

### 3.3 Roads

An inventory of existing transportation facilities is a key element in developing a Regional Transportation System. This section identifies the highway network within OMEGA's eight-county RTPO planning area which is eligible for federal aid as well as the major highway corridors that serve this area. Specific information that is documented in this section includes:

- 3.3.1 Functional Classification
- 3.3.2 Average Daily Traffic Counts
- 3.3.3 Pavement Condition
- 3.3.4 Level of Service and Congestion








#### 3.3.1 Functional Classification

The National Functional Classification (NFC) System is used to determine the level of importance placed on each road within a particular planning area. The three levels of classification are: (1) arterial highways, (2) collector streets, and (3) local roads. These classifications represent a balance between mobility and access. Arterial highways have the highest degree of mobility and a low degree of access; whereas, local roads have a lower mobility, but a high degree of access. Collectors represent a balance between mobility and access. Factors involved with functional classification include efficiency of travel, access points or control, speed limit, route spacing, usage (average daily traffic or vehicle miles traveled), number of lanes, and regional or statewide significance. The impact of these characteristics on functional classification is illustrated below.

Functional Classification	Distance Served (and Length of Route)	Access Points	Speed Limit	Distance between Routes	Usage (AADT and DVMT)	Significance	Number of Travel Lanes
Arterial	Longest	Few	Highest	Longest	Highest	Statewide	More
Collector	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Local	Shortest	Many	Lowest	Shortest	Lowest	Local	Fewer

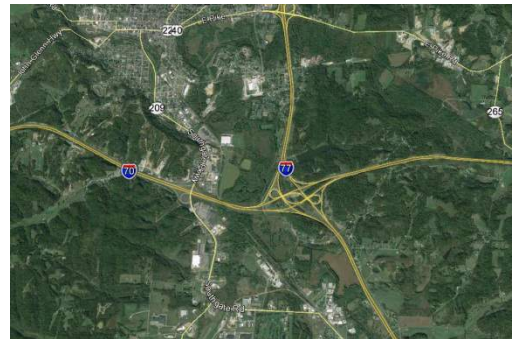
Source: ODOT Presentation 02/12/14

Functional Classification is important for program and project prioritization, asset management, safety programs, highway and bridge design, traffic control and access management, and maintenance. In October 2013, the Federal Highway Administration (FHWA) modified the concept, criteria, and procedures for classification. The National Federal-Aid Highway System is updated every ten years after the census. Urban/rural boundaries have changed, the treatment of routes crossing between urban and rural boundaries have changed, and rural and urban designations have been consolidated. With these modifications, the new functional classifications are:

<u>Old Functional Classification</u>	<u>New Functional Classification</u>	<u>Roadway Type</u>	
01, 11	01	Interstate	
12	02	Freeway and Expressway	
02, 14	03	Other Principal Arterial	
06, 16	04	Minor Arterial	
07,17	05	Major Collector	
08	06	Minor Collector	
09, 19	07	Local	

A map showing the Functional Classifications in OMEGA's planning area is shown on Figure 3-17 and Functional Classification Maps for each of the eight counties and major cities are included in Appendix B. Please note that these maps were sent to FHWA in April 2014 for approval and acceptance by ODOT, MPOs, RPOs, and Counties; approval is anticipated later this year. Local roads are not eligible for federal aid. Rural minor collectors are eligible for federal aid, but the percentage of funds available for this classification is low.

Two interstates, I-70 and I-77 are located in OMEGA's RTPO planning area, both of which are designated as National Highway Corridors in Access Ohio 2040. I-70 is a major east-west corridor and I-77 is a major north-south corridor. Both have been identified as part of the Strategic Transportation System (STS) in Access Ohio 2040 and are important to the national economy as they carry large volumes of freight both inside and outside Ohio. I-70 extends through Guernsey and Muskingum Counties and I-77 extends through Guernsey and Tuscarawas Counties. The total center lane miles of interstate in OMEGA's RTPO is 114.2 miles and accounts for 1.1% of all of the roads in the OMEGA RTPO.



Only US 250 in Tuscarawas County between New Philadelphia and Uhrichsville, US 36 west of Uhrichsville, and US 30 in southeastern Columbiana County extending through the City of East Liverpool are classified as Freeways and Expressways and account for only 20.5 miles or 0.2% of all of the roads in the OMEGA RTPO. Principal Arterials include sections of US 30, US 62, SR 7, SR 9, SR11, SR 14, and SR 45 in Columbiana County, US 36 and SR 16 in Coshocton County, US 22 and sections of SR 209 in Guernsey County; US 22 and US 250 in Harrison County, US 22, US 40, and SR 60 in the Zanesville Urbanized area, SR 16 in Muskingum County; and US 36 west of I-77 and near Uhrichsville, sections of US 250, SR 212,

and SR 800 in Tuscarawas County. US 30, Ohio's Energy Corridor in Columbiana County, US 36 and SR 16 in Coshocton and Muskingum Counties, sections of US 250 in Tuscarawas and Harrison Counties, section of US 22 in Harrison County, and SR 7 in Columbiana County have also been identified as Statewide Primary Corridors and are included in the State of Ohio STS.

As shown in Figure 3-16, approximately 70% of the roads in the OMEGA RTPO are classified as Local. This represents approximately 7,283 lane miles of road. Approximately 6.7% of the roads are classified as either Other Principal Arterials or Minor Arterials with approximately 21.6% classified as either Major or Minor Collectors.

The percentage of roads by functional classification for each county is provided in Table 4. As shown in this table, the highest functional classification in Carroll and Holmes County is Minor Arterial. Neither of these counties has any four lane roads.

