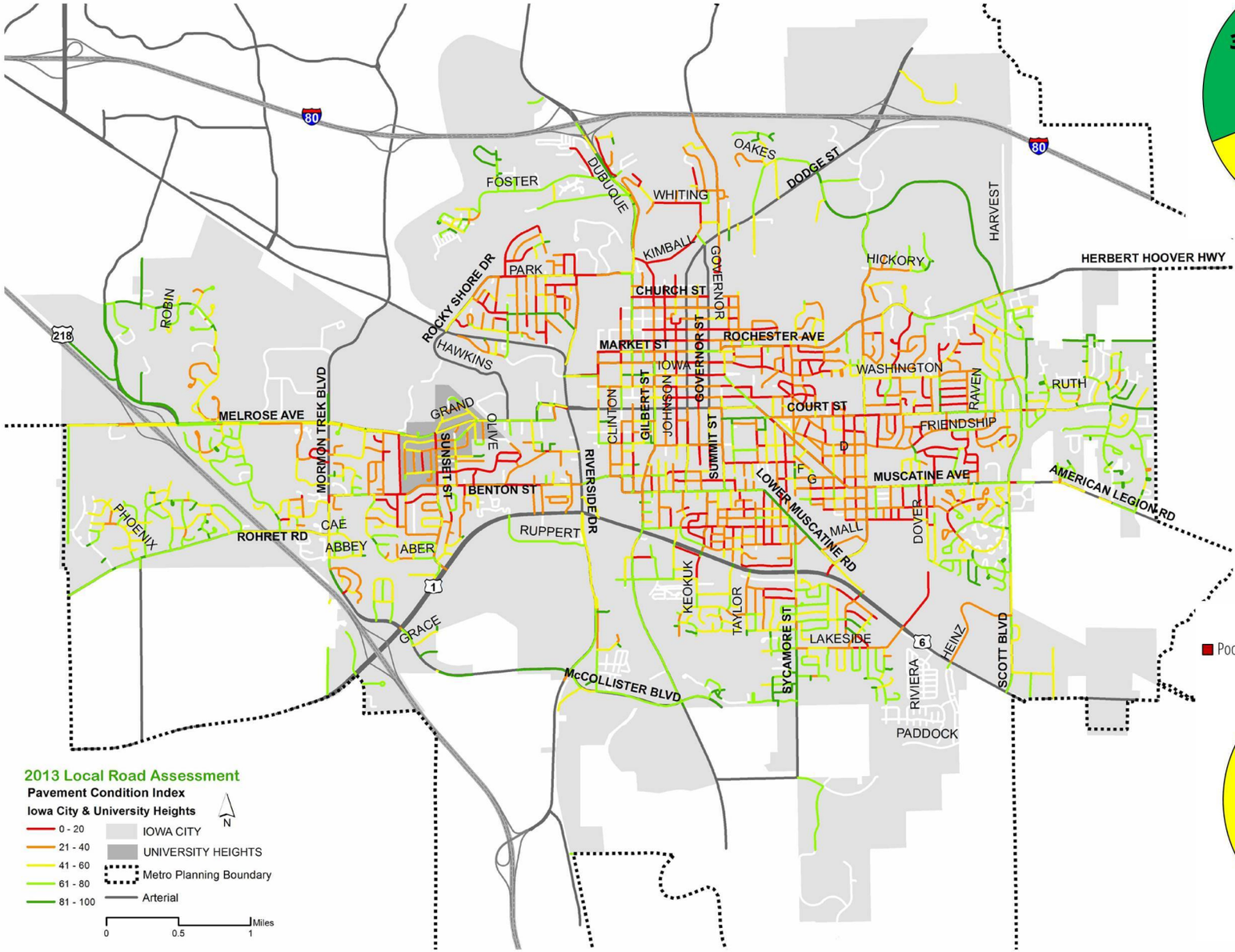
Local Pavement Condition Index by Community

Each year, the Institute for Transportation at Iowa State University (InTrans), collects pavement condition data for roads in Iowa. As part of this data collection, InTrans record the Pavement Condition Index (PCI), which gives users the level of quality they should expect when driving on the roadways. The PCI ranges from zero to one hundred, with one hundred being the best possible score a roadway can receive. PCI is summarized and mapped below for each community. For more information on the Program please visit: http://www.ctre.iastate.edu/ipmp/.

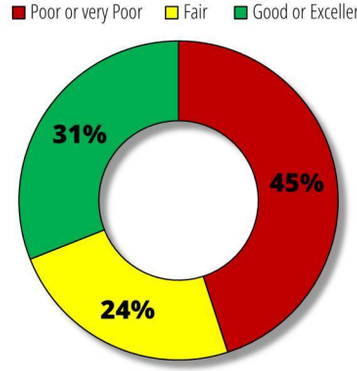




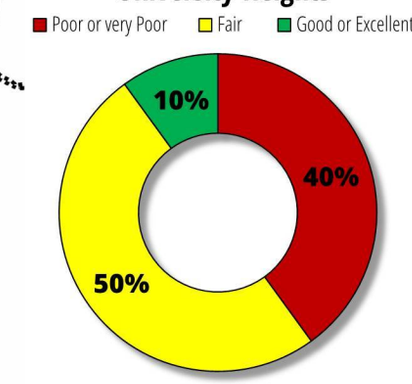

North Liberty
Poor or very Poor
Fair
Good or Excellent
4%
11%
85%
MEHAFFEY BRIDGE RD
N LIBERTY RD
PENN ST
ZELLER ST
FOREVERGREEN RD
JONES BLVD
FRONT ST
CHUKAR
PHEASANT
POND'S EDGE
GRIZZLY
PROGRESS
OTTER
FOX
WILLOW
TUPELO
LINDEN
VIXEN
LOCUST
ALDER
ANTLER
DEERFIELD
LOGAN
238
NORTH BEND
HODGE
CAMDEN
JESSIE
MOLLY
NICK
ALEXANDER
LININGER
PACHA
NATHAN
FRONT
VILLAGE
CARLYLE
HERKY
STONER
CAMERON
LIBERTY
PATTON
COMMUNITY
CHERRY
CIRCLE
WALNUT
LEHIGH
KANSAS
CATTAIL
LANDON
LILY POND
BROOKFIELD
ELM RIDGE
STEWART
HICKORY
CHESTNUT
JUNIPER
CORY
HACKBERRY
AUGUSTA
KIOWA
PRAIRIE
SAINT ANDREWS
GOLFVIEW
HOOSIER
HEIDI
LOCKMOOR
LOCKVIEW
BROADMOOR
RACHAEL
TARTAN
965
380
NICHOLAS
TRINITY
WINDSOR
JORDAN
BURR
ABIGAIL
2013 Local Road Assessment
Pavement Condition Index
North Liberty
0 - 20
21 - 40
41 - 60
61 - 80
81 - 100
NORTH LIBERTY
Metro Planning Boundary
Arterial
Miles
0
0.5
1
N

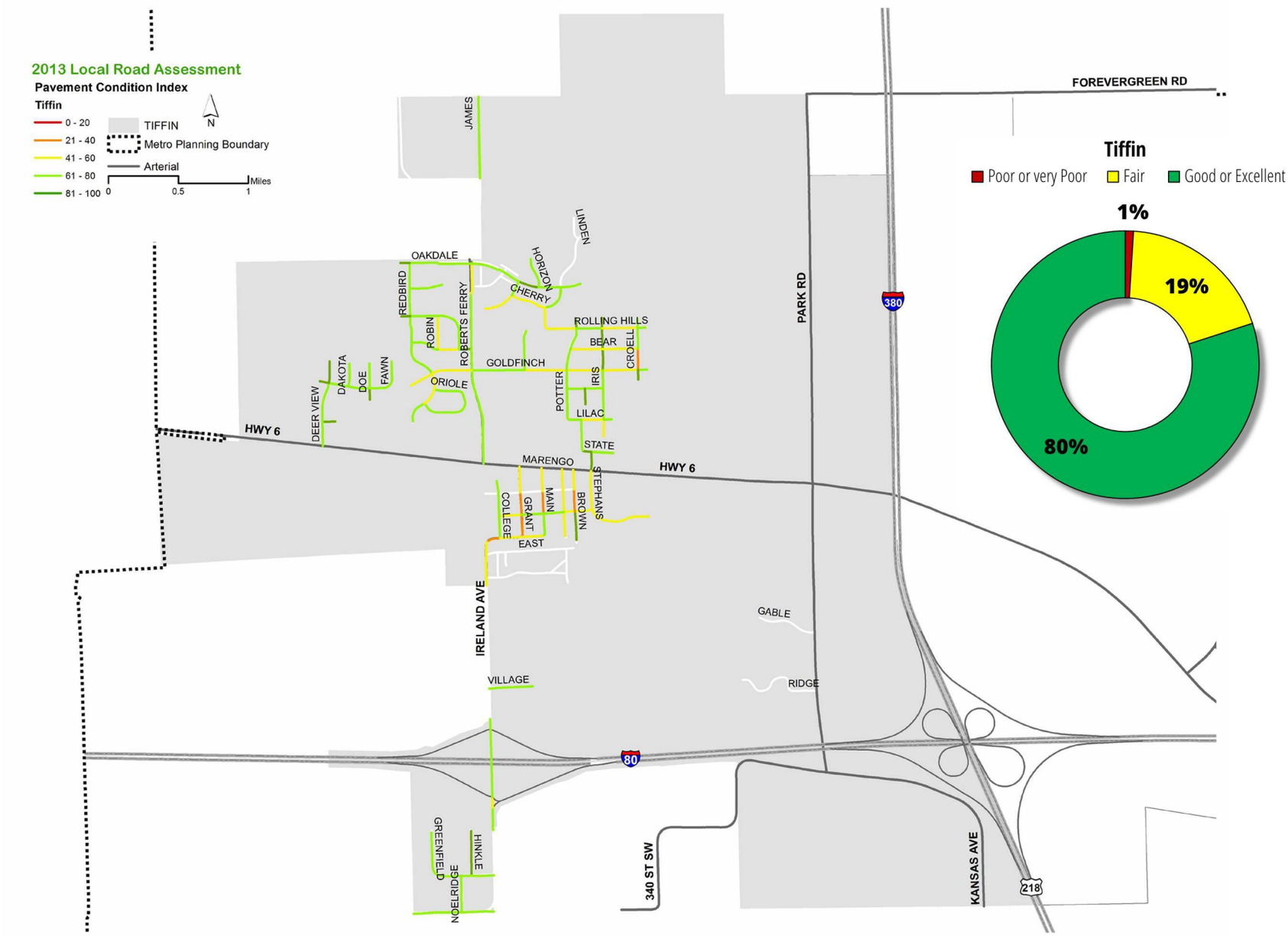


Iowa City



University Heights




2013 Local Road Assessment
Pavement Condition Index
Tiffin
0 - 20
21 - 40
41 - 60
61 - 80
81 - 100
TIFFIN
Metro Planning Boundary
Arterial
Miles
0
0.5
1
N
FOREVERGREEN RD
JAMES
LINDEN
OAKDALE
HORIZON
CHERRY
REDBIRD
ROBIN
ROBERTS FERRY
ROLLING HILLS
BEAR
CROELL
GOLDFINCH
ORIOLE
POTTER
IRIS
LILAC
STATE
DAKOTA
DOE
FAWN
DEER VIEW
HWY 6
MARENGO
STEPHANS
COLLEGE
GRANT
MAIN
BROWN
EAST
PARK RD
380
IRELAND AVE
GABLE
RIDGE
VILLAGE
80
GREENFIELD
HINKLE
NOELRIDGE
340 ST SW
KANSAS AVE
218
Tiffin
Poor or very Poor
Fair
Good or Excellent
1%
19%
80%

Unfunded Capitol Transportation Infrastructure Projects

The following tables outline projects that were submitted to the MPO for inclusion in the fiscally constrained 'approved projects' scenario approved as part of this plan, but were not ultimately selected.

Although the following projects cannot currently receive federal funding through the MPO, it's possible that these projects may become eligible should additional funding become available or if the Policy Board approved the removal of a project from the approved projects list and replaces the project with a currently unfunded project(s) of equal construction cost. All changes to the fiscally constrained list must be approved by the Urbanized Area Policy Board and updated in this Plan so the 'approved projects' list remain fiscally constrained for the 2017-2045 time frame.

Illustrative Road & Bridge Projects 2017 - 2025

ID	Project Title	Project Description	$ Cost Estimate at Construction	Entity
1	**Front Street Improvements - Dubuque to Zeller**	Dubuque Street to Zeller Street. Replace rural section roadway with urban section.	$1,206,400	North Liberty
2	**Dubuque Street Access Road and Traffic Signal**	This project will result in the construction of an access drive from the north end of Laura Drive to Dubuque Street, south of the Interstate 80 / Dubuque St interchange. A traffic signal will be installed at this new access, and the traffic signal will be coordinated with the I-80 interchange signals. May also facilitate a second means of access from the Peninsula area to Dubuque St.	$2,320,000	Iowa City
3	**Peninsula Secondary Access Road**	This project will establish a more reliable access to the Peninsula neighborhood by either elevating Foster Rd from Laura Dr to No Name road by creating a secondary access to the area. This project will not be necessary if the Taft Speedway Levee Project is constructed.	$3,692,280	Iowa City
4	**12th Avenue Reconstruction #1**	0.4 mile reconstruction of 12th Avenue between 6th St. and 8th St.	$1,740,000	Coralville
5	**Forevergreen Rd. Extension**	1.8 mile extension of Forevergreen Rd. between 12th Ave. and Dubuque St.	$10,440,000	Coralville
6	**Oakdale Boulevard - Westerly Extension**	1.5 mile extension of Oakdale Blvd. west of the future Jones Blvd. intersection	$7,250,000	Coralville
7	**McCollister Blvd - Gilbert to Sycamore**	Extend proposed McCollister Boulevard from Gilbert Street to Sycamore Street.	$3,915,000	Iowa City
8	**10th Street Reconstruction #1**	0.42 mile reconstruction of 10th Street between 12th Ave. and 20th Ave.	$1,218,000	Coralville
9	**Foster Rd Extension - Dubuque to Prairie Du Chien**	Construct Foster Road between Dubuque Street and Prairie Du Chien Road	$3,132,000	Iowa City

Illustrative Road & Bridge Projects 2017 - 2025				
10	**Dubuque Street Improvements - Cherry to Juniper**	Cherry to Juniper Street. Replace rural section roadway with urban section and intersection improvements.	$4,872,000	North Liberty
11	**Dubuque St Reconstruction - Washington St to Iowa Ave**	This project reconstructs Dubuque Street from Washington to Iowa Avenue. The project also improves sidewalk pavement, addresses critical utility updates, and enhances the retail environment with streetscape components.	$1,582,820	Iowa City
		Total Illustrative Project Costs 2017- 2025	$ 39,785,680	

