Akron Metropolitan Area Transportation Study
Policy Committee
Virtual Meeting

Thursday, September 24, 2020
1:30 p.m.

Agenda

1. **Call to Order**
   - A. Determination of a Quorum — Oral
   - B. Audience Participation*

2. **Minutes**
   - A. May 14, 2020 Meeting – **Motion Required** — Attachment 2A

3. **Staff Reports**
   - A. Financial Progress Report – **Motion Required** — Attachment 3A
   - B. Technical Progress Report — Oral
   - C. AMATS Federal Funds Report — Attachment 3C

4. **Old Business**

5. **New Business**
   - A. *2020 Transit Plan* – **Motion Requested** — Attachment 5A
   - B. *2020 Freight Plan* – **Motion Requested** — Attachment 5B
   - C. Draft *Congestion Management Process Report* – **Discussion Only** — Attachment 5C

6. **Resolutions**
   - A. **Resolution 2020-11** – Approving FY 2021 Elderly and Disabled Program Project Recommendations (FY 2021-2024 TIP Amendment #1). – **Motion Required** — Attachment 6A
   - B. **Resolution 2020-12** – To Add ODOT and FTA Funds in FY 2021 for PARTA - (FY 2021-2024 TIP Amendment #2). – **Motion Required** — Attachment 6B
   - C. **Resolution 2020-13** – Approving Amendment #3 to the FY 2021-2024 Transportation Improvement Program to cancel one existing project, add two new projects, and revise the funding and scope of work to one existing project and one of the new projects. – **Motion Required** — Attachment 6C
   - D. **Resolution 2020-14** – Approving the FY 2020 Year End Completion Report. – **Motion Required** — Attachment 6D
   - E. **Resolution 2020-15** – Authorizing the AMATS Staff to adjust Transportation Planning Work Program and Budget element allocations. – **Motion Required** — Attachment 6E
   - F. **Resolution 2020-16** – CMAQ Performance Plan Mid-Period Progress Report. – **Motion Required** — Attachment 6F

7. **Other Business**

- MORE -

8. **Adjournment**

Next Regular Meeting:
Thursday, December 17, 2020 - 1:30 PM

* Please note that AMATS will be unable to provide an opportunity for live public comment regarding agenda items or other transportation-related issues due to technological limitations. AMATS Director Baker will instead read any email or written correspondence that the agency has received from the public regarding agenda items.

All mailout material is available on the AMATS Web Site at www.amatsplanning.org

Akron Metropolitan Area Transportation Study
Technical Advisory Committee
Virtual Meeting

Thursday, September 17, 2020
1:30 p.m.

Agenda

1. **Call to Order**
   A. Determination of a Quorum — Oral

2. **Minutes**
   A. May 6, 2020 Meeting – **Motion Required** — Attachment 2A

3. **Staff Reports**
   A. Financial Progress Report – **Motion Required** — Attachment 3A
   B. Technical Progress Report — Oral
   C. AMATS Federal Funds Report — Attachment 3C

4. **Old Business**

5. **New Business**
   A. *2020 Transit Plan* – **Motion Requested** — Attachment 5A

   B. *2020 Freight Plan* – **Motion Requested** — Attachment 5B

   C. Draft *Congestion Management Process Report* – **Discussion Only** — Attachment 5C

6. **Resolutions**
   A. **Resolution 2020-11** – Approving FY 2021 Elderly and Disabled Program Project Recommendations (FY 2021-2024 TIP Amendment #1). – **Motion Required** — Attachment 6A

   B. **Resolution 2020-12** – To Add ODOT and FTA Funds in FY 2021 for PARTA - (FY 2021-2024 TIP Amendment #2). – **Motion Required** — Attachment 6B

   C. **Resolution 2020-13** – Approving Amendment #3 to the FY 2021-2024 Transportation Improvement Program to cancel one existing project, add two new projects, and revise the funding and scope of work to one existing project and one of the new projects. – **Motion Required** — Attachment 6C

   D. **Resolution 2020-14** – Approving the FY 2020 Year End Completion Report. – **Motion Required** — Attachment 6D

   E. **Resolution 2020-15** – Authorizing the AMATS Staff to adjust Transportation Planning Work Program and Budget element allocations. – **Motion Required** — Attachment 6E

   F. **Resolution 2020-16** – CMAQ Performance Plan Mid-Period Progress Report. – **Motion Required** — Attachment 6F

7. **Other Business**

- MORE -

8. **Adjournment**

Next Regular Meeting:
Thursday, December 10, 2020 - 1:30 PM

All mailout material is available on the AMATS Web Site at www.amatsplanning.org.

Akron Metropolitan Area Transportation Study
Citizens Involvement Committee
Virtual Webinar
AMATS Facebook Page - AMATSPlanning

Thursday, September 17, 2020
6:30 p.m.

Agenda

1. **Welcome**

2. **Introductions and Virtual Webinar Orientation**

3. **Items**
   A. Presentation regarding the *2020 Transit Plan*.

   B. Presentation regarding the *2020 Freight Plan*.

   C. Presentation regarding the Draft *Congestion Management Process Report*.

4. **Open Discussion**

5. **Adjournment 7:45 P.M.**
   Next Regular Meeting:
   Thursday, December 10, 2020 - 6:30 p.m.

All mailout material is available on the AMATS Web Site at www.amatsplanning.org

From:	William Maki
To:	Prater, Kerry
Subject:	[External]Freight Transportation Plan
Date:	Thursday, August 27, 2020 2:12:04 PM

Good document. Since we are looking into the future I think the following should be addressed:

- Lack of truck drivers. On the news I saw self driving trucks that go from terminal to terminal. Should we have special lanes? Will self driving trucks increase the number of trucks on the road? Should these trucks only travel at night?

- Separation of RR crossings and streets/highways. Technology has a way of surprising us. Perhaps, in addition to the to the lights, bells and gate arms, a small transmitter could be put at each crossing. It would send out a signal to all cell phones. The signal could be a train whistle sound and the words "Train approaching crossing" Once the train has gone by the transmitter signal would stop Area of coverage about a quarter mile?

- Fuel costs. again, technology. I see a hydrogen vehicle being touted as having a 1000 mile range. I think the trucking companies will rush to embrace this or other types of fuel Less emissions

- Airlander 10 This is basically a blimp. It can transport 10 tons of cargo. Where could such an airship land? The old mall in SW Akron where Amazon is putting in a warehouse. Akron Airport. Other large areas now abandoned from their original purpose. Isn't technology fun?

- I still think with a bit of eminent domain there could be two left turn lanes on Rt 8 south at the Howe road exit. Instead of cars and TRUCKS backing up on Rt *.

- Table 4-2. Non interstate NHS TTR why was 2014 - 15 - 16 so low, and 2017 and 2018 so high. An explanation of the change would be nice

Akron Metropolitan Area Transportation Study
Policy Committee
Thursday, May 14, 2020 – 1:30 p.m.

Minutes of Meeting

Recordings of AMATS committee meetings are available in the Podcast section of the agency web site at www.amatsplanning.org/category/meetings/.

I. Call to Order

A. Chairwoman Clark called the meeting to order in Ballroom A of the Hilton Garden Inn. The attending members constituted a quorum.

Chairwoman Clark asked for the meeting attendees to introduce themselves. Introductions were made.

B. Audience Participation

None.

II. Minutes – Motion Required

A. Approval of Minutes

Members were asked to approve the minutes of the March 11, 2020 meeting.

Motion
David G. Kline *made a motion to approve the minutes and it was seconded by* ***Rick Bissler****. The motion was approved by a voice vote.*

III. Staff Reports

A. Financial Progress Report

Curtis Baker presented Attachment 3A.

Motion
Lou Bertrand *made a motion to approve the Financial Progress Report and it was seconded by* ***Connie Krauss****. The motion was approved by a voice vote.*

B. Technical Progress Report

Mr. Baker said that the AMATS Technical Staff is working remotely from their homes in response to the COVID-19 Pandemic.

Mr. Baker noted that the May TAC meeting had 35 attendees participating. **Mr. Baker** said that there has not been a decision to cancel the June committee meetings yet. **Mr. Baker** said that in-person committee meetings may resume in September. The 2020 AMATS Annual Meeting in October has been cancelled due to the difficulties posed by the COVID-19 Pandemic with regards to scheduling guest speakers and possible social distancing concerns.

C. AMATS Federal Funds Report

Mr. Baker presented tables concerning STBG, CMAQ and TASA Funding Program and Balances dated April 20, 2020.

IV. Old Business

None.

V. New Business

None.

VI. Resolutions

A. Resolution 2020-05 – Approving an Amendment to Transportation Outlook 2040.

Mr. Baker presented Attachment 6A.

Motion
Jim McCleary *made a motion to approve Resolution 2020-05 and it was seconded by* ***Bobbie Beshara****. The motion was approved.*

B. Resolution 2020-06 – Approving the Transportation Improvement Program FY 2021-2024.

Mr. Baker presented Attachment 6B.

