



2040

LONG RANGE
TRANSPORTATION
PLAN

EXECUTIVE SUMMARY

MAY 2016



MIAMI VALLEY
Regional Planning Commission

Transportation GOALS

REGIONAL STEWARDSHIP

- Develop Regional Priorities

VIBRANT COMMUNITIES

- Transportation Choices
- Transportation System Management
- Transportation and Land Use

VIGOROUS ECONOMY

- Transportation Support

SUSTAINABLE SOLUTIONS

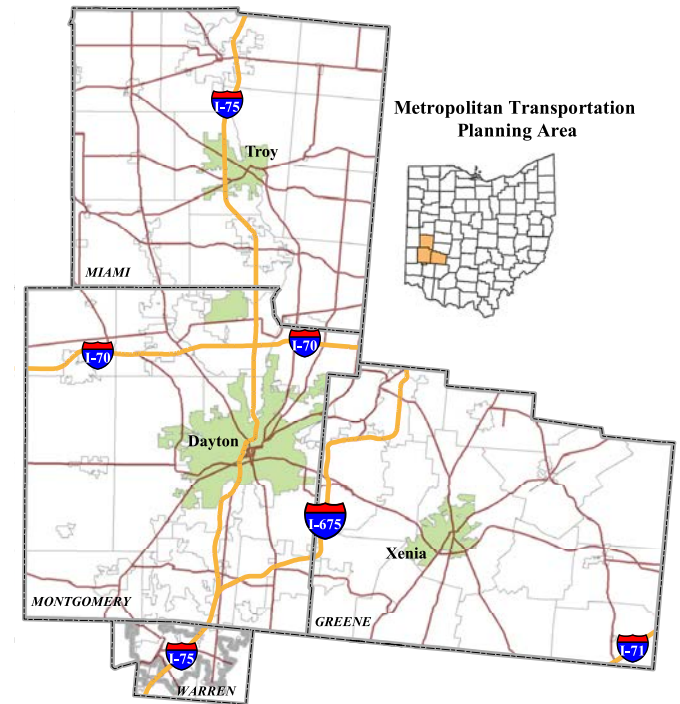
- Clean Air

About MVRPC

The Miami Valley Regional Planning Commission (MVRPC) is a voluntary association of local governments and non-governmental organizations serving as the Regional Planning Commission for Darke, Greene, Miami, Montgomery, and Preble Counties, and northern Warren County in west-central Ohio.

MVRPC is also the Metropolitan Planning Organization (MPO) for Greene, Miami, and Montgomery Counties and the Cities of Carlisle, Franklin, and Springboro in Warren County. As such, MVRPC conducts various transportation planning activities that are designed to enhance the Region's competitive position, promote regional growth, improve personal mobility, and preserve the environment.

As the MPO, MVRPC develops the regional Long Range Transportation Plan (LRTP). The Plan then provides a framework for the Transportation Improvement Program (TIP). The TIP serves as the implementation device of the LRTP by funding projects and programs which address the short-range (4-year), capital and operating needs of the Region.



The MPO at a glance



Local Governments
Transit Agencies
Other Agencies
Private Sector



L RTP Update Process and Public Participation

MVRPC conducted an extensive public outreach effort to solicit input from the general public and special interest groups in order to increase public participation during the 2040 L RTP development process following the guidelines in its **Public Participation Policy** and the **FAST Act**.

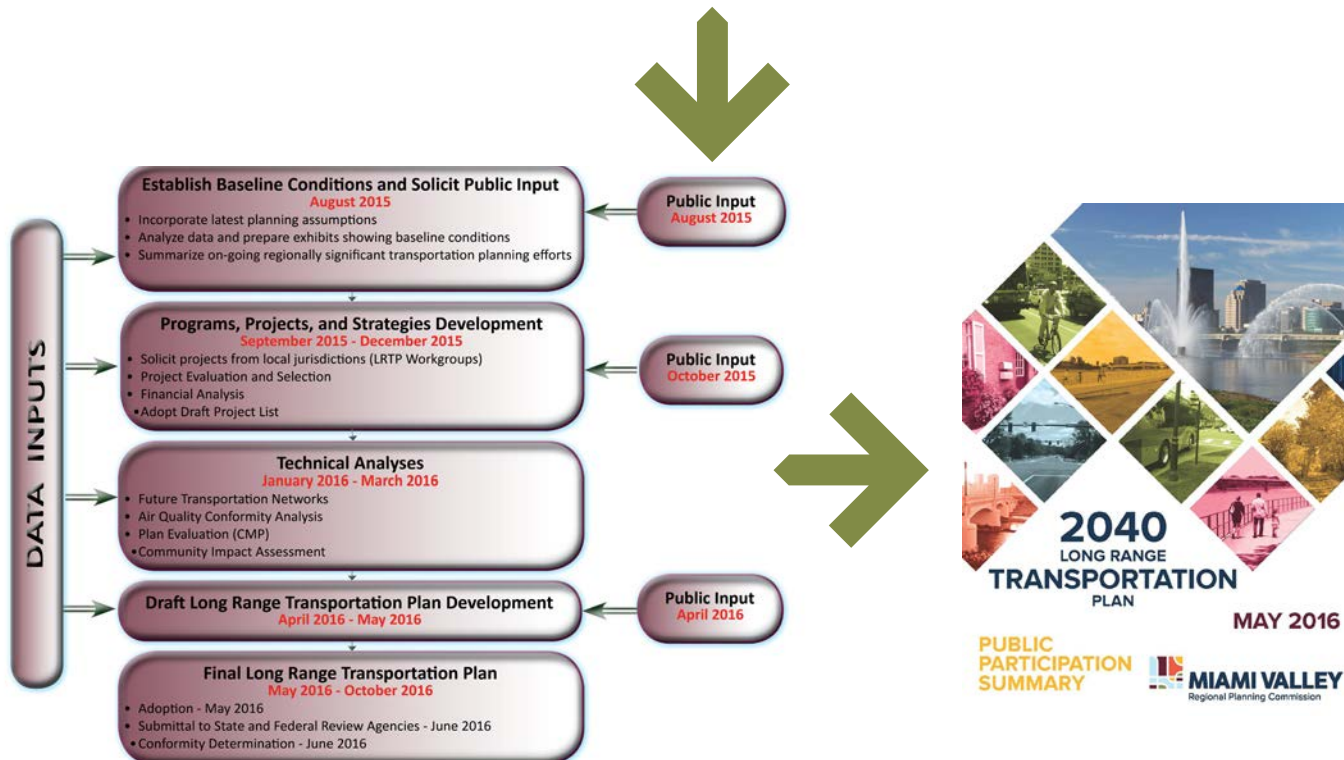


MVRPC's 2040 Long Range Transportation Plan, adopted on May 5, 2016, is a 25-year multimodal transportation plan with a planning horizon year of 2040.