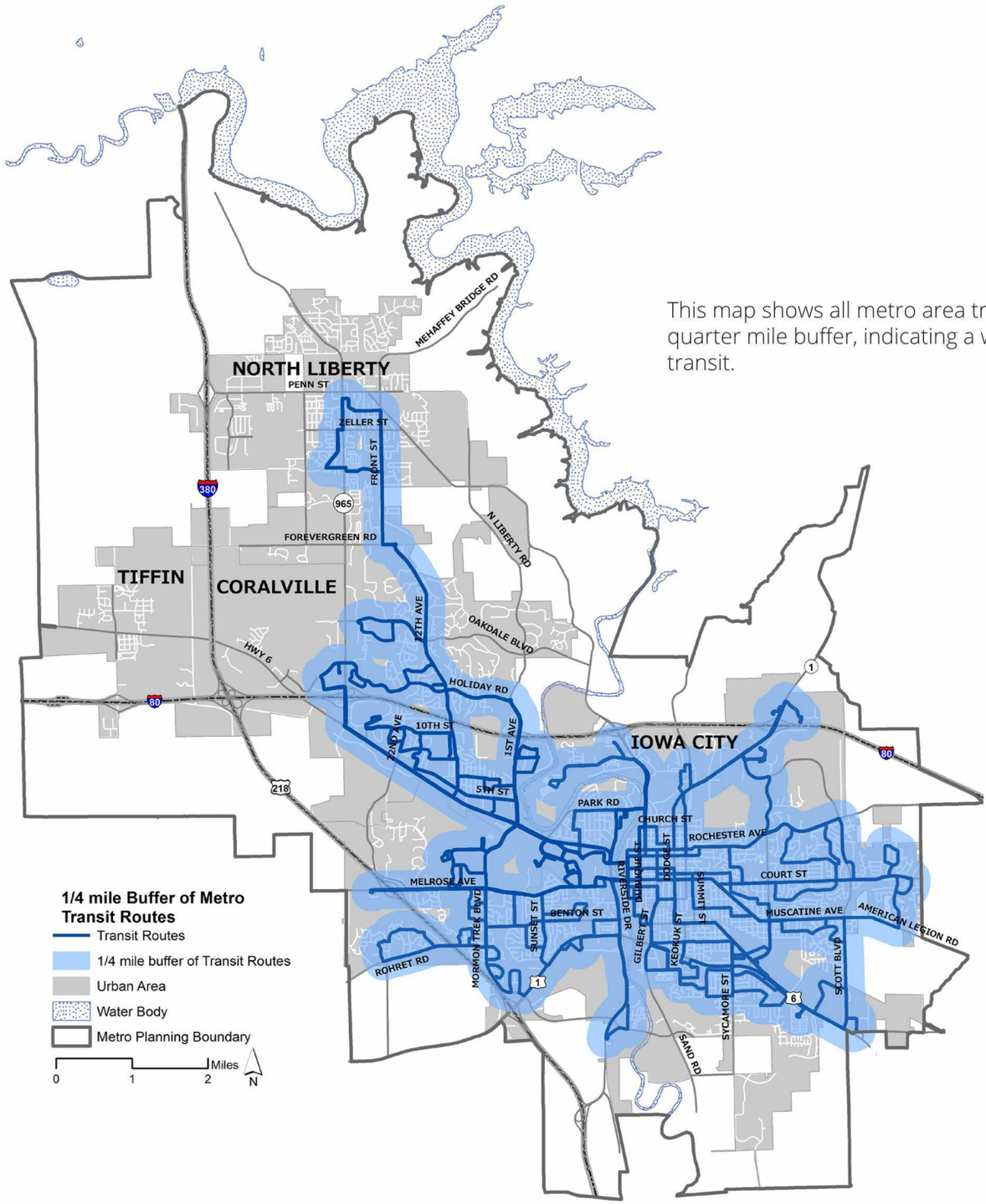
Illustrative Road & Bridge Projects 2026 - 2035				
ID	**Project Title**	**Project Description**	**$ Cost Estimate at Construction**	**Entity**
12	**Highway 6 - Jones. Blvd. to I-380**	1.0 mile reconstruction of Hwy 6 between Jones. Blvd. and I-380, conversion from rural to urban cross section	$15,200,000	Coralville
13	**Gilbert / US 6 Intersection Left Turn Lanes**	Reconstruct the intersection of Gilbert & US 6 to include dual left turn lanes on Gilbert St.	$7,356,800	Iowa City
14	**McCollister Blvd - Sycamore St to Scott Blvd**	Extend proposed McCollister Boulevard from Sycamore Street to Scott Boulevard.	$13,813,760	Iowa City
15	**Holiday Road Reconstruction #1**	0.9 mile reconstruction of Holiday Road between 1st Ave. and 12th Ave.	$5,130,000	Coralville
16	**Dubuque Street Improvements - Juniper to NL Rd**	Juniper Street to NL Road roundabout. Roadway and intersection improvements.	$5,320,000	North Liberty
17	**12th Avenue Reconstruction #3**	0.4 mile reconstruction of 12th Avenue between Interstate 80 and Holiday Rd.	$2,280,000	Coralville
18	**12th Avenue Reconstruction #4**	0.7 mile reconstruction of 12th Avenue between Holiday Rd. and Oakdale Blvd.	$3,990,000	Coralville
19	**Coral Ridge Avenue South Extension**	2.2 mile extension of Coral Ridge Avenue south of James St., over Highway 218, to IWV Rd. SW	$3,544,023	Coralville

Illustrative Road & Bridge Projects 2026 - 2035				
20	**Ireland Ave (Clear Creek Bridge to Railroad St.)**	Replace Bridge and Grade and Pave	$2,280,000	Tiffin
21	**Oakdale Blvd Bridge/Overpass**	Construct an Overpass over I-380 connecting Oakdale Blvd in Tiffin to Oakdale Blvd in Coralville	$15,200,000	Tiffin
22	**Kirkwood Avenue to Capitol Street Connection**	Extend Kirkwood Avenue to the intersection of Benton Street and Capitol Street.	$4,560,000	Iowa City
		Total Illustrative Project Costs 2026- 2035	$78,674,583	

Illustrative Road & Bridge Projects 2036 - 2045				
	Project Title	**Project Description**	**$ Cost Estimate at Construction**	**Entity**
23	**Camp Cardinal Boulevard Reconstruction #2**	0.58 mile reconstruction of Camp Cardinal Blvd. between Clear Creek and Kennedy Parkway	$4,176,000	Coralville
24	**340th Street (Park Road to Ireland Ave)**	Grade & Pave Street, Install Curb, Gutter and Sidewalks or Trails	$9,600,000	Tiffin
25	**Highway 965 Extension**	This project will be initial phase of constructing Hwy 965 extended from the south side of Hwy 218 to Melrose Avenue to arterial standards.	$22,170,123	Iowa City
26	**25th Avenue Reconstruction**	0.16 mile reconstruction of 25th Avenue between Hwy 6 and 10th St.	$1,536,000	Coralville
		Total Illustrative Project Costs 2036- 2045	$37,482,123	

D. Transit

This map shows all metro area transit routes with a one quarter mile buffer, indicating a walkable distance to transit.



Current Fixed Route/Paratransit Transit Programs:

Iowa City Transit (includes University Heights): Iowa City Transit provides service on 17 regular routes from 6:00 a.m.-11:00 p.m. All routes operate daily with 30-minute service during peak periods. The Seventh Avenue (during a.m. and p.m. peak periods), Melrose Express, Westside Hospital, Eastside Express, and Westport routes operate hourly all day long. Midday service is hourly except on the Towncrest and Oakcrest where service is 30 minutes all day during the University academic year. The Eastside Loop operates when Iowa City schools are in session. Hourly evening service is provided to the same general service area using combined routes, from 6:30 p.m.-11:00 p.m. Saturday service operates hourly all day with service ending at 7:00 p.m. Iowa City Transit also extends service to Chatham Oaks Care Facility located on the west side of Iowa City. There is no fixed route service on Sundays.

During peak periods Iowa City Transit operates 20 buses. Twelve buses operate weekdays off-peak. During evening hours and Saturdays five buses are in service. The Downtown Iowa City Transit Interchange is the hub of Iowa City Transit's operations. All regular routes arrive and depart at the interchange except for the Eastside Loop, allowing for coordinated transfers between buses.

The existing fare structure is a $1.00 base fare, $32 unlimited ride 31-day pass, and $8.50 for a ten-ride ticket strip. There is a 75¢ youth fare for K-12 aged children. Children under five may ride free accompanied by an adult. There is also a K-12 31-day pass available for $27 and a student semester pass for $100 for persons attending the University of Iowa or Kirkwood Community College. There is a monthly pass for University of Iowa faculty/staff for $28 per month. Elderly persons may ride during off peak hours and all day Saturday for 50¢. Eligible persons with disabilities and low income elderly persons may ride free during off peak hours. Free transfers are available and may be used on Coralville Transit. There is one free-fare route, the Downtown Transit Shuttle.

All Iowa City Transit fixed route buses are lift/ramp-equipped. Demand responsive paratransit service is provided during fixed-route service hours, operated by Johnson County SEATS.

Coralville Transit (includes North Liberty): Coralville Transit operates three routes on weekdays between 6:00 a.m. and 6:30 p.m. and one evening route until 12:00 a.m. An additional peak hour (tripper) route provides service to the core area of Coralville during the a.m. and p.m. rush hours when the University of Iowa and the Iowa City Community School District are in session. The Lantern Park and Tenth Street routes operate in the core area of Coralville with half hour headways except during midday when headways are one hour. The Express Route operates on a 60-minute headway, with midday service (no service at Coral Ridge Mall). Saturday service is provided on one route that serves the Lantern Park/10th Street service area from 7:00 a.m.-7:30 p.m. Coralville Transit offers a commuter route to North Liberty on weekdays from 7 a.m.-8 a.m. and 5 p.m.-6 p.m. There is no midday service and this route does not service Coral Ridge Mall. The 1st Avenue route serves the Coralville Intermodal to UIHC and VA Hospital areas. The Express, 1st Avenue, Night, and Saturday routes all serve the Coralville Intermodal. Park and Ride commuter service is available to and from the Coralville Intermodal.

Coralville Transit operates seven buses during weekday peak periods, three buses off peak, and one bus evenings and Saturdays. No service is offered on Sunday. All Coralville Transit routes interchange at the Downtown Iowa City Transit Interchange and at the University of Iowa Hospitals and Clinics.

The base fare on Coralville Transit is $1.00. Children under five, accompanied by an adult, ride for free. A 31-day pass is offered for $32, and a 20-ride pass for $20. Saturdays and evenings persons 5 to 15 years of age are eligible for a 75¢ youth fare. Elderly and disabled residents of Coralville may be eligible to ride for free at any time with a Coralville pass. Medicare recipients may ride at half-fare rates. Free transfers are available and may be used on Iowa City Transit.

All Coralville Transit fixed route buses are lift/ramp-equipped. Demand responsive paratransit service is provided during fixed-route service hours, operated by Johnson County SEATS.

University of Iowa Cambus: Cambus provides service on 13 routes Monday through Friday, and four routes Saturday and Sunday during the academic year. Cambus is a no fare service designed to facilitate circulation throughout the University campus. Although designed primarily to serve University students, faculty, and staff, Cambus is also open to the general public.

Cambus operates two separate levels of service throughout the year. Academic year service is the highest level of service; summer/interim service is approximately 75% of academic year service. Difference in level of service is in the amount of service provided, not in the areas served. The service area remains the same during both periods.

The primary routes, Red and Blue, operate in nearly identical clockwise and counter clockwise loops which serve the residence halls, University Hospitals, most academic buildings, Iowa City, and commuter parking lots. The Red, Blue and Hawkeye routes operate on Saturday and Sunday, for 28 weeks per year. The other routes are designed for specific functions: providing service to Oakdale Campus, providing service to commuter lots, providing service to residence halls, providing a shuttle between main campus and the hospital area, and service to Mayflower and Hawkeye Apartments.

During the academic year Cambus operates 25 buses during daytime peak hours, 12 buses between 6:30 p.m. and 9:00 p.m., and five buses between 9:00 p.m. and 12:00 a.m. Weekend service on the Red, Blue, Hawkeye-Interdorm, and Studio Arts routes operates between noon and midnight with three buses. Cambus also operates a Safe Ride service on Friday and Saturday nights from midnight to 2:20 a.m. with two buses.

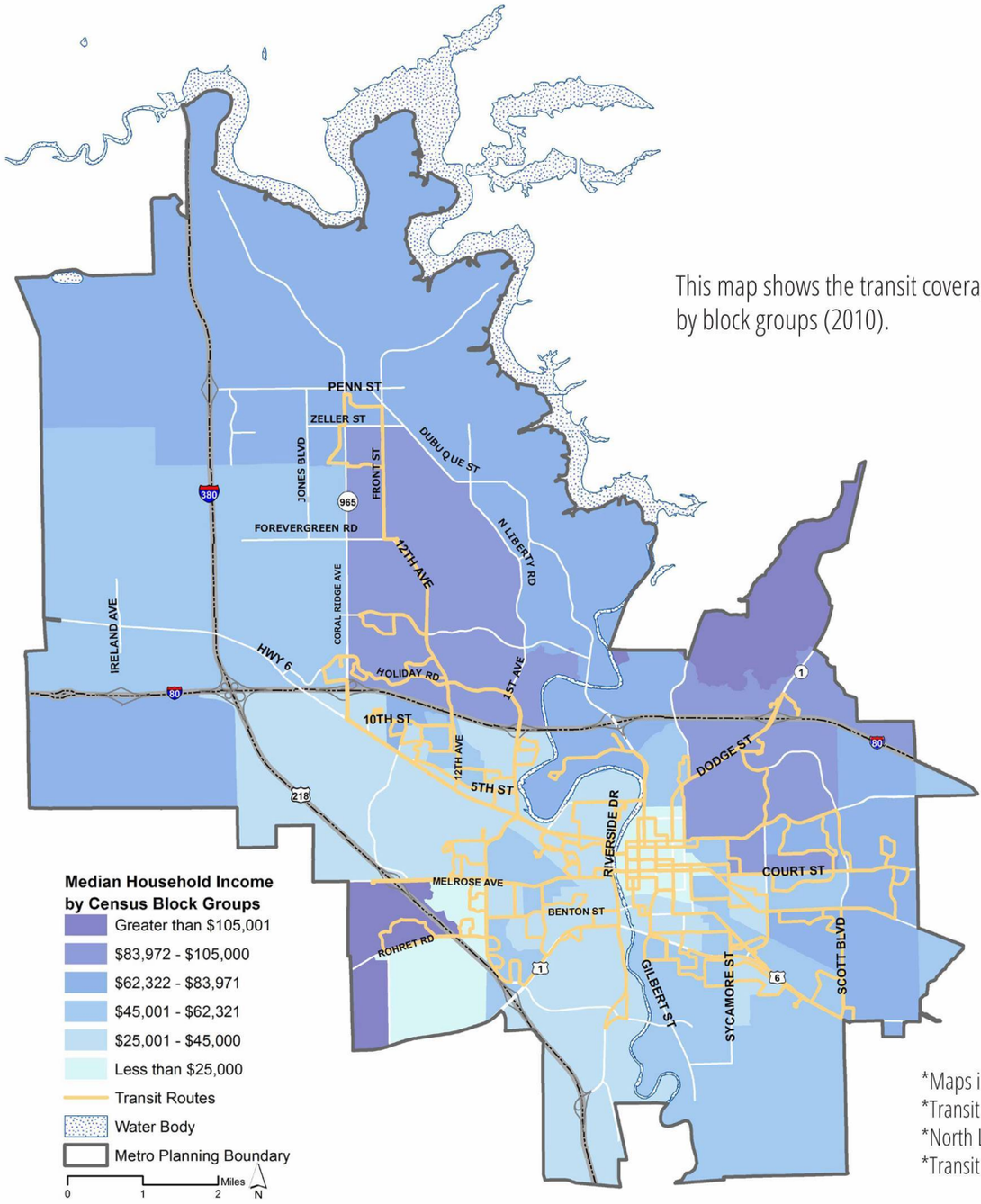
All Cambus fixed route buses are ramp/lift equipped. Cambus operates a special paratransit system, Bionic Bus. Similar to the fixed-route system, it is intended for University students, faculty and staff, but is also open to the public. The Bionic Bus system operates small accessible buses on a demand responsive basis. Service hours are the same as fixed route scheduled hours on Saturday and Sunday. A reduced level of service is provided during summer and interim periods.