Motion
Connie Krauss *made a motion to approve Resolution 2020-06 and it was seconded by* ***David G. Kline****. The motion was approved.*

C. Resolution 2020-07 – Reaffirming the Approval of the Regional Transportation Plan and the Transportation Improvement Program, and Affirming the Consistency between the Regional Transportation Plan, the Transportation Improvement Program, and the State Implementation Plan.

Resolution 2020-08 – Certification of the Urban Transportation Planning Process.

Mr. Baker presented Attachment 6C.

Motion
Paul Adamson *made a motion to approve Resolution 2020-07 and it was seconded by* ***Bobbie Beshara****. The motion was approved.*

Motion
Paul Adamson *made a motion to approve Resolution 2020-08 and it was seconded by* ***Jim McCleary****. The motion was approved.*

D. Resolution 2020-09 – Approving the FY 2021 Transportation Planning Work Program and Budget.

Mr. Baker presented Attachment 6D.

Motion
Rick Bissler *made a motion to approve Resolution 2020-09 and it was seconded by* ***David G. Kline****. The motion was approved.*

E. Resolution 2020-10 – Opposing the elimination of the Akron Metropolitan Statistical Area by combining it with the Cleveland Metropolitan Statistical Area.

Mr. Baker presented Attachment 6E.

Mr. Baker unmuted the meeting participants to allow for their comments.

Mayor Bertrand suggested that the members consider pursuing the merger of the Akron and Canton MSAs.

Mayor Kline noted that any potential changes to the MSAs may be bad timing due to the ongoing 2020 U.S. Census. **Mayor Kline** stated that he opposed the merger of the Akron and Cleveland MSAs.

Mr. Baker noted that the planning officials that he has discussed the issue with in Canton and Stark County have indicated that they strongly support their separate Canton MSA and prefer to maintain the three separate MSA designations of Akron, Canton and Cleveland. **Mayor Kline** concurred.

Connie Krauss noted that the Akron MSA presently performs better statistically in the MSA designations in such categories as poverty and economic GDP than if it were to merge with Cleveland.

Chad Root noted that, as the ODOT District 4 representative, he would abstain during the vote on the motion.

Motion
Bobbie Beshara *made a motion to approve Resolution 2020-10 and it was seconded by* ***Chris Papp****. The motion was approved with Mr. Root abstaining.*

VII. Other Business

A. **Mr. Baker** said that it was likely that AMATS would cancel its June committee meetings, but noted that it was possible that AMATS would resume in-person meetings in September.

VIII. Adjournment

A. ***Motion***
Bobbie Beshara *made a motion to adjourn the meeting and it was seconded by* ***Rick Bissler****. The motion was approved.*

The next regularly scheduled Policy Committee meeting is tentatively scheduled for **1:30 p.m**. on **Thursday, June 25**, **2020.**

AMATS POLICY COMMITTEE
2020 ATTENDANCE

M Denotes Member Present **A Denotes Alternate Present**	**Jan 23**	**Mar 11**	**May 14**	**June 25**	**Sept 24**	**Dec 17**
AKRON - Mayor Dan Horrigan (Hardy) (DiFiore)	A	A	A			
AURORA - Mayor Ann Womer Benjamin (Stark) (Januska)	A					
BARBERTON - Mayor William B. Judge (Stefan) (Vinay)	M	M	M			
BOSTON HEIGHTS - Mayor Bill Goncy (Polyak)		M				
CLINTON - Mayor Clarissa Allega			M			
CUYAHOGA FALLS - Mayor Don Walters (Zumbo)		A	A			
DOYLESTOWN - Mayor Terry Lindeman (Kerr)	A					
FAIRLAWN - Mayor William Roth (Spagnuolo) (Staten)						
GARRETTSVILLE - Mayor Rick Patrick (Klamer)						
GREEN - Mayor Gerard Neugebauer (Wax Carr)			M			
HIRAM - Mayor Lou Bertrand (J. McGee)	M	M	M			
HUDSON - City Mgr. Jane Howington (Comeriato) (Hannan) (Sheridan)	A	A	A			
KENT – City Mgr. David Ruller (Baker) (Bowling)		A	A			
LAKEMORE – Mayor Rick Justice (Fast)		A				
MACEDONIA - Mayor Nick Molnar (Gigliotti) (Sheehy)						
MANTUA - Mayor Linda Clark (Iafelice) (Trew)	M	M	M			
METRO – Dawn Distler (Shea)	A	M	M			
MOGADORE - Mayor Michael Rick						
MUNROE FALLS - Mayor James W. Armstrong (Bowery)						
NEW FRANKLIN - Mayor Paul Adamson (Kepler) (Kochheiser)	M	M	M			
NORTHFIELD – Mayor Jesse Nehez (Magistrelli)						
NORTON - Mayor Mike Zita (Fowler)		A				
ODOT – Gery Noirot (Rebillot) (Root)	M	A	A			
PARTA – Rick Bissler (Amrhein) (Baba) (Popik) (Schrader)	A	A	M			
PENINSULA - Mayor Douglas Mayer						
PORTAGE COUNTY COMM. - Kathleen Clyde (Hairston)	A	A	M			
PORTAGE COUNTY COMM. – Vicki Kline (Long)		A				
PORTAGE COUNTY COMM. - Sabrina Christian-Bennett (Hlad)	A	A	A			
PORTAGE COUNTY ENGINEER - Michael Marozzi (Jenkins)	M	M	M			
RAVENNA - Mayor Frank Seman (Finney)	A	A				
REMINDERVILLE - Mayor Sam Alonso (Krock)						
RICHFIELD - Mayor Michael Wheeler (Darwish) (Papp)	M	M	A			
RITTMAN – City Mgr. Bobbie Beshara (Robertson) (Heater)	M		M			
SILVER LAKE - Mayor Bernie Hovey (Housley)						
STOW - Mayor John Pribonic (Kurtz) (McCleary)	A		A			
STREETSBORO - Mayor Glenn M. Broska (Cieszkowski)		M				
SUGAR BUSH KNOLLS - Mayor John Guidubaldi						
SUMMIT COUNTY ENGINEER-Al Brubaker (Fulton) (Paradise)	A	A	A			
SUMMIT COUNTY EXECUTIVE - Ilene Shapiro (Miller-Dawson)	A					
SUMMIT COUNTY COMM. & ECON. DEV. - Connie Krauss			M			
SUMMIT COUNTY COMM. & ECON. DEV. – Stephen Knittel			M			
TALLMADGE - Mayor David G. Kline (Kidder)	M	M	M			
TWINSBURG - Mayor Ted Yates (Mohr) (Finch)	A	A	A			
WAYNE COUNTY COMM. BOARD - Dominic Oliverio (Broome)						
WAYNE COUNTY ENGINEER – Scott A. Miller		M				
WINDHAM - Mayor Deborah Blewitt						

AMATS POLICY COMMITTEE
2020 ATTENDANCE

OBSERVERS AND STAFF MEMBERS PRESENT

NAME	REPRESENTING
Mr. Curtis Baker	AMATS
Mr. Jeffrey Gardner	AMATS
Mr. Darryl Kleinhenz	AMATS
Mr. Kerry Prater	AMATS

Akron Metropolitan Area Transportation Study
Technical Advisory Committee
Thursday, May 6, 2020 – 1:30 p.m.

Minutes of Meeting

Recordings of AMATS committee meetings are available in the Podcast section of the agency web site at www.amatsplanning.org/category/meetings/.

I. Call to Order

A. **Chairman John H. Cieszkowski, Jr.** called the virtual meeting to order using Zoom, the video conferencing platform. The attending members constituted a quorum.

II. Minutes – Motion Required

A. Approval of Minutes

Members were asked to approve the minutes of the March 5, 2020 meeting.

Motion
Jim McCleary *made a motion to approve the minutes and it was seconded by* ***Bradley Kosco****. The motion was approved by a voice vote.*

III. Staff Reports

A. Financial Progress Report

Curtis Baker presented Attachment 3A.

Motion
Wayne Wiethe *made a motion to approve the Financial Progress Report and it was seconded by* ***Jim McCleary****. The motion was approved by a voice vote.*

B. Technical Progress Report

Mr. Baker said that the AMATS Technical Staff is working remotely from their homes in response to the COVID-19 Pandemic.

Mr. Baker noted that the May TAC meeting has 35 attendees participating. **Mr. Baker** said that there has not been a decision to cancel the June committee meetings yet. **Mr. Baker** said that in-person committee meetings may resume in September. The 2020 AMATS Annual Meeting has been cancelled due to the difficulties posed by the COVID-19 Pandemic with regards to scheduling guest speakers and possible social distancing concerns.

C. AMATS Federal Funds Report

Mr. Baker presented tables concerning STBG, CMAQ and TASA Funding Program and Balances dated April 20, 2020.

IV. Old Business

None.

V. New Business

None.

VI. Resolutions

A. Resolution 2020-05 – Approving an Amendment to Transportation Outlook 2040.

Mr. Baker presented Attachment 6A.

Motion
Bobbie Beshara *made a motion to approve Resolution 2020-05 and it was seconded by* ***Wayne Wiethe****. The motion was approved.*

B. Resolution 2020-06 – Approving the Transportation Improvement Program FY 2021-2024.

Mr. Baker presented Attachment 6B.