The 2040 L RTP identifies long- and short-range investment strategies for all modes of transportation to support meeting the regional transportation goals. The Plan also reflects current and projected land uses, demographics, economic conditions, traffic conditions and Local, State, and Federal priorities and planning requirements.

The 2040 L RTP is based upon a year-long dialogue with various stakeholders including the general public, elected officials, engineers and planners, economic development interests, private businesses, and special interest groups.

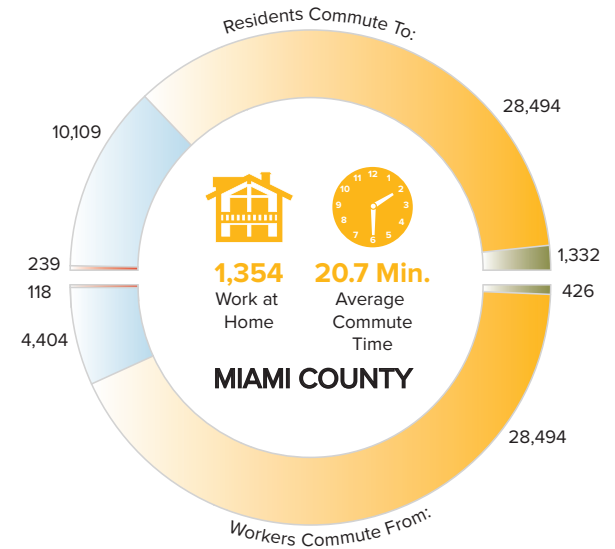
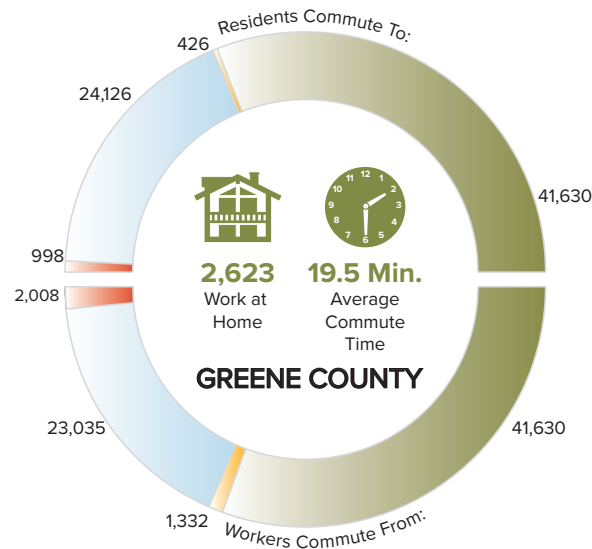
It is fiscally constrained, complies with all Local, State, and Federal planning requirements, and meets national air quality conformity requirements.



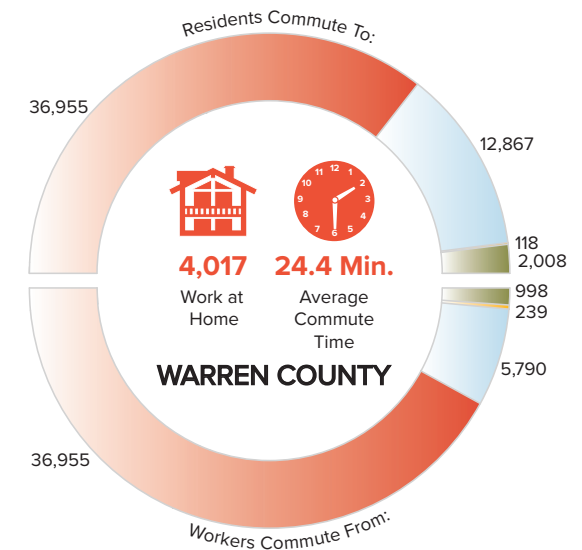
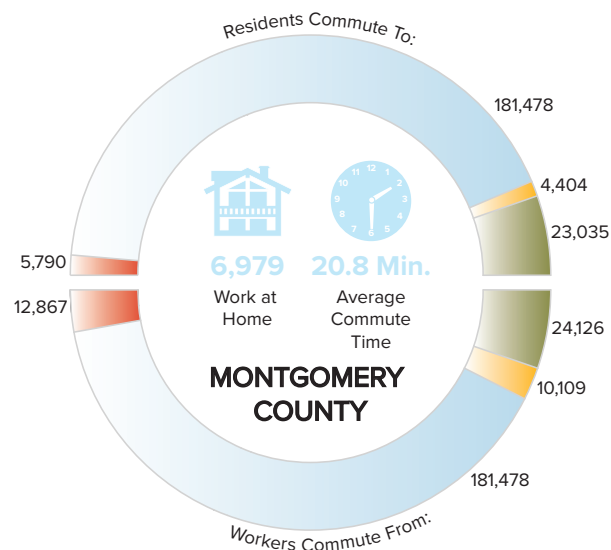
The Miami Valley Region - Journey to Work

The Miami Valley Region is served by a variety of transportation modal choices. The Region's journey-to-work characteristics were examined for Greene, Miami, Montgomery, and Warren counties using 2006-2010 American Community Survey data.

Although the majority of county residents work in the same county in which they live, Montgomery County is a major "work destination" for commuters from surrounding counties. The average commute time in the Miami Valley is 21.3 minutes and approximately 84% of the Region's residents drove their automobile alone to work.



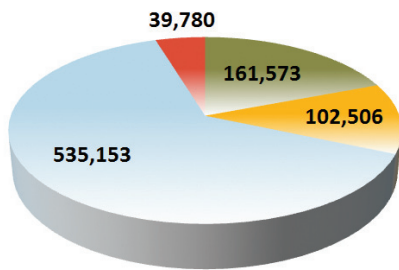
Greene County Miami County Montgomery County Warren County



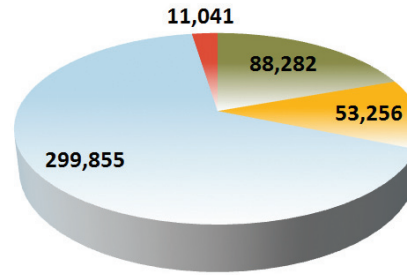
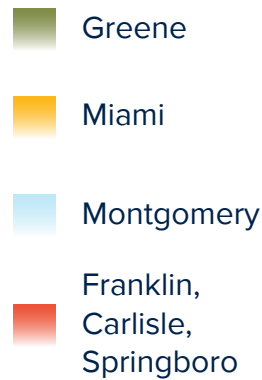
Source: American Community Survey 2006-2010