North Liberty: The City of North Liberty will implement an off-peak fixed route transit service this fall. Johnson County SEATS, the regional transit provider, will provide the service with vehicles leased to SEATS by the East Central Iowa Council of Governments (ECICOG). The service will be offered Monday through Friday and will start at the Food Pantry around 10:25 A.M. and proceed on an agreed upon loop route, making five loops per day. The fare will initially be set at $2/ride. Complementary paratransit service will also be offered during the fixed route service hours.

Johnson County SEATS: Iowa City and Coralville Transit systems contract with Johnson County SEATS for provision of demand-responsive paratransit service. Johnson County SEATS provides scheduled service to rural Johnson County, and ADA service to the cities of Iowa City, Coralville, and University Heights. Paratransit service is available during the fixed-route service hours, as well as on Sundays from 8:00 a.m.-2:00 p.m.

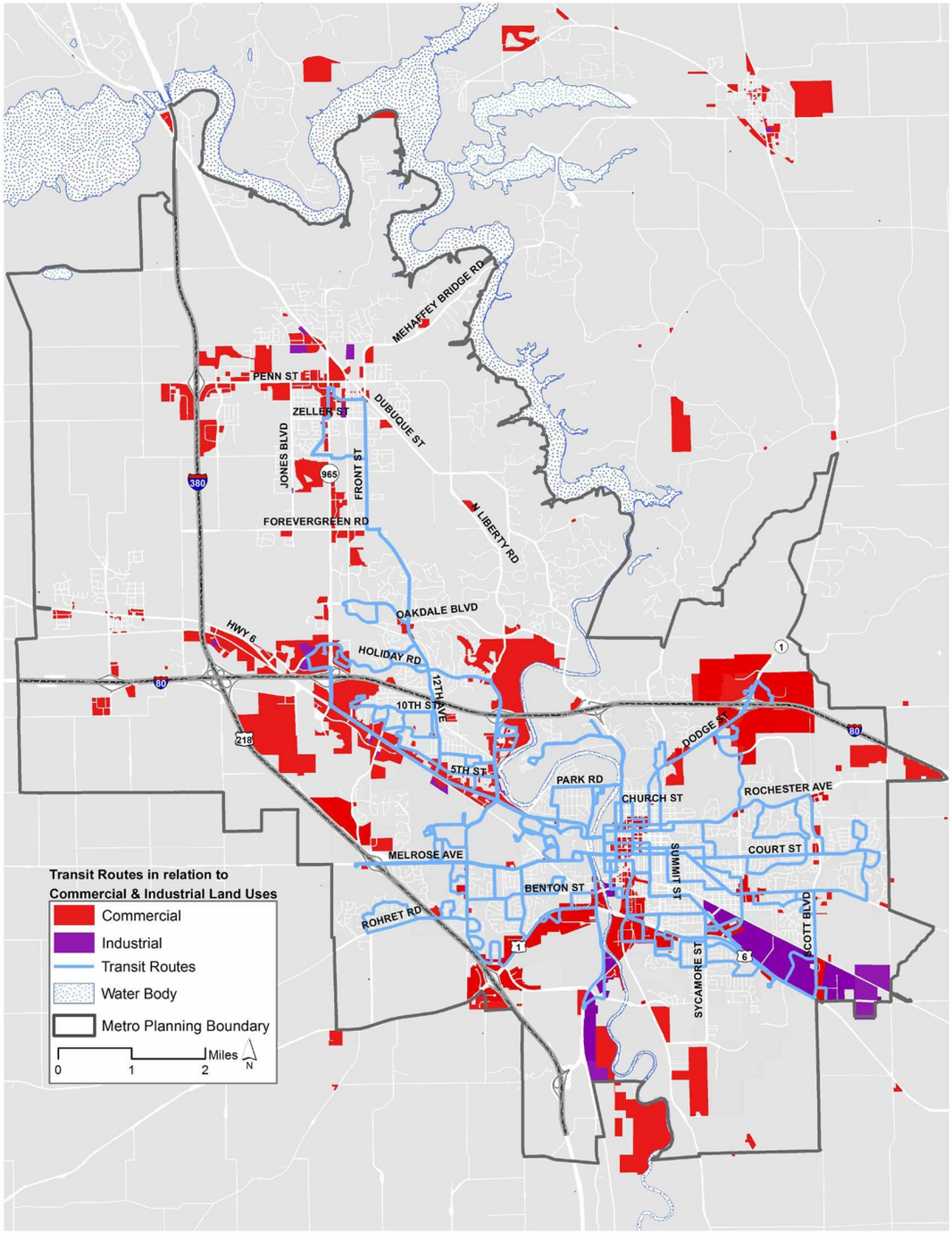
To qualify for SEATS service, you must have a transportation disability that precludes you from utilizing fixed-route service. While all fixed-route buses are now lift-equipped, SEATS is available to pick up and drop off passengers who are unable to, or are not mobile enough, to reach a standard bus stop.

Johnson County SEATS also provides demand response service throughout Johnson County.



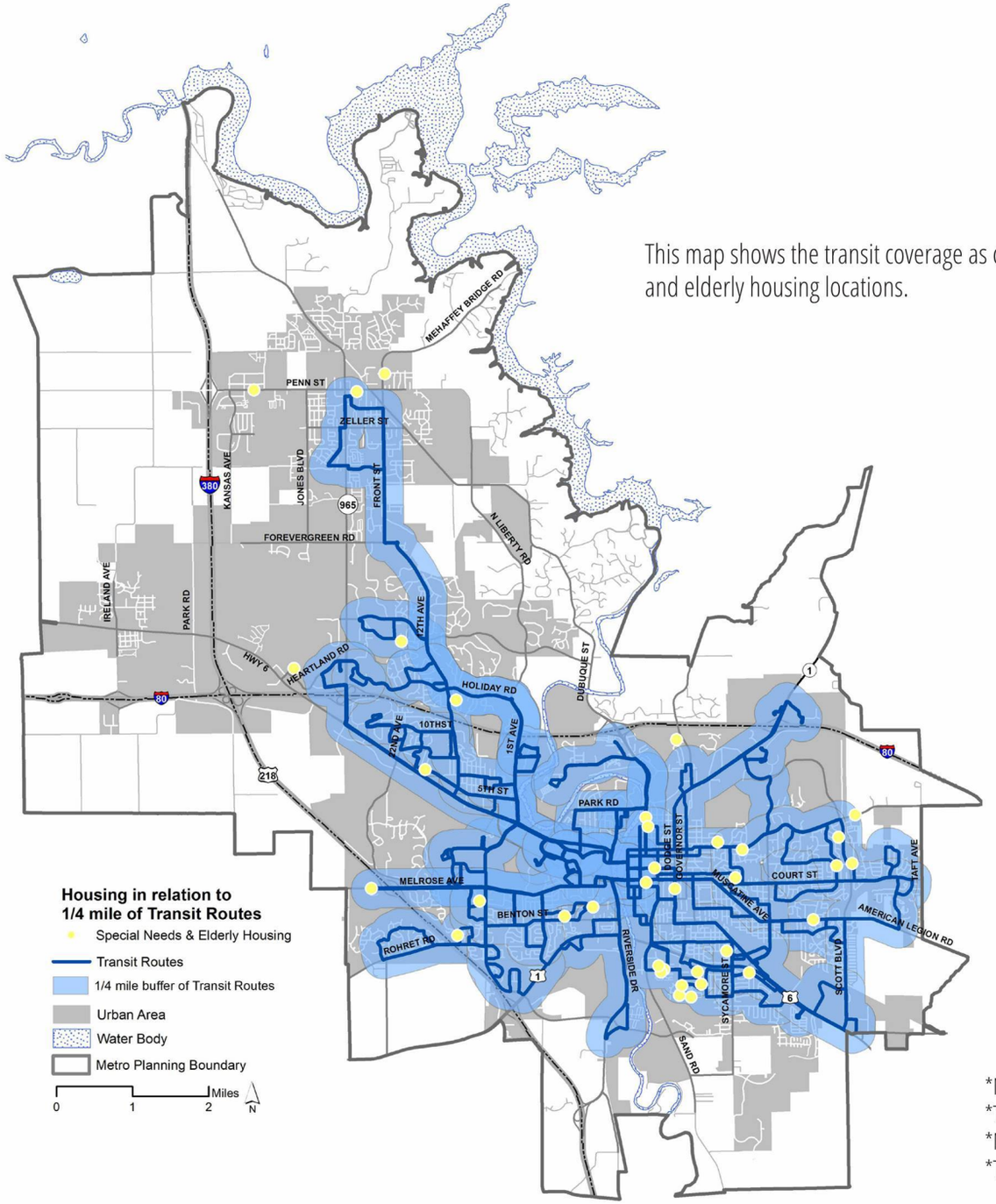
This map shows the transit coverage as compared to the median household income by block groups (2010).

*Maps include Iowa City, Coralville and Cambus transit routes
*Transit service is not available in Tiffin.
*North Liberty's Off-Peak Fixed Route is not shown on these maps.
*Transit service does not go beyond city limits



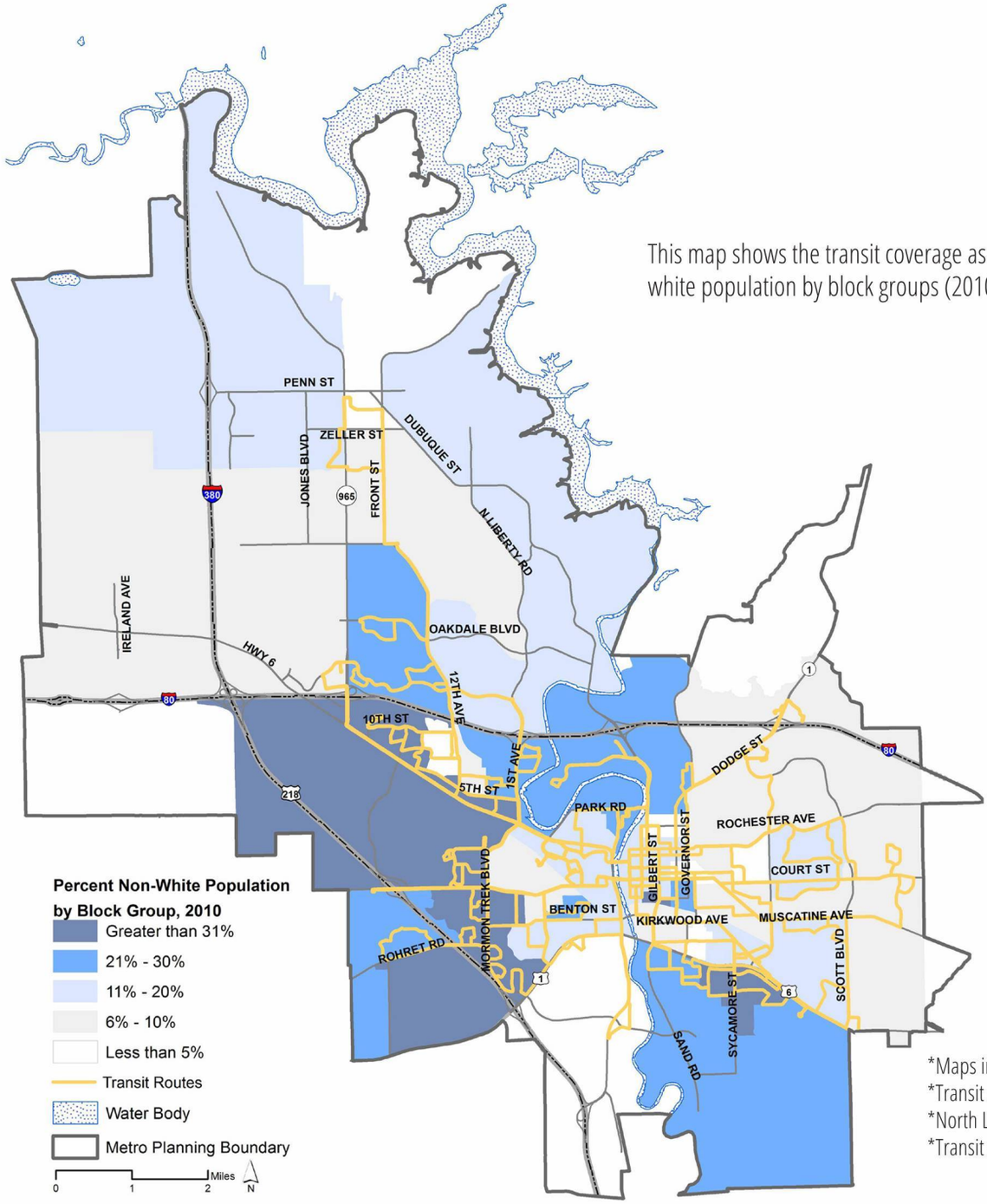
This map shows the transit coverage as compared to the existing commercial & industrial land uses.

*Maps include Iowa City, Coralville and Cambus transit routes
*Transit service is not available in Tiffin.
*North Liberty's Off-Peak Fixed Route is not shown on these maps.
*Transit service does not go beyond city limits



This map shows the transit coverage as compared to special needs and elderly housing locations.