Motion
Chris Papp *made a motion to approve Resolution 2020-06 and it was seconded by* ***Amy Mohr****. The motion was approved.*

C. Resolution 2020-07 – Reaffirming the Approval of the Regional Transportation Plan and the Transportation Improvement Program, and Affirming the Consistency between the Regional Transportation Plan, the Transportation Improvement Program, and the State Implementation Plan.

Resolution 2020-08 – Certification of the Urban Transportation Planning Process.

Mr. Baker presented Attachment 6C.

Motion
Tony Demasi *made a motion to approve Resolution 2020-07 and it was seconded by* ***Jim Bowling****. The motion was approved.*

Motion
Wayne Wiethe *made a motion to approve Resolution 2020-08 and it was seconded by* ***Bobbie Beshara****. The motion was approved.*

D. Resolution 2020-09 – Approving the FY 2021 Transportation Planning Work Program and Budget.

Mr. Baker presented Attachment 6D.

Motion
Jim McCleary *made a motion to approve Resolution 2020-09 and it was seconded by* ***Jim Bowling****. The motion was approved.*

E. Resolution 2020-10 – Opposing the elimination of the Akron Metropolitan Statistical Area by combining it with the Cleveland Metropolitan Statistical Area.

Mr. Baker presented Attachment 6E.

Motion
Wayne Wiethe *made a motion to approve Resolution 2020-10 and it was seconded by* ***Jim Bowling****. The motion was approved with no abstentions.*

VII. Other Business

None.

VIII. Adjournment

A. **Chairman Cieszkowski** said that the status of the June meeting of the TAC has yet to be determined. **Mr. Baker** said that AMATS would discuss the necessity of a June meeting with officials at the ODOT District 4 office.

Motion
Wayne Wiethe *made a motion to adjourn and it was seconded by* ***Robert Finney****. The motion was approved.*

The next regularly scheduled TAC meeting will be at **1:30 p.m**. on **Thursday, June 18, 2020.**

AMATS TECHNICAL ADVISORY COMMITTEE
2020 ATTENDANCE

M Denotes Member Present **A Denotes Alternate Present**	**Jan** **16**	**Mar** **5**	**May** **6**	**June** **18**	**Sept** **17**	**Dec** **10**
AKRON ENGINEERING BUREAU- Michael J. Teodecki (Jonke)		M	M			
AKRON PLANNING DEPT. – Mark Moore (Tomic)						
AKRON TRAFFIC ENGINEERING - Michael Lupica		M	M			
AURORA - Harry Stark (Czekaj)(Cooper)						
BARBERTON – Melissa McFadden						
BARBERTON – Greg Tracy						
CUYAHOGA FALLS - Fred Guerra (Paul)						
CUYAHOGA FALLS - Tony V. Demasi (Marko)		M	M			
DOYLESTOWN - Eng. Assoc. - Ronny Portz						
FAIRLAWN - Nicholas Spagnuolo (Staten)	A					
GREEN - Wayne Wiethe (Haring)	M		M			
GREEN - Paul Pickett (Schemansky)			M			
HUDSON – Nick Sugar (Hannan)	M	M	M			
HUDSON – Nate Wonsick (Kosco)	M	M	M			
KENT - Jim Bowling	M	M	M			
KENT - Jon Giaquinto (Baker)						
LAKEMORE – Mayor Richard Cole, Jr. (Fast)			A			
MACEDONIA - Joseph Gigliotti (Sheehy)			M			
METRO - Dawn Distler (Baarson) (Shea)	A	A	A			
MOGADORE – Vacant						
MUNROE FALLS – Vacant						
NEFCO - Joe Hadley (Lautzenheiser)	A	A	A			
NEW FRANKLIN - Bryan Kepler (Ganoe)	M		M			
NORTHFIELD - Richard S. Wasosky						
NORTON – Josh Slaga (Hess)						
ODOT – Chad Root (Phillis) (Rebillot)	M	A	A			
PARTA – Claudia Amrhein (Baba) (Popik) (Schrader)	A	A	M			
PORTAGE COUNTY ENGINEER – Larry Jenkins (Kusner)		M	M			
PORTAGE CO. REG. PLANNING COMM. - Todd Peetz (McGee)						
PORTAGE COUNTY SMALL VILLAGES – John Trew						
PORTAGE COUNTY TOWNSHIP ASSOC – John Kovacich (Greener)	M	M				
RAVENNA - Robert Finney (Jeffers)	M	M	M			
RICHFIELD - Chris Papp (Frantz) (Neumeyer)		M	M			
RITTMAN – Bobbie Beshara (Robertson)			M			
SILVER LAKE – John Tutak						
STOW – James McCleary (Donovan)	M	M	M			
STOW – Mike Jones (Sisson)	M					
STREETSBORO – John H. Cieszkowski, Jr. (Broska)	M	M	M			
SUMMIT CO. COMM. & ECON. DEV. – Connie Krauss (Tubbs)			M			
SUMMIT COUNTY ENGINEER - Alan Brubaker (Fulton) (Paradise)	A	A	A			
SUMMIT COUNTY SMALL VILLAGES - Vacant						
SUMMIT COUNTY TOWNSHIP ASSOC. - Richard Reville (Funk)						
TALLMADGE - Andrea Kidder (Kline)			M			
TWINSBURG - Amy Mohr (Muter)	M		M			
WAYNE COUNTY ENGINEER – Scott A. Miller						
WINDHAM – Deborah Blewitt (Brown)						

AMATS TECHNICAL ADVISORY COMMITTEE
2020 ATTENDANCE

M Denotes Member Present A Denotes Alternate Present	Jan 16	Mar 5	May 6	June 18	Sept 17	Dec 10
NON-VOTING MEMBERS						
AKRON CANTON AIRPORT - Renato Camacho						
AKRON REG. AIR QUALITY MGT. DISTRICT – Sam Rubens		M				
AMATS - Curtis Baker	M	M	M			
CUYAHOGA VALLEY NATIONAL PARK – Vacant						
ENVIRONMENTAL COMMUNITY REP. - Kurt Princic						
GREATER AKRON CHAMBER - Gregg Cramer						
OHIO TURNPIKE COMMISSION – Anthony Yacobucci						
PORTAGE COUNTY PORT AUTHORITY – Vacant						
PORTAGE PARK DISTRICT - Christine Craycroft						
PRIVATE TRANSPORTATION PROVIDER (CYC) – Deb Stolfo (Posten)						
RAILROAD INDUSTRY REP. - William A. Callison (Davis)						
SUMMIT COUNTY PORT AUTHORITY – Vacant						
SUMMIT METRO PARKS – Mark Szeremet (King)	M	M	M			
TRUCKING INDUSTRY – Vacant						

OBSERVERS AND STAFF MEMBERS PRESENT

NAME	REPRESENTING
Ms. Clarissa Allega	Village of Clinton
Ms. Carmen Stemen	FHWA

STAFF MEMBERS PRESENT

Mr. Seth Bush	AMATS
Mr. Jeff Gardner	AMATS
Mr. Kerry Prater	AMATS
Mr. Dave Pulay	AMATS

FINANCIAL PROGRESS REPORT
AKRON METROPOLITAN AREA TRANSPORTATION STUDY
JULY 31, 2020

	Description	Annual Budget	Year-to-Date Expenses	% Budget Expended	July Expenses
I.	**Short Range Planning**	**$289,700**	**$38,352**	**13%**	**$38,352**
	FY2020 Carryover	14,700	14,683		14,683
	FY2021	275,000	23,669		23,669
II.	**Transportation Improvement Program**	**$361,100**	**$9,683**	**3%**	**$9,683**
	FY2020 Carryover	86,100	9,683		9,683
	FY2021	275,000	0		0
III.	**Continuing Planning & Data Collection**	**$187,600**	**$77,195**	**41%**	**$77,195**
	Transportation System Update				
	FY2020 Carryover	7,600	6,874		6,874
	FY2021	180,000	70,321		70,321
IV.	**Long Range Plan Activity**	**$486,000**	**$21,660**	**4%**	**$21,660**
	FY2020 Carryover	86,000	21,660		21,660
	FY2021	400,000	0		0
V.	**Service**	**$460,500**	**$20,795**	**5%**	**$20,795**
	FY2020 Carryover	110,500	20,795		20,795
	FY2021	350,000	0		0
VI.	**OhioRideshare and AQ Advocacy**	**$347,000**	**$12,848**	**4%**	**$12,848**
	FY2020 OhioRideshare Carryover	47,000	5,199		5,199
	FY2021 OhioRideshare	80,000	0		0
	FY2020 Air Quality Carryover	100,000	7,649		7,649
	FY2021 Air Quality	120,000	0		0
VII.	**Local**	**$25,000**	**$0**	**0%**	**$0**
	AMATS local Costs	25,000	0		0
VIII.	**AMATS Transportation Quarterly**	**$105,488**	**$5,416**	**5%**	**$5,416**
	FY2020 Carryover	46,900	5,416		5,416
	FY2021	58,588	0		0
IX.	**GRAND TOTAL AMATS BUDGET**	**$2,262,388**	**$185,949**	**8%**	**$185,949**

Attachment 3C

AKRON METROPOLITAN AREA TRANSPORTATION STUDY

M E M O R A N D U M

TO: **Policy Committee**
Technical Advisory Committee
Citizens Involvement Committee

FROM: **AMATS Staff**

RE: **AMATS Federal Funds Report**

DATE: **September 10, 2020**

The first quarter of FY 2021 is already nearly over. We are pleased to report that one of AMATS largest projects, Cleveland Massillon Road in Fairlawn, has sold and is nearing the start of construction. AMATS provided $477,000 of STBG funds and $4,462,924 of CMAQ funds for this project.