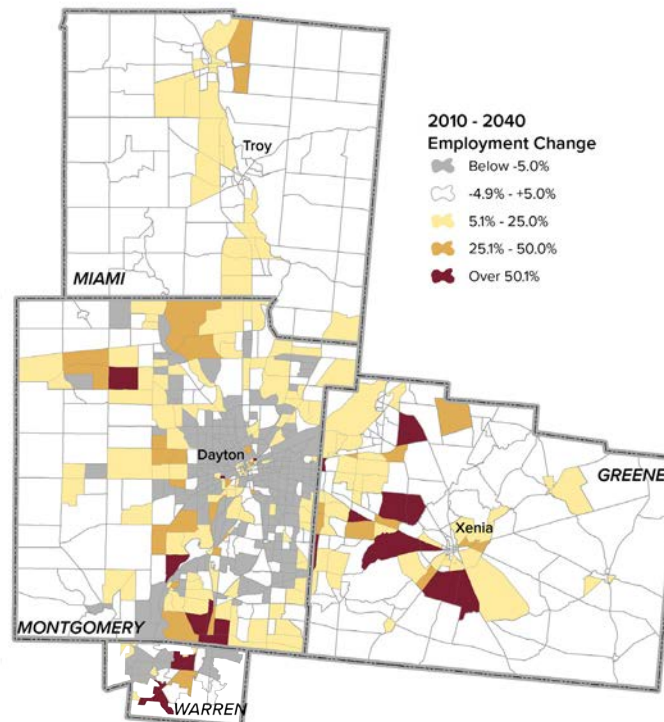
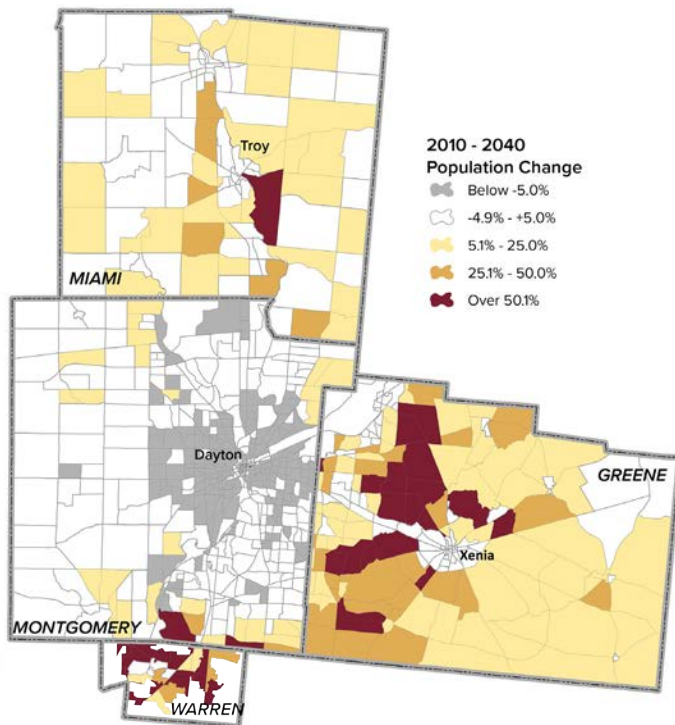
The Miami Valley Region - Population and Employment



2010 Population



2010 Employment



As of 2010, the Region is home to approximately 839,000 people in 1,300 square miles. The Region is also home to nearly 442,000 jobs including the Wright Patterson Air Force Base (WPAFB), the largest single-site employer in Ohio. Montgomery County has the Region's highest population and employment share with 67% of the population and 67.9% of the employment. Overall, the population of the Region is expected to slightly increase 2.63% over the next 30 years while the employment is projected to grow by approximately 5%.

The Congestion Management Process

The MAP-21 legislation, and now the FAST Act, continue to emphasize developing a Congestion Management Process (CMP) as part of an MPO's regional planning efforts. MVRPC published the 2015 Congestion Management Process Technical Report in preparation for the 2040 LRTP Update. The report documents the status of regional roadway congestion based on available transportation data.

Currently, there are a number of strategies that transportation planners and engineers implement to reduce the geographic and temporal extent of roadway congestion. MVRPC's 2015 CMP Technical Report includes a matrix describing a toolbox of congestion countermeasures. Some potential roadway congestion mitigation strategies include:



Highway Capacity Addition



Alternative Transportation Modes

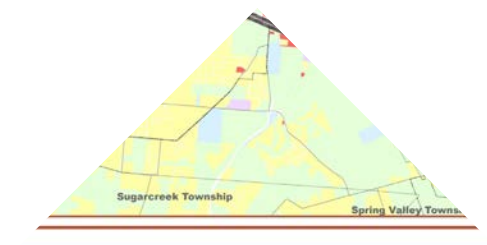
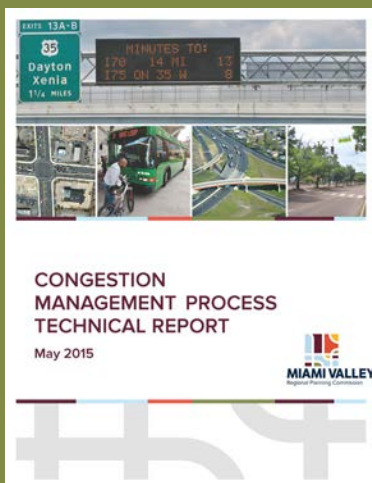


Travel Demand Management



Transportation System Management

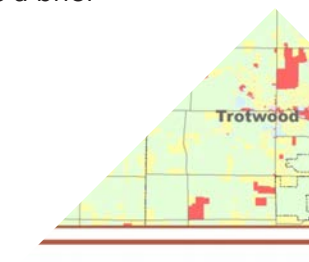
Freeway travelers experience some of the worst congestion levels in the Dayton Region. Ten freeway corridors in the Region were identified for detailed congestion study and analysis. The CMP Technical Report includes a detailed corridor profile and performance data for each of the corridors. Congestion is most noticeable on I-75 and US 35, reaching its highest levels during the evening peak period. Each corridor profile provides a brief mention of recently completed or ongoing projects along that corridor to address congestion.