**Figure 3-16: Functional Class**

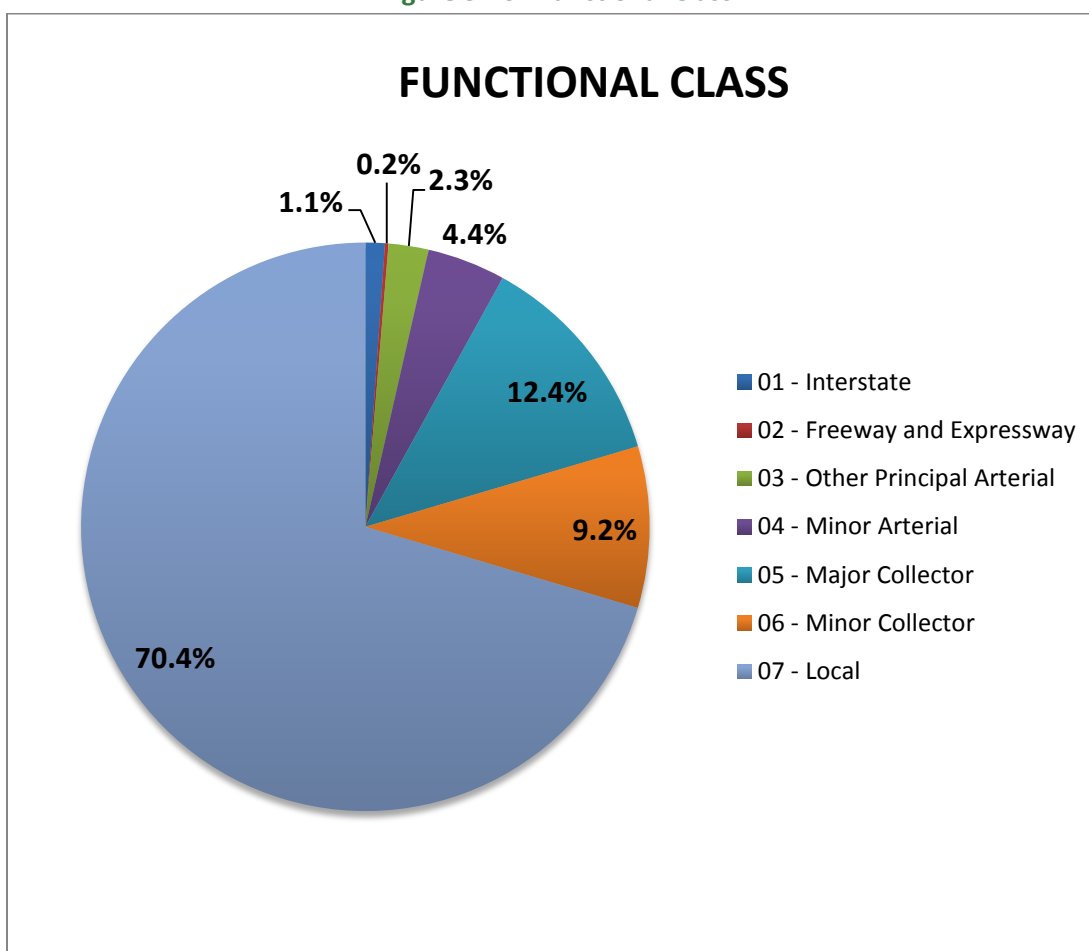


Table 3-4: Functional Class Summary by County

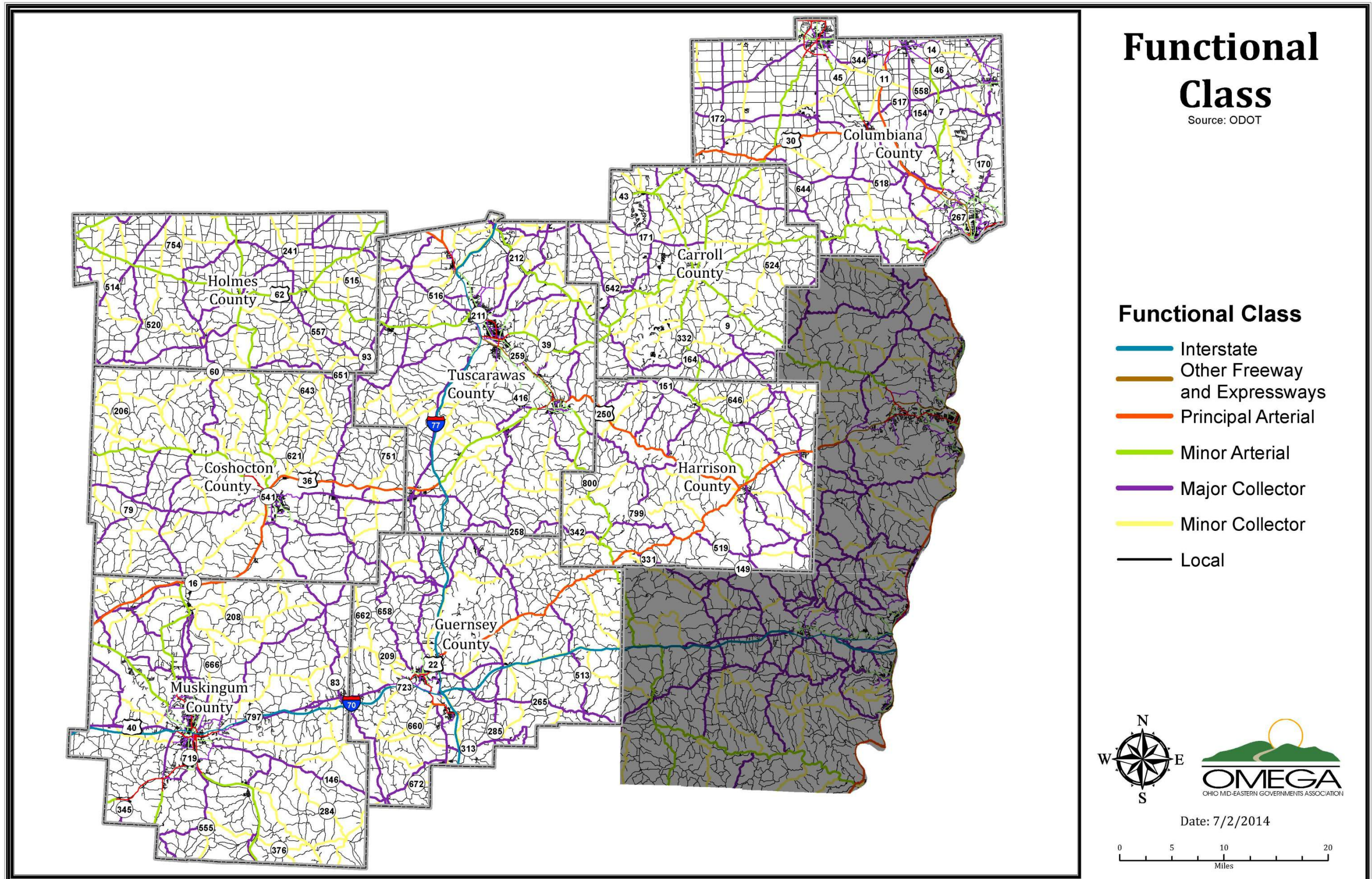
	Carroll		Columbiana		Coshocton		Guernsey		Harrison	
Functional Class	Miles	Percentage	Miles	Percentage	Miles	Percentage	Miles	Percentage	Miles	Percentage
01 - Interstate	0.0	0.0%	0.0	0.0%	0.0	0.0%	51.9	3.9%	0.0	0.00%
02 - Freeway and Expressway	0.0	0.0%	8.6	0.5%	0.0	0.0%	0.0	0.0%	0.0	0.0%
03 - Other Principal Arterial	0.0	0.0%	65.9	4.0%	27.2	2.2%	32.5	2.4%	43.1	4.8%
04 - Minor Arterial	85.0	9.2%	80.4	4.9%	39.5	3.1%	10.3	0.8%	26.5	3.0%
05 - Major Collector	86.6	9.4%	262.4	16.1%	125.6	10.0%	171.5	12.8%	123.1	13.8%
06 - Minor Collector	82.8	9.0%	77.3	4.7%	169.7	13.5%	132.5	9.9%	86.8	9.7%
07 - Local	665.5	72.3%	1,140.1	69.7%	895.6	71.2%	941.1	70.2%	614.9	68.8%
<b>Total</b>	<b>919.9</b>	<b>100.0%</b>	<b>1,634.7</b>	<b>100.0%</b>	<b>1,257.6</b>	<b>100.0%</b>	<b>1,339.9</b>	<b>100.0%</b>	<b>894.4</b>	<b>100.0%</b>

