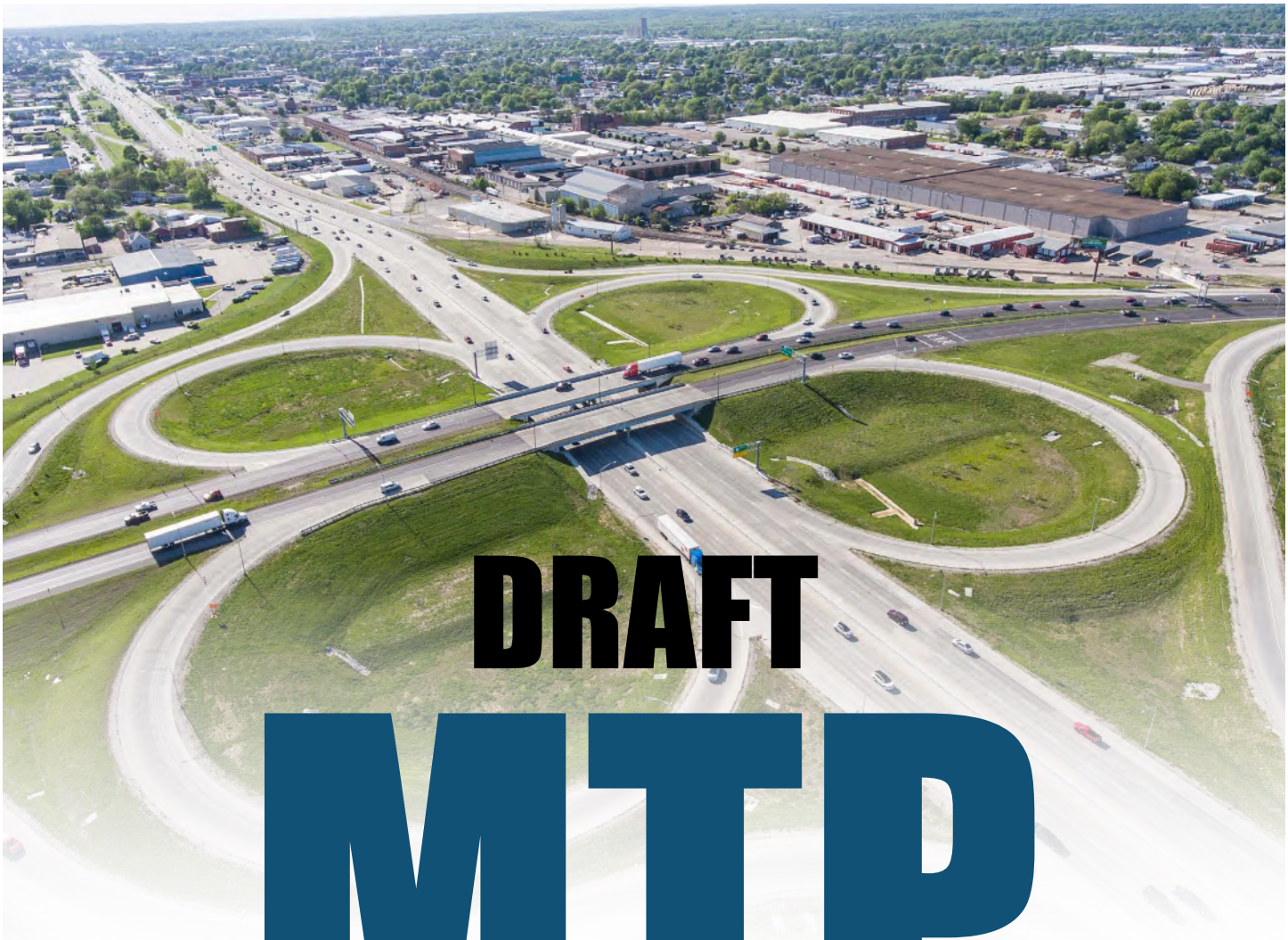

DRAFT

MTP 2045

Metropolitan Transportation Plan

Evansville MPO

Henderson • Vanderburgh • Warrick

Front Cover Image: **Alex Morgan Imaging**

DRAFT

Metropolitan Transportation Plan

2045

EMPO Policy Committee Adoption:
FHWA Conformity Finding:

Evansville Metropolitan Planning Organization
1 NW Martin Luther King, Jr. Blvd.
Room 316 - Civic Center Complex
Evansville IN, 47708

This project was partially funded through the U.S. Department of Transportation's Federal Highway Administration and Federal Transit Administration.

ACKNOWLEDGEMENTS

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Mr. Jack Corn, Jr.	Chairperson, Evansville City Council Appointment
Ms. Christy Powell	Vice-Chairperson, Town Manager, Town of Newburgh Appointment
Mr. Lloyd Winnecke	Mayor, City of Evansville
Mr. William "Buzzy" Newman	Henderson City Manager, City of Henderson Appointment
Dr. H. Dan Adams	Councilman, Evansville City Council
Mr. Jeff Hatfield	Commissioner, Vanderburgh County Commission
Ms. Angela Koehler Lindsey	Councilwoman, Vanderburgh County Council
Mr. Dan Saylor	Commissioner, Warrick County Commission
Mr. William Hubiak	County Engineer, Henderson County Appointment
Mr. Michael Lockard	Vanderburgh County Commission Appointment
Mr. Todd M. Robertson	Transportation and Services Director, City of Evansville Mayoral Appointment
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Mr. John Stoll	Vice-Chairperson, Vanderburgh County Engineer

The following organizations are represented on the Technical Committee:

American Medical Response
Carver Community Organization
CSX Transportation
Easter Seals Rehabilitation Center
Economic Development Coalition of Southwest Indiana
EnviroKinetics, Inc.
Evansville ARC
Evansville Bicycle Club
Evansville Board of Public Safety
Evansville Chamber of Commerce
Evansville City Engineer
Evansville Department of Metropolitan Development
Evansville Department of Transportation and Services
Evansville Department of Urban Forestry
Evansville Environmental Protection Agency
Evansville Parks and Recreation Department
Evansville Police Department
Evansville Regional Airport
Evansville-Vanderburgh Area Plan Commission
Evansville Water and Sewer Department
Federal Highway Administration (Indiana)
Federal Highway Administration (Kentucky)
Federal Transit Administration (Region V)
Green River Area Development District
Henderson Area Rapid Transit
Henderson City Engineer
Assistant Henderson City Manager
Henderson County Engineer
Henderson County Riverport
Henderson-Henderson County Chamber of Commerce
Henderson-Henderson County Plan Commission
Henderson Judge Executive
Indiana Department of Environmental Management (Indianapolis)
Indiana Department of Transportation (Indianapolis; Vincennes)
Indiana Southern Railroad
Kentucky Transportation Cabinet (Frankfort; Madisonville)
Lochmueller Group
Metropolitan Evansville Transit System
Port of Indiana-Mount Vernon
Posey County Chamber
Qk4 Inc.
River City Taxi
St. Vincent's Trauma Hospital
SIRS Inc.
University of Evansville
Vanderburgh County Emergency Management Agency
Vanderburgh County Engineer
Warrick County Economic Development
Warrick County Plan Commission
Warrick County School Corporation
Westside Improvement Association

ACKNOWLEDGEMENTS

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Ms. Donna Crooks	Kyndle (Henderson Chamber of Commerce)
Mr. Larry Taylor	Success Warrick County
Mr. Justin Groenert	Southwest Indiana Chamber of Commerce
Mr. Wil Marquez	Diverse Business Alliance
Mr. Josh Armstrong	Downtown Alliance Director
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Mr. Jim Heck	WorkOne Southwest
Mr. Greg Wathen	Economic Development Coalition of Southwest Indiana
Ms. Helen Zimmerman	Historic Newburgh, Inc
Mr. Shawn Hayden	Eastland Mall
Mr. Nate Hahn	Evansville Regional Airport
Mr. Phil Wilzbacher	Ports of Indiana
Mr. John DiDomizio	Beam, Longest and Neff
Mr. Mike O'Daniel	D-Patrick Automotive
Mr. John Petkovsek	David Matthews Associates
Mr. Jonathan Weinzapfel	Ivy Tech Community College
Mr. Ben Payne	Henderson County Schools
Mr. Rick Cameron	Evansville-Vanderburgh School Corporation
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Ms. Donna Teague	University of Evansville
Mr. Jim Wilsbacher	CAJE (Congregations Acting for Justice and Empowerment)
Ms. Angie Higgins	Easterseals Rehabilitation Center
Mr. Andy Imlay	Evansville Advisory Board on Disability Services
Ms. Vanessa Rodriguez	HOLA Evansville
Mr. Silas Matchem	Promise Zone
Ms. Diane Clements-Boyd	Evansville Human Relations Commission
Mr. Ted Miller	Citizen
Mr. Nibby Priest	Henderson Bikeway Advisory Committee
Ms. Lorie Van Hook	Evansville Trails Coalition
Mr. Steve Roelle	Warrick Trails
Ms. Mary Raley	St. Vincent Evansville
Mr. Jim Renne	Deaconess Hospital
Ms. Andrea Hays	Welborn Baptist Foundation
Mr. Noah Robinson	Vanderburgh County Sheriff's Department
Mr. Brent Jackson	United Neighborhoods of Evansville
Mr. Leonard Collins	Goosetown Neighborhood Association
Ms. DeAnna Outlaw	Westside Improvement Association
Mr. Randy Garratt	Culver Neighborhood Association
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The MTP 2045

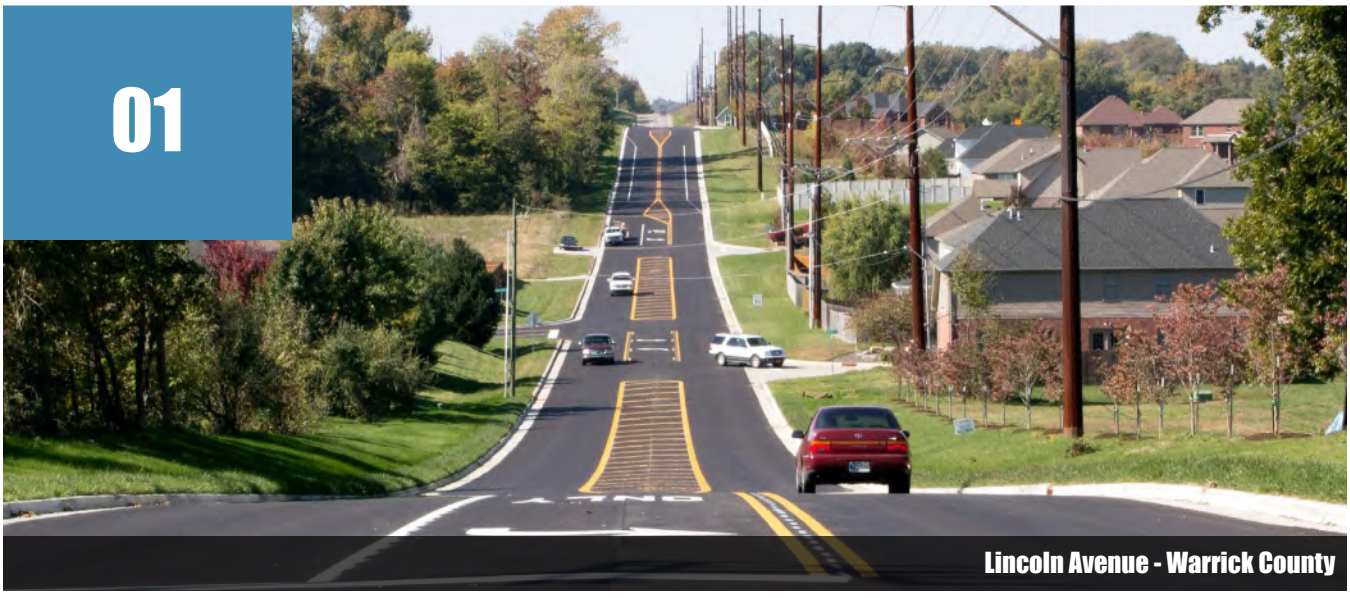
The Metropolitan Transportation Plan (MTP 2045) for the Evansville, Indiana - Henderson, Kentucky Urbanized Area is developed through the cooperative transportation planning process of the Evansville Metropolitan Planning Organization (EMPO). Informed by input from public officials, local public agencies, a Citizen's Advisory Committee and the general public, the MTP 2045 is a guide for the implementation of multimodal transportation improvements, policies and programs in the Metropolitan Planning Area through 2045.

The MTP is required by federal statute for the programming of federal funds for transportation project planning and the implementation of ground transportation modes (roadway, transit, bicycle and pedestrian). By analyzing regional trends, transportation needs, local priorities and federal, state and local funding projections, the MTP provides a framework to achieve the goals and objectives developed through the planning process. The MTP 2045 replaces the MTP 2040 in fulfilling federal planning requirements.

The EMPO is required to produce a Metropolitan Transportation Plan (MTP) every four to five years (depending on attainment for air quality) that looks at least 20 years into the future. It provides the framework for how federal transportation funding is spent to improve roadway, transit, bicycle and pedestrian modes of travel. This renewal period enables the MTP to reflect ever-changing community conditions. Implementation of projects in the MTP is managed through the Transportation Improvement Program (TIP), a short-term planning document detailing all federally funded and regionally significant transportation projects. All projects in the TIP must be consistent with the MTP.

ABOUT THE MTP 2045

01



Lincoln Avenue - Warrick County

MTP 2045 Basics

- Establishes a vision for the region's transportation system covering a planning period of at least 20 years.
- Supports local goals targeting quality of life and health; economic vitality; environment; and safety and security.
- Documents community priorities for the expenditure of limited resources.
- Demonstrates fiscal constraint. Projects in the plan must be consistent with reasonable projections of available funding over the period of the plan.

The Evansville MPO

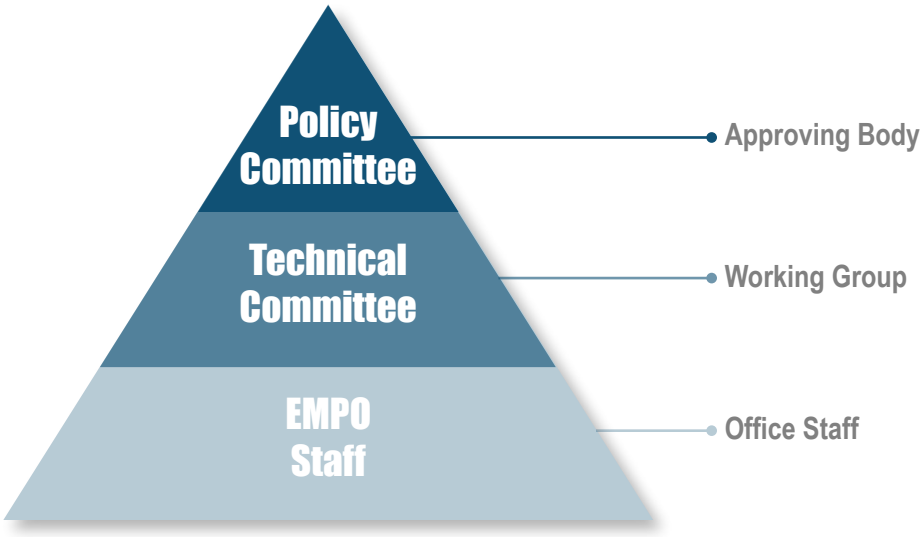
Federal law requires that all urbanized areas over 50,000 in population establish a Metropolitan Planning Organization to undertake a "3C" transportation planning process. This Continuous, Cooperative and Comprehensive planning process is required for a region to receive federal highway planning and improvement funding.

Established as the Evansville Urban Transportation Study (EUTS) in 1969, the EMPO is the designated agency responsible for conducting the 3C planning process within the Evansville-Henderson urbanized area. Effective transportation planning requires an organization with a regional focus and the ability to operate independent of city, county and state lines. Accordingly, the EMPO is an independent transportation policy body that is comprised of elected or appointed officials from the metropolitan area and representatives from state and local transportation agencies.

Policy and Technical Committees

The EMPO is guided by the advice of the Policy Committee. This is a chief advisory board that includes elected or appointed officials from local governments within the planning area, local transit agency officials, representatives from the Federal Highway Administration, Federal Transit Administration, Indiana Department of Transportation, Indiana Department of Environmental Management, and the Kentucky Transportation Cabinet.

The Technical Committee is the chief working committee, providing relevant expertise and data to the EMPO. The Technical Committee is composed of planners, engineers, community representatives, and professional staff from various departments of Local Public Agencies (LPAs) within the planning area.

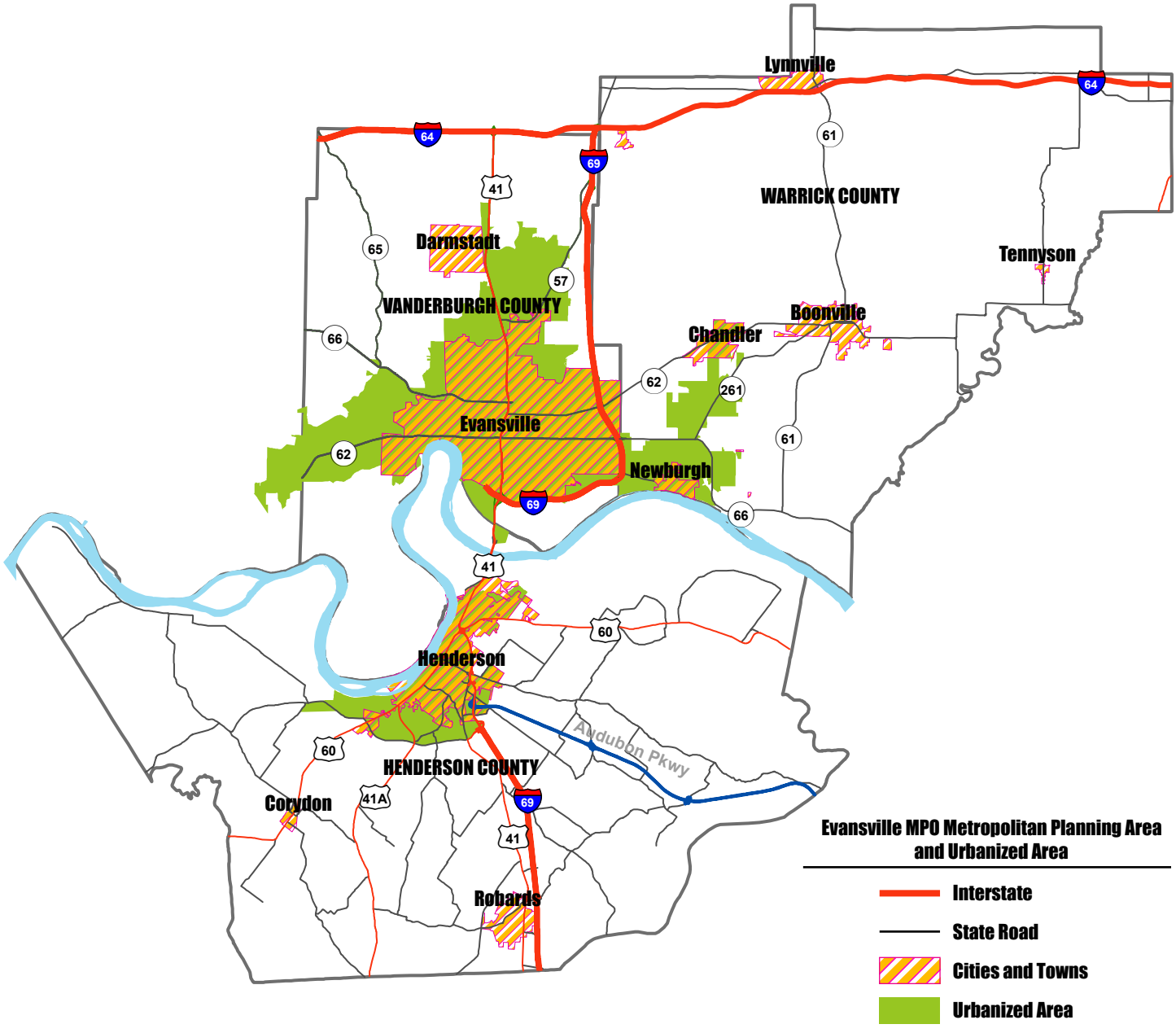


Where We Plan

The EMPO Metropolitan Planning Area (MPA) contains approximately 650 square miles in Indiana, including the City of Evansville, Vanderburgh County, Warrick County, and a very small area of eastern Posey County. In Kentucky, the Study Area encompasses approximately 440 square miles which includes the City of Henderson and Henderson County.

The Evansville-Henderson Urbanized Area is determined by population numbers from the decennial census. With a population that exceeded 200,000 in the 2000 Census, the Evansville-Henderson Urbanized Area has been designated as a Transportation Management Area (TMA). This means that the EMPO is responsible for prioritizing and allocating the Urban Surface Transportation Program (STP-U in Indiana; SHN Kentucky) funds for surface transportation projects on federal-aid system roads within the Urbanized Area. Figure 1.1 illustrates the EMPO Metropolitan Planning Area, including the Urbanized Area.

Figure 1.1: EMPO Metropolitan Planning Area and Urbanized Area



The FAST Act

The MTP 2045 has been developed to comply with the Fixing America's Surface Transportation Act (the FAST Act). Signed into law on December 4, 2015, the FAST Act funds surface transportation programs, maintains focus on safety, keeps intact the established structure of the various highway-related programs, continues efforts to streamline project delivery and provides a dedicated source of federal dollars for freight projects. The FAST Act also builds on the previous transportation bill, the Moving Ahead for Progress in the 21st Century Act (MAP-21), that was enacted in 2012. Provisions carried forward from MAP-21 include making Federal surface transportation more streamlined, performance-based and multimodal; addressing challenges facing the U.S. transportation system, including improving safety, maintaining infrastructure condition, reducing traffic congestion, improving efficiency of the system and freight improvement; protecting the environment, and reducing delays in project delivery.

The FAST Act introduces three themes to set the course for transportation investment in highways:

- Improves mobility on America's highways by establishing and funding new programs to support critical transportation projects to ease congestion and facilitate the movement of freight;
- Creates jobs and supports economic growth by authorizing over $226 billion in Federal funding for road, bridge, bicycle, walking and freight improvements; and
- Accelerates project delivery and promotes innovation by incorporating changes aimed at ensuring the timely delivery of transportation projects, improving innovation and efficiency in the development of projects, through the planning and environmental review process, to project delivery.

Planning Factors

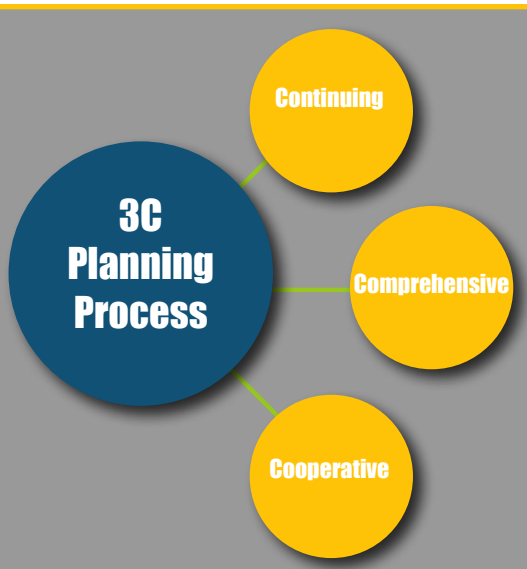
The FAST Act continues the mandates of MAP-21 to incorporate Planning Factors into the metropolitan transportation planning process, with the addition of two new factors. These planning factors are taken into consideration during the planning process and development of the MTP 2045. The planning factors include:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
- Increase the safety of the transportation system for motorized and non-motorized users;
- Increase the security of the transportation system for motorized and non-motorized users;
- Increase accessibility and mobility of people and freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation;
- Emphasize the preservation of the existing transportation system;
- Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and
- Enhance travel and tourism.

The Planning Process

To develop the MTP 2045, the Evansville MPO followed the 3C planning process to receive as much public and LPA input as possible. The planning process included:

- Developing a vision, establishing goals and objectives, determining performance measures, setting short- and long-term targets, and collecting baseline data.
- Collecting an inventory of existing conditions, including updates to demographic data using 2016 American Community Survey (ACS) estimates from the U.S. Census Bureau, utilizing population and employment forecasts from the Kentucky State Data Center, STATS Indiana and Bureau of Economic Analysis (BEA) trends used in the Evansville MPO model update (which was part of the initial I-69 planning efforts), and updating the existing transportation network including roadway, bicycle, pedestrian, transit and freight network changes or additions since the MTP 2040.
- Project development, including consultation with Local Public Agencies (LPAs), the Citizen's Advisory Committee (CAC), and the public through survey results and open houses.
- Project analysis, including model analysis and Red Flag Investigations, was conducted for all projects that were recommended for inclusion in the MTP 2045. Demographic analysis was also conducted to identify the potential impacts on Environmental Justice populations.



The 3C transportation planning process was derived from the Federal-Aid Highway Act of 1962 to ensure a continuing, comprehensive and cooperative planning process was followed by states and local governments when developing transportation plans.

The Vision

A vision statement reflects the ideal future toward which a plan guides collective action. The MTP 2045 vision is carried forward from the MTP 2040 vision with input and revisions from the CAC. The vision establishes the foundation for the plan.

The vision is supported by goals, objectives, and performance measures and targets developed by the CAC in collaboration with the EMPO.

The Evansville region will strive to provide a higher quality of life for all residents with a transportation system that is safe, efficient, multimodal and accessible for all users, maintaining economic vitality and respecting the environment.

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Various activities, such as employment, shopping, education, entertainment and other social activities, significantly influence the demand on the regional transportation system. More people, more jobs, and more commercial and social destinations generate higher traffic volumes. Therefore, social and economic characteristics can be used as reliable indicators of travel behavior. By recognizing this relationship, mathematical models have been developed to estimate traffic demands based on social and economic characteristics.

The following socioeconomic data provides an overview of the region. This information helps identify trends necessary to estimate existing and future travel demand on the regional transportation system. The data is utilized in the Evansville MPO travel demand model.

SOCIOECONOMIC TRENDS

02

North Main Street - Evansville

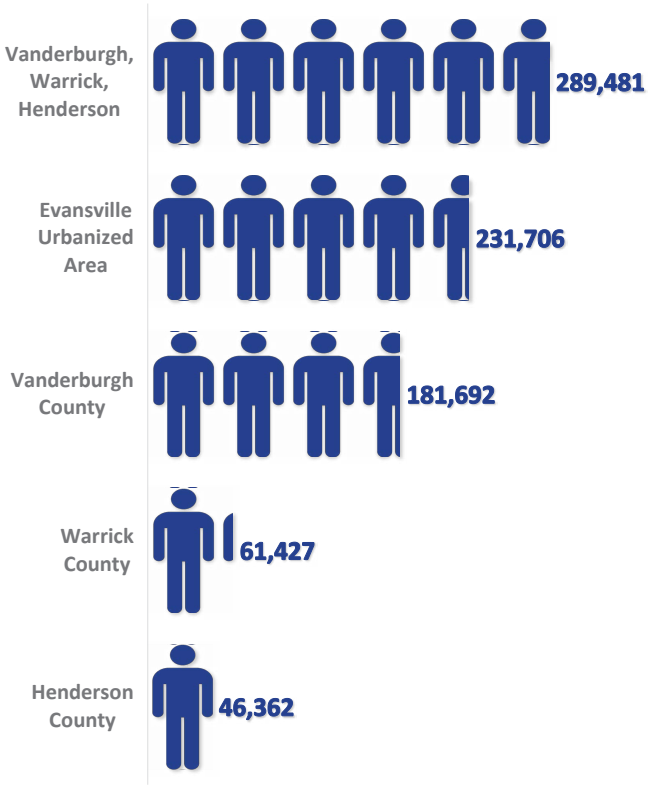
Population

Total Population

According to U.S. Census data, the region's total population grew by just over 6% between 2000 and 2010 and has continued to grow another 1.3% between 2010 and 2016. Figure 2.1 compares the population of all three counties and the Urbanized Area.

The three major trends revealed in the numbers are (1) Vanderburgh County has the highest total growth of the three counties while Warrick County has the highest growth rate, (2) all three counties continue to grow, although annual growth rates are slowing down, and (3) the City of Evansville's population has increased for the first time since the 1960 Census. This shows that people continue to move into Warrick County, especially in Ohio Township just east of the Vanderburgh County border and between Newburgh and Chandler. It also shows more people moved into the City of Evansville than other parts of Vanderburgh County for the first time in decades.

Figure 2.1:
2016 Regional Population

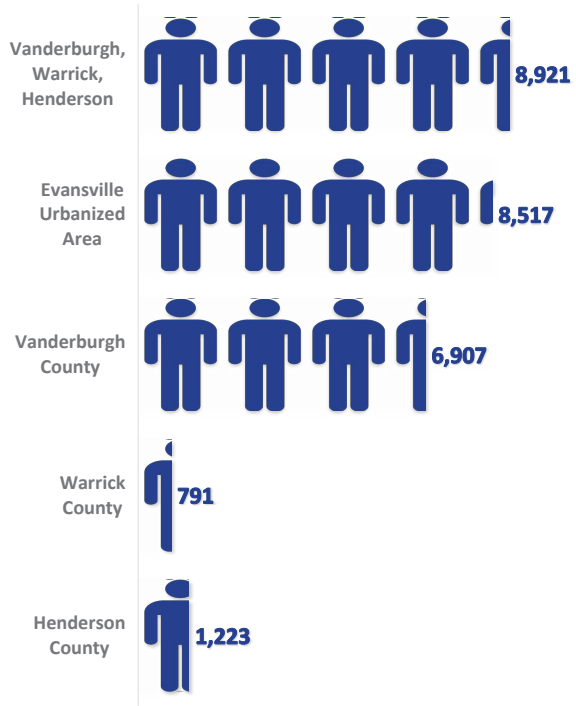


Group Quarters Population

The group quarters population consists of all persons not living within a household. This population could be living in an institutionalized facility or a non-institutionalized facility. Institutionalized facilities include correctional facilities for adults and juveniles, group homes and treatment centers, nursing facilities and mental health facilities. The largest category of these facilities in Vanderburgh County and Warrick County is nursing facilities and nursing homes. In Henderson County, the adult correctional facility population is the highest of the categories. This is driven by the Henderson County Detention Center that houses city, county, and state inmates.

Non-institutionalized facilities include college or university student housing, emergency and transitional shelters for the homeless, residential treatment centers, group homes, temporary housing for workers, and Job Corps centers. The greatest percentage of non-institutionalized population is in the college or university housing category, the majority of which lives in housing on the University of Evansville or University of Southern Indiana campuses. Figure 2.2 compares the total group quarters population of all three counties and the urbanized area.

Figure 2.2:
2016 Population in Group Quarters



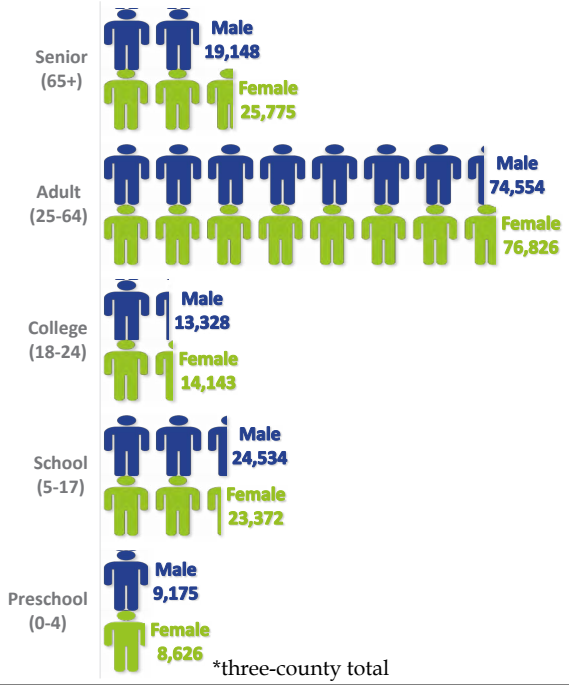
Age and Gender

The region's population continues to get older as evidenced by the increasing median age, which increased in each county between 2010 and 2016. The Preschool and College age groups had a loss in population between 2010 and 2016, and the School age group had an increase of less than 300 people. The Adult and Senior age groups had increases of more than 1,000 and more than 4,000 people respectively. Table 2.1 shows age groups by gender and median age for each county. Figure 2.3 compares the population by gender for multiple age groups for the three county region.

Table 2.1:
2016 Age Groups by Gender and Median Age

2016 Age Groups				
		Vanderburgh	Warrick	Henderson
Preschool (0-4)	M	5,845	1,785	1,545
	F	5,561	1,708	1,357
School (5-17)	M	14,490	6,054	3,990
	F	13,891	5,562	3,919
College (18-24)	M	9,183	2,284	1,861
	F	10,232	2,187	1,724
Adult (25-64)	M	46,818	15,787	11,949
	F	47,890	16,188	12,748
Senior (65+)	M	11,573	4,440	3,135
	F	16,209	5,432	4,134
Median Age	M	36.5	39.2	39
	F	39.2	42.2	41.6
		37.7	40.6	40.2

Figure 2.3: 2016 Age and Gender*

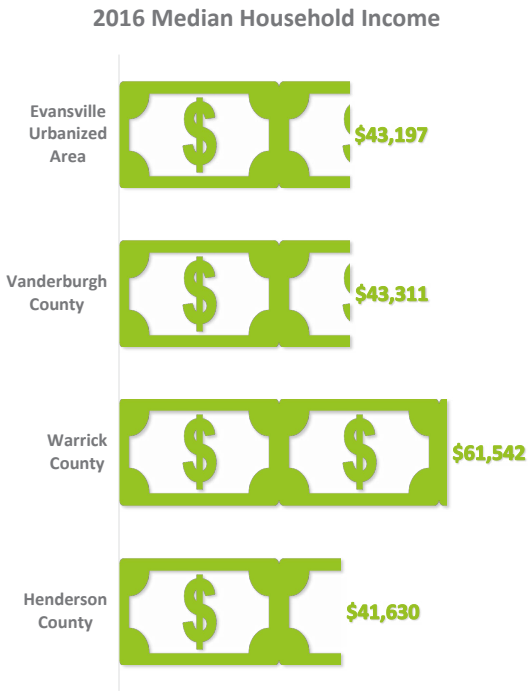


*three-county total

Household Income

Income data is important to transportation planning because increasing income tends to result in increased personal travel. Higher income households ($50,000 or higher) produce more than twice the number of daily trips than very low-income households ($10,000 or lower). Very low-income households are less likely to own vehicles and are more likely to use transit as a primary transportation mode. These very low-income households are significantly below the Federal poverty income level threshold for the year 2016 defined at $24,563 for a family of four. Income level, however, is only one indicator of poverty threshold. Poverty thresholds are determined primarily by the following three factors: household income, size of the family and ages of family members. The same thresholds are used throughout the United States and are updated annually to account for inflation. Figure 2.4 shows the median household income for the three counties and the Evansville Urbanized Area.

Figure 2.4:
2016 Median Household Income

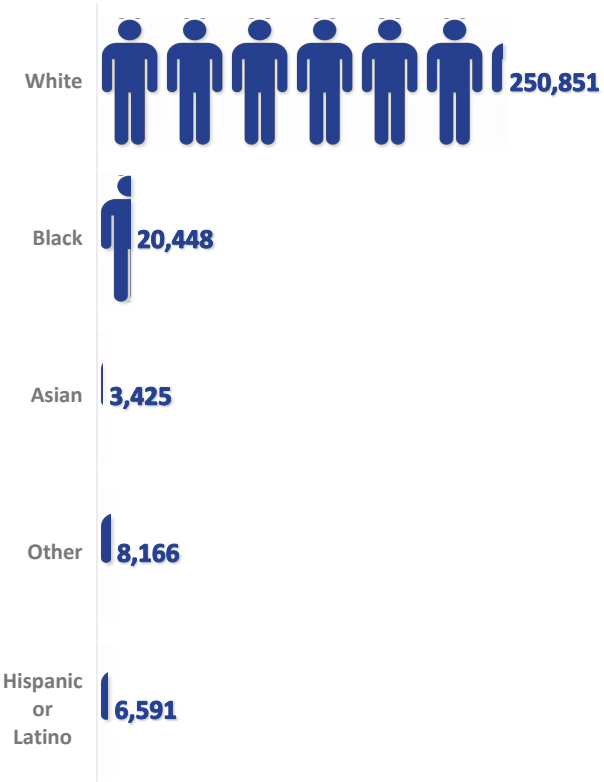


Race and Ethnicity

According to the U. S. Environmental Protection Agency (USEPA), environmental justice is defined as "the fair treatment and meaningful involvement of all people regardless of race, color, culture, national origin, income and educational levels with respect to the development, implementation and enforcement of protective environmental laws, regulations and policies." Therefore, it is important to locate areas of racial concentration and determine if each racial group has equal access to the multimodal transportation network and services. As a transportation planning agency, the EMPO also ensures that the transportation projects and policies do not adversely affect these areas.

Data gathered from the 2016 American Community Survey reveals that the Evansville region is much less racially diverse than the average for the United States. While less than two-thirds of the U.S. population is non-Hispanic white, more than 86% of the Evansville region is non-Hispanic white. Vanderburgh County, with nearly 16% of its population being non-white, is the most diverse of the three counties. Figure 2.5 shows the total population distribution by race for the three county region.

Figure 2.5:
2016 Race and Ethnicity*



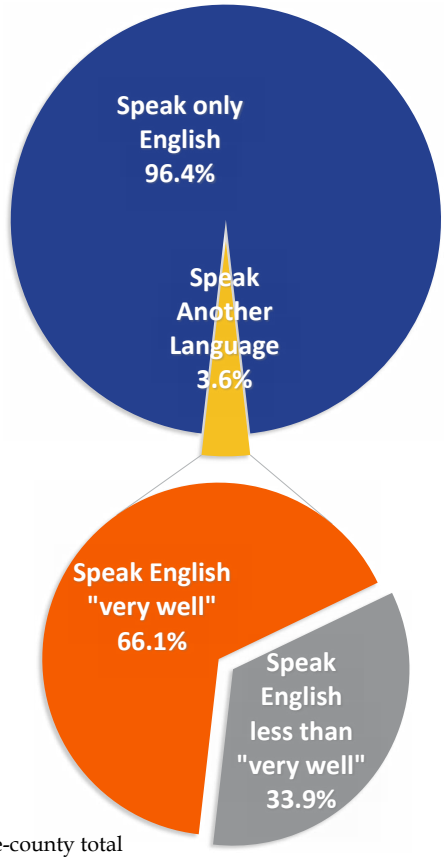
*three-county total

Language

In addition to providing equal opportunities for everyone regardless of their race, it is also important to ensure that individuals who do not speak English have access to public services in a language that they understand. More than 3.5% of the regional population speaks a language other than English according to the 2016 American Community Survey. This includes 3.9% of Vanderburgh County's population, 3.5% of Warrick County's population and 2.6% of Henderson County's population. The most common other language spoken in the region is Spanish.

The percentage of people who speak a language other than English includes those people who speak English very well and those who speak English less than very well. Particular attention should be paid to those areas with high concentrations of people who speak English less than very well. Just over 1% of the total population in each county speaks English less than very well. This amounts to more than 3,300 people in the region. Figure 2.6 shows the percentages of people in the region who speak English and those that speak another language.

Figure 2.6:
2016 Language Spoken*



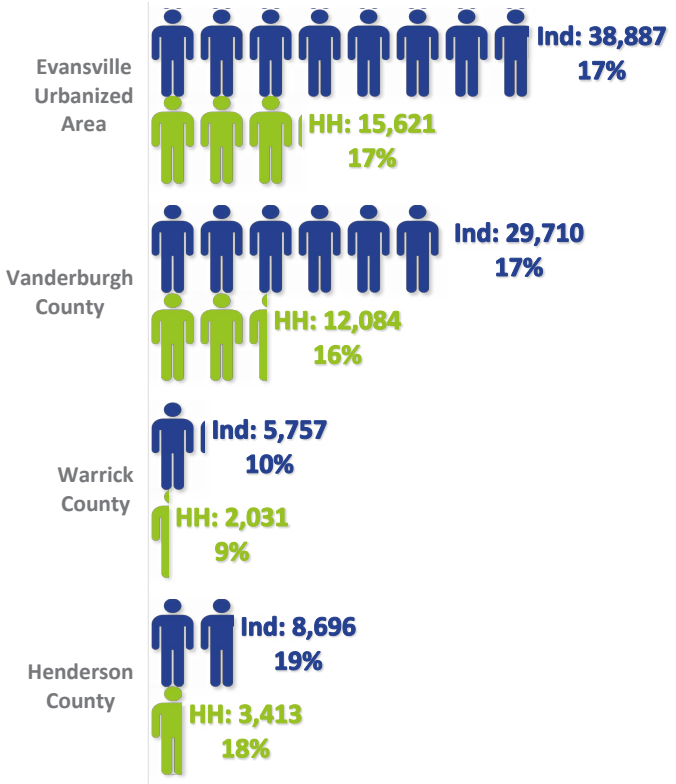
*three-county total

Poverty

Locating concentrations of poverty is another key element in determining how equitable a region actually is. Figure 2.7 shows the percentage of individuals and households in each county and the urbanized area that fall below the poverty line. The 17% poverty rate for individuals and households in the urbanized area is higher than the national poverty rate of 15% for individuals and 14% for households.

The U.S. Census determines poverty status of families by assigning each family to an income threshold based upon the size of the family and the age of the members. If a family's income falls below that threshold, then the family is considered to be in poverty. Every individual in that family is considered to be in poverty. A household with a family or individual in poverty is considered to be a household in poverty.

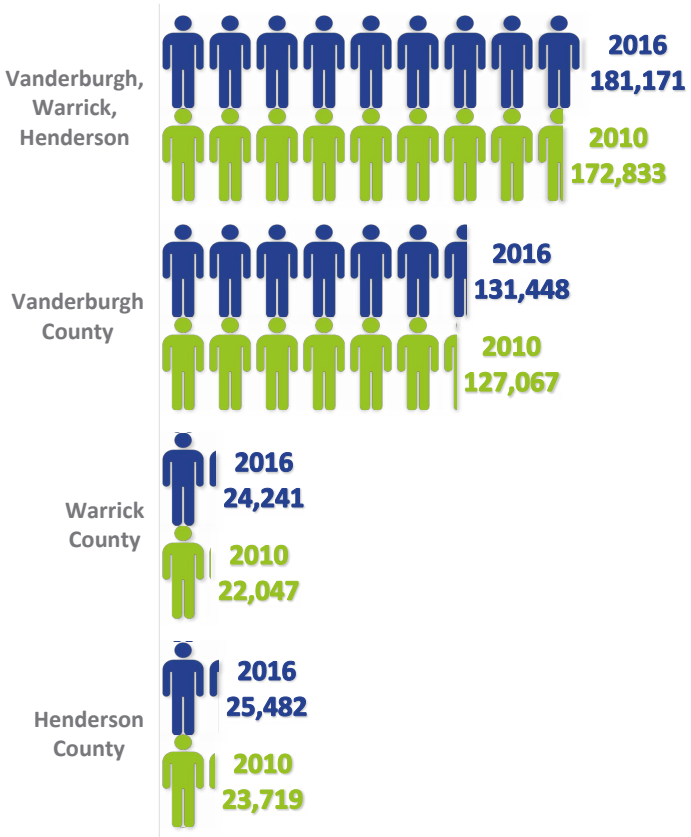
Figure 2.7:
2016 Individuals (Ind) and Households (HH) Below Poverty



Employment

According to the Bureau of Economic Analysis (BEA), the region's employment grew by nearly 5% between 2010 and 2016. Figure 2.8 shows the total employment for all three counties. As was the case with population growth, Vanderburgh County had the highest total growth in jobs between 2010 and 2016, but Warrick County had the highest growth rate with a 10% increase.

Figure 2.8:
2010 and 2016 Employment



Employment by Industry Sector

According to Bureau of Economic Analysis (BEA) data from the STATS Indiana website, health care and social services is the largest industry in the three-county region. Manufacturing and retail trade are the next two largest industries in the region, with very similar total employment. Overall, regional employment is very diverse, with high employment in most categories. Table 2.2 shows the employment industry sector data for the year 2016.

Major Employers

Table 2.3 shows the major employers in the three-county region based on information from the Economic Development Coalition of Southwest Indiana and the Kentucky Cabinet for Economic Development's ThinkKentucky website. This list is consistent with the employment by industry sector data, as health care and manufacturing make up a large portion of the major employers list.

Table 2.2:
2016 Employment Industries by Sector

		Vanderburgh	Warrick	Henderson	3 Counties
	Total employment	131,448	24,241	25,482	181,171
	Wage and salary employment	114,444	16,992	21,015	152,451
	Farm employment	279	372	511	1,162
	Nonfarm employment	131,169	23,869	24,971	180,009
	Private employment	119,866	21,496	22,161	163,523
NAICS					
0	Forestry, fishing, related activities, and other	D*	85	D*	D*
21	Mining	1,230	723	513	2,466
22	Utilities	D*	268	D*	D*
23	Construction	8,122	1,729	1,282	11,133
31-33	Manufacturing	12,993	2,397	5,399	20,789
42	Wholesale trade	D*	578	847	D*
44-45	Retail Trade	14,694	2,331	2,535	19,560
48-49	Transportation and warehousing	D*	594	D*	D*
51	Information	1,552	139	214	1,905
52	Finance and insurance	3,648	1,241	683	5,572
53	Real estate and rental and leasing	4,470	1,362	812	6,644
54	Professional and technical services	5,620	1,331	634	7,585
55	Management of companies and enterprises	3,041	38	54	3,133
56	Administrative and waste services	8,908	847	1,709	11,464
61	Educational services	2,788	298	D*	D*
62	Health care and social assistance	20,349	4,046	D*	D*
71	Arts, entertainment, and recreation	2,918	523	487	3,928
72	Accommodation and food services	10,673	1,200	1,526	13,399
81	Other services, except public administration	7,454	1,766	1,595	10,815
0	Government and government enterprises	11,303	2,373	2,810	16,486

* D=not shown to avoid disclosure of confidential information, but the estimates for this item are included in the totals.

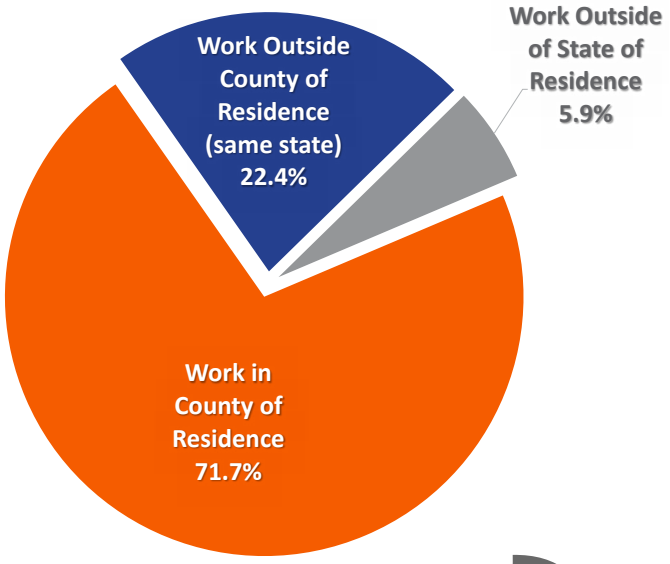
Table 2.3:
Major Employers in Vanderburgh, Warrick and Henderson Counties

Company	Product/Service	Employees	County
Deaconess Hospital	Medical services	6,100	Vanderburgh
St. Vincent Health System	Medical services	3,529	Vanderburgh
Evansville Vanderburgh School Corporation	Education	3,290	Vanderburgh
Berry Global	Injection-molded plastics	2,699	Vanderburgh
University of Southern Indiana	Education	2,521	Vanderburgh
SKANSKA	Construction and Engineering	1,650	Vanderburgh
T.J. Maxx	Distribution center	1,520	Vanderburgh
Alcoa Warrick Operations	Aluminum sheet and ingot	1,510	Warrick
Tyson Foods	Chicken processing and packaging	1,416	Henderson
Vectren	Utility: gas and electric	1,200	Vanderburgh
Methodist Hospital	Medical services	1,200	Henderson
OneMain Financial	Financial services	1,171	Vanderburgh
Koch Enterprises, Inc.	Industrial and auto parts manufacturing	1,039	Vanderburgh
Old National Bancorp	Banking and financial services	920	Vanderburgh
Mead Johnson Nutrition	Pediatric nutrition	900	Vanderburgh
Gibbs Die Casting	Aluminum and mangnesium die casting	861	Henderson
Tropicana Evansville	Gaming and entertainment	803	Vanderburgh
AT&T	Wireless and wireline communications	630	Vanderburgh
Ivy Tech Community College	Education	568	Vanderburgh
University of Evansville	Education	555	Vanderburgh
AmeriQual Group, LLC	Meals ready-to-eat	550	Vanderburgh
SRG Global	Color & Chrome Plastics Manufacturing	524	Vanderburgh
Century Aluminum	Aluminum extrusion billets and ingots	515	Henderson

Commuting Patterns

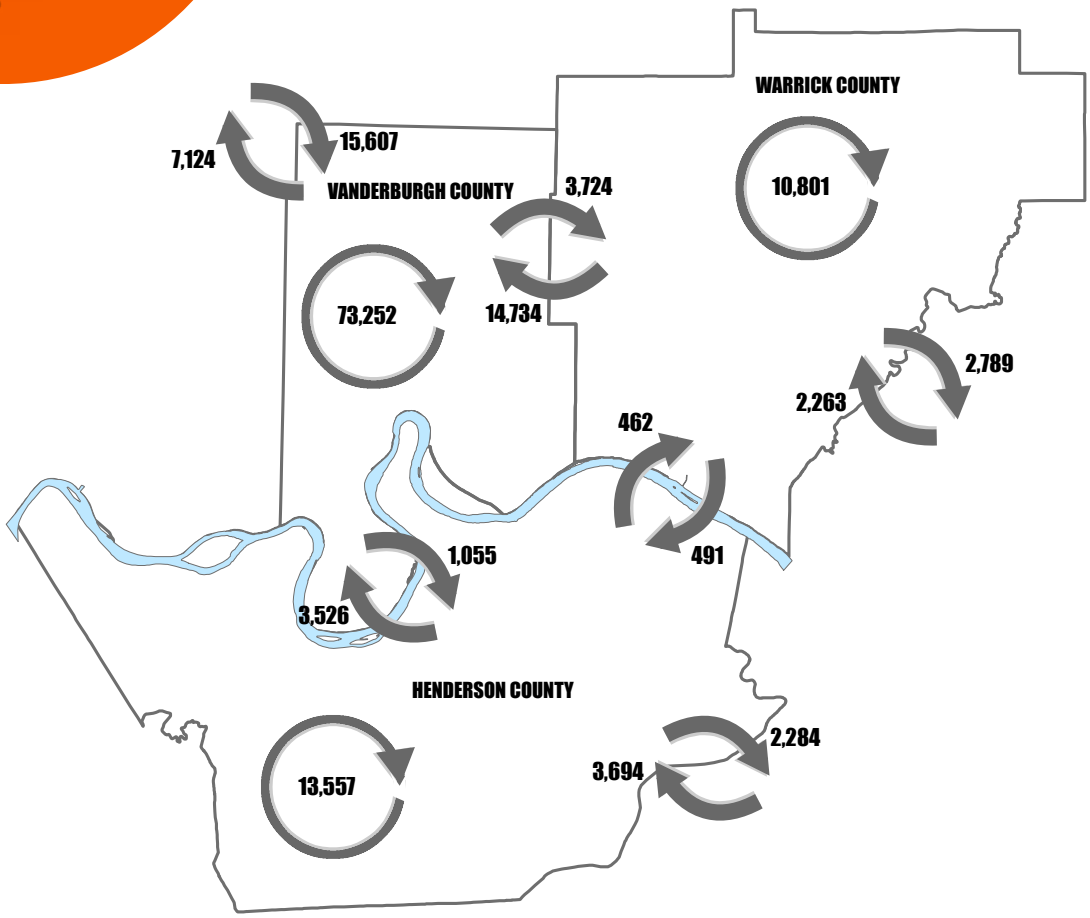
Understanding where people travel to work is important for determining regional transportation needs. Nearly 72% of the residents within the three-county region work within the same county in which they reside. Less than 10% of residents within the three-county region commute outside of the three counties. Figure 2.9 shows the percentage of residents that live and work in the same county and those that commute outside of their county of residence.

Figure 2.9:
2016 Place of Work for Three-County Residents



The three-county region attracts more residents from surrounding counties for work than it sends to other counties. Just over 12,000 workers commute outside of the region, but nearly 22,000 commute into the region. Vanderburgh County attracts the most people, with approximately 15,000 coming from Warrick County, 3,500 coming from Henderson County, and 16,000 coming from outside of the region. In fact, Vanderburgh County attracts almost three times more workers than it sends to other counties. Henderson County sends approximately 1,000 more out of the county than it attracts. Warrick County sends almost three times as many workers outside of the county than it attracts. Figure 2.10 shows the commuting patterns of workers in and out of the three counties.

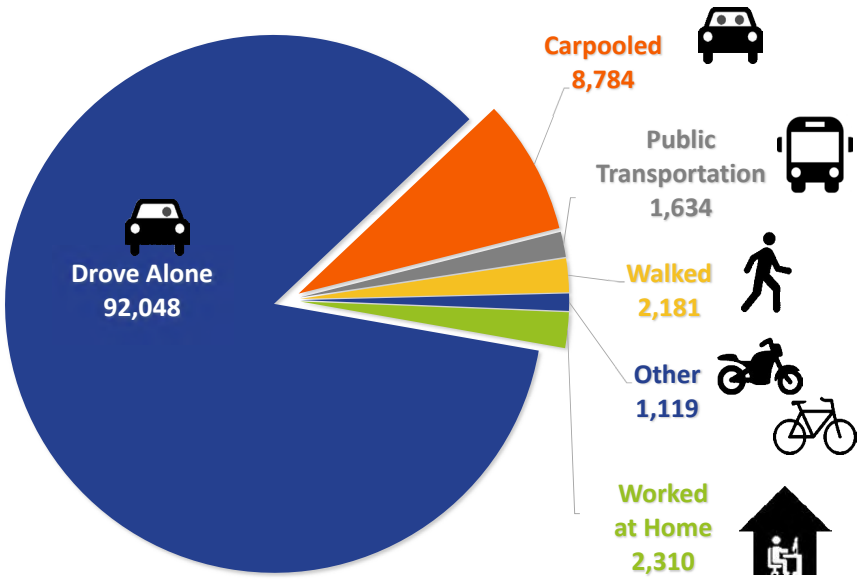
Figure 2.10:
Commuting Patterns



Means of Transportation to Work

The personal vehicle is the most common means of transportation to work for the Evansville Urbanized Area. In total, 93% of the workers in the urbanized area drove to work in a personal vehicle. This includes 85% that drove alone and 8% that carpooled. Only 1.5% of the urbanized area population takes public transportation to work based on the 2016 ACS. However, this is an increase over the year 2010 when only 1.1% of the population took public transportation. Figure 2.11 shows the means of transportation for all workers in the urbanized area.

Figure 2.11:
2016 Means of Transportation to Work*



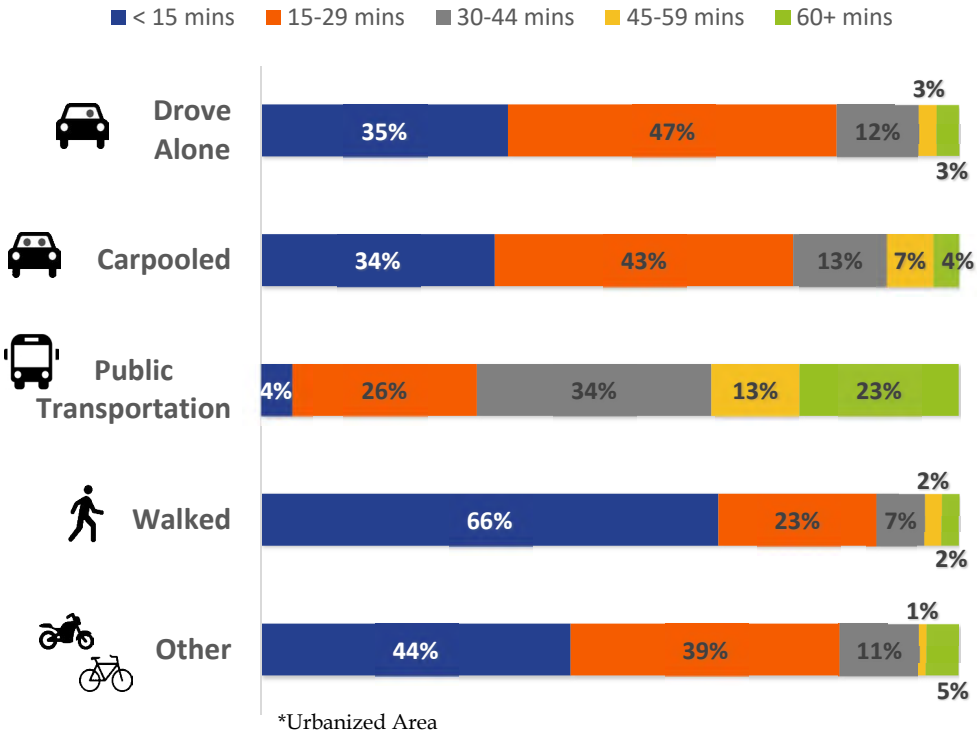
*Urbanized Area

Commute Time

The average commute time to work increased for all commuters in the urbanized area between 2010 and 2016. In 2010, the average commute time was 18.5 minutes. In 2016, the average increased to 19.6 minutes.

Most workers commuting by car travel less than 30 minutes to work. Commute times are longer for people taking public transportation. The majority of people that walk to work spend less than 15 minutes commuting. Figure 2.12 shows the commute time by mode of transportation.

Figure 2.12:
2016 Commute Time*



*Urbanized Area

Population and Employment Forecasts

As part of the initial planning efforts for the I-69 Ohio River Crossing project, the Evansville MPO model was updated to a 2015 base year and 2025 and 2045 future years. In order to develop forecasts, the consulting firm utilized county-level population estimates from the Kentucky State Data Center and STATS Indiana. Employment was forecasted by a linear trend using Bureau of Economic Analysis (BEA) from 1990 through 2015. Estimates for the model update were found for Vanderburgh, Warrick, Posey, Gibson, and Henderson counties. To be consistent with I-69 planning, the MTP 2045 used these same forecasts for 2045.

2045 Population

According to forecasts from the I-69 Ohio River Crossing project, the total population of the three county region is anticipated to increase by approximately 22,000 between 2016 and 2045, an increase of about 7.5%. Population forecasts for the three counties, and a comparison to 2016, are shown in Figure 2.13.

The forecasts reveal an anticipated continuation of growth in Warrick County, which is projected to have the most total growth with approximately 13,000 more people and an increase over 2016 of about 21%. Vanderburgh County is expected to increase in population as well, with an increase of nearly 7%. Henderson County is anticipated to have a decrease in population between 2016 and 2045, with a more than 7% loss.

2045 Employment

According to forecasts from the I-69 Ohio River Crossing project, the total employment of the three county region is anticipated to increase by almost 33,000 between 2016 and 2045, an increase of more than 18%. Employment forecasts for the three counties, and a comparison to 2016, are shown in Figure 2.14.

The forecasts reveal a continuation of employment growth for all three counties. Vanderburgh County is expected to add the most employment, with almost 23,000 new jobs, an increase of over 17% from 2016. Warrick County is anticipated to have the highest percentage increase at almost 32% more employees between 2016 and 2045. Henderson County employment growth is not expected to grow as much, with a nearly 9% increase in employment between 2016 and 2045.

Figure 2.13:
2016 Population and 2045 Forecast

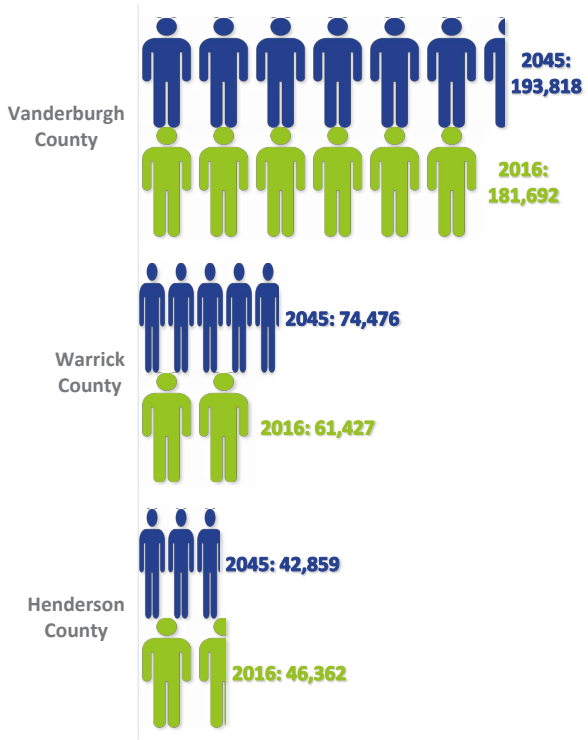
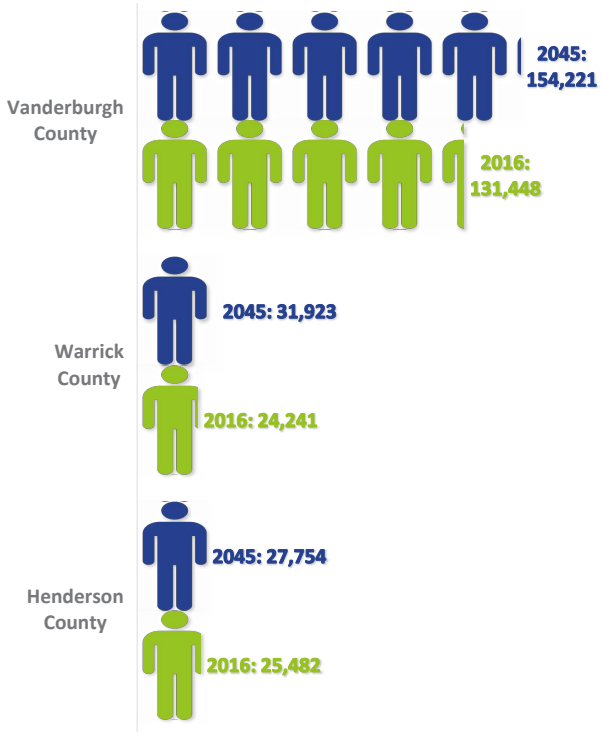


Figure 2.14:
2016 Employment and 2045 Forecast



The regional transportation network includes over 3,000 miles of roadways, more than 25 transit routes, 140 miles of bicycle and pedestrian facilities, and nearly 875 miles of sidewalks. The highway network in the three counties includes several state roads, two US highways, and two interstates, connecting the region to the rest of the Midwest. This highway network, the rail network, and the Ohio River all bring freight into and through the region.

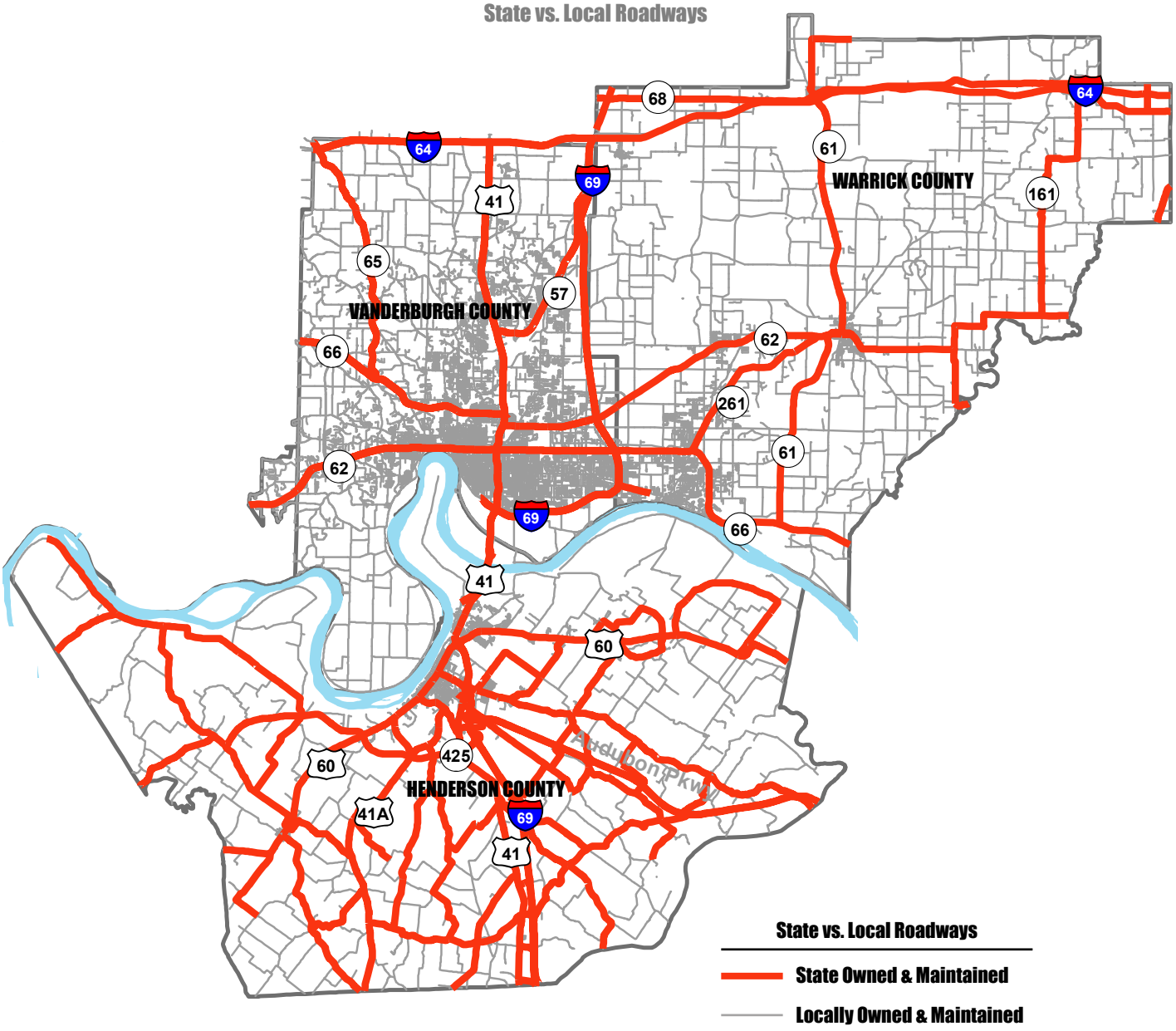
Residents of the three counties can connect to areas well beyond the region through multiple intercity transportation options. Greyhound bus service is available in downtown Evansville that connects to regional hubs throughout the Midwest. Amtrak train service is available a couple of hours to the northwest in Centralia, Illinois. The Evansville Regional Airport provides direct flights to Chicago, Detroit, Charlotte, Atlanta, Orlando, Destin and Dallas. All of these regional destinations can provide access to the rest of the country and other parts of the world.

EXISTING NETWORKS

03

Vann Avenue Pedestrian Bridge over Lloyd Expressway - Evansville

Figure 3.1:
State vs. Local Roadways



Roadway Network

The Evansville MPA has access to and mobility over approximately 3,000 miles of roadways. By all indications, roadways are the primary network of choice available in the region. Roadways directly support the movement of people and freight using vehicles such as, cars, trucks, buses, and bicycles. They are also used in many "last mile" intermodal movements in supply chain management or passenger intermodal movements such as taking a car to the airport for a flight.

There are generally two jurisdictions that operate and maintain roadways in the region. State Departments of Transportation (INDOT and KYTC) own and operate the interstates, parkways, US highways and state roads in both Indiana and Kentucky. Local Public Agencies (LPAs) own and operate most of the remaining public roadways. Figure 3.1 shows the State vs. Local roadways.

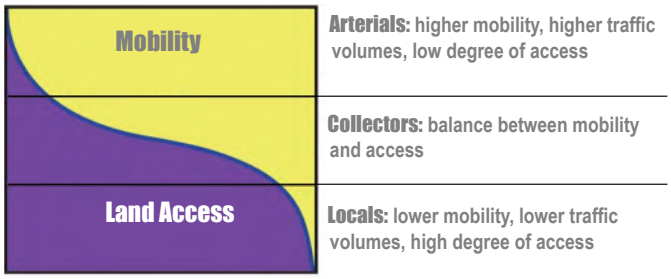
Several priority networks utilize this system of roadways and are created to strategically direct Federal resources and policies toward improved performance of the network. These include, but are not limited to:

- Strategic Highway Network (STRAHNET)
- National Highway System (NHS)
- National Highway Freight Network (NHFN)
- Intermodal Connectors

Roadways serve two primary travel needs: access to/egress from specific locations and travel mobility. While these two functions lie at opposite ends of the spectrum of roadway function, most roads provide some combination of each.

- Roadway mobility function: Provides few opportunities for entry and exit and therefore low travel friction from vehicle ingress/egress.
- Roadway accessibility function: Provides many opportunities for entry and exit, which creates potentially higher friction from vehicle ingress/egress.

Figure 3.2:
Relationship Between Functional Classification, Mobility and Land Access



Source: Safety Effectiveness of Highway Design Features, Volume 1, Access Control, FHWA, 1992

Roadways are assigned to one of several possible functional classifications within the hierarchy according to the character of the service (mobility vs. access) the roadway is intended to provide. Planners and engineers use this hierarchy of roadways to properly channel transportation movements through the network efficiently and cost effectively. Figure 3.2 indicates that arterials are intended more for mobility than for access. Local roads on the other hand are intended to be used for access to adjacent properties. Figure 3.3 shows the functional classification of the roadways within the MPA.

Traffic Volumes

Figure 3.4 shows traffic count data made available by INDOT and KYTC, as well as data from the MPO, on the functionally classified system for 2013-2017. The map gives an indication of the most heavily traveled roads in the region.

FYI

Roadway Plans and Tools

Access Management Manual and Development Guide:

Access management standards are applied to proposed developments in order to maintain the intended service of the adjacent roadways. In 2015, the EMPO in coordination with LPA, INDOT and KYTC engineers undertook an update to the 2005 Access Management Manual. The resulting Access Management Manual and Development Guide was adopted by the MPO's Technical and Policy Board committees in July 2016. Subsequently, the City of Evansville's Board of Public Works adopted this document as an enforceable technical document.

Pavement Management:

The Pavement Management process assists with planning by finding cost-effective strategies for providing, evaluating, and maintaining pavements in a functional condition. It provides the data required to make decisions to ensure the existing transportation network is preserved and maintained with a cost-effective, long-term practice when compared to costs of major reconstruction.

Travel Demand Model:

The Travel Demand Model is used to assist with transportation planning activities. The use of travel demand models and their outputs in regional decision-making was initiated in the mid-1950s and has become a standard for many aspects of planning, including the development of regional transportation plans, air quality conformity determinations, corridor and subarea planning, alternatives analyses, and detailed project planning.