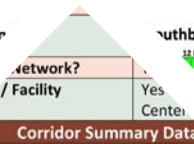
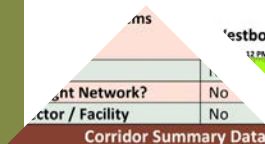
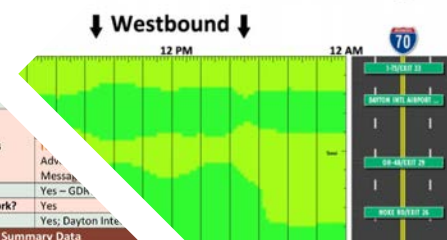
Corridor Congestion Scan



Corridor Congestion Scan



Corridor Congestion



The Congestion Management Process

Performance MANAGEMENT

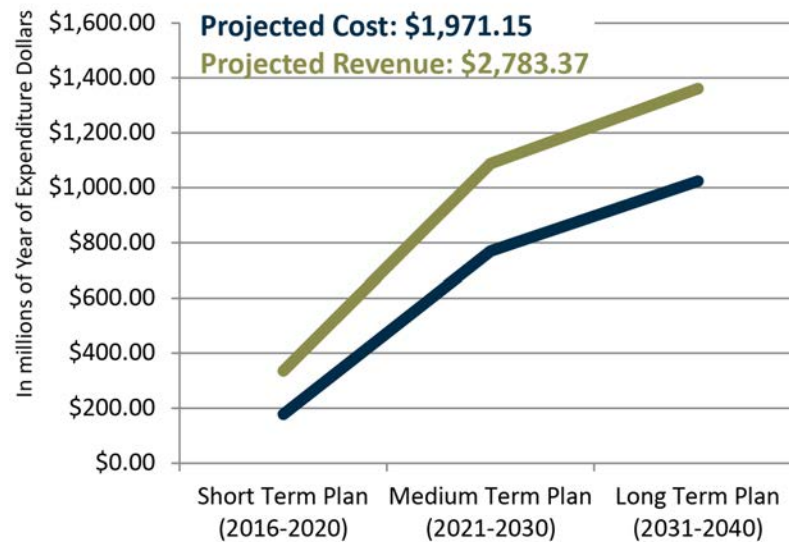
Regional Report Card

	Measure	Description	Data		Goal	Actual	Trend
System Performance	Average Freeway Speed (mph)	Source: INRIX	NA	60.2 (2013)			■
	Congested System	Congested Lane-Miles Source: Texas Transportation Institute	29.0% (2007)	24.0% (2011)			-5%
	Annual Freeway Vehicle Hours of Delay	In hours; Source: INRIX	NA	696,167 (2013)			■
	Annual Cost of Vehicle Delay on Freeways	In millions; Source: INRIX	NA	\$24.33 (2013)			■
	Annual Cost of Truck Delay on Freeways	In millions; Source: INRIX	NA	\$12.82 (2013)			■
Safety	Incident Response	Average duration of major freeway incidents In minutes; Source: INRIX	NA	98 (2013)			■
	Mean Distance Between Calls	Miles between service calls. Source: GDRTA	NA	15,813 (2013)			■
	Rate of Fatalities	Total fatalities per 100 million Daily VMT Source: ODPS	0.82 (2008-10)	0.88 (2011-13)			9%
	Rate of Serious Injuries	Total incapacitating injuries per 100 MDVMT Source: ODPS	8.39 (2008-10)	7.88 (2011-13)			-65%
	Transit Incidents	Transit incidents per 100,000 trips Source: NTD	0.28 (2008-10)	0.27 (2011-13)			■
Accessibility	Miles of Regional Bikeway	Additions to Regional Bikeway System In miles; Source: MVRPC	165 (2010)	198 (2014)			20%
	Population Served by Bikeway	Population within ½ mile of a Regional Bikeway Source: U.S. Census, MVRPC	28.3% (2000)	28.8% (2010)			■
	Employment Served by Bikeway	Employment within ½ mile of a Regional Bikeway Source: QCEW, MVRPC	43.2% (2000)	43.8% (2010)			■
	Population Served by Transit	Population within ½ mile of a GDRTA Bus Route Source: U.S. Census, MVRPC	79.8% (2000)	79.5% (2010)			■
	Employment Served by Transit	Employment within ½ mile of a GDRTA Bus Route Source: QCEW, MVRPC	85.4% (2000)	89.3% (2010)			4.5%
	Work trips by bike and walking	Work trips in the Region by biking and walking Source: U.S. Census, ACS 2006-2010	2.55% (2000)	2.79% (2010)			■
	Population Living in Mixed Land Use Districts	Population living in districts integrated with residential and employment land uses Source: U.S. Census, QCEW, MVRPC	NA	36% (2010)			■

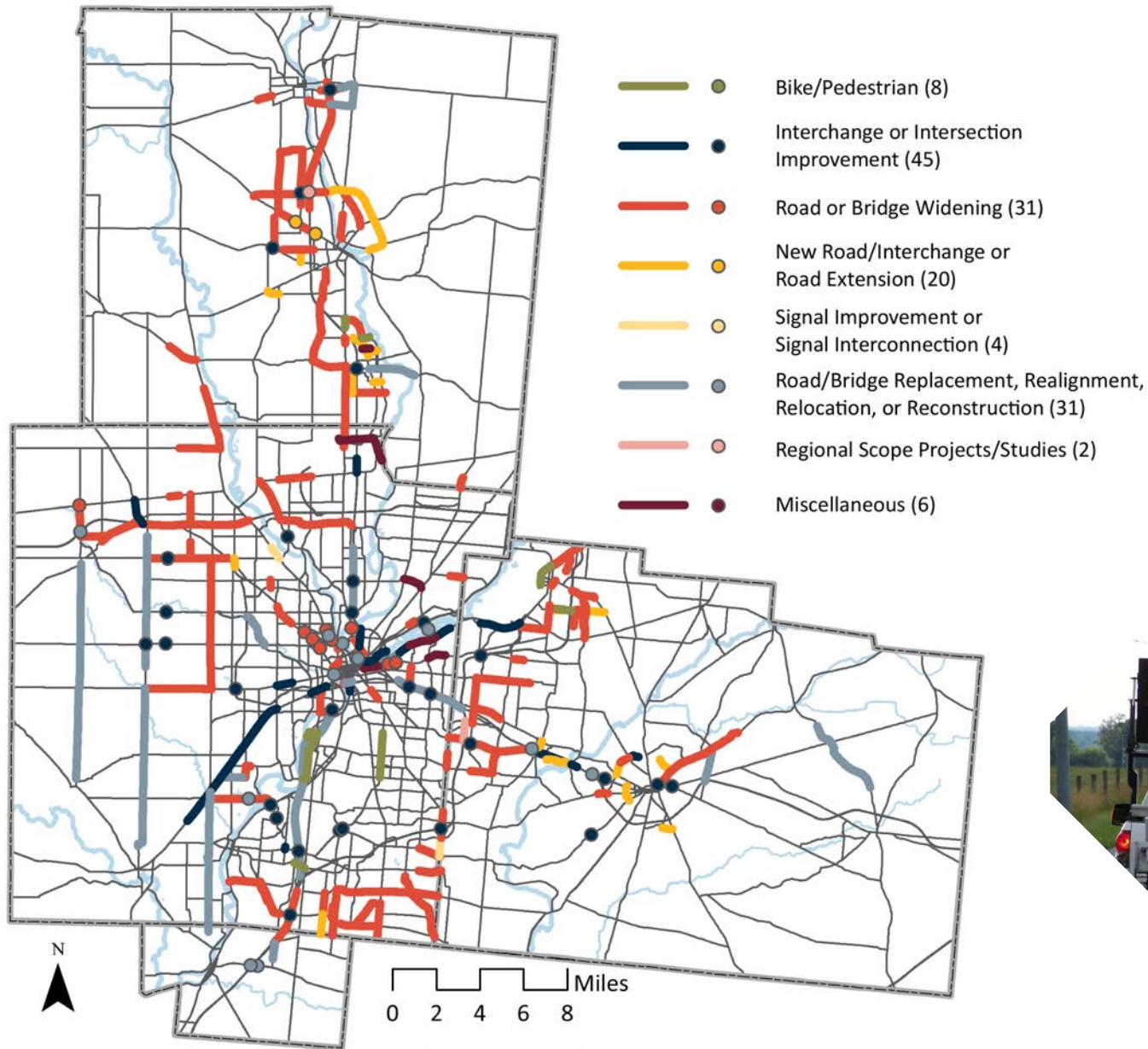
The FAST Act continues MAP-21's overall performance management approach, within which MPOs invest resources in projects that collectively will make progress toward national and state goals. The Regional Report Card documents various parameters including transportation system conditions, transportation system safety and incident response, as well as accessibility to alternative modes of transportation.

