A forum and resource where the Board of Directors identifies priorities and develops public policy and collaborative strategies to improve quality of life throughout the Miami Valley Region.

Major Areas of Concentration

- Transportation Planning
- Regional Planning
- Environmental Planning
A decision-making body comprised of elected officials of member jurisdictions and others in the Miami Valley Region.
MVRPC Vision and Goals

Our Board of Directors’ decisions, through strategic partnerships and staff efforts, contribute to the advancement of the Region’s economic vitality, enhanced quality of life, strong sense of place, and expanded opportunities that attract and retain talented individuals and organizations to the Miami Valley Region.

- Regional Stewardship
  - Foster Regional thinking
  - Transcend boundaries
  - Discover shared solutions
  - Develop Regional priorities

- Vibrant Communities
  - Promote transportation choices
  - Attract infrastructure funding
  - Promote the transportation and land use vision
  - Support local planning efforts

- Partnerships
  - Expand business and development partnerships
  - Expand civic organization and professional association partnerships
  - Expand existing government partnerships

- Sustainable Solutions & Environment
  - Effective clean air programs
  - Protect water resources
  - Protect the natural environment
  - Encourage eco-friendly design practices
  - Promote energy efficiency
MVRPC Staff

A multi-disciplinary team developing successful planning and policies to address regional and local needs.

- Transportation Planning and Programming
- Land Use Planning
- Environmental Planning
- Strategic Planning
- Geographic Information System and other Planning Support System
- Planning Research and Data Analysis
- Group Facilitation

SFY 2017 = $4.6M Annual Operating Budget, 23 Full Time Employees
2017 Annual Member Dues = $461,570: A $9 Return per $1 Investment

• Updated every 4 years prior to the next update of the LRTP

• 2015 CMP Report redesigned to include:
  – Corridor Level Performance Measurements
  – Regional Report Card
  – Peer City Congestion Performance Measures Comparison
  – Regional Safety, Congestion, Mobility and Accessibility Analyses
  – Toolkit of Congestion Mitigation Strategies
MAP-21/Fast Act-Performance Management

• MAP-21 signed into law on July 6, 2012
• Requires:
  – Establishment of Performance-Based Planning
  – Performance Management for both Highways and Public Transportation
  – Establish Performance Targets based on Seven National Goals
Introduction to Congestion

• Roadway congestion is a blending of three key elements – Severity, Extent and Duration (FHWA)

• According to TTI 2012 Urban Mobility Report, in 2011, the average commuter:
  – Spent an extra 38 hours traveling
  – Wasted 19 gallons of fuel
  – Had to plan for approx. 3 times as much travel time as in light travel conditions

• Dayton performs better than nation and peer cities in terms of congestion but overall congestion worsening across the U.S.
Nationwide, 60% of roadway congestion can be attributed to:

- Traffic Incidents
- Weather
- Work Zones
- Traffic Control Devices
- Special Events

The remaining 40% is the result of traffic “bottlenecks”.

# Regional Report Card – System Performance

<table>
<thead>
<tr>
<th>Measure</th>
<th>Data</th>
<th>Goal</th>
<th>Actual</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Freeway Speed ( \text{in mph} )</td>
<td>NA</td>
<td>60.2 (2013)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Congested System</td>
<td>29.0% (2007)</td>
<td>24.0% (2011)</td>
<td>\downarrow</td>
<td>\downarrow</td>
</tr>
<tr>
<td>Annual Freeway Vehicle Hours of Delay – ( \text{in hours} )</td>
<td>NA</td>
<td>696,167 (2013)</td>
<td>\downarrow</td>
<td></td>
</tr>
<tr>
<td>Annual Cost of Vehicle Delay on Freeways – ( \text{in millions} )</td>
<td>NA</td>
<td>$24.33 (2013)</td>
<td>\downarrow</td>
<td></td>
</tr>
<tr>
<td>Annual Cost of Truck Delay on Freeways – ( \text{in millions} )</td>
<td>NA</td>
<td>$12.82 (2013)</td>
<td>\downarrow</td>
<td></td>
</tr>
</tbody>
</table>
# Regional Report Card – Safety

