DARKE - PREBLE - SHELBY

2050 REGIONAL TRANSPORTATION PLAN

June 2024

MIAMI VALLEY
Regional Planning Commission

STEERING COMMITTEE MEMBERS

AES OHIO

ANSONIA VILLAGE

ARCANUM VILLAGE

BRADFORD VILLAGE

CATHOLIC SOCIAL SERVICES

DARKE COUNTY

DARKE COUNTY ECONOMIC DEVELOPMENT

DARKE COUNTY ENGINEER

DARKE COUNTY PARK DISTRICT

EATON CITY

GREENVILLE CITY

GREENVILLE TRANSIT SYSTEM

LEWISBURG VILLAGE

NEW MADISON VILLAGE

ODOT DISTRICT 7

ODOT DISTRICT 8

PREBLE COUNTY

PREBLE COUNTY COUNCIL ON AGING

PREBLE COUNTY DEVELOPMENT PARTNERSHIP

PREBLE COUNTY ENGINEER

PREBLE COUNTY PARK DISTRIST

PREBLE TRAILS

SHELBY COUNTY

SHELBY COUNTY ENGINEER

SHELBY PUBLIC TRANSIT

SIDNEY CITY

SIDNEY-SHELBY ECONOMIC PARTNERSHIP

UNION CITY VILLAGE

VERSAILLES VILLAGE

WAYNE LAKES VILLAGE

Darke-Preble-Shelby
2050 Regional Transportation Plan

Adopted: June 6, 2024

Miami Valley Regional Planning Commission
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Suite 700
Dayton, Ohio 45402

This document is the product of a study financed by the United States Department of Transportation (U.S. DOT), Ohio Department of Transportation (ODOT), and the Miami Valley Regional Planning Commission.

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RESOLUTION
ADOPTING THE 2050
REGIONAL TRANSPORTATION PLAN

WHEREAS, the Miami Valley Regional Planning Commission working with the rural members in Darke, Preble, and Shelby counties has been participating in the Regional Transportation Planning Organization (RTPO) Pilot Program in coordination with the Ohio Department of Transportation; and

WHEREAS, one of the goals of the RTPO Pilot Program is to develop a multi-modal Regional Transportation Plan; and

WHEREAS, the Region's initial Steering Committee provided direction for the development of the Regional Transportation Plan; and

WHEREAS, the Regional Transportation Plan is the result of a coordinated effort that reflects State requirements and Regional priorities; and

WHEREAS, the Regional Transportation Plan includes multimodal strategies and projects and is in reasonable fiscal constraint; and

WHEREAS, the draft Regional Transportation Plan was made available for public comment using a variety of public participation techniques consistent with MVPRC's Public Participation Policy; and

WHEREAS, the Regional Transportation Plan is consistent with the current SFY2024-2027 State Transportation Improvement Program (STIP).

NOW, THEREFORE, BE IT RESOLVED, that the Miami Valley Regional Planning Commission Board of Directors members in Darke, Preble, and Shelby counties hereby adopt the 2050 Regional Transportation Plan.

BY ACTION OF THE Miami Valley Regional Planning Commission's Board of Directors.

_____
Brian O. Martin, AICP
Executive Director

_____
Date

_____
Larry Holmes, Third Vice-Chairperson
Board of Directors of the
Miami Valley Regional Planning Commission

_____
Sara Lommatzsch, Chairperson
Board of Directors of the
Miami Valley Regional Planning Commission

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Chapter 1

Introduction

1.1 Overview

Regional or rural transportation planning existed largely in the background of most federal or state planning organizations until the passing of several federal transportation acts throughout the past 30 years. The formation of Rural Transportation Planning Organizations (RTPO) is the result of the Moving Ahead for Progress in the 21st Century (MAP-21) Act, signed into law in 2012. Further, MAP-21 allowed states to formally designate RTPOs to help conduct non-metropolitan transportation planning.

In July 2013, the Ohio Department of Transportation (ODOT) officially initiated the development of the Regional Transportation Planning Organization (RTPO) pilot program to assist multi-county rural regional planning organizations in developing transportation plans and expertise among RTPO staff. According to ODOT, a Regional Transportation Planning Organization is an organization that identifies local transportation needs, conducts planning, assists local governments, and supports the statewide transportation planning process in non-metropolitan regions of a state. Considering the differences in transportation challenges, states were given the opportunity to provide non-metropolitan transportation planning and project development. This provided a pathway for federal recognition, with prescribed responsibilities and relationships. The first RTPOs in Ohio were officially designated in January 2016.

> ***"In carrying out planning…with respect to non-metropolitan areas, each State shall cooperate with affected local officials with responsibility for transportation or, if applicable, through regional transportation planning organizations."***

1.2 Regional Transportation Program Structure

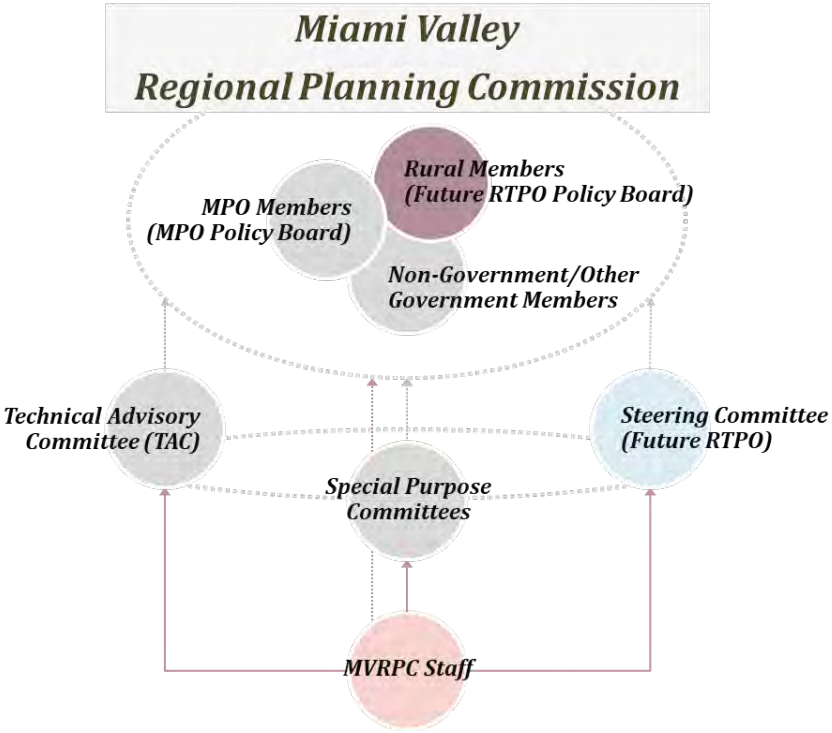
In SFY 2023, the Miami Valley Regional Planning Commission (MVRPC) was selected to participate in the continuing Regional Transportation Planning Organization (RTPO) pilot program for Darke, Preble, and Shelby counties, hereafter referred to as the Region. As such, MVRPC is responsible for developing a plan designed to enhance the Region's competitive position, promote regional growth, improve personal mobility, and preserve the environment.

MVRPC will use this Regional Transportation Plan (RTP) to advance transportation planning and partnerships that will benefit both the Ohio Department of Transportation (ODOT) and the member governments of the Region. Foremost, MVRPC will serve as the Regional Transportation Planning Organization (RTPO) in accordance with federal and state regulations for the purpose

of conducting the nonmetropolitan transportation planning processes for the RTPO Planning Area.

MVRPC is also the Metropolitan Planning Organization (MPO) for Greene, Miami, and Montgomery County, and the municipalities of Franklin, Franklin Township, Carlisle, and Springboro in Northern Warren County, and as such MVRPC staff has the transportation planning expertise required to successfully implement the pilot program. Figure 1.1 highlights the future RTPO structure within the overall MVRPC organization. In addition, Figure 1.2 details the planning area of MVRPC.

Figure 1.1 – MVRPC Board and Member Organizations

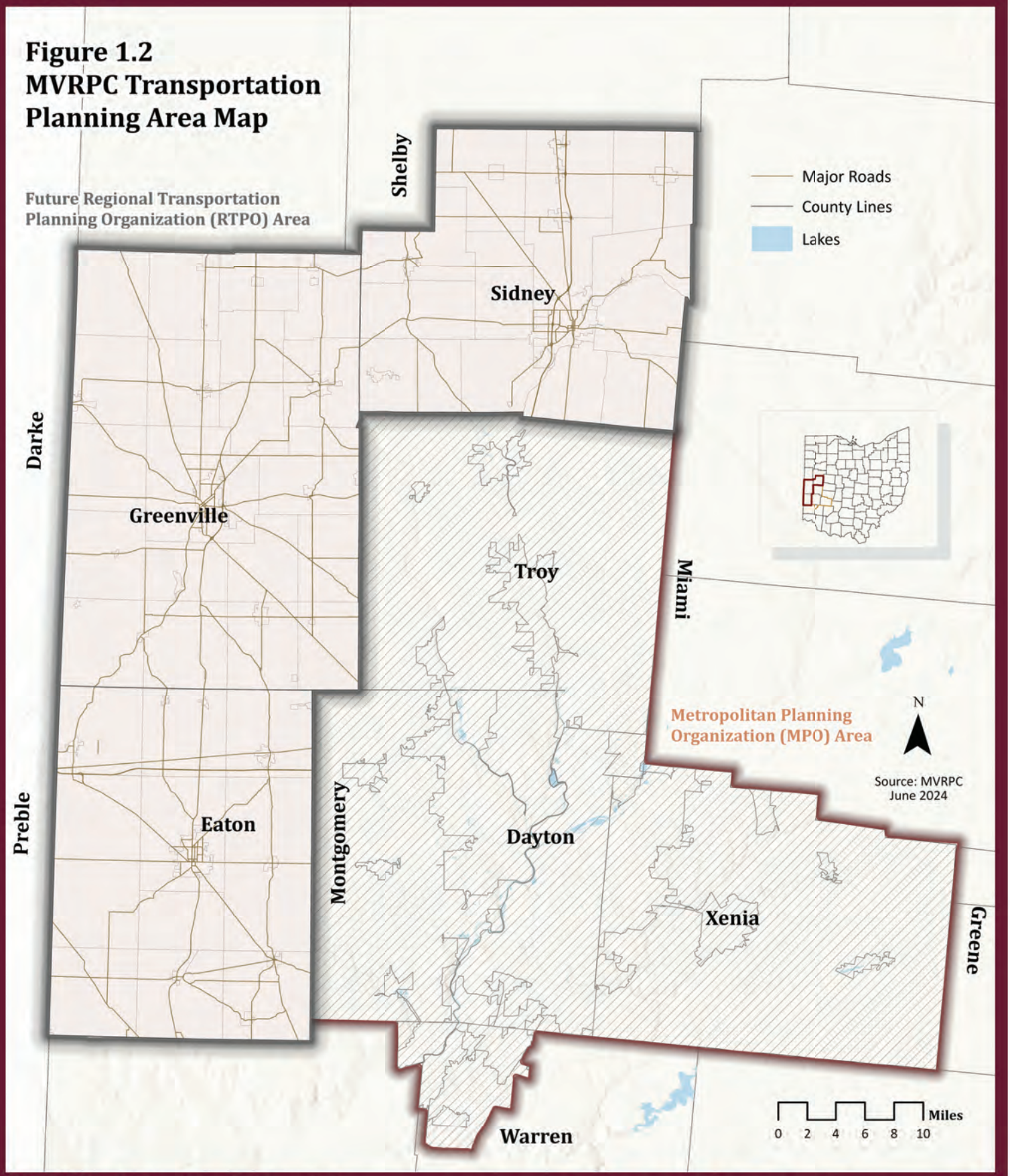


The MVRPC Board of Directors is the policy-making body and consists of local elected officials from the member jurisdictions throughout the Miami Valley Region. In addition, Ohio Department of Transportation (ODOT), civic and corporate leaders, and regional transit systems have Board representation.

An initial steering committee, the Regional Transportation Planning Organization Steering Committee (RTPOSC), was formed to guide the development of the RTP. The RTPOSC is comprised of Rural Board Members, Non-Governmental and Other Governmental Members, County Engineers located within the Regional Transportation Planning Area (RTPA) planning boundaries, business leaders, and community organizations. Other governmental or non-governmental entities that have interest or are impacted by the transportation system in the RTPO can also be voting members of the RTPOSC. The RTPOSC met quarterly throughout the two-year pilot effort, with additional informal workshops scheduled as needed to focus on specific topics related to the Plan development.

MVRPC

Figure 1.2
MVRPC Transportation Planning Area Map



1.3 Regional Transportation Plan Vision, Goals, and Objectives

Process Development

MVRPC began the process of developing the Regional Transportation Plan with a preliminary meeting in August 2022. The Region's transportation goals and objectives were finalized in February 2023 following a facilitated group goal exercise at the November 2022 RTPOSC meeting.

The objective of the exercise was to identify the collective transportation values of the communities in the Region and develop a shared transportation vision, along with measurable criteria that could be applied to potential projects to gauge their consistency with the vision. The exercise collected input from stakeholders in the Region by applying various tools and methods to solicit shared objectives. Based on the inputs, transportation goals and objectives were identified and incorporated into the Regional Transportation Plan.

The RTP goals and objectives were also informed by the results of the Region's residents' transportation preference survey conducted by ODOT. According to the results of the survey, which included both the statewide preference survey results and steering committee survey results, respondents' answers varied more than half in approximately eight questions of mode choice.

- Approximately 36% of steering committee respondents use a bicycle or scooter for leisure activities.
- 100% of steering committee respondents are employed, as opposed to 62% of the Region's residents.
- Steering committee respondents are 19% more likely to purchase an electric vehicle (EV) within the next five years compared to the Region's residents.
- When considering technology, steering committee respondents believe Ohio should favor the use of alternative fuels, support the use of electric vehicles and charging stations, and develop infrastructure for automated vehicles.
- At least 90% or more of steering committee respondents believe bicycle and pedestrian transportation modes, such as multi-use trails, bike lanes, transit accesses, and sidewalks, are of utmost importance for Ohio.

Vision, Goals, and Objectives

With the information gathered from surveys, a review of example transportation goals, and facilitated group exercises, the vision, goals, and objectives for the Region were developed.

Vision: The Darke, Preble, and Shelby counties' Regional Transportation Plan strives to improve the multimodal transportation system in a manner that supports enhanced accessibility and mobility for all people and freight resulting in a higher quality of life for its residents and economic development opportunities for the Region.

Safety

- Improve safety by reducing crashes.
- Evaluate routes with high Amish populations to accommodate mixed buggy/vehicular traffic.
- Evaluate and define truck and alternative truck routes including improved signage.
- Evaluate rail crossings for extended blockages.

System Preservation

- Support projects that maintain the condition of the existing transportation system in a state of good repair.
- Upgrade the electrical system in preparation for an increase in transportation system electrification.

Mobility

- Leverage and expand existing public transportation services by establishing an on-demand, multi-county, mobility management one-call center.
- Explore cross-county public transportation options.
- Improve the sidewalk and bikeway network to facilitate access to employment hubs and as form of active transportation.
- Research and leverage new technologies to improve the mobility of seniors and those without access to an automobile.

Economic Development

- Improve access to employment hubs and routes for commuters.
- Improve access to Interstates to facilitate the movement of goods and attract new businesses and residents.
- Identify regional growth areas to plan for improvements in advance of development.

Quality of Life

- Conduct a study to assess the feasibility of connecting the cities and villages in the Region to each other and to the wider statewide network through a network of bikeways.
- Preserve the rural character of the area by protecting agriculture while diversifying economic opportunities.

Stewardship

- Address transportation priorities in an equitable manner consistent with environmental principles.
- Research and seek existing and new funding sources to further the goals of the Regional Transportation Plan.

1.4 Essential Regional Transportation Plan Elements

The Regional Transportation Plan is an important statement of the direction the Region will be taking in transportation system investment. The RTP identifies the multimodal and intermodal transportation policies and facilities needed to meet the travel demand for a minimum 20-year planning horizon. The RTP should be updated periodically and cover transportation needs for the entire Region. Additionally, the RTP should include both short- and long-term strategies designed to result in an integrated transportation system that facilitates the efficient movement of people and goods. Federal regulations (23 CFR 450.206) describe the factors that need to be considered in the nonmetropolitan planning process.[1] Table 1.1 describes the essential components of a Regional Transportation Plan.

Table 1.1 – Essential Components of a Regional Transportation Plan

Essential Components
Regional Vision, Goals, and Objectives
Stakeholder Participation
Inventory of Existing Conditions and Regional Trends
Projection of Future Conditions and Regional (Recommended Strategies and Projects Trends)
Environmental Justice Analysis
Financial Plan
Systems Performance Report

Source: Ohio RTPO Administration Manual, 2022

[1] Ohio RTPO Administration Manual, 2022

MVRPC began the process of developing the RTP by first collecting information from steering committee participation to develop and finalize the Region vision, goals, and objectives. The inventory of existing conditions and regional trends are summarized in Chapters 2 and 3 and were assembled by collecting transportation and land use data for the base year. Additionally, GIS data for socioeconomic, demographic, environmental, highway, transit networks, and road safety information were gathered and analyzed to determine the existing conditions in the Region. This RTP also includes an analysis of Limited English Populations within the Region, as well as Environmental Justice populations. The information was prepared and presented to steering committee members from March to August of 2023.

MVRPC compiled recommended strategies and project trends based on steering committee and stakeholder participation: the resulting analyses and answers are in Chapters 2 and 3. Through 2023, MVRPC also solicited project information and compiled a project list for the RTP. Public Participation meetings were held in March 2024 to present all relevant information regarding the Region and the RTP. After considering public input and relevant stakeholder input, a proposed project list, found in Chapter 4, was finalized in March 2024.

State and Local Coordination

Finally, changes in transportation needs require a constant and iterative process to improve upon and update the RTP. These continuous improvements ensure that public needs are met and a variety of transportation modes are considered in long range transportation planning. A successful and comprehensive transportation plan focuses on identifying the necessary goals and strategies that underscore the purpose of the RTP.

Regional Transportation Plan Updates

Following the adoption of the initial RTP, amendments to the RTP may occur as part of a comprehensive update (every 5 years) or annually in conjunction with STIP updates. A comprehensive Plan update requires a full public participation cycle while a minor annual update only requires approval by the RTPOSC and Policy Board.

1 Introduction

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Vision, Goals, and Objectives

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Chapter 2

State of the Region

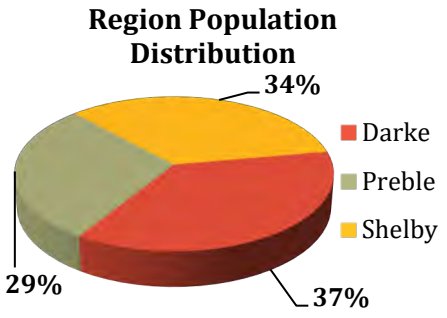
2.1 Overview

The counties of Darke, Preble, and Shelby are located in west central Ohio, situated approximately 30 miles north of Cincinnati, 30 miles west of Dayton, and 70 miles east of Indianapolis. Centrally located in both Ohio and the United States, the Region counties are within a moderate distance of many major cities that include Cincinnati, Toledo, and Cleveland, Ohio; Detroit, Michigan; Indianapolis, Indiana; Louisville and Lexington, Kentucky; Charleston, West Virginia; and Pittsburgh, Pennsylvania.

Darke, Preble, and Shelby counties were formed in the 1800s. The populations in the 1800s were generally clustered, eventually forming into the cities we know today. When the counties were first developed, land development followed the river valleys, which were the main transportation arteries prior to the development of mechanized forms of transportation. Riverways provided both a means of transportation and the major source of water for populations and industries. Since the 1800s, development has migrated along major transportation routes in the counties, leading to sprawl throughout rural areas in the counties through the development of businesses, rural lot splits, and subdivisions.

Today, the largest employment sectors and drivers within the Region are manufacturing, retail trade, health care and social services, and education services. These sectors drive a large portion of the economy within the Region. As discussed later in this chapter, commercial retail development and trading has also increased and is now a large percentage of employment in the counties.

As of 2020, the Region is home to 141,110 people in 1,434 square miles with 89 units of county, city, village, and township governments. Of the three counties, Darke County is the largest, with 37% of the Region's total population. The City of Sidney is the largest city in the Region, with approximately 20,589 residents.



Further, the Region is served by an array of transportation modal choices. Within Darke County is Darke County Airport (VES), located in Versailles, which serves an average of 30 daily mixed aircraft operations.[2] Within Shelby County is the public Shelby Municipal Airport (SCA), located within the City of Sidney, which serves an average of 56 daily mixed aircraft operations.[2] The Dayton International Airport, the largest in proximity to the Region, is also located in the northern part of Montgomery County, which is an average of 18 miles south of Shelby County and east of Darke and Preble counties. Furthermore, the Region contains an extensive network of roads with limited transit services, bikeways, and pedestrian facilities.

According to the 2020 Census, the majority of residents in the Region work within the county in which they reside with a large percentage commuting to counties in the Dayton Urbanized Area. Because of the rural nature of these counties, the Region is heavily dependent on personal vehicles for working residents, with the largest percent of work trips made by automobiles averaging a 23-minute commute to work.[3]

The Region map depicted at the end of this section displays Darke, Preble, and Shelby counties in addition to the townships and municipalities that reside within them.

The following sections in this chapter detail the socio-demographic conditions for Darke, Preble, and Shelby counties. Data for the Plan was gathered from the 2020 Census, the U.S. Bureau of Economic Analysis, the Ohio Department of Job and Family Services (ODFJS), and the Bureau of Labor Market Information (BLMI). The data for the following sections were collected, analyzed, and mapped in order to present an accurate representation and overview of the current socio-demographic conditions within the Region.

The types of socio-demographic and environmental data that were gathered and presented in the following sections include:

- **2.2** Socio-Demographic Profile
- **2.3** Vulnerable Populations and Limited English Proficiency Population
- **2.4** Journey-to-Work Characteristics
- **2.5** Environmental Resources Overview
- **2.6** Climate Change

[2] Federal Aviation Administration (FAA), Terminal Area Forecast (TAF), 2020.
[3] US Census Bureau, ACS 5-year estimates, 2020.

2.2 Sociodemographic Profile

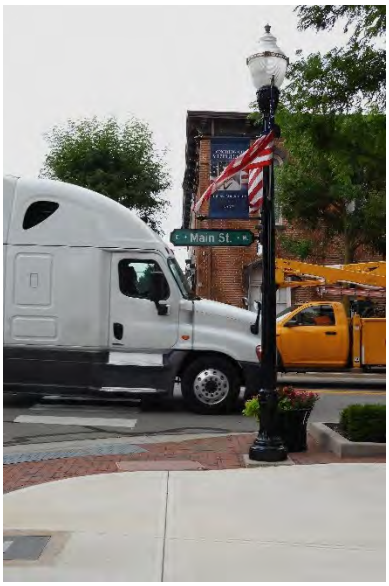
Land Use

Using spatial and imagery analysis techniques, the most recent aerial imagery of the Region was examined to determine land uses in 2019. Figure 2.1 shows generalized land use and land cover in 2019 from the United States Geological Survey imagery repository.

Figure 2.1 also provides a glimpse into the current land uses within the Region. Currently, residential development is distributed evenly through urban or developed areas, with high concentrations of residential areas near the county seats within the Region. According to historical land cover data, residential development has increased in Preble and Shelby counties but remains low density—this is consistent with overall trends in development.

According to the National Land Cover Database (NLCD), agriculture is the prominent land use within the Region. In each of the three counties, the county seats are comprised of the majority of the developed land areas. Smaller cities and towns within the counties are clustered along major roadways, to include I-70, I-75, US-35, US-127, OH-47, and OH-503. Further, there are small clusters of cities and towns near Lake Lakengren within Preble County. Lake Lakengren, along with other Region water resources, such as the Great Miami River, Stillwater River and Prairie Reserve, Twin Creek, Greenville Creek and Falls, Lake Loramie, Wayne Lakes, Acton Lake, and Hueston Woods, all provide numerous natural resources for wildlife and recreational activities in the Region.

Other regional land uses include commercial corridors that are comprised of walkable historic areas, suburban style shopping centers, and office parks.



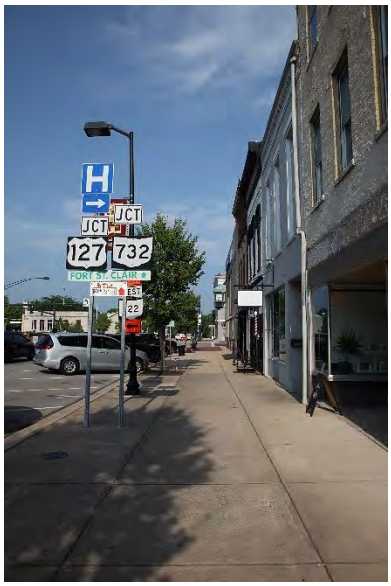


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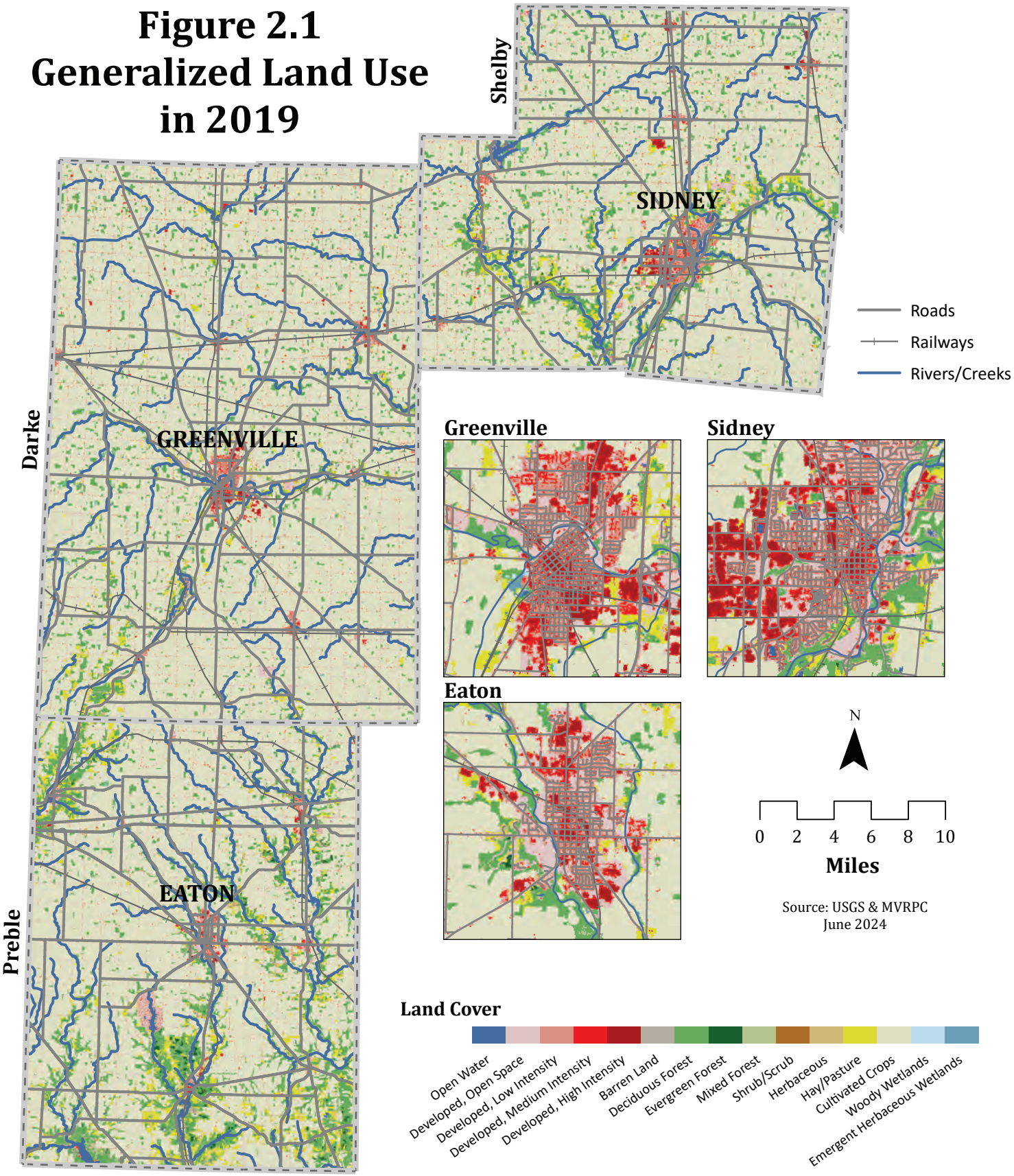
Figure 2.1
Generalized Land Use in 2019



Population

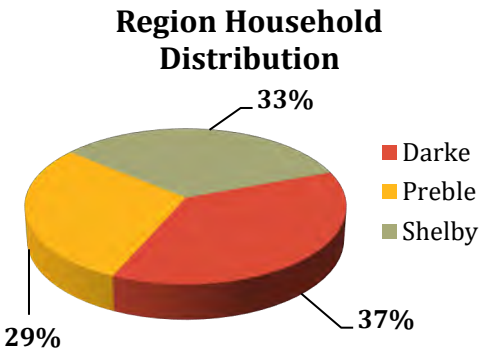
In the preparation of a socio-economic profile for Darke, Preble, and Shelby counties, a number of sources of information were used. The 2020 U.S. Census data were used for all residence-related variables. For employment and population variables and journey-to-work characteristics, MVRPC used a combination of sources including American Community Survey, the Ohio Department of Job and Family Services, and ODOT.

Table 2.1 shows data taken from the U.S. 2020 Census and the American Community Survey. According to the data, the Region is home to a total population of 141,110. Of the total population in the Region, Darke County has the highest percentage at approximately 37%. In Preble and Shelby counties, the distribution of population is slightly lower at 29% and 34% respectively. In all three counties, the highest population density is located within the cities in the Region—Greenville, Eaton, and Sidney—with density decreasing into the surrounding rural areas.

Table 2.1 – Population and Households by County

County	Population	Percent of Population	Households	Percent of Households	Persons per Household
Darke	51,881	36.77%	20,925	37.27%	2.45
Preble	40,999	29.05%	16,412	29.23%	2.48
Shelby	48,230	34.18%	18,803	33.49%	2.55
Total	**141,110**	**100%**	**56,140**	**100%**	**2.5**

Sources: U.S. Census Bureau, ODOD, and MVRPC



The Region is home to a population of 141,110. As noted, the majority (37%) of the population lives in Darke County, however, the population density distribution indicates that the Region has significant variations as shown in Figure 2.2. Generally, a higher population density is seen around the county seats (Greenville, Eaton, and Sidney) with density dispersing away from the centers and into the rural areas of the counties.

There are approximately 56,140 households in the Region, with the largest portion (15%) located in Darke County, and approximately 2.5 persons per household.

MVRPC acquired 2050 population and employment projections from the Ohio Department of Development and ODOT to identify the Region's future socioeconomic trends for use in the Regional Transportation Plan. According to the calculated projections, the population within the Region is expected to hold steadily between 2020 and 2050. Counties with population decline, such as Darke and Preble County, are

expected to stabilize between 2040 and 2050. Similarly, population growth is expected to slightly decline in Shelby County between 2040 and 2050, as seen in Table 2.2.

Table 2.2 – Changes in Population from 1980 – 2020 and Projections to 2050

County	1980	1990	2000	2010	2020	2030	2040	2050
Darke	55,096	53,619	53,309	52,959	51,881	48,280	46,290	46,120
Preble	38,223	40,113	42,337	42,270	40,999	37,540	34,140	34,020
Shelby	43,089	44,915	47,964	49,423	48,230	48,420	47,180	47,040
Total	**136,408**	**138,647**	**143,610**	**144,652**	**141,110**	**134,240**	**127,610**	**127,180**

Source: U.S. Census (1980-2020) and ODOD (2030-2050)

Table 2.3 summarizes the changes in population from 1980 to 2020 and subsequent percent in change. Overall, the population in the Region has declined through the year 2020 and is expected to continue to decline into the year 2050. However, the percent decline in Shelby County has remained fairly low compared to Darke and Preble counties, which have experienced considerable change in comparison to previous years.

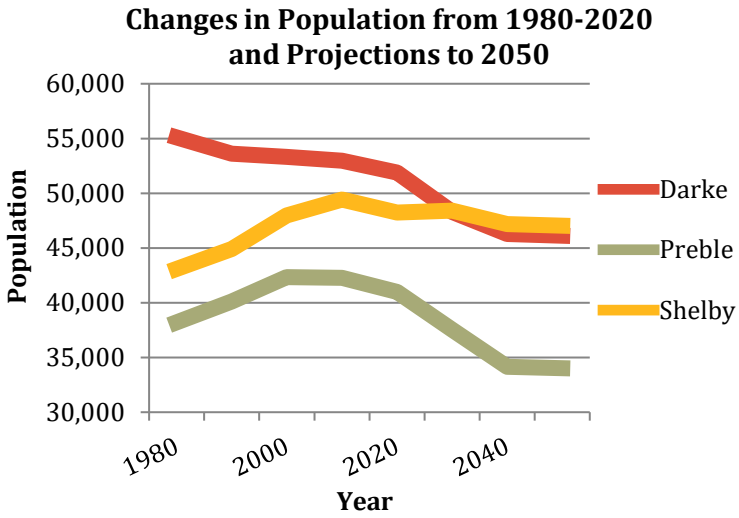


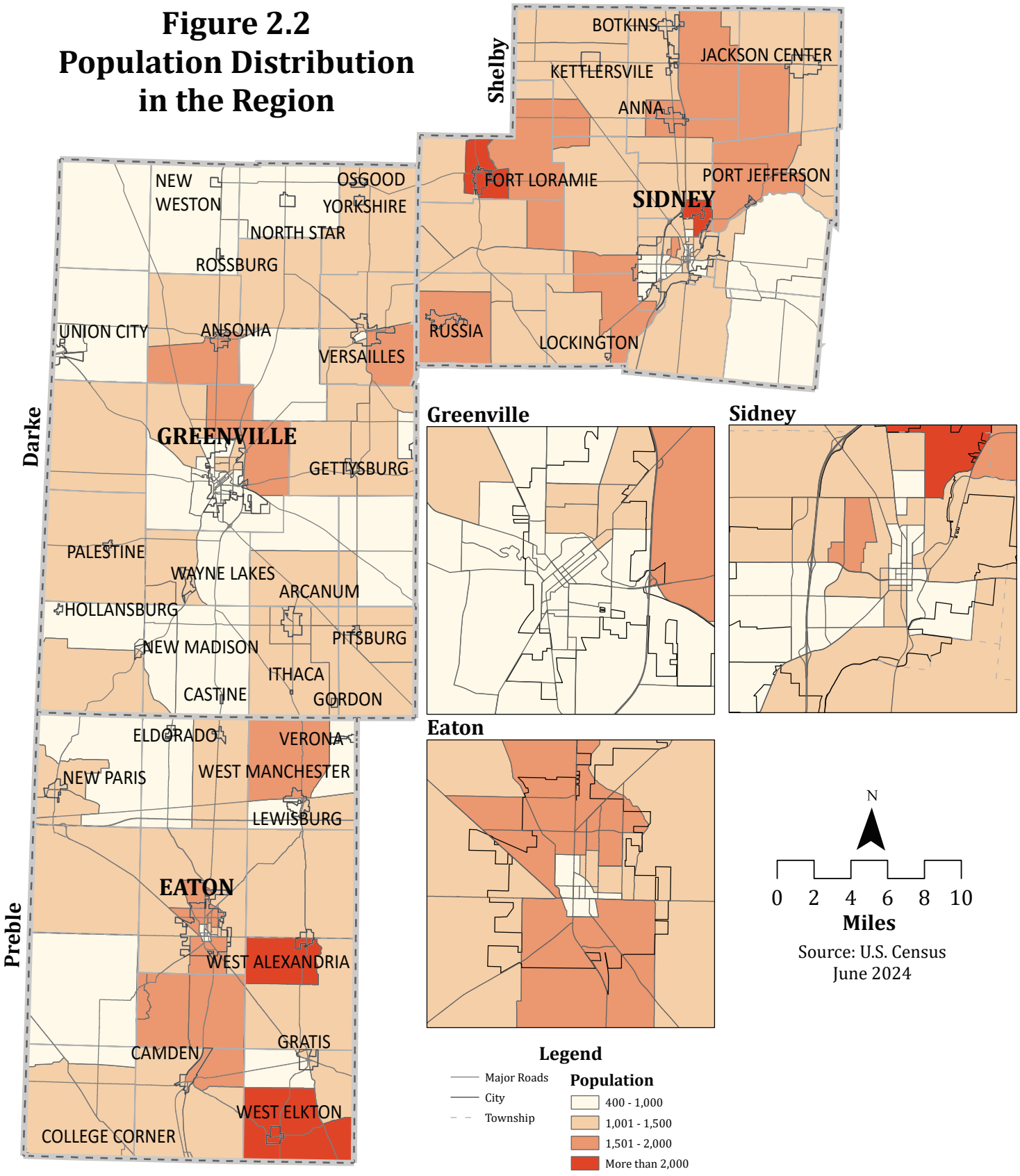
Table 2.3 – Percent Changes in Population from 1980 – 2020 and 2010 – 2020

County	Change 1980 – 2020	Change 2010 – 2020
Darke	-6%	-2%
Preble	7%	-3%
Shelby	12%	-2%

Source: U.S. Census (1980-2020)

MVRPC

Figure 2.2
Population Distribution in the Region



Employment

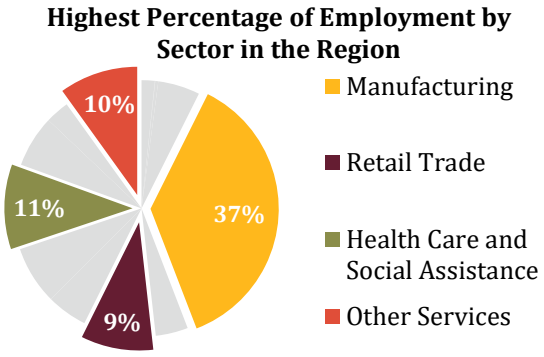
According to the Ohio Department of Job & Family Services' Quarterly Census of Employment (QCEW) data, the Region was home to more than 53,220 jobs in 2020 with approximately 16,810 jobs in Darke County; 10,376 jobs in Preble County; and the highest number in Shelby County, at 26,034. Manufacturing represents both the highest percentage of jobs in the Region and about 47.14% of the total county employment in Shelby County, 32.79% of the total county employment in Preble County, and 23.14% in Darke County. Based on employment forecasts and the current largest employers in the Region, manufacturing has the potential to increase. In addition, healthcare and education are large employment sectors in the Region at 14.36% in healthcare in Darke County and 10.22% in education services in Preble County.

