



2020 FREIGHT PLAN





2020 FREIGHT PLAN

September 2020

AKRON METROPOLITAN AREA TRANSPORTATION STUDY
161 SOUTH HIGH STREET, SUITE 201
AKRON, OHIO 44308

This report is the product of a study financed (in part) by the U.S. Department of Transportation's Federal Highway Administration, Federal Transit Administration and the Ohio Department of Transportation.

The contents of this report reflect the views of the Akron Metropolitan Area Transportation Study which is responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policy of the U.S. Department of Transportation. This report does not constitute a standard, specification or regulation.

Cooperative transportation planning by the Village, City and County governments of Portage and Summit Counties and the Chippewa and Milton Township areas of Wayne County; in conjunction with the U.S. Department of Transportation and the Ohio Department of Transportation.

Table of Contents

Executive Summary	1
Roadway Freight	2
Table 1-1 Mileages by Roadway Classification	2
Table 1-2 Number and Deck Area of Bridges	2
The Ohio Turnpike	3
Ohio Turnpike Annual Freeflow Traffic (2016-2019)	3
Highway / Trucking Network	4
Strengths	4
Weaknesses	4
Railway Freight	5
Map 2-1 Rail Line Ownership	6
METRO RTA	7
Recent Changes to the Rail System	8
Concerns	8
Congestion	8
Highway-Rail Grade Crossings	9
Map 2-2 High Volume At-Grade Crossings	10
Table 2-1 High Volume At-Grade Crossings	11
Rail Network	11
Strengths	11
Weaknesses	11
Freight Profiles	12
What Are Job Hubs?	12
AMATS Job Hubs	12
Methodology	12
Firestone Park Freight Corridor	13
Downtown Akron Freight Corridor	17
Chapel Hill Freight Corridor	21

Cuyahoga Falls Freight Corridor	25
Barberton Freight Corridor	29
Green Freight Corridor	33
Akron-Canton Airport Freight Corridor	37
Brimfield Freight Corridor	41
Gilchrist Road Freight Corridor	45
Twinsburg Freight Corridor	49
Aurora / Streetsboro Freight Corridor	53
East Akron / Airport Freight Corridor	57
Richfield Freight Corridor	61
Hudson / Stow Freight Corridor	65

Performance Measures	69
Travel Time Reliability and Freight Movement Performance Measures	69
Table 4-1 ODOT Travel Time Reliability Targets	69
Level of Travel Time Reliability	69
Level of Truck Travel Time Reliability	69
Table 4-2 AMATS Travel Time Reliability	69
Level of Travel Time Reliability	69
Table 4-3 Ohio Travel Time Reliability	70
Level of Travel Time Reliability	70
Table 4-4 TIP Projects (FY 2021-2024) Improving Travel Time Reliability	70
Level of Travel Time Reliability	70

Recommendations	71
Roadway Recommendations	71
Rail Recommendations	71
Railroad-Highway Grade Separation Recommendations	71

Conclusion	72
-----------------------------	-----------

Executive Summary

Freight is the movement of goods by land, air, or sea. For the purposes of this report, the types of freight that service the AMATS area are truck, train, and airplane. Freight is a cost-effective manner of shipping, as it moves a large quantity of goods all at once. It also allows goods to be transported over longer distances. Employers, employees, and consumers alike depend on the transportation of goods, therefore our infrastructure must continue to support it, and work must be done to continually improve it.

Why is freight important? Freight transportation employs millions of people in the United States, stimulates demand for goods and services, and increases competition. The value of goods increases when they are moved to locations where they are worth more. The movement of freight is vital to the economy of Greater Akron, specifically to the agriculture, retail, and manufacturing industries. Predictable travel times are especially important to manufacturing and distribution systems that operate on tight schedules. Goods arriving late can have negative impacts on production times, inventory management, and costs. Freight is a necessity.

AMATS and the Ohio Department of Transportation (ODOT) are responsible for ensuring that freight movement is considered in the transportation planning process. The purpose of this report is to identify the elements of the transportation system that are critical for movement of bulk goods, to determine where improvements can be made, and to offer recommendations for those improvements. Examples of transportation projects that are freight-related or critical to goods movement include bridge replacements, road widening, rail-access improvements, grade separations for highway and rail, and connections for new commercial infrastructure. Additionally, job hubs help to identify where products are being manufactured as well as where goods are being delivered. Several job hubs will be studied in this report to determine where freight may encounter traffic issues. Recommendations to improve on these issues will also be explored.

This report analyzes the highway and rail freight network. It identifies regional job hubs that generate freight activity and evaluates the freight network's efficiency in these job hubs. Finally, the AMATS Freight Report recommends strategies to improve the freight network in the AMATS region. Recommendations made in the *2020 Freight Report* will be considered for inclusion in *Transportation Outlook 2045*.

Roadway Freight

The economy of the AMATS area depends on its roadways. Business and industry depend on an effective freight transportation system to reach state, regional, national, and global markets. Trucks move most of Ohio's freight.

In 2015, 242,990 people in Ohio - or one out of every 15 workers - were employed in trucking-related occupations at private and for-hire motor carriers. The average annual wage paid to trucking industry workers was \$42,760. The total annual payroll for the trucking industry in Ohio was \$11.3 billion.

Truck traffic originates and terminates primarily in metropolitan areas. As a result, increases in freight-truck traffic have the greatest impact in the metropolitan areas in terms of greater roadway congestion, deteriorating pavement conditions, and increased emissions.

Trucks account for much of the wear and tear on roadways. A large, legally loaded truck weighing 80,000 pounds puts about the same wear and tear on a road as 9,000 to 10,000 cars. Furthermore, a large truck causes as much congestion as 2.5 to 3.5 cars on flat terrain and as much as 15 cars on uphill grades. Building and preserving roads and bridges is vital to the economy. As the economy changes, generating varying types of freight movement and new demands for reliable access to markets, policy-makers need to understand the nature of the freight system and how it affects trucking and the area's roadways.

Commercial transportation companies in Ohio are designated as public utilities under the jurisdiction of the Public Utilities Commission of Ohio (PUCO). These companies pay special fees and taxes in exchange for exemption from other taxes, such as sales tax on equipment. They are also exempt from many forms of local regulation.

In terms of trucking, one responsibility of the PUCO is to improve road safety and ensure quality, equitable service for commercial motor and hazardous materials carriers and their customers. The PUCO registers more than 58,000 general freight carriers; 2,500 hazardous materials transporters; 1,000 towing companies; and 300 household goods movers in the state of Ohio.

The Akron metropolitan area contains 4,775 miles of roadways of all types. Table 1-1 shows the length in miles and lane miles for each roadway classification.

Table 1-1 | Mileages by Roadway Classification

FEDERAL FUNCTIONAL CLASSIFICATION	LENGTH (in Miles)	NUMBER OF LANE MILES
Interstate	100	462
Ohio Turnpike (I-80)	34	192
Freeway	35	171
Principal Arterial	190	567
Minor Arterial	356	911
Major Collector	516	1,119
Minor Collector	64	127
Local	3,479	6,990
TOTAL	4,775	10,539

Please note that minor collectors and local roads are not considered part of the federal aid system; therefore, they are not eligible for federal funding. The local jurisdiction or the county in which they are located assumes responsibility for maintaining these roadways.

The Akron metropolitan area contains 1,251 bridges. Table 1-2 shows the number and deck area for each type of bridge based on information from the Ohio Department of Transportation (ODOT). The federal definition of a bridge is a self-supported structure equal to or greater than 20 feet in length. Bridges less than 20 feet are not eligible for federal funds. The railroad bridges listed in Table 1-2 are maintained by the privately-held railroad companies operating in the AMATS area.

Table 1-2 | Number and Deck Area of Bridges

BRIDGE TYPE	NUMBER OF BRIDGES	DECK AREA (Sq Ft)
Bridges (20+ feet)*	912	7,371,227
Turnpike Bridges (20+ feet)	49	1,023,021
Railroad Bridges (20+ feet)	30	118,262
Bridges (<20 feet)	314	163,364
TOTALS	1,305	8,675,874

* Includes Pedestrian Bridges

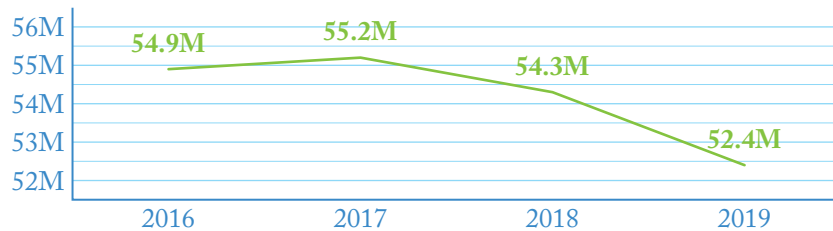
These roads and bridges support the largest portion of freight movement in the AMATS area. The current *Highway Preservation Needs Report (2045)* estimates that it will cost nearly \$1.2 billion to maintain the area's roads over the next 25 years. Bridge preservation is estimated to cost \$1.9 billion over the same period. In order for the area to maintain its transportation infrastructure and continue the status quo in terms of freight movement in the area, sufficient and regular funding will need to continue.

Taking future growth and development into account, the *AMATS Congestion Management Process* (CMP) report identifies existing and projected future congestion on our region’s freeways, arterial streets and key intersections, and provides recommendations to alleviate identified congestion. The report provides an extensive list of freeway, arterial street and intersection needs for our region.

The Ohio Turnpike

Constructed in 1955, the Ohio Turnpike is a 241-mile toll road running east-west across Northern Ohio. The Turnpike traverses the AMATS area through Northern Portage and Summit Counties paralleling SR 303. The Turnpike can be accessed through interchanges with I-77 in Richfield, SR-8 in Boston Heights, I-480/SR-14 in Streetsboro, SR-44 north of Ravenna, and at SR-5 just outside of the AMATS area in Trumbull County. In the AMATS area, the Ohio Turnpike is designated as I-80.

Ohio Turnpike Annual Freeflow Traffic (2016-2019)



The Turnpike operates under capacity; meaning that the volume of traffic does not exceed the amount of roadway needed for the smooth flow of vehicles at optimal speed. The Ohio Turnpike Commission measures and reports their traffic performance utilizing the term “Freeflow Traffic”, which is the amount of traffic moving freely without delay during the reported year. The reported numbers for the last four years is reflected in the graph above.

The speed limit on the Turnpike is 70 miles per hour. In addition, the Turnpike allows the movement of freight through the use of Long Combination Vehicles (LCVs). LCVs are combinations of multiple trailers on one tractor truck as compared to a standard 5-axle semi trailer-truck with one trailer. The use of LCVs optimizes freight movement on the highway. And the Ohio Turnpike is the only facility in the state where this is permitted.

In 2013 the Ohio assembly passed a \$7.6 billion transportation and public safety bill. This bill allows the state, for the first time, to use toll revenue from the Ohio Turnpike for projects beyond the Turnpike’s borders. The bill raises turnpike tolls for each of the

next ten years, allowing Ohio to issue \$1.5 billion in bonds and shift funding to road and bridge projects across the state.

Of the new funding available, ninety percent of the turnpike money is designated for projects within 75 miles of the Turnpike. That means projects from across northern Ohio will compete for funding.

The Turnpike Commission intends to raise tolls at no more than the rate of inflation. The state believes the bond money can leverage an equal amount of federal and local funding, yielding at least an additional \$3 billion for roads and bridges in the coming years.

Highway / Trucking Network

Strengths

- Direct Delivery of Goods to Stores and Consumers
- Accessibility to Other Modes of Transportation
- Dense Network of Roads
- Publicly Owned and Managed
- Dedicated Funds for Maintenance
- Ohio is Strategically-Located for Goods Movement (60% percent of the US/ Canada Population is within a one day drive - 600 miles)

Weaknesses

- Congestion at Strategic Locations, Bottlenecks
- Limited Ability to Increase Capacity
- Rising Fuel Costs
- Environmental Regulations
- Shortage of Trained Drivers
- Limited Funding for Maintenance and Improvements
- Limitations on Truck Size and Weights
- Speed Limits, Varying by Location

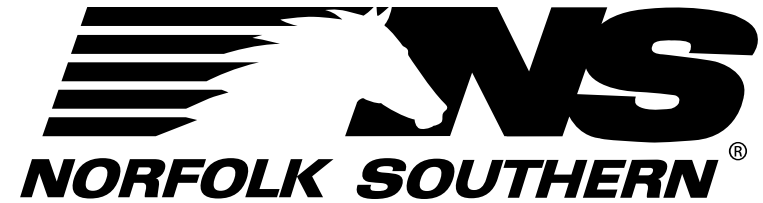
Railway Freight

Northeast Ohio lies along the heavily utilized rail route between Chicago and the US East Coast ports. Northeast Ohio serves as a hub where a large block of rail cars moving east from Chicago can be redirected toward New York, Philadelphia, Baltimore, and Virginia. The CSX route between Cleveland and New York City is particularly important. This route is known as the Waterlevel Route. This is because, from Cleveland, this route follows the coast of Lake Erie to Buffalo, and then turns east along the Erie Canal to Albany, following the Hudson River to New York. This route, following water, has no bridges and the track is in excellent condition, allowing double stack trains and train speeds of 60 mph.

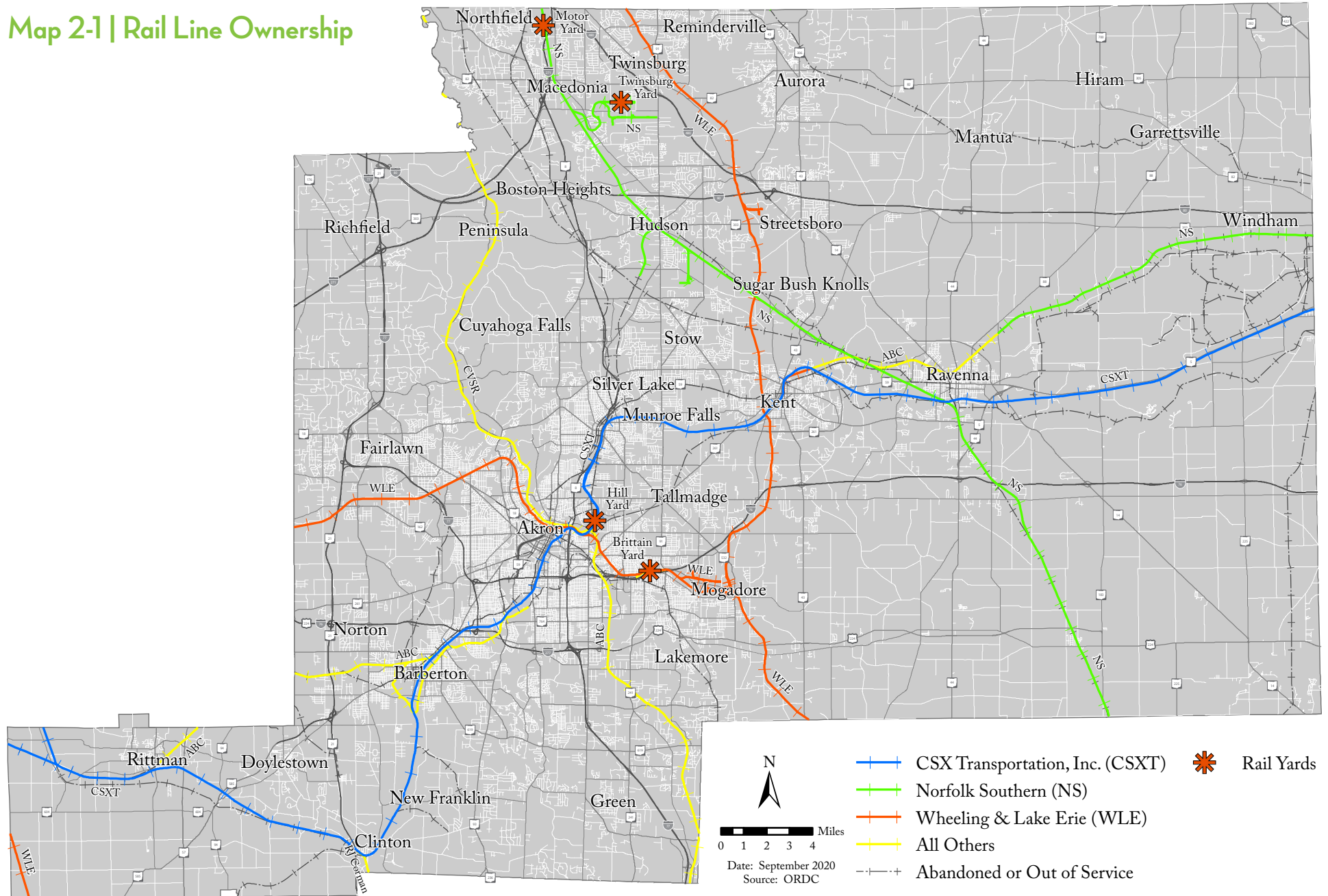
To serve its local and Ohio markets, Northeast Ohio has three intermodal terminals: Norfolk Southern (NS) has one located in Maple Heights, CSX has one located in Collinwood (on the east side of Cleveland), and the Wheeling and Lake Erie Railway has one located in Navarre (near Massillon). These terminals transfer domestic and international containers between rail and truck. Containers arrive at these terminals from coastal ports for local and Ohio delivery, and also are shipped out to these ports for export. There are no intermodal terminals in the AMATS area.

Northeast Ohio is fortunate to have connections with both NS and CSX, as well as a regional railroad of its own, the Wheeling and Lake Erie Railway (WLE). A map of the railroad lines and rail yards in the AMATS area follows on the next page. The WLE connects the Cleveland/Akron/ Canton area with Pittsburgh, Toledo, and Lima Ohio. As such, the WLE removes a significant number of trucks from Northeast Ohio highways, allowing for less congested highways and less demand for expensive highway maintenance. In addition to easing the burden on our highways, the WLE provides rate competition for the two major railroads, and allows the Canadian National Railway (CN) access to Northeast Ohio (which it would not otherwise have). WLE provides this access through CN's Lang yard in Toledo. Consequently, the WLE provides Northeast Ohio with access for three of the seven Class I railroads. In addition, WLE conveys most of the rail freight with origins or destinations in the Akron area.

The Akron Barberton Cluster Railway (ABC) is a Class III railroad that operates on 73 miles of track in and around the AMATS area. It serves as a switching service for important industries in the area. Its parent company is the Wheeling & Lake Erie Railway.



Map 2-1 | Rail Line Ownership



METRO RTA

METRO RTA is the public transit agency for Summit County, providing both fixed-route and demand response bus services.

METRO RTA also owns three rail lines, totaling 51 miles in length. These rail lines were purchased in order to preserve them for future use. Possible uses include passenger service, freight service, or recreational trail usage. The following three rail lines are owned by METRO:

- The former Conrail Akron Secondary between Hudson and Akron (terminus near Eastwood Avenue)
- The former Conrail Freedom Secondary between Akron (near Mill Street) and Kent (near Mogadore Road)
- The former CSX Sandyville Line between Akron (at Howard Street) and Canton (near Marion Avenue SW, outside of Summit County).

The Akron Secondary Line between Hudson and Akron is non-operational. This line has not had service for over twenty years. It begins as a one-track line in the City of Hudson with an at-grade crossing at Barlow Road, passing 1.5 miles south through Hudson into the City of Stow. The Akron Secondary Line then proceeds 2.75 miles through the City of Stow, entering the Village of Silver Lake at an at-grade crossing at Graham Road. The line then runs adjacent to SR 8 for one-half mile, entering the City of Cuyahoga Falls just west of Ivanhoe Road. The tracked portion of the line runs for 2.25 miles through Cuyahoga Falls before pairing with the CSX line, just north of Broad Boulevard. The final 0.6 miles of the Akron Secondary, between the Cuyahoga Falls Electric Services property and Broad Boulevard, then runs west of, and adjacent to, the main east-west CSX two-track rail line arriving from the east. The Akron Secondary right-of-way then continues south, untracked, for 3.5 miles, running from near Broad Boulevard in Cuyahoga Falls to its connection with the Sandyville Line in the City of Akron, just north of the Hill Rail Yard.

The Akron Secondary Line could be reactivated to provide a connection between the CSX Line in Cuyahoga Falls and NS in Hudson. The line could also provide service to potential clients adjacent to the right-of-way. The right-of-way would need to be restored and upgraded to Class I in order to meet these needs. Costs to restore this service would run into the millions of dollars.

Most of the Freedom Secondary Line is non-operational. Portions of the track have been removed. The right-of-way extends from a site near Mill Street in Akron to Mogadore Road in Kent. The north end of the Freedom Secondary right-of-way ties

into the WLE and NS Lines. The south end of the right-of-way does not have any existing track connecting with existing freight carriers. Portage County owns seven miles of the Freedom Secondary operating between Kent and Ravenna.

The Freedom Secondary could be reactivated to provide a connection between the WLE and NS lines at the north end of the line in Kent with the WLE and CSX lines at the south end in Akron. The line could also provide service to existing or potential clients adjacent to the right-of-way. The right-of-way would need to be reconstructed in order to be put back into service.

Currently, the Freedom Secondary trail is an 8.5 mile long bike and hike trail connecting the Cuyahoga Scenic Railroad at the Northside Station, in Akron, to Middlebury Road in Kent. It is operated by the Summit Metro Parks. In Kent, the Freedom Secondary trail connects to the Portage Bike Trail, and extends from Middlebury Road to Ravenna. The unused railroad corridor is owned by Metro Regional Transit Authority and leased to the Metro Parks.

The Sandyville Line begins in the City of Akron at Howard Street, at the eastern terminus of the Cuyahoga Valley Scenic Railroad (CVSR). The Sandyville line continues approximately 1.6 miles east, where the Akron Secondary right-of-way joins just south of Eastwood Avenue. From this junction, the Sandyville Line continues approximately 4.75 miles south through the City of Akron into Springfield Township. The line then runs for approximately 3.1 miles southeast through Springfield, where it enters the City of Green at an at-grade crossing at SR 619. From this crossing, the line then continues for approximately 6 miles before exiting Summit County just west of the Akron-Canton Airport. The Sandyville Line enters Stark County in Jackson Township at an at-grade crossing at Mount Pleasant Road, continuing southeast approximately 2.85 miles into Plain Township at an at-grade crossing at Whipple Avenue. The Sandyville Line then proceeds 1.85 miles southeast through Plain Township, entering the City of Canton approximately 300 feet north of the I-77 overpass of 38th Street. The Sandyville Line travels south through the City of Canton for 3.9 miles just east of I-77, ultimately terminating at the Canton Crossing Diamond where it connects to the former Conrail line operated by WLE and NS.

The Sandyville Line and a short section of the Freedom Secondary near Kent are in active use for local freight service. In addition, the Sandyville Line is also used by the CVSR for excursion service to Canton. Despite the costs and liability, METRO continues to invest in the maintenance of this rail line, serving an important role in economic development.

Recent Changes to the Rail System

To accommodate projected increases in rail traffic, CSX completed the National Gateway project. This project involved the development of a significant block-swap yard near Toledo, Ohio, and a new intermodal terminal in Pittsburgh. Phase One of the \$850 million project, between CSX's existing terminal in Chambersburg, Pennsylvania, and its hub facility in Northwest Ohio was completed in September 2013. The North Baltimore Intermodal Terminal project is a public-private partnership with ODOT and the federal government.

The National Gateway expands and improves freight rail service by alleviating freight bottlenecks in the Midwest that cause delays for companies and consumers shipping or receiving freight from West Coast ports. This project reduces freight transit times by 24 to 48 hours between ports on the West Coast and major consumption centers in the East by enabling freight to move more efficiently through the AMATS area. A double stack rail route between mid-Atlantic ports and the Midwest markets frees up highway capacity by creating an additional option for transporting freight. Moving freight by rail reduces congestion and deterioration on our nation's highways by reducing truck miles traveled.

The Norfolk Southern (NS) Railway has successfully implemented the Heartland Corridor Project. This project enlarged tunnels to create a double stack rail route between the Port of Norfolk, Virginia and Columbus. The project also involved the construction of a major intermodal terminal in Columbus (near the Rickenbacker Airport) in another public-private partnership that cost hundreds of millions of dollars. The Heartland Corridor was originally designated as a Project of National and Regional Significance under SAFETEA-LU, and received an initial \$90 million earmark. These funds, combined with funding from Norfolk Southern and from the states concerned, have been used to develop the corridor north from Columbus to Bellevue, Ohio, and then on to Fort Wayne, Indiana and Chicago, Illinois.

The nearest intermodal facility is located in Stark County. It opened in 1996. The Neomodal terminal, although currently underutilized, is located on the regional Wheeling & Lake Erie Railway, which offers interconnection to the Canadian National Railway and others.

Concerns

Summarizing the trends above, it appears that both major Class I railroads are operating intermodal terminals in Pittsburgh, Columbus, and Toledo. Their investments do not include direct investments in Northeast Ohio, despite the fact that Northeast Ohio is the historical manufacturing center of the state. Thus, the railroads do not foresee a return to traditional manufacturing in the area. In addition, there is the concern that the intermodal terminals will compete for business with the existing Northeast Ohio intermodal terminals.

Congestion

The most recent *Ohio Freight Rail Choke Point Study* (2007) identified the 30 most severe choke points in the Ohio freight rail network by considering:

- Severity of the existing choke point;
- Potential for Ohio truck-to-rail diversions;
- Potential for Ohio job creation or retention;
- Impact of the choke point on railroad operating efficiency;
- Project readiness; and
- Safety, security, and environmental issues

Of the 30 choke point locations, one location is found in the AMATS area: the CSX Lambert (Southwest Akron) to Warwick section near Clinton. It is one of few remaining single-track segments on the CSX main line between Baltimore/Washington and Chicago. A mixture of bulk commodities, merchandise, and intermodal traffic moves between the West Coast and Midwest to and from Mid-Atlantic markets.

Occasional congestion at this location not only inhibits the movement of freight; it also poses a safety and traffic congestion problem as stopped trains block several at-grade crossings in the area. Safety vehicles (police, fire, ambulance) are required to drive around the blocked at-grade crossings in order to reach their destination. The proposed solution is to construct a second main line on 9.25 miles of abandoned, parallel, ex-Conrail right-of-way at an estimated cost of \$10.9 million. Financial and environmental concerns have left this project unfinished.

This project would increase capacity and improve rail service, helping to divert long-haul trucks from the highway network. This project would free highway capacity, lower maintenance costs, improve safety, and mitigate mobile air pollutants, and reduce delays on this section of track, thereby increasing the overall average train speed. As CSX is a private company and the owner of this private right-of-way, improvements can only be made in cooperation with CSX.

Highway-Rail Grade Crossings

A highway-rail grade crossing is where a railway and roadway intersect. There are approximately 393 grade crossings in the AMATS area (many are on abandoned or out of service rail lines). At-grade crossings are protected either by train-activated, active warning devices (such as gates and flashing lights) or by passive warning devices (such as crossbucks, stop signs, and yield signs). Trains often require a mile or more to stop and are unable to deviate from their path. Consequently, safety at grade crossings is primarily a motorist's responsibility. The warning devices are there to protect motorists, not trains.

As a result, states, not railroads, are responsible for evaluating grade crossing risks and prioritizing grade crossings for improvement. The decision to install a specific type of warning device at a particular public grade crossing is made by ODOT, not by the railroad, with final approval by the Federal Highway Administration.

Ideally, highway-rail grade crossings would be separated if feasible. Grade separation projects eliminate safety and delay concerns by redirecting the vehicle, pedestrian and bicycle traffic above or below the railroad tracks. Construction of overpasses and underpasses are costly, and this is not always feasible due to cost or geographic configuration.

The Association of American Railroads recommends that at-grade crossing accidents can best be reduced through a mix of engineering, education and enforcement, including:

- Closing unnecessary crossings, and adopting a uniform national at-grade crossing closure process, combined with a freeze on the overall number of grade crossings within each state. Ultimately, the goal is to eliminate all at-grade crossings on the National Highway System.
- Generously funding Operation Lifesaver, a nationwide non-profit organization that educates the public about the need for proper behavior at grade crossings and on railroad property; as well as a research and development program to design effective low-cost active warning systems for at-grade crossings.
- Examining the effectiveness of other types of warning devices such as four quadrant gates.
- Requiring that grade crossing safety be part of commercial driver's license educational curricula and administer tough penalties for grade crossing traffic violations.
- Requiring a minimum set-back or a physical safety barrier between active railroad tracks and adjacent parallel trails and paths.

Ohio has four major grade crossing safety programs that use a combination of both federal and state funds as part of its Highway Safety Improvement Program (HSIP). The use of four programs allows for flexibility to maximize needed improvements at the state's at-grade crossings. The four programs are:

- The formula-based upgrade program is based on a calculation of the most hazardous crossings.
- The corridor-based upgrade program provides a framework for systematically considering, identifying, and prioritizing projects that have public safety benefits at multiple grade crossings along a railroad corridor. Ohio identifies these corridors in collaboration with the railroads. The Heartland Corridor is an example of a corridor-based project that runs through the state.
- The constituent-identified upgrade program considers project referrals from a number of sources and makes selections based on hazard rankings, extenuating conditions, and funding availability.
- The preemption program upgrades warning devices and traffic signals to establish appropriate traffic signal preemption when a train approaches a crossing that has a highway traffic signal in close proximity.

Ohio has the fourth largest number of highway rail grade crossings in the country behind Texas, Illinois, and California. As of 2018, 5,737 at-grade vehicular public crossings are located in Ohio, of which 58% have flashing lights and roadway gates, 32% have passive systems such as crossbucks, and 10% have flashing lights.

ORDC administers an average of \$15 million in infrastructure improvements at highway rail grade crossings annually.

The AMATS area has a number of at-grade crossings with significant train and vehicle volumes.

Between the years of 2016 and 2018, the AMATS area suffered four train-motor vehicle crashes. One of these crashes resulted in a fatality, one resulted in injury, and the remaining two only resulted in property damage.

Map 2-2 on page 10 shows all at-grade crossings in the AMATS area with high volume crossings highlighted. At-grade crossings are prioritized by scoring the number of trains per day and the daily traffic volume (ADT). Scores greater than 100 are shown in Table 2-1 on page 11.

Map 2-2 | High Volume At-Grade Crossings

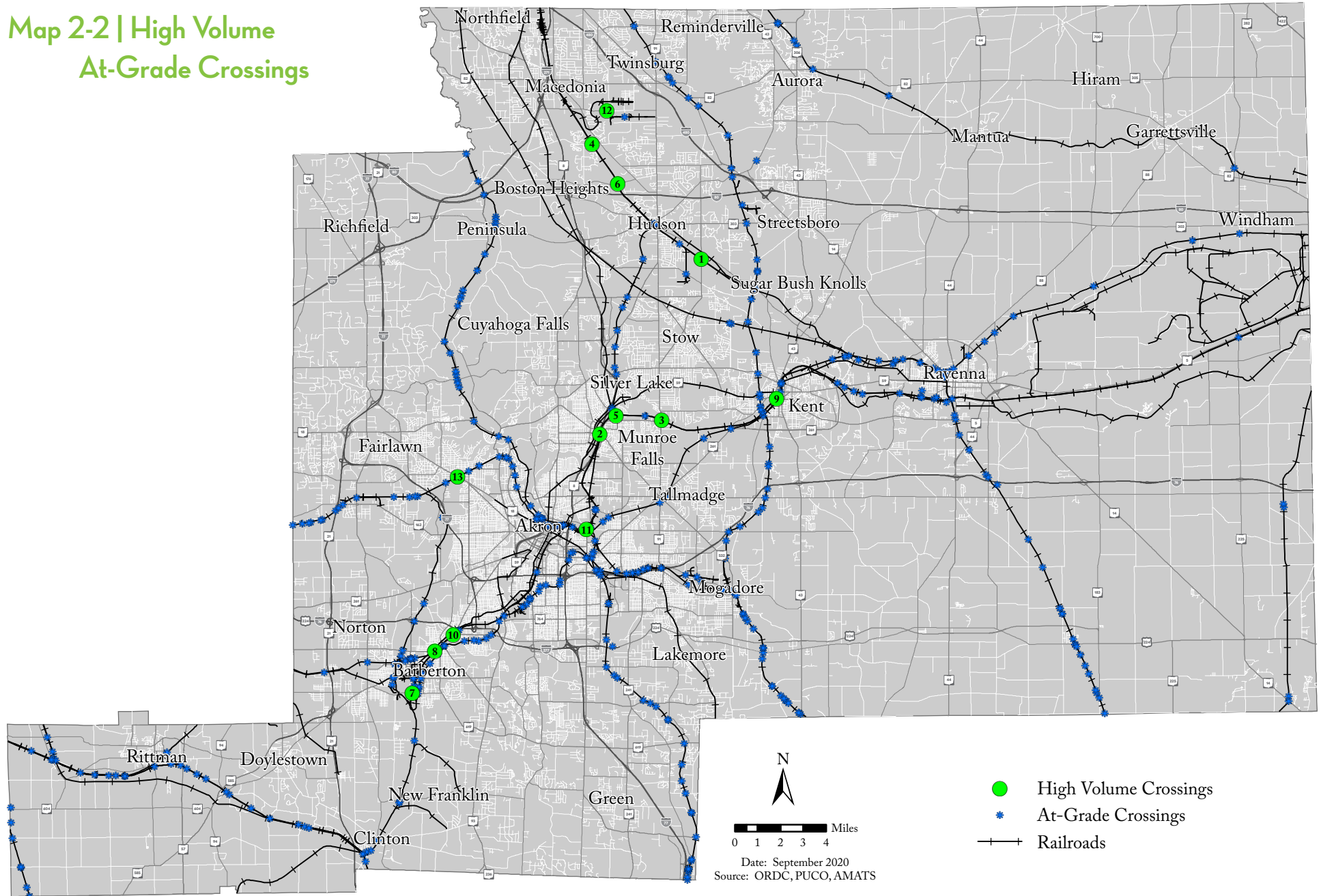


Table 2-1 | High Volume At-Grade Crossings

RANK	STREET (LOCATION)	TRAINS PER DAY	VEHICLE ADT	SCORE
1	Stow Rd (Hudson)	70	10,280	720
2	Broad Blvd (Cuyahoga Falls)	32	15,385	492
3	S Main St (Munroe Falls)	27	16,694	451
4	E Twinsburg Rd (Macedonia)	74	5,550	411
5	Bailey Rd (Cuyahoga Falls)	27	13,315	360
6	E Hines Hill Rd (Hudson)	62	3,710	230
7	Hudson Run Rd (Barberton)	32	5,161	165
8	Fairview Ave (Barberton)	29	5,251	152
9	W Summit St (Kent)	27	5,438	147
10	W Waterloo Rd (Twinsburg Township)	31	4,383	136
11	N Arlington St (Akron)	27	4,630	125
12	E Highland Rd (Twinsburg Township)	10	11,679	117
13	W Market St (Akron)	4	25,530	102

The highest priority grade crossing at the time of the previous Freight Plan (May 2016) was the Broad Boulevard crossing with CSX in Cuyahoga Falls. However, the geometrics of the area prohibit an easy grade separation at this location due to the close proximity of SR 8.