<table>
<thead>
<tr>
<th>Measure</th>
<th>Data</th>
<th>Goal</th>
<th>Actual</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incident Response <strong>In minutes</strong></td>
<td>NA</td>
<td>98 (2013)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Distance Between Calls <strong>In Miles</strong></td>
<td>NA</td>
<td>15,813 (2013)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rate of Fatalities <strong>In 100 MDVMT</strong></td>
<td>0.82 (2008-10)</td>
<td>0.88 (2011-13)</td>
<td></td>
<td>9%</td>
</tr>
<tr>
<td>Rate of Serious Injuries <strong>Per 100 MDVMT</strong></td>
<td>8.39 (2008-10)</td>
<td>7.88 (2011-13)</td>
<td></td>
<td>-65%</td>
</tr>
<tr>
<td>Transit Incidents <strong>Per 100,000 trips</strong></td>
<td>0.28 (2008-10)</td>
<td>0.27 (2011-13)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Regional Report Card – Accessibility

<table>
<thead>
<tr>
<th>Measure</th>
<th>Data</th>
<th>Goal</th>
<th>Actual</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miles of Regional Bikeway</td>
<td>165 (2010) 198 (2014)</td>
<td>🟢</td>
<td>🟢</td>
<td>🟢 20%</td>
</tr>
<tr>
<td>Employment Served by Bikeway</td>
<td>43.2% (2000) 43.8% (2010)</td>
<td>🟢</td>
<td>🟢</td>
<td>🟢</td>
</tr>
<tr>
<td>Population Served by Transit</td>
<td>79.8% (2000) 79.5% (2010)</td>
<td>🟢</td>
<td>🟢</td>
<td>🟢</td>
</tr>
<tr>
<td>Employment Served by Transit</td>
<td>85.4% (2000) 89.3% (2010)</td>
<td>🟢</td>
<td>🟢</td>
<td>🟢 4.5%</td>
</tr>
<tr>
<td>Work Trips by Bike and Walking</td>
<td>2.55% (2000) 2.79% (2010)</td>
<td>🟢</td>
<td>🟢</td>
<td>🟢</td>
</tr>
<tr>
<td>Population living in Mixed Land Use District</td>
<td>NA 36% (2010)</td>
<td>🟢</td>
<td>🟢</td>
<td>🟢</td>
</tr>
</tbody>
</table>

2015 Congestion Management Process
Technical Report
Current and Future Regional Recurring Congestion

• Three “Scenarios” were evaluated:
  – Existing (2010)
  – Existing + Committed (2040)
  – Plan (2040)

• Systemwide Congestion Measure:
  – Level of Service (LOS)

• MVRPC emphasizes the use of LOS data when evaluating roadway projects for inclusion in the LRTP and TIP documents.
Snapshot: Downtown Levels of Service

- **Existing (2010)**
  - Severe congestion (LOS E & F) is confined to I-75 and US-35 near city center

- **Existing + Committed (2040)**
  - Severe congestion spreads to more surface arterials and outward from city center on I-75

- **Plan (2040)**
  - Severe congestion eliminated from many freeways and surface arterials
Freeway Corridor Analysis

- Freeways:
  - Represent only 13% of total roadway lane miles
  - Carry between 40% (2010 Base) and 44% (2040 Plan) of VMT.