Table 2.4 – Percentage of Employment by Sector

Industry	Darke	Preble	Shelby	Region
Agriculture, Forestry, Fishing and Hunting	3.80%	1.00%	0.55%	1.66%
Mining	0.02%	0.21%	0.00%	0.05%
Utilities	0.39%	0.40%	0.38%	0.38%
Construction	5.10%	4.05%	5.90%	5.29%
Manufacturing	23.14%	32.79%	47.14%	36.76%
Wholesale Trade	4.42%	2.72%	4.41%	4.08%
Retail Trade	11.06%	10.97%	7.16%	9.13%
Transportation and Warehousing	7.16%	4.22%	4.21%	5.15%
Education Services	8.38%	10.22%	5.53%	7.34%
Health Care and Social Assistance	14.36%	11.29%	8.09%	10.69%
Arts, Entertainment, and Recreation	6.51%	8.62%	5.71%	6.53%
Public Administration	3.09%	4.14%	2.48%	3.00%
Other Services	12.56%	9.39%	8.44%	9.93%

Source: ODJFS and MVRPC

Some of the major manufacturing employers in Darke County include Midmark Corporation, Whirlpool Corporation, and Greenville Technology, Inc. Approximately 23% of employment in Darke County is in the manufacturing sector, followed by 14.36% in health care and social assistance, 12.56% in other services, and 11.06% in wholesale and retail trade.



Major employers in Preble County include Silfex, Inc., Henny Penny Corporation, and Neaton Auto Products Manufacturing. Out of the three counties, Preble County has the lowest number of large employers in the Region. Approximately 32.79% of employment in Preble is in

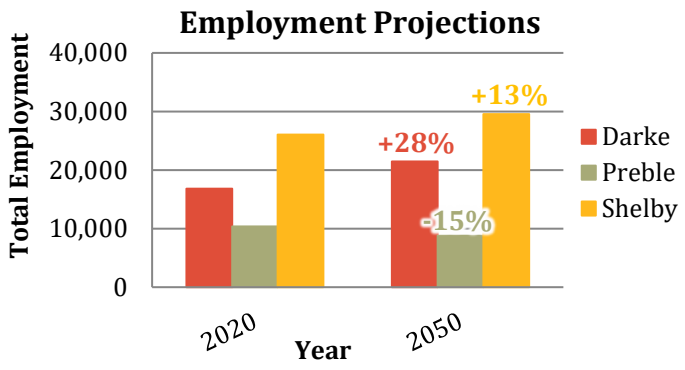
manufacturing, followed by 11.29% in health care and social assistance, 10.97% in retail trade, and 10.22% in education services.

In Shelby County, the largest employer is Honda of America, followed by Emerson Climate Technologies, and Airstream, Inc. Shelby County employs the largest number of workers who reside within Shelby County, likely resulting from the large manufacturing industry located north of Sidney. Shelby County boasts the highest number of manufacturing jobs per capita in Ohio.

Table 2.5 – Employment Change and Projections for Each County in the Region

County	2020	2050	Change (Total)	Change (Percentage)
Darke	16,810	21,469	4,659	28%
Preble	10,376	8,800	-1,576	-15%
Shelby	26,034	29,536	3,502	13%
Total	**53,220**	**59,805**	**6,585**	**26%**

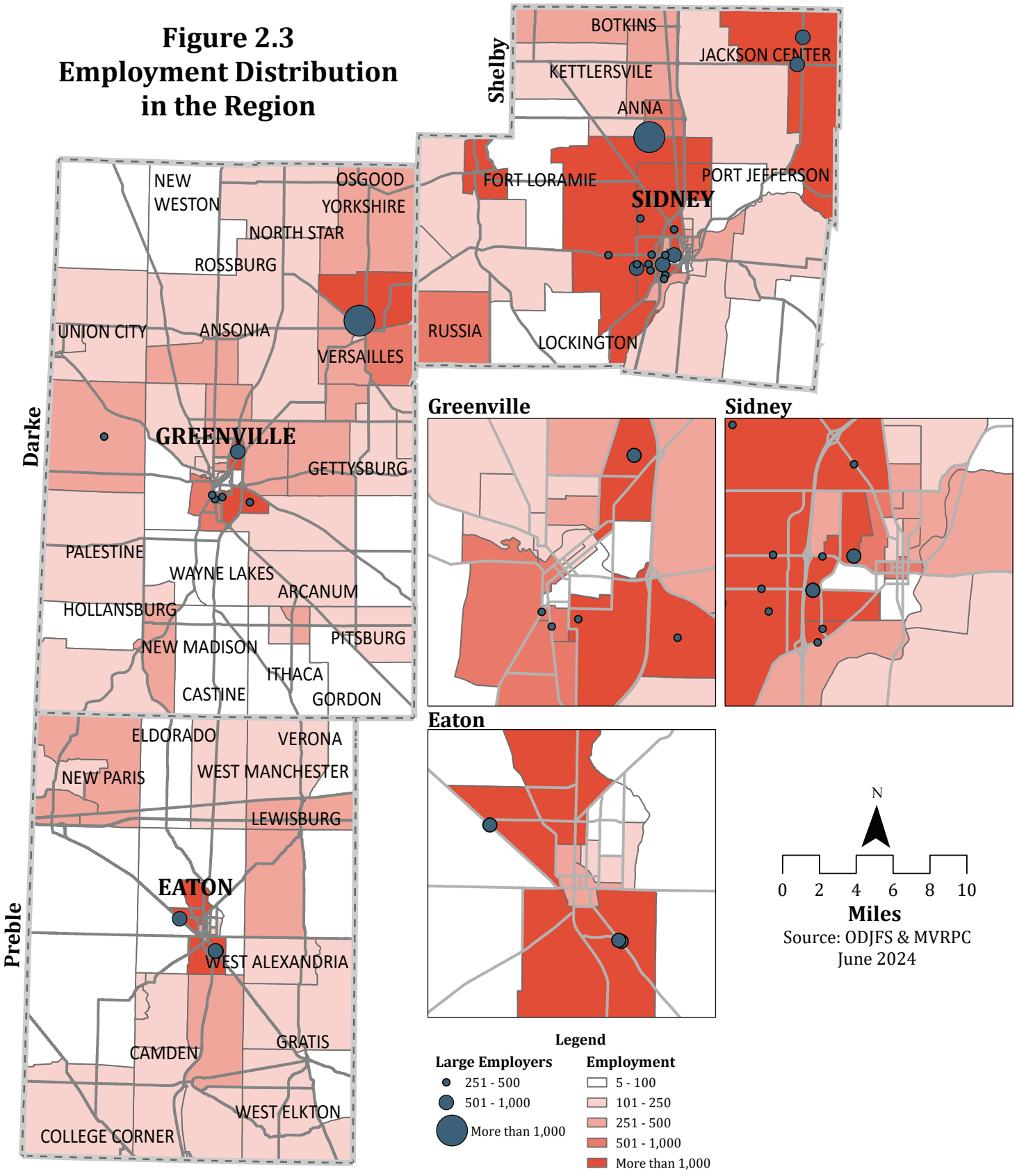
Source: U.S. Census Bureau, ODOT, and MVRPC



According to ODOJFS employment data and employment projections developed by ODOT, Table 2.5 shows that employment has the potential to increase in two of the three counties from 2020-2050. The most significant change is forecasted to occur in Darke County, with a 28% increase in employment. Shelby County employment is expected to grow approximately 13%, and Preble County is expected to decline 15% in growth into 2050. Overall, employment is expected to increase by approximately 12.37%. Figure 2.3 provides the employment distribution within the Region.

MVRPC

Figure 2.3
Employment Distribution in the Region



2.3 Vulnerable Populations and Populations with Limited English Proficiency

Vulnerable Populations

MVRPC's analysis groups for this section included the Environmental Justice (EJ) populations of racial and ethnic minorities and persons in poverty. Further, MVRPC expanded the target populations to include other traditionally vulnerable groups, such as persons with disabilities, the elderly, and households without automobiles.

Data Sources

An array of data sources exists for population demographics, however not all are of equal quality for analysis purposes. Therefore, MVRPC used the 2020 Census data and 2016-2020 American Community Survey (ACS) data as primary data sources for the analysis of target population groups. For all vulnerable populations' variables, 2020 Census and 2016-2020 American Community Survey (ACS) 5-year estimate block group data were analyzed using GIS methods and spatial analysis techniques.

Definition of Population Groups

Persons in Poverty

Persons in poverty are defined as the sum of the number of persons in families with income below the poverty threshold and the number of unrelated individuals with incomes below the poverty thresholds. The set of poverty thresholds varies by family size and composition and age of householder. MVRPC defined the poverty population based on available ACS data tabulated for total household population plus noninstitutionalized group quarters.

People with Disabilities

MVRPC defines the population of people with disabilities based on available ACS data tabulated for population 18 years of age and over for whom poverty status is determined. A person was considered as having a disability if they met any of the following conditions. A brief description of each disability category is as follows:

- Hearing difficulty — deaf or having serious difficulty hearing
- Vision difficulty — blind or having serious difficulty seeing, even when wearing glasses
- Cognitive difficulty — because of a physical, mental, or emotional problem, having difficulty remembering, concentrating, or making decisions
- Ambulatory difficulty — having serious difficulty walking or climbing stairs
- Self-care difficulty — having difficulty bathing or dressing
- Independent living difficulty — because of a physical, mental, or emotional problem, having difficulty doing errands alone such as visiting a doctor's office or shopping

Zero-Car Households

Zero-Car households are households with no automobiles at home and available for the use of household members.

Minority Population

All persons of races other than Caucasian were considered minorities, including African-American; American Indian or Alaska Native; Asian; Native Hawaiian or Other Pacific Islander; some other race alone; and persons of two or more races. It is important to note that the population of Hispanic origin was not counted as a race since the U.S. Census Bureau treats persons of Hispanic origin as an ethnic group, not a race.

Hispanic Population

Persons who classified themselves in one of the specific Spanish/Hispanic/Latino origin categories listed, such as Mexican, Mexican-American, Puerto Rican, or Cuban, as well as those who indicated that they were of other Spanish/Hispanic/Latino origin. Persons of Hispanic origin may be of any race.

Elderly Persons

The elderly population is defined as all persons 65 years of age and older.

Identifying Target Areas

MVRPC identified target areas by examining the concentration of the target populations at the block group level using Geographic Information Systems (GIS) methods and tools.

Population Thresholds

The target population thresholds were calculated for each population demographic variable under examination in order to locate the areas of high concentration. The data was aggregated to the county level and a county average percentage for each target population was calculated. Using the county average percentage as a threshold, the areas of high concentration were identified. Target population averages were calculated individually for each county, as opposed to a Region average, to reflect the unique characteristics of each county. The county thresholds for each target population are listed below in Table 2.6.

- ***People in Poverty*** — In the Region, Darke County has the highest percentage of people in poverty at 10.48%, compared to Preble and Shelby counties with 8.41% and 9.49%, respectively.
- ***Population of People with Disabilities*** — Preble County has the highest population of people with disabilities in the Region at 19.1%, followed by Shelby and Darke counties at 17.79% and 16.69% respectively.
- ***Zero-Car Households*** — Preble County has the highest percentage of households without access to cars at 4.90%, followed by Darke and Shelby counties at 4.55% and 3.68% respectively.
- ***Minority Population*** — Shelby County has the highest percentage of minority population in the Region at 8.19%. Darke and Preble counties both have lower percentages at 4.93% and 5.22% respectively.
- ***Hispanic Population*** — A higher percentage of persons of Hispanic descent live in Darke and Shelby counties, at approximately 1.7% and 1.6% respectively, followed closely by Preble County at 0.9%.

- ***Elderly Population*** — A higher percentage of elderly population lives in Darke and Preble counties, at 21.07% and 20.52% respectively, compared to Shelby County at 17.41%.

Table 2.6 – Target Thresholds Population in the Region

	County	Universe	Total	Threshold
People in Poverty*	Darke	49,414	5,179	10.48%
	Preble	39,227	3,298	8.41%
	Shelby	46,232	4,389	9.49%
Population of People with Disabilities*	Darke	38,645	6,449	16.69%
	Preble	31,487	6,014	19.10%
	Shelby	36,121	6,425	17.79%
Zero-Car Households*	Darke	21,171	963	4.55%
	Preble	16,417	805	4.90%
	Shelby	18,670	687	3.68%
Minority Population	Darke	51,881	2,559	4.93%
	Preble	40,999	2,142	5.22%
	Shelby	48,230	3,950	8.19%
Hispanic Population	Darke	51,881	859	1.66%
	Preble	40,999	386	0.94%
	Shelby	48,230	787	1.63%
Elderly Population	Darke	51,193	10,788	21.07%
	Preble	40,999	8,413	20.52%
	Shelby	48,230	8,397	17.41%

Sources: 2020 Census and *2016-2020 American Community Survey (Due to the low sampling rates and MOE [margin of error] of the ACS, and despite accurate data aggregation across geographic and population subgroups, estimates can sometimes result in unreliable data.)

Distribution of Target Areas

Using the county's threshold for each target population, block groups were examined and coded as either "Above County Average" or "Below County Average." MVRPC used GIS to produce a series of maps showing the geographic distribution of target areas for each population group in the Region. The maps are shown in Figure 2.4.

Distribution of People in Poverty — The distribution of people in poverty revealed a high concentration in the central city area of Darke County. Further, Preble and Shelby counties also showed the highest concentrations south of the central city areas and distributed somewhat evenly around selected rural areas surrounding them.

Distribution of People with Disabilities — The distribution of people with disabilities showed minor concentrations within and around the central city areas in Darke and Shelby counties. In Preble County, the distribution of people with disabilities is south and west of the central city area.

Zero-Car Households Distribution — The distribution of households with no cars is fairly evenly distributed within all counties in the Region, similar in distribution to the population of people in poverty or the Hispanic population distribution. Rural areas are of particular concern, as they tend to have less access to available transit services.

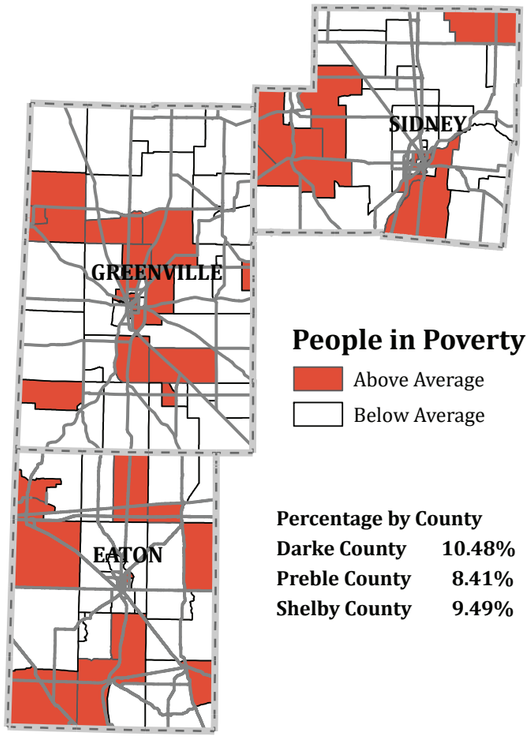
Minority Population Distribution — The minority population areas are concentrated around urban areas or cities.

Hispanic Population Distribution — The Hispanic population in the Region appears to be located centrally, specifically in Darke and Shelby counties, and away from city centers and closer to rural areas in Preble County.

Elderly Population Distribution — The distribution of elderly population is very high in concentration around the central cities in all of the Region's counties. However, Preble and Darke counties have higher concentrations in comparison to Shelby County.

MVRPC

Figure 2.4 Environmental Justice and Other Populations



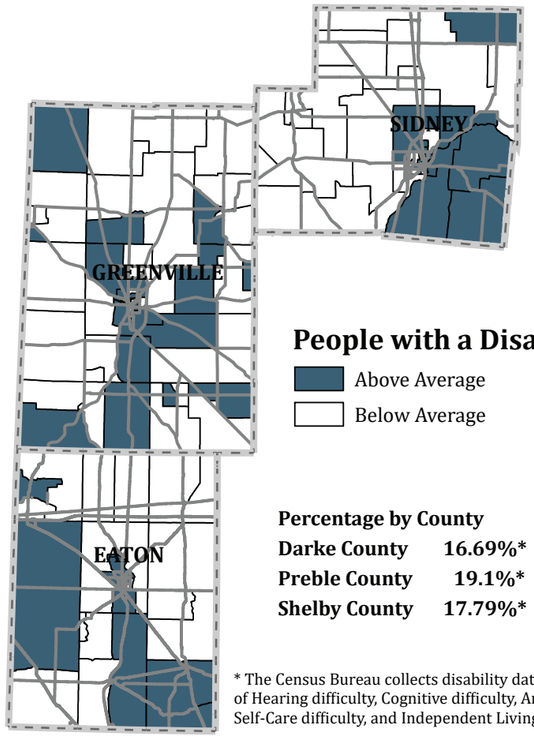
People in Poverty

Above Average

Below Average

Percentage by County

Darke County	10.48%
Preble County	8.41%
Shelby County	9.49%



People with a Disability

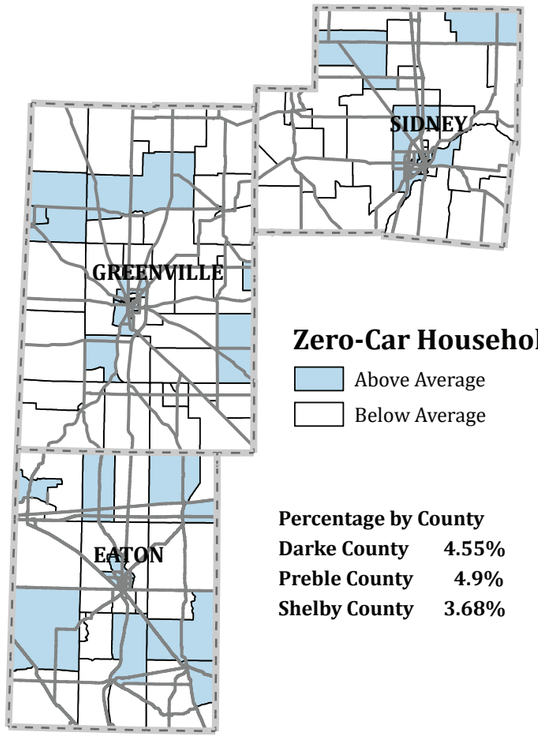
Above Average

Below Average

Percentage by County

Darke County	16.69%*
Preble County	19.1%*
Shelby County	17.79%*

* The Census Bureau collects disability data under the categories of Hearing difficulty, Cognitive difficulty, Ambulatory difficulty, Self-Care difficulty, and Independent Living difficulty.



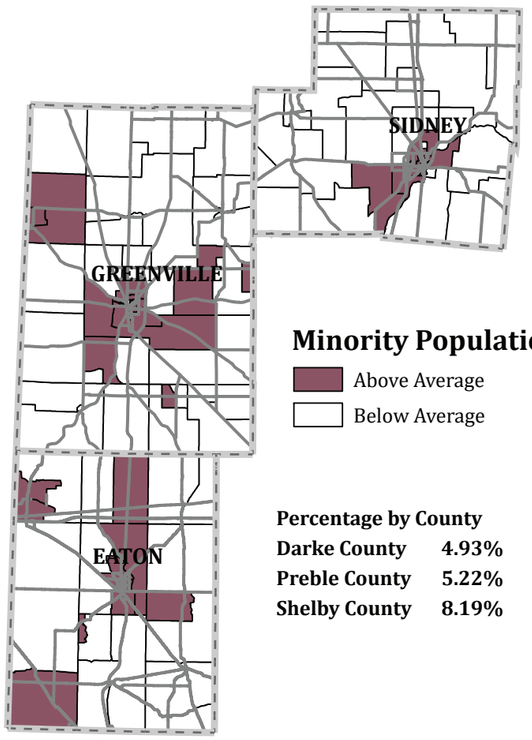
Zero-Car Households

Above Average

Below Average

Percentage by County

Darke County	4.55%
Preble County	4.9%
Shelby County	3.68%



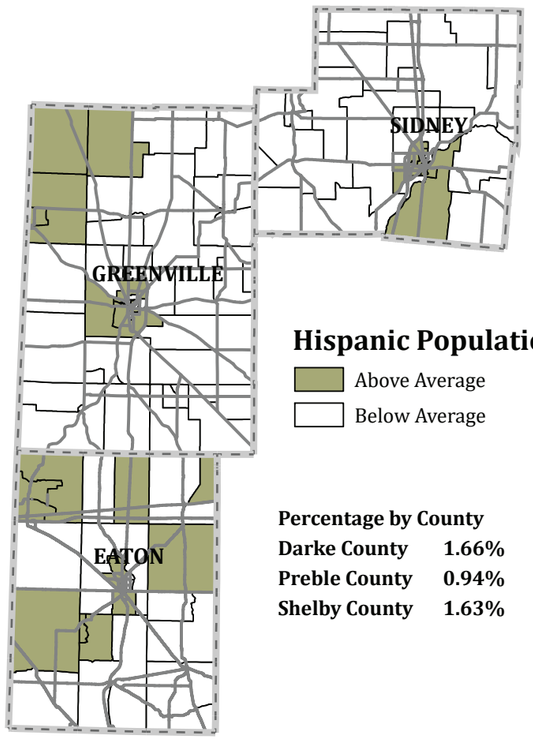
Minority Population

Above Average

Below Average

Percentage by County

Darke County	4.93%
Preble County	5.22%
Shelby County	8.19%



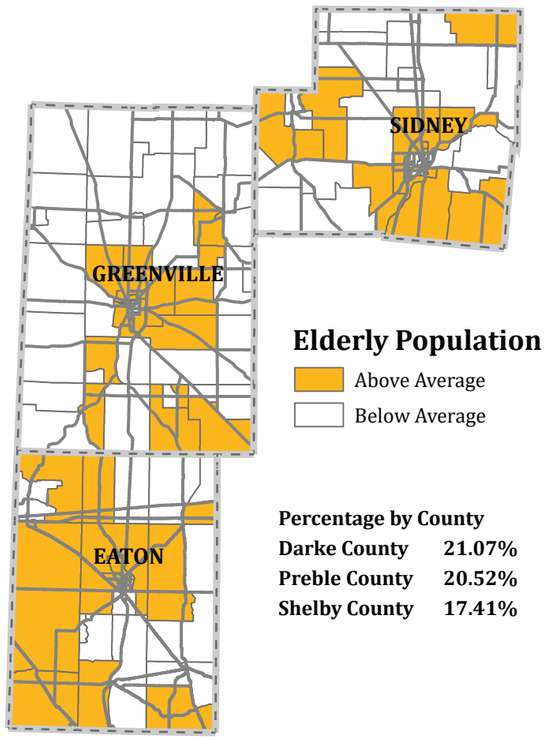
Hispanic Population

Above Average

Below Average

Percentage by County

Darke County	1.66%
Preble County	0.94%
Shelby County	1.63%



Elderly Population

Above Average

Below Average

Percentage by County

Darke County	21.07%
Preble County	20.52%
Shelby County	17.41%

N

0 4 8 12 16 20

Miles

Source: 2020 U.S. Census & 2016-2020 ACS
June 2024

Limited English Proficiency (LEP) Analysis

A person with Limited English Proficiency is one who does not speak English as their primary language and who has a limited ability to read, speak, write, or understand English. The purpose of this Limited English Proficiency analysis is to provide a written examination of the distribution and percentage of LEP persons within MVRPC's Region of Darke, Preble, and Shelby counties. The U.S. Census Bureau American Community Survey (ACS), 2016-2020, was the data source used to determine the number of LEP persons in the three county Region.

To ensure compliance with *Executive Order 13166: Improving Access to Service for Persons with Limited English Proficiency*, MVRPC examined the Limited English Proficiency (LEP) populations within the Region's boundaries using 2020 American Community Survey: Language Spoken at Home by the Ability to Speak English datasets. This executive order states that individuals who do not speak English well and who have a limited ability to read, write, speak, or understand English are entitled to language assistance under Title VI of the Civil Rights Act of 1964 with respect to a particular type of service, benefit, or encounter.

Executive Order 13166: Improving Access to Service for Persons with Limited English Proficiency

"The executive order requires Federal agencies to examine the services they provide, identify any need for services to those with Limited English Proficiency (LEP) and develop and implement a system to provide those services so LEP persons can have meaningful access to them. It is expected that agency plans will provide for such meaningful access consistent with, and without unduly burdening, the fundamental mission of the agency."[4]

Limited English Proficiency Populations in the Region

Most individuals living in the United States read, write, speak, and understand English. There are many individuals, however, for whom English is not their primary language.[5] MVRPC defines LEP persons as "any individual 5 years of age and older who speaks a language at home other than English as their primary language, and who speak or understand English 'not well' or 'not at all'." Within the MVRPC's Region boundaries, defined as Darke, Preble, and Shelby counties, and as shown in Table 2.7, approximately 1.93% of the population does not speak English as their primary language in the household. Table 2.7 below also outlines the Region by the number and percent of persons who speak English only, and persons who do not speak English as their primary language in the household.

[4] Executive Order 13166; Overview of EO 13166
[5] DOT LEP Handbook

Table 2.7 – Primary Language Spoken at Home in the Region

County	Total	English Only	Percent	English Not Primary Language Spoken in the Household	Percent
Darke	48,294	47,480	98.31%	814	1.69%
Preble	38,741	37,939	98.93%	802	2.07%
Shelby	45,453	44,512	98.93%	941	2.07%
Total	**132,488**	**129,931**	**98.07%**	**2,557**	**1.93%**

Source: 2016-2020 American Community Survey 5-Year Estimates

According to the American Community Survey (ACS) 5-Year Estimates of individuals five years and older who do not speak English as their primary language, approximately 84% speak English very well and 16% are considered Limited English Proficiency individuals who do not speak English well or do not speak English at all. The LEP individuals represent less than 0.2% of the population in the Region. Table 2.8 outlines the percentages of individuals who do not speak English as the primary language in the household within each county in the Region by their ability to speak English and Figure 2.5 depicts their geographic distribution.

Table 2.8 – Limited English Proficient (LEP) Persons in the Region

County	Speaks English "Well" or "Very Well"	Percent Speaks English "Well" or "Very Well"	Total LEP: Speaks English "Not Well" or "Not at All"	Percent LEP: Speaks English "Not Well" or "Not at All"
Darke	733	90.05%	81	9.95%
Preble	736	91.77%	66	8.23%
Shelby	690	73.33%	251	26.67%
Total	**2,159**	**84.43%**	**398**	**15.57%**

Source: 2016-2020 American Community Survey 5-Year Estimates

According to the total estimates of individuals whose primary household language is not English, approximately 46% speak Spanish as their primary language, 25% speak Other Indo-European languages, 23% speak Asian or Pacific Island languages, and 6% speak other languages.

Using the U.S. Department of Justice's Safe Harbor Provision, four- factor analysis, regarding translation of vital document and the above demographic analysis, MVRPC has determined that translation of written documents is not required.

In the Darke-Preble-Shelby counties region, no LEP group constitutes 1,000 persons or five percent (5%) of the total population eligible to be served or likely to be affected or encountered. Further, MVRPC is most likely to encounter LEP populations during public participation for key transportation planning documents/programs and focuses its efforts on outreach to LEP population as described in the following section.

MVRPC Outreach to Limited English Proficiency Constituents

MVRPC's primary objective with regards to public participation and outreach is to bring a broad cross-section of the public into the public policy decision making process. MVRPC makes assurances that the traditionally underserved populations in the Region, including Limited English Proficiency individuals, benefit equally from projects and programs using federal funds along with the rest of the general population. MVRPC makes every effort to demonstrate that the opinions, concerns, and input from traditionally underserved populations are valued and welcomed.

With respect to public participation and outreach of Limited English Proficiency populations for public meetings and open houses, MVRPC may include the following outreach methods:

- Placing public notices and/or advertisements in minority and ethnic newspapers, in addition to major regional newspapers deemed appropriate for the project. Public notices are translated into Spanish when appropriate.
- Translating informational flyers/posters into Spanish and distributing them via appropriate outlets. When appropriate, participation from target populations is sought by posting flyers/posters and meeting notices in locations such as government centers, neighborhood shops, religious institutions, social service agencies, employment centers, senior centers, public health clinics, public libraries, community centers and popular meeting places.
- Individuals with limited English proficiency are encouraged to request translators. Agency wide translating efforts are focused on Spanish speakers as it is the predominant concentration of non-English speaking individuals in the Miami Valley.

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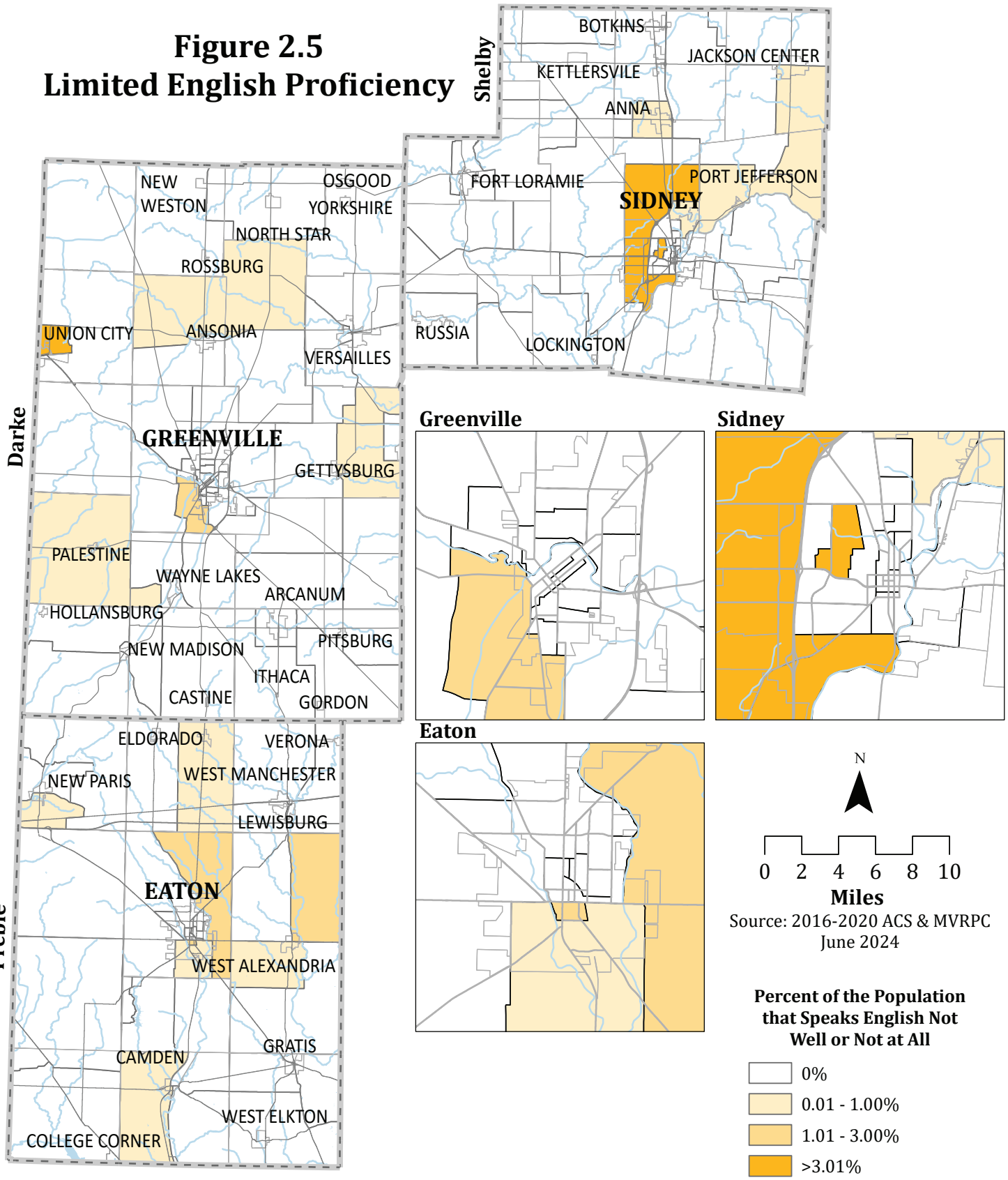
Figure 2.5
Limited English Proficiency



2.4 Journey-to-Work Characteristics

The journey-to-work characteristics for Darke, Preble, and Shelby counties were examined using county and block group data from the 2016-2020 American Community Survey (ACS) 5-year estimates. When evaluating a transportation network, it is especially important to examine work trip characteristics as this increase in vehicular traffic at peak times often strains the network to capacity. In addition, rural areas sometimes face transportation issues of a different nature than those encountered in metropolitan areas.[6] Particular attention should be given to ensure proper Levels of Service (LOS) during those crucial peak times of traffic flow.

Work trip characteristics were examined because although work trips make up only 10% of person trips during peak commute hours, that increment often makes the difference in straining capacity of the transportation system.[7] Figure 2.6 provides a summary of the journey-to-work characteristics, including county commuting patterns, and average travel time to work for Darke, Preble, and Shelby counties.

The 2020 ACS data revealed that Darke and Preble counties have a greater number of workers residing in the counties than workers employed within their boundaries. As such, a large number of residents commute to the MPO counties of Greene, Miami, Montgomery, and Warren counties in the Dayton Urbanized Area.

As a whole, Shelby County has more residents employed within the county and serves as a regional job center that draws more employees from the MPO counties than Shelby County residents working within the MPO.

Average travel time to work was analyzed for the Region using the 2016-2020 ACS Census Tract data. The data revealed the average commute time in the Miami Valley Region to be 22 minutes. The average commute time was 23 minutes for Darke County workers, 26 minutes for Preble County workers, and 18 minutes for Shelby County workers.[8]

Table 2.9 displays the means of transportation to work for the entire Region and each county individually. As shown in the table, the majority of residents in the Region drive alone (car, truck, or van) as their means of transportation to work. Approximately 1.3 percent of residents in Darke County worked from home (WFH) prior to 2020, significantly higher than percentages in Preble or Shelby counties. However, current levels of remote work may differ from pre-pandemic levels, but due to high levels of employment in manufacturing in the Region, they might not have increased as much as those in the surrounding urbanized areas. The category of "other" represents other means of transportation, including taxis and motorcycles, as both categories represent a small percentage of travel mode.

[6] Federal Highway Administration (FHWA), Planning Processes, Rural and Small Community Planning, 2023.
[7] FHWA, 1995 National Personal Transportation Survey.
[8] MVRPC; U.S. Census Bureau, 2020.

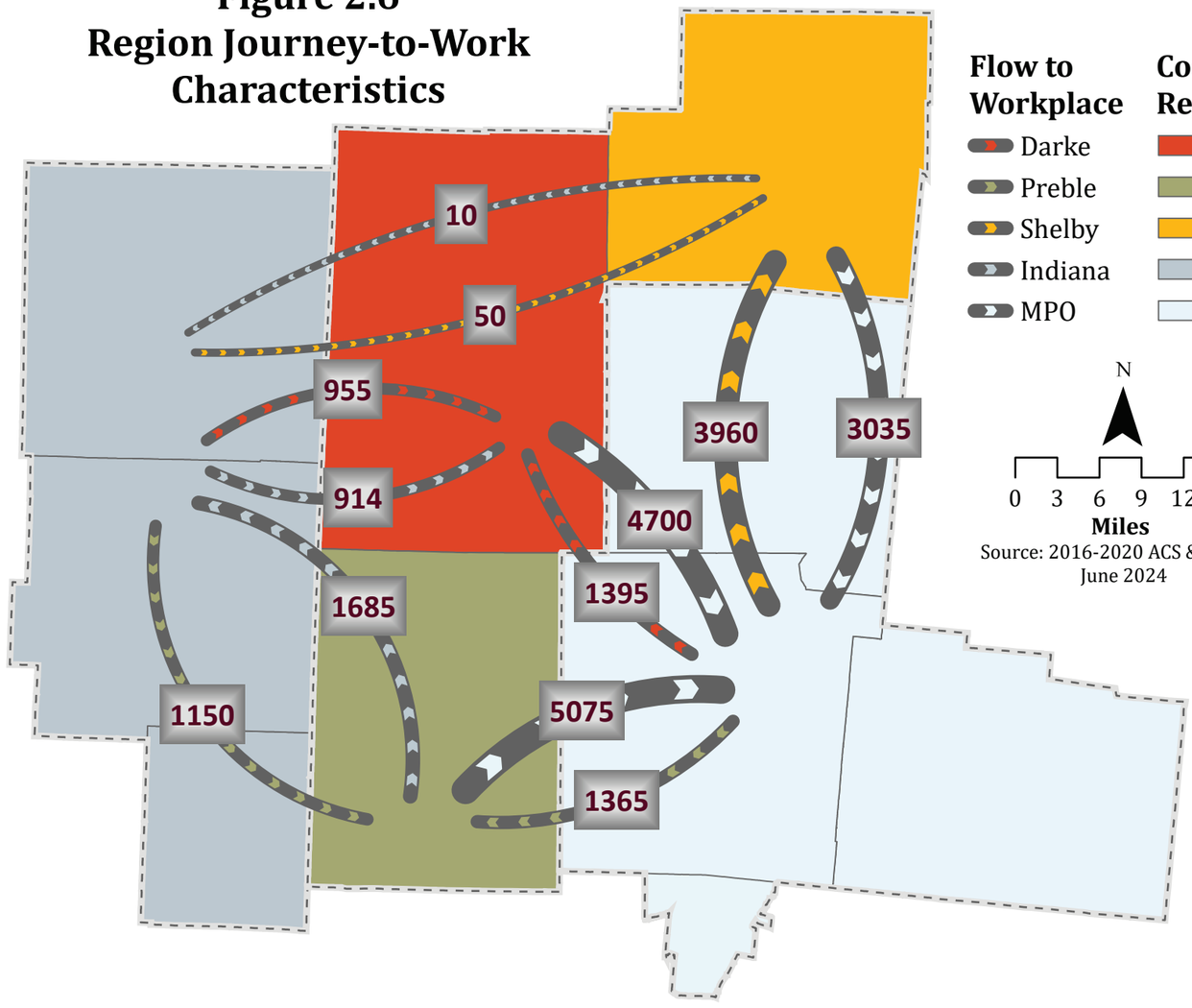
Table 2.9 – Means of Transportation to Work

Area	Drove Alone	Carpooled	Public Transit	Walk	Bicycle	Worked from Home	Other
Darke	80.1%	8.7%	0.1%	0.2%	1.7%	1.3%	4.0%
Preble	82.0%	6.9%	0.0%	0.0%	1.6%	0.2%	3.6%
Shelby	77.9%	9.2%	0.0%	0.6%	1.3%	0.3%	4.0%
Region	**79.9%**	**8.4%**	**0.1%**	**0.3%**	**1.5%**	**0.6%**	**3.9%**

Source: 2016-2020 ACS and MVRPC

Travel trends in the Region follow national patterns. As is the case with the U.S., the automobile represents the predominant mode of travel. According to the 2016-2020 ACS, approximately 80 percent of the Region residents drove their automobile alone to work, and 8 percent of residents carpooled. In total, less than 2 percent of residents in the Region walked, bicycled, or used public transit or other means of transportation to work. Lastly, approximately 0.6 percent of the Region worked from home according to the 2016-2020 ACS data, which largely represents pre-pandemic levels of remote work.