Stow Road in Hudson, crossing the busy Norfolk-Southern rail line, is a candidate for a grade separation. However, no project is scheduled at this time. Stow Road provides a good alternative to bypass the busy intersection of SR 91 and SR 303 in the center of Hudson. North Main Street (SR 91) in Munroe Falls places third in priority, and has a comparable ADT to Broad Boulevard. But the CSX rail line at this location does not have the same level of frequency (trains per day) as the Norfolk-Southern line discussed above.

The Evans Avenue Railroad Grade Separation project is currently under construction. The project consists of construction of a separated rail grade crossing over the Metro RTA and CSX railroad tracks on a new roadway alignment. This project also includes construction of concrete curbs and gutters, asphalt pavement, storm sewer, sanitary sewer, water main and a cul-de-sac. The project is approximately 2,200 feet in length, with a total project cost of \$9.3 million. Construction for this project is partially funded through a FASTLANE grant in the amount of \$5.7 million as well as an Ohio Public Works Commission (OPWC) grant in the amount of \$2.3 million. FASTLANE is a federal highway program that provides funding for projects that improve public safety, efficiency and reliability of the movement of freight and people.

Rail Network

Strengths

- Most Fuel-Efficient Land Transportation Mode
- Developed to Transport Heavy and Repetitive Loads
- Efficiently Moves Bulk Commodities and Large Volumes over Long Distances
- Intercontinental System with Connections to Multiple Shippers
- Intermodal Connectivity
- Most of the Rail System is Privately-Funded, on Private Right-of-Way
- The AMATS area has Multiple Rail Providers
- Reduces Highway Congestion by Providing an Alternative to Trucking

Weaknesses

- Rail is Less Flexible in Delivering Goods to Final Destination
- One-Third of Industry does not have Access to Rail
- Limited Funds to Fix Existing Choke Points
- Limited Funds for Capital Improvements Necessary for Forecasted Increases in Freight
- Private Infrastructure may not be Eligible for Public Funds
- Cooperation is Problematic between Competing Rail Companies
- Rising Fuel Costs
- Environmental Regulations

Freight Profiles

In 2017, AMATS partnered with Fund for Our Economic Future (The Fund) to develop 14 Job Hubs in the AMATS area.

What Are Job Hubs?

According to The Fund, “Job hubs are specific places of concentrated economic activity in a region. They are defined and identified based on the extent to which they exhibit the following four characteristics:

- **High concentration of traded-sector jobs:** We identified job hubs based on the number of traded-sector jobs in a particular area, with a focus on places with job density in the top 5 percent in the region. The research focused specifically on identifying clusters of employment in sectors of the economy like manufacturing or business consulting that can export (or trade) goods and services outside of Northeast Ohio. To learn more about the importance of the traded sector and why we focused on it in this study, download our full report here.
- **Multiple traded-sector employers:** Job hubs represent “clusters” of business activity and other assets like roads, highways, transit, and utilities. Business clustering allows for efficient use of infrastructure and creates other spill-over benefits from the accumulation of human and physical capital.
- **Alignment with local development patterns:** Job hubs reflect local development patterns and the location of businesses, infrastructure, transportation assets, and land inventory in each place. This alignment with the built-environment will hopefully facilitate local community planning discussions around potential land use policies, transportation investments or other strategies to enhance each job hub’s market competitiveness.
- **Alignment with civic priorities and economic development opportunities:** Beyond encompassing many existing businesses and jobs, job hubs also contain high-quality sites with existing infrastructure or office inventory that, if occupied, could further add density to the job hub. As we continue to develop the research, we hope to work with local partners across Northeast Ohio to promote the vibrancy and growth of regional job hubs that can compete in the global 21st-century economy.”

AMATS Job Hubs

Having identified these 14 specific focal points within the region, AMATS has been able to pinpoint general areas which serve as primary origins and destinations for freight trips based upon expected demand of businesses in retail, warehousing, manufacturing and medical services, among various others. These areas will be referred to throughout this chapter as Freight Corridors. The identified corridors are as follows:

- Firestone Park
- Downtown Akron
- Chapel Hill
- Cuyahoga Falls
- Barberton
- Green
- Akron-Canton Airport
- Brimfield
- Gilchrist Road
- Twinsburg
- Aurora / Streetsboro
- East Akron / Airport
- Richfield
- Hudson / Stow

The following pages within this chapter focus on providing freight-related information about each of the 14 Freight Corridors. The first page of each of the following profiles provides a general description of the corridor followed by some additional relevant information such as location, accessible Interstate / Freeway routes, number of jobs and pavement conditions in and around the corridor. The second page consists of tables identifying safety and traffic issues in and around the corridor. The third and fourth pages show inbound and outbound truck traffic for the corridor.

Methodology

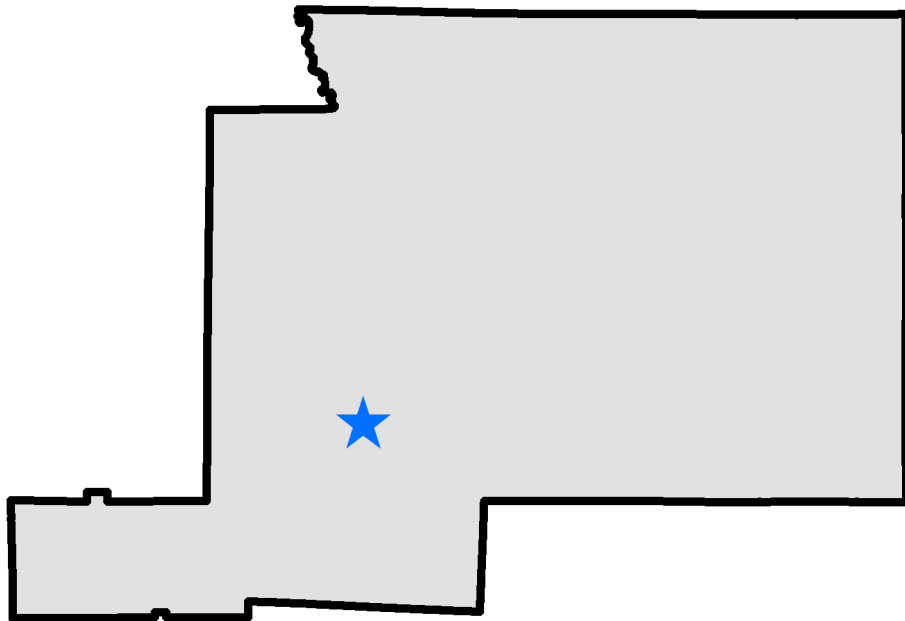
The data displayed in the last two maps for each corridor was derived from a Streetlight Data analysis project. Using the boundaries for each corridor as both an origin and a destination, data regarding truck trips was collected. That data was then imported into GIS to map the total percentage of truck trips in and out of the corridor by means of each roadway.

Firestone Park Freight Corridor

Characteristics:

The Firestone Park Job Hub is located just south of downtown Akron and is easily accessed by I-76 to the north, I-277 to the south, I-77 to the east and SR 93 to the west. The job hub encompasses the original Firestone Headquarters and campus and Bridgestone Americas still has a presence in the corridor and employs approximately 700 jobs in the technical center. There are an estimated 2,500 jobs located within the job hub, in the industries of manufacturing, transportation and warehousing, and professional, scientific, and technical services. There are a number of locations within the corridor that have the potential to negatively impact freight traffic. These locations include high crash intersections and segments as well as congestion on US 224 and on Wilbeth Road. This job hub benefits from its proximity to downtown Akron and several interstates as well as access to the ABC Railway and the CSXT rail lines.

Location:



Key Freeway / Highway Access:

- I-77
- SR-764

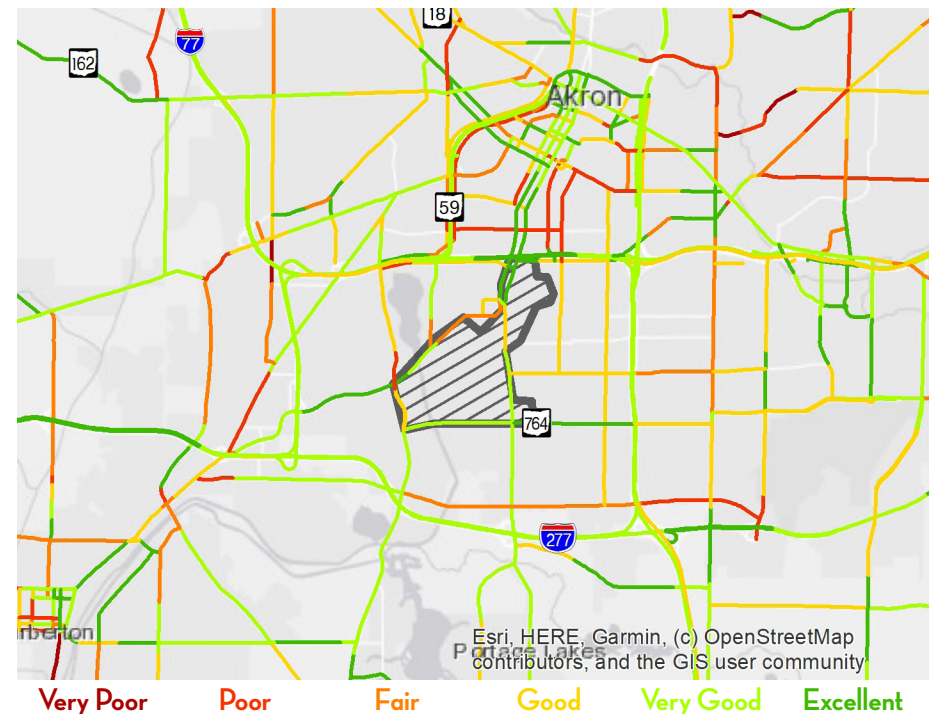
Top 3 Job Types:

1. Manufacturing
2. Professional, Scientific, and Technical Services
3. Transportation and Warehousing

2017 Estimated Jobs:

2,500

Surrounding Pavement Conditions (2018-2019):



Firestone Park Freight Corridor

Top High Crash Segments

The following table identifies the segments in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Roadway Section, From (*segment beginning location*), To (*segment ending location*), Length (MI), Average Daily Traffic, Total Crashes (*2016-2018*), Crashes per MI per YR, and Crash Rate (*crashes per million vehicle miles travelled*).

LOCATION	LOCAL RANK	OVERALL RANK	ROADWAY SECTION	FROM	TO	LENGTH (MI)	AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASHES PER MI PER YR	CRASH RATE
Akron	28	92	E Waterloo Rd	Brown St	S Arlington St	1.00	15,180	54	18	3.26
Akron	29	95	E Archwood Ave	Brown St	S Arlington St	1.00	6,960	31	10	4.08
Akron	57	162	Manchester Rd (SR-93)	Waterloo Rd	W Wilbeth Rd (SR-764)	0.60	12,030	20	11	2.54

Top High Crash Intersections

The following table identifies the intersections in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Street, Intersecting Street, Approach Average Daily Traffic (*Average Daily Traffic entering Intersection*), Total Crashes (*2016-2018*), Crash Rate (*crashes per million approach vehicles*), and Severity Index (*weighted score based upon number of fatal, injury, or property damage only crashes for the intersection*).

LOCATION	LOCAL RANK	OVERALL RANK	STREET	INTERSECTING STREET	APPROACH AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASH RATE	SEVERITY INDEX
Akron	40	83	Brown St	E Thornton St	5,310	14	2.41	1.86
Akron	49	95	S Arlington St	E Archwood Ave	19,310	30	1.42	1.60
Akron	50	100	E Wilbeth Rd (SR-764)	Coventry St / I-77 Southbound Ramp	14,150	31	2.00	1.39

Top Congested Segments

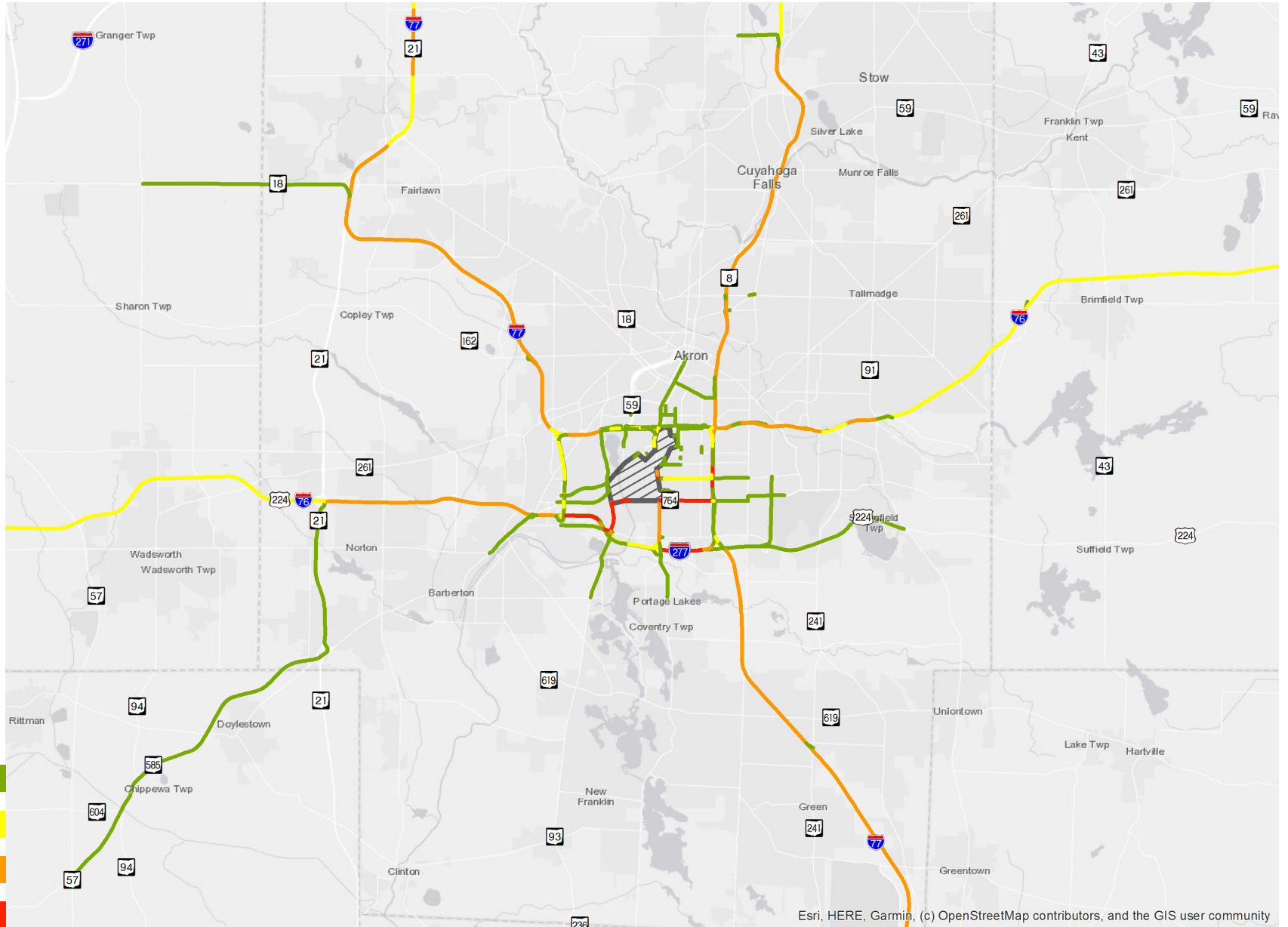
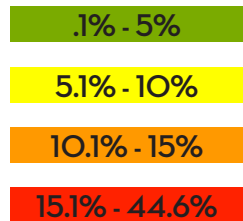
The following table identifies the top segments / intersections in or near the job hub that have been identified in AMATS' 2020 Congestion Management Process report. The fields contained within the table are: Location, Name, Miles, Time (*hour in which peak congestion occurs*), AM / PM (*half of day in which peak hour occurs*), Type (*description of section*), Direction (*direction of traffic flow*), and % Free Flow (*ratio of the speed traffic is traveling in relation to the free flow speed, or the speed at which unimpeded traffic can travel*).

LOCATION	NAME	MILES	TIME	AM / PM	TYPE	DIRECTION	% FREE FLOW
Akron	Firestone Blvd from S Main St to Grant St	0.481	5:00 - 6:00	PM	Arterial	Eastbound	48.53
Akron	Firestone Blvd from Grant St to S Main St	0.481	10:00 - 11:00	PM	Arterial	Westbound	58.80
Akron	Wilbeth Rd (SR-764) at Manchester Rd (SR-93)	0.060	4:00 - 5:00	PM	Intersection	Westbound	62.46

Firestone Park Freight Corridor

INBOUND
TRUCK
TRAFFIC

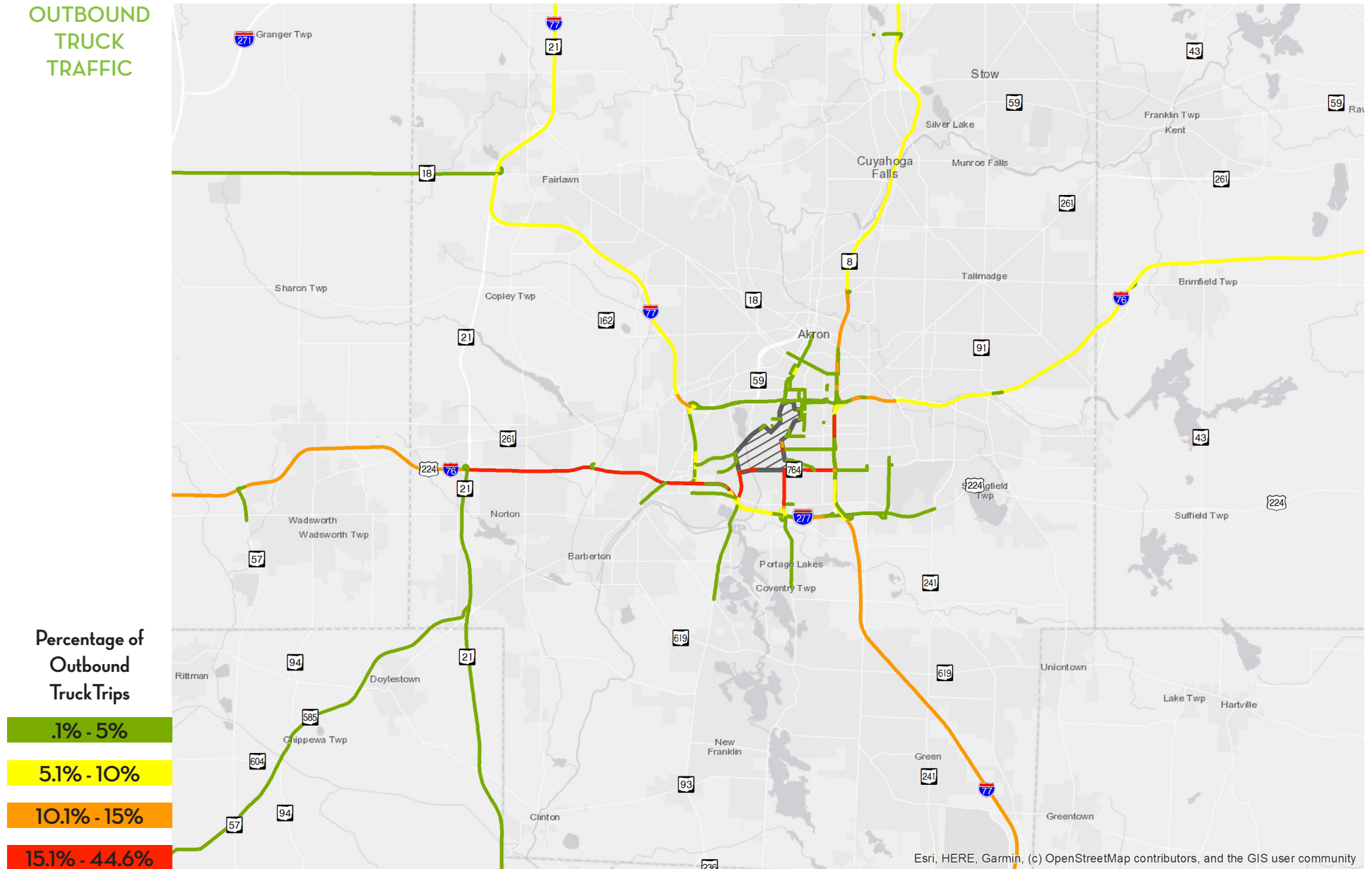
Percentage of
Inbound
Truck Trips



Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Firestone Park Freight Corridor

OUTBOUND
TRUCK
TRAFFIC



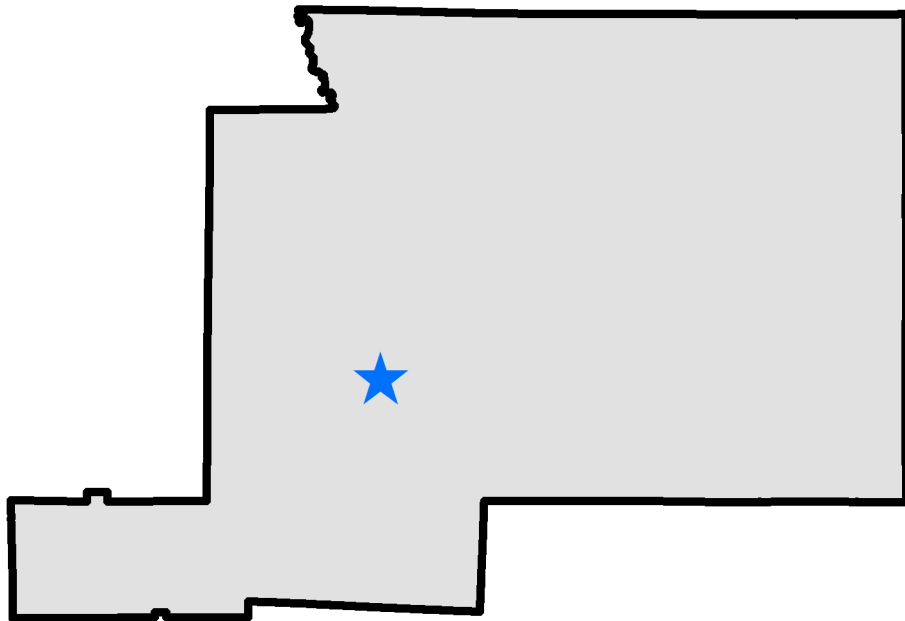
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Downtown Akron Freight Corridor

Characteristics:

An estimated 36,000 jobs are located within the Downtown Akron Job Hub, the majority of which are in the healthcare and social assistance, public administration, and educational services industries. This job hub is located in central Summit County and has easy access to I-76 and SR 8. Home to the University of Akron, downtown Akron is also a destination for art, music, retail, and restaurants, drawing travelers from surrounding areas for public events, baseball games, and fairs. Several intersections and locations in the corridor contained in the AMATS crash listings. These crashes, coupled with congestion on SR 8, contribute to potential freight delays in the area. This job hub also benefits from access to the CSXT rail line.

Location:



Key Freeway / Highway Access:

- I-76
- SR-8

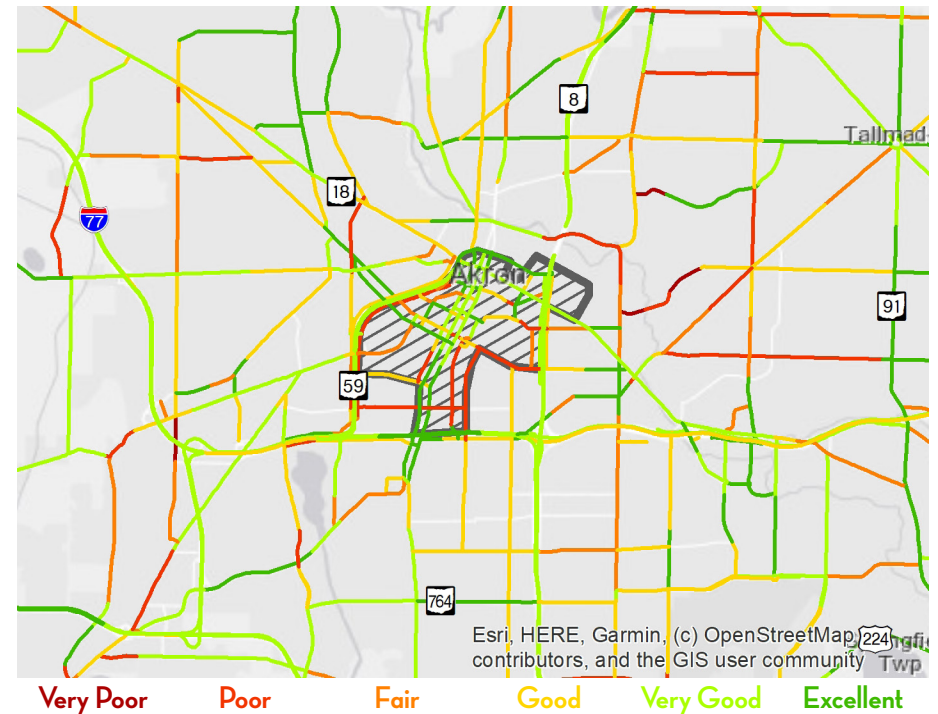
Top 3 Job Types:

1. Health Care and Social Assistance
2. Public Administration
3. Educational Services

2017 Estimated Jobs:

36,000

Surrounding Pavement Conditions (2018-2019):



Downtown Akron Freight Corridor

Top High Crash Segments

The following table identifies the segments in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Roadway Section, From (*segment beginning location*), To (*segment ending location*), Length (MI), Average Daily Traffic, Total Crashes (2016-2018), Crashes per MI per YR, and Crash Rate (*crashes per million vehicle miles travelled*).

LOCATION	LOCAL RANK	OVERALL RANK	ROADWAY SECTION	FROM	TO	LENGTH (MI)	AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASHES PER MI PER YR	CRASH RATE
Akron	1	4	Martin Luther King Blvd (SR-59)	W Market St Bridge (SR-18)	N Broadway St	0.35	18,385	31	29	4.09
Akron	3	10	W Exchange St	Rhodes Ave	Dart Ave	0.94	8,770	42	26	8.03
Akron	12	45	S Main St	S Broadway St	Bartges St	0.56	11,877	67	23	5.34

Top High Crash Intersections

The following table identifies the intersections in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Street, Intersecting Street, Approach Average Daily Traffic (*Average Daily Traffic entering Intersection*), Total Crashes (2016-2018), Crash Rate (*crashes per million approach vehicles*), and Severity Index (*weighted score based upon number of fatal, injury, or property damage only crashes for the intersection*).

LOCATION	LOCAL RANK	OVERALL RANK	STREET	INTERSECTING STREET	APPROACH AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASH RATE	SEVERITY INDEX
Akron	1	1	S Maple St (SR-162)	Rhodes Ave	13,290	41	2.82	1.88
Akron	2	2	S Maple St (SR-162)	W Cedar St	16,200	45	2.54	1.76
Akron	3	3	S Broadway St	E Thornton St	18,245	51	2.55	1.71

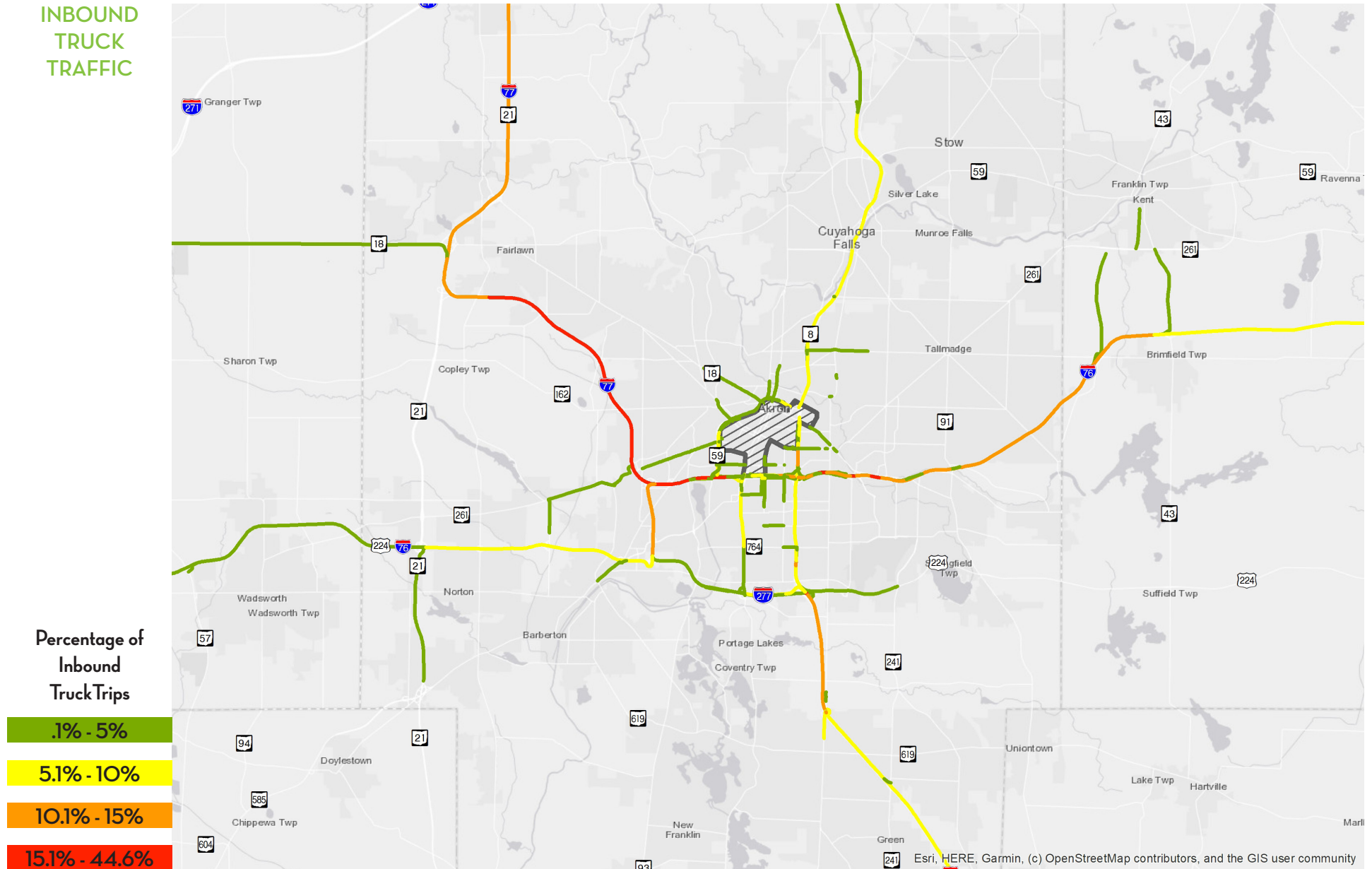
Top Congested Locations

The following table identifies the top segments / intersections in or near the job hub that have been identified in AMATS' 2020 Congestion Management Process report. The fields contained within the table are: Location, Name, Miles, Time (*hour in which peak congestion occurs*), AM / PM (*half of day in which peak hour occurs*), Type (*description of section*), Direction (*direction of traffic flow*), and % Free Flow (*ratio of the speed traffic is traveling in relation to the free flow speed, or the speed at which unimpeded traffic can travel*).