Congestion Management Projects

The 2040 congestion management project list includes 235 projects with a total cost of \$1,971.15 million. The list is fiscally constrained with a projected revenue of \$2,783.37 million. Both costs and revenues are expressed in year of expenditure dollars, as required by federal regulations.

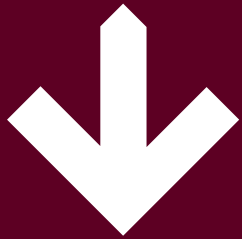


Congestion Management Projects



Economic Benefits of TRANSIT

A GDRTA study estimates that for every dollar (\$1) invested in transit services, there is a four dollar (\$4) return in economic investment.



Transit Services



MIAMI COUNTY PUBLIC TRANSIT

- 62,300 passenger trips/year
- Demand responsive transit services
- Fleet of 18
- Operates 6 days a week

2040 Financial Assumptions

Capital Projects: \$6.91 million
Operations: \$34.13 million



GREATER DAYTON REGIONAL TRANSIT AUTHORITY (GDRTA)

- 9,000,000 passenger trips/year
- Operates 31 fixed-routes connecting 23 communities in Montgomery County along with WSU and WPAFB
- Operates 5 Transit Centers and 33 Park-N-Ride locations

2040 Financial Assumptions

Capital Projects: \$521.17 million
Operations: \$2,233.00 million



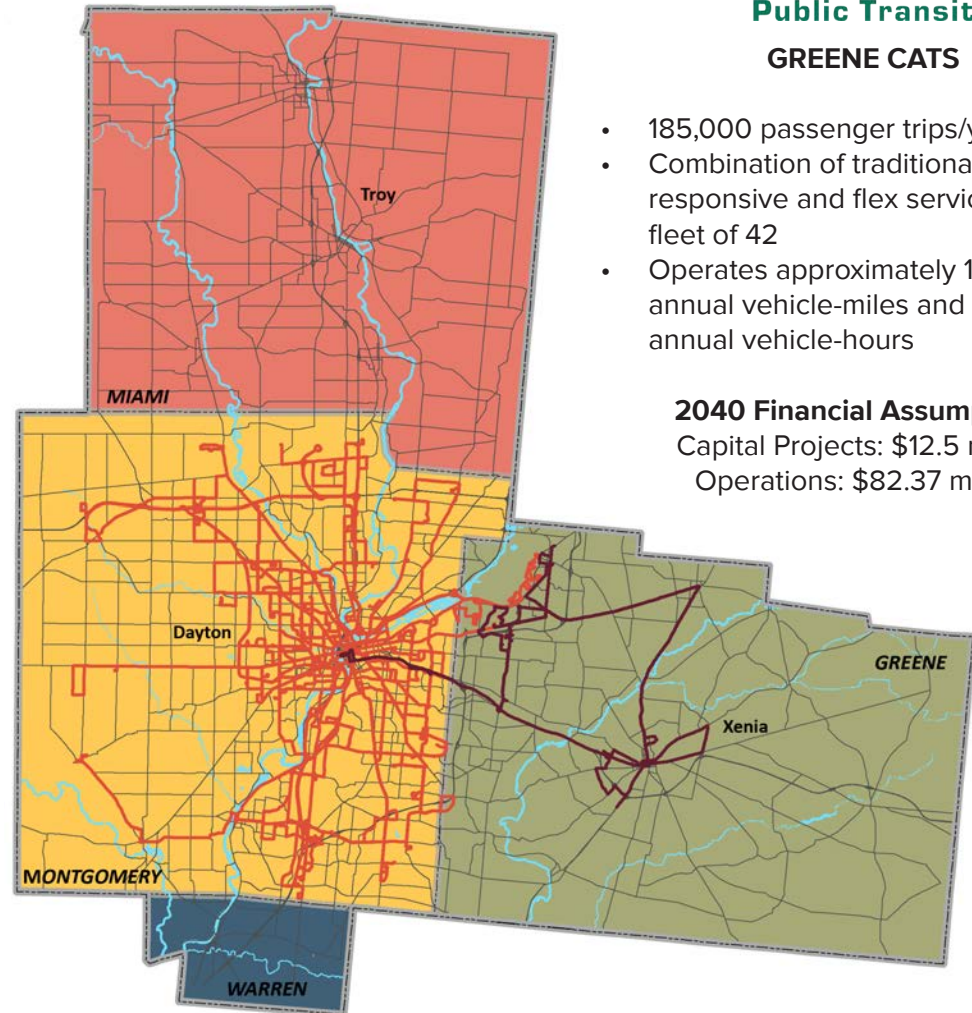
Greene CATS Public Transit

GREENE CATS

- 185,000 passenger trips/year
- Combination of traditional demand responsive and flex services with a fleet of 42
- Operates approximately 1,400,000 annual vehicle-miles and 75,000 annual vehicle-hours

2040 Financial Assumptions

Capital Projects: \$12.5 million
Operations: \$82.37 million



Transit Routes

- GDRTA Fixed Transit Routes
- Greene CATS FlexRoutes

Bike and Pedestrian Network

Complete STREETS



It is essential to plan a transportation system that serves travelers using all modes of transportation, including bicycling and walking. The 2040 LRTP contains both projects with funds already committed for implementation, and future proposed projects. Approximately \$4.27 million have been committed, with an additional \$97.19 million for proposed projects. These projects will extend the regional bikeway and pedestrian network.