Figure 2.6
Region Journey-to-Work Characteristics



Flow to Workplace
- Darke
- Preble
- Shelby
- Indiana
- MPO

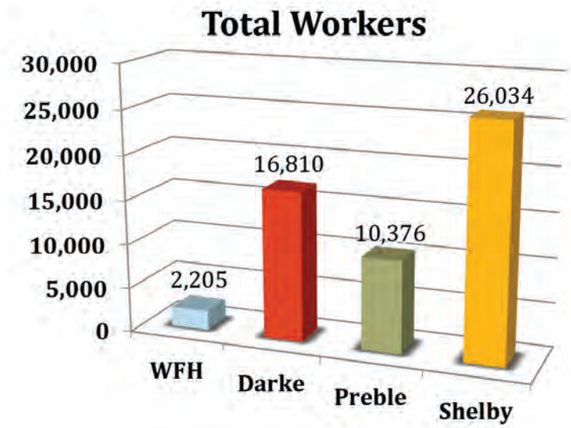
County or Region
- Darke
- Preble
- Shelby
- Indiana
- MPO

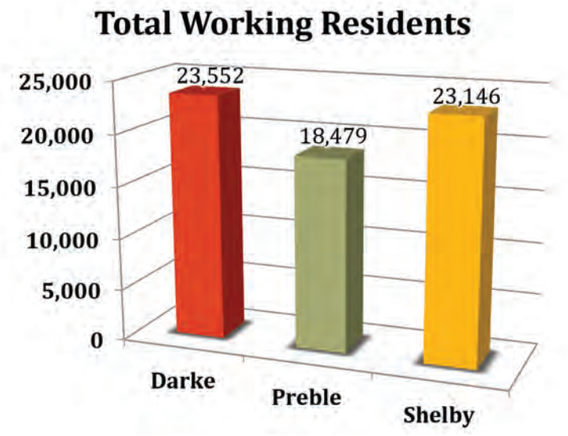
N

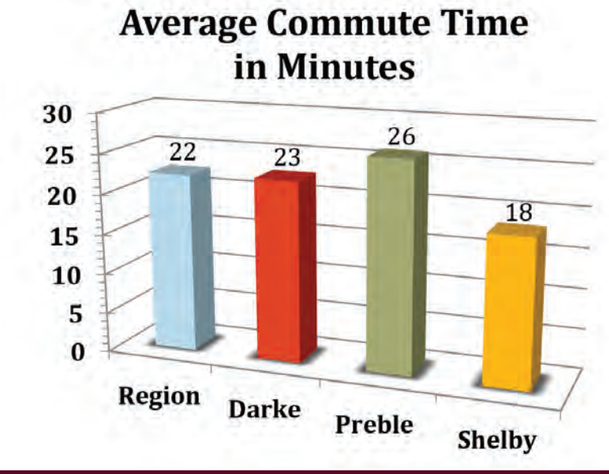
0 3 6 9 12 15

Miles

Source: 2016-2020 ACS & MVRPC
June 2024







Residence	Workplace	WFH	Darke	Preble	Shelby	Indiana	MPO	Total Working Residents
Darke		1,030	13,690	765	750	914	4,700	**23,552**
Preble		545	315	8,025	75	1,685	5,075	**18,479**
Shelby		630	250	0	16,530	10	3,035	**23,146**
Indiana			955	1,150	50	32,325	545	-
MPO			1,395	1,365	3,960	299	389,340	-
Total County Employees		**2,205**	**16,810**	**10,376**	**26,034**	-	-	-

2.5 Environmental Resources Overview

Environmental Resources Overview

The National Environmental Policy Act (NEPA) process requires federally funded projects to account for possible current and future impacts to environmental resources within or surrounding the project area. Per the U.S. Department of Transportation,[9] there are several categories for which impacts are analyzed:

- *Air Quality and Noise*
- *Community Impacts*
- *Cultural Resources*
- *Water Resources*
- *Ecological Resources*
- *Underserved Populations*
- *Asbestos*
- *Farmlands*
- *Floodplains*
- *Section 4(f) and 6(f) Resources*
- *Regulated Materials and Permits*
- *Public Involvement*

Generally, an inventory of existing environmental conditions is created and compared to current or future transportation projects using GIS analysis methods. Mitigation measures are then identified based on the resource. This process ensures that all projects first consider the most feasible project alternative or solution while minimizing harm or impact to the resource.

The following sections detail the existing environmental resources for Darke, Preble, and Shelby counties. Environmental data were gathered from a variety of sources, such as the Ohio Department of Transportation (ODOT) Transportation Information Mapping System (TIMS), the United States Geological Survey (U.S.GS), the Ohio Environmental Protection Agency (OEPA), the United States National Park Service (NPS), the United States Fish and Wildlife Service (USFWS), the Ohio Department of Natural Resources (ODNR), the National Oceanic and Atmospheric Administration (NOAA), and the Federal Emergency Management Agency (FEMA). The data were collected and then analyzed and visualized using GIS to provide an overview of the environmental conditions in the Region.

[9] U.S. Department of Transportation, Manuals and Guidance; https://rb.gy/jxj9e.

Environmental Resources in the Region

Watersheds, Wellfields, Wetlands, and Floodplains

The Region has:

- A total of 7,000 acres of wetlands, which is comprised of both freshwater and emergent wetlands.
- Two scenic recreational rivers, Stillwater River and Greenville Creek, both located in Darke County.
- A total of 35,000 acres of flood zones and approximately 1,000 acres of Floodways.
- Approximately 700 acres of inner management zones and 3,000 acres of outer management zones: both of which are considered Wellfield Protection Areas.
- 39 watershed areas with high priority total maximum daily load according to the Ohio EPA ATTAINS database.[10]

Historic and Cultural Features

The Region has:

- A total of 21 historic bridges, with Preble County having the majority.
- A total of 65 sites listed on the National Register of Historic Places, 47 of which are buildings of historical significance.
- Approximately 380+ cemeteries.

Parklands and Protected Areas

The Region has:

- At least 10 nature preserves, wildlife areas, or sanctuaries, and a grand total of approximately 3,400 acres of protected natural areas.
- A multitude of recreational areas, totaling at least 10,300 acres of land for recreational use.

Hazardous Materials, Superfund, and NPL

The Region has:

- One Superfund Site, located in Darke county, which was removed from the National Priorities List in 2001: Arcanum Iron & Metal; *HRS: 62.*
- The 4.5-acre Arcanum Iron & Metal (AIM) site is located just outside Arcanum in Darke County, Ohio. A lead battery reprocessing facility operated on site from the early 1960s to 1982. During this time, battery casings were split to extract the lead cores for smelting. Battery acid drained into a low area on site. Reprocessing of the battery casings generated lead oxide sludge that collected on the ground surface. Some lead-contaminated materials were buried in on-site pits. Following cleanup, EPA took the site off the Superfund program's National Priorities List (NPL) in 2001.[11]

[10] Ohio 2022 Integrated Water Quality Monitoring and Assessment Report, Ohio EPA.
[11] Remedial Action Plan—Arcanum Iron & Metal, U.S. EPA found at https://semspub.epa.gov/work/05/222746.pdf.

MVRPC

Figure 2.7 Existing Environmental Resources

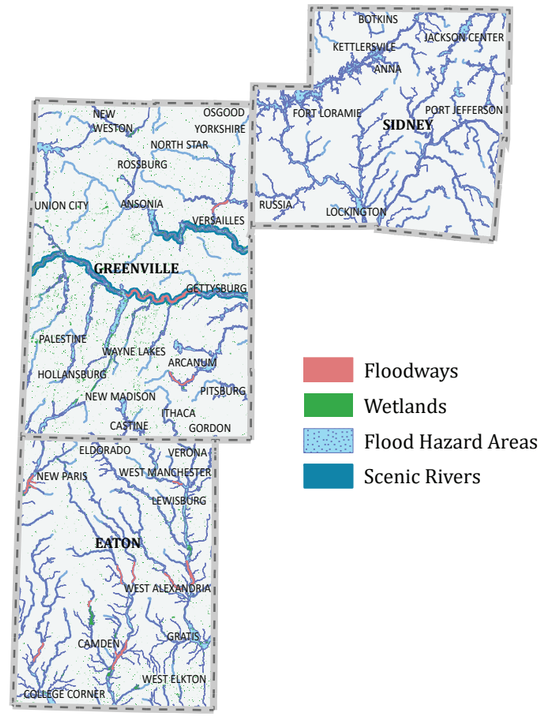
N

0 4 8 12 16 20

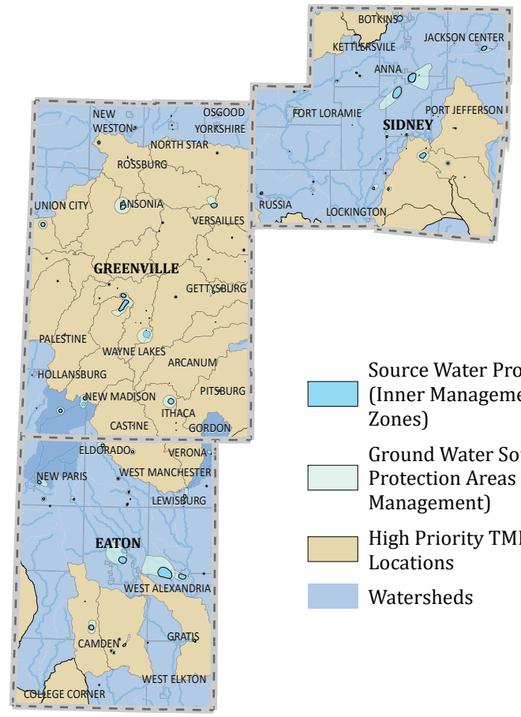
Miles

Source: FEMA, MVRPC, NOAA, NPS, ODNR, ODOT, OEPA, USFWS & USGS
June 2024

Wetlands, Scenic Rivers, and Floodways



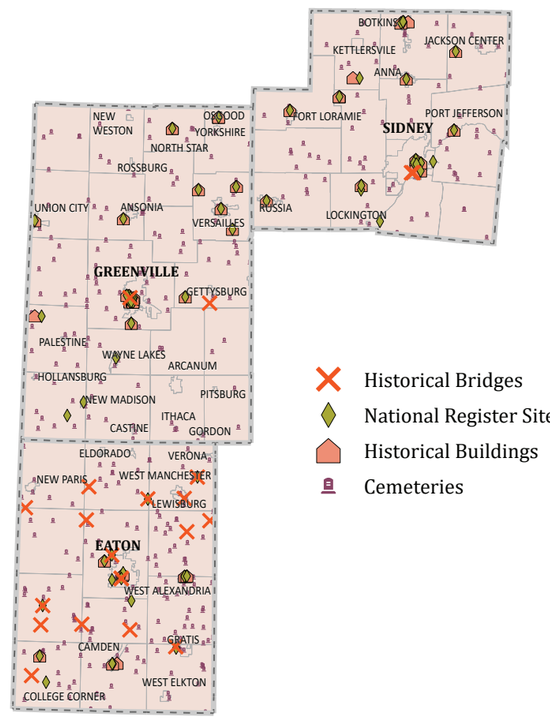
Watersheds and Wellfields



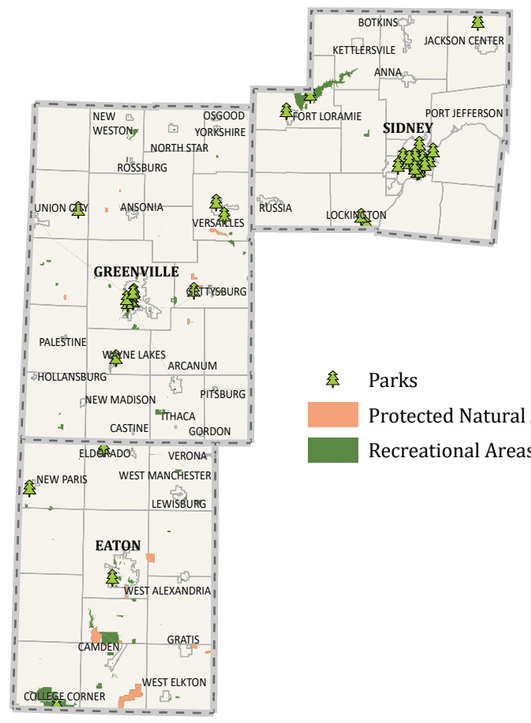
Threatened and Endangered Species

See Table 2.7 and Table 2.8 for Federal and State Listed Species

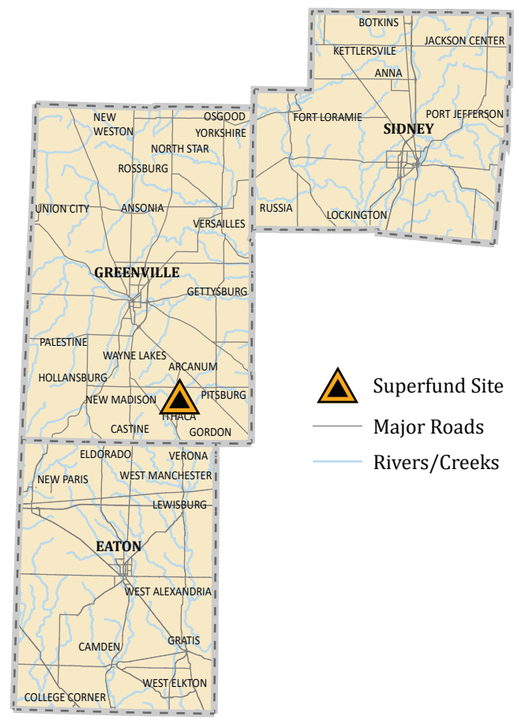
Cultural Features



Parklands



Superfund Locations



Federal and State Threatened and Endangered Species Matrix

The Region has:

- A total of 57 State Listed Species, with four species Federally Listed.
- The majority of State or Federally Listed Species are found within Darke County.

The Environmental Resources described above can be found in Figure 2.7. Further, Table 2.7 and Table 2.8 display Federal and State Endangered Species within each county in the Region.

Table 2.10 – Environmental Inventory – Endangered Species Matrix

Group	Common Name	Scientific Name	Ohio Status	Darke	Preble	Shelby
Bird	Northern Harrier	*Circus hudsonius*	Endangered	**X**	**X**	**X**
Bird	Barn Owl	*Tyto alba*	Threatened	**X**		**X**
Bird	Bell's Vireo	*Vireo bellii*	Special Interest	**X**		
Bird	Veery	*Catharus fuscescens*	Special Interest	**X**		
Crayfish	Sloan's Crayfish	*Orconectes (Rhoadesius) sloanii*	Threatened	**X**	**X**	
Dragonfly	Blue Corporal	*Ladona deplanata*	Endangered		**X**	
Dragonfly	Plains Clubtail	*Gomphus externus*	Endangered	**X**		
Mammal	Wapiti (Elk)	*Cervus elaphus*	Extirpated	**X**		
Mammal	Northern Long-eared Bat	*Myotis septentrionalis*	Threatened*		**X**	
Mammal	Indiana Myotis	*Myotis sodalis*	Endangered*		**X**	
Mollusk	Clubshell	*Pleurobema clava*	Endangered*	**X**		
Mollusk	Snuffbox	*Epioblasma triquetra*	Endangered*	**X**		
Reptile	Kirtland's Snake	*Clonophis kirtlandii*	Threatened		**X**	

*Denotes Federally Listed Species

Source: Ohio Department of Natural Resources – Division of Wildlife, 2023

Table 2.11 – Environmental Inventory – Endangered Plant Species Matrix

Group	Common Name	Scientific Name	Ohio Status	Darke	Preble	Shelby
Plant	Hazel Dodder	*Cuscuta coryli*	Extirpated	**X**		
Plant	Drummond's Ptychomitrium	*Ptychomitrium drummondii*	Extirpated		**X**	
Plant	Midland Sedge	*Carex mesochorea*	Threatened		**X**	
Plant	Showy Lady's-slipper	*Cypripedium reginae*	Threatened			**X**
Plant	Gattinger's-foxglove	*Agalinis gattingeri*	Threatened	**X**		
Plant	Leafy Blue Flag	*Iris brevicaulis*	Threatened	**X**		
Plant	Wood's Bunchflower	*Melanthium woodii*	Threatened			**X**
Plant	Midland Sedge	*Carex mesochorea*	Threatened	**X**		
Plant	Soft-leaf Arrow-wood	*Viburnum molle*	Threatened		**X**	
Plant	Wood's Bunchflower	*Melanthium woodii*	Threatened	**X**		
Plant	Grove Sandwort	*Moehringia lateriflora*	Potentially Threatened	**X**		
Plant	Scaly Blazing-star	*Liatris squarrosa*	Potentially Threatened	**X**		
Plant	Smooth Rose	*Rosa blanda*	Potentially Threatened	**X**		
Plant	Three-birds Orchid	*Triphora trianthophora*	Potentially Threatened			**X**
Plant	Three-birds Orchid	*Triphora trianthophora*	Potentially Threatened		**X**	
Plant	Tufted Fescue Sedge	*Carex brevior*	Potentially Threatened	**X**		
Plant	Wheat Sedge	*Carex atherodes*	Potentially Threatened	**X**		

Source: Ohio Department of Natural Resources – Division of Wildlife, 2023

Regional Consultation Resources

The main purpose of various conservation organizations in the Region is to monitor and protect regional land including natural resources and historical properties. Close partnerships with individuals, businesses, and local jurisdictions are a key component for these organizations to achieve their conservation goals. A brief description of each organization in the Region is provided in Table 2.9.

Table 2.12 – Environmental Consultation Organizations in the Region

Responsible Organization	Type of Conservation Organization	Description
Arcanum Preservation Society	Historical Preservation	The APS Heritage Committee is a division of the Arcanum Preservation Society, a non-profit and educational institution, whose purpose is to collect, preserve, interpret and promote the heritage, culture, artifacts and documents of the historic buildings in the Arcanum community.
Audubon Miami Valley (Preble and Butler Counties)	Nature Conservation	Audubon Miami Valley works to conserve and restore natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and the earth's biological diversity.
Darke County Extension Office (OSU)	Land-Grant University Extension	The OSU Darke County Extension office aims to connect with people in all stages of life, from young children to older adults. The Extension works with families and children, farmers and business owners, community leaders and elected officials to build better lives, better businesses, and better communities to make Ohio great.
Darke County Farm Service Agency	Government Agency	The U.S. Department of Agriculture (USDA) Farm Service Agency (FSA) serves America's farmers, growers and producers through a network of over 2,100 offices in nearly every rural county in the United States, providing localized service to potential and current farmers who, in turn, provide our nation and the world with safe, affordable and reliable food, fuel and fiber.
Darke County Historical Society	Historical Preservation	The Darke County Historical Society is dedicated to preserving the history of the county and fostering education on its relevance to the American experience. Their mission is to collect, preserve, exhibit, study, and interpret materials relating to the history and culture of Darke County, Ohio, as it represents a Crossroads of the American Experience.
Darke County Parks	Parks and Recreation	Darke County Parks preserve areas of special natural and historical features through outreach, education, and interaction, as well as maintain and protect the unique natural and cultural areas of Darke County for future generations.
Darke County Soil & Water	Water Conservation	Darke Soil and Water Conservation District (SWCD) is a legal subdivision of the State of Ohio responsible for the conservation of natural resources within Darke County. The organization has a special emphasis on soil and water with a focus on assisting landowners in planning and applying conservation practices on the land. Darke SWCD is dedicated to the sustainable use of natural resources and to encouraging positive behavioral changes that produce a higher quality of life for its citizens.
Environmental Education Council of Ohio	Environmental Education	EECO leads in facilitating environmental education that fosters global stewardship and a sustainable future for all Ohioans. EECO's vision is for all Ohioans to be environmentally literate and engage in decision making that ensures sustainability for future generations.
Loramie Valley Alliance (LVA)	Historical Preservation	The Loramie Valley Alliance (LVA) is a partnership of people representing public and private organizations, working together for the benefit of Loramie Creek and its tributaries. This kind of organization is typically referred to as a "watershed project."
Miami Conservancy District (MCD)	Flood Protection	The Miami Conservancy District established its Groundwater Preservation Program in 1997 to develop and maintain an ongoing watershed-wide technical program to help protect and manage the area's aquifer and groundwater resources. Over the years, the organization has branched out to meet the Region's water needs. MCD has been actively involved for many years in promoting recreation along the Region's rivers and streams as well as being a key partner in projects like downtown Dayton's RiverScape, by bringing together state and federal funds to leverage local dollars.

Responsible Organization	Type of Conservation Organization	Description
Ohio Chapter of the U.S. Department of Agriculture	Government Agency	Natural Resources Conservation Service (NRCS) assists owners of Ohio's private land with conserving their soil, water, and other natural resources. Several environmental conservation and mitigation programs are offered by NRCS in partnership with local agencies. These include EQIP – Environmental Quality Incentives Program, SWCA – Soil and Water Conservation Assistance, WHIP – Wildlife Habitat Incentives Program, and the WRP – Wetlands Reserve Program.
Ohio Chapter of the Worldwide Conservation Organization (The Nature Conservancy)	Nature Conservation	The Nature Conservancy works to protect large landscapes made up of plants, animals, and natural communities all over Ohio including the Miami Valley Region.
Ohio Wetlands Association	Land Trust	Ohio Wetlands Association is dedicated to the protection, restoration and enjoyment of Ohio's wetlands and associated ecosystems through science-based programs, education, and advocacy.
Preble County Extension Office (OSU)	Land-Grant University Extension	The OSU Preble County Extension Office aims to connect with people in all stages of life, from young children to older adults. The Extension works with families and children, farmers and business owners, community leaders and elected officials to build better lives, better businesses and better communities to make Ohio great.
Preble County Historical Society and Nature Reserve	Historical Preservation	The Preble County Historical Society and Nature Reserve aims to be the resource to preserve and promote the knowledge and history of Preble County for all generations.
Preble Soil & Water Conservation District	Water Conservation	Preble County Soil & Water Conservation District aims to work with rural and urban landowners as well as government entities and agencies to ensure water quality and soil protection now and for future generations by strengthening the grass root effort of providing best management practices to all-natural resources but especially those of soil and water.
Shelby County Extension Office (OSU)	Land-Grant University Extension	The OSU Shelby County Extension office aims to connect with people in all stages of life, from young children to older adults. The Extension works with families and children, farmers and business owners, community leaders and elected officials to build better lives, better businesses and better communities to make Ohio great.
Shelby County Historical Society	Historical Preservation	Shelby County Historical Society aims to actively engage and educate our community to preserve and promote local history and to become a Center of Excellence where it builds for tomorrow by understanding the past.
Shelby County Soil & Water Conservation District	Water Conservation	An organization responsible for the promotion of conservation and development of natural resources within Shelby County with a special emphasis on soil and water and aiding landowners with the planning and application of conservation practices on their land. An organization that receives funding from the State of Ohio through the Ohio Department of Agriculture, Division of Soil & Water Conservation, and from the Shelby County Commissioners.
Three Valley Conservation Trust	Land Trust	The Three Valley Conservation Trust actively seeks to protect agricultural land, forested lands, wildlife areas, wetlands, and other scenic or natural lands. The Trust protects streams in Butler, Preble, Montgomery, and Darke counties in Ohio and very small parts of Wayne, Franklin, and Union counties in SE Indiana.

Note: Environmental Justice and Public Participation refers to Section 4.2 — Community Outreach and Public Participation, for a discussion of additional public participation efforts to reach Environmental Justice and LEP populations.

2.6 Climate Change

Rural populations are the stewards of most of the Nation's forests, watersheds, rangelands, agricultural land, and fisheries, and much of the rural economy is closely tied to its natural environment.[12] Thus, any changes in climate have the ability to dramatically impact rural areas and populations. According to the U.S. Global Change Research Program's (U.S. GCRP) most recent national climate assessment, there are a number of impacts rural communities could face in the future. These potential impacts include reduced agricultural productivity due to changes in weather, degradation of soil and water resources due to changes in precipitation, and health challenges to rural populations and livestock. Foremost, the vulnerability and adaptive capacity of rural communities is of utmost importance when considering potential impacts to transportation or water infrastructure.

What is Climate Change?

Climate change is a global phenomenon which has been observed over the past several decades and is projected to continue in to the foreseeable future. The driving characteristic of climate change is a reported increase in temperature, which creates change in weather patterns around the globe. Different parts of the globe will experience different aspects of these changes, from severe drought and wildfires in some areas, to flooding due to rising tides in others. In rural areas, changes in climate can have tremendous impact on communities who primarily rely on the natural environment.

What causes changes to the climate?

Climate change is driven by an increased concentration of water vapor and other greenhouse gases (e.g. carbon dioxide and methane) in the atmosphere. These gases absorb energy, locking heat onto the Earth that would normally escape into space. As more heat is trapped, glaciers and ice caps shrink, which adds more water into the oceans, increasing the overall amount of water evaporating into the atmosphere. In this manner, the heat-trapping effect reinforces itself. Other greenhouse gases are added by natural processes (e.g. volcanic eruption) and man-made activities such as farming and burning of fossil fuels. Currently, fuel burnt for transportation accounts for 28% of greenhouse gas emissions in the United States, making transportation the top source of such emissions.[13]

The differences between climate and weather

It is also important to distinguish between climate and weather; climate is a long-term average of weather over a specified area, whereas weather is a description of circumstances at a particular time. For example, while the global temperature may be increasing, a particular region may experience an increased number of cold weather events. Thus, a geographic locale experiencing record or near-record low temperatures with heightened frequency does not indicate a cooling in the global climate trajectory.

[12] Gowda, P., J.L. Steiner, C. Olson, M. Boggess, T. Farrigan, and M.A. Grusak, 2018: Agriculture and Rural Communities. In Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II

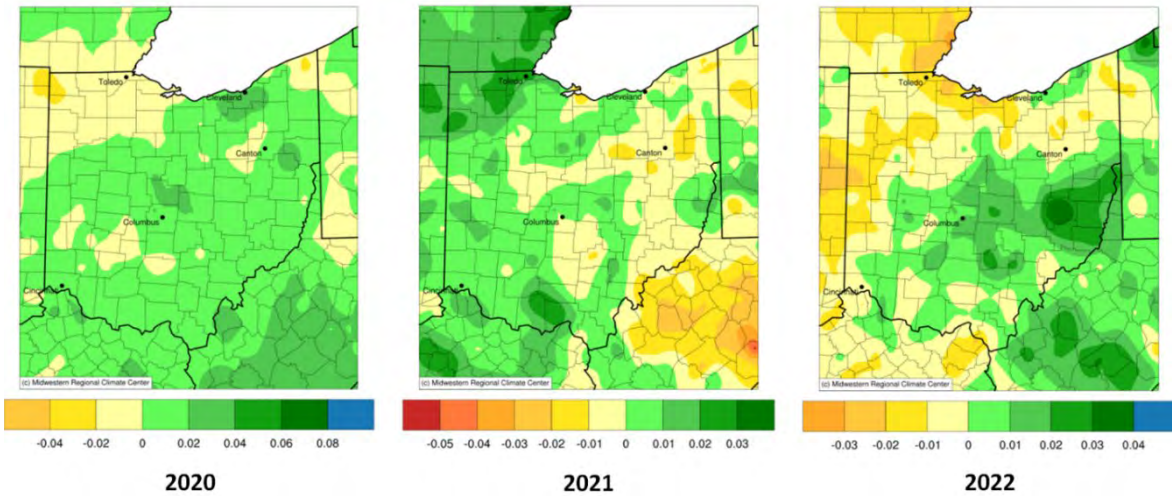
[13] EPA 2020. "Inventory on Greenhouse Gas Emissions and Sinks: 1990-2018." U.S. Environmental Protection Agency, Washington, D.C. April 2020. EPA-430-R-20-002 (2020). Sec. 2 Pg. 25

The Miami Valley

Flooding

In the Miami Valley, there has been a reported increase in precipitation. According to the United States Global Change Research Program (U.S. GCRP), increases in precipitation are expected to occur over *fewer* days. This results in higher likelihoods of flooding to roads, culverts, and bridge/bridge approaches, with each flood event having the potential to disrupt the ability to travel and the need to reroute around flooding. In the long term, more frequent flooding can lead to erosion of the soil which supports roads and bridges, thus shortening the lifespan of infrastructure. Soil erosion can also lead to a decrease in agricultural production in areas where it is the main economic resource. Further, in rural areas like the Region, the transportation infrastructure and network is critical to communities for agriculture and manufacturing. Hence, increased precipitation can deeply impact the populations reliant and dependent on transportation networks for community resources.12 Finally, Regional bike trails, many of which are built along the waterways and levees in Ohio, are also likely to be submerged more frequently and for longer periods of time.

Figure 2.8 – Average Daily Precipitation (in.) Relative to 1991-2020 Averages[14]



Weather

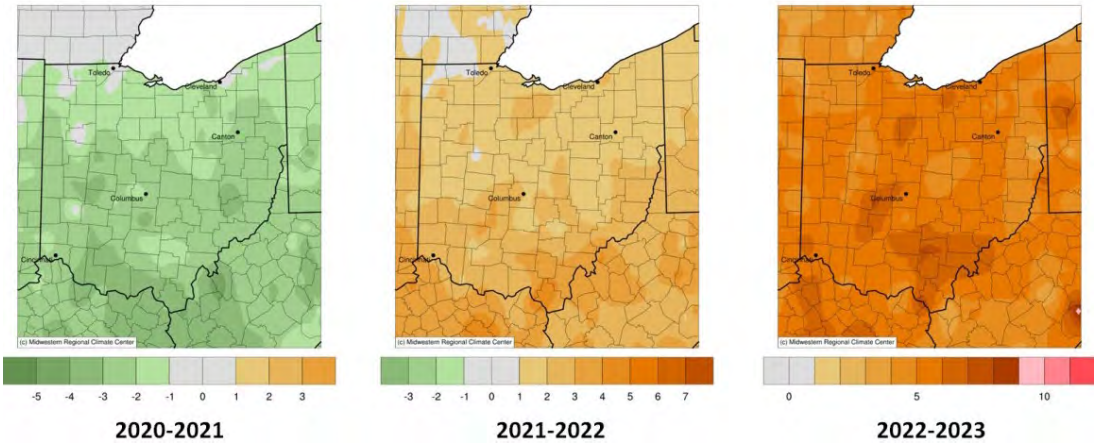
As there become fewer but increased precipitation days, there are also projected to be more dry days. While the abundance of natural water in Ohio and the Midwest (especially the Great Lakes) prevents the threat of drought on the level of more arid climates like the Southwest United States, many consecutive days with little to no precipitation can cause issues for soil absorption. In rural areas, these changes can have primary and consequent secondary effects, such as reduced crop yields and damage to infrastructure.[12]

There are mixed projections concerning winter weather in the Region. The overall trend predicted by models is warmer winters, as we have seen in recent years in Ohio (Figure 2.9), but

[14] MWRCC 2023, cli-MATE Interpolated Station Data online tool. Midwest Regional Climate Center (MRCC), http://mrcc.purdue.edu/CLIMATE

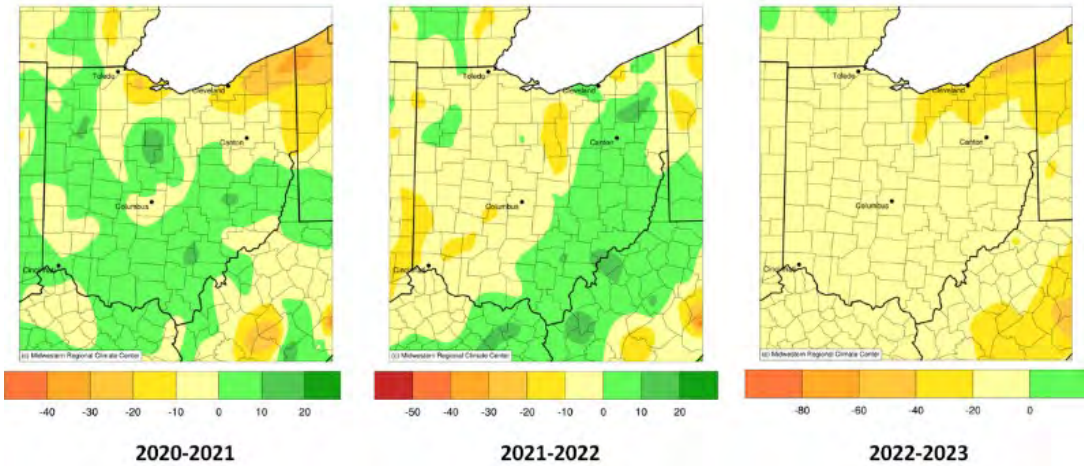
there is also evidence that the jet stream is slowing and becoming wavier as the planet warms.[15] A wavy jet stream indicates an effect on arctic oscillation, increasing the frequency of events when the polar vortex drops south into the Midwest, as happened in early January 2014 and late January 2019: such events bring extreme cold. Projections of warmer winters overall and increasing bouts of extreme cold are not inconsistent, but together they amount to a prediction of erratic winter temperatures, likely to produce near-record highs and near-record lows.

Figure 2.9 – Average Maximum Temperature Change, December-February, Relative to 1991-2020 Averages14



Warmer winters would indicate a decrease in snow and ice accumulation. This may increase the life of infrastructure, owing to less corrosion from salt treatment. However, a winter with more days for which the high temperature is above freezing is more likely to result in more frequent freeze-thaw cycles; this is destructive to road and bridge surfaces and creates potholes.

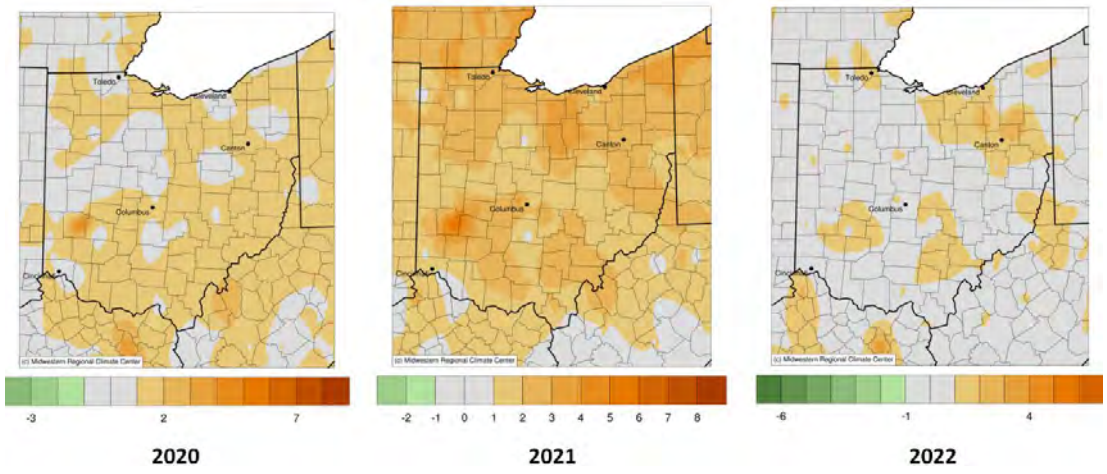
Figure 2.10 – Accumulated Snowfall, December-March, Relative to 1991-2020 Averages[14]



[15] NOAA 2014. "How Is the Polar Vortex Related to the Arctic Oscillation?" How is the polar vortex related to the Arctic Oscillation? National Oceanic and Atmospheric Administration (NOAA), January 20, 2014. https://www.climate.gov/news-features/eventtracker/how-polar-vortex-related-arctic-oscillation.

Increasing average summer temperatures and extreme heat events can cause expansion of bridge joints and buckling of pavement, thus shortening the life of infrastructure. High temperatures also worsen air quality, creating a public health concern. The impact of poor air quality is especially acute for those with preexisting respiratory conditions (e.g. asthma or COPD) and the elderly. Summer 2019 was the hottest on record in the northern hemisphere. In Ohio, summer 2021 was warmer in temperature, due in large part to the higher-than-average daily low temperatures (see Figure 2.11). The trend of warmer summers is projected to continue.

Figure 2.11 – Average Minimum Temperature Change, June-August, Relative to 1991-2020 Averages[14]



Mitigation, Adaptation, and Resiliency

When climate change has been occurring for decades, it is still possible to slow the rate and avoid the worst outcomes.[16] As fuel burned for transportation is one of the largest sources of greenhouse gases, changes in the way people and goods are transported could significantly reduce the rate at which heat-trapping gases enter the atmosphere.[17] Commuters traveling by walking, biking, and public transportation contribute significantly fewer greenhouse gas emissions than those traveling by traditional means. The switch to electric vehicles for both commuters and freight is another significant way to reduce emissions. Replacing long-haul trucking and air freight with rail and river transportation, when possible, can also substantially reduce emissions.

Slowing the growth rate of impervious surfaces is a more localized and immediate way to reduce damage from climate change in the Region. Maximizing the efficiency of drainage is the best way to avoid and reduce damage caused by flooding. Preserving open space & forests and utilizing

[16] PNAS 2018. Ornes S. "Core Concept: How does climate change influence extreme weather? Impact attribution research seeks answers." National Academy of Sciences of the United States of America (PNAS), 115(33), 8232–8235. August 14, 2018. https://doi.org/10.1073/pnas.1811393115

[17] IPCC 2014. "Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change." [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. Intergovernmental Panel on Climate Change (IPCC), Geneva, Switzerland. November 2, 2014. Pgs. 17-26

pervious pavements and other infrastructure features that promote rapid drainage are strategies that can be used to mitigate the threat posed by flooding.

Developing resiliency plans for handling the fallout of major weather events is an important way to reduce the economic, social, and health costs posed by these disasters. Identifying evacuation routes helps people escape disaster areas quickly and safely. Additionally, factoring in flood-prone areas at varying levels of precipitation and flood stages and having alternative routes can make an impacted transportation network function more smoothly. While it is impossible to predict where tornados will occur, pre-assigning responsibilities, planning communications, and deciding upon logistics for handling network breakdowns on critical arterials can make response faster and more effective.