*Maps include Iowa City, Coralville and Cambus transit routes
*Transit service is not available in Tiffin.
*North Liberty's Off-Peak Fixed Route is not shown on these maps.
*Transit service does not go beyond city limits



This map shows the transit coverage as compared to the percent non-white population by block groups (2010).

*Maps include Iowa City, Coralville and Cambus transit routes
*Transit service is not available in Tiffin.
*North Liberty's Off-Peak Fixed Route is not shown on these maps.
*Transit service does not go beyond city limits

TRANSIT REVENUE AND OPERATING COSTS (2017-2045)

IOWA CITY TRANSIT	2017	2018	2019	2020	2021	2022	2023	2024	2025
State Transit Assistance	$513,374	$533,909	$555,265	$577,476	$600,575	$624,598	$649,582	$675,565	$702,588
Urbanized Area Formula (5307	$1,439,334	$1,496,907	$1,556,784	$1,619,055	$1,683,817	$1,751,170	$1,821,217	$1,894,065	$1,969,828
Special Needs Formula (5310)	$119,704	$124,492	$129,472	$134,651	$140,037	$145,638	$151,464	$157,522	$163,823
Local Tax/Transit Levy	$3,402,567	$3,538,670	$3,680,216	$3,827,425	$3,980,522	$4,139,743	$4,305,333	$4,477,546	$4,656,648
Fare Revenue	$1,480,012	$1,539,212	$1,600,781	$1,664,812	$1,731,405	$1,800,661	$1,872,687	$1,947,595	$2,025,499
Contracts/Other	$887,668	$923,175	$960,102	$998,506	$1,038,446	$1,079,984	$1,123,183	$1,168,111	$1,214,835
Total Revenue	**$7,842,659**	**$8,156,365**	**$8,482,620**	**$8,821,925**	**$9,174,802**	**$9,541,794**	**$9,923,466**	**$10,320,404**	**$10,733,220**
Total Operating	**$6,593,295**	**$6,857,027**	**$7,131,308**	**$7,416,560**	**$7,713,223**	**$8,021,751**	**$8,342,622**	**$8,676,326**	**$9,023,379**

CORALVILLE TRANSIT	2017	2018	2019	2020	2021	2022	2023	2024	2025
State Transit Assistance	$283,341	$294,675	$306,462	$318,720	$331,469	$344,728	$358,517	$372,857	$387,772
Urbanized Area Formula (5307	$388,950	$404,508	$420,688	$437,516	$455,016	$473,217	$492,146	$511,832	$532,305
Special Needs Formula (5310)	$33,190	$34,518	$35,898	$37,334	$38,828	$40,381	$41,996	$43,676	$45,423
Local Tax/Transit Levy	$388,088	$403,612	$419,756	$436,546	$454,008	$472,168	$491,055	$510,697	$531,125
Fare Revenue	$493,442	$513,180	$533,707	$555,055	$577,257	$600,348	$624,362	$649,336	$675,309
Contracts/Other	$186,700	$194,168	$201,935	$210,012	$218,413	$227,149	$236,235	$245,684	$255,512
Total Revenue	**$1,773,711**	**$1,844,659**	**$1,918,446**	**$1,995,184**	**$2,074,991**	**$2,157,991**	**$2,244,310**	**$2,334,083**	**$2,427,446**
Total Operating	**$1,720,792**	**$1,789,624**	**$1,861,209**	**$1,935,657**	**$2,013,083**	**$2,093,607**	**$2,177,351**	**$2,264,445**	**$2,355,023**

UNIVERSITY OF IOWA CAMBUS	2017	2018	2019	2020	2021	2022	2023	2024	2025
State Transit Assistance	$753,559	$783,701	$815,049	$847,651	$881,557	$916,820	$953,493	$991,632	$1,031,298
Urbanized Area Formula (5307	$543,025	$564,746	$587,336	$610,829	$635,262	$660,673	$687,100	$714,584	$743,167
Special Needs Formula (5310)	$168,074	$174,797	$181,789	$189,060	$196,623	$204,488	$212,667	$221,174	$230,021
Local Tax/Transit Levy	$2,099,318	$2,183,291	$2,270,622	$2,361,447	$2,455,905	$2,554,141	$2,656,307	$2,762,559	$2,873,062
Fare Revenue	$0	$0	$0	$0	$0	$0	$0	$0	$0
Contracts/Other	$13,580	$14,123	$14,688	$15,276	$15,887	$16,522	$17,183	$17,870	$18,585
Total Revenue	**$3,577,556**	**$3,720,658**	**$3,869,485**	**$4,024,264**	**$4,185,235**	**$4,352,644**	**$4,526,750**	**$4,707,820**	**$4,896,132**
Total Operating	**$3,316,131**	**$3,448,776**	**$3,586,727**	**$3,730,196**	**$3,879,404**	**$4,034,580**	**$4,195,964**	**$4,363,802**	**$4,538,354**

4% increase/year

IOWA CITY TRANSIT	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
State Transit Assistance	$730,691	$759,919	$790,316	$821,928	$854,805	$888,998	$924,558	$961,540	$1,000,001	$1,040,002
Urbanized Area Formula (5307	$2,048,621	$2,130,566	$2,215,789	$2,304,420	$2,396,597	$2,492,461	$2,592,159	$2,695,846	$2,803,679	$2,915,827
Special Needs Formula (5310)	$170,376	$177,191	$184,279	$191,650	$199,316	$207,289	$215,580	$224,203	$233,171	$242,498
Local Tax/Transit Levy	$4,842,914	$5,036,630	$5,238,096	$5,447,619	$5,665,524	$5,892,145	$6,127,831	$6,372,944	$6,627,862	$6,892,976
Fare Revenue	$2,106,519	$2,190,779	$2,278,410	$2,369,547	$2,464,329	$2,562,902	$2,665,418	$2,772,035	$2,882,916	$2,998,233
Contracts/Other	$1,263,428	$1,313,965	$1,366,524	$1,421,185	$1,478,032	$1,537,154	$1,598,640	$1,662,586	$1,729,089	$1,798,252
Total Revenue	**$11,162,549**	**$11,609,051**	**$12,073,413**	**$12,556,350**	**$13,058,604**	**$13,580,948**	**$14,124,186**	**$14,689,153**	**$15,276,719**	**$15,887,788**
Total Operating	**$9,384,315**	**$9,759,687**	**$10,150,075**	**$10,556,078**	**$10,978,321**	**$11,417,454**	**$11,874,152**	**$12,349,118**	**$12,843,083**	**$13,356,806**

CORALVILLE TRANSIT	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
State Transit Assistance	$403,283	$419,414	$436,190	$453,638	$471,784	$490,655	$510,281	$530,692	$551,920	$573,997
Urbanized Area Formula (5307	$553,597	$575,741	$598,771	$622,721	$647,630	$673,536	$700,477	$728,496	$757,636	$787,941
Special Needs Formula (5310)	$47,240	$49,129	$51,094	$53,138	$55,264	$57,474	$59,773	$62,164	$64,651	$67,237
Local Tax/Transit Levy	$552,370	$574,465	$597,444	$621,341	$646,195	$672,043	$698,925	$726,882	$755,957	$786,195
Fare Revenue	$702,322	$730,415	$759,631	$790,017	$821,617	$854,482	$888,661	$924,208	$961,176	$999,623
Contracts/Other	$265,732	$276,362	$287,416	$298,913	$310,869	$323,304	$336,236	$349,686	$363,673	$378,220
Total Revenue	**$2,524,544**	**$2,625,526**	**$2,730,547**	**$2,839,768**	**$2,953,359**	**$3,071,494**	**$3,194,353**	**$3,322,127**	**$3,455,013**	**$3,593,213**
Total Operating	**$2,449,224**	**$2,547,193**	**$2,649,080**	**$2,755,043**	**$2,865,245**	**$2,979,855**	**$3,099,049**	**$3,223,011**	**$3,351,932**	**$3,486,009**

UNIVERSITY OF IOWA CAMBUS	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
State Transit Assistance	$1,072,549	$1,115,451	$1,160,069	$1,206,472	$1,254,731	$1,304,920	$1,357,117	$1,411,402	$1,467,858	$1,526,572
Urbanized Area Formula (5307	$772,894	$803,810	$835,962	$869,401	$904,177	$940,344	$977,957	$1,017,076	$1,057,759	$1,100,069
Special Needs Formula (5310)	$239,222	$248,791	$258,742	$269,092	$279,856	$291,050	$302,692	$314,799	$327,391	$340,487
Local Tax/Transit Levy	$2,987,984	$3,107,503	$3,231,804	$3,361,076	$3,495,519	$3,635,340	$3,780,753	$3,931,983	$4,089,263	$4,252,833
Fare Revenue	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Contracts/Other	$19,329	$20,102	$20,906	$21,742	$22,612	$23,516	$24,457	$25,435	$26,452	$27,511
Total Revenue	**$5,091,978**	**$5,295,657**	**$5,507,483**	**$5,727,782**	**$5,956,894**	**$6,195,169**	**$6,442,976**	**$6,700,695**	**$6,968,723**	**$7,247,472**
Total Operating	**$4,719,888**	**$4,908,684**	**$5,105,031**	**$5,309,233**	**$5,521,602**	**$5,742,466**	**$5,972,165**	**$6,211,051**	**$6,459,493**	**$6,717,873**

4% increase/year

IOWA CITY TRANSIT	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
State Transit Assistance	$1,081,602	$1,124,866	$1,169,860	$1,216,655	$1,265,321	$1,315,934	$1,368,571	$1,423,314	$1,480,246	$1,539,456
Urbanized Area Formula (5307	$3,032,460	$3,153,758	$3,279,908	$3,411,105	$3,547,549	$3,689,451	$3,837,029	$3,990,510	$4,150,130	$4,316,136
Special Needs Formula (5310)	$252,198	$262,286	$272,778	$283,689	$295,036	$306,838	$319,111	$331,876	$345,151	$358,957
Local Tax/Transit Levy	$7,168,695	$7,455,443	$7,753,661	$8,063,807	$8,386,360	$8,721,814	$9,070,687	$9,433,514	$9,810,855	$10,203,289
Fare Revenue	$3,118,162	$3,242,889	$3,372,604	$3,507,508	$3,647,809	$3,793,721	$3,945,470	$4,103,289	$4,267,420	$4,438,117
Contracts/Other	$1,870,183	$1,944,990	$2,022,789	$2,103,701	$2,187,849	$2,275,363	$2,366,378	$2,461,033	$2,559,474	$2,661,853
Total Revenue	**$16,523,300**	**$17,184,232**	**$17,871,601**	**$18,586,465**	**$19,329,924**	**$20,103,120**	**$20,907,245**	**$21,743,535**	**$22,613,277**	**$23,517,808**
Total Operating	**$13,891,078**	**$14,446,721**	**$15,024,590**	**$15,625,574**	**$16,250,597**	**$16,900,621**	**$17,576,645**	**$18,279,711**	**$19,010,900**	**$19,771,336**

CORALVILLE TRANSIT	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
State Transit Assistance	$596,957	$620,835	$645,668	$671,495	$698,355	$726,289	$755,341	$785,554	$816,977	$849,656
Urbanized Area Formula (5307	$819,459	$852,237	$886,327	$921,780	$958,651	$996,997	$1,036,877	$1,078,352	$1,121,486	$1,166,346
Special Needs Formula (5310)	$69,926	$72,723	$75,632	$78,658	$81,804	$85,076	$88,479	$92,018	$95,699	$99,527
Local Tax/Transit Levy	$817,643	$850,349	$884,363	$919,737	$956,527	$994,788	$1,034,579	$1,075,962	$1,119,001	$1,163,761
Fare Revenue	$1,039,608	$1,081,192	$1,124,440	$1,169,417	$1,216,194	$1,264,842	$1,315,436	$1,368,053	$1,422,775	$1,479,686
Contracts/Other	$393,349	$409,083	$425,446	$442,464	$460,162	$478,569	$497,712	$517,620	$538,325	$559,858
Total Revenue	**$3,736,942**	**$3,886,419**	**$4,041,876**	**$4,203,551**	**$4,371,693**	**$4,546,561**	**$4,728,423**	**$4,917,560**	**$5,114,263**	**$5,318,833**
Total Operating	**$3,625,449**	**$3,770,467**	**$3,921,286**	**$4,078,137**	**$4,241,263**	**$4,410,913**	**$4,587,350**	**$4,770,844**	**$4,961,678**	**$5,160,145**

UNIVERSITY OF IOWA CAMBUS	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
State Transit Assistance	$1,587,635	$1,651,141	$1,717,186	$1,785,874	$1,857,309	$1,931,601	$2,008,865	$2,089,220	$2,172,788	$2,259,700
Urbanized Area Formula (5307	$1,144,072	$1,189,835	$1,237,428	$1,286,925	$1,338,402	$1,391,938	$1,447,616	$1,505,520	$1,565,741	$1,628,371
Special Needs Formula (5310)	$354,107	$368,271	$383,002	$398,322	$414,255	$430,825	$448,058	$465,980	$484,619	$504,004
Local Tax/Transit Levy	$4,422,946	$4,599,864	$4,783,859	$4,975,213	$5,174,222	$5,381,191	$5,596,438	$5,820,296	$6,053,108	$6,295,232
Fare Revenue	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Contracts/Other	$28,611	$29,755	$30,946	$32,183	$33,471	$34,810	$36,202	$37,650	$39,156	$40,722
Total Revenue	**$7,537,371**	**$7,838,866**	**$8,152,420**	**$8,478,517**	**$8,817,658**	**$9,170,364**	**$9,537,179**	**$9,918,666**	**$10,315,413**	**$10,728,029**
Total Operating	**$6,986,588**	**$7,266,051**	**$7,556,693**	**$7,858,961**	**$8,173,320**	**$8,500,252**	**$8,840,262**	**$9,193,873**	**$9,561,628**	**$9,944,093**

4% increase/year

TRANSIT REVENUE AND OPERATING COSTS (2017-2045)

IOWA CITY TRANSIT	2017-2025	2026-2035	2036-2045
State Transit Assistance	$5,432,932	$8,772,758	$12,985,825
Urbanized Area Formula (5307	$15,232,177	$24,595,964	$36,408,035
Special Needs Formula (5310)	$1,266,803	$2,045,554	$3,027,919
Local Tax/Transit Levy	$36,008,670	$58,144,542	$86,068,126
Fare Revenue	$15,662,664	$25,291,088	$37,436,988
Contracts/Other	$9,394,009	$15,168,856	$22,453,613
Total Revenue	$82,997,255	$134,018,761	$198,380,506
Total Operating	$69,775,491	$112,669,087	$166,777,772

CORALVILLE TRANSIT	2017-2025	2026-2035	2036-2045
State Transit Assistance	$2,998,540	$4,841,854	$7,167,127
Urbanized Area Formula (5307	$4,116,178	$6,646,546	$9,838,512
Special Needs Formula (5310)	$351,243	$567,165	$839,543
Local Tax/Transit Levy	$4,107,056	$6,631,816	$9,816,708
Fare Revenue	$5,221,996	$8,432,151	$12,481,643
Contracts/Other	$1,975,808	$3,190,411	$4,722,587
Total Revenue	$18,770,820	$30,309,944	$44,866,121
Total Operating	$18,210,790	$29,405,641	$43,527,532

UNIVERSITY OF IOWA CAMBUS	2017-2025	2026-2035	2036-2045
State Transit Assistance	$7,974,761	$12,877,143	$19,061,318
Urbanized Area Formula (5307	$5,746,722	$9,279,447	$13,735,848
Special Needs Formula (5310)	$1,778,693	$2,872,121	$4,251,441
Local Tax/Transit Levy	$22,216,653	$35,874,057	$53,102,368
Fare Revenue	$0	$0	$0
Contracts/Other	$143,714	$232,061	$343,507
Total Revenue	$37,860,543	$61,134,830	$90,494,483
Total Operating	$35,093,936	$56,667,486	$83,881,722

4% increase/year

E. Public Input

Below is a summary of efforts undertaken by the MPO to gather public input on the Future Forward 2045 plan as well as the feedback received. The MPO solicited for input through online surveys, workshops, presentations, social media, press releases, and the MPOJC website.