LOCATION	NAME	MILES	TIME	AM / PM	TYPE	DIRECTION	% FREE FLOW
Akron	Euclid Ave from Rand St to Dart Ave	0.084	8:45 - 9:45	PM	Arterial	Eastbound	25.40
Akron	SR-8 Southbound from Forge St to E Market St (SR-18)	0.110	4:45 - 5:45	PM	Freeway	Southbound	32.61
Akron	SR-8 Southbound from Perkins St Off Ramp to Perkins St On Ramp	0.437	4:45 - 5:45	PM	Freeway	Southbound	34.00
Akron	SR-8 Southbound from Glenwood Ave On Ramp to Perkins St Off Ramp	0.541	4:45 - 5:45	PM	Freeway	Southbound	37.56
Akron	W Exchange St from Paul Williams St to S Main St	0.029	4:00 - 5:00	PM	Arterial	Eastbound	39.97
Akron	Perkins St (SR-59) from Union St to SR-8 Southbound Ramps	0.121	4:00 - 5:00	PM	Arterial	Eastbound	40.50

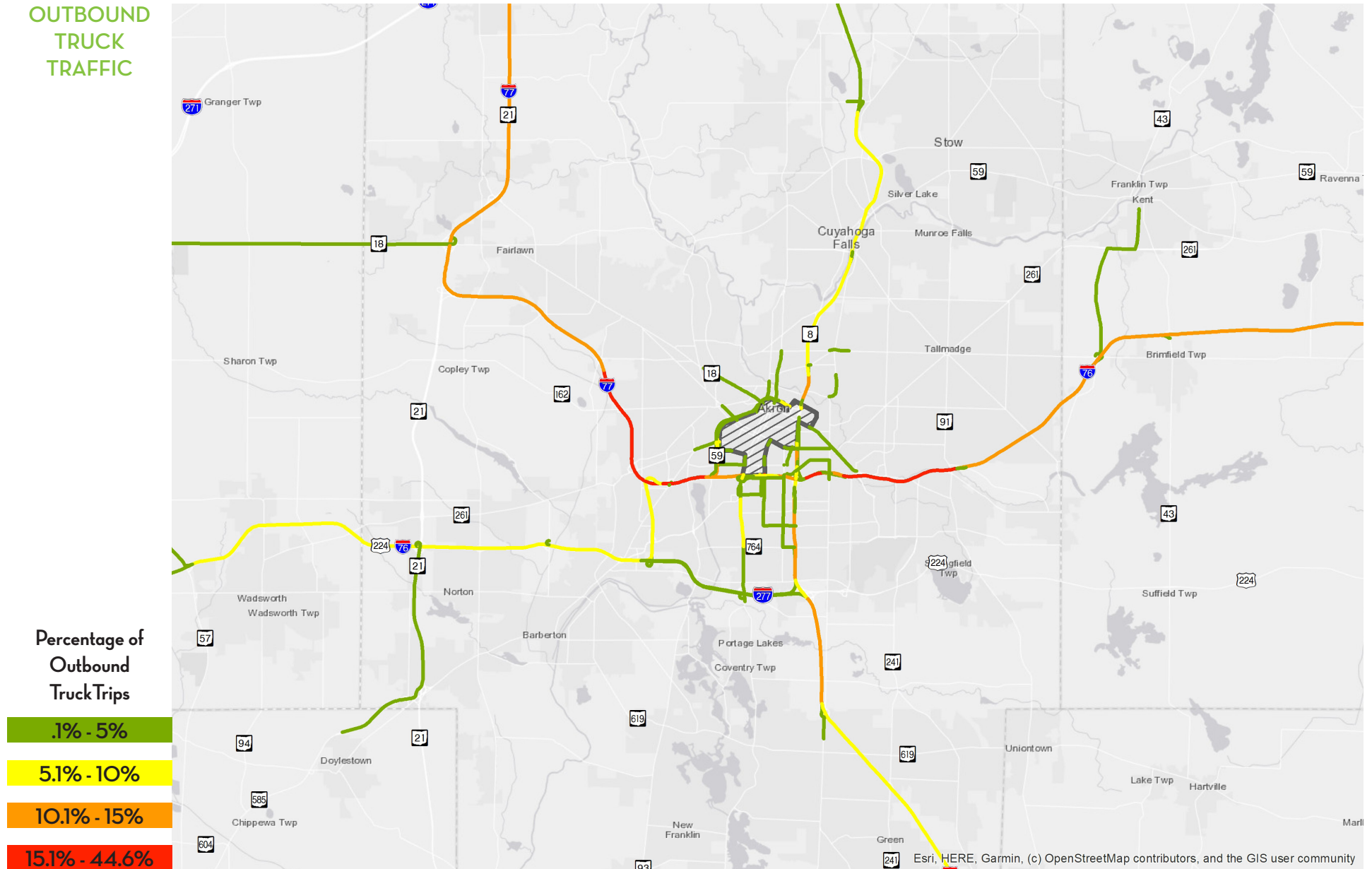
Downtown Akron Freight Corridor

INBOUND
TRUCK
TRAFFIC



Downtown Akron Freight Corridor

OUTBOUND
TRUCK
TRAFFIC



Percentage of
Outbound
Truck Trips

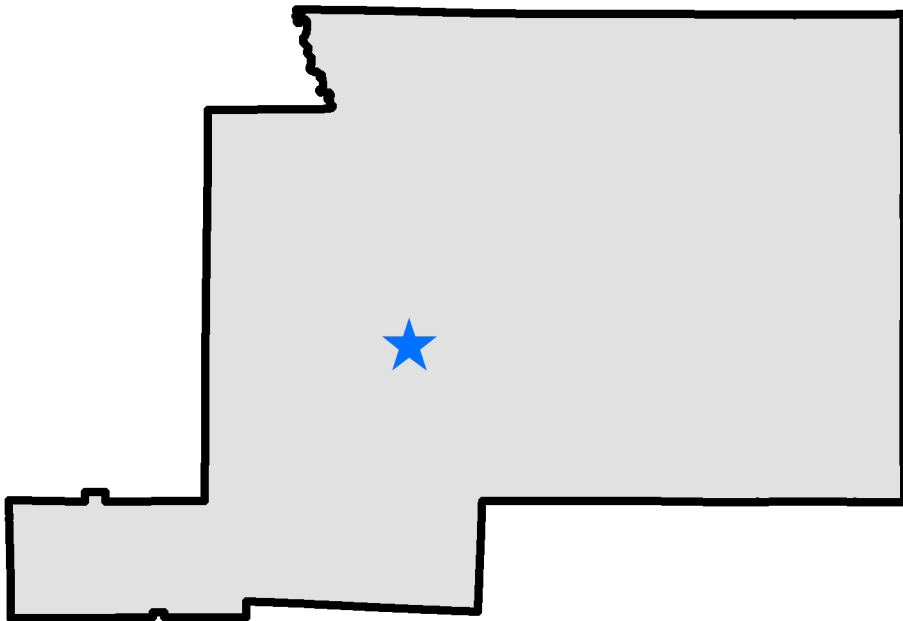
- .1% - 5%
- 5.1% - 10%
- 10.1% - 15%
- 15.1% - 44.6%

Chapel Hill Freight Corridor

Characteristics:

Located in central Summit County just north of downtown Akron, the Chapel Hill job hub employs 4,000 people in the areas of manufacturing, management of companies and enterprises, and information. Named for the nearby Chapel Hill Mall built in 1967, this job hub is easily accessed by SR 8 and continues to be a destination for retail and restaurants. In addition to SR 8, SR 261 connects the Chapel Hill area to communities to the east and west. AMATS has identified several high crash locations and intersections near the job hub, as well as highly congested areas that could interfere with freight traffic in the corridor. This job hub also benefits from access to the CSXT rail line.

Location:



Key Freeway / Highway Access:

- SR-8
- SR-261

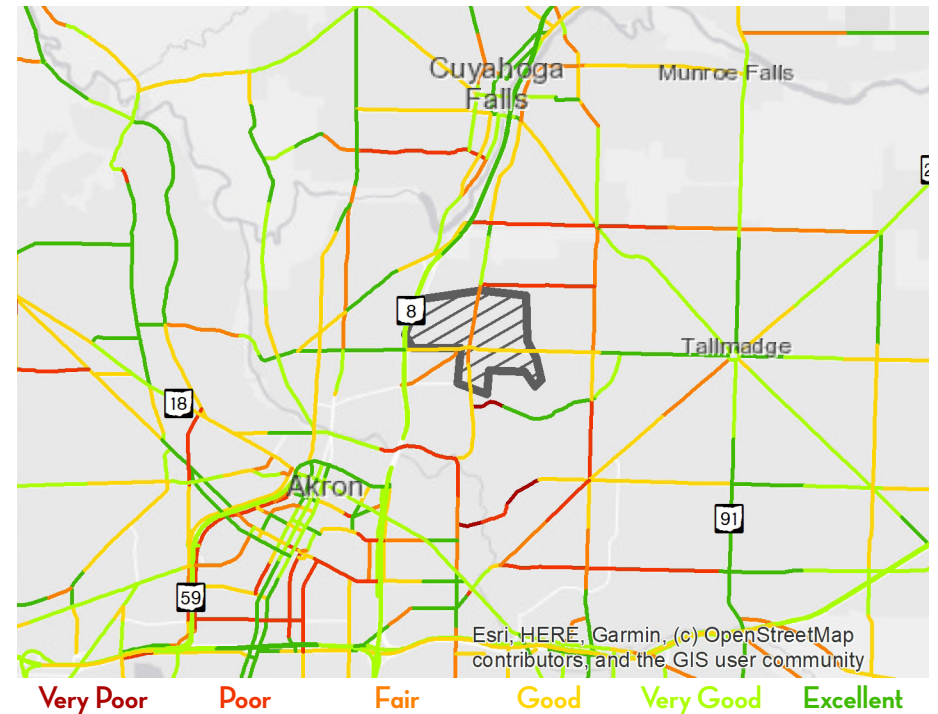
Top 3 Job Types:

1. Manufacturing
2. Management of Companies and Enterprises
3. Information

2017 Estimated Jobs:

4,000

Surrounding Pavement Conditions (2018-2019):



Chapel Hill Freight Corridor

Top High Crash Segments

The following table identifies the segments in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Roadway Section, From (*segment beginning location*), To (*segment ending location*), Length (MI), Average Daily Traffic, Total Crashes (2016-2018), Crashes per MI per YR, and Crash Rate (*crashes per million vehicle miles travelled*).

LOCATION	LOCAL RANK	OVERALL RANK	ROADWAY SECTION	FROM	TO	LENGTH (MI)	AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASHES PER MI PER YR	CRASH RATE
Cuyahoga Falls	2	28	Howe Ave	Cuyahoga Falls Corp Line	Main St	0.27	36,670	44	53	3.98
Akron	51	148	E Tallmadge Ave (SR-261)	Home Ave	Brittain Rd	1.15	15,855	47	14	2.35

Top High Crash Intersections

The following table identifies the intersections in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Street, Intersecting Street, Approach Average Daily Traffic (*Average Daily Traffic entering Intersection*), Total Crashes (2016-2018), Crash Rate (*crashes per million approach vehicles*), and Severity Index (*weighted score based upon number of fatal, injury, or property damage only crashes for the intersection*).

LOCATION	LOCAL RANK	OVERALL RANK	STREET	INTERSECTING STREET	APPROACH AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASH RATE	SEVERITY INDEX
Cuyahoga Falls	8	44	Howe Ave	Buchholzer Blvd	20,890	44	1.92	1.41

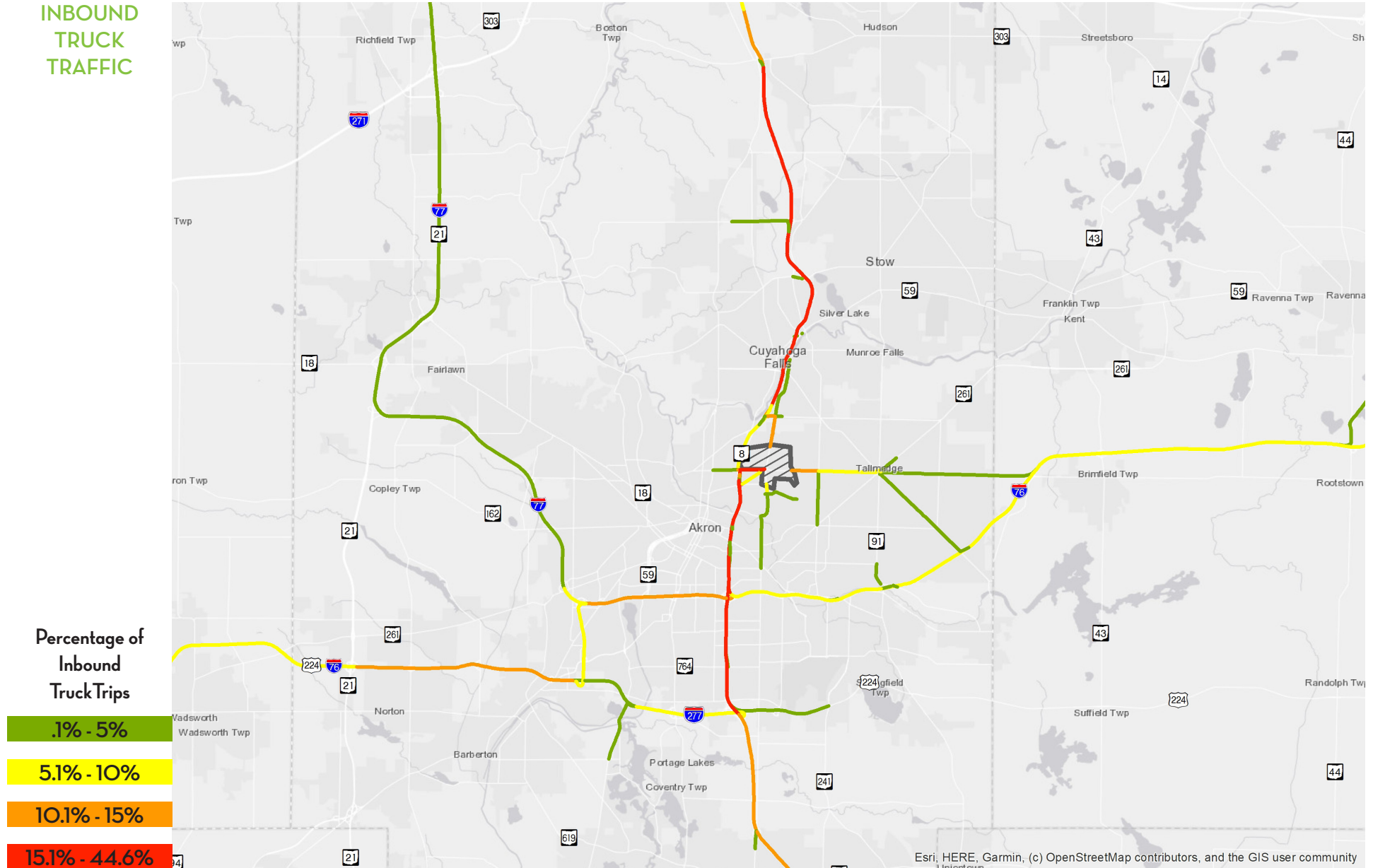
Top Congested Locations

The following table identifies the top segments / intersections in or near the job hub that have been identified in AMATS' 2020 Congestion Management Process report. The fields contained within the table are: Location, Name, Miles, Time (*hour in which peak congestion occurs*), AM / PM (*half of day in which peak hour occurs*), Type (*description of section*), Direction (*direction of traffic flow*), and % Free Flow (*ratio of the speed traffic is traveling in relation to the free flow speed, or the speed at which unimpeded traffic can travel*).

LOCATION	NAME	MILES	TIME	AM / PM	TYPE	DIRECTION	% FREE FLOW
Akron	SR-8 Southbound from Tallmadge Ave Off Ramp to Tallmadge Ave On Ramp	0.501	4:45 - 5:45	PM	Freeway	Southbound	38.06
Akron	SR-8 Southbound from E Cuyahoga Falls Ave On Ramp to Tallmadge Ave Off Ramp	0.398	4:45 - 5:45	PM	Freeway	Southbound	48.03
Akron	E Tallmadge Ave (SR-261) from Gorge Blvd to SR-8 Southbound Ramps	0.048	3:00 - 4:00	PM	Freeway Interchange	Westbound	51.79
Akron	Home Ave from Annapolis Ave to Howe Ave	0.403	12:00 - 1:00	PM	Arterial	Northbound	57.40
Akron	E Tallmadge Ave (SR-261) from SR-8 Southbound Ramps to Gorge Blvd	0.048	3:00 - 4:00	PM	Freeway Interchange	Eastbound	62.58
Akron	Home Ave from Howe Ave to Annapolis Ave	0.403	12:00 - 1:00	PM	Arterial	Northbound	63.50

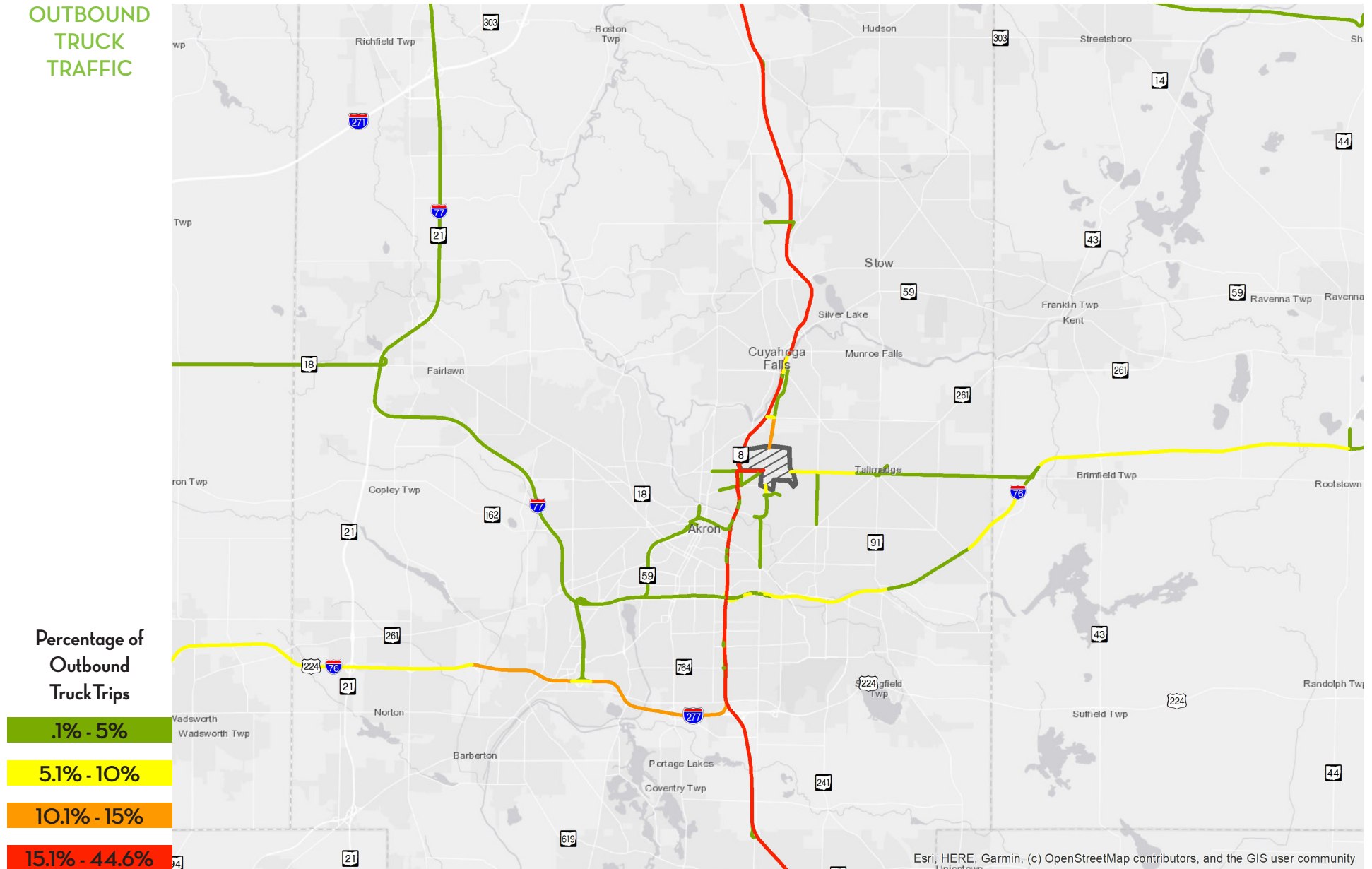
Chapel Hill Freight Corridor

INBOUND
TRUCK
TRAFFIC



Chapel Hill Freight Corridor

OUTBOUND
TRUCK
TRAFFIC



Percentage of
Outbound
Truck Trips

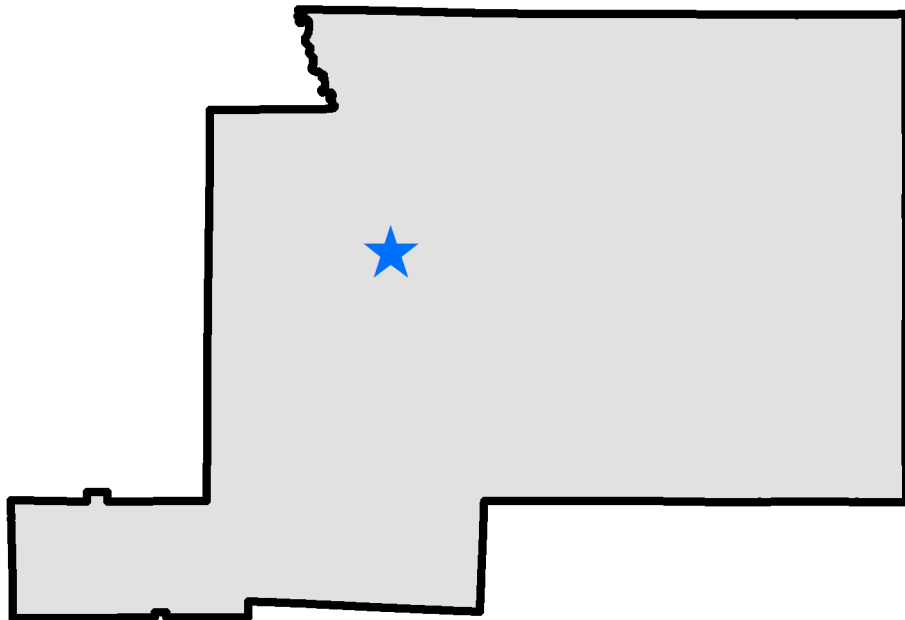
- 0.1% - 5%
- 5.1% - 10%
- 10.1% - 15%
- 15.1% - 44.6%

Cuyahoga Falls Freight Corridor

Characteristics:

The Cuyahoga Falls job hub is located north of Akron in central Summit County. The city of Cuyahoga Falls has a population of 50,000, making it one of the county's larger cities. With access from SR 8 and SR 59, this job hub includes over 5,500 jobs in the industries of manufacturing, management of companies and enterprises, administrative and support, and waste management and remediation. SR 59 is known to become congested at certain times of the day, and there are some high crash areas within the corridor that would impact incident related congestion. The city of Cuyahoga Falls has witnessed a resurgence recently due to the reconstruction and reopening of Front Street and its Portage Crossing development. These developments provide attractive amenities to employers that locate within the job hub.

Location:



Key Freeway / Highway Access:

- SR-8
- SR-59

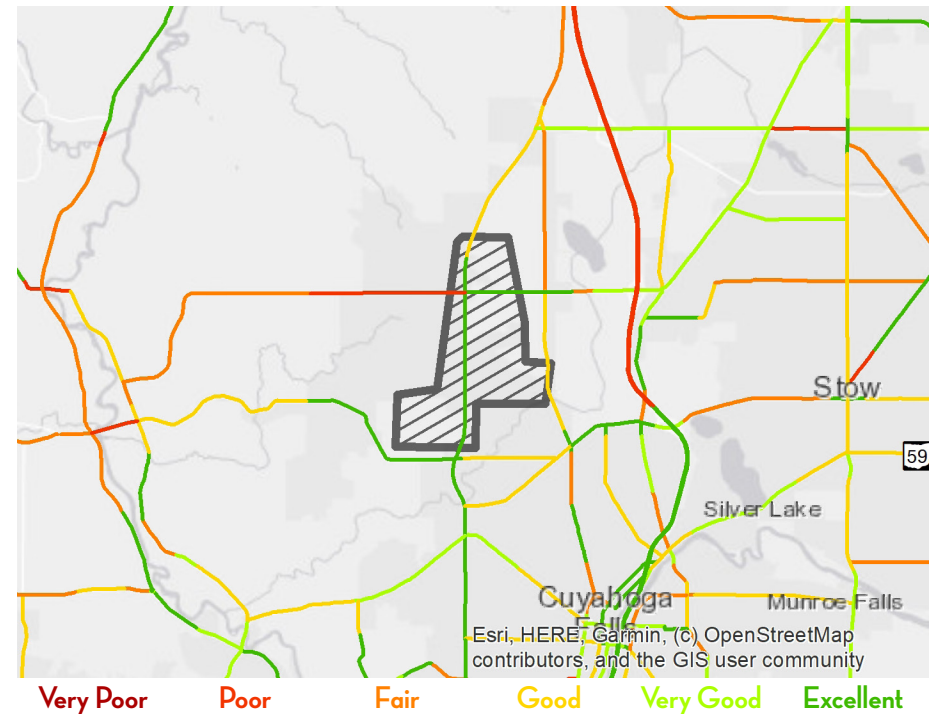
Top 3 Job Types:

1. Manufacturing
2. Management of Companies and Enterprises
3. Administrative & Support and Waste Management & Remediation

2017 Estimated Jobs:

5,500

Surrounding Pavement Conditions (2018-2019):



Cuyahoga Falls Freight Corridor

Top High Crash Segments

The following table identifies the segments in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Roadway Section, From (*segment beginning location*), To (*segment ending location*), Length (MI), Average Daily Traffic, Total Crashes (*2016-2018*), Crashes per MI per YR, and Crash Rate (*crashes per million vehicle miles travelled*).

LOCATION	LOCAL RANK	OVERALL RANK	ROADWAY SECTION	FROM	TO	LENGTH (MI)	AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASHES PER MI PER YR	CRASH RATE
Cuyahoga Falls	1	19	State Rd	Portage Trail	Graham Rd	0.27	21,530	21	26	3.34
Cuyahoga Falls	2	28	Howe Ave	Cuyahoga Falls Corp Line	Main St	0.27	36,670	44	53	3.98
Cuyahoga Falls	3	39	Howe Ave	Main St	Buchholzer Blvd	0.69	22,540	59	29	3.47

Top High Crash Intersections

The following table identifies the intersections in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Street, Intersecting Street, Approach Average Daily Traffic (*Average Daily Traffic entering Intersection*), Total Crashes (*2016-2019*), Crash Rate (*crashes per million approach vehicles*), and Severity Index (*weighted score based upon number of fatal, injury, or property damage only crashes for the intersection*).

LOCATION	LOCAL RANK	OVERALL RANK	STREET	INTERSECTING STREET	APPROACH AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASH RATE	SEVERITY INDEX
Cuyahoga Falls	1	18	Portage Trail	2nd St	29,830	61	1.87	1.46
Cuyahoga Falls	2	30	Portage Trail	State Rd	34,080	101	2.71	1.26
Cuyahoga Falls	3	36	Broad Blvd	SR-8 Ramps	41,670	79	1.73	1.38

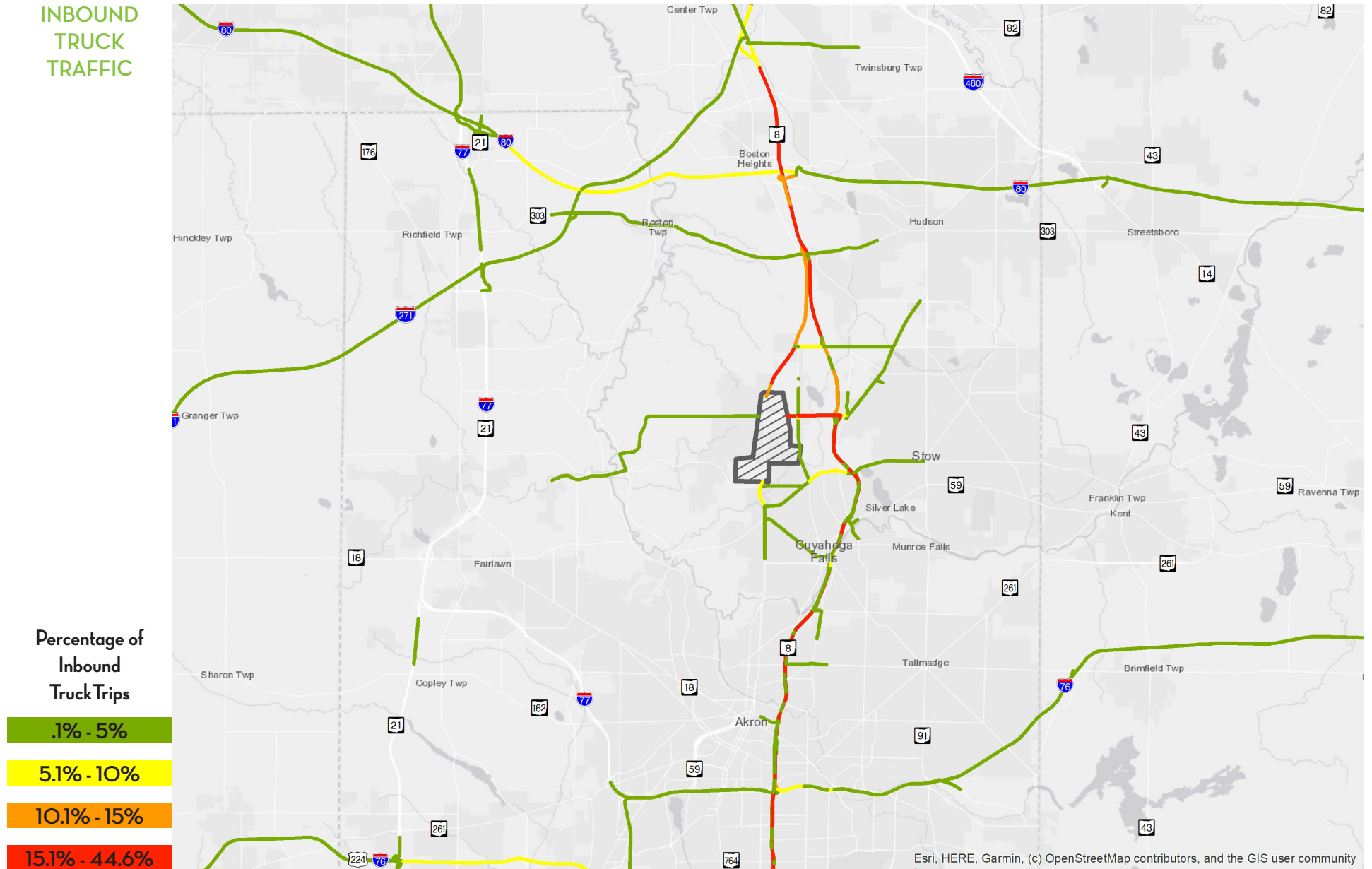
Top Congested Locations

The following table identifies the top segments / intersections in or near the job hub that have been identified in AMATS' 2020 Congestion Management Process report. The fields contained within the table are: Location, Name, Miles, Time (*hour in which peak congestion occurs*), AM / PM (*half of day in which peak hour occurs*), Type (*description of section*), Direction (*direction of traffic flow*), and % Free Flow (*ratio of the speed traffic is traveling in relation to the free flow speed, or the speed at which unimpeded traffic can travel*).