MVRPC adopted its Regional Complete Streets Policy in January 2011. The Policy encourages transportation improvements for users to safely and conveniently travel on streets or roads, regardless of their transportation mode.



in economic activity is generated through the trails.



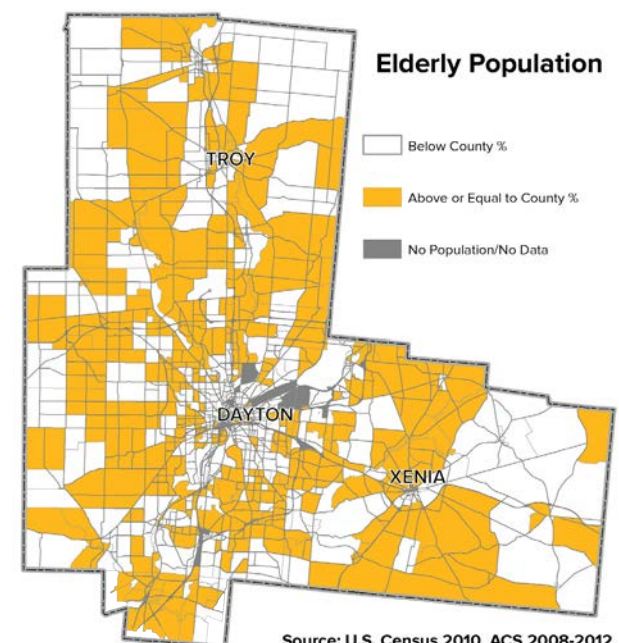
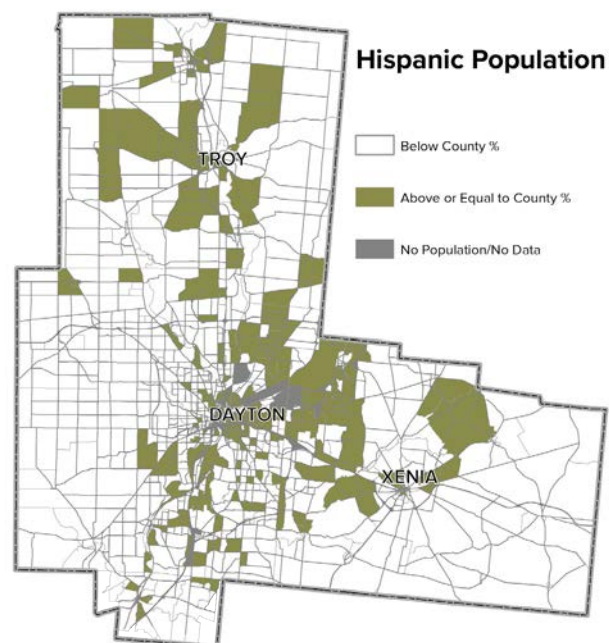
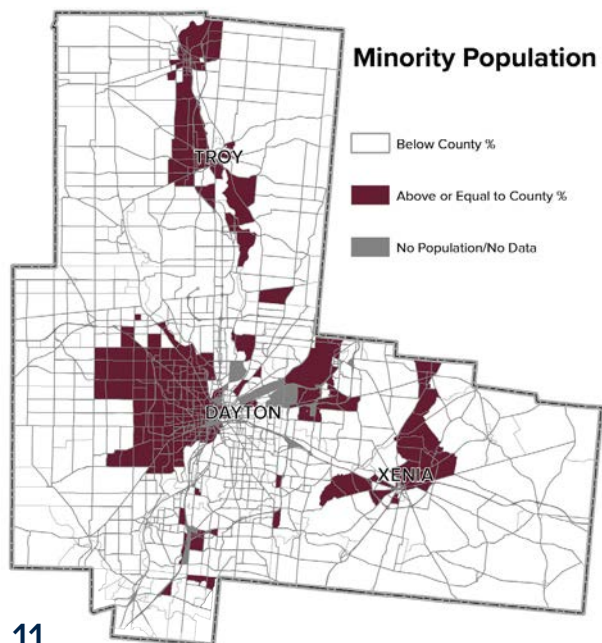
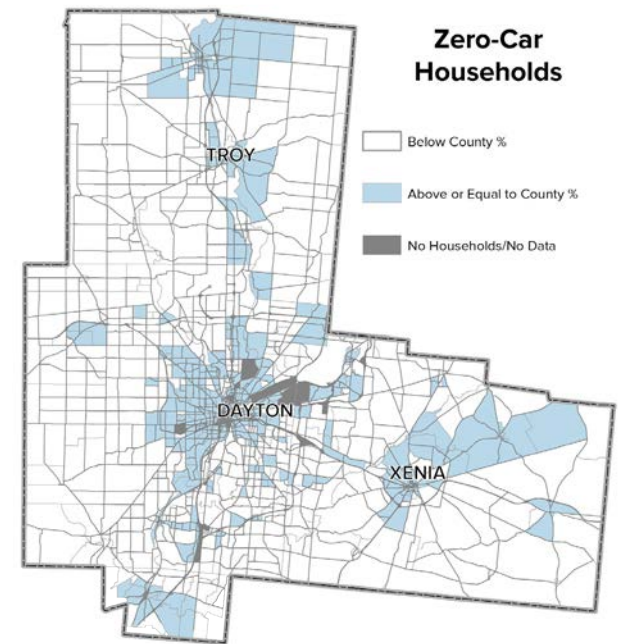
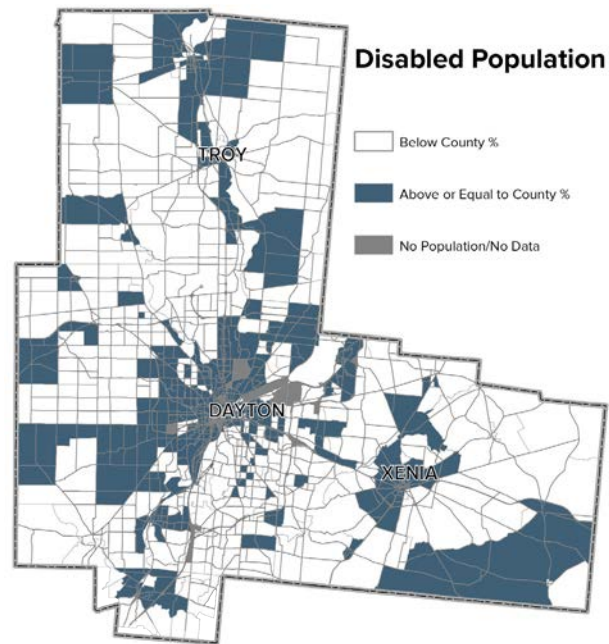
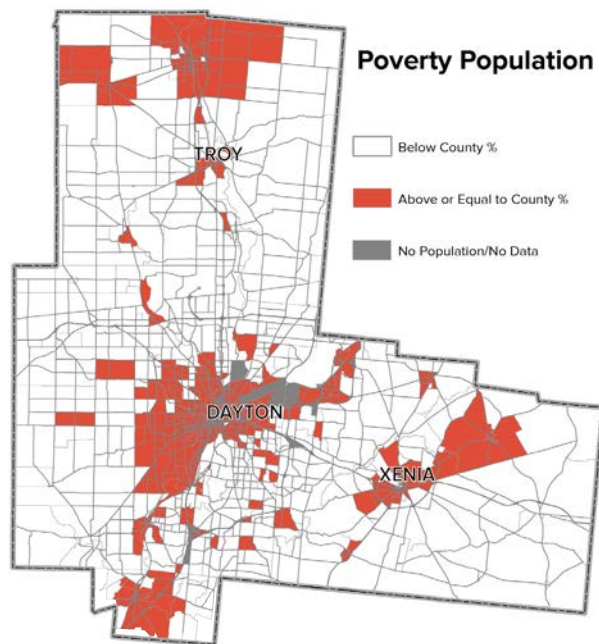
of trail users come from outside the Miami Valley!