Outreach

Presentations

In June 2015, MPO staff offered to provide a presentation to any committees or commissions in the urbanized area seeking more information about the Long Range Transportation Plan revision process, or more detail about what the plan encompasses. Over the course of two years, staff presented to four interested committees or groups. Staff also presented pertinent information, related to the Long Range Transportation Plan, to the Regional Trails and Bicycling Committee, the Transportation Technical Committee, and the Urbanized Area Policy Board.

Surveys

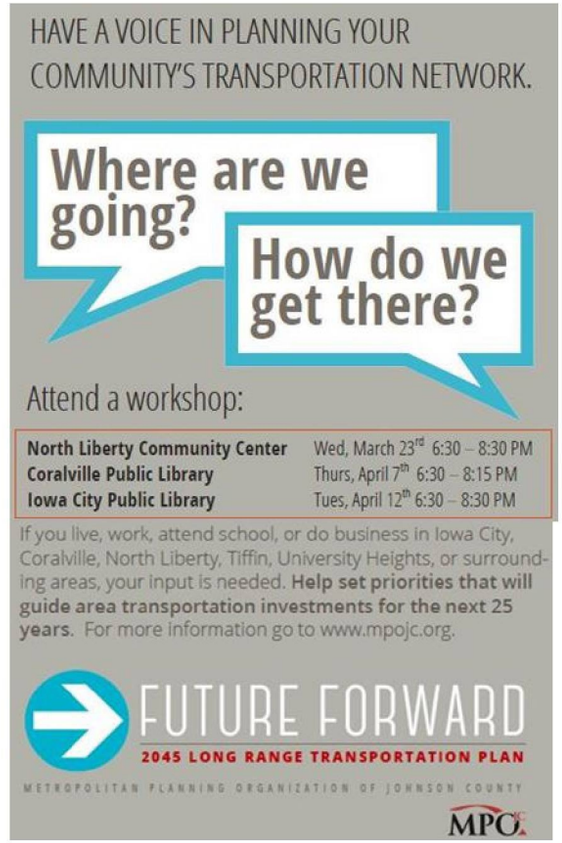
In February and March 2016, the MPO posted six surveys—general transportation, passenger vehicle, transit, bicycle, pedestrian, and youth—on it's website for approximately 2 months. Anyone who lives, works, attends school or conducts business in Johnson County was encouraged to complete one or many surveys. While the surveys were not statistically significant, they provide significant information regarding the way people travel throughout the Metro area. In total, over 3,500 surveys were collected.

In addition, the MPOJC conducted its first ever youth transportation survey. While the youth survey was available in an online format, Kingsley Botchway of the ICCSD assisted MPOJC by distributing paper copies to all public schools. We received more than 1,718 completed surveys (342 K-6th elementary; 666 junior high; 710 high school). The survey focused on students preferred mode of transportation to and from school. We did not receive responses from all schools, most notably several Iowa City elementary schools did not complete the survey.

Workshops

The MPO hosted a series of workshops in March and April 2016, which sought feedback on transportation projects submitted by member entities for consideration in the plan. In addition, participants were asked to provide feedback on the strengths and weaknesses of the transportation network. To gather this feedback, Staff provided participants with a map that illustrated all projects submitted for consideration along with basic information about each project. Participants could review the projects and then 'vote' for their 5 most important projects in each category (road/bridge and bike/pedestrian). Participants were also asked to 'vote' on aspects of transit service that could be improved.

* Public comment collected during development of the Future Forward 2045 plan was also considered.



3,983 Total Survey Responses

Youth (1,718)

Bike (304)

Transit (215)

Vehicle (240)

General (1,271)

Pedestrian (235)

Over 100 Individuals Attended Workshops

Press Releases / MPOJC Website

The five media outlets listed below were used to notify residents of public comment periods, public workshops, public surveys, and meetings.

1. Press-releases were sent to subscribers of the MPOJC e-news list.
2. The planning process and draft chapters were posted on the MPOJC Website.
3. Cambus, Iowa City and Coralville buses displayed workshop posters.
4. Notices of public input opportunities were delivered to MPOJC public input organizations (over 35).
5. Notices of public input opportunities were tweeted on Twitter and posted on Facebook.

Capturing and Organizing Public Input

Public input received from each public outreach opportunity is summarized below.

Presentations

- Conducted 4 formal presentations to interested parties
- Over 5 presentations to the Regional Trails and Bicycle Committee and Transportation Technical Advisory Committee
- Over 9 presentation to the Urbanized Area Policy Board

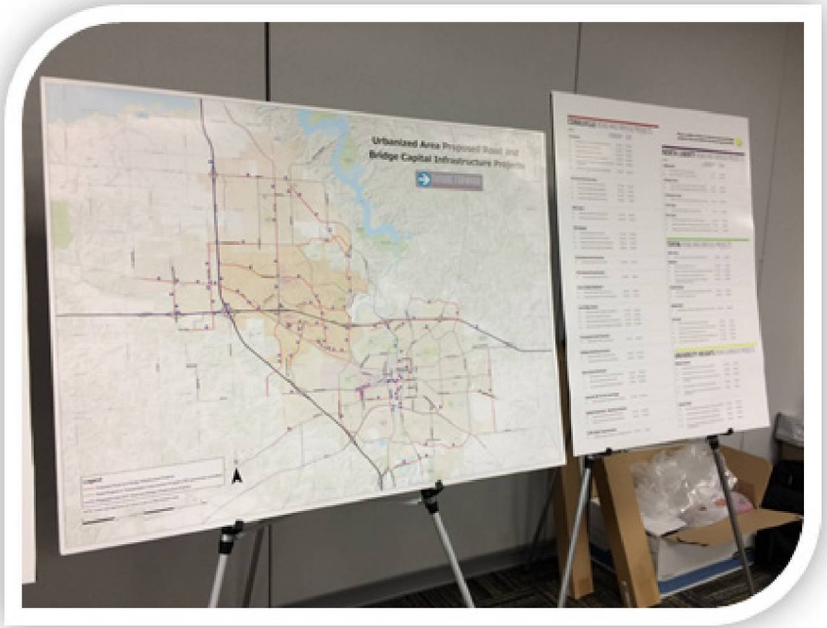
Surveys

Received 3,983 surveys responses

Workshops

Held 3 workshops:

- March 23rd, 2016 North Liberty
- April 7th, 2016 Coralville
- April 12th, 2016 Iowa City



Presentation and Comment

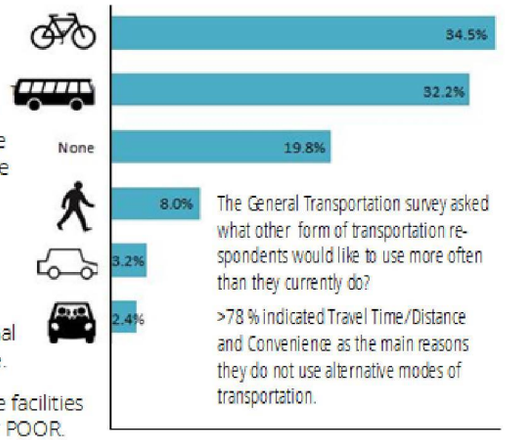
MPOJC initiated a formal public comment period lasting 30 days prior to the adoption of the Long Range Transportation Plan. After the formal public comment period, an open house was held (May 11th, 2017) for the public to provide feedback in person on the Long Range Transportation Plan.

Metro Survey

55% of respondents to the Passenger Vehicle Survey indicated that they would bicycle or walk more if additional bike or pedestrian facilities were available.

54% of respondents to the Passenger Vehicle Survey indicated that they would take the bus more often if additional bus facilities were available.

2/3 rated on-street bicycle facilities (bike lanes) as FAIR or POOR.



The General Transportation survey asked what other form of transportation respondents would like to use more often than they currently do?

>78 % indicated Travel Time/Distance and Convenience as the main reasons they do not use alternative modes of transportation.

PRIORITIES

50% rate the overall transportation network as GOOD.
35% rate the overall transportation network as FAIR.

1. Improve or expand transit routes/options.
2. Add more sidewalks/trails/ ADA accessible routes.
3. Reduce congestion on roadways & reduce travel times.
4. Provide more on-street bike facilities.
5. Provide carpooling/vanpooling options.

The information above represents selected results from on-line surveys posted by the MPOJC (January-March 2016). These surveys do NOT represent a random sample and the results should not be applied to the general public. A total of 1271 responses to the General Transportation survey were received along with 215 responses to the Private Vehicle Survey.

Metro Pedestrian Survey

Why walk?

78% walk for health or exercise

What makes walking . . .

pleasant

1. Feels safe
2. Visually appealing
3. Tree-lined streets / landscaping
4. Sidewalks are a safe distance from the street

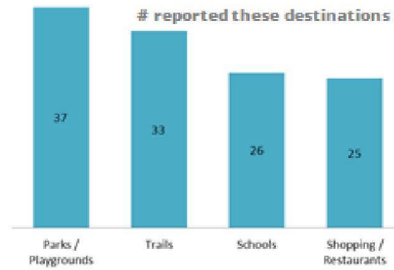
unpleasant

1. Too much traffic or traffic moving too fast
2. Lack of destinations to walk to
3. Lack of street lighting
4. Uncontrolled intersections along busy streets

AESTHETICS

75% of respondents think walking in their neighborhood is a pleasant experience

DESTINATIONS



MULTI-MODAL

16% Regularly take the bus as part of their commute to work or school.

23% Occasionally take the bus as part of their commute

Most commonly identified obstacles to walking:

Lack of snow or ice removal **Cars failing to yield**

Poor sidewalk conditions **Intersections difficult to cross**

The information above represents selected results from an on-line survey posted by the MPOJC (Feb-March 2016). This survey does NOT represent a random sample and the results should not be applied to the general public. A total of 235 responses to the Pedestrian Survey were received. Respondents were self-identified as having some interest in pedestrian issues.

Metro Transit Survey

What is public transit and who uses it?

- Metro Area transit consists of buses and paratransit vehicles.
- Iowa City, Coralville, and the University of Iowa all provide transit services— all 3 transit services are coordinated to provide connectivity across jurisdictional boundaries.
- In Fiscal Year 2015, public transit in the Metro Area provided **7,097,016 rides**. That is more than **22,615 rides per day**.
- **Ridership has grown nearly 20% in the past decade — up 9% percent since 2010.**

Percentage of respondents to an MPO online survey say they track their bus's movements on Bongo.

82% of respondents indicated that a bus stop was located within easy walking distance of their house.

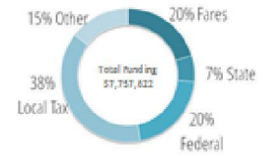
96% of respondents indicated that a bus stop is within easy walking distance of their work.

35% of respondents indicated they are satisfied to very satisfied with current route coverage. 48% indicated they are somewhat satisfied with current route coverage.

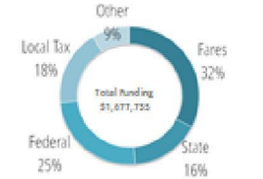
48% indicated an interest in Sunday bus service.

42% of respondents indicated that they would use the bus more frequently if they did not have to transfer at the Downtown Iowa City hub.

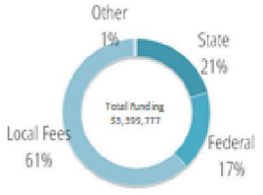
How is transit funded?



IOWA CITY TRANSIT



CORALVILLE TRANSIT



UI CAMBUS

Note: Cambus transit service is provided without charge to riders thus funds in come from fares.

Approximately 39% of respondents who indicated they use transit to commute to work/school have a household income >$100k.

The information above represents selected results from an on-line survey posted by the MPOJC (Feb-March 2016). This survey does NOT represent a random sample and the results should not be applied to the general public. A total of 278 responses to the Transit Survey were received. Respondents were self-identified as having some interest in transit.

Metro Bike Survey

April 28, 2016

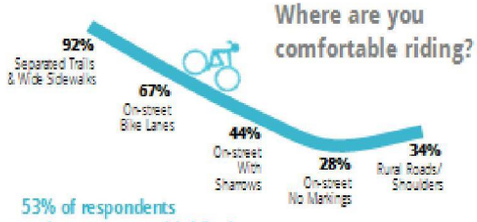
How do you classify yourself as a bicyclist?

Experienced 50%

Moderate 33%

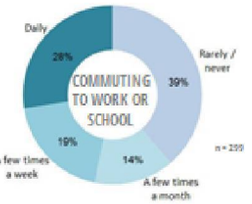
Beginner 17%

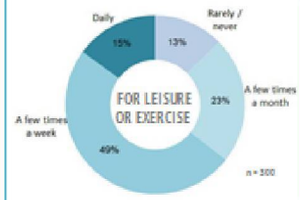
Where are you comfortable riding?



53% of respondents seek out streets with bike lanes and 69% seek out bike trails even if it means a longer ride.

How often do you bike during warm weather months?





FAMILIARITY WITH AREA TRAILS

>70%
Iowa River Trail
North Liberty Trail

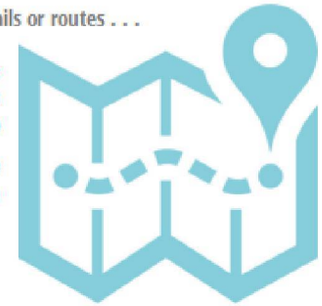
>50%
Clear Creek Trail
Highway 6 Trail
Highway 1 Trail
North Ridge Trail

>40%
Sycamore Greenway
Court Hill Trail

To locate bike trails or routes . . .