Figure 3.3:
Functional Classification

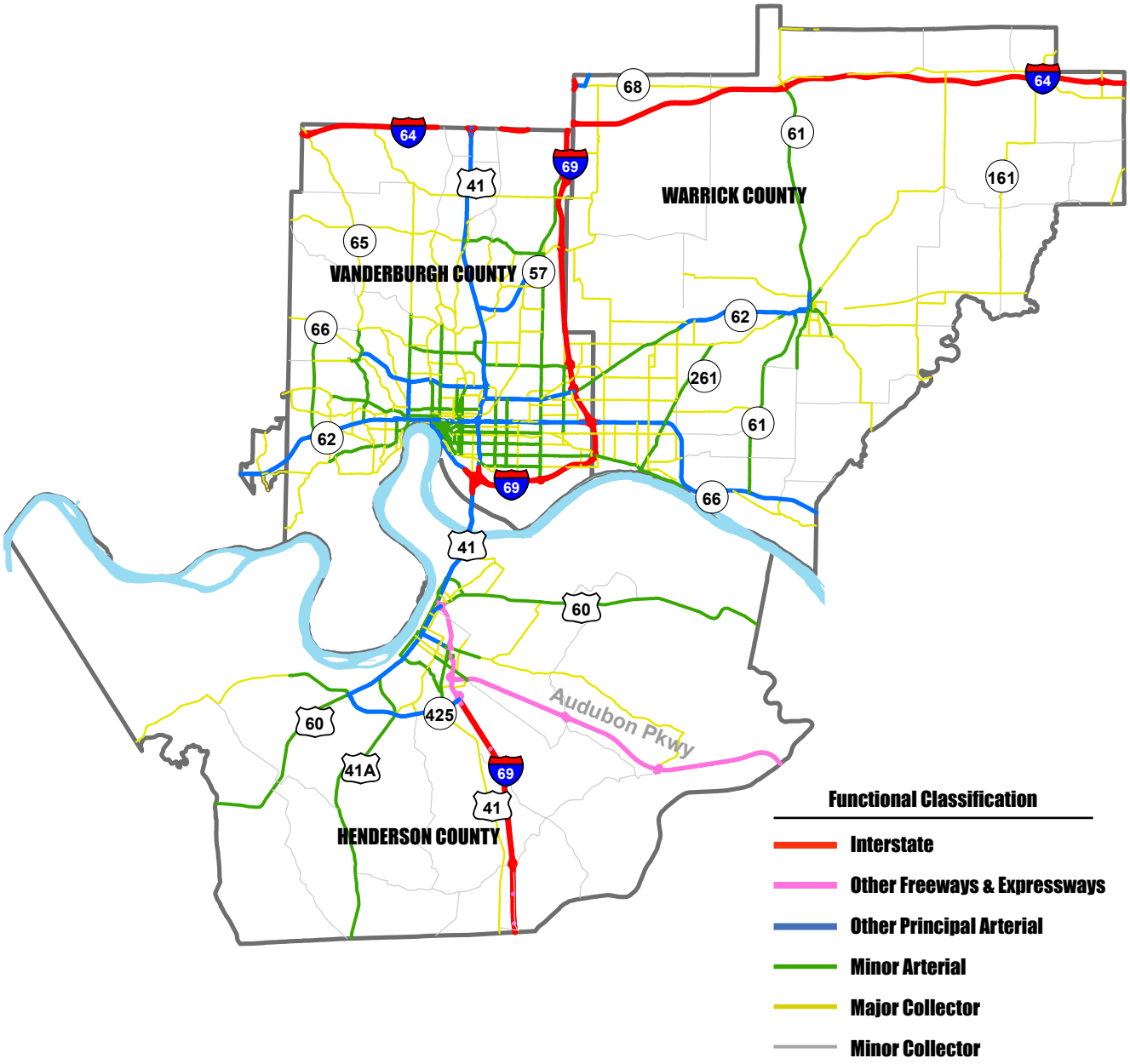
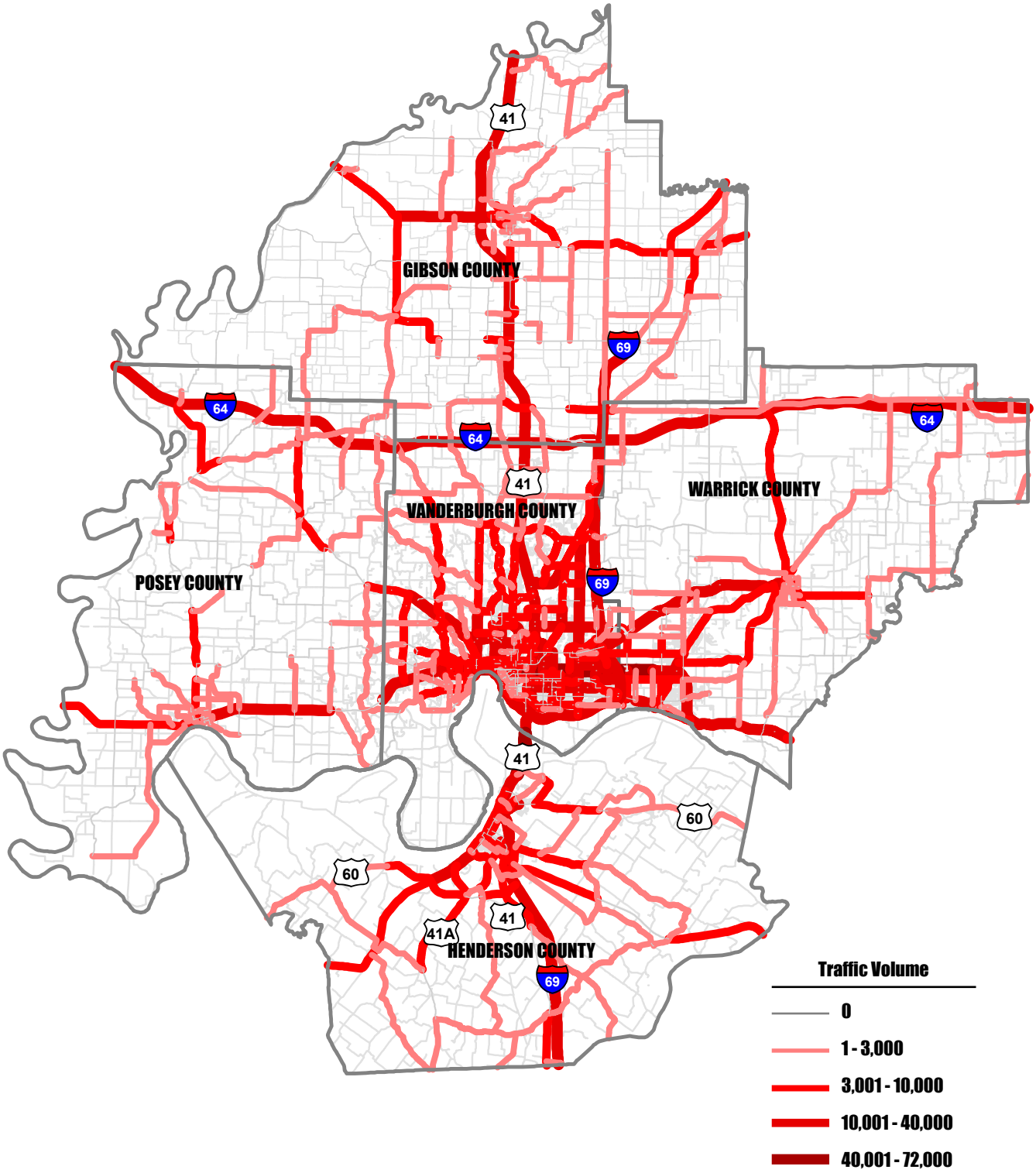


Figure 3.4:
Traffic Volumes (AADT)



Public Transportation

Public transportation, also referred to as transit, includes all forms of transportation that are available to the public, charge set fares, and run on fixed routes. In the MPO's three-county region, this consists of three separate bus systems, one in each county. These bus systems provide an alternative form of transportation to the personal vehicle.

Transit riders vary greatly, but are often categorized into two categories: dependent riders and choice riders. Dependent riders do not have access to a personal vehicle for any number of reasons, including age, income, or disability. Without affordable and reliable public transportation, these individuals cannot access employment, healthcare, recreation, shopping or other everyday activities. In fact, the lack of reliable transportation is one of the greatest barriers to getting the unemployed to available jobs. Public transportation also helps seniors and individuals with disabilities remain independent.

Choice riders have access to a personal vehicle, but occasionally prefer the more economical and environmentally-friendly alternative. Some families may only have one vehicle, so public transportation provides another option to determining how to share that vehicle.

Regional Transit Providers

The MPO Planning Area is served by two municipal transit providers and one rural transit provider that are open to the general public. The Metropolitan Evansville Transit System (METS) and Henderson Area Rapid Transit (HART) are both city owned and operated transit agencies. Warrick Area Transit System (WATS) is considered a rural transit system that is operated by Ride Solution, a transportation service provided by Four Rivers Resource Services.

The Metropolitan Evansville Transit System (METS)

METS operates 16 daytime fixed routes Monday through Friday. Most of these routes also operate on Saturday. A limited number of routes run nights and Sundays. Base fare for the general public on fixed routes is $0.75. Fare for students is $0.50 and fare for seniors and individuals with a disability is $0.35. A detailed route schedule is shown in Table 3.1. Figure 3.5 shows the weekday routes and Figure 3.6 shows the Sunday routes.

In 2017, METS made several changes to improve the fixed route system. Five routes began running on Sundays from 6:15 a.m. to 6:15 p.m. A new Lynch-Walnut evening route was added, combing the Lynch and Walnut daytime routes. The overall fare structure was also changed, dropping the general fare from $1.00 to $0.75 and eliminating the free transfers.

Table 3.1: METS Route Schedule

Route		Monday-Friday		Saturday		Sunday
		Day	Night	Day	Night	
Covert	A					
	B					
Covert-Riverside						
Downtown-North Main						
East Connection						
First Avenue						
Fulton						
Howell-Mary						
Lincoln	A					
	B					
Lynch						
Lynch-Walnut						
Mary						
Riverside	A					
	B					
Shopper Shuttle						
Stringtown						
Stringtown-First						
USI Shuttle	1					
	2					
Walnut						
Washington	A					
	B					
West Connection						

Day routes run 6:15am-6:15pm, except B routes that run 5:45am-5:45pm.
A routes do not run 10:45am-12:45pm.
Night routes run 6:15pm-12:15am.
Sunday routes run 6:15am-6:15pm.
USI 1 runs 7am-5pm; USI 2 runs 7:30am-9:15pm (stops at 5pm Fridays).
West Connection runs 6:45am-9:15pm.
USI and West Connection operate only during Fall & Spring USI semesters.

Figure 3.5: METS Weekday Routes

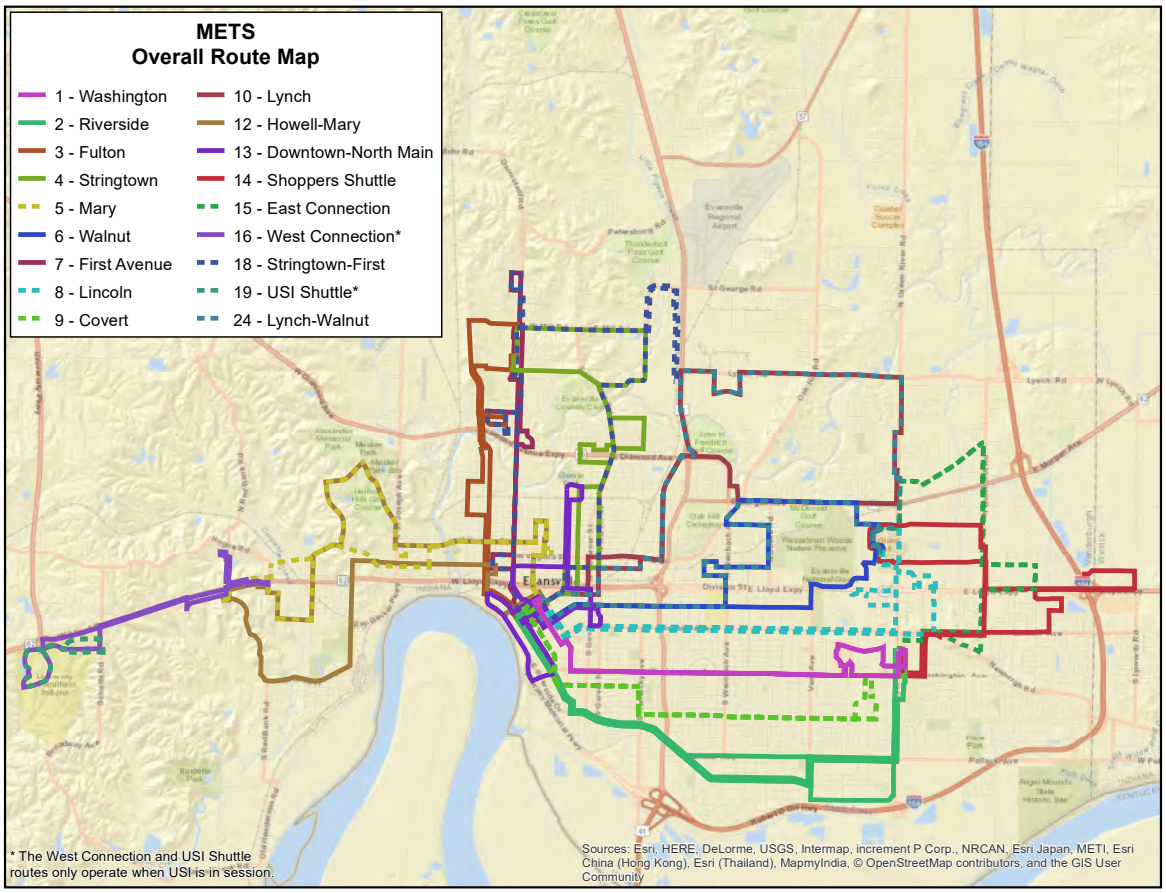
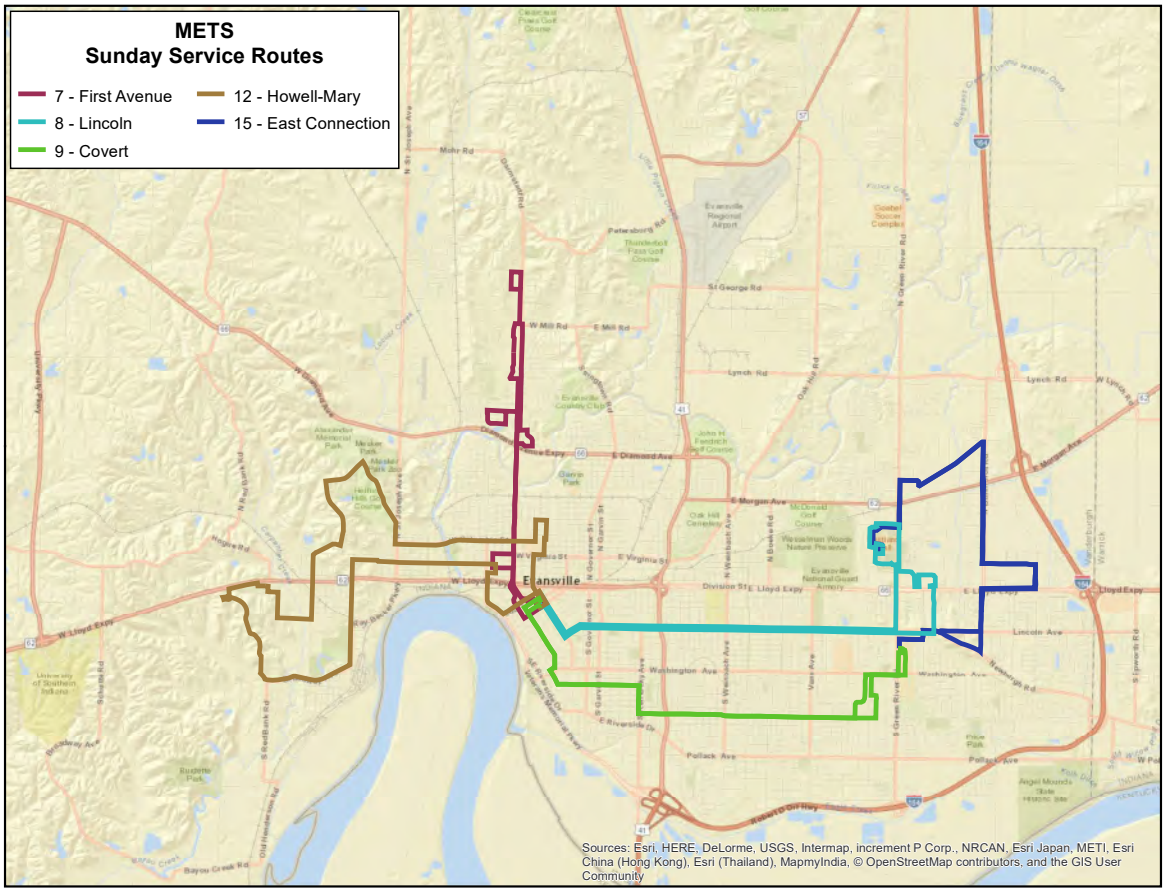


Figure 3.6: METS Sunday Routes



METS is also required to operate ADA Complementary Paratransit Service in addition to the fixed routes. Referred to as METS Mobility, the paratransit service is offered to individuals 65 years and older or individuals with a documented disability that limits their use of the fixed route system. METS Mobility operates within the city limits of Evansville on the same days and times as the fixed routes. Fare for METS Mobility is $1.50 per one-way trip.

Vanderburgh County currently contracts with METS to provide Mobility service to county residents at a cost of $5 per one-way trip. County service operates Monday through Friday from 8:00 a.m. to 5:00 p.m.

Henderson Area Rapid Transit (HART)

HART operates five fixed routes served by three buses. Two buses run back-to-back 30-minute routes and one bus runs a one-hour route. The routes run Monday through Saturday from 6:00 a.m. to 5:30 p.m. HART also runs the College Shuttle from the downtown terminal to Henderson Community College Monday through Friday at 7:30 a.m., 11:30 a.m. and 3:30 p.m. Base fare for the general public on fixed routes is $0.50. Fare for students, seniors, and individuals with a disability is $0.25. A detailed route schedule is shown in Table 3.2. Figure 3.7 shows the route map side of the HART Ride Guide.

HART must also operate ADA Complementary Paratransit Service in addition to the fixed routes. The paratransit service is referred to as Demand Response and is offered to seniors or individuals with a disability that limits their use of the fixed route system. Demand Response service operates within the city limits of Henderson Monday through Saturday from 6:00 a.m. to 5:30 p.m. Fare for Demand Response is $1.00 per one-way trip.

Warrick Area Transit System (WATS)

WATS operates four fixed routes Monday through Friday from 5:45 a.m. to 6:05 p.m. (Note: each route begins and ends at slightly different times. The route schedule provides details.) Two routes operate in and around Newburgh and connect to the METS transfer station; one route operates in Chandler and connects to METS and the Newburgh routes; and one route operates in Boonville and connects to the Chandler route. Base fare for the general public is $1.00. Fare for seniors and individuals with a disability is $0.50. A detailed route schedule is shown in Table 3.3. Figure 3.8 shows the route map from the WATS ride guide.

Table 3.2: HART Route Schedule

Route	Monday-Saturday	
	:00 - :29	:30 - :59
East Gate		
East End		
Weaverton		
North		
Shopper Shuttle		
College Shuttle	7:30am, 11:30am, 3:30pm	

All routes run 6:00am-5:30pm.
:00 routes leave the downtown terminal on the hour.
:30 routes leave the downtown terminal on the half hour.
:00 and :30 routes are rn back to back.
College Shuttle runs 3 days a week Mon-Fri.

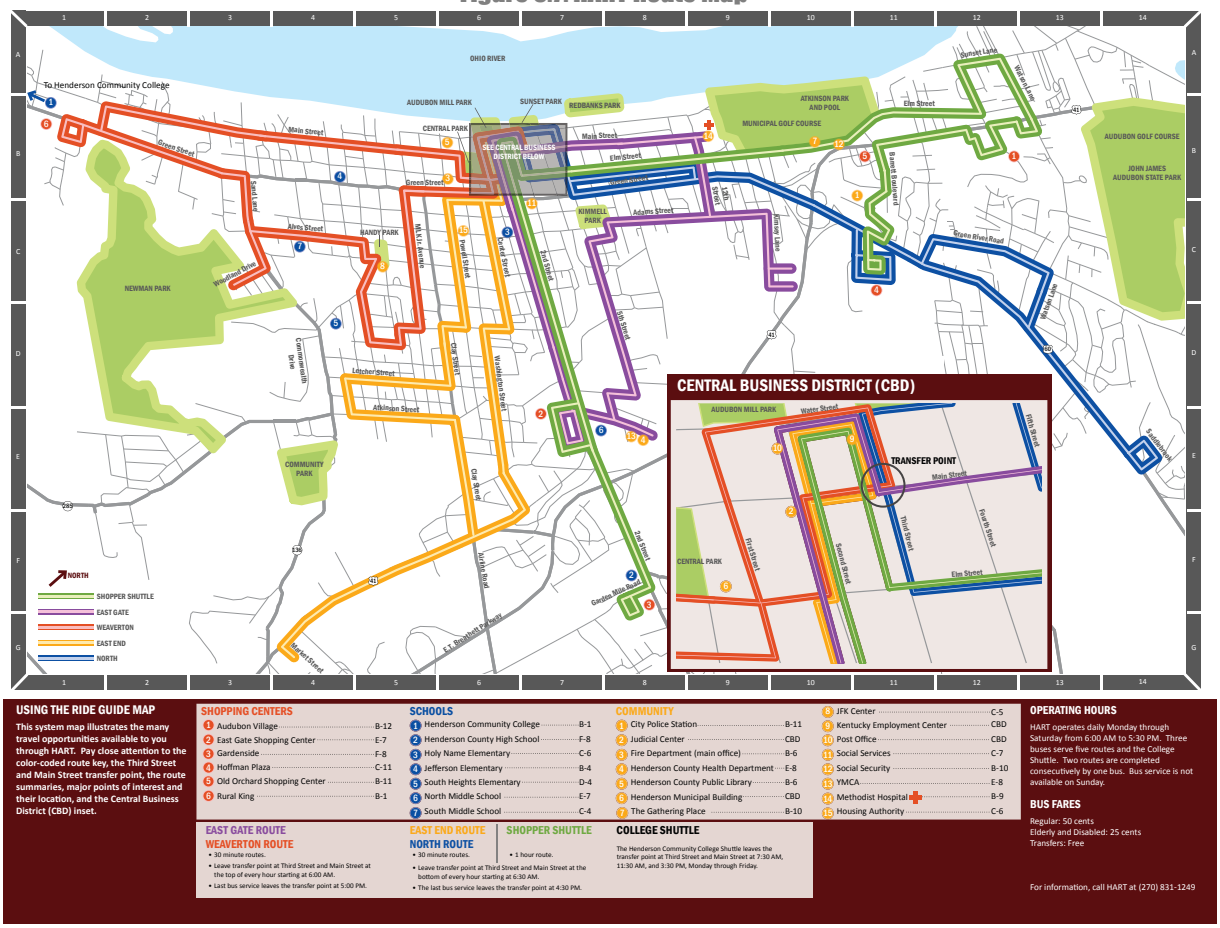
Table 3.3: WATS Route Schedule

Route	Monday-Friday	Transfer Time	Transfer Point	Transfer To Routes
Newburgh East	6:05am-6:05pm	:55	Stahl Rd	METS & Chandler
Newburgh West	5:45am-6:00pm	:55	Stahl Rd	METS & Chandler
Chandler	6:15am-6:00pm	:55	Stahl Rd	METS & Newburgh
		:30	Bnvl Walmart	Boonville
Boonville	5:50am-6:00pm	:30	Bnvl Walmart	Chandler

Both Newburgh routes and the Chandler route meet at Stahl Road approximately 5 minutes before the hour for transfers.
METS' Shopper Shuttle stops at Stahl Road approximately on the hour.

Instead of operating an ADA Complementary Paratransit Service, Ride Solution provides two options for seniors or individuals with a disability that limits their use of the fixed route system. One option is a route deviation. A driver will deviate from a route up to ¼ mile to pick up an individual. These route deviations must be scheduled at least two business days prior to the needed ride and cost $2.00. Another option is door-to-door service on a Ride Solution vehicle, which operates throughout Warrick County and can provide rides to other counties. Door-to-door service is $2.00 in-town, $4.00 in-county and $6.00 county-to-county.

Figure 3.7: HART Route Map



USING THE RIDE GUIDE MAP

This system map illustrates the many travel opportunities available to you through HART. Pay close attention to the color-coded route key, the Third Street and Main Street transfer point, the route summaries, major points of interest and their location, and the Central Business District (CBD) inset.

SHOPPING CENTERS

1	Audubon Village	B-12
2	East Gate Shopping Center	E-7
3	Gardenside	F-8
4	Hoffman Plaza	C-11
5	Old Orchard Shopping Center	B-11
6	Rural King	B-1

SCHOOLS

1	Henderson Community College	B-1
2	Henderson County High School	F-8
3	Holy Name Elementary	C-6
4	Jefferson Elementary	B-4
5	South Heights Elementary	D-4
6	North Middle School	E-7
7	South Middle School	C-4

COMMUNITY

1	City Police Station	B-11
2	Judicial Center	CBD
3	Fire Department (main office)	B-6
4	Henderson County Health Department	E-8
5	Henderson County Public Library	B-6
6	Henderson Municipal Building	CBD
7	The Gathering Place	B-10
8	JFK Center	C-5
9	Kentucky Employment Center	CBD
10	Post Office	CBD
11	Social Services	C-7
12	Social Security	B-10
13	YMCA	E-8
14	Methodist Hospital	B-9
15	Housing Authority	C-6

EAST GATE ROUTE
WEAVERTON ROUTE
- 30 minute routes.
- Leave transfer point at Third Street and Main Street at the top of every hour starting at 6:00 AM.
- Last bus service leaves the transfer point at 5:00 PM.

EAST END ROUTE
NORTH ROUTE
- 30 minute routes.
- Leave transfer point at Third Street and Main Street at the bottom of every hour starting at 6:30 AM.
- The last bus service leaves the transfer point at 4:30 PM.

SHOPPER SHUTTLE
- 1 hour route.

COLLEGE SHUTTLE

The Henderson Community College Shuttle leaves the transfer point at Third Street and Main Street at 7:30 AM, 11:30 AM, and 3:30 PM, Monday through Friday.

OPERATING HOURS

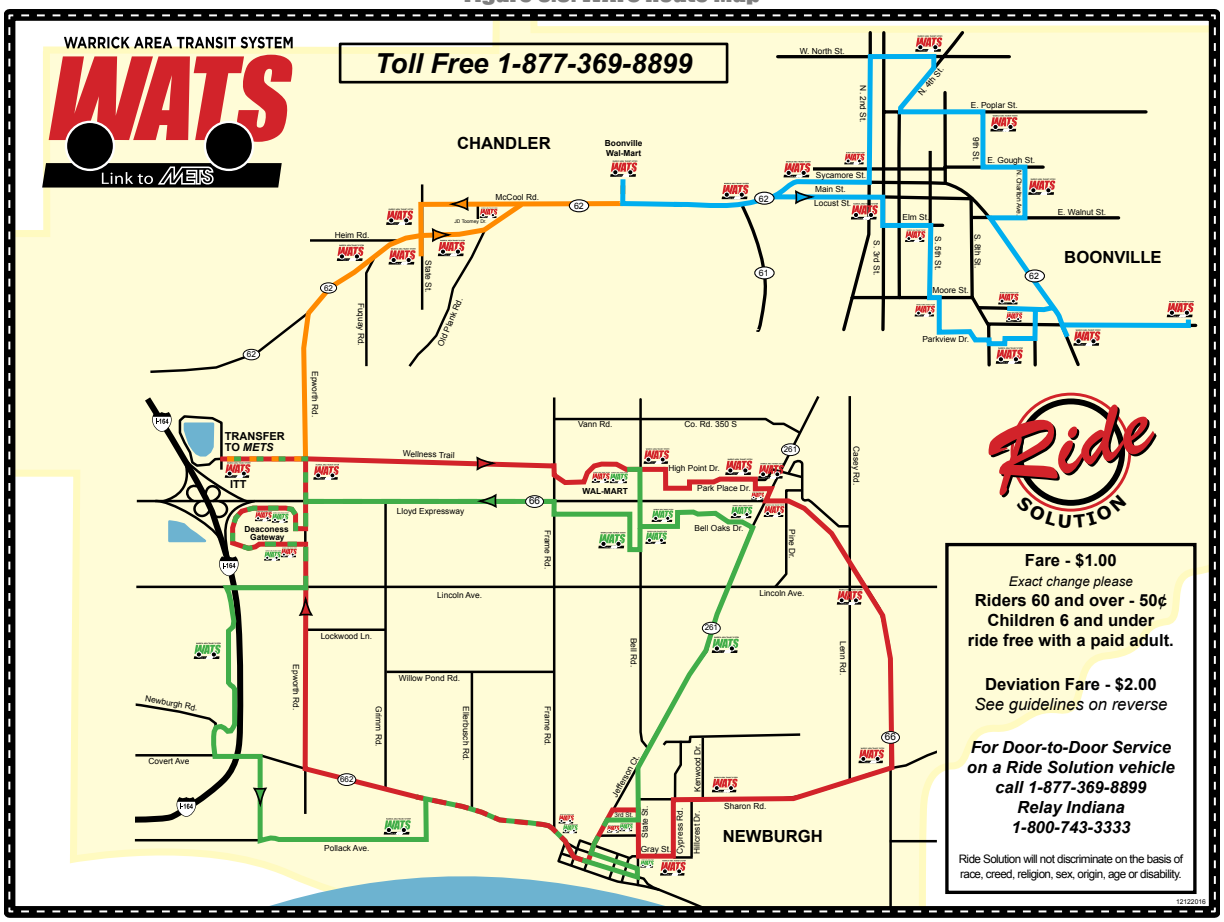
HART operates daily Monday through Saturday from 6:00 AM to 5:30 PM. Three buses serve five routes and the College Shuttle. Two routes are completed consecutively by one bus. Bus service is not available on Sunday.

BUS FARES

Regular: 50 cents
Elderly and Disabled: 25 cents
Transfers: Free

For information, call HART at (270) 831-1249

Figure 3.8: WATS Route Map



FYI

Transit Plans

The Coordinated Public Transit - Human Services Transportation Plan:

The Coordinated Public Transit - Human Services Transportation Plan allows for the region to be eligible for Section 5310 funding. Section 5310 funding helps METS and HART receive funds to purchase buses for their paratransit service and local non-profits to receive funding to purchase vans or buses for their clients. The MPO amends the Coordinated Plan as changes occur in transportation serving the elderly and individuals with disabilities.

The primary goal of the Coordinated Plan, in addition to Section 5310 eligibility, is to create a collaborative network of transportation services that improve mobility for seniors, individuals with disabilities, and low income individuals. For many people, public transportation is the only means for accessing medical care, social services, government offices, and other essential services. The Coordinated Plan aids in directing Section 5310 funding to projects that improve transportation options and prevent overlapping services.

Section 5310 Program Management Plan:

The Section 5310 Program Management Plan (PMP) documents how the MPO will manage the FTA Section 5310: Enhanced Mobility of Seniors and Individuals with Disabilities grant program. The PMP includes the roles and responsibilities of the MPO and each subrecipient (METS, HART, and non-profits), eligible activities, and how the MPO selects projects for funding. It also lists the requirements that each subrecipient must follow in order to continue to be eligible for Section 5310 funding.

Transit Asset Management Plan:

In 2018, the MPO began working with METS and HART to develop the region's first Transit Asset Management (TAM) Plan. The TAM plan recently became a requirement from the FTA, and the initial TAM Plan was required to be completed by October 2018. METS, HART and the MPO decided to develop a regional TAM Plan in coordination with each other rather than developing individual TAM Plans for both METS and HART. The TAM Plan lists all of METS' and HART's major assets and a plan for replacement as those assets reach the end of their useful life.

METS and HART Planning:

In addition to the TAM Plan, METS and HART are also responsible for all other FTA required plans beyond the Section 5310 planning. The MPO provides technical assistance to each agency as requested.

Ridership

Transit ridership in the region has been declining slightly over the past several years. Table 3.4 shows ridership for fixed routes and paratransit service for the three transit providers in the region. Transit statistics for METS and HART were found in the National Transit Database. The most recent data included is from 2016. WATS provided their annual ridership totals.

Between 2012 and 2016, regional fixed route ridership has decreased by 13%. METS saw the largest fixed route ridership change in this time with a decrease of 14%. HART's fixed route ridership decreased by 8% and WATS ridership decreased by 7% between 2012 and 2016.

Regional paratransit ridership actually increased between 2012 and 2016, due to the increase in MET's paratransit ridership. METS saw an increase in paratransit ridership of 19%. HART's paratransit ridership decreased by 26% in this same time period.

In 2017, METS added Sunday service on five routes and a new evening route on Lynch-Walnut. These additions have helped METS increase their fixed route and paratransit ridership.

Table 3.4: Transit Ridership

		2012	2013	2014	2015	2016
METS	Fixed	2,041,247	1,880,871	2,068,991	1,974,079	1,756,873
	Paratransit	45,468	45,601	48,048	51,416	53,964
	Total	**2,086,715**	**1,926,472**	**2,117,039**	**2,025,495**	**1,810,837**
HART	Fixed	134,930	135,940	134,966	130,530	123,886
	Paratransit	16,524	15,286	14,020	12,804	12,309
	Total	**151,454**	**151,226**	**148,986**	**143,334**	**136,195**
WATS	**Total**	**27,030**	**26,653**	**25,547**	**24,421**	**25,166**

Sources:
National Transit Database (NTD)
Warrick Area Transit System (WATS)
Annual Database Service

Mets Terminal, downtown Evansville

Bicycle and Pedestrian

Active transportation in the forms of walking and bicycling are a demonstrated priority of citizens and policy makers throughout the communities served by the MPO. Despite these modes sometimes being called "alternatives", for many people, walking or bicycling are their only means of travel. Almost everyone is a pedestrian for at least a portion of each trip taken, as final destinations are arrived at by foot. Additionally, in recent years, rising fuel prices have driven a resurgence of bicycling as an economical and non-polluting transportation choice.

An accessible and connected bicycle and pedestrian network facilitates mode choice for users, lessening dependence on single-occupant vehicle (SOV) travel. Benefits of active transportation include enhanced efficiency of the existing roadway network, better community air quality and positive health and economic impacts. A commitment by local communities to plan for active modes of transportation is a fundamental component of addressing the system-wide transportation needs of the future. Planning and research conducted by the MPO can serve as a foundation for developing policies and directing investments in active transportation facilities. The acknowledged benefits of walking and bicycling for transportation include:

- Bicycling and walking are inexpensive (or no cost) alternatives to automobile travel;
- Increased exercise from walking or biking often leads to health improvement;
- Bicycling and walking are environmentally sustainable ways to travel;
- Reductions in automobile traffic leads to improved quality of life for individuals and community; and
- Active transportation provides more opportunities for personal interaction with others.

Bicycle and Pedestrian Networks

Vanderburgh, Henderson, and Warrick counties all strive to make bicycling and walking a more safe and realistic mode of transportation and form of recreation for residents. Communities in the region recognize the value and importance of providing an accessible bicycle and pedestrian network, and have made improvements to their existing bicycle networks in the last several years. Improvements have included greenway extensions, signing bike routes, designating bike lanes, and sidewalk and curb ramp repairs.

FYI

Bicycle and Pedestrian Plans

Evansville Bicycle and Pedestrian Connectivity Master Plan:

The Evansville Bicycle and Pedestrian Connectivity Master Plan (BPCMP) was adopted in November 2015 and includes nearly 170 miles of recommended bicycle and pedestrian network improvements.

The Greater Henderson Bicycle and Pedestrian Master Plan:

The Greater Henderson Bicycle and Pedestrian Master Plan was adopted in February 2014 and includes nearly 140 miles of bicycle and pedestrian network improvements.

Warrick Trails:

Warrick Trails, a non-profit organization, has developed a bicycle and pedestrian plan to connect Newburgh, Chandler and Boonville with off- and on-street facilities. The plan, also named Warrick Trails, will provide Warrick County with over 35 miles of bicycle and pedestrian facilities once implemented.

EMPO Complete Streets Policy:

In March 2012, the MPO adopted the region's first Complete Streets Policy. A Complete Streets Policy promotes roadways that are designed to safely and comfortably accommodate all users of all ages and abilities, including, but not limited to motorists, bicyclists, pedestrians, transit and school bus riders, delivery and service personnel, freight haulers, and emergency responders. The MPO Complete Streets Policy requires that all projects receiving MPO allocated federal funding adhere to the policy. Because this is an MPO-level policy, local jurisdictions completing projects with only local funds are encouraged, but not required to adhere to the policy.

In the three county region, just over 30 miles of bicycle and pedestrian facilities have been added since the MTP 2040. Table 3.5 shows existing miles for bicycle and pedestrian facilities and Figure 3.9 shows their locations.

City of Evansville and Vanderburgh County

The City of Evansville and Vanderburgh County have a combined 75 miles of bicycle and pedestrian facilities (not including sidewalks), having added nearly 10 miles to the overall network since the MTP 2040. Over these four years, bike lanes have more than doubled with the extension of Oak Hill Road and the addition on Green River Road. Because sidepaths are becoming a common addition to roadway projects in the county, the amount of sidepaths have increased by nearly 75%. The City of Evansville completed the first cycle track in the region in 2017. It extends just over a half-mile on North Main Street before turning into a sidepath, connecting downtown Evansville with Garvin Park.

Town of Newburgh and Warrick County

Since 2014, Warrick County has increased their bicycle and pedestrian network by over 30%, from 56 miles to almost 75 miles. Currently, there are over six miles of bike lanes, all of which were developed since the MTP 2040. In 2016, nearly 1.5 miles of separated trail was constructed as part of the Warrick Wellness Trail project from the Regional Cities initiative near the Warrick County Medical Complex. Warrick Trails, a not-for-profit volunteer group with an initiative to improve Warrick County quality of life, has worked with corporate donors and area officials to help implement bicycle and pedestrian projects. To date, over 15 miles of on-street facilities have been added, including some on state roads in collaboration with INDOT. The Town of Newburgh is currently constructing an extension of the Rivertown Trail that will add another ¾ mile west from the Gene Aurand Trailhead at Old SR 662 to Pollack Avenue.

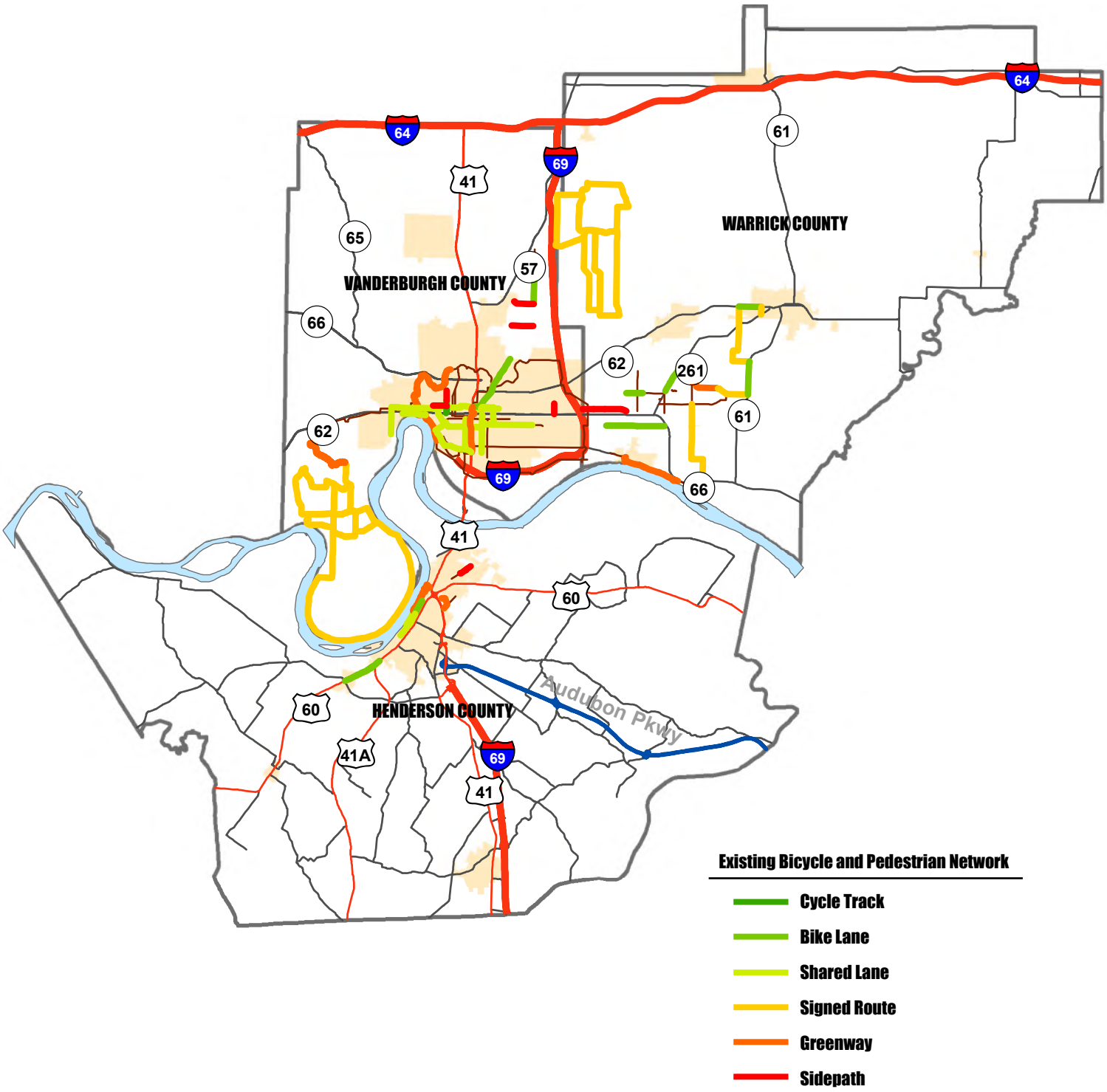
City of Henderson and Henderson County

Since the MTP 2040, the City of Henderson has added almost two miles of bicycle facilities to the existing network. In 2015, over a half-mile of bike lane was added on Main Street between 12th Street and 5th Street, and just over one mile of shared lane was added from 5th Street to Hancock Street. A ½ mile sidepath was constructed in 2015 on Green River Road between Osage Drive and Woodspoint Drive. The City of Henderson is currently planning an extension of the sidepath from Osage Drive to Bend Gate Road. This extension will connect into an existing sidewalk and provide alternative opportunities for students at Bend Gate Elementary School.

Table 3.5:
Existing Bicycle and Pedestrian Facilities

Type	Total Existing Miles	Total Miles Completed Since 2014	% Increase
Vanderburgh County			
Cycle Track	0.57	0.57	100%
Bike Lane	4.09	2.61	64%
Shared Lane	19.14	3.02	16%
Signed Route	37.78	-	0%
Greenway	11.54	2.24	19%
Sidepath	3.45	2.51	73%
TOTAL	**76.57**	**10.96**	**14%**
Warrick County			
Cycle Track	-	-	-
Bike Lane	7.53	7.53	100%
Shared Lane	-	-	-
Signed Route	43.83	9.39	21%
Greenway	4.64	1.78	38%
Sidepath	1.50	1.00	67%
TOTAL	**57.50**	**19.70**	**34%**
Henderson County			
Cycle Track	-	-	-
Bike Lane	2.53	0.68	27%
Shared Lane	1.97	1.17	59%
Signed Route	-	-	-
Greenway	2.54	-	0%
Sidepath	0.57	0.57	100%
TOTAL	**7.61**	**2.42**	**32%**

Figure 3.9:
Existing Bicycle and Pedestrian Facilities



FYI

Understanding Bicycle Facilities

Source: NACTO

Cycle Track:

A cycle track combines the user experience of a separated path with the on-street infrastructure of a dedicated bike lane. It is physically separated from vehicle traffic and distinct from a sidewalk.

Source: NACTO

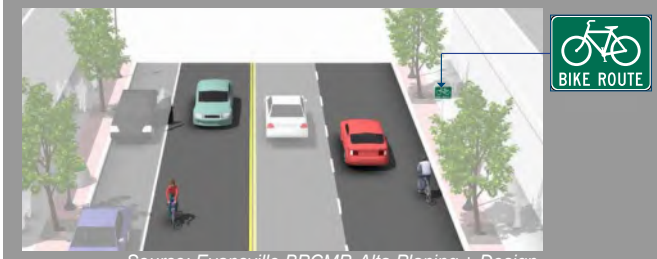
Bike Lane:

A bike lane is a designated portion of the roadway that is striped, signed and marked with pavement markings to provide space for bicycles only. Bike lanes increase safety and promote proper riding, but typically do not have a physical barrier from vehicle traffic like cycle tracks.

Source: NACTO

Shared Lane:

Shared lanes, or "sharrows" are road markings that indicate a shared lane environment for bicycles and vehicles. Shared lanes reinforce the legitimacy of bicycle traffic on the street, recommend proper bicyclist positioning, and may be configured to offer directional and wayfinding guidance. These are typically used to support a complete bikeway network when space does not allow for separated facilities.



Source: Evansville BPCMP, Alta Planing + Design

Signed Route:

Signed routes are typically marked with wayfinding signs that guide bicyclists along preferred routes, such as the Burdette Park Discovery Trail in Union Township (Vanderburgh County) and the Bluegrass Fish and Wildlife Area (in Warrick County). Similar signs can also be placed along shared routes to direct bicyclists to destinations or indicate where shared lanes turn from one street to another.

Source: Evansville BPCMP, Alta Planing + Design

Greenway:

A greenway, or trail, is a paved facility that is separated from vehicle traffic and often times not parallel to the street. A greenway is typically paved and accommodates bicyclists, walkers, runners, skaters and skateboarders, and wheelchairs.

Sidepath:

A sidepath is similar to a greenway in that it can accommodate many users, but is typically adjacent to the roadway.

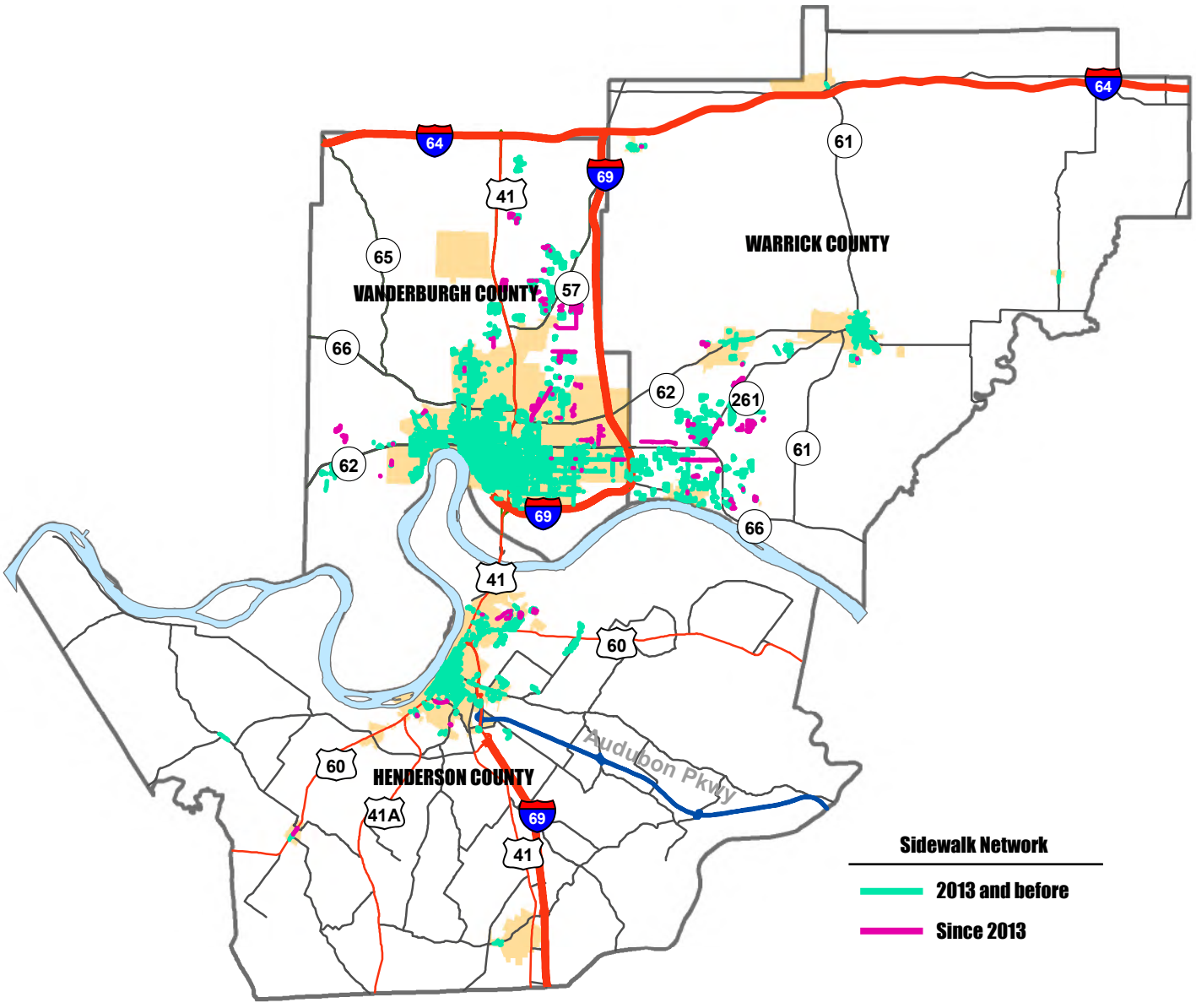
Sidewalks

In 2013, Vanderburgh, Warrick and Henderson counties had a combined 830 miles of sidewalks. By 2018, another 42 miles of sidewalk were constructed, making the regional sidewalk network a combined 873 miles. A majority of the sidewalks are located within the City of Evansville in Vanderburgh County, Town of Newburgh and cities of Chandler and Boonville in Warrick County, and the City of Henderson in Henderson County. Of the sidewalks that have been constructed since 2013, a majority are located within residential subdivisions. Table 3.6 shows sidewalk numbers by county, and Figure 3.10 shows the locations of sidewalks.

Table 3.6: Existing Sidewalks

Sidewalks (in miles)			
	2013	2018	% Increase
Vanderburgh County	573.35	25.35	4%
Warrick County	158.30	14.03	9%
Henderson County	99.20	2.97	3%
Total	**830.85**	**42.35**	**5%**

Figure 3.10: Existing Sidewalks



FYI

Upgrade Bikeshare Program

In September 2016, the Evansville Trails Coalition, in partnership with Welborn Baptist Foundation's Upgrade Initiatve, launched the first bikeshare program in Evansville. This program has been a success with over 3,000 active members and more than 80 bikes located throughout Evansville. In October 2018, the program expanded to Henderson, KY with 30 bikes at three stations. Stations are currently located at:

Evansville

- Evansville Convention and Visitors Bureau (Pagoda)
- Downtown YMCA
- Haynie's Corner
- Franklin Street at West Library
- North Main Street area
- Deaconess Sports Park
- University of Evansville
- Ivy Tech Community College

Henderson

- Second St and Main St
- Audubon Kids Zone
- along trails in Atkinson Park

For more information, visit: walkbikeevv.org/bike-share or bike.zagster.com/upgrade

Freight-Related Transportation

In the past, connections to railroads or highways ensured the prosperity of a region. Today, regional economies depend on their connections with global supply chains. Shippers are concerned with their total distribution cost, from supplier to consumer. Even modest changes in the cost of distribution can have dramatic impacts on manufacturing sources and the modes of transportation used by businesses. Freight mobility is the key to economic development.

As overall national freight movements across all modes are expected to increase, congestion, reliability, safety, and system preservation will continue to be of major concern for the foreseeable future, despite improvements in operational efficiencies currently planned. Figures 3.11 and 3.12 shows current and expected tonnage and value of shipments using highways, railroads, and waterways, air and pipelines for 2012, 2015 and projected for 2045. Both tonnage and value for all modes are expected to increase.

For the purpose of presenting a bigger picture of freight in the region, the MPO's rural planning counties of Gibson and Posey, which lie outside of the MPA, are included in this review. They are indicated in maps with a darker shading.

Figure 3.11:
Weight of Shipments by Mode (millions of tons)

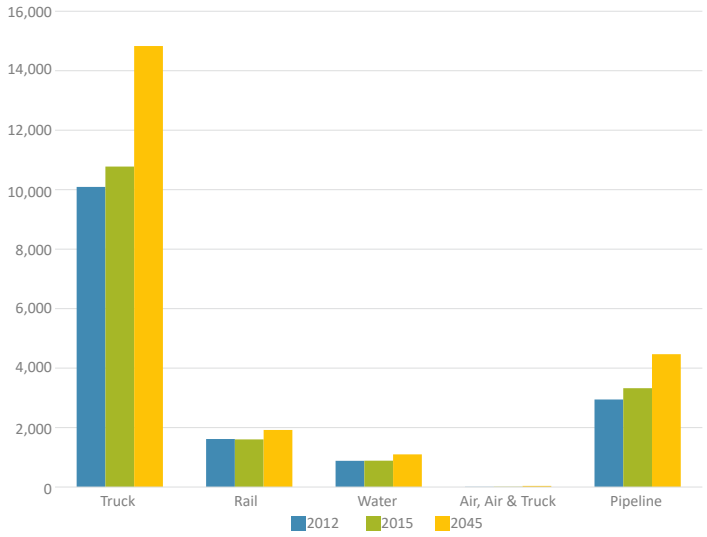
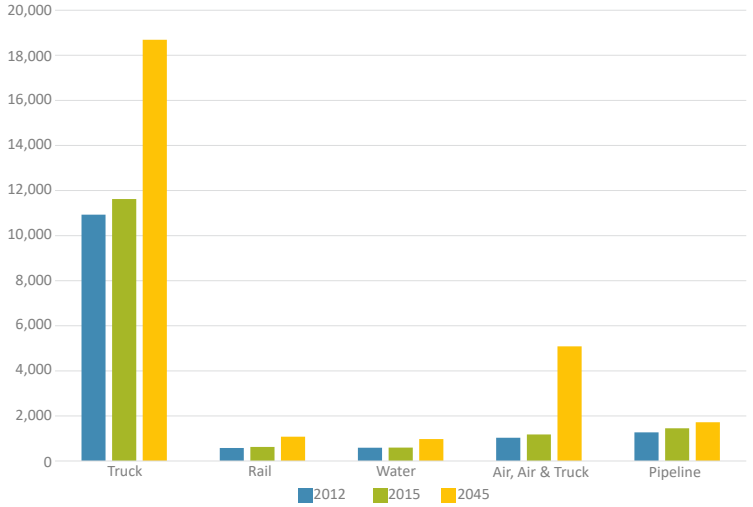


Figure 3.12:
Value of Shipments by Mode (billions of tons)



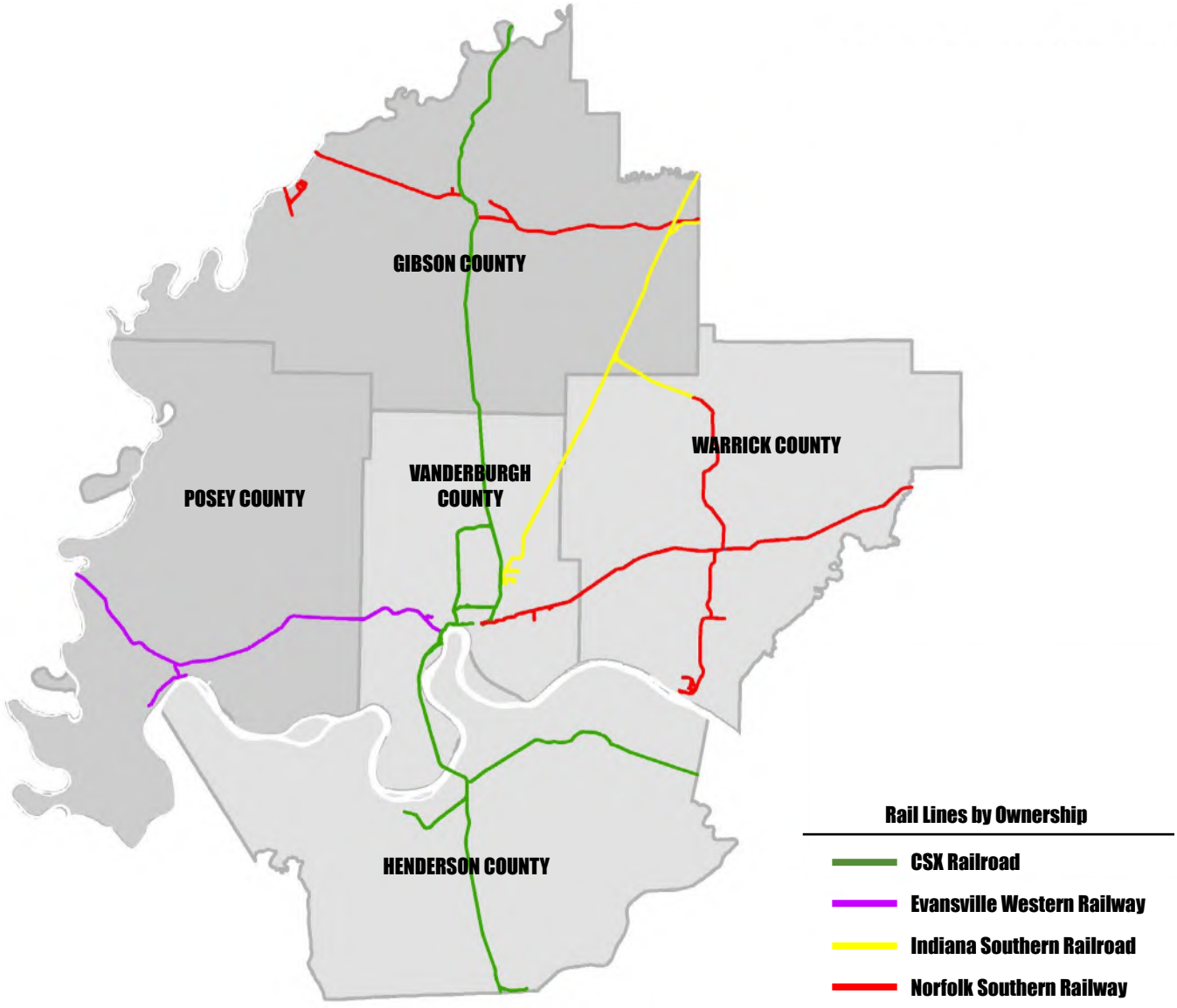
Source: U.S. Department of Transportation, Bureau of Transportation Statistics and Federal Highway Administration, Freight Analysis Framework, Version 4.3.1, 2017.

Rail Freight

Railroads are an integral part of the transportation system for the region, and compete with water and truck-based services for the movement of bulk materials. Rail lines radiate from the study area in all directions providing needed connections to the regional and national networks. All rail lines serving this region carry freight only, as passenger service was discontinued in 1971.

There are currently five companies in operation in the study area. Currently, CSX Transportation and Norfolk Southern Railway are the only two Class I railroads, meaning they have an operating revenue over $250 million per year. Figure 3.13 shows these rail lines by ownership.

Figure 3.13:
Rail Lines by Ownership



Source: Indiana State Rail Plan 2017, INDOT; Kentucky Statewide Rail Plan, 2015

CSX Transportation

CSX Transportation (CSXT) is the primary railroad company in the region, and has the most extensive rail system within the study area that carries 50-100 million gross tons (MGT) per mile of track. This system consists of tracks running north and south through the region, along CSX's Southeastern Corridor and a line that splits from the Southeastern Corridor in Henderson and heads east toward Louisville. The CSXT facilities through this region are primarily single-track lines. The vertical clearance on the CSXT lines meets the minimum requirements to accommodate double stacked containers. All of the tracks within the region can accommodate 286,000 pound railcars. CSXT is the only rail company within the study area to have access to Kentucky through a channel span rail bridge over the Ohio River. This bridge is owned and maintained by CSXT. The CSX intermodal facility (CSXI) operates out of Howell Yard in Evansville.

Norfolk Southern Railway

Norfolk Southern Railway (NS) operates one mainline that originates in Evansville and runs east parallel to SR 62, on the right-of-way of the old Wabash and Erie Canal, through Vanderburgh and Warrick counties. This route runs between Huntingburg, Indiana and Evansville with one train daily and carries less than 5 MGT per mile of track. The second NS route runs east and west in Gibson County, through Princeton. This line carries 10-50 MGT per mile of track. The NS lines meet the minimum requirements to accommodate double stacked containers within the region, and can accommodate 286,000 pound railcars.

Indiana Southern Railroad

Indiana Southern Railroad (ISRR) operates one mainline between Indianapolis and Evansville where it converges with the CSXT lines. This is currently the only direct rail connection between the Study Area and Indianapolis. The primary commodity carried through this region is coal, but it does carry a significant amount of farm products and chemicals. ISRR can accommodate double stacked containers, but cannot accommodate 286,000 pound railcars over the entire length of track in Indiana.

Evansville Western Railway

Evansville Western Railway (EVWR) operates 124.5 miles of CSX former L&N RR St. Louis Subdivision from Evansville Howell Yard to Okawville, IL through western Vanderburgh and Posey County. The EVWR serves the Port of Indiana - Mount Vernon and major industrial facilities in southern Posey County. The EVWR took over the line in December 2005 and interchanges with Burlington Northern Santa Fe (BNSF) and Union Pacific in Illinois in addition to CSX at Howell Yard. The EVWR is based in Mount Vernon, IN and is owned by Four Rivers Transportation. This rail line can accommodate both double stacked containers and 286,000 pound railcars.

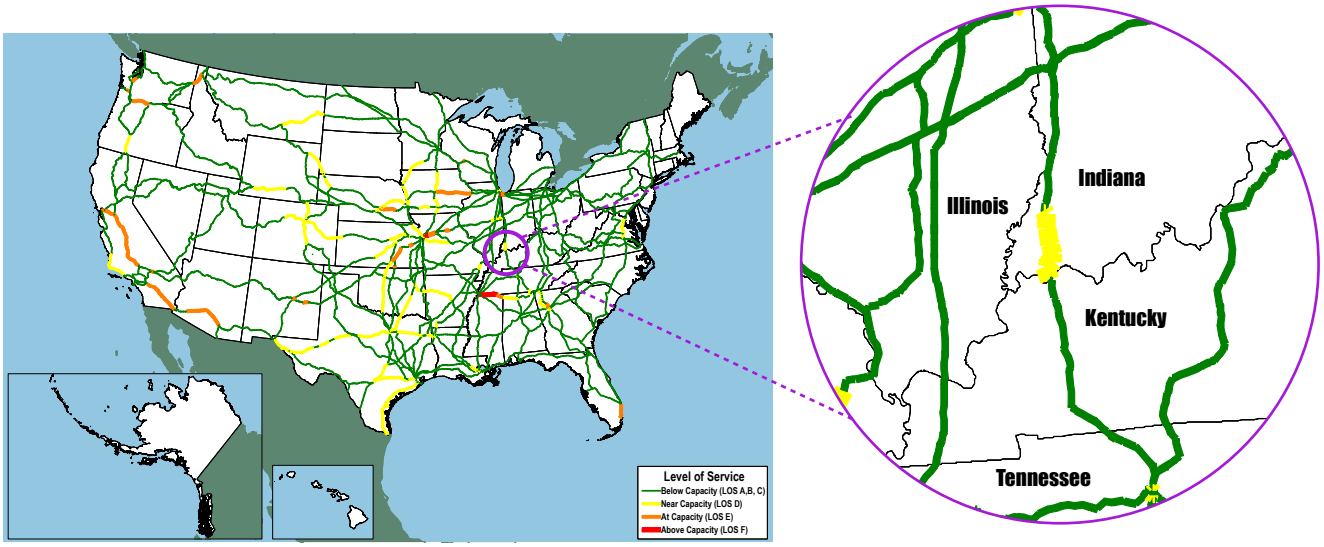
Squaw Creek Southern

Squaw Creek Southern (SCS) operates 21.3 miles of track (previously the Yankeetown Dock (YDC) track) from Lynnville Mine to Yankeetown Dock with trackage rights obtained from Norfolk Southern (NS) when NS purchased the rail portion of YDC maintenance facility in Yankeetown and is a division of Respondek Railroad Corporation of Crossville, IL. SCS interchanges with Indiana Southern (ISRR) at Lynnville Mine. This rail line can accommodate both double stacked containers and 286,000 pound railcars.

Capacity

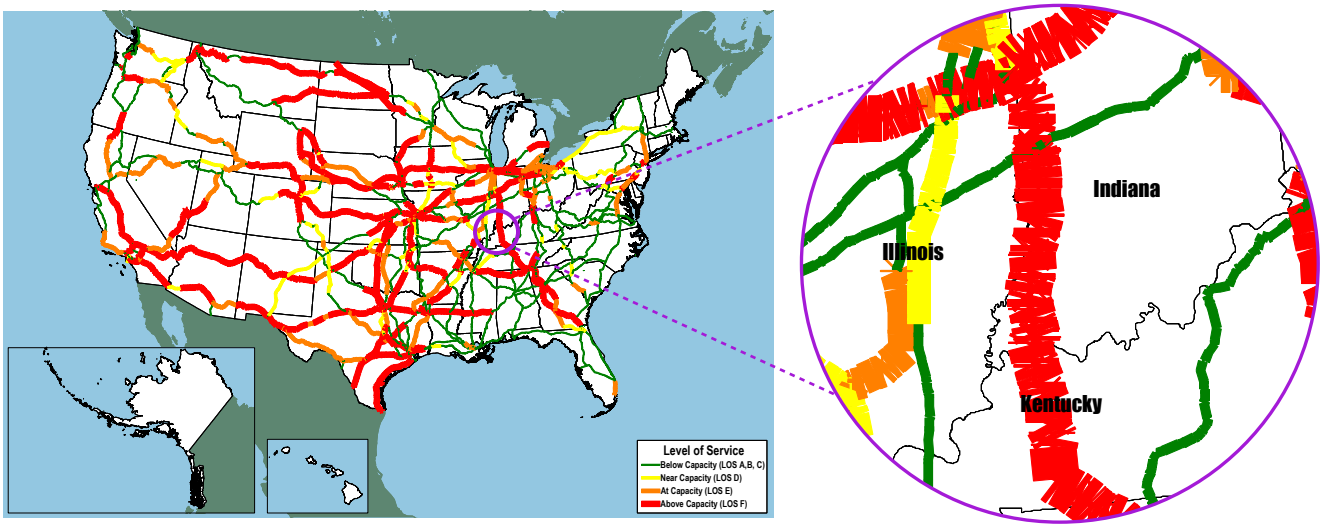
According to nationwide data collected in 2007, the CSX line running north-south through the planning area is nearing capacity. It has been projected that this same rail line will be over capacity by 2035. Figure 3.14 shows 2007 Train Volumes and LOS, and Figure 3.15 shows Expected 2035 Train Volumes and LOS.

Figure 3.14:
2007 Train Volumes and LOS



Note: Level of Service (LOS) A through F approximates the conditions described in Transportation Research Board, *Highway Capacity Manual 2000* period
Source: Association of American Railroa *National Rail Infrastructure Capacity and Investment Study*, ıdy prepared by Cambridge Systematics, Inc. (Washington, DC: September 2007), figure 4.4, page 4-10.

Figure 3.15:
Expected 2035 Train Volumes and LOS

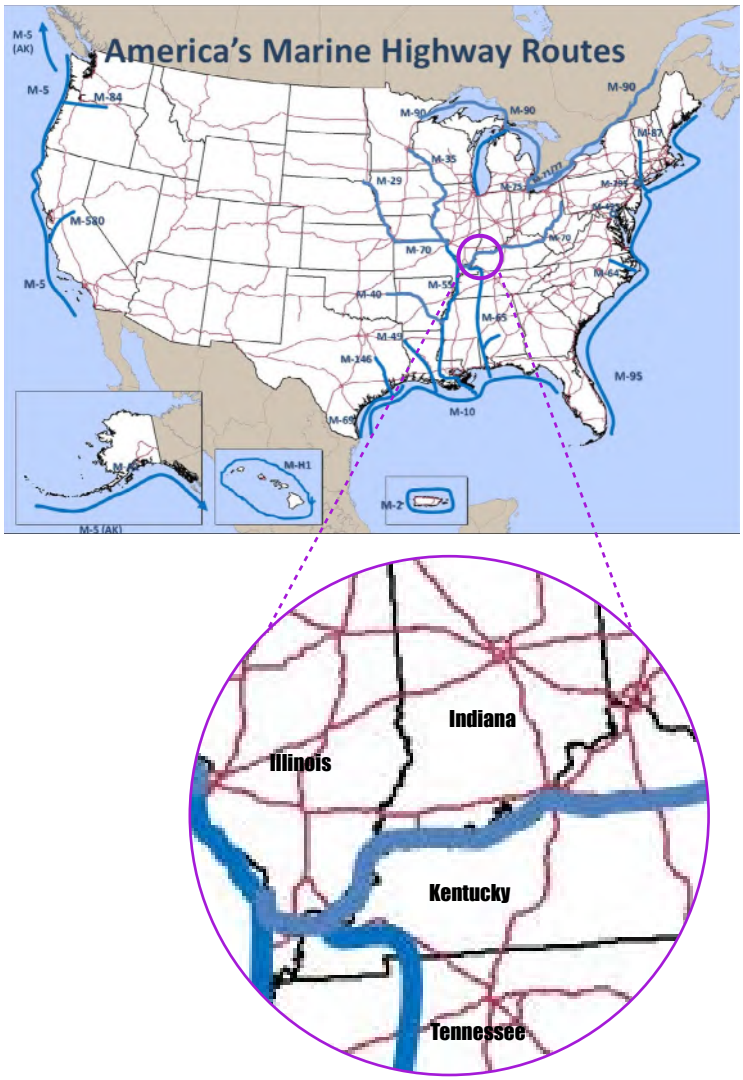


Note: Level of Service (LOS) A through F approximates the conditions described in Transportation Research Board, *Highway Capacity Manual 2000.*
Source: Association of American Railroads, *National Rail Infrastructure Capacity and Investment Study*, prepared by Cambridge Systematics, Inc. (Washington, DC: September 2007), figure 5.4, page 5-5.

Inland Waterways Freight

The Ohio River has historically been the main impetus to growth in the region. Today, the Ohio River is designated a Marine Highway (M-70). A marine highway is a designated route for transporting cargo on water, reducing pollution and congestion on roads. Since 2009, the Department of Transportation has designated 24 Marine Highway routes, and invested millions in projects supporting Marine Highway services. In addition to highlighting the role waterways play in moving freight throughout the region, designated Marine Highways receive preferential treatment for any future federal assistance from the Department or the Maritime Administration. Figure 3.16 shows Marine Highways throughout the country.

Figure 3.16: Marine Highways



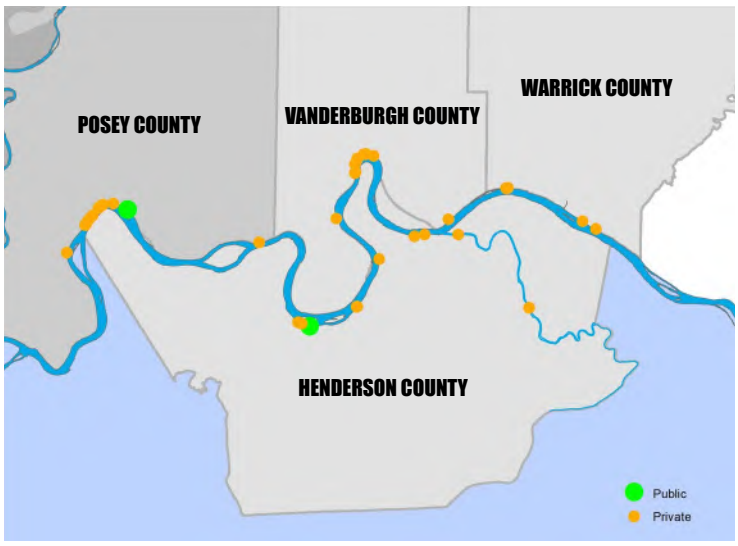
Several industries in the area utilize barge transportation for incoming and outgoing freight movement, and there are two public riverports that have a major impact on the flow of commodities throughout the study area. Figure 3.17 shows Inland Waterway Ports.