- 10 Regional Freeway Corridors analyzed for congestion studies

- Each corridor profile includes:
  - Corridor Location Map
  - Corridor Congestion Scan chart
  - Corridor Statistics & Other Characteristics

Corridor 4: I-75 - US 35 to I-70

Profile & Statistics

<table>
<thead>
<tr>
<th>Corridor Profile</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>8.96 miles</td>
</tr>
<tr>
<td>Functional Class</td>
<td>Interstate</td>
</tr>
<tr>
<td>Access Control</td>
<td>Limited</td>
</tr>
<tr>
<td>Lanes</td>
<td>6 - 8</td>
</tr>
<tr>
<td>Intelligent Transportation Systems</td>
<td>Designated Corridor? Yes</td>
</tr>
<tr>
<td>ITS Deployment</td>
<td>Radios, Cameras, Dynamic Message Sign</td>
</tr>
<tr>
<td>Served by Transit?</td>
<td>Yes – Express Routes 1A and 5; GDRTA Route 42</td>
</tr>
<tr>
<td>Part of National Freight Network?</td>
<td>Yes</td>
</tr>
<tr>
<td>Intermodal Connector / Facility</td>
<td>Yes – Wright Stop Plaza Transit Center</td>
</tr>
</tbody>
</table>

Corridor Summary Data

<table>
<thead>
<tr>
<th></th>
<th>2010/2040 (est.)</th>
<th>2011/2040 (est.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Volume</td>
<td>95,400</td>
<td>127,300</td>
</tr>
<tr>
<td>Truck Volume</td>
<td>14,000</td>
<td>25,200</td>
</tr>
<tr>
<td>Posted Speed</td>
<td>55 mph – 65 mph</td>
<td></td>
</tr>
<tr>
<td>Average Speed AM</td>
<td>62.3 mph</td>
<td></td>
</tr>
<tr>
<td>Average Speed PM</td>
<td>61.3 mph</td>
<td></td>
</tr>
<tr>
<td>V/C Ratio AM</td>
<td>0.93</td>
<td>0.99</td>
</tr>
<tr>
<td>V/C Ratio PM</td>
<td>0.93</td>
<td>0.99</td>
</tr>
<tr>
<td>Travel Time Index</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Cost of Vehicle Delay</td>
<td>$3,235,927</td>
<td></td>
</tr>
<tr>
<td>Total Crash Rate</td>
<td>974 crashes</td>
<td>0.93 per MVMT</td>
</tr>
</tbody>
</table>

Other Corridor Characteristics

- This corridor is a densely populated urban corridor connecting high density residential areas in Dayton with its downtown and surrounded by significant industrial, retail and office commercial uses.
- This corridor carries one of the highest percentage of truck traffic in the Region and is a significant thoroughfare for freight movement.
- The southern portion of this corridor, south of SR 4, is currently undergoing widening and reconfiguration as part of Phase 2 of the downtown subcorridor reconstruction project.
Conclusions

• Recurring congestion most noticeable on I-75 (between Grand Ave and Dryden Rd in NB direction in the evening peak hours) and
• US 35 (east of I-675, primarily along the section with three at-grade intersections).
• Continued upgrade of problem locations through:
  – Freeway Widening and Reconstruction,
  – Interchange Modifications, and
  – ITS Deployment,

are included in the LRTP to improve freeway performance.
Assessment of Non-Recurring Congestion

• Defined:
  – “The result of random occurrences that temporarily reduce roadway capacity to the point that motorists experience sudden significant and unexpected delay.”

• Possible locations of past non-recurring congestion were identified using:
  – Traffic Crash Data (ODOT)
  – Travel Demand Data (MVPRC)
  – Construction Data (ODOT/MVRPC)
  – Historical Travel Speed Data (INRIX)
  – Transit Incidents (National Transit Database)
  – Freeway Incidents (INRIX)
Conclusions

• Non-recurring congestion a factor for up to 50% of decrease in mobility on roadways
• Random and unplanned incidents — vehicular crashes, weather, construction — difficult to measure and counteract
• Locations with:
  – Frequent midday crashes
  – Freeways with scheduled construction projects
  – Segments with high work zone crashes can be targeted with congestion management strategies.
# CM Strategies Toolkit (Example)