58% use the Metro Area Trails Map

56% use Google



Top 3 reasons respondents choose to commute by bike:

1. Close to home/short ride
2. Faster & more convenient
3. Bike facilities make it easy

The information above represents selected results from an on-line survey posted by the MPOJC (Feb-March 2016). This survey does NOT represent a random sample and the results should not be applied to the general public. A total of 304 responses to the Bike Survey were received. Respondents were self-identified as having some interest in bicycle transportation.

General Transportation Survey

The Metropolitan Planning Organization of Johnson County (MPOJC) is a transportation policy-making organization made up of representatives from Iowa City, Coralville, North Liberty, Tiffin, University Heights, Johnson County, and the University of Iowa. The purpose of the MPO is to ensure that scarce federal transportation spending occurs through a comprehensive, cooperative, and continuing process that benefits our entire metro area. MPOJC is revising its long-range transportation plan–a requirement for securing state and federal funding for transportation projects. The "Future Forward 2045 Plan" will help guide metropolitan area decision-making regarding transportation improvements and investments extending 25 years into the future. This plan considers all modes of transportation—car, truck, freight, transit, pedestrian, and bicycle—and makes specific recommendations for transportation projects and funding sources.

Please help us by answering these survey questions—it takes 5 minutes or less.
Your feedback will be used to develop more detailed surveys for each mode of transportation.
Your answers will also help to shape the vision of the Plan and prioritize transportation funding for the greater community.

1. What mode of travel do you use for each of the following activities?

Commuting to Work/School

Private vehicle	Always/mostly	Sometimes	Never
Carpool/vanpool	Always/mostly	Sometimes	Never
Transit (bus)	Always/mostly	Sometimes	Never
Walk	Always/mostly	Sometimes	Never
Bike	Always/mostly	Sometimes	Never

Shopping

Private vehicle	Always/mostly	Sometimes	Never
Carpool/vanpool	Always/mostly	Sometimes	Never
Transit (bus)	Always/mostly	Sometimes	Never
Walk	Always/mostly	Sometimes	Never
Bike	Always/mostly	Sometimes	Never

Recreation

Private vehicle	Always/mostly	Sometimes	Never
Carpool/vanpool	Always/mostly	Sometimes	Never
Transit (bus)	Always/mostly	Sometimes	Never
Walk	Always/mostly	Sometimes	Never
Bike	Always/mostly	Sometimes	Never

3,983 Total Survey Responses

Youth (1,718)

Bike (304)

Transit (215)

Vehicle (240)

General (1,271)

Pedestrian (235)

2. What factors influence your choice of transportation for commuting to work/school? (Please rank the top 3 in order of importance.)

	1	2	3
Travel time/distance			
Convenience			
Safety			
Cost			
Other _____			

3. Is there a transportation mode that you would like to use more often than you currently do?

Private vehicle
Carpool/vanpool
Transit (Bus)
Walk
Bike
None

4. What obstacles or issues prevent you from choosing the above transportation mode more often?

Travel time/distance
Lack of convenient access (e.g. location of stops, access points, etc.)
Concerns about safety (e.g. locations, connectivity, signals, lighting, visibility)
Lack of familiarity with facilities/schedules/how to use this transportation mode
Costs of lack of cost savings
Other _____

5. Based on your personal experiences, how would you rate the following facilities aspects of the transportation network in the Iowa City area?

Speed of traffic	Poor	Fair	Good	Very Good	Uncertain/unfamiliar
Condition of Roads	Poor	Fair	Good	Very Good	Uncertain/unfamiliar
Attractiveness of Roads	Poor	Fair	Good	Very Good	Uncertain/unfamiliar
Traffic safety	Poor	Fair	Good	Very Good	Uncertain/unfamiliar
On-street bicycle facilities (e.g. bike lanes)	Poor	Fair	Good	Very Good	Uncertain/unfamiliar
Crosswalks	Poor	Fair	Good	Very Good	Uncertain/unfamiliar
Sidewalks	Poor	Fair	Good	Very Good	Uncertain/unfamiliar
Off-street trails	Poor	Fair	Good	Very Good	Uncertain/unfamiliar
Traffic signals	Poor	Fair	Good	Very Good	Uncertain/unfamiliar
Transit (bus) service	Poor	Fair	Good	Very Good	Uncertain/unfamiliar
Overall connectivity	Poor	Fair	Good	Very Good	Uncertain/unfamiliar

6. Based on your personal experiences, how would you rate the overall transportation network in the greater Iowa City urban area?

Poor Fair Good Very Good Uncertain/unfamiliar

7. Based on your personal experiences, how would you improve the overall transportation network in the greater Iowa City urban area?

Add more sidewalks/trails/ADA accessible routes
Reduce congestion on roadways & reduce travel times
Improve or expand transit routes/options
Provide carpooling/vanpooling options
Other _____

8. Please list up to 3 specific improvements you would like to see. (EXAMPLE: Provide marked crosswalk at First and Main Streets.)

Thank you for your participation!

Bike Survey

The Metropolitan Planning Organization of Johnson County (MPOJC) is a transportation policy-making organization made up of representatives from Iowa City, Coralville, North Liberty, Tiffin, University Heights, Johnson County, and the University of Iowa. The purpose of the MPO is to ensure that scarce federal transportation spending occurs through a comprehensive, cooperative, and continuing process that benefits our entire metro area. MPOJC is revising its long-range transportation plan–a requirement for securing state and federal funding for transportation projects. The "Future Forward 2045 Plan" will help guide metropolitan area decision-making regarding transportation improvements and investments extending 25 years into the future. This plan considers all modes of transportation—car, truck, freight, transit, pedestrian, and bicycle—and makes specific recommendations for transportation projects and funding sources.

Please help us by filling out this bicycle survey—it takes 10 minutes or less.
Through this survey, we hope to obtain helpful information from a wide spectrum of cyclists that will help us to improve bicycle safety and encourage more people to bicycle. The survey will provide us with detailed information and valuable input as we plan current and future projects.

1. Tell us a little about yourself:

Age	Gender
<18	Female
18-24	Male
25-34	Prefer not to answer
35-44	
45-54	
55-64	
65 or over	
Prefer not to answer	

2. How would you classify yourself as a biker?

Beginner Moderate Experienced

3. Where do you live? Refer to map

4. Where do you work or go to school? Refer to map

Please tell us about your cycling habits . . .

5. How often do you bike for the following purposes during warm weather months (April-September)? (check all that apply)

Commuting to Work/School
Rarely/Never A few times a month A few times a week Daily

For Leisure or Exercise
Rarely/Never A few times a month A few times a week Daily

Running Errands
Rarely/Never A few times a month A few times a week Daily

6.[IF ANSWERED A FEW TIMES TO DAILY COMMUTER]
Tell us why you choose to commute to work or school by bike: (Choose up to 3)

I work close to home/short ride
It is healthy and good exercise
It is environmentally-friendly
It is faster or more convenient than car or bus
Bike facilities (lanes or trails) provide convenient route
Cost savings (gas/parking)
I have a shower/change facility at work
I can park my bike indoors
I do not have regular access to a car
Other _____

7. [IF RARELY/NEVER COMMUTER]
What keeps you from commuting by bike to work or school? (Choose up to 3)

Takes too long or is too far from home
Roadway condition is poor
Don't feel safe/comfortable (due to speeds, traffic, road conditions)
May need access to a car for errands or appointments during or immediately around the workday
No bike facilities (lanes/trails) along route to work
No change/shower facility at destination
No safe place to store bike at destination

Please tell us a bit about your riding preferences . . .

8. How comfortable are you with riding on the following?

OFF-street facilities such as trails and wide sidewalks.
Uncomfortable (would avoid) Somewhat uncomfortable Not sure
Comfortable Very Comfortable

ON-street where there are marked bike lanes.
Uncomfortable (would avoid) Somewhat uncomfortable Not sure
Comfortable Very Comfortable

ON-street where there are NO marked lanes or routes.
Uncomfortable (would avoid) Somewhat uncomfortable Not sure
Comfortable Very Comfortable

Riding outside city limits on road shoulders or rural roads.
Uncomfortable (would avoid) Somewhat uncomfortable Not sure
Comfortable Very Comfortable

9. When riding, do you seek out bike trails or other off-street facilities even if it means a longer ride?

Yes No Other _____

10. When riding on the street, do you seek out streets with bike lanes even if it means a longer ride?

Yes No Other _____

Please tell us a about the routes that you regularly ride.

11. How often do you encounter the following issues on your bike route?

	Frequently	Sometimes	Rarely
Poor road surface conditions			
Worn-out bike lane markings			
Vehicles driving or parking in bike lanes			
Car doors opening into travel lane			
High traffic volumes			
Vehicles not sharing the road			
Speeding cars			
Presence of heavy vehicles like trucks			
Difficult to locate directional signs or missing signs for bike routes or trails			
Lack of safe and convenient connections between bicycle facilities— (for example connection between a trail and a bike lane or)			
Conflicts with other cyclists or pedestrians			
Other_____			

12. How familiar are you with the following trails in the metro area?

Please indicate how familiar you are with the trail with "not familiar" meaning you have not ridden or do not know of the trail and "very familiar" meaning you have used the trail on multiple occasions.

	Not familiar	Somewhat familiar	Very familiar
Clear Creek Trail			
Court Hill Trail			
Highway 1 Trail			
Highway 6 Trail			
Iowa River Trail South of I/80			
Iowa River Trail North of I/80			
North Liberty Trail			
North Ridge Trail			
Sycamore Greenway Trail			

13. What tools, if any, do you use for finding bike routes or trails? (Check all that apply.)

Metro Area Trail map
Other paper map
Google maps
Other on-line tool or phone app _____
None

14. Are there bike racks available at those destinations where you most frequently bike? (e.g. shopping areas, schools, worksites, parks, etc.)

Yes No

15. List any specific destinations where bike racks are missing, inadequate, or in poor locations. (You may list up to 5).

16. Suggest up to five specific locations within the metro area where you think improvements are needed for bicycling facilities. Suggested improvements could include trail extensions, bike lanes, street crossing improvements, sharrows, signage, amenities, etc.

Passenger Vehicle Survey

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MPOJC is revising its long-range transportation plan–a requirement for securing state and federal funding for transportation projects. The "Future Forward 2045 Plan" will help guide metropolitan area decision-making regarding transportation improvements and investments extending 25 years into the future. This plan considers all modes of transportation—automobile, freight, transit, pedestrian, and bicycle—and makes specific recommendations for transportation projects and funding sources.

1. Where do you live?

Iowa City
Coralville
North Liberty
Tiffin
University Heights
Other_____

2. Where do you work?

Iowa City
Coralville
North Liberty
Tiffin
University Heights
Other_____

3. What is your age?

4. What is your gender?

Male
Female
Prefer not to answer

5. How often do you drive for:

	Rarely/Never	A few times a month	A few times a week	Daily
Commuting purposes (work/school)				
Leisure/Social Outings				
Running errands				

6. Tell us why you use your vehicle for commuting, leisure/social outings, or running errands (check all that apply):

- Work/School is too far from home
- I have to run errands before/during/after work
- I have free parking at work
- It is faster or more convenient than walking, riding a bus or bicycling
- I have to transport children to school
- Weather conditions
- Other

7. How often do you encounter the following issues while driving?

	Frequently	Sometimes	Rarely
Poor road surface conditions			
Difficulty making left-turns			
Long traffic queues/delays/congestion			
Lack of traffic control at intersections			
Not enough traffic lanes			
Excessive traffic speeds			
Conflicts with cyclists or pedestrians			
Lack of convenient parking			
Lack of convenient connections between home and work			
Visibility issues			
Other			

8. Would you ride a bicycle and/or walk more if additional bicycle and pedestrian facilities were available?

Yes___ No___ Unsure___

9. While of the following bike and pedestrian facilities would be helpful to you? (check all that apply)

On-street bicycle lanes
More separated off-street bicycle trails
Availability of bicycle facility maps
Improved bicycle facility signage/wayfinding signs
More sidewalks
Improved maintenance of existing facilities
Parking, restrooms, water fountains, benches
Bicycling and walking groups
Safe Routes to School Program for Children

10. Would you consider riding the bus if additional facilities were available?

Yes___ No___ Unsure___

11. I would use the bus more often if (check all that apply):

There was a route that I could take to work/school/childcare facility
There was a route that would take me to the shopping district where I needed to run errands
The busses ran more frequently
The busses expanded their hours of operation
If it didn't take so long to reach my destination

Thank you for participating!

Transit Survey

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Please help us by answering these survey questions—it takes 10 minutes or less.

1. Where do you live?

Iowa City
Coralville
North Liberty
Tiffin
University Heights
Other_____

2. Where do you work?

Iowa City
Coralville
North Liberty
Tiffin
University Heights
Other_____

3. What is your gross annual household income?

24,999 or less
25,000 to 49,999
50,000 to 74,999
75,000 to 99,999
100,000 to 149,999
150,000 or more

4. What is your age?

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

5. What is your gender?

Male
Female
Prefer not to answer

6. Which best describes your employment status?

Student
Part-time employed
Full-time employed
Unemployed
Retired
Other_____

7. Do you ride the Iowa City, Coralville, or the University of Iowa Cambus public bus services?

Yes___ No___

8. Which Iowa City bus routes, if any, do you ride? (check all that apply)

I don't ride the Iowa City bus
7th Avenue
Manville Heights
Broadway
Melrose Express
North Dodge
Eastside Express
Eastside Loop AM or PM
Free Shuttle North
Towncrest
Lakeside
Mall
Westwinds
Oakcrest
Cross Park
Manville Heights Night/Weekend
Broadway Night/Weekend
Court Hill
North Dodge Night/Weekend
Plaen VIew
Rochester
Free Shuttle South
Towncrest Night/Weekend
Westport
Westside Hospital
Westwinds Night/Weekend
Oakcrest Night/Weekend

9. Which Coralville bus routes, if any, do you ride? (check all that apply)

I don't ride the Coralville bus
Lantern Park
Night Route
AM Express
1st Avenue
PM Special
10th Street
Saturday Route
Express
North Liberty Route

10. Which University of Iowa Cambus routes, if any, do you ride? (check all that apply)

I don't ride the Cambus
Red Route
Pentacrest
Interdorm
Hawkeye-Interdorm
Hawkeye Hospital
Hospital/Finkbine Arena
Hospital via Hancher
ABW/Studio Art Shuttle
Music/Theatre Shuttle
Blue Route
Research Park
Mayflower Shuttle
Hawkeye Express
Hawk Lot/Hospital
North Hospital Shuttle
East Campus Shuttle
Studio Arts Shuttle
Saferide Service

11. I use the public bus primarily to: (check all that apply)

Commute to and from work/school
Access shopping during the week
Get to and from downtown Iowa City during the week
Access shopping on the weekends
Get to and from downtown Iowa City on the weekends
Other_____

12. How satisfied are you with the current route coverage?

Very satisfied
Satisfied
Somewhat satisfied
Not satisfied
Uncertain

13. How satisfied are you with the amount of time it takes you to reach your destination?

Very satisfied
Satisfied
Somewhat satisfied
Not satisfied
Uncertain

14. Would you prefer fewer bus stops on routes to decrease travel times?

Yes___ No___ I don't know___ No opinion___

15. Is there a bus stop within easy walking distance of your home?

Yes___ No___

16. Is there a bus stop within easy walking distance of your workplace/school?

Yes___ No___

17. How many blocks are you willing to walk if it reduced travel time on the bus?

One block
Two blocks
Three blocks
Over three blocks
I would not walk any further

18. Do you transfer at the downtown Iowa City hub to another route or bus service?

Yes___ No___

19. I would use the bus more frequently if I did not have to transfer at the downtown Iowa City hub.

Yes___ No___ Not Sure___

20. When you transfer buses are you transferring within a bus service or between bus services?

Within a bus service (EXAMPLE: Iowa City bus to Iowa City bus)
Between bus services (EXAMPLE: Iowa City bus to Coralville bus)

21. How many times per week do you ride a public bus on average?

Less than 5
5 to 10
Greater than 10

22. What times of day do you ride a public bus in an average week?

Early morning (6am to 8am)
Morning (8am to 10am)
Midmorning (10am to 12pm)
Early afternoon (12pm to 2pm)
Late afternoon (4pm to 6pm)
Early Evening (6pm to 8pm)
Evening (8pm to 10pm)
Late Evening (10pm to midnight or later)
Saturday Use

23. How satisfied are you with the current hours of operation?

Very satisfied
Satisfied
Somewhat satisfied
Not satisfied
Uncertain

24. Identify up to 3 Iowa City routes you would use, or use more often, if it's hours were expanded (in the AM or PM)?

25. Identify up to 3 Coralville routes you would use, or use more often, if it's hours were expanded (in the AM or PM)?

26. Identify up to 3 University of Iowa Cambus routes you would use, or use more often, if it's hours were expanded (in the AM or PM)?