	Holmes		Muskingum		Tuscarawas		Total	
Functional Class	Miles	Percentage	Miles	Percentage	Miles	Percentage	Miles	Percentage
01 - Interstate	0.0	0.0%	27.4	1.6%	35.0	2.2%	114.2	1.1%
02 - Freeway and Expressway	0.0	0.0%	0.0	0.0%	11.9	0.7%	20.5	0.2%
03 - Other Principal Arterial	0.0	0.0%	43.1	2.6%	23.9	1.5%	235.6	2.3%
04 - Minor Arterial	65.4	6.4%	60.1	3.6%	93.1	5.8%	460.3	4.4%
05 - Major Collector	125.2	12.3%	195.8	11.7%	192.9	12.0%	1,283.1	12.4%
06 - Minor Collector	113.4	11.1%	164.2	9.8%	123.2	7.7%	949.9	9.2%
07 - Local	717.7	70.2%	1,183.9	70.7%	1,124.0	70.1%	7,282.9	70.4%
<b>Total</b>	<b>1,021.6</b>	<b>100.0%</b>	<b>1,674.5</b>	<b>100.0%</b>	<b>1,603.9</b>	<b>100.0%</b>	<b>10,346.4</b>	<b>100.0%</b>

Source: ODOT 01-01-13



Figure 3-17: Functional Class Map



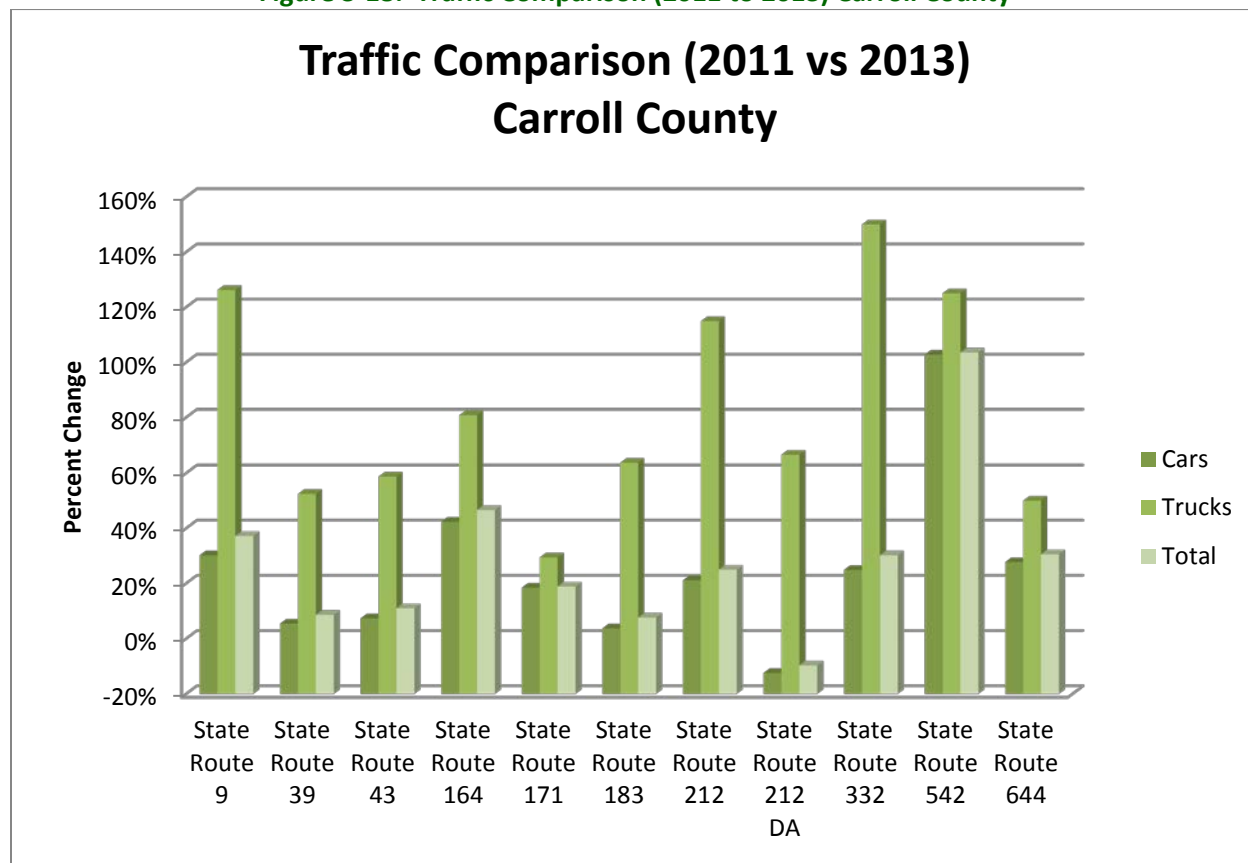


### 3.3.2 Traffic Volumes

Annual Average Daily Traffic (AADT) for all state and federal routes within the RTPO planning area were reviewed. Maps showing the AADT for each county, city, and village with a population of at least 2,000 are provided in Appendix C. With the exception of the interstates, SR 60 (Maple Avenue in Zanesville) and US 250 between New Philadelphia and Uhrichsville, the AADT of all state and federal routes within the planning area is less than 20,000. With the exception of Harrison County, all counties in the RTPO area have at least one segment of a state or national route with an AADT greater than 10,000.