The FY 2021 balances in AMATS funding are in good shape. We currently have a small balance of $230,375 in STBG funds, a slight deficit of -$152,708 in TASA funds, and a deficit of -$4,104,438 in CMAQ funds. The fiscal year is still young and at this point we will just monitor the balances. The statewide CMAQ committee could be contacted to request assistance with the CMAQ deficit if necessary.

AMATS TRANSPORTATION IMPROVEMENT PROGRAM

STBG Funding Program and Balances

September 8, 2020

ODOT PID	STBG PROJECT NAME	SPONSOR	PHASE	FY 2021	Quarter	FY 2022	FY 2023	FY 2024	FY 2025
	Sold								
103293	**Cleveland Massillon Rd**	**Fairlawn**	**(R)C**	**$477,000**	1				
101264	**SR 18-4.91/7.98 curb ramps**	**Akron**	**C**	**$82,991**	1				
93819	**Howe Ave***	**Cuy Falls**	**(P)(R)C**	**$0**	1				
107794	**South Main St South & North Resurfacing***	**New Franklin**	**C**	**$49,646**	1				
	Pending								
107761	Aurora Citywide Signal Improvement	Aurora	R(C)	$60,000					
107761	Aurora Citywide Signal Improvement	Aurora	(R)C	$2,717,597					
107689	Mill Rd/S. Diamond St Resurfacing	Ravenna	C	$268,000					
84397	Seiberling Way Ph 1	Akron	P(R)(C)	$48,808					
108132	South Hawkins Rd resurfacing	Akron	C	$700,000					
102701	E. Exchange St-complete street	Akron	R(C)	$240,000					
102904	W. Steels Corners Rd-phase 1 resurfacing	Cuy Falls	C	$700,000					
103172	Massillon Rd (SR 241) Ph 2/Corporate Woods	Green	R	$1,398,346					
102234	SR 14 widening	Streetsboro	C	$2,170,005					
108498	Wooster Rd resurfacing	Norton	C	$291,200					
108372	2nd St SW/Wooster Rd North/Norton Rd resurfacing	Barberton	C	$1,175,602					
108200	White Pond Dr resurfacing	Summit Co Eng	C			$600,000			
108370	Wooster Rd/State St reconstruction	Barberton	C			$1,930,644			
108454	Olde Eight Road Resurfacing	Summit Co Eng	C			$700,000			
108467	Cleveland Massillon Rd Part 1 Resurfacing	Summit Co Eng	C			$700,000			
108468	Cleveland Massillon Rd Part 2 Resurfacing	Summit Co Eng	C			$700,000			
108140	Ravenna Rd Part 1 Resurfacing	Summit Co Eng	C			$700,000			
102701	E. Exchange St-complete street	Akron	(R)C			$3,600,000			
108865	Smith Rd Resurfacing	Summit Co Eng	C			$700,000			
108098	Chestnut Blvd Resurfacing	Cuy Falls	C			$392,000			
107886	North River Rd Resurfacing	Munroe Falls	C				$558,590		
108453	Akron Cleveland Rd Resurfacing	Summit Co Eng	C				$700,000		
108141	Valley View Rd Resurfacing	Summit Co Eng	C				$300,000		
108240	Wooster Rd West Reconstruction	Barberton	C				$5,507,836		
108084	Portage Trail Extension Turn Lane	Cuy Falls	C				$3,649,197		
106416	SR 43 Widening	Streetsboro	C				$858,657		
84397	Seiberling Way Ph 1	Akron	(P)(R)C					$4,118,390	
112755	New Milford Rd Resurfacing	Portage Co Eng	C					$590,882	
112757	Riddle St Resurfacing	Ravenna	C					$200,000	
112756	S Chestnut St Resurfacing	Ravenna	C					$192,000	
112487	Romig Rd BRT Study	METRO	P					$80,000	
112745	Gilchrist Rd Ph 1 Resurfacing	Mogadore	C					$356,264	
112741	Hopocan Av Resurfacing	Barberton	C					$281,696	
112754	Johnson Rd Resurfacing	Norton	C					$443,869	
112753	Norton Av Resurfacing	Norton	C					$390,008	
112583	Ravenna Rd Resurfacing	Twinsburg	C					$432,000	
112735	Snyder Av Resurfacing	Barberton	C					$611,976	
112743	Terex Rd Resurfacing	Hudson	C					$506,000	
112740	Wooster Rd W Resurfacing	Barberton	C					$231,808	
112549	S Main St (CR 57-2.62) Resurfacing	Rittman	C					$336,588	
112543	E Ohio Av (CR 57-3.91) Resurfacing	Rittman	C					$459,662	
113168	W Steels Corners Rd Ph 2 Resurfacing	Cuy Falls	C						$700,000
113175	Ravenna Rd Part 2 Resurfacing	Summit Co	C						$600,000
113176	Swartz Rd Resurfacing	Summit Co	C						$500,000
113169	Munroe Falls Av Resurfacing	Munroe Falls	C						$261,190
113171	Tallmadge Rd Ph 1 Resurfacing	Portage Co	C						$700,000
112716	N Main St Complete Streets	Akron	(R)C						$6,000,000
112026	SR 59-2.14 (E Main St)	Kent	C						$3,600,000

		2021	2022	2023	2024	2025
P = Engineering	Annual STBG Expenditures	$10,379,195	$10,022,644	$11,574,280	$9,231,143	$12,361,190
R = Right-of-Way	Annual STBG Allocations	$10,609,570	$10,633,414	$10,633,414	$10,633,414	$10,633,414
C = Construction	Balance	$230,375	$610,770	-$940,866	$1,402,271	-$1,727,776

AMATS TRANSPORTATION IMPROVEMENT PROGRAM

CMAQ Funding Program and Balances

September 8, 2020

ODOT PID	CMAQ PROJECT NAME	SPONSOR	PHASE	FY 2021	Quarter	FY 2022	FY 2023	FY 2024	FY 2025
	Sold								
100692	**Air Quality Advocacy Program**	**AMATS**		**$120,000**	1				
100691	**Rideshare Program**	**AMATS**		**$80,000**	1				
103293	**Cleveland Massillon Rd**	**Fairlawn**	**(R)C**	**$4,462,924**	1				
	Pending								
93442	SR 43 (South Water St)*	Kent	R(C)	$75,520					
93433	Canton Rd/East Market St	Akron	(R)C	$788,320					
102992	CNG Bus Replacement (2 buses)	PARTA	C	$832,000					
98585	Tallmadge Rd Interchange	Portage Co Eng	(R)C	$2,868,000					
103173	Massillon Rd (SR 241) Ph 3/Boettler	Green	R(C)	$445,500					
111426	Air Quality Advocacy Program	AMATS				$100,000			
111431	Rideshare Program	AMATS				$80,000			
111777	CNG Bus Buy 2022 (2 buses)	PARTA	C			$920,000			
103173	Massillon Rd (SR 241) Ph 3/Boettler	Green	(R)C			$2,827,675			
103172	Massillon Rd/Corporate Woods Cir PH 2	Green	C			$2,606,199			
106445	SR 91-13.53 (SR 91 South Widening Project)	Hudson	C			$2,500,000			
111428	Air Quality Advocacy Program	AMATS					$100,000		
111432	Rideshare Program	AMATS					$80,000		
112270	CNG Bus Buy (3 buses)	METRO	C				$1,560,000		
106416	SR 43 Widening	Streetsboro	C				$3,300,775		
108084	Portage Trail Extension Turn Lane	Cuy Falls	C				$267,202		
111429	Air Quality Advocacy Program	AMATS						$100,000	
111433	Rideshare Program	AMATS						$80,000	
112245	METRO CNG Replacements (3 buses)	METRO	C					$1,260,000	
112244	PARTA 2 replacement clean diesel buses	PARTA	C					$779,253	
112797	Valley View & Olde Eight Improvements	Summit Co Eng	R(C)					$32,000	
112797	Valley View & Olde Eight Improvements	Summit Co Eng	(R)C					$228,000	
113165	Ravenna & Shephard Improvements	Macedonia	R(C)					$80,000	
113161	Highland & Valley View Improvements	Macedonia	R(C)					$104,000	
112026	SR 59-2.14 (E Main St)	Kent	C						$6,000,000
112716	N Main St Complete Streets	Akron	C						$900,000
113165	Ravenna & Shephard Improvements	Macedonia	(R)C						$1,289,288
113161	Highland & Valley View Improvements	Macedonia	(R)C						$1,704,811