LOCATION	NAME	MILES	TIME	AM / PM	TYPE	DIRECTION	% FREE FLOW
Cuyahoga Falls	State Rd from Marc Dr to Bath Rd	0.860	5:00 - 6:00	PM	Arterial	Southbound	55.20
Cuyahoga Falls / Stow	Steels Corners Rd from Wyoga Lake Rd to Bridgewater Pkwy	0.579	7:00 - 8:00	AM	Arterial	Eastbound	55.60
Cuyahoga Falls	State Rd from Marc Dr to Steels Corners Rd	0.697	7:00 - 8:00	AM	Arterial	Northbound	59.00
Cuyahoga Falls	State Rd from Bath Rd to Graham Rd	0.462	4:00 - 5:00	PM	Arterial	Southbound	63.20
Cuyahoga Falls	State Rd from Quick Rd to Steels Corners Rd	0.329	2:00 - 3:00	PM	Arterial	Southbound	65.00

Cuyahoga Falls Freight Corridor

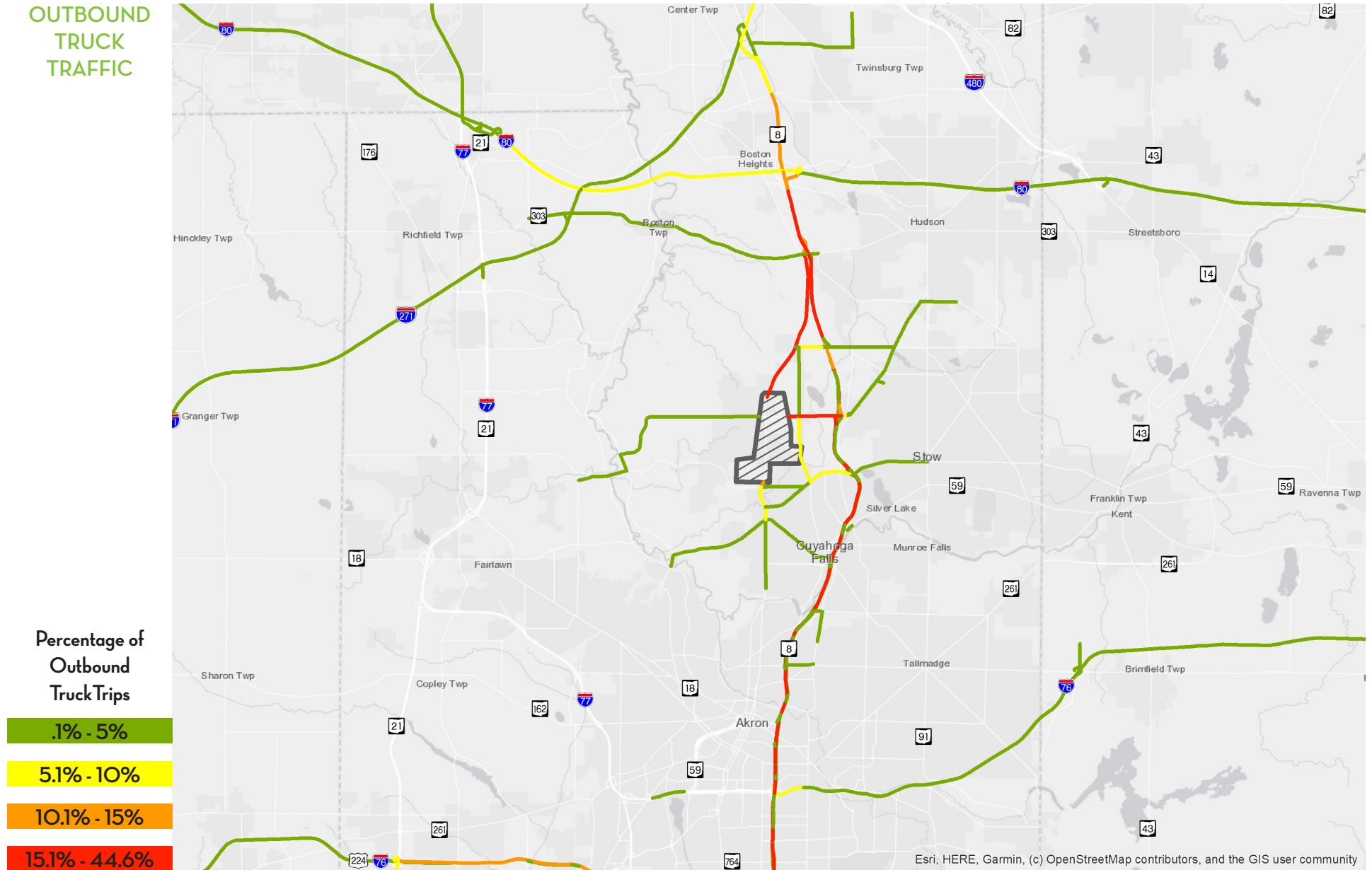
INBOUND
TRUCK
TRAFFIC



Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Cuyahoga Falls Freight Corridor

OUTBOUND
TRUCK
TRAFFIC



Percentage of
Outbound
Truck Trips

- .1% - 5%
- 5.1% - 10%
- 10.1% - 15%
- 15.1% - 44.6%

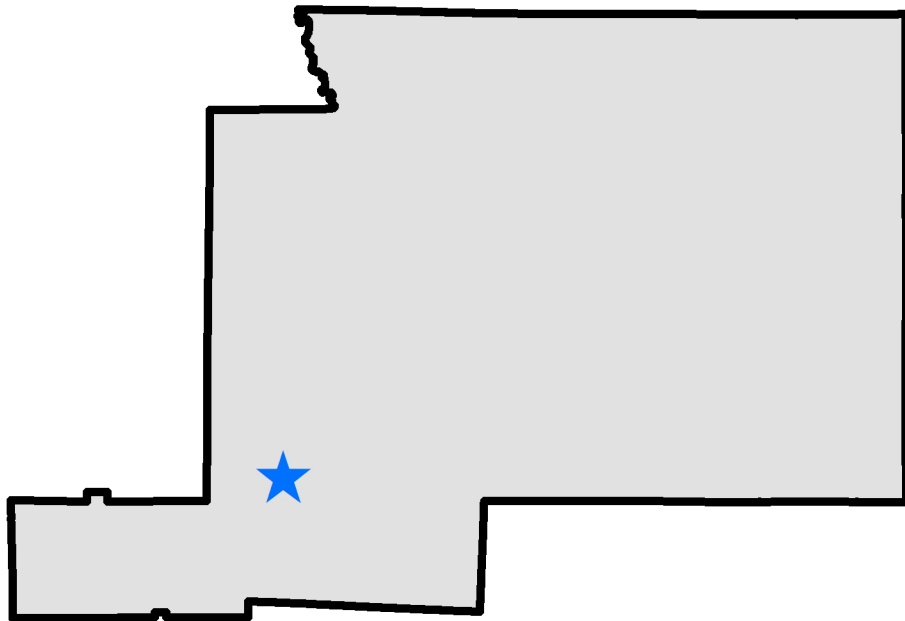
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Barberton Freight Corridor

Characteristics:

The city of Barberton was established as a planned industrial community in the late 1800's and the city's core was centered on a natural glacial lake called Lake Anna. Businesses such as the Diamond Match Company and Babcock & Wilcox helped establish Barberton as an industrial center and major employment hub. Although the region's industrial landscape has changed, Barberton remains an attractive location for businesses. In 2017, Barberton was home to 1,500 jobs in manufacturing, retail trade, and wholesale trade. Barberton is located in southwest Summit County, with I-76 highway access nearby. State Route 619 is another heavily traveled roadway that connects Barberton to I-77 and the city of Green, but is known to have a higher incidence of crashes in certain locations. Wooster Road North has some congestion and a high number of crashes, creating the potential for freight delay. In an effort to improve traffic, a project is currently underway that will: remove the I-76 / Wooster Rd Interchange, add a new interchange at State St / Romig Rd, and add access roads between State/Romig and Wooster/East. This job hub also benefits from access to the ABC Railway and the CSXT rail lines.

Location:



Key Freeway / Highway Access:

- I-76
- SR-619

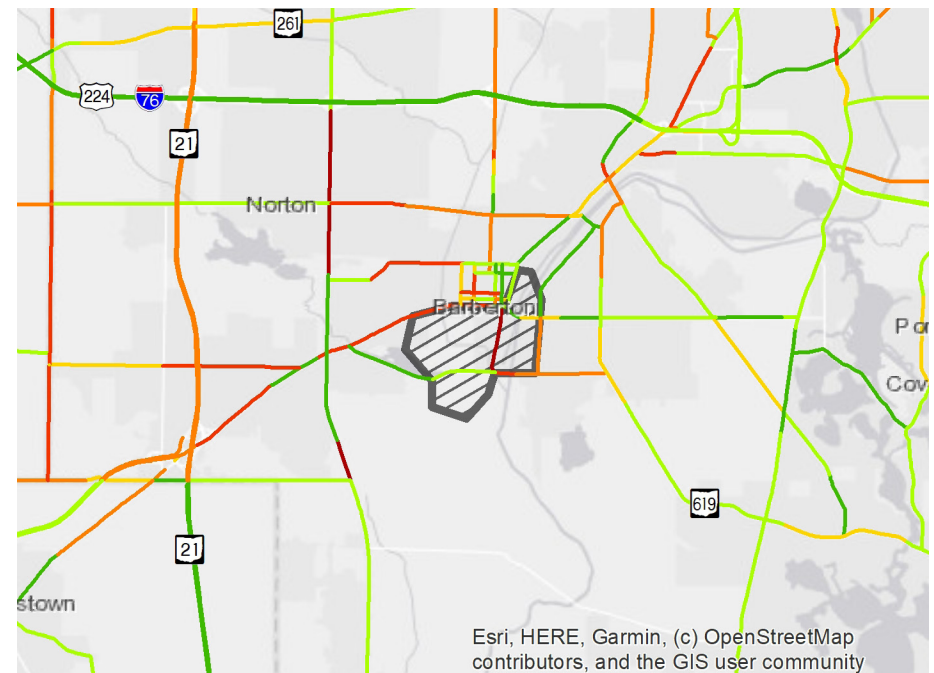
Top 3 Job Types:

1. Manufacturing
2. Retail Trade
3. Wholesale Trade

2017 Estimated Jobs:

1,500

Surrounding Pavement Conditions (2018-2019):



Very Poor Poor Fair Good Very Good Excellent

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Barberton Freight Corridor

Top High Crash Segments

The following table identifies the segments in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Roadway Section, From (*segment beginning location*), To (*segment ending location*), Length (MI), Average Daily Traffic, Total Crashes (*2016-2019*), Crashes per MI per YR, and Crash Rate (*crashes per million vehicle miles travelled*).

LOCATION	LOCAL RANK	OVERALL RANK	ROADWAY SECTION	FROM	TO	LENGTH (MI)	AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASHES PER MI PER YR	CRASH RATE
Barberton	1	47	Wooster Rd W	14th St NW	Wooster Rd N	0.75	11,813	35	16	3.61
Barberton	2	77	Wooster Rd N (SR-619 part)	State St	Barberton Corp Line	0.77	19,030	38	16	2.37
Barberton	3	88	Wooster Rd N	Norton Ave	State St	0.51	12,240	19	12	2.79

Top High Crash Intersections

The following table identifies the intersections in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Street, Intersecting Street, Approach Average Daily Traffic (*Average Daily Traffic entering Intersection*), Total Crashes (*2016-2019*), Crash Rate (*crashes per million approach vehicles*), and Severity Index (*weighted score based upon number of fatal, injury, or property damage only crashes for the intersection*).

LOCATION	LOCAL RANK	OVERALL RANK	STREET	INTERSECTING STREET	APPROACH AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASH RATE	SEVERITY INDEX
Barberton	1	26	State St (SR-619)	Wooster Rd N (SR-619)	27,545	44	1.46	1.68
Barberton	2	117	Wooster Rd N (SR-619)	East Ave / Kenmore Blvd / I-76 Westbound Ramps	20,795	35	1.54	1.40
Barberton	3	126	Wooster Rd N	W Hopocan Ave	11,340	24	1.93	1.42

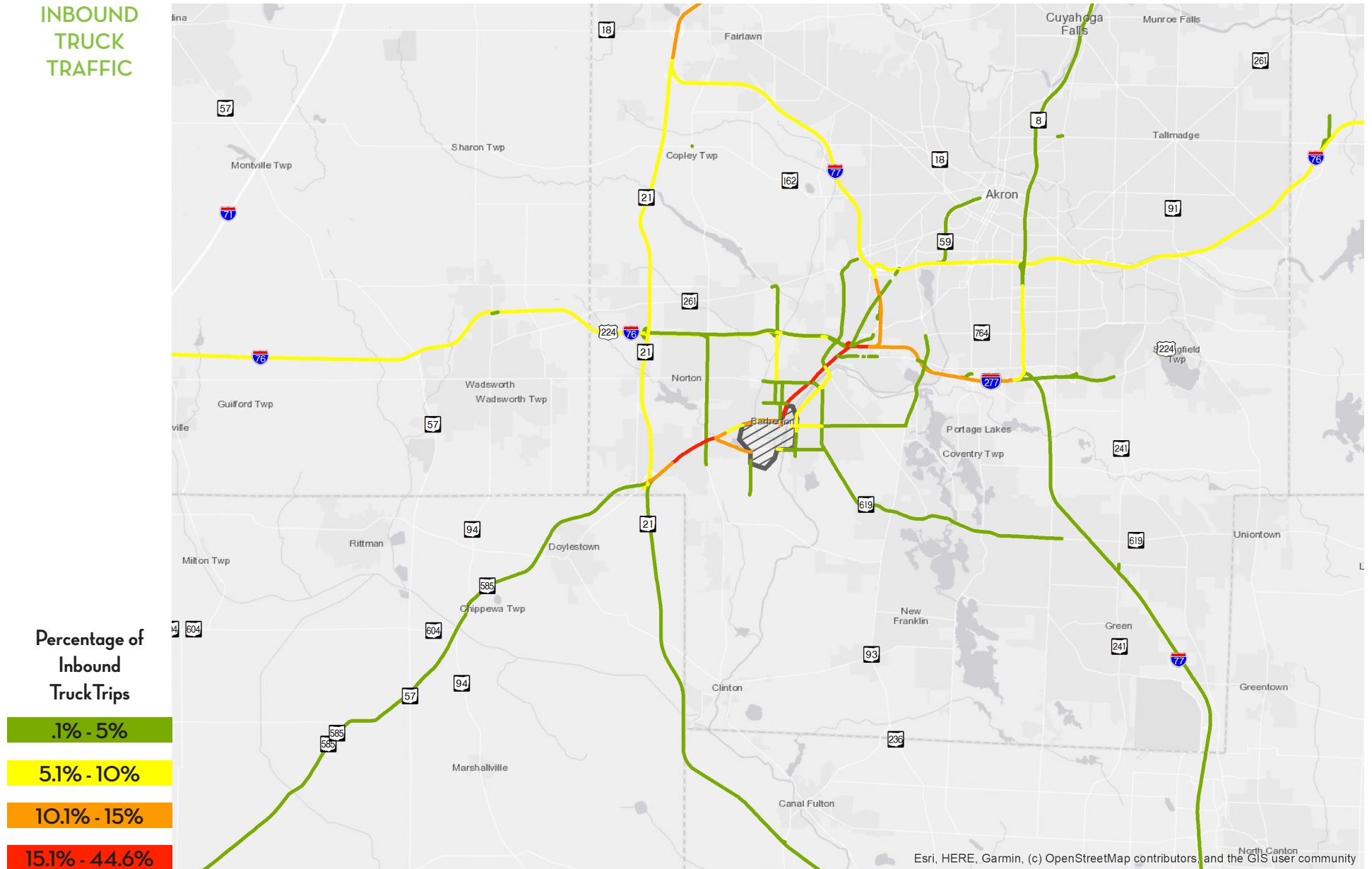
Top Congested Locations

The following table identifies the top segments / intersections in or near the job hub that have been identified in AMATS' 2020 Congestion Management Process report. The fields contained within the table are: Location, Name, Miles, Time (*hour in which peak congestion occurs*), AM / PM (*half of day in which peak hour occurs*), Type (*description of section*), Direction (*direction of traffic flow*), and % Free Flow (*ratio of the speed traffic is traveling in relation to the free flow speed, or the speed at which unimpeded traffic can travel*).

LOCATION	NAME	MILES	TIME	AM / PM	TYPE	DIRECTION	% FREE FLOW
No Nearby Locations in the CMP							

Barberton Freight Corridor

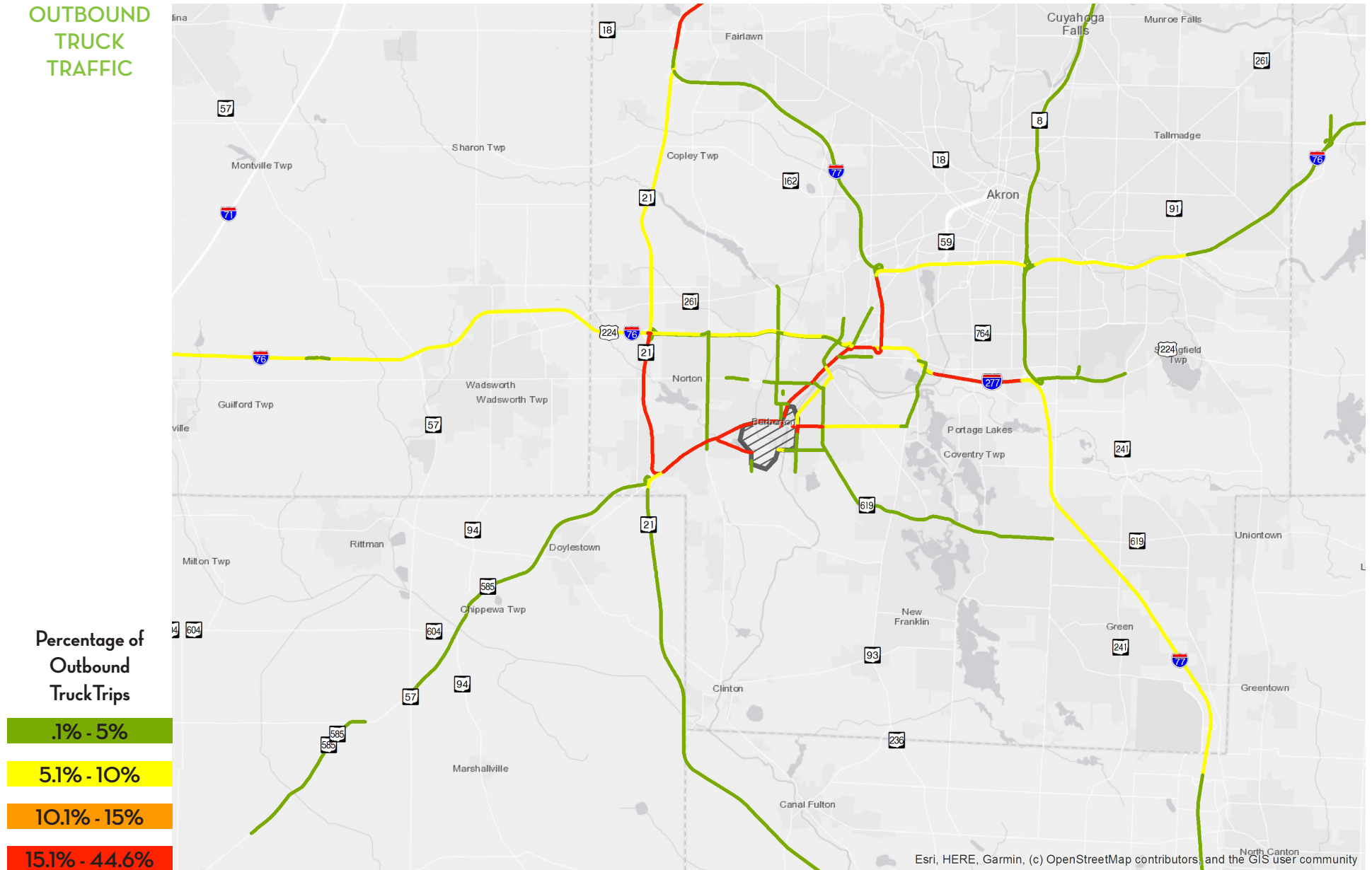
INBOUND
TRUCK
TRAFFIC



Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Barberton Freight Corridor

OUTBOUND
TRUCK
TRAFFIC



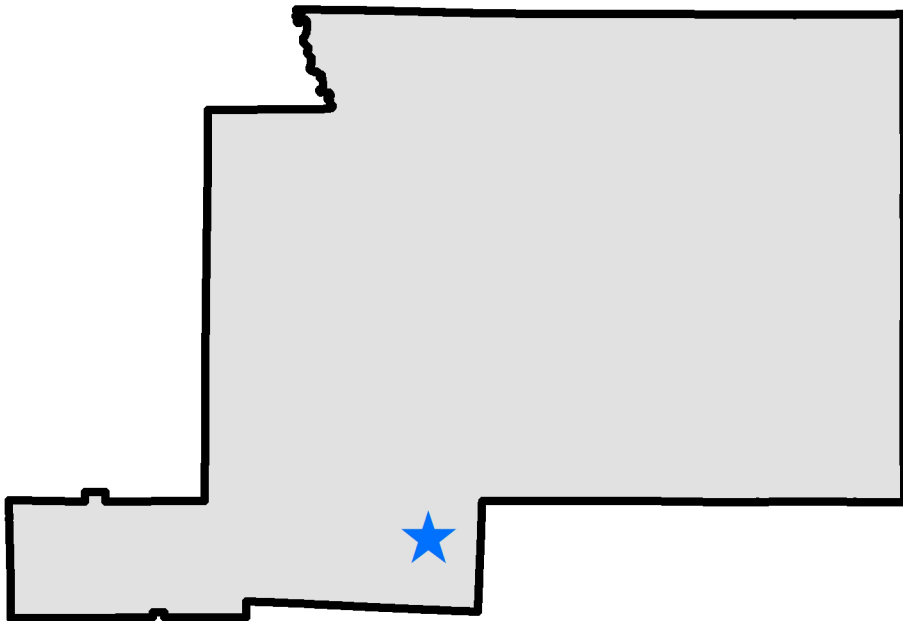
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Green Freight Corridor

Characteristics:

The city of Green is the southernmost city in Summit County, with I-77 and SR 619 serving as key access roads. This job hub is home to approximately 7,000 jobs in health care and social assistance, and transportation and warehousing. Massillon Road (SR 241) runs north and south through the corridor and is heavily congested around the I-77 interchange due to the large number of businesses that have moved into the corridor in the last two decades. The roadways near the job hub include a number of high crash locations and the city of Green has planned multiple improvements along Massillon road including roundabouts to improve safety and relieve congestion.

Location:



Key Freeway / Highway Access:

- I-77
- SR-619

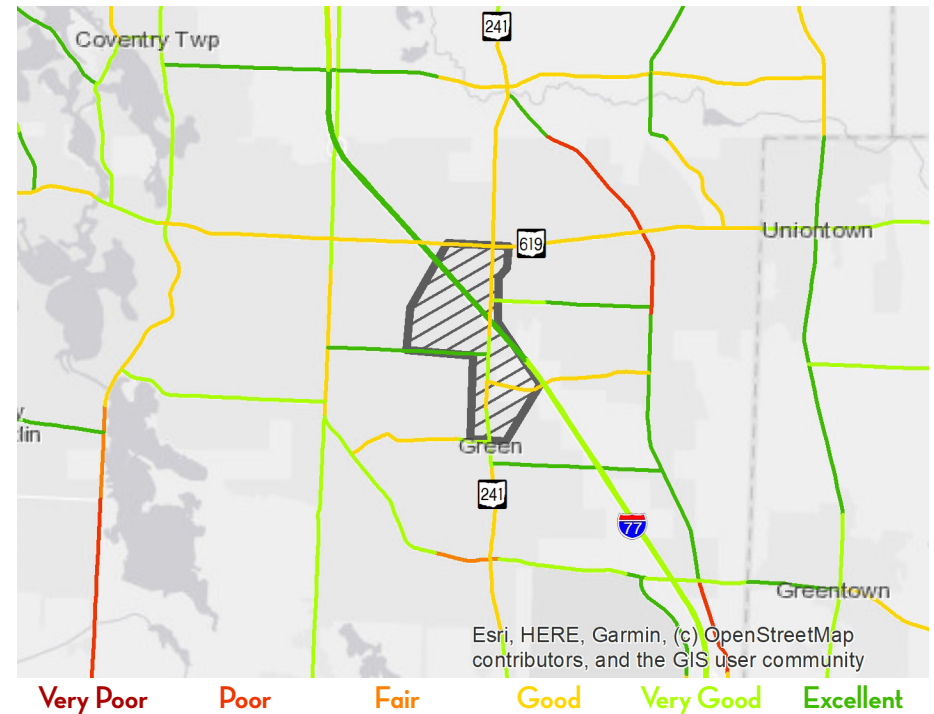
Top 3 Job Types:

1. Health Care and Social Assistance
2. Administrative & Support and Waste Management & Remediation
3. Transportation and Warehousing

2017 Estimated Jobs:

7,000

Surrounding Pavement Conditions (2018-2019):



Green Freight Corridor

Top High Crash Segments

The following table identifies the segments in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Roadway Section, From (*segment beginning location*), To (*segment ending location*), Length (MI), Average Daily Traffic, Total Crashes (*2016-2018*), Crashes per MI per YR, and Crash Rate (*crashes per million vehicle miles travelled*).

LOCATION	LOCAL RANK	OVERALL RANK	ROADWAY SECTION	FROM	TO	LENGTH (MI)	AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASHES PER MI PER YR	CRASH RATE
Green	1	14	Arlington Rd	E Turkeyfoot Lake Rd (SR-619)	Green North Corp Line	0.95	20,305	146	51	6.91
Green	2	16	Massillon Rd (SR-241)	Boettler Rd	E Turkeyfoot Lake Rd (SR-619)	1.01	21,413	131	43	5.55
Green	3	136	E Turkeyfoot Lake Rd (SR-619)	S Main St	Arlington Rd	1.57	12,050	52	11	2.52

Top High Crash Intersections

The following table identifies the intersections in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Street, Intersecting Street, Approach Average Daily Traffic (*Average Daily Traffic entering Intersection*), Total Crashes (*2016-2019*), Crash Rate (*crashes per million approach vehicles*), and Severity Index (*weighted score based upon number of fatal, injury, or property damage only crashes for the intersection*).

LOCATION	LOCAL RANK	OVERALL RANK	STREET	INTERSECTING STREET	APPROACH AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASH RATE	SEVERITY INDEX
Green	1	6	Corporate Woods Cir	Corporate Woods Pkwy	7,350	32	3.98	1.81
Green	2	48	E Turkeyfoot Lake Rd (SR-619)	Arlington Rd	28,605	51	1.63	1.43
Green	3	71	Massillon Rd (SR-241)	I-77 Ramps	43,695	78	1.63	1.33

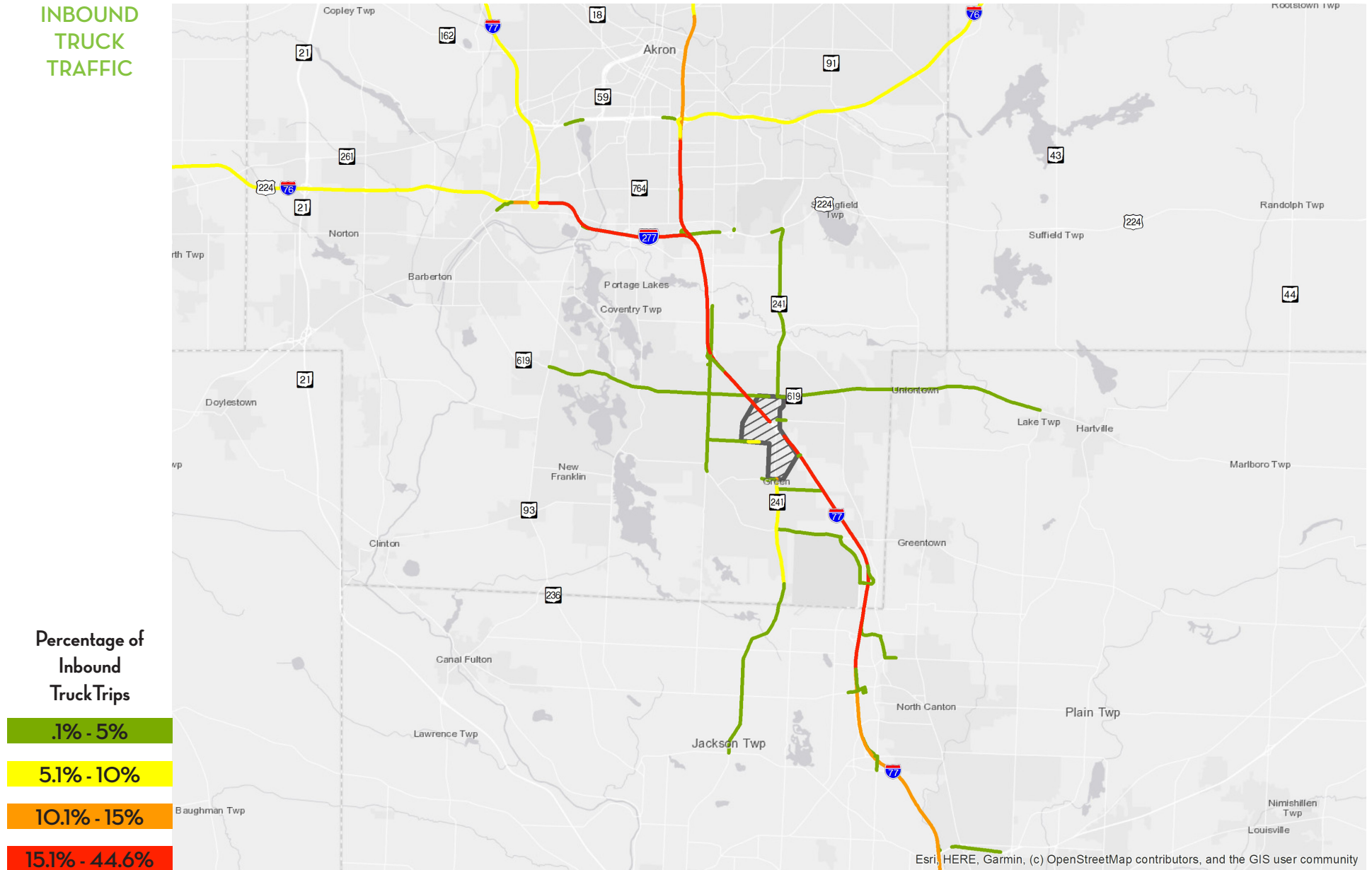
Top Congested Locations

The following table identifies the top segments / intersections in or near the job hub that have been identified in AMATS' 2020 Congestion Management Process report. The fields contained within the table are: Location, Name, Miles, Time (*hour in which peak congestion occurs*), AM / PM (*half of day in which peak hour occurs*), Type (*description of section*), Direction (*direction of traffic flow*), and % Free Flow (*ratio of the speed traffic is traveling in relation to the free flow speed, or the speed at which unimpeded traffic can travel*).

LOCATION	NAME	MILES	TIME	AM / PM	TYPE	DIRECTION	% FREE FLOW
Green	Massillon Rd (SR-241) from I-77 Southbound Ramps to I-77 Northbound Ramps	0.136	4:45 - 5:45	PM	Freeway Interchange	Northbound	56.73
Green	Massillon Rd (SR-241) from I-77 Northbound Ramps to I-77 Southbound Ramps	0.136	4:15 - 5:15	PM	Freeway Interchange	Southbound	62.38

Green Freight Corridor

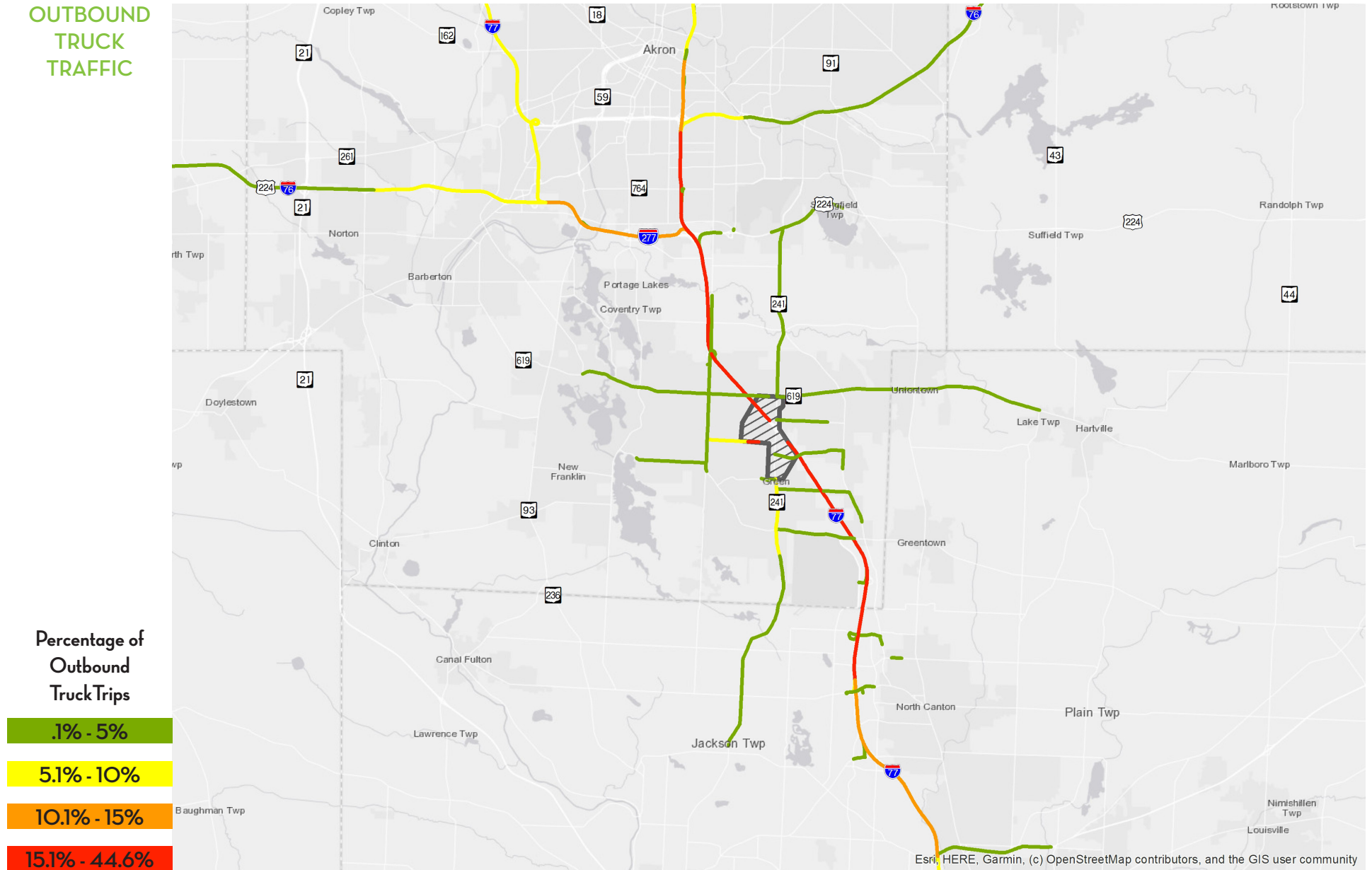
INBOUND
TRUCK
TRAFFIC



Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Green Freight Corridor

OUTBOUND
TRUCK
TRAFFIC

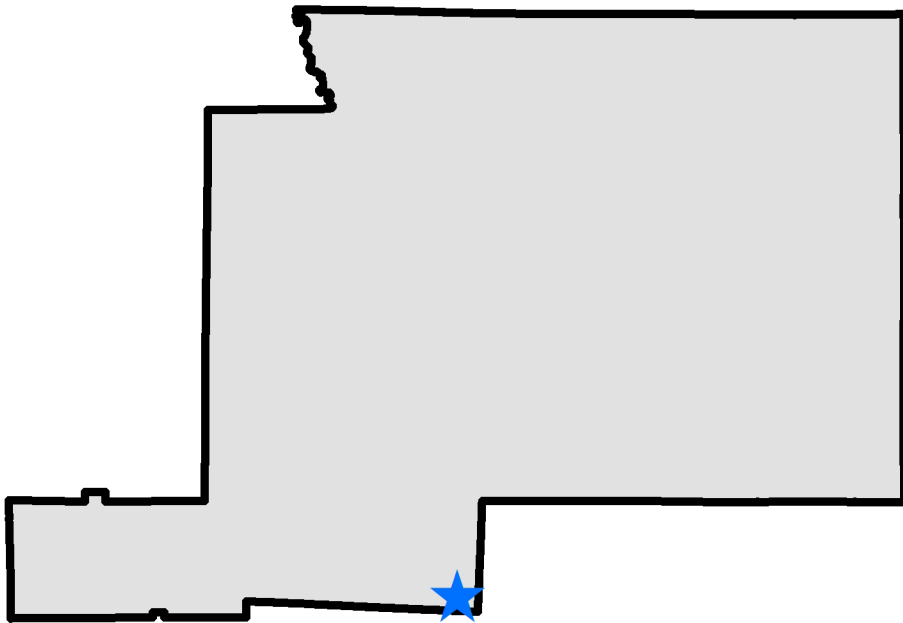


Akron-Canton Airport Freight Corridor

Characteristics:

The Akron-Canton Airport Job Hub is located in the southeast corner of the City of Green. There are an estimated 4,500 jobs located in the hub with the top industries being manufacturing, management and transportation and warehousing. This job hub benefits from being centrally located between Akron and Canton. The Akron-Canton Airport is nestled next to the job hub on 2,700 acres of land providing a competitive advantage to businesses nearby. Primary transportation to and from the Akron-Canton Airport job hub is Interstate I-77. AMATS has identified a number of crash locations near the corridor that would impact local freight traffic that have the potential to generate incident level congestion. This job hub also benefits from access to the ABC Railway rail line.