<table>
<thead>
<tr>
<th>Congestion Mitigation Strategy</th>
<th>Description</th>
<th>Currently Implemented in Dayton</th>
<th>Suitability of Application to MPO Region</th>
<th>Illustration / Photograph</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ridesharing and Emergency Ride Home</strong></td>
<td>Programs encourage employees to share rides. This is typically arranged through employers or transportation agencies, which provide ride-matching services. Emergency Ride Home programs provide a service to those who need to travel for unexpected or emergency purposes.</td>
<td>Yes. Emergency Ride Home programs are implemented in MPO areas. Additionally, MVPC also provides subsidies to encourage the formation of new vanpools. MVPC implements a region-wide promotion to encourage businesses to offer ride-matching services to reduce the amount of single-occupant vehicle (SOV) travel they do during a typical monthly travel period. More information is available on the MVPC website.</td>
<td>Medium</td>
<td>Rideshare MVPC.png</td>
</tr>
<tr>
<td><strong>Alternative Work Hours</strong></td>
<td>There are three main variations: staggered hours, flex-time, and compressed work weeks.</td>
<td>Yes. Alternative Work Hours are becoming more common. WPAE is the region's largest employer, allows a variety of work schedules.</td>
<td>Medium to High</td>
<td>Flex Work Hours.png</td>
</tr>
<tr>
<td><strong>Telecommuting</strong></td>
<td>Telecommuting policies allow employees to work at home or a regional telecommute center instead of going into office all of the time for a certain number of days per week.</td>
<td>Yes. Telecommuting has become more common, either on a regular basis or as a way to minimize weather related events.</td>
<td>Medium to High</td>
<td>Telecommuting.png</td>
</tr>
<tr>
<td><strong>High Occupancy Vehicle (HOV) Lanes</strong></td>
<td>Increased capacity on existing HOV lanes can be achieved through the installation of bus lanes or shared-ride taxi lanes, allowing more passengers per lane.</td>
<td>No.</td>
<td>Low</td>
<td>HOV lanes.png</td>
</tr>
<tr>
<td><strong>Managed Lanes</strong></td>
<td>Dynamic traffic management strategies are implemented for a set of lanes in which operational strategies are implemented and managed (real-time) in response to changing conditions. Examples include high-occupancy toll (HOT) lanes, HOV and clean-air and/or alternative-fuel vehicle lanes, and HOV lanes that could be changed into HOT lanes during peak periods to manage general traffic conditions.</td>
<td>No.</td>
<td>Low</td>
<td>Managed Lanes.png</td>
</tr>
<tr>
<td><strong>Congestion Pricing</strong></td>
<td>Congestion pricing can be implemented statically or dynamically. Static congestion pricing requires that tolls are higher during peak or low periods. Dynamic congestion pricing allows tolls to vary depending upon actual traffic conditions.</td>
<td>No.</td>
<td>Low</td>
<td>Congestion Pricing.png</td>
</tr>
<tr>
<td><strong>Parking Management</strong></td>
<td>This strategy reduces the amount of space devoted to parking and encourages use of alternative modes of transportation. Options include reducing the minimum number of parking spaces required for development, increasing the share of parking spaces to encourage walking or cycling, and using technology to increase transportation options.</td>
<td>No.</td>
<td>Low</td>
<td>Parking Management.png</td>
</tr>
</tbody>
</table>

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Operational Congestion Management Strategies

• Access Management
  – Limiting the frequency of ingress/egress points along a route

• Updated Traffic Signal Timing Plan
  – Re-time signals to reflect traffic volumes at different times of day (ex. Peak and off-peak)

• Freeway Management Systems
  – Integration of roadside devices to provide motorists with real-time roadway information

Multimodal Approach to Addressing Congestion

• 2015 Bikeway Plan Update
  – Identifies corridors that connect local communities together and provide missing links in the regional bikeway network