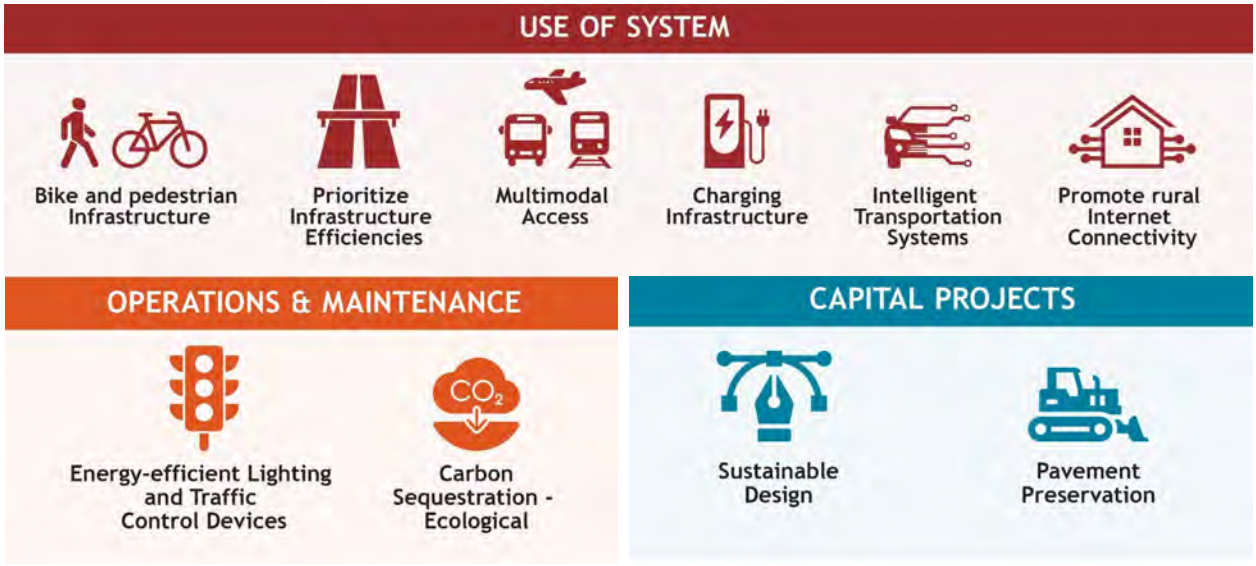
While budgets are always thin, it is necessary to consider that many of the effects of climate change will require an increasingly greater allocation of funds to manage and respond. Infrastructure inspections are likely to be needed more frequently with the threats of erosion from flood events and heat, tornado, or wind damage. Annual needs for salt and other ice treatments should be expected to be less predictable, including funding allocations, storage considerations, and potential issues with the supply chain. Pothole filling and road resurfacing should be expected to be required more frequently, due to a greater number of freeze-thaw cycles.

Current Initiatives

ODOT, U.S. DOT, OEPA, U.S. EPA, and other state and federal agencies are actively monitoring climate change data and are positioned to provide guidance and assistance for encountering related challenges. Coordinating with these and other agencies and staying aware of the latest data and opportunities are a valuable strategy for mitigating and adapting to this evolving situation. From learning best practices to being positioned to quickly apply for and receive emergency funding, it is recommended to follow any related information given and actions taken by these agencies.

In 2023, ODOT completed its first carbon reduction strategy, a requirement of the IIJA infrastructure law. Working with a wide range of stakeholders, the Plan identifies 10 strategies in the areas of use of system, operational maintenance, and capital projects with great potential to reduce carbon emissions that can be integrated into ODOT's plans and programs (see Figure 2.10).

Figure 2.12 – Ten Carbon Reduction Initiatives Identified for Detailed Analysis[18]



ODOT also completed the first Resilience Improvement Plan in 2023 which enables projects listed in the Plan to a reduced federal match. Projects in the first version of the Plan will focus on mitigating the risks associated with increased precipitation.

[18] Draft Carbon Reduction Strategy, ODOT, 2023

Chapter 3

Existing Transportation Conditions

3.1 The Regional Multimodal Transportation Network

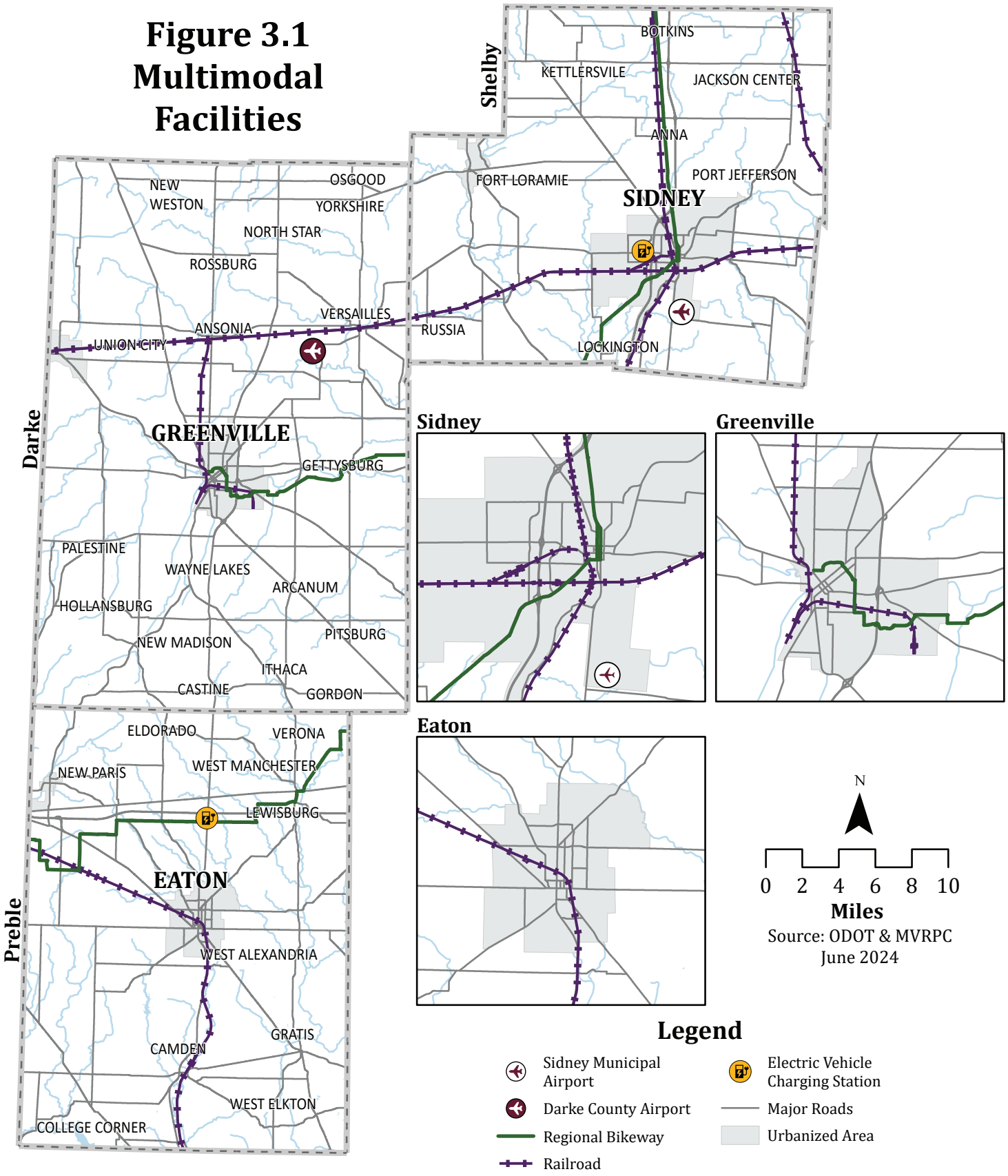
A strong multimodal transportation network helps people and the economy prosper. In the Region encompassing Darke, Preble, and Shelby counties there are various means of transportation available. In terms of active transportation, there are shared lane bike paths in all counties within the Region. The main bikeways include Ohio Bike Route 36, US Bike Route 25, and US Bike Route 50. Additionally, there are plans to expand the bikeways in all of the counties. For aviation options, there are two small public airports available in the Region. The first is the Darke County Airport near Versailles, which has one runway. The second is Sidney Municipal Airport, which is close to the City of Sidney in Shelby County and has two runways. There is an extensive railroad infrastructure network in the Region: 154.4 miles of railroad track are used for large-scale commercial freight operations and connect to rail lines in Indiana and neighboring Ohio counties. In addition, there are 26.2 combined miles of industrial terminal rail lines in the Region. A Pilot Travel Center near the City of Eaton and an EVgo Service Station, a collaboration with the Sidney Town Center, were awarded funding in July 2023 for the creation of electric vehicle charging ports that will be up and running in 2024.[19] Multimodal transportation options and alternative fuel sources available in the Region can be seen in Figure 3.1.

Public transit options in the Region are limited. Preble County is in the beginning stages of implementing a county-wide public transit system. The Preble County Council on Aging (PCCoA) is taking the lead role in the initiative. The only public transit option in Darke County (Greenville Transit System) is centered in Greenville and, as of December 2023, cannot provide guaranteed transit outside the city limits of Greenville. However, the GTA is working with the Darke County Board of Commissioners to expand the boundaries of their public service. Shelby County has a public transit system that provides guaranteed transportation throughout their county.

[19] ODOT DriveOhio's "Ohio Electric Vehicle Infrastructure Deployment Plan."

MVRPC

Figure 3.1 Multimodal Facilities



3.2 Functional Classification of Roads in the Region

According to the Federal Highway Administration (FHWA), Functional Classification refers to the grouping of roads, streets, and highways in a hierarchy based on the type of service they provide. The type of service is defined by combinations of mobility and land access as follows:

- ***Arterials***: Arterials are roadways that focus on providing a high level of mobility for the through movement of traffic—land access is a secondary function for arterial roads. Interstates and freeways represent the highest class of arterials.
- ***Collectors***: As their name indicates, collector roadways collect traffic from lower functional class roadways and distribute it to higher class roadways. Their function is divided equally between mobility and land access.
- ***Local***: Local streets are positioned at the bottom of the functional class hierarchy. Their primary function is to provide access to adjacent land uses—providing a high level of mobility is not a priority for this type of roadway.

Using these three major categories of roadways as the base, roads can be further subdivided into major or minor categories as shown in Table 3.1. Only roadways that are functionally classified as a minor collector or above in an urban area or as a major collector or higher in a rural area are eligible for federal funding, with the exception of bridges on non-classified roads. Figure 3.2 details the functional class layout of roadways in the Region.

Table 3.1 – Regional Roadway Network by Functional Class

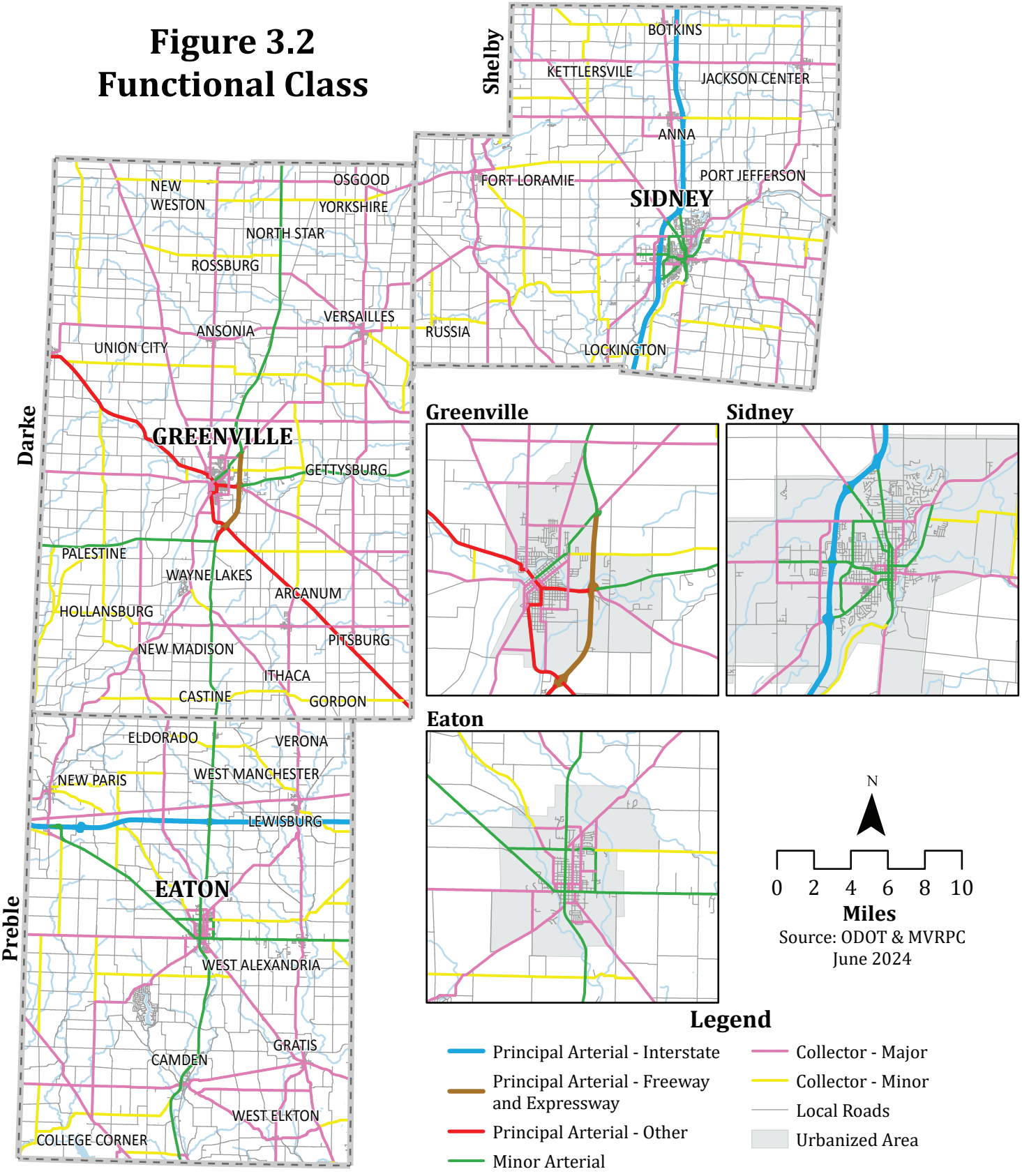
Functional Class Number	Functional Class Name	Total Length in Centerline Miles	Percent of Total
1	Principal Arterial (Interstate)	92.7	2.5%
2	Principal Arterial (Freeway/Expressway)	10.4	0.3%
3	Principal Arterial (Other) *	32.7	0.9%
4	Minor Arterial	116.1	3.2%
5	Major Collector	553.2	15.2%
6	Minor Collector	321.8	8.8%
7	Local	2,523.2	69.1%
Grand Total	-	**3,650.1**	**100%**

Source: FHWA and ODOT

*Also referred to as a "Major Arterial."

MVRPC

Figure 3.2
Functional Class



Interstates travel through both Preble and Shelby counties. Interstate 70 (I-70) travels east and west through the northern part of Preble County passing near the villages of Lewisburg and New Paris. Interstate 75 (I-75) travels north and south through the middle of Shelby County near the City of Sidney and the villages of Anna and Botkins.

Small segments of US 36 and US 127 qualify as freeways and travel through a small stretch of land near the center of Darke County around the City of Greenville.

Three contiguous principal arterial roads travel through Darke County from the northwest edge to the southeast edge of the County. These roads include State Route 49 (SR 49), State Route 571 (SR 571), and US Route 36 (US 36). SR 49 meets SR 571 in the City of Greenville. US 36 meets SR 49 a short distance south of Greenville.

A continuous minor arterial road network stretches from north to south through the middle of Darke and Preble counties. US 36 is another minor arterial road that extends from around the east end of Darke County to the west into Indiana. A few minor arterial network roads exist in Shelby County clustered around the City of Sidney.

An extensive collector road network facilitates travel and land access throughout the Region. Local roads are the most common road type present across all the counties. When looking at the total centerline length in miles of roads in all three counties, local roads account for 69.1% of the total Regional network.

3.3 Regional Bikeways

Bikeways are important assets to communities for resident well-being. In total, there are around 65.4 centerline miles of bikeways in the Region (Table 3.2).

Table 3.2 – Distribution of Bikeway Facility Types in Centerline Miles

County	Shared Lane (SL)	Shared Use Path (SUP)	Other*	Grand Total
Darke	8.7	6.0	0.1	**14.8**
Preble	27.2	0.1	0.1	**27.4**
Shelby	23.0	0.0	0.2	**23.2**

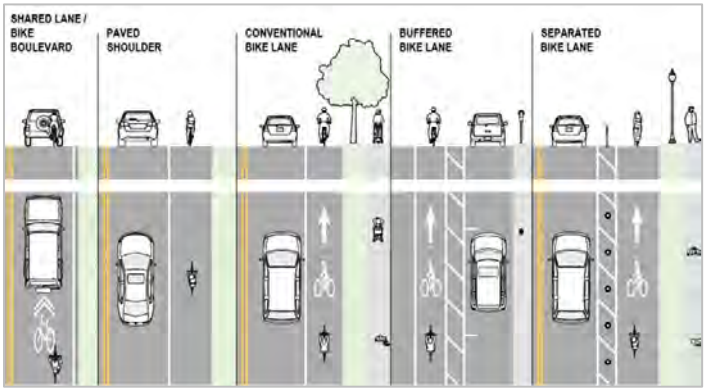
Source: ODOT

*The "Other" category includes bikeway crossings and paved shoulder segments.

It is important to note that Preble County is currently working on an Active Transportation Plan (ATP) with the goal of increasing the number and quality of bikeways in the County. The predominant type of bikeway within the Regional boundaries is a shared lane, meaning the bike path shares the road with vehicles with no separation between vehicles and bikes. A shared use

path (SUP) refers to a facility suitable for mixed use by bikes and pedestrians that is completely separate from a vehicular roadway. For reference, Figure 3.3 shows different types of bikeways that exist in the U.S. The Darke County bikeway is designated as SR 36, while the Preble and Shelby counties' bikeways are designated as US 50 and US 25, respectively.

Figure 3.3 – Bikeway Facility Types



Source: ODOT[20]

3.4 Transit Options

Having a variety of transportation options helps residents access all the benefits of their community. Public transportation options are essential for residents that do not own a vehicle and may rely on public transportation for access to essential services such as getting to a job, receiving medical care, or going to a grocery store. Public transportation options can be crucial in rural areas— where amenities are spread further apart— so that vulnerable populations are not isolated.[21] This need is also strengthened by the fact that a growing senior population resides in the Region.

Counties in the Region have varying levels of access to transportation providers. Access is particularly limited in Preble and Darke counties—neither one has a county-wide transportation system. All counties within the Region are also within sub-region 2a of the Greater Region Mobility Initiative (GRMI) which focuses on standardizing, connecting, and increasing transit options across Clark, Champaign, Darke, Greene, Miami, Montgomery, Preble, and Shelby counties. Transit within and between the counties in the Region is not uniform. Shelby County is the sole county in the Region that has guaranteed public transportation service coverage for the entire county. Darke County currently has one established public transportation system in the City of Greenville named the Greenville Transit System (GTA) that can currently provide trips outside city limits that are within Darke County. However, this service is constrained by resources and trips within Greenville City

[20] ODOT's Multimodal Design Guide, Figure 6.1.
[21] MVRPC's Greater Region Coordination Plan.

limits are prioritized. Preble County does not currently have an official county-wide public transportation system but an effort to establish one is in the works. The agency tasked with implementing a public transportation system is the PCCoA, which received federal funding in early 2023 for the initiative. In all counties within the Region, public transit providers are supplemented by a variety of human services transportation providers that provide transit for specific sectors of the Region's population.

3.5 Airports

There are two public use airports in the Region. The first airport is located two miles southwest of Versailles in Darke County and is named Darke County Airport (VES). VES is classified as a level three general aviation facility. The second airport is located three miles south of Sidney in Shelby County and is named Sidney Municipal Airport (SCA). SCA is classified as a level one general aviation facility. Both VES and SCA are small airports utilized for various commercial, educational, medical, and recreational purposes. The multimodal map (Figure 3.1) depicts where the two airports are located. All counties in the Region are within a 50-mile radius of Dayton International Airport—a small commercial service airport facility. Additionally, the Region is mostly within a 100-mile radius of Port Columbus International Airport (CMH), Indianapolis International Airport (IND), and Cincinnati/Northern Kentucky International Airport (CVG), all of which are designated as medium commercial service airport facilities.

Darke County Airport

The Darke County Airport has one runway that extends from east to west. The runway is 4,802 feet long and 75 feet wide.[22] The runway surface is composed of asphalt and the pavement and pavement markings were in good condition as of the last inspection that took place in 2021.[23] Facilities at the airport include tie-down and hangar airport storage. Fixed Based Operation (FBO) services for aircraft at the facility are run by the airport faculty.

According to the 2014 Ohio Airports Economic Impacts Study, Darke County Airport supported 20 full-time jobs, had a payroll of 1.1 million dollars, and had an output of 2.6 million dollars.[24] Notably, Darke County Airport is used by the Midmark Corporation, which is a healthcare products commercial company headquartered in Versailles.[24] The airport terminal is also commonly used for educational and recreational purposes by the local community.[24] For example, the airport is used for the annual Darke County Fair.

[22] Information was found in the Darke County Airport and Sidney Municipal Airport fltplan.com webpages.
[23] ODOT Office of Aviation Darke County 2021 Pavement Condition Report.
[24] 2014 ODOT Airports Economic Impact Study Info Sheet on Darke County Airport.

Sidney Municipal Airport

The Sidney Municipal Airport has a crosswind and primary runway. The crosswind runway is 2,981 feet long and 50 feet wide; the primary runway is 5,013 feet in length and 75 feet wide. The crosswind runway pavement is composed of asphalt and was given a pavement condition rating of "Fair" at the last inspection in 2021—markings on the pavement were given a rating of "Good." The primary runway pavement is composed of asphalt and was given a pavement condition rating of "Fair" at the 2021 inspection. Pavement markings were given a "Fair" rating at the 2021 inspection.

Facilities and services at the airport include tie-down and hangar storage, flight instruction (by Golden Eagle Aviation, LLC), aircraft rental, and aircraft sales.[22] FBO and maintenance services at the airport are supplied by Aerotech Aviation.

As of 2014, the Sidney Municipal Airport supported 41 full-time jobs and had a payroll of 1.1 million dollars with an output of 4 million dollars.[25] ODOT found "the most frequent general aviation operations at Sidney Municipal included corporate flights, flight training, and recreational flying. Air cargo operations were conducted on a seasonal basis by agricultural businesses and Honda suppliers."[25] Sidney Municipal Airport engages in community outreach by hosting annual events such as the Sidney Air Fair and a country music concert.[26]

3.6 Railroads

Railroads are a means of commerce and economic activity in Darke, Preble, and Shelby counties. The active railroad lines can be seen in the Multimodal Transportation Map (Figure 3.1). The revenue source of all railroads in the Region is exclusively freight (meaning the railroads are used exclusively for the transportation of goods). There are approximately 180.6 miles of active track in the Region and 249.0 miles of abandoned track.

There are 154.4 miles of Class I railroad tracks in the Region and 26.2 miles of Class III tracks according to Surface Transportation Board (STB) classifications. STB railroad track classifications indicate the level of economic activity a track is utilized for. Class I tracks are used extensively and generate high levels of economic activity, whereas Class III railroads are primarily shortline or industrial terminal railroads.[26] The active railroads in Darke County are owned by the CSX

[25] ODOT 2014 Ohio Airport Focus Study Information page on Sidney Municipal Airport.
[26] ODOT Glossary found here (https://gis.dot.state.oh.us/tims/Glossary).

Corporation and the RJ Corman Railroad Group, LLC. All active railroads in Preble County are owned by Norfolk Southern Corporation. Active railroads in Shelby County are owned by the CSX Corporation and Genesee & Wyoming, Inc.

Railroad Crossings

Railroad crossings are necessary because railroads pass through the Region and cross over roads used by the public. For the safety of drivers, bikers, pedestrians, and train operators alike, signage at railroad crossings is essential. Active devices are defined by ODOT as signals that "give visual and audible warning of the approach of a train. Active devices require power service and are activated by the train, which means users will only interact with them when a train is present."[26] Passive signals are defined by ODOT to "consist of signing and pavement markings that generally provide static messaging."[27]

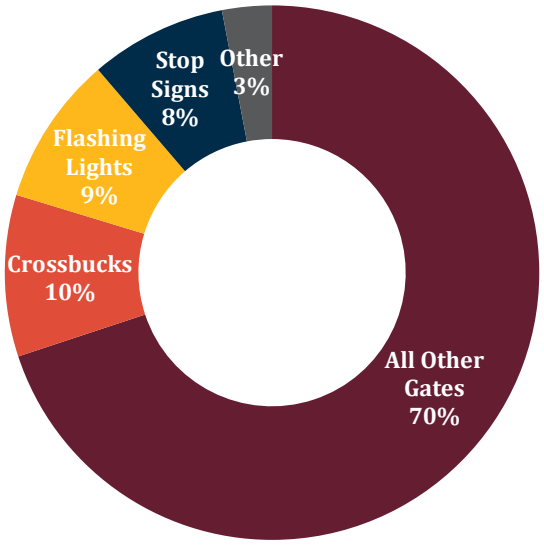
There are approximately 133 at-grade railroad crossings in public locations and in active use (Table 3.3). There are 48 crossings in Darke County, 35 in Preble County, and 50 in Shelby County. The majority of signals in the Region are active signals (82%) while the rest are passive (18%). Figure 3.4 depicts the location of railroad crossing devices in the Region.

Table 3.3 – Active and Passive Crossing Devices in the Region

County	Active Devices	Passive Devices	Grand Total
Darke	37	11	**48**
Preble	33	2	**35**
Shelby	39	11	**50**
Grand Total	**109**	**24**	**133**

Source: FRA, ODOT, and OPUC

The most common types of active warning devices present in the three counties are gates followed by flashing lights. The most common types of passive warning devices are crossbucks followed by stop signs. The pie chart to the right breaks down warning devices in more detail. Most passive warning devices occur on STB Class III tracks in the Region. Railroad crossings are not clustered in any one area—they are spread out at fairly consistent distances in each of the counties. Preble County has the lowest number of warning devices out of the three counties but also has the least amount of active railway; Darke and Shelby counties have about the same number of warning devices.



[27] ODOT's "2023 Multimodal Design Guide" in Chapter 11 on Rail Crossings.

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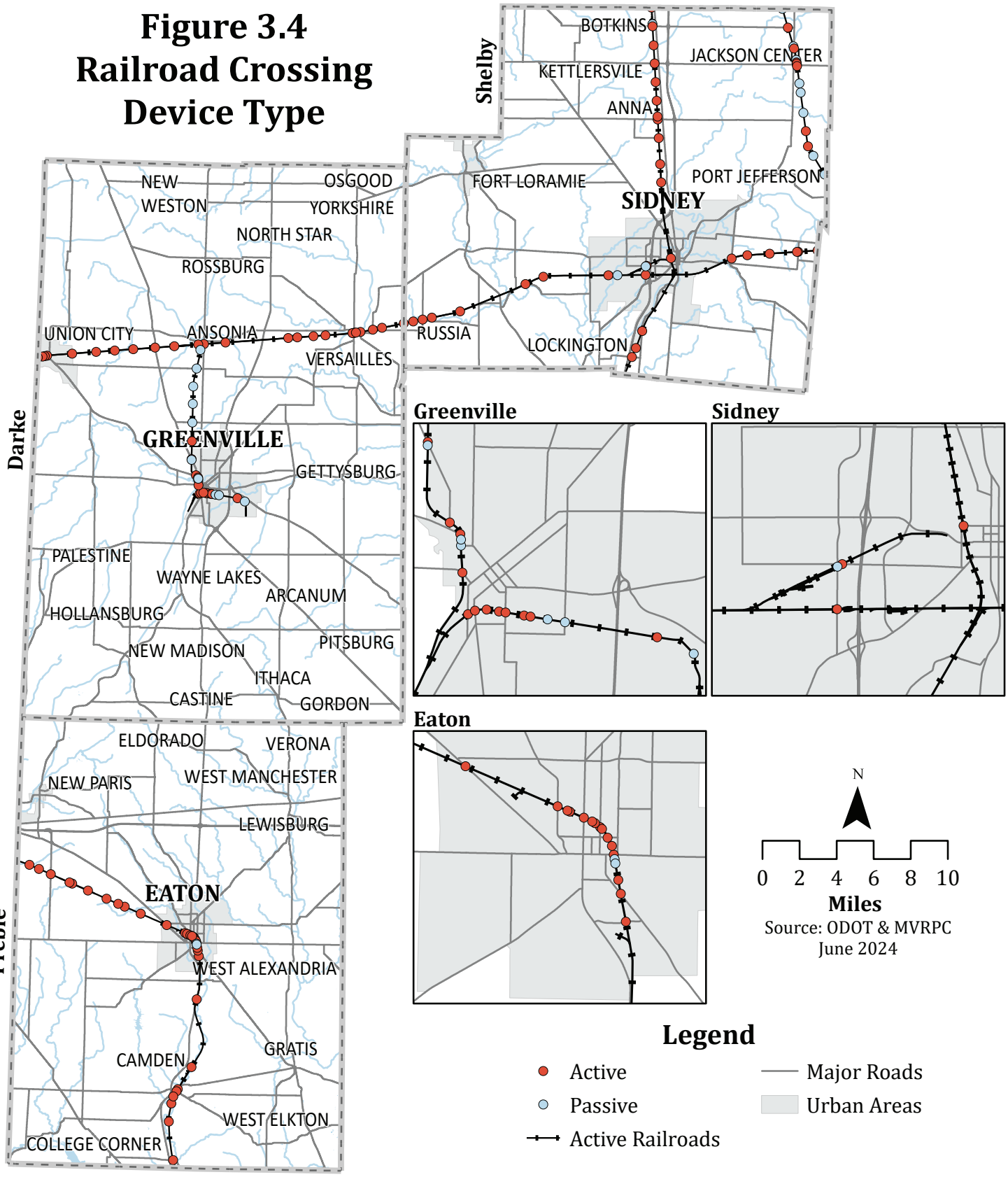
Figure 3.4
Railroad Crossing Device Type



3.7 Pavement Condition Rating Trends

Pavement Condition Rating (PCR) is a measure that indicates the quality of a paved surface. A higher numerical value indicates pavement in good condition whereas lower values indicate pavement in poor condition. Paved roads with lower PCR scores tend to have decreased performance in adequately handling traffic loads. The PCR value is determined by evaluating the structural integrity of the pavement (an example being cracks in pavement potentially signaling weakening integrity). Local roads were omitted in this analysis as ODOT does not collect PCR data on the local roadway system.

The most common PCR rating for paved roads in the Region was "Very Good" (36.3%), followed by "Fair" (30.4%), "Good" (26.4%), and "Poor" (7.0%). Notably, all roads designated as Functional Class 2 (Freeway/Expressway) had a PCR rating of "Good." Table 3.4 provides more detail on the lengths of roadway categorized in each PCR rating category. Figure 3.5 depicts pavement conditions in the Region.

Table 3.4 – Distribution of Regional PCR Values by Functional Class in Centerline Miles*

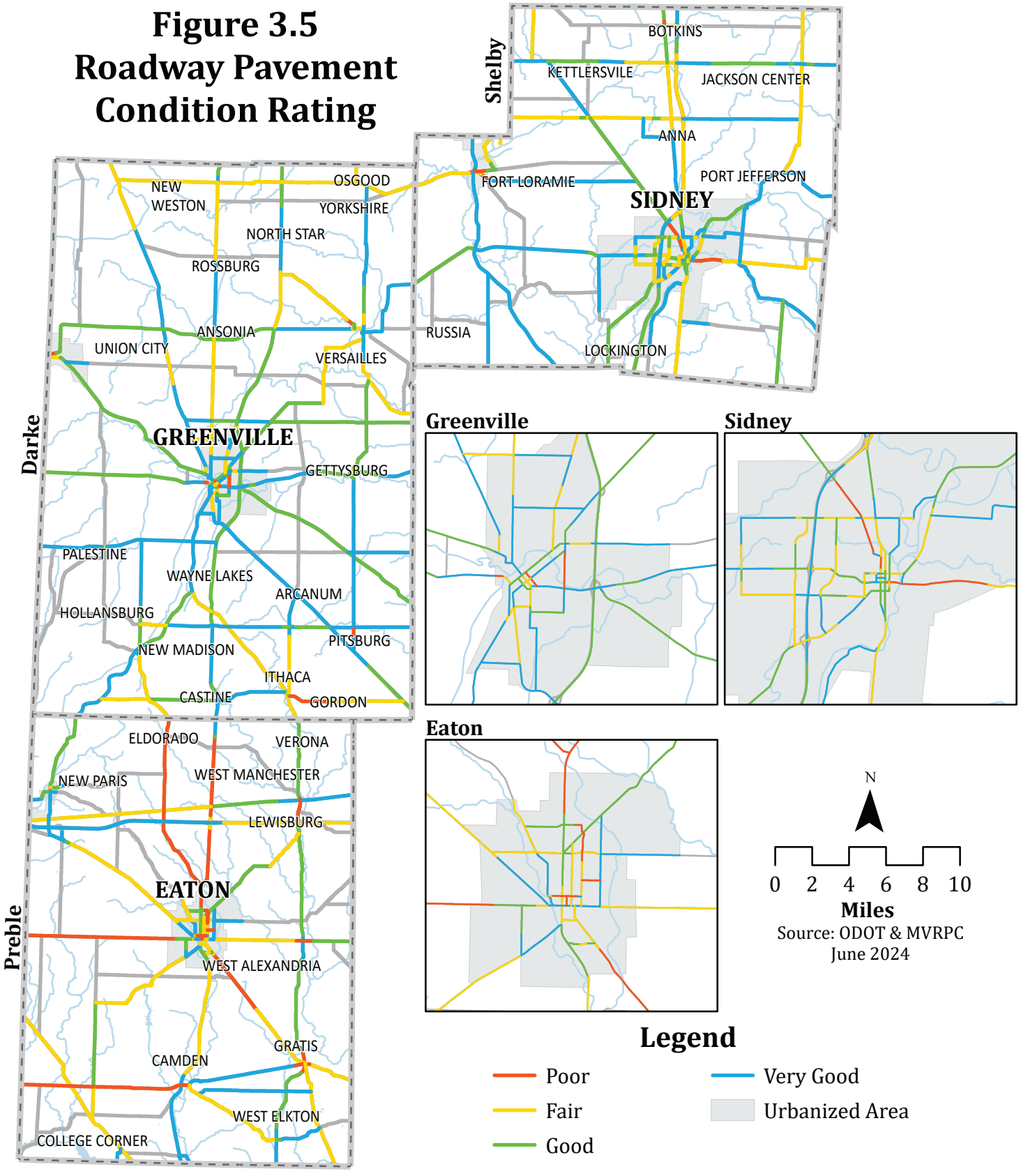
PCR Rating	Interstate	Freeway / Expressway	Major Arterial	Minor Arterial	Major Collector	Minor Collector	Grand Total
Very Good 91-100	16.5	0.0	13.9	36.2	190.2	29.8	**286.6**
Good 81-90	5.5	6.9	14.0	30.7	145.7	5.5	**208.3**
Fair 66-80	16.3	0.0	2.7	31.3	172.9	17.0	**240.2**
Poor < 66	0.0	0.0	0.0	11.0	42.1	2.4	**55.4**
Grand Total	**38.2**	**6.9**	**30.6**	**109.2**	**550.8**	**54.7**	**790.5**

Source: ODOT

*Functional Class 7 (local roads) roadways were omitted.

MVRPC

Figure 3.5
Roadway Pavement Condition Rating



3.8 Bridge Conditions in the Region

Bridges in Ohio are evaluated by ODOT and local owners on an annual basis to assess their structural integrity and ability to enable effective transportation. All bridges that were at least 20 feet long, used by vehicles, and open as of April 2023 were considered in this report. This included 1,120 bridges (out of the total 1,690 in the Region) in the analysis.

Bridges in Ohio are classified using a General Appraisal Scheme that quantifies the condition of a bridge on a scale ranging from 0 to 9. A rating of 0 is the lowest value a bridge can be assigned and indicates a permanently closed bridge. A rating of 9 indicates a bridge is newly made and in excellent condition. The most frequent appraisal category for bridges in the Region is 8, 436 bridges or 38.9% of the total analyzed bridges were classified as 8. Table 3.5 goes into further detail on the number of bridges in each Functional Class by General Appraisal Condition Rating. Bridges in "Poor" condition only occurred on bridges functionally classified as local (38 bridges) and major collectors (5 bridges). The majority of analyzed bridges in the Region (around 75.3%) were given a bridge condition rating of "Good." No arterial bridges were in "Poor" condition—although some (26) were given a condition rating of "Fair." Figure 3.6 details bridge locations and conditions.