The average trail visitor's stay is 2.4 nights...

Su M Tu W Th F Sa

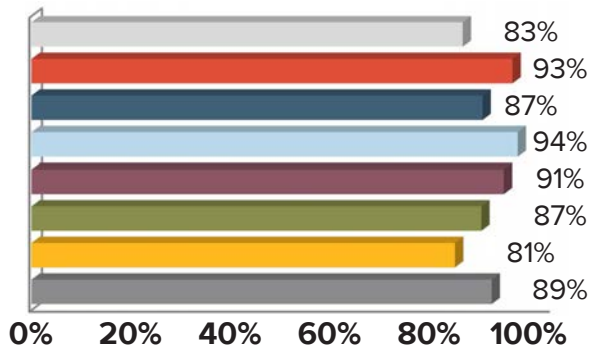
...spending \$77 per night!

Community Impact Assessment

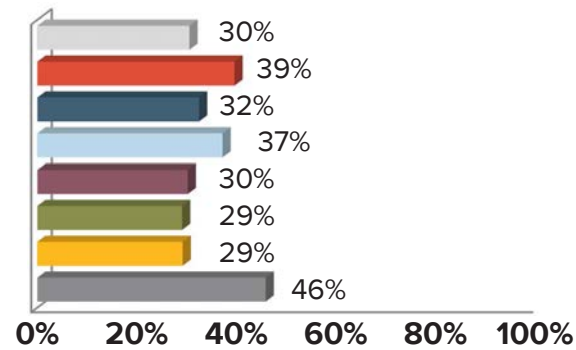


Community Impact Assessment

Percentage of Population within
1/2 mile of GDRTA Transit Route



Percentage of Population within
1/2 mile of a Regional Bikeway



MVRPC conducted various technical analyses to address Environmental Justice issues, and determine whether disproportionate adverse impacts exist. Analyses include Accessibility to Major Facilities, Home-Based-Work Travel Times, and Transit and Regional Bikeway Accessibility. The purpose of these analyses was to determine if target areas (areas with above average proportions of target populations) are adversely affected by the Plan, compared to non-target areas.

The analyses determined there were no disparate impacts on target populations.

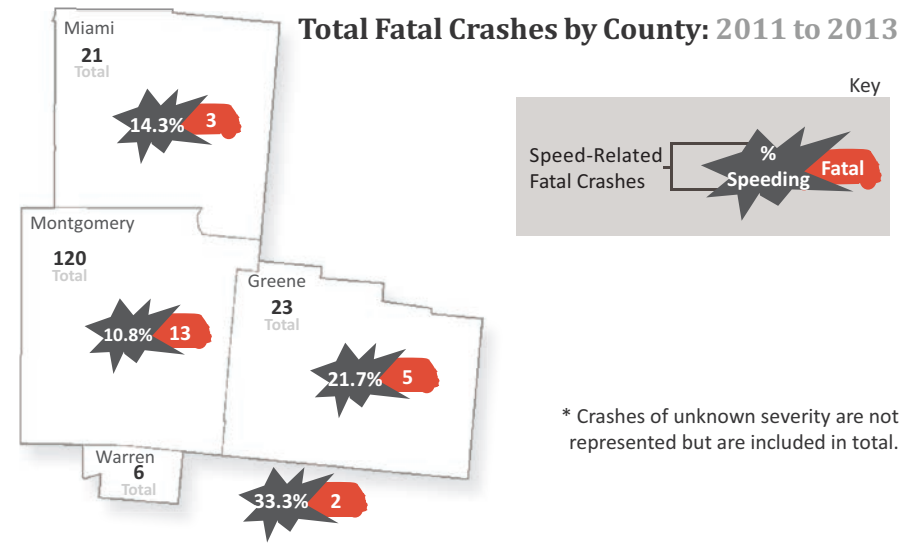
Travel Time in Minutes by Destination for Target Populations

	2010				2040 - Existing + Committed				2040 - Plan			
	University	Hospital	Shopping Center	Work	University	Hospital	Shopping Center	Work	University	Hospital	Shopping Center	Work
Poverty	6.9	6.5	5.2	13.5	7.4	7.0	5.4	14.0	7.3	6.8	5.3	14.0
Non-Poverty	13.0	10.6	7.1	17.2	14.2	11.7	7.8	18.0	13.9	11.4	7.7	17.8
Disabled	8.8	7.6	5.6	14.4	9.5	8.1	5.9	14.9	9.3	8.0	5.8	14.9
Non-Disabled	11.9	10.1	6.9	16.8	13.1	11.2	7.6	17.6	12.8	10.9	7.5	17.5
Zero Car	7.1	6.6	5.1	13.6	7.7	7.0	5.4	14.2	7.5	6.9	5.3	14.1
Non-Zero Car	12.9	10.7	7.2	17.2	14.2	11.7	7.8	17.9	13.8	11.5	7.7	17.8
Minority	6.8	5.6	4.7	13.0	7.3	5.8	4.9	13.3	7.0	5.7	4.8	13.3
Non-Minority	12.0	10.3	7.0	16.8	13.1	11.4	7.6	17.6	12.8	11.1	7.5	17.5
Hispanic	8.1	7.3	4.9	13.4	8.9	7.8	5.1	13.8	8.6	7.6	5.0	13.8
Non-Hispanic	11.3	9.5	6.9	16.6	12.3	10.4	7.5	17.4	12.0	10.2	7.4	17.2
Elderly	11.6	9.7	6.5	16.5	12.6	10.5	7.0	17.3	12.3	10.3	6.9	17.1
Non-Elderly	9.3	8.1	6.2	14.9	10.2	8.9	6.6	15.5	9.9	8.7	6.5	15.4