Location:



Key Freeway / Highway Access:

- I-77
- SR-241

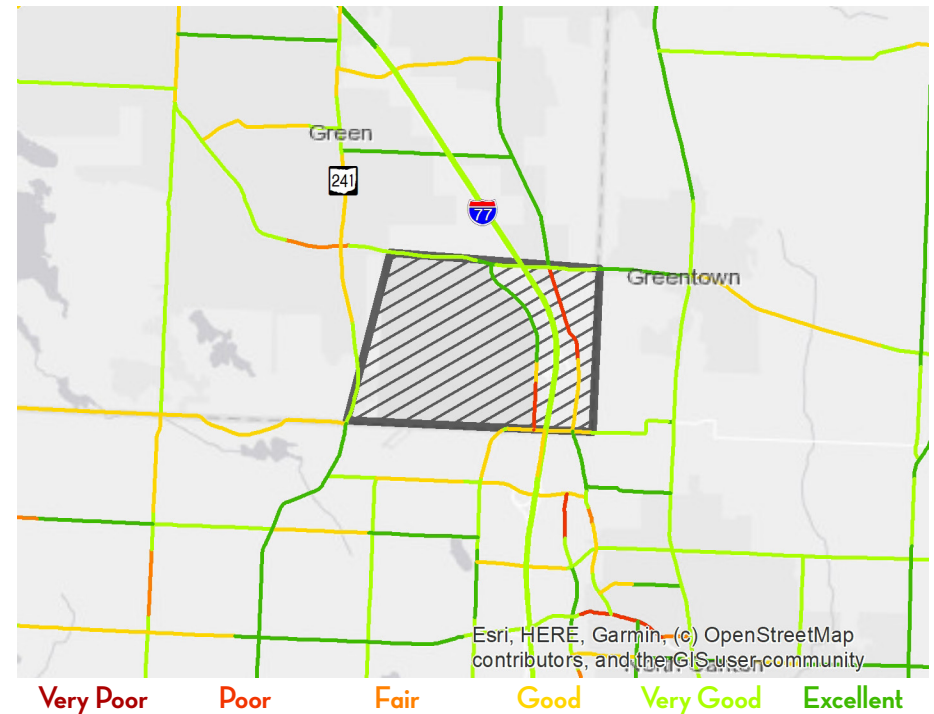
Top 3 Job Types:

1. Manufacturing
2. Management of Companies and Enterprises
3. Transportation and Warehousing

2017 Estimated Jobs:

4,500

Surrounding Pavement Conditions (2018-2019):



Akron-Canton Airport Freight Corridor

Top High Crash Segments

The following table identifies the segments in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Roadway Section, From (*segment beginning location*), To (*segment ending location*), Length (MI), Average Daily Traffic, Total Crashes (*2016-2018*), Crashes per MI per YR, and Crash Rate (*crashes per million vehicle miles travelled*).

LOCATION	LOCAL RANK	OVERALL RANK	ROADWAY SECTION	FROM	TO	LENGTH (MI)	AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASHES PER MI PER YR	CRASH RATE
Green	1	14	Arlington Rd	Turkeyfoot Lake Rd (SR-619)	Green North Corp Line	0.95	20,305	146	51	3.98
Green	2	16	Massillon Rd (SR-241)	Boettler Rd	Turkeyfoot Lake Rd (SR-619)	1.01	21,413	131	43	5.55
Green	3	136	E Turkeyfoot Lake Rd (SR-619)	S Main St	Arlington Rd	1.57	12,050	52	11	2.52

Top High Crash Intersections

The following table identifies the intersections in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Street, Intersecting Street, Approach Average Daily Traffic (*Average Daily Traffic entering Intersection*), Total Crashes (*2016-2019*), Crash Rate (*crashes per million approach vehicles*), and Severity Index (*weighted score based upon number of fatal, injury, or property damage only crashes for the intersection*).

LOCATION	LOCAL RANK	OVERALL RANK	STREET	INTERSECTING STREET	APPROACH AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASH RATE	SEVERITY INDEX
Green	3	71	Massillon Rd (SR-241)	I-77 Ramps	43,695	78	1.63	1.33
Green	5	97	Massillon Rd (SR-241)	Raber Rd	24,810	36	1.33	1.56
Green	6	99	Massillon Rd (SR-241)	Steese Rd	14,230	41	2.63	1.10
Green	7	104	Massillon Rd (SR-241)	Boettler Rd	31,120	42	1.23	1.52

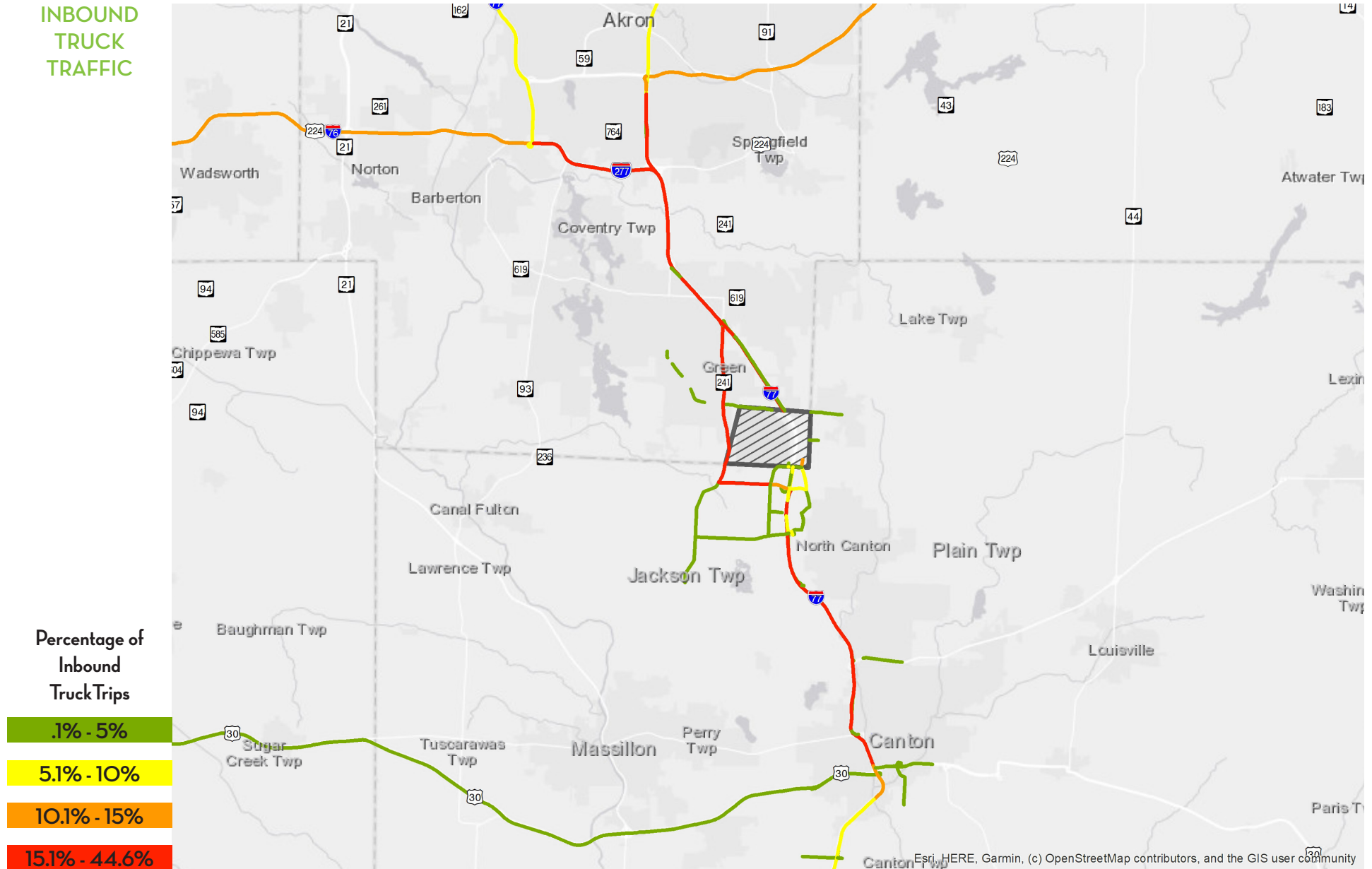
Top Congested Locations

The following table identifies the top segments / intersections in or near the job hub that have been identified in AMATS' 2020 Congestion Management Process report. The fields contained within the table are: Location, Name, Miles, Time (*hour in which peak congestion occurs*), AM / PM (*half of day in which peak hour occurs*), Type (*description of section*), Direction (*direction of traffic flow*), and % Free Flow (*ratio of the speed traffic is traveling in relation to the free flow speed, or the speed at which unimpeded traffic can travel*).

LOCATION	NAME	MILES	TIME	AM / PM	TYPE	DIRECTION	% FREE FLOW
No Nearby Locations in the CMP							

Akron-Canton Airport Freight Corridor

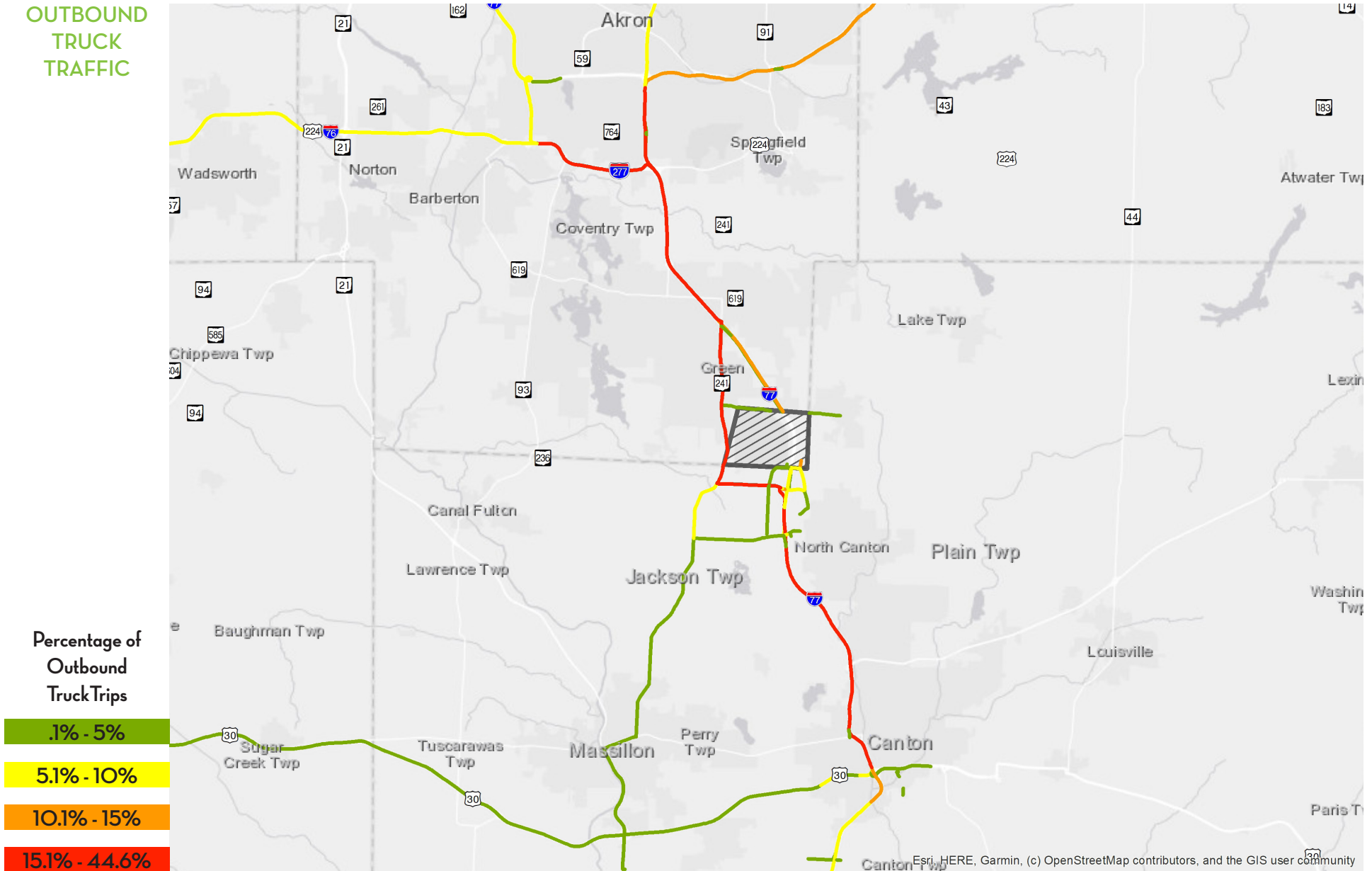
INBOUND
TRUCK
TRAFFIC



Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Akron-Canton Airport Freight Corridor

OUTBOUND
TRUCK
TRAFFIC



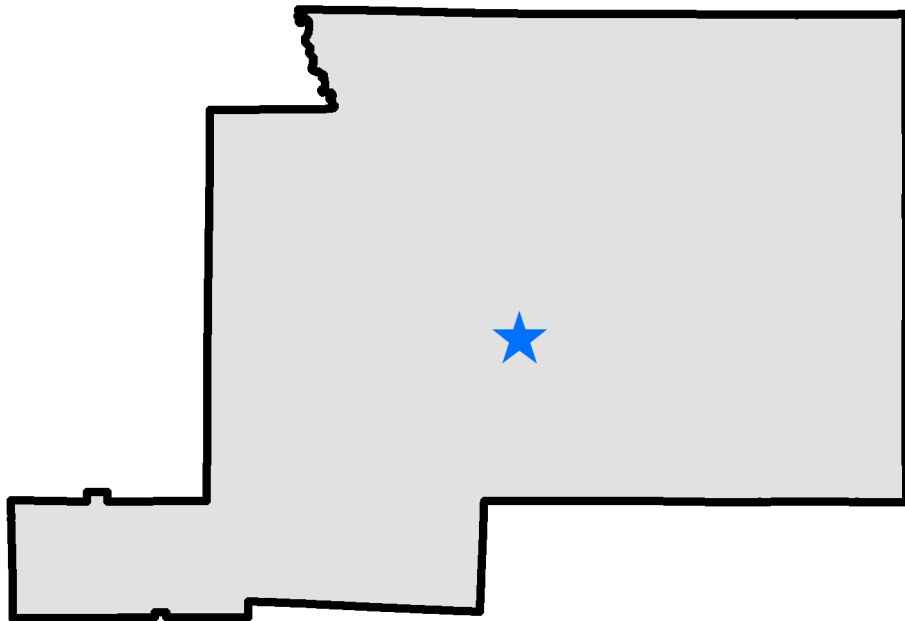
- Percentage of Outbound Truck Trips
- 0.1% - 5%
- 5.1% - 10%
- 10.1% - 15%
- 15.1% - 44.6%

Brimfield Freight Corridor

Characteristics:

The Brimfield Job Hub is located in western Portage County and is easily accessed by I-76 and SR-43. Brimfield benefits from its proximity to Akron, Canton and Kent. Brimfield Township has a growing population, but it also strives to maintain its rural identity. There are an estimated 1,000 jobs in manufacturing, transportation and warehousing, and wholesale trade in this job hub. Improvements are underway for the intersection of Tallmadge Road, Mogadore Road and the I-76 off-ramp as it has been a trouble spot for congestion and crashes. Additionally, other high crash locations have been identified in the corridor and are likely to interfere with freight travel.

Location:



Key Freeway / Highway Access:

- I-76
- SR-43

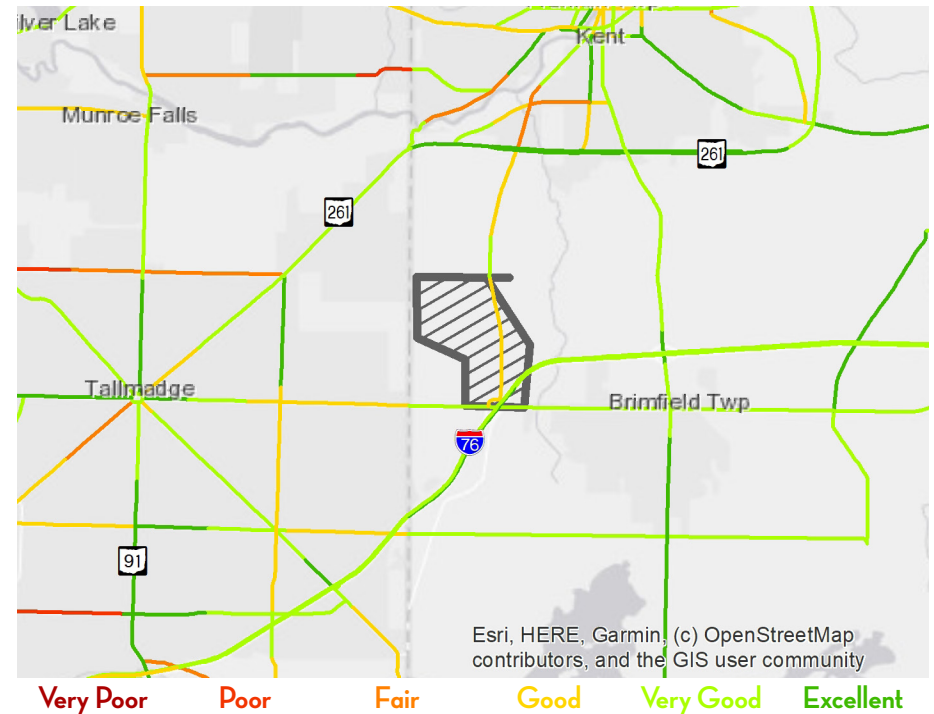
Top 3 Job Types:

1. Health Care and Social Assistance
2. Transportation and Warehousing
3. Wholesale Trade

2017 Estimated Jobs:

1,000

Surrounding Pavement Conditions (2018-2019):



Brimfield Freight Corridor

Top High Crash Segments

The following table identifies the segments in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Roadway Section, From (*segment beginning location*), To (*segment ending location*), Length (MI), Average Daily Traffic, Total Crashes (*2016-2018*), Crashes per MI per YR, and Crash Rate (*crashes per million vehicle miles travelled*).

LOCATION	LOCAL RANK	OVERALL RANK	ROADWAY SECTION	FROM	TO	LENGTH (MI)	AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASHES PER MI PER YR	CRASH RATE
Brimfield Township	2	31	SR-43	Tallmadge Rd (CR-18)	I-76	0.52	10,870	26	17	4.23
Brimfield Township	5	62	Tallmadge Rd (CR-18)	Summit County Line	Sunnybrook Rd (CR-11)	1.06	11,580	48	15	3.57
Brimfield Township	11	165	SR-43	I-76	Kent South Corp Line	1.61	21,820	50	10	1.30

Top High Crash Intersections

The following table identifies the intersections in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Street, Intersecting Street, Approach Average Daily Traffic (*Average Daily Traffic entering Intersection*), Total Crashes (*2016-2019*), Crash Rate (*crashes per million approach vehicles*), and Severity Index (*weighted score based upon number of fatal, injury, or property damage only crashes for the intersection*).

LOCATION	LOCAL RANK	OVERALL RANK	STREET	INTERSECTING STREET	APPROACH AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASH RATE	SEVERITY INDEX
Brimfield Township	1	13	SR-43	Tallmadge Rd (CR-18)	19,270	37	1.75	1.76
Brimfield Township	2	22	SR-43	I-76 Ramps / Edson Rd	43,720	85	1.78	1.45
Brimfield Township	3	54	Old Forge Rd	Mogadore Rd	4,280	19	4.05	1.63

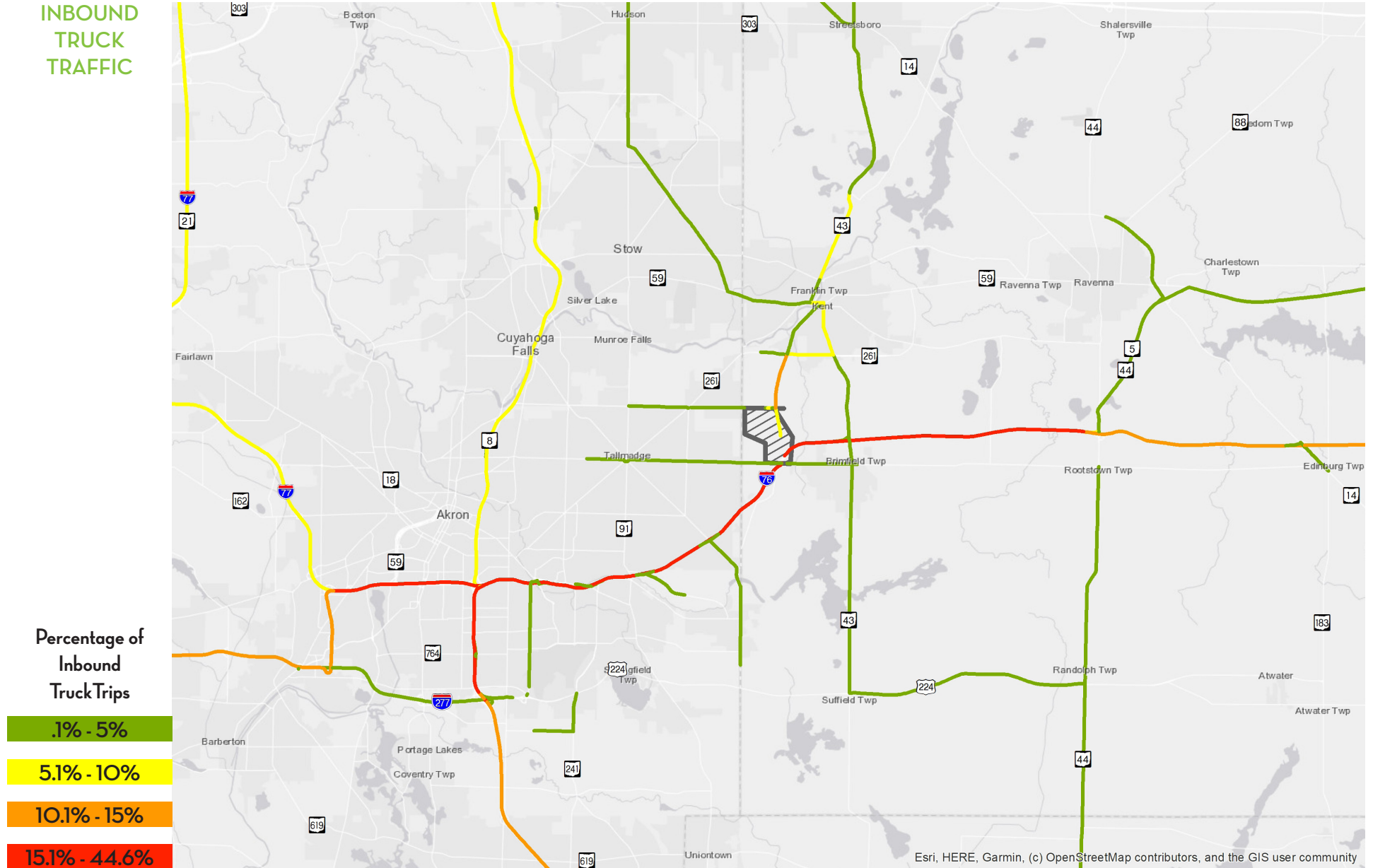
Top Congested Locations

The following table identifies the top segments / intersections in or near the job hub that have been identified in AMATS' 2020 Congestion Management Process report. The fields contained within the table are: Location, Name, Miles, Time (*hour in which peak congestion occurs*), AM / PM (*half of day in which peak hour occurs*), Type (*description of section*), Direction (*direction of traffic flow*), and % Free Flow (*ratio of the speed traffic is traveling in relation to the free flow speed, or the speed at which unimpeded traffic can travel*).

LOCATION	NAME	MILES	TIME	AM / PM	TYPE	DIRECTION	% FREE FLOW
Brimfield Township	Tallmadge Rd from I-76 Westbound Ramps to I-76 Eastbound Ramps	0.147	4:15 - 5:15	PM	Freeway Interchange	Eastbound	57.68
Brimfield Township	Tallmadge Rd from I-76 Eastbound Ramps to I-76 Westbound Ramps	0.150	12:00 - 1:00	PM	Freeway Interchange	Westbound	57.95

Brimfield Freight Corridor

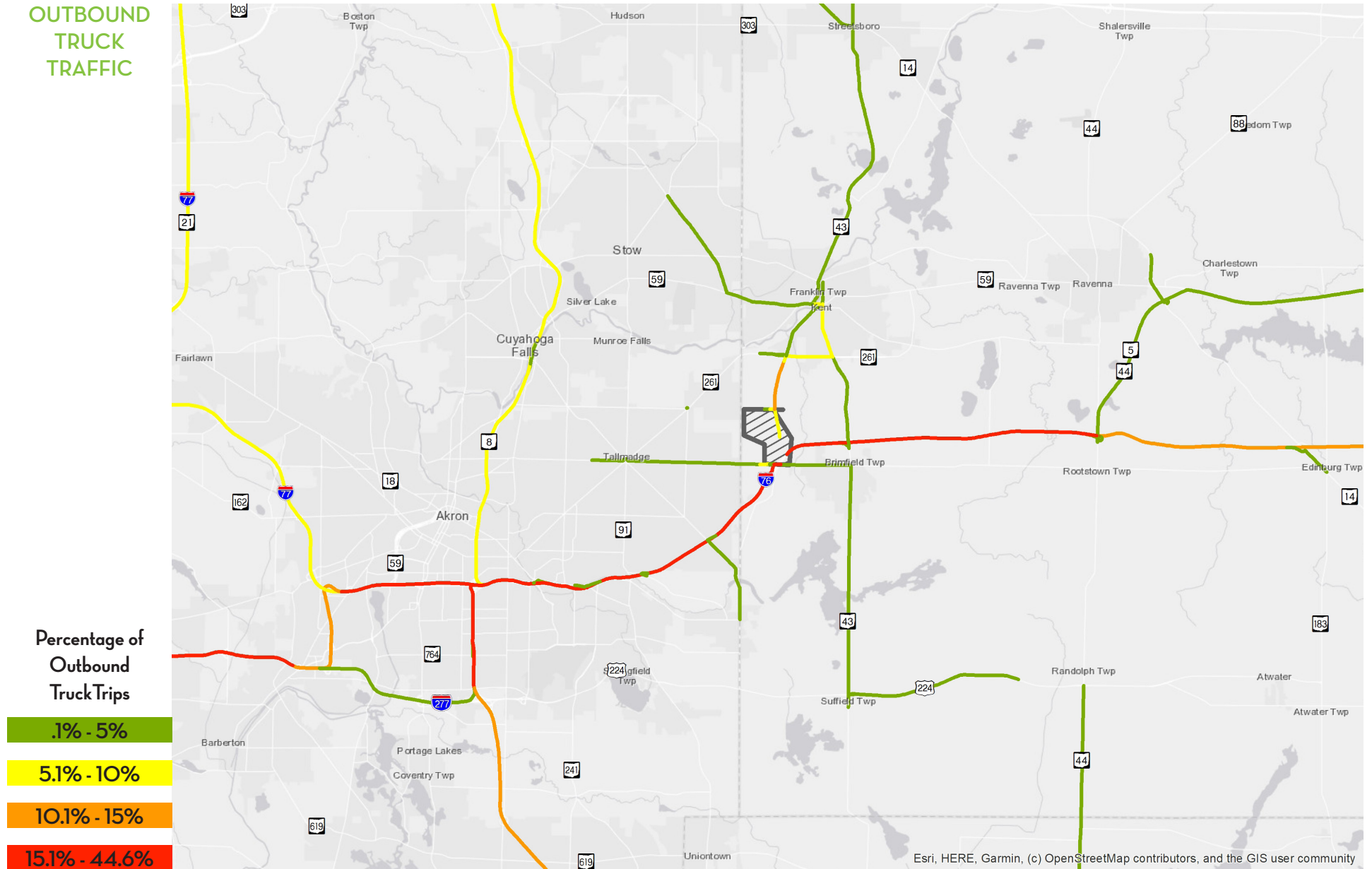
INBOUND
TRUCK
TRAFFIC



Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Brimfield Freight Corridor

OUTBOUND
TRUCK
TRAFFIC



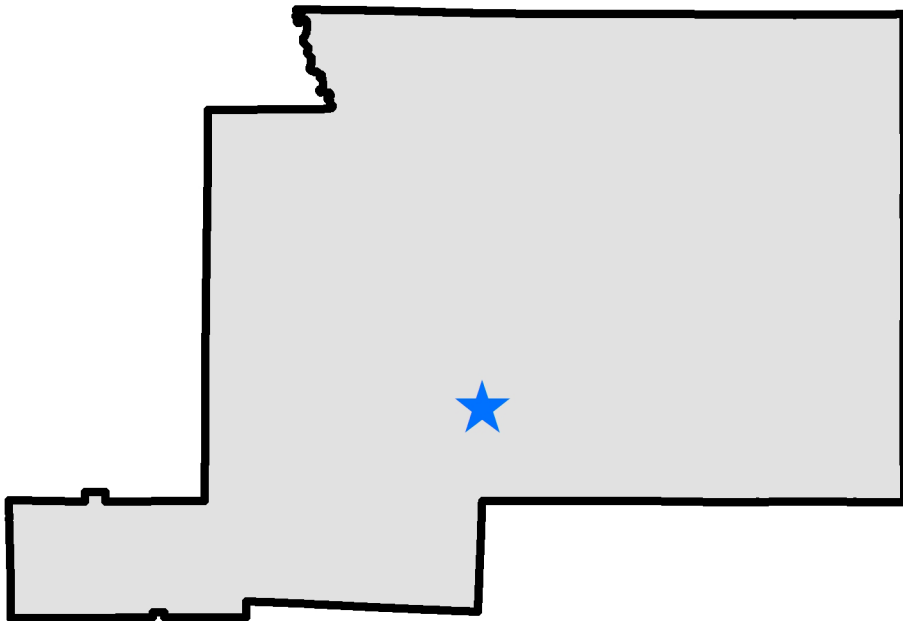
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Gilchrist Road Freight Corridor

Characteristics:

The Gilchrist Road Job Hub is an industrial road located in eastern Summit County, in the city of Akron. This job hub is easily accessible from I-76 and SR 91. There are 3,000 jobs in manufacturing, transportation and warehousing, and wholesale trade. The job hub is small in geography but is very dense with employers. With a 54 acre undeveloped industrial park located within the job hub it has potential room to expand. Freight traffic can experience congestion along the nearby I-76 corridor as well as East Market Street. There are only a few crash locations within the corridor to disrupt traffic. This job hub also benefits from access to the Wheeling & Lake Erie Railway rail line.