Traffic counts prior to the onset of shale development in Carroll, Columbiana, and Harrison Counties were reviewed to data collected in 2013 and 2014. In Carroll County, the most heavily traveled roads include SR 43, SR 39, SR 183, and SR 9. The highest volume is along SR 43 at the intersection with SR 39 with an AADT of 13,620 vehicles per day, 8% of which are trucks. Since the epicenter of shale development is in Carroll County, 2013 traffic volumes were compared to 2011 traffic volumes. As shown in Figure 3-18, the total volume of truck traffic has more than doubled on SR 9, SR 212, SR 332, and SR 542 and has increased by at least 50% on SR 39, SR 43, SR 164, SR 183, and SR 212 Directional Alternate. Please note that this comparison excludes SR 524. Truck volume on this route increased by 800%, from only 20 trucks per day to 180 trucks per day.

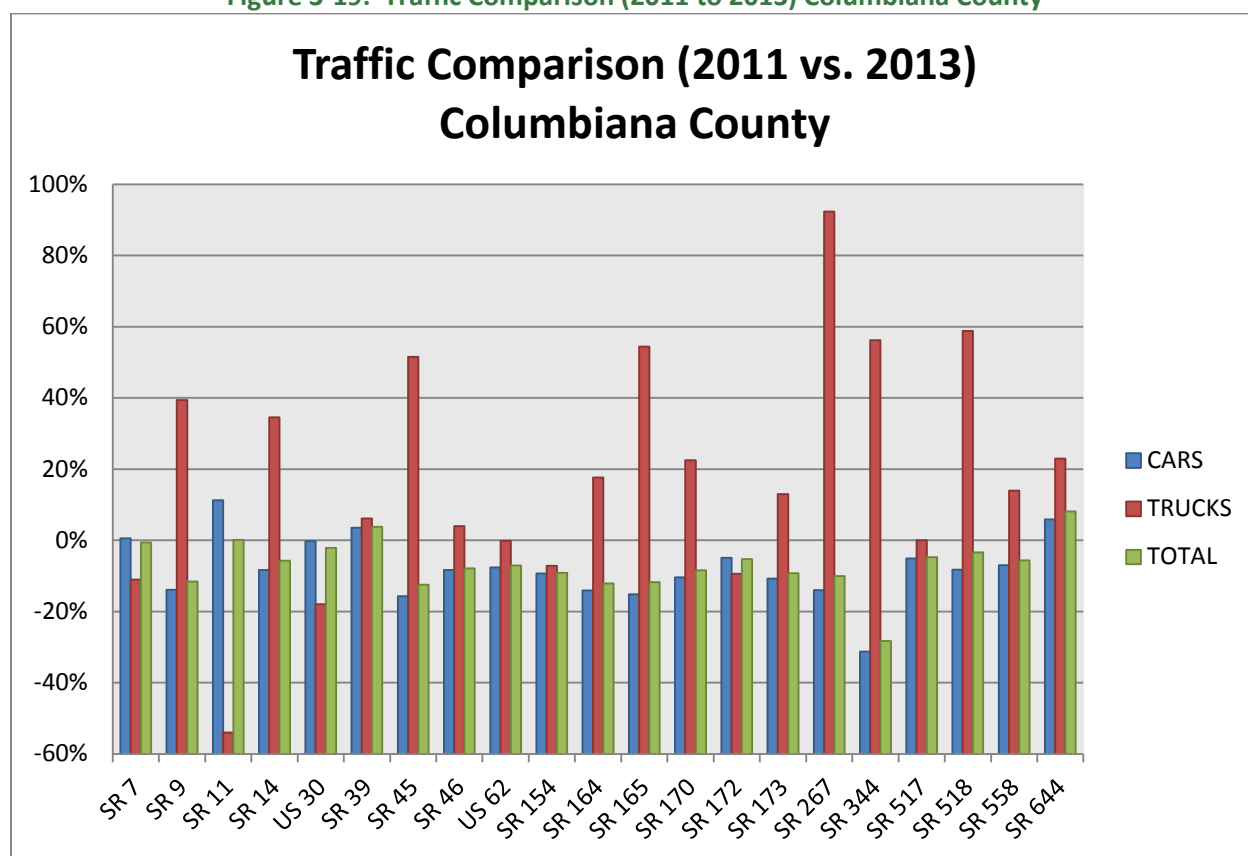
**Figure 3-18: Traffic Comparison (2011 to 2013) Carroll County**



Similar comparisons were also done for Columbiana and Harrison Counties as these are the two other counties in the RTPO that have been most impacted by shale development. Although Guernsey County has also been impacted by shale development, traffic counts for 2014 are not yet available.

As shown in Figure 3-19, the impact of shale development on ADT in Columbiana County does not appear to be as significant as that for Carroll County. Only modest increases in total volume were observed on SR 39 (4% increase) and SR 644 (8% increase). On all other state routes, the total volume of traffic either stayed the same as previous years or decreased. However, the total volume of trucks on SR 267 almost doubled and the total truck volume on SR 45, SR165, SR 344, and SR 518 increased by more than 50% while the truck volumes on SR 9 and SR 14 increased by over 30%.

**Figure 3-19: Traffic Comparison (2011 to 2013) Columbiana County**



As shown in Figure 3-20, the AADT on almost all state routes in Harrison County increased between 2011 and 2014. One of the most significant increases occurred on SR 151 where the total volume of traffic increased by 50% and the volume of trucks almost doubled. The total volume of traffic on SR 519 almost doubled. Truck volume significantly increased on SR 799 (125% increase), SR 646 (153% increase), and SR 800 (248% increase). These significant increases are primarily attributable to the shale development that is occurring in the area to include the construction of the processing facilities near Scio and Cadiz.

The dramatic impact of these developments is shown by comparing the total volume of traffic along SR 151 to 2011 and 2014 levels. As shown in Figure 3-21, the total volume on SR 151 and SR 332 increased by 70% from 2,450 to 4,170 and on SR 151 and Eastport Street in Scio, the total volume increased by 55% from 3,190 to 4,930.