Henderson County Riverport

Henderson County Riverport (HCR) is located at milepost 808 on the Ohio River, west of the City of Henderson. It is an all-commodities terminal offering full port facilities, coal loading, bulk and cargo handling, warehousing, yard storage, and intermodal transfers between barge, rail and truck. The site encompasses 395 acres including an industrial park which supports 11 industries with room to expand.

- 125-ton electric pedestal crane
- 134-barge fleeting area
- 12,800 feet of rail track on riverfront facility
- Rail service by CSXT
- Highway access to I-69 over an adopted Critical Urban Freight Corridor
- 395–acre facility includes industrial park
- Foreign-Trade Zone

Figure 3.17: Inland Waterway Ports



Port of Indiana-Mount Vernon

Port of Indiana - Mount Vernon (POI-MV, formerly Southwind Maritime Center) lies outside of the MPA, but has a considerable freight impact in the MPO region. According to the port's website, Port of Indiana-Mount Vernon handles more cargo than any other port in the state, more than 6.5 million tons per year. The port serves the agriculture, energy and manufacturing sectors with the major cargoes being coal, grain, soy products, ethanol,

dried distillers grain, fertilizer, minerals, cement, salt, steel and project cargo. It is the largest public port within 153 mile from the confluence of the Ohio and Mississippi Rivers and connects the Ohio River Valley Region of the Midwest to the world with year-round access to the Gulf of Mexico and Great Lakes through the Inland Waterway System. Mount Vernon is ranked as the 6th largest U.S Inland River Port district by Army Corp of Engineers statistics.

- 60-ton, dual-lift overhead crane
- 500-barge fleeting area
- 200-car rail storage capacity
- Rail service by Evansville Western with interchanges to five Class I railroads
- Highway connection to I-64 and I-69
- Foreign-Trade Zone #177
- 15 miles of interior rail
- Heavy-haul roads; no weight limit
- Port complex encompasses 1,240 acres

Lock and Dam Stations

There are two lock and dam stations on the Ohio River within the study area, the Newburgh Lock and Dam in Warrick County and the John T. Myers Lock and Dam in Posey County. Both are operated from the northern shore of the river. The John T. Myers station was authorized for new construction in 2013 with little or no funding available to complete the project (USACE, 2013). An article in the Marine Link on March 6, 2017 by the President and CEO of the Waterways Council, Inc., Michael Toohey implies the project is ready for construction and is optimistic regarding the approval of funding with the new administration.

Capacity

Both public ports report adequate space for expansion and the ability to handle any additional containerized traffic expected from the expansion of the Panama Canal. Questions remain as to whether the locking system on the inland waterways can handle this traffic without needed improvements.

Air Freight

The Study Area is served by one regional airport within the study region. The Evansville Regional Airport (Identifier KEVV), the largest airport in the region, is located in the southeast quadrant of SR 57 and US Highway 41. The operation of the 1,260 acre property which includes sites for commercial development is overseen by the Evansville-Vanderburgh Airport Authority District. The Federal Aviation Administration (FAA) classifies the airport as a Primary - Non-hub facility. This implies that the airport will serve as a starting point or a destination rather than an in route stopover for travelers to other destinations.

While freight shipments have always been available, freight cargo has historically played a secondary role to passenger travel. Types of cargo demand which typically occur at the airport are airline cargo, all-cargo and charter service shipments. The major airlines and commuter airlines transport airline cargo in the hold of passenger aircraft. Airline cargo typically includes small packages, express cargo (i.e. tropical fish, flowers, etc) and mail. This is sometime referred to as "over the counter" cargo or "next flight out" cargo.

All-cargo carriers range from freight forwarders operating their own fleet (such as UPS and FedEx) to carriers operating on an intermittent basis. No information has been made available on the amount or value of cargo that is shipped using this facility, though within the last decade, FedEx began weekday flights of time sensitive, early delivery cargo from Memphis, TN to the FedEx distribution center located in Vanderburgh County. There are also approximately 100 on demand freight flights annually. These are typically parts for manufacturers in the region.

Highway Freight

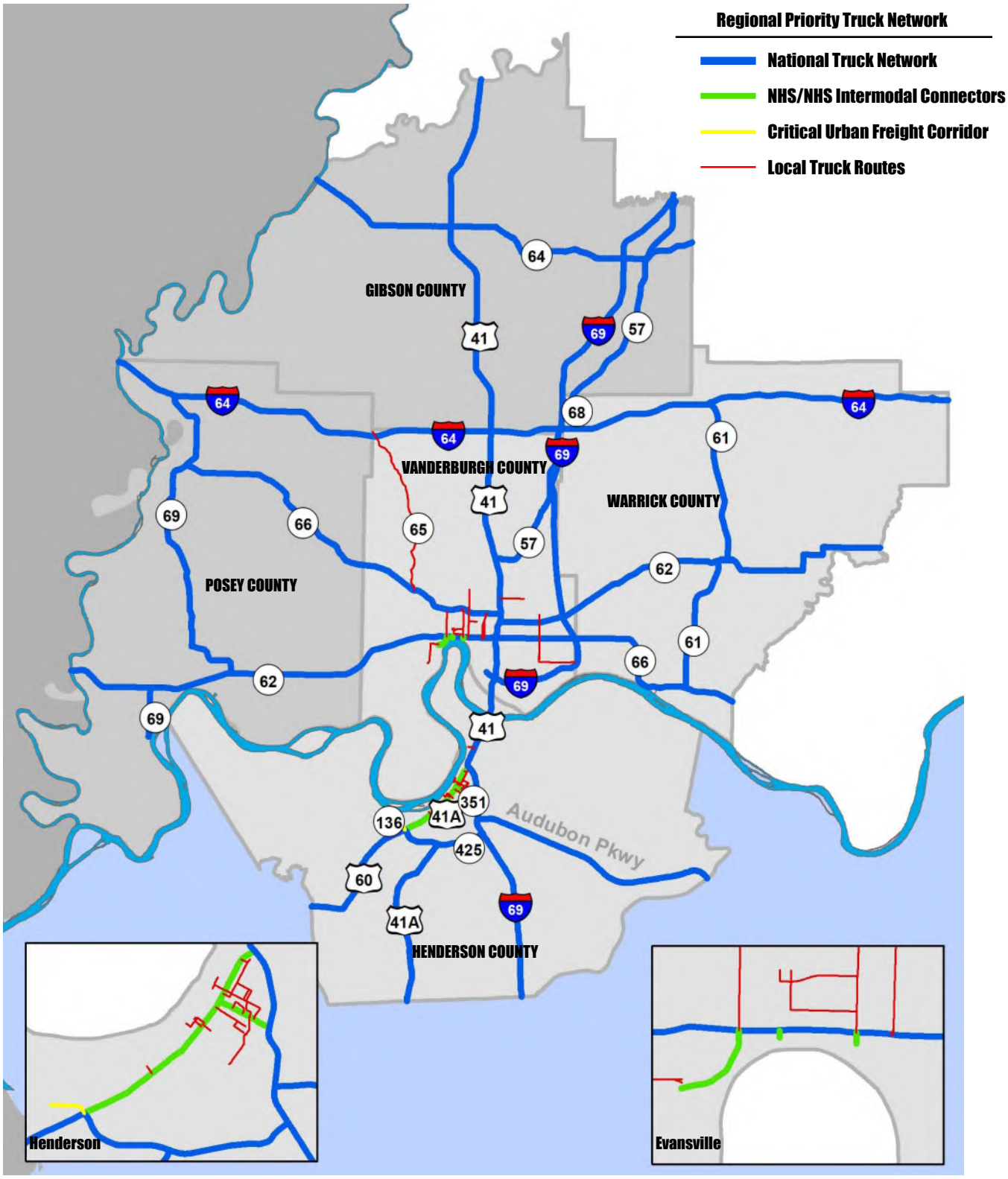
Trucks are the most visible of all the freight modes in the region because they share the same highway network as transit and passenger vehicles. Nationally, trucks carry the greatest weight and greatest value of shipments compared to other modes, and those estimates are expected to increase by 47% and 71%, respectively by 2045 when compared to 2012.

Network

The MPO's Regional Priority Truck Network, shown in Figure 3.18, represents the priority routes in the study area. This network includes the National Truck Network (NTN), National Highway System (NHS) routes or intermodal connectors not on the NTN, Critical Urban Freight Corridors not included on NTN or NHS networks and locally designated truck routes. All of these routes together, have been established to improve freight movement. The MPO gives additional

priority to improvements on this network during the project selection process, and will monitor congestion on the more heavily trafficked routes through the Congestion Management Process laid out in Appendix A on this network for needed improvements.

Figure 3.18: Regional Priority Truck Network

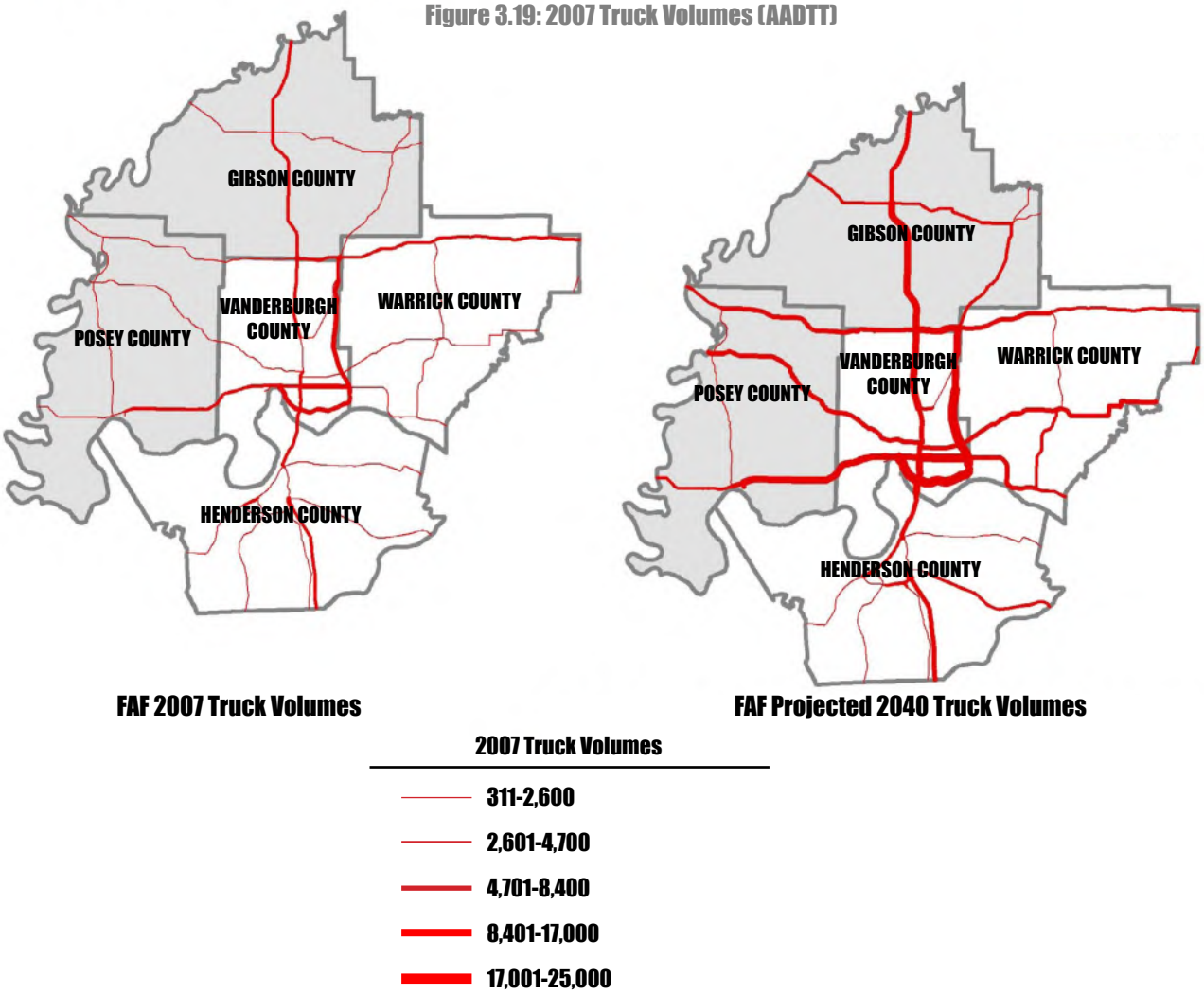


Capacity

With the expected increases by weight and value for truck shipments, truck volumes are expected to follow that increase accordingly. Figure 3.19 shows truck volumes from 2007 and the projected volume for 2040.

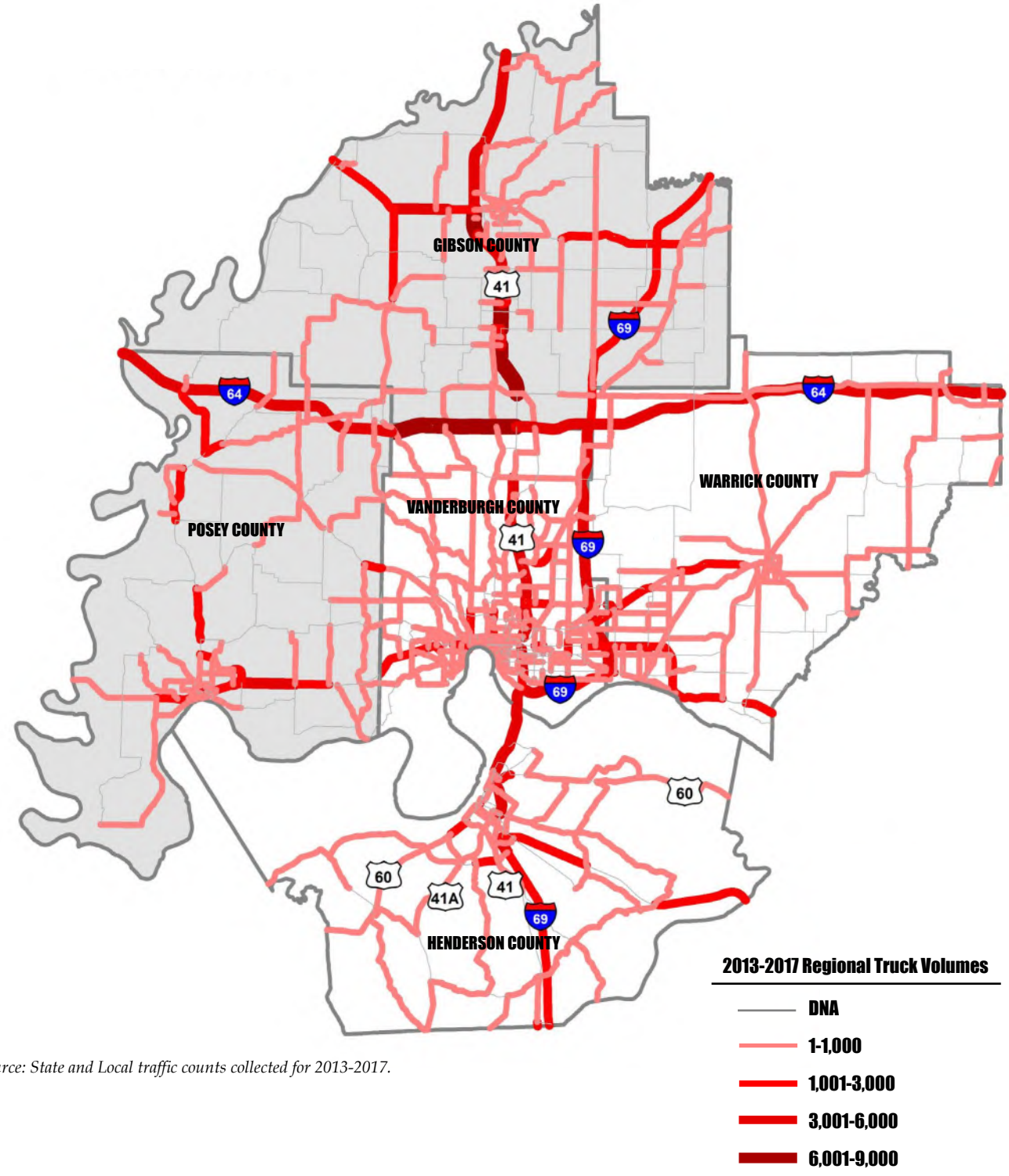
Current regional truck volumes, shown in Figure 3.20, indicate the interstates, parkways, highways and state roads are most heavily used by trucks. Obvious hot spots occur on Interstate 64 west of US Highway 41 and US Highway 41 north of Interstate 64 in Gibson County. While volumes alone do not indicate impaired freight movement, these areas should be monitored through the CMP for congestion and delay. Volumes can also help determine where local truck routes are needed to support freight movements.

Figure 3.19: 2007 Truck Volumes (AADTT)



Source: US Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework (FAF) 3.4

Figure 3.20:
2013-2017 Regional Truck Volumes (AADTT)



Source: State and Local traffic counts collected for 2013-2017.

Pipeline

Pipelines are generally the lowest cost, highest volume and least flexible mode of goods transport. Natural gas and petroleum products are the primary commodities delivered by a local pipeline distribution network.

Intermodal/Multimodal Freight

Multi-modal and intermodal shipments move by a combination of two or more transportation modes. Intermodal shipments can be containerized and the actual cargo is never touched but can easily be moved from rail to truck or barge to rail, etc. Figure 3.21 shows the regional intermodal/multi-modal facilities, identified by their largest mode connections (either known or assumed). Of those identified, the three largest are CSXI-Howell Yard, Evansville; Henderson County Riverport, and the Port of Indiana-Mount Vernon (Posey County).

To facilitate intermodal movements, the FHWA issued Guidelines in April of 1995 for Identifying National Highway System Connectors to major intermodal terminals. This document indicated that NHS connectors must be public roads leading to major intermodal terminals and that those roads must have a critical bearing on the efficient operation of that facility. Intermodal terminals were defined as facilities which provide for the transfer of freight or passengers from one mode to another.

There are five intermodal connectors within the study area that are recognized by FHWA. These connectors are listed in Table 3.7 and shown in Figure 3.22. All are in Indiana and located near the largest intermodal facilities in the region. The connector on SR 57 near the Evansville Regional Airport was likely created more for passengers than for freight.

Figure 3.21: Regional Intermodal Facilities

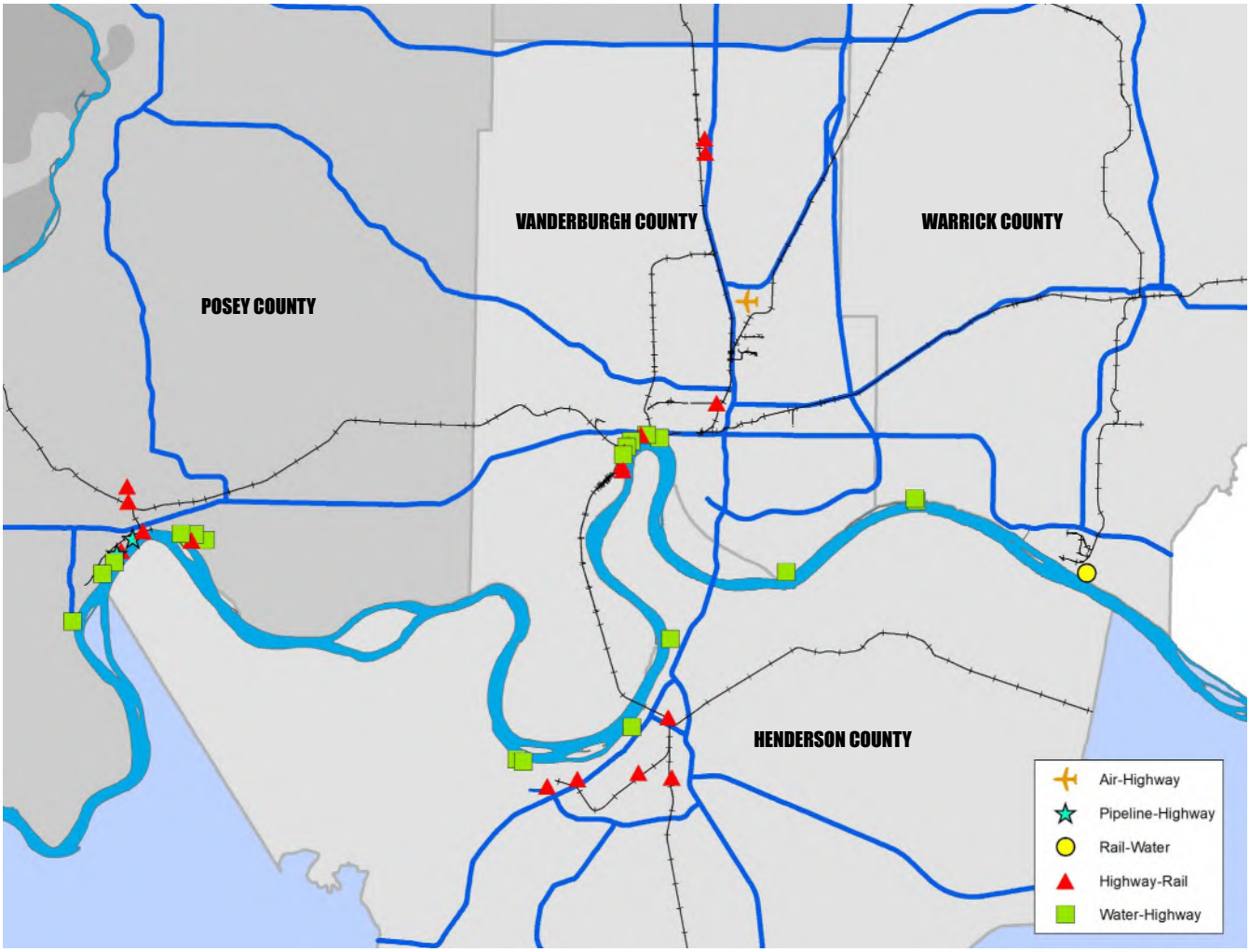
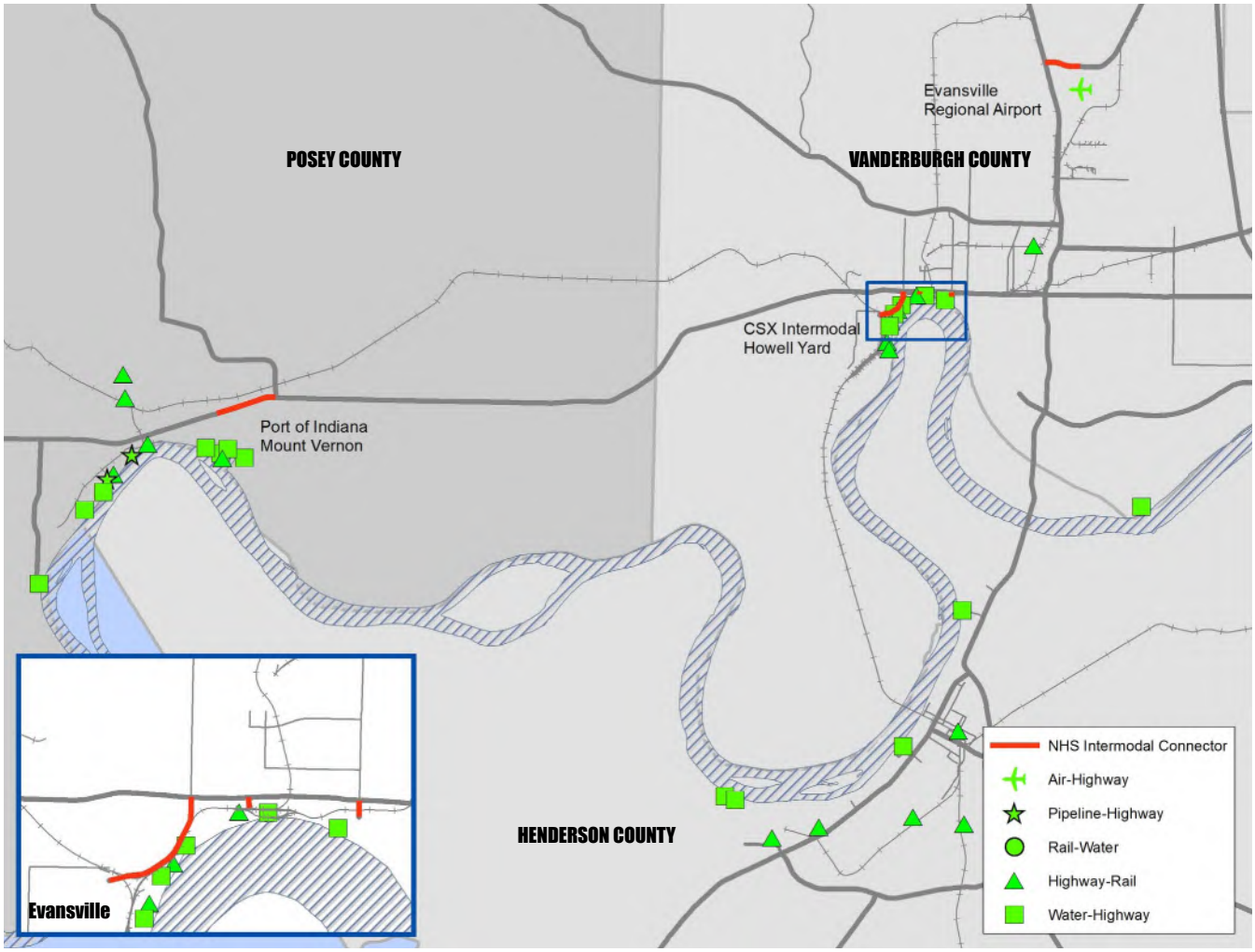


Table 3.7: Intermodal Connectors

Facility	Type	Connector Description	Connector Length	Facility ID	% Trucks
Evansville Regional Airport	Airport	From U.S. 41: east 0.8 mi on SH 57 to Bussing Drive at the airport entrance	0.8	IN2A	8%
Ohio River Intermodal Terminal Grouping	Port Terminal	From SH 62: southwesterly 0.9 mi on Ray Becker Parkway to South Barker Avenue	0.9	IN9P	10% St Joseph/8% Ray Becker
Ohio River Intermodal Terminal Grouping	Port Terminal	From SH 62: south 0.1 mi on Wabash Avenue to port	0.1	IN9P	7%
Ohio River Intermodal Terminal Grouping	Port Terminal	From SH 62: south 0.1 mi on Fulton Avenue to port	0.1	IN9P	6%
Southwinds Maritime Centre (now POI-Mount Vernon)	Port Terminal	From SH 69 bypass: west 1.3 mi on SH 62 to Southwind Port Road at the port entrance	1.3	IN1P	14%

Figure 3.22: Intermodal Connectors



Passenger Intercity Transportation

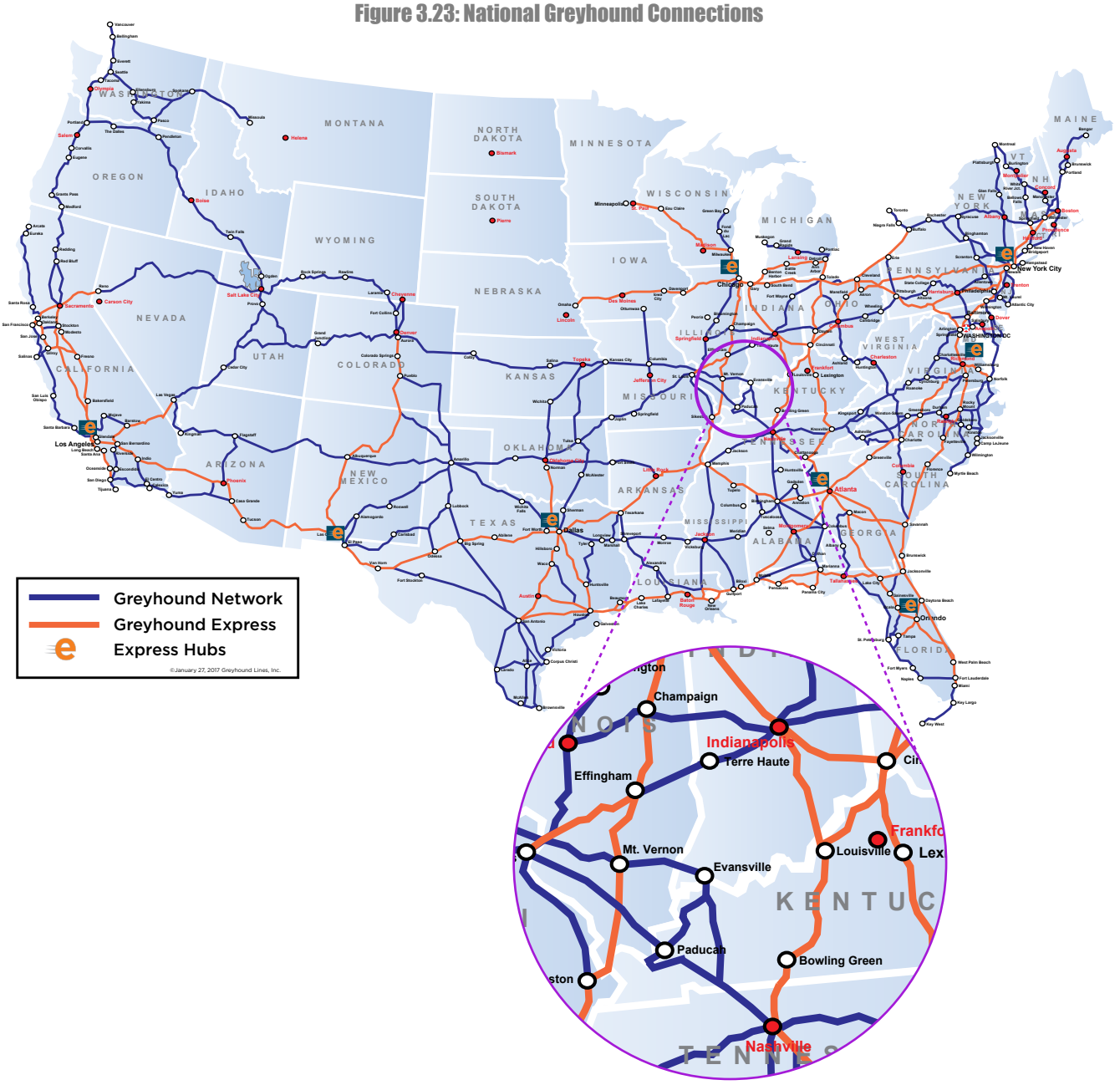
In addition to transportation options that provide access throughout the MPO's three county region, there are also transportation opportunities to connect people to the rest of the country and beyond. Intercity transportation in the region includes bus service, airports, and connections to train service.

Intercity Bus

Intercity bus service in the region is provided by Greyhound out of downtown Evansville. The Greyhound station is located at 119 NW 6th Street and is connected to the METS Terminal. The station is open seven days a week.

Greyhound offers trips to nearby destinations, such as Owensboro, Kentucky, Mount Vernon, Illinois, and Paducah, Kentucky. It also provides connections to major Midwestern cities, including Nashville, Louisville, St. Louis, and Indianapolis. From these destinations, travelers can connect to destinations throughout the country. Figure 3.23 shows the connections that can be made from Evansville to destinations across the country.

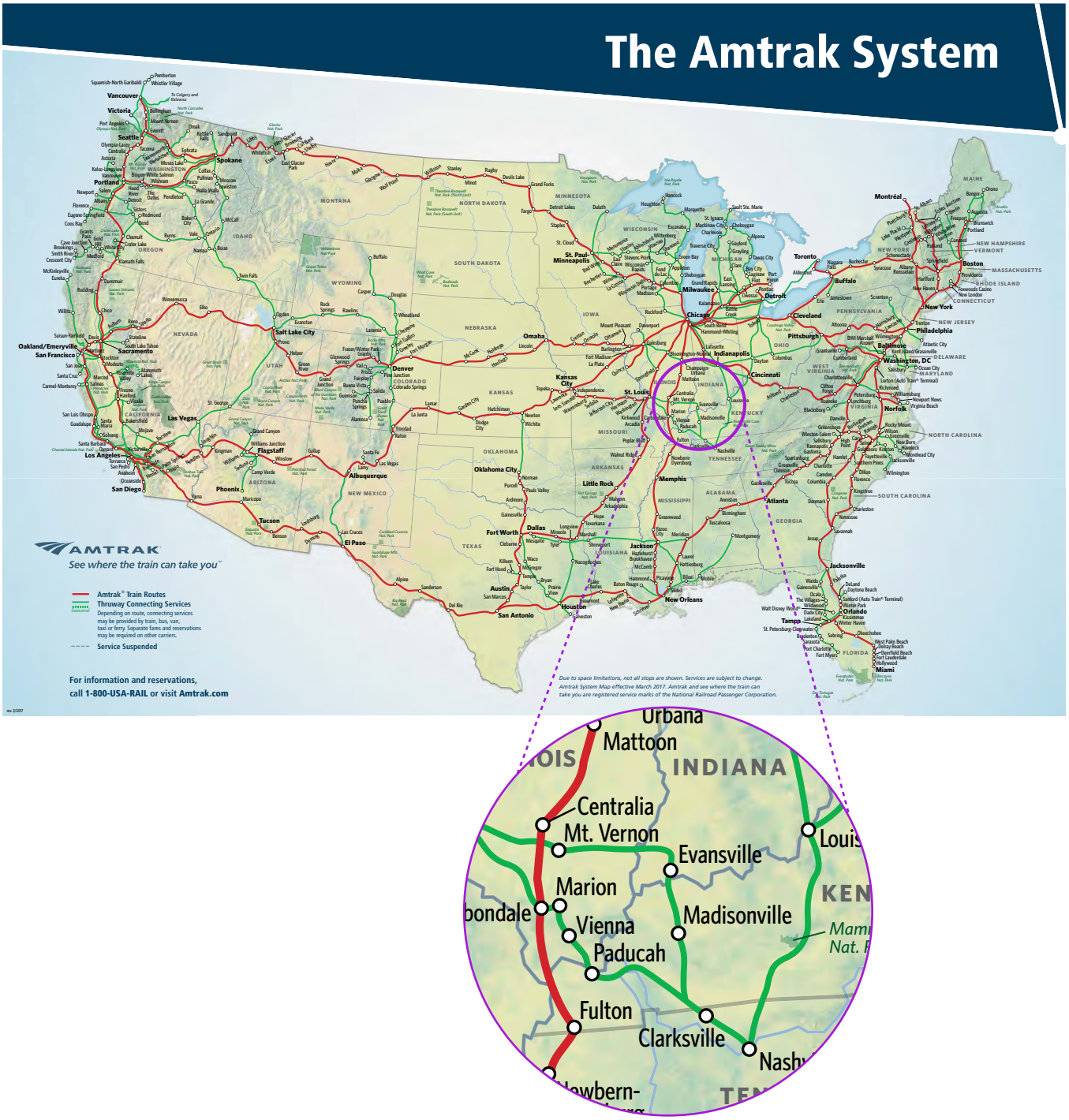
Figure 3.23: National Greyhound Connections



Train Service

The nearest intercity train service is an Amtrak station in Centralia, Illinois. From Centralia, the route makes connections to Chicago to the north and Memphis and New Orleans to the south. From Evansville, passengers can use the Amtrak Thruway service. Thruway service connects passengers to a regional train station via buses, vans, or taxis. Figure 3.24 shows how Evansville connects to the national Amtrak system.

Figure 3.24: National Amtrak System



Air Service

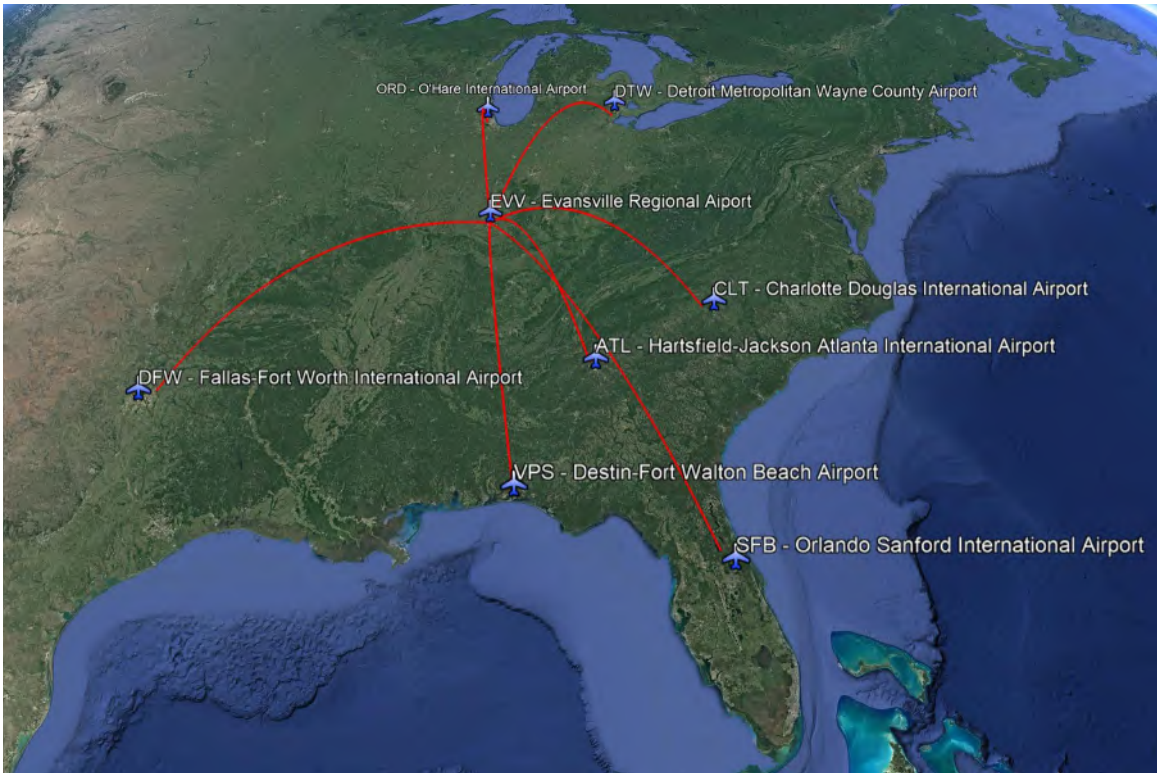
The primary airport in the region is the Evansville Regional Airport (EVV). The airport provides multiple direct flights every day to Chicago, Detroit, Charlotte, Atlanta, Orlando, Destin and Dallas. From these destinations, travelers have access to hundreds of destinations across the country and overseas. Four airlines fly in and out of EVV, including Allegiant, American Airlines, Delta, and United. Figure 3.25 shows the direct flight destinations out of EVV.

In addition to EVV, there are three other small airports in the three county region. Skylane is a privately owned airport open to the public on the northwest side of Evansville. It has a turf runway and averages approximately 100 aircraft operations per week, primarily local general aviation with some transient general aviation use.

The Henderson City-County Airport is a publicly owned airport located to the southwest of the City of Henderson. It has an asphalt runway and averages 85 aircraft operations per day. The main uses are transient general aviation and local general aviation, but it can also be used for air taxi and military uses.

The Boonville Airport is publicly owned by the City of Boonville, located between Boonville and Chandler. It has a turf runway and averages approximately 100 aircraft operations per week, primarily local general aviation with some transient general aviation use.

Figure 3.25: Direct Flights Destinations from EVV



PUBLIC INVOLVEMENT

04

Public participation is a critical component of the planning process and was a continued effort throughout the development of the MTP 2045. The MPO utilized multiple forms of public outreach to gather as much information as possible from a variety of stakeholders and the general public. Table 4.1 summarizes the outreach efforts for the plan.

Citizen's Advisory Committee

In March 2018, the Evansville MPO assembled a Citizen's Advisory Committee (CAC) to help guide the development of the plan. The CAC is comprised of approximately 30 members representing diverse interests and backgrounds (see the Acknowledgements section at the beginning of the MTP 2045 for a full list of CAC members and their

Citizen's Advisory Committee Meeting

affiliations). The CAC gathered twice for specific meetings and were notified of public outreach efforts so they could participate in and help share information for public events.

The first CAC meeting was held on March 22, 2018 to gather ideas on the plan's goals, how to implement them, and identify specific projects to improve the transportation network. The CAC provided the EMPO with information needed to begin drafting the plan's objectives and performance measures.

The second CAC meeting was held on June 19, 2018. During this meeting, members provided feedback on the vision, goals, and objectives that were developed based on the first CAC meeting. They then helped identify specific programs, policies and projects that could achieve those goals and objectives. At the end of the meeting, the CAC members prioritized those programs, policies and projects.

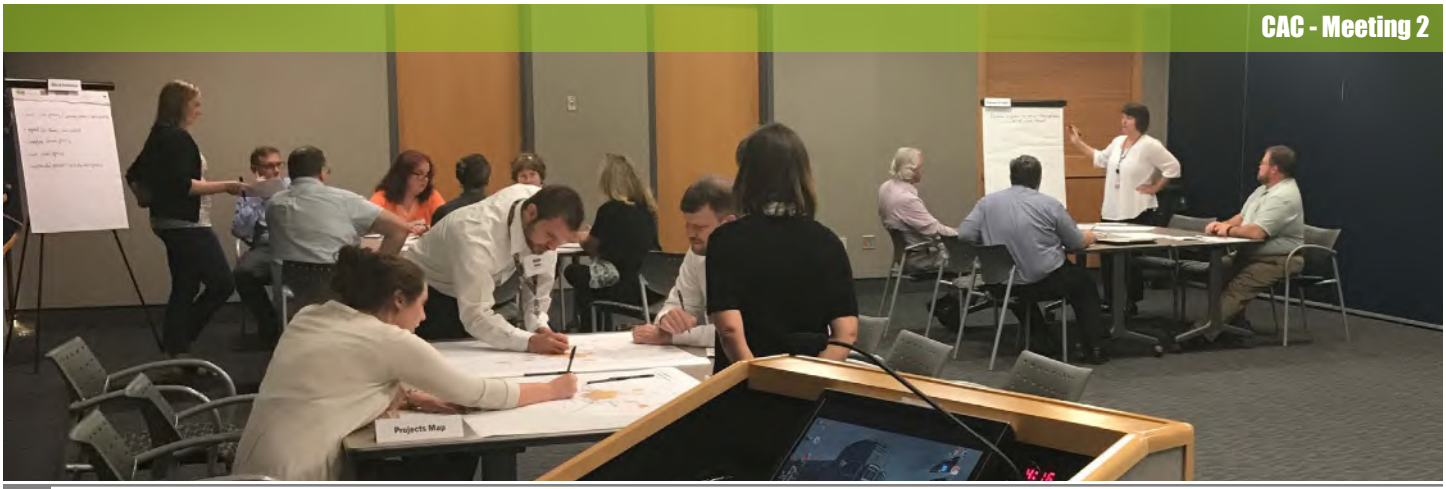
Local Public Agencies

The EMPO began meeting with the Local Public Agencies (LPAs) in April 2018 to gain an understanding of project needs in their jurisdictions. LPAs consist of cities, towns and counties within the MPO planning area. LPAs reviewed projects currently in the MTP 2040 to determine what was still an applicable need and provided additional potential projects based on trends over the past five years.

As part of these initial discussions, the EMPO provided LPAs with results from the public priorities survey broken down by county. They also received comments the EMPO received during the first Citizen's Advisory Committee meeting. This information will guide LPAs as they consider additional projects for potential inclusion in the MTP 2045.

Table 4.1: Outreach Efforts

Who	What	When	Purpose
Public	Priorities Survey	February 20 - March 23, 2018	Gather the public's opinion on how to prioritize transportation projects by mode.
CAC 1	Goals, Objectives, and How We Get There	March 22, 2018	Develop the vision, goals, and objectives for the MTP 2045. Members also identified problem roadways/areas for improvements on maps for LPAs use.
LPAs	Project discussions	April 2-4, 2018	One-on-one meetings with LPAs to discuss project needs within their jurisdiction.
CAC 2	Programs, Policies, Projects, and Prioritization	June 19, 2018	Members identified programs, policies, and projects that could achieve goals and objectives. They then prioritized the list.
Public	Open House	February 19, 2019	Public Open House to provide citizens an opportunity to review and comment on the plan.
Public	Open House	February 20, 2019	Public Open House to provide citizens an opportunity to review and comment on the plan.



Public Survey

The Evansville MPO designed a survey that allowed participants to prioritize improvements to the transportation system by specifying how they would distribute $100 across roadway, bicycle, pedestrian, and transit modes. Participants were then asked to distribute $100 within each mode for specific improvements. The survey was available online from February 20 through March 23. The MPO also visited sites that were identified as EJ Population Areas as shown in Appendix B. In total, the MPO received 660 survey responses.

Out of the 660 responses collected, 89% listed a personal vehicle as their most common mode of travel. However, when asked about overall priorities, respondents would spend less than half ($46) of their $100 on roadway improvements. Figure 4.1 shows the breakdown of overall priorities. The full results of the survey, along with outreach efforts, can be found in Appendix C.

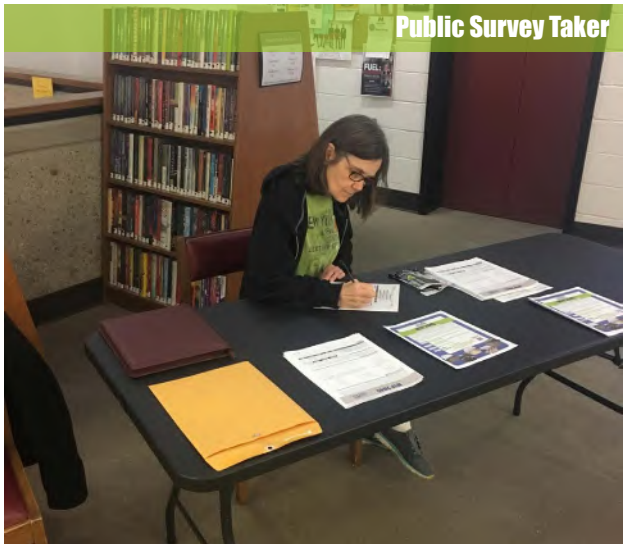
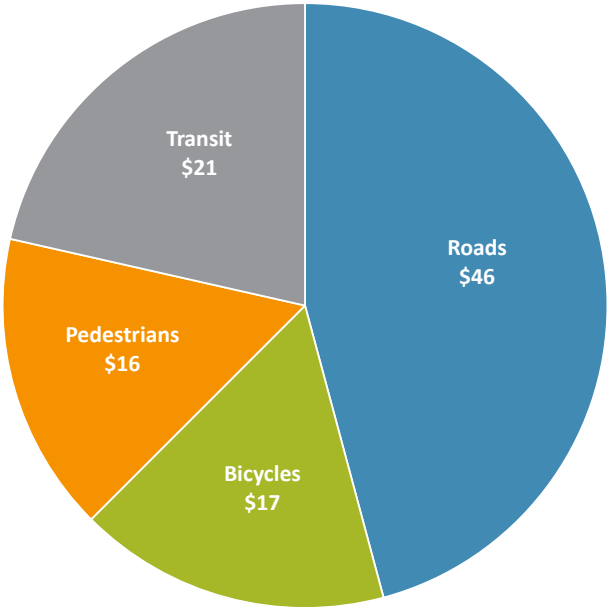

Public Survey Taker

Figure 4.1: Survey Overall Priorities



Draft Plan

The Draft MTP was released for a 30-day public comment on February 11, 2019 and ran through March 12, 2019. Open house meetings for providing information and collecting comments on the Plan were held at the Evansville Central Library on February 19, 2019 and the Henderson Public Library on February 20, 2019. The comment period and meetings were advertised in the Evansville Courier & Press, Henderson Gleaner, Our Times Newspaper, and The Warrick County Standard. Copies of the draft TIP were made available at the Evansville MPO office in Evansville, the Office of the City Manager and Henderson-Henderson County Plan Commission office, and the Newburgh and Boonville town halls. The draft TIP was also available for review at select area public libraries. Comment sheets were provided at all locations along with the draft copy to simplify the comment process. In addition, the draft TIP was available for online review through the Evansville MPO website.

Appendix D will contain the text of comments received during the development and draft review public comment periods.

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GOALS, OBJECTIVES, PERFORMANCE MEASURES & TARGETS

05

Lloyd Expressway at Cullen Avenue Pedestrian Bridge - Evansville

Goals, Objectives and Performance Measures define the long-term end to which planning activities will be directed, the planning activities that will lead to that end, and the tools to help measure progress. Figure 5.1 shows how each of these work together. Below is more detail about each.

Goals

Goals are general guidelines that explain what we want to achieve as a region. They are usually long-term, large-scale, and represent a broad vision.

Objectives

Objectives define strategies or implementation steps to attain the identified goals. Unlike goals, objectives are specific, measurable, and outline the "who, what, when, where, and how" of reaching the goals.

Approaches

Approaches help further define the objectives, such as how the MPO's planning activities and the work of the LPAs will help achieve each specific objective.

Performance Measures

Performance measures are used to measure progress toward each goal and objective over time. Each objective may have multiple performance measures to best measure progress. The FHWA and FTA require some performance measures to be tracked annually. Some of the goals and objectives developed during the MTP planning process do not have Federal performance measures that could be associated with them. This is particularly the case for objectives pertaining to improvements to the bike, pedestrian, and transit networks. Because of this, the MPO has developed additional performance measures to track progress towards attaining goals and objectives. Table 5.1 indicates which performance measures are Federally required.

Targets

Targets are established at the beginning of each year for certain performance measures. A target is a specific number or percent that the region should try to attain by the end of the given year. At the end of each year, the targets will show the progress toward a given goal and objective for that year. See Appendix E for more details on targets and performance measures.

Figure 5.1: Goals Hierarchy

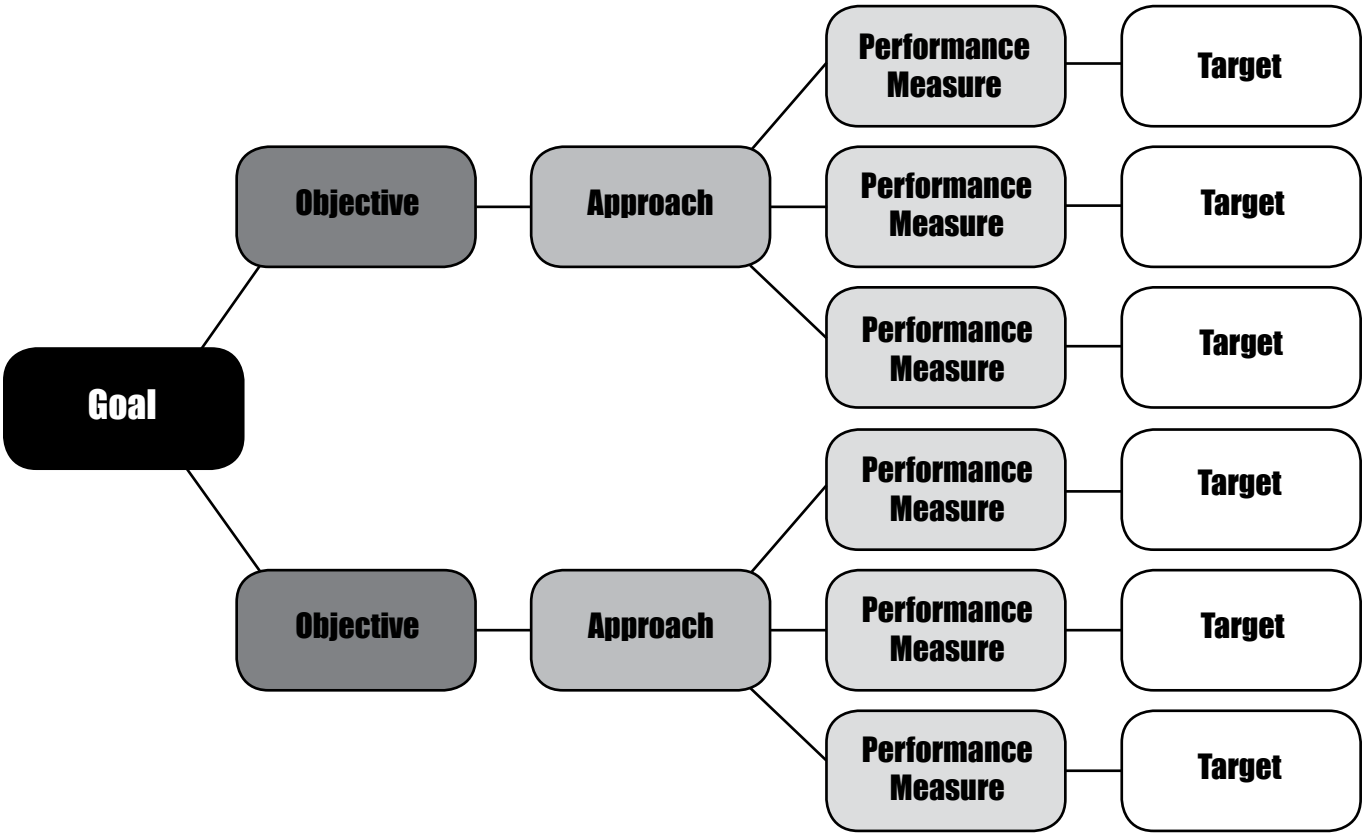


Table 5.1: Goals and Objectives

Quality of Life & Health		
Goal: Provide a variety of transportation options for all residents to improve connectivity and enhance quality of life, community health and transportation equity.		
Objective: Increase the availability of bicycle and pedestrian facilities to provide better connections between residential areas, workplaces, schools, shopping, parks/recreational facilities and other services.		
Approach:	**Performance Measure:**	**Federal:**
During the planning and development of road projects, local bicycle and pedestrian plans should be reviewed to identify options for including bicycle and pedestrian facilities. Existing plans identify the best type of facility that helps complete the overall bicycle and pedestrian network. All types of facilities (sidewalks, bike lanes, cycle tracks, greenways, shared use paths, etc.) should be considered to provide the most effective connections between residences and shopping, recreational and entertainment destinations.	# of on-street bicycle miles (since MTP 2040)	
	# of greenway/shared use path miles (since MTP 2040)	
	# of sidewalk miles on arterials and collectors (since MTP 2040)	
Objective: Increase transit access to provide better connections between residential areas, workplaces, schools, shopping, parks/recreational facilities and other services.		
Approach:	**Performance Measure:**	**Federal:**
METS, HART and WATS should provide connections between neighborhoods and major shopping, entertainment, and reacretional destinations. Routes may need to be reviewed to ensure the most effective connections. Service area, number of routes, number of bus shelters, technology used, etc. should also be reviewed periodically to provide the best possible service for the highest number of people.	# of people within 1/4 mile of a transit route	
Objective: Provide travel time reliability to ensure the most efficient use of time for commuters.		
Approach:	**Performance Measure:**	**Federal:**
Reduce congestion to maintain travel times by encouraging the adoption of access management principles that maintain mobility on higher volume roadways; supporting the completion of I-69 within the region and statewide to divert pass-through trips from more congested areas; modernizing, improving coordination, and/or removing traffic signals when possible; encouraging grade separation of rail crossings; and encouraging the implemention of Traffic Incident Management (TIM) standards to quickly clear non-recurring incidents.	% of person-miles traveled on interstate system that are reliable	✔
	% of person-miles traveled on non-interstate NHS system that are reliable	✔

Table 5.1: Goals and Objectives Cont.

Economic Vitality		
Goal: Increase the economic vitality of the region to support mobility options, employment access and freight movement efficiency.		
Objective: Increase the availability of bicycle and pedestrian facilities to improve job access for residents, while also serving as an economic catalyst.		
Approach:	**Performance Measure:**	**Federal:**
Local bicycle and pedestrian plans should be reviewed during roadway project development to identify improvements that can be made to the bicycle and pedestrian network. Having an expanded bicycle and pedestrian network will allow for more access to and from jobs. Multi-modal corridors can increase economic competitiveness and can serve as a catalyst for further development.	# of people within 1 mile of an on-street bicycle facility	
	# of people within 1/2 mile of a greenway/shared use path	
	# of people within 1/4 mile of a sidewalk on arterials and collectors	
Objective: Expand transit service area and increase efficiencies to ensure better access to jobs and places of business.		
Approach:	**Performance Measure:**	**Federal:**
METS, HART and WATS should provide access to the highest number of jobs as possible and ensure routes connect to major places of employment. These agencies may need to periodically review existing routes and bus stop locations to keep up with changes in major employment locations.	# of jobs within 1/4 mile of a transit route	
Objective: Provide travel time reliability to ensure the on-time delivery of goods and services.		
Approach:	**Performance Measure:**	**Federal:**
Reduce congestion on interstates by supporting projects that provide alternative routes for commercial trucks to avoid congested areas; the appropriate spacing of warranted signals; alternatives to at-grade intersections; grade separation of rail crossings, etc.	Truck Travel Time Reliability Index (TTTR) on interstates	✔
Objective: Prioritize transportation projects that support compact growth.		
Approach:	**Performance Measure:**	**Federal:**
Prioritize transportation projects that make use of existing right-of-way and provide better access to all roadway users. Reconstructing existing roadways instead of building new ones will encourage the redevelopment of underutilized properties, helping to keep the transportation network more compact.	% of road projects using State or Federal funds within Block Group(s) having a population density of at least 1,000 people per square mile	

Table 5.1: Goals and Objectives Cont.

Environment		
Goal: Develop a transportation system that minimizes environmental impacts and preserves or enhances natural resources, air quality and water quality.		
Objective: Increase access to alternative transportation options to reduce vehicular emissions and meet EPA standards.		
Approach:	**Performance Measure:**	**Federal:**
Encourage the expansion of transit routes, bike facilities and sidewalks to make alternative modes of transportation accessible to more people. Encourage complete street projects that include all alternative modes and help connect residents to the larger bus, bike and pedesestrian network.	Maintain $PM_{2.5}$ and Ozone attainment status for National Ambient Air Quality Standards (NAAQS)	
	Peak Hour Excessive Delay (PHED) per capita	✔
	% of Non-Single Occupancy Vehicle (SOV)	✔
Objective: Prioritize projects that incorporate green infrastructure components to reduce or mitigate stormwater impacts.		
Approach:	**Performance Measure:**	**Federal:**
Increase the number of road projects that include green infrastructure components to help decrease flooding risks and reduce the amount of stormwater within the storm sewer system.	% of projects that include green infrastructure components	

Table 5.1: Goals and Objectives Cont.

Safety & Security		
Goal: Improve the safety and security of the transportation system for all users.		
Objective: Prioritize projects that reduce serious injuries and fatalities to ensure a safe and secure roadway network for all users.		
Approach:	**Performance Measure:**	**Federal:**
Support roadway designs that increase safety, especially those that help reduce conflicts between vehicle traffic and bike and pedestrian users. Support safety education programs for all roadway users so that drivers, cyclists and pedestrians all know the rules of the road.	Number of fatalities	✔
	Fatality rate per 100 million VMT	✔
	Number of serious injuries	✔
	Serious injury rate per 100 million VMT	✔
	Number of non-motorized fatalities and serious injuries	✔
Objective: Maintain and monitor roadway conditions to preserve the investment in existing transportation systems.		
Approach:	**Performance Measure:**	**Federal:**
Ensure the highest and best use of available funding by ensuring the existing transportation networks are being properly monitered and maintained before adding new facilities. Proper and continual maintenance of existing roads will help prevent major construction costs in the future for a road that has failed.	% of pavement on the interstate system in good condition	✔
	% of pavement on the interstate system in poor condition	✔
	% of pavement on the non-interstate NHS system in good condition	✔
	% of pavement on the non-interstate NHS system in poor condition	✔
	% of NHS system bridge deck area in good condition	✔
	% of NHS system bridge deck area in poor condition	✔
Objective: Maintain a state of good repair for transit vehicles and facilities to ensure a safe and secure transit system.		
Approach:	**Performance Measure:**	**Federal:**
METS, HART and WATS should monitor the age and condition of vehicles, equipment and facilities to provide the best possible service. The agencies should replace the oldest vehicles and equipment and facilities in the worst condition before replacing newer assets.	% of revenue vehicles that have met or exceeded their Useful Life Benchmark (ULB)	✔
	% of non-revenue vehicles that have met or exceeded their Useful Life Benchmark (ULB)	✔
	% of facilities with a condition rating below 3.0 on FTA's Transit Economic Requirements Model (TERM) Scale	✔

Under federal regulations, the MTP must include a financial plan that demonstrates how the adopted transportation plan can be implemented. The financial plan shall compare the estimates of funds that are reasonably expected to be available for transportation uses, including transit, and the cost of constructing, maintaining and operating the total (existing, plus planned) transportation system over the period of the plan. As such, the development of reasonable funding estimates and costs is essential to the development of a transportation plan that is consistent with the federal requirements for fiscal constraint.

Roadway

Operation and Maintenance Costs

For the review of operation and maintenance costs for all modes, the LPA's were requested to submit costs for operating and maintaining their respective networks and transit systems.

FUNDING

06

HART - Henderson Area Rapid Transit

The average operations and maintenance costs are found in Table 6.1. Included are system maintenance costs for the preservation of the transportation system such as snow and ice removal; patching pot holes and repairing shoulders; traffic control devices, including but not limited to signs and signals; and highway department labor cost; administrative costs, utilities and rent.

Local Revenue Estimates

Revenue sources available annually to the LPAs are shown in Table 6.2. According to information provided, the MPO's Planning Area LPAs collective revenue is approximately $50 million per year.

To demonstrate the potential for the local agencies to support the implementation of the MTP, consideration must be given to the local funding needed to ensure the preservation of the existing transportation system, including requirements for operational improvements, resurfacing, restoration, and rehabilitation of existing and future roadways, as well as operations, maintenance, modernization, and rehabilitation of existing and future transit facilities. The following equation demonstrates how yearly local available revenues are estimated. The estimated yearly available revenues in Table 6.3 indicate how much an LPA may have, based on historical averages, to use for capital improvement projects.

Total Revenues
-
Estimated Operations and Maintenance Costs

Available Revenues

Using the estimated average available local revenues from Table 6.3, the estimated local funding available for the implementation of the MTP was calculated and is presented in Table 6.4.

The following assumptions were made when reviewing the financial capabilities of the LPAs in the study area:

- The fiscal analysis will cover the period of 2019 to 2045.
- Estimated operations and maintenance costs are assumed to remain the same percentage of the revenue budget over the life of the Plan.
- Construction cost estimates submitted by the LPAs are Year-of-Expenditure compliant or projected at 4% to YOE from the last known estimate.
- The average local revenues have been estimated by using a 5-year historical average (2014 – estimated 2018). These revenues are projected to increase at a conservative rate of 1.5% per year to the year 2045.
- The revenues and operation and maintenance costs for transit projects are included in the revenues and costs for the governing LPA.
- Historical averages are used when appropriate.

Table 6.1:
Average Local Annual Highway Operations and Maintenance Expenditures

Indiana	
Vanderburgh County	$5,355,830
City of Evansville	$6,938,201
Warrick County	$4,445,232
Kentucky	
Henderson County	$4,366,449
City of Henderson	$1,851,391

Table 6.2:
Local Revenue Sources and Historical Averages

Revenue Source	Historical Averages
MVHA	$11,392,571
LRSA	$3,427,416
LOHUT	$5,075,350
CVET	$35,585
CBF	$2,141,712
EDIT	$4,653,777
COIT	$898,923
Financial Institution Tax	$132,840
Permit Fees/User Fees	$674,137
Gaming Funds	$4,619,712
General Fund Transfers	$3,507,265
Capital Development Fund	$1,601,761
Fuel Tax Reimbursements	$45,423
TIF	$8,856,649
Municipal Road Aid	$601,981
Local Economic Assistance	$53,411
Advertising and Promotional	$177,236
Private Donations	$600
Transit Fares	$1,573,090
Investments	$5,923
Subsidies	$567,859
Total	**$50,043,223**

Table 6.3:
Estimated Yearly Available Local Revenues

LPA	Average Yearly Local Revenues	Average Yearly Ops & Maintenance Costs	Average Available Revenues
Indiana			
Vanderburgh County	$16,338,196	$5,355,830	$10,982,366
City of Evansville (including METS)	$15,813,581	$10,833,468	$4,980,113
Warrick County	$15,443,879	$4,445,232	$10,998,647
Kentucky			
City of Henderson (including HART)	$2,447,567	$1,875,823	$571,744

Table 6.4:
Projected Local Available Revenue

LPA	2019-2025	2026-2035	2036-2045
Indiana			
Vanderburgh County	$80,423,801	$130,452,507	$151,395,461
City of Evansville (including METS)	$36,469,341	$59,155,585	$68,652,471
Warrick County	$80,543,028	$130,645,902	$151,619,903
Indiana Total	**$197,436,170**	**$320,253,994**	**$371,667,834**
Kentucky			
Henderson County	$7	$19	$33
City of Henderson (including HART)	$4,186,875	$6,791,377	$7,881,670
Kentucky Total	**$4,186,882**	**$6,791,396**	**$7,881,703**

The City of Henderson collaborates with Henderson County on mutually beneficial improvement projects outside of the City limits. The county may participate financially on these projects, or with in-kind services, to help reduce any local cost incurred, or toll credits will be used to reduce the required local match as appropriate.

Federal-Aid for Local Projects

The MPO is responsible for prioritizing and allocating the federal funds available to the Urbanized Area. These funds may be used to finance surface transportation projects on federal-aid system roads within the urbanized area boundary. Urban area apportionments are distributed to the MPOs based upon urban area population levels from the latest decennial census. Under the current funding legislation (the FAST Act), the apportionment of funds to the Evansville-Henderson urban area in Indiana is approximately $5,900,000 annually. In Kentucky, the annual STBG-U (SHN) apportionment to the urban area of Henderson is approximately $615,000 per year.

In addition to the relevant assumptions made in the analysis of local financial capabilities; Federal funding feasibility assumes the following:

- The annual growth rate for Urban funds are flat-lined (0%) .
- Projected federal revenues for roadway projects include projected STBG-U funds, un-obligated prior year STBG-U funds, and approved earmark funding.
- Transportation Alternative (TA) and 10% of STBG funds for both Indiana and Kentucky have been set aside for bicycle and pedestrian improvements.

Table 6.5 shows the estimated federal funding available by MTP analysis years.

Table 6.5:
Estimated Urban Area STBG/SHN Funds per Analysis Period

MPO Federal Funding per Analysis Period		
Analysis Period	**Indiana**	**Kentucky**
FY 2019-2025	$58,602,380	$9,078,200
FY 2026-2035	$59,000,000	$6,156,000
FY 2035-2045	$59,000,000	$6,156,000

Financial Feasibility

Tables 6.6 and 6.7 demonstrate the financial feasibility of the 2045 Transportation plan. This demonstration assumes that federal funds are applied only to construction costs. The assumed federal/local split is 80% federal and 20% local, unless the project is known to be completely funded locally or is expecting to receive a significant outside source of aid, such as an earmark.

As indicated in Tables 6.6 and 6.7, the urban area federal funding totals for all analysis periods remains a surplus. Together, these tables indicate the Plan is reasonably constrained. This analysis did not consider state funded projects, as the State DOTs are responsible for demonstrating fiscal constraint for their funding programs.

Table 6.6:
Estimated Indiana Roadway Costs and Urban Area Funds

Indiana Urban Area Federal Funds (in millions)				
Analysis Period	Project Costs	Multiplied by 80%	Federal Share	Federal Available
FY 2019-2025	$65.10		$52.08	$58.60
FY 2026-2035	$54.30		$43.44	$59.00
FY 2036-2045	$77.90		$62.32	$59.00
Total			**$157.84**	**$176.60**

Table 6.7:
Estimated Kentucky Roadway Costs and Urban Area Funds

Kentucky Urban Area Federal Funds (in millions)				
Analysis Period	Project Costs	Multiplied by 80%	Federal Share	Federal Available
FY 2019-2025	$9.90		$7.92	$9.08
FY 2026-2035	$0.00		$0.00	$6.16
FY 2036-2045	$0.00		$0.00	$6.16
Total			**$7.92**	**$21.39**

Transit

Federal Funding

It is anticipated that METS and HART will continue to receive Federal Transit Administration (FTA) Section 5307 Urbanized Area Formula Grant funds, Section 5339 Bus and Bus Facilities Grants, and Section 5310 Enhanced Mobility of Seniors & Individuals with Disabilities Grants to assist with capital and operating costs. Section 5307 funds can be used for all capital projects. The FTA allows smaller transit agencies, including METS and HART to also use Section 5307 funds for operating costs. Section 5339 funds can be used to purchase buses and on bus-related facilities. Section 5310 funds can be used for paratransit vehicles or to improve accessibility to the fixed route system. METS is also eligible to use CMAQ funds to purchase vehicles or operate a new route for a trial period of three years.

From 2014 through 2018, METS and HART have received a combined nearly $18,400,000 in Federal grant funds. By projecting these past trends, it is expected that the area will receive more than $163,000,000 in Federal funds between 2019 and 2045. A breakdown of this funding is shown in Table 6.8.

Table 6.8:
Federal Transit Funding (in millions)

		Previous	Projected		
		2014-2018	2019-2025	2026-2035	2036-2045
METS	Federal	$14.8	$26.9	$48.4	$60.2
	State	$10.9	$16.7	$26.6	$29.8
	Local	$17.1	$32.3	$58.2	$72.4
	Total	**$42.8**	**$75.9**	**$133.2**	**$162.4**
HART	Federal	$3.6	$6.7	$9.8	$11.6
	State	$0.3	$0.6	$0.8	$1.0
	Local	$3.2	$5.6	$7.8	$8.8
	Total	**$7.1**	**$12.9**	**$18.4**	**$21.4**

State Funding

The State of Indiana's Public Mass Transit Fund (PMTF) can be used for capital or operating expenses. The source of these funds is a fixed percentage of the Indiana State Sales Tax. The PMTF are allocated based on a formula which considers fleet size, ridership and operating costs. The State of Kentucky does not have a dedicated transit fund; however, HART does receive funds and toll credits from Kentucky to pay 10%-20% of the cost of capital projects. Table 6.8 shows the anticipated State funding for both METS and HART.

Local Funding

METS and HART are required to provide at least a 50% match to the Federal funds for operating and at least 20% for capital projects. The match typically comes from the City's general budget. METS also has Riverboat funding that can be used for capital projects.

Both METS and HART make the most of the available funding they receive from the FTA and the State. In some years, major capital projects require additional funding compared to the previous year. Both agencies typically provide the required 20% match for all Capital and Preventive Maintenance Costs. They often must provide more than the 50% match for Operating expenses. The amount they spend each year for capital projects is dependent upon the amount of State and Federal funding they receive.

Bicycle and Pedestrian

As demonstrated in Table 6.9, the Indiana portion of the MPO planning area is projected to have approximately $19.4 million in federal funds available between the years 2019 and 2045. This includes Transportation Alternative (TA) funds and the 10% Surface Transportation Block Grant (STBG) set-aside funds for bicycle and pedestrian improvements and activities in Vanderburgh and Warrick County. Projects eligible for these funds may include, but are not limited to, infrastructure such as crosswalks, trails and sidewalks, on-street bicycle facilities, and related support activities.