• Transit

• Alternative Modes & Development Choices
CONGESTION MANAGEMENT PROCESS TECHNICAL REPORT

May 2015

To access a PDF version of the document, navigate to:


Questions?
Regional Safety Initiative
Goals of Analysis

Monitor Crash Trends

Locate High Crash Locations

Make Roadway Improvements
The Data

Reports

Statewide Database

Crashes reported in MOT, MIA, GRE, northern WAR counties

Geo-locates Crashes
52,025 crashes reported in the Region from 2011 thru 2013
37,766
property damage only

14,054
injury causing crashes

195
fatal crashes
On average…

- Every 30 minutes, a crash occurred.
- Every 6 days, a fatal crash occurred.
41% of all fatal crashes involved alcohol.

80 Fatal Crashes involved at least one driver who had been drinking.
30% decrease in annual crashes from 2004 to 2013
52,025 total crashes in Region

Functionally classified roads only

42,502 crashes on the regional roadway network
Rear ends were the most common crash type.

Types of Crashes

- Rear End: 31%
- Fixed Object: 16%
- Angle: 17%
- Sideswipe Passing: 11%
- Left Turn: 6%
- Other: 19%
1,415 serious crashes reported on regional network

Serious Crashes are crashes that led to an incapacitating injury or fatality.
Fixed-Object Crashes

27% of crashes that led to a serious injury or fatality were fixed-object crashes.

68% Failure to control was the top contributing factor in fixed-object crashes.
40% of crashes involved someone 16 to 25 years old.
1.6% of crashes involved a bicycle or pedestrian.

17% of fatal crashes involved a bicycle or pedestrian.

34% Failure to Yield was the top contributing factor in bicycle or pedestrian crashes.
High-Crash Locations

- Regional road network was divided into segments & intersections (excl. highways).

- Ranked by crash frequency and severity.

- Minimum of 10 crashes in 3 years.
378 High-Crash Locations
How to Improve Road Safety

Engineer

Enforce

Educate
Next Steps

- Conduct crash analysis every 3 years
  - Performance measure, MAP-21/Fast Act
  - Identify high-crash locations
  - Criterion for project evaluation system
Next Steps

- Assist in safety studies
  - ODOT Safety Program
  - Safe Routes to School
  - Provide crash data information
MVRPC analyzes crash data to help improve transportation safety and inform the planning process. These analyses are the first steps towards understanding road safety conditions in the Dayton Region. A number of statistical and comparative analyses are performed on the regional crash data, which is collected from Ohio Department of Transportation (ODOT) and the Ohio Department of Public Safety (ODPS) in three-year intervals. Reports below outline crash trends and a list of high-crash locations is generated, which identifies roadways that may need further examination to determine need for improvement.

**SFY 2015 REGIONAL ROADWAY SAFETY UPDATE**

The latest analysis used data of crashes reported during the years 2011 through 2013. The reports below outline safety conditions on the regional roadway network and identify high-crash locations from those three years.

**SUMMARY OF CRASHES FROM 2011 TO 2013**

Several trends were revealed in the analysis of crashes that occurred on regional roadway network from the years 2011 to 2013. An overview and detailed report are available.

**HIGH-CRASH LOCATIONS**

In the SFY 2015 High Crash Location Analysis, intersections and roadway segments were ranked based on the frequency and severity of crashes. These high-crash locations were prioritized as low, medium and high priority, and include 157 intersections and 221 segments. These priority high-crash locations are displayed in maps below and the top 100 are listed.

**SAFETY RESOURCES**

Many programs and resources are available to communities in the Miami Valley to advance multi-modal roadway safety priorities. In SFY 2014, MVRPC has compiled a list of such safety resources that includes informational sources, and funding programs, which make roadway safety improvement through one of the three “Es” (Engineering, Education, and Enforcement).
More Information

mvrpc.org/transportation/long-range-planning-lrtp/transportation-safety

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aramirez@mvrpc.org