**Figure 3-20: Traffic Comparison (2011 to 2014) Harrison County**

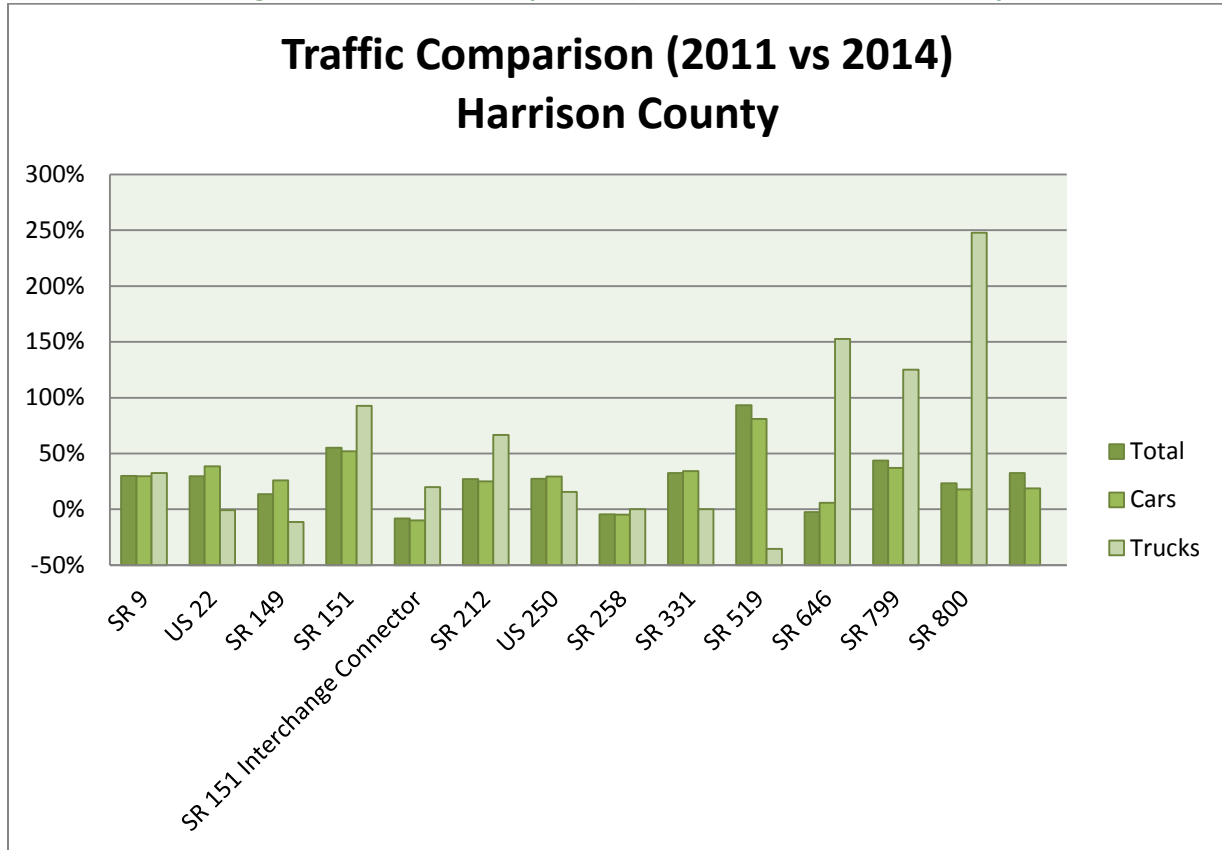
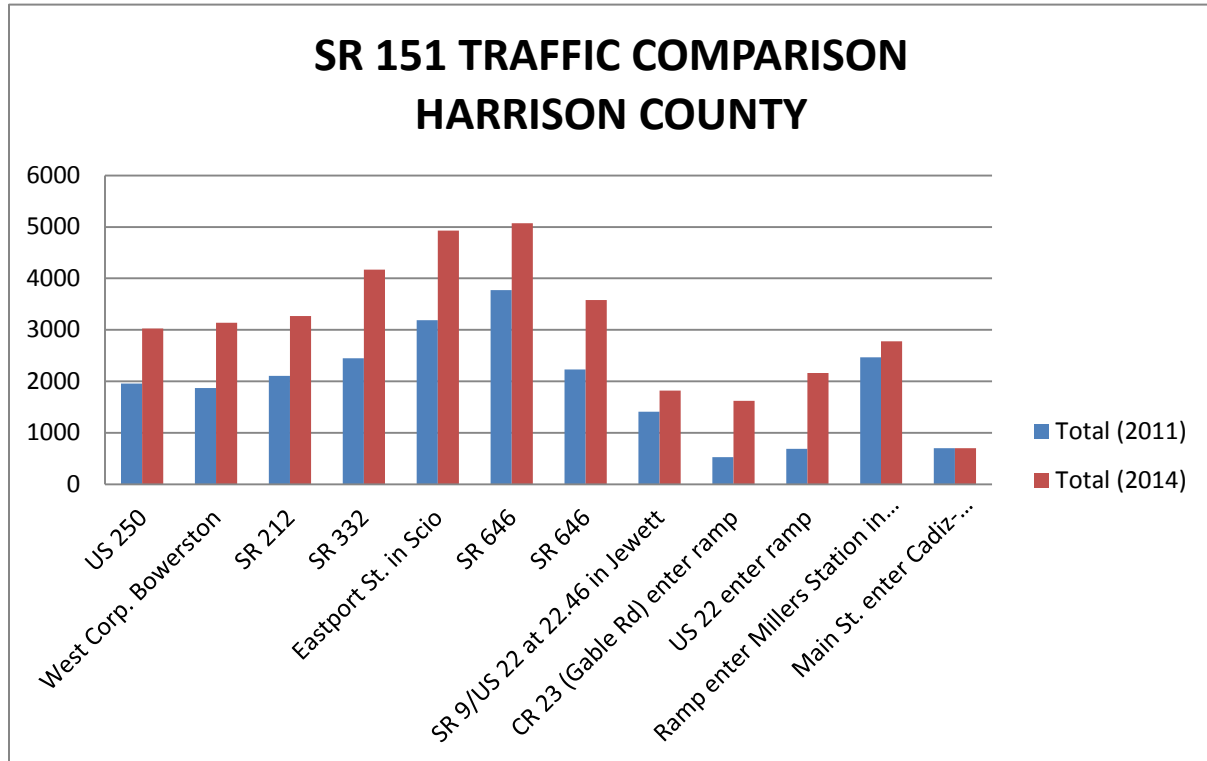










Figure 3-21: SR 151 Traffic Comparison Harrison County



### 3.3.3 Pavement Condition

ODOT has developed a formal Pavement Condition Rating (PCR) system to assess pavement condition in order to make informed decisions for maintenance and/or rehabilitation. The PCRs establish a standard critical threshold level below which the pavement is considered unacceptable and in need of major maintenance or rehabilitation. Various threshold levels are established that will indicate the need for routine maintenance, minor repair, major rehabilitation, etc. Pavement condition ratings also allow ODOT and local officials to rank and prioritize maintenance and rehabilitation activities. These ratings also allow for the assessment of the rate of deterioration of different pavement sections and allow the organization to modify or calibrate road performance. Pavement designers are also able to look back at the design method and analyze the effects of various design attributes on the pavement distress.