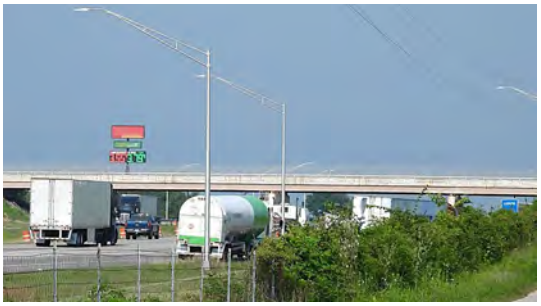


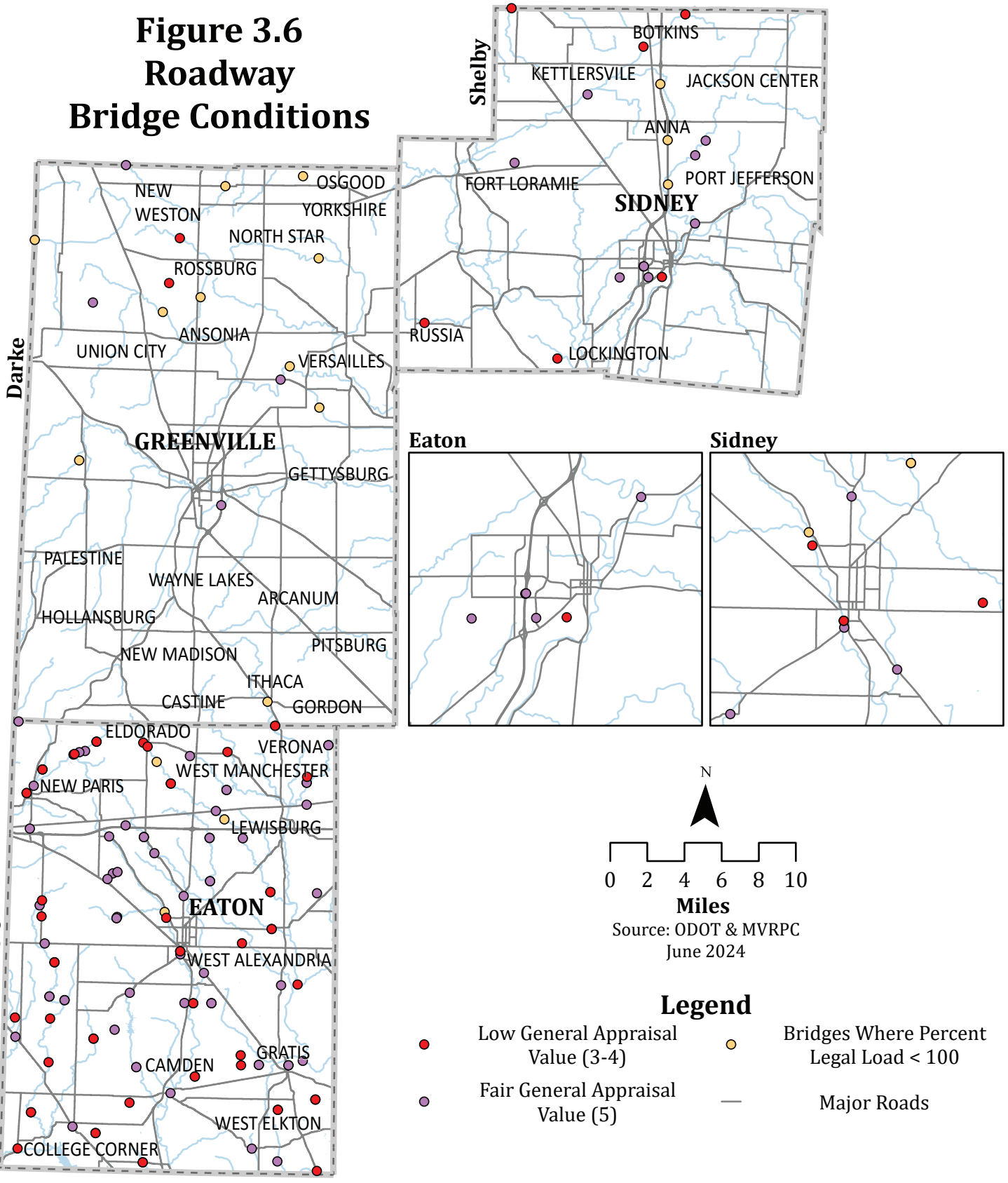
Table 3.5 – Regional Bridge Conditions by Functional Class

Functional Classes	Poor (3-4)	Fair (5-6)	Good (7-9)	Grand Total
Interstate	0	11	23	**34**
Freeway/Expressway	0	2	6	**8**
Major Arterial	0	0	10	**10**
Minor Arterial	0	13	42	**55**
Major Collector	5	72	193	**270**
Minor Collector	0	8	100	**108**
Local	38	128	469	**635**
Grand Total	**43**	**234**	**843**	**1120**

Source: ODOT

MVRPC

Figure 3.6
Roadway
Bridge Conditions



3.9 Lane and Shoulder Width Trends in the Region

The width of a roadway lane affects its traffic volume capacity. Roads that tend to have higher volumes of truck traffic are recommended to have wider lanes to accommodate larger vehicles. The FHWA recommends that roads where 10% or more of the traffic are trucks should have lanes that are at least ten feet wide. For this study, local roads were omitted but all other roadway classes were considered. Two roads have segments in the Region that are nine feet wide with truck traffic higher than 10%: a segment of SR 47 (0.1 centerline miles) and a segment of SR 706 (1.0 centerline mile). Approximately 74 miles of roadways have a lane width of nine feet in the Region (Table 3.6). Figure 3.7 depicts lane width constraints.

Table 3.6 – Total Centerline Length of Roadway that is Nine Feet Wide

Functional Class	Total Centerline Miles	Percent of Total
Major Collector	63.8	86.2%
Minor Collector	10.2	13.8%
Grand Total	**74.0**	**100.0%**

Source: ODOT

Road shoulders are useful safety tools for providing extra spaces for drivers, non-motorized users, and storing disabled vehicles after crashes. Insufficient shoulder space for this study is defined as portions of a roadway where the right shoulder of the roadway is zero feet wide according to 2023 ODOT GIS data. Approximately 37 centerline miles of roadways have an insufficient right shoulder width in the Region. Table 3.7 displays the distribution of roadways where the right shoulders were insufficient according to ODOT inventory data organized by functional class. The majority of roads with insufficient right shoulders occurred on major collector roadways.

Table 3.7 – Length of Roadways with Insufficient Right Shoulders in Centerline Miles

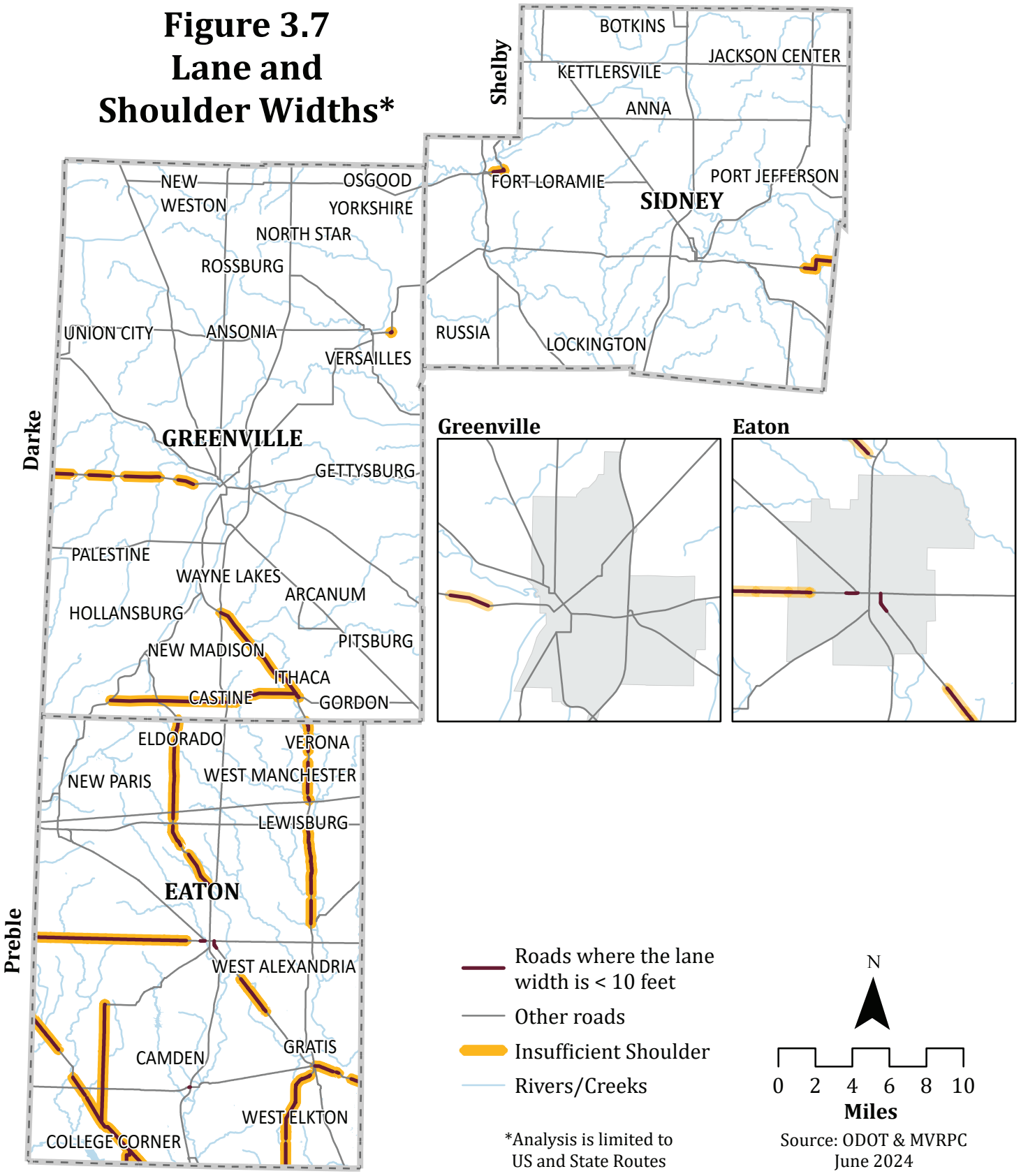
Functional Class	Centerline Road Length	Grand Total	Percent of Total Roadway with Insufficient shoulder
Interstate	0.0	92.7	0.0%
Freeway / Expressway	0.0	10.5	0.0%
Major Arterial	3.7	32.7	11.4%
Minor Arterial	10.9	116.2	9.4%
Major Collector	21.5	553.6	3.9%
Minor Collector	0.8	322.5	0.3%
Grand Total	**37.0**	**1,128.1**	**3.3%**

Source: ODOT

*Insufficient Shoulder is defined as the right shoulder of the roadway having a width of zero in ODOT data.

MVRPC

Figure 3.7
Lane and Shoulder Widths*



*Analysis is limited to US and State Routes

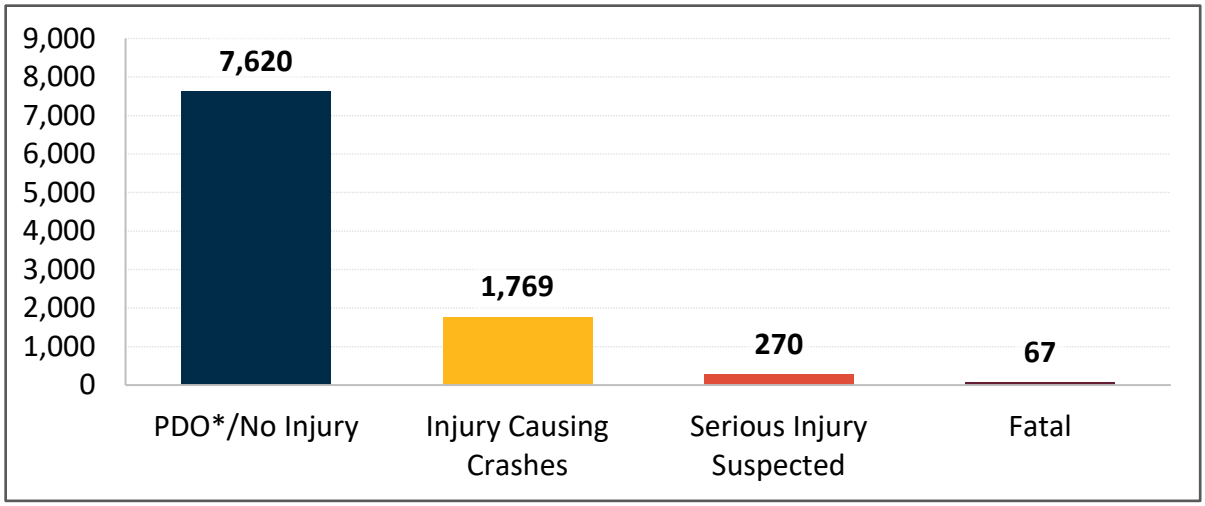
Source: ODOT & MVRPC
June 2024

3.10 Regional Safety Analysis

The goal of the safety analysis is to determine the baseline trend for where and what types of crashes occur within the Region. Crash data for the safety analysis were collected from the Ohio Department of Public Safety (ODPS) police reports and the Ohio Department of Transportation's (ODOT) GIS Crash Analysis Tool (GCAT) for crashes that occurred between January 1, 2019 and December 31, 2021.

A total of 9,726 reported crashes occurred in the Region during the two-year study period. These crashes include only those that cost $1,000 or more in property damage, caused an injury, or were fatal. Of the total 9,726 crashes: 67 crashes were fatal, 2,309 crashes led to injuries, and 270 of those injury crashes were serious injuries (Figure 3.8). Alcohol was reported to be involved in 31% of all fatal crashes. On average, a crash occurred in the Region every 3 hours and a fatal crash occurred every 16 days.

Figure 3.8 – Crashes by Severity between 2019 and 2021



Source: ODOT and ODPS

*PDO stands for Property Damage Only.

Comparison Across the Region

The total crash rate, calculated by the number of crashes per million vehicle miles travelled (MVMT), varied across the Region. On average, Darke County experienced the highest crash rate of the three counties with a three-year average of approximately 2.4 crashes for every one million vehicle miles traveled. Preble and Shelby counties had three-year averages around 1.6 and 1.9 crashes, respectively, for every MVMT (Table 3.8).

Table 3.8 – County Crash Rates per MVMT between 2019 and 2021

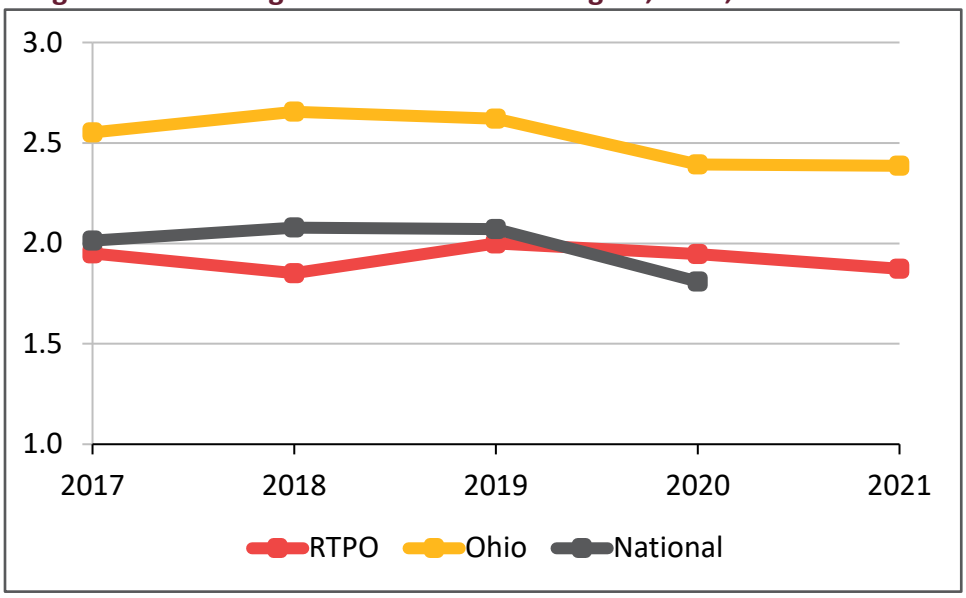
County	2019	2020	2021	2019-2021 Average
Darke	2.42	2.45	2.38	**2.42**
Preble	1.76	1.53	1.53	**1.61**
Shelby	1.92	1.95	1.82	**1.9**

Source: ODOT and ODPS

Regional Comparison to Ohio and the Nation

The total crash rate in the Region has been higher than the national rate since 2019. The total crash rate in the Region was lower than the statewide average for the duration of recorded crash data (2017-2021) and can be seen in Figure 3.9.

Figure 3.9 – Average Crash Rate for the Region, Ohio, and the Nation



Source: ODOT and ODPS

Prioritization of Crash Locations

Of the 9,726 crash records received from ODOT, 9,712 were able to be geo-located. Crashes were further narrowed down to 6,090 by removing crashes on local roads, freeways, and freeway access ramps. Local road crashes were omitted due to lack of information on the local roadway system to carry out the analysis. Freeways and freeway ramps were omitted as ODOT already prioritizes freeways and freeway related intersections for improvements. Of the 6,090 qualifying crashes, 878 (14%) occurred at intersections and 5,212 (86%) happened on road segments.

Crash Type Trends

The top 5 common crash types that occurred in the Region from 2019 to 2021 were Animal (22.89%), Fixed Object (20.44%), Rear End (15.40%), Angle (14.20%) and Passing Sideswipe (7.85%). A more detailed breakdown of crash types can be seen in Table 3.10.

Table 3.9 – Crashes by Crash Type Between 2019 and 2021

Crash Type	Crash Sum	Percent
Animal	1,394	22.9%
Fixed Object	1,245	20.4%
Rear End	938	15.4%
Angle	865	14.2%
Sideswipe – Passing	478	7.9%
Left Turn	285	4.7%
Backing	185	3.4%
Other*	170	2.8%
Parked Vehicle	168	2.8%
Right Turn	143	2.4%
Head On	126	2.1%
Overturning	93	1.5%
Grand Total	**6,090**	**100.0%**

Source: ODOT and ODPS

Note: The "Other" crash type category is the sum of all Other Non-Collision, Other Object, Pedalcycles, Pedestrian, Meeting Sideswipe, Train and Unknown crashes which individually composed less than 1% of the total crashes that occurred.

Top Contributing Factors for All Qualified Crashes

The top three contributing factors in the 6,090 analyzed crashes were Driving Off Road (15.44%), Following Too Closely/Assured Clear Distance Ahead (ACDA) (15.27%), and Failure to Yield (14.35%). Table 3.11 has a more detailed breakdown of the primary contributing factors for crashes.

Table 3.10 – Crashes by Contributing Factor

Primary Contributing Factor*	Total Number of Crashes	Percentage of Total Crashes
Drove Off Road	940	21.5%
Following Too Closely/ACDA	930	21.2%
Failure to Yield	874	20.0%
Other Improper Action	331	7.6%
Left of Center	175	4.0%
Improper Turn	164	3.7%
Improper Backing	158	3.6%
Unsafe Speed	141	3.2%
Ran Red Light	137	3.1%
Improper Lane Change	121	2.8%
Swerving to Avoid	97	2.2%
Ran Stop Sign	94	2.2%
Improper Passing	92	2.1%
Other*	128	2.9%
Grand Total	**4,382**	**100.0%**

Source: ODOT

*Crashes that had a primary contributing factor of "None" or "Not Discernible" (1,708) were omitted from this aspect of analysis. Primary contributing factors that made up less than one percent of the total crashes that occurred were combined into the "Other" category. The "Other" category included operating defective equipment, load shifting/falling/spilling, improper start from a parked position, vision obstruction, improper crossing, stopped or parked illegally, wrong way, lying in roadway, and opening door into roadway.

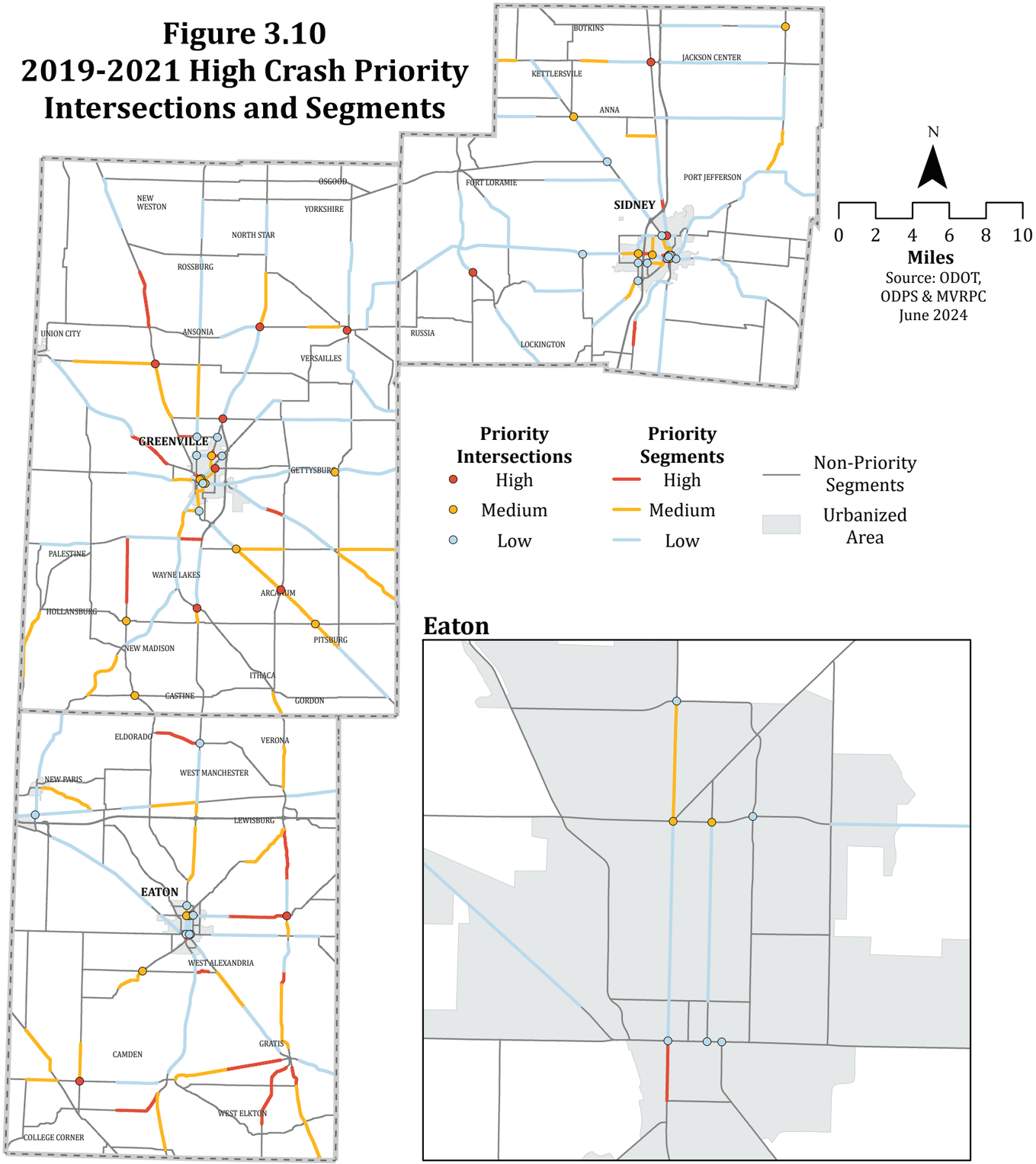
Crash Prioritization

The roadway network was divided into segments (1,065) and intersections (317). Crashes were then aggregated to a segment or intersection. The following values were then calculated for each segment or intersection: Equivalent Property Damage Only (EPDO), Relative Severity Index (RSI), crash rate, and crash density for segments or crash frequency for intersections. Points were assigned to each segment or intersection based on EPDO, RSI, crash rate, and crash density for segments or crash frequency for intersections and then added across categories for an overall safety score. The higher the safety score, the higher a given segment or intersection's ranking was on the safety priority list. Locations where severe or fatal crashes occurred were ranked higher in the safety priority list.

Priority Intersections

Of the 317 total intersections in the Region intersection network, 212 intersections were the location of at least one crash. To be considered in the analysis, an intersection had to be a location where 7 or more crashes occurred or be a location of one or more fatal or serious injury crashes: 55 intersections qualified for prioritization. 12 intersections were categorized as high priority, 18 intersections as medium priority, and 25 intersections as low priority. Prioritized intersections were primarily clustered in the city centers of Greenville, Eaton, and Sidney—with a few locations in outlying rural areas in the Region (Figure 3.10; Table 3.12).

Figure 3.10
2019-2021 High Crash Priority Intersections and Segments



N

0 2 4 6 8 10

Miles

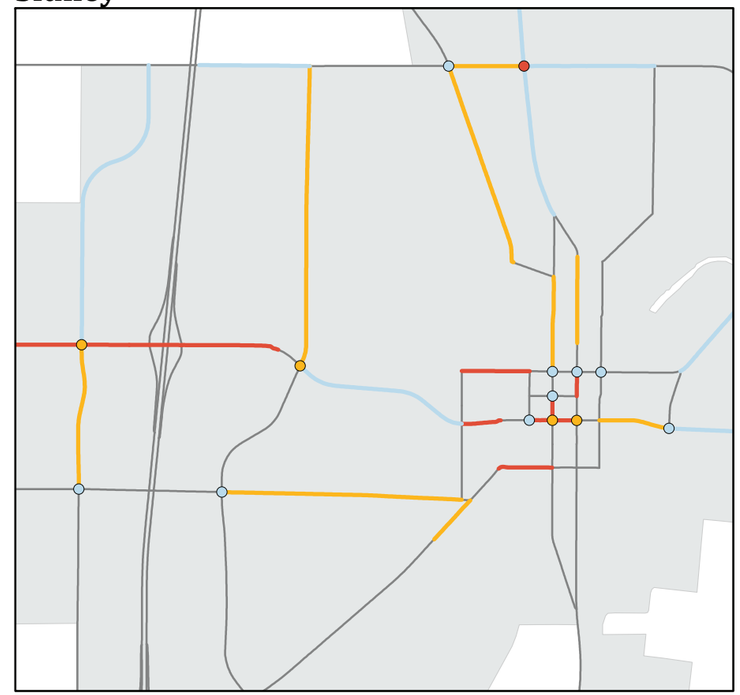
Source: ODOT, ODPS & MVRPC June 2024

Priority Intersections
- High
- Medium
- Low

Priority Segments
- High
- Medium
- Low

- Non-Priority Segments
- Urbanized Area

Sidney



Eaton

Greenville

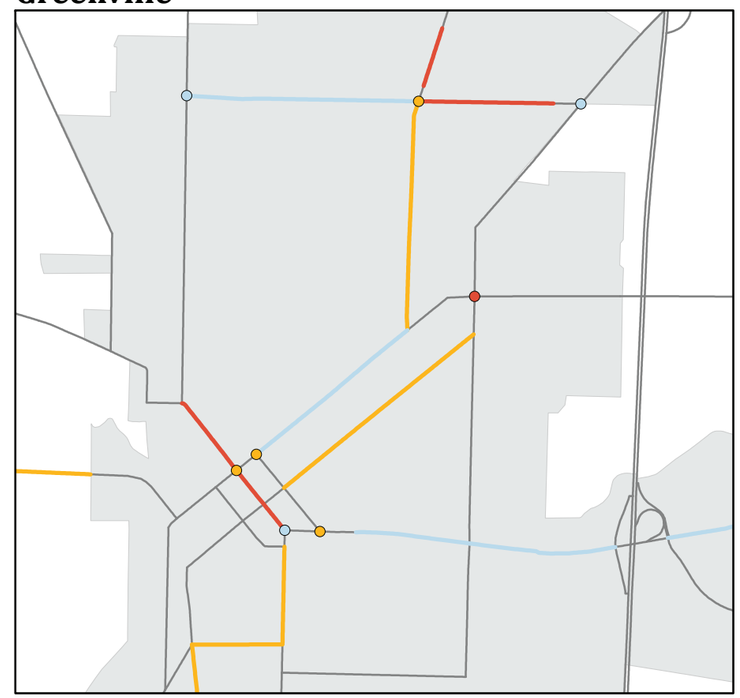


Table 3.11 – Priority High Crash Intersections

Priority	High	Medium	Low	Grand Total
Darke County	**7**	**9**	**6**	**22**
Rural Area	6	5	0	11
Urban Area	1	4	6	11
Preble County	**2**	**3**	**7**	**12**
Rural Area	2	1	1	4
Urban Area	0	2	6	8
Shelby County	**3**	**6**	**12**	**21**
Rural Area	2	2	1	5
Urban Area	1	4	11	16
Grand Total	**12**	**18**	**25**	**55**

Source: ODOT and MVRPC

Priority Segments

Of the total 1,065 segments considered, 792 road segments were the location of at least one crash. To be considered in the analysis, a road segment had to be a location where 9 or more crashes occurred or be a location where a sum of 2 or more fatal crashes or severe crashes occurred: 205 segments qualified for prioritization. Of these segments, 37 were designated as high priority, 62 as medium priority, and 106 as low priority. There was no clear clustering of priority segment locations within urban areas. Instead, priority segments were spread out across rural and urban areas—Table 3.13 displays this information in more detail. Preble County had a lower amount of priority segments compared to Darke and Shelby counties (Figure 3.10; Table 3.13).

Table 3.12 – Priority High Crash Road Segments

Priority	High	Medium	Low	Grand Total
Darke County	**11**	**28**	**38**	**77**
Rural Area	6	21	30	57
Urban Area	5	7	8	20
Preble County	**11**	**18**	**24**	**53**
Rural Area	10	16	12	38
Urban Area	1	2	12	15
Shelby County	**15**	**16**	**44**	**75**
Rural Area	2	4	29	35
Urban Area	13	12	15	40
Grand Total	**37**	**62**	**106**	**205**

Source: ODOT and MVRPC

3.11 Regional Traffic Flow Analysis

Annual Average Daily Traffic (AADT)

The two roadways with the highest Annual Average Daily Traffic (AADT) volumes in the Region are Interstate Route 70 in Preble County and Interstate Route 75 in Shelby County. Select roads around the downtown areas of Greenville (Darke County), Eaton (Preble County), and Sidney (Shelby County) have AADTs above 10,000. The most common AADT value of roadways within the Region fall within a range of 1,001-3,000 (39.1% of the total length of analyzed roads). Roads with the highest traffic are arterials—no collector roads have an AADT higher than 13,893 (Table 3.14). Figure 3.11 depicts the AADT values of the Regional Roadway network excluding local roads.

Table 3.13 – Regional Roadway AADT Trends by Functional Class in Centerline Miles

AADT (in Centerline Miles) *					
Functional Class	**1-1,000**	**1,001-3,000**	**3,001-8,000**	**8,001-20,000**	**20,001-50,000**
Interstate	2.3	6.0	3.7	0.0	38.2
Freeway/Expressway	0.4	1.3	0.0	4.4	0.0
Major Arterial	0.0	8.9	21.8	0.7	0.0
Minor Arterial	0.4	7.5	94.0	9.8	0.1
Major Collector	92.6	326.5	128.8	3.6	0.0
Minor Collector	250.9	67.9	0.5	0.0	0.0
Grand Total	**346.7**	**418.0**	**248.8**	**18.5**	**38.3**

Source: ODOT

*Road segments with a Functional Class of 7 (Local Roads) or with a total AADT value of 0 were not considered in this analysis.

Truck Volume

The analysis for truck volume focused on IR, US, and SR roads that had truck AADT and total AADT values that were not null. The roadways that had the highest amount of truck traffic were I-70 (which passes east and west through Preble County) and I-75 (which passes north and south through the center of Shelby County). Most centerline miles in the analyzed road network (72.12%) had a truck AADT that was higher than the statewide average on Interstate, US, and State Routes (Table 3.15). Figure 3.12 depicts the average use of roads in the Region by trucks.

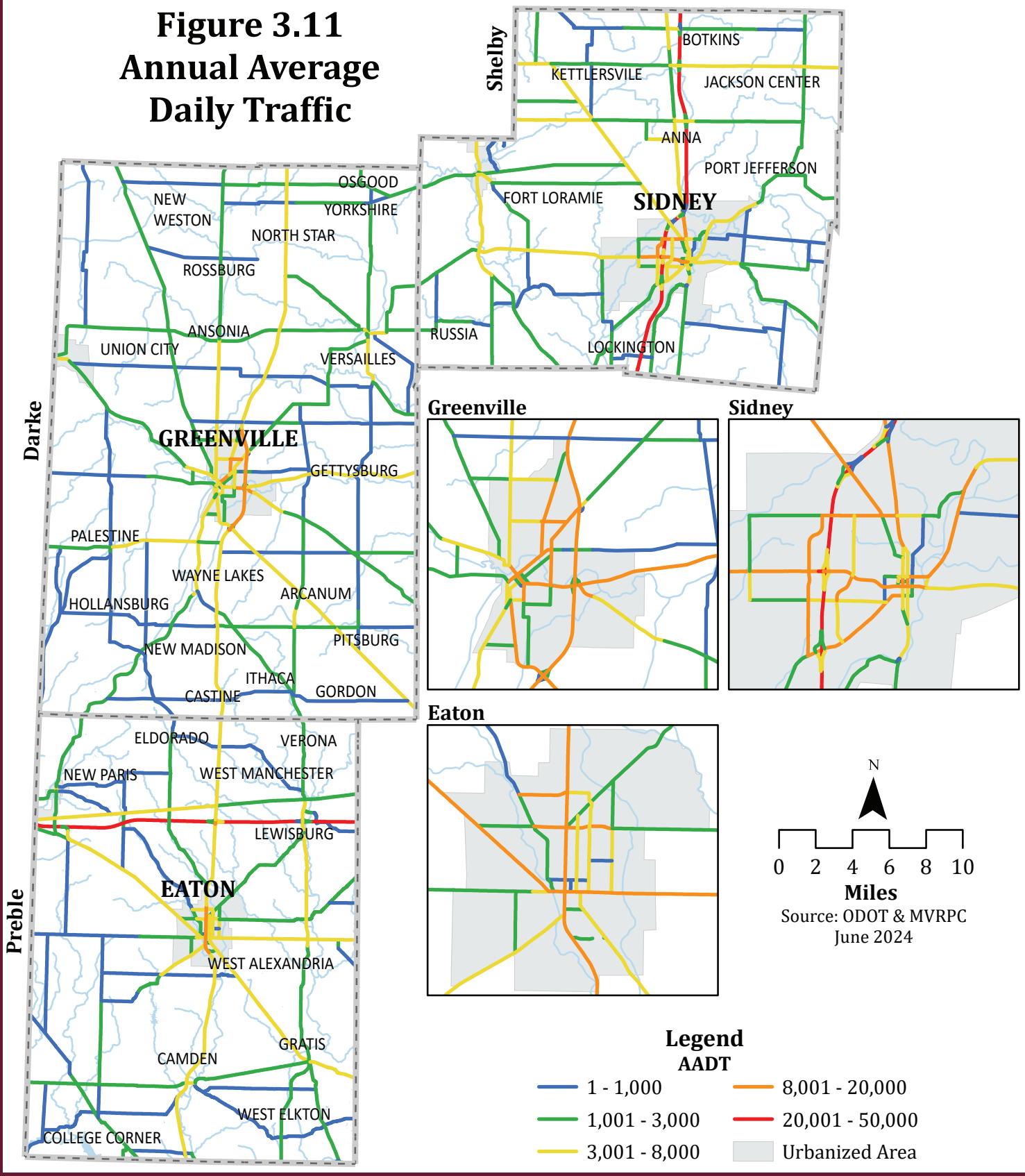
Table 3.14 – Regional Network Comparison to Average Statewide Truck Percentages

Route Type	Average Statewide Truck Percentage	Centerline Miles Above Average Statewide Truck Percentage	Centerline Miles Below Average Statewide Truck Percentage	Grand Total
IR	15.99%	38.2	0.00	**38.2**
US	9.32%	83.7	27.78	**111.4**
SR	5.65%	321.7	143.35	**465.1**
Grand Total	**—**	**443.6**	**171.12**	**614.7**

Source: ODOT

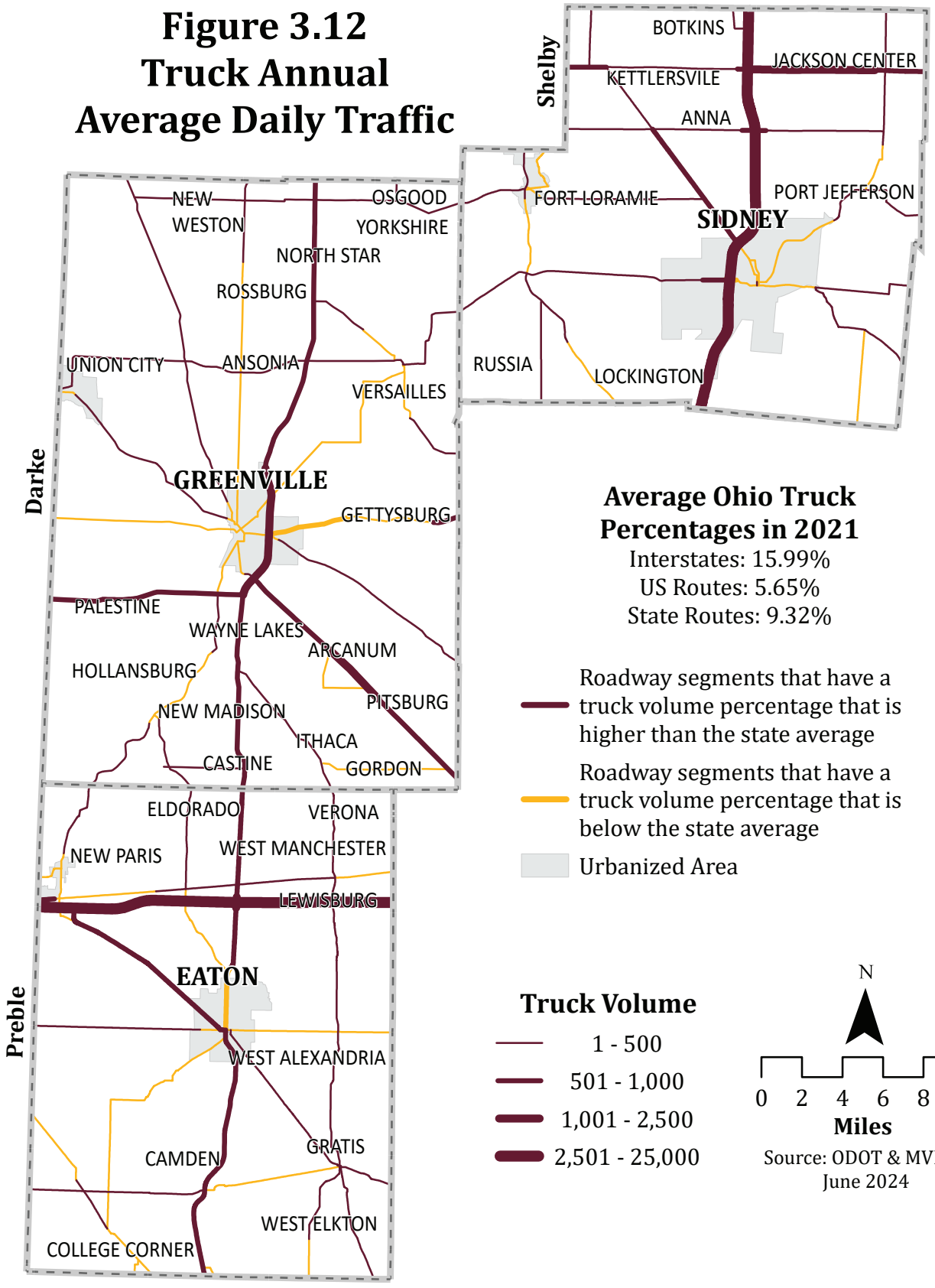
MVRPC

Figure 3.11
Annual Average Daily Traffic



MVRPC

Figure 3.12
Truck Annual Average Daily Traffic



Average Ohio Truck Percentages in 2021

Interstates: 15.99%
US Routes: 5.65%
State Routes: 9.32%

- Roadway segments that have a truck volume percentage that is higher than the state average
- Roadway segments that have a truck volume percentage that is below the state average
- Urbanized Area

Truck Volume

- 1 - 500
- 501 - 1,000
- 1,001 - 2,500
- 2,501 - 25,000

N

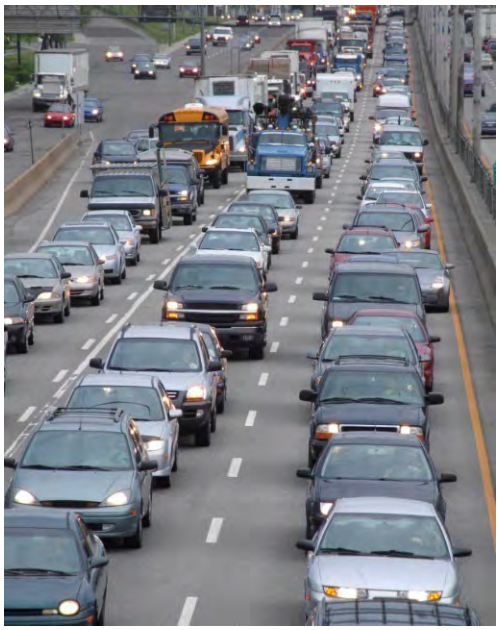
0 2 4 6 8 10

Miles

Source: ODOT & MVRPC
June 2024

Level of Service (LOS) Regional Analysis

Level of Service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists. Volume-to-capacity (V/C) ratio is a measure of the traffic volume on a road compared to the capacity of the road. The capacity of a road depends on its physical and operational characteristics and varies by functional class. A higher V/C ratio indicates that the traffic volume of the road is nearing its capacity and is becoming congested. Similarly, the ratio of average speed to free flow speed can also be used to measure congestion, with lower speed ratios indicating congested conditions. The analyses presented in this section are based on calculations created by ODOT and their definition of LOS by speed and V/C ratio. LOS is broken down into six levels (A through F), with significant traveler delay and recurring congestion occurring at LOS grades D, E, and F.