Location:



Key Freeway / Highway Access:

- I-76
- SR-91

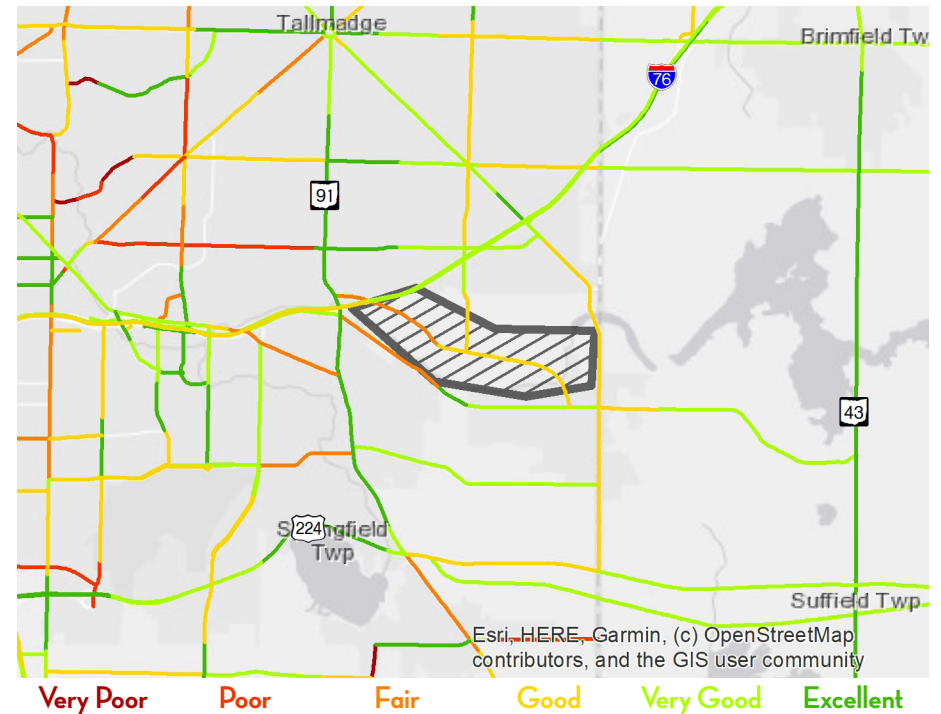
Top 3 Job Types:

1. Manufacturing
2. Transportation and Warehousing
3. Wholesale Trade

2017 Estimated Jobs:

3,000

Surrounding Pavement Conditions (2018-2019):



Gilchrist Road Freight Corridor

Top High Crash Segments

The following table identifies the segments in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Roadway Section, From (*segment beginning location*), To (*segment ending location*), Length (MI), Average Daily Traffic, Total Crashes (*2016-2019*), Crashes per MI per YR, and Crash Rate (*crashes per million vehicle miles travelled*).

LOCATION	LOCAL RANK	OVERALL RANK	ROADWAY SECTION	FROM	TO	LENGTH (MI)	AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASHES PER MI PER YR	CRASH RATE
Akron	55	155	N Canton Rd / Darrow Rd (SR-91)	Mogadore Rd	Newton St	0.56	10,870	25	13	1.76
Akron	64	177	S Canton Rd (SR-91)	E Market St (SR-18)	Mogadore Rd	0.55	13,450	17	10	2.09

Top High Crash Intersections

The following table identifies the intersections in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Street, Intersecting Street, Approach Average Daily Traffic (*Average Daily Traffic entering Intersection*), Total Crashes (*2016-2019*), Crash Rate (*crashes per million approach vehicles*), and Severity Index (*weighted score based upon number of fatal, injury, or property damage only crashes for the intersection*).

LOCATION	LOCAL RANK	OVERALL RANK	STREET	INTERSECTING STREET	APPROACH AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASH RATE	SEVERITY INDEX
Akron	131	263	Canton Rd (SR-91)	Gilchrist Rd	25,365	29	1.045	1.28

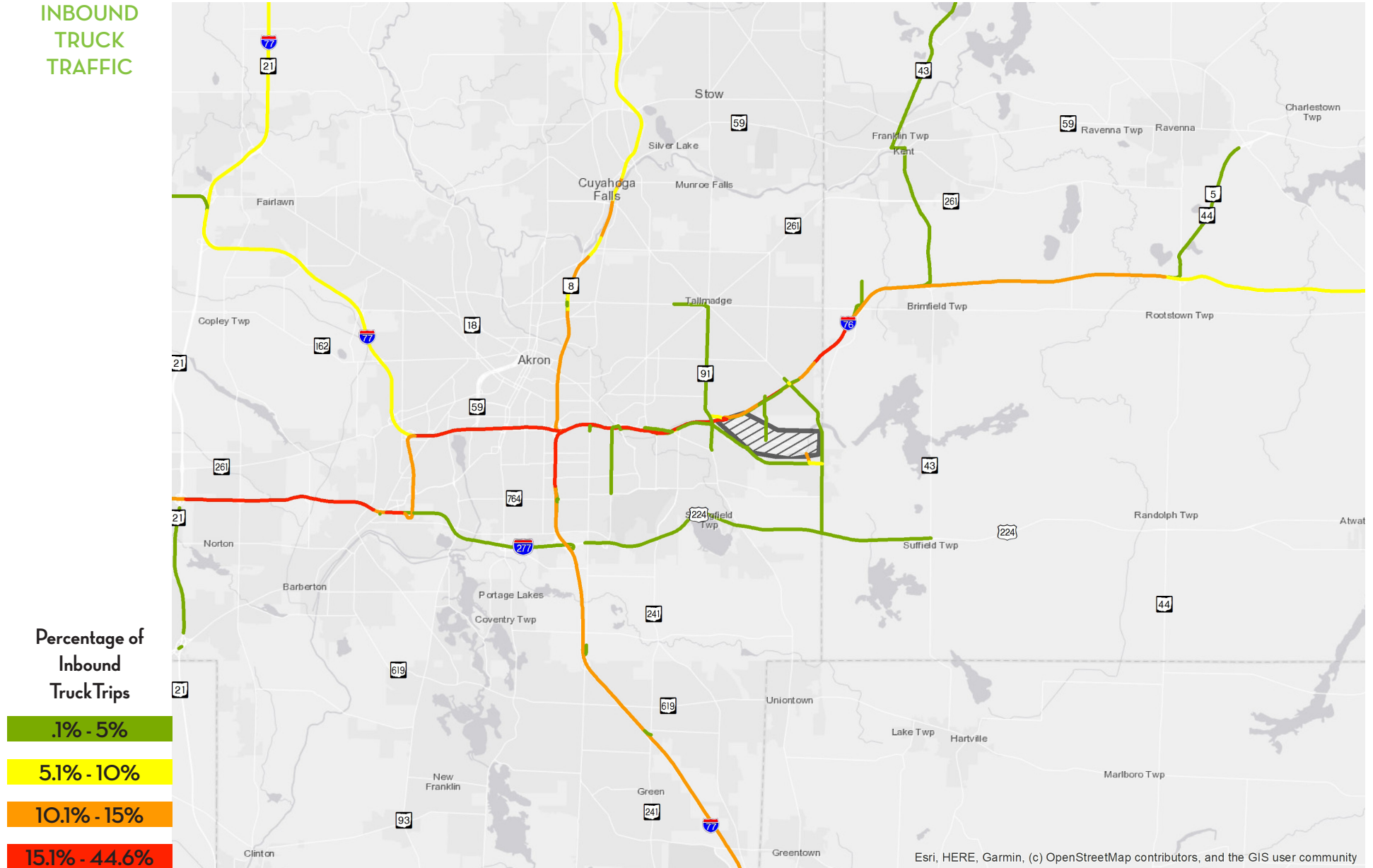
Top Congested Locations

The following table identifies the top segments / intersections in or near the job hub that have been identified in AMATS' 2020 Congestion Management Process report. The fields contained within the table are: Location, Name, Miles, Time (*hour in which peak congestion occurs*), AM / PM (*half of day in which peak hour occurs*), Type (*description of section*), Direction (*direction of traffic flow*), and % Free Flow (*ratio of the speed traffic is traveling in relation to the free flow speed, or the speed at which unimpeded traffic can travel*).

LOCATION	NAME	MILES	TIME	AM / PM	TYPE	DIRECTION	% FREE FLOW
No Nearby Locations in the CMP							

Gilchrist Road Freight Corridor

INBOUND
TRUCK
TRAFFIC



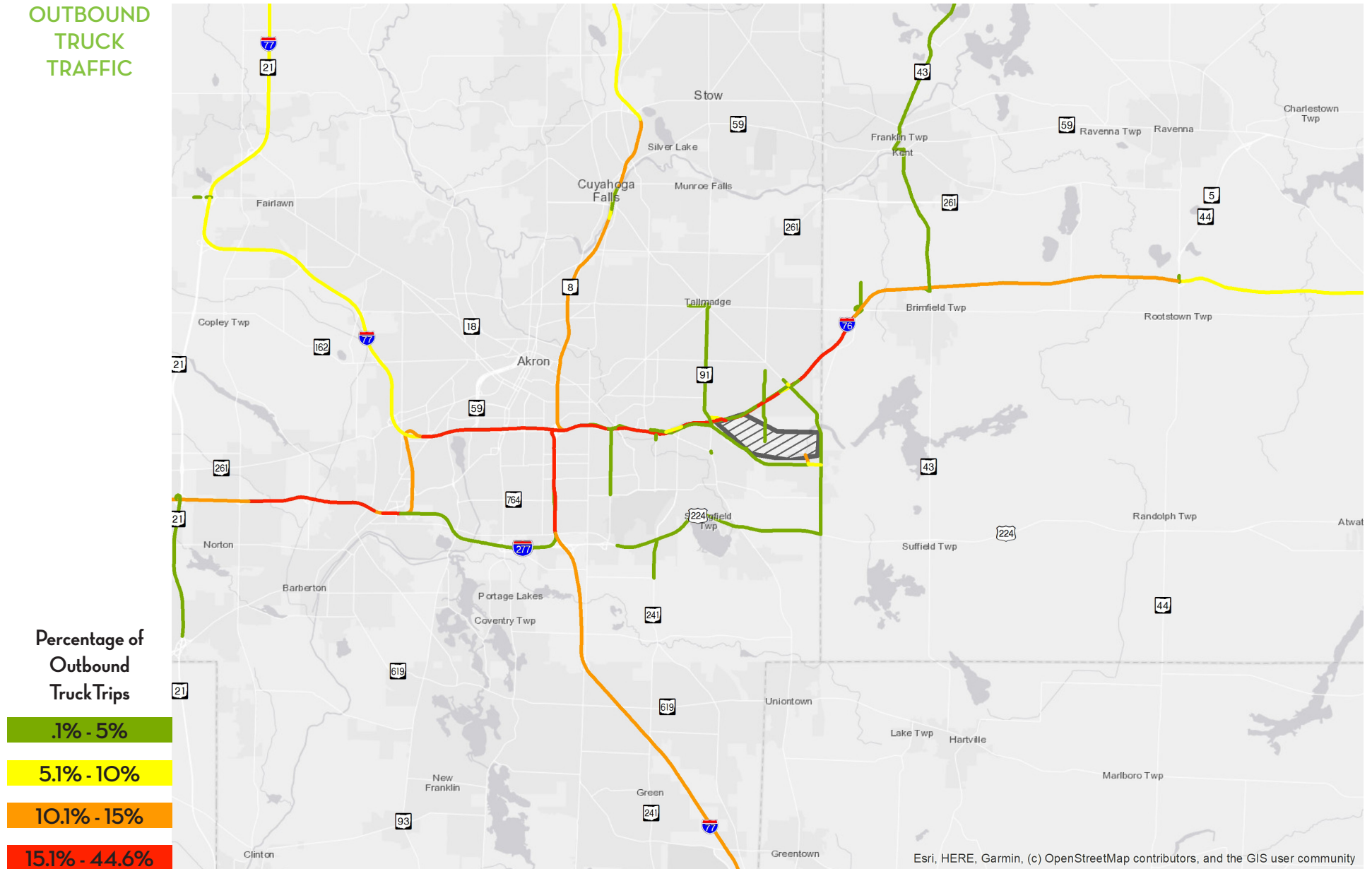
Percentage of
Inbound
Truck Trips

- .1% - 5%
- 5.1% - 10%
- 10.1% - 15%
- 15.1% - 44.6%

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Gilchrist Road Freight Corridor

OUTBOUND
TRUCK
TRAFFIC



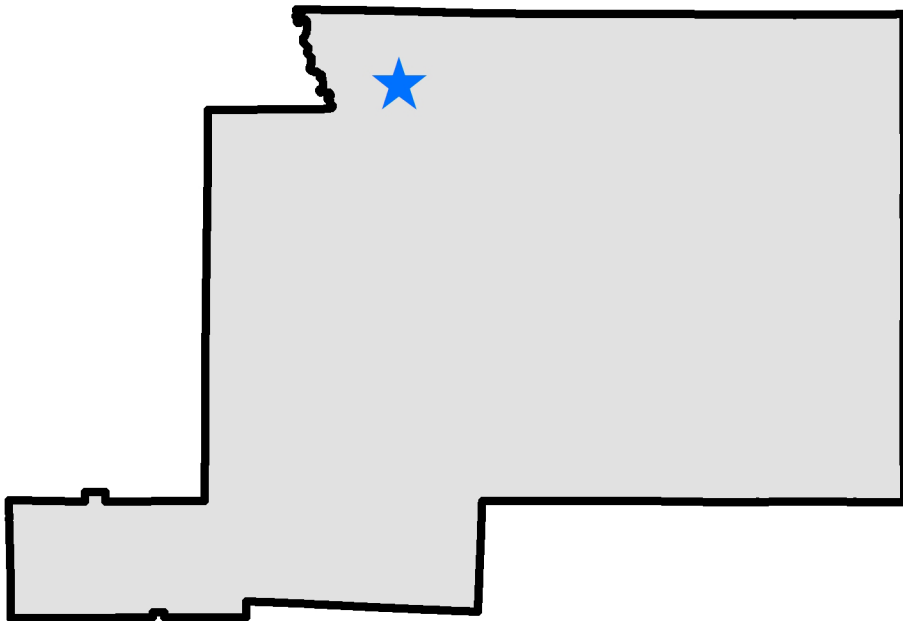
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Twinsburg Freight Corridor

Characteristics:

The Twinsburg Job Hub is located in northern Summit County and is the largest traded sector employment hub in greater Akron with 17,000 jobs in manufacturing, wholesale trade, and retail trade. With access nearby to I-271, I-480 and I-80, as well as being halfway between Cleveland and Akron, this location is ideal for businesses and employees alike. State Routes 82 and 91 have some congestion and high crash locations. There is the potential for delays to freight traffic. Recent improvements to SR 91 include a roundabout and operational improvements to help ease some of the safety and congestion issues. This job hub also benefits from access to the Norfolk Southern Railway rail line.

Location:



Key Freeway / Highway Access:

- I-80
- I-271

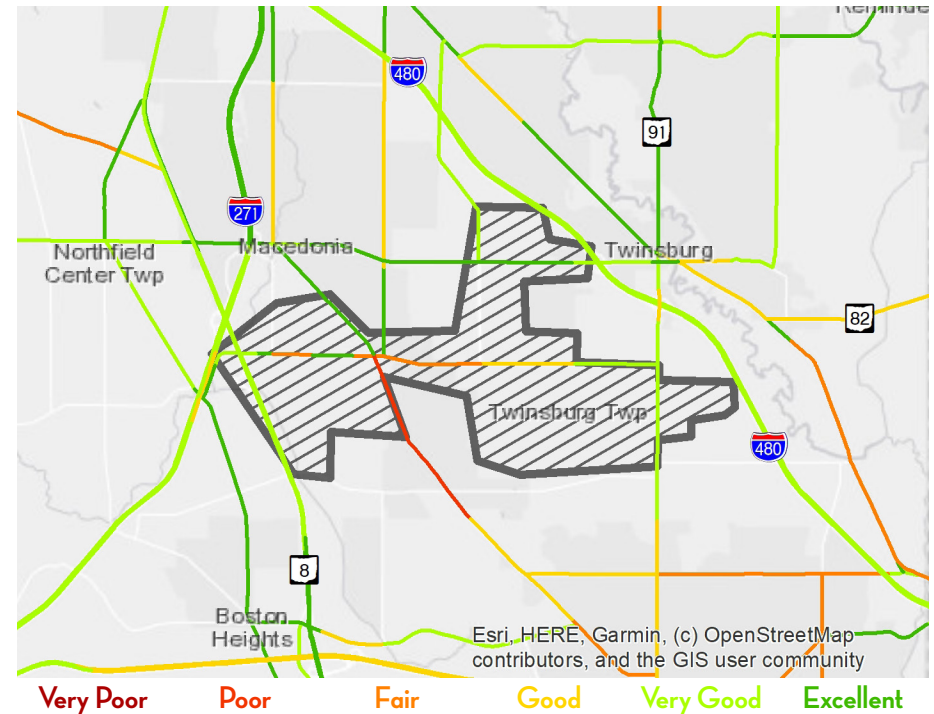
Top 3 Job Types:

1. Manufacturing
2. Wholesale Trade
3. Retail Trade

2017 Estimated Jobs:

17,000

Surrounding Pavement Conditions (2018-2019):



Twinsburg Freight Corridor

Top High Crash Segments

The following table identifies the segments in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Roadway Section, From (*segment beginning location*), To (*segment ending location*), Length (MI), Average Daily Traffic, Total Crashes (*2016-2019*), Crashes per MI per YR, and Crash Rate (*crashes per million vehicle miles travelled*).

LOCATION	LOCAL RANK	OVERALL RANK	ROADWAY SECTION	FROM	TO	LENGTH (MI)	AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASHES PER MI PER YR	CRASH RATE
Twinsburg	1	66	Darppw Rd (SR-91)	E Highland Rd	E Aurora Rd (SR-82)	0.95	25,305	84	30	3.19
Twinsburg	2	119	E Aurora Rd (SR-82)	I-480	Darppw Rd (SR-91)	0.56	18,250	30	18	2.67
Twinsburg	3	164	W Aurora Rd / Ravenna Rd (SR-82)	Darppw Rd (SR-91)	E Aurora Rd (SR-82)	1.16	10,570	36	10	2.68

Top High Crash Intersections

The following table identifies the intersections in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Street, Intersecting Street, Approach Average Daily Traffic (*Average Daily Traffic entering Intersection*), Total Crashes (*2016-2019*), Crash Rate (*crashes per million approach vehicles*), and Severity Index (*weighted score based upon number of fatal, injury, or property damage only crashes for the intersection*).

LOCATION	LOCAL RANK	OVERALL RANK	STREET	INTERSECTING STREET	APPROACH AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASH RATE	SEVERITY INDEX
Twinsburg	1	78	Darrow Rd (SR-91)	Glenwood Dr	20,720	45	1.98	1.31
Twinsburg	2	222	E Aurora Rd (SR-82)	Hadden Rd / Wilcox Dr	19,855	26	1.20	1.38
Twinsburg	3	223	E Aurora Rd (SR-82)	Darrow Rd (SR-91)	32,720	40	1.12	1.20

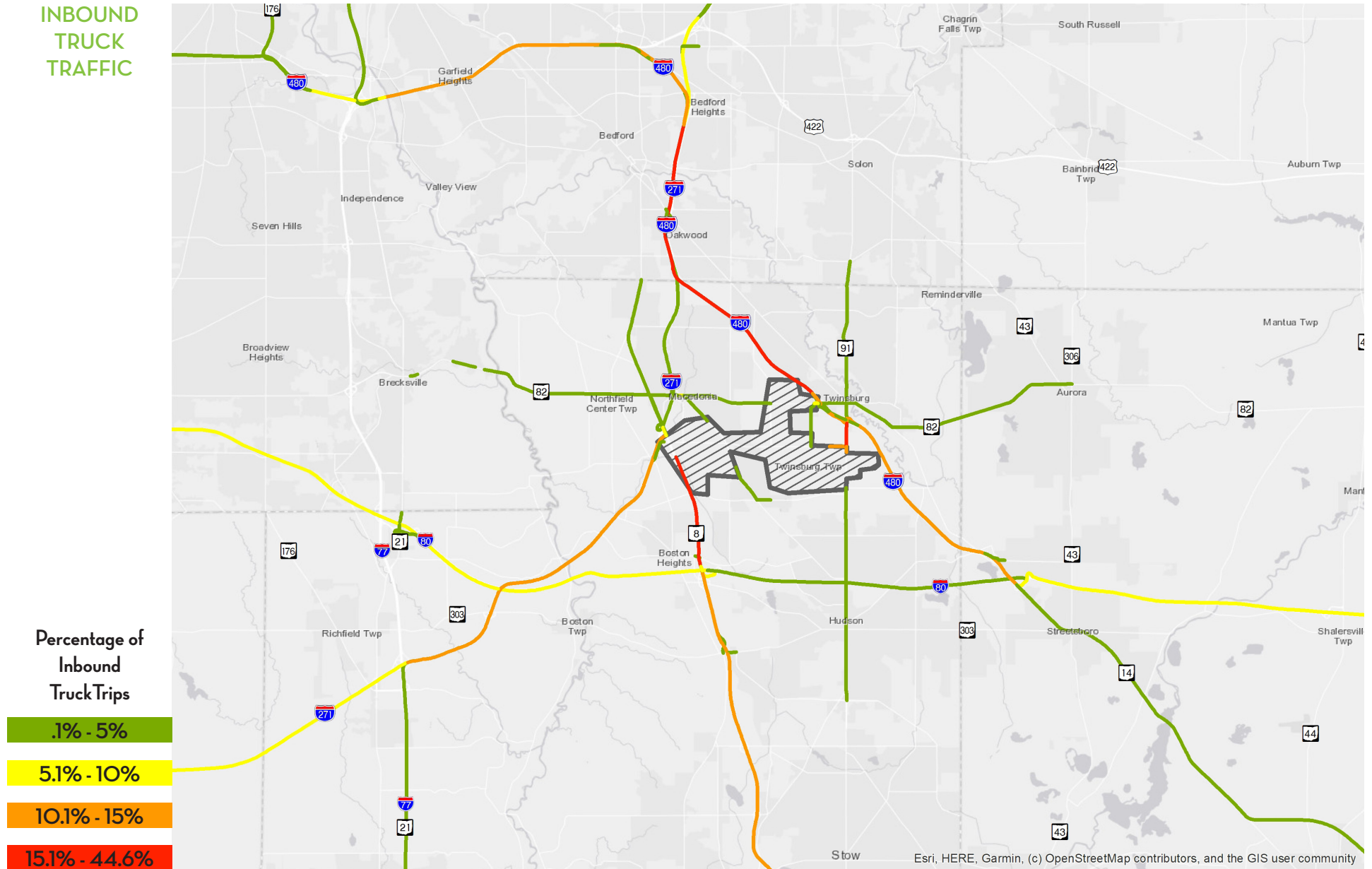
Top Congested Locations

The following table identifies the top segments / intersections in or near the job hub that have been identified in AMATS' 2020 Congestion Management Process report. The fields contained within the table are: Location, Name, Miles, Time (*hour in which peak congestion occurs*), AM / PM (*half of day in which peak hour occurs*), Type (*description of section*), Direction (*direction of traffic flow*), and % Free Flow (*ratio of the speed traffic is traveling in relation to the free flow speed, or the speed at which unimpeded traffic can travel*).

LOCATION	NAME	MILES	TIME	AM / PM	TYPE	DIRECTION	% FREE FLOW
Macedonia	I-271 Northbound Off Ramp to SR-8	0.308	7:45 - 8:45	AM	Freeway Ramp	Northbound	44.37
Macedonia	SR-8 Southbound from I-271 Southbound On Ramp to I-271 Northbound Off Ramp	1.117	7:30 - 8:30	AM	Freeway Interchange	Southbound	62.26
Twinsburg	E Aurora Rd (SR-82) from I-480 Westbound Ramps to Darrow Rd (SR-91)	0.493	5:00 - 6:00	PM	Arterial	Eastbound	64.74

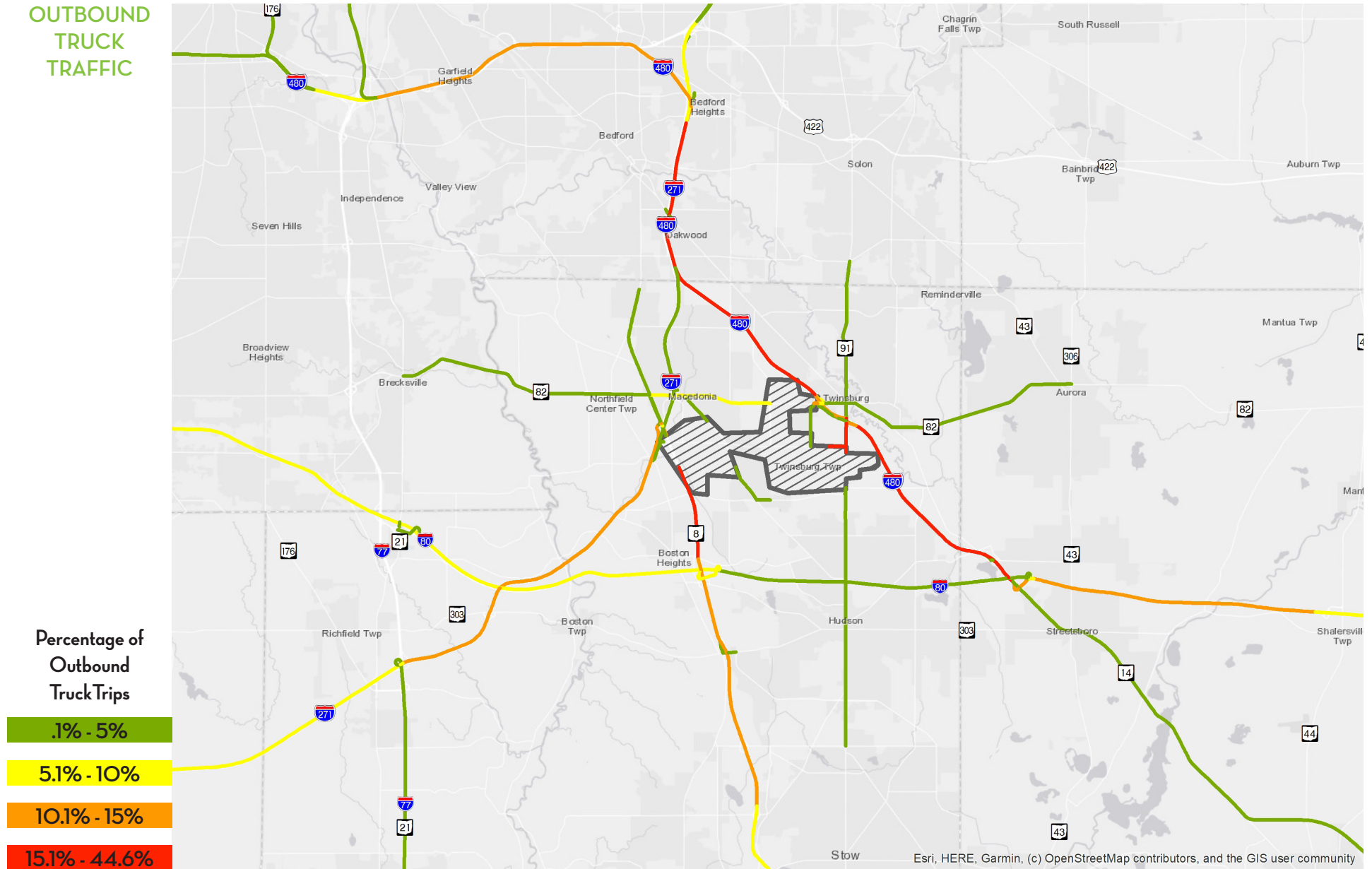
Twinsburg Freight Corridor

INBOUND
TRUCK
TRAFFIC



Twinsburg Freight Corridor

OUTBOUND
TRUCK
TRAFFIC

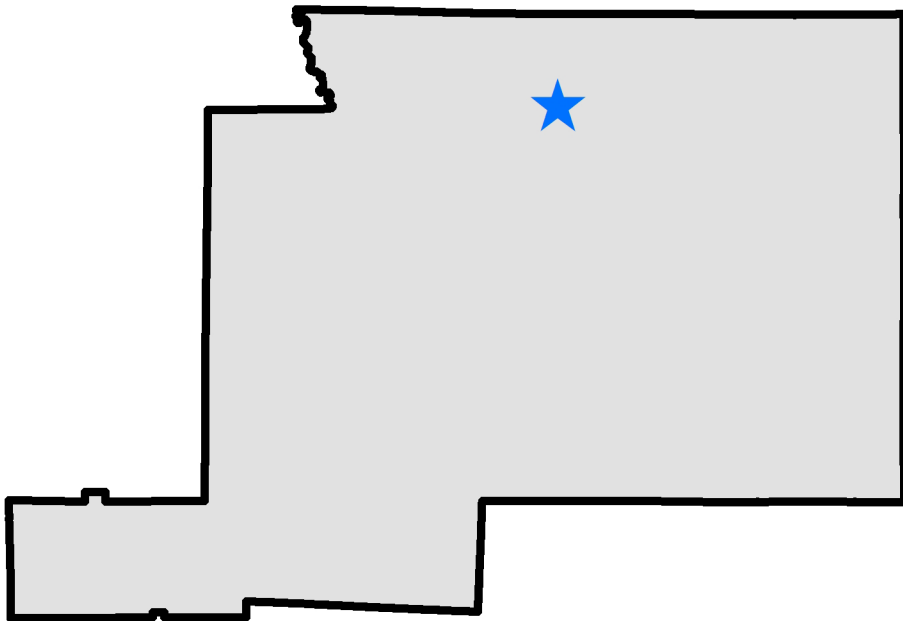


Aurora / Streetsboro Freight Corridor

Characteristics:

The Aurora / Streetsboro Job Hub is located on northwestern edge of Portage County and is in close proximity to Cleveland, Akron and Kent. With 6,500 jobs and I-80, SR 43, and I-480 nearby, this job hub is home to jobs in manufacturing, wholesale trade, and professional, scientific, and technical services. Freight traffic experiences congestion on nearby SR 14, and AMATS has identified several high crash locations and intersections along this corridor. Planned improvements are expected to ease some of the congestion as both Aurora and Streetsboro are working on overhauling their traffic signal systems. This job hub also benefits from access to the Wheeling & Lake Erie Railway rail line.

Location:



Key Freeway / Highway Access:

I-80
SR-43

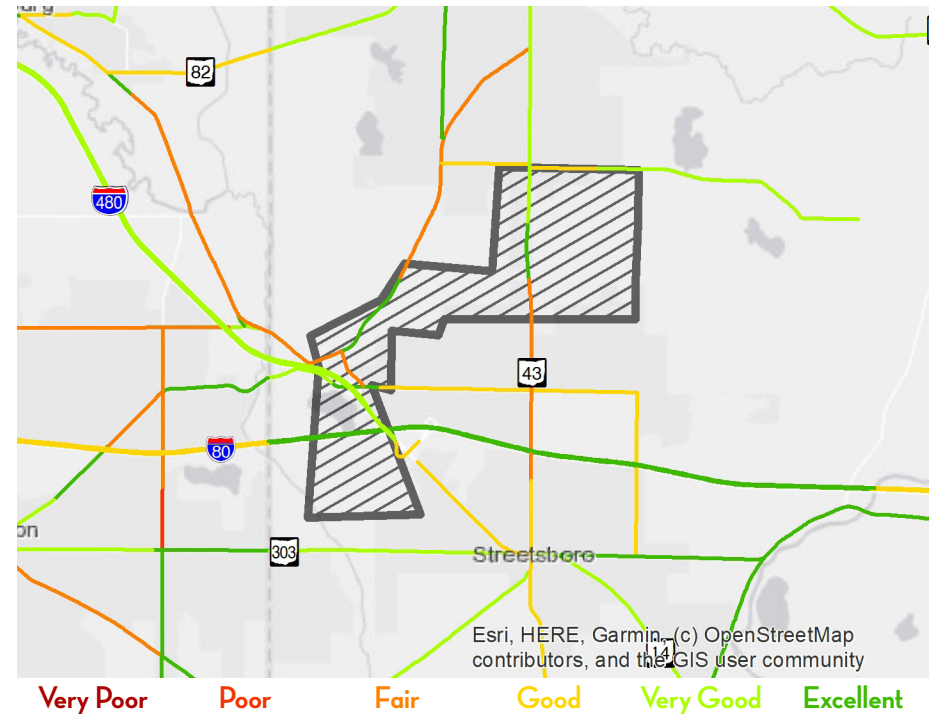
Top 3 Job Types:

1. Manufacturing
2. Wholesale Trade
3. Professional, Scientific and Technical Services

2017 Estimated Jobs:

6,500

Surrounding Pavement Conditions (2018-2019):



Aurora / Streetsboro Freight Corridor

Top High Crash Segments

The following table identifies the segments in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Roadway Section, From (*segment beginning location*), To (*segment ending location*), Length (MI), Average Daily Traffic, Total Crashes (*2016-2018*), Crashes per MI per YR, and Crash Rate (*crashes per million vehicle miles travelled*).