		2021	2022	2023	2024	2025
P = Engineering	Annual CMAQ Expenditures	$9,695,565	$9,033,874	$5,307,977	$2,663,253	$9,894,099
R = Right-of-Way	Annual CMAQ Allocations	$5,591,127	$5,591,127	$5,591,127	$5,591,127	$5,591,127
C = Construction	Balance	-$4,104,438	-$3,442,747	$283,150	$2,927,874	-$4,302,972

AMATS TRANSPORTATION IMPROVEMENT PROGRAM

TASA Funding Program and Balances

September 8, 2020

ODOT PID	TASA PROJECT NAME	SPONSOR	PHASE	FY 2021	Quarter	FY 2022	FY 2023	FY 2024	FY 2025
	Pending								
103834	Portage Hike and Bike-Brady's Leap Connection	Kent	C	$700,000					
107814	Darrow Rd (SR 91) Sidewalks	Stow	(R)C	$516,050					
105556	The Portage Trail - Ravenna Rd Bridge	Portage Parks	(P)C			$313,600			
99729	Raber Rd sidewalks	Green	C			$500,000			
102796	Freedom Trail/Portage Trail Connector	MetroParks/Tallm	C			$700,000			
106539	Wooster Rd/Robinson (Towpath Trail connector)	Barberton	C			$380,376			
107797	CVNP Ped Bridge & Trail	Summit Co Eng	C			$700,000			
112788	Cleveland Massillon Rd sidewalk	Summit Co Eng	P(R)(C)				$120,000		
107930	Freedom Trail Phase 4	MetroParks	C				$700,000		
112788	Cleveland Massillon Rd sidewalk	Summit Co Eng	(P)R(C)					$32,000	
113016	Stow Silver Lake Cuyahoga Falls Bike Connector	Stow	C						$700,000
112788	Cleveland Massillon Rd sidewalk	Summit Co Eng	(P)(R)C						$368,000
113160	Rubber City Heritage Trail East Side Seg B	Akron	C						$700,000

		2021	2022	2023	2024	2025
P = Engineering	Annual TASA Expenditures	$1,216,050	$2,593,976	$820,000	$32,000	$1,768,000
R = Right-of-Way	Annual TASA Allocations	$1,063,342	$1,063,342	$1,063,342	$1,063,342	$1,063,342
C = Construction	Balance	-$152,708	-$1,530,634	$243,342	$1,031,342	-$704,658

AKRON METROPOLITAN AREA TRANSPORTATION STUDY

M E M O R A N D U M

TO: **Policy Committee**
Technical Advisory Committee
Citizens Involvement Committee

FROM: **AMATS Staff**

RE: **2020 Transit Plan**

DATE: **September 9, 2020**

AMATS, in conjunction with its two local transit agencies, is responsible for the periodic development of a regional public transit plan. A primary goal of the AMATS 2020 Transit Plan is to assist in achieving a balance between strengthening the existing system to provide better service to current transit riders, and expanding to key areas to satisfy new needs. This plan contains an analysis of the region's existing transit system and makes recommendations that are eligible for inclusion in the upcoming 2045 Regional Transportation Plan.

As part of the public transit plan development process, AMATS has collected and analyzed a wide variety of data, including several analyses of the existing transit system and demographics likely to use transit. These analyses help guide the recommendations for improving existing service for those who already use public transit, as well as attracting new passengers. The AMATS 2020 Transit Plan encourages increasing headways where appropriate, as well as sidewalk and bus stop improvements to increase access to transit. Additionally, the AMATS 2020 Transit Plan recommends transit agencies and communities work together to find the best solutions that meet the needs of their riders.

To view the entire report, please visit the AMATS website at www.amatsplanning.org.

The staff recommends approval of this document.

2020 Transit Plan

2020 Transit Plan

DRAFT

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.

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

The Akron Metropolitan Area Transportation Study (AMATS) is the metropolitan planning organization responsible for ensuring comprehensive transportation planning for Summit and Portage counties and parts of Wayne County. This responsibility includes coordination with various agencies in Northeast Ohio, not the least of which are two transit providers, METRO RTA in Summit County and the Portage Area Regional Transportation Authority (PARTA) in Portage County. The portions of Wayne County in the AMATS region are not currently served by a public transit provider. In planning for all 700,000 users in the AMATS region, transit provides a necessary tool to ensure mobility access for disabled, elderly, and low income residents. However, transit also provides an opportunity to improve transportation choices for everyone. Providing a strong transit system is essential for a dynamic region preparing for the future.

METRO RTA and PARTA both provide traditional fixed-route service, operating a combined 53 routes, but they also provide demand response services and express bus services. Both agencies have a Compressed Natural Gas (CNG) fueling station, as they include CNG buses in their fleet. METRO's newest station opened in 2016 and PARTA's first station opened in 2018.

Transit serves many purposes. At a minimum, transit provides basic mobility to those without access to vehicles. Transit riders use services to get to work, to get to a doctor, to run errands, to visit family and friends, etc. Some transit users may even choose to ride a bus instead of taking a car, saving wear and tear on their vehicle and avoiding parking fees. Additionally, transit reduces emissions and congestion in metropolitan areas, which is a benefit for all users of the roadways. Lastly, transit can provide a basis for development, spurring economic development along a bus route and adding jobs to an area. Transit-oriented development is defined as a type of urban development that is designed and constructed with transit access in mind. It usually includes mixed-use development and easy access to transit.

Existing System and Coverage

Fixed-route transit service is meant to be reliable, efficient, and timely. That is why the route arrives at and departs from stops at the same time every day. This allows users to plan the transit trips they take each day. These routes tend to be along dense, high-demand travel corridors.

For METRO RTA, over four and a half million riders used its fixed-route service in 2019, with October being the most traveled month of the year. Two routes, West Market (#1) and Arlington (#2), were by far the most popular routes. For PARTA, over one million passengers took advantage of their fixed-routes, with one route on the Kent State University campus (Front Campus/Summit East) totaling over 350,000 passengers for the year. The following tables provide ridership numbers for the entire fixed-route system for both METRO RTA and PARTA.

Table 1 | METRO RTA Fixed-Route Service 2019 Monthly Ridership

ROUTE #	DESCRIPTION	MONTHLY AVERAGE
1	West Market	42,450
2	Arlington	42,143
3	Copley Rd / Hawkins	22,012
4	Delia/N Hawkins	10,102
5	East Market / Ellet	8,109
6	East Market / Lakemore	20,579
7	Cuyahoga Falls Ave	12,287
8	Kenmore / Barberton	19,947
9	Wooster / East Ave	13,561
10	Howard / Portage Trail	18,690
11	South Akron	2,503
12	Tallmadge Hill	13,472
13	Grant / Firestone Park	14,655
14	Euclid / Barberton XP	21,831
17	Brown / Inman	15,707
18	Thornton / Manchester	13,662
19	Eastland	14,268
21	South Main	2,357
24	Lakeshore	3,855
26	W Exchange / White Pond	5,397
28	Merriman Valley	3,746
30	Goodyear / Darrow	9,977
33	State Rd / Wyoga Lake	5,105
34	Cascade Village / Uhler	12,794
50	Montrose Circulator	1,573
51	Stow Circulator	1,418
53	Portage / Graham	2,114
54	DASH Circulator	10,376
59	Chapel Hill Circulator	1,145
60	NCX Chapel Hill / Cleveland	1,088
61	NCX Montrose / Cleveland	5,787
101	Richfield / Bath	1,038
102	Northfield Express	3,142
103	Stow / Hudson	3,403
104	Twinsburg Creekside	2,483
110	Green / Springfield	2,317
AVERAGE MONTHLY TOTAL		**385,093**

Table 2 | PARTA Fixed-Route Service 2019 Monthly Ridership

ROUTE #	DESCRIPTION	MONTHLY AVERAGE
30	Interurban West	5,819
35	Interurban East	13,240
40	Suburban North	2,737
45	Suburban South	3,303
51	Campus Loop	11,637
53	Reverse Loop	5,217
55	Allerton	5,964
57	Stadium Loop	948
58	Front Campus / Summit East	31,129
59	Stadium Night Loop	2,170
60	Black Squirrel	1,063
70	Windham / Garrettsville	855
80	Raven West	356
85	Raven East	965
90	Akron Express	1,573
100	Cleveland Express	448
AVERAGE MONTHLY TOTAL		**89,018**

In addition to fixed-route service, METRO provides several other options for residents of Summit County to utilize for everyday travel. METRO's Call-A-Bus service, serving Macedonia, Twinsburg, Townships of Sagamore Hills, Twinsburg, and Northfield Center and the Villages of Northfield and Reminderville, can be used by anyone who calls a day in advance and schedules the ride. The Call-A-Bus service provides curb to curb service for $4 per ride and is available Monday through Friday. Call-A-Bus services are also available in the City of Green.