Nearly half of the roads (48.6%) analyzed for LOS were given a score of B. Approximately 93.9% of the roads assigned a LOS in the Region had a rating between A and C, which indicated that most roadways in the Region tend to have stable operating conditions.

A few analyzed roads in the Region had a LOS rating of D (6.0%). Most portions of the roadway that were assigned a D rating were on Interstates (74.7% of the total centerline miles of LOS D graded roadway) although some (25.3%) were on other principal arterial roadways (Table 3.16). LOS grade D encompassed all of I-70 in Preble County and the southern half of I-75 in Shelby County. Parts of SR 49 in the southeast part of Darke County also had a LOS D rating. Table 3.16 details the LOS rating in miles categorized by functional class. Figure 3.13 highlights where grade D LOS areas are.

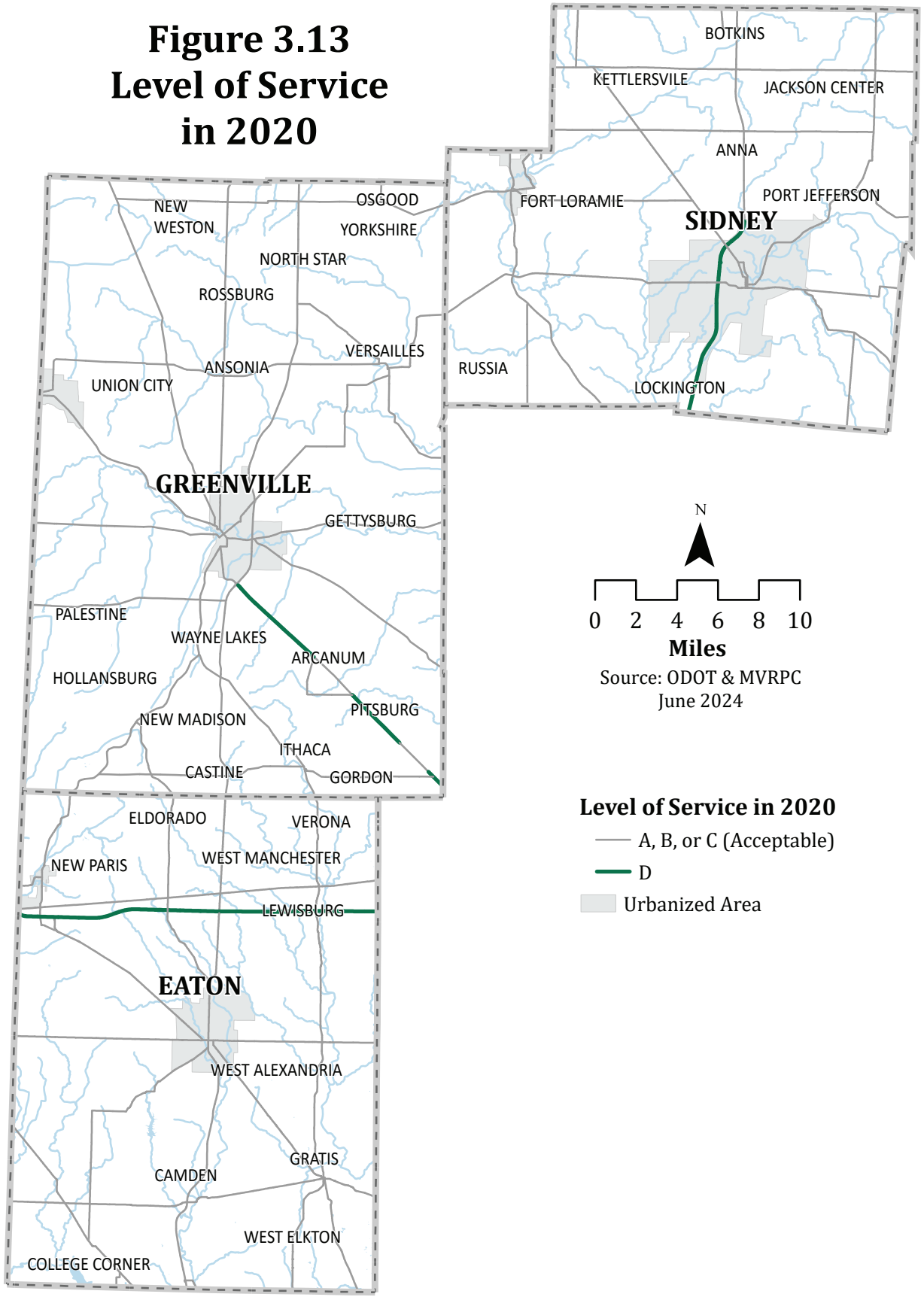
Table 3.15 – LOS by Functional Classes in the Region

Functional Class	A	B	C	D	Grand Total
Interstate	0.0	0.0	10.5	27.7	**38.2**
Freeway / Expressway	4.4	0.0	0.0	0.0	**4.4**
Major Arterial	3.2	1.6	17.2	9.4	**31.4**
Minor Arterial	15.9	37.1	78.7	0.0	**131.7**
Major Collector	20.2	260.2	128.4	0.0	**408.9**
Grand Total	43.8	298.9	234.7	37.1	**614.5**
Grand Total Percentage	**7.1%**	**48.6%**	**38.2%**	**6.0%**	**100.0%**

Source: ODOT

MVRPC

Figure 3.13
Level of Service in 2020



Average Speeds

The average speed of traffic on a roadway can be an indicator of a road's average level of congestion— particularly during peak hours. Congestion also contributes to traffic crashes. Identifying roadways that are prone to congestion can inform decision-makers of roadways that might need to be prioritized for funding.

The data used for this analysis came from INRIX (a software company that collects transportation data such as average roadway speeds based on information from cell phones, vehicle probes, and other sensors). The geographic range of the data covered most major roadways in the Region and was based on data collected in 2022, in 15-minute intervals, for each weekday (Saturday and Sunday were excluded). Local roads and roads that were not connected to other Regional roadway segments were omitted from the analysis. It is important to note there were some inconsistencies in the data and the values in this section are estimates. The average traffic speed values seen in Figure 3.14 illustrate the average daily speed for each road segment.

Table 3.17 below shows the approximate centerline length of roadways organized by average speed. The most frequent average speed range was between 50 and 60 mph: a little over half (~52.5%) of all analyzed roadways in the Region fell into this category.

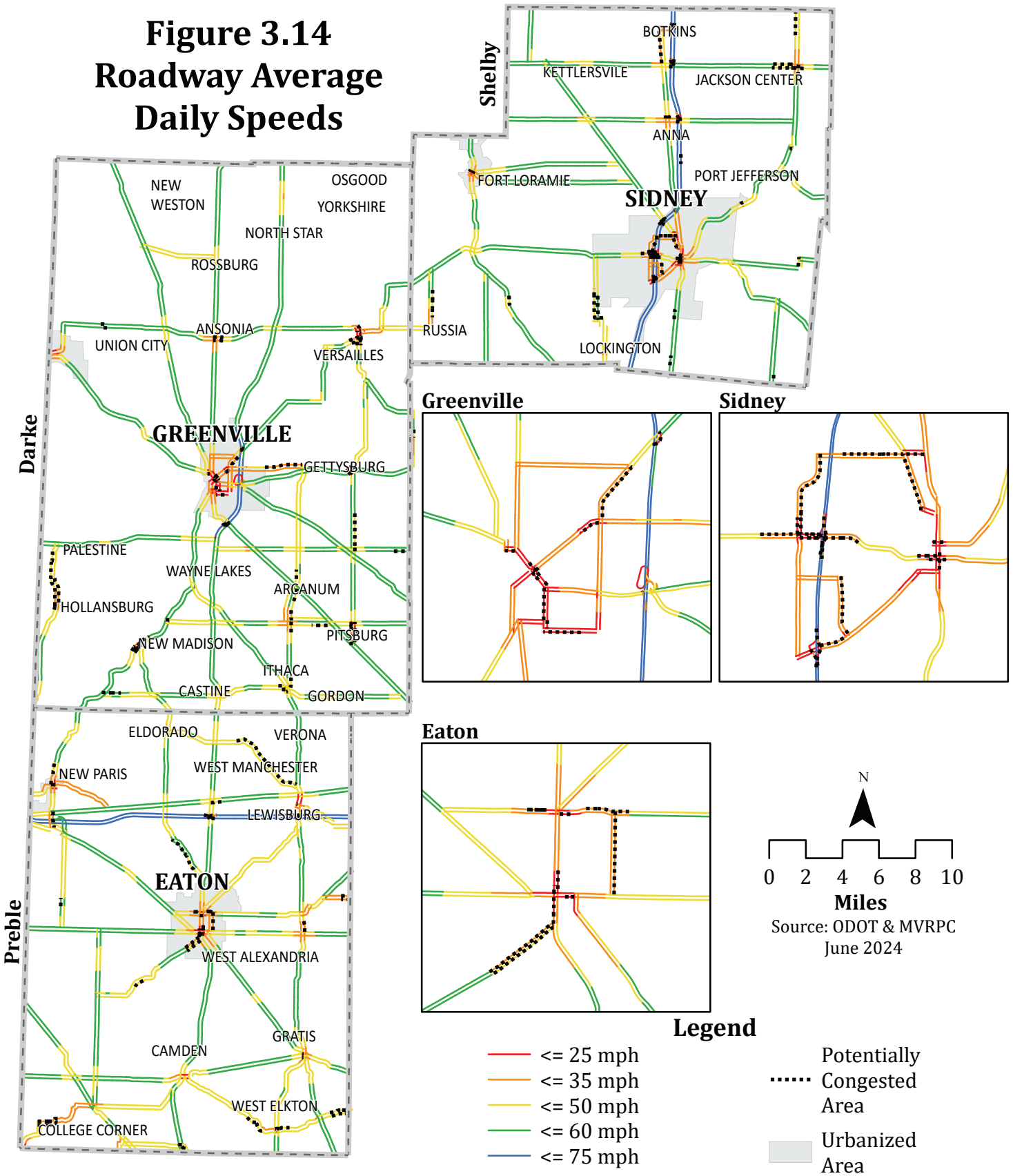
Table 3.16 – Mileage of Average Daily Speed in the Region

Average Speed	Length in Centerline Miles	Percent of Total Roadway
25 mph or less	33.2	2.2%
Between 25 and 35 mph	136.7	9.0%
Between 35 and 50 mph	465.9	30.6%
Between 50 and 60 mph	801.5	52.6%
Between 60 and 75 mph	87.4	5.7%
Grand Total	**1,524.7**	**100.0%**

Source: INRIX

MVRPC

Figure 3.14
Roadway Average Daily Speeds



Potential traffic congestion areas for the purposes of this study were defined as roadways where the lowest possible 15-minute speed for a given roadway segment divided by the daily average speed for the roadway segment was a value less than 0.80. This led to 253 roadway segments, approximately 85.6 miles, classified as areas likely to become congested during some time of the day. Table 3.18 lists the centerline mileage of potentially congested roadways by functional class and lists the percentage of each functional class that is classified as potentially congested. Potentially congested areas are also shown in Figure 3.14.

The functional class roadway types that were most likely to experience congestion were Interstate and minor collector roads in the Region—nearly 10% of the total mileage of these roadways are likely to experience traffic congestion.

Table 3.17 – Congestion Distribution in the Region by Functional Class

Functional Class	Congested (in Centerline Miles)	Percent Length Congested	Not Congested	Grand Total
Interstate	8.2	9.4%	78.6	**86.8**
Freeway/Expressway	0.7	6.3%	10.6	**11.3**
Major Arterial	0.9	1.4%	64.6	**65.5**
Minor Arterial	9.4	4.3%	208.1	**217.6**
Major Collector	41.6	4.6%	855.0	**896.6**
Minor Collector	24.7	10.0%	222.2	**246.9**
Grand Total	**85.6**	**5.6%**	**1,439.1**	**1,524.7**

Source: INRIX

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Chapter 4

Strategies and Recommendations

4.1 Overview

Chapter 4 provides an overview of the projects and strategies that are included in the Regional Transportation Plan (RTP) and the processes that were followed to reach the proposed recommendations. The chapter starts by providing an analysis of the current STIP, as the STIP is the basis for the RTP financial forecast (Section 4.2), and an overview of future transportation needs identified by the Region's Steering Committee (Section 4.3). Project recommendations are divided between transit and non-transit and include an analysis of the financial resources available to carry out the proposed recommendations. Section 4.4 focuses on roadway and active transportation projects while Section 4.5 describes the state of public transportation in each of the counties and the financial needs of the various transit systems. Section 4.6 describes the aspirational Regional Bikeway Vision for increasing the amount of multi-use paths in the Region.

4.2 Statewide Transportation Improvement Program (STIP)

Introduction

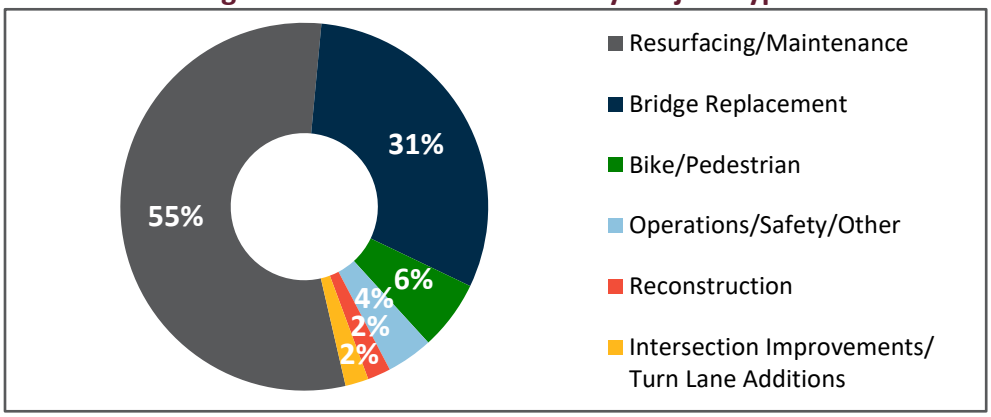
The STIP is a planning document that includes upcoming transportation projects or studies planned for implementation between 2024 and 2027. The STIP is developed in cooperation with local officials, the State, and public transit providers. The STIP includes capital surface transportation, non-capital surface transportation, bicycle and pedestrian, and other transportation projects. All projects that receive federal or state funding must be included in the STIP, meaning the STIP contains an accurate short-term snapshot of projects occurring in the Region that can be utilized for making projections on the type of revenue available in the future. Funding data from Regional projects included in the current 2024-2027 STIP were used for making the financial projections in the RTP. The STIP contains the most up-to-date representation of likely funding available for Regional transportation projects and accounts for revenue increases resulting from the Infrastructure Investment and Jobs Act (IIJA).

STIP Project Analysis

An analysis of STIP projects can indicate the type of project and distribution of funding that will likely be available for Regional projects in the future. The following list contains the main project types from the STIP that MVRPC considered as the baseline for Regional transportation projects going forward as referenced in Figure 4.1:

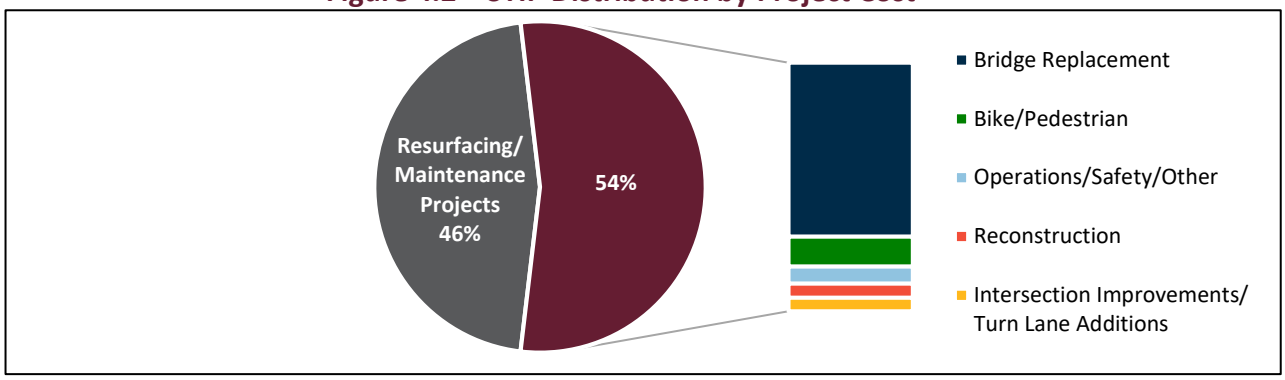
- The most common project types included in the STIP are resurfacing or maintenance projects (approx. 55%) and bridge replacement projects (approx. 31%). All other individual project types make up less than 10% of all Regional projects.
- The most common sponsors of STIP projects are the ODOT districts of the respective counties (Darke and Shelby counties are in District 7 and Preble is in District 8).
- Bridge replacement projects are the highest STIP expenditure excluding Interstate projects and resurfacing/maintenance projects.
- Bike/Pedestrian-classified projects make up 6% of the allocated STIP expenditures and are the second most common source of spending excluding Interstate projects and resurfacing/maintenance projects.

Figure 4.1 – STIP Distribution by Project Type



MVRPC also analyzed Regional STIP projects to determine the relative proportion of purely maintenance projects (including resurfacing) compared to projects that would make significant changes to transportation network facilities. Only projects that make significant changes to facilities—such as reconstructions, bridge replacements, additional lanes/new lanes, or adding new transportation facilities—are individually listed in the RTP. Maintenance and resurfacing projects are consistent with the RTP and a certain amount of financial resources is reserved for those projects based on the SFY 2024-2027 distribution. Figure 4.2 shows the distribution of maintenance/resurfacing projects (46%) in comparison to projects that are specifically included in the RTP (54%). The financial analysis excluded the widening of I-70 in Preble County as the resources needed to implement a project of this magnitude are generally outside the historically available financial resources available to the Region.

Figure 4.2 – STIP Distribution by Project Cost



4.3 Future Transportation Needs

It is difficult to predict the condition of the transportation system in 2050 with current data for an area like the Darke-Preble-Shelby Region that has a fairly stable population and employment base. However, understanding the possible future conditions of the Region is imperative for proactive transportation planning that benefits the Region's communities and overall economy. In addition to deficiencies identified by the existing transportation conditions analysis in Chapter 3, ODOT's travel demand modeling (TDM) software and LOS analysis can be used to pinpoint areas that will likely need improvements in the future.[28]

Future development plans and employment opportunities can also increase the demand and further strain the transportation system. These factors combined help to shape ideas for future transportation infrastructure improvements. Identifying necessary improvements now can lead to faster solutions in the future.

Level of Service (LOS) in 2050

ODOT's travel demand modeling (TDM) software and LOS modelling can be used to pinpoint areas that likely need improvements in the future.[28] The level of service (LOS) in the Region is expected to substantially decrease along Interstate roadways by 2050 (Figure 4.3). Without improvements, I-70 in Preble County is expected to have the longest continuous stretch of roadway (about 5 miles) in the Region with high congestion and operate at LOS grade F by 2050. All of I-75 in Shelby County is expected to have substantially worse congestion by 2050 with LOS grades E and F likely present compared to 2020 when no LOS grade E or F roadway existed.

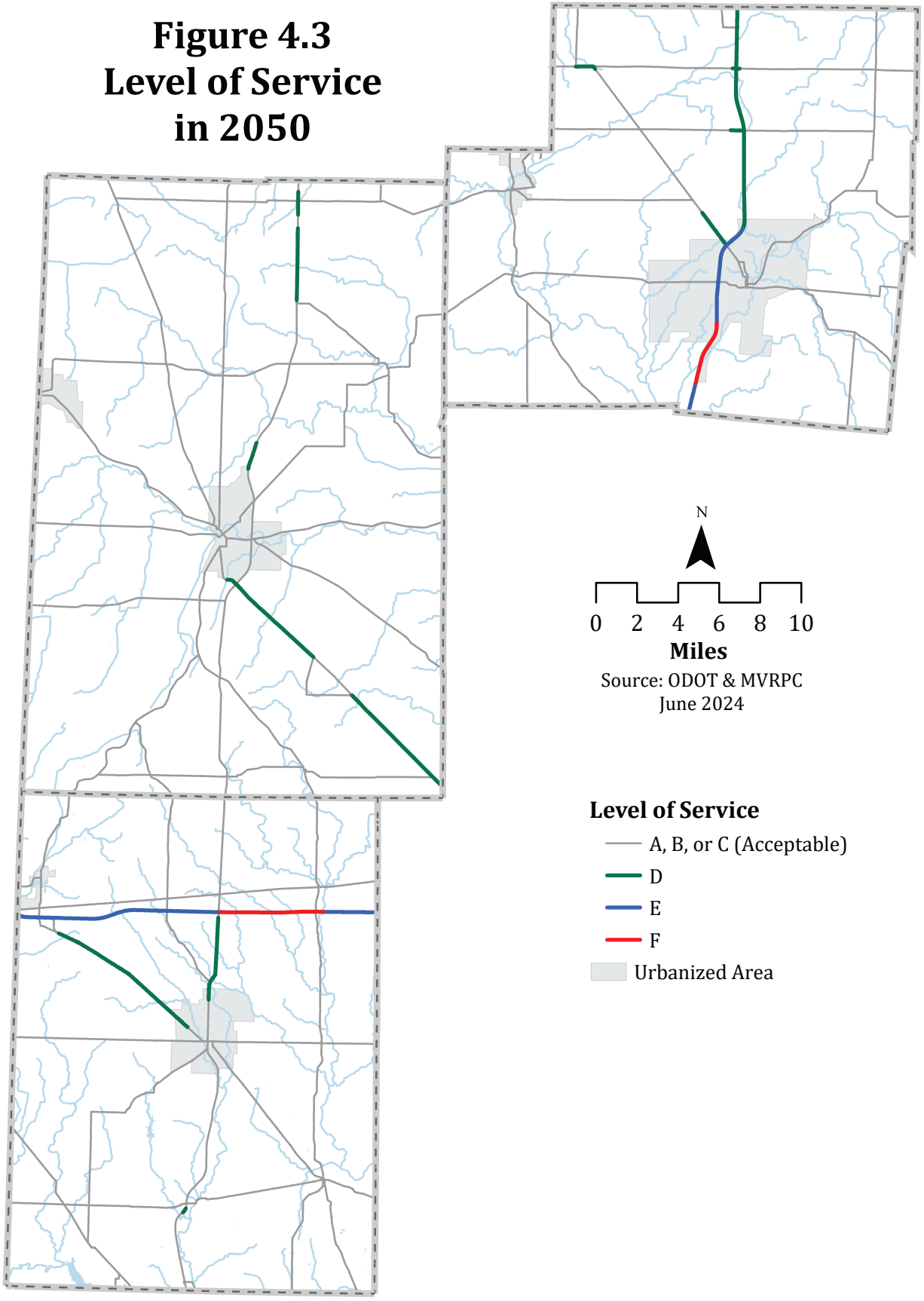
Congestion is expected to get slightly worse on some non-Interstate arterials and major collectors throughout the Region by 2050 with roadway sections moving from acceptable LOS grades to a LOS D grade. This is the case particularly for US 35 in Preble County; US 127 in Darke and Preble counties; SR 49 in Darke County; and SR 29 in Shelby County.

Local roads will likely not have a substantial increase in congestion by 2050—no local roads are predicted to have a LOS grade below C.

[28] Acceptable LOS grades are defined as grades A, B, and C.

MVRPC

Figure 4.3
Level of Service in 2050



Economic Development in the Region

Transportation planning and economic development are vital to the future needs of the community. Thus, it is important to create a link between these planning areas in order to adequately track and provide suggestions for future projects and development locations. Since the population in the Region is expected to remain stable into the future, challenges are created when attempting to predict future transportation demand. It is important to note that areas experiencing economic growth, which might not show in Regional employment projections, could still require transportation improvements. Staff worked with the Steering Committee to alleviate this information gap and create a list of potential sites and development areas.

The corresponding development map (Figure 4.4) and analysis were compiled through both Steering Committee input and MVRPC's development tracking database. The Regional development tracking database contains data from 2020 to the present.

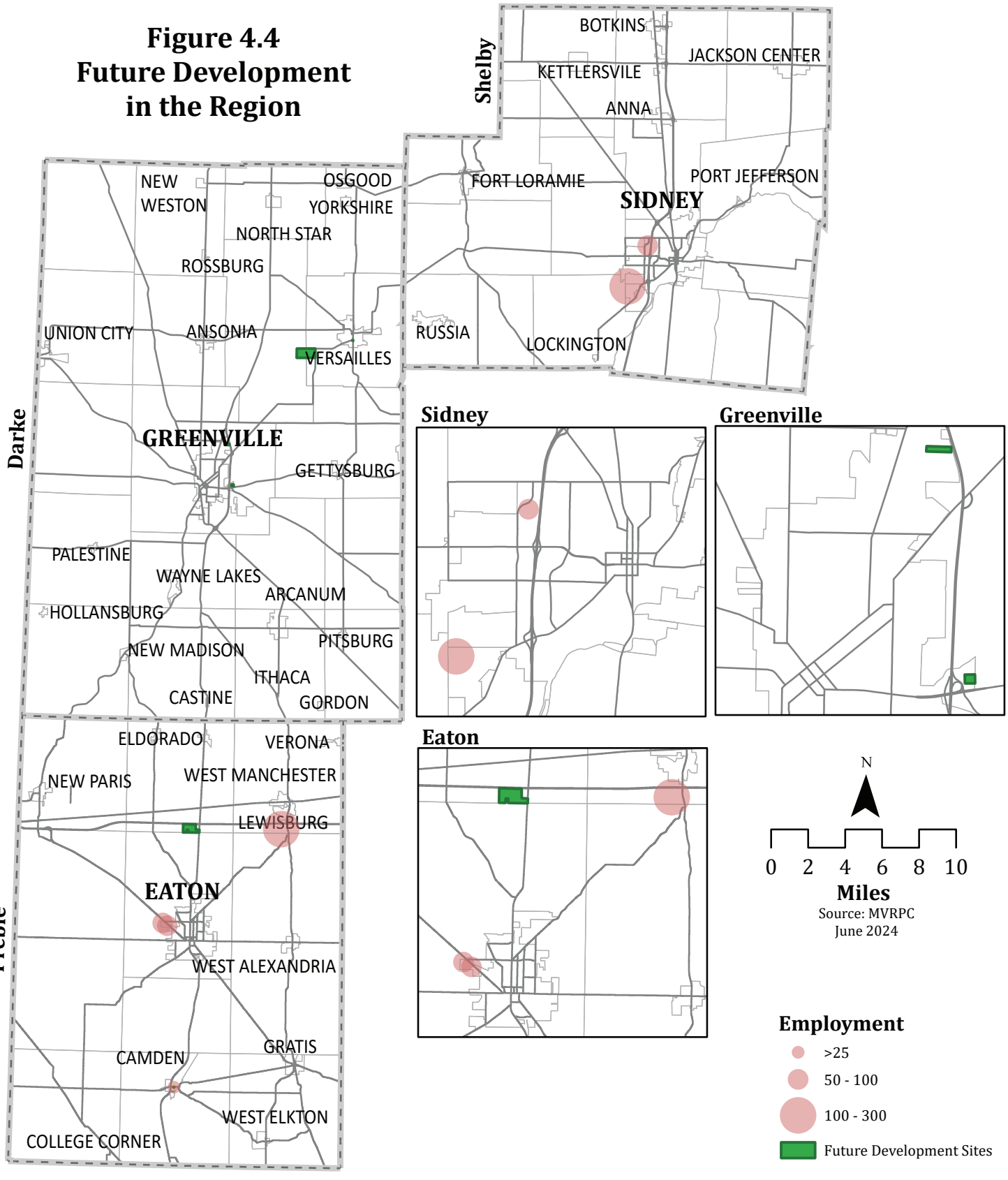
Future Economic Development

Based on analysis compiled through the development tracking database, economic growth in the Region is expected throughout the next several years. Over 700 jobs have been recently announced and entered into the development tracking database. Of the total amount, new employment is primarily within the manufacturing industry, which represents approximately 37% of employment in the Region. This upward trend in the manufacturing industry is in line with the current employment analysis from Section 2.2 of the Plan.

As the Region has experienced increased economic development, the Darke County Airport (VES) has also recently completed a new airport terminal, which is expected to meet the demand of the increased economic activity within Darke County (Versailles) and the Region as a whole.

MVRPC

Figure 4.4
Future Development in the Region



4.4 Roadway and Active Transportation Recommendations

MVRPC and the Region's Steering Committee worked together to compile a list of project recommendations for the Region that help achieve the vision and goals established for the RTP. This list is fiscally constrained, with more expensive projects being tentatively scheduled towards the latter half of this RTP to account for the higher large cost.

Project List

The initial projects for the RTP came from the SFY 2024-2027 STIP. All projects except those addressing maintenance or resurfacing needs are included in the RTP and are identified as STIP equals "Y" to indicate yes, the project is in the STIP or as "YP" to indicate the project is partially included in the STIP as seen in Table 4.1. Projects that are programmed and funded but beyond SFY 2027 are also included and are identified as STIP = NF. The remainder of the projects in the RTP were submitted by Steering Committee members, including the ODOT Districts. As a result, 41 projects have been identified for inclusion in the Region's RTP project list. The most common project types include Bridge Replacements (39%), Studies (15%) and Bike/Pedestrian (15%) projects; for more detail, see Figure 4.5.[29] The Year of Expenditure (YoE) rough estimate of the total cost for all projects in the RTP is $582,982,925—over half (54%) of the costs are likely to come from roadway or bridge capacity expansion projects and nearly another quarter (23%) from reconstruction projects. Figure 4.5 visualizes the areas where the projects will be by year and type.

[29] "Other" category includes projects classified as an intersection improvement/turn lane addition, new road or bridge, or road diet project in the project list.

Table 4.1 – Roadway and Active Transportation Projects

County	RTP No.	Sponsor	Project Name	Project Description	STIP	Timeframe	Cost	YOE Cost
Darke	1	Darke County	DAR-CR 380-00.68	Meeker Road over Bridge Creek-Bridge replacement.	Y	2024-2030	$0.47	$0.47
Darke	2	ODOT D7	DAR-US 127-30.53	US 127 over Mile Creek-Bridge deck replacement.	Y	2024-2030	$0.92	$0.92
Darke	3	ODOT D7	DAR/MIA-US 36/SR 721-22.56	Intersection of US 36 and SR 721-Construct safety improvements with consideration of a roundabout.	Y	2024-2030	$2.75	$2.75
Darke	4	Versailles	DAR-New Truck Route	Construct 5,600' of new roadway connecting SR 47 to Reed Road and 1,300 feet of new roadway connecting West Street to Industrial Way. Then, improve 2,700 feet of existing roadway.	N	2031-2040	$15.72	$20.97
Darke	5	Darke County	DAR-SR 49/Arcanum Bears Mill Rd-Intersection	Intersection of SR 49 and Arcanum Bears Mill-Perform traffic safety study to design and implement upgrade to intersection—including possible installation of a roundabout.	N	2024-2030	$0.02	$0.02
Darke	6	Darke County	DAR-SR 705/SR 716-Intersection	Intersection of SR 705 and SR 716-Study of traffic at the intersection and feasibility of implementing a flashing or stop light installation.	N	2024-2030	$0.02	$0.02
Darke	7	City of Greenville	DAR-Russ Rd/Kitchen Aid Way-Intersection	Intersection of Kitchen Aid Way and Russ Road-A study to determine if the intersection warrants a right turn lane due to increased traffic.	N	2024-2030	$0.02	$0.02
Darke	8	Darke County	DAR-North Ohio St-Road Diet	North Ohio Street-Implement a road diet by adding sidewalks with lighting, and placing Bike Trail and/or Share the Road signs for increased active transportation safety.	N	2024-2030	$1.25	$1.44
Darke	9	City of Greenville	DAR-SR 571-Study	Westbound SR 571 by Greenville Industrial Park-Study to determine if road widening and a potential new turn lane for westbound traffic near the Greenville Industrial Park is warranted.	N	2024-2030	$0.02	$0.02
Darke	10	ODOT D7	DAR-Sweitzer St-15.08	Sweitzer Road-Full street reconstruction of Sweitzer Street between Eidson Road and Birt Street (approx. 2,700 feet), including a road diet that will reduce the roadway to two 12-foot lanes with a 12-foot left-turn-only lane. An 8-foot curb-attached walk, with ADA compliant curb ramps, will be installed on each side of the roadway. Project also includes the installation of 6-foot walk along the west side of Sweitzer Street from 900 feet south of Eidson Road to Eidson Road.	NF	2024-2030	$6.80	$6.80

County	RTP No.	Sponsor	Project Name	Project Description	STIP	Timeframe	Cost	YOE Cost
Darke	D1	Darke County Park District	DAR-Greenville to Arcanum-7.21	This is project D1 on the Regional Bikeway Vision plan. It is a shared-use path from Greenville to Arcanum that would utilize existing abandoned rail line. It would continue the current bikeways in Darke County to connect Greenville's trail (Tecumseh Trail, Ohio-IN Trail) to the Village of Arcanum.	N	2031-2040	$5.38	$7.18
Preble	301	ODOT D8	PRE-Israel Twp-Safety Signs	Israel Township in Preble County-Safety sign grant to combat run off the road and intersection crashes.	Y	2024-2030	$0.05	$0.05
Preble	302	ODOT D8	PRE-SR 121-02.07	SR 121 over East Fork of Whitewater Creek just north of New Paris-Bridge superstructure replacement.	Y	2024-2030	$2.26	$2.26
Preble	303	ODOT D8	PRE-SR 726-02.74	SR 726 over Bantas Fork-Repair abutment and replace superstructure of bridge.	Y	2024-2030	$1.79	$1.79
Preble	304	ODOT D8	PRE-I-70-08.72	Monroe Central Rd. over I-70-Rehabilitate bridge by replacing the concrete deck.	Y	2024-2030	$4.37	$4.37
Preble	305	Preble County	PRE-Concord Fairhaven Rd-00.65	Concord-Fairhaven Road over Four Mile Creek-Bridge replacement.	Y	2024-2030	$1.14	$1.14
Preble	306	Eaton	PRE-North Maple St-00.60	North Maple Street from Mechanic Street to Lexington Road-Widen the roadway to provide on-street parking, reconstruct pavement, add curb and gutter, and storm sewer.	Y	2024-2030	$2.23	$2.23
Preble	307	ODOT D8	PRE-US 127-15.44	US 127 over Rocky Run-Bridge replacement.	YP	2024-2030	$1.99	$1.99
Preble	308	ODOT D8	PRE-SR 726-08.62	SR 726 over Price Creek-Bridge replacement.	YP	2024-2030	$1.35	$1.35
Preble	309A	ODOT D8	PRE-I-70-00.00	I-70 from the Indiana/Ohio border to US 127-Full depth pavement removal and replacement. Widening of I-70 from Indiana State Line to US 127 from 4 to 6 lanes.	YP	2024-2030	$132.87	$132.87
Preble	309B	ODOT D8	PRE-I-70-10.01	I-70 from US 127 to US 503-Widening of I-70 from 4 to 6 lanes.	N	2031-2040	$120.00	$160.08
Preble	309C	ODOT D8	PRE/MOT-I-70-14.25	I-70 from SR 503 in Preble County to Upper-Lewisburg Salem Road in Montgomery County-Widening of I-70 from 4 to 6 lanes.	N	2031-2040	$110.00	$146.74
Preble	310	ODOT D8	PRE-SR 725-13.60	SR 725 from Quaker Trace Road to Brubaker Road-Improve roadway by moving ditch line on south side of SR 725, extending culverts, removing guardrail, etc.	Y	2024-2030	$1.25	$1.25
Preble	311	Preble County	PRE-Pleasant Valley Rd-04.55	Pleasant Valley Road approximately 2,450' south of SR 725-Replacement of bridge superstructure.	Y	2024-2030	$0.22	$0.22

County	RTP No.	Sponsor	Project Name	Project Description	STIP	Timeframe	Cost	YOE Cost
Preble	312	Eaton	PRE-North Maple St-00.99	North Maple Street from East High Street to Mechanic Street-Reconstruction including replacement of curb, storm sewer system, and sidewalks.	Y	2024-2030	$2.89	$2.89
Preble	313	ODOT D8	PRE-SR 122-24.36	SR 122 over Elk Creek-Bridge replacement.	YP	2024-2030	$3.64	$3.64
Preble	314	Preble County Development Partnership	PRE-I-70-Industrial Park	Orphans Road at US 127-Turn lane, lane widening and intersection improvements in preparation for industrial development.	N	2031-2040	$6.42	$8.57
Preble	315	Village of Lewisburg	PRE-Main St/Apple Valley Dr-Reconstruction	Main Street from Commerce St to Apple Valley Dr and Esther Dr-Includes pavement planing of 3" with replacement of the asphalt with 1-1/2" intermediate course and 1-1/2" surface course.	N	2024-2030	$1.00	$1.15
Preble	P1A	ODOT D8	PRE-US 40-01.10-P1	US 40 from SR 320 to Preble County Line Road-Develop a planning level cost estimate for the design and construction of a multi-use path.	N	2024-2030	$0.04	$0.05
Preble	P1B	ODOT D8	PRE-US 40-01.10-P2	Along US 40 from SR 320 to Preble County Line Road- Construct a multi-use path	N	2031-2040	$20.00	$26.68
Shelby	601	ODOT D7	SHE-SR 47-03.97	SR 47 over Loramie Creek-Replace the bridge deck. Paint steel superstructure and seal all concrete surfaces.	Y	2024-2030	$2.37	$2.37
Shelby	602	Shelby County	SHE-SR 49-03.59	South Kuther Road approximately 400' south of Wright Road-Bridge replacement.	Y	2024-2030	$5.19	$5.19
Shelby	603	Sidney	SHE-Spruce Ave-00.64	Spruce Avenue over the CSX railroad south of Lincoln Street-Replace deficient bridge and increase vertical clearance over the railroad.	Y	2024-2030	$2.56	$2.56
Shelby	604	ODOT D7	SHE-I-75-06.14	I-75 over Campbell Road in Sidney-Remove and replace the mainline superstructure.	Y	2024-2030	$5.35	$5.35
Shelby	605	Sidney	SHE-CR 41-03.04	Canal east of Tawawa Lake-Renovate the Pratt truss and pin-connected bowstring bridge and relocate from its current location to Sidney's Tawawa Park.	Y	2024-2030	$1.04	$1.04
Shelby	606	ODOT D7	SHE-I-75-06.25	I-75 over railroad spur just north of Campbell Road in Sidney-Remove and replace the mainline bridge, including profile adjustments to increase the vertical clearance.	YP	2024-2030	$6.22	$6.22
Shelby	607	ODOT D7	SHE-I-75-05.67	I-75 approximately 2,000' north of Fair Road in Sidney-Remove and replace the mainline structure over the CSX railroad, including profile adjustments to increase the vertical clearance.	NF	2024-2030	$8.29	$8.29