LOCATION	LOCAL RANK	OVERALL RANK	ROADWAY SECTION	FROM	TO	LENGTH (MI)	AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASHES PER MI PER YR	CRASH RATE
Streetsboro	1	21	Cleveland - East Liverpool Rd (SR-14)	Streetsboro Rd (SR-303) West Junction	Streetsboro Rd (SR-303) East Junction	0.36	38,600	53	50	3.51
Streetsboro	2	39	Cleveland - East Liverpool Rd (SR-14)	I-480 Ramp to I-80	Streetsboro Rd (SR-303) West Junction	1.18	32,730	104	29	2.46
Streetsboro	3	52	Cleveland Canton Rd (SR-43)	Streetsboro Rd (SR-303)	Frost Rd	1.51	20,140	89	20	2.67

Top High Crash Intersections

The following table identifies the intersections in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Street, Intersecting Street, Approach Average Daily Traffic (*Average Daily Traffic entering Intersection*), Total Crashes (*2016-2019*), Crash Rate (*crashes per million approach vehicles*), and Severity Index (*weighted score based upon number of fatal, injury, or property damage only crashes for the intersection*).

LOCATION	LOCAL RANK	OVERALL RANK	STREET	INTERSECTING STREET	APPROACH AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASH RATE	SEVERITY INDEX
Streetsboro	1	4	Cleveland - East Liverpool Rd (SR-14)	Brook Valley Trail / Shady Lake Dr	27,030	56	1.89	1.89
Streetsboro	2	9	Cleveland - East Liverpool Rd (SR-14 / SR-303)	Cleveland Canton Rd (SR-43)	48,390	132	2.49	1.45
Streetsboro	3	32	Cleveland - East Liverpool Rd (SR-14)	Mondial Pkwy / Singletary Dr	27,030	50	1.69	1.48

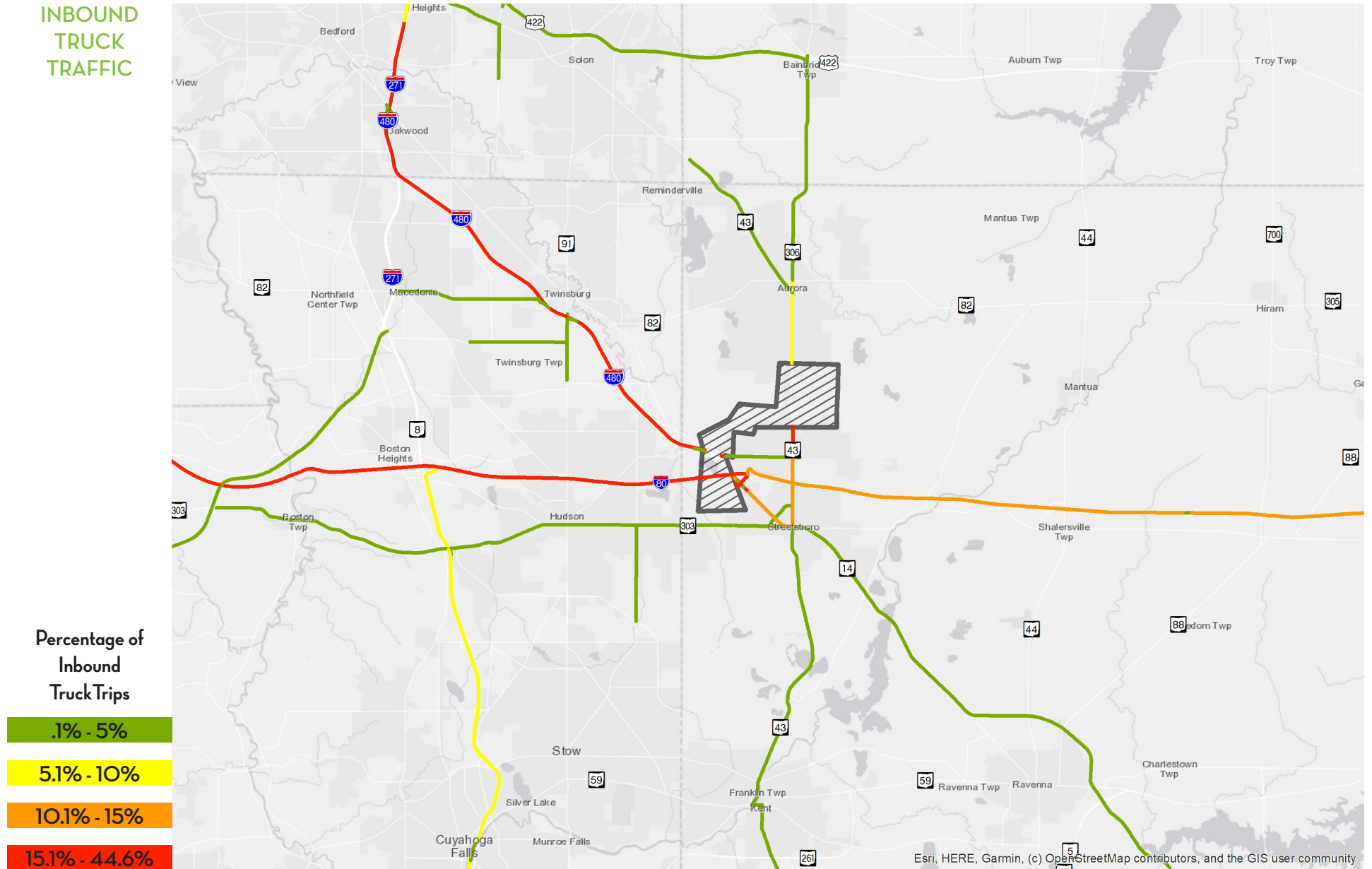
Top Congested Locations

The following table identifies the top segments / intersections in or near the job hub that have been identified in AMATS' 2020 Congestion Management Process report. The fields contained within the table are: Location, Name, Miles, Time (*hour in which peak congestion occurs*), AM / PM (*half of day in which peak hour occurs*), Type (*description of section*), Direction (*direction of traffic flow*), and % Free Flow (*ratio of the speed traffic is traveling in relation to the free flow speed, or the speed at which unimpeded traffic can travel*).

LOCATION	NAME	MILES	TIME	AM / PM	TYPE	DIRECTION	% FREE FLOW
Streetsboro	SR-14 from I-80 Ramps to SR-43	1.391	4:45 - 5:45	PM	Arterial	Eastbound	54.14
Streetsboro	I-480 Southbound Ramp to I-80	0.518	9:15 - 10:15	PM	Freeway Ramp	Southbound	57.22
Streetsboro	Aurora Hudson Rd from I-480 Southbound Ramps to Frost Rd	0.198	7:00 - 8:00	AM	Arterial	Eastbound	60.90

Aurora / Streetsboro Freight Corridor

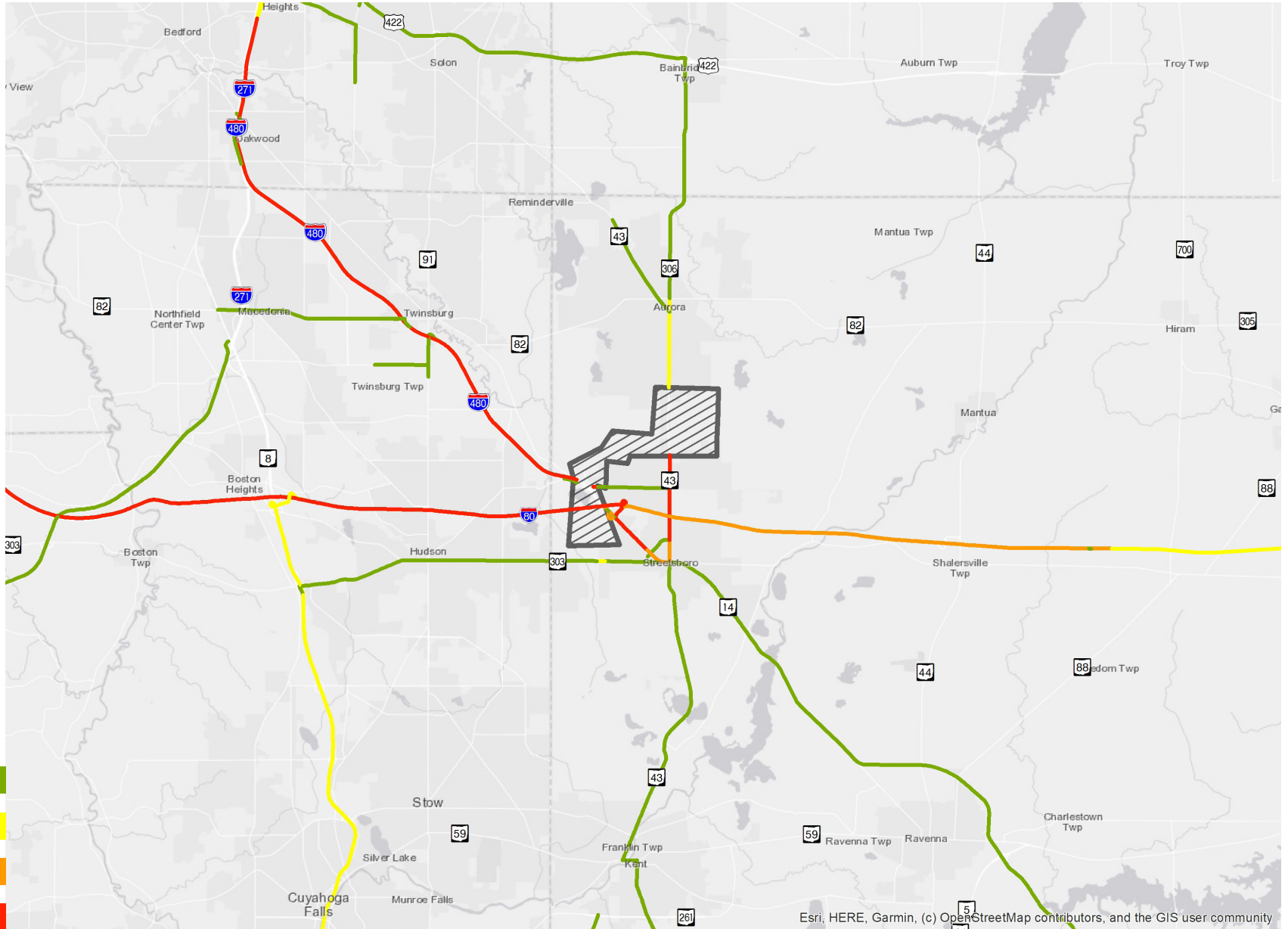
INBOUND
TRUCK
TRAFFIC



Aurora / Streetsboro Freight Corridor

OUTBOUND
TRUCK
TRAFFIC

Percentage of
Outbound
Truck Trips

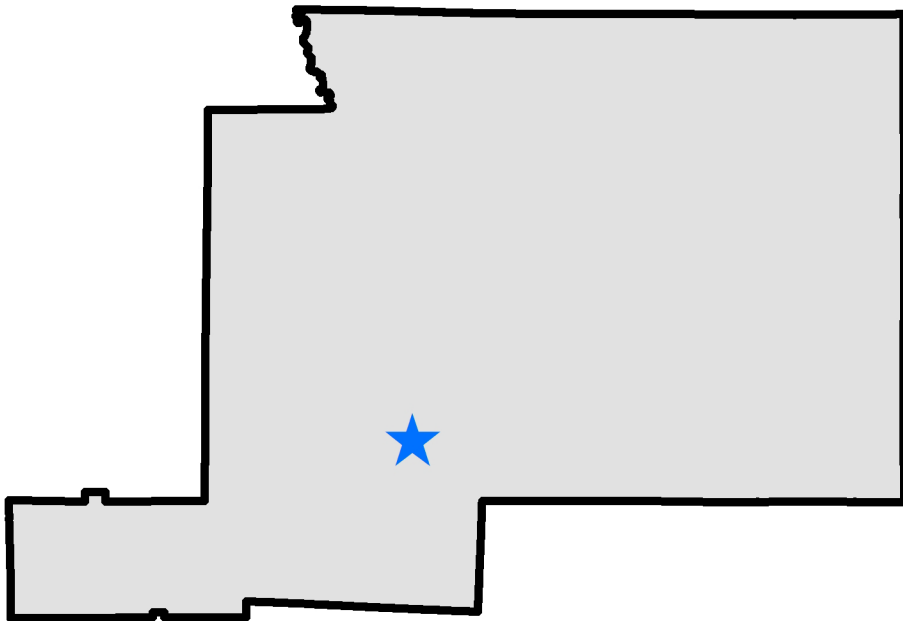


East Akron / Airport Freight Corridor

Characteristics:

The East Akron / Airport Job Hub is located in the southeast corner of Akron, between Springfield Township and downtown Akron. This job hub is home to 8,000 jobs in the areas of manufacturing, construction, and transportation and warehousing. This job hub is dense with employers benefiting from the nearby access to I-76 and US-224, including the Goodyear Tire and Rubber Company's World Headquarters. There are some nearby areas of congestion and a few high crash locations that could impact freight traffic. This job hub also benefits from access to the ABC Railway and Wheeling & Lake Erie Railway rail lines.

Location:



Key Freeway / Highway Access:

I-76
US-224

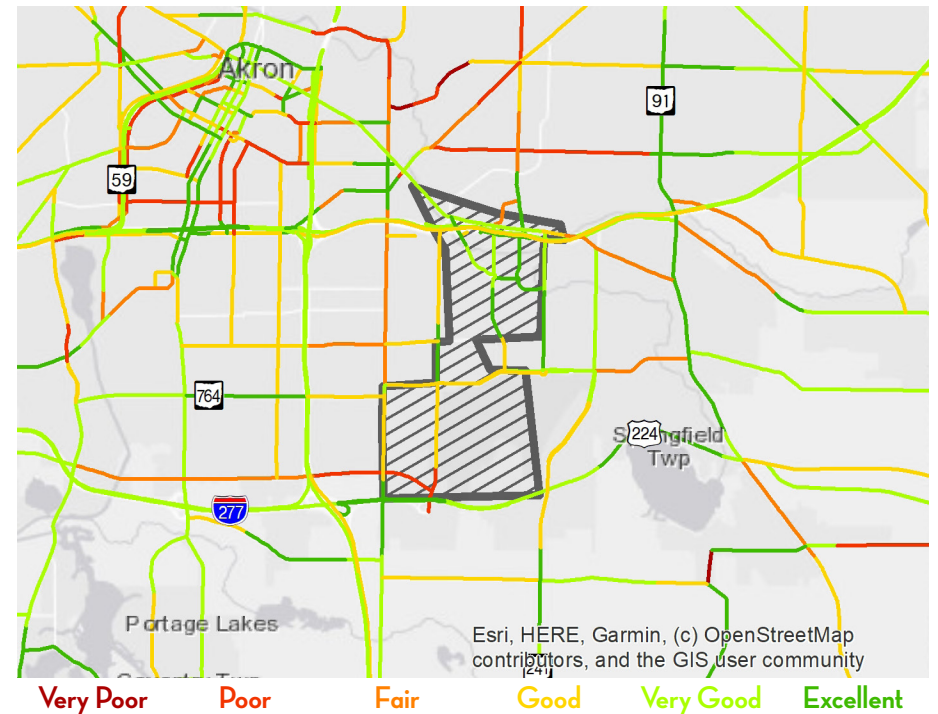
Top 3 Job Types:

1. Manufacturing
2. Construction
3. Transportation and Warehousing

2017 Estimated Jobs:

8,000

Surrounding Pavement Conditions (2018-2019):



East Akron / Airport Freight Corridor

Top High Crash Segments

The following table identifies the segments in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Roadway Section, From (*segment beginning location*), To (*segment ending location*), Length (MI), Average Daily Traffic, Total Crashes (*2016-2018*), Crashes per MI per YR, and Crash Rate (*crashes per million vehicle miles travelled*).

LOCATION	LOCAL RANK	OVERALL RANK	ROADWAY SECTION	FROM	TO	LENGTH (MI)	AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASHES PER MI PER YR	CRASH RATE
Springfield Township	2	13	Canton Rd	Sanitarium Rd (CR-136) West Junction	E Waterloo Rd (US-224)	1.01	20,415	83	28	3.69
Springfield Township	3	30	S Arlington Rd	I-77 / Green North Corp Line	Killian Rd (CR-135)	0.61	17,570	53	29	4.49
Springfield Township	4	56	Canton Rd (SR-91)	E Waterloo Rd (US-224)	Akron South Corp Line	0.72	18,950	37	17	2.49

Top High Crash Intersections

The following table identifies the intersections in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Street, Intersecting Street, Approach Average Daily Traffic (*Average Daily Traffic entering Intersection*), Total Crashes (*2016-2019*), Crash Rate (*crashes per million approach vehicles*), and Severity Index (*weighted score based upon number of fatal, injury, or property damage only crashes for the intersection*).

LOCATION	LOCAL RANK	OVERALL RANK	STREET	INTERSECTING STREET	APPROACH AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASH RATE	SEVERITY INDEX
Springfield Township	2	69	E Waterloo Rd (US-224)	Canton Rd (SR-91 / CR-66)	36,955	57	1.41	1.46
Springfield Township	6	206	S Arlington Rd	Killian Rd (CR-135)	23,625	27	1.04	1.52
Springfield Township	7	249	Gilchrist Rd	Skeleton Rd	7,014	10	1.30	1.60

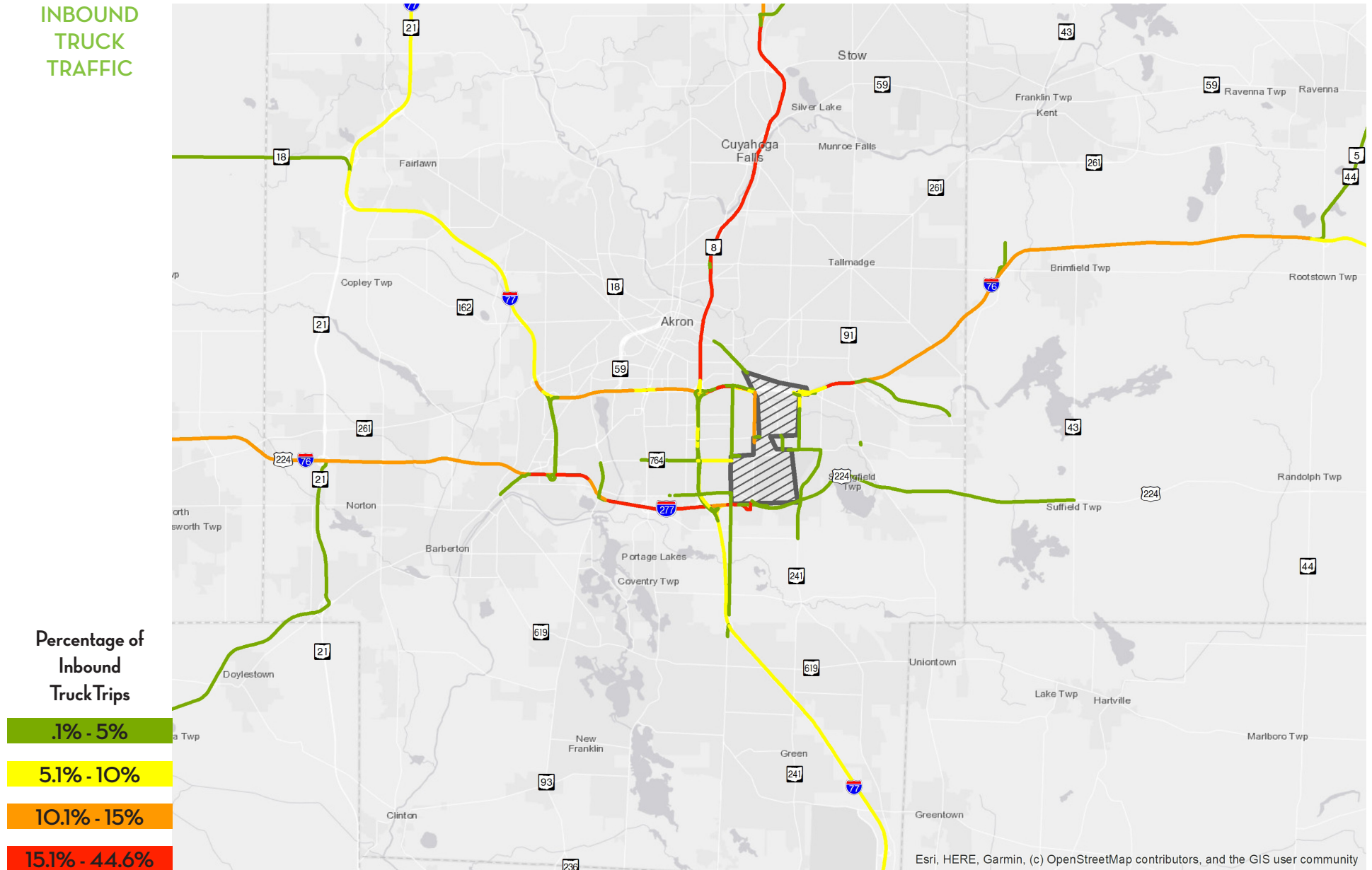
Top Congested Locations

The following table identifies the top segments / intersections in or near the job hub that have been identified in AMATS' 2020 Congestion Management Process report. The fields contained within the table are: Location, Name, Miles, Time (*hour in which peak congestion occurs*), AM / PM (*half of day in which peak hour occurs*), Type (*description of section*), Direction (*direction of traffic flow*), and % Free Flow (*ratio of the speed traffic is traveling in relation to the free flow speed, or the speed at which unimpeded traffic can travel*).

LOCATION	NAME	MILES	TIME	AM / PM	TYPE	DIRECTION	% FREE FLOW
Akron	Waterloo Rd (US-224) at George Washington Blvd (SR-241)	0.04	2:00 - 3:00	PM	Intersection	Westbound	51.63
Akron	Waterloo Rd (US-224) at George Washington Blvd (SR-241)	0.04	7:15 - 8:15	AM	Intersection	Eastbound	55.81
Akron	Waterloo Rd at Arlington St	0.05	3:00 - 4:00	PM	Intersection	Eastbound	63.99

East Akron / Airport Freight Corridor

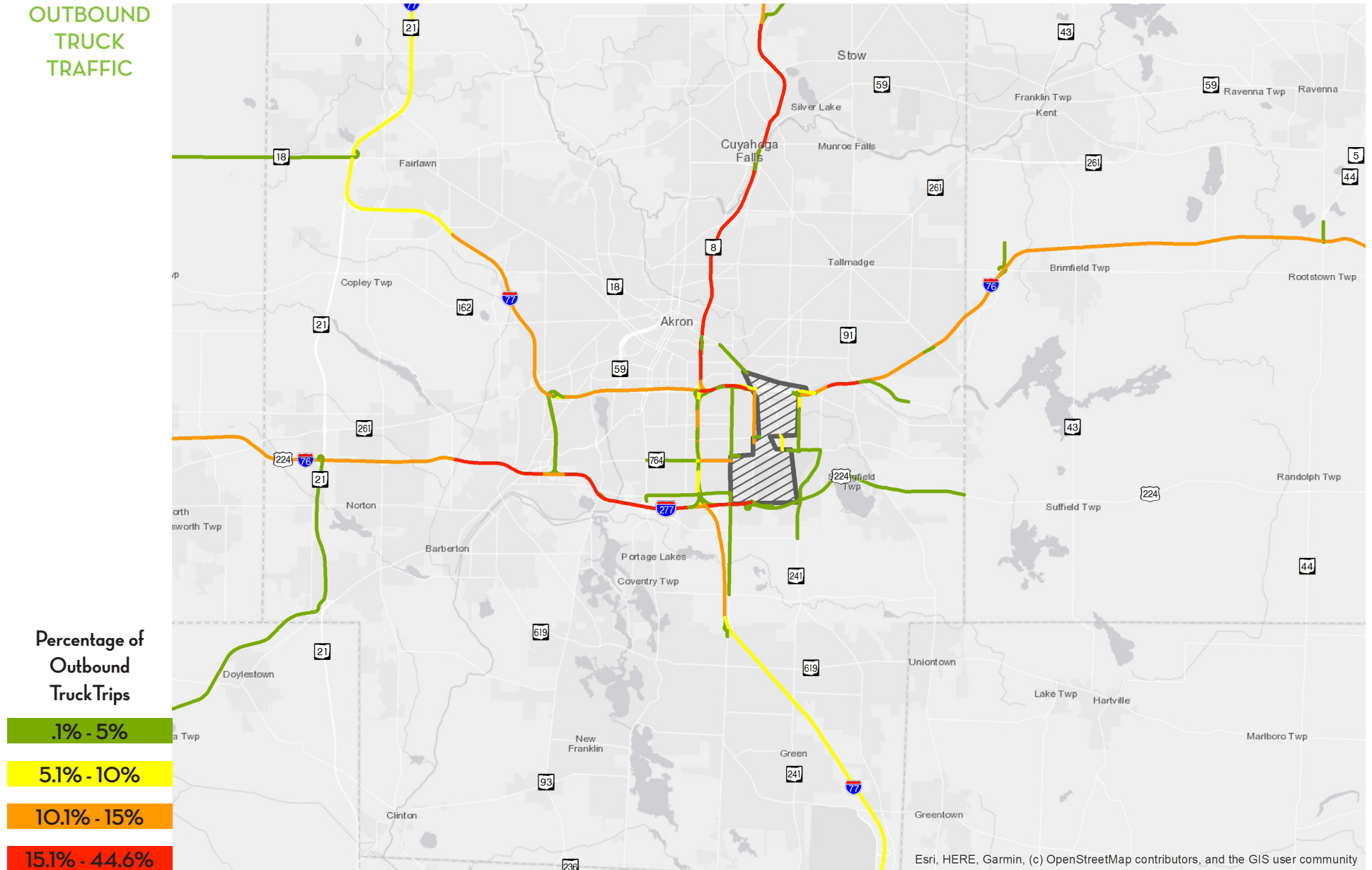
INBOUND
TRUCK
TRAFFIC



Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

East Akron / Airport Freight Corridor

OUTBOUND
TRUCK
TRAFFIC



Percentage of
Outbound
Truck Trips

- .1% - 5%
- 5.1% - 10%
- 10.1% - 15%
- 15.1% - 44.6%

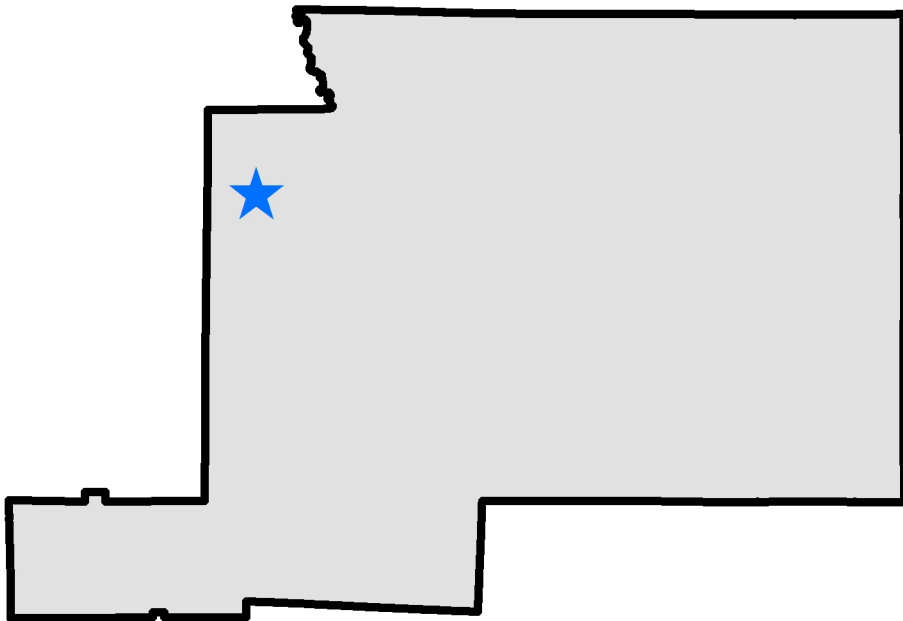
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Richfield Freight Corridor

Characteristics:

With 4,000 jobs in finance and insurance, wholesale trade, and transportation warehousing, the Richfield Job Hub is an important regional job hub. This job hub sits in northwestern Summit County, a short drive to either Cleveland or Akron. The Crossroads Development District, a new development off of Wheatley Road, promises potential new businesses easy access to I-271 and I-77. In addition to recent improvements along Wheatley Road, the corridor boasts attractive amenities for employers. Congestion in the area is typically on nearby I-77.

Location:



Key Freeway / Highway Access:

- I-77
- I-271

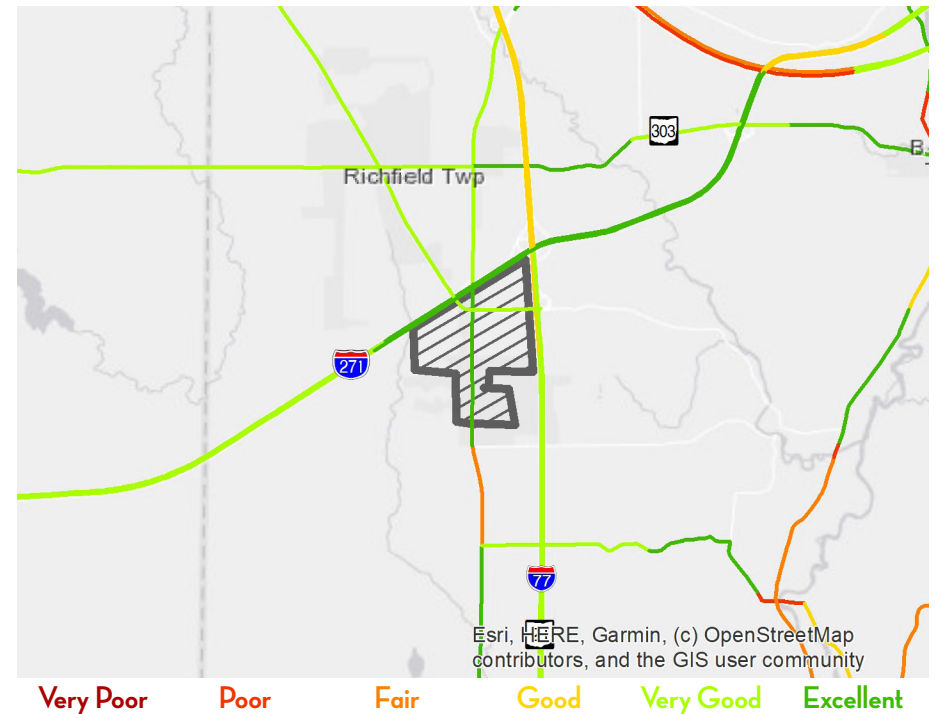
Top 3 Job Types:

1. Finance and Insurance
2. Wholesale Trade
3. Transportation and Warehousing

2017 Estimated Jobs:

4,000

Surrounding Pavement Conditions (2018-2019):



Richfield Freight Corridor

Top High Crash Segments

The following table identifies the segments in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Roadway Section, From (*segment beginning location*), To (*segment ending location*), Length (MI), Average Daily Traffic, Total Crashes (*2016-2018*), Crashes per MI per YR, and Crash Rate (*crashes per million vehicle miles travelled*).

LOCATION	LOCAL RANK	OVERALL RANK	ROADWAY SECTION	FROM	TO	LENGTH (MI)	AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASHES PER MI PER YR	CRASH RATE
Richfield	1	173	Wheatley Rd (SR-176)	I-77	Brecksville Rd	0.60	10,651	18	10	2.58

Top High Crash Intersections

The following table identifies the intersections in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Street, Intersecting Street, Approach Average Daily Traffic (*Average Daily Traffic entering Intersection*), Total Crashes (*2016-2019*), Crash Rate (*crashes per million approach vehicles*), and Severity Index (*weighted score based upon number of fatal, injury, or property damage only crashes for the intersection*).