27. Which of the following do you feel is the most important to improve? (please choose up to 3)

Total travel time
On-time performance/reliability
Hours of operation
Frequency of service
Cleanliness of bus
Bus stop amenities
Availability of information
Courtesy of staff
Service area

28. Would you be interested in special Express routes running with fewer stops during peak travel hours to decrease commute times (morning and evening rush hours)?

Yes___ No___ I don't know___ No opinion___

29. Would Sunday service be useful to you?

Yes___ No___ Not sure/No opinion

30. Would having to transfer multiple times deter you from riding the bus?

Yes___ No___ Not sure/No opinion

31. Do you use bongo (bus on the go) to find bus locations and arrival times? (Check all that apply)

Yes – phone
Yes – Online
Yes – text
Yes – QR (Quick Response) Code
No

32. I would use the bus more often if (check all that apply):

There was a route that I could take to work/school
There was a route that would take me to the shopping district where I needed to run errands
The busses ran more frequently
The busses expanded their hours of operation
If it didn't take so long to reach my destination
I would not increase use even if there were changes in the routes or schedule
I am satisfied with the current level of service

Thank you for participating!

Pedestrian Survey

The Metropolitan Planning Organization of Johnson County (MPOJC) is a transportation policy-making organization made up of representatives from Iowa City, Coralville, North Liberty, Tiffin, University Heights, Johnson County, and the University of Iowa. The purpose of the MPO is to ensure that scarce federal transportation spending occurs through a comprehensive, cooperative, and continuing process that benefits our entire metro area. MPOJC is revising its long-range transportation plan–a requirement for securing state and federal funding for transportation projects. The "Future Forward 2045 Plan" will help guide metropolitan area decision-making regarding transportation improvements and investments extending 25 years into the future. This plan considers all modes of transportation—car, truck, freight, transit, pedestrian, and bicycle—and makes specific recommendations for transportation projects and funding sources.

Please help us by filling out this pedestrian survey—it takes 10 minutes or less.
Through this survey, we hope to obtain helpful information from a wide spectrum of pedestrians of all ages (kids are welcome to take the survey) that will help us to improve safety and accessibility and encourage more people to walk for transportation, recreation, or exercise.

1. Tell us a little about yourself:

Age	Gender
<18	Female
18-24	Male
25-34	Prefer not to answer
35-44	
45-54	
55-64	
65 or over	
Prefer not to answer	

2. Where do you live? Refer to map (Same as bike survey)

3. How often do you walk for the following purposes during warm weather months (April-September)? (check all that apply)

Commuting to Work/School (walking may be combined with riding the bus)

Rarely/Never	A few times a month	A few times a week	Daily

For Leisure or Exercise

Rarely/Never	A few times a month	A few times a week	Daily

Running Errands

Rarely/Never	A few times a month	A few times a week	Daily

4.[IF FEW TO DAILY COMMUTER]
Tell us why you choose to walk to work or school
(Choose up to 3)

- I work close to home (short walk)
- It is healthy and good exercise
- It is environmentally-friendly
- I walk to the bus stop
- Cost savings (gas/parking)
- I do not have regular access to a car
- Other _____

5. Tell us about the conditions you encounter or observe when walking to work or school
(check any that apply)

- Poor sidewalk or trail conditions (cracks or uneven sidewalks)
- Sidewalks are too narrow
- Missing sections of sidewalk or no sidewalk
- Missing trail sections or connections
- Lack of curb ramps at intersections
- Vehicles parked or stopped over the sidewalk (i.e. driveways)
- Cars failing to yield to pedestrians in crosswalks
- Areas where it is difficult to see oncoming/opposing traffic.
- Intersections are difficult to cross due to speeds and/number of vehicles
- Lack of street lighting
- Conflicts with cyclists
- Lack of snow or ice removal
- Other_____

6. Do you regularly use the bus as part of your commute? For example do you walk to or from a bus stop.

- Yes, I regularly take the bus as part of my commute
- Yes, I occasionally take the bus as part of my commute
- No, I do not take the bus as part of my commute

For the following questions, think about your own neighborhood (the area that you consider within a easy walkable distance from your house)

7. Are there destinations in your neighborhood within a walkable distance?
Parks/Playgrounds Trails Schools Shopping/Restaurants

8. I walking in your neighborhood a pleasant experience?
Yes Somewhat No

9. [IF SOMEWHAT OR NO]
In your opinion, what makes walking in your neighborhood an unpleasant experience?
(check any that apply)

- Too much traffic or traffic moving too fast along the street
- Uncontrolled intersections along busy streets
- Sidewalks are too close to the street
- Too many driveways
- Few trees, little shade
- Lack of things to see along the way
- Doesn't feel safe
- Lack of street lighting
- Street or sidewalk network is disconnected
- Other_____

10. [IF YES]
In your opinion, what makes your neighborhood pleasant to walk in? (check all that apply)

- Traffic is slower
- Sidewalks are a safe distance from the street
- Driveways are spaced appropriately
- Tree-lined streets
- Nice things to see along the way
- Feels safe
- Destinations to walk to
- Street or sidewalk network is connected
- Other_____

For the final question please consider all the places and reasons that you walk—in your neighborhood or in the larger community to access shopping, employment, recreation, etc.

11. Suggest up to five issues within the metro area where you think improvements are needed for pedestrian facilities. Suggested improvements could include signs, crosswalks, wider sidewalks or trails, improved maintenance or repair, etc.

Thank you for participating!

FUTURE FORWARD TRANSPORTATION SURVEY

Youth Survey Elementary /Junior High Survey

The Metropolitan Planning Organization of Johnson County (MPOJC) is a transportation organization made up of representatives from Iowa City, Coralville, North Liberty, Tiffin, University Heights, Johnson County, the University of Iowa, and the Iowa City Community School District. The MPO helps plan for new roads, trails, and other transportation needs with a goal of spending government transportation dollars wisely so that all people in our communities can get the places they need to go easily and safely.

MPOJC is in the process of making a new plan that will help determine which roads and trails to build, extend, or improve over the next 25 years. This plan considers the many ways that people travel throughout the area, including driving, taking the bus, biking, and walking.

This year we are making a special effort to find out how young people under the age of 18 travel around the community. Please help us by filling out this survey—it takes 10 minutes or less to complete the survey.

1. Which school do you attend? _____

2. a. Do you know how to ride a bicycle?

___ No ___ Yes

If NO, skip down to question # 3.

2. b. If you answered YES, How often do you ride a bike during warm weather months (May-September)?

___ Often/Weekly

___ Once in a while

___ Rarely/Never

2. c. Do you wear a helmet when you ride?

___ Always ___ Sometimes ___ Never

2. d. What kinds of activities do you use your bike for?
(You can check more than 1 answer.)

___ Get to or from school
___ Meet up with friends/go to a friend's house
___ Get to places other than school or friends' homes—things like shopping, practice, etc.
___ Ride around my own neighborhood
___ Ride on bike trails
___ Other _____
_____
_____

2.e. Where do you feel comfortable or safe riding your bike?
(You can check more than one)

___ On sidewalks ___ On the street ___ On bike trails

3. a. Have you ridden on a city bus in the past year?

___ No ___ Yes

If NO, skip down to question # 4.

3. b. How often do you ride on a bus?

___ Often/weekly
___ Once in a while
___ Rarely/Never

3. c. Which bus routes do you take most often? (Circle any that you ride regularly)

Coralville:

10th Street
1st Avenue
AM Express
AM North Liberty Express
Lantern Park
Night/Saturday
PM North Liberty
PM Special

Iowa City of Iowa City:

7th Avenue
Broadway
Court Hill
Cross Park
Eastside Express
Eastside Loop
Free Shuttle
Lakeside
Mall
Manville Heights
Melrose Express
North Dodge
Oakcrest
Plaen View
Rochester
Towncrest
Westport
Westside
Westwinds

Not sure

4. How do you get to school most days of the week?

___ Car ___ Bus ___ Motorbike/moped ___ Bicycle ___ Walk

___ Other_____

5. a. Is there a different form of transportation that you would like to use for getting to school?

___ No ___ Yes

If NO, skip down to question # 6.

5. b. How would you rather get to school?

___ Car ___ Motorbike/moped ___ Bus ___ Bicycle ___ Walk

___ Other_____

5. c. What keeps you from traveling this way to school?

(check any answers that describe your situation)

___ I live too far from school or it takes too long to get there from my house.
___ I have a younger brother or sister that is too young to travel this way.
___ There isn't a bus to take me there or the bus doesn't stop near my house.
___ There aren't sidewalks or trails to get me there.
___ I would have to travel along or cross busy streets/don't feel safe.
___ Parent/Guardian does not want me to go to school this way.
___ I do not have access to a bike.
___ I do not have access to a car.
___ Other _____

6. Do you participate in after school activities such as sports, music, dance, theatre, clubs or organizations.

___ No ___ Yes

7. a. Are you unable to participate in activities because you have difficulty getting to or from the places where they are located?

___ No ___ Yes

If NO, skip down to question # 8.

7. b. How to you usually get to and from meetings, practices, or rehearsals?

___ Car ___ Motorbike/moped ___ Bus ___ Bike ___ Walk

___ Other _____

7. c. Is getting to and from these activities in any way difficult for you?

___ No ___ Yes

8. Tell us more about why getting to/from this activity is difficult for you?
(Check any answers that describe your situation.)

___ My family cannot give me a ride.

___ I have to rely on friends or people outside my family to get a ride.

___ There is not a bus to get me to and from this activity (route or schedule).

___ Activities begin or end after dark, so it might not be safe to walk/bike/bus there.

___ Activities take place far from my home or it takes a long time to get to where events are held.

___ Other _____

_____

9. Do you know the location of the bus stop in your neighborhood?

___ No ___ Yes ___ There is no stop in my neighborhood.

10. Do you know the location of the closest bike trail to your neighborhood?

___ Yes ___ No ___ There is no bike trail near my neighborhood.

11. Is there anything you would like us to know about your needs or experiences getting to and from the places you go? Please feel free to let us know about anything that makes it difficult to get the places you need to go OR you can tell us about things that make it easy for you.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

THANK YOU for participating in this survey!

Please return your completed survey to the office at your high school.

FUTURE FORWARD TRANSPORTATION SURVEY

Youth Survey High School Survey

The Metropolitan Planning Organization of Johnson County (MPOJC) is a transportation organization made up of representatives from Iowa City, Coralville, North Liberty, Tiffin, University Heights, Johnson County, the University of Iowa, and the Iowa City Community School District. The MPO helps plan for new roads, trails, and other transportation needs with a goal of spending government transportation dollars wisely so that all people in our communities can get to the places they need to go easily and safely.

MPOJC is in the process of making a new plan that will help determine which roads and trails to build, extend, or improve over the next 25 years. This plan considers the many ways that people travel throughout the area, including driving, taking the bus, biking, and walking.

This year we are making a special effort to find out how young people under the age of 18 travel around the community.

Please help us by filling out this survey—it takes 10 minutes or less to complete the survey.

1. Which school do you attend? _____

2. a. Do you have a drivers license?

___ No ___ Yes

2. b. If you answered YES, do you have regular access to a car (or motor bike/ moped) for meeting your own personal transportation needs?

___ No ___ Yes

3. a. Do you know how to ride a bicycle?

___ No ___ Yes

If NO, skip down to question # 4.

3. b. If you answered YES, How often do you ride a bike during warm weather months (May-September)?

___ Often/Weekly

___ Once in a while

___ Rarely/Never

3. c. Do you wear a helmet when you ride?

___ Always ___ Sometimes ___ Never

3. d. What kinds of activities do you use your bike for?
(You can check more than 1 answer.)

___ Get to or from school
___ Meet up with friends/go to a friend's house
___ Get to places other than school or friends' homes—things like shopping, practice, etc.
___ Ride around my own neighborhood
___ Ride on bike trails
___ Other _____

_____

_____

3.e. Where do you feel comfortable or safe riding your bike? (You can check more than one)

___ On sidewalks ___ On the street ___ On bike trails

4. a. Have you ridden on a city bus in the past year?

___ No ___ Yes

If NO, skip down to question # 5.

4. b. How often do you ride on a bus?

___ Often/weekly
___ Once in a while
___ Rarely/Never

If you do ride the bus, answer 4c below.

If you answered rarely/never, go to question 5

4. c. Which bus routes do you take most often?
(Circle any that you ride regularly)

Coralville:

10th Street
1st Avenue
AM Express
AM North Liberty Express
Lantern Park
Night/Saturday
PM North Liberty
PM Special

Iowa City of Iowa City:

7th Avenue
Broadway
Court Hill
Cross Park
Eastside Express
Eastside Loop
Free Shuttle
Lakeside
Mall
Manville Heights
Melrose Express
North Dodge
Oakcrest
Plaen View
Rochester
Towncrest
Westport
Westside
Westwinds

Not sure

5. How do you get to school most days of the week?

___ Car ___ Bus ___ Motorbike/moped ___ Bicycle ___ Walk

___ Other_____

6. a. Is there a different form of transportation that you would like to use for getting to school?

___ No ___ Yes

If NO, skip down to question # 7.

6. b. How would you rather get to school?