SCAT service is origin-to-destination shared rides using a small bus or van. Rides are available Monday through Friday and scheduled a day in advance. SCAT service is $2 per trip and is available to anyone 62 years old or older, or with a disability. Additionally, METRO runs a free shuttle service through downtown Akron during the week, the Downtown Akron Shuttle (DASH). DASH buses run every 10 minutes and travel a loop around downtown and the RKP Transit Center. Lastly, METRO runs two bus routes from the Akron area to Cleveland every weekday morning and evening. Called the Northcoast Express, one route starts in Cuyahoga Falls and travels through Hudson and Twinsburg on its way to Cleveland. The other route starts at the Transit Center in downtown Akron, heads out to the Fairlawn/Montrose area, and makes its way to Cleveland via the expressway.

PARTA also offers several services in addition to their regular fixed-routes. PARTA's Dial-A-Ride service creates access in areas where fixed-route service has not been expanded to or is not feasible. Dial-A-Ride is available to the general public throughout Portage County, which is especially helpful in the eastern portion of the county where

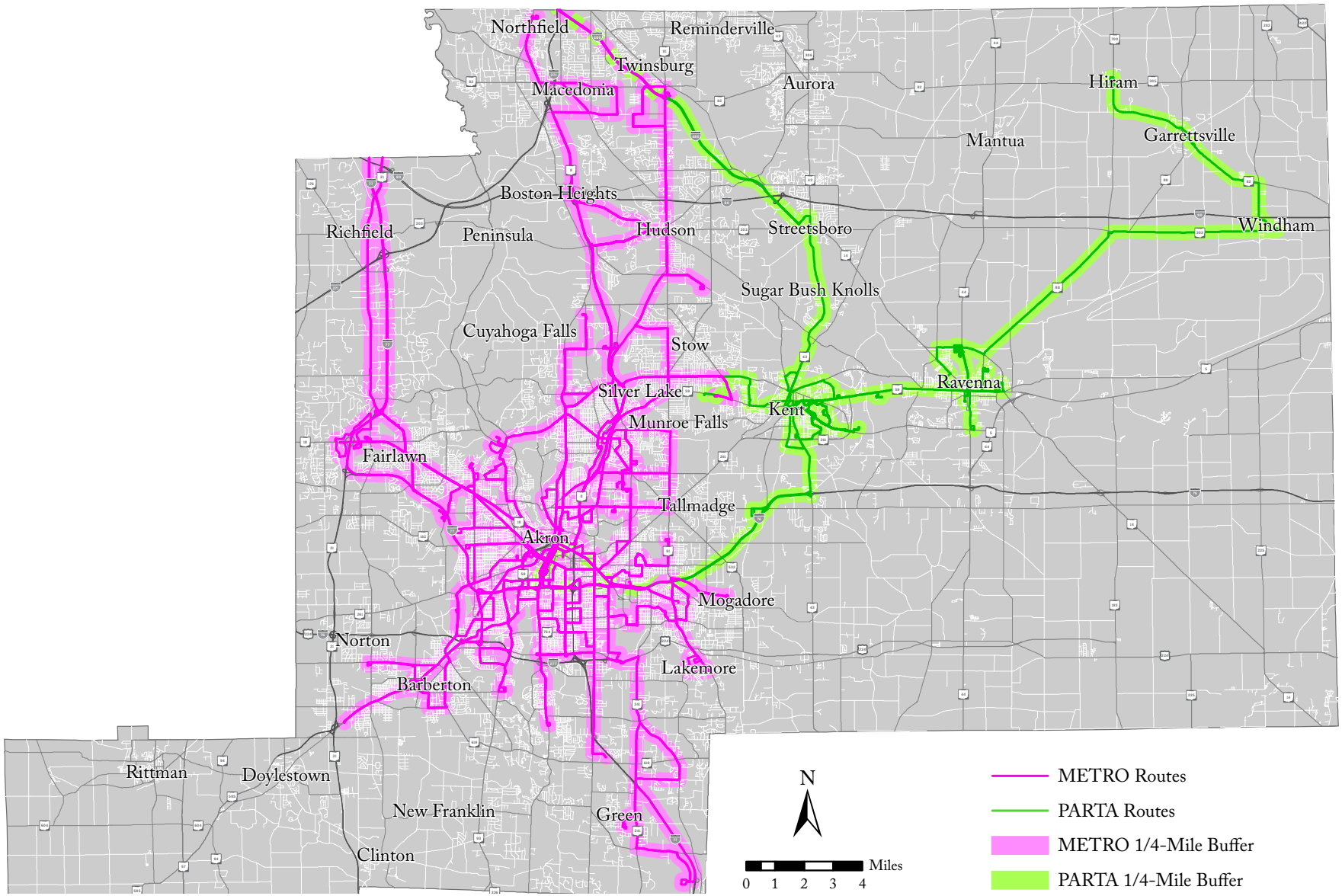
fixed-route service does not reach. This service is offered on small buses with equipment to assist those with disabilities and is $6 per ride, with reduced fare available for those who qualify. Also, PARTA provides express service from Kent to Akron seven times a day and Kent to Cleveland twice a day. The Kent to Cleveland express service travels through Streetsboro on its way to the Cleveland Clinic, Cleveland's Public Square, Cleveland State University, and other locations.

Both METRO and PARTA offer a specialized service for those with disabilities per the Americans with Disabilities Act (ADA). This complementary paratransit service provides transportation for people with disabilities who cannot use fixed-route buses. It is available at the same time as the fixed-route buses, with the pick-up location and destination no further than three quarters of a mile from the fixed-route.

NEORide was created to encourage coordination among member transit agencies in Ohio in order to provide a more comprehensive and collaborative transit system to residents. Both METRO and PARTA are members, as well as GCRTA (Cleveland), MCPT (Medina), SARTA (Canton), WRTA (Youngstown), and several others around the state of Ohio and Northern Kentucky. Together, these agencies can apply for federal grant programs, promote transit use to the entire state and surrounding regions, combine resources to better serve the communities they represent, and implement services that benefit transit riders.

One recent initiative of NEORide was the introduction of EZFare, a mobile app that makes it easier to buy bus passes, pay your fare before you get on the bus, and even switch between different transit systems. Before EZfare, transit riders had to either swipe their pass or pay bus fare with exact change while getting on the bus. Passes could only be bought at specific locations, making it inconvenient to always have a bus pass. With EZfare, transit riders can download the EZfare app and purchase their bus passes using a credit card and at their own convenience. Riders simply show the pass on their phone to the driver when they board the bus. NEORide will continue to be an asset to transit agencies in Ohio, providing opportunities for collaboration and growth well into the 21st century.

Map 1 | Transit Coverage



Transit Coverage Analysis

When determining how well the region is served by fixed-route transit, it is helpful to determine the number of residents that live within a comfortable walking distance to a transit line. A quarter mile walk is the typical standard. Comparing the population living within walking distance of a bus route to the overall population gives us a percentage of transit coverage for each community. The above map and following table were produced using data from the American Community Survey - 2017 5 year estimates. Out of the entire AMATS region's population of 713,412 (as of 2010), 317,673 people (almost 44% of the population) have access to fixed-route transit within a quarter mile. It should be mentioned that the quarter mile standard is only part of the picture. A comprehensive multi-modal network includes bus shelters, park and ride lots, bike paths and sidewalks. This integrated approach makes access to transit stops seamless and traveling longer distances to stops more feasible.

The following table (Table 3) shows all of the communities with access to fixed-route transit. Older, established cities with a higher density of development have better transit coverage. Cities such as Akron, Kent, Ravenna, Barberton, and Cuyahoga Falls offer some of the highest levels of transit access in the area. Some smaller suburban communities (Silver Lake, Windham, and Franklin Township) also offer excellent coverage. As expected, there are very low levels of transit access in rural communities such as Charlestown, Nelson, and Shalersville Townships. Those communities in the AMATS region that do not have access to fixed-route service are:

- Atwater
- Aurora
- Chippewa
- Clinton
- Deerfield
- Doylestown
- Edinburg
- Mantua
- Milton
- New Franklin
- Palmyra
- Peninsula
- Randolph
- Rittman
- Rootstown
- Suffield

Table 3 | Total Population Transit Coverage by Community

(Includes Only Communities with Access to Fixed-Route Transit Service)