LOCATION	LOCAL RANK	OVERALL RANK	STREET	INTERSECTING STREET	APPROACH AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASH RATE	SEVERITY INDEX
Richfield	1	125	Broadview Rd (SR-176)	Wheatley Rd (SR-176) / Brecksville Rd	16,661	24	1.32	1.67

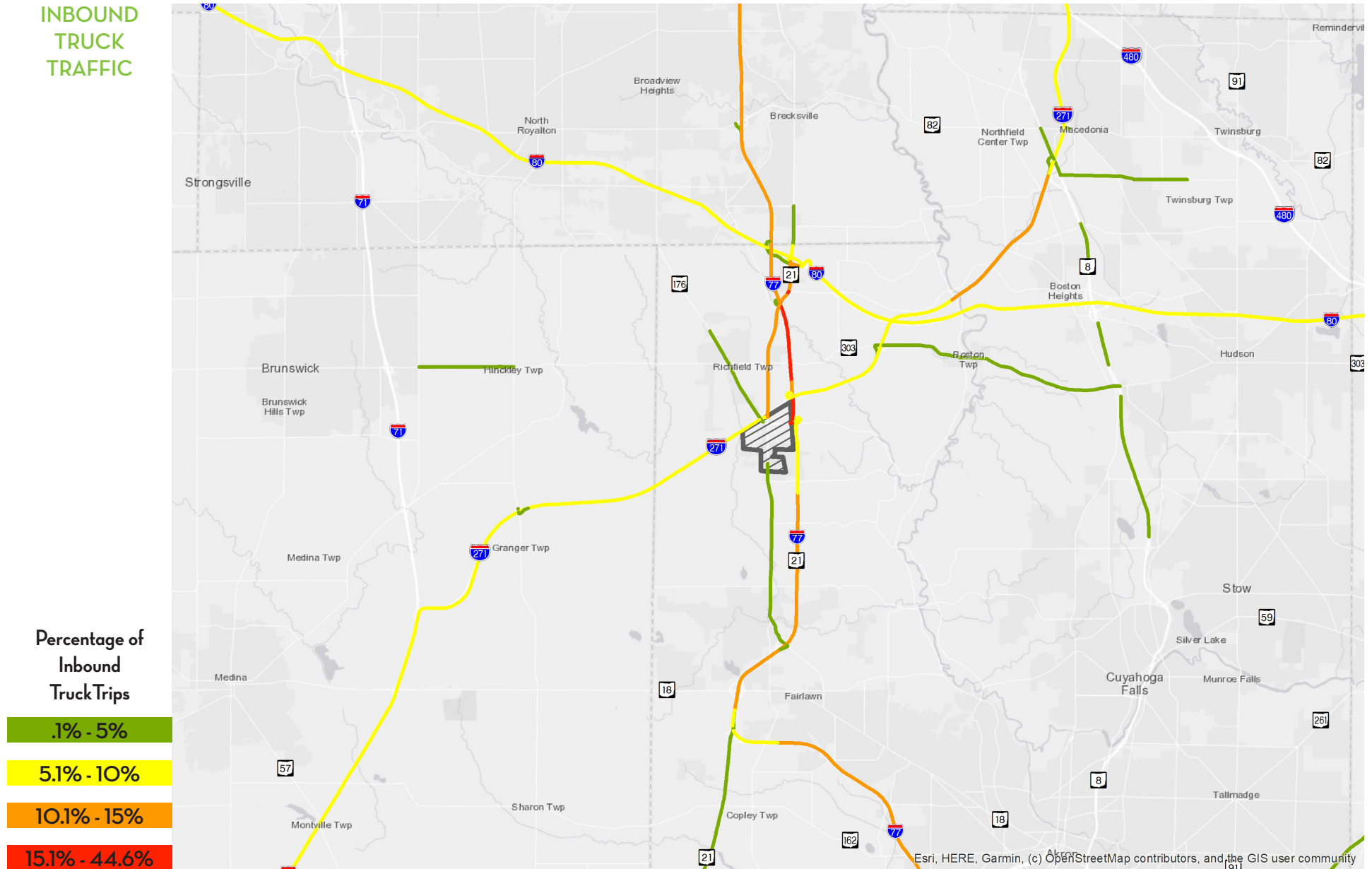
Top Congested Locations

The following table identifies the top segments / intersections in or near the job hub that have been identified in AMATS' 2020 Congestion Management Process report. The fields contained within the table are: Location, Name, Miles, Time (*hour in which peak congestion occurs*), AM / PM (*half of day in which peak hour occurs*), Type (*description of section*), Direction (*direction of traffic flow*), and % Free Flow (*ratio of the speed traffic is traveling in relation to the free flow speed, or the speed at which unimpeded traffic can travel*).

LOCATION	NAME	MILES	TIME	AM / PM	TYPE	DIRECTION	% FREE FLOW
Richfield	Wheatley Rd at Brecksville Rd	0.07	5:30 - 6:30	PM	Intersection	Westbound	56.62
Richfield	Brecksville Rd at Wheatley Rd	0.07	5:15 - 6:15	PM	Intersection	Southbound	57.86
Richfield	Brecksville Rd at Wheatley Rd	0.07	7:45 - 8:45	AM	Intersection	Northbound	62.03
Richfield	Wheatley Rd at Brecksville Rd	0.07	5:00 - 6:00	PM	Intersection	Eastbound	64.51

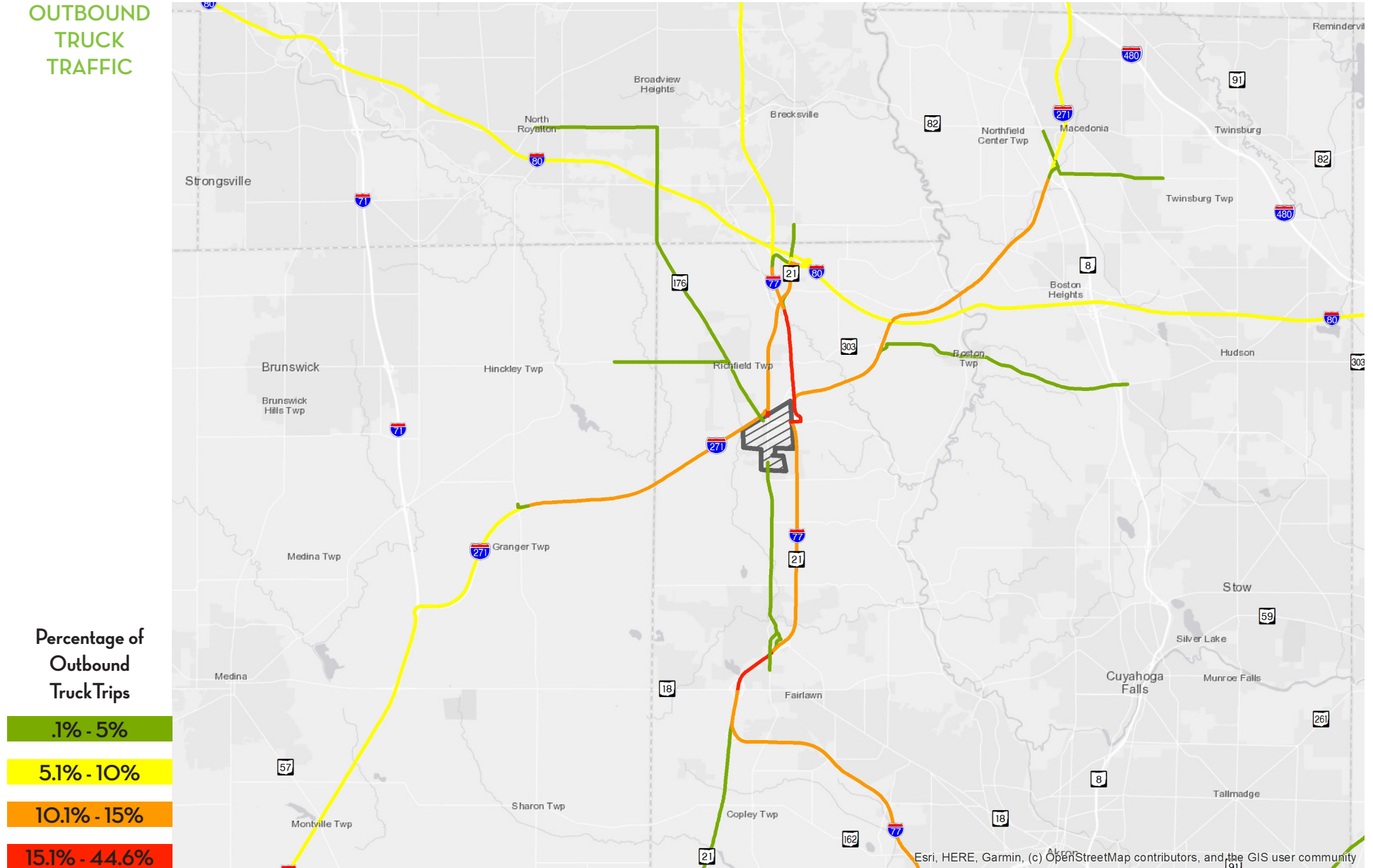
Richfield Freight Corridor

INBOUND
TRUCK
TRAFFIC



Richfield Freight Corridor

OUTBOUND
TRUCK
TRAFFIC

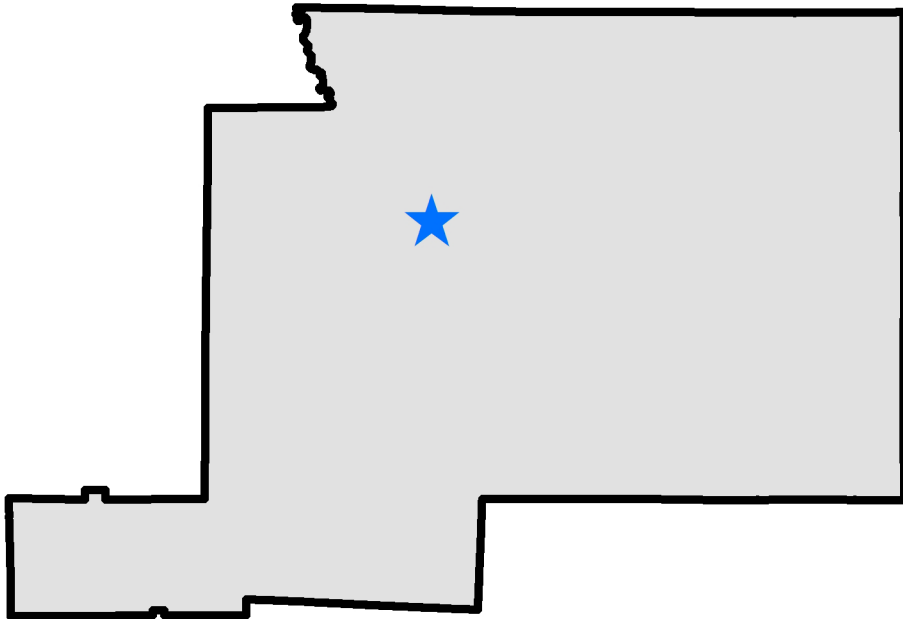


Hudson / Stow Freight Corridor

Characteristics:

The Hudson / Stow Job Hub is located north of Akron in Summit County. With 7,000 jobs in manufacturing, wholesale trade, and management of companies and enterprises this job hub is one of the larger hubs in the region. The corridor is near I-80 and is easily accessed by SR-8. The area boasts attractive amenities with vibrant residential communities. Anchored by JOANN Fabrics, this job hub includes several industrial parks with room for growth. Several high crash locations and intersections have been identified near the job hub, and congestion along SR-91 has the potential to impact freight traffic. This job hub also benefits from access to the Norfolk Southern Railway rail line.

Location:



Key Freeway / Highway Access:

- I-80
- SR-8

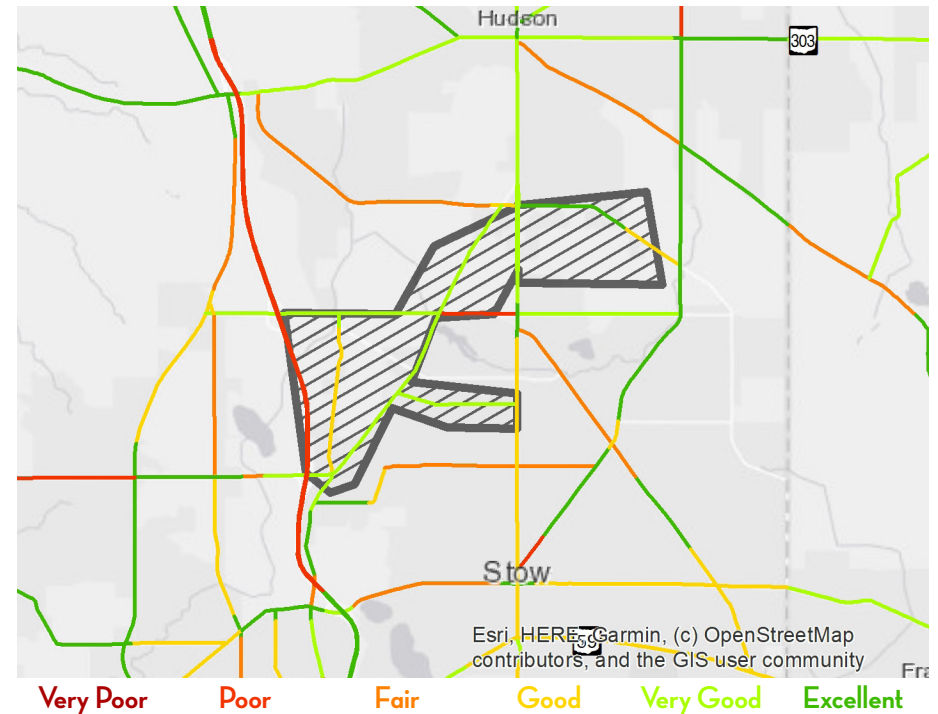
Top 3 Job Types:

1. Manufacturing
2. Wholesale Trade
3. Management of Companies and Enterprises

2017 Estimated Jobs:

7,000

Surrounding Pavement Conditions (2018-2019):



Hudson / Stow Freight Corridor

Top High Crash Segments

The following table identifies the segments in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Roadway Section, From (*segment beginning location*), To (*segment ending location*), Length (MI), Average Daily Traffic, Total Crashes (*2016-2018*), Crashes per MI per YR, and Crash Rate (*crashes per million vehicle miles travelled*).

LOCATION	LOCAL RANK	OVERALL RANK	ROADWAY SECTION	FROM	TO	LENGTH (MI)	AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASHES PER MI PER YR	CRASH RATE
Hudson	1	29	W Streetsboro St (SR-303)	Boston Mills Rd	Main St (SR-91)	0.55	16,630	45	27	4.53
Hudson	2	48	N Main St (SR-91)	Streetsboro St (SR-303)	Owen Brown St	0.23	17,590	22	32	4.93
Hudson	3	134	Darrow Rd / S Main St (SR-91)	Hudson Dr	Streetsboro St (SR-303)	1.23	21,120	89	15	1.93
Stow	1	18	Graham Rd	Fishcreek Rd	Stow East Corp Line	0.66	11,870	53	25	5.86
Stow	2	24	Graham Rd	Hudson Dr	Silver Lake West Corp Line	0.44	28,680	104	36	3.42
Stow	3	64	Kent Rd (SR-59)	Fishcreek Rd	Stow East Corp Line	0.35	18,930	89	20	2.89

Top High Crash Intersections

The following table identifies the intersections in or near the job hub with the highest number of crashes based on recent crash history. The fields contained within the table are: Location, Local Rank (*rank within community*), Overall Rank (*rank within AMATS*), Street, Intersecting Street, Approach Average Daily Traffic (*Average Daily Traffic entering Intersection*), Total Crashes (*2016-2019*), Crash Rate (*crashes per million approach vehicles*), and Severity Index (*weighted score based upon number of fatal, injury, or property damage only crashes for the intersection*).

LOCATION	LOCAL RANK	OVERALL RANK	STREET	INTERSECTING STREET	APPROACH AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASH RATE	SEVERITY INDEX
Hudson	1	85	Hudson Dr	Terex Rd	12,160	30	2.25	1.40
Hudson	2	151	Barlow Rd	Terex Rd (West Junction)	8,305	15	1.65	1.67
Hudson	3	238	Darrow Rd (SR-91)	Terex Rd	24,775	30	1.11	1.33
Stow	1	5	Darrow Rd (SR-91)	Graham Rd	42,395	96	2.07	1.58
Stow	2	14	Graham Rd	Fishcreek Rd	28,155	55	1.78	1.58
Stow	3	149	Kent Rd (SR-59)	Darrow Rd (SR-91)	36,010	41	1.04	1.54

Top Congested Locations

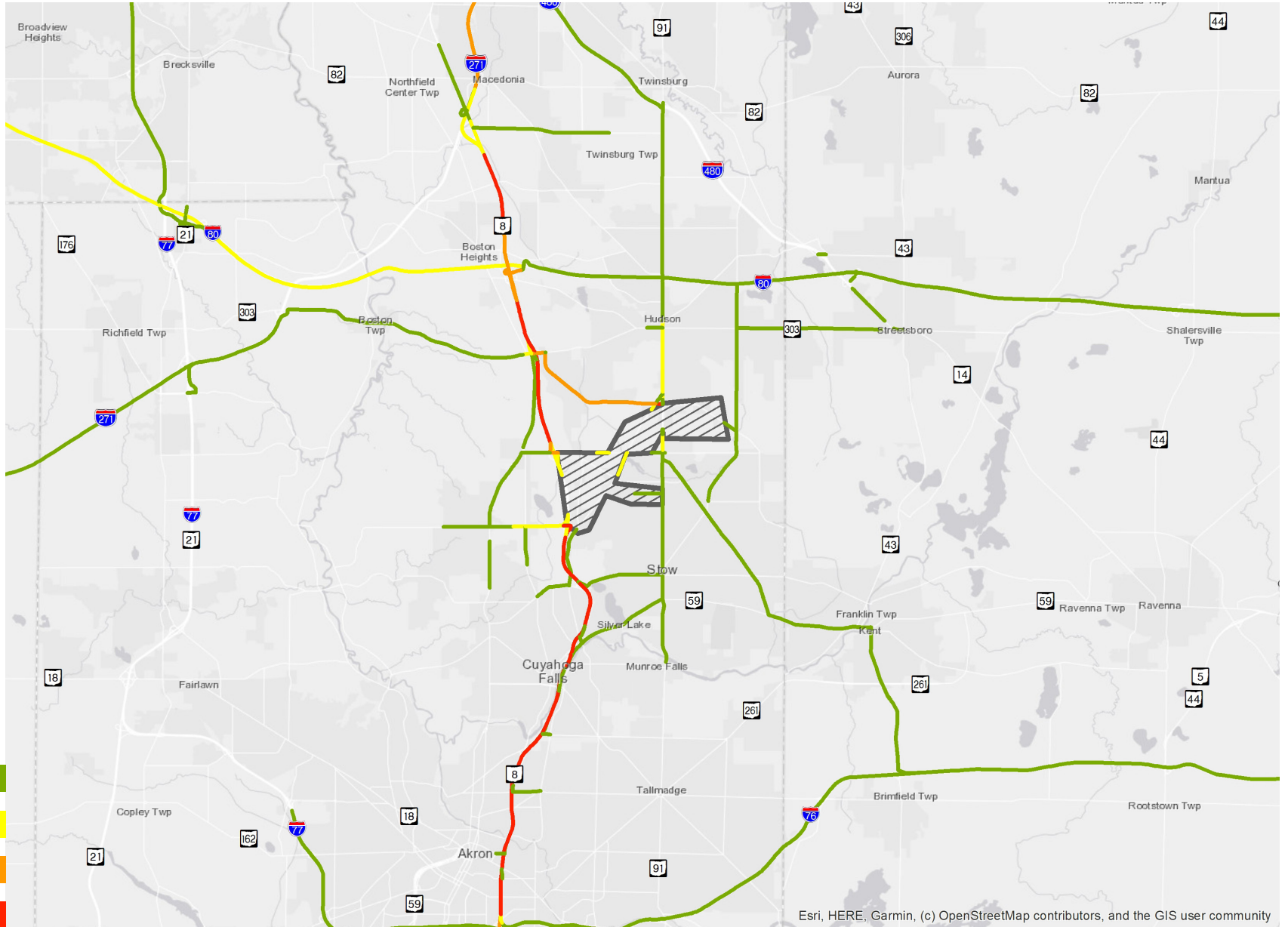
The following table identifies the top segments / intersections in or near the job hub that have been identified in AMATS' 2020 Congestion Management Process report. The fields contained within the table are: Location, Name, Miles, Time (*hour in which peak congestion occurs*), AM / PM (*half of day in which peak hour occurs*), Type (*description of section*), Direction (*direction of traffic flow*), and % Free Flow (*ratio of the speed traffic is traveling in relation to the free flow speed, or the speed at which unimpeded traffic can travel*).

LOCATION	NAME	MILES	TIME	AM / PM	TYPE	DIRECTION	% FREE FLOW
Stow	Steels Corners Rd from Bridgewater Pkwy to SR-8	0.266	5:00 - 6:00	PM	Arterial	Eastbound	52.70
Hudson	Terex Rd from Hudson Dr to Darrow Rd (SR-91)	0.147	4:00 - 5:00	PM	Arterial	Eastbound	57.80
Stow	Steels Corners Rd from SR-8 to Hudson Dr	0.246	5:00 - 6:00	PM	Arterial	Eastbound	58.80
Hudson	Terex Rd from Darrow Rd (SR-91) to Hudson Dr	0.147	4:00 - 5:00	PM	Arterial	Westbound	61.80

Hudson / Stow Freight Corridor

INBOUND
TRUCK
TRAFFIC

Percentage of
Inbound
TruckTrips

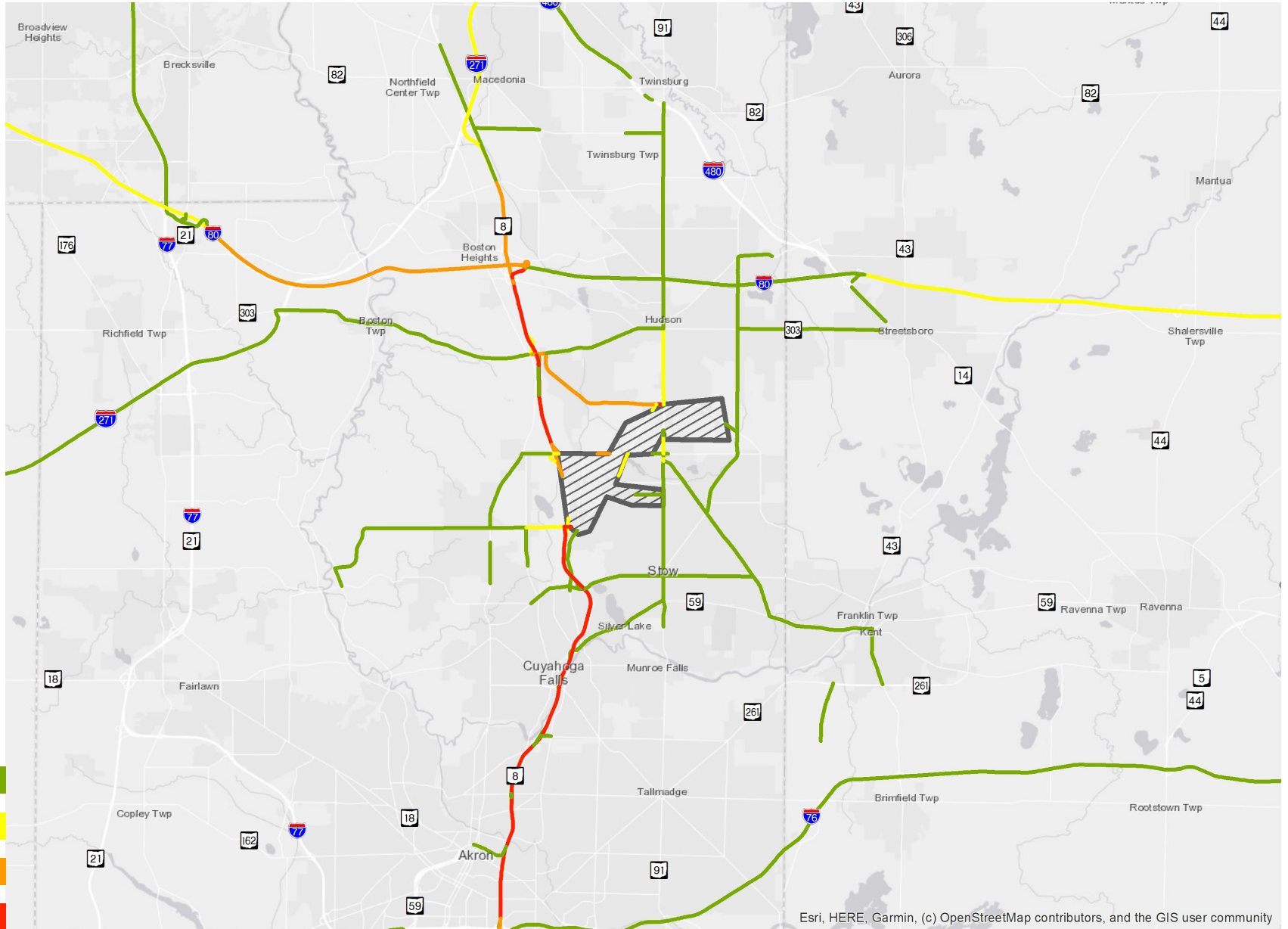


Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Hudson / Stow Freight Corridor

OUTBOUND
TRUCK
TRAFFIC

Percentage of
Outbound
TruckTrips



Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Performance Measures

Current federal regulations require performance management to ensure that state DOTs and MPOs such as AMATS choose the most efficient investments for federal transportation funds.

Performance management focuses attention on national transportation goals, increases the accountability of federal fund programming, and improves project decision-making through performance-based planning. State DOTs and MPOs have established performance goals and will assess this performance over time. The USDOT requires that states and MPOs develop and assess performance measures for areas such as safety, infrastructure condition, traffic congestion, system reliability, vehicle emissions and freight movement.

Specifically, the USDOT will be assessing performance and pavement conditions on the National Highway System (NHS); bridge conditions on the NHS; fatalities and serious injuries (both the number and the rate per vehicle mile traveled) on all public roads; traffic congestion; mobile source emissions; and freight movement on the interstate system.

AMATS will continue to coordinate with ODOT to assess and review factors that influence the level of performance of various transportation modes, and periodically refine the performance targets that will be necessary to maintain or improve operational efficiency.

The assessment of freight performance is measured in terms of mobility and efficiency (travel time, delay and safety) and accessibility and connectivity. Bottlenecks and roadways (or corridors) with particularly high levels of freight movement are singled out for more detailed analysis in terms of the adopted performance measures and goals. The end result is to use performance measures to inform goals that are part of the Regional Transportation Plan. Projects that are essential to the movement of goods are then programmed into the TIP as a part of an integral process. See the AMATS Funding Policy Guidelines for a full discussion of the area's project selection process.

Travel Time Reliability and Freight Movement Performance Measures

Federal rules 23 CFR 490.507 and 23 CFR 490.607 establish National Highway System travel time reliability and Interstate System freight reliability measures. For both personal travel time reliability and freight travel time reliability measures, ODOT is required to establish 2-year and 4-year targets within a four year performance period. The two current (2020) targets are listed in Table 4-1 below:

Table 4-1 | ODOT Travel Time Reliability Targets

Level of Travel Time Reliability		
TRAVEL TIME RELIABILITY	2-YEAR TARGET	4-YEAR TARGET
Interstate Travel Time Reliability	85%	85%
Non-Interstate NHS Travel Time Reliability	N/A	80%

Level of Truck Travel Time Reliability		
TRUCK TRAVEL TIME RELIABILITY	2-YEAR TARGET	4-YEAR TARGET
Interstate Truck Travel Time Reliability	< 1.50	< 1.50

Level of Travel Time Reliability (LOTTTR) is defined as the ratio of the longer travel times (80th percentile) to a “normal” travel time (50th percentile). The measures are the percent of person-miles traveled on the relevant portion of the NHS that are reliable.

Truck Travel Time Reliability (TTTR) is the ratio generated by dividing the 95th percentile travel time by the normal time (50th percentile) for each Interstate segment. The TTTR Index is established by multiplying each segment's largest ratio of five reporting periods by its length then dividing the sum of all length-weighted segments by the total length of Interstate.

The data to assess travel time reliability and establish targets is sourced from FHWA's National Performance Management Research Data Set (NPMRDS). ODOT is participating in FHWA's Performance Management Analytical Tool pooled fund where a contractor assists states in calculating NPMRDS travel time reliability metrics.

AMATS current performance is documented in the following Table 4-2:

Table 4-2 | AMATS Travel Time Reliability

Level of Travel Time Reliability						
YEAR	2014	2015	2016	2017	2018	AVERAGE
Interstate TTR	97.6%	96.5%	97.6%	98.6%	98.5%	97.8%
Non-Interstate NHS TTR	60.7%	63.1%	59.8%	89.3#	90.4%	72.7%
Interstate TTTR Index	0.01	0.01	0.01	0.01	0.01	0.01

AMATS meets the performance targets for travel time reliability on the interstate system and on truck travel time. The AMATS non-interstate system meets the target as of 2017. Overall state of Ohio performance is documented in table 4-3 below:

Table 4-3 | Ohio Travel Time Reliability

Level of Travel Time Reliability

YEAR	2014	2015	2016	2017	2018	AVERAGE
Interstate TTR	92.4%	90.3%	90.6%	90.7%	89.1%	90.6%
Non-Interstate NHS TTR	68.5%	67.4%	66.8%	90.5%	90.1%	76.7%
Interstate TTTR Index	1.46	1.48	1.45	1.34	1.38	1.42

AMATS identifies 6 projects that will improve travel time reliability in the greater Akron area. The projects total \$85 million. These projects are also anticipated to benefit truck travel time reliability as well.

Table 4-4 | TIP Projects (FY 2021-2024)

Improving Travel Time Reliability

Level of Travel Time Reliability

ROAD TYPE	NUMBER OF PROJECTS	CONSTRUCTION \$ (MILLIONS)
Interstate	2	\$67.6
Non-Interstate	4	\$17.5

A full discussion of the AMATS area's performance measures and targets can be found in *Appendix H: Performance Measures of the Transportation Improvement Program FY 2021-2024* (adopted May 14, 2020).

Recommendations

The highest priority needs in the AMATS area regarding freight movement involve improvements to the highway and rail systems. The AMATS *Highway Preservation Needs Report* and the *Congestion Management Process Report (CMP)* address the needs of the AMATS area in terms of highway improvements that streamline the flow of freight in the region. After studying existing and future levels of congestion, the CMP makes recommendations which are then considered for inclusion in the financially-constrained *Transportation Outlook 2045*.

Freight movement, by way of trucks, is heavily concentrated on freeways and major state routes. The number of trucks on these roads range from 50 to 15,000 trucks per day, with I-76 through Summit and Portage counties being the busiest freeway for trucks. Highway improvements such as the Central Interchange project will help improve the efficiency of freight movement on the area's roadways. Recommended grade separations will reduce delays and eliminate conflicts between trains and automobiles.

Since the approval of the current *2016 Freight Plan* in May 2016, ODOT has completed improvements to the ramp from I-76 EB to I-277 NB at the south end of the Kenmore Leg (safety issue related to crashes) to meet modern standards and geometrics. But the largest current project presently under construction is the new South Main/Broadway interchange with I-76/77 near downtown Akron. This \$113 million project includes removing interchanges at Wolf Ledges Parkway and Grant Street, and reconstructing access points and re-aligning Main Street and Broadway.

In addition, there are several upcoming projects that will aid in the improvement of the overall freight network. These projects include:

- I-76 / I-77 / SR-8 Pavement Replacement and Lane Add Project in Akron (I-76 from Kenmore Leg to Princeton St, I-77 from Waterloo Rd to Lafollette St and Kenmore Leg to North of Vernon Odom Blvd, SR-8 from I-76 / I-77 to Perkins St)
- I-77 / I-277 / US-224 Interchange improvement and additional lanes (I-77 from Arlington Rd to US-224)
- SR-8 Bridge Replacement (SR-8 High Level Bridge over Cuyahoga River Valley)

Roadway Recommendations

- Prioritize safety improvements near heavy freight corridors to relieve non-recurring congestion in *Transportation Outlook 2045*.
- Prioritize operational improvements in heavy freight corridors that would improve recurring congestion in *Transportation Outlook 2045*.

Rail Recommendations

- Provide support or engage in public-private partnerships to alleviate congestion on rail lines identified in the *Ohio Statewide Rail Plan* and the *Ohio Freight Rail Choke Point Study*.
 - Improve the CSX Lambert (Southwest Akron) to Warwick section near Clinton. This section of single track handles large amounts of two-way traffic. When trains are backed up, at-grade crossings are blocked to vehicular traffic. This situation also poses a danger to public safety in the area, as emergency vehicles cannot pass. Estimated cost: \$10.9 million
 - Improve the NS Cleveland to Pittsburgh Line that passes through Macedonia, Hudson and Ravenna on its way to Alliance. The segment in Macedonia remains congested along a length of the rail line.
 - Improve the Norfolk-Southern line in Hudson to prevent trains from idling on the Hines Hill Road at-grade crossing and blocking emergency vehicle access.
- Preserve out of service rail lines for future rail use and promote bike and pedestrian trails adjacent to rail lines.
- Consider public/private partnerships with the rail companies in order to improve freight service in the area.

Railroad-Highway Grade Separation Recommendations

Railroad-highway intersections are a source of congestion and safety concerns. The strategies for alleviating congestion and improving safety were discussed earlier in the report. When feasible, separating the railroad and highway provides the greatest benefit. The highest priority grade separation locations in the AMATS area are:

- The Stow Road crossing of the Norfolk-Southern Line in Hudson
- The North Main Street (SR-91) crossing of the CSX Line in Munroe Falls

Conclusion

The efficient movement of goods is of paramount importance to a region's economy. The consideration of freight is critical to the transportation planning process to ensure the transportation network promotes multimodal freight movement. The AMATS Freight Report's recommended strategies to improve the freight network in the AMATS region will strengthen the freight network and improve its safety and efficiency. Recommendations made in the *2020 Freight Report* will be considered for inclusion in *Transportation Outlook 2045*.



The 2020 Freight Plan is published by:
Akron Metropolitan Area Transportation Study
161 S High St | Suite 201
Akron, Ohio 44308-1423
Editorial comments are welcome.
Director: Curtis Baker



E-Mail: amats@akronohio.gov

Please visit our website at: www.amatsplanning.org

Phone: 330-375-2436 | Fax: 330-375-2275

This report was prepared by the Akron Metropolitan Area Transportation Study (AMATS) in cooperation with the U.S. Department of Transportation, the Ohio Department of Transportation, and the Village, City and County governments of Portage and Summit Counties and a portion of Wayne County.

The contents of this report reflect the views of AMATS, which is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official view and policies of the Ohio and/or U.S. Department of Transportation. This report does not constitute a standard, specification or regulation.