___ Car ___ Motorbike/moped ___ Bus ___ Bicycle ___ Walk

___ Other_____

6. c. What keeps you from traveling this way to school?

(check any answers that describe your situation)

___ I live too far from school or it takes too long to get there from my house.
___ I have a younger brother or sister that is too young to travel this way.
___ There isn't a bus to take me there or the bus doesn't stop near my house.
___ There aren't sidewalks or trails to get me there.
___ I would have to travel along or cross busy streets/don't feel safe.
___ Parent/Guardian does not want me to go to school this way.
___ I do not have access to a bike.
___ I do not have access to a car.
___ Other _____

7. a. Do you participate in after school activities such as sports, music, dance, theatre, clubs or organizations.

___ No ___ Yes

If NO, skip down to question # 8.

7. b. How to you <u>usually</u> get to and from meetings, practices, or rehearsals?

___ Car ___ Motorbike/moped ___ Bus ___ Bike ___ Walk

___ Other _____

7. c. Is getting to and from these activities in any way difficult for you?

___ No ___ Yes

8. a. Are you unable to participate in activities because you have difficulty getting to or from the places where they are located?

___ No ___ Yes

If NO, skip down to question # 9.

8. b. Tell us more about why getting to/from this activity is difficult for you?
(Check any answers that describe your situation.)

___ My family cannot give me a ride.

___ I have to rely on friends or people outside my family to get a ride.

___ There is not a bus to get me to and from this activity (route or schedule).

___ Activities begin or end after dark, so it might not be safe to walk/bike/bus there.

___ Activities take place far from my home or it takes a long time to get to where events are held.

___ Other _____

_____

9. Do you know the location of the bus stop in your neighborhood?

___ No ___ Yes ___ There is no stop in my neighborhood.

10. Do you know the location of the closest bike trail to your neighborhood?

___ Yes ___ No ___ There is no bike trail near my neighborhood.

11. Is there anything you would like us to know about your needs or experiences getting to and from the places you go? Please feel free to let us know about anything that makes it difficult to get the places you need to go OR you can tell us about things that make it easy for you.

PLEASE PRINT NEATLY so we can read your response.

_____

_____

_____

_____

_____

_____

_____

_____

_____

THANK YOU for participating in this survey!

APPROVED 2045 LONG RANGE PLAN SCORING CRITERIA

The following scoring criterion was approved by the MPO Policy Board on March 30th, 2016. The criteria are one of several factors considered by the MPOJC Policy Board in making a decision on which projects to include in the Long Range Transportation Plan.

Principle 1: Economic Opportunity – *Supports metro area growth, innovation, job creation, and productivity*

1. Project improves/provides direct access to planned growth area, existing jobs, or retail +1
2. Project involves more than one MPO jurisdiction +1 per jurisdiction

Principle 2: Environment – *Preserves and protects our natural resources, including land, water and air quality*

1. Project promotes air quality improvements via congestion reduction through one or more of the following:
   Geometric improvements +1
   ITS/signalization improvements +1
   Reduction of VMT +1
   Improvement to turning movements. +1

Principle 3: Quality of Life – *Enhances livability and creates vibrant and appealing places that serve residents throughout their lives*

1. Project directly enhances safe route(s) to school, or improves transportation choices for locations specifically serving multi-family developments or elderly populations+1

Principle 4: System Preservation – *Maintained in good and reliable condition*

1. Maintenance or improvement to existing facility/infrastructure +5

Principle 5: Efficiency – *Builds a well-connected transportation network and coordinating land use patterns to reduce travel demand, miles travelled, and fossil fuel consumption*

1. Project in a corridor with existing congestion (defined as having LOS E or F during peak hours according to the adopted MPO Travel Demand Model) +5
2. Project in a corridor with forecasted future congestion (defined as having LOS E or F during peak hours according to adopted MPO Travel Demand Model) +7

Principle 6: Choice – *Offers multi-modal transportation options that are affordable and accessible*

1. Project is on existing bus route +3
2. Separated trail or wide sidewalk (8' or wider) +3
3. Project reduces modal conflict (pedestrian hybrid beacons, grade separation, dedicated bicycle lanes or sharrows, bus pull off, etc.) +3

Principle 7: Safety – *Designed and maintained to enhance the safety and security of all users*

1. Sight distance or related safety issue documented by an expert (planner/engineer ect) +5
2. History involving two or more bicycle or pedestrian collisions in the last five years +7
3. Top 25 highest MPO accident locations or top 10 highest accident mid-blocks +7

Principle 8: Health – *Invites and enhances healthy and active lifestyles*

1. Project extends area trail network +3
2. Project addresses critical gap in the regional trail network +5

Principle 9: Equity – *Provides access and opportunity for all people and neighborhoods*

1. Project improves transportation network in lower-income neighborhoods +3
2. Focus of the project is to correct ADA non-compliance +5

H. Performance Measures

PERFORMANCE MEASURE	DEFINITION	DESIRED TREND	BASELINE
Economic Opportunity			
Travel time to work	Average travel time to work	Decrease ↓	18.5 minutes
Transit access to employment	Percent of metro employees within 1/4 mile of transit route	Increase ↑	93%
Environment			
VMT	Metro Area vehicle miles traveled	Decrease ↓	660,194 (1000's of miles)
Housing density	Metro area housing units per acre	Increase ↑	1.4
Air quality	Annual average concentration of PM 2.5 in Johnson County	Decrease ↓	9.3-9.6 (EPA annual standard = 12)
Quality of Life			
Travel delay to work	Annual hours of delay per auto commuter	Decrease ↓	6 hrs / yr
Trail access	Percentage of metro area within 1/4 mile of trail system	Increase ↑	80%
System Preservation			
Bridges	Percent of bridges (IDOT, County, & City) in Johnson County rated as being deficient	Decrease ↓	20.0% (2015)
Pavement Condition Index	Percent of pavement measured at fair or better condition	Increase ↑	93% (2014) State/Federal
		Increase ↑	70% (2013) Local Federal Aid Routes

PERFORMANCE MEASURE	DEFINITION	DESIRED TREND	BASELINE
Choice			
Mode Split	Percentage of workers commuting via walking, biking, transit, or rideshare	Increase ↑	14.9% (2015)
Facilities	Miles of roadway that include bike lanes	Increase ↑	6.2 miles
	Percentage of roadway miles that do not include sidewalks	Decrease ↓	13 miles
Safety			
Fatalities	Number of fatalities (5-year total)	Decrease ↓	24
	Rate of fatalities per 100 million vehicle miles traveled (VMT)	Decrease ↓	0.761
Serious Injuries	Number of serious injury accidents (5-year total)	Decrease ↓	127
	Rate of serious injury collisions per 100 million VMT	Decrease ↓	4.023
Nonmotorized Fatalities/Injuries	Number of non-motorized fatalities/injuries (5-year total)	Decrease ↓	32
	Rate of non-motorized fatalities and serious injuries per 100 million VMT	Decrease ↓	1.016
Bicycle Collisions	Total Collisions	Decrease ↓	170
Pedestrian Collisions	Total Collisions	Decrease ↓	154
Efficiency			
Congestion	Percentage of major road mileage at Level of Service C or better at peak hours	Increase ↑	97.90%
Vehicle Miles Travelled	Local VMT per capita (annual, 1000's of miles)	Decrease ↓	5,709 (2015)

PERFORMANCE MEASURE	DEFINITION	DESIRED TREND	BASELINE
Health			
Physical activity	Percent of adults in Johnson County who are physically active	Increase ↑	17.6% (2013)
Seat belt use	Percent of adults reporting to always use seat belts	Increase ↑	86% (2013)
Equity			
Housing & transportation costs	Average proportion of household income devoted to housing and transportation costs	Decrease ↓	49% metro average

Organizations

American Association of Highway and Transportation Officials (AASHTO): AASHTO is a nonprofit, nonpartisan association representing highway and transportation departments in the 50 states, the District of Columbia, and Puerto Rico. It represents all five transportation modes: air, highways, public transportation, rail, and water. Its primary goal is to foster the development, operation, and maintenance of an integrated national transportation system.

Federal Highway Administration (FHWA): An agency within the U.S. Department of Transportation that supports State and local governments in design, construction, and maintenance of the Nation's highway system (Federal Aid Highway Program) and various federally and tribal owned lands. Through financial and technical assistance to State and local governments, the Federal Highway Administration is responsible for ensuring that American's roads and highways continue to be among the safest and most technologically sound in the world.

Federal Transit Administration (FTA): An agency within the U.S. Department of Transportation that provides financial and technical assistance to local public transit systems, including buses, subways, light rail, commuter rail, trolleys and ferries.

Iowa Governor's Traffic Safety Bureau (GTSB): A subdivision of the Iowa Department of Public Safety that administers the State of Iowa's allocation of federal highway safety funds.

Iowa Department of Transportation (Iowa DOT): The government organization, in Iowa, responsible for the organization, construction and maintenance of the primary highway system.

Metropolitan Planning Organization (MPO): An organization made up of local elected and appointed officials responsible for the development and coordination of transportation plans and programs, in cooperation with the state, for metropolitan areas containing 50,000 or more residents.

National Association of City Transportation Officials (NACTO): NACTO is a non-profit association. NACTO's mission is to build cities as places for people, with safe, sustainable, accessible and equitable transportation choices that support a strong economy and vibrant quality of life.

Regional Trails and Bicycle Committee (RTBC): The RTBC discusses and coordinates matters pertaining to pedestrian and bicycle activity. This committee includes staff who oversee trail development and maintenance from MPOJC member agencies, but also includes representatives of bicycle advocacy groups.

Transportation Technical Advisory Committee (TTAC): The TTAC advises the Urbanized Area Policy Board on policy matters. This committee is composed of transportation planning, transit, and engineering staff members from MPOJC member agencies.

Urbanized Area Policy Board (UAPB): The board is organized to conform to the federal requirements of the MPO. The board is made up of elected officials from each the member entities plus one representative appointed by the president of the University of Iowa.

U.S. Environmental Protection Agency (EPA): The EPA, established in 1970, is an agency of the United States federal government whose mission is to protect human and environmental health.

Strava: A social network for athletes (website and mobile app based).

Terms

Accessible Pedestrian Signal APS: Accessible pedestrian signals are devices that communicate information about the WALK and DON'T WALK intervals at signalized intersections in non-visual formats to pedestrians who are blind or who have low vision.

Americans with Disabilities Act (ADA): The ADA became law in 1990. The ADA is a civil rights law that prohibits discrimination against individuals with disabilities in all areas of public life, including jobs, schools, transportation, and all public and private places that are open to the general public. The purpose of the law is to make sure that people with disabilities have the same rights and opportunities as everyone else. The ADA gives civil rights protections to individuals with disabilities similar to those provided to individuals on the basis of race, color, sex, national origin, age, and religion. It guarantees equal opportunity for individuals with disabilities in public accommodations, employment, transportation, state and local government services, and telecommunications.

Average Daily Traffic (ADT): The total traffic volume during a given time period.

Baby Boomers: The demographic cohort born during the post-World War II baby boom, approximately between the years 1946 and 1964.

Complete Streets Policy: Rights of way designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities.

FAST Act: Signed into law on December 4, 2015, the FAST Act is the first federal law to provide long-term funding certainty for surface transportation infrastructure planning and investment. The Act authorizes $305 billion over fiscal years 2016 through 2020 for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail and research.

Federal Functional Classification (FFC): A tool used to define the role of roadways within the larger transportation network. Each classification fits within a hierarchy based on the level of mobility and access that the particular roadway is intended to provide.

Fiscal Constraint: A required component of long-range planning. Transportation expenditures included in this plan should not exceed revenue estimates during the life of the plan.

Functionally obsolete bridge: The geometric design of a bridge does not meet the current design standards.

Housing Density: A measure of the number of housing units per a given area.

Level of Service (LOS): A qualitative assessment of a road's operating conditions. For local government comprehensive planning purposes, level of service means an indicator of the extent or degree of service provided by, or proposed to be provided by, a facility based on and related to the operational characteristics of the facility. Level of Service indicates the capacity per unit of demand for each public facility.

Metropolitan Area Planning Boundary: The area in which the metropolitan transportation planning process is carried out.

Millennials: The demographic cohort following Generation X. There are no precise dates for when this cohort starts or ends but the early 1980s as starting birth years and the mid-1990s to early 2000s as ending birth years.

Mode Split: The percentage of travellers using a particular type of transportation or number of trips using said type.

National Ambient Air Quality Standards (NAAQS): Standards established by the U.S. Environmental Protection Agency under authority of the Clean Air Act that apply for outdoor air throughout the country.

National Environmental Protection Act (NEPA): Signed into law on January 1, 1970, NEPA requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions.

Pavement Condition Index (PCI): A numerical index between 0 and 100 which is used to indicate the general condition of pavement.

Statewide Urban Design And Specifications (SUDAS): The Institute for Transportation at Iowa State University maintains Iowa's SUDAS manuals for public improvements. Developing and maintaining Iowa's unique SUDAS manuals is the result of a lengthy and painstaking effort by more than 300 stakeholders across the state.

Structurally deficient bridge: A bridge having deterioration to one or more major components, but the bridge is not unsafe.

Surface Transportation Block Grant (STBG) Program: The FAST Act converts the long-standing Surface Transportation Program into the Surface Transportation Block Grant Program acknowledging that this program has the most flexible eligibilities among all Federal-aid highway programs and aligning the program's name with how FHWA has historically administered it. [FAST Act § 1109(a)]. STBG provides flexible funding that may be used by States and localities for projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals

Surface Transportation Block Grant (STBG) Program Set-Aside: The FAST Act eliminates the MAP-21 Transportation Alternatives Program (TAP) and replaces it with a set-aside of Surface Transportation Block Grant (STBG) program funding for transportation alternatives (TA). These set-aside funds include all projects and activities that were previously eligible under TAP, encompassing a variety of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects, community improvements such as historic preservation and vegetation management, and environmental mitigation related to stormwater and habitat connectivity.

Tax Increment Financing (TIF) Districts: TIF is a public financing method that is used as a subsidy for redevelopment, infrastructure, and other community-improvement projects. A TIF District reallocates funds from property taxes to encourage investment within the district.

Traffic Analysis Zone: The unit of geography most commonly used in conventional transportation planning models. The size of a zone varies, but for a typical metropolitan planning software, a zone of under 3,000 people is common.

Transportation Improvement Program (TIP): The programming document for federally funded surface transportation improvements. The document includes transportation projects for all modes of surface transportation, including street and highway, transit, bicycle, and pedestrian projects.

Transportation Performance Management (TPM): A strategic approach that uses system information to make investment and policy decisions to achieve national performance goals.

Travel Demand Model: Includes elements such as roadway and transit networks, and population and employment data to calculate the expected demand for transportation facilities.

Vehicle Miles Traveled (VMT): An estimate of the miles traveled by all vehicles within a specific region each year.