Because the MTP 2045 does not identify specific bicycle and pedestrian projects, project-specific costs are not available. However, based on the expected TA funds through 2045 and assumed costs of facilities per mile, the number of potential miles of facilities were estimated. These cost assumptions are:

Table 6.9:
Bicycle and Pedestrian Funding

TA + 10% STBG		
Analysis Period	**Indiana**	**Kentucky**
FY 2019-2025	$5,040,000	$751,800
FY 2026-2035	$7,200,000	$1,074,000
FY 2036-2045	$7,200,000	$1,074,000
Total	**$19,440,000**	**$2,899,800**

- $1 million per mile of greenway
- $20,000 per mile of bike lane
- $10,000 per mile of shared lanes (sharrows)

Figure 6.1 shows the approximate miles of facilities that could be constructed with the estimated $19.4 million in Indiana through 2045. For example, if 19 miles of greenway were constructed through 2045, there would be no TA money left for on-street facilities. If 12 miles of greenway were constructed through 2045, 372 miles of bike lanes (or 744 miles of shared routes, or a combination of the two) could be constructed. It is important to note that the estimated facilities are through 2045, not per year.

Henderson will have approximately $2.9 million in TA and the 10% STBG set-aside in federal funds for bicycle and pedestrian improvements. Figure 6.2 breaks down the estimated miles of facilities that could be constructed through 2045 with the approximated $2.9 million (and was based on the same per-mile cost assumptions as Vanderburgh and Warrick counties).

Figure 6.1:
Approximate Bike Facilities with Projected TA+STGB Funds in Indiana (in miles)

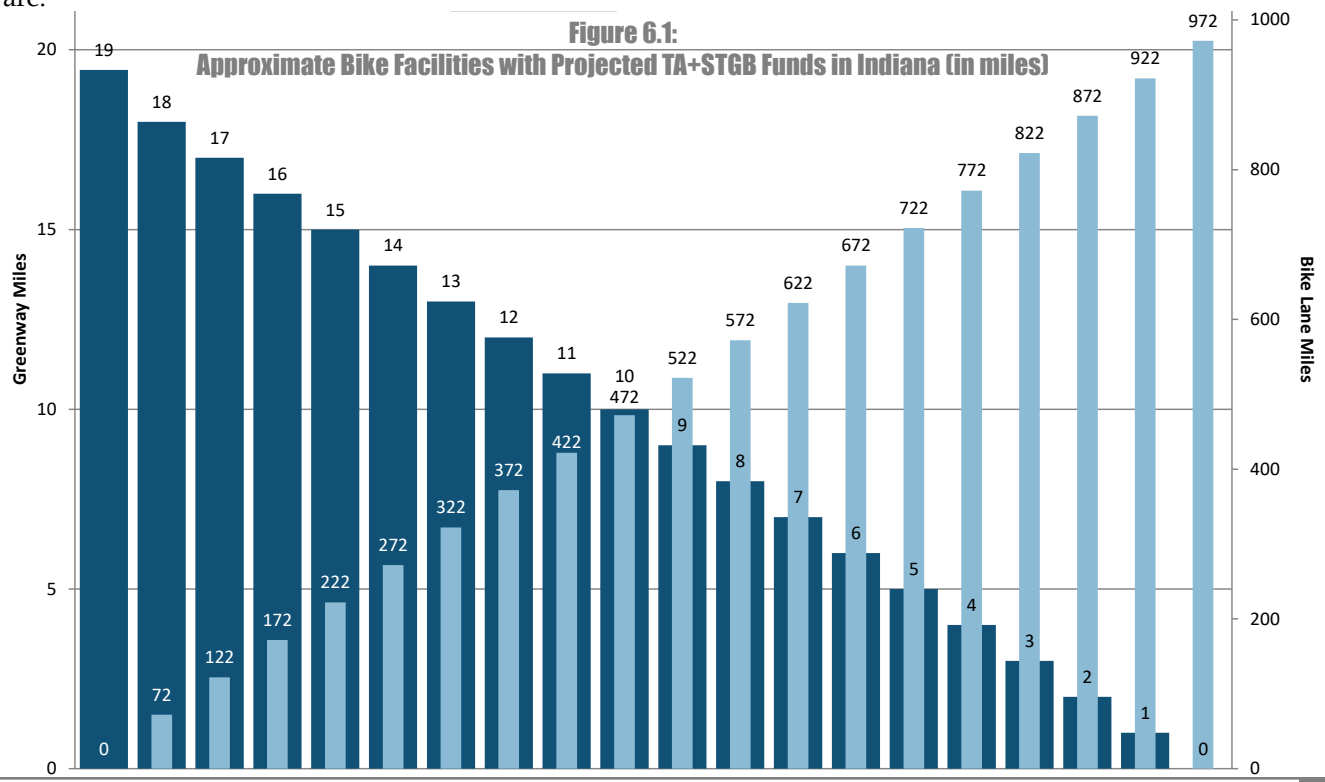
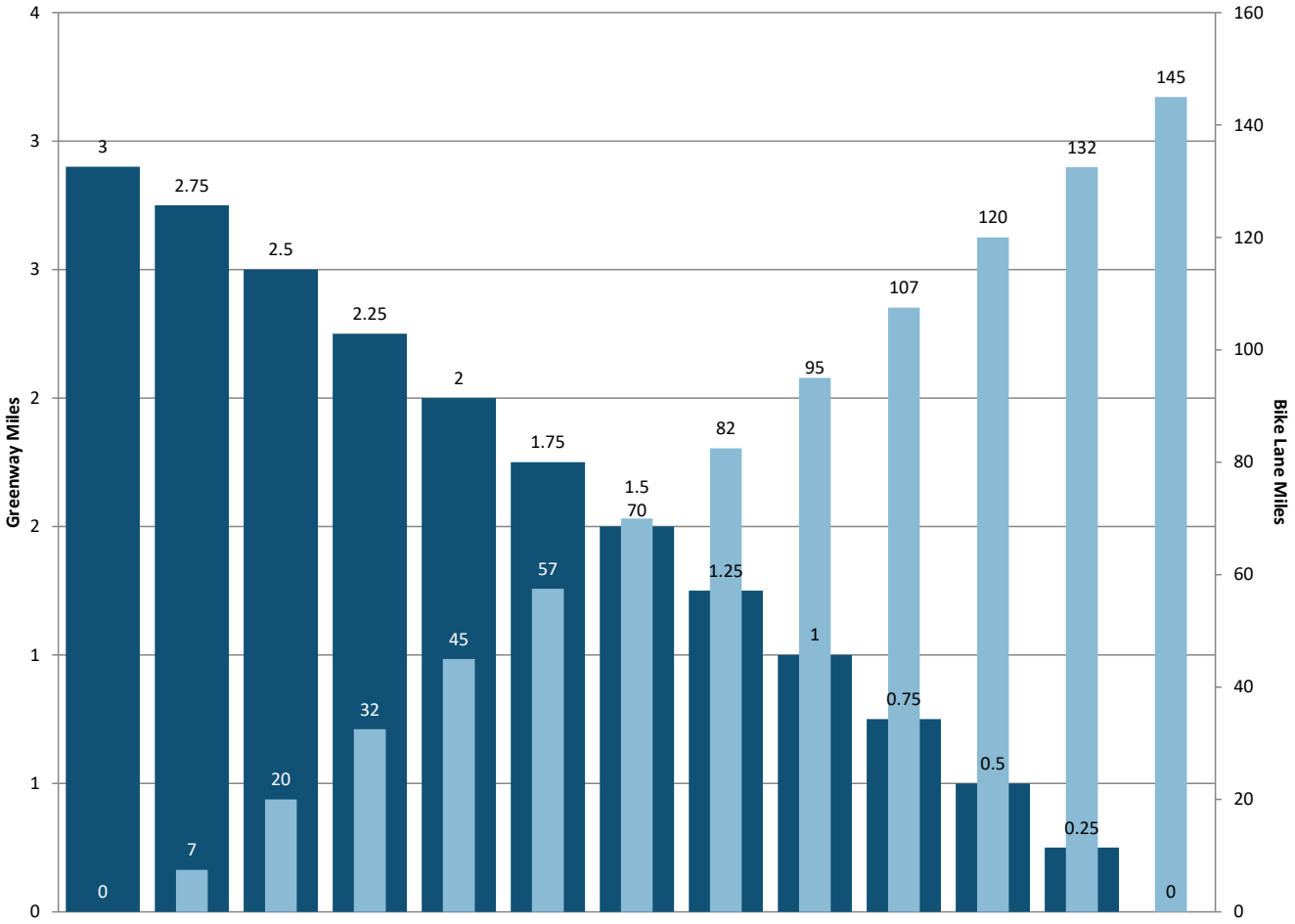


Figure 6.2: Approximate Bike Facilities with Projected TA+STGB Funds in Kentucky (in miles)



Ohio River Crossing

The Interstate 69 corridor was first identified in the 1991 Intermodal Surface Transportation Efficiency Act as Corridor 18, a High Priority Corridor on the National Highway System. The entire Interstate 69 corridor, from Michigan to Texas, consists of 32 Sections of Independent Utility (SIUs). SIU 4, known locally as the Ohio River Crossing, will connect Interstate 69 in the City of Evansville, Indiana, to Interstate 69 on the south side of Henderson, Kentucky.

On June 30, 2016, Indiana Governor Mike Pence and Kentucky Governor Matt Bevin signed a memorandum of agreement (MOA) directing both states to take the next steps in the advancement of the I-69 Ohio River Crossing (ORX) project development.

Project Fiscal Constraint

The total estimated cost to complete the project in year of expenditure dollars (estimated for 2019-2025) is $1.497 billion. The amount also includes roadway and bridge operational costs for 35-years following completion of the new bridge construction. The cost to complete comes from the I-69 Draft Environmental Impact Statement for the I-69 ORX, prepared in December 2018. Table 6.10 shows the Ohio River Crossing Project Financial Demonstration.

The Commonwealth of Kentucky and the State of Indiana have taken several key steps to strengthen and expand the range of strategies available to fund transportation projects. Provisions within Kentucky Revised Statutes (KRS) 175B and Indiana Code (IC) 8-15.7 allow each state to pursue Public Private Partnerships (P3) as a financial strategy for project delivery.

While the issue of fiscal constraint and schedule will continue to be analyzed, developed and updated throughout the planning and NEPA process, Indiana and Kentucky intend to consider advancing the Ohio River Crossing (ORX) project as a P3 project. A well-structured P3 agreement can reduce demands on constrained public budgets, help ensure timely project delivery, as well as result in lower life-cycle costs of projects in the long run in case a long-term concession agreement is considered.

Table 6.10:
Ohio River Crossing Project Financial Demonstration (in year of expenditure $, billions)

Project Information	2019-2025
Reasonably Anticipated Project Development and Construction Funding Needs	
Project Development, Construction, Maintenance and Operation Costs	$1.497
Committed , Available, and Reasonably Expected to be Available Funding Sources	
*Federal-Aid, PS, State**	$1.497

*The source of funding for the project is subject to change. The State of Indiana and the Commonwealth of Kentucky through the preliminary phase of project development will be investigating various funding and financing opportunities.

Implementation of the Project may also utilize a combination of traditional (federal, state and local intergovernmental grants) and alternative and innovative financing techniques that will be fully evaluated as part of the project financial plan identified during the NEPA process. Such additional financial resources available to INDOT and KYTC for the ORX project includes, but is not limited to, normal Federal Aid formula funds, State funding, federal discretionary programs, federal grant programs, GARVEE bonds, and toll supported financing.

The inclusion of funding for preliminary engineering in the INDOT and KYTC current respective programs, the MOU, and the P3 legislation demonstrate the intent of the states to provide financing for the Project. The State of Indiana and the Commonwealth of Kentucky will continue to investigate all avenues of funding and financing opportunities through the preliminary phase of the project.

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Project Selection

The foundation of the project selection process was formed around LPA consultations and the public participation process. Projects were selected based on public input, review of the MTP 2040 and other locally developed plans, LPA needs, and a review by the CAC. Projects were evaluated to determine their effectiveness of increasing connectivity and accessibility (see Appendix F), their impact to environmental features (see Appendix G), their effectiveness of improving asset needs (see Appendix H), and their impact to Environmental Justice Communities (see Appendix B). Intersection and segment crash analyses were also conducted to indicated where improvements were needed (see Appendix I). Figure 7.1 shows the MTP 2045 process.

Throughout the planning process, an Interagency Consultation Group (ICG) met to ensure coordination between federal and state partners. The ICG consisted of FHWA Indiana and Kentucky, U.S. Environmental Protection Agency (EPA), Indiana Department of Environmental Management (IDEM), Federal Transit Administration (FTA), INDOT, KYTC, and the MPO. The ICG was involved in determining the "open to traffic date" timeframes, project selection, the Ohio River Crossing project and general updates to federal regulations.

MTP Recommendations

The MTP 2045 recommends a program of projects and strategies intended to reduce existing and projected congestion, support increased mode choice, and address deficiencies within the transportation network. Implementing these recommendations will help the region achieve the goals, objectives, and performance targets set forth for the Plan. It is emphasized that the MTP is a dynamic document, one that will undergo future updates to reflect changing conditions and needs.

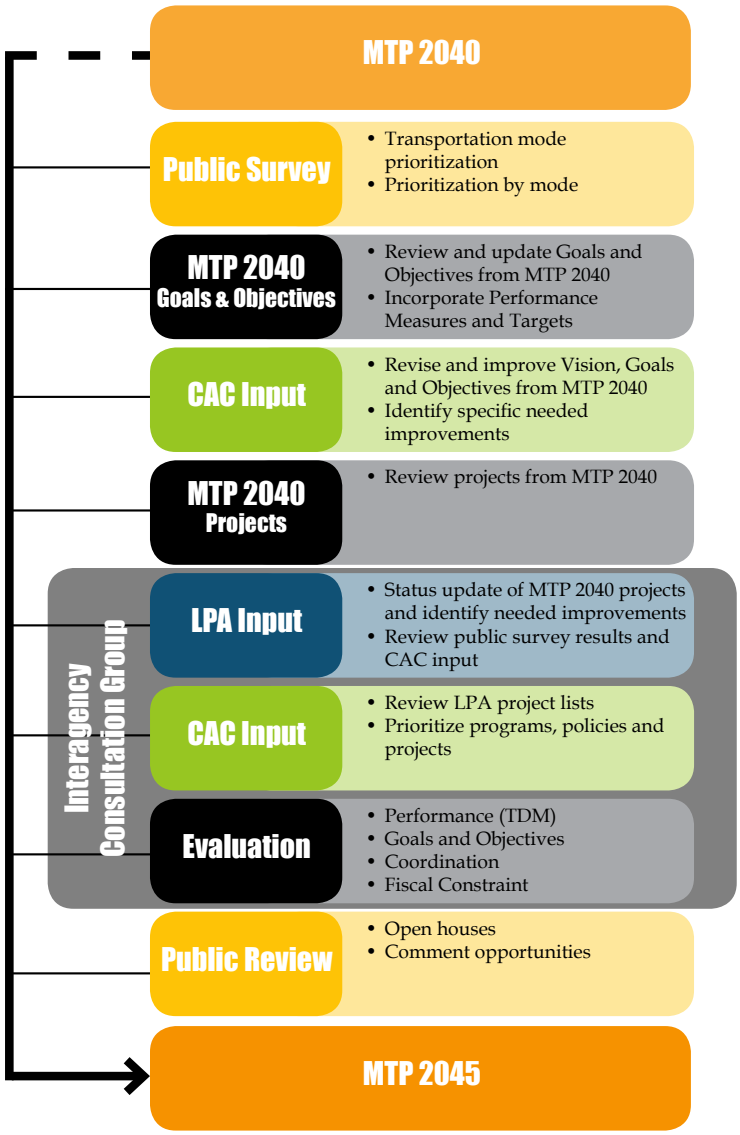
Recommendations are divided into five categories: Roadways, Public Transportation, Bicycle and Pedestrian Transportation, Freight-Related Transportation, and Illustrative Needs. Projects were grouped by the "open to traffic date" of either 2025, 2035, or 2045, according to the anticipated funding available.

RECOMMENDATIONS

07

Virginia Street - Evansville

Figure 7.1: MTP Planning Process



Roadway Recommendations

The MTP 2045 fiscally reasonable roadway recommendations will improve the existing and future network by upgrading or adding new roadways and incorporating bicycle and pedestrian accommodations. The total construction cost of these projects is estimated to be in the range of $518 - $544M.

Projects are separated into three time periods based on the anticipated / recommended completion year: projects that are to be completed by 2025, 2035 or 2045. Most projects included in the MTP 2045 are updates or improvements to existing roadways; however, some new terrain projects were identified. The project tables include a project concept based on the best planning level information available at the time of publication. It is important to note that the MTP process does not include project level analysis and/or details. The project purpose and need will be fully assessed through the NEPA process after the responsible agency selects the project for implementation. MTP projects to be completed by 2025 that are in the FY 2020-2024 TIP listing or included in a local or state capital improvement program are considered actively under development, and as such, the project scope will be more defined. The cost estimates for those active projects reflect construction costs as provided by the project sponsor in the associated document. For all other projects, an estimate cost range is provided given the project scope and construction year are conceptual in nature at this time.

Figure 7.2 shows project locations with the ID# that corresponds with the project tables, shown in Tables 7.1 through 7.3. Figures 7.3 through 7.7 illustrate potential street configurations for the proposed projects.

FYI

Roadway Progress Since MTP 2040

- SR 61, Boonville Bypass
- US 41 Interchange at SR 62/SR 66/Lloyd Expressway
- Local pavement management data collection
- I-69 Ohio River Crossing Draft Environmental Impact Study
- Establishment of Critical Urban Freight Corridor in Henderson linking port/manufacturing with I-69
- City of Evansville's adoption of the Access Management Manual and Development Guide
- US Highway 41 Corridor Study
- SR 62/SR 66/Lloyd Expressway Corridor Study

The listed projects are intended to alleviate the majority of transportation system deficiencies in the EMPO Planning Area. However, it is understood that all future deficiencies cannot be precisely or accurately modeled or predicted. Therefore, the EMPO believes that it is important to continually monitor the transportation network and implement short-term improvements. Many of these improvements use federal funds, such as Surface Transportation Block Grant, Congestion Mitigation and Air Quality, Highway Safety Improvement Program, Transportation Alternatives, or railroad funds. The EMPO will continue to evaluate needed short-term improvements and will implement any new federally funded projects through the Call for Projects process and Transportation Improvement Program (TIP) and MTP update processes.

Figure 7.2: MTP 2045 Project Tables

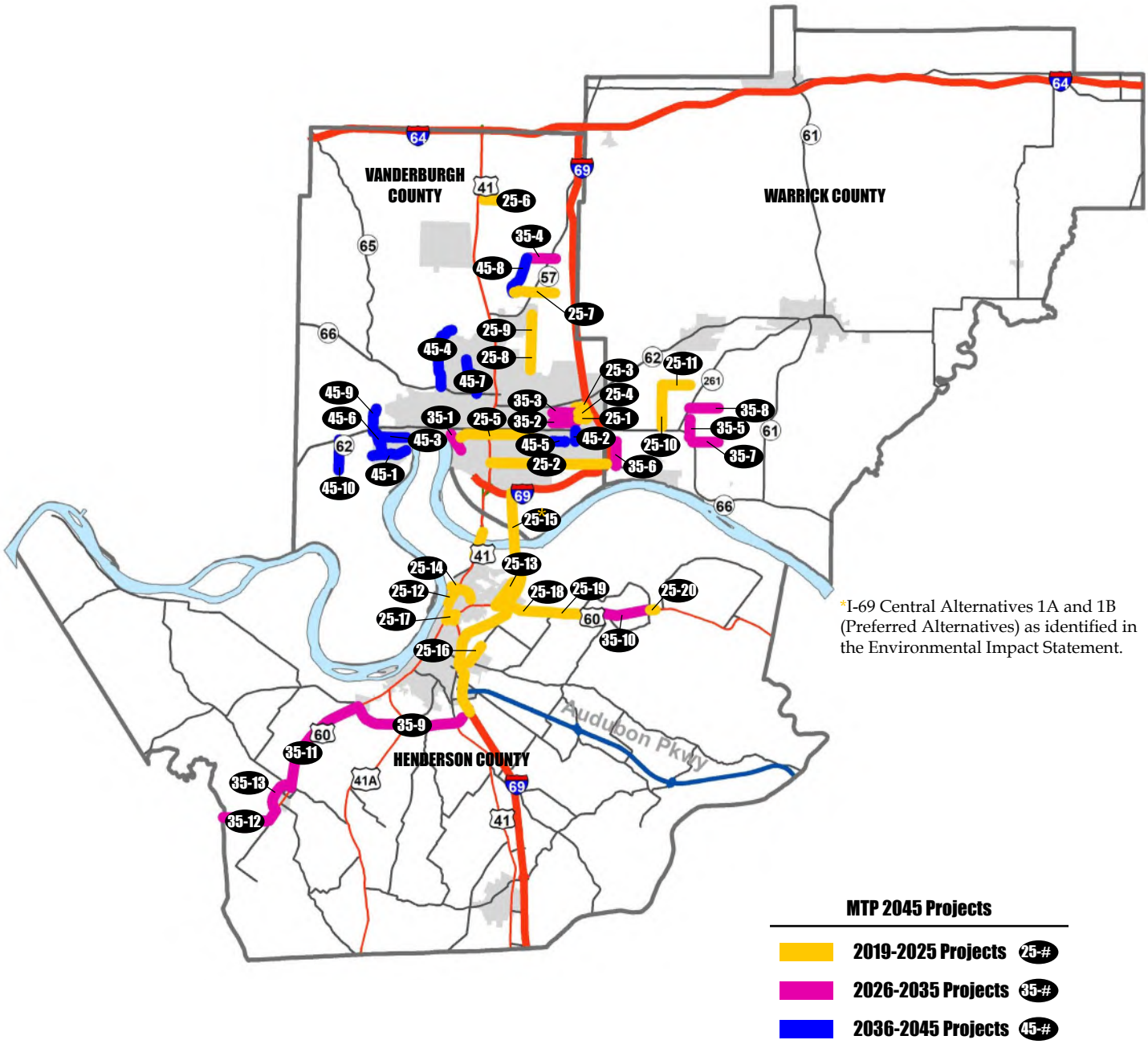


Table 7.1: 2019-2025 Project List

2019 - 2025 Project List						
ID#	Road	Limits	Concept	Length (mi)	Non-Exempt	Est. Cost
City of Evansville						
25-1	Columbia St	Hirschland Rd to Cross Pointe Blvd	New	0.52	x	N/A*
25-2	Covert Ave	US 41 to I-69	Reconstruct (road diet)	5.10		$4.6
25-3	Oak Grove Rd	Burkhardt Rd to Cross Pointe Blvd	Widen (5 Lns)	0.36	x	N/A*
25-4	Vogel Rd	E of Hirschland to Cross Pointe Blvd	New (3 Lns)	0.36	x	N/A*
25-5	Walnut St	MLK Blvd to Vann Ave	Reconstruct	3.07		$16.4
Vanderburgh County						
25-6	Baseline Rd	Husky Way to Old State Rd	Widen (TWLTL)	0.85		$5.3
25-7	Kansas Rd	Petersburg Rd to Green River Rd	Widen (TWLTL)	0.88		$8.7
25-8	Oak Hill Rd	Lynch Rd to Heckel Rd	Widen (TWLTL)	1.52		$10.2
25-9	Oak Hill Rd	Heckel Rd to Millersburg Rd	Widen (TWLTL)	1.15		$7.6
Warrick County						
25-10	Bell Rd	High Pointe Dr to Telephone Rd	Widen (TWLTL)	1.82		$7.8
25-11	Telephone Rd	Bell Rd to Fuquay Rd	Widen (TWLTL)	1.24		$4.2
City of Henderson						
25-12	North Elm St	Watson Ln to 12th St	Upgrade	1.75		$6.0 - $6.6
25-13	Wathen Ln	US 60 to City Limit	Upgrade	1.13		$3.3
25-14	Watson Ln	Sunset Ln to Green River Rd	Upgrade	1.10		$5.0
Henderson County						
None						
INDOT/KYTC						
25-15	I-69	Ohio River Crossing	New		x	$1,200 - $1,600
KYTC						
25-16	KY 1539/Zion-Larue Rd	KY 351 to Kimsey Ln	Upgrade			$3.0
25-17	US 41 - US 60	Interchange Modification	Reconstruct			$20.0
25-18	US 60	Wathen Ln to KY 2183/ Holloway-Rucker Rd	Widen (4 Lns)		x	$5.5
25-19	US 60	KY 2183/Holloway-Rucker Rd to KY 1078/Baskett Ln	Widen (4 Lns)		x	$4.3
25-20	US 60	New Bridge over Green River at Spottsville	Replacement			$25.0

*These infrastructure projects will be designed and constructed as part of development plans submitted by the developers of the properties. As such, the costs are not factored into the fiscal constraint determination.

Table 7.2: 2026-2035 Project List

2026 - 2035 Project List						
ID#	Road	Limits	Concept	Length (mi)	Non-Exempt	Est. Cost Range
City of Evansville						
35-1	Third St	Court St to Parrett St	Reconstruct	0.83		$10.8 - $13.2
35-2	Virginia St	Green River Rd to Burkhardt Rd	Widen (TWLTL)	1.02		$5.4 - $6.6
35-3	Vogel Rd	Green River Rd to Burkhardt Rd	Widen (TWLTL)	1.02		$5.4 - $6.6
Vanderburgh County						
35-4	Boonville-New Harmony Rd	Petersburg Rd to Green River Rd	Upgrade	1.26		$6.5 - $8.0
Warrick County						
35-5	Casey Rd	Vann to SR 66	Widen (TWLTL)	0.79		$3.0 - $4.0
35-6	Epworth Rd	SR 662 to Lincoln Av	Widen (TWLTL)	1.07		$6.0 - $7.0
35-7	Lincoln Ave	SR 66 to Anderson Rd	Widen (TWLTL)	1.13		$6.2 - $6.9
35-8	Oak Grove Rd	SR 261 to Anderson Rd	Widen (TWLTL)	1.26		$5.0 - $6.0
City of Henderson						
None						
Henderson County						
None						
INDOT						
None						
KYTC						
35-9	KY 425/ Henderson Bypass	US 60 to I-69	Widen (4 Lns)		x	$26.0 - $29.0
35-10	US 60	KY 1078/Baskett Ln to Green River Bridge	Widen (4 Lns)		x	$36.0 - $39.0
35-11	US 60	Corydon to KY 425/Henderson Bypass	Reconstruct		x	$21.0 - $26.0
35-12	US 60	Waverly, KY to Corydon, KY	Reconstruct		x	$18.0 - $22.0
35-13	US 60	City of Corydon Bypass	New		x	$27.0 - $34.0

Table 7.3: 2036-2045 Project List

2036 - 2045 Project List						
ID#	Road	Limits	Concept	Length (mi)	Non-Exempt	Est. Cost Range
City of Evansville						
45-1	Broadway Ave	City Limits to Barker Ave	Reconstruct	1.55		$10.0 - $11.0
45-2	Burkhardt Rd	Lincoln Av to Lloyd Expy	Widen (5 Lns)	0.50	x	$5.4 - $6.6
45-3	Claremont Ave	Red Bank Rd to Barker Ave	Reconstruct	1.27		$7.0 - $10.0
45-4	Kratzville Rd	Diamond to Darmstadt Rd	Reconstruct	2.86		
45-5	Lincoln Ave	Green River Rd to Newburgh Rd	Widen (TWLTL)	0.50		$3.2 - $3.5
45-6	Red Bank Rd	Broadway Ave to SR 62/Lloyd Expy	Reconstruct	1.37		$9.0 - $9.9
45-7	Stringtown Rd	Diamond Ave to Mill Rd	Upgrade	1.65		$7.4 - $8.2
Vanderburgh County						
45-8	Petersburg Rd	Boonville New Harmony Rd to Kansas Rd	Reconstruct	1.72		$8.5 - $10.5
45-9	Red Bank Rd	N of SR 62/Lloyd Expy to Upper Mt Vernon Rd	Reconstruct	0.94		$5.1 - $6.3
45-10	Schutte Rd	SR 62/Lloyd Exp to Broadway Av	Reconstruct	1.35		$6.8 - $8.4
Warrick County						
None						
City of Henderson						
None						
Henderson County						
None						
INDOT						
None						
KYTC						
None						

Figure 7.3: Three-Lane Street

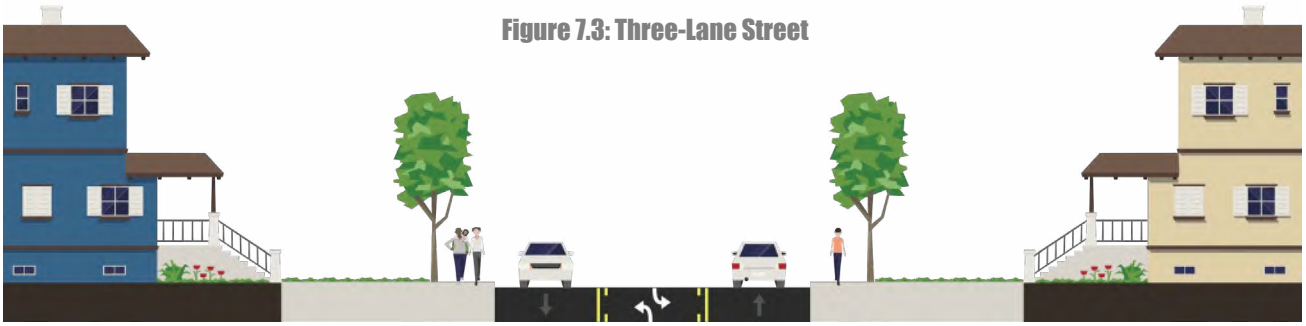


Figure 7.4: Three-Lane Street with Bike Lanes (typical Road Diet)

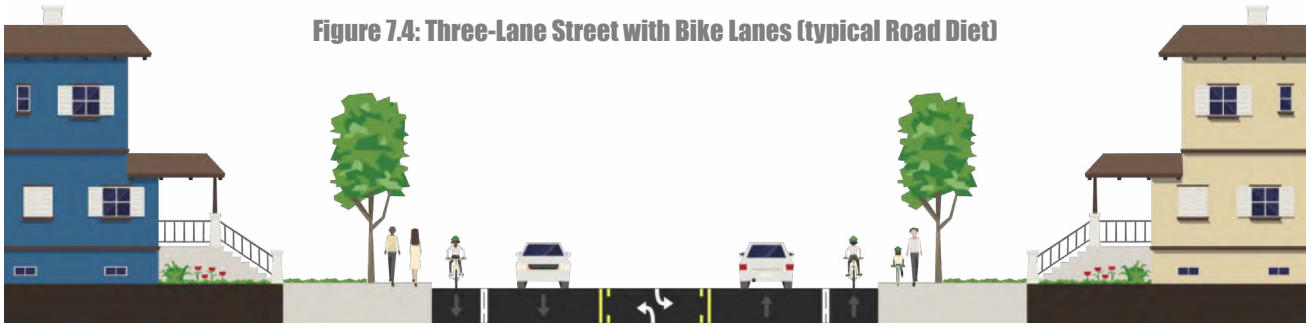


Figure 7.5: Three-Lane Street with Sidepaths

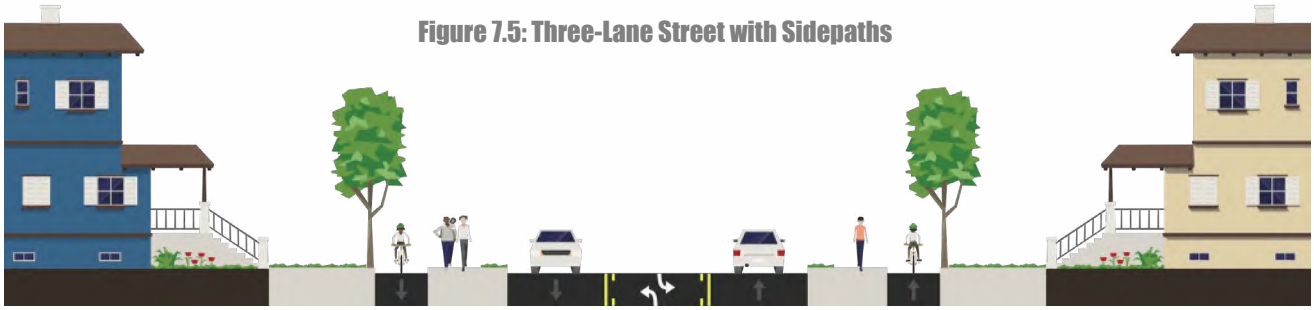
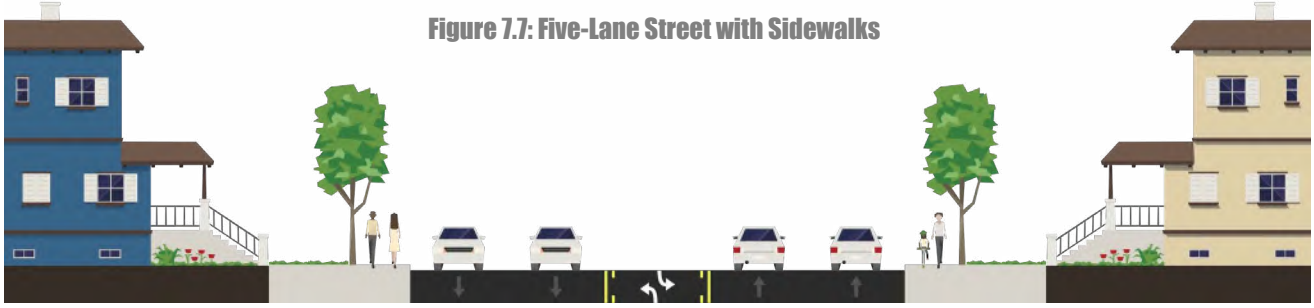


Figure 7.6: Four-Lane Street with Sidewalks

Figure 7.7: Five-Lane Street with Sidewalks



Illustrative Needs Projects

Beyond the fiscally constrained projects listed in this chapter, the plan development process identified unmet transportation needs in the Planning Area. Table 7.4 lists the projects that were included in the original unconstrained project lists evaluated for the MTP 2045. Due to financial constraints, these projects could not be included in the constrained project list. Should additional funding become available during the timeframe of the MTP 2045, these projects may be reconsidered for inclusion in the constrained project list.

Table 7.4: Illustrative Needs Project List

ID#	Road	Limits	Concept
City of Evansville			
IL-1	Lynch Rd	Extension from US 41 to Diamond Av	New (4 Lns)
IL-2	SR 57	Extension - US 41 to SR 65	New
Vanderburgh County			
IL-3	Baseline Rd	SR 65/Big Cynthiana Rd to Warrick County Line	Reconstruct
IL-4	Boonville New Harmony Rd	University Parkway to Warrick County Line	Reconstruct
IL-5	Lynch Rd	Extension from US 41 to Diamond Av	New (4 Lns)
IL-6	Saint Joseph Av	at Meier Rd	Realignment
IL-7	SR 57	Extension - US 41 to SR 65	New
IL-8	University Parkway	Extension from SR 66/Diamond Av to Interstate 64	New
Warrick County			
IL-9	Baseline Rd	Vanderburgh County Line to SR 61	Reconstruct
IL-10	Boonville New Harmony Rd	Vanderburgh County Line to SR 61	Reconstruct
City of Henderson			
IL-11	Atkinson St	KY 136/Madison St to Clay St	Reconstruct
IL-12	Watson Ln	US 60 to US 41	Upgrade
Henderson County			
None			
INDOT			
IL-13	Elberfeld I-69 Connector	Bluebell Rd Overpass at I-64	New
IL-14	SR 62/Lloyd Expy	Red Bank Rd to Pigeon Creek Bridge (w/ interchange)	New/Widen (6Lns)
IL-15	SR 62/Lloyd Expy - University Parkway	Interchange Modification	Reconstruct
IL-16	SR 66/Lloyd Expy-Burkhardt Rd	Upgrade to Interchange	New
IL-17	US 41	Diamond Ave to St George Rd	Widen (6 Lns)
IL-18	US 41	St George Rd to SR 57	Widen (6 Lns)
IL-19	US 41	St George Rd to SR 57	Widen (6 Lns)
KYTC			
None			

Alternative Modes Recommendations

In recent years, the number of people bicycling, walking, and using public transportation as an alternative to single-occupancy vehicle travel has increased. Due to this increase, either because of a personal choice or financial reasons, improving the public transportation and bicycle and pedestrian networks have been among the most highly-mentioned needs discussed by the Citizens Advisory Committee and the public.

As a result of this increased interest in alternative transportation, local jurisdictions and the area transit agencies have all developed plans that will help guide them to improving the transit, bike, and pedestrian networks. The MPO continues to work with each city, town, and transit agency as they develop their individual plans and apply for federal funding. The MPO's role is to include these projects in the TIP and MTP and to help secure federal funding.

The following recommendations for public transportation and bicycle and pedestrian improvements summarize the efforts already made in local plans and emphasize the improvements mentioned by the CAC and the public. Specific details about routes and facility types, as well as project prioritization and funding, are included the individual plans. These plans can be found on the MPO's website at evansvillempo.com/links.html.

Public Transportation

The MTP Goals and Objectives listed in Chapter 5 include several transit specific objectives. These objectives continue the key themes from regional public transportation plans that have been developed over the last several years. The major themes include:

- Maintain a state of good repair through proper asset management practices, including monitoring the age and condition of vehicles, equipment and facilities
- Increase transit ridership by expanding transit coverage, rider accessibility and bus stop proximity
- Attract choice riders by increasing route frequency, expanding hours to include weekends and overnight, improving bus stop shelters and benches, reducing travel time, and by making buses safe, clean and comfortable
- Increase regional connectivity among the transit providers
- Improve the reliability and safety of transit use
- Enhance the transit experience through technology and improved infrastructure delivery

Regional Public Transportation Plans

The following regional transit plans were developed through coordination between the MPO, METS, HART, WATS, and area non-profits that provide transportation. Each plan includes an overview of the agencies and goals, objectives and recommendations specific to the purpose of the plan. Each of these plans are available in PDF format on the MPO's website at evansvillempo.com/links.html.

- Transit Asset Management Plan (2018)
  - The FTA required all transit agencies to complete a TAM Plan by October 2018. The MPO, METS and HART worked together to develop the condition assessment table of all assets and priorities for replacement over time.
- Section 5310 Program Management Plan (2018)
  - The Section 5310 PMP documents how the MPO will manage the FTA Section 5310: Enhanced Mobility of Seniors and Individuals with Disabilities grant program, including how projects will be selected.
- Coordinated Public Transit-Human Services Transportation Plan (2017)
  - The purpose of the Coordinated Plan is to create a collaborative network of transportation services that improve mobility for seniors, individuals with disabilities, and low income individuals. It also lists planned capital projects that will utilize Section 5310 funds.
- METS Comprehensive Operations Analysis (2015)
  - The METS COA includes an Assessment of Existing Conditions and a Five Year Service Plan. The Service Plan includes a list of projects that will help METS address some of the gaps and needs identified in the Existing Conditions report.

Public Transportation Recommendations

Each one of the plans listed previously have several recommendations specific to those plans. The recommendations listed in Table 7.5 are some of the key recommendations listed in those plans that were also discussed during the development of the MTP by the public, Citizens Advisory Committee, METS, HART, and/or area non-profits.

Table 7.5: Public Transportation Recommendations

ID#	Recommendations
T-1	Replace transit vehicles that are beyond their useful life in age or mileage as funding becomes available.
T-2	Rehabilitate and/or replace equipment and facilities in poor condition.
T-3	Provide Section 5310 grant funding for buses and vans to agencies that provide transportation for seniors and/or individuals with disabilities, focusing first on the needs of non-profit organizations, then on the METS and HART paratransit services.
T-4	Provide Section 5310 funding to METS and HART to improve accessibility to the fixed route system, including accessible bus shelters and sidewalks.
T-5	Develop regional transit connections, especially between Evansville and Henderson. Consider creating Express Routes between Evansville and Henderson and Evansville and Newburgh.
T-6	Expand transit service areas and hours to provide access to more residents.
T-7	Increase the frequency of some transit corridors to help increase ridership.
T-8	Continue to expand the use of technology, such as the DoubleMap bus tracking used by METS, to improve ease of use of the transit system.
T-9	Incorporate fixed bus routes, stops, and shelters when developing road projects.

Transit Progress Since MTP 2040

MPO/METS/HART/Non-Profits:

- METS, HART and the MPO coordinated to complete the Transit Asset Management (TAM) plan to help prioritize asset replacements.
- The MPO completed an update to the Coordinated Public Transit-Human Services Transportation Plan to identify the needs of non-profit organizations and METS' and HART's paratransit services.
- A Regional Transit Advisory Committee was formed to improve coordination between all transportation providers.
- Developed a Regional Transportation Guide made available to the public listing the public and non-profit transportation providers in Vanderburgh, Warrick, Henderson, Posey, and Gibson counties.
- The MPO worked with METS and HART to acquire Remix transit planning software to assist the agencies in planning for new routes, detours, and other route changes.

METS:

- Developed a Comprehensive Operations Analysis (COA), which included a Five-Year Service Plan.
- Added Sunday Service on five routes based on a recommendation from the COA.
- Added a Lynch/Walnut evening route based on a recommendation from the COA.
- Acquired seven new fixed route buses and seven new paratransit buses.
- Completed upgrades at the downtown terminal.
- Acquired and began utilizing DoubleMap vehicle tracking software to allow riders to track buses.

HART:

- Acquired two new fixed route buses and one new paratransit bus.
- Completed a Ride Guide showing the HART routes and information about riding the buses.
- Completed a Paratransit Ride Guide providing information about using the paratransit system.
- Replaced the downtown terminal with a newer structure.

Bicycle and Pedestrian

Local bicycle and pedestrian plans all have the similar goal of increasing connectivity within the region. There are several bicycle and pedestrian related goals and objectives listed in Chapter 5 that once implemented, would provide better connections. Another common theme among bicycle and pedestrian plans include increasing the network mileage that will provide access to more residents.

Regional Bicycle and Pedestrian Plans

The City of Evansville, the City of Henderson and Henderson County, and Warrick County have bicycle and pedestrian plans. The Evansville and Henderson plans were developed through coordination with the Evansville MPO. The non-profit organization Warrick Trails developed the Warrick County plan, which focuses on facility development in southwest Warrick County between Newburgh and Chandler.

- Evansville Bicycle and Pedestrian Connectivity Master Plan
  - The Evansville Bicycle and Pedestrian Connectivity Master Plan (BPCMP) was adopted in November 2015 and includes nearly 170 miles of recommended bicycle and pedestrian network improvements.
- The Greater Henderson Bicycle and Pedestrian Master Plan
  - The Greater Henderson Bicycle and Pedestrian Master Plan was adopted in February 2014 and includes nearly 140 miles of bicycle and pedestrian network improvements.
- Warrick Trails
  - Warrick Trails, a non-profit organization, has developed a bicycle and pedestrian plan to connect Newburgh, Chandler and Boonville with off-and on-street facilities. The plan, also named Warrick Trails, will provide Warrick County with over 35 miles of bicycle and pedestrian facilities once implemented.

Bicycle and Pedestrian Recommendations

The above plans have specific recommendations and should be referenced by LPAs when implementing projects. Many bicycle and pedestrian projects can be incorporated into roadway reconstruction projects to reduce the costs of adding them later. Recommendations from these plans were also brought up in the public survey and Citizens Advisory Committee during the MTP 2045 development. The bicycle and pedestrian recommendations are listed in Table 7.6.

Table 7.6: Bicycle and Pedestrian Recommendations

ID#	Recommendations
BP-1	Communities within the Evansville region should adopt local Complete Streets Policies, separate from the regional Policy adopted by the Evansville MPO in 2012.
BP-2	Coordinate transportation planning with land use planning to ensure new developments are walkable and bikable.
BP-3	Expand the greenway network.
BP-4	Better connect the bicycle and pedestrian network with bus systems.
BP-5	Continue to update bicycle and pedestrian plans to have projects ready when funding is available.
BP-6	Increase the amount of Upgrade Bikeshare stations throughout the region.

FYI

Bicycle & Pedestrian Progress Since MTP 2040

Evansville/Vanderburgh County:

- Completed the Bicycle and Pedestrian Connectivity Master Plan
- Hi-Rail Corridor complete
- North Main Street and Virginia Street cycle tracks and sidepaths complete
- Extension of Oak Hill Road bike lanes
- Multiple bike lanes and sidepaths in northern Vanderburgh County

Warrick County:

- Formed the non-profit Warrick Trails and implemented on- and off- street segments from their plan
- Lincoln Avenue and Oak Grove Road bike lanes complete
- Coordination with INDOT and Warrick Trails for bike lanes on SR 261
- Secured federal funding for a Safe Routes to School project between John H. Castle Elementary School, Castle High School, and Castle South Middle School

Henderson/Henderson County:

- Completed the Greater Henderson Bicycle and Pedestrian Master Plan
- Green River Road sidepath
- Main Street bike lanes/shared lanes

Freight Recommendations

Freight related goals and objectives discussed in Chapter 5 were formulated with the help of the Citizen Advisory Committee (CAC) which included representatives from the local freight industry and economic development leaders. Increasing economic vitality is seen as the primary goal of freight. To support that effort, policies and/or projects are recommended that improve the mobility of all freight modes. The following recommendations have been identified through CAC participation, past surveys and/or stakeholder interviews within the freight planning area. See Appendix J for more details.

Freight Plans

In recent years, both INDOT and KYTC have developed statewide plans addressing freight and rail movement. These plans are referenced when making freight or rail decisions in the Evansville MPO region. Plans include:

- Indiana Multimodal Freight Plan
- Indiana State Rail Plan
- Kentucky Freight Plan Published
- Kentucky Statewide Rail Plan

FYI

Freight Progress Since MTP 2040

- Completed the US 41/Lloyd Expressway Interchange
- Completed the Boonville Bypass from SR 61 west of Boonville to SR 61 north of Boonville
- Proposed elimination of at grade rail crossing (Mill Rd, west of Kratzville Rd)

Other regional plans that are referenced by the Evansville MPO include:

- Indiana's Blue Ribbon Panel on Transportation Infrastructure Report, developed by a panel appointed by the Governor
- Southwest Regional Logistics Council-A Plan For Growing Southwest Indiana's Logistics Sector, developed by Conexus Indiana Logistics Council.

Freight Recommendations

Table 7.7 lists recommended strategies for improving on-road freight movement and recommended policies to advance alternative freight modes.

Table 7.7: Freight Recommendations

ID#	Recommendations
Strategies for Improving On-Road Freight Movement	
F-1	Improve signal timing and coordination
F-2	Remove signals where possible
F-3	Provide signals where warranted and when other forms of access are not feasible
F-4	Provide alternative routes and quick connections to interstates for freight generators/carriers and intermodal facilities
F-5	Quick clearance of non-recurring congestion
F-6	Provide freight friendly road geometry on all truck routes
F-7	Encourage grade separated rail crossings and intersections on arterials
F-8	Provide dedicated truck lanes on high volume interstates
F-9	Maintain/upgrade infrastructure to eliminate need for weight/size restrictions
F-10	Provide turn lanes/deceleration lanes to remove turning vehicles from through traffic movements
F-11	Encourage the establishment of access management plans for arterial corridors
F-12	Encourage the adoption of access management documents to guide site development
F-13	Add capacity where needed
F-14	Identify and eliminate freight bottlenecks

Table 7.7: Freight Recommendations Cont.

Policies to Advance Alternative Freight Modes	
F-15	Support local adoption of access management standards
F-16	Seek comprehensive and accessible data reporting sources for all modes
F-17	Promote the consideration of freight movements in advance of site selection
F-18	Support funding for Ohio River Lock and Dam Infrastructure Improvements
F-19	Support funding for dredging to maximize capacity for barges
F-20	Support funding options for non-public freight modes
F-21	Support statewide freight advisory committees that seek MPO inclusion
F-22	Maintain good working relationships with area airport/port authorities
F-23	Encourage railroad participation in the MPO planning process
F-24	Encourage the consideration of direct rail service to planned/existing manufacturing facilities
F-25	Identify a railroad "champion"

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As part of its transportation planning process, Evansville MPO completed the transportation conformity process for the 2045 MTP and 2020 - 2024 TIP. This report documents that the 2045 MTP and 2020 -2024 TIP meet the federal transportation conformity requirements in 40 CFR Part 93.

Clean Air Act (CAA) section 176(c) (42 U.S.C. 7506(c)) requires that federally funded or approved highway and transit activities are consistent with ("conform to") the purpose of the State Implementation Plan (SIP). Conformity for the purpose of the SIP means that transportation activities will not cause or contribute to new air quality violations, worsen existing violations, or delay timely attainment of the relevant NAAQS or any interim milestones (42 U.S.C. 7506(c)(1)). EPA's transportation conformity rules establish the criteria and procedures for determining whether metropolitan transportation plans, transportation improvement programs (TIPs), and federally supported highway and transit projects conform to the SIP (40 CFR Parts 51.390 and 93).

On February 16, 2018, the United States Court of Appeals for the District of Columbia Circuit in *South Coast Air Quality Mgmt. District v. EPA* ("*South Coast II*", 882 F.3d 1138) held that transportation conformity determinations must be made in areas that were either nonattainment or maintenance for the 1997 ozone national ambient air quality standard (NAAQS) and attainment for the 2008 ozone NAAQS when the 1997 ozone NAAQS was revoked. These conformity determinations are required in these areas after February 16, 2019. Vanderburgh and Warrick Counties were maintenance areas at the time of the 1997 ozone NAAQS revocation on April 6, 2015 and was also designated attainment for the 2008 ozone NAAQS on May 21, 2012. Therefore, per the *South Coast II* decision, this conformity determination is being made for the 1997 ozone NAAQS in the MTP and TIP.

This conformity determination was completed consistent with CAA requirements, existing associated regulations at 40 CFR Parts 51.390 and 93, and the *South Coast II* decision, according to EPA's *Transportation Conformity Guidance for the South Coast II Court Decision* issued on November 29, 2018.

AIR QUALITY

08

Greenway at US 41/Lloyd Expressway Overpass

Transportation Conformity Process

The concept of transportation conformity was introduced in the Clean Air Act (CAA) of 1977, which included a provision to ensure that transportation investments conform to a State implementation plan (SIP) for meeting the Federal air quality standards. Conformity requirements were made substantially more rigorous in the CAA Amendments of 1990. The transportation conformity regulations that detail implementation of the CAA requirements were first issued in November 1993, and have been amended several times. The regulations establish the criteria and procedures for transportation agencies to demonstrate that air pollutant emissions from metropolitan transportation plans, transportation improvement programs and projects are consistent with ("conform to") the State's air quality goals in the SIP. This document has been prepared for State and local officials who are involved in decision making on transportation investments.

Transportation conformity is required under CAA Section 176(c) to ensure that Federally-supported transportation activities are consistent with ("conform to") the purpose of a State's SIP. Transportation conformity establishes the framework for improving air quality to protect public health and the environment. Conformity for the purpose of the SIP means Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) funding and approvals are given to highway and transit activities that will not cause new air quality violations, worsen existing air quality violations, or delay timely attainment of the relevant air quality standard, or any interim milestone.

Vanderburgh and Warrick Counties were maintenance areas for the 1997 Ozone NAAQS at the time of revocation and were designated as attainment for the 2008 Ozone NAAQS, and have not been required to make transportation conformity determinations for any Ozone NAAQS since the 1997 Ozone NAAQS was revoked in April 2015.

2045 Metropolitan Transportation Plan (MTP)

The MTP 2045 for the Evansville, Indiana - Henderson, Kentucky Urbanized Area is developed through the cooperative transportation planning process of the Evansville Metropolitan Planning Organization. Informed by input from public officials, local public agencies, a Citizen's Advisory Committee and the public, the MTP 2045 is a guide for the implementation of multimodal transportation improvements, policies and programs in the Metropolitan Planning Area through 2045.

2020-2024 Transportation Improvement Program (TIP)

The 2020–2024 TIP is one part of the Evansville MPO's transportation planning process. The planning process includes the development of a Metropolitan Transportation Plan (MTP) which is adopted by the MPO. As projects in the MTP advance to implementation, they are programmed in the TIP for study, design, and construction, provided they attain environmental permits and other necessary clearances.

The TIP identifies and prioritizes the Evansville MPO's short-term program of projects that is consistent with the MTP. The TIP development procedures include working with state Departments of Transportation (DOTs), Local Public Agencies (LPAs) and the appropriate transit operators in soliciting project proposals. This collaboration also includes engaging the public and the various Evansville MPO Committees to keep them informed about the regional transportation plans. Following public and agency review, the draft TIP is approved by the MPO, forwarded to INDOT, then on to federal funding agencies—the Federal Highway Administration, and the Federal Transit Administration. The TIP must include a minimum four-year program of projects, and it must be updated at least every four years.

Transportation Conformity Determination: General Process

Per the court's decision in *South Coast II*, beginning February 16, 2019, a transportation conformity determination for the 1997 ozone NAAQS will be needed in 1997 ozone NAAQS nonattainment and maintenance areas identified by EPA[1] for certain transportation activities, including updated or amended metropolitan MTPs and TIPs. Once US DOT makes its 1997 ozone NAAQS conformity determination for the MTP 2045 and 2020-2024 TIP, conformity will be required no less frequently than every four years. This conformity determination report will address transportation conformity for the MTP 2045 and 2020–2024 TIP.

Transportation Conformity Requirements

On November 29, 2018, EPA issued *Transportation Conformity Guidance for the South Coast II Court Decision*[2] (EPA-420-B-18-050, November 2018) that addresses how transportation conformity determinations can be made in areas that were nonattainment or maintenance for the 1997 ozone NAAQS when the 1997 ozone NAAQS was revoked, but were designated attainment for the 2008 ozone NAAQS in EPA's original designations for this NAAQS (May 21, 2012).

The transportation conformity regulation at 40 CFR 93.109 sets forth the criteria and procedures for determining conformity. The conformity criteria for MTPs and TIPs include: latest planning assumptions (93.110), latest emissions model (93.111), consultation (93.112), transportation control measures (93.113(b) and (c), and emissions budget and/or interim emissions (93.118 and/or 93.119).

For the 1997 ozone NAAQS areas, transportation conformity for MTPs and TIPs for the 1997 ozone NAAQS can be demonstrated without a regional emissions analysis, per 40 CFR 93.109(c). This provision states that the regional emissions analysis requirement applies one year after the effective date of EPA's nonattainment designation for a NAAQS and until the effective date of revocation of such NAAQS for an area. The 1997 ozone NAAQS revocation was effective on April 6, 2015, and the *South Coast II* court upheld the revocation. As no regional emission analysis is required for this conformity determination, there is no requirement to use the latest emissions model, or budget or interim emissions tests.

Therefore, transportation conformity for the 1997 ozone NAAQS for MTP 2045, 2020–2024 TIP can be demonstrated by showing the remaining requirements in Table 1 in 40 CFR 93.109 have been met. These requirements, which are laid out in Section 2.4 of EPA's guidance and addressed below, include:

- Latest planning assumptions (93.110)
- Consultation (93.112)
- Transportation Control Measures (93.113)
- Fiscal constraint (93.108)

Latest Planning Assumptions

The use of latest planning assumptions in 40 CFR 93.110 of the conformity rule generally apply to regional emissions analysis. In the 1997 ozone NAAQS areas, the use of latest planning assumptions requirement applies to assumptions about transportation control measures (TCMs) in an approved SIP.

The development of the MTP 2045 included updating the land use assumptions derived from the estimates of current and future population, employment, travel, and congestion. All forecasts utilized the best available planning assumptions concerning development and socio-economic forecasts to the year 2045.

The Indiana SIP does not include any TCMs for the Vanderburgh and Warrick County Orphan Maintenance Area.

1 The areas identified can be found in EPA's "Transportation Conformity Guidance for the South Coast II Court Decision", EPA-420-B-18-050, available on the web at: www.epa.gov/state-and-local-transportation/policy-and-technical-guidance-state-and-local-transportation.

2 Available from https://www.epa.gov/sites/production/files/2018-11/documents/420b18050.pdf

Consultation Requirements

The consultation requirements in 40 CFR 93.112 were addressed both for interagency consultation and public consultation.

Interagency consultation was conducted with INDOT, IDEM, FHWA, FTA, and EPA. During the preparation of the MTP 2045, 2020–2024 TIP, and the development of the conformity determination analysis, the consulting agencies communicated on a regular basis. This included, but was not limited to, scheduled conference calls on May 11, 2018, October 30, 2018, December 4, 2018, and December 20, 2018. For the conformity analysis, the procedures used and all of the major assumptions were subject to discussion, review, and consensus approval by the consulting agencies. Interagency consultation was conducted consistent with the Indiana Conformity Consultation Guidance and the Conformity SIP as applicable.

Public consultation was conducted consistent with planning rule requirements in 23 CFR 450. The Evansville MPO released the conformity documentation for a public comment period from February 11, 2019 through March 12, 2019.

Timely Implementation of TCMs

No Traffic Control Measures (TCM) are included in the SIP for the Vanderburgh and Warrick County Orphan Maintenance Area.

Fiscal Constraint

Transportation conformity requirements in 40 CFR 93.108 state that transportation plans and TIPs must be fiscally constrained consistent with DOT's metropolitan planning regulations at 23 CFR part 450. The MTP 2045 and 2020–2024 TIP are fiscally constrained.

The MTP includes a financial plan that demonstrates how the plan can be implemented. The financial plan compares the estimates of funds that are reasonably expected to be available for transportation uses, including transit, and the cost of constructing, maintaining and operating the total (existing, plus planned) transportation system over the period of the plan. The detailed discussion can be found in Chapter 6.

The FY 2020-2024 TIP includes a summary of the fiscal constraint analysis for local highway projects listed in the TIP document. In accordance with federal requirements, federal funds within the first four years of the TIP are within the anticipated Federal funding levels, indicating fiscal constraint for local federal-aid projects. The LPA is required, prior to beginning projects, to have identified the specific source and amount required for their local match. The detailed discussion and demonstration of fiscal constraint can be found in Chpater 3 of the FY 2020-2024 TIP.

Conclusion

The conformity determination process completed for the MTP 2045 and 2020–2024 TIP demonstrates that these planning documents meet the Clean Air Act and Transportation Conformity rule requirements for the 1997 ozone NAAQS.

A CONGESTION MANAGEMENT PROCESS

The Congestion Management Process (CMP) is a plan for recommending and implementing appropriate strategies that can alleviate congestion and improve the performance of the transportation system. This CMP establishes a consistent and systematic process for managing congestion by producing information and recommendations on system performance and on alternative strategies for alleviating congestion and enhancing the mobility of persons and goods. This is done with Federal and State guidance for the intended purpose of conforming to Federal air quality standards. Achieving regional air quality improvements are a potential and desired outcome of CMP planning.

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 was the first Federal transportation Act to require the establishment of a Congestion Management System in Transportation Management Areas (TMAs), which are urbanized areas with a population over 200,000. Subsequent Acts, including TEA-21, SAFETEA-LU, MAP-21 and now the FAST Act, have all maintained the Congestion Management requirements for TMAs.

In TMAs designated as carbon monoxide (CO) or ground-level ozone (O_3) non-attainment areas, the Federal regulation prohibits projects that increase capacity for single-occupant vehicles (SOVs), unless the project emerges from a CMP. At present the EMPO study area is in attainment for CO, and ozone, both of which are considered transportation-related pollutants and that being the case, a CMP analysis is not required for transportation projects. The CMP is nonetheless, a required planning process, and the EMPO will be engaged in CMP activities on a regular basis.

Formerly, the CMP was known as the Congestion Management System (CMS), and the CMS was presented as a stand-alone document (Congestion Management System Report, July 2004). SAFETEA-LU changed the name, and required the inclusion of the CMP within the Metropolitan Transportation Plan. The FAST Act continues these requirements. The EMPO revised the Congestion Management Process, and implemented a new data collection program, in 2009 to better monitor intersections and roadways for delay and operational shortcomings. This data collection program, as well as performance measures and strategies for reducing congestion, are discussed in this appendix.

Managing Congestion

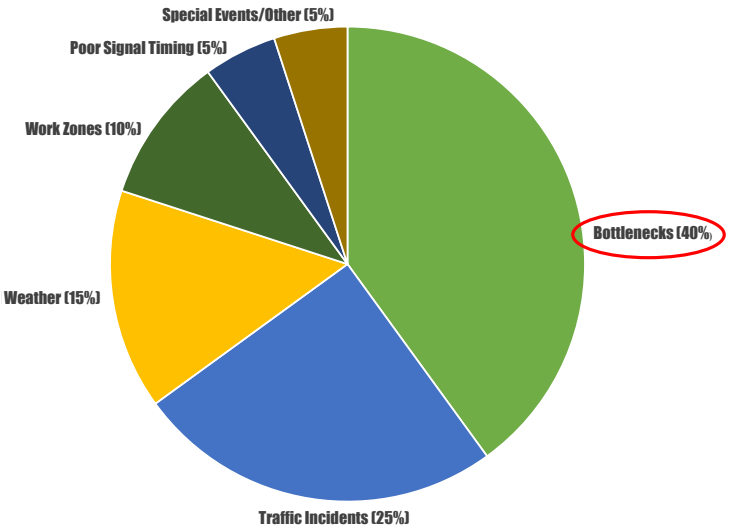
Congestion has been defined by the Federal Highway Administration (FHWA) as "The level at which transportation system performance is no longer acceptable due to traffic interference." The level of acceptable system performance varies by type of transportation facility, geographic location, and/or time of day. In the National Strategy to Reduce Congestion on America's Transportation

Network (US Dept. of Transportation, 2006), the US DOT states that "Based on current trends, highway congestion is on its way towards becoming a problem in medium-sized cities within the next ten years, while smaller cities, towns, and the suburban and rural fringe can expect to face similar challenges over the next 10 to 15 years."

The Transportation Research Board (TRB) has identified two types of congestion, as it relates to travel time and speed. The first and most dominant cause of congestion is recurrent congestion caused by inadequate road capacity. This simply means that there are more vehicles trying to utilize a roadway than it can physically accommodate at a single time. Historically, solutions for this type of congestion have focused on building new roads or adding travel lanes to existing roadways.

The second type of congestion results from random events such as accidents, spills, vehicle breakdowns, inclement weather, special events or any other factor that cannot be anticipated on a typical day of travel. This type of congestion is called non-recurrent congestion because it is largely unpredictable as to when or where it will occur. It is estimated that the majority of traffic congestion is caused from non-recurrent incidents in an urban area. Figure A.1 shows the factors of congestion. When they occur during rush hours they cause serious congestion. Incident Management, which is a sequence of pre-planned and integrated activities that applies both human and technological resources to remove incidents as quickly and safely as possible to restore capacity to the highway, is a unique solution to non-recurrent congestion incidents.

Figure A.1: Factors of Congestion



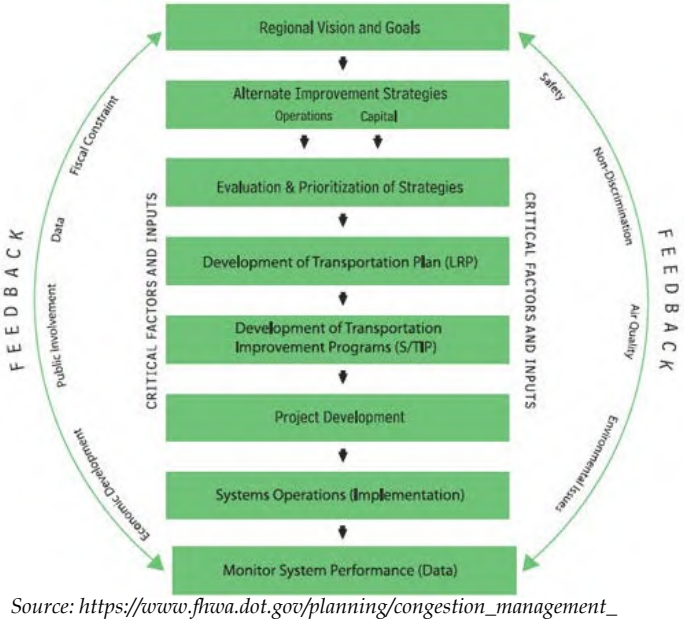
Source: FHWA http://ops.fhwa.dot.gov/publications/fhwahop11034/ch1.htm

A successful congestion management program should address both recurrent and non-recurrent congestion. Both types of congestion can be difficult to mitigate without reducing overall travel demand. For capacity expansion to occur there must be sufficient right-of-way available for expansion or funds available to acquire the addition right-of-way needed to build a new road or add travel lanes. Often right-of-way is difficult to acquire and costs can be prohibitive for smaller roadway projects.

Sometimes minimal or temporary relief can be provided through highway performance improvements such as traffic signal synchronization, traffic signal modernization, improved roadway signs and pavement markings and other low cost remedies. However, these improvements are often temporary and only serve to prolong the problem without actually fixing anything. Otherwise, meaningful reductions in congestion can only be accomplished with non-capacity expansion strategies, which are discussed in more detail in the following section.

The EMPO's CMP includes the eight elements of CMP discussed in the new CMP guidance document published by the FHWA. Figure A.2 shows the elements of the EMPO's CMP.

Figure A.2: Elements of Congestion Management Process



Source: https://www.fhwa.dot.gov/planning/congestion_management_process/cmp_guidebook/fig1.cfm

Regional Objectives

Regional CMP goals and objectives are developed to support the regional goals and objectives adopted in the MTP 2045. The regional goals and objectives for the MTP 2045 were developed through an extensive planning process discussed in detail in Chapter 5 of the MTP 2045. Specific, Measurable, Realistic, and Time bound (SMART) objectives are listed below.

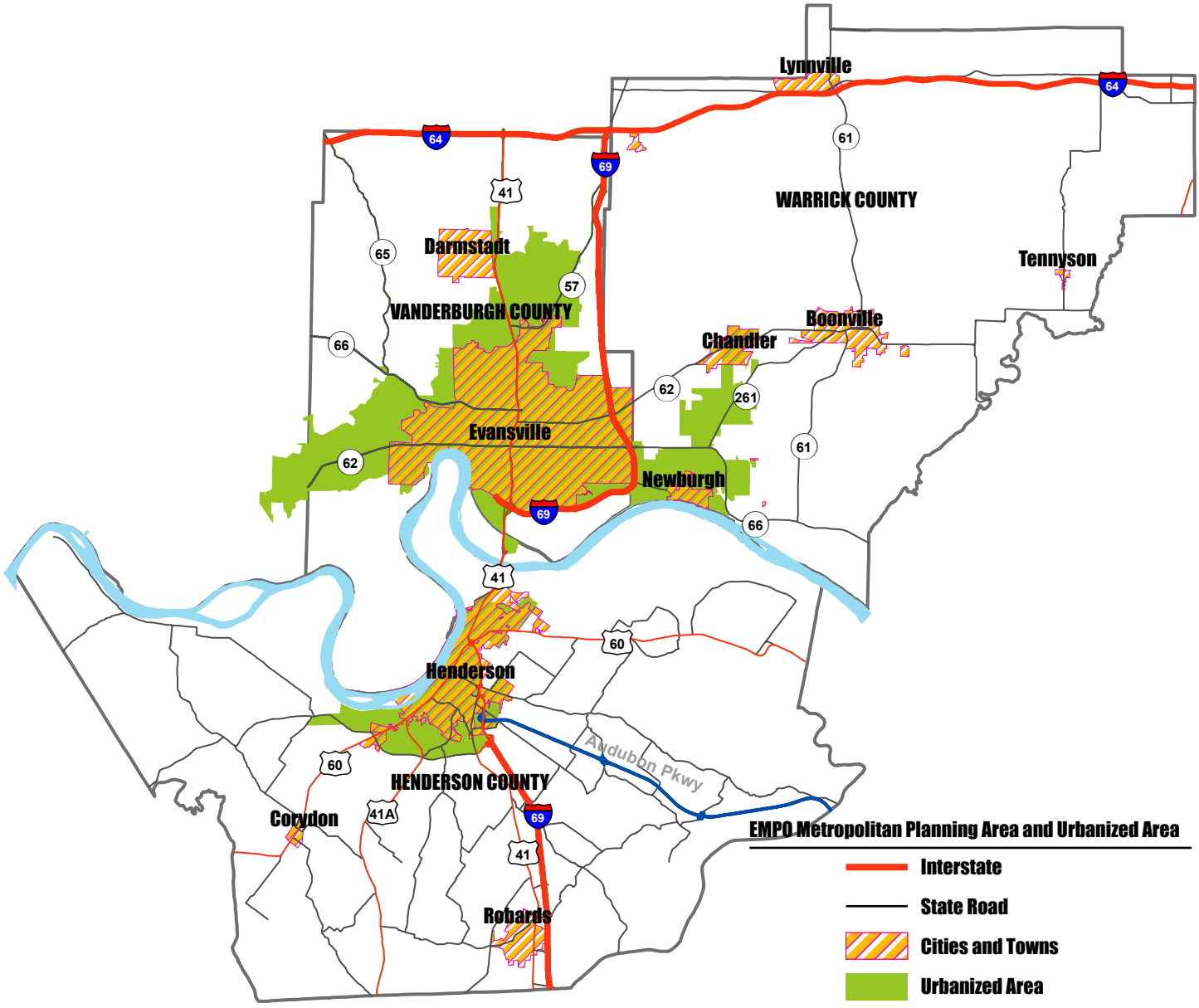
Objectives:

- Reduce travel times on CMP network by 2% by 2045
- Reduce average delay on CMP network corridors by 2% by 2045.
- Maintain CMP corridors with no/low congestion

CMP Network

The CMP is applied to the EMPO Transportation Management Area (TMA) which contains approximately 650 square miles in Indiana, including the City of Evansville, Vanderburgh County, Warrick County, and a very small area of eastern Posey County. In Kentucky, the Study Area encompasses approximately 440 square miles which includes the City of Henderson and Henderson County. Figure A.3 shows the Evansville MPA, including the Urbanized Area.