County	RTP No.	Sponsor	Project Name	Project Description	STIP	Timeframe	Cost	YOE Cost
Shelby	S1	Shelby County	SHE-Kuther Rd-SUP	Kuther Road following the Sidney Feeder Canal to the Village of Lockington-Construct multi-use recreation trail.	Y	2024-2030	$5.02	$5.02
Shelby	S3A	City of Sidney	SHE-Canal Feeder Trail	Canal Feeder Trail to vacant railroad hub via abandoned CSX rail trails-The Canal Feeder Trail Extension will utilize Miami-Erie Canal land, along with CSX Railroad spurs that are no longer in use, to provide a connection into the city from the Great Miami River Recreational Trail. It will link to a vacant railroad depot and create a "hub" for the connection to the East/West Connector, with a future option of connecting to the northern areas of the city.	N	2031-2040	$4.10	$5.47
Shelby	S3B	City of Sidney	SHE-Lake St-Connector	The East/West Connector will tie into an existing walkway from the west side of Sidney that will then pass near the city center, and on to Custenborder Fields and Tawawa Park. The cost estimate for the east-west connection from the Highland Ave., 10' walkway to the Stolle Bridge, over the Great Miami River and into Custenborder Fields and Tawawa Park is $900,000.00. This .9-mile trail will connect the western neighborhoods of Sidney to the residents living on the east side of the city and into the 226-acre Tawawa Park.	N	2031-2040	$0.90	$1.20
Regional	901	Region	Regional-US 127-Widening	Length of US 127 in Darke and Preble Counties - Study to assess the feasibility of widening US 127 from 2 to 4 lanes. US 127 is currently an alternate truck route to access I-70 in Preble County.	N	2024-2030	$0.30	$0.35
						Total Cost (in Millions)	$482.84	$575.80

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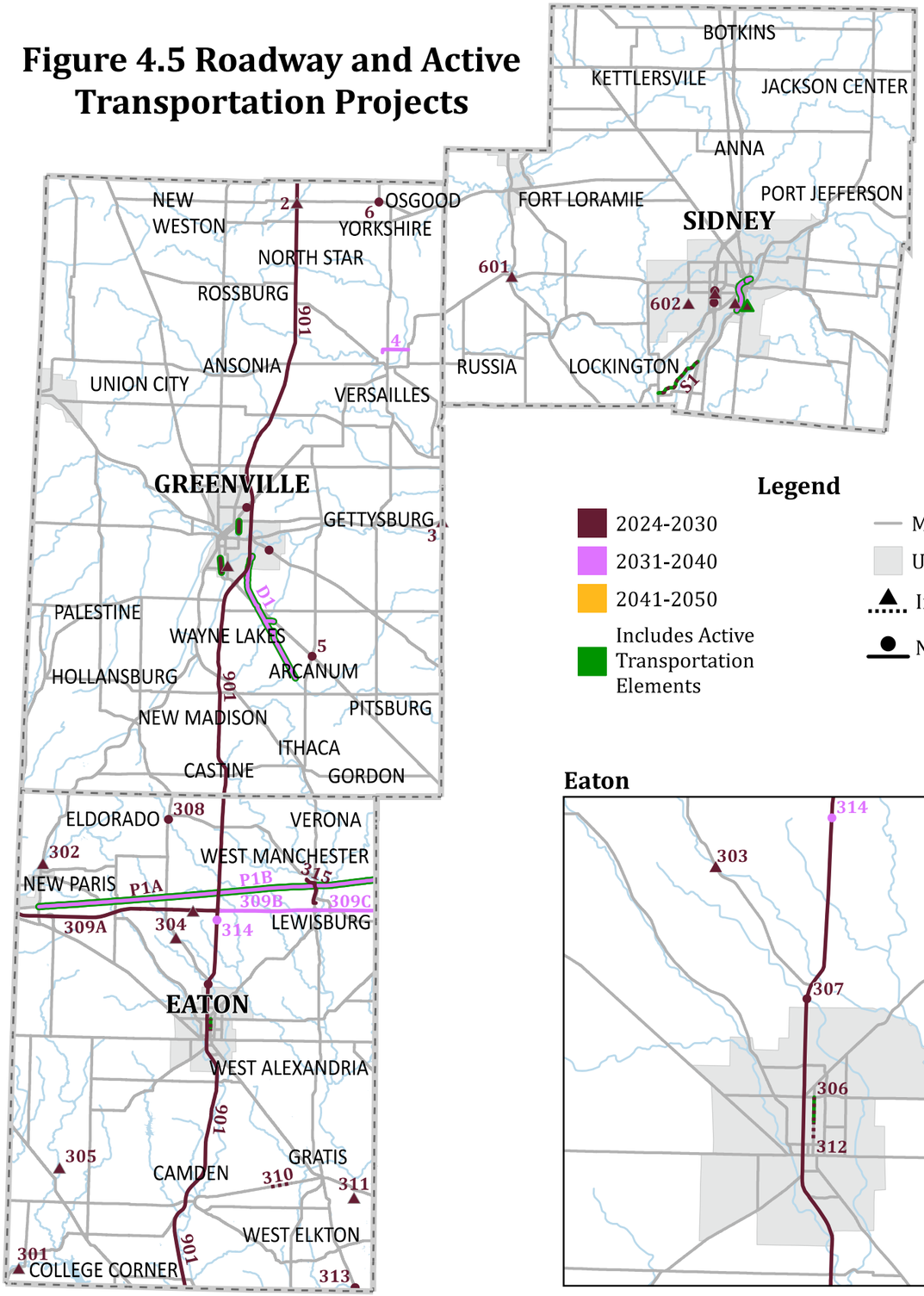
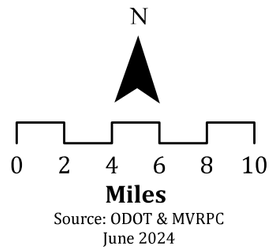
Figure 4.5 Roadway and Active Transportation Projects

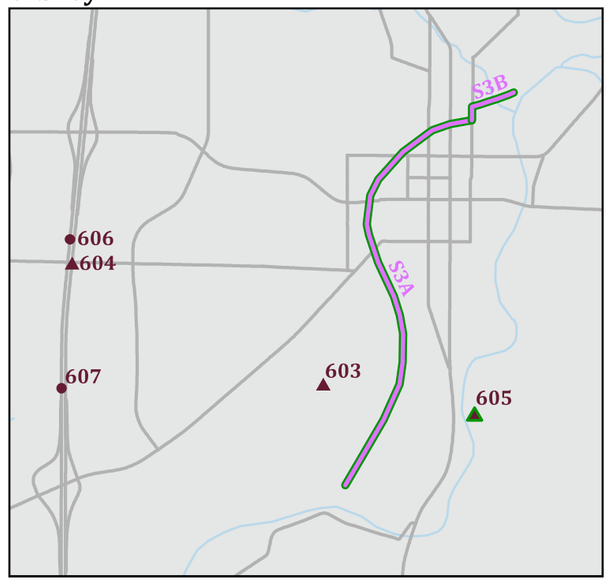




Legend

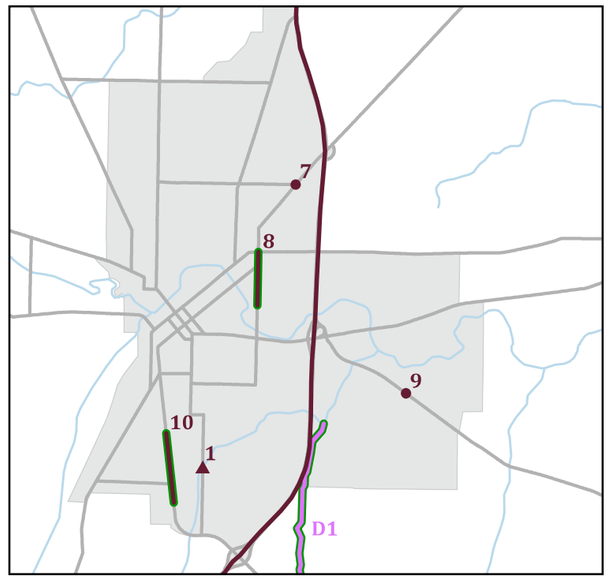
- 2024-2030
- 2031-2040
- 2041-2050
- Includes Active Transportation Elements
- Major Roads
- Urbanized Area
- In STIP
- Not in STIP

Sidney



Eaton

Greenville



Financial Outlook

Establishing Regional transportation fiscal estimates in a planning horizon extending to 2050 in today's everchanging environment is a challenging endeavor. Federal transportation funding sources have substantially increased in recent years, mainly through the passage of the IIJA in November 2021, that opened up billions of dollars for funding transportation projects in FFY 2023 through FFY 2026 and changed the project funding landscape.[30] However, the future of available federal transportation funds past SFY 2026 is largely unknown. Consistent with federal transportation regulations and with feedback from the Steering Committee, MVRPC has developed fiscally constrained planning level cost estimates and YoE revenue projections for SFY 2024 through 2050 for the Region.[31] Project cost inflation factors are from the Congressional Budget Office's report "The Budget and Economic Outlook 2023 to 2033." Revenue sources are projected to grow at an annual rate of 2% per year.

The transportation revenue analysis was established by first identifying the projects in the SFY 2024-2027 STIP deemed consistent with the RTP (about 54% of all projects on the STIP).[32] All project types except for general road or bridge maintenance and pavement treatment or resurfacing projects were deemed consistent with the RTP and included in the financial analysis (Table 4.2).[33]

Table 4.2 – Project Types Included in Financial Analysis

Project Type	Examples
Bridge Replacement	Replacing bridge superstructure or entire bridge structure
Operations and Safety Other	Adding safety signs and/or adding or fixing guardrails
Bike/Pedestrian	New or renovated multi-use paths and other bike/pedestrian improvements
Reconstruction	Complete roadway and/or curb replacement
Intersection Improvement/Turn Lane Additions	Addition of turn lanes and various traffic signal improvements
New Road/ Road Extension/New Bridge	New road, road extension, or bridge
Road or Bridge Widening with Additional Lanes	Making existing traffic lanes wider or adding new lanes

The resulting STIP annual average funding values were then used as the base to calculate the year 2050 revenue forecast. The 27-year period was separated into two increments. The first increment was from SFY 2024 to SFY 2027, and includes actual programmed expenditures for the period in the current STIP. The second increment includes the remaining 23 years and was further sub-divided into three additional increments to apply inflationary factors: SFY 2028-2030 (1.126),

[30] ODOT's "Discretionary Grant Opportunities October, 2023."
[31] Congressional Budget Office's report "The Budget and Economic Outlook 2023 to 2033."
[32] The Annual Average calculation did not include Interstate projects, as it is assumed that Interstate projects will be funded with resources not typically available to the Region (such as TRAC funding).
[33] "General Maintenance" refers to both general bridge and roadway maintenance projects.

SFY 2031-2040 (1.281), and SFY 2041-2050 (1.561), assuming an annual two percent increase in revenue sources. Table 4.3 displays the results of this analysis.

The majority of funding for long-term projects (excluding Interstate projects) in the RTP is from federal sources.[32] More specifically in YoE dollars, an estimated 59% of total project funding comes from federal sources, 35% from state sources, and 6% from local sources. The total revenue available for non-interstate projects is expected to be around $250,396,465.

The total revenue expected over the life of the Plan is projected to be about $605,086,465 when interstate projects are considered.[32] Projected revenue for Interstate projects will make up over half (59%) of the total revenue for the Region for the duration of the RTP which extends to 2050.

Table 4.3 – Projected Cost/Revenue for the RTP from SFY 2024 to 2050

Fiscal Period	SFY 2024-2030	SFY 2031-2040	SFY 2041-2050	Full Plan
Cost				
Total Project Cost (2023 dollars)	$205,694,584	$277,140,733	$0	$482,835,317
Total Project Cost (YoE dollars)	$206,096,845	$369,705,738	$0	$575,802,583
Revenue				
Federal Funding	$28,791,969	$41,131,385	$41,131,385	$111,054,738
State Funding	$17,715,458	$24,597,933	$24,597,933	$66,414,420
Local Funding	$2,946,775	$4,209,679	$4,209,679	$11,366,133
Total without Interstate (2023 dollars)	$48,957,298	$69,938,997	$69,938,997	$188,835,292
Total without Interstate (YoE dollars)	$51,604,400	$89,586,555	$109,205,510	$250,396,465
Interstate Projects (YoE dollars)	$157,097,700	$306,820,000	$0	$354,690,000
Revenue Total (YoE dollars)	$208,702,100	$396,406,555	$109,205,510	$605,086,465
Difference in Funding				
Difference (YoE dollars)	+$2,605,255	+$26,700,817	+$109,205,510	+$29,283,882

4.5 Public Transit Systems

Introduction

Access to transportation is essential for people to move around in their daily lives—particularly in rural areas where amenities tend to be spaced further apart. Public transportation is particularly important for empowering people who do not own a vehicle, aging populations, people with disabilities, and people making lower incomes to live independently and get where they need to go daily. In rural Ohio, the most common transit services available are demand-responsive services because there are not enough users who frequent a rural transit system, or who would desire a specific fixed route, to necessitate a fixed-route service.[34]

Ohio's population is aging. Current estimates suggest that 25% of Ohio residents will be over 60 by 2040—much of the aging population will be located in rural areas.[35] The American Automobile Association (AAA) estimates that most people will outlive their ability to drive by 7 to 10 years.[36] This reality means that sustaining and strengthening rural transit systems is crucial for enabling all citizens to have access to their community and vital services. Having access to transit enables community members to attend medical appointments that could be life-saving.

Improved transit could also potentially help the regional economy by bringing more people to live in or visit the Region. Recent studies show more people across generational lines are gravitating towards living in locations with reliable public transit and solid active transportation infrastructure in place.[34]

Regional Transit Options

There are three main public transportation options in the Region. The two established public transit options are the Greenville Transit System (GTS) centered in the City of Greenville in Darke County and the Shelby Public Transit System centered in the City of Sidney in Shelby County. The third recently designated public transit agency in the Region is run by the Preble County Council on Aging (PCCoA) which was designated as the recipient of funding to implement a public transit system in Preble County in 2022. Figure 4.6 displays the public transit options and their service range.

The PCCoA is estimated to begin public transit services in Spring 2024, but plans may change due to driver shortages. All transit agencies operate demand-response services— there is no fixed transit route in any of the counties. In addition, there are a variety of smaller private and non-profit agencies that provide transit throughout the Region. Table 4.4 summarizes the transit

[34] Smart Growth America's "An Active Roadmap: Best Practices in Rural Mobility."
[35] Ohio Department of Aging's "Ohio State Plan on Aging 2023-2025."
[36] American Automobile Association's "Senior Driver Safety & Mobility" article.

options in the Region. Please note that private and nonprofit transit options can change regularly based on funding and may or may not be available in the future.

Greenville Transit System (GTS)

The GTS primarily provides services within the city limits of Greenville.[37] Transit within the city is on-call and guaranteed to be available during service hours. Access to public transit outside of the city limits is not currently guaranteed and limited to driver availability. GTS is working on expanding their public transit services outside of Greenville to be guaranteed if scheduled at least one day ahead of time by early 2024. GTS also plans to add transit connections to neighboring counties. The GTS fleet currently contains 10 cutaway buses and one accessible van for a total of 11 vehicles.

Preble County Council on Aging (PCCoA)

The Preble County Council on Aging was officially designated as the lead public transit agency for Preble County in March 2022—there was previously no established public transit agency in the County. PCCoA originally provided free demand-response transit services for people over the age of 60 in Preble County. With their recent designation as a public transit agency, service will extend to all citizens and is estimated to become available sometime in Spring 2024. PCCoA has a fleet of 6 cutaway buses, 15 modified minivans (wheelchair accessible), and 4 standard minivans for a total of 25 vehicles.

Shelby Public Transit (SPT)

SPT provides trips throughout all of Shelby County, but trips within 3 miles of Sidney City limits are cheaper and can be arranged on the same day.[38] Trips within the county but outside approximately 3 miles of city limits must be arranged with SPT by 5 p.m. on the day before the given trip. SPT also provides specific trips upon request to a drop-off location in the City of Piqua, Upper Valley Career Center, or Edison Community College in Miami County. SPT currently has a fleet of 10 cutaway buses, 1 accessible van, and 1 minivan for a total of 13 vehicles.

[37] Greenville Transit System's "Fares" webpage.
[38] Shelby Public Transit's "Fares" webpage.

Figure 4.6
Public Transit Systems and Service Areas

Greenville Transit System (GTS)

Service and Ridership

GTS provides demand-response transit services centered around the City of Greenville but provides transportation throughout all Darke County if there are enough staff available to do so. GTS has a fleet of 11 vehicles.

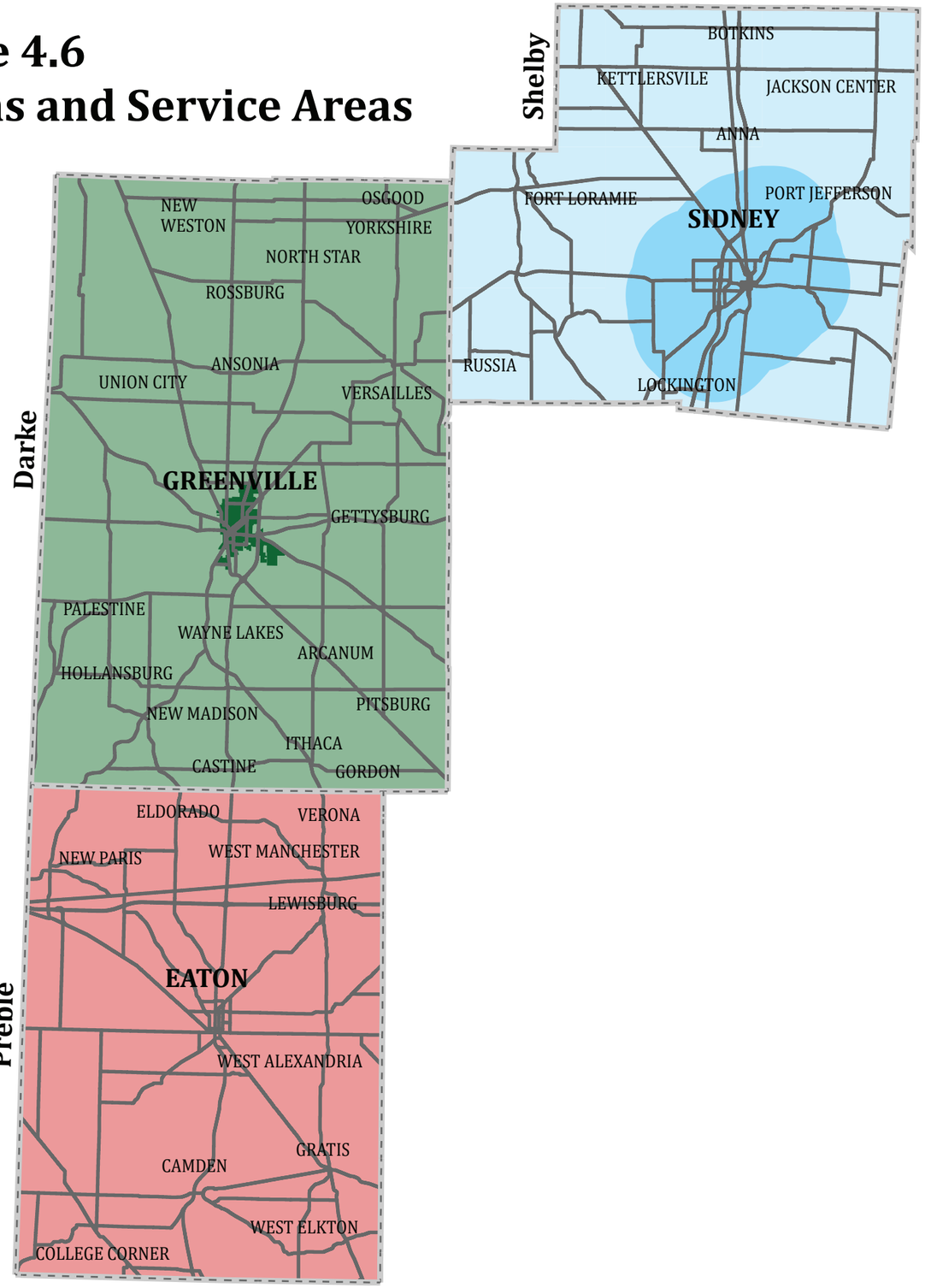
Performance (2020)

35,045 Total Annual Passenger Trips
26,173 Annual Trips for adults over 60 and adults with disabilities (74.7% of all trips)
117,198 Annual Vehicle Miles
11.360 Annual Vehicle Hours

Preble County Council on Aging (PCCoA)

Service and Ridership (2023)

PCCoA is currently in the process of becoming a public transit agency— they previously served individuals at or over 65 in the Preble County exclusively. PCCoA has a fleet of 25 vehicles, most of which are accessible minivans (15).



Shelby Public Transit

Service and Ridership

SPT provides demand-response transit services centered around the City of Sidney but provides transportation throughout all Shelby County and connecting trips to Miami County. SPT has a fleet of 13 vehicles.

Performance (2020)

29,112 Total Annual Passenger Trips
16,571 Annual Trips for adults over 60 and adults with disabilities (56.9% of all trips)
166,950 Annual Vehicle Miles
12,858 Annual Vehicle Hours

N

0 2 4 8 12 16

Miles

Sources: GTS, MVRPC, ODOT, PCCoA, & SPT
June 2024

Legend

- Shelby Public Transit Core Area of Service
- Shelby Public Transit Service Boundaries
- Greenville Transit Service Core Area of Service
- Greenville Transit Service Boundaries
- Preble County Council on Aging Transit Service Boundaries
- Major Roads

Table 4.4 – Summary of Regional Transit Options

Service Provider	Population Served	Service Area	Trip Type(s)	ADA	Fee
Greenville Transit System	General Public	Darke County	All	Wheelchair Accessible	Within Greenville: $3 for general public or $1.50 for 60+ and people with disabilities Outside City: $1.00/mile
Spirit Medical Transport	People with disabilities	Darke County	Medical	Wheelchair Accessible	Not listed
Darke County Veterans Services	Veterans	Darke County	Medical	Wheelchair Accessible	Free
Darke County Job and Family Services	Medicaid Recipients (Non-Emergency Transportation Program)	Darke County	All	Wheelchair Accessible	Free
Preble County Council on Aging	Adults 60 and older	Preble County	Medical Social Shopping	Wheelchair Accessible	Free
Preble County Educational Services Center	Students with Disabilities	Preble County	Education	Wheelchair Accessible	Contract Services
L &M Products and Your Happy Place	Adults with Developmental Disabilities	Preble County	Work	Wheelchair Accessible	Contract Services
Universal Transportation Systems	Adults over 60, Adults with Developmental Disabilities, Children in School	Southern Preble County	Contract	Wheelchair Accessible	Contract Services
Preble County Veterans	Veterans	Preble County	Contract Medical	Wheelchair Accessible	Contract Services (with Miami Valley Community Action Partnership)
Preble County Job and Family Services	Medicaid Recipients (Non-Emergency Transportation Program)	Preble County	All	Wheelchair Accessible	Free Through contracted services with JFS
Shelby Public Transit	General Public	Shelby County	All	Wheelchair Accessible	Within Sidney + 3 miles: General Public - $2.50 Elderly + Disabled - $1.00 Outside Sidney: General Public - $5.00 Elderly + Disabled - $1.00
S&H Products	Adults with developmental disabilities	Shelby County	Work	Wheelchair Accessible	Contract Services
Shelby Veteran Services	Veterans	Shelby County	Medical	Wheelchair Accessible	Free
Shelby County Job and Family Services	Medicaid Recipients (Non-Emergency Transportation Program)	Shelby County (To/From VA Medical Center)	Medicaid Covered Appointments	Wheelchair Accessible	Free Through refunding public transit or gas for personal vehicle

Greater Region Mobility Initiative

The Darke, Preble, and Shelby County Region is part of a larger coordinated public transit human services planning area, also referred to as a coordinated plan, that encompasses 8 counties.[39] The purpose of a coordinated plan is "to identify the transportation needs of individuals with disabilities, older adults, and people with low incomes, provide strategies for meeting those needs, and prioritize transportation services for funding and implementation."[40] In the Greater Region, this effort is known as the "Greater Region Mobility Initiative" or GRMI. A Transportation Coordination Plan analyzing the various transit agencies in the GRMI area is updated annually and discusses the various strengths and struggles in each of the relevant counties. As of 2022, the top identified unmet needs in Darke County were county-wide transportation, early morning and evening transit, county-to-county transportation, and transportation for those that do not have funding.[39] The top unmet needs in Preble County were transportation for new entry-level employees, funding for populations not served, exploring options to expand services, improving public knowledge of available options, and cooperation among stakeholders.[39] The top unmet needs in Shelby County were transportation in early mornings, evenings, and holidays for medical trips, employment and non-medical trips, educating residents on transportation options, driver shortages, and affordable out-of-county service.[39] **Figure 4.7** shows the top 7 unmet transit needs in the entire GRMI area.

Figure 4.7 – Top 7 Unmet Needs in the GRMI Area

[39] MVRPC's "Greater Region Transportation Coordination Plan."
[40] Federal Transit Administration's "Coordinated Human Services Transportation Plan" webpage.

Transit Funding Outlook

MVRPC transit revenue projections include federal, state, and local sources; they represent MVRPC's outlook on available future transit program funding. MVRPC is projecting average growth in transit program revenue at an estimated 2% and average annual project cost inflation between 2.3% and 3.4%.[31] The annual revenue estimates were based on values from the State Fiscal Year 2021 to 2023 STIP and increased by 25% to account for the substantial increase in federal transportation funding that has occurred due to the infusion of IIJA funding. Local funds were increased by $185,048 for the average annual revenue value so that the local transit annual operating budgets would be balanced for SFY 2023.

The inflation factors used for the short, intermediate, and long-term plan project cost period projections came from the aforementioned report made by the Congressional Budget Office.[31] The projected inflation factors used were (rounded to the nearest hundredth): 1.10 for the short-term period, 1.33 for the intermediate-term period, and 1.67 for the long-term period.[31] The Revenue Inflation Index factors used were (rounded to the nearest hundredth): 1.08 for the short-term period, 1.28 for the intermediate-term period, and 1.56 for the long-term period, assuming a 2% annual growth.

The vehicle replacement cycle period and operating/maintenance annual cost values used for financial projections were supplied by a representative from each transit agency. The annual cost for capital vehicle replacement was then calculated by multiplying the annual vehicle replacement rate by the cost of the most prominent vehicle type in a given agency's fleet (or if there were two prominent vehicle types, the average monetary value between the two vehicle types was used). It is important to keep in mind that these are estimates— PCCoA's transit funding in particular is a rough estimate due to recently becoming a public transit agency. Table 4.5 identifies a $11,597,024 funding gap happening over the life of the plan due to project inflation being higher than revenue inflation. Additional resources or service cuts will need to be identified to account for the discrepancy.

Table 4.5 – Estimated Transit Costs and Revenues

	Agency	Major Project	Annual Cost / Revenue	Short-Term Plan (SFY 2024-2030)	Intermediate-Term Plan (SFY 2031-2040)	Long-Term Plan (SFY 2041-2050)	Full Plan (SFY 2024-2050)
Costs	Greenville Transit System	**Costs**					
		Capital Vehicle Replacement (9 vehicles)	$40,000	$280,000	$400,000	$400,000	$1,080,000
		Operating/ Maintenance	$1,000,000	$7,000,000	$10,000,000	$10,000,000	$27,000,000
		Total (2023 dollars)	$1,040,000	$7,280,000	$10,400,000	$10,400,000	$28,080,000
		Total (YOE dollars)	—	**$8,019,614**	**$13,873,208**	**$17,415,392**	**$39,308,214**
	Shelby Transit System	Capital Vehicle Replacement (18 vehicles)	$80,000	$560,000	$800,000	$800,000	$2,160,000
		Operating/ Maintenance	$900,000	$6,300,000	$9,000,000	$9,000,000	$24,300,000
		Total (2023 dollars)	$980,000	$6,860,000	$9,800,000	$9,800,000	$26,460,000
		Total (YOE dollars)	—	**$7,556,944**	**$13,072,831**	**$16,410,657**	**$37,040,432**
	Preble Transit System (PCCoA)	Capital Vehicle Replacement (9 vehicles)	$28,333	$198,333	$283,333	$283,333	$765,000
		Operating/ Maintenance	$700,000	$4,900,000	$7,000,000	$7,000,000	$18,900,000
		Total (2023 dollars)	$728,333	$5,098,333	$7,283,333	$7,283,333	$19,665,000
		Total (YOE dollars)	—	**$5,616,300**	**$9,715,692**	**$12,196,356**	**$27,528,348**
	Regional Total Cost	Regional Total (2023 Dollars)	$2,748,333	$19,238,333	$27,483,333	$27,483,333	$74,205,000
		Regional Total (YoE Dollars)	—	**$21,192,858**	**$36,661,732**	**$46,022,405**	**$103,876,995**
Revenues	**Region Total Revenue Sources**	**Revenues**					
		Federal	$1,279,824	$8,958,767	$12,798,239	$12,798,239	$34,555,246
		State	$865,708	$6,059,958	$8,657,083	$8,657,083	$23,374,125
		Local	$602,801	$4,219,608	$6,028,011	$6,028,011	$16,275,629
		Total (2023 dollars)	$2,748,333	$17,942,998	$25,632,854	$25,632,854	$69,208,706
		Total (YOE dollars)	—	**$19,422,078**	**$32,833,743**	**$40,024,150**	**$92,279,971**
	Funding Gap	**Total (YoE dollars)**	—	**-$1,770,780**	**-$3,827,988**	**-$5,998,255**	**-$11,597,024**

4.6 Regional Bikeways Vision

Introduction

The vision for the bikeway and pedestrian network in the Region intends to highlight the importance of active transportation in all communities. Active transportation is especially important where traditional transportation modes may not always be available. Bikeways and pedestrian networks provide opportunities to improve the overall health and well-being of a community and the individuals within it. The following recommendations aim to serve all populations within the Region while also considering environmental justice and equity. The following recommended projects should help the Region meet the vision, goals, and objectives established at the start of the Plan.

Workshops

In March and April of 2023, the Miami Valley Regional Planning Commission held three workshops with Regional stakeholders to determine the long-term vision for the bike and pedestrian network with the goals of connecting the Region to the larger bike and pedestrian network and connecting the Region's communities to each other. Discussion points included determining the type of facility desired and timeframes for project implementation. An overview map was provided of the three county Region during the workshops to show context for the current Regional Bikeway network and provide inspiration for future Regional Bikeway projects.

The workshops resulted in 18 bikeway and/or pedestrian projects, with Shared Used Path (SUP) being the preferred facility type, and project timeframes ranging from the year 2024 to 2050. The proposed projects are listed below in Table 4.6. The proposed projects meet the expectation to eventually enhance inter- and intra-connectivity in the rural areas of the Miami Valley.

The project segments displayed on the resulting vision map (Figure 4.8) are represented directly from county stakeholder recommendations and visions for the Region. These recommendations encourage more accessible and safe active transportation options for the Region and are one of the aspirational goals for the 2050 RTP. Foremost, the current and proposed projects meet the Regional Transportation Plan goals of mobility, stewardship, quality of life, and safety. A separate study, beyond the scope of the RTP, is needed to determine the feasibility and cost of projects listed in Table 4.6. However, as projects in the vision are funded, attention and focus will be given to the next tier of priority bikeway projects.

Table 4.6 – Regional Bikeways/Pedestrian Network Vision Segments

	Project #	Timeframe	Description	Type	Mileage**	Funded
Darke	D1	2031-2040	Shared-use path from Greenville to Arcanum utilizing existing abandoned rail line	Shared-Use Path	7.21 mi	No
	D2	2031-2040	Connect Arcanum to Verona using shared-used path	Shared-Use Path	7.73 mi	No
	D3	2031-2040	Connect Greenville SUP northwest to Union City	Shared-Use Path	13.7 mi	No
	D4	2041-2050	Connect Greenville SUP northeast to Versailles	Shared-Use Path	13.8 mi	No
	D5	2041-2050	SUP north along SR 118 from Greenville to Ansonia	Shared-Use Path	9.7 mi	No
	D6	2041-2050	Connect SUP from Versailles to Russia in Shelby County	Shared-Use Path	5.1 mi	No
Preble	P1*	2024-2028	US 40 from SR 320 to Preble County Line Road, develop planning level cost estimate for the design and construction of shared-use path	Shared-Use Path	21.1	Yes
	P2	2028-2030	Connection from Eaton north to west of Washington Twp. and connecting to segment P3	Shared-Use Path	4.9 mi	No
	P3	2031-2040	Connection from west of Washington Twp. north to P1 along US 40	Shared-Use Path	8.6 mi	No
	P4	2031-2040	Connect Eaton to Camden using shared-use path	Shared-Use Path	18.9 mi	No
	P5	2041-2050	SUP connection from US 72 (Consolidated Rd.) to SR 372 (Consolidated Rd. to Winters Rd.) southwest to Lake Lakengren	Shared-Use Path	4.9 mi	No
Shelby	S1	2024-2028	Kuther Road shared-use path connection from Sidney Feeder Canal to the Village of Lockington	Shared-Use Path	3.8 mi	Yes
	S2	2031-2040	Connection from Lockington south towards SUP along GMR Trail near Piqua	Shared-Use Path	2.3 mi	No
	S3	2031-2040	Connection from east side of Tawawa Park (existing SUP) south toward another existing SUP along the GMR toward Lockington	Shared-Use Path	3.1 mi	No
	S4	2031-2040	Connection from north of Tawawa Park to northeast Port Jefferson	Shared-Use Path	5.2 mi	No
	S5	2041-2050	Connection from Port Jefferson north to Jackson center, then onward to Indian Lake	Shared-Use Path	10.9 mi	No
	S6	2041-2050	Connection from north of Sydney along County Road 25A to Botkins	Shared-Use Path	16.3 mi	No
	S7	2041-2050	Connection from Lockington east to Russia, connecting to segment D6	Shared-Use Path	12.4 mi	No

* A study to determine the cost and feasibility for a shared-use path is funded in SFY 2024.
** Mileage is an estimate.