ODOT has established the following PCR scale:

<u>PCR</u>	<u>Condition</u>	
91 to 100	Very Good	
76 to 90	Good	
66 to 75	Fair	
56 to 65	Fair to Poor	
41 to 55	Poor	
0 to 40	Very Poor	

Maps showing the PCR for state and limited local routes within the OMEGA RTPPO are provided in Appendix D and are summarized in Table 3-5. Please note that these ratings are based upon data from 2012 and some roads may have been improved since then or are scheduled to be improved in 2014.

**Table 3-5: Pavement Condition Rating Summary**

<u>County</u>	<u>Pavement Condition Rating, Miles</u>						<u>Total</u>
	<u>Very Good</u>	<u>Good</u>	<u>Fair</u>	<u>Fair to Poor</u>	<u>Poor</u>	<u>Very Poor</u>	
Carroll	137.6	45.9	19.0	12.3	23.9	0.0	238.5
Columbiana	206.4	145.7	67.4	49.0	9.5	0.0	478.0
Coshocton	14.1	144.2	122.9	14.7	44.4	0.0	340.2
Guernsey	110.3	173.0	78.1	54.8	15.5	0.0	431.7
Harrison	84.0	98.0	42.5	32.3	7.7	0.0	264.4
Holmes	123.4	57.9	61.5	17.1	7.7	0.0	267.5
Muskingum	147.9	131.7	93.6	40.5	24.5	0.0	438.2
Tuscarawas	99.5	180.2	68.1	33.6	8.3	0.0	389.5
<b>Total</b>	<b>923.1</b>	<b>976.4</b>	<b>553.0</b>	<b>254.2</b>	<b>141.4</b>	<b>0.0</b>	<b>2,848.0</b>

Approximately 70% of the state routes are in good to very good condition and no state routes within the RTPPO are in very poor condition.

The following routes are considered to be in fair to poor or poor condition:

#### Carroll County

- SR 212 between Sherrodsville and the Harrison County Line
- SR 212 between the Tuscarawas County Line and SR 39
- SR 164 between Leesville and SR 332

- SR 164 between the Jefferson County Line and the Jefferson County Line
- SR 39 between the Carrollton corporation line and SR 43
- Aurora Road between Bane and the Carroll/Jefferson County Line

### Columbiana County

- SR 154 between SR 7 and state border
- SR 7 between Middle Fork Little Beaver Creek and the City of Columbiana
- US 30 from SR 11 interchange and SR7
- SR 664 between SR 9 and Summitville
- SR 39 from 10 Street Extension to SR 7
- SR 517 in Lisbon
- Ellsworth near the intersection with SR 14 in Salem
- SR 267 in East Liverpool
- SR 45 in Wellsville
- SR 39 from 10<sup>th</sup> Street in Yellow Creek Township to SR 7
- **City of Columbiana:** Section of Heck Road in the City of Columbiana
- **City of East Liverpool:** Sections of 4<sup>th</sup>, 6<sup>th</sup>, Jefferson, Broadway, Walnut, Park, and Lisbon Street (SR 267)
- **City of Salem:** SR 9 between New Garden Avenue and Depot Road
- **Village of East Palestine:** Clark between SR 165 and Sumner Street
- **Village of Leetonia:** Sections of Walnut, Main, Chestnut and Washington
- **Village of Lisbon:** Lee Street (SR 164) between SR 45 and SR 517
- **Village of Wellsville:** Sections of 10<sup>th</sup>, 17<sup>th</sup>, 18<sup>th</sup>, Commerce, Broadway, Main, SR 39, Springhill-Cemetery, SR 45, and SR 39

### Coshocton County

- SR 83 between US 36 and the Holmes County Border
- SR 93 between US 36 and the Tuscarawas County Border
- **City of Coshocton:** Sections of SR 541\*, Chestnut, Main, Walnut, Ostego, 3<sup>rd</sup>, 7<sup>th</sup>, and 16<sup>th</sup>
- **Tuscarawas Township:** TR 453

### Guernsey County

- SR 265 between US 40 and SR 285\*
- SR 209 between I-70 and the Muskingum County Line\*\*
- US 40 between Old Washington and the Belmont County Line\*\*
- SR 513 between Quaker City and US 22
- SR 258 between the Tuscarawas County line and the Tuscarawas County Line
- SR 209 in Byesville between Fourteenth Street and Sixth Street
- SR 821 in Byesville between SR 209 and Brown Drive
- **City of Cambridge:** Sections of SR 209 (Southgate Parkway and Steubenville Avenue), Georgetown Road, Oakland Blvd, Woodlawn Avenue, Fairdale Drive, and Skyline Drive

### Harrison County

- Sections of US 250 between Tappan Lake and Cadiz
- SR 646 between SR 9 and the Jefferson County Line
- SR 800 in Freeport
- SR 9 south of New Athens
- SR 151 in Bowerston
- SR 212 between SR 151 and Carroll County Line
- US 250 between High Street Road and Jefferson County Line
- **Village of Cadiz:** US 250 between South Main Street and Holmes Avenue

### Holmes County

- SR 515 between SR 39 and US 62\*\*
- SR 83 in Millersburg
- SR 206 between US 62 and Coshocton County Line
- **Village of Millersburg:** Sections of SR 83 and SR 39

### Muskingum County

- SR 83 from New Concord to the Coshocton County Line
- SR 93 between SR 83 and the Coshocton County Line
- SR 209 between SR 83 and the Guernsey County Line
- SR 666 from Zanesville to Dresden
- Sections of US 22 in Zanesville and South Zanesville
- US 60 in Philo
- SR 16 in Licking Township
- US 22 between Roseville Road and Springfield Township Line
- SR 555 between Moxahalla Avenue and Zanesville Corporation Line
- SR 146 between Blue Avenue and Zanesville Corporation Line
- SR 666 between Adamsville Road and Malinda Street
- SR 60 between Elberon Road and Market Street
- SR 146 between Marietta Street and Zanesville Corporation Line
- Olde Falls Road
- **City of Zanesville:** Sections of 4<sup>th</sup>, 6<sup>th</sup>, SR 146, SR 666, Linden Avenue, Zane Street, Adamsville Road, Muskingum Avenue, Putnam Street, and Lee Street
- **Village of New Concord:** SR 83 and US 22 from SR 83 to Rix Mills

### Tuscarawas County

- SR 258 from Newcomerstown to the Guernsey County Line
- SR 39 near Roswell
- SR 800 south of Dennison to the Harrison County Line
- SR 39 between SR 93 and Holmes County Line
- SR 416 between Donahey Avenue and New Philadelphia Corporation Line
- SR 259 between Reiser Avenue and SR 416



- Sections of Stone Creek Road (CR 21)
- **City of Dover:** Deis Hill and sections of Front Street
- **City of New Philadelphia:** Ray Avenue between 4<sup>th</sup> and Tuscarawas, SR 259 between Beaver Avenue and the corporation Line, and Park Lane from Wabash to the corporation line
- **City of Uhrichsville:** Sections of 1<sup>st</sup> and 3<sup>rd</sup> Streets and Trenton Avenue

\*Scheduled to be paved in 2014.