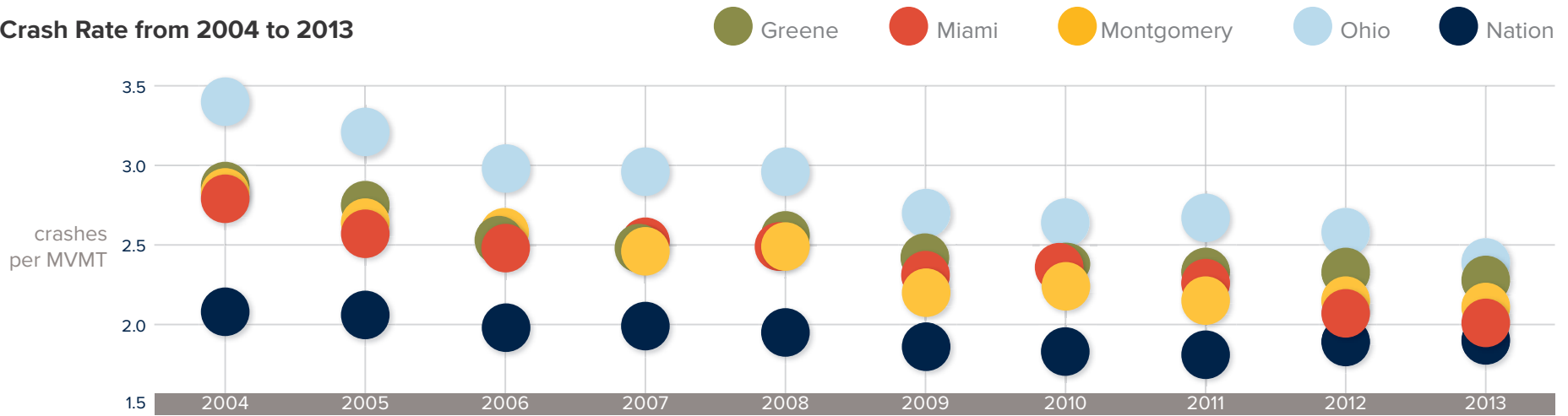
Roadway Safety

As part of the Dayton Regional Safety Initiative, crash data is analyzed every three years to identify trends and locations with high frequency and severity of crashes. These analyses are the first step toward understanding roadway safety conditions in the Miami Valley Region. The latest analysis examines crashes occurring from 2011 through 2013. In those three years, approximately 52,000 crashes were reported, including 170 fatal and 14,054 injury-causing crashes.

In accordance with the goals and objectives of the 2040 LRTP, MVRPC will continue to work with regional partners to improve roadway safety by conducting safety studies and providing crash information to local jurisdictions. Findings from the Regional Crash Analysis will be used during the project evaluation process to rank and prioritize future transportation projects. Data analysis can reveal the success of the Region's initiatives to reduce crash frequency and/or severity. For example, from 2004 to 2013, total reported crashes decreased from 23,626 crashes to 16,506, a 30% decrease.



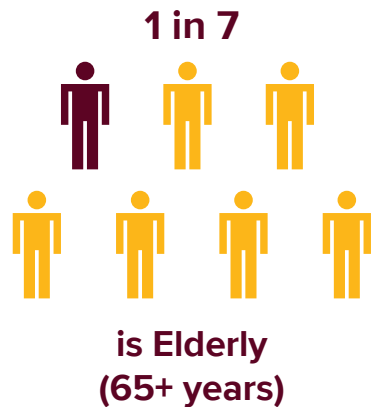
Crash Rate from 2004 to 2013



Crash rate is calculated as the annual reported crashes per Million Vehicle Miles Traveled (MVMT), a measure of the amount of driving in a specific region.

The Future - Changing Demographics and Transportation Technologies

Characteristics of Miami Valley Residents...



For the Miami Valley Region to remain competitive, it will need to adapt to its changing demographics and their needs while embracing and planning for new and emerging technologies, including those in the transportation field.

Between 2000 and 2010, the Region's elderly population (older than 65 years) increased by 16 percent. At the same time, younger people are increasingly delaying the age at which they get their first driver's license. In 2013, approximately 62 percent of the population between the ages of 15 to 24 years had driver's licenses in the Miami Valley. It is also important for elderly residents to live in an environment in which they are not being pushed to drive beyond the ages at which it is safe to do so.

On the household front, 40 percent of the household population in the Region now lives in a 1 or 2 person household, a 9 percent increase since 2000. Younger generations are also choosing to postpone homeownership; as a result, the Region experienced a 10 percent increase in the population living in rental housing units between 2000 and 2010.

New Technologies: Car-sharing, bike-sharing, and ride-sharing services, such as Uber and Lyft, are providing reasonable alternatives/supplements to automobile ownership, and new models, such as GetAround (car-sharing of privately owned automobiles), are also emerging. On a longer horizon, emerging self-driving and autonomous vehicle technologies will also impact congestion, mobility, safety, and development patterns.



Dayton
Bike Share
System

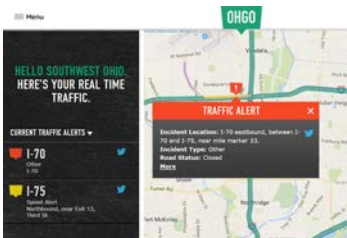


Self-
Driving
Vehicles

Travel
Information
Systems



Car-
Sharing
Services



MVRPC Board of Directors - MPO Members

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Concord Township
Five Rivers MetroParks
Greater Dayton Regional Transit Authority
Greene County
Greene County Engineer
Greene County Transit Board
Harrison Township
Jefferson Township
Miami Conservancy District
Miami County
Miami County Engineer
Miami County Transit
Miami Township, Greene Co.
Miami Township, Montgomery Co.
Monroe Township

Montgomery County
Montgomery County Engineer
Municipality of Carlisle
Municipality of Germantown
Municipality of New Lebanon
ODOT District 7
ODOT District 8
Perry Township
Vectren Energy Delivery of Ohio
Village of Covington
Village of Farmersville
Village of Phillipsburg
Village of West Milton
Village of Yellow Springs
Washington Township

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

The contents of this document reflect the views of the Miami Valley Regional Planning Commission, which is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the views of the U.S. DOT or ODOT. This document does not constitute a standard, specification, or regulation.

To learn more about the 2040 Long Range Transportation Plan and to view the full report, visit MVRPC's website at:

plan2040.mvrpc.org



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