COMMUNITY NAME	ESTIMATED TOTAL POPULATION	ESTIMATED TOTAL POPULATION W/IN 1/4 MILES OF TRANSIT	% TRANSIT COVERAGE
Akron	198,252	165,653	83.6%
Barberton	26,230	15,080	57.5%
Bath Twp	9,697	2,132	22.0%
Boston Heights	666	281	42.2%
Boston Twp	1,209	13	1.1%
Brimfield Twp	10,353	1,369	13.2%
Charlestown Twp	1,788	5	0.3%
Copley Twp	17,305	2,641	15.3%
Coventry Twp	10,911	2,730	25.0%
Cuyahoga Falls	49,329	32,149	65.2%
Fairlawn	7,463	4,426	59.3%
Franklin Twp	6,004	3,603	60.0%
Freedom Twp	2,847	236	8.3%
Garrettsville	2,991	841	28.1%
Green	25,741	6,410	24.9%
Hiram	1,294	75	5.8%
Hiram Twp	2,256	111	4.9%
Hudson	22,250	6,047	27.2%
Kent	29,771	19,850	66.7%
Lakemore	3,075	1,163	37.8%
Macedonia	11,715	3,828	32.7%
Mogadore	2,842	78	2.7%
Munroe Falls	5,065	1,101	21.7%
Nelson Twp	3,123	7	0.2%
Northfield	3,658	2,071	56.6%
Northfield Center Twp	5,840	828	14.2%
Norton	12,038	1,209	10.0%
Ravenna	11,530	7,623	66.1%
Ravenna Twp	9,172	2,550	27.8%
Richfield	3,649	937	25.7%
Richfield Twp	2,515	243	9.7%
Sagamore Hills Twp	10,956	403	3.7%
Shalersville Twp	5,643	10	0.2%
Silver Lake	2,450	1,776	72.5%
Springfield Twp	14,581	2,613	17.9%
Stow	34,743	13,317	38.3%
Streetsboro	16,305	2,686	16.5%
Sugar Bush Knolls	177	23	13.0%
Tallmadge (Summit County)	17,276	4,977	28.8%
Tallmadge (Portage County)	230	99	43.0%
Twinsburg	18,849	3,757	19.9%
Twinsburg Twp	2,879	1,311	45.5%
Windham	1,928	1,182	61.3%
Windham Twp	1,683	229	13.6%
Estimated Total Pop. with Transit Access:		317,673	43.9%

Source: American Community Survey - 2017 5-Year Estimates

Headway Performance

In previous reports, AMATS staff has analyzed the Level of Service of routes for both METRO RTA and PARTA. For this report, a different approach has been used that better characterizes the service that is provided by these transit agencies.

Superior Performance (SP)
Frequent service, passengers don't need schedules

Acceptable Performance (AP)
Maximum desirable wait time, service unattractive to riders with other transportation options

Potential Service Improvement (PSI)
Extended wait time, service unattractive to all riders

Headway Performance Analysis

The term "headway" is the amount of time between bus arrivals at a bus stop. A suburban route that has a bus arrival once an hour would have a 60 minute headway. Frequent bus service often has 10-15 minute headways. The Headway Performance Analysis for both METRO and PARTA is shown in Tables 4 and 5 on the following pages.

METRO's Downtown Akron Shuttle (DASH) service is listed as Superior Performance. The DASH is a recent addition to METRO's service, and provides frequent service every 10 minutes between the hours of 7 a.m. and 7 p.m. as well as 15 minute service on weekday evenings. The route quite often attracts riders who have a car or another transportation option.

METRO RTA shows the majority of their routes as Potential Service Improvement, which means that passengers wait a minimum of 30 minutes for the bus to pick them up, and some passengers may wait longer. The majority of routes after 6 pm have extended wait times, which create complications for travel, while some routes cease by 6 pm. This creates a burden for those workers whose shift ends after this time. Retail and restaurant workers who very often head home in the evening or late at night are more likely to use transit due to low-wage jobs, and have to wait over an hour for a bus. METRO could work to improve the headways for second-shift workers by adding buses to routes in the evening; however this would require large capital and operating expenses.

METRO is in the process of collecting feedback for their Strategic Plan, which they expect to complete by 2021. Additionally, they are currently exploring the idea of adding a Bus Rapid Transit (BRT) corridor to the Akron area. This could greatly improve the overall headway performance for the agency.

Characteristics of BRT may include:

- Dedicated Bus Lanes
- Signal preemption
- Increased Bus Frequency
- Off-board Fare Collection
- Platform-level boarding

METRO anticipates a decision by the end of 2021 regarding the feasibility of a BRT being added to their system.

PARTA removed three routes and added one since the last time their Headway Performance was studied in 2016. About half of the routes are split between being Superior Performance and Acceptable Performance. This means that riders wait at most 15 minutes for the bus, making the service attractive to most transit riders. The other half of the routes is listed as Potential Service Improvement. Although this type of service is unattractive due to its extended wait times, and riders with other transportation options would likely make another choice, these routes provide the opportunity to increase bus service and attract new riders. In 2016, PARTA had more routes operating frequently, but had some routes that didn't run at all in the evenings. Now, all routes run approximately 16 hours a day on weekdays, with limited service on the weekends. This change could mean that there are fewer buses to go around, reducing the frequency for bus service and contributing to the reduction in performance. More buses and more drivers are a costly solution, but would give the routes increased frequency.

Table 4 | METRO RTA Fixed-Route Headway Performance Analysis

ROUTE #	DESCRIPTION	AM PEAK (7-9 AM) AVG HEADWAY (MINS)	HEADWAY PERFORMANCE	DAYTIME (9AM - 4PM) AVG HEADWAY (MINS)	HEADWAY PERFORMANCE	PM PEAK (4-6 PM) AVG HEADWAY (MINS)	HEADWAY PERFORMANCE	EVENING (6 PM +) AVG HEADWAY (MINS)	HEADWAY PERFORMANCE
LOCAL ROUTES									
1	West Market	21	AP	21	AP	31	PSI	36	PSI
2	Arlington	22	AP	21	AP	31	PSI	38	PSI
3	Copley / Hawkins	24	AP	21	AP	29	AP	69	PSI
4	Delia / N Hawkins	33	PSI	48	PSI	29	AP	-	PSI
5	Joy Park / Gilchrist	43	PSI	51	PSI	53	PSI	-	PSI
6	East Market / Lakemore	30	AP	33	PSI	28	AP	66	PSI
7	Cuyahoga Falls Ave	32	PSI	36	PSI	37	PSI	70	PSI
8	Kenmore / Barberton	35	PSI	41	PSI	39	PSI	70	PSI
9	Vern Odom Blvd / East Ave	40	PSI	37	PSI	38	PSI	60	PSI
10	Howard / Portage Trail	32	PSI	46	PSI	51	PSI	71	PSI
11	South Akron	87	PSI	75	PSI	-	PSI	-	PSI
12	Tallmadge Hill	28	AP	38	PSI	38	PSI	57	PSI
13	Grant / Firestone Park	32	PSI	38	PSI	44	PSI	70	PSI
14	Euclid / Barberton Express	26	AP	36	PSI	34	PSI	68	PSI
17	Brown / Inman	25	AP	40	PSI	58	PSI	71	PSI
18	Thornton / Manchester	80	PSI	61	PSI	77	PSI	72	PSI
19	Eastland	46	PSI	43	PSI	46	PSI	61	PSI
21	South Main	40	PSI	40	PSI	40	PSI	40	PSI
24	Lakeshore	43	PSI	34	PSI	50	PSI	70	PSI
26	W. Exchange / White Pond	37	PSI	40	PSI	69	PSI	80	PSI
28	Merriman Valley	69	PSI	56	PSI	40	PSI	-	PSI
30	Goodyear / Darrow	40	PSI	40	PSI	43	PSI	70	PSI
33	State Road / Wyoga Lake	60	PSI	40	PSI	120	PSI	95	PSI
34	Cascade Village / Uhler	34	PSI	34	PSI	43	PSI	71	PSI
CIRCULATOR ROUTES									
50	Montrose Circulator	35	PSI	35	PSI	35	PSI	33	PSI
51	Stow Circulator	36	PSI	36	PSI	37	PSI	36	PSI
53	Portage / Graham	44	PSI	74	PSI	-	PSI	-	PSI
59	Chapel Hill Circulator	50	PSI	35	PSI	45	PSI	33	PSI
DOWNTOWN CIRCULATOR									
54	DASH	10	SP	10	SP	10	SP	14	
NORTH COAST EXPRESS COMMUTER SERVICE TO CLEVELAND									
60	NCX - Cuyahoga Falls to Cleveland	35	PSI	-	PSI	60	PSI	-	PSI
61	NCX - RKP to Cleveland	26	AP	121	PSI	33	PSI	-	PSI
TOWN CENTER ROUTES									
101	Richfield / Bath	55	PSI	104	PSI	-	PSI	-	PSI
102	Northfield	54	PSI	48	PSI	41	PSI	66	PSI
103	Stow / Hudson	113	PSI	93	PSI	94	PSI	-	PSI
104	Twinsburg / Creekside	91	PSI	101	PSI	94	PSI	68	PSI
110	Green / Springfield	55	PSI	99	PSI	53	PSI	-	PSI

Table 5 | PARTA Fixed-Route Headway Performance Analysis

ROUTE #	DESCRIPTION	AM PEAK (7-9 AM) AVG HEADWAY (MINS)	HEADWAY PERFORMANCE	DAYTIME (9AM - 4PM) AVG HEADWAY (MINS)	HEADWAY PERFORMANCE	PM PEAK (4-6 PM) AVG HEADWAY (MINS)	HEADWAY PERFORMANCE	EVENING (7 PM +) AVG HEADWAY (MINS)	HEADWAY PERFORMANCE
COUNTY SERVICE									
30	Interurban West (Kent to Stow)	30	AP	30	AP	30	AP	38	PSI
35	Interurban East (Kent to Ravenna)	30	AP	30	AP	30	AP	38	PSI
40	Suburban North (Kent)	45	PSI	45	PSI	45	PSI	65	PSI
45	Suburban South (Kent)	45	PSI	45	PSI	45	PSI	58	PSI
60	Black Squirrel	30	AP	30	AP	-	PSI	-	PSI
70	Windham / Garrettsville	105	PSI	105	PSI	105	PSI	105	PSI
80	Raven West (Ravenna)	60	PSI	60	PSI	60	PSI	60	PSI
85	Raven East (Ravenna)	60	PSI	60	PSI	60	PSI	60	PSI
90	Akron Express	90	PSI	105	PSI	90	PSI	-	PSI
100	Cleveland Express								
CAMPUS SERVICE									
51	Campus Loop	21	AP	15	AP	15	AP	30	AP
53	Reverse Loop	30	AP	15	AP	30	AP	30	AP
55	Allerton	15	AP	15	AP	15	AP	15	AP
57	Stadium Loop (Summer / KSU Breaks)	30	AP	30	AP	30	AP	-	PSI
58	Summit East / Front Campus	8	SP	8	SP	12	SP	31	PSI
59	Stadium Night Loop	-	PSI	-	PSI	-	PSI	30	AP

Capital Assets

PARTA Fleet

PARTA has 35 fixed-route buses comprised of 32 large buses and 3 small buses/light transit vehicles (LTVs). Additionally, PARTA has 23 LTVs and 5 vans/small transit vehicles (STVs) that provide demand response service.

PARTA Large Transit Bus

PORTAGE AREA REGIONAL TRANSPORTATION AUTHORITY

PARTA Light Transit Vehicle (LTV)

PARTA Small Transit Vehicle (STV)

METRO Fleet

METRO has an active fleet of 231 vehicles. Of these, 124 are Compressed Natural Gas (CNG), 103 are diesel, and 4 are hybrid. METRO's fleet is varied and includes 60-foot articulated, 40-foot diesel, 40-foot CNG, and 40-foot hybrid buses, as well as smaller vehicles for SCAT and Call-A-Bus services. All METRO buses are equipped with bike racks and are handicap accessible.

METRO Downtown Akron Shuttle (DASH)

METRO Large Transit Bus

METRO North Coast Express Bus

METRO Articulated Transit Bus

METRO Small Bus (SCAT)

METRO Van

Facilities

Both METRO and PARTA have their own CNG fueling stations, with METRO's original station opening in 1997 and a new one in 2016, and PARTA opening the first CNG fueling station in Portage County in 2018. METRO's fleet is approximately 50% CNG today, with a goal of being 100% alternative fuels by 2024. PARTA plans to include more CNG buses in their fleet, having added the fueling station as well as converting part of their facility for the storage and maintenance of these vehicles. CNG fuel positively benefits both transit agencies due to its affordability and consistent price. With both transit agencies having their own CNG fueling stations, we should begin to see more CNG buses in the AMATS area as well as a reduction in operating costs. Incorporating CNG buses into the fleet reduces greenhouse gas emissions significantly and saves the agency on its fuel costs.

PARTA Kent Central Gateway

PARTA
PORTAGE AREA REGIONAL
TRANSPORTATION AUTHORITY

PARTA CNG Fueling Station

METRO Robert K. Pfaff Transit Center

330-762-0341 METRO akronmetro.org

METRO CNG Fueling Station

Transit Ridership

The people who rely on transit for most of their daily trips tend to fall into one of the following groups:

- Elderly
- Low Income
- Minority
- Disabled

Population data for the above groups was gathered using the American Community Survey (ACS) Estimates that are updated annually. The definition of transit coverage is the percentage of people in the demographic group that are within a quarter mile of a bus route. The quarter mile walking distance is considered convenient for most people, however, studies have shown that transit riders are willing to travel farther to a stop that has high-frequency and reliable service. This distance is also increased if there is a well-lit path, such as a bike path or sidewalk. Using ACS Estimates, it was first determined how many of each population lived within a community. Next, the number of people from this population who live within a quarter mile of a bus route was calculated. From there, a percentage was calculated that tells us how well that population is covered by transit within that community. Simply put, the more a transit-dependent population exists, the more comprehensive bus service a community should have. Unfortunately this is not always the case.

Although both METRO and PARTA provide demand response services, sometimes these resources are not available to accommodate those needing assistance due to medical reasons. For that reason, it is important to examine the transit coverage in the AMATS area through the transit agencies fixed-route transit lines, and identify where improvements can be made.

Elderly Population

As stated earlier, the elderly population is one of the largest populations who use transit as their primary form of transportation. Many elderly individuals may find it difficult to walk over a quarter mile, especially without a robust and accessible sidewalk network.Therefore, transit agencies should continuously look at the population of elderly in the area and adjust their bus routes accordingly. In the AMATS area, Akron, Ravenna, and Silver Lake have the best transit coverage for elderly. Unfortunately, Stow, Green, and Tallmadge have larger elderly populations, but don't have high fixed-route transit coverage. For the AMATS region, there is transit coverage of 39.6% of the elderly population as a whole.

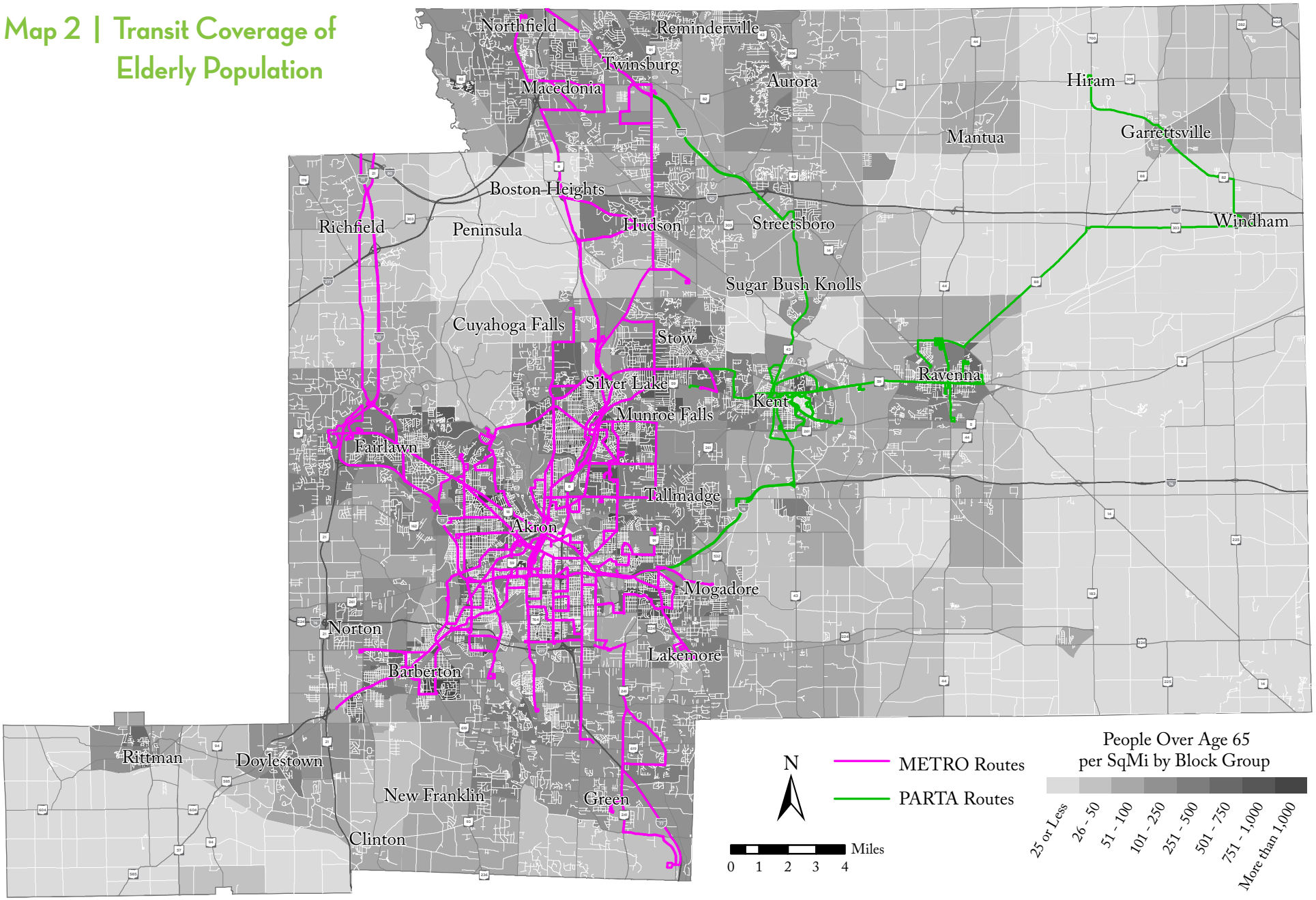
Table 6 | Elderly Population Transit Coverage by Community

(Includes Only Communities with Access to Fixed-Route Transit Service)

COMMUNITY NAME	ESTIMATED ELDERLY POPULATION	ESTIMATED ELDERLY POPULATION W/IN 1/4 MILES OF TRANSIT	% TRANSIT COVERAGE
Akron	28,094	22,314	79.4%
Barberton	4,727	2,566	54.3%
Bath Twp	1,843	557	30.2%
Boston Heights	141	45	