\*\* Paved in 2013

### 3.3.4 Level of Service

Level of Service (LOS) is a qualitative measure of the operation of traffic flow. Speed, travel time, freedom to maneuver, traffic interruptions, drive inconvenience, safety, and delay are all factors considered in the LOS. The LOS is based upon different measures of effectiveness for different transportation systems.

As defined in the Highway Capacity Manual, there are six levels of service from A as being the best to F as being the worst. These levels are defined as:

- **Level A** Free flow, with low volumes and high speeds. Traffic flows at or above the posted speed limit and motorists have complete mobility between lanes. Motorists have a high level of physical and psychological comfort and incidents or point breakdowns are easily absorbed. Level of Service A typically occurs late at night in urban areas and frequently in rural areas.
- **Level B** Reasonable free or stable flow, speeds beginning to be restricted by traffic conditions. Maneuverability within the traffic stream is slightly restricted. Motorists still have a high level of physical and psychological comfort
- **Level C** In stable flow zone, but most drivers are restricted in freedom to select own speed. Ability to maneuver through lanes is noticeably restricted and lane changes require more driver awareness. Most drivers are comfortable, roads remain safely below but efficiently close to capacity, and posted speed is maintained. Minor incidents still have no effect but localized service will have noticeable effects and traffic delays will form behind the incident.
- **Level D** Approaching unstable flow; drivers have little freedom to maneuver. Lower speeds and increased traffic volume. Minor incidents will create delays.
- **Level E** Unstable flow; operating at capacity. Flow becomes irregular and speed varies, rarely reach the posted limit. Any disruption to traffic flow will create a shock wave affecting upstream traffic. Driver's level of comfort is poor.
- **Level F** Forced or breakdown flow. Frequent slowing required. Demand exceeds capacity and the road is in a constant traffic jam.

In rural areas, interstates, other freeways and expressways, and arterials are generally designed for a LOS of B (or C in hilly terrain). Collectors are normally designed for a Level of Service C (or D in hilly terrain). In urban and urbanized areas, the design LOS for these functional classifications is normally C, regardless of terrain. Local roads in both rural and urban areas are normally designed for a LOS D.

As shown in Appendix E, the Level of Service for the major routes within the RTPD is C or higher. All federal and state routes in Harrison County have a LOS of C or better. The following routes within the RTPD have an LOS of D:

- **Carroll County** SR 183 from the Stark County Line to Malvern  
SR 183 in Minerva  
SR 43 in northern Carrollton
- **Columbiana County** SR 170 between St. Clair Township and Middleton Township  
SR 14 in Columbiana and the center of downtown Columbiana
- **Coshocton County** SR 16 from the Muskingum County Line to City of Coshocton
- **Guernsey County** I-70 between Exit 176 and I-77
- **Holmes County** SR 39 between Walnut Creek and Berlin  
US 62 between Berlin and Millersburg  
SR 83 in Millersburg
- **Muskingum County** I-70 from Zanesville east to the Perry Township Line  
Section of SR 16 to the Coshocton County Line  
SR 60 between Zanesville and Muskingum Township  
Sections of SR 146 in Falls Township  
SR 93 south of the intersection with US 22
- **Tuscarawas County** SR 39 between Dover and Sugarcreek  
US 250 north of Strasburg  
Sections of SR 259 in New Philadelphia  
US 36 south of the Village of Tuscarawas

SR 83 south of Millersburg in Holmes County and a section of SR 146 west of Zanesville in Falls Township have a LOS of E. There are no routes within the RTPD that have a LOS of F.

During meetings of OMEGA's Transportation Advisory Committee (TAC) and the Executive Board, OMEGA solicited input on transportation needs and concerns. At these meetings, committee members also identified the following congested areas:

- **Columbiana County:** SR 14 east side of Salem near hospital  
SR 170 in St. Clair Township (Columbia Drive Completion)
- **Guernsey County:** I-70/SR 209 Interchange and SR 209/Dozer Road
- **Holmes County:** Downtown Millersburg (intersection of SR 39, SR 83, SR 241 and US 62)  
and SR 83/US 62 south of downtown Millersburg  
Intersection of SR 557/SR 39
- **Muskingum County:** Maple Avenue (SR 60) in Zanesville
- **Tuscarawas County:** I-77/SR 39 Interchange New Philadelphia (exit 81)

SR 39 (High Avenue) in New Philadelphia  
I-77/SR 39 Interchange Dover (exit 83)  
I-77/US 250 Interchange Strasburg (exit 87)  
US 250 through Strasburg

Traffic counts, accidents, and planned developments along each of these corridors were reviewed and summarized in the sections which follow.

#### 3.3.4.1 Columbiana County

SR 14 through the City of Salem is a two lane road with an ADT of 16,910. Between 2011 and 2013, 250 accidents including one fatal accident have occurred along SR 14 in Salem. This is a commercial area that includes the hospital, shopping centers, restaurants, and a hotel.

To alleviate the congestion along SR 170, St. Clair Township wants to complete Columbia Drive which will connect SR 170 to McGuffy Drive. The ADT along SR 170 is 10,560. Between 2011 and 2013, 139 accidents have occurred along SR 170 between US 30 and CR 428. This is also a commercial area with several shopping centers and access points to local businesses. Completion of Columbia Drive will allow local traffic to divert from SR 170 to McGuffy Drive and will alleviate the congestion that occurs especially during rush hour and weekends.

#### 3.3.4.2 Guernsey County

Local elected officials and other community leaders were unanimous in their opinion that the I-70/SR 209 interchange (south) to include intersection of SR 209 and Dozer Road was the most congested area in the City of Cambridge and Guernsey County. The ADT of the SR 209 corridor south of I-70 is 25,310 (2011), 880 of which are type B & C commercial vehicles. During the period of 2011 to 2013, 33 accidents occurred along this corridor, 55% of which were rear end collisions or sideswipe and 21% occurred during wet weather. Severe rutting is also occurring along this corridor. SR 209 is a five lane principal arterial with some sections six-lane with a dedicated turn lane.