Figure A.3: EMPO Metropolitan Planning Area



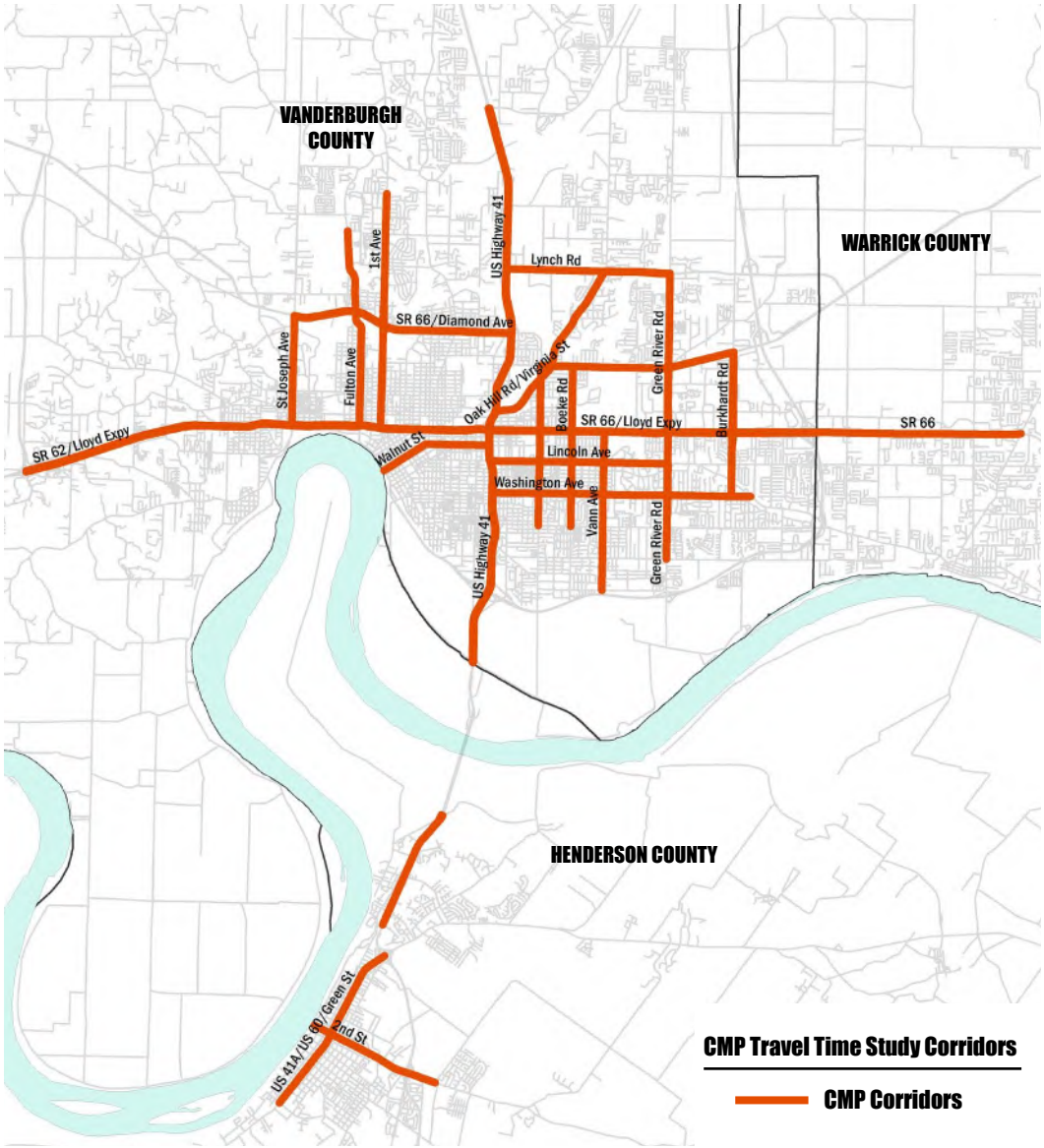
Transportation System

The transportation system consists of the modes and network to transport people and goods. A general CMP network may include all modes of transportation, such as walk, bike, transit, and motor vehicles. At this point in time, the EMPO's CMP focuses on addressing motor vehicle congestion mitigation strategies for major corridors or roadways and transit system congestion. This is accomplished by collecting performance measurement data, monitoring congestion conditions, and implementing CMP strategies. However, the CMP does promote other modes that help mitigate congestion problems, such as transit, pedestrian, bicycle, carpool, and vanpool modes of transportation. The promotion of these modes is considered an on-going and effective congestion mitigation strategy.

Various definitions of congestion have been proposed. The Interim Final Rule on Management and Monitoring Systems in ISTEA of 1991 by the Federal Highway Administration (FHWA) defines congestion as "the level at which the transportation system performance is no longer acceptable due to traffic interference. The level of acceptable system performance may vary by type of transportation facility, geographic location, and/or time of day." The Transportation Research Board (TRB) defines that "congestion is travel time or delay in excess of that normally incurred under light or free-flow travel conditions."

The current CMP network includes 25 corridors within the MPO area. The updated CMP network corridors are shown in Figure A.4.

Figure A.4: Evansville TMA CMP Travel Time Study Corridors



The CMP is a continuous cycle of transportation planning activities, designed to provide decision-makers with valuable information about transportation system performance and the effectiveness of alternative strategies to deal with congestion. The CMP is not a one-time exercise but an ongoing process of planning, action and review. By monitoring the effectiveness of congestion mitigation strategies and evaluating their benefits in an orderly and consistent manner, planners and stakeholders can improve the ability to select the most cost-effective strategies appropriate to specific local conditions and needs.

Performance Measures

Performance measures are the specific, measurable attributes of performance that are used to assess possible implementation strategies. They can be monitored and tracked to report progress toward a goal.

Performance measures are at the core of the CMP and are parameters to measure the level of congestion, identify the locations, and indicate the extent of congestion on the region's transportation system. This leads to specific requirements for data collection, analysis, and monitoring. The information may be used to track changes in mobility/congestion over time, identify subareas or corridors with mobility problems, and identify causes of congestion.

EMPO selected the following performance measures to gauge the level of congestion on the arterial corridors:

- Travel Time Index (TTI)
- Volume-to-Capacity Ratio (V/C)

Travel Time Index (TTI)

The Travel Time Index is the ratio of the peak-period travel time to the free-flow travel time, along the same routes. The free-flow travel time is the time used to travel in free-flow condition, under which the traffic is so light that vehicles are able to maneuver freely without the impact of the presence of other traffic. For each corridor, both peak-hour travel time and free-flow travel time are collected from one end of the segment to the other, bi-directionally. The peak-hour travel time is obtained by the floating car method, namely driving through the corridor in peak hour with a data collecting instrument, such as a tablet with an installed GPS tracking application. The free-flow travel time is obtained from Google Data Services.

As mentioned in the last section, there were a total of 25 corridors under study, as shown in Table A.1. The highlighted corridors have been under construction and we were not able to collect appropriate peak-hour travel time. The Travel Time Indexes for those four corridors will not be included in this document.

Recalling the definition of Travel Time Index (TTI), we can see that the more severe the congestion is, the more time you will spend on the road, and the higher TTI number will be. The MPO used Table A.2 as designation of the congestion level based on the value of Travel Time Index. A brief visualization of the results is shown in Figure A.5.

Table A.1: CMP Travel Time Survey Corridors

Number	County	Road	From	To	Length (mi)
1	Henderson	US 60	US 41	Sand Ln	3.6
2	Henderson	US 41	Wolf Hills Rd	Barret Blvd	1.9
3	Henderson	2nd St	Water St	Garden Mile Rd	2.16
4	Vanderburgh	Boeke Ave	SR 62/Morgan Ave	Covert Ave	2.52
5	Vanderburgh	Weinbach Ave	SR 62/Morgan Ave	Covert Ave	2.51
6	Vanderburgh	Vann Ave	SR 66/Lloyd Expy	Rheinhardt Ave	2.53
7	Vanderburgh	Washington Ave	US 41	Newburgh Rd	4.04
8	Vanderburgh	St. Joseph Ave	SR 62/Lloyd Expy	SR 66/Diamond Ave	1.72
9	Vanderburgh	SR 66/Lloyd Expy	I 69	US 41	5.14
10	Vanderburgh	SR 62/Lloyd Expy	US 41	St. Joseph Ave	3.15
11	Vanderburgh	SR 62/Lloyd Expy	St. Joseph Ave	University Pkwy	4.4
12	Vanderburgh	US 41	SR 62/Lloyd Expy	KY State Line	3.68
13	Vanderburgh	US 41	SR 62/Lloyd Expy	SR 57	5.19
14	Vanderburgh	1st Ave	SR 62/Lloyd Expy	Old Post Rd	3.71
15	Vanderburgh	Fulton Ave	SR 62/Lloyd Expy	Mill Rd	3.08
16	Vanderburgh	SR 66/Diamond Ave	US 41	St. Joseph Ave	3.52
17	Vanderburgh	Burkhardt Rd	Washington Ave	SR 62/Morgan Ave	2.27
18	Vanderburgh	Green River Rd	SR 66/Lloyd Expy	Lynch Rd	2.5
19	Vanderburgh	Green River Rd	SR 66/Lloyd Expy	Pollack Ave	2.01
20	Vanderburgh	Lincoln Ave	US 41	Green River Rd	2.79
21	Vanderburgh	Walnut St	US 41	Riverside Dr	1.76
22	Vanderburgh	SR 62/Morgan Ave	Weinbach Ave	Burkhardt Rd	3.1
23	Vanderburgh	Lynch Rd	US 41	Green River Rd	2.6
24	Vanderburgh	Oak Hill Rd	US 41	Lynch Rd	2.9
25	Warrick	SR 66	I 69	SR 261	3.33

Under Construction

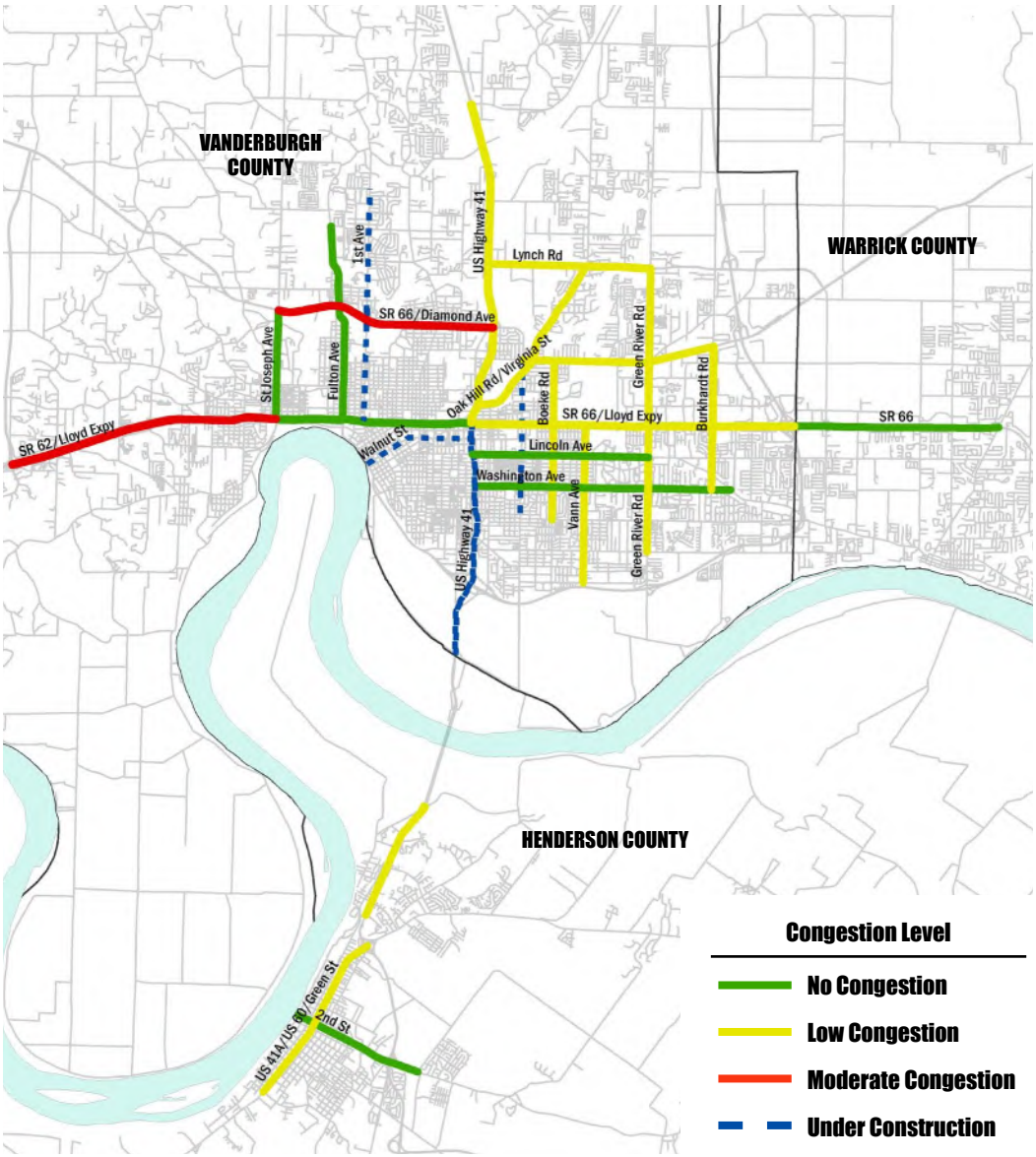
Table A.2: TTI and Congestion Levels on CMP Corridors

Street	From	To	Length	FF TT	AM Peak				PM Peak			
					Avg TT	Avg Delay	TTI	Congestion Level	Avg TT	Avg Delay	TTI	Congestion Level
Vanderburgh County												
Boeke Ave	SR 62/Morgan Ave	Covert Ave	2.52	05:35	06:22	00:58	1.14		06:49	01:36	1.22	
Boeke Ave	Covert Ave	SR 62/Morgan Ave	2.52	05:31	05:41	00:26	1.03		06:07	00:52	1.11	
Burkhardt Rd	Washington Ave	SR 62/Morgan Ave	2.27	05:21	06:03	01:35	1.13		06:59	01:50	1.30	
Burkhardt Rd	SR 62/Morgan Ave	Washington Ave	2.27	05:52	06:52	02:09	1.17		07:47	02:41	1.33	
Fulton Ave	SR 62/Lloyd Expy	Mill Rd	3.08	06:36	06:38	00:52	1.00		06:41	00:53	1.01	
Fulton Ave	Mill Rd	SR 62/Lloyd Expy	3.08	06:31	06:59	00:57	1.07		06:29	00:36	0.99	
Green River Rd	SR 66/Lloyd Expy	Pollack Ave	2.01	03:57	05:27	01:07	1.38		04:53	00:38	1.24	
Green River Rd	Pollack Ave	SR 66/Lloyd Expy	2.01	04:48	05:41	01:18	1.19		05:13	00:46	1.09	
Green River Rd	SR 66/Lloyd Expy	Lynch Rd	2.5	05:21	04:48	00:40	0.90		06:17	01:41	1.17	
Green River Rd	Lynch Rd	SR 66/Lloyd Expy	2.5	05:06	05:44	01:04	1.12		05:58	00:48	1.17	
Lincoln Ave	US 41	Green River Rd	2.79	06:14	05:04	00:39	0.81		06:42	01:04	1.08	
Lincoln Ave	Green River Rd	US 41	2.79	06:12	07:17	01:05	1.18		06:09	00:38	0.99	
Lynch Rd	US 41	Green River Rd	2.6	04:15	04:33	00:39	1.07		05:29	01:31	1.29	
Lynch Rd	Green River Rd	US 41	2.6	04:09	04:40	00:34	1.13		05:21	01:18	1.29	
Oak Hill Rd	US 41	Lynch Rd	2.9	05:53	07:03	01:38	1.20		07:23	01:52	1.26	
Oak Hill Rd	Lynch Rd	US 41	2.9	05:58	06:39	01:03	1.12		06:55	01:30	1.16	
SR 62/Lloyd Expy	St. Joseph Ave	University Pkwy	4.4	05:41	06:05	00:41	1.07		06:43	00:52	1.18	
SR 62/Lloyd Expy	University Pkwy	St. Joseph Ave	4.4	05:39	07:21	01:23	1.30		09:05	02:48	1.61	
SR 62/Lloyd Expy	US 41	St. Joseph Ave	3.15	04:02	03:54	00:10	0.97		05:03	00:59	1.25	
SR 62/Lloyd Expy	St. Joseph Ave	US 41	3.15	03:51	04:05	00:15	1.06		04:00	00:17	1.04	
SR 62/Morgan Ave	Weinbach Ave	Burkhardt Rd	3.1	06:05	07:21	01:58	1.21		08:06	02:30	1.33	
SR 62/Morgan Ave	Burkhardt Rd	Weinbach Ave	3.1	05:28	06:57	01:42	1.27		08:16	02:57	1.51	
SR 66/Diamond Ave	US 41	St. Joseph Ave	3.52	05:20	07:55	03:01	1.49		08:26	02:58	1.58	
SR 66/Diamond Ave	St. Joseph Ave	US 41	3.52	05:45	06:00	01:02	1.04		06:59	01:45	1.21	
SR 66/Lloyd Expy	I 69	US 41	5.14	06:59	07:32	01:07	1.08		09:03	01:47	1.30	
SR 66/Lloyd Expy	US 41	I 69	5.14	06:34	07:16	00:29	1.11		09:27	02:02	1.44	
St. Joseph Ave	SR 62/Lloyd Expy	SR 66/Diamond Ave	1.72	04:02	03:34	00:44	0.89		03:41	00:52	0.91	
St. Joseph Ave	SR 66/Diamond Ave	SR 62/Lloyd Expy	1.72	04:41	04:07	00:53	0.88		03:56	01:00	0.84	
US 41	SR 62/Lloyd Expy	SR 57	5.19	08:15	07:56	00:52	0.96		11:29	03:13	1.39	
US 41	SR 57	SR 62/Lloyd Expy	5.19	08:02	09:09	01:38	1.14		09:13	01:32	1.15	
Vann Ave	SR 66/Lloyd Expy	Rheinhardt Ave	2.53	05:36	05:41	00:21	1.02		06:31	01:01	1.16	
Vann Ave	Rheinhardt Ave	SR 66/Lloyd Expy	2.53	06:02	06:43	01:16	1.11		08:02	02:13	1.33	
Washington Ave	US 41	Newburgh Rd	4.04	08:17	09:36	01:08	1.16		08:51	00:54	1.07	
Washington Ave	Newburgh Rd	US 41	4.04	08:30	07:57	01:26	0.93		09:29	01:23	1.11	
Warrick County												
SR 66	I 69	SR 261	3.33	04:27	04:48	00:35	1.08		05:46	01:10	1.30	
SR 66	SR 261	I 69	3.33	04:23	04:32	00:23	1.03		04:46	00:38	1.09	
Henderson County												
2nd St	Water St	Garden Mile Rd	2.16	04:58	05:34	01:14	1.12		05:26	01:22	1.09	
2nd St	Garden Mile Rd	Water St	2.16	05:19	05:52	01:15	1.10		05:16	01:14	0.99	
US 41	Wolf Hills Rd	Barret Blvd	1.9	02:41	03:10	00:20	1.18		03:26	00:23	1.28	
US 41	Barret Blvd	Wolf Hills Rd	1.9	02:44	03:04	00:17	1.12		03:31	00:34	1.29	
US 60	US 41	Sand Ln	3.6	05:06	05:22	00:24	1.05		06:22	01:22	1.25	
US 60	Sand Ln	US 41	3.6	04:50	05:26	00:41	1.12		06:30	01:35	1.34	

TTI Thresholds for Congestion Levels

No Congestion	<1.1
Low Congestion	1.1-1.5
Moderate Congestion	1.5-1.8
High/Severe Congestion	>1.8

Figure A.5: Congestion Level on CMP Travel Time Study Corridors



Volume-to-Capacity Ratio (V/C)

The Volume-to-Capacity Ratio (V/C) is the ratio of the facility's volume to its capacity. If we use the real-world volume instead of a demanded volume, the V/C is always a value between 0 to 1. The free-flow condition we mentioned before will have a very low V/C ratio close to 0 while the super-congested condition will have a very high V/C ratio close to 1.

For each corridor, the MPO chose one or two segments to show the V/C ratio. The volume is obtained from traffic counts. The capacity is obtained from EMPO Travel Demand Model. Table A.3 shows the results.

Based on the results in Table A.3, overall congestion in the MPO area is considered low congestion.

Table A.3: CMP Traffic Count Locations

STREET	LOCATION	Volume/Capacity Ratio									
		Peak Hr LnCAP	# of Lanes	AM Peak				PM Peak			
				N/E Volume	N/E V/C	S/W Volume	S/W V/C	N/E Volume	N/E V/C	S/W Volume	S/W V/C
Vanderburgh County											
Boeke Rd	S of SR 62/Morgan Ave	1370	2	488		383		577		451	
Burkhardt Rd	N of Lincoln Ave	1418	1	613		551		664		827	
Burkhardt Rd	N of SR 66/Lloyd Expy	1500	2	1236		1190		1251		1382	
First Ave	N of Fairway Dr	1370	2	849		1058		1125		1107	
First Ave	N of SR 62/Lloyd Expy	1370	2	495		776		634		644	
Fulton Ave	S of SR 66/Diamond Ave	1389	2	447		760		878		506	
Green River Rd	S of Covert Ave	1370	2	521		395		447		658	
Green River Rd	S of Lynch Rd	1424	2	782		1325		1377		1058	
Green River Rd	S of SR 66/Lloyd Expy	1418	2	1404		1197		1432		1292	
Green River Rd	S of Virginia St	1438	2	1409		1139		1491		1411	
Kratzville Rd	S of Mill Rd	1269	1	221		426		464		246	
Lincoln Ave	W of Green River Rd	1424	1	575		798		779		642	
Lynch Rd	E of Oak Hill Rd	1568	2	1001		950		1165		1132	
Lynch Rd	E of US 41	1407	2	820		794		872		876	
Oak Hill Rd	S of Lynch Rd	1406	1	383		591		550		524	
Oak Hill Rd	S of SR 62/Morgan Ave	1347	1	328		497		603		407	
SR 62/Lloyd Expy	E of University Pkwy	1874	2	981		860		1225		1159	
SR 62/Lloyd Expy	W of US 41	1681	3	2667		3830		3639		2504	
SR 62/Morgan Ave	E of Boeke Rd	1431	2	924		892		1198		1182	
SR 66/Diamond Ave	W of Fares Ave	1711	3	1252		996		1252		1389	
SR 66/Diamond Ave	W of First Ave	2095	2	1103		664		857		1194	
SR 66/Lloyd Expy	E of Cross Pointe Blvd	1990	3	1405		2498		2412		1795	
SR 66/Lloyd Expy	E of US 41	1622	3	2534		3139		3332		2644	
St Joseph Ave	N of SR 62/Lloyd Expy	1481	2	623		927		854		781	
St Joseph Ave	S of SR 66/Diamond Ave	1389	2	577		908		837		751	
US 41	N of SR 62/Morgan Ave	1665	3	943		1572		1213		1289	
US 41	N of Washinton Ave	1879	2	1116		856		968		1334	
US 41	S of Covert Ave	1879	2	912		621		816		1012	
US 41	S of Lynch Rd	1661	2	1233		1952		1506		1680	
US 41	S of SR 57	2095	2	1098		1736		1665		1379	
Vann Ave	S of SR 66/Lloyd Expy	1370	2	635		574		565		631	
Vann Ave	S of Washington Ave	1269	1	434		244		339		442	
Walnut St	W of US 41	1269	2	258		594		462		379	
Washington Ave	E of US 41	1370	2	412		457		654		504	
Washington Ave	E of Wiltshire Dr	1407	2	363		540		579		397	
Weinbach Ave	S of SR 66/Lloyd Expy	1370	2	474		577		572		623	
Weinbach Ave	S of Washington Ave	1370	2	337		197		338		368	
Warrick County											
SR 66	W of SR 261	1882	3	1069		1678		1785		1335	
SR 66	E of Grimm Rd	1981	3	1187		2659		2290		1673	
SR 66	W of Epworth Rd	1990	3	1126		2310		2178		1648	
Henderson County											
US 41	N of Walker Dr	1598	2	1390		1110		1436		1671	
US 60/Green St	N of 12th St	1481	2	913		913		1037		1037	
US 60/Green St	S of Washington St	1431	2	1030		1030		1175		1175	
2rd St	E of US 41	1370	2	600		600		859		859	

V/C Ratio Identification

0-0.50 | 0.51-0.75 | 0.76->

Transit and Bicycle and Pedestrian

For the public transportation aspect of the CMP, the same travel conditions can be utilized to determine transit congestion because buses are subject to the same congestion levels as the rest of traffic on the CMP corridors.

As for the congestion concerning bicycle and pedestrian patterns on the CMP corridors, there is a low volume of non-motorized traffic congestion in the MPO area. Increased congestion may be seen during special events but it is still managed with the appropriate protocols. Without a major change in the Evansville metropolitan area population, bicycle and pedestrian congestion should not be a problem in the MPO area in the near future.

Congestion Management Strategies

Transportation Demand Management (TDM)

The primary purpose of TDM strategies is to reduce the number of vehicles using the road system while providing mobility options to those who want to travel. TDM strategies are designed to maximize the people-moving capacity of the transportation network, and support more efficient use of the existing transportation systems by influencing the time, route, or mode selected for a given trip. To accomplish these types of changes, TDM programs often rely on incentives to make these shifts in behavior attractive and generally work best where land uses are mixed and fairly dense, urban design is integrated with transportation systems, and there are multiple choices for travel. Incentives associated with TDM strategies include preferential parking for persons sharing carpools, vanpools, or transit; transportation allowances for transit; subsidies for transit operators; and guaranteed ride home programs. The following are some TDM alternatives that are, or may be, viable in the Evansville-Henderson area.

Ridesharing

Carpools and vanpools are typically arranged by employers. Ridesharing will reduce SOV trips and Vehicle Miles Traveled (VMT) in the region, and can be especially helpful in corridors with large employment centers. The timeframe for implementation is usually short-term.

Telecommuting

This allows employees to sometimes work from home or a regional telecommute center, which helps to reduce SOV trips, and most importantly, the amount of traffic during peak travel times. Employer costs tend to decline after initial investments and the timeframe for implementation is usually short-term.

Alternative Work Hour Programs

This allows workers to arrive and leave work outside the traditional commute period. It may be accomplished by Compressed Work Weeks in which employees work a full week in fewer than the typical five days, or a Flexible Work Schedule that shifts work start and end times to off-peak hours of the day. Employer implementation costs vary and the timeframe for implementation is usually short-term.

Public Transit

Transit can be promoted as a TDM strategy when there is a demand for transit service and other TDM strategies are not able to alleviate congestion. Fare reductions (replaced by operational subsidies), increasing route coverage or frequencies, and implementing park and ride lots all have short-to-medium term implementation timeframes. Costs include capital, operational, and possibly structural outlays.

Non-motorized Improvements

Bicycling and walking are important for travel purposes, especially in mixed land use development areas, and aid in reducing congestion and air pollution. New sidewalks and designated bicycle lanes increase mobility and access. Providing access for pedestrians and cyclists in developments and at transit facilities encourages people to walk and use bicycles. Implementation costs can be part of design and construction costs. The timeframe for implementation of most strategies is short-to-medium term.

Transportation System Management (TSM)

The TSM approach to congestion mitigation seeks to identify improvements of an operational nature to enhance the capacity of an existing system. Through better management and operation of existing transportation facilities, these techniques are designed to improve traffic flow, air quality, and movement of vehicles and goods, as well as enhance system accessibility and safety.

Intersection and Lane Improvements

Congestion and travel time can be improved by installing traffic control devices and designs for the efficent and safe passage of both pedestrians and vehicles. The devices and designs used could be signs, turning lanes, auxiliary lanes, traffic islands, traffic channels, and other appropriate geometric elements to help reduce congestion and improve the safety and ease of travel. Implementation costs vary, but are usually moderate to high, and the timeframe for implementation of most strategies is short-to-medium term.

Traffic Signal Improvements

Studies have shown that changes in a signal's physical equipment and timing optimization can help significantly in congestion mitigation. Traffic flow could be improved by equipment updates, timing plan improvements, interconnected signals, traffic signal removal, or traffic signal maintenance as needed. Implementation costs vary and the timeframe for implementation is usually short-term.

Intelligent Transportation (ITS)

ITS technology, such as Advanced Traveler Information Systems, has been a great help in relieving congestion where other solutions have failed. These intelligent transportation systems include computers, communications, and displays. At present, one ITS project is planned for Evansville (see Appendix L). Implementation costs vary and the timeframe for implementation is usually medium-term.

Incident Detection and Management Systems

To alleviate non-recurring congestion, systems typically include video monitoring, dispatch systems, and sometimes service patrol vehicles. The prompt removal of disabled vehicles from travel lanes reduces travel time and accident delay. Capital costs are variable, as are annual operating maintenance and operational costs. The timeframe for implementation is usually medium-term.

Other Strategies

Aside from TDM and TSM strategies, a variety of other strategies may be used to mitigate congestion. Most of these strategies and techniques are employed to some degree in the Evansville-Henderson area already, but not as part of a coordinated congestion management effort.

Land Use Strategies

Land-use techniques and urban design can be used to mitigate congestion by integrating land-use planning (e.g. zoning), site planning, innovative development styles, and landscaping within a transportation system. Mixed-Use Development, Infill and Densification, Traditional Neighborhood Design, and Transit-Oriented Development all support a reduction of SOV travel and reduction of VMT. Some of these strategies involve public costs in creating ordinances. The timeframe for implementation is usually long-term.

Access Management

Access management consists of controlling the space and design of driveways and other curb cuts, medians, and median openings, intersections, traffic signals, and freeway interchanges. Appropriate access control can decrease the number of accidents and congestion. To have a successful access management plan, both transportation planners and land use planners have to work cooperatively. The benefits of access management are fewer conflict points, increased mobility, fewer crashes, increased capacity, and shorter travel times. Implementation costs can be part of design and construction costs, but new signage, striping, and other new facility costs for reconstruction can vary widely. The timeframe for implementation of most strategies is short-to-medium term (0-10 years).

Highways Strategies

The traditional way to deal with congestion has been to widen a highway and add lanes, but this is usually a short-term solution because traffic acts like a gas: it expands to fill the space available. Lanes can sometimes be added without widening the highway. Geometric element improvements (as described above under Intersection and

Lane Improvements), can serve to improve mobility, reduce congestion, and improve safety. The conversion of existing major arterials with signalized intersections into grade-separated interchanges, as was done to create Evansville's Lloyd Expressway, also serve to increase capacity and mobility. Implementation costs can be part of design and construction costs, but new facility costs for reconstruction can vary widely. Also, there is potential for significant environmental and community impacts. The timeframe for implementation of most strategies is short-to-long term.

Parking Management

Many communities have adopted parking policies to induce transportation mode shifts, increase peak-period capacity, promote access preservation, and improve environmental quality. Parking management strategies include: On-street Parking and Standing Restrictions; Employer/Landlord Parking Agreements; Location-Specific Parking Ordinances; and Preferential/Free Parking for Ride-sharers. Implementation costs vary and the timeframe for implementation of most strategies is usually short-term.

Congestion Factors and Potential Mitigation Actions

The following are examples of TDM, TSM, and other congestion-reduction strategies applied to particular congestion problems:

Single Occupant Vehicle (SOV) Travel

SOV is the predominant mode of travel within the MPO area and is a major cause of congestion and deteriorating air quality.

Action

- **TDM:** Ridesharing (carpooling, vanpooling); transit service; bikeways & walkways, alternative work-hour programs; telecommuting, parking management.
- **TSM/Other:** Traffic signal improvement; intersection improvement; transit-oriented development; access management; Intelligent Transportation System (ITS).

Traffic Signal Synchronization

Unsynchronized signals contribute to traffic congestion. Drivers experience stops, stop-delays, and longer travel time contributing to increased fuel consumption, congestion, and air pollution.

Action

- **TSM:** Traffic signal improvements.

Access Management

Closely spaced driveways/curb cuts, and driveways too near intersections on arterial streets, hamper traffic movement causing congestion and air pollution.

Action

- **TSM/Other:** Geometric design; traffic signal improvements; intersection improvement; parking management; land-use strategies (e.g. subdivision regulations; urban design).

Intersections Without Right Turn Channelization

Intersections that experience heavy right turn traffic movements without dedicated right turn lanes contribute to congestion during peak hours.

Action

- **TSM:** Geometric design (lane marking); traffic signal improvement; intersection improvements.

School Zones on Major Arterials

The intent of the arterial street system is to emphasize mobility rather than land accessibility within the urban area. Low driving speed limits in school zones on major arterials cause traffic delays and congestion.

Action

- **TSM:** Geometric design; traffic signal improvements; intersection improvements; parking management; access management (designated crosswalks).

Walkways

Walkways that are not properly maintained, that lack ADA accessibility ramps, and that do not properly connect residential and commercial activity centers discourage potential users.

Action

- **TDM:** Sidewalk additions and upgrades; multi-use path additions and upgrades. TSM/Other: Traffic signal improvements, intersection improvements, urban design improvements, access management.

Bikeways

On- and off-street bicycle facilities help to alleviate congestion and enhance air quality by providing an alternative to automobile travel.

Action

- **TDM:** Bicycle lanes and routes; multi-use facility additions and upgrades; bike parking.
- **TSM/Other:** Urban design improvements (e.g. mixed-use development), access management; traffic signal improvements, intersection improvements.

Transit Service

Enhanced travel and headway times in the urban area can mitigate congestion and improve air quality; Bus bays play an important part in reducing congestion on busy streets.

Action

- **TDM:** Direct transit routes between activity centers and residential areas.
- **TSM:** Bus-priority signals at intersections; geometric design (study to determine feasibility of addition of bus bays).

Program and Implementing Strategies

To integrate CMP and the Metropolitan Transportation Plan, the EMPO has included the CMP data for project prioritization criteria, where applicable, for a determination of roadway congestion reduction. The EMPO will work with local jurisdictions to implement the congestion management strategies. The EMPO will support local jurisdictions in the evaluation and implementation of congestion management strategies as appropriate.

Evaluation of Congestion Management Strategies Effectiveness

The EMPO will conduct a before and after performance measures analysis for all congestion reduction related projects within the TMA. For each project, the most appropriate performance measures will be selected for evaluation based on the type of the project. If the project lies in one of the corridors in Table A.1, the same performance measures, namely Travel Time Index and Volume/ Capacity ratio, will be examined after the project is implemented. The results will be compared with the values before the project is implemented to see whether the project helped reduce the congestion along the corridor.

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B ENVIRONMENTAL JUSTICE & TITLE VI

Title VI

Title VI of the Civil Rights Act of 1964 states that "no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." Title 49, Part 21 of the Code of Federal Regulations outlines the U.S. Department of Transportation's requirements related to Title VI. The purpose of 49 CFR Part 21 is "to effectuate the provisions of title VI of the Civil Rights Act of 1964 to the end that no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving Federal financial assistance from the Department of Transportation."

Environmental Justice

Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, issued on February 11, 1994, expands on the Title VI regulations to require that disproportionately high and adverse health or environmental impacts to minority and low-income populations be avoided or minimized to the extent feasible. Projects that include actions that are proposed, funded, authorized or permitted by federal agencies are subject to this Executive Order.

The U.S. Department of Transportation (DOT) identifies three primary goals of Environmental Justice (EJ) that should be considered through transportation planning and project development, and through all public outreach and public participation efforts conducted by the DOT, including the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), and their grantees (MPOs, states, cities/towns). These three primary goals are:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority population and low-income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

The intent of the Executive Order and of U.S. DOT's Environmental Justice guidance is to ensure that communities of concern, defined as minority population and low-income populations, are included in the transportation planning process, and to ensure that they may benefit equally from the transportation system without experiencing a disproportionate share of its burdens.

EJ and MPO Planning

The MPO's Metropolitan Transportation Plan, Transportation Improvement Program and specific road, transit, bicycle and pedestrian plans all take into consideration the potential impact to low-income and minority populations. During each planning process, the MPO ensures outreach to low-income and minority populations through targeted public outreach efforts. Within each plan as appropriate, proposed projects are mapped along with EJ Population Areas. (EJ Population Areas are referred to as Potentially Disadvantaged Areas in the MPO's Title VI Implementation Plan and Targeted Outreach Areas in the Public Participation Plan.)

EJ Population Areas

The MPO has identified EJ Population Areas based on Census Tracts with concentrations of underserved and disadvantage populations. These areas receive additional public outreach beyond general public notices, depending on the plan being developed. During the development of the MTP, public meetings and outreach efforts were conducted in these EJ Population Areas. These areas are also used to determine if a plan and its projects may have a disproportionately high and/or adverse impact on specific areas. More information about impacts can be found in the next section to follow. The EJ Population Areas were developed based on data from the 2010-2014 American Community Survey. The following data was gathered for all 71 Census Tracts in Henderson, Vanderburgh, and Warrick counties:

- individuals below poverty;
- individuals age 65 and older;
- minority (non-Hispanic) population;
- Hispanic population;
- individuals with limited English proficiency (speak English "less than very well");
- individuals with a disability; and
- households with no vehicles.

For each one of these key demographic characteristics, a regional average combining all three counties was found using the ACS data. This average is considered to be the EJ Population Threshold. If the percentage for a particular Census Tract exceeds this Threshold in more than one of these demographic categories, it is considered to be an EJ Population Area.

All of these demographic characteristics were added to a database of all 71 Census Tracts within the three counties. For each Census Tract, the total number of categories that exceeded the EJ Population Threshold was identified. These Census Tracts were then labeled as one of three EJ Population Area Tiers depending on the number of categories that exceeded the EJ Populiation Threshold. Below are the EJ Population Area Tiers based on the number of categories that exceeded the threshold.

- Tier 1: Exceeds 6-7 EJ Population Thresholds
- Tier 2: Exceeds 4-5 EJ Population Thresholds
- Tier 3: Exceeds 2-3 EJ Population Thresholds

More detailed information about the EJ Population Areas can be found in the MPO Public Participation Plan, which can be found on the MPO website: evansvillempo.com. (EJ Population Areas are referred to as Targeted Outreach Areas in the Public Participation Plan.) A map of the EJ Population Areas and how they relate to MTP projects is shown in Figure B.1.

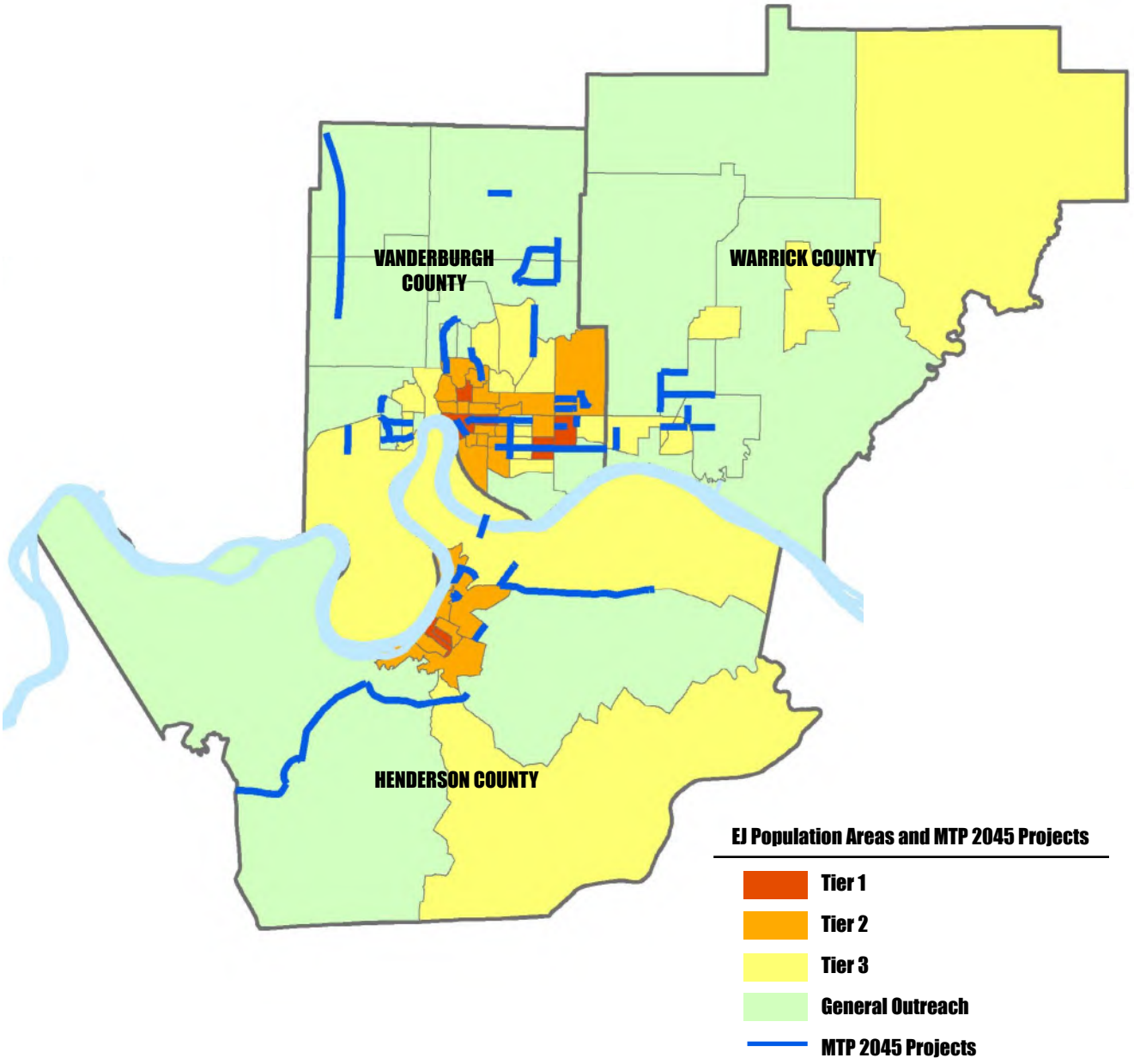
Impact of Planned Projects

During development of the 2045 Metropolitan Transportation Plan (MTP), the EJ Population Areas in the three-county study area were mapped along with the locations of the selected MTP projects. Figure B.1 shows the MTP 2045 projects along with the EJ Population Areas in the three counties.

The projects selected for inclusion in the MTP 2045 are distributed throughout the three counties and have limited negative impacts on disadvantaged populations. Those projects that are located in or near EJ Population Areas include bike and pedestrian improvements and/or potential economic improvements, while having little, if any direct impact to an individual's property. The most significant negative impact will be temporary during construction, but the positive impacts on the surrounding neighborhood after completion should outweigh the short term impact.

Public outreach during the MTP 2045 included hosting meetings in EJ Population Areas to gather as much feedback from disadvantaged populations as possible. Meeting locations were also held along or very near to bus routes to allow access for those with limited transportation options. In addition to the MPO website, Facebook page, and local newspapers, MTP meeting announcements were displayed at bus terminals and on buses.

Figure B.1: Environmental Justic Areas and MTP 2045 Projects



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Public Survey and Open Houses

The Evansville MPO designed a survey that allowed participants to prioritize improvements to the transportation system by specifying how they would distribute $100 across roadway, bicycle, pedestrian, and transit modes. Participants were then asked to distribute $100 within each mode for specific improvements. The survey was available online from February 20 through March 23. The MPO also set up tables and asked people to participate in the survey at locations identified as Targeted Outreach Areas in the Evansville MPO Public Participation Plan. In total, the MPO received 660 survey responses.

To advertise the survey, the MPO placed flyers on buses, at bus terminals, and within the municipal centers of Evansville, Henderson, Newburgh and Boonville. The flyers were posted in both English and Spanish. There were also several television, newspaper and radio announcements about the survey.

C PUBLIC INVOLVEMENT

MTP 2045

Metropolitan Transportation Plan

Evansville MPO
Henderson • Vanderburgh • Warrick

The Evansville Metropolitan Planning Organization, the transportation planning agency for the Evansville-Henderson Urbanized Area (covering Henderson, Vanderburgh and Warrick counties), is currently updating the Metropolitan Transportation Plan. The draft Plan under development will be a guide for transportation improvements through the year 2045. Please take a few minutes to answer the following questions and share your suggestions about transportation in our region. Thank you!

Tell us a little about yourself:

I live in _____ County:

- ☐ Henderson
- ☐ Warrick
- ☐ Vanderburgh
- ☐ Other

I work in _____ County:

- ☐ Henderson
- ☐ Warrick
- ☐ Vanderburgh
- ☐ Other

My age is:

- ☐ 0-19
- ☐ 20-24
- ☐ 25-44
- ☐ 45-64
- ☐ 65+

My most common mode of travel is:

- ☐ Personal Vehicle
- ☐ Transit (bus or other)
- ☐ Carpool/Vanpool
- ☐ Bicycle
- ☐ Walking
- ☐ Other

Based on your most common mode of travel, what improvement or project would have the greatest positive impact on your daily travel? Be specific, and include road and county name if applicable.

_____

_____

_____

_____

_____

Your transportation priorities:

How would you distribute a budget of $100 toward improvements to the transportation system in Vanderburgh, Warrick and Henderson counties? You can assign all $100 to one item, or divide the money between items. We have provided some examples below.

Overall transportation mode priorities: How would you spend $100 on the Evansville/Henderson region?

	Example 1	Example 2	Example 3	Your Funding
Improvements to/expansion of **roadways**	$80	$25	$30	
Improvements/additions to **bicycle facilities**	$0	$50	$20	
Improvements/additions to **pedestrian facilities**	$10	$10	$20	
Improvements/expansion of **transit** (METS, HART, WATS)	$10	$15	$30	
Total	**$100**	**$100**	**$100**	**$100**

Comments:

_____

_____

_____

over ⟶

Roadway Priorities:

How would you spend $100 on roads in the region?

	Your Funding
Construction of new roads (e.g. new route construction)	
Improvements to/expansion of existing roadways (e.g. road widening, added lanes/shoulders)	
Maintenance of existing roadways/structures (e.g. paving, bridge rehabilitation)	
Intersection and/or traffic signal improvements (e.g. added turn lanes, roundabouts, better signal timing)	
Total	**$100**

Comments:

Bicycle Priorities:

How would you spend $100 on bicycle facilities in the region?

	Your Funding
Add more bike lanes (e.g. Oak Hill Rd. in Evansville, 2nd St. in Henderson)	
Add more cycle tracks (e.g. North Main St. in Evansville)	
Add more shared use paths (e.g. Pigeon Creek Greenway, Henderson Riverwalk)	
Reduce lanes to add bicycle facilities (road diets) (e.g. Lincoln Ave. in Evansville)	
Total	**$100**

Comments:

Pedestrian Priorities:

How would you spend $100 on pedestrian facilities in the region?

	Your Funding
Expand sidewalk network (e.g. add to existing streets and new development)	
Repair existing sidewalks (e.g. fix cracked sidewalks, add/improve ramps)	
Crosswalk/signal improvements (e.g. add more crosswalks, increase crossing times)	
Expand shared use path/greenway facilities (e.g. Pigeon Creek Greenway, Henderson Riverwalk)	
Total	**$100**

Comments:

Transit Priorities:

How would you spend $100 on transit in the region?

	Your Funding
Expand service (e.g. add new routes, days, hours)	
Improve terminals/shelters (e.g. improve downtown terminals, add bus shelters)	
Improve service frequency (e.g. decrease one hour routes to 30 minute routes)	
Incorporate technology (e.g. mobile app, online/mobile fare payments, digital signage)	
Total	**$100**

Comments:

Thank you for your time and ideas!

Please mail or drop off to the address below. Scanned PDFs can be sent to the email below.

Evansville Metropolitan Planning Organization
1NW Martin Luther King Jr. Blvd., Room 316, Evansville, Indiana 47708
812-436-7833; www.evansvillempo.com; comments@evansvillempo.com

MTP 2045

Plan de Transporte Metropolitano

El Evansville Metropolitan Planning Organization, la agencia de planificación de transporte para el Área Urbanizada Evansville-Henderson (que abarca los condados de Henderson, Vanderburgh y Warrick), actualmente está actualizando el Plan de Transporte Metropolitano. El borrador del Plan en desarrollo será una guía para las mejoras de transporte hasta el año 2045. Tómese unos minutos para responder las siguientes preguntas y compartir sus sugerencias sobre el transporte en nuestra región. ¡Gracias!

Cuéntanos un poco sobre ti:

Vivo en _____ Condado:

- ☐ Henderson
- ☐ Warrick
- ☐ Vanderburgh
- ☐ Otro

Trabajo en _____ Condado:

- ☐ Henderson
- ☐ Warrick
- ☐ Vanderburgh
- ☐ Otro

Mi edad es:

- ☐ 0-19
- ☐ 20-24
- ☐ 25-44
- ☐ 45-64
- ☐ 65+

Mi modo más común de viajar es:

- ☐ Vehículo personal
- ☐ Tránsito (autobús u otro)
- ☐ Comparte coche/Vanpool
- ☐ Bicicleta
- ☐ Para caminar
- ☐ Otro

Según su modo de viaje más común, ¿qué mejora o proyecto tendría el mayor impacto positivo en su viaje diario? Sea específico, e incluya el nombre de la carretera y el condado si corresponde.

_____

_____

_____

_____

_____

Sus prioridades de transporte:

¿Cómo distribuiría un presupuesto de $ 100 para mejoras en el sistema de transporte en los condados de Vanderburgh, Warrick y Henderson? Puede asignar todos los $ 100 a un artículo, o dividir el dinero entre los artículos. A continuación proporcionamos algunos ejemplos.

Prioridades generales del modo de transporte: ¿Cómo gastaría $ 100 en la red de transporte de la región de Evansville / Henderson?

	Ejemplo 1	Ejemplo 2	Ejemplo 3	Su Financiamiento
Mejoras a/expansión de **carreteras**	$80	$25	$30	
Mejoras/adiciones a las instalaciones para **bicicletas**	$0	$50	$20	
Mejoras/adiciones a las instalaciones **peatonales**	$10	$10	$20	
Mejoras/expansión del **tránsito** (METS, HART, WATS)	$10	$15	$30	
Total	**$100**	**$100**	**$100**	**$100**

Comentarios:

_____

_____

_____

encima ⟶

Prioridades de la carretera:

¿cómo gastaría $ 100 en las carreteras de la región?

	Su Financiamiento
Construcción de nuevas carreteras (p. ej. nueva construcción de ruta)	
Mejoras/expansión de carreteras existentes (p.ej. ensanchar la carretera, agregar carriles / hombros)	
Mantenimiento de carreteras/estructuras existentes (p. ej. pavimentación, rehabilitación de puentes)	
Mejoras en intersecciones y/o señales de tráfico (p. ej. carriles de giro añadidos, rotondas, mejor sincronización de la señal)	
Total	**$100**

Comentarios:

Prioridades de la bicicleta:

¿cómo gastaría $ 100 en instalaciones para bicicletas en la región?

	Su Financiamiento
Agregue más carriles para bicicletas (p. ej. Oak Hill Rd. en Evansville, 2nd St. en Henderson)	
Añadir más pistas para bicicletas (p. ej. North Main St. en Evansville)	
Agregue más rutas de uso compartido (p. ej. Pigeon Creek Greenway, Henderson Riverwalk)	
Reduzca los carriles para agregar instalaciones para bicicletas (dietas en el camino) (p. ej. Lincoln Ave. en Evansville)	
Total	**$100**

Comentarios:

Prioridades peatonales:

¿Cómo gastaría $ 100 en instalaciones peatonales en la región?

	Su Financiamiento
Expandir la red de banquetas (p. ej. agregar a calles existentes y nuevos desarrollos)	
Reparar banquetas existentes (p. ej. arreglar aceras agrietadas, agregar/mejorar rampas)	
Mejoras a los cruces peatonales/señales (p. ej. agregue más cruces peatonales, aumente los tiempos de cruce)	
Expandir la ruta de uso compartido/instalaciones de vía verde (p. ej. Pigeon Creek Greenway, Henderson Riverwalk)	
Total	**$100**

Comentarios:

Prioridades de tránsito:

¿cómo gastaría $ 100 en tránsito en la región?

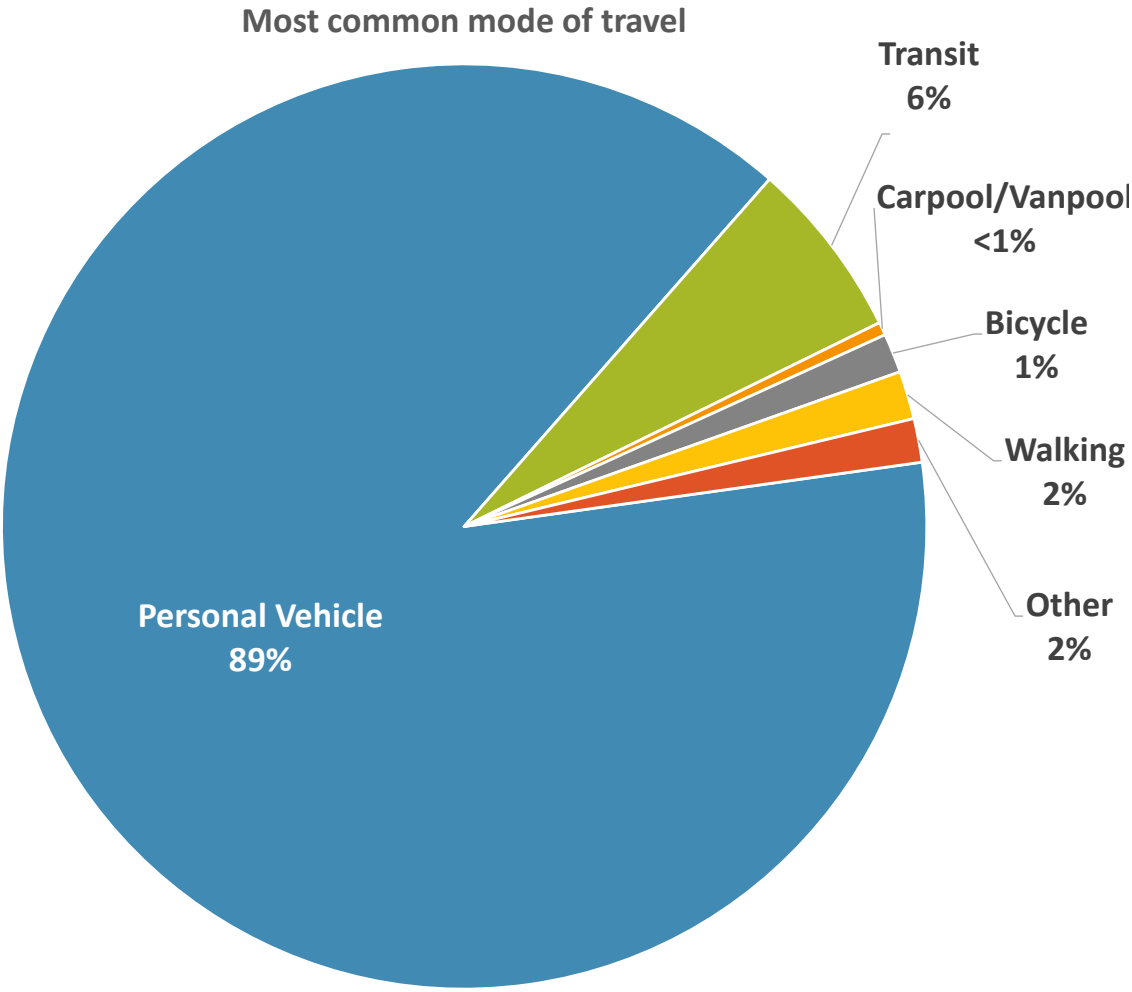
	Su Financiamiento
Expandir servicio (p. ej. agregar nuevas rutas, días, horas)	
Mejorar terminales/refugios (p. ej. mejorar las terminales del centro, agregar refugios de autobús)	
Mejorar la frecuencia del servicio (p. ej. disminuir rutas de una hora a rutas de 30 minuto)	
Incorporar tecnología (p. ej. aplicación móvil, pagos de tarifas en línea/móvil, señalización digital señalización)	
Total	**$100**

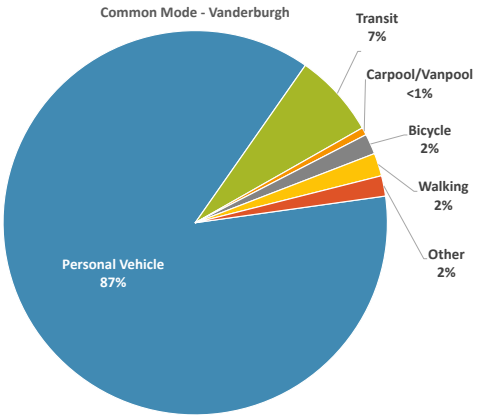
Comentarios:

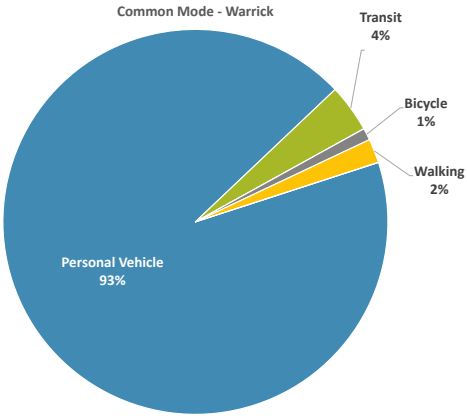
¡Gracias por tu tiempo e ideas!

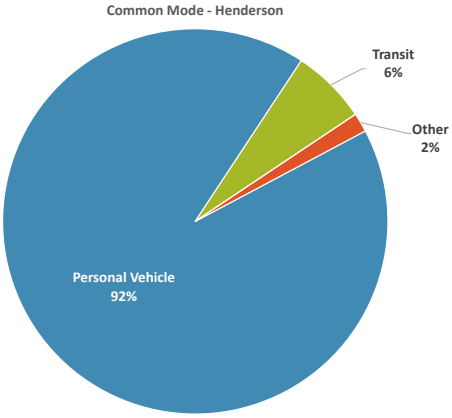
Envíe por correo o déjela a la dirección que se encuentra a continuación. Los PDF escaneados se pueden enviar al siguiente correo electrónico.

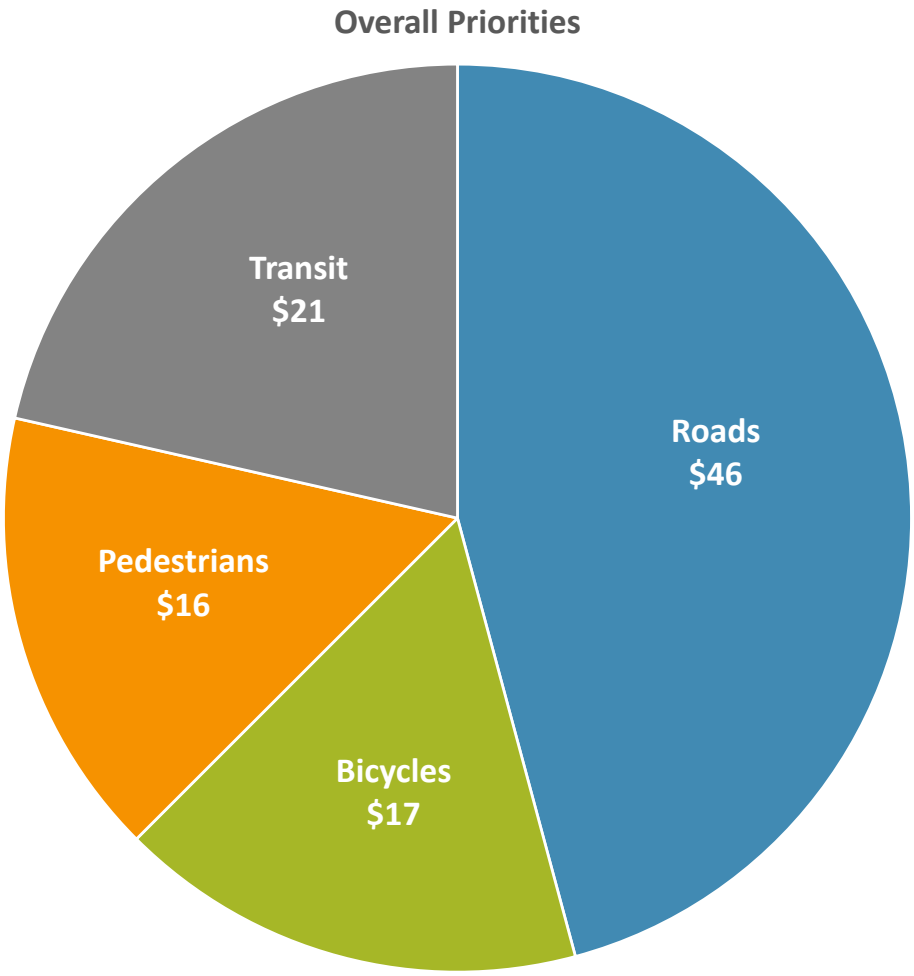
Evansville Metropolitan Planning Organization
1NW Martin Luther King Jr. Blvd., Room 316, Evansville, Indiana 47708
812-436-7833; www.evansvillempo.com; comments@evansvillempo.com

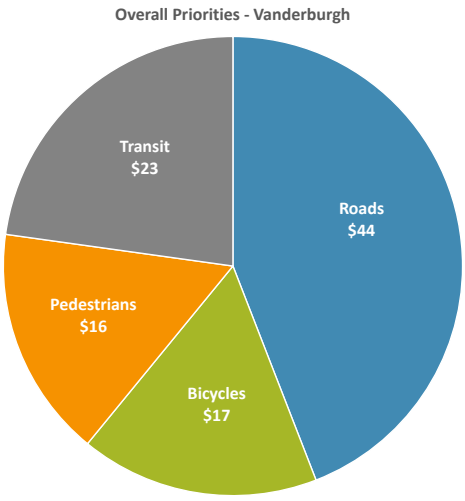

Most common mode of travel
Transit
6%
Carpool/Vanpool
<1%
Bicycle
1%
Walking
2%
Other
2%
Personal Vehicle
89%

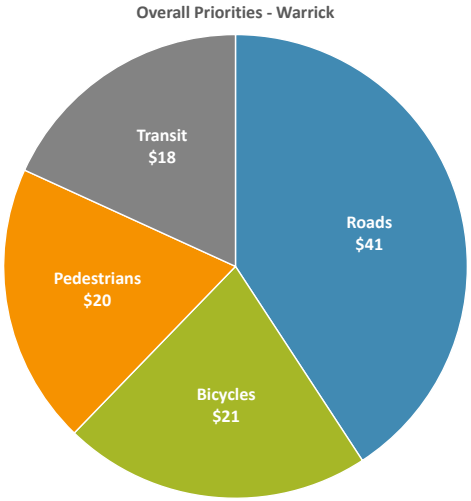

Common Mode - Vanderburgh
Transit
7%
Carpool/Vanpool
<1%
Bicycle
2%
Walking
2%
Other
2%
Personal Vehicle
87%

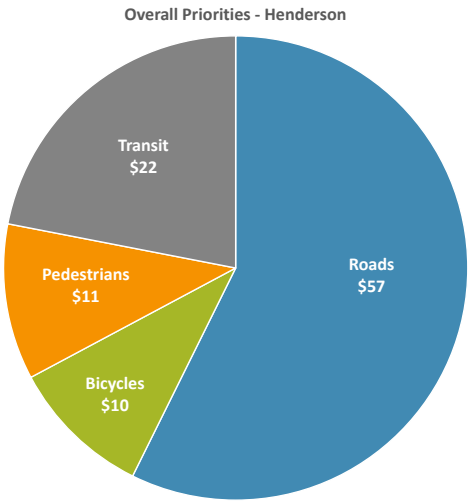

Common Mode - Warrick
Transit
4%
Bicycle
1%
Walking
2%
Personal Vehicle
93%

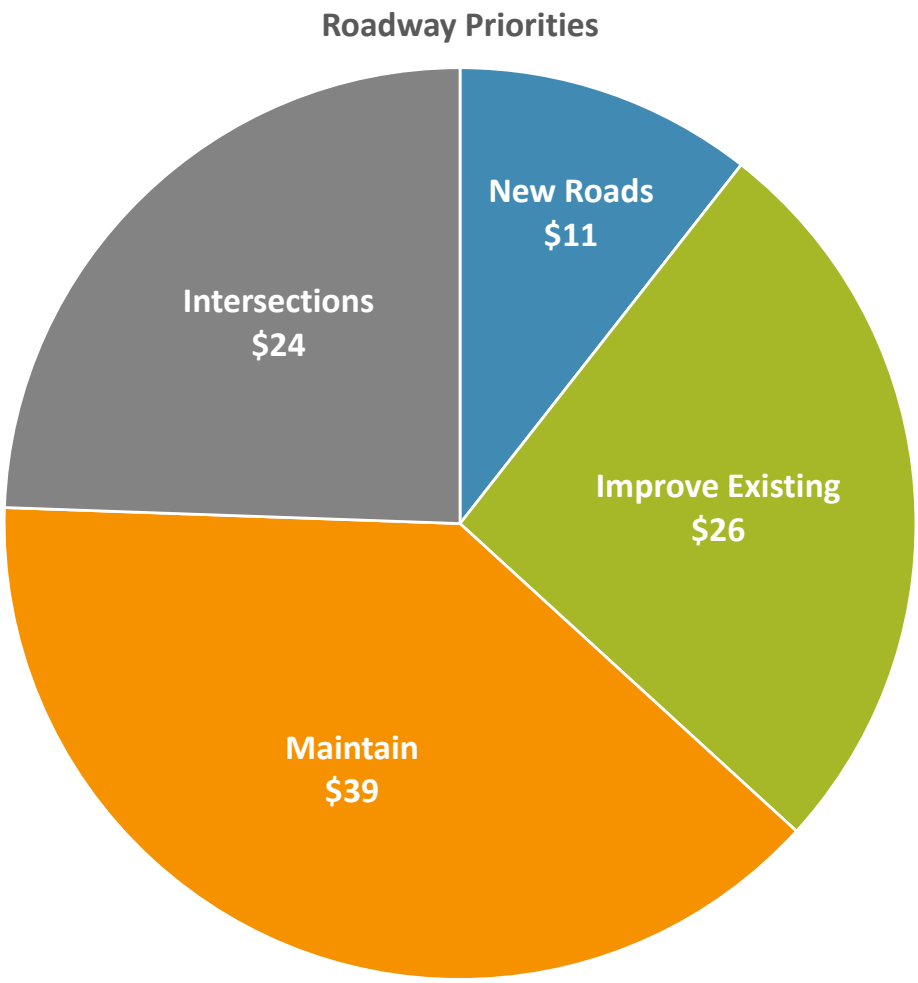

Common Mode - Henderson
Transit
6%
Other
2%
Personal Vehicle
92%

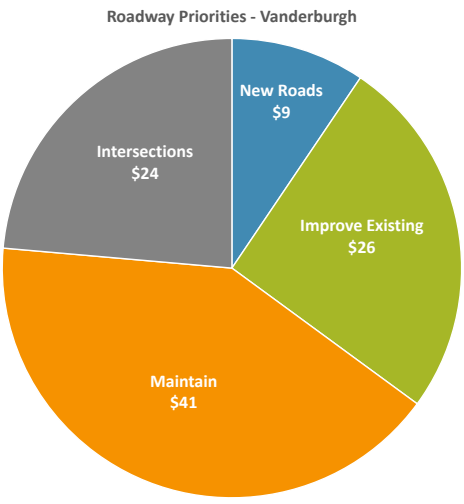

Overall Priorities
Transit
$21
Roads
$46
Pedestrians
$16
Bicycles
$17

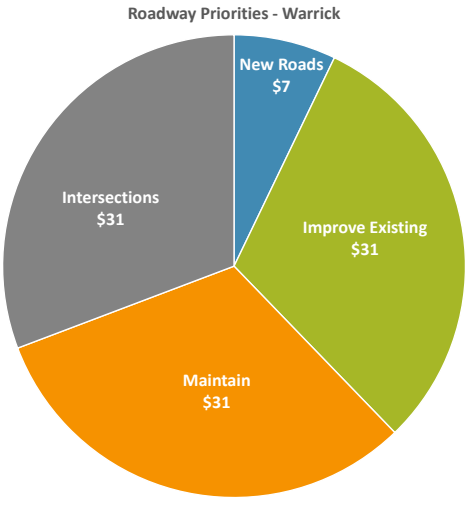

Overall Priorities - Vanderburgh
Transit
$23
Roads
$44
Pedestrians
$16
Bicycles
$17

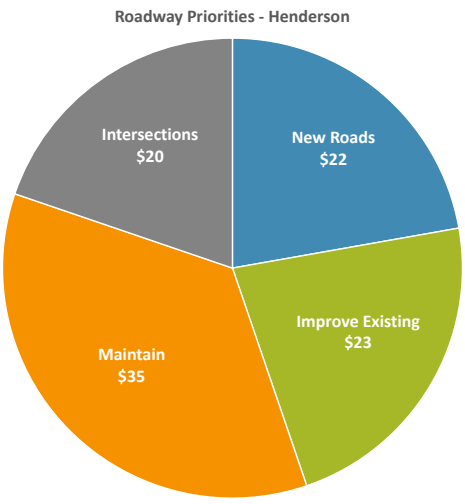

Overall Priorities - Warrick
Transit
$18
Roads
$41
Pedestrians
$20
Bicycles
$21

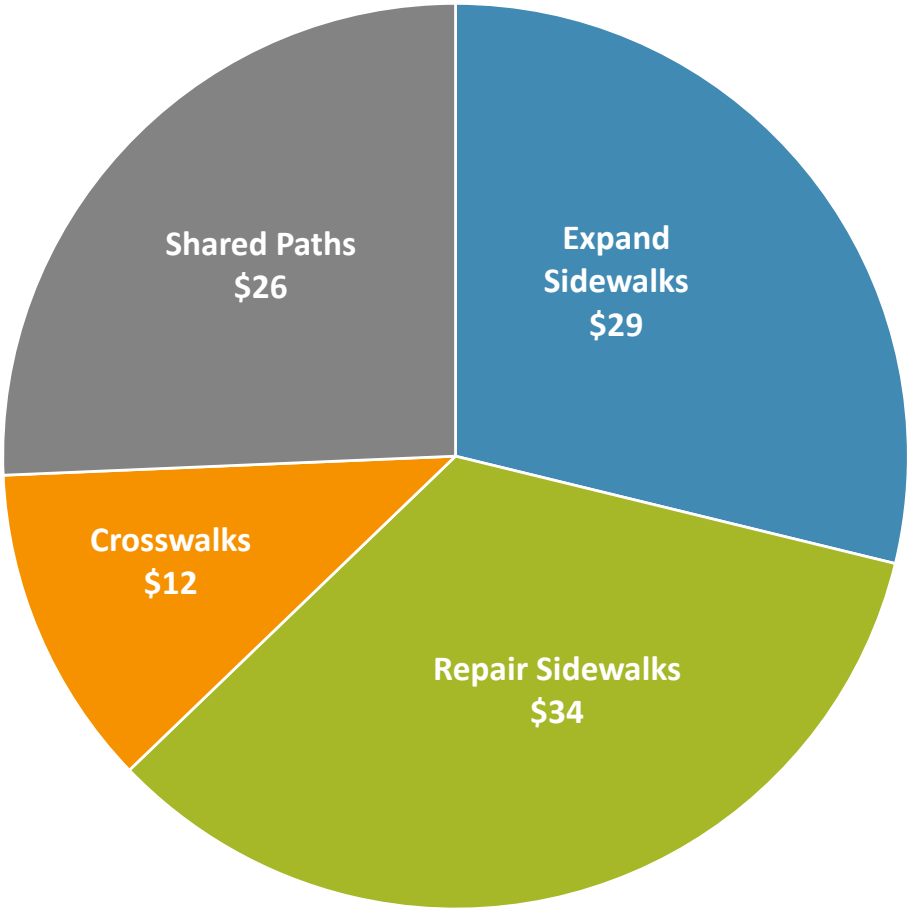

Overall Priorities - Henderson
Transit
$22
Roads
$57
Pedestrians
$11
Bicycles
$10

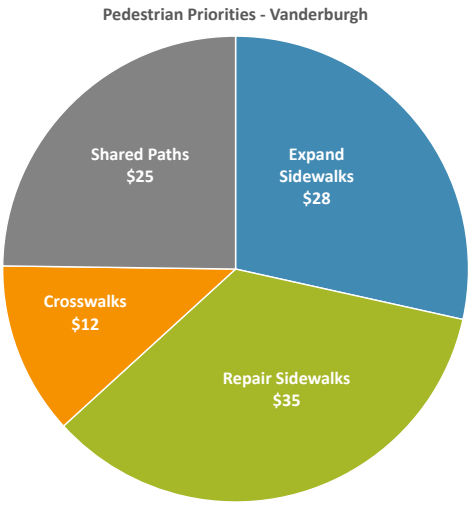

Roadway Priorities
New Roads
$11
Improve Existing
$26
Maintain
$39
Intersections
$24


Roadway Priorities - Vanderburgh
New Roads
$9
Improve Existing
$26
Maintain
$41
Intersections
$24


Roadway Priorities - Warrick
New Roads
$7
Improve Existing
$31
Maintain
$31
Intersections
$31


Roadway Priorities - Henderson
New Roads
$22
Improve Existing
$23
Maintain
$35
Intersections
$20


Pedestrian Priorities
Shared Paths
$26
Expand
Sidewalks
$29
Crosswalks
$12
Repair Sidewalks
$34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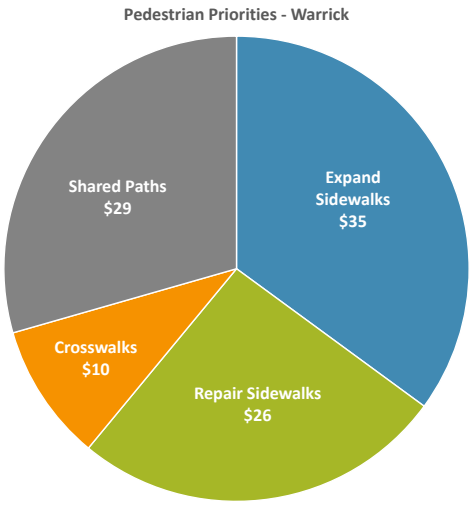
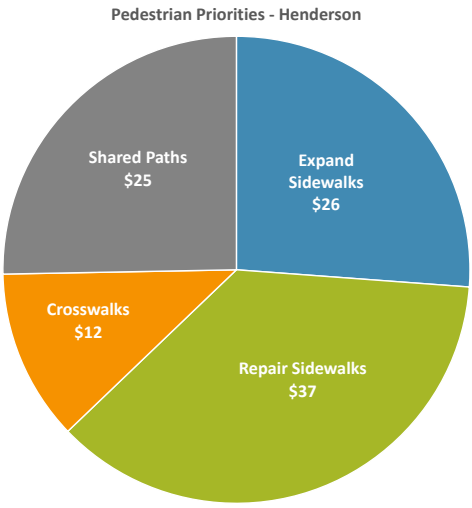
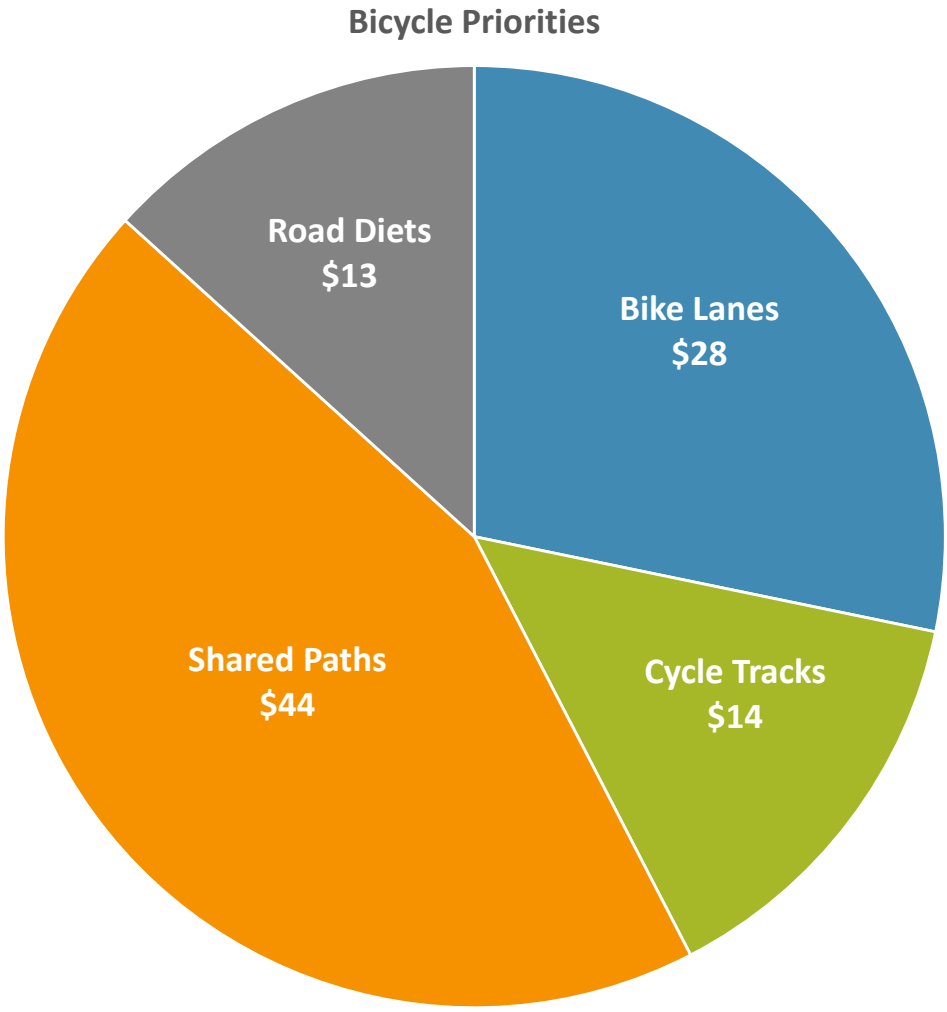
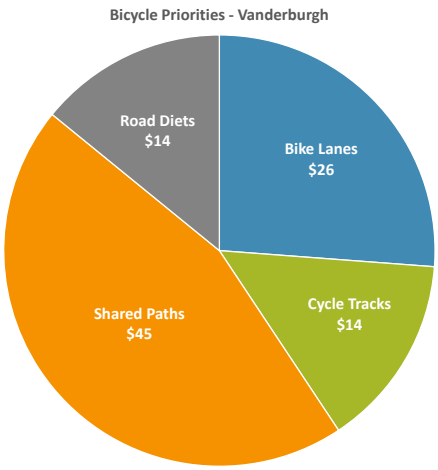
Shared Paths
$25
Expand
Sidewalks
$28
Crosswalks
$12
Repair Sidewalks
$35


Pedestrian Priorities - Warrick
Shared Paths
$29
Expand
Sidewalks
$35
Crosswalks
$10
Repair Sidewalks
$26


Pedestrian Priorities - Henderson
Shared Paths
$25
Expand
Sidewalks
$26
Crosswalks
$12
Repair Sidewalks
$37


Bicycle Priorities
Road Diets
$13
Bike Lanes
$28
Shared Paths
$44
Cycle Tracks
$14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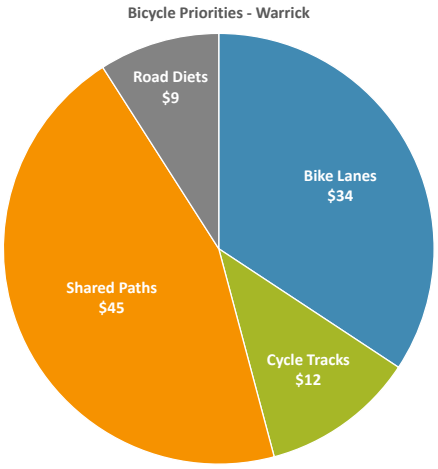
Road Diets
$14
Bike Lanes
$26
Shared Paths
$45
Cycle Tracks
$14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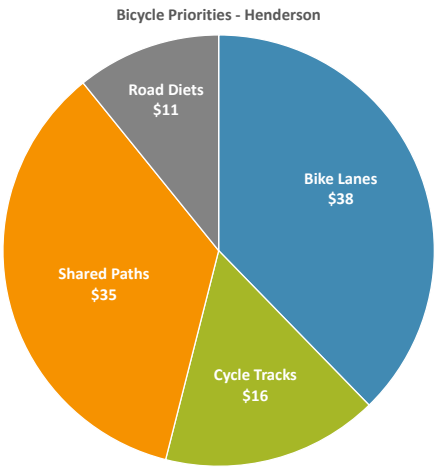
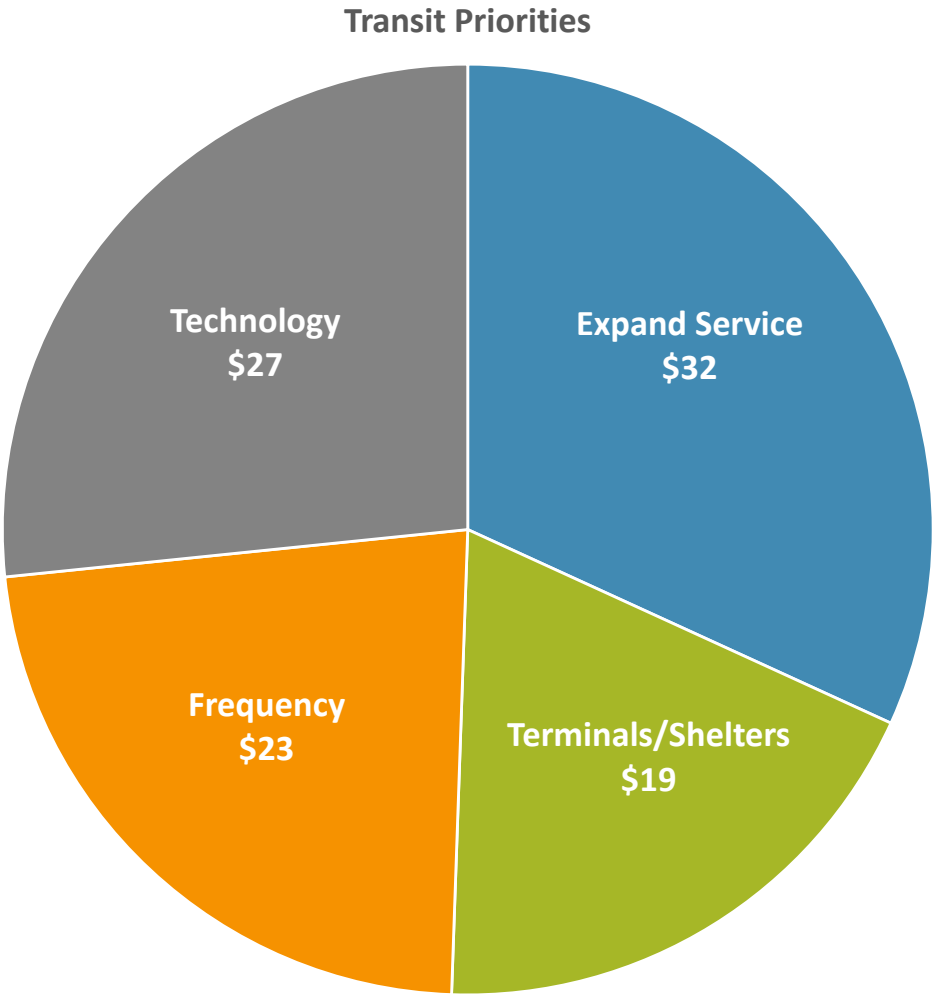
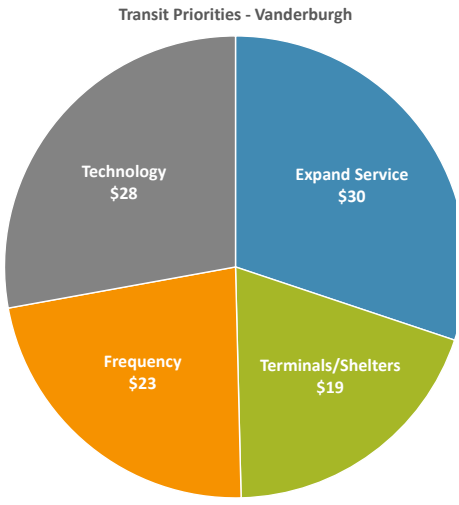
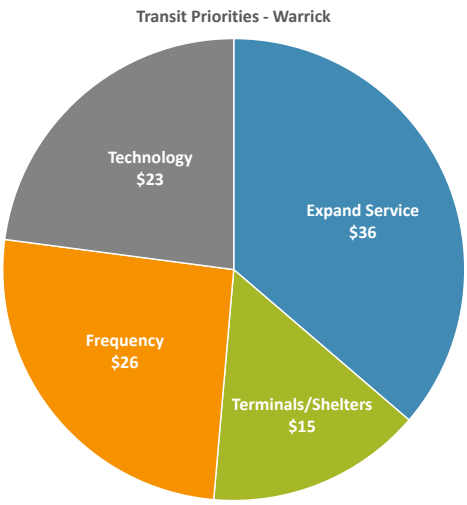
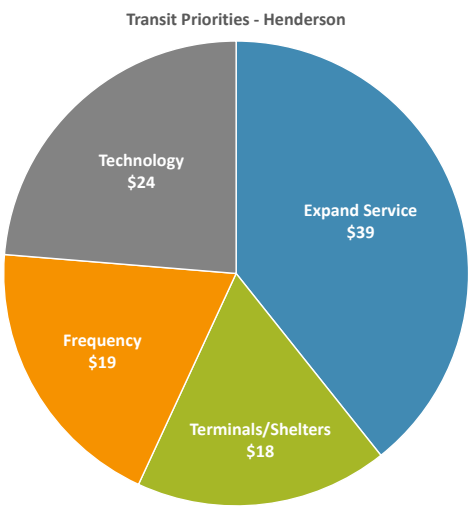
Road Diets
$9
Bike Lanes
$34
Shared Paths
$45
Cycle Tracks
$12


Bicycle Priorities - Henderson
Road Diets
$11
Bike Lanes
$38
Shared Paths
$35
Cycle Tracks
$16


Transit Priorities
Technology
$27
Expand Service
$32
Frequency
$23
Terminals/Shelters
$19


Transit Priorities - Vanderburgh
Technology
$28
Expand Service
$30
Frequency
$23
Terminals/Shelters
$19


Transit Priorities - Warrick
Technology
$23
Expand Service
$36
Frequency
$26
Terminals/Shelters
$15


Transit Priorities - Henderson
Technology
$24
Expand Service
$39
Frequency
$19
Terminals/Shelters
$18

Evansville MPO

Henderson • Vanderburgh • Warrick

MTP 2045

Metropolitan Transportation Plan

The Evansville Metropolitan Planning Organization (EMPO), the transportation planning agency for the Evansville-Henderson Urbanized Area (covering Henderson, Vanderburgh and Warrick counties), is currently updating the Metropolitan Transportation Plan. The draft Plan under development will be a guide for transportation improvements through the year 2045.

The EMPO is seeking your opinion on the region's transportation system and what you would like to see improved between today and 2045. We invite you to take a short survey. The results will be used to help prioritize projects and guide the overall development of the MTP 2045.

WHO: those that live or work in Vanderburgh, Warrick and Henderson counties

WHAT: a survey to provide your opinion on future transportation projects in the region

WHEN: February 20 - March 23

HOW:

online: bit.ly/mtp2045

in person: 1 NW Martin Luther King Jr Blvd.
Room 316 - Civic Center Complex
Evansville, Indiana 47708

Scan here with mobile device

Evansville MPO
Henderson • Vanderburgh • Warrick

MTP 2045

Plan de transporte metropolitano

El Evansville Metropolitan Planning Organization (EMPO), la agencia de planificación de transporte para el Área Urbanizada Evansville-Henderson (que abarca los condados de Henderson, Vanderburgh y Warrick), actualmente está actualizando el Plan de Transporte Metropolitano. El borrador del Plan en desarrollo será una guía para las mejoras de transporte hasta el año 2045.

El EMPO está buscando su opinión sobre el sistema de transporte de la región y lo que le gustaría ver mejorado entre hoy y 2045. Le invitamos a realizar una breve encuesta. Los resultados se usarán para ayudar a priorizar proyectos y guiar el desarrollo general del MTP 2045.

Quien: aquellos que viven o trabajan en los condados de Vanderburgh, Warrick y Henderson

Qué: una encuesta para proporcionar su opinión sobre futuros proyectos de transporte en la región

Cuando: 20 de febrero - 23 de marzo

Cómo:
en línea: bit.ly/mtp2045espanol
en persona: 1 NW Martin Luther King Jr Blvd.
Room 316 - Civic Center Complex
Evansville, Indiana 47708

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Evansville MPO

Henderson • Vanderburgh • Warrick

MTP 2045

Metropolitan Transportation Plan

The Evansville Metropolitan Planning Organization (EMPO), the transportation planning agency for the Evansville-Henderson Urbanized Area (covering Henderson, Vanderburgh and Warrick counties), is currently updating the Metropolitan Transportation Plan. The draft Plan under development will be a guide for transportation improvements through the year 2045.

The EMPO is seeking your opinion on the region's transportation system and what you would like to see improved between today and 2045. We invite you to take a short survey. The results will be used to help prioritize projects and guide the overall development of the MTP 2045.

WHO: those that live or work in Vanderburgh, Warrick and Henderson counties

WHAT: a survey to provide your opinion on future transportation projects in the region

WHEN: February 20 - March 23

HOW:

online: bit.ly/mtp2045

in person: Henderson Municipal Center
222 First Street
Henderson, KY 42420

Scan here with mobile device

Evansville MPO
Henderson • Vanderburgh • Warrick

MTP 2045

Plan de transporte metropolitano

El Evansville Metropolitan Planning Organization (EMPO), la agencia de planificación de transporte para el Área Urbanizada Evansville-Henderson (que abarca los condados de Henderson, Vanderburgh y Warrick), actualmente está actualizando el Plan de Transporte Metropolitano. El borrador del Plan en desarrollo será una guía para las mejoras de transporte hasta el año 2045.

El EMPO está buscando su opinión sobre el sistema de transporte de la región y lo que le gustaría ver mejorado entre hoy y 2045. Le invitamos a realizar una breve encuesta. Los resultados se usarán para ayudar a priorizar proyectos y guiar el desarrollo general del MTP 2045.

Quien: aquellos que viven o trabajan en los condados de Vanderburgh, Warrick y Henderson

Qué: una encuesta para proporcionar su opinión sobre futuros proyectos de transporte en la región

Cuando: 20 de febrero - 23 de marzo

Cómo:
en línea: bit.ly/mtp2045
en persona: Henderson Municipal Center
222 First Street
Henderson, KY 42420

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104.1 WIKY

EMPO collecting feedback for transportation plan

Monday, March 05, 2018 1:54 p.m. CST by Jordan Rowe

METS Downtown Bus Terminal (Source: WIKY)

The Evansville-Metropolitan Planning Organization (EMPO) is collecting feedback for a long-range transportation plan.

"And in order to develop the plan, the most important thing is to get public input," said Matt Schriefer, Transportation Planner.

Residents are asked to prioritize improvements to roads, sidewalks, bicycle trails and public transit.

"So we wanted to get an idea of what is most important to residents," Schriefer added.

The draft plan under development will be a guide for transportation improvements through 2045.

"Throughout the country, we are seeing increases in the number of people who want to use bicycle lanes, more sidewalks throughout the community and increased opportunities for transit," Schriefer said.

"And it's definitely hitting here in our region as well, as we try to push and promote for more facilities like that."

Click here (https://www.surveymonkey.com/r/mtp2045) to complete the survey.

Take a short survey about transportation in this area

Douglas White, The Gleaner Published 4:55 p.m. CT March 5, 2018

(Photo: File)

HENDERSON - If you have suggestions or ideas about how to make Henderson/Evansville area transportation better, then officials want to hear about them.

In at least two recent community forums, according to a news release from the city of Henderson, transportation services have been mentioned as an area to consider for improvement or expansion.

That's the kind of information that the Evansville Metropolitan Planning Organization (EMPO) is looking for as it updates its Metropolitan Transportation Plan.

EMPO, the transportation planning agency for the Evansville-Henderson Urbanized Area (covering Henderson, Vanderburgh and Warrick counties) is inviting residents to take a short survey to express opinions and ideas.

The draft plan under development will be a guide for transportation improvements through the year 2045.

The survey will allow residents to express their opinions on the region's transportation system and ideas about what should be improved between today and 2045.

The survey results will be used to help prioritize projects and guide the overall development of the MTP 2045.

EMPO will be collecting survey information through March 23.

Citizens can take it online at bit.ly/mtp2045 (http://bit.ly/mtp2045) OR in person in the lobby of the Henderson Municipal Center, 222 First St., Henderson, KY 42420.

Read or Share this story: https://www.thegleaner.com/story/news/2018/03/05/take-short-survey-transportation-area/397393002/

Opinions wanted for area's updated transportation plan

Published: Tuesday, March 6th 2018, 7:56 am CST
Updated: Tuesday, March 6th 2018, 7:56 am CST

Posted by Kara Mattingly, Producer CONNECT

Plans are in progress to update the area's Metropolitan Transportation Plan.

The Evansville Metropolitan Planning Organization put together a survey so the public can help locate areas of like and dislike.

The organization is looking for input from people in Vanderburgh, Henderson and Warrick Counties on things like roads on your daily drive and opinions on bike paths and pedestrian areas.

Organizers will look at those surveys and use answers as a guide for improvements over the next 20 years.

You can find the survey here. It's open until March 23.

It's also available for those who want to take it and need it in Spanish.

SKYVISION HD | ASK THE EXPERT | JOBS | BIRTHDAY CLUB | MADE IN THE TRI-STATE | A BETTER YOU

Evansville Metropolitan Planning Organization working on 2045 Transportation Plan

Published: Thursday, March 8th 2018, 6:45 pm CDT
Updated: Thursday, March 8th 2018, 6:48 pm CDT

By Kate O'Rourke, Reporter CONNECT

EVANSVILLE, IN (WFIE) - We are hearing from the people planning the future of transportation in the Tri-State. The Evansville Metropolitan Planning Organization is asking for your help by filling out a survey with what you want to see.

Every four to five years, the Evansville MPO is required to update the regional transportation plan that covers Henderson, Vanderburgh, and Warrick counties. The goal is to see how to better connect the three counties with what the public wants to see.

Options include improvements to roads, bike, pedestrian paths, and bus routes. They are also looking at how to better connect these modes of transportation within the three counties. The short survey asks things like where you live and work, your age, and your priorities when it comes to transportation options. While we are still decades away from 2045, organizers say it is crucial to start planning now.

"So we also have short range projects that are in there. Every couple of years, we update our short-range project. If we're not updating for what we want to spend our money over time, by the time 2045 gets here we won't be on track. We need to work our way up to 2045 and always be updating our short-range plans to be able to reach our long-term goals," says Evansville MPO Transportation Planner Matthew Schriefer.

They are halfway through the survey period and have about 400 responses so far. They are hoping to double that number.

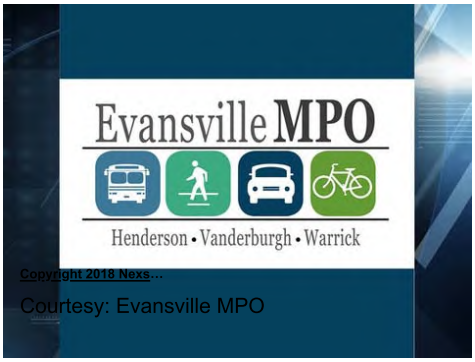
If you live or work in Henderson, Vanderburgh, or Warrick counties you are eligible.

The survey is open through March 23 and is offered in English and Spanish.

Tristate homepage.com

EMPO updating Metropolitan Transportation Plan

Posted: Mar 05, 2018 12:10 PM CST
Updated: Mar 05, 2018 12:10 PM CST



Courtesy: Evansville MPO

The Evansville Metropolitan Planning Oragnization (EMPO), the transportation planning agency for the Evansville-Henderson area is currently updating the Metropolitan Transportation Plan.

The area covers Henderson, Vanderburgh, and Warrick counties.

The draft plan under development will be a guide for transportation improvements through the year 2045.

The EMPO is seeking your opinion on the region's transportation system.

Click here to take the survey, which is open through March 23.

For the latest breaking news and stories from across the Tri-State, follow Eyewitness News on Facebook and Twitter.

(This story was originally published on March 5, 2018)

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D PUBLIC COMMENT

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Performance Based Planning and Programming

"The metropolitan transportation planning process shall provide for the establishment and use of a performance-based approach to transportation decision making to support national goals….." (23 USC Section 134(h)(2); 49 USC Section 5303(h)(2)).

The primary goal of the Transportation Planning Process is to develop a safe, cost-effective transportation system that ensures mobility to all persons, enhances the quality of life in the region, supports planned growth, promotes economic development, and preserves the integrity and enhances the vitality of the human and natural environment. To achieve this FHWA, FTA and their partners have developed the Performance Based Planning and Programming (PBPP) process. This process uses data to help assess the effectiveness of plans and programs in meeting state and regional performance of goals.

As currently defined by these federal agencies, the PBPP includes the following:

- **Visioning** is the strategic planning process, focused on setting goals and objectives. This may include scenario planning. These efforts would take into account national goal areas and any state or regional goals, as appropriate.
- **Program Area Planning** includes specific plans for key program areas. Some of these are now required efforts, such as the Strategic Highway Safety Plan (SHSP) and Congestion Management Process (CMP). In other areas, there are no specific planning products currently required, though planning efforts take place, sometimes informally, in these areas. At this level, national and state or regional performance measures are identified and addressed and needs are defined.
- **Long-Range Transportation Plans** (MTP) bring together all of an agency's planning efforts to present a comprehensive look at the transportation system. In many State Departments of Transportation, these plans provide broad policy statements which may address transportation system needs and possibly funding levels and constraints.
- **Transportation Improvement Programs** (TIP) are the result of the metropolitan and statewide planning processes that leads to specific projects. These would be linked to Long-Range Plans through performance based resource allocation.
- **Program and Service Delivery Plans** include a wide range of design and other project delivery products and processes.
- **Performance Reporting, Monitoring, and Evaluation** is a reporting requirement that includes descriptions of the performance of each national goal area.

The anticipated outcomes of utilizing a performance based planning process, including the prescribed performance measures and INDOT/MPO target setting, is to achieve a higher level of system performance. The anticipated outcomes of the PBPP are numerous and while most are included in the following list, it is unlikely the list is all inclusive.

E PERFORMANCE MEASURES & TARGETS

Federally Required Performance Measures

Current federal transportation legislation requires MPOs, in collaboration with the state DOT and transit agencies, to formally establish targets for performance measures aligned with seven identified national goals:

1. **Safety** – to achieve a significant reduction in traffic fatalities and serious injuries on all public roads
2. **Infrastructure condition** – to maintain the highway infrastructure asset system in a state of good repair
3. **Congestion reduction** – to achieve a significant reduction in congestion on the National Highway System
4. **System reliability** – to improve the efficiency of the surface transportation system
5. **Freight movement and economic vitality** – to improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
6. **Environment sustainability** – to enhance the performance of the transportation system while protecting and enhancing the natural environment
7. **Reduced project delivery delays** – to reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices

What is PBPP?

PBPP refers to the application of performance management within the federally-required regional planning and programming processes to achieve desired performance outcomes for the multimodal transportation system. PBPP is intended to ensure that transportation investment decisions are made — both in the long-term planning and medium-term programming of projects – based on their ability to meet established goals. Implementation of PBPP is done within the Transportation Performance Management (TPM) framework which includes setting targets for the performance measures identified in the federal legislation. Figure E.1 shows how PBPP and TPM work together.

Federal Transportation Performance Management

The following national performance measures were established by MAP-21 and carried forward under the FAST Act:

- For the National Highway Performance Program (NHPP):
  - Pavement conditions on the Interstate system and remainder of the National Highway System (NHS)
  - Bridge conditions on the NHS
  - Performance of the Interstate system and remainder of the NHS
- For the Highway Safety Improvement Program (HSIP):
  - Number and rate per vehicle mile traveled of fatalities
  - Number and rate per vehicle mile traveled of serious injuries
- For the Congestion Mitigation and Air Quality (CMAQ):
  - Traffic congestion (currently for areas with population over 1 Million)
  - On-road mobile source emissions
- Freight movement on the Interstate system
- Public Transportation:
  - State of good repair
  - Safety

Federal planning regulations identify performance measures to help determine how well the regional transportation system is meeting national policy goals and the public's expectations. These measures are central to implementing a performance-based planning process that guides investment decisions. This strategic, structured approach relies on performance measurement to reach decisions that fulfill performance outcomes.

Performance measures are intended to:

- clarify the definition of the goals,
- monitor and track performance over time,
- provide a reference for target setting,
- provide a basis for supporting policy and investment decisions by comparing alternative options, and
- allow the ability to assess the effectiveness of projects and strategies.

Figure E.1: FHWA PBPP and TPM

PBPP and TPM: Bringing It All Together

PBPP Framework	PBPP Element	TPM Framework	TPM Elements
Strategic Direction *(Where do we want to go?)*	Goals and Objectives Performance Measures	National Goals Measures	Goals and Objectives Performance Measures
Performance Based-Planning (Analysis) *(How are we going to get there?)*	Identify Targets and Trends Identify Strategies Develop Strategy/Investment Priorities *Results in long-range plans*	Targets Plans	Targets: Technical Approach and Business Process Strategy Identification Investment Prioritization
Performance Based-Programming *(What will it take?)*	Investment Plan Resource Allocation Program of Projects	Plans	Programming Within Program Areas Programming Across Program Areas
Implementation and Evaluation *(How did we do?)*	Reporting Monitoring Evaluation	Reports Accountability Transparency	Monitoring & Adjustment (System, Program, Project) Reporting & Communication (Internal & External)
Cross-Cutting Elements *(Apply to Entire Framework)*	Public Involvement Data Management Data Analysis		Organizational Culture External Collaboration & Coordination Data Management Data Usability & Analysis

U.S. Department of Transportation
Federal Highway Administration

10

Source: fhwa.dot.gov/tpm/workshop/az/planning.pdf

Establishment of Targets by the MPO

For each performance measure identified in paragraph (c) of section (23 CFR 490.105 (f)(3)), except the CMAQ Traffic Congestion measures in paragraph (f)(5) of this section, and MPOs meeting the criteria under paragraph (f)(6)(iii) of this section for Total Emissions Reduction measure, the MPOs shall establish targets by either:

1. Agreeing to plan and program projects so that they contribute toward the accomplishment of the relevant State DOT target for that performance measure; or
2. Committing to a quantifiable target for that performance measure for their metropolitan planning area.

The Evansville MPO has opted to support the state DOT's (INDOT and KYTC) targets by planning and programming projects that will contribute toward the accomplishment of those targets. This proposal was approved by the MPO's Policy Board on November 8, 2018.

State Performance Targets

USDOT has implemented the federal PBPP requirements through a number of rulemakings released in several phases. At the conclusion of the rulemaking process, states had twelve months to establish statewide performance targets for the federal performance measures, after which MPOs had up to 180 days to establish regional performance targets. Visit fhwa.dot.gov/tpm/rule.cfm for a complete set of the performance

management final rules. Calculations of targets including use of particular data sources, are specified in each final rule.

In addition to the timelines for the establishment of the performance targets by the State DOTs and MPOs, the final rules also include the associated reporting requirements. All baseline targets have been established and are presented in the following sections. Baseline performance reports required by the regulations were submitted by INDOT and KYTC to FHWA by the associated deadlines. Additional reports representing midpoint and conclusion of each performance period will be submitted by the State DOTs as required. Future transportation plans will include a report evaluating the system performance with respect to the performance targets.

Safety

- **Number of Fatalities:** The total number of persons suffering fatal injuries in a motor vehicle crash during a calendar year based on the Fatality Analysis Reporting System (FARS) database.
- **Rate of Fatalities:** The ratio of total number of fatalities to the number of vehicle miles traveled (VMT, in 100 Million VMT) in a calendar year. The state DOT provide the data source for VMT.
- **Number of Serious Injuries:** The total number of persons suffering at least one serious injury in a motor vehicle crash during a calendar year. This data source is either obtained from the State Police crash reporting system ARIES in Indiana) or the DOT (KYTC for Kentucky).
- **Rate of Serious Injuries:** The ratio of the total number of serious injuries to the number of VMT (in 100 Million VMT) in a calendar year.

Table E.1: Safety Targets

2019 Safety Targets	INDOT	KYTC
Number of Fatalities	889.6	737
Number of Serious Injuries	3,501.9	2,991
Fatality Rate (per 100M VMT)	1.087	1.50
Serious Injury Rate (per 100M VMT)	4.234	6.070
Number of Non-Motorized Fatalities and Serious Injuries	393.6	276.0

- **Number of Non-motorized Fatalities and Non-motorized Serious Injuries:** The combined total number of non-motorized fatalities and serious injuries during a calendar year. The data sources for fatalities is FARS and the data source for serious injuries is again the state police crash reporting system or the state DOT. Non-motorized transportation may include pedestrian, bicyclist, other cyclist or person on personal conveyance.

Baseline data are calculated using a 5-year rolling average. Table E.1 shows the most recent Safety targets established by INDOT and KYTC.

Infrastructure Condition

The Federal Highway Administration has established performance measures for state DOTs to use in managing pavement and bridge performance on the NHS. Figure E-2 shows the NHS in the Evansville region.

Bridges

These performance measures apply to all bridges carrying the National Highway System (NHS) including on- and off-ramps. DOTs must establish statewide 2- and 4-year targets. The condition is measured based on deck area. The classification is based on the National Bridge Inventory (NBI) condition ratings for item 58 – Deck, 59 – Superstructure, 60 – Substructure, and 62 – Culvert. The condition is determined by the lowest rating of deck, superstructure, substructure, or culvert. If the lowest rating is greater than or equal to 7, the bridge is classified as good; if it is less than or equal to 4, the classification is poor. The performance measures are:

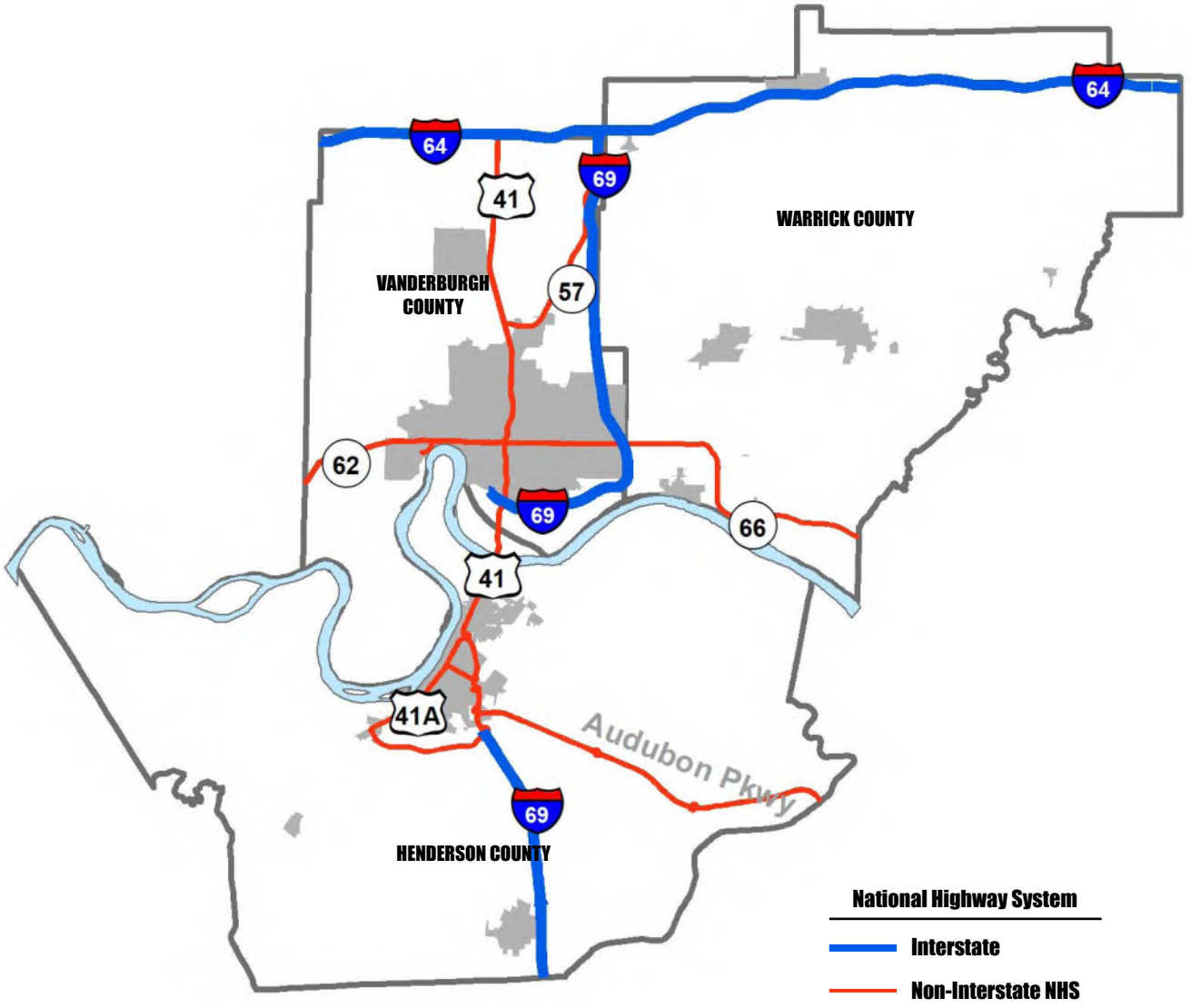
- **Percent of NHS bridges by deck area classified in Good condition**
- **Percenter of NHS bridges by deck area classified in Poor condition**

The initial Bridge performance targets established by INDOT and KYTC are shown in Table E.2.

Table E.2: Bridge Condition Targets

	INDOT		KYTC	
Bridge Condition Targets	2-yr	4-yr	2-yr	4-yr
Percent of NHS bridges by deck area classified in Good condition	48.32	48.32	35.0	35.0
Percent of NHS bridges by deck area classified in Poor condition	2.63	2.63	3.7	3.2

Figure E.2: National Highway System



Pavement

The state DOTs are required to collect data for interstate and non-interstate NHS pavements that conform to the final rule (IRI, Rutting, Cracking percentage, Faulting, and Inventory), regardless of ownership, and establish 2- and 4-year targets for the following performance measures:

- **Percentage of Interstate pavements in Good condition**
- **Percentage of Interstate pavement in Poor condition**
- **Percentage of non-Interstate NHS pavement in Good condition**
- **Percentage of non-Interstate NHS pavements in Poor condition**

Table E.3 shows the initial Pavement performance targets established by INDOT and KYTC.

Table E.3: Pavement Condition Targets

	INDOT		KYTC	
Pavement Condition Targets	**2-yr**	**4-yr**	**2-yr**	**4-yr**
Percent of Interstate pavements in Good Condition	84.24	84.24		50.0
Percent of Interstate pavements in Poor condition	0.80	0.80		3.0
Percent of non-Interstate NHS pavements in Good condition	78.71	78.71	35.0	35.0
Percent of non-Interstate NHS pavements in Poor condition	3.10	3.10	6.0	6.0

System Reliability

Level of Travel Time Reliability (LOTTR)

This is a measurement of travel time reliability on the Interstate and non-Interstate NHS. This is calculated as the ratio of the longer travel times (80th percentile) to a "normal" travel time (50th percentile), using data from FHWA's National Performance Management Research Data Set (NPMRDS) or equivalent. Data are collected in 15-minute segments during all time periods between 6 a.m. and 8 p.m. local time. The measures are the percent of person-miles traveled on the relevant portion of the NHS that are reliable. Person-miles take into account all users of the NHS.

DOTs must establish 2- and 4-year targets with the option to adjust 4-year targets in their mid-performance period progress report.

Table E.4 shows the initial Travel Time Reliability performance targets established by INDOT and KYTC.

Table E.4: Travel Time Reliability Targets

	INDOT		KYTC	
Travel Time Reliability Targets (% person miles reliable)	**2-yr**	**4-yr**	**2-yr**	**4-yr**
Level of Travel Time Reliability on Interstates	90.5	92.8	93.0	93.0
Level of Travel Time Reliability on non-Interstate NHS		89.8		82.5

Freight Reliability

This is the measurement of truck travel time reliability on the Interstate System. The intent of the measure is to consider factors that are unique to the roadway freight industry, such as the use of the system during all hours of the day and the need to consider more extreme impacts to the system in planning for on-time arrivals. State DOTs must establish 2- and 4-year targets with the option to adjust 4-year targets in the mid-performance period progress report. Freight reliability will be assessed by the TTTR Index (Truck Travel Time Reliability Index). Reporting is divided into five periods: morning peak (6-10 a.m.), midday (10 a.m.-4 p.m.); and overnights for all days (8 p.m.-6 a.m.). The TTTR ratio is generated by dividing the 95th percentile time by the normal time (50th percentile) for each segment. The TTTR Index is generated by multiplying each segment's largest ratio of the five periods by its length, then dividing the sum of all length-weighted segments by the total length of Interstate. Needed data is available in the FHWA's National Performance Management Research Data Set (NPMRDS) or equivalent dataset.

Table E.5 shows the initial Truck Travel Time Reliability performance targets established by INDOT and KYTC.

Table E.5: Truck Travel Time Reliability Targets

	INDOT		KYTC	
Truck Travel Time Reliability Targets (Index)	**2-yr**	**4-yr**	**2-yr**	**4-yr**
Truck Travel Time Reliability on Interstates	1.27	1.24	1.25	1.25

Congestion

Non-Single Occupancy Vehicle (SOV) Travel and Peak Hour Excessive Delay Measures

These are the measure of non-SOV travel and annual hours of peak hour excessive delay per capita. Currently the rule applies to urbanized areas of more than 1 million people that are also in nonattainment or maintenance areas for ozone, carbon monoxide or particulate matter. Beginning in January 1, 2022, the population threshold changes to areas of more than 200,000. All States and MPOs with NHS mileage that overlaps within an applicable urbanized area must coordinate on a single, unified target and report on the measures for that area. There are no targets that affect the EMPO for these performance measures at this time.

Air Quality

On-Road Mobile Source Emissions

This measure aids in the assessment of the Congestion Mitigation and Air Quality Improvement (CMAQ) Program through measurement of total emissions reduction of on-road mobile source emissions. State DOTs whose geographic boundaries include any part of a nonattainment or maintenance area for ozone, carbon monoxide, or particulate matter will establish separate targets for each of these applicable criteria pollutants and precursors. Total emissions reduction is calculated by summing 2- and 4-year totals of emissions reductions of applicable criteria pollutant and precursor, in kilograms per day, for all projects funded with CMAQ funds.

Table E.6 shows the initial On-Road Mobile Source Emissions performance targets established by INDOT and KYTC.

Table E.6: On-Road Mobile Source Emissions

	INDOT		KYTC	
On-Road Mobile Source Targets (kg/day)	2-yr	4-yr	2-yr	4-yr
CMAQ volatile organic compounds (VOC)	1,600.00	2,600.00	100.00	200.00
CMAQ carbon monoxide (CO)	200.00	400.00		
CMAQ oxides of nitrogen (NO_x)	1,600.00	2,200.00	100.00	200.00
CMAQ project reduction particulate matter less than 10 microns (PM_{10})	0.30	0.50		
CMAQ project reduction particulate matter less than 2.5 microns ($PM_{2.5}$)	20.00	30.00		

Transit Asset Management (TAM)

The FTA published this final rule on July 26, 2016 which defines the term "state of good repair", requires public transportation providers to develop and implement a transit asset management (TAM) plan, and establishes state of good repair standards and performance measures. The MPO worked with METS and HART to develop a group TAM Plan, which defines the TAM Performance Measures (Table E.7) and identifies TAM Targets (Table E.8).

Table E.7: TAM Performance Measures

Asset Class	Performance Measure	Defnition
Rolling Stock All revenue vehicles	Age	% of revenue vehicles that have met or exceeded their Useful Life Benchmark (ULB)
Equipment Non-revenue vehicles	Age	% of non-revenue vehicles that have met or exceeded their Useful Life Benchmark (ULB)
Facilities All buildings or structures	Condition	% of facilities with a condition rating below 3.0 on FTA's Transit Economic Requirements Model (TERM) Scale

Table E.8: TAM Targets

Asset Class			2017 Performance Metrics (% exceeding ULB)	2018 Target (% exceeding ULB)
Rolling Stock All revenue vehicles	Bus	METS	32%	20%
		HART	0%	0%
		Combined	32%	20%
	Cutaway	METS	58%	42%
		HART	13%	13%
		Combined	47%	34%
Equipment Non-revenue vehicles	Service Vehicles	METS	93%	93%
		HART	67%	67%
		Combined	89%	89%
Facilities All buildings or structures		METS	0%	0%
		HART	0%	0%
		Combined	0%	0%

Public Transportation Safety Program

The Public Transportation Safety Program final rule published on August 11, 2016 established substantive and procedural rules for FTA's administration of a comprehensive safety program to improve the safety of the nation's public transportation systems. It provides the framework for FTA to monitor, oversee and enforce transit safety, based on the methods and principles of Safety Management Systems (SMS).

The Public Transportation Agency Safety Plan (PTASP) Final Rule was published on July 19, 2018. This rule requires public transportation operators to develop safety plans that include the processes and procedures to implement SMS, as well as safety performance measures. Safety plans and targets must be completed by July 20, 2020.

Locally Established Performance Measures

In addition to the performance measures required by the FHWA and FTA, the MPO has developed performance measures to track progress towards attaining goals and objectives. Some of the goals and objectives developed during the MTP planning process do not have Federal performance measures that could be associated with them. This is particularly the case for objectives pertaining to improvements to the bike, pedestrian, and transit networks. See the goals and objectives table in Chapter 5 for a list of performance measures developed by the MPO.

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F CONNECTIVITY & ACCESSIBILITY

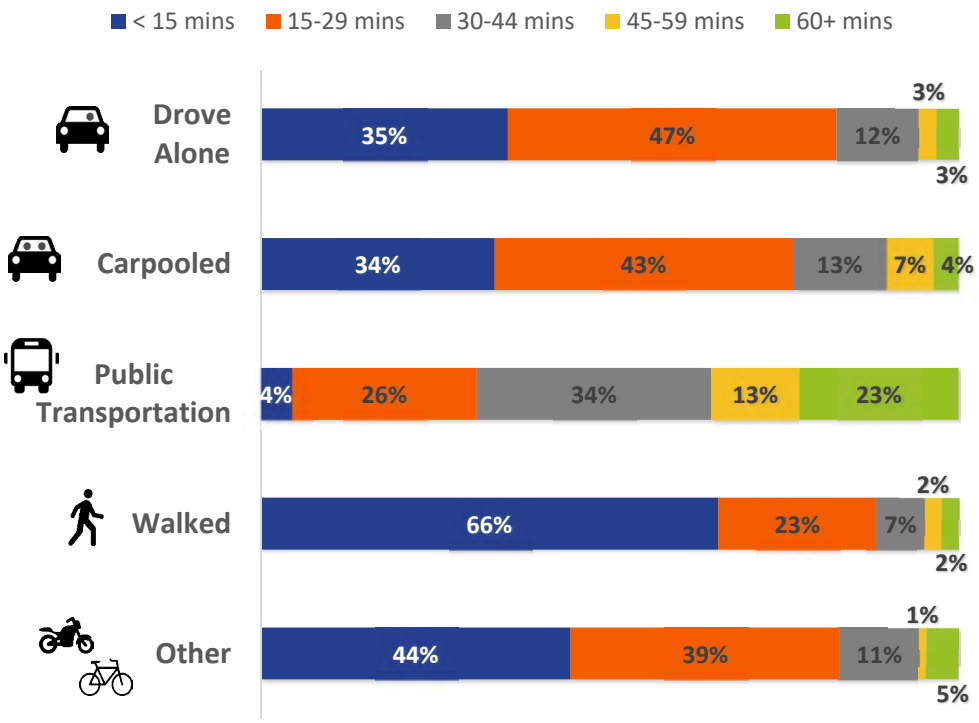
A connected and accessible transportation network plays an important role in a region's quality of life. A transportation network that links multiple modes and is well connected to a variety of land uses (residential, commercial, recreational, etc.) provides greater mobility for residents of the region. A multi-modal and well connected transportation network helps residents and goods move throughout the region and beyond.

Road Network

An extensive road network in the Evansville MPA provides good connectivity between all of the incorporated cities and towns in the area. At the regional level, the established network facilitates travel to major regional cities such as St. Louis, MO, Indianapolis, IN, Louisville, KY and Nashville, TN within three hours. It also provides easy access between residential areas, major employers, commercial centers, and recreational areas located in all three counties. As a result, roadway users can see reliable commute times in the region. This is demonstrated by the short average commute times as shown in Figure F.1.

Although the extensive road network within the Evansville MPA provides reasonably secure connectivity and reliable access, deficiencies remain that provide opportunities to secure greater network distribution and redundancy. Currently, there are only two east-west thoroughfares (Lloyd Expressway and Morgan/Diamond Avenues)

Figure F.1:
2016 Commute Time



that connect populated areas in Warrick and Vanderburgh counties. Similarly, current access between the Indiana and Kentucky portions of the MPA is provided by the US Highway 41 twin bridges across the Ohio River. The limited alternative routes make daily commuters within the MPA vulnerable to delayed commute times and hazardous travel conditions if there is an incident on these routes.

Transit

A connected and easily accessible transit route is also vital to getting residents to work, school and shopping. Many residents choose transit as their primary means of transportation for a variety of reasons. Some residents use transit as a backup to their personal vehicle in case of a breakdown or family members sharing a vehicle.

Proximity to a transit route is a major factor in determining transit use. Generally, one-fourth of a mile is an acceptable distance people are willing to walk to access public transportation. Connectivity to work, shopping, and everyday needs is also important in increasing the number of residents willing to use public transportation. Table F.1 shows the number of people and jobs within one-fourth and one-half of a mile of a transit route. Figures F.2 through F.4 shows this buffer for each of the transit agencies in the region.

Connections between transit routes and transit systems is vital for people to get around by public transportation, but connections to the roadway network, bicycle facilities, and sidewalks is just as important. Biking or walking is necessary to get people to a bus stop and from the bus stop to their final destination.

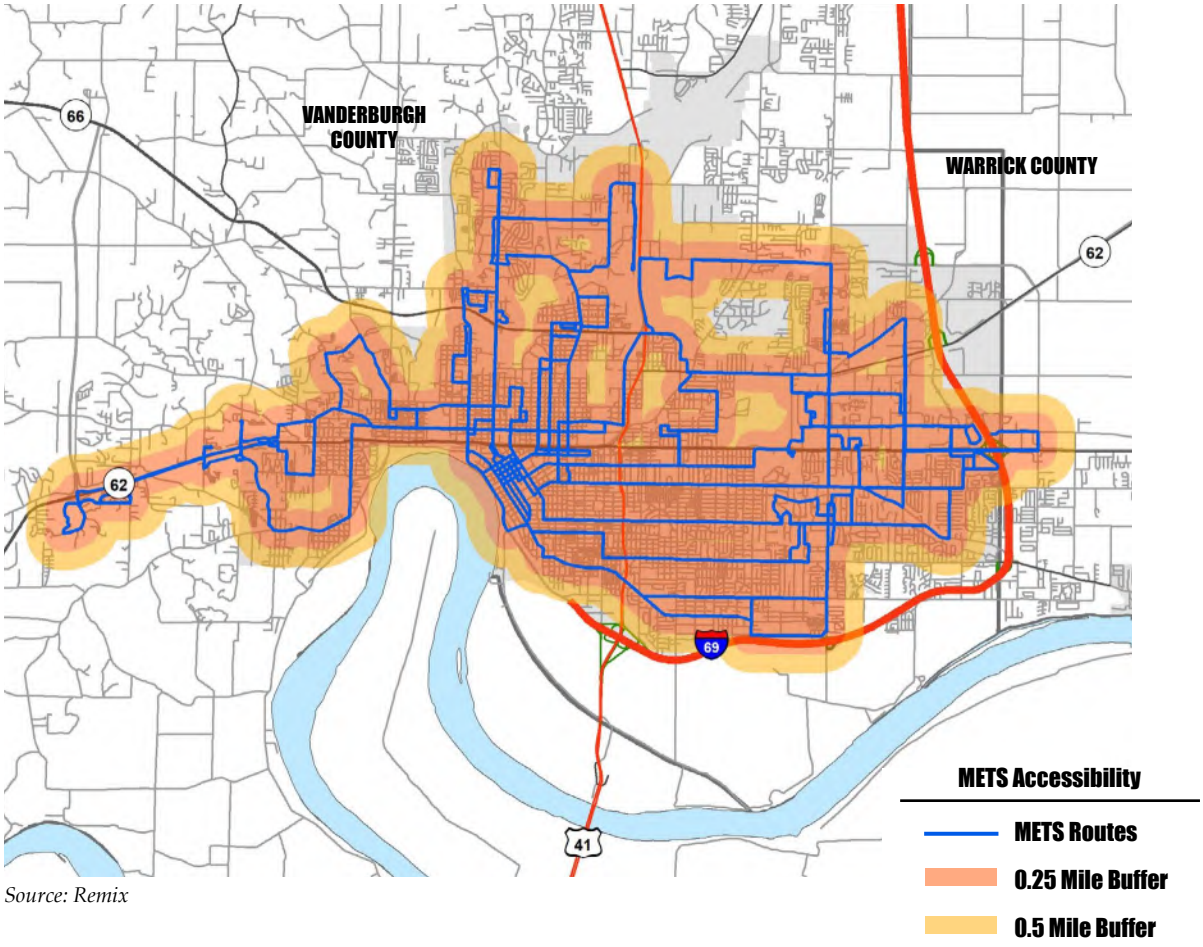
Better connections is the greatest need of the regional transit system. Connections between counties are limited to one bus stop between Vanderburgh County and Warrick County. There are currently no transit connections between Vanderburgh County and Henderson County. Sidewalk access is also needed in several areas with high transit use, especially the major shopping destinations in eastern Vanderburgh County.

Table F.1:
Population and Jobs near Transit

		METS	HART	WATS	All Routes	% of Region (MPA)
Population	within 1/4 mile	99,958	15,376	19,235	118,845	41%
	within 1/2 mile	122,067	19,571	30,288	151,611	52%
Jobs	within 1/4 mile	79,665	7,560	6,355	85,940	60%
	within 1/2 mile	92,079	10,543	8,722	101,091	71%

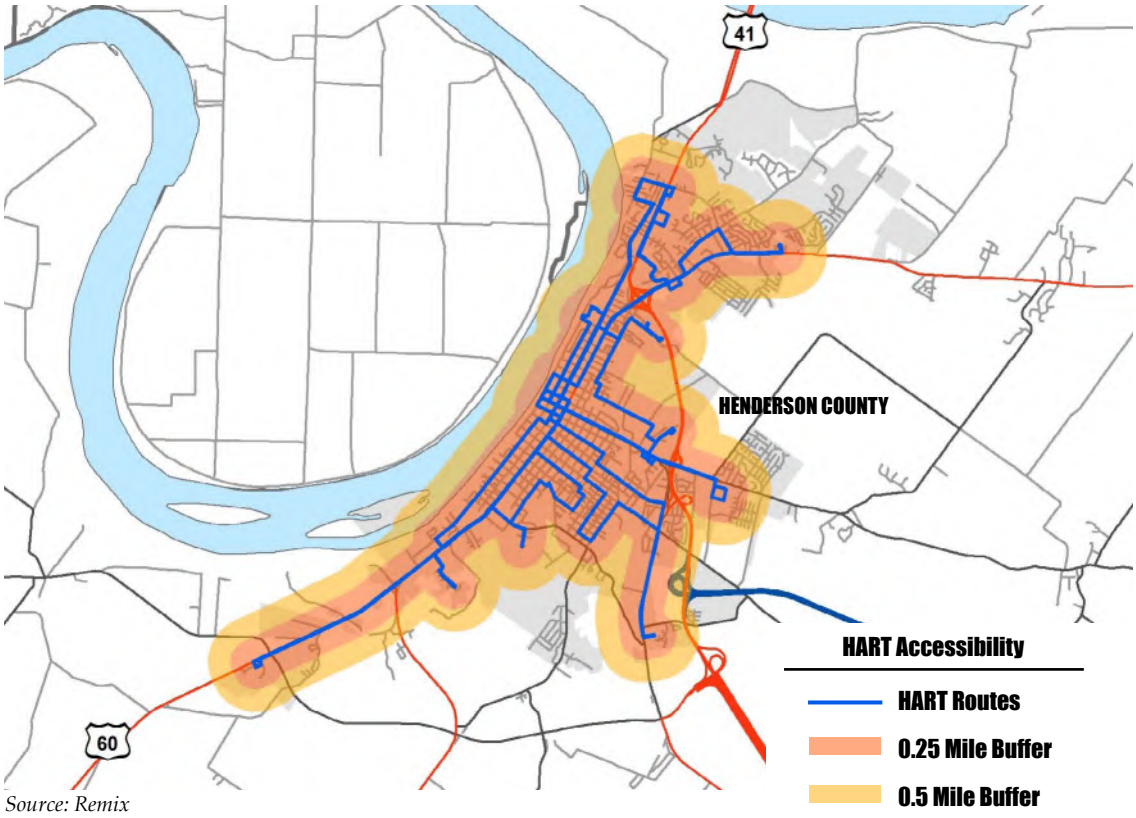
Source: ACS 2016, LEHD 2015

Figure F.2:
METS Buffers



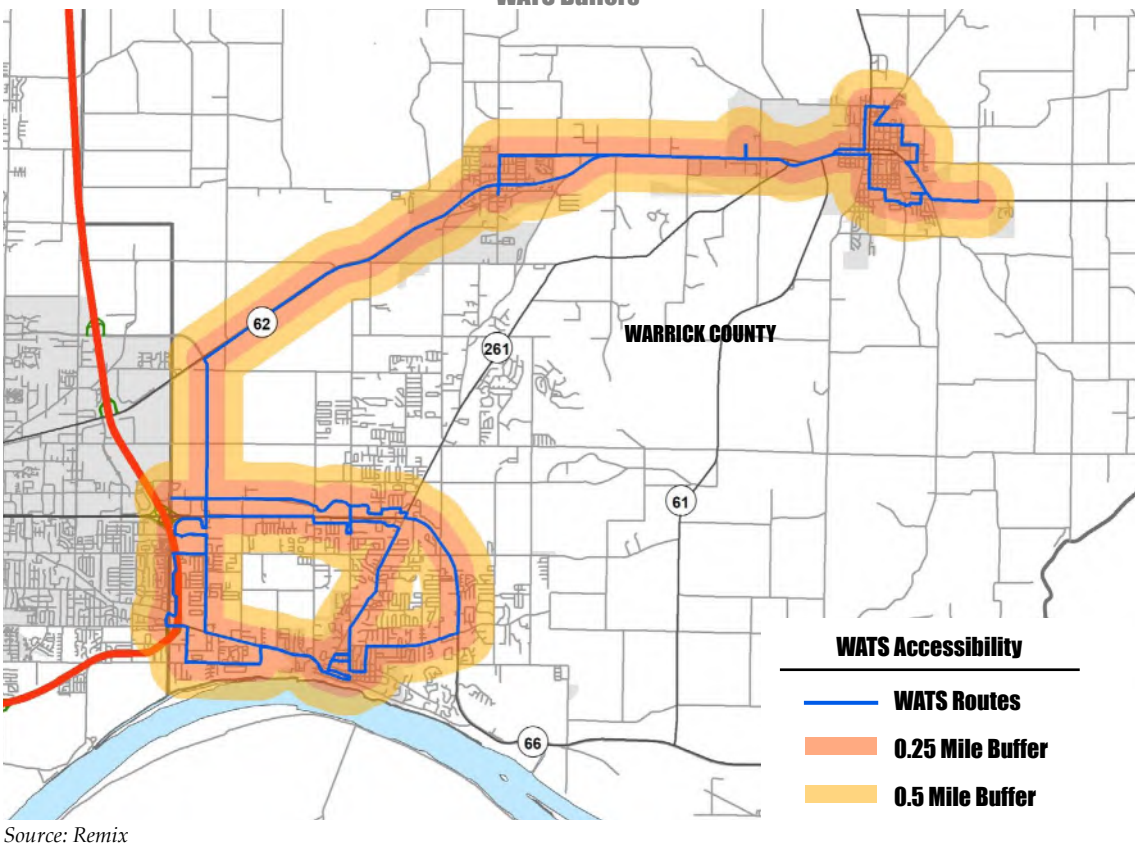
Source: Remix

Figure F.3:
HART Buffers



Source: Remix

Figure F.4:
WATS Buffers



Source: Remix

Bicycle and Pedestrian

Sidewalks provide the beginning and/or ending of almost every trip a person makes. Bike routes provide an alternative to driving a personal vehicle. Both modes are not only vital for commuting and access to shopping and daily needs, they also provide recreational opportunities. The roadway and transit networks are inefficient without a connection to the bicycle and pedestrian network.

Access is a major factor in determining the amount of use bike and pedestrian facilities receive. While many people use the bike and pedestrian network to access the transit network and their final destinations, it makes less sense to use the road or transit network to access bike and pedestrian facilities. Generally, one-fourth of a mile is an acceptable distance people are willing to walk and one-half of a mile is acceptable for people biking to a bike route or multi-use trail. The distance people are willing to walk is dependent upon the availability of sidewalks and the amount/speeds of traffic on their streets. Table F.2 shows the number of people and jobs within one-fourth and one-half of a mile of a bicycle or pedestrian facility, excluding sidewalks. Figures F.5 through F.7 shows this buffer for each county in the region.

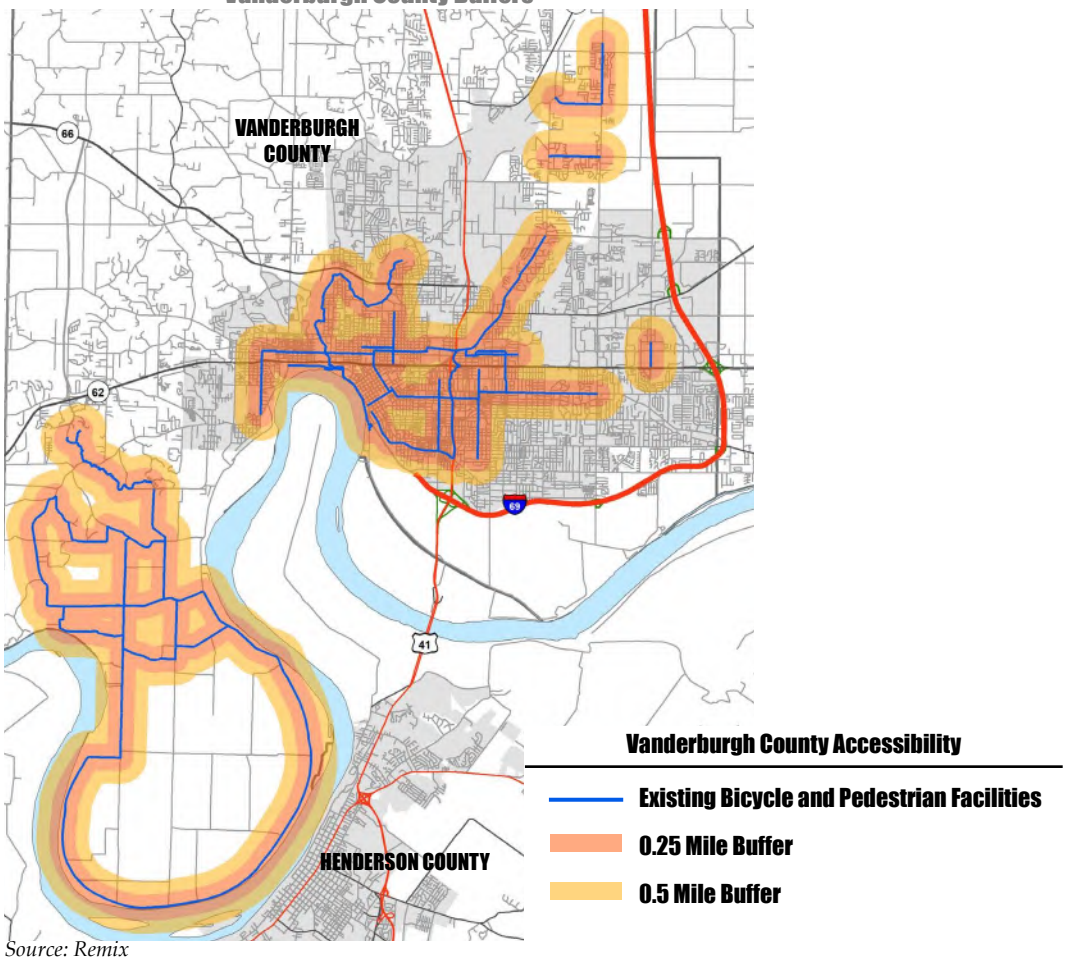
Additional sidewalks is a major need of the pedestrian network. Some areas with high volumes of traffic lack sidewalks altogether. Better connections between the existing bicycle network is also needed. Progress has been made, but several gaps in the network still exist.

Table F.2:
Population and Jobs near Bicycle and Pedestrian Facilities

		Vanderburgh	Henderson	Warrick	All	% of Region (MPA)
Population	within 1/4 mile	44,559	3,379	9,859	57,796	20%
	within 1/2 mile	72,526	8,229	21,475	100,932	35%
Jobs	within 1/4 mile	45,921	3,098	2,284	51,303	36%
	within 1/2 mile	63,088	6,460	5,362	73,566	51%

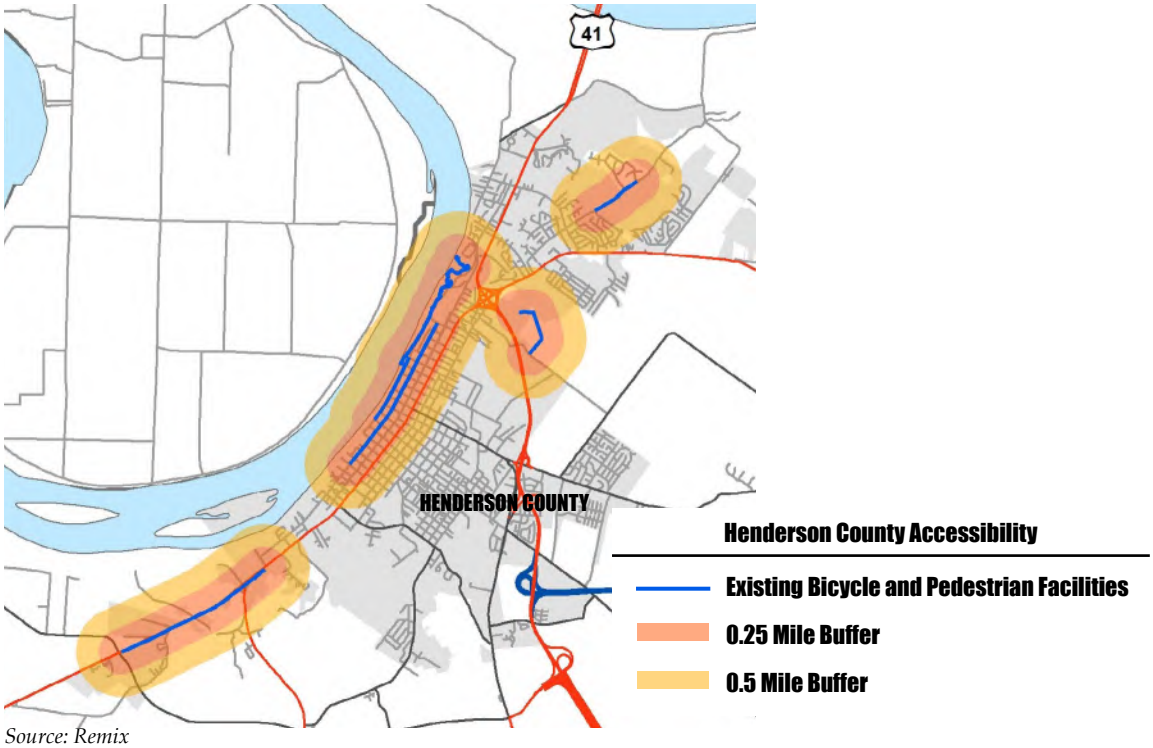
Source: ACS 2016, LEHD 2015

Figure F.5:
Vanderburgh County Buffers



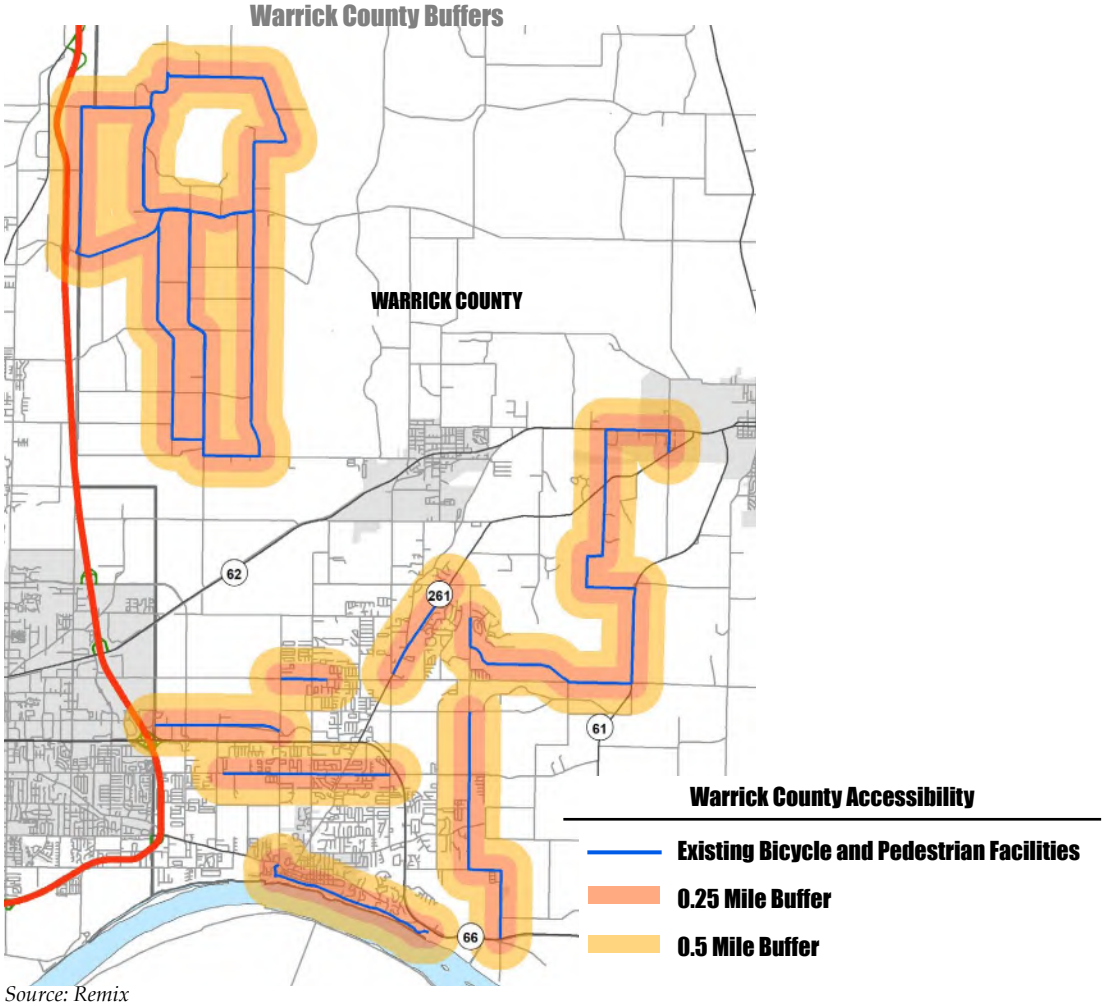
Source: Remix

Figure F.6:
Henderson County Buffers



Source: Remix

Figure F.7:
Warrick County Buffers



Source: Remix

G ENVIRONMENTAL

Transportation improvements, whether new roadway construction or a widening project, can have significant impacts on natural, cultural/social, and historic resources. An effort should be made during the planning and design phases of projects to ensure that these impacts are avoided or minimized and/or mitigated. Areas of natural or ecological significance (wetlands, forests, streams, nature preserves, and areas which harbor endangered species) should be avoided in the planning and design of new roads or roadway widening. In addition to natural resources, cultural and historic resources should also be considered, and steps taken to minimize negative impacts. Although the environmental impact of a road improvement project in a previously undisturbed area may seem to be negligible, new road construction can have a significant negative impact on plant and wildlife population and habitats. In addition, the improved access may result in development of the area. This type of secondary impact should always be considered in transportation planning, as the environmental effects from a development can be much more damaging than the road project itself. In fact, transportation-related infrastructure projects should seek to complement the surrounding natural features.

Discussion of types of potential mitigation activities developed in consultation with Federal, State and Tribal land management, wildlife and regulatory agencies is required by the FAST Act. This discussion is at the policy/strategy level, not project specific. The policy level discussion considers the preliminary nature of project details available at the long range plan stage of project development. While detailed environmental analysis is not appropriate at this point, consultation with environmental resource agencies provides an opportunity to compare transportation plans

with resource plans and initiate a discussion of potential mitigation activities, location of mitigation activities and identification of mitigation strategies with the greatest potential to restore and maintain environmental functions affected by the Metropolitan Transportation Plan. Table G.1 lists resource and regulatory agencies solicited for input to the plan.

Table G.1:
EMPO Environmental and Historic Resource Agency Planning Partners

Planning Partners
Evansville Dept. of Metropolitan Development, Historic Preservation Office
Newburgh Historic Preservation Commission
Patoka River National Wildlife Refuge, US Fish and Wildlife Service
Indiana Dept. of Environmental Management, Office of Air Quality
Indiana Dept. of Natural Resources - Division of Fish and Wildlife
Indiana Dept. of Natural Resources, Division of Water, Environmental Unit
Indiana State Historic Preservation Officer (Dept. of Natural Resources)
Kentucky State Historic Preservation Officer, Kentucky Heritage Council
Kentucky Dept. of Environmental Protection, Owensboro Regional Office
Kentucky Dept. of Fish and Wildlife Resources
Kentucky Dept. for Natural Resources, Henderson Conservation District
USDA Natural Resources Conservation Service, Boonville Service Center
USDA Natural Resources Conservation Service, Evansville Service Center
USDA Natural Resources Conservation Service, Henderson Service Center
US EPA Region Five, Air and Radiation Division

Projects advancing to construction require additional study and detailed design to more clearly describe project features. This process enables environmental impacts and appropriate mitigation measures to be established. Projects using state or federal funds will require detailed environmental study and permitting in conformance with the National Environmental Policy Act (NEPA) and other federal, state and local regulations.

Preliminary Red Flag Investigation Data

Tables G.2 through G.8 include a listing of potential conflicts with Infrastructure, Mining/Mineral Exploration, Hazardous Material concerns, Water Resources, and Historical Resources within a ½ mile radius of the proposed project area. The categories included in the review were chosen because they were generally available throughout the MPO study area in a GIS format. While not required by the NEPA process, the Evansville MPO also reviews potential project impacts to low income and minority populations.

Table G.2:
Infrastructure

Infrastructure			Religious Facility	School	Cemetery	Pipeline	Trail/Proposed Trail	Recreational Facility	Hospital	Managed Land/Park	Airport	Railroad
Road	**Limits**	**Type**										
Burkhardt Rd	Lincoln Ave to Lloyd Expy	Widen (5 Lns)	2	1	0	1	0	1	1	0	0	0
Lincoln Ave	Green River Rd to Newburgh Rd	Widen (TWLTL)	3	6	1	1	0	3	1	0	0	0
Oak Grove Rd	Burkhardt Rd to Cross Pointe Blvd	Widen (5 Lns)	0	0	0	0	1	0	0	0	0	0
Virginia St	Green River Rd to Burkhardt Rd	Widen (3 Lns)	0	2	0	2	0	3	0	0	0	0
Stringtown Rd	**Maxwell Ave to Petersburg Rd**	**Upgrade/Widen**	**3**	**5**	**1**	**2**	**1**	**8**	**0**	**1**	**0**	**2**
	SR 66/Diamond Ave to Mill Rd											
Columbia St	Hirschland Rd to Cross Pointe Blvd	New	0	2	0	1	1	0	0	0	0	0
Vogel Rd	**Burkhardt Rd to Cross Pointe Blvd**	**New (3 Lns)**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**1**
	E of Hirschland Rd to Cross Pointe Blvd											
Claremont Ave	Red Bank Rd to Barker Ave	Reconstruct	1	1	0	1	2	3	0	1	0	3
Red Bank Rd	**Broadway Ave to SR 62/Lloyd Expy**	**Reconstruct**	**4**	**2**	**1**	**1**	**1**	**4**	**0**	**0**	**0**	**1**
	Broadway Ave to SR 62/Lloyd Expy											
	N of SR 62/Lloyd Expy to Upper Mount Vernon Rd											
Broadway Ave	**Felstead Red to Barker Ave**	**Reconstruct**	**4**	**2**	**0**	**1**	**1**	**5**	**0**	**2**	**0**	**1**
	City Limits to Barker Ave											
Walnut St	MLK Blvd to Vann Ave	Reconstruct										
Covert Ave	US 41 to I 69	Reconstruct										
Vogel Rd	Green River Rd to Burkhardt Rd	Widen (TWLTL)	0	0	0	0	8	3	0	0	0	1
Third St	Court St to Parrett St	Reconstruct	0	1	0	0	1	10	0	1	0	1
Kratzville Rd	SR 66/Diamond Ave to Darmstadt Rd	Reconstruct	0	6	3	2	5	8	0	0	1	1
Oak Hill Rd	**Lynch Rd to Millersburg Rd**	**Widen (3 Lns)**	**7**	**3**	**1**	**2**	**1**	**0**	**0**	**0**	**1**	**1**
	Lynch Rd to Heckel Rd											
	Heckel Rd to Millersburg Rd											
Boonville New Harmony Rd	Petersburg Rd to Green River Rd	Reconstruct	0	0	0	0	0	0	0	0	0	1
Baseline Rd	**US Highway 41 to Old State Rd**	**Widen (3 Lns)**	**1**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**
	Husky Way to Old State Rd											
Schutte Rd	SR 62/Lloyd Expy to Broadway Ave	Reconstruct	0	1	0	1	1	1	0	0	0	0
Kansas Rd	Petersburg Rd to Green River Rd	Reconstruct	3	0	3	0	0	1	0	0	0	1
Petersburg Rd	Boonville New Harmony Rd to Kansas Rd	Reconstruct	2	1	3	0	0	1	0	0	0	0
Bell Rd	**SR 66 to Oak Grove Rd**	**Widen (3 Lns)**	**1**	**0**	**1**	**3**	**0**	**0**	**0**	**0**	**0**	**0**
	High Pointe Dr to Oak Grove Rd											
Bell Rd	Oak Grove Rd to Telephone Rd	Reconstruct	0	0	0	0	0	0	0	0	0	0
Telephone Rd	Bell Rd to Fuquay Rd	Reconstruct	0	1	0	0	0	0	0	0	0	0
Lincoln Ave	**Lenn Rd to Anderson Rd**	**Reconstruct**	**0**	**1**	**0**	**2**	**0**	**2**	**0**	**1**	**0**	**0**
	SR 66 to Anderson Rd											
Oak Grove Rd	SR 261 to Anderson Rd	Widen (TWLTL)	1	3	0	0	7	3	0	0	0	0
Casey Rd	Vann Rd to SR 66	Widen (TWLTL)	0	2	0	2	4	2	0	0	0	0
Epworth Rd	SR 662 to Lincoln Ave	Widen (TWLTL)	2	1	0	3	2	0	1	0	0	0
US 60	City of Corydon Bypass	New										
US 60	Wathen Ln to KY 2183/Holloway-Rucker Rd	Widen (4 Lns)	0	0	0	DNA	DNA	DNA	0	0	0	1
US 60	KY 2183/Holloway-Rucker Rd to KY 1078/Baskett Ln	Widen (4 Lns)	0	0	0	DNA	DNA	DNA	0	0	0	0
KY 425/Henderson Bypass	US 60 to I 69	Widen (4 Lns)	1	0	0	DNA	DNA	DNA	0	0	0	1
US 60	KY 1078/Baskett Ln to Green River Bridge	Widen (4 Lns)	2	1	0	DNA	DNA	DNA	0	0	0	1
North Elm St	Watson Ln to 12th St	Upgrade	0	0	0	DNA	DNA	DNA	0	2	0	0
Watson Ln	**US 60 to Sunset Ln**	**Upgrade**	**1**	**1**	**0**	**DNA**	**DNA**	**DNA**	**0**	**1**	**0**	**0**
	Sunset Ln to Green River Rd											
US 60	Corydon to KY 425/Henderson Bypass	Reconstruct										
US 60	Waverly, KY to Corydon, KY	Reconstruct										
Wathen Ln	US 60 to city limits	Upgrade	0	0	0	DNA	DNA	DNA	0	0	0	0
US 41 - US 60	Interchange Modification	Reconstruct	0	0	0	DNA	DNA	DNA	1	1	0	0
KY 1539/Zion-Larue Rd	KY 351 to Kimsey Ln	Upgrade	0	2	0	DNA	DNA	DNA	0	0	0	0
US 60	New Bridge over Green River at Spottsville	Reconstruct	0	0	0	DNA	DNA	DNA	0	0	0	1
KY 812/Clay St - US 41	Intersection Upgrade	Upgrade	0	0	0	DNA	DNA	DNA	0	0	0	1
I 69	Ohio River Crossing	Upgrade/New										

DNA Data Not Available
Environmental Underway/Complete

Table G.3:
Mining and Mineral Resources

Mining and Mineral Resources			Mine-Surface	Mine-Underground	Oil and Gas Wells	Mineral Resources
Road	**Limits**	**Type**				
Burkhardt Rd	Lincoln Ave to Lloyd Expy	Widen (5 Lns)	0	0	0	0
Lincoln Ave	Green River Rd to Newburgh Rd		0	0	0	0
Oak Grove Rd	Burkhardt Rd to Cross Pointe Blvd	Widen (5 Lns)	0	0	0	0
Virginia St	Green River Rd to Burkhardt Rd	Widen (3 Lns)	0	0	1	0
Stringtown Rd	**Maxwell Ave to Petersburg Rd**	**Upgrade/Widen**	**0**	**2**	**1**	**0**
	SR 66/Diamond Ave to Mill Rd					
Columbia St	Hirschland Rd to Cross Pointe Blvd	New	0	0	0	0
Vogel Rd	**Burkhardt Rd to Cross Pointe Blvd**	**New (3 Lns)**	**0**	**0**	**0**	**0**
	E of Hirschland Rd to Cross Pointe Blvd					
Claremont Ave	Redbank Rd to Barker Ave	Reconstruct	0	1	0	0
Red Bank Rd	**Broadway Ave to Upper Mount Vernon Rd**	**Reconstruct**	**0**	**0**	**1**	**0**
	Broadway Ave to SR 62/Lloyd Expy					
	N of SR 62/Lloyd Expy to Upper Mount Vernon Rd					
Broadway Ave	**Felstead Rd to Barker Ave**	**Reconstruct**	**0**	**1**	**4**	**0**
	City limits to Barker Ave					
Walnut St	MLK Blvd to Vann Ave	Reconstruct				
Covert Ave	US 41 to I 69	Reconstruct				
Vogel Rd	Green River Rd to Burkhardt Rd	Widen (TWLTL)	0	0	1	0
Third St	Court St to Parrett St	Reconstruct	0	0	1	1
Kratzville Rd	SR 66/Diamond Ave to Darmstadt Rd	Reconstruct	0	2	18	0
Oak Hill Rd	**Lynch Rd to Millersburg Rd**	**Widen (3 Lns)**	**0**	**0**	**2**	**0**
	Lynch Rd to Heckel Rd					
	Heckel Rd to Millersburg Rd					
Boonville New Harmony Rd	Petersburg Rd - Green River Rd	Reconstruct	0	0	2	0
Baseline Rd	**US Highway 41 to Old State Rd**	**Widen (3 Lns)**	**0**	**0**	**15**	**2**
	Husky Way to Old State Rd					
Schutte Rd	SR 62/Lloyd Expy to Broadway Ave	Reconstruct	0	0	65	0
Kansas Rd	Petersburg Rd to Green River Rd	Reconstruct	0	0	3	0
Petersburg Rd	Boonville New Harmony Rd to Kansas Rd	Reconstruct	0	0	3	0
Bell Rd	**SR 66 to Oak Grove Rd**	**Widen (3 Lns)**	**0**	**0**	**0**	**0**
	High Pointe Dr to Oak Grove Rd					
Bell Rd	Oak Grove Rd to Telephone Rd	Reconstruct	0	0	1	0
Telephone Rd	Bell Rd to Fuquay Rd	Reconstruct	0	0	3	0
Lincoln Ave	**Lenn Rd to Anderson Rd**	**Reconstruct**	**2**	**0**	**2**	**0**
	SR 66 to Anderson Rd					
Oak Grove Rd	SR 261 to Anderson Rd	Widen (TWLTL)	1	0	0	0
Casey Rd	Vann Rd to SR 66	Widen (TWLTL)	1	0	0	0
Epworth Rd	SR 662 to Lincoln Ave	Widen (TWLTL)	0	2	2	0
US 60	City of Corydon Bypass	New				
US 60	Wathen Ln to KY 2183/Holloway-Rucker Rd	Widen (4 Lns)	DNA	0	DNA	DNA
US 60	KY 2183/Holloway-Rucker Rd to KY 1078/Baskett Ln	Widen (4 Lns)	DNA	1	DNA	DNA
KY 425/Henderson Bypass	US 60 to I 69	Widen (4 Lns)	DNA	1	DNA	DNA
US 60	KY 1078/Baskett Ln to Green River Bridge	Widen (4 Lns)	DNA	3	DNA	DNA
North Elm St	Watson Ln to 12th St	Upgrade	DNA	0	DNA	DNA
Watson Ln	**US 60 to Sunset Ln**	**Upgrade**	**DNA**	**0**	**DNA**	**DNA**
	Sunset Ln to Green River Rd					
US 60	Corydon to KY 425/Henderson Bypass	Reconstruct				
US 60	Waverly, KY to Corydon, KY	Reconstruct				
Wathen Ln	US 60 to city limit line	Upgrade	DNA	1	DNA	DNA
US 41 - US 60	Interchange Modification	Reconstruct	DNA	0	DNA	DNA
KY 1539/Zion-Larue Rd	KY 351 to Kimsey Ln	Upgrade	DNA	1	DNA	DNA
US 60	New Bridge over Green River at Spottsville	Reconstruct	DNA	1	DNA	DNA
KY 812/Clay St - US 41	Intersection Upgrade	Upgrade	DNA	1	DNA	DNA
I 69	Ohio River Crossing	Upgrade/New				

DNA Data Not Available
Environmental Underway/Complete

Table G.4:
Hazardous Materials

Hazardous Materials			UG Storage Tanks	Leaking UG Storage Tanks	Waste Treatment Storage Disposal	State Cleanup Site	Brownfield	Tire Waste Site	RCRA Generator/TSD	NPDES Pipe Location	NPDES Facilities	Institutional Controls	Confined Feeding Operation	Solid Waste Landfill
Road	**Limits**	**Type**												
Burkhardt Rd	Lincoln Ave to Lloyd Expy	Widen (5 Lns)	4	1	0	1	0	0	0	0	0	0	0	0
Lincoln Ave	Green River Rd to Newburgh Rd	Widen (3 Lns)	6	4	0	2	0	0	0	0	0	0	0	0
Oak Grove Rd	Burkhardt Rd to Cross Pointe Blvd	Widen (5 Lns)	2	3	3	0	0	0	0	0	0	0	0	0
Virginia St	Green River Rd to Burkhardt Rd	Widen (3 Lns)	10	10	2	1	0	0	0	0	0	0	0	0
Stringtown Rd	**Maxwell Ave to Petersburg Rd**	**Widen (3 Lns)**	**12**	**14**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	SR 66/Diamond Ave to Mill Rd													
Columbia St	Hirschland Rd to Cross Pointe Blvd	New (3 Lns)	4	0	0	0	0	0	0	0	0	0	0	0
Vogel Rd	**Burkhardt Rd to Cross Pointe Blvd**	**New (3 Lns)**	**4**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	E of Hirschland Rd to Cross Pointe Blvd													
Claremont Ave	Redbank Rd to Barker Ave	Reconstruct	8	5	5	1	0	0	0	0	0	0	0	0
Red Bank Rd	**Broadway Ave to Upper Mount Vernon Rd**	**Reconstruct**	**5**	**5**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	Broadway Ave to SR 62/Lloyd Expy													
	N of SR 62/Lloyd Expy to Upper Mount Vernon Rd													
Broadway Ave	**Felstead Rd to Barker Ave**	**Reconstruct**	**5**	**4**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	City limits to Barker Ave													
Walnut St	MLK Blvd to Vann Ave	Reconstruct												
Covert Ave	US 41 to I 69	Reconstruct												
Vogel Rd	Green River Rd to Burkhardt Rd	Widen (TWLTL)	15	5	0	0	0	0	5	1	11	1	0	0
Third St	Court St to Parrett St	Reconstruct	15	23	0	6	4	0	6	8	6	2	0	0
Kratzville Rd	SR 66/Diamond Ave to Darmstadt Rd	Reconstruct	5	9	0	0	1	1	2	1	1	1	0	0
Oak Hill Rd	**Lynch Rd to Millersburg Rd**	**Widen (3 Lns)**	**1**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	Lynch Rd to Heckel Rd													
	Heckel Rd to Millersburg Rd													
Boonville New Harmony Rd	Green River Rd to Petersburg Rd	Reconstruct	0	2	0	0	0	0	0	0	0	0	0	0
Baseline Rd	**US Highway 41 to Old State Rd**	**Widen (3 Lns)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
	Husky Way to Old State Rd													
Schutte Rd	SR 62/Lloyd Expy to Broadway Ave	Reconstruct	0	0	0	0	0	0	0	0	0	0	0	0
Kansas Rd	Petersburg Rd to Green River Rd	Reconstruct	2	2	0	0	0	0	0	0	9	0	0	0
Petersburg Rd	Boonville New Harmony Rd to Kansas Rd	Reconstruct	1	4	0	0	0	0	0	0	6	0	0	0
Bell Rd	**SR 66 to Oak Grove Rd**	**Widen (3 Lns)**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	High Pointe Dr to Oak Grove Rd													
Bell Rd	Oak Grove Rd to Telephone Rd	Reconstruct	0	0	0	0	0	0	0	0	0	0	0	0
Telephone Rd	Bell Rd to Fuquay Rd	Reconstruct	0	0	0	0	0	0	0	0	0	0	0	0
Lincoln Ave	**Lenn Rd to Anderson Rd**	**Reconstruct**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	SR 66 to Anderson Rd													
Oak Grove Rd	SR 261 to Anderson Rd	Widen (TWLTL)	1	0	0	0	0	0	1	0	4	0	0	0
Casey Rd	Vann Rd to SR 66	Widen (TWLTL)	3	3	0	0	0	0	0	0	3	0	0	0
Epworth Rd	SR 662 to Lincoln Ave	Widen (TWLTL)	2	3	0	0	0	0	0	0	4	0	0	0
US 60	City of Corydon Bypass	New												
US 60	Wathen Ln to KY 2183/Holloway-Rucker Rd	Widen (4 Lns)	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	0
US 60	KY 2183/Holloway-Rucker Rd to KY 1078/Baskett Ln	Widen (4 Lns)	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	0
KY 425/Henderson Bypass	US 60 to I 69	Widen (4 Lns)	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	0
US 60	KY 1078/Baskett Ln to Green River Bridge	Widen (4 Lns)	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	0
North Elm St	Watson Ln to 12th St	Upgrade	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	0
Watson Ln	**US 60 to Sunset Ln**	**Upgrade**	**DNA**	**DNA**	**DNA**	**DNA**	**DNA**	**DNA**	**DNA**	**DNA**	**DNA**	**DNA**	**DNA**	**0**
	Sunset Ln to Green River Rd													
US 60	Corydon to KY 425/Henderson Bypass	Reconstruct												
US 60	Waverly, KY to Corydon, KY	Reconstruct												
Wathen Ln	US 60 to city limit line	Upgrade	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	0
US 41 - US 60	Interchange Modification	Reconstruct	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	0
KY 1539/Zion-Larue Rd	KY 351 to Kimsey Ln	Upgrade	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	0
US 60	New Bridge over Green River at Spottsville	Reconstruct												
KY 812/Clay St - US 41	Intersection Upgrade	Reconstruct	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	0
I 69	Ohio River Crossing	Upgrade/New												

DNA Data Not Available
Environmental Underway/Complete

Table G.5:
Water Resources

Water Resources											
Road	Limits	Type	Floodplain-DFIRM	Lake	River	Wetland Areas	Stream-Impaired	Canal Route-Historic	Historic Canal Structure	National Wetland Inventory-Line	National Wetland Inventory-Point
Burkhardt Rd	Lincoln Ave to Lloyd Expy	Widen (5 Lns)	Yes	4	4	2	0	0	0	0	0
Lincoln Ave	Green River Rd to Newburgh Rd	Widen (3 Lns)	Yes	0	1	0	0	0	0	0	0
Oak Grove Rd	Burkhardt Rd to Cross Pointe Blvd	Widen (5 Lns)	Yes	3	3	0	0	1	0	1	0
Virginia St	Green River Rd to Burkhardt Rd	Widen (3 Lns)	Yes	7	3	5	0	0	0	1	0
Stringtown Rd	**Maxwell Ave to Petersburg Rd**	**Widen (3 Lns)**	**Yes**	**10**	**2**	**9**	**1**	**0**	**0**	**2**	**0**
	SR 66/Diamond Ave to Mill Rd										
Columbia St	Hirschland Rd to Cross Pointe Blvd	New (3 Lns)	Yes	4	3	0	0	0	0	1	0
Vogel Rd	**Burkhardt Rd to Cross Pointe Blvd**	**New (3 Lns)**	**Yes**	**3**	**3**	**0**	**0**	**1**	**0**	**1**	**0**
	E of Hirschland Rd to Cross Pointe Blvd										
Claremont Ave	Redbank Rd to Barker Ave	Reconstruct	Yes	7	2	9	1	0	0	1	0
Red Bank Rd	**Broadway Ave to Upper Mount Vernon Rd**	**Reconstruct**	**Yes**	**14**	**6**	**12**	**0**	**0**	**0**	**2**	**0**
	Broadway Ave to SR 62/Lloyd Expy										
	N of SR 62/Lloyd Expy to Upper Mount Vernon Rd										
Broadway Ave	**Felstead Rd to Barker Ave**	**Reconstruct**	**Yes**	**11**	**5**	**9**	**0**	**0**	**0**	**3**	**0**
	City Limits to Barker Ave										
Walnut St	MLK Blvd to Vann Ave	Reconstruct									
Covert Ave	US 41 to I 69	Reconstruct									
Vogel Rd	Green River Rd to Burkhardt Rd	Widen (TWLTL)	Yes	3	4	7	0	1	0	1	0
Third St	Court St to Parrett St	Reconstruct	Yes	0	1	1	1	1	1	1	0
Kratzville Rd	SR 66/Diamond Ave to Darmstadt Rd	Reconstruct	Yes	7	8	10+	3	0	0	3	1
Oak Hill Rd	**Lynch Rd to Millersburg Rd**	**Widen (3 Lns)**	**Yes**	**10**	**4**	**16**	**1**	**0**	**0**	**2**	**0**
	Lynch Rd to Heckel Rd										
	Heckel Rd to Millersburg Rd										
Boonville-New Harmony Rd	Petersburg Rd to Green River Rd	Reconstruct	Yes	21	5	22	0	0	0	1	2
Baseline Rd	**US Highway 41 to Old State Rd**	**Widen (3 Lns)**	**Yes**	**4**	**6**	**9**	**0**	**0**	**0**	**2**	**2**
	Husky Way to Old State Rd										
Schutte Rd	SR 62/Lloyd Expy to Broadway Ave	Reconstruct	Yes	10+	6	10+	0	0	0	1	0
Kansas Rd	Petersburg Rd to Green River Rd	Reconstruct	Yes	10+	10+	10+	0	0	0	1	0
Petersburg Rd	Boonville New Harmony Rd to Kansas Rd	Reconstruct	Yes	10+	10	10+	0	0	0	1	0
Bell Rd	**SR 66 to Oak Grove Rd**	**Widen (3 Lns)**	**Yes**	**10**	**5**	**6**	**0**	**0**	**0**	**0**	**0**
	High Pointe Dr to Oak Grove Rd										
Bell Rd	Oak Grove Rd to Telephone Rd	Reconstruct	Yes	8	4	12	0	0	0	2	0
Telephone Rd	Bell Rd to Fuquay Rd	Reconstruct	Yes	13	8	15	0	0	0	2	0
Lincoln Ave	**Lenn Rd to Anderson Rd**	**Reconstruct**	**Yes**	**13**	**8**	**15**	**0**	**0**	**0**	**1**	**0**
	SR 66 to Anderson Rd										
Oak Grove Rd	SR 261 to Anderson Rd	Widen (TWLTL)	No	10+	6	10+	0	0	0	1	0
Casey Rd	Vann Rd to SR 66	Widen (TWLTL)	Yes	10	5	10+	0	0	0	2	0
Epworth Rd	SR 662 to Lincoln Ave	Widen (TWLTL)	Yes	10+	1	10+	0	0	0	2	0
US 60	City of Corydon Bypass	New									
US 60	Wathen Ln to KY 2183/Holloway-Rucker Rd	Widen (4 Lns)	DNA	DNA	4	26	DNA	DNA	DNA	DNA	DNA
US 60	KY 2183/Holloway-Rucker Rd to KY 1078/Baskett Ln	Widen (4 Lns)	DNA	DNA	1	18	DNA	DNA	DNA	DNA	DNA
KY 425/Henderson Bypass	US 60 to I 69	Widen (4 Lns)	DNA	DNA	6	32+	DNA	DNA	DNA	DNA	DNA
US 60	KY 1078/Baskett Ln to Green River Bridge	Widen (4 Lns)	DNA	DNA	3	45+	DNA	DNA	DNA	DNA	DNA
North Elm St	Watson Ln to 12th St	Upgrade	DNA	DNA	2	3	DNA	DNA	DNA	DNA	DNA
Watson Ln	**US 60 to Sunset Ln**	**Upgrade**	**DNA**	**DNA**	**0**	**2**	**DNA**	**DNA**	**DNA**	**DNA**	**DNA**
	Sunset Ln to Green River Rd										
US 60	Corydon to KY 425/Henderson Bypass	Reconstruct									
US 60	Waverly, KY to Corydon, KY	Reconstruct									
Wathen Ln	US 60 to city limit line	Upgrade	DNA	DNA	0	11	DNA	DNA	DNA	DNA	DNA
US 41 - US 60	Interchange Modification	Reconstruct	DNA	DNA	1	6	DNA	DNA	DNA	DNA	DNA
KY 1539/Zion-Larue Rd	KY 351 to Kimsey Ln	Upgrade	DNA	DNA	0	8	DNA	DNA	DNA	DNA	DNA
US 60	New Bridge over Green River at Spottsville	Reconstruct	DNA	DNA	1	14	DNA	DNA	DNA	DNA	DNA
KY 812/Clay St - US 41	Intersection Upgrade	Upgrade	DNA	DNA	2	0	DNA	DNA	DNA	DNA	DNA
I 69	Ohio River Crossing	Upgrade/New									

DNA Data Not Available
Environmental Underway/Complete

Table G.6:
Historical Resources

Historical Resources			National Register Structures	Other Historic Structures	National Register Historic Districts	Proposed NR Historic Districts	Historic Farms
Road	**Limits**	**Type**					
Burkhardt Rd	Lincoln Ave to Lloyd Expy	Widen (5 Lns)	1	1	0	0	DNA
Lincoln Ave	Green River Rd to Newburgh Rd	Widen (TWLTL)	1	3	0	0	DNA
Oak Grove Rd	Burkhardt Rd to Cross Pointe Blvd	Widen (5 Lns)	0	0	0	0	DNA
Virginia St	Green River Rd to Burkhardt Rd	Widen (3 Lns)	0	0	0	0	DNA
Stringtown Rd	**Maxwell Ave to Petersburg Rd**	**Upgrade/Widen**	**1**	**12**	**0**	**0**	**DNA**
	SR 66/Diamond Ave to Mill Rd						
Columbia St	Hirschland Rd to Cross Pointe Blvd	New	0	0	0	0	DNA
Vogel Rd	**Burkhardt Rd to Cross Pointe Blvd**	**New (3 Lns)**	**0**	**0**	**0**	**0**	**DNA**
	E of Hirschland Rd to Cross Pointe Blvd						
Claremont Ave	Red Bank Rd to Barker Ave	Reconstruct	0	2	0	1	DNA
Red Bank Rd	**Broadway Ave to Upper Mount Vernon Rd**	**Reconstruct**	**0**	**5**	**0**	**0**	**DNA**
	Broadway Ave to SR 62/Lloyd Expy						
	N of SR 62/Lloyd Expy to Upper Mount Vernon Rd						
Broadway Ave	**Felstead Rd to Barker Ave**	**Reconstruct**	**0**	**7**	**0**	**0**	**DNA**
	City Limits to Barker Ave						
Walnut St	MLK Blvd to Vann Ave	Reconstruct					
Covert Ave	US 41 to I 69	Reconstruct					
Vogel Rd	Green River Rd to Burkhardt Rd	Widen (TWLTL)	0	1	0	0	DNA
Third St	Court St to Parrett St	Reconstruct	20+	10+	4	1	DNA
Kratzville Rd	SR 66/Diamond Ave to Darmstadt Rd	Reconstruct	0	6	0	0	DNA
Oak Hill Rd	**Lynch Rd to Millersburg Rd**	**Widen (3 Lns)**	**1**	**2**	**0**	**0**	**DNA**
	Lynch Rd to Heckel Rd						
	Heckel Rd to Millersburg Rd						
Boonville New Harmony Rd	Petersburg Rd to Green River Rd	Reconstruct	0	1	0	0	DNA
Baseline Rd	**US Highway 41 to Old State Rd**	**Widen (3 Lns)**	**0**	**0**	**0**	**0**	**DNA**
	Husky Way to Old State Rd						
Schutte Rd	SR 62/Lloyd Expy to Broadway Ave	Reconstruct	0	5	0	0	DNA
Kansas Rd	Petersburg Rd to Green River Rd	Reconstruct	1	4	0	0	DNA
Petersburg Rd	Boonville New Harmony Rd to Kansas Rd	Reconstruct	1	4	0	0	DNA
Bell Rd	**SR 66 to Oak Grove Rd**	**Widen (3 Lns)**	**0**	**DNA**	**0**	**DNA**	**DNA**
	High Pointe Dr to Oak Grove Rd						
Bell Rd	Oak Grove Rd to Telephone Rd	Reconstruct	0	DNA	0	DNA	DNA
Telephone Rd	Bell Rd to Fuquay Rd	Reconstruct	0	DNA	0	DNA	DNA
Lincoln Ave	**Lenn Rd to Anderson Rd**	**Reconstruct**	**0**	**DNA**	**0**	**DNA**	**DNA**
	SR 66 to Anderson Rd						
Oak Grove Rd	SR 261 to Anderson Rd	Widen (TWLTL)	0	0	0	DNA	DNA
Casey Rd	Vann Rd to SR 66	Widen (TWLTL)	0	0	0	DNA	DNA
Epworth Rd	SR 662 to Lincoln Ave	Widen (TWLTL)	0	0	0	DNA	DNA
US 60	City of Corydon Bypass	New					
US 60	Wathen Ln to KY 2183/Holloway-Rucker Rd	Widen (4 Lns)	0	4	0	DNA	0
US 60	KY 2183/Holloway-Rucker Rd to KY 1078/Baskett Ln	Widen (4 Lns)	0	0	0	DNA	0
KY 425/Henderson Bypass	US 60 to I 69	Widen (4 Lns)	0	0	0	DNA	1
US 60	KY 1078/Baskett Ln to Green River Bridge	Widen (4 Lns)	0	0	0	DNA	0
North Elm St	Watson Ln to 12th St	Upgrade	0	0	1	DNA	0
Watson Ln	**US 60 to Sunset Ln**	**Upgrade**	**0**	**0**	**1**	**DNA**	**0**
	Sunset Ln to Green River Rd						
US 60	Corydon to KY 425/Henderson Bypass	Reconstruct					
US 60	Waverly, KY to Corydon, KY	Reconstruct					
Wathen Ln	US 60 to city limit line	Upgrade	0	3	0	DNA	0
US 41 - US 60	Interchange Modification	Reconstruct	0	2	0	DNA	0
KY 1539/Zion-Larue Rd	KY 351 to Kimsey Ln	Upgrade	1	2	0	DNA	1
US 60	New Bridge over Green River at Spottsville	Reconstruct	0	0	0	DNA	0
KY 812/Clay St - US 41	Intersection Upgrade	Upgrade	0	0	0	DNA	0
I 69	Ohio River Crossing	Upgrade/New					

DNA Data Not Available
Environmental Underway/Complete

Table G.7:
Below Poverty

Below Poverty (%)			0-15.00	15.00-30.00	30.00-40.00	40.00-50.00	50.00-100.00
Road	**Limits**	**Type**					
Burkhardt Rd	Lincoln Ave to Lloyd Expy	Widen (5 Lns)	X	X			
Lincoln Ave	Green River Rd to Newburgh Rd	Widen (TWLTL)	X	X			
Oak Grove Rd	Burkhardt Rd to Cross Pointe Blvd	Widen (5 Lns)		X			
Virginia St	Green River Rd to Burkhardt Rd	Widen (3 Lns)	X	X			
Stringtown Rd	**Maxwell Ave to Petersburg Rd**	**Upgrade/Widen**	**X**	**X**	**X**		
	SR 66/Diamond Ave to Mill Rd						
Columbia St	Hirschland Rd to Cross Pointe Blvd	New	X	X			
Vogel Rd	**Burkhardt Rd to Cross Pointe Blvd**	**New (3 Lns)**					
	E of Hirschland Rd to Cross Pointe Blvd						
Claremont Ave	Red Bank Rd to Barker Ave	Reconstruct	X	X			
Red Bank Rd	**Broadway Ave to Upper Mount Vernon Rd**	**Reconstruct**	**X**	**X**			
	Broadway Ave to SR 62/Lloyd Expy						
	N of SR 62/Lloyd Expy to Upper Mount Vernon Rd						
Broadway Ave	**Felstead Rd to Barker Ave**	**Reconstruct**	**X**	**X**			
	City Limits to Barker Ave						
Walnut St	MLK Blvd to Vann Ave	Reconstruct					
Covert Ave	US 41 to I 69	Sidewalks					
Vogel Rd	Green River Rd to Burkhardt Rd	Widen (TWLTL)	X	X			
Third St	Court St to Parrett St	Reconstruct	X		X	X	
Kratzville Rd	SR 66/Diamond Ave to Darmstadt Rd	Reconstruct	X	X			
Oak Hill Rd	**Lynch Rd to Millersburg Rd**	**Widen (3 Lns)**	**X**				
	Lynch Rd to Heckel Rd						
	Heckel Rd to Millersburg Rd						
Boonville New Harmony Rd	Petersburg Rd to Green River Rd	Reconstruct	X				
Baseline Rd	**US 41 to Old State Rd**	**Widen (3 Lns)**	**X**				
	Husky Way to Old State Rd						
Schutte Rd	SR 62/Lloyd Expy to Broadway Ave	Reconstruct	X	X			
Kansas Rd	Petersburg Rd to Green River Rd	Reconstruct	X				
Petersburg Rd	Boonville New Harmony Rd to Kansas Rd	Reconstruct	X				
Bell Rd	**SR 66 to Oak Grove Rd**	**Widen (3 Lns)**	**X**				
	High Pointe Dr to Oak Grove Rd						
Bell Rd	Oak Grove Rd to Telephone Rd	Reconstruct	X				
Telephone Rd	Bell Rd to Fuquay Rd	Reconstruct	X				
Lincoln Ave	**Lenn Rd to Anderson Rd**	**Reconstruct**	**X**	**X**			
	SR 66 to Anderson Rd						
Oak Grove Rd	SR 261 to Anderson Rd	Widen (TWLTL)	X				
Casey Rd	Vann Rd to SR 66	Widen (TWLTL)	X	X			
Epworth Rd	SR 662 to Lincoln Ave	Widen (TWLTL)	X				
US 60	City of Corydon Bypass	New					
US 60	Wathen Ln to KY 2183/Holloway-Rucker Rd	Widen (4 Lns)	X	X			
US 60	KY 2183/Holloway-Rucker Rd to KY 1078/Baskett Ln	Widen (4 Lns)	X	X			
KY 425/Henderson Bypass	US 60 to I 69	Widen (4 Lns)	X	X			
US 60	KY 1078/Baskett Ln to Green River Bridge	Widen (4 Lns)	X	X			
North Elm St	Watson Ln to 12th St	Upgrade	X	X	X		
Watson Ln	**US 60 to Sunset Ln**	**Upgrade**	**X**	**X**			
	Sunset Ln to Green River Rd						
US 60	Corydon to KY 425/Henderson Bypass	Reconstruct					
US 60	Waverly, KY to Corydon, KY	Reconstruct					
Wathen Ln	US 60 to city limit line	Upgrade	X	X			
US 41 - US 60	Interchange Modification	Reconstruct	X		X		
KY 1539/Zion-Larue Rd	KY 351 to Kimsey Ln	Upgrade	X	X			
US 60	New Bridge over Green River at Spottsville	Reconstruct	X	X			
KY 812/Clay St - US 41	Intersection Upgrade	Upgrade	X	X			
I 69	Ohio River Crossing	Upgrade/New					

DNA Data Not Available
Environmental Underway/Complete

Table G.8:
Minority

Minority (% including Hispanic)							
Road	Limits	Type	0-15.00	15.00-30.00	30.00-40.00	40.00-50.00	50.00-100.00
Burkhardt Rd	Lincoln Ave to Lloyd Expy	Widen (5 Lns)		X			
Lincoln Ave	Green River Rd to Newburgh Rd	Widen (TWLTL)		X	X		
Oak Grove Rd	Burkhardt Rd to Cross Pointe Blvd	Widen (5 Lns)		X			
Virginia St	Green River Rd to Burkhardt Rd	Widen (3 Lns)	X	X			
Stringtown Rd	**Maxwell Ave to Petersburg Rd**	**Upgrade/Widen**	**X**				
	SR 66/Diamond Ave to Mill Rd						
Columbia St	Hirschland Rd to Cross Pointe Blvd	New		X			
Vogel Rd	**Burkhardt Rd to Cross Pointe Blvd**	**New (3 Lns)**					
	E of Hirschland Rd to Cross Pointe Blvd						
Claremont Ave	Red Bank Rd to Barker Ave	Reconstruct	X				
Red Bank Rd	**Broadway Ave to Upper Mount Vernon Rd**	**Reconstruct**	**X**				
	Broadway Ave to SR 62/Lloyd Expy						
	N of SR 62/Lloyd Expy to Upper Mt Vernon Rd						
Broadway Ave	**Felstead Rd to Barker Ave**	**Reconstruct**	**X**				
	City Limits to Barker Ave						
Walnut St	MLK Blvd to Vann Ave	Reconstruct					
Covert Ave	US 41 to I 69	Reconstruct					
Vogel Rd	Green River Rd to Burkhardt Rd	Widen (TWLTL)	X	X			
Third St	Court St to Parrett St	Reconstruct	X	X	X	X	X
Kratzville Rd	SR 66/Diamond Ave to Darmstadt Rd	Reconstruct	X	X			
Oak Hill Rd	**Lynch Rd to Millersburg Rd**	**Widen (3 Lns)**	**X**				
	Lynch Rd to Heckel Rd						
	Heckel Rd to Millersburg Rd						
Boonville-New Harmony Rd	Petersburg Rd to Green River Rd	Reconstruct	X				
Baseline Rd	**US 41 to Old State Rd**	**Widen (3 Lns)**	**X**				
	Husky Way to Old State Rd						
Schutte Rd	SR 62/Lloyd Expy to Broadway Ave	Reconstruct	X				
Kansas Rd	Petersburg Rd to Green River Rd	Reconstruct	X				
Petersburg Rd	Boonville New Harmony Rd to Kansas Rd	Reconstruct	X				
Bell Rd	**SR 66 to Oak Grove Rd**	**Widen (3 Lns)**	**X**				
	High Pointe Dr to Oak Grove Rd						
Bell Rd	Oak Grove Rd to Telephone Rd	Reconstruct	X				
Telephone Rd	Bell Rd to Fuquay Rd	Reconstruct	X				
Lincoln Ave	**Lenn Rd to Anderson Rd**	**Reconstruct**	**X**				
	SR 66 to Anderson Rd						
Oak Grove Rd	SR 261 to Anderson Rd	Widen (TWLTL)	X				
Casey Rd	Vann Rd to SR 66	Widen (TWLTL)	X				
Epworth Rd	SR 662 to Lincoln Ave	Widen (TWLTL)	X	X			
US 60	City of Corydon Bypass	New					
US 60	Wathen Ln to KY 2183/Holloway-Rucker Rd	Widen (4 Lns)	X				
US 60	KY 2183/Holloway-Rucker Rd to KY 1078/Baskett Ln	Widen (4 Lns)	X				
KY 425/Henderson Bypass	US 60 to Interstate 69	Widen (4 Lns)	X		X		
US 60	KY 1078/Baskett Ln to Green River Bridge	Widen (4 Lns)	X				
North Elm St	Watson Ln to 12th St	Upgrade	X		X		
Watson Ln	**US 60 to Sunset Ln**	**Upgrade**	**X**				
	Sunset Ln to Green River Rd						
US 60	Corydon to KY 425/Henderson Bypass	Reconstruct					
US 60	Waverly, KY to Corydon, KY	Reconstruct					
Wathen Ln	US 60 to city limit line	Upgrade	X				
US 41 - US 60	Interchange Modification	Reconstruct	X	X			
KY 1539/Zion-Larue Rd	KY 351 to Kimsey Ln	Upgrade	X		X		
US 60	New Bridge over Green River at Spottsville	Reconstruct	X				
KY 812/Clay St - US 41	Intersection Upgrade	Upgrade		X	X		
I 69	Ohio River Crossing	Upgrade/New					

DNA Data Not Available
Environmental Underway/Complete

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H ASSET MANAGEMENT

Asset management is a strategic and systematic process of operating, maintaining, and improving physical assets, with a focus on engineering and economic analysis based upon quality information, to identify a structured sequence of maintenance, preservation, repair, rehabilitation, and replacement actions that will achieve and sustain a desired state of good repair (SOGR) over the lifecycle of the assets at minimum practicable cost (23 U.S.C. 101(a)(2)). The MPO, in coordination with LPAs and transit agencies, have developed asset management strategies for roadways, bridges, and transit capital assets. Maintaining an inventory of assets and determining asset condition over time will help the region use funding as efficiently as possible.

Regional Pavement Management System

The Regional Pavement Management System (RPMS) is a tool utilized to collect and monitor current pavement condition, as well as evaluate and prioritize pavement maintenance, rehabilitation and repair strategies. When appropriately implemented, the RPMS provides decision-makers with the necessary data for understanding the long-term consequences of short-term budgeting decisions.

The Evansville MPO implemented a pavement management system to assist decision makers in determining the most cost-effective approaches to address the region's roadway conditions. Pavement condition data has been collected and analyzed since 2014 in order to help identify the needs of the MPO region. The types of pavement data collected include pavement rutting and pavement distress data. This data is used to determine the Pavement Condition Index (PCI), an industry standard used to indicate the general condition of pavement. The PCI is figured based on a range from 100 to 0 (100 being excellent condition and 0 being failed condition), Figure H.1 shows this scale according to the industry standard set by ASTM D6433-07.

Figure H.1:
PCI Scale

Pavement Condition

The MPO pavement condition data is reported in PCI format for the locally maintained roads in the MPO area. All data included in this section was collected in 2014. Table H.1 shows the breakdown of the MPO area counties, there were 2,223 miles of road network that were evaluated within Vanderburgh, Warrick and Henderson counties. The overall average for the EMPO area was 75 on the ASTM PCI scale, which rates as Satisfactory. Figure H.3 shows the PCI of the MPO region.

Table H.2 shows that 85% of the region's local roadways rate as Fair (PCI rating 70-56) or higher, showing that the majority of the MPO network falls into preventative pavement plans instead of more costly restorative pavement plans. Figure H.2 demonstrates pavement condition over time.

Another aspect of the data collected, is based on the Functional Class of the roadways. The local roadways are separated into Arterial, Collector and Residential (Local) classifications. Table H.3 displays the PCI breakdown between the road classifications. The high traffic roads have an overall PCI of 78, which falls into the Satisfactory range. This demonstrates that the high traffic roads, nearly 20% of the local roads, are in a condition where preventative pavement projects would maintain the Satisfactory PCI rating.

The MPO will continue to update and maintain pavement condition data in the Pavement Management System for the region. As of late 2018, the MPO has been involved in the collection of new pavement condition data and in the early stages of processing that data. An updated RPMS can be utilized by Local Public Agencies to refine the deterioration curves applied to the network when developing maintenance plans and road projects based on pavement condition.

Table H.1:
PCI by County

County	Miles	PCI
Vanderburgh	1,084	75
Warrick	741	75
Henderson	398	77
MPO Area	**2,223**	**75**

Table H.2:
Miles by PCI Rating

PCI	Miles	% of Total
100 - 86 (Good)	777	35.0%
85 - 71 (Satisfactory)	647	29.1%
70 - 56 (Fair)	458	20.6%
55 - 41 (Poor)	231	10.4%
40 - 26 (Very Poor)	84	3.8%
25 - 11 (Serious)	21	1.0%
10 - 0 (Failed)	4	0.2%

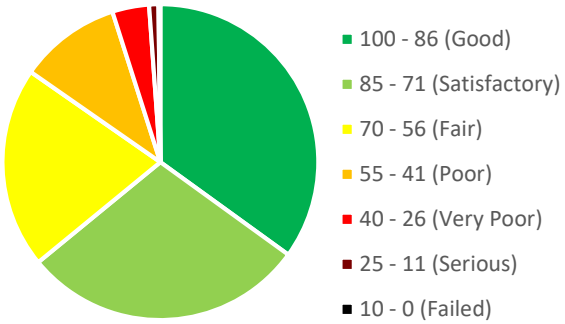


Table H.3:
PCI by Road Functional Classification

Facility Type	PCI	Lane Miles	% Lane Miles
Arterial	76	124	5.6%
Collector	80	264	11.9%
Residential	75	1,835	82.5%

Figure H.2:
Pavement Condition Over Time

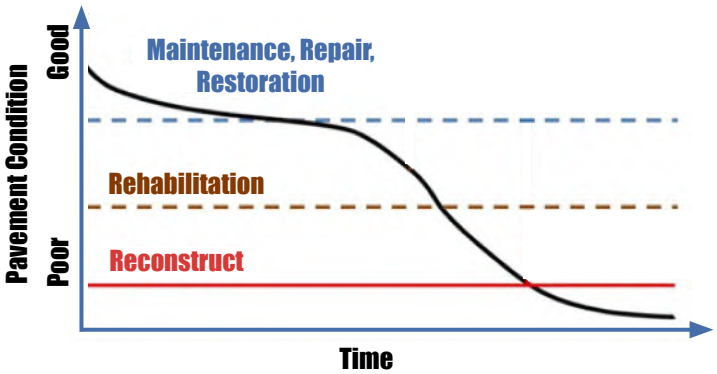
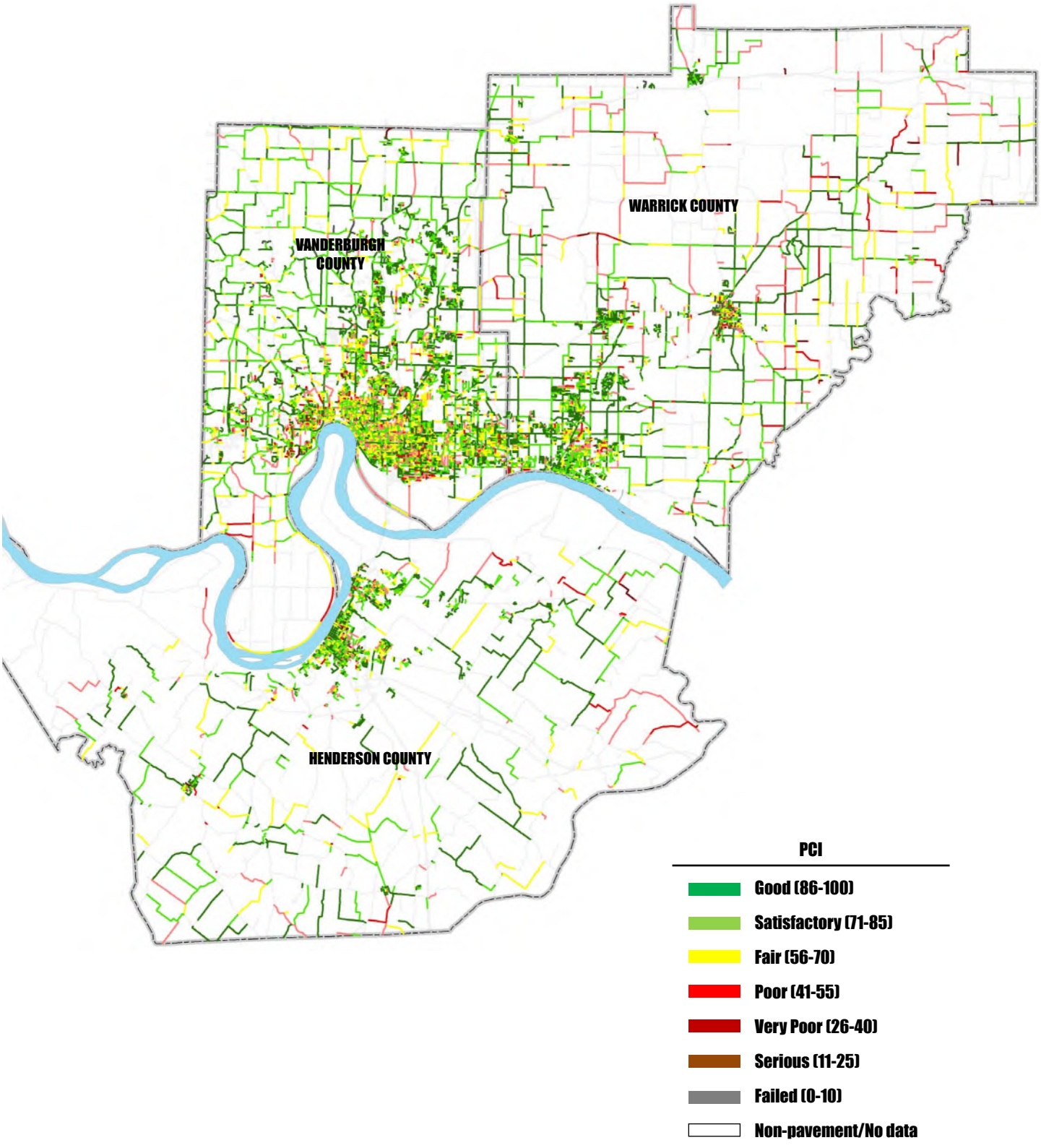


Figure H.3:
PCI by County



Bridges

The National Bridge Inspection Standards published in the Code of Federal Regulations (23 CFR 650.3) give the following definition:

A highway bridge is defined as a structure including supports erected over a depression or an obstruction, such as water, highway, or railway, and having a track or passageway for carrying traffic or other moving loads, and having an opening measured along the center of the roadway of more than 20 feet (6.1 meters) between undercopings of abutments or spring lines of arches, or extreme ends of openings for multiple boxes; it may also include multiple pipes, where the clear distance between openings is less than half of the smaller contiguous opening. Culverts may qualify to be considered "bridge" length.

The National Bridge Inventory (NBI) is the aggregation of structure inventory and appraisal data collected to fulfill the requirements of the National Bridge Inspection Standards. Each State shall prepare and maintain an inventory of all bridges subject to the National Bridge Inspection Standards (NBIS). The three counties in the MPA, Vanderburgh and Warrick counties in Indiana and Henderson County in Kentucky, participate in periodic inspection and appraisals of bridges in the NBI that meets these requirements. Table H.4 shows bridge condition statistics for the three counties.

Table H.4:
Bridge Conditions Statistics

Year	County	Bridge Counts				
		All	Good	Fair	Poor	% Poor
2017	Vanderburgh	277	158	112	7	3%
2016		277	160	109	8	3%
2017	Warrick	195	96	87	12	6%
2016		195	95	88	12	6%
2017	Henderson	183	87	82	14	8%
2016		184	90	82	12	7%

Transit Asset Management

Transit asset management (TAM) is the practice of prioritizing funding based on the condition and maintenance requirements of transit assets, including vehicles, equipment, and facilities. Properly tracking asset conditions helps transit agencies determine the most cost-effective process for operating, maintaining, rehabilitating, and replacing assets. Tracking the age and mileage of vehicles and physical condition of equipment and facilities aids transit agencies in maintaining a state of good repair.

In July of 2016, the FTA published the Transit Asset Management final rule (49 CFR part 625) that established minimum asset management requirements for transit providers. The rule included a deadline of October 2018 for the completion of a Transit Asset Management (TAM) Plan by all transit providers. As operators of less than 100 vehicles for their fixed route systems in the same urbanized area, METS and HART were allowed to develop a Group TAM Plan. The Evansville MPO worked closely with METS and HART to develop the 2018-2022 Transit Asset Management Plan, and will continue to work together on future updates.

The Transit Asset Management Plan includes a summary of all of the capital assets of both METS and HART, including a condition assessment of those assets. The appendix of the TAM Plan includes a detailed table of all vehicles, equipment, and facilities with age, mileage, condition, replacement cost, and anticipated replacement year. The plan also includes performance measures and targets that will be updated annually and a list of the tools that help METS and HART determine replacement times. The TAM Targets are shown in Appendix E: Performance Measures.

The full Transit Asset Management Plan can be viewed on the Evansville MPO website at evansvillempo.com/links.html. Click on Multi-Modal under Publications to see a full list of transit related plans.

I SAFETY & SECURITY

TRANSPORTATION SAFETY PLANNING

The mission of Transportation Safety Planning (TSP) is to reduce transportation fatalities and serious injuries by supporting comprehensive, system-wide, multimodal, data-driven, and proactive regional and statewide transportation planning processes that integrate safety into surface transportation decision-making. TSP is a comprehensive, system-wide, multimodal, proactive process that better integrates safety into surface transportation decision-making. Federal law requires that the State and metropolitan transportation planning processes be consistent with Strategic Highway Safety Plans. It is important for the processes to consider projects and strategies to increase the safety of the transportation system for motorized and non-motorized users.

As with prior transportation bills, the FAST Act retains safety as a "stand-alone" planning factor with a dedicated funding source, Highway Safety Improvement Program (HSIP) funds. These funds are what the MPO uses to increase the safety of the transportation system for motorized and non-motorized users. State crash data is used to help determine where these funds are best targeted. Data is downloaded from the state databases yearly for each county within the MPA. The datasets are imported into the MPO's GIS database and geographical representations are corrected as appropriate. Private property crashes, crashes that take place entirely on private property such as parking lots or in apartment complexes are removed. Generalized crash statistics can be used for targeted educational advertising and other educational media. It can also guide planners to other necessary reviews such as system-wide intersection or segment analyses where right angle and rear end or head on and run-off-road crashes are predominant. Tables I.1 through I.3 show the 5-year general crash statistics for Vanderburgh, Warrick and Henderson counties.

Table I.1:
Vanderburgh County Crash Statistics

Vanderburgh County Crash Statistics excluding crashes occuring on private property	2013	2014	2015	2016	2017
Manner of Collision					
Backing	184	193	176	201	187
Collision with Animal Other		2	0	2	5
Collision with Deer		3	51	96	73
Collision with Object in Road		1	4	4	3
Head On	288	348	142	48	
Head On Between Two Motor Vehicles			119	118	180
Left Turn	227	236	260	258	264
Left/Right Turn	19	16	21	19	17
Non-collision	51	44	34	26	27
Opposite Direction Sideswipe	110	129	137	123	106
Other	125	152	170	271	198
Ran Off Road	447	537	505	562	498
Rear End	1908	1961	2160	2242	2082
Rear to Rear	12	6	15	7	18
Right Angle	1142	1272	1359	1227	1230
Right Turn	55	78	71	75	62
Same Direction Sideswipe	599	628	679	671	605
Primary Factor					
Accelerator Failure or Defective	0	4	0	1	
Alcoholic Beverages	0	0	0	0	
Animal/Object in Roadway	197	196	211	147	168
Brake Failure or Defective	10	12	11	9	7
Cell Phone Usage	13	8	6	7	2
Disregard Signal/Reg Sign	341	423	410	388	424
Driver Asleep or Fatigued	15	27	23	33	22
Driver Distracted	68	84	71	62	83
Driver Illness	15	17	19	14	19
Engine Failure or Defective	0	0	0	0	1
Failure to Yield Right of Way	1065	1176	1330	1302	1203
Following Too Closely	1651	1687	1914	1990	1850
Glare	0	0	0	0	
Headlight Defective or Not On	0	2	2	1	
Holes/Ruts in Surface	1	0	1	0	
Illegal Drugs	0	0	0	0	
Improper Lane Usage	293	296	308	297	303
Improper Passing	68	69	67	53	48
Improper Turning	153	163	205	184	177
Insecure/Leaky Load	1	2	1	1	2
Jacknifing	0	0	0	0	
Left of Center	103	108	122	143	119
Obstruction Not Marked	3	3	2	4	3
None (Driver)	0	0	0	0	
Other (Driver)	236	225	255	253	209
Other (Environmental)	17	15	6	13	17
Other (Vehicle)	7	8	10	10	4
Other Lights Defective	1	0	1	0	
Other Telematics In Use	0	3	2	0	
Overcorrecting/Oversteering	43	78	62	60	69
Oversize/Overweight Load	0	0	1	0	2
Passenger Distraction	0	0	0	0	
Pedestrian Action	25	23	19	22	17
Prescription Drugs	0	0	0	0	
Ran Off Road Left	0	0	0	0	
Ran Off Road Right	390	468	442	522	476
Road Under Construction	0	0	0	0	
Roadway Surface Condition	39	70	28	26	10
Severe Crosswinds	1	0	1	1	
Speed Too Fast For Weather Condition	85	140	89	112	75
Steering Failure	4	1	4	6	3
Tire Failure or Defective	9	7	6	5	8
Tow Hitch Failure	1	1	0	1	
Traffic Control Inoperative/Missing/Obsc	0	1	0	0	
Unsafe Backing	224	214	199	234	210
Unsafe Lane Movement	3	3	7	4	6
Unsafe Speed	77	68	71	61	55
Utility Work	0	0	0	0	
View Obstructed	1	3	1	1	5
Wrong Way on One Way	7	4	5	11	5

Table I.2:
Warrick County Crash Statistics

Warrick County Crash Statistics excluding crashes occurring on private property	2013	2014	2015	2016	2017
Manner of Collision					
Backing	36	53	61	53	40
Collision with Animal Other		6	3	9	5
Collision with Deer		88	242	235	262
Collision with Object in Road		1	4	6	7
Head On	211	0	0	0	0
Head On Between Two Motor Vehicles		150	50	40	33
Left Turn	41	43	40	63	59
Left/Right Turn	16	14	13	8	5
Non-collision	9	5	6	16	7
Opposite Direction Sideswipe	26	26	28	36	21
Other	18	28	56	55	60
Ran Off Road	175	222	262	229	231
Rear End	224	273	298	299	312
Rear to Rear	0	0	4	0	0
Right Angle	187	170	164	143	152
Right Turn	8	5	18	14	16
Same Direction Sideswipe	56	98	87	111	83
Primary Factor					
Accelerator Failure or Defective	0	0	0	1	3
Alcoholic Beverages	0	0	0	0	0
Animal/Object in Roadway	256	265	260	256	283
Brake Failure or Defective	1	3	12	11	5
Cell Phone Usage	8	1	6	2	2
Disregard Signal/Reg Sign	30	38	65	45	54
Driver Asleep or Fatigued	7	24	17	14	14
Driver Distracted	21	28	41	40	30
Driver Illness	7	7	8	8	7
Engine Failure or Defective	0	1	0	2	1
Failure to Yield Right of Way	139	172	207	217	193
Following Too Closely	165	187	186	219	235
Glare	0	0	0	0	0
Headlight Defective or Not On	0	0	0	1	0
Holes/Ruts in Surface	1	0	2	2	1
Illegal Drugs	0	0	0	0	0
Improper Lane Usage	15	34	24	34	27
Improper Passing	7	5	10	11	12
Improper Turning	24	21	35	35	35
Insecure/Leaky Load	2	1	2	3	0
Jacknifing	0	0	0	0	0
Lane Marking Obscured	1	0	0	0	0
Left of Center	21	22	34	27	25
None (Driver)	0	0	0	0	0
Obstruction Not Marked	3	1	2	2	3
Other (Driver)	27	38	26	37	47
Other (Environmental)	9	5	8	9	13
Other (Vehicle)	9	0	3	4	3
Other Lights Defective	1	0	2	0	0
Other Telematics In Use	1	0	0	0	0
Overcorrecting/Oversteering	16	23	27	24	18
Oversize/Overweight Load	0	0	1	1	0
Passenger Distraction	0	0	0	0	0
Pedestrian Action	1	1	1	1	1
Prescription Drugs	0	0	0	0	0
Ran Off Road Left	0	0	0	0	0
Ran Off Road Right	94	114	138	136	135
Road Under Construction	0	0	0	0	0
Roadway Surface Condition	29	54	40	22	16
Severe Crosswinds	0	1	0	0	0
Speed Too Fast For Weather Condition	28	41	33	37	33
Steering Failure	2	1	6	1	1
Tire Failure or Defective	2	2	4	8	6
Tow Hitch Failure	0	0	2	0	1
Traffic Control Inoperative/Missing/Obsc	1	0	0	0	0
Unsafe Backing	39	51	69	54	48
Unsafe Lane Movement	9	4	10	15	11
Unsafe Speed	32	31	51	36	34
Utility Work	0	0	0	0	0
View Obstructed	5	5	3	4	2
Wrong Way on One Way	0	1	3	2	2

Table I.3:
Henderson County Crash Statistics

Henderson County Crash Statistics

Manner of Collision	2013	2014	2015	2016	2017
Angle	274	283	303	332	276
Backing	121	115	136	130	119
Head On	36	36	46	32	41
Opposing Left Turn	44	44	48	46	59
Rear End	368	375	422	423	412
Rear to Rear	3	4	7	8	7
Opposite Direction Sideswipe	76	66	79	77	68
Same Direction Sideswipe	153	164	175	186	164
Single Vehicle	480	457	490	458	394

Directional Analysis	2013	2014	2015	2016	2017
1 Vehicle Entering or Leaving Parked Position (Not Parking Lot)	10	16	15	16	7
1 Vehicle Entering/Leaving Entrance	83	88	113	117	94
1 Vehicle Parked Position (Not Parking Lot/Driveway)	124	125	141	148	117
Angle Collision - Both Vehicles Going Straight	70	57	50	75	35
Angle Collision - 1 Vehicle Turning Left	58	61	66	66	31
Angle Collision - 1 Vehicle Turning Right	13	23	26	15	8
Angle Collision - Other	29	34	20	29	56
Collision With Animal (any)	151	129	106	100	99
Collisions Involving Bicycles (calculated)	9	11	4	7	1
Collision With Fixed Object In Gore	0	0	0	0	0
Collision With Fixed Object In Intersection - First Event Collision 09 - 32	30	26	36	33	27
Collision With Fixed Object Non-Intersection-First Event Collision 09 - 32 Excluding 16	129	118	130	109	96
Collision With Fixed Object Not In Gore	9	0	4	8	3
Collision With Non-Fixed Object	7	6	3	8	4
Collision With Parked Vehicle	10	9	13	8	8
Collision With Pedestrian In Intersection	6	1	3	7	3
Collision With Pedestrian Non-Intersection	6	5	6	6	5
Collision With Train	2	1	0	1	0
Head-On Collision	15	10	19	11	20
Median Cross-Over Collision	1	0	0	0	0
Multiple Vehicle Collision On Ramp	2	1	4	5	1
Non-Collision Object Collision	5	10	17	17	4
Occupant Fell From Moving Vehicle	5	5	4	6	3
Opposing Left Turn	30	23	24	28	22
Opposite Direction - Both Vehicles Going Straight Ahead	16	17	22	13	9
Other Collisions On Shoulder	5	11	22	25	28
Other Intersection Collisions	4	4	7	3	37
Other Ramp Related Collisions Not Listed Above	0	0	2	1	4
Other Roadway or Mid-Block Collision	60	78	96	75	134
Overturned In Roadway	2	6	5	4	2
Overturned On Ramp	0	0	1	0	0
Ramp - Vehicle Ran Off Roadway	1	0	1	0	0
Ran Off Roadway (1 Vehicle with Earth Embankment/Ditch)	108	115	123	119	47
Rear End - Both Vehicles Going Straight	8	5	8	5	5
Rear End - On Ramp	2	3	5	7	1
Rear End - One Vehicle Stopped	32	26	22	25	13
Rear End - One Vehicle Turning Left	4	5	7	7	4
Rear End - One Vehicle Turning Right	9	5	11	7	6
Rear End - Other	79	68	91	91	28
Rear End In Traffic Lanes Both Vehicles Moving	144	150	179	181	195
Rear End In Traffic Lanes One Vehicle Stopped	46	67	45	54	25
Rear End On Shoulder	0	0	0	0	0
Sideswipe-Same Direction					21
Sideswipe Collision - Opposite Direction	42	39	53	54	40
Sideswipe Collision - Same Direction	112	128	135	140	98
Vehicle Backing In Intersection	61	61	67	61	5
Vehicle Backing Non Intersection					43
Vehicle Going In Wrong Direction	1	1	0	0	0

Intersection Crash Analysis

Currently the MPO conducts intersection crash analyses in Vanderburgh, Warrick and Henderson counties. Due to time constraints, the number of intersections reviewed during a given analysis period is limited. For analysis in Indiana, the MPO uses INDOT's RoadHAT (Road Hazard Analysis Tool) software to calculate an Icc (Index of Crash Cost) and Icf (Index of Crash Frequency) as well as a basic crash rate and crash severity calculations. In Kentucky, only the crash rate and crash severity rates are calculated.

Intersections are selected for review based on LPA input, fatality/incapacitating injury occurrences, injury occurrences and overall number of crashes. An intersection with an Icc of 2.00 or greater will automatically be included in the subsequent review period for continued monitoring. Each review period includes three years of crash data. Studies have been completed for 2009-2011, 2012-2014 and 2015-2017. The resulting crash rates and crash severity rates are used to see how intersections change over time. Due to the periodic changes in the RoadHAT software, the Icc is not used for trend analyses. Table I.4 shows the intersection crash rates, and Table I.5 shows intersection crash severity.

Segment Crash Analysis

The MPO has begun a roadway segment crash analysis for Vanderburgh and Warrick counties. The same principles apply for the selection of the segments for review as were used for the intersection crash analyses. The analysis has been completed for 2013-2015 and is currently underway for 2016-2018. The results of the 2013-2015 study are shown in Table I.6 and includes the segment selected for review in the next review period. Trending analysis will not be available until after the 2018 crash data is reviewed.

CR Crash Rate
UC Under Construction
Not reviewed during the analysis period
Intersections with Icc or CR > 2.00

Table I.4: Intersection Crash Rates

Agency	Intersection	CR 09-11	CR 12-14	CR 15-17
Vanderburgh	Hogue Rd & Red Bank Rd	3.01		
Vanderburgh	New Harmony Rd & St Joe Rd/Koressel Rd	4.47	2.87	
Vanderburgh	Green River Rd & Kansas Rd	1.38		
Vanderburgh	St Joseph Av & Allens Ln	0.85	0.91	1.19
Vanderburgh	Green River Rd & Heckel Rd	0.74		
Vanderburgh	Green River Rd & Millersburg Rd	0.81		
Vanderburgh	St Joseph Av & Wimberg Rd	0.81		
Vanderburgh	Upper Mt Vernon Rd & Red Bank Rd	0.55		
Vanderburgh	Upper Mt Vernon Rd & Boehne Camp Rd	0.90		
Vanderburgh	Hogue Rd & Rosenberger Av	1.44	1.42	0.90
Vanderburgh	Baseline Rd & Princeton Rd	1.96		
Vanderburgh	Green River Rd & Surrey Wa	0.52		
Vanderburgh	Oak Hill Rd & St George Rd	0.45		
Vanderburgh	Boonville-New Harmony Rd & Green River Rd		2.89	2.86
Vanderburgh	Oak Hill Rd & Rode Rd		0.79	0.87
Vanderburgh	Boehne Camp Rd & Middle Mt Vernon Rd		3.24	2.22
Vanderburgh	Boonville-New Harmony Rd & Bridlewood Dr		0.64	0.41
Vanderburgh	Old State Rd & Eissler Rd		1.17	0.32
Vanderburgh	St Joseph Rd & Mohr Rd		1.03	
Vanderburgh/Evansville	Covert Av & Fuquay Rd	1.02		
Vanderburgh/Evansville	Green River Rd & Hirsch Rd	0.12		
Vanderburgh/Evansville	Red Bank Rd & Pearl Dr		1.39	1.39
Evansville	Green River Rd & Lynch Rd	1.98	2.41	3.23
Evansville	Garvin St & John St	8.77	7.19	9.31
Evansville	Boeke Rd & Washington Av	2.37	1.18	2.85
Evansville	Washington Av & Weinbach Av	1.97	2.29	2.00
Evansville	First Av & Columbia St	2.22	0.99	1.79
Evansville/Vanderburgh	Lynch Rd & Oak Hill Rd	2.01	1.09	1.60
Evansville	Burkhardt Rd & Virginia St	1.78	3.06	4.32
Evansville	First Av & Mill Rd	1.80		
Evansville	Green River Rd & Virginia St	1.66	1.98	3.50
Evansville	Green River Rd & Vogel Rd	1.47	1.77	2.62
Evansville	Green River Rd & Washington Av	1.26		
Evansville	Covert Av & Green River Rd	1.53	0.70	2.54
Evansville	First Av & Buena Vista Rd	1.56		2.73
Evansville/Vanderburgh	Red Bank Rd & Pearl Dr	1.84		
Evansville	First Av & Fairway Dr	1.30		
Evansville	Vann Av & Washington Av		2.49	3.01
Evansville	Covert Av & Weinbach Av		1.81	2.35
Evansville	Covert Av & Vann Av		1.79	2.39
Evansville	First Av & Franklin St		1.69	1.94
Evansville	Tekoppel Rd & Hogue Rd		1.42	1.14
Evansville	Lincoln Av & Weinbach Av		1.89	1.78
Evansville	Mt Vernon Av/Upper Mt Vernon Rd & Tekoppel Av		0.28	
Evansville	Newburgh Rd & Washington Av		0.30	2.38
Evansville	Tekoppel Rd & Virginia St		0.15	
Evansville	Bellemeade Av & Garvin St			2.57
Evansville	Bellemeade Av & Weinbach Av			UC
Evansville	Burkhardt Rd & Columbia St			1.42
Evansville	Green River Rd & Constellation Av			0.33
Evansville	Green River Rd & Lincoln Av			2.61
Evansville	Green River Rd & Spring Valley Rd			1.58
Evansville	Stringtown Rd & Pfeiffer Rd			1.16
Evansville	Vann Av & Bayard Park Dr			0.20
Evansville	Vann Av & Bellemeade Av			2.13
Darmstadt	Boonville-New Harmony Rd & Darmstadt Rd	0.47		
Darmstadt	Boonville-New Harmony Rd & Hoing Rd	0.69		
Darmstadt	Boonville-New Harmony Rd & Lurey Dr	0.16		
Darmstadt	Darmstadt Rd & Korb Manor Dr	0.13		
Darmstadt	Darmstadt Rd & Wortman Rd	0.51		
Darmstadt	Boonville-New Harmony Rd & St Joseph Av	1.82		1.83
Warrick	Old SR 261 & Bell Oaks Dr	1.40	1.45	0.37
Warrick	Bell Rd & Bell Oaks Dr (north junction)	2.30	2.64	2.73
Warrick	Oak Grove Rd & Bell Rd	1.02	0.87	UC
Warrick	Lincoln Av & Epworth Rd	0.38	0.47	
Warrick	Old SR 261 & Lincoln Av	1.17	0.81	1.27
Warrick	Vann Rd & Anderson Rd	0.77		2.27
Warrick	Lincoln Av & Frame Rd		1.04	0.67
Warrick	Vann Rd & Bell Rd		1.20	
Warrick	Bell Oaks Dr & Wyntree Dr		1.60	1.17
Warrick	Epworth Rd & Gateway Dr		0.65	
Warrick	Bell Rd & Bell Oaks Dr (south junction)			1.75
Warrick	Lincoln Av & Bell Rd			1.10
Warrick	Epworth Rd & Oak Grove Rd			0.53
Warrick	Lincoln Av & Lenn Rd			0.53
Warrick	Old SR 261 & Olde Newburgh Dr			0.09
Warrick	Telephone Rd & Fuquay Rd			0.92
Warrick	Telephone Rd & Bell Rd			0.00
Boonville	Sycamore St & 1st St			2.27
Newburgh	Old SR 662/Jennings Rd & Main St/Plum St		0.40	0.32
Newburgh	Old SR 662/Newburgh Rd & Frame Rd/Yorkshire Rd		1.04	0.56
Newburgh	Jennings St & Jefferson		0.39	0.10
Newburgh	French Island Trl & Sycamore St/Water St		0.71	0.24
Newburgh	Jennings St & State St		0.37	0.00
Henderson	Martin Luther King Jr Bl & Fagan St	3.93	1.74	1.26
Henderson	Martin Luther King Jr Bl & Adams St	1.71		0.38
Henderson	1st St & Adams St		2.24	1.50
Henderson	Elm St & Barker Rd		2.16	0.36
Henderson	3rd St & Elm St		1.44	
Henderson	5th St & Ingram St		1.02	
Henderson	Elm St & 12th		1.00	
Henderson	Washington St & Adams St		0.95	
Henderson	Garden Mile Rd & Stadium Dr		0.71	
Henderson	Clay St & Meadow St		0.43	
Henderson	US Highway 41 & Barret Bl			0.36
Henderson	Elm St & 14th St			0.58
Henderson County	Corydon Greenlick Rd & Kings Mill Rd			19.71
Henderson County	Crooked Rd & Chase Rd (north junct)			5.44

Table I.5:
Intersection Crash Severity

Agency	Intersection	CS 09-11	CS 12-14	CS 15-17
Vanderburgh	Hogue Rd & Red Bank Rd	0.00		
Vanderburgh	New Harmony Rd & St Joe Rd/Koressel Rd	2.51	1.91	
Vanderburgh	Green River Rd & Kansas Rd	0.28		
Vanderburgh	St Joseph Av & Allens Ln	0.11	0.23	0.25
Vanderburgh	Green River Rd & Heckel Rd	0.40		
Vanderburgh	Green River Rd & Millersburg Rd	0.15		
Vanderburgh	St Joseph Av & Wimberg Rd	0.22		
Vanderburgh	Upper Mt Vernon Rd & Red Bank Rd	0.00		
Vanderburgh	Upper Mt Vernon Rd & Boehne Camp Rd	0.36		
Vanderburgh	Hogue Rd & Rosenberger Av	0.63	0.53	0.27
Vanderburgh	Baseline Rd & Princeton Rd	0.65		
Vanderburgh	Green River Rd & Surrey Wa	0.17		
Vanderburgh	Oak Hill Rd & St George Rd	0.06		
Vanderburgh	Boonville-New Harmony Rd & Green River Rd		1.39	1.13
Vanderburgh	Oak Hill Rd & Rode Rd		0.17	0.52
Vanderburgh	Boehne Camp Rd & Middle Mt Vernon Rd		1.62	0.00
Vanderburgh	Boonville-New Harmony Rd & Bridlewood Dr		0.32	0.00
Vanderburgh	Old State Rd & Eissler Rd		0.17	0.00
Vanderburgh	St Joseph Rd & Mohr Rd		0.34	
Vanderburgh/Evansville	Covert Av & Fuquay Rd	0.00		
Vanderburgh/Evansville	Green River Rd & Hirsch Rd	0.00		
Vanderburgh/Evansville	Red Bank Rd & Pearl Dr		0.10	0.15
Evansville	Green River Rd & Lynch Rd	0.28	0.46	0.72
Evansville	Garvin St & John St	4.20	3.73	3.56
Evansville	Boeke Rd & Washington Av	0.72	0.37	0.79
Evansville	Washington Av & Weinbach Av	0.67	0.41	0.68
Evansville	First Av & Columbia St	0.66	0.46	0.49
Evansville/Vanderburgh	Lynch Rd & Oak Hill Rd	0.57	0.41	0.47
Evansville	Burkhardt Rd & Virginia St	0.41	0.69	0.97
Evansville	First Av & Mill Rd	0.46		
Evansville	Green River Rd & Virginia St	0.32	0.31	0.51
Evansville	Green River Rd & Vogel Rd	0.30	0.51	0.49
Evansville	Green River Rd & Washington Av	0.34		
Evansville	Covert Av & Green River Rd	0.31	0.23	0.52
Evansville	First Av & Buena Vista Rd	0.21		0.65
Evansville/Vanderburgh	Red Bank Rd & Pearl Dr	0.09		
Evansville	First Av & Fairway Dr	0.28		
Evansville	Vann Av & Washington Av		0.80	0.93
Evansville	Covert Av & Weinbach Av		0.59	0.69
Evansville	Covert Av & Vann Av		0.65	0.75
Evansville	First Av & Franklin St		0.54	0.68
Evansville	Tekoppel Rd & Hogue Rd		0.13	0.21
Evansville	Lincoln Av & Weinbach Av		0.44	0.39
Evansville	Mt Vernon Av/Upper Mt Vernon Rd & Tekoppel Av		0.00	
Evansville	Newburgh Rd & Washington Av		0.08	0.50
Evansville	Tekoppel Rd & Virginia St		0.00	
Evansville	Bellemeade Av & Garvin St			1.47
Evansville	Bellemeade Av & Weinbach Av			UC
Evansville	Burkhardt Rd & Columbia St			0.58
Evansville	Green River Rd & Constellation Av			0.10
Evansville	Green River Rd & Lincoln Av			0.52
Evansville	Green River Rd & Spring Valley Rd			0.28
Evansville	Stringtown Rd & Pfeiffer Rd			0.31
Evansville	Vann Av & Bayard Park Dr			0.10
Evansville	Vann Av & Bellemeade Av			0.81
Darmstadt	Boonville-New Harmony Rd & Darmstadt Rd	0.16		
Darmstadt	Boonville-New Harmony Rd & Hoing Rd	0.00		
Darmstadt	Boonville-New Harmony Rd & Lurey Dr	0.00		
Darmstadt	Darmstadt Rd & Korb Manor Dr	0.00		
Darmstadt	Darmstadt Rd & Wortman Rd	0.26		
Darmstadt	Boonville-New Harmony Rd & St Joseph Av	0.50		0.91
Warrick	Old SR 261 & Bell Oaks Dr	0.35	0.08	0.15
Warrick	Bell Rd & Bell Oaks Dr (north junction)	0.35	0.42	1.41
Warrick	Oak Grove Rd & Bell Rd	0.16	0.24	UC
Warrick	Lincoln Av & Epworth Rd	0.05	0.06	
Warrick	Old SR 261 & Lincoln Av	0.26	0.07	0.07
Warrick	Vann Rd & Anderson Rd	0.44		0.93
Warrick	Lincoln Av & Frame Rd		0.28	0.19
Warrick	Vann Rd & Bell Rd		0.50	
Warrick	Bell Oaks Dr & Wyntree Dr		0.64	0.21
Warrick	Epworth Rd & Gateway Dr		0.10	
Warrick	Bell Rd & Bell Oaks Dr (south junction)			0.16
Warrick	Lincoln Av & Bell Rd			0.39
Warrick	Epworth Rd & Oak Grove Rd			0.12
Warrick	Lincoln Av & Lenn Rd			0.18
Warrick	Old SR 261 & Olde Newburgh Dr			0.09
Warrick	Telephone Rd & Fuquay Rd			0.23
Warrick	Telephone Rd & Bell Rd			0.00
Boonville	Sycamore St & 1st St			0.57
Newburgh	Old SR 662/Jennings Rd & Main St/Plum St		0.00	0.08
Newburgh	Old SR 662/Newburgh Rd & Frame Rd/Yorkshire Rd		0.16	0.00
Newburgh	Jennings St & Jefferson		0.10	0.00
Newburgh	French Island Trl & Sycamore St/Water St		0.00	0.00
Newburgh	Jennings St & State St		0.00	0.00
Henderson	Martin Luther King Jr Bl & Fagan St	1.31	0.87	0.42
Henderson	Martin Luther King Jr Bl & Adams St	1.28		0.00
Henderson	1st St & Adams St		0.75	0.00
Henderson	Elm St & Barker Rd		0.36	0.00
Henderson	3rd St & Elm St		0.54	
Henderson	5th St & Ingram St		0.13	
Henderson	Elm St & 12th		0.09	
Henderson	Washington St & Adams St		0.47	
Henderson	Garden Mile Rd & Stadium Dr		0.47	
Henderson	Clay St & Meadow St		0.43	
Henderson	US Highway 41 & Barret Bl			0.00
Henderson	Elm St & 14th St			0.35
Henderson County	Corydon Greenlick Rd & Kings Mill Rd			6.57
Henderson County	Crooked Rd & Chase Rd (north junct)			5.44

CS Crash Severity
UC Under Construction
Not reviewed during the analysis period
Intersections with Icc or CR > 2.00

Table I.6:
Segment Crash Analysis

LPA	Street	Begin Pt	End Pt	CR 13-15	CS 13-15	Icc 13-15	Icf 13-15	2016-2018 Selection Set
Vanderburgh	Red Bank Rd	Hogue Rd	Upper Mt Vernon Rd	960	320	3.05	4.00	
Vanderburgh	Wimberg Rd	Kratzville Rd	St Joseph Av	807	255	1.57	3.33	
Vanderburgh	Pearl Dr	Red Bank Rd	Boehne Camp Rd	445	0	0.56	0.90	
Vanderburgh	Hogue Rd	city limits	Rosenberger Av	423	195	1.45	1.02	
Vanderburgh	Old Henderson Rd	King Rd	Nurrenbern Rd	286	172	0.05	-0.36	
Vanderburgh	Boonville-New Harmony Rd	Browning Rd	Old State Rd	267	83	1.55	2.01	
Vanderburgh	Boonville-New Harmony Rd	Petersburg Rd	Browning Rd	261	69	1.32	1.81	
Vanderburgh	St Joseph Av	Mill Rd	Wimberg Rd	186	62	1.54	2.83	
Vanderburgh	Old State Rd	Mount Pleasant Rd	Hillsdale Rd					
Vanderburgh	Boonville-New Harmony Rd	Darmstadt Town limits	SR 65/Big Cynthiana Rd					
Vanderburgh	Orchard Rd	Darmstadt Town limits	SR 65/Big Cynthiana Rd					
Vanderburgh	Darmstadt Rd	city limits	Evergreen Rd					
Vanderburgh	Baseline Rd	SR 65/Big Cynthiana Rd	Owensville Rd					
Vanderburgh	Broadway Av	Schutte Rd	Old Mt Vernon Rd					
Vanderburgh	Covert Av	city limits	Fuquay Rd					
Vanderburgh	Darmstadt Rd	Evergreen Rd	Darmstadt Town limits					
Vanderburgh	Peerless Rd	Hogue Rd	Upper Mt Vernon Rd					
Vanderburgh	Petersburg Rd	Boonville-New Harmony Rd	Schlensker Rd					
Evansville	Morgan Av	Heidelbach Av	First Av	572	401	1.25	0.13	
Evansville	Green River Rd	SR 66/Lloyd Expy	Virginia St	391	11	3.42	4.46	
Evansville	1st Av	Allens Ln	Buena Vista Rd	288	104	2.69	1.47	
Evansville	Virginia St	Burkhardt Rd	Cross Pointe Bl	286	41	1.1	0.46	
Evansville	Green River Rd	Lincoln Av	SR 66/Lloyd Exp	273	84	2.22	1.86	
Evansville	Lincoln Av	Green River Rd	Vann Av	265	59	0.29	0.06	
Evansville	1st Av	Buena Vista Rd	Mill Rd	262	102	1.51	0.82	
Evansville	Green River Rd	Vogel Rd	SR 62/Morgan Av	233	78	2.84	3.11	
Evansville	Lynch Rd	Hitch & Peters Rd	US 41	185	59	1.43	0.59	
Evansville	Green River Rd	SR 62/Morgan Av	Theater Dr	185	54	1.52	2.48	
Evansville	Riverside Dr	Court St	Fulton Av	177	88	1.51	1.98	
Evansville	Lynch Rd	Oak Hill Rd	Hitch & Peters Rd	171	52	0.29	0.00	
Evansville	Covert Av	Green River Rd	east to county line	159	106	1.40	0.91	
Evansville	Weinbach Av	SR 66/Lloyd Expy	Oak Hill Rd	147	52	0.28	-0.02	
Evansville	Washington Av	Green River Rd	Vann Av	134	32	0.37	-0.13	
Evansville	Green River Rd	Virginia St	Vogel Rd	132	37	1.41	0.83	
Evansville	Virginia St	Burkhardt Rd	Green River Rd	125	42	-0.06	-0.18	
Evansville	Green River Rd	Theater Dr	Lynch Rd	96	15	-0.17	-0.18	
Evansville	Virginia St	US Highway 41	Garvin St					
Evansville	Riverside Dr	Court St	Fulton Av					
Evansville	Virginia St	Burkhardt Rd	Green River Rd					
Evansville	Indiana St	Congress Av	Stockwell Rd					
Evansville	Stockwell Rd	SR 66/Lloyd Expy	SR 62/Morgan Av					
Evansville	Stringtown Rd	Pfeiffer Rd	Buena Vista Rd					
Evansville	Covert Av	Green River Rd	Vann Av					
Evansville	Mill Rd	Stringtown Rd	Kentucky Av					
Evansville	Kratzville Rd	Wimberg Rd	First Av					
Evansville	Pfeiffer Rd	Kentucky Av	Stringtown Rd					
Evansville	Kratzville Rd	Mill Rd	Wimberg Rd					
Evansville	Lohoff Av	First Av	Kratzville Rd					
Evansville	Petersburg Rd	US Highway 41	Stringtown Rd					
Evansville	Vogel Rd	Burkhardt Rd	Green River Rd					
Darmstadt	Boonville New Harmony Rd	Hoing Rd	Darmstadt Rd					
Darmstadt	Boonville New Harmony Rd	Darmstadt Rd	St Joseph Av					
Warrick	Vann Rd	Anderson	SR 61	124	67	1.42	0.05	
Warrick	Jenner Rd	Bell	Fuquay	311	104	1.32	0.81	
Warrick	Yankeetown	Roeder	Eble	246	82	1.06	-0.03	
Warrick	Folsomville Rd	Lovers	Hunsaker	144	54	-0.12	-0.33	
Warrick	Yankeetown Rd	Boonville city limits	Roeder	137	61	0.36	-0.2	
Warrick	Rockport	Maple Grove	Bullocktown	221	74	0.76	0.25	
Warrick	New Hope	Yankeetown	Lashbrook	325	72	0.42	-0.06	
Warrick	Epworth Rd	Lincoln	SR 662	93	27	0.22	-0.26	
Warrick	Plank	Jenner	Gardner	327	131	0.96	0.65	
Warrick	Roeder	SR 61	Yankeetown	151	113	0.91	0.11	
Warrick	Lincoln Av	Frame	Old SR 261	55	28	0.28	-0.29	
Warrick	Elberfeld	Vanderburgh county line	Saint Johns	268	67	0.9	0.6	
Warrick	Martin	Outer Lincoln	Sharon	63	0	-0.29	-0.18	
Warrick	Bell Rd	SR 66	Lincoln	136	30	0.4	0.25	
Warrick	Telephone Rd	Bell	Fuquay	62	31	0.79	-0.17	
Warrick	Fuquay Rd	Telephone	SR 261	166	0	-0.07	0.82	
Warrick	Fuquay Rd	Gardner	Telephone	121	0	-0.35	-0.05	
Warrick	Old SR 261	SR 66	Lincoln					
Warrick	High Pointe Dr	Bell	Park Place					
Warrick	Bell Oaks	Bell	Old SR 261					
Warrick	Saint Johns	Elberfeld Rd	Cornell Rd					
Warrick	Pelzer	Rockport	New Hope					
Warrick	Hewins	Edwards	McCool					
Warrick	Phillips Rd	Folsomville Rd	Folsomville Degonia Rd					
Warrick	Boner	Eble	Red Brush					
Warrick	Leslie	Folsomville	Taylorville					
Warrick	Old Boonville	Vanderburgh county line	Stevenson Station					
Warrick	Herr	Bell Rd	Castle Garden Rd					
Newburgh	State St	Bell	Jennings					
Newburgh	Old SR 261	S of Marywood	Bell Rd					
Newburgh	Filmore	3rd	dead end					
Boonville	4th	SR 62/SR 61/Main	Lovers	128	51	0.44	-0.25	
Boonville	3rd	Oak	Maple	246	62	0.79	-0.11	
Boonville	Tower	Millis	Mac-Ray	1061	1061	1.04	0.84	
Boonville	Moore	3rd	8th					
Boonville	Poplar St	Fourth St	Boonville city limits					
Chandler	Washington	Gardner	Cambridge					

Icc 2.00 or greater
Selected for review
Not selected for review

Road Safety Spot Reviews

Additional safety reviews can be requested by an LPA on a local facility and are generally initiated when a complaint is received by another agency or the public. Most of the LPAs participate in an informal Road Safety Audit where various stakeholders are asked to contribute to the discussion by offering on-site review and/or experiences in dealing with the particular issue at hand. These reviews can include law enforcement, city/county engineers, highway departments, and signal timing experts, but has also included urban forestry professionals, etc. In these reviews crash data is always considered, and recommendations are made in accordance with the Manual on Uniform Traffic Control Devices (MUTCD), or recommendations and guidelines in AASHTO's A Policy on Geometric Design of Highways and Streets (The Green Book), ITE's Traffic Engineering Handbook, and the many and various publications by the FHWA. In Indiana, if a review results in an Icc of 2.00 or greater for an intersection or a roadway segment, the project will be added to the appropriate study list for continued monitoring.

Transportation Security

The transportation system is one of the most important infrastructure facilities of the Evansville MPO region as it provides access to surrounding areas with road, rail, water and air transport. It also provides mobility to the people and goods within the region, providing links between various land uses such as residential neighborhoods, recreational facilities, retail stores, manufacturing plants, and health care providers. Maintaining and securing the transportation system is important because disruption to the transportation system can negatively impact the region's economy and quality of life. MTP security goals and objectives are outlined in Chapter 5 of this document along with the other transportation planning goals. In addition to the transportation planning goals, the MPO will support the policies and strategies addressed by each county's Comprehensive Emergency Management Plans (CEMPs).

Transportation security is now considered a "stand-alone" planning factor. Previously, the safety and security of the transportation system were one planning factor. The security factor is to "increase the security of the transportation system for motorized and non-motorized users." The Federal Highway Administration (FHWA) along with the Evansville MPO has conducted a GAP analysis and suggested five steps for creating the new stand-alone factor. The five steps suggested by FHWA are as follows:

- Review current statewide and metropolitan transportation plans for emergency planning/ security elements.
- Incorporate the Transit System Security Program Plan (required for passenger rail system) into metropolitan plan.
- Define the role of the public transportation operators/MPO/State in promoting security.
- Identify critical facilities and transportation system elements.
- Develop security goals and appropriate strategies.

Emergency Planning

Under the guidance of the Federal and State Departments of Homeland Security and the Federal and State Emergency Management Agencies (EMAs) the county-wide EMAs for Vanderburgh, Warrick and Henderson counties provide emergency planning for their respective counties.

The EMAs in each of the three counties, with the coordination of all the government agencies responsible for the security of the region, have adopted county-wide CEMP's. A CEMP documents the county level emergency planning process that establishes policies and procedures needed to prepare for, respond to, recover from, and mitigate the impacts of all types of natural, technological, and criminal/hostile disasters. The CEMPs followed the emergency support function concept and identified the Federal Emergency Management Agency's support functions and the roles and responsibilities of the primary coordinating agencies for each support function. All three CEMPs identify the transportation system as a key infrastructure for carrying out emergency response activities in the region.

Various Federal, State and local governmental agencies provide the day to day security for all four modes of transportation in the Evansville MPO region. These agencies also provide the emergency response in the event of an unexpected disaster. Table I.7 lists the various governmental agencies that are responsible for the four modes of transportation in the MPO region.

Table I.7:
Agencies Responsible for Transportation Emergencies

Transportation System	Agency
Road Network	Indiana/Kentucky State Police
	All three County Sheriff's Departments
	City Police
	Fire Departments of all Townships
Water Transportation/ Ohio River	US Coast Guard
	State
	Fire Departments provide immediate response
Air Transport	Transportation Security Administration
	Airport Fire Department
Railroads	Indiana/Kentucky State Police
	All three County Sheriff's Departments
	City Police
	Fire Departments in cities/ towns and Townships

Critical Facilities

In the Evansville MPO region there are many facilities and systems that are considered critical. The continued and uninterrupted operation of these facilities is necessary for the health, safety, and wellbeing of the general public. The interruptions in operations of these facilities could lead to:

- Disruption to the ability to initiate and sustain emergency response operations;
- Increased safety risks to the community from the release of hazardous materials or dangerous substances;
- Disruption of all types of governmental functions, including utilities, public safety, education, and similar critical operations;
- Threats to institutions and public gathering places serving large numbers of individuals, posing higher vulnerability to the health and safety of these individuals;
- Threats to the economic vitality of the State, region and its businesses; and
- Damage or disruption to components of the transportation or utility infrastructure resulting in additional physical or economic consequences.

Critical facilities include government buildings, public safety facilities, medical facilities, schools, community centers, manufacturing plants and locations storing or using designated hazardous materials. Potentially vulnerable utilities include communications facilities, bridges, and components of water and sewage treatment systems. In addition, the entire highway and railroad network in the region, as well as the airports and river ports, are considered vulnerable infrastructure and facility components.

Alternative Modes Safety and Security

Transit

Safety and security are vital to public transportation systems to make sure transit riders have the safest possible trips and routes continue to run on time. METS, HART, and WATS have several safety procedures in place to ensure system safety. Driver training helps new drivers understand all of the safety procedures required and annual driver training provides a refresher on all current safety measures. Proper and continual maintenance is important to keep the buses running efficiently and safely. Daily checks by drivers and/or maintenance staff ensures that the vehicles will operate effectively each day. If any issues are found during daily checks or routine maintenance, the buses are immediately removed from service until a solution is found.

Security not only helps the transit providers ensure their equipment remains safe, it also helps passengers feel safe on the buses. All METS, HART, and WATS buses have security cameras onboard. These cameras help keep passengers and drivers safe, as well as protect the transit providers from any baseless complaints. Cameras, fencing, and building security at the garage/administration buildings, ensures that the equipment and employees remain safe at all times.

Bicycle and Pedestrian

Safety is a concern for any community when designating bicycle and pedestrian facilities. Ensuring the safety of bicyclists and pedestrians is a difficult task because doing so requires all roadway users to make sound judgements. Facilities should be designed in a way that will encourage users to make safe decisions, but sometimes accidents are not avoidable.

Table I.8 shows past crash statistics involving bicyclists and pedestrians in the three-county region. These numbers show crashes that were reported in public right-of-way and does not include crashes that may have happened on private property, such as a pedestrian being hit in a grocery store parking lot.

Security for the bike and pedestrian networks is ensuring that people feel free of danger when using the bike and pedestrian facilities. It is important for facilities to be well lit and open. Specific areas, such as those along shared use paths, could use call boxes to help people feel more secure. The new Hi-Rail corridor is one example of a well-lit multi-use path, with solar lighting along much of the route. The USI-Burdette Park trail includes call boxes to help trail users feel safe. In downtown Evansville, the police presence in cars and on bikes increases the security of sidewalk and Greenway users.

Table I.8:
Bicycle and Pedestrian Crash Statistics

		2012	2013	2014	2015	2016	2017
Bicycles	Indiana*	33	27	31	37	29	23
	Kentucky	8	9	11	4	7	1
Pedestrians	Indiana*	56	37	43	34	47	32
	Kentucky	18	12	8	9	13	8

*Indiana includes both Vanderburgh and Warrick counties

The Evansville MPO (EMPO) recognizes the importance of freight transportation in contributing to the economic vitality of the region. To maximize the efficiency of freight transportation, the system should provide as many mode options as possible. The term multimodal freight indicates that products are moved using a variety of modes, in some cases multiple modes between origin and destination. Within the region, roadways, railways, airports pipelines and inland waterway ports support the multimodal distribution of freight.

When considering freight movement and facilities, the EMPO not only includes the Metropolitan Planning Area (MPA), Henderson County in Kentucky, and Vanderburgh and Warrick counties in Indiana but incorporates the rural planning counties of Gibson and Posey in southwest Indiana. These rural counties are home to intense freight generating/moving facilities (primary freight stakeholders).

J FREIGHT

In the past, the MPO has used surveys to help identify freight stakeholder concerns. Due to low rates of return these surveys provided little insight into actual freight movement patterns and/or movement issues. In the fall of 2018, the MPO initiated a process of interviewing primary freight stakeholders on an individual basis with the intent of understanding the movement patterns, mode preferences and concerns regarding the existing system that these stakeholders have identified.

The MPO will identify other agencies working with these stakeholders to address freight-related concerns and, if not already involved with the MPO, make it a primary effort to include these agencies in the planning process.

Based on past surveys and recent interviews, Table J.1 shows freight concerns identified by stakeholders.

Table J.1:
Freight Stakeholder Concerns

Jurisdiction	Truck Route	Location	Description	Deficiency	Potential Resolution
INDOT	Yes	SB US Hwy 41 to WB Columbia St	Inadequate turning radii	Turning radii	Corridor Study recommendation implementation projects
INDOT	Yes	SR 61, from Boonville to northern county line	Vertical and/or horizontal alignment issues	Road geometry	SR 61/Boonville bypass complete; new project for remaining area
INDOT	Yes	SR 57, from US Hwy 41 through Vanderburgh County	Congested area	Congestion/ delays	Consider new project; add turn lanes
INDOT	Yes	SR 62/Lloyd Exp, from western county line to US Hwy 41	Congested area	Congestion/ delays	Corridor Study recommendations
INDOT	Yes	SR 66/Lloyd Exp, from US Hwy 41 to I-69	Traffic signal delays	Congestion/ delays	Corridor Study recommendations
INDOT	Yes	US Hwy 41, through Vanderburgh County	Congested area; signal delays; needs turn lanes	Congestion/ delays	Corridor Study recommenadations (N or Walnut)
INDOT/ Regional	Yes	Primarily state roads leading to/ from POI-Mount Vernon	Improve port access to I-64 and US 41 S into Kentucky	Congestion/ delays	Corridor Study recommendations; I-69 ORX
INDOT	Yes	SR 62 at POI-Mount Vernon entrance	Improve entrance and remove restricted movements	Turning restrictions	Consider new project
KYTC	Yes	KY 416, E.T. Breathitt Pkwy to US Hwy 41	Inadequate road width; horizontal alignment concerns	Road geometry	Consider new project
KYTC	Yes	US Hwy 41, through Henderson County	Inadequate road width; congestion; needs turn lanes	Road geometry; congestion/ delays	Consider new project
KYTC	Yes	US Hwy 60, through Henderson County (east of downtown)	Inadequate road width; congestion; needs turn lanes	Road geometry; congestion/ delays	Several projects listed in the MTP; Spottsville bridge underway
KYTC	Yes	NE Atkinson St to SE Clay St/SR 812	Inadequate turning radii	Turning radii	Consider new project
KYTC	Yes	US Hwy 41A, through Henderson County	Delay caused by inadequate or non-existant turn lanes	Congestion/ delays	Consider new project
Evansville	Yes	Lynch Rd & Hitch Peters Rd	Intersection congestion	Congestion/ delays	Met TCS warrants in 2015
Evansville	Yes	Lynch Rd, from US Hwy 41 to Oak Hill Rd	Congested area restricts access to site	Congestion/ delays	CMP Study
Evansville	Yes	First Av, from SR 62/Lloyd Exp to SR 66/Diamond Av	Congested area restricts access to site	Congestion/ delays	CMP Study

Table J.1:
Freight Stakeholder Concerns Cont.

Evansville	No	WB Walnut St to NB Evans Av	Inadequate turning radii	Turning radii	Walnut St Corridor Improvements; probable road diet project (4 lanes to 3 lanes)
Evansville	No	Weinbach Av	Inadequate road width	Road geometry	Weinbach Av Road Diet project (4 lanes to 3 lanes)
Evansville	No	Bellemeade Av	Inadequate road width	Road geometry	Possible Road Diet (4 lanes to 3 lanes)
Evansville	No	Grove St, north of Maryland St	On-street parking inhibits site access	Site access	on-site improvements can aid in truck access; remove parking if safety issue
Evansville	No	Old Boonville Hwy, west of Burkhardt Rd	Inadequate road width; congestion	Road geometry; congestion/ delays	Consider new project
Evansville	No	Wabash Av & Ohio St	Intersection congestion	Congestion/ delays	Continue to monitor for signal warrants
Vanderburgh	No	Boonville New Harmony Road, SR 65 west to county line	Inadequate road width	Road geometry	Construct University Pkwy (SR 66 to I-64) and Baseline Road improvements to US 41
Vanderburgh	No	Warrick County Line Rd, north of Boonville New Harmony Rd	Pavement deterioration	Pavement deterioration	Pavement Management recommendations
Vanderburgh	No	Baumgart Rd from SR 57 to Mt. Pleasant Rd	Inadequate road width	Road geometry	Consider new project

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K TRAVEL DEMAND MODEL

Travel demand forecasting models (TDMs) are a major analysis tool for the development of long-range transportation plans. These mathematical models are designed to calculate the number of trips, connect their origins and destinations, forecast the mode of travel, and identify the roadways or transit routes most likely to be used in completing a trip. Models are used to determine where future transportation problems are likely to occur, as indicated by modeled roadway congestion. Once identified, the model can test the ability of roadway and transit system improvements to address those problems.

Significant elements of the EMPO TDM are as follows:

Socioeconomic Forecasts

Socioeconomic forecasts are essential to predict future travel demand. The socioeconomic data was allocated to the traffic analysis zones (TAZs) using the land use model (HELPViz).

HELPViz

HELPViz was developed as part of the Sustainable Evansville Area Coalition's Regional Plan for Sustainable Development. This model offers sensitivity to land use zoning, building codes and infrastructure facilities such as transportation network, water and sewer utilities. HELPviz allocates the future population and employment regional totals to the TAZs based on build out capacities, transportation network and infrastructure facilities. HELPviz uses Nested Logit model framework and uses information at both TAZ and parcel levels.

Modeling Area

The EMPO modeling area includes a five county area consisting of Gibson, Posey, Vanderburgh and Warrick counties in Indiana and Henderson County in Kentucky. The base year of the model is 2015. The model's roadway network covers over 7,600 lane miles, 955 TAZs, and 28 external stations in the base year. Figures K.1 and K.2 show the EMPO TDM network and TAZs.

Figure K.1:
Model Area Network

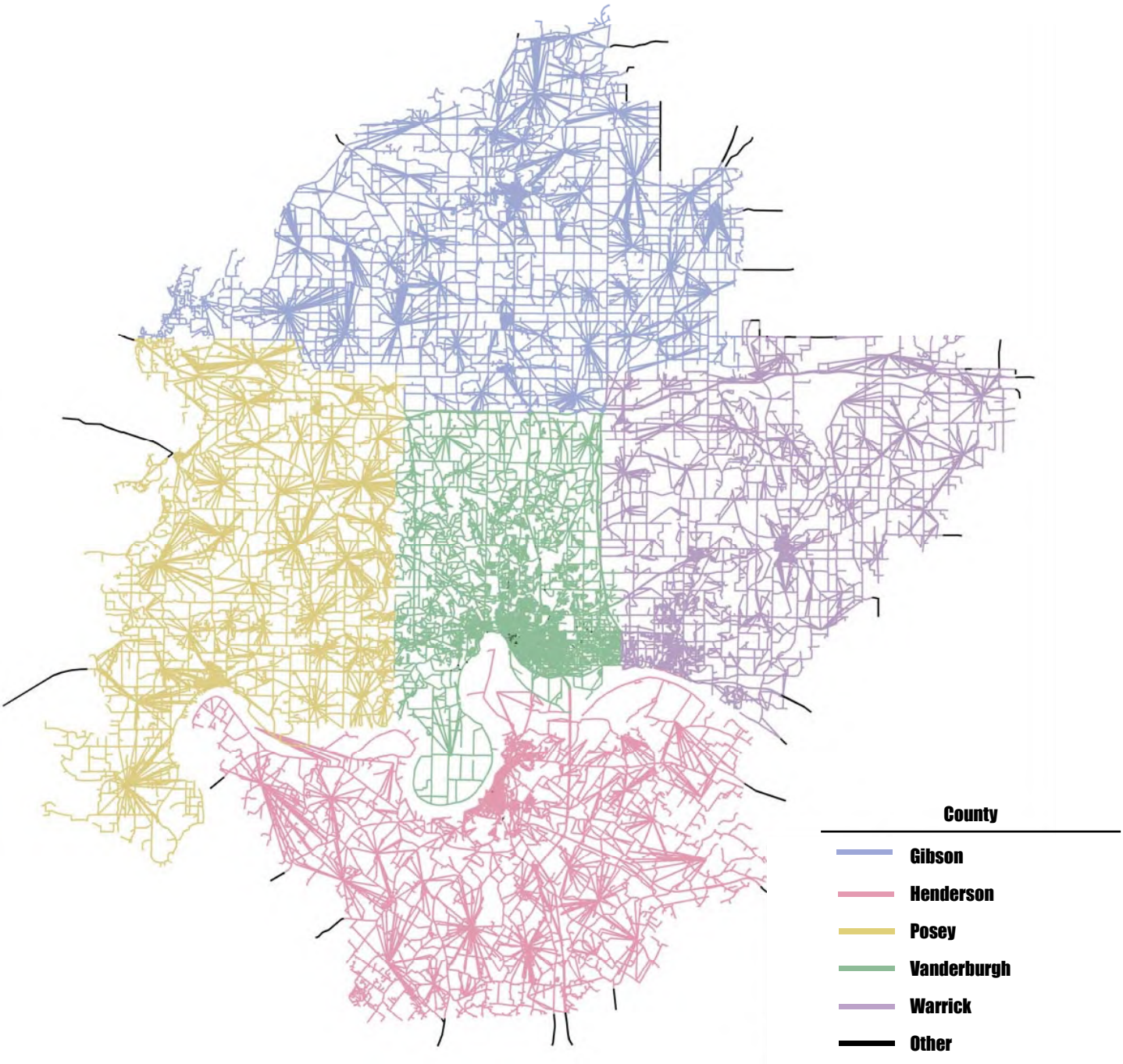
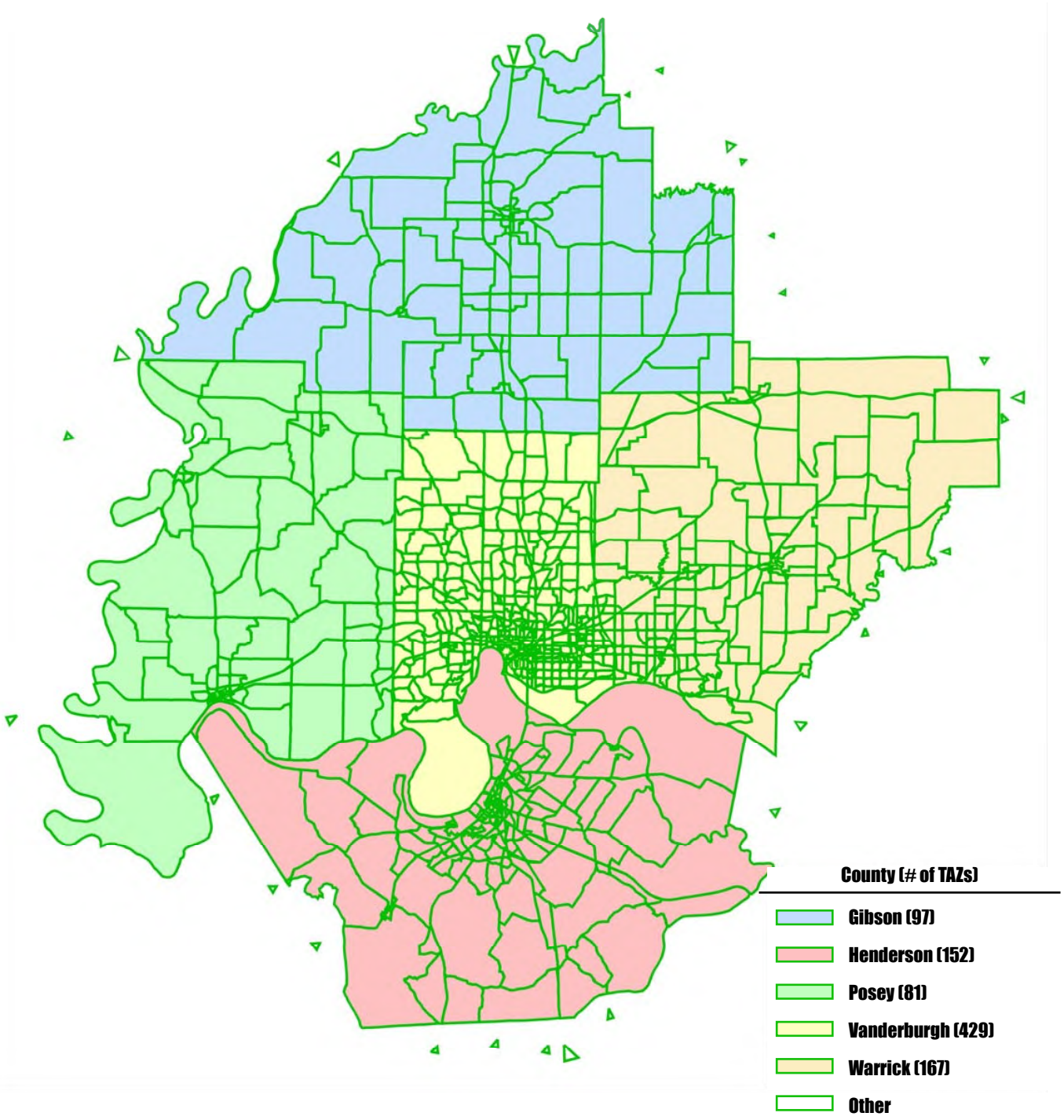


Figure K.2:
Model Area TAZs



Modeling Technology

The current version of the EMPO TDM is implemented in TransCAD 6.0, a GIS based travel demand modeling software, using the software's GISDK scripting language. The EMPO model is a hybrid Trip/Tour based model. This model offers policy sensitivity such as:

- Sensitivity to fuel prices
- Planning capability for transit, bicycle and pedestrian modes
- More realistic representation of special populations (seniors, low income, students)
- Sensitivity to urban design (mixed uses, development density, grid vs. cul-de-sac style street networks)
- Ability to represent shifts in the timing of travel (due to congestion)
- Consistency with tours and trip-chaining behavior
- Improved traffic impacts with halo effects around major developments (malls, factories, etc.)
- More accurate commuting patterns from destination choice models
- Improved representation of speeds and delays from traffic signals, stop signs, etc.
- Improved accuracy of alternatives analysis from new assignments algorithms
- Reduction of aggregation bias which can skew model results

The hybrid model includes 12 steps:

1. Population synthesis
2. Vehicle availability
3. Tour and stop generation
4. Activity allocation choice
5. Tour mode choice
6. Stop location choice
7. Stop sequence choice
8. Trip mode choice
9. Departure time choice
10. External model
11. Truck model
12. Network Assignment

Population Synthesis Model

The EMPO TDM is applied directly to the individual households to model their travel behavior rather than at the TAZ level. This is done to avoid the aggregation bias that occurs when non-linear demand models are applied to aggregate or average characteristics rather than to populations. The current TDM generates a synthetic population of households for each TAZ based on their demographic information such as:

- Zonal Average Household Size
- Zonal Average Workers per Household
- Zonal Average Students per Household
- Zonal Percentage of Households with Seniors
- Zonal Average Household Income
- Zonal Population Density
- Percent Zone within 0.5 miles of Bus Route
- Urban Design Factor

Each household has a total number of persons, a number of workers and students, a number of seniors and an income quartile the household belongs to: Q1 (under $25,000/year), Q2 ($25,000-$45,000/year), Q3 ($45,000-$75,000/year) Q4 (over $75,000/year). Each of these income categories comprise approximately a fourth of the households in the region.

The synthetic population is developed in two steps. First, a set of ordered response logit models for each variable (household size, number of workers, etc.) predicts the number of each degree of variables (one person, two persons, …. zero workers, one worker, two workers, ….etc.). Second, iterative proportional fitting is used to develop the synthetic population based on a seed population of households from the household travel surveys and the marginal distribution for each variable provided by the logit models.

Vehicle Availability Model

Vehicle availability is an important factor required in modeling the travel behavior. Because of its importance, vehicle availability in the EMPO TDM is not modeled simply as a demographic variable, essentially input to the travel demand model. Rather, it is modeled behaviorally with each household choosing the number of vehicles it will own, lease, etc., based on:

- Individual Household Size
- Individual Household Workers
- Individual Income
- Presence/ Absence of Seniors in HH
- Percent of Zone within one-half mile of a Bus Route
- Urban Design Factor
- Population Density
- Gas Price

The estimation of vehicle availability is accomplished by disaggregate ordered response logit choice mode. This model applied to the individual households generated in the population synthesis, can be interpreted as modeling each household's choice of how many vehicles it will have in its fleet.

Tour and Stop Generation Model

The tour and stop types in the EMPO TDM are classified as follows:

Tour Types:

- Work
- School
- Other (Non-Work)

Stop/Activity Types:

- Work stops
- University stops
- School stops
- Shopping stops
- Personal business stops
- Social and recreational stops
- Eating stops
- Travel stops

The number of tours and stops of each type is estimated using either multiple regression or multinomial logit models applied to disaggregate synthetic population of households. The stops are allocated to the tours. The method offers behavioral fidelity and also allows for an improved goodness-of-fit of both tours and stops.

Activity Allocation Choice Model

The activity allocation model uses household survey estimated logit models to allocate activity types (stop types) to tour types. The results are the number of each activity types that occur on each tour type by household. There are seven activity types generated for each household in generation step. Five of these types need allocation choice while work and school activities do not since they only occur on work tours and school tours. The activity types are eat, personal business, shopping, social/recreational, travel, and university.

Eat Activity Allocation Model

In the eat activity allocation model, the probability that an eating activity would occur on another tour was sharply decreased as the number of household workers grew. This means that more household workers would lead to more work tours where eat activities might occur.

Personal Business Activity Allocation Model

In the personal business activity allocation model, household vehicles had a negative effect on allocating personal business to school tours. Increased bus fare had a negative effect on allocating personal business to other tours. The percentage of streets with sidewalks at the origin or destination had a positive effect on allocating business activities to other tours. More household workers decreased the likelihood of allocating personal business to another tour, while more students increased the likelihood of personal business on a school tour. The highest income quartile of households was the only quartile to not have significant parameters for allocating personal business to other tours.

Shopping Activity Allocation Model

In the shopping activity model, besides the expected trend of workers and students decreasing the likelihood of allocating shopping activities to other tours, a higher number of household vehicles decreased the likelihood of a shopping activity on a school tour. This can be attributed to the fact that households with fewer vehicles are likely to allocate more activities to fewer auto tours, so that a one vehicle household would be more likely to make a shopping activity on a school tour rather than making a separate tour of that activity.

Social/Recreational Activity Allocation Model

In social/recreational activity allocation model, besides the expected trend of increased workers and students decreasing the probability of allocating this activity to other tours, it was found that the higher income households were less likely to allocate social/recreational activities to other tours.

Travel Activity Allocation Model

In the travel activity allocation model, besides the expected trend of increased workers and students decreasing the probability of allocating this activity to other tours, it was found that more household vehicles increased the probability of a travel activity on another tour. This could be attributed to the fact that as the availability of vehicles increases the likelihood of making other tours to chauffeur someone to other activities decreases. With fewer vehicles, a household would be more likely to chain a travel activity on a work or school tour.

University Activity Allocation Model

In the university activity allocation model, for part-time students making university stops as part of work or other tours, the percentage of sidewalks at the origin and destination zones was significant in decreasing the probability that a university activity would be made as part of a work tour. This can be attributed to part-time students who live near a walkable campus having a better ability to make a separate tour for his/her university activity. Conversely, origins and destinations with poor walkability would most likely influence the students to chain their university activity as part of an auto work tour.

Tour Mode Choice Model

The mode of travel is modeled in two stages: tour mode choice and trip mode choice. First, after tours are generated, they are assigned a primary mode by tour mode choice models. Later, after spatial distribution of stops creates trips, individual trips are assigned a mode, based on the primary mode of tour, in trip mode choice models.

The EMPO model has four primary modes:

- Private automobile
- Public Transit
- Walk / Bike
- School Bus

The choice of primary mode for work tours was modeled using a nested logit model, grouping the private automobile and public transit alternatives together as motorized modes. This structure implies that people who drive to work are more likely to switch to take a bus than to walk/bike and transit riders are more likely to switch to driving than walking/biking. This seems reasonable, particularly for work tours when travel time is more important, suggesting that workers who commute by foot or bike likely live close to work.

As expected in mode choice models, the number of household vehicles decreased the probability of workers to commute by bus. Gas prices for low and medium income families decreased the probability of choosing auto, while for the same families bus fare prices had a negative effect on choosing the bus. The percentage of sidewalks in a zone and the net density variable, a measure of intersection approach density on the street network had a strong positive effect on walking and biking.

The choice of primary mode of school tours was modeled using nested logit model, grouping auto and school bus alternatives together as motorized modes and walk/bike as non-motorized modes. This structure implies that students who take a motorized mode to school are more likely to switch between bus and auto modes than walking and biking to school.

The choice of primary mode of other tours did not group the private automobile and public transit alternatives together as motorized modes for work tours. This structure implies that people who drive are as likely to walk/bike as they would be to use transit and vice versa.

Significant demographic variables in other tour mode choice models include:

- Vehicles per household
- Household income
- Net density

Stop Location Choice Model

The spatial distribution of the trips in the EMPO TDM is based on double destination choice framework of stop allocation and stop sequence choice models. The behavioral framework implied by the double destination choice of stop location and sequence is straightforward. First, travelers choose all the destinations or locations at which they will stop during the day. Next, travelers choose an origin for each destination they will visit. The stop choices made by the travelers are dependent on convenience and trip changing efficiencies amongst other effects. The stop location models used for the EMPO TDM are logit models.

The work location choice model used standard attraction or size variables, employment by industry categories. The total attraction to all work stops is simply the total employment for a TAZ. The attractions are apportioned between each income level based on the attractions predicted using the parameters from estimation, and balanced to the number of stops produced for each stop type using generation. The work stop location models are "doubly constrained" such that the model assigns exactly one stop for every attraction.

The school location choice mode used the school enrollment variable, travel time from home, as well as county line and river crossings. Both county line crossings and river crossings present significant barriers for school location choice as school districts respect county lines and only private school students generally attend schools out of their districts.

The stop location choice model for other activities, included variables such as: employment size, travel time, gas cost, river crossing, highway crossing and accessibility to other services.

Stop Sequence Choice Model

The stop sequence model is a more procedural model that "connects the dots" (origins and destinations) produced in the stop location choice model. There is one stop sequence choice for each tour purpose. All stop location matrices produced by stop location models of one tour purpose are added together to create a table of all out of home stops, by location, for each residence location. The number of tours of that purpose is then added to the diagonal to account for stops at home. Each row vector (residence zone) in the stop location matrix then becomes the row and column marginal vector to which the gravity model is constrained. This procedure enforces the traveler conservation constraint and ensures that all travel takes place in closed tours.

Trip Mode Choice Model

As stated, in the earlier section the travel mode is modeled in two stages: tour mode choice and trip mode choice. The trip models are developed only for private automobile tours primarily used for the vehicle occupancy for each trip. The EMPO TDM uses four trip modes for automobile tours:

- Walk
- Drive Alone
- HOV2
- HOV3+

The trip mode shares are estimated by aggregate multinomial logit models for the home-based and non-home based trips for each tour purpose.

Departure Time Choice Model

The departure time choice models distribute the average weekday trips throughout the day. It produces not only AM, PM, and off peak trip tables for standard assignments, but also can produce trip tables for any or all 15-minute periods from 6 am to 9 pm. These 15-minute trip tables can be used for micro simulations and could be used in conjunction with dynamic network assignment.

The departure time choice models add sensitivity to new variables, such as travel times and accessibility. This model reflects the shifts in travelers' departure times to avoid longer travel times. This is commonly referred to as peak-spreading as travelers leave earlier or later to avoid peak traffic. This model also incorporates accessibility variables which allow departure times to vary geographically such as lower accessibility, rural travelers might leave for work earlier.

The departure time choice model is a multinomial logit pseudo-continuous discrete choice model.

External Model

Trips with at least one end of the trip outside the modeling area are called external trips. External trips are classified into External–Internal (EI) trips if only one end of the trip is outside the modeling area or as External-External (EE) trips if both ends of the trip are outside of the modeling area. The EMPO TDM has 28 external stations in the base year and 29 external stations in the following analysis years, where traffic can enter or exit the modeling area. The vehicle types are auto, Single Unit Trucks (SU) and Multi Unit Trucks (MU).

The trip generation for each vehicle type at the external stations was generated from the most recent AADT traffic counts, EE trip percentages from the year 2000 external survey. The trip attractions are modeled using doubly constrained gravity model.

Truck Model

The truck model estimates the number of trips for four-tier commercial vehicles, SUs with six or more tiers, and MUs. The Truck model uses a four-step process: trip generation, distribution, choice of time and trip assignment. In addition, the special trip generators of inter-region and inter-modal trucks were added to better replicate the current inter-region and inter-modal truck movements.

The truck trip generation and distribution is based on the following input variables:

- Number of employees
- Number of households
- Special generators

The truck assignment utilizes a time-of-day modeling procedure. In this procedure a 24 hour trip table is broken into AM-peak, PM-peak and

Off-peak periods. For each time period, a two-step assignment procedure is implemented. The first step, referred to as "priority pre loading", will assign the EE trips and truck trip tables onto the roadway network separately. Then the internal auto trips are assigned onto the network with considerations of these preloading volumes. This assignment method is used in the user equilibrium assignment.

Network Assignment

Once vehicle trips have been produced for every vehicle class, they are assigned to the model's roadway network. External automobile trips, SU trips, and MU trips are loaded to the network first, on the assumption that the external trips do not divert due to congestion. Then, local automobile trips are assigned to the network on the "user equilibrium" assumption that only minimum congested travel cost routes are used. The EMPO TDM uses TransCAD 6.0's origin-based algorithm to solve for user equilibrium solution to a precision of 0.0001 relative-gap in least time.

A model is considered to be in high degree of accuracy when the system wide % Route Mean Squared Error (RMSE) of network is in the range of 30%. The system-wide RMSE of the EMPO TDM is 34.18%.

L ITS ARCHITECTURE

Intelligent Transportation Systems (ITS)

The Regional ITS Architecture Guidance published by the US Department of Transportation defines Intelligent Transportation Systems as: the application of advanced sensors, computers, electronics, and communications technologies and management strategies in an integrated manner to improve safety and efficiency of the surface transportation system.

ITS technologies are used to make the transportation network and transit system safer and more efficient for the movement of goods and people. ITS involves the integration of software, hardware and information flow between various agencies associated with the provision of transportation services. The roadway variable message boards that inform drivers of current weather, traffic, accident or construction ahead and available alternate routes are one visible example of ITS technologies.

ITS Architecture

An ITS Architecture is the framework within which a system of ITS projects can be built. It defines the components of the system and the interconnections and information flow between the components. The primary components of an ITS Architecture are Subsystems and Information Flows.

Subsystems

Subsystems are individual pieces of the overall ITS that perform particular functions such as managing traffic, providing traveler information, or responding to emergencies. Subsystems can be associated with particular organizations such as public safety agencies, transportation services, emergency management agencies, or transit providers. They are the sources and/or users of information provided by other subsystems within the boundary of an ITS architecture. Subsystems include center systems, roadside equipment, vehicle equipment and traveler devices that participate in ITS.

Information Flows

Information Flows define the information that is exchanged between subsystems such as traffic information, or surveillance and sensor control data. They depict ITS integration by illustrating the information links between subsystems. In ITS, this integration is not only technical but also institutional. The system interfaces that are defined require cooperation and shared responsibilities on the part of owners and operators of each participating system.

Evansville MPO Regional ITS Architecture

On January 8, 2001, the US Department of Transportation published the FHWA Final Rule and FTA Policy, which implemented Section 5206(e) of the Transportation Equity Act of 21st Century (TEA-21). The Final Rule/Policy, effective April 8, 2001, explains and defines how Section 5206(e) is to be implemented. TEA-21 required ITS projects funded through the highway trust fund to conform to the National ITS Architecture and applicable standards. The intention of the Rule/Policy is to foster the deployment of integrated regional ITS systems. The Rule/Policy also requires that the National Architecture be used to develop a local implementation plan or "Regional ITS Architecture" that would be tailored to address the local situation and ITS investment needs. The FAST Act continues these requirements.

As the established regional transportation planning agency, the Evansville MPO has developed the "Evansville MPO Regional ITS Architecture". This ITS Architecture is a specific regional framework for ensuring institutional agreement and technical integration for the implementation of ITS projects in the Evansville MPO region. The Evansville Regional ITS Architecture was updated concurrently with the MTP 2045 and is available online at evansvillempo.com/links.html. Click on Planning under Publications.

Architecture Outline

The Evansville MPO ITS Architecture includes Vanderburgh County and Henderson County in the Evansville MPO planning area. The MPO has considered a 10 year planning horizon in developing the Architecture.

Stakeholders

All of the organizations related to the ITS elements of the transportation system have been identified as stakeholders and a brief description of each organization has been documented. The organizations identified as stakeholders are as follows:

- INDOT
- KYTC
- Department of Homeland Security
- Public Safety agencies
- Evansville Vanderburgh Traffic Signal Control
- Computer Services, City of Evansville
- Mass transit operators
- Commercial vehicle operators
- Railroad companies
- National Weather Service
- Evansville Fire Department

System Inventory

A list of ITS elements currently existing and planned has been documented along with a brief description of the system.

ITS Services

The regional transportation needs include: safe, secure and efficient transportation on freeways and arterials; commercial vehicle operations, public transit, emergency management and incident response. Various Market Packages that provide the services to address the above mentioned needs have been identified and listed.

Operational Concepts

The roles and responsibilities of all of the stakeholders associated with the Evansville MPO Regional ITS Architecture have been documented.

Functional Requirements

Activities are performed by each system included in the ITS Architecture are defined in detail and documented in the functional requirements.

ITS Standards

The standards address the flow of information between various systems included in the ITS Architecture.

ITS Projects

The Evansville regional ITS architecture currently includes one new project within the City of Evansville.

Stakeholder

Evansville Vanderburgh Traffic Signal Control; Evansville Fire Department

Project

Signal pre-emption project for the signal system in the City of Evansville fire department service area.

Description

Installation of traffic light pre-emption for emergency response vehicles, to provide a safe corridor for emergency response vehicles to respond to emergencies and subsequently making it safer for the public. This project will include City, County and INDOT traffic light controlled intersections in Evansville. This field-to-vehicle application area covers the interface between a traffic signal controller and an emergency vehicle desiring signal pre-emption. The granting of pre-emption to the vehicle may be based upon passive detection of the vehicle type, or upon a request from an active device on the vehicle. Signal pre-emption typically implies that the controller switches the light to green in the direction of the preemption request, overriding the current timing. (However, there are other possible scenarios, such as setting all directions to flashing red.)

As the project is developed it will be incorporated into the regional architecture through a process of engaging the appropriate stakeholders.

Agreements

Interagency coordination and cooperation is one of the key issues related to the efficient implementation of ITS services in the area. This section documents known interagency agreements related to ITS. The development of additional agreements will be an item to address moving forward.

Future ITS Issues – Architecture Utilization, Implementation and Maintenance

The regional ITS architecture will guide future ITS efforts in the region and support the long-range planning process. The MPO will maintain the current architecture and develop future iterations of it in support of ITS projects as they emerge. It is anticipated that the framework established by this first architecture will facilitate the efficient development of future projects by identifying key components required for their implementation and opportunities for institutional cooperation.

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M GLOSSARY

Abbreviations

AADT – Average Annual Daily Traffic

ADA - Americans with Disabilities Act

AQPP - INDOT Air Quality Post-Processor

CAAA - Clean Air Act Amendments of 1990

CAC - Citizens Advisory Committee

CBF - Cumulative Bridge Fund

CMAQ - Congestion Mitigation & Air Quality

CMP - Congestion Management Process

COA - Comprehensive Operations Analysis

COIT - County Option Income Tax

CVET - Commercial Vehicle Excise Tax

EDIT - Economic Development Income Tax

EMPO - Evansville Metropolitan Planning Organization

EPA - U.S. Environmental Protection Agency

FAA - Federal Aviation Administration

FHWA - Federal Highway Administration

FRA - Federal Railroad Administration

FTA - Federal Transit Administration

FAST Act – Fixing America's Surface Transportation Act

HART - Henderson Area Rapid Transit

HES - Hazard Elimination Safety

HSIP - Highway Safety Improvement Program

HUD - U.S. Housing and Urban Development

IDEM - Indiana Department of Environmental Management

INDOT - Indiana Department of Transportation

ISTEA – Intermodal Surface Transportation Efficiency Act

KYTC - Kentucky Transportation Cabinet

LOHUT - Local Option Highway User Tax (or Wheel Tax)

LOS - Level of Service

LPA – Local Public Agency

LRSA - Local Road and Street Account

MARAD - US Department of Transportation Marine Administration

MVHA - Motor Vehicle Highway Account

MAP-21 - Moving Ahead for Progress in the 21st Century Act

METS - Metropolitan Evansville Transit System

MPA - Metropolitan Planning Area

MTP - Metropolitan Transportation Plan

MUTCD - Manual on Uniform Traffic Control Devices

NAAQS – National Ambient Air Quality Standards

NHPP - National Highway Performance Program

NHS - National Highway System

PBPP - Performance Based Planning and Programming

PCI – Pavement Condition Index

RPMS - Regional Pavement Management System

RPSD - Regional Plan for Sustainable Development

SAFETEA-LU - Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users

SEAC - Sustainable Evansville Area Coalition

SHN – Federal STBG Funds Dedicated to Henderson

SIP - State Implementation Plan

SRTS - Safe Routes to School

STBG - Surface Transportation Block Grant

TAM – Transit Asset Management

TAMP – Transit Asset Management Plan

TAP - Transportation Alternatives Program

TAZ - Traffic Analysis Zone

TDM - Travel Demand Model

TE - Transportation Enhancement

TEA-21 - Transportation Equity Act for the 21st Century

TIF - Tax Increment Financing

TIP - Transportation Improvement Program

TMA - Transportation Management Area

VMT - Vehicle Miles Travelled

WATS - Warrick Area Transit System

Glossary

Active Transportation

Active transportation includes any method of travel that is human-powered, but most commonly refers to walking and bicycling.

Air Quality Attainment Area

An area considered to have air quality as good or better than that required by the National Ambient Air Quality Standards (NAAQS) as defined by the Clean Air Act. Areas that have not met the required standards are classified as nonattainment. An area

may be an attainment area for one pollutant and a nonattainment area for other pollutants. (see National Ambient Air Quality Standards, air quality maintenance area, air quality nonattainment area)

Air Quality Maintenance Area
An area that has been redesignated from nonattainment to attainment is an attainment maintenance area.

Average Annual Daily Traffic (AADT)
The average number of vehicles on a roadway segment during a 24 hour period. Raw data counts are adjusted to reflect an annual average volume.

Arterial (functional classification)
A major thoroughfare, used primarily for through traffic rather than for access to adjacent land, that is characterized by high vehicular capacity and continuity of movement.

Bonds
Municipal Bonds are typically used for debt financing of non-proprietary functional expenditures such as roads and schools. The amount of general obligation debt, which local governments and special districts may incur, is limited to 2% of the net locally assessed property value in Indiana.

Capital Development Fund
The Capital Development Fund is a levy on property to raise money for capital improvements within the county or municipality.

Carbon Monoxide (CO)
Carbon Monoxide - a criteria pollutant – a product of incomplete combustion.

Collector (functional classification)
Roadways providing direct access to neighborhoods as well as direct access to arterials.

Commercial Vehicle Excise Tax (CVET)
CVET is paid in addition to Indiana's registration fees for all tractors, trucks, truck-tractors, road tractors, recovery vehicles (wreckers), trailers, and semi-trailers and is distributed back to local tax districts in Indiana based on the certified assessed value of applicable commercial vehicles.

Conformity
Transportation conformity is a mechanism for ensuring that transportation activities are reviewed and evaluated for their impacts on air quality prior to their funding or approval. Transportation plans and TIPs must conform to the State Implementation Plan (SIP). (see State Implementation Plan)

Congestion Management Process (CMP)
A plan for recommending and implementing appropriate strategies that can alleviate congestion and improve the performance of the transportation system. A CMP establishes a consistent and systematic process for managing congestion

County Option Income Tax (COIT)
A local Indiana LPA (county, city or town) may pledge a share of COIT (County Option Income Tax) to pay debt service for road, street and bridge financings. (IC 6-3.5-6) COIT - "COIT is treated as additional revenue and may be used to fund locally provided homestead tax credits."

County Road Aid
County Road Aid Co-op Program funded by 18.3% of the motor fuels taxes in Kentucky. The funds are used for construction, reconstruction and maintenance of county roads. The funds are allocated to the 120 counties by the same formula as the Rural Secondary Program, but are expended by the fiscal court. Our co-op program makes funds available up front based on projected revenues and sets aside 3% of each participating county's allocation into a statewide emergency fund. The co-op program is voluntary and if a county does not participate, they receive a monthly check based on the previous month's actual collections and there is no emergency fund.

Cumulative Bridge Fund
CBF is a supplemental source of revenue for the construction and repair of county highway bridges and grade separations in Indiana. Indiana statutes authorize the County Commissioners of the individual county units to establish a countywide tax levy on all taxable personal and real property for the construction and repair of county highway bridges. The yearly income from this source depends on the amount of the tax levy, the assessed valuation for the county, and return on investments. Receipts from this fund must be used exclusively for construction of bridges on the county road system.

Economic Development Income Tax (EDIT)
A local Indiana LPA (county, city or town) may pledge a share of Economic Development Income Tax (EDIT) to pay debt service for road, street and bridge financings. (IC 6-3.5-7) EDIT - "A city, town or county by ordinance of the fiscal body may issue bonds payable from the unit's EDIT distribution for economic development projects and for any capital purpose for which the unit could issue general obligation bonds. EDIT may be used to retire bonds or pay lease rentals for an

economic development project which will promote significant opportunities for gainful employment; attract a major new business enterprise to the unit or; retain or expand a significant business enterprise within the unit. It can be used for the acquisition of land; site and infrastructure improvements, buildings and structures; rehabilitation, renovation and enlargement of buildings and structures; machinery, equipment, furnishings, and facilities; administrative expenses associated with a project, etc."

Environmental Protection Agency (EPA)
The EPA is the federal agency responsible for issuing and enforcing air quality and emissions regulations and approving State Implementation Plans (SIPs). The EPA is also responsible for regulating water pollution, toxic chemical production and use, hazardous waste disposal, solid waste disposal, pesticides, radiation, and noise pollution. (see State Implementation Plan)

FAST Act
The FAST Act establishes and funds new programs to support critical transportation projects to ease congestion and facilitate the movement of freight on the Interstate System and other major roads.

Financial/Fiscal Constraint
Financial constraint ensures that a planning document will be financially feasible. The total estimated cost of proposed transportation improvements is equal to, or less than, the estimated revenue for the time period. This consideration seeks to ensure a "realistic" plan.

Intermodal
The ability to connect, and the connections between, modes of transportation.

Level of Service (LOS)
A standard measure of roadway congestion reflecting the relative ease of traffic flow on a scale of A to F, with free-flow being rated A, and congested conditions rated as F.

Local (Government) Economic Assistance
Local Government Economic Assistance Fund may receive state appropriations, gifts, grants, and federal funds and shall be disbursed by the State Treasurer of Kentucky. Income earned by the tax of the sale of coal and minerals/rights is disbursed to coal producing and coal impact counties according to each county's allocable part of the fund. 30% of these direct funds must be spent on the coal haul road system, the remaining 70% can go to anything except administrative costs.

Local Option Highway User Tax (LOHUT)
Commonly known as the wheel tax, this tax is a flat tax on all motor vehicles registered in a participating Indiana county. The revenue from this tax can only be used in maintaining the current road network in each county through reconstruction and rehabilitation projects.

Local Road and Street Account
LRSA funds provide an important source of revenue for both city and county highway departments in Indiana. The funds are dedicated for engineering, construction or reconstruction of roads, streets, sidewalks, trails and bridges, as well as for the payment of bonds and interest to finance a project of this type.

Local Roadway (functional classification)
Road or street whose principal function is to provide direct access to abutting land.

Metropolitan Planning Area (MPA)
A Metropolitan Planning Area is defined in the Code of Federal Regulations as the geographic area in which the metropolitan transportation planning process must be carried out. The MPA boundary shall, as a minimum, cover the UZA(s) and the contiguous geographic area(s) likely to become urbanized within the twenty year forecast period covered by the transportation plan.

Metropolitan Planning Organization (MPO)
Formed in cooperation with the state, MPO's develop transportation plans and programs for metropolitan areas. For each urbanized area, a Metropolitan Planning Organization (MPO) must be designated by agreement between the Governor and local units of government representing 75% of the affected population (in the metropolitan area), including the central cities or cities as defined by the Bureau of the Census, or in accordance with procedures established by applicable state or local law.

Minor Arterial (functional classification)
Streets and highways linking cities and larger towns in rural areas in distributing trips to small geographic areas in urban areas.

Motor Vehicle Highway Account (MVHA)
These funds are a source of revenue from the General Fund of the State of Indiana which, by statute, is credited with the collection of the first six cents of the motor fuel and fuel use taxes, plus statutory fees for motor vehicle registration and operation. These highway-use taxes are collected by the State. A portion of the MVHA are distributed

back to the cities and counties for administration, budgeting and expenditure by local officials to aid in the purchase of materials, labor, and/ or equipment required in the maintenance and construction of roads, sidewalks, greenways, and bridges.

Municipal Road Aid

Municipal Road Aid Co-op Program is funded by 7.7% of the motor fuels taxes in Kentucky. The funds are used for the construction, reconstruction and maintenance of urban roads and streets. These funds are allocated to incorporated cities and unincorporated urban places based on their population only. This co-op program works in the same manner as the County Road Aid Co-op Program.

National Ambient Air Quality Standards (NAAQS)

Limits established by the EPA for various pollutants, known as criteria pollutants, in ambient (air representatively sampled) air that are the target in local air quality improvement or protection programs. The primary standard protects public health; the secondary standard protects public welfare. Stricter standards may be established by state government. The three major transportation related criteria pollutants are: Ozone, Particulate matter, and Carbon Monoxide.

NO_x

Oxides of nitrogen - a collective term for all compounds of nitrogen and oxygen (include nitrogen monoxide, nitrogen dioxide, etc.).

Ozone (O_3)

Ozone - a criteria pollutant - is an oxygen compound that can develop when NO_x, VOC, and sunlight interact in the lower atmosphere; the primary constituent of smog.

Particulate Matter (PM_{10} and $PM_{2.5}$)

The term used for a mixture of solid particles and liquid droplets found in the air. PM - a criteria pollutant - can be emitted directly by a source or formed in the atmosphere by the transformation of gaseous emissions. Fine particles, under 2.5 microns ($PM_{2.5}$), result from fuel combustion by motor vehicles and other sources, as well as transformation of gaseous emissions. Coarser particles up to 10 microns in diameter (PM_{10}) generally consist of windblown dust from a variety of sources.

Principal Arterial (functional classification)

Major streets or highways, many with multi-lane or freeway design, serving high volume traffic corridor movements that connect major generators of travel.

Right-of-Way (R/W or ROW)

The land (usually a strip) acquired for or devoted to highway transportation purposes.

Rural Secondary Program

Rural Secondary Program is funded by 22.2% of the motor fuels taxes in Kentucky. The funds are used for the construction, reconstruction and maintenance of secondary and rural roads in each county (state or locally maintained). The funds are allocated to the 120 counties by a Four-Part Formula (the Fifths Formula) and are expended by the Transportation Cabinet.

Section 5307

FTA Urbanized Area Formula Grant. Provides funding to public transit systems in Urbanized Areas (UZA) for public transportation capital, planning, job access and reverse commute projects, as well as operating expenses in certain circumstances.

Section 5310

FTA Enhanced Mobility of Seniors and Individuals with Disabilities Grant. Formula funding to States and MPOs for the purpose of assisting private non-profit groups and public transit systems in meeting the transportation needs of the elderly and persons with disabilities.

Section 5339(a)

FTA Buses and Bus Facilities Grant. Formula funding to States, MPOs and transit agencies through a statutory formula to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities.

Surface Transportation Block Grant (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.

State Implementation Plan (SIP)

A document prepared by each state, and submitted to EPA for approval, that identifies actions and programs to be undertaken by the state and localities to implement its responsibilities under the Clean Air Act.

Tax Incremental Financing (TIF)
TIF funds are taxes collected by LPAs on commercial developments in established TIF districts to help pay for the construction of needed improvements in that specific district.

Toll Credits
Toll Credits, or excess toll revenues, may be used as a credit toward the non-Federal matching share of federally assisted transit projects (or non-transit projects). Toll Credits do not provide cash to the project to which they are applied, but their use effectively raises the federal share up to 100 percent on projects receiving Toll Credits. Normally, Toll Credits are used for capital projects. They are exclusively used in Kentucky.

Transportation Control Measure (TCM)
Steps taken by a locality to adjust traffic patterns or to reduce vehicle use to reduce vehicular emissions of air pollutants.

Transportation Improvement Program (TIP)
A prioritized program of transportation projects to be implemented in appropriate stages over several years. Current regulations require that TIPs cover a four year period. The projects are recommended from those in the transportation systems management element and the long-range element (transportation plan) of the planning process. This program is required as a condition for a locality to receive federal transit and highway funds.

Transportation Management Area (TMA)
Is an area designated by the Secretary of Transportation, having an urbanized area population of over 200,000.

Urbanized Area
Areas with a population of 50,000 or more, at a minimum, encompassing an entire urbanized area in a state, as designated by the US Bureau of Census. The Federal Highway Administration (FHWA) approved, adjusted urbanized area boundaries include the Census defined urbanized areas plus transportation centers, shopping centers, major places of employment, satellite communities, and other major trip generators near the edge of the urbanized area.

VOC
Volatile organic compounds – gaseous compounds made of carbon and hydrogen (used interchangeably with Hydrocarbons, or HC).

DRAFT

Metropolitan Transportation Plan

2045

Evansville Metropolitan Planning Organization
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