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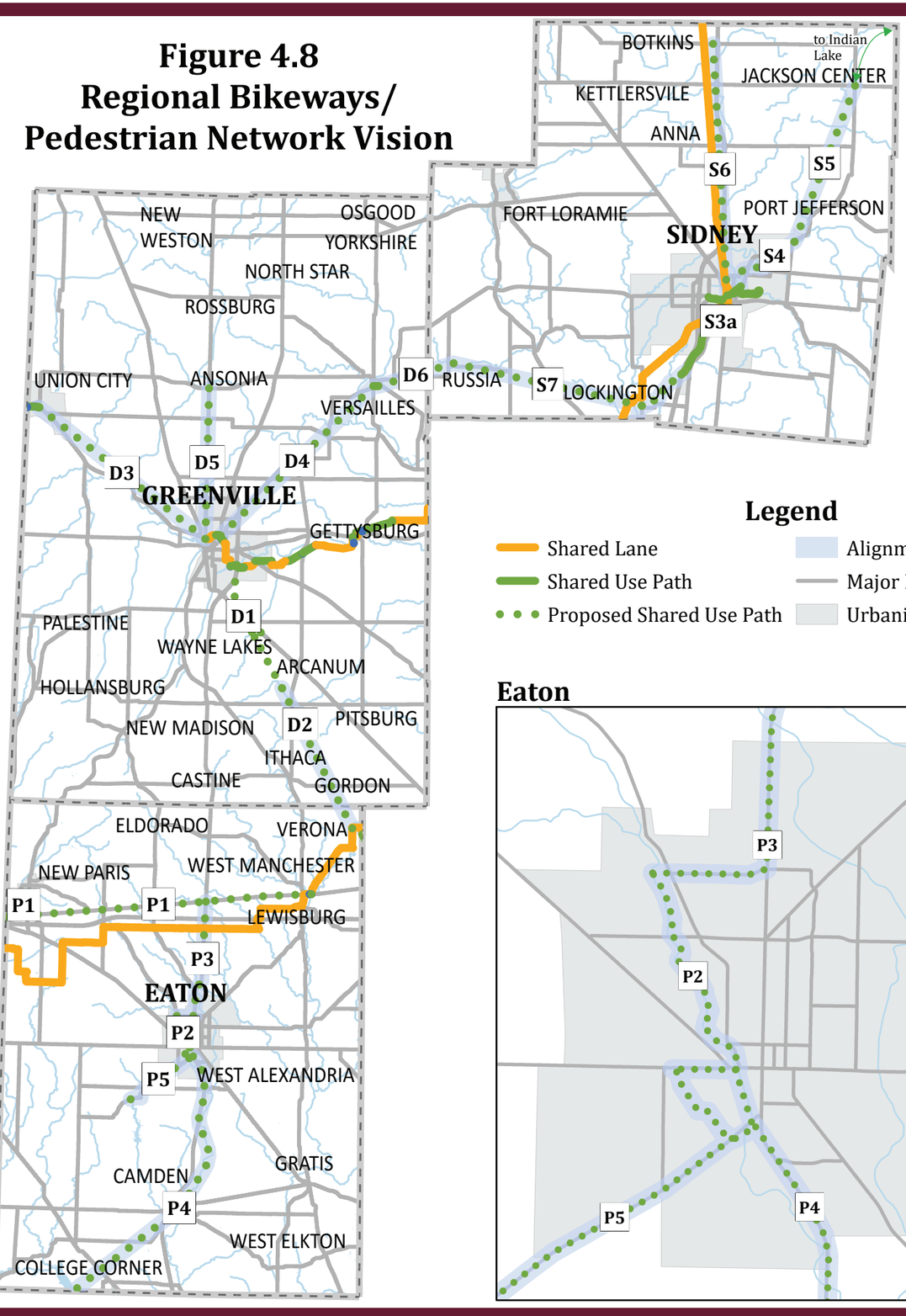
Figure 4.8
Regional Bikeways/ Pedestrian Network Vision



N

0 2 4 6 8 10

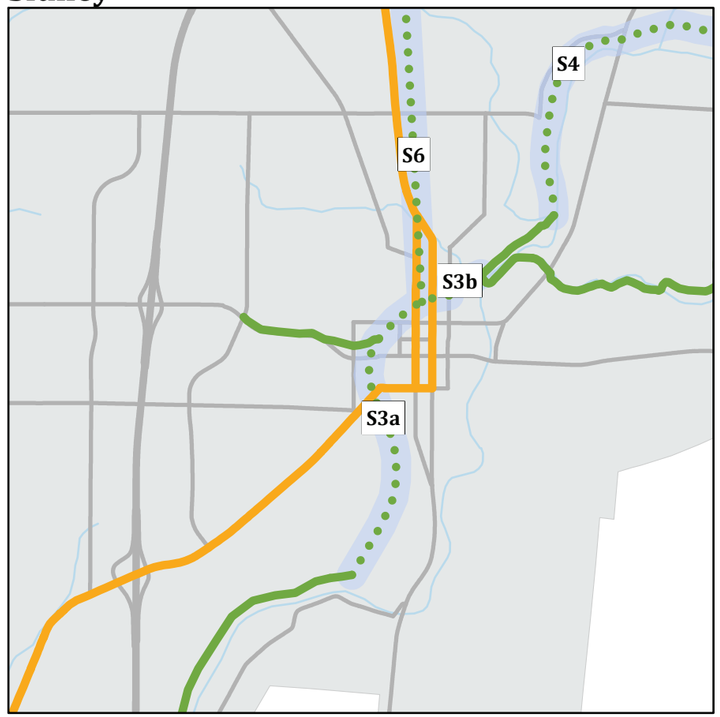
Miles

Source: ODOT, ODPS, & MVRPC
June 2024

Legend

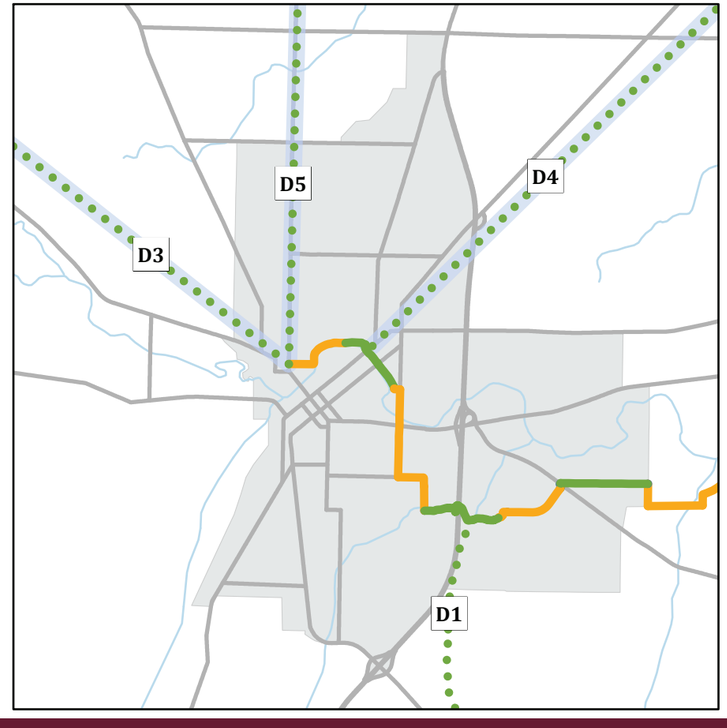
- Shared Lane
- Shared Use Path
- Proposed Shared Use Path
- Alignment Undetermined
- Major Roads
- Urbanized Areas

Sidney



Eaton

Greenville



4.7 Community Impact Assessment

Title VI of the 1964 Civil Rights Act states *"no person shall, on the grounds of race, color, national origin, sex, disability, age, or income status, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any programs or activity receiving Federal financial assistance."*

As a recipient of Federal transportation funds, MVRPC provides assurance of compliance with the U.S. Department of Transportation requirements in regards to Title TVI and Civil Rights. MVRPC's Title VI program is further described the agency document titled Miami Valley Regional Planning Commission Title VI Program Procedures Description. Lastly, MVRPC and its contractors, subcontractors, material suppliers, vendors, and consultants must:

- Ensure nondiscrimination in all of their programs and activities, whether those programs and activities are Federally funded, or not. The factors prohibited from consideration as a basis for discriminatory action or inaction include race, color, national origin, sex, age, and disability.
- Provide Equal Employment Opportunity (EEO) by not discriminating in employment based on the race, color, religion, sex, national origin, age, or disability.

Analysis Methodology

MVRPC analyzed the distribution of RTP projects at the block-group level with respect to Environmental Justice (EJ) and other vulnerable populations as identified in Section 2.3. All projects were added to existing EJ project maps for analysis. Any block group with an above average threshold for each population was used as the baseline for analysis. The above average baseline ensures that vulnerable populations are receiving a proportionate share of RTP projects relative to the overall general population. Figure 4.9 shows the spatial distribution of RTP projects by vulnerable and EJ population groups.

Environmental Justice and Vulnerable Populations

People in Poverty – Approximately 57 percent of RTP projects are located or partially located within an area of above average poverty levels.

People with a Disability – Approximately 48 percent of RTP projects are located or partially located within an area of above average disability levels.

Zero Car Households – Approximately 60 percent of RTP projects are located or partially located within an area of above average zero-car households.

Minority Population – Approximately 61 percent of RTP projects are located or partially located within an area of above average minority population levels.

Hispanic Population – Approximately 53 percent of RTP projects are located or partially located within an area of above average Hispanic population levels.

Elderly Population – Approximately 57 percent of RTP projects are located or partially located within an area of above average levels of elderly population.

Each vulnerable population group will benefit from a large portion of RTP projects. Thus, there is no additional or disproportional impact expected on Environmental Justice or other vulnerable populations. In addition, public transit services are available to EJ and vulnerable populations in the Region. Access to transit services is particularly important to vulnerable populations that are unable to drive or lack access to an automobile. Counties within the Region are also actively attempting to increase availability of transit services to a county-wide level, especially in areas where readily available transit services have previously been unavailable.

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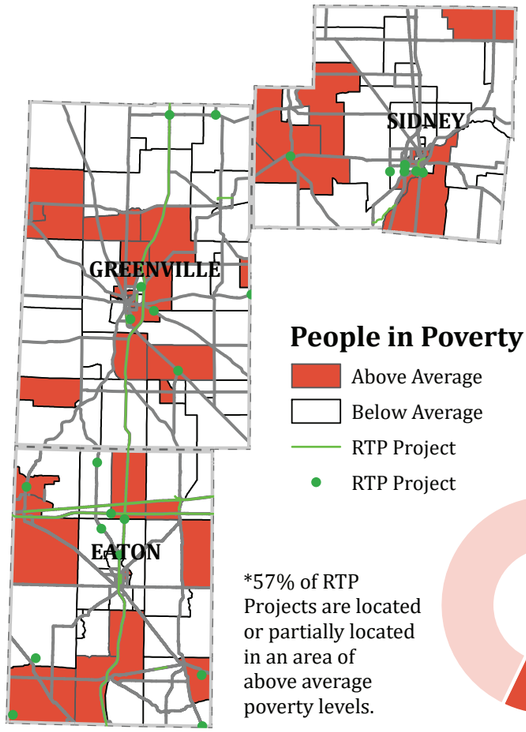
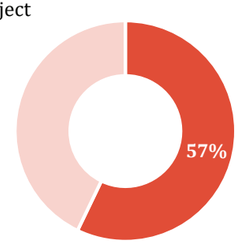
Figure 4.9 Distribution of RTP Projects by Vulnerable Population Groups

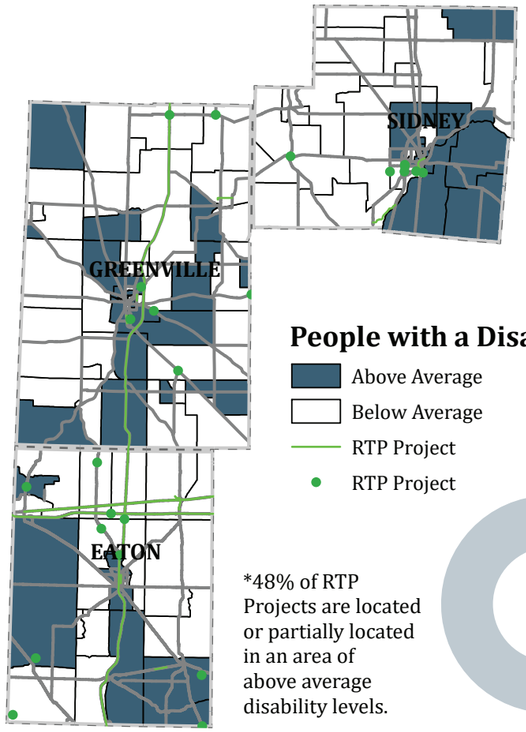


People in Poverty

- Above Average
- Below Average
- RTP Project
- RTP Project

*57% of RTP Projects are located or partially located in an area of above average poverty levels.

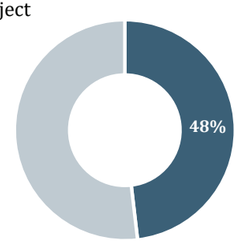


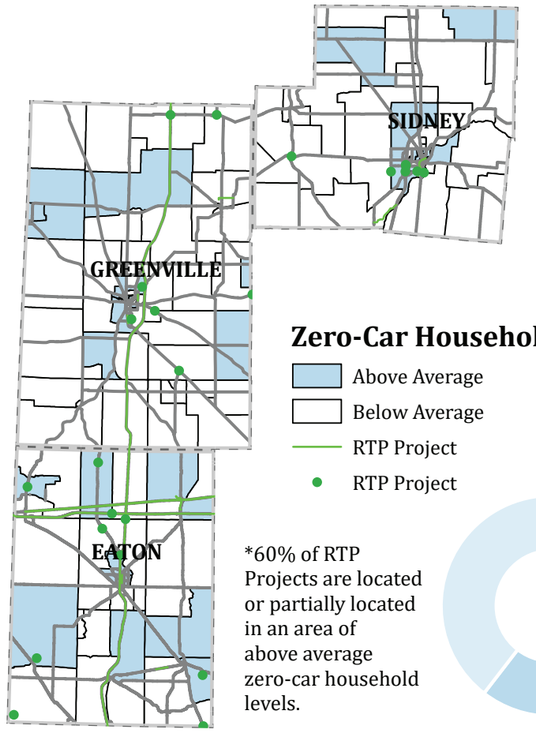


People with a Disability

- Above Average
- Below Average
- RTP Project
- RTP Project

*48% of RTP Projects are located or partially located in an area of above average disability levels.

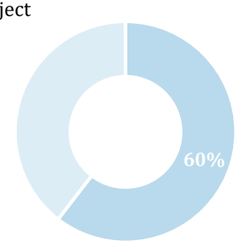


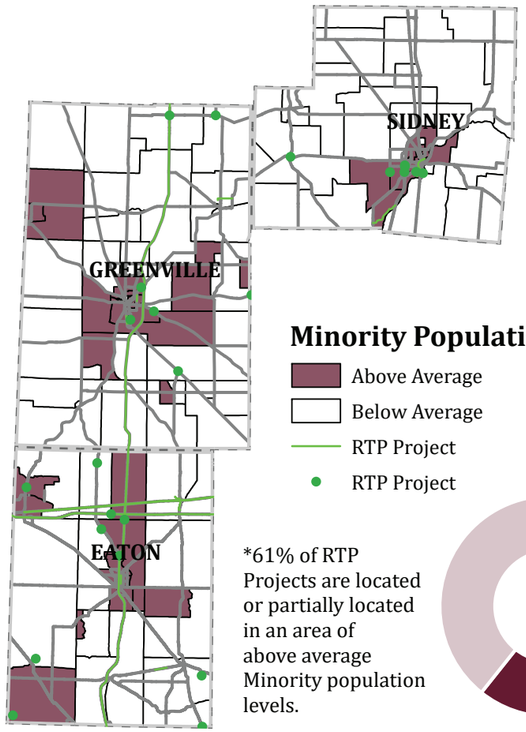


Zero-Car Households

- Above Average
- Below Average
- RTP Project
- RTP Project

*60% of RTP Projects are located or partially located in an area of above average zero-car household levels.

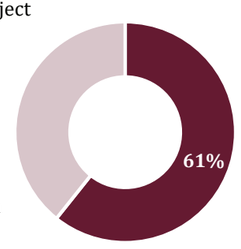


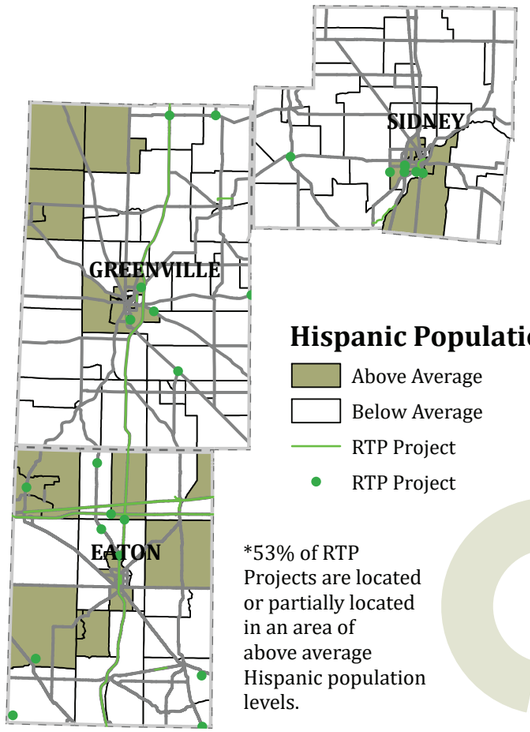


Minority Population

- Above Average
- Below Average
- RTP Project
- RTP Project

*61% of RTP Projects are located or partially located in an area of above average Minority population levels.

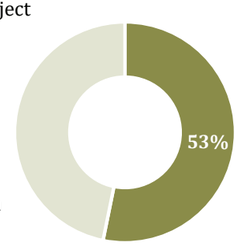


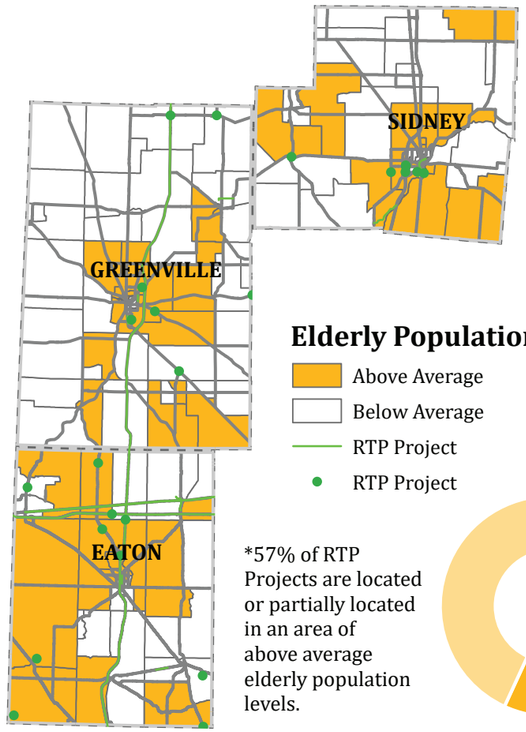


Hispanic Population

- Above Average
- Below Average
- RTP Project
- RTP Project

*53% of RTP Projects are located or partially located in an area of above average Hispanic population levels.

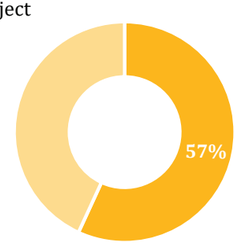


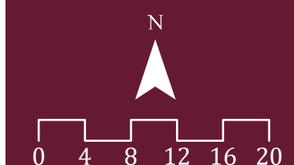


Elderly Population

- Above Average
- Below Average
- RTP Project
- RTP Project

*57% of RTP Projects are located or partially located in an area of above average elderly population levels.





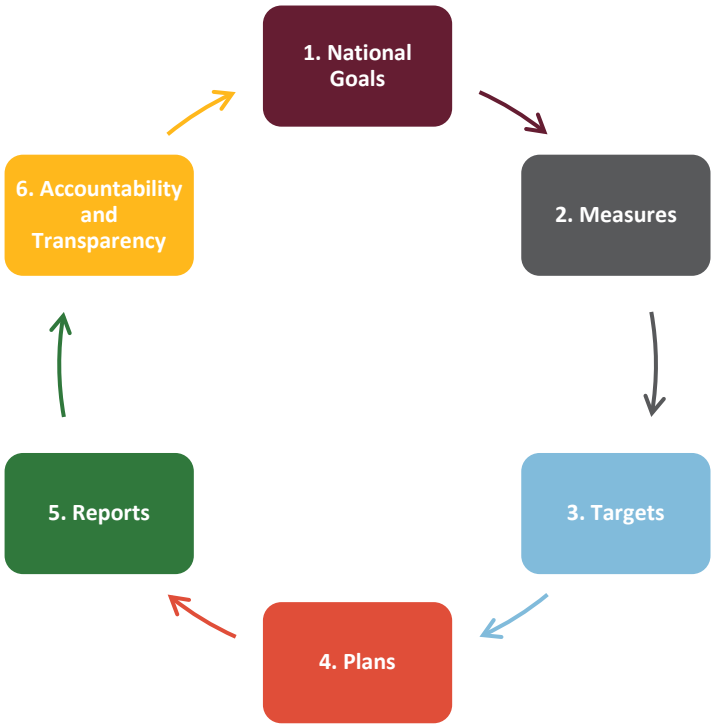
Source: MVRPC; 2020 U.S. Census & 2016-2020 ACS
June 2024

4.8 Transportation Performance Management

Transportation Performance Management (TPM) is a strategic approach that uses transportation system information to make investment and policy decisions to achieve national performance goals. This section gives a brief summary of performance management goals adopted by ODOT in accordance with the U.S. DOT guidelines and the background behind their implementation.

Planning Rule Framework

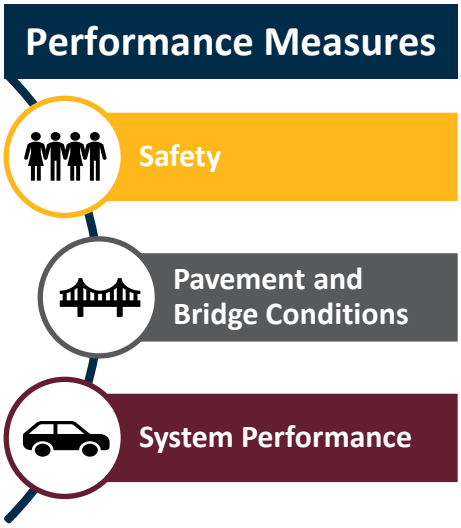
The FAST Act requires state DOTs and transit agencies to conduct performance-based planning by tracking performance measures and establishing data-driven targets to improve those measures in a coordinated process to ensure consistency.



The Federal Highway Administration (FHWA) organized the many performance-related provisions within the FAST Act for recipients of federal-aid highway funding into six elements: (1) National goals or programs to focus the federal-aid highway program on specific areas of performance; (2) Establishment of measures by FHWA to assess performance and condition in order to carry out performance-based federal-aid highway programs; (3) Establishment of targets for each of the measures to document expectations of future performance; (4) Development of strategic and/or tactical plans to identify strategies and investments that will address performance needs; (5) Development of reports that would document progress toward the achievement of targets, including the effectiveness of federal-aid highway investments; and (6) requirements developed by FHWA to achieve or make significant progress toward achieving targets established for performance.

The FAST Act also furthers several important goals with respect to public transportation, including safety, state of good repair, performance, and program efficiency. The FAST Act gives the Federal Transit Administration (FTA) significant new authority to strengthen the safety of public transportation systems throughout the United States. The FAST Act also put new emphasis on restoring and replacing aging public transportation infrastructure by establishing a new needs-based formula program and new asset management requirements.

Under this framework, FHWA and FTA have established a set of rules for implementation of Performance-Based Planning and Programming (PBPP). FHWA published three core rules that established performance measures to monitor the performance of safety (PM 1); pavement and bridge conditions (PM 2); and system performance (PM 3) while the FTA published rules to monitor Transit Asset Management (TAM) and develop Public Transportation Agency Safety Plans (PTASP). The rules indicate how state DOTs and transit agencies should set targets, report progress, and integrate performance management into their Regional Transportation Plans and State Transportation Improvement Programs (STIPs).



Performance measures and standards are based on national goals and aligned to various program and policy areas including the National Highway Performance Program (NHPP), Highway Safety Improvement Program (HSIP), the Congestion Mitigation and Air Quality Improvement Program (CMAQ), and the National Freight Policy. The goals ODOT has set for the State based on this legislation can be seen in Table 4.7.

Table 4.7 – Summary of ODOT Performance Targets

	Target Areas	Performance Measures	Network	Target Adoption Date	Target Adopted
PM 1	Safety	Number of Fatalities	All Public Roads	August 2023	1,172
		Rate of Fatalities			1.05
		Number of Serious Injuries			7,270
		Rate of Serious Injuries			6.51
		Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries			835
PM 2*	Pavement Condition	Percentage Interstate System in Good Condition	Interstate System	February 2022	> 55%
		Percentage Interstate System in Poor Condition			< 1%
		Percentage non-Interstate System in Good Condition	NHS Non-Interstate	February 2022	> 40%
		Percentage non-Interstate System in Poor Condition			< 2%
	Bridge Condition	Percentage of NHS bridges by deck area in Good condition	NHS	February 2022	> 55%
		Percentage of NHS bridges by deck area in Poor condition			< 3%
PM 3*	NHS Travel Time Reliability	Percent of Person-Miles Traveled on the Interstate System that are Reliable	Interstate System	February 2022	> 85%
		Percent of Person-Miles Traveled on the Non-Interstate System that are Reliable	NHS Non-Interstate	February 2022	> 80%
	Freight	Truck Travel Time Reliability (TTTR) Index	Interstate System	February 2022	< 1.5
TRANSIT	Transit Asset Management Plan	Transit – Capital State of Good Repair	N/A	June 2017	For specific targets, see ODOT 2022 TAMPS
	Public Transportation Agency Safety Plan	Fatalities	N/A	May 2020	-2%
		Injuries			
		Safety Events		May 2020	2%
		System Reliability (State of Good Repair)			

Source: ODOT

*The 2 and 4-year performance targets for each measure in PM Targets 2 and 3 are the same and noted above once per measure.

Performance Management Measures and Goals

The purview of the Safety Performance Management Goal (PM 1) is extended to safety on all roads in the Region instead of exclusively NHS roadways. PM 1 establishes five measures to assess the condition of road safety: (1) number of fatalities, (2) rate of fatalities in fatalities per million vehicles mile travelled (MVMT), (3) number of serious injuries, (4) rate of serious injuries per MVMT, and (5) number of non-motorized fatalities and non-motorized serious injuries. ODOT has established a 2% annual reduction goal for all five safety performance measures for SFY 2024.

FHWA rules for the second performance management aspect—pavement and bridge condition—became effective on May 20, 2017. This policy established measures to assess the condition of pavements and bridges on the National Highway System (NHS), which is further subdivided into the Interstate system and the non-Interstate NHS (PM 2). States are required to establish 2-year and 4-year targets for PM2 measures over a 4-year performance period. Two-year targets reflect the anticipated performance level at the midpoint of each performance period, while 4-year targets reflect it for the end of the performance period. There are four performance measures to evaluate pavement conditions on the NHS: (1) percentage of pavement on the Interstate system in good condition, (2) percentage of pavement on the Interstate system in poor condition, (3) percentage of pavements on the non-Interstate NHS in *good* condition, and (4) percentage of pavements on the non-Interstate NHS in *poor* condition. ODOT reviewed 8 years of HPMS submitted NHS pavement data to establish targets for the pavement condition performance measures. The target percentage of pavement above and below various thresholds for ODOT-advised agencies is in Table 4.7. ODOT used the National Bridge Inventory (NBI) data to assess condition of bridges on the interstate and non-interstate NHS to establish bridge quality targets in accordance with PM 2. They created two performance measures to be used: (1) percentage of bridges on the NHS in good condition and (2) percentage of bridges on the NHS in poor condition.

The third performance measure—[transportation] system performance—had supporting policies created by the FHWA that became effective on May 20, 2017. These rules focused on assessing the performance of the NHS, freight movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program (CMAQ) in applicable zones. States are required to establish 2-year and 4-year targets for PM 3 measures in a 4-year performance period. Since no part of the RTPO is in a CMAQ zone, CMAQ requirements will not be discussed as they are not pertinent to the RTPO. The FHWA established two performance measures to assess travel time reliability on the NHS: (1) percent of Person-Miles Traveled on the Interstate that are reliable and (2) percent of Person-Miles Traveled on the non-Interstate NHS that are reliable. These measures seek to assess how reliable the NHS network is by calculating a ratio called the Level of Travel Time Reliability (LOTTR). The data to compute LOTTR is sourced from FHWA's National Performance Management Research Data Set (NPMRDS). The chosen freight reliability performance measure established by the FHWA was the Truck Travel Time Reliability (TTTR) Index. This measure seeks to assess how reliable the interstate network is for trucks by calculating a ratio called TTTR. Similar to the computation of LOTTR, the data to compute TTTR is also sourced from the NPMRDS.

Transit Asset Management (TAM)

The FTA's Transit Asset Management (TAM) rule became effective on October 1, 2016. This rule applies to all recipients and subrecipients of federal transit funding that own, operate, or manage public transportation capital assets, thus including the Greenville Transit System, Shelby Public Transit, and Preble County Council on Aging Transportation Service. The purpose of the TAM is to help achieve and maintain a State of Good Repair (SGR) for the nation's public transportation assets. The Act emphasized the importance of data collection and management for the purposes of updating the National Transit Database—it mandated that any transit agency that receives federal funding must maintain an FTA-compliant transit asset dataset.[41] ODOT is responsible for overseeing that agencies such as GTS, SPT, and PCCoA maintain FTA-compliant transit asset datasets.

The FTA, and therefore ODOT, requires transit agencies to establish a system to monitor and manage public transportation assets to improve safety and increase reliability and performance, and to establish performance targets for four national performance measures:

1. Rolling Stock: Percent of vehicles that have met or exceeded their Useful Life Benchmark.
2. Equipment: Percent of vehicles that have met or exceeded their ULB.
3. Infrastructure: Percent of track segments with a performance restriction(s).
4. Facilities: Percent of facilities in an asset class, rated < 3 on the Transit Economic Requirements Model (TERM) scale.

ODOT's current performance target goals for rural transit agencies can be found in the 2022 edition of the "Ohio Department of Transportation (ODOT) Transit Asset Management (TAM) Program Standard (TAMPS)."

[41] ODOT's "Statewide Transportation Improvement Program: State Fiscal Years 2024-2027."

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Chapter 5

Public Participation

5.1 Overview

The integration of a more proactive approach in transportation planning is accomplished though the public participation process, including: input from the Steering Committee and MVRPC Board of Directors; interested parties; general outreach to the public; and expanded outreach efforts to vulnerable populations.

As required by the Ohio Department of Transportation, MVRPC has updated its Public Participation Policy to incorporate the RTPO (May 2024). The Policy details public participation requirements and complies with all regulations and policies for transportation planning.

5.2 Public Participation Policy

In anticipation of RTPO designation following the adoption of the first Regional Transportation Plan, MVRPC has incorporated the RTPO into the agency's Public Participation Policy. During the Pilot Program, the development of the RTP was guided by the members of the Steering Committee.

Public Involvement Principles and Requirements

The public involvement process has a number of requirements through both Federal regulations and the Ohio Department of Transportation. Public involvement is also a formal requirement in developing a Regional Transportation Plan. As noted, MVRPC has updated its Public Participation Policy to incorporate the requirements for the RTPO. Per the RTPO requirements, each RTPO is required to create a proactive public involvement process. This process is fulfilled in the Plan by way of the agency's policy. As a result of the public involvement process, the public is provided with complete information, timely public notice, full access to key decisions, and continuous involvement in the development of the Plan.

MVRPC's Public Participation Policy clearly defines the public involvement activities MVRPC has performed within the development of the Plan. In addition, the public involvement process accounts for Federal requirements listed in 23 CFR 450.210(a), to include, but not limited to:

- Providing timely information to citizens, affected public agencies, transportation agencies, private providers of transportation, and affected community segments.
- Providing reasonable public access to technical and policy information used to develop plans and programs.
- Requiring adequate public notice of public involvement activities.

According to MVRPC's Public Participation Policy, "*MVRPC has long been committed to meaningful and proactive public participation. Public participation ensures that projects and planning activities evolve from and address public needs. Providing a forum for public participation demonstrates that the Region recognizes citizens' rights to be heard. These forums, coupled with careful attention to feedback, will result in better, well-informed, decision-making processes and transparency in the Region."* MVRPC's Public Participation Policy four core commitments include:

- MVRPC will provide an effective public forum in a manner appropriate for the project, through which consensus can be reached between public officials and citizens for regional planning issues. This will be achieved by discussing issues, negotiating conflicts, and reaching general agreement on important regional decisions.
- MVRPC will provide adequate and timely notice of public participation and planning activities to provide the opportunity for interested parties to comment on proposals, plans, programs, and projects that affect the general population and to actively contribute to the policy and decision-making process.
- MVRPC will endeavor to educate the public on the processes and issues involved in transportation planning and other programs in such a manner that it is easy to understand and provide feedback.
- MVRPC solicits public participation without regard to race, color, sex, age, national origin, low-income status or disability. MVRPC is committed to providing access and inclusion and reasonable accommodation in its services, activities, programs and employment opportunities in accordance with the Americans with Disabilities Act (ADA) and other applicable laws.

The key elements of MVRPC's Public Participation Policy align with ODOT's Public Participation Principles and the RTPO Administration Manual Guidelines for Public Involvement. Further, MVRPC's commitments to meaningful public involvement are inclusive of community stakeholders. The development of the RTPO Public Participation Contact list included community stakeholders such as: local businesses, governments, community organizations, special interest groups, transportation system users and providers, representatives of freight and shipping services, public transit services, and representatives of environmental justice and LEP populations.

Public Participation Contact List Development

In preparation for public participation meetings, MVRPC staff worked with the Steering Committee members to develop a list of contacts and stakeholders that might have an interest in the Regional Transportation Plan. MVRPC also expanded its media contacts to include Darke, Preble, and Shelby counties.

Contacts are roughly categorized into the following categories:

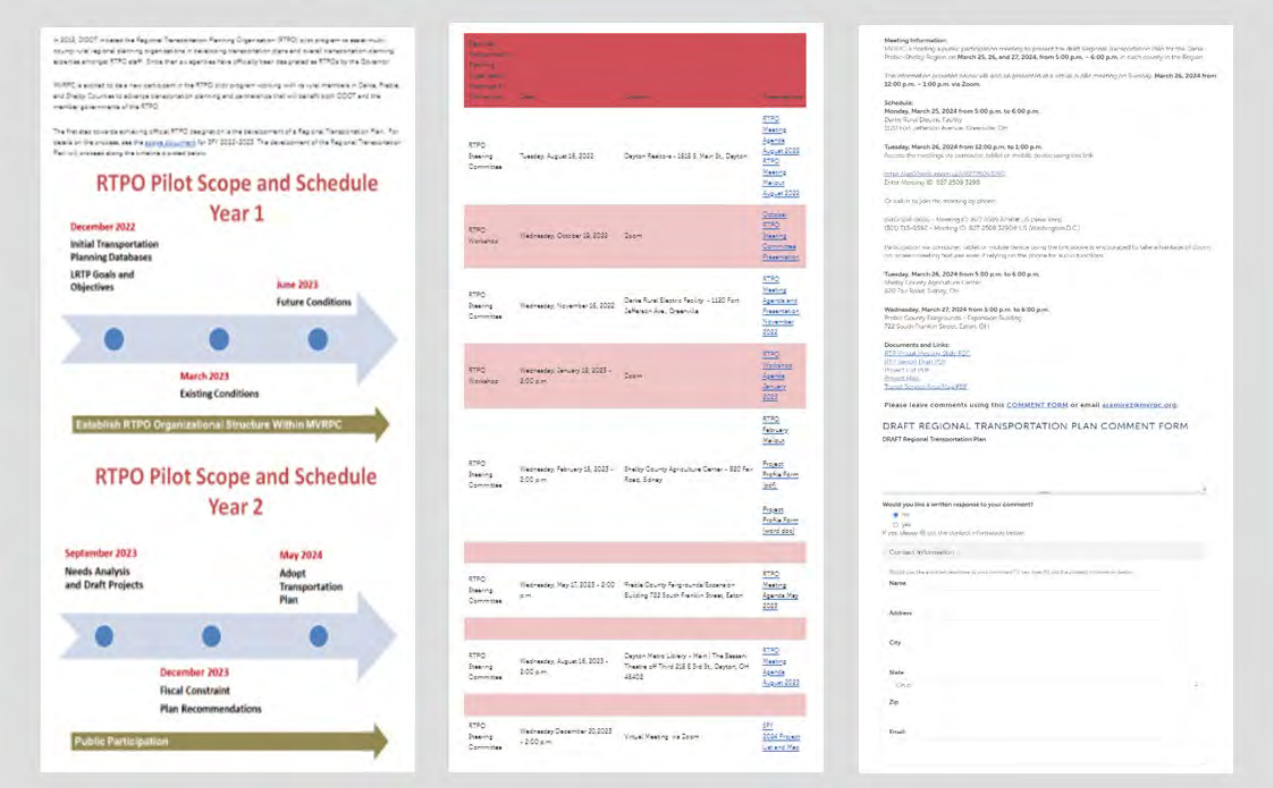
- ***Environmental Protection, Conservation, and Historical Preservation*** – Government agencies, parks and recreation departments, land and water conservation organizations, and historic preservation resources.
- ***Environmental Justice*** – Nonprofit organizations for disadvantaged populations and LEP populations.
- ***Housing*** – Housing Departments and relevant nonprofit organizations in the Region.
- ***Health*** – Health Departments and relevant nonprofit health organizations for each county.
- ***Transit*** – GRMI nonprofit transit providers in the Region.
- ***Safety*** – Police and Sheriff Departments for Region, State Highway Patrol posts, and AAA Chapters.
- ***Other Relevant Organizations*** – Large freight dependent industries, private taxi services, and medical transport services.

5.3 Public Participation

Webpage

In 2022, a webpage was created for the RTPO Pilot Program to track the scope and schedule of the effort. The times and locations for the Regional Transportation Planning Organization meetings and workshops were also made available on the webpage.

rtpo.mvrpc.org



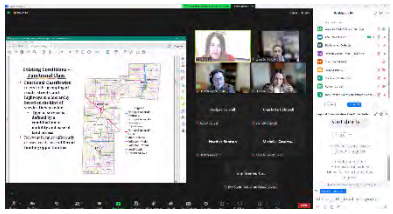
The comment period for the Draft RTP was from March 11 – April 10, 2024. During the public participation comment period, the webpage included the draft RTP, project lists/maps, and an online comment card.

Meeting Locations

The RTP Public Participation meetings were held at the end of March 2024 at various locations and times in each county in the Region. A virtual public participation meeting was held to present information on the Regional Transportation Plan contents, with MVRPC staff in attendance to address comments or questions from participants. MVRPC also made information available at its office during the public participation comment period.

Table 5.1 – RTPO Public Participation Meetings

Outreach	Content	Meetings

• Public notice in a weekly newspaper published in each individual County
  - The Early Bird, Darke County
  - The Register Herald, Preble County
  - Sidney Daily News, Shelby County
• 30 second radio ads on WHIO, WMMX, WTGR, WEDI, Alpha Media Digital (177 ads)
• Targeted audio streaming ads in Darke, Preble, and Shelby counties with companion banner (18,750 impressions)
• Submitted press release to all local newspapers and radio stations—approximately 24 media companies
• Emails and letters to Steering Committee members and public participation contact list
• Letters and promotional posters to all public libraries in Darke, Preble, and Shelby counties in English and Spanish
	• RTP Overview and Goals
	• Existing Conditions Overview
	• Safety Analysis for the Region
	• Land Use and Environmental Resources in the Region
	• Socioeconomic Trends, Environmental Justice, and LEP Populations
	• Transportation Performance Management
	• Future RTP Projects, Fiscal Constraint
	• Draft RTP Report
		March 25th Darke County
		• 8 people attended the meeting in Darke County
		• No formal comments were received; staff spoke with participants, took their input, and answered questions
		 
		March 26th Virtual
		• 5 people attended the Virtual (Zoom) Public Meeting for the RTP
		• No formal comments were received during the meeting
		 

Outreach	Content	Meetings
organizations/businesses that serve have contact with Environmental Justice, LEP, and other vulnerable populations • Press release on MVRPC's website • Posts on Facebook, LinkedIn, and X (formerly Twitter), including boosted posts on Facebook and Instagram • Information on the Plan, projects, and a comment card at rtpo.mvrpc.org • Distributed English and Spanish Posters to Steering Committee members		**March 26th** Shelby County • 6 people attended the meeting in Shelby County • Two comments were received through comment cards **March 27th** Preble County • 6 people attended the meeting in Preble County • No formal comments were received; staff spoke with participants, took their input, and answered questions

Meeting Content

The meeting content for the RTP Public Participation meetings included a generalized overview of the goals and importance of the Regional Transportation Planning Organization. MVRPC staff presented in-person meeting information displayed on large posters, while the virtual meeting used a PowerPoint presentation with identical information. The complete meeting content included:

- RTPO Overview and Goals
- Existing Conditions Overview
- Safety Analysis for the Region
- Land Use and Environmental Resources in the Region
- Socioeconomic Trends, Environmental Justice, and LEP Populations
- Transportation Performance Management
- Future RTPO Projects, Fiscal Constraint

The 2050 RTP Public Participation Summary in Appendix A provides detailed information and documentation of the public participation process, as required for the RTPO Pilot Program. Information includes all public outreach materials created by MVRPC Staff, the information presented at each meeting, and comments received during the comment period.

5.4 Community Outreach and Public Participation

In accordance with Executive Order 12898 on Environmental Justice, MVRPC has expanded its public participation to incorporate the regulations required by this order. Although MVRPC has historically made efforts towards the requirements of Environmental Justice (EJ), a concerted effort was made to further seek input from EJ populations and other vulnerable groups and to include them in the public participation process. These efforts included:

Expanding the mailing list to include EJ and other vulnerable populations (low income, minority, elderly, and disabled);

- Adapting advertising for ease of understanding, including special articles and flyers;
- Expanding advertising to online platforms (e.g. YouTube, Spotify) to reach a more diverse population;
- Adapting public meeting times and locations for accessibility;
- Advertising at the regional transit systems and public libraries;
- Offering an English-to-Spanish translator on MVRPC's website; and
- Posting information about upcoming meetings on social networking sites