The SR 209 corridor includes a Pilot Station, shopping centers, strip malls, restaurants, a motel, a concrete plant, and a deep injection well for the disposal of drilling fluids from the hydraulic fracturing process. Please note that since the well was installed in 2013, any additional traffic associated with this well is not included in the 2011 counts. Planned development for this corridor includes a 100-room hotel, a 200-seat full service restaurant, an 80-room extended stay motel, and a 17,000 square foot office/retail complex. To address existing and future concerns about congestion along this corridor, ODOT retained DLZ to conduct a Safety Study for the GUE-SR 209 10.45 -10.9. This study was completed in June 2013. Several alternatives both short term and long term were considered. These alternatives ranged from adjusting signal timing to construction of a roundabout at the intersection of SR 209 and Parkway Plaza to eliminate left hand turns to the Pilot Station.



#### 3.3.4.3 Holmes County

Three state routes (SR 39, SR 83, SR 241) and US 62 converge in downtown Millersburg. The ADT at the intersection of SR 39 and US 62 is 13,020 with 1,130 trucks and the ADT just south of town on SR 83/US 62 is 15,420 with 1,490 trucks. All routes in this area are two lane. Between 2011 and 2013, 18 accidents have occurred.

The intersection of SR 557 and SR 39/US 62 has also been identified as a congested area. This is the major intersection in Berlin, a premiere destination for those visiting Amish Country. Restaurants, motels, shops, and strip centers line this corridor. The ADT (2011) is 9,240, 14% of which are trucks. Between 2011 and 2013, 6 accidents have occurred at this location.

#### 3.3.4.4 Muskingum County

Maple Avenue (SR 60) from Northpointe Drive to Adair Avenue has been identified as the most congested area in Muskingum County. The ADT (2013) is 29,780, 7% of which are trucks. Over 770 accidents have occurred along this corridor, and 34 at the intersection of Maple Avenue and Adair Avenue.

This is a signalized, five lane commercial corridor that also includes two major medical complexes, restaurants, strip centers, a mall, and other office/retail establishments. Unlimited access to these businesses, substandard lane widths, and unrestricted left and right turns contribute to the congestion. Signal coordination appears to have been optimized. An access management program appears to be needed to improve traffic flow; however, this will need to be balanced by providing reasonable access to the existing businesses.

#### 3.3.4.5 Tuscarawas County

Several congested areas were identified in Tuscarawas County, three of which are interchanges along I-77 at Exits 81, 83, and 87. The ADT of SR 39 at I-77 in New Philadelphia (Exit 81) is 16,320 and that of SR 39 at I-77 in Dover (Exit 83) is 15,860. The ADT of US 250 in Strasburg is 9,570. ODOT has adjusted the signal timing to improve traffic flow at the I-77/SR 39 interchange in New Philadelphia and plans to make some improvements at Exit 87 as well.

The ADT along SR 39 in New Philadelphia between Bluebell and Broadway ranges from 16,320 at Bluebell to 10,980 at Broadway Street. To alleviate the congestion between the railroad tracks and 7<sup>th</sup> Street NW (also known as the Five Points intersection), this section of SR 39 will be widened from two lanes to three lanes. This corridor is zoned commercial with additional commercial developments planned for the currently vacant land immediately west of the railroad tracks.

With the development of the Strasburg Industrial Park, traffic along US 250 in Strasburg is projected to increase. In 2012, Schlumberger, an oil and gas service company located to the Strasburg industrial

park. Existing businesses at this park have expanded and other new businesses have also located to this industrial park. A traffic study may need to be conducted to assess the need for improving access along this corridor to include the potential for a traffic signal at the intersection of US 250 and 12<sup>th</sup> Street. This approximately 1.7 mile long section of US 250 between I-77 and the western corporation limit is two lane through a commercial area. During the period between 2011 and 2013, 85 accidents have occurred on this section of US 250 in Strasburg.

### 3.3.5 Volume to Capacity Ratio

Another measure of congestion is the Volume to Capacity (V/C) Ratio. The V/C ratio is the volume of vehicles compared to the volume of vehicles the road can support based upon factors such as number of lanes, road width, and speed limit. Each road on the state network has a capacity number as well as an AADT, in this case a normalized AADT for 2012. These two numbers form the ratio. The maps in Appendix F are color coded based upon the V/C ratio. ODOT uses this number to assess the need and competitiveness of funding applications for road projects. The value determines the number of points that are applied to a sponsor's application. The V/C ratio and corresponding number of points are as follows:

<u>V/C Ratio</u>	<u>Points</u>
0 to 0.54	0
0.55 to 0.79	1 to 5
0.80 to 0.99	6 to 9
≥1	10

Under the ODOT Safety Program, a ratio of 0 to 0.54 gets 0 points; 0.55 to 0.79 is between 1 and 5 points; 0.80 to 0.99 is between 6 and 9 points; and greater than or equal to 1 receives 10 points. Please note that other funding programs, such as the Small City, may have a different scoring system for V/C Ratio.

In Carroll, Coshocton, and Harrison Counties, the V/C Ratio for the state routes is less than 0.54. In Columbiana County, SR 14 in the City of Salem has a V/C Ratio of 0.55, all other state routes in Columbiana County have a V/C Ratio less than 0.54. In Guernsey County, I-70 east of Exit 176 to I-77 has a V/C ratio of 0.67 and SR 209 south of I-70 has a V/C ratio of 0.60 to 0.75. All other state routes in Guernsey County have a V/C ratio of less than 0.54. In Holmes County, only SR 83 with a V/C ratio of 0.68 in Millersburg and US 62 east of SR 83 with a V/C ratio of 0.57 have a V/C Ratio greater than 0.54. Maple Avenue in Muskingum County has a V/C Ratio from 0.84 to 0.93. I-70 between Zanesville and Norwich, and sections of US 22, SR 146, and US 40 in Zanesville and South Zanesville have a V/C Ratio of 0.55 to 0.59. SR 250 in Strasburg has a V/C Ratio of 0.55 to 0.79 and the section of SR 39 on the eastern side of I- 77 at exit 83 in Tuscarawas County have a V/C Ratio of 0.87.

The V/C Ratio is an important part of determining need for road improvements. The roads nearing a ratio of 1.0 are barely able to support the amount of traffic they are currently carrying and should be examined and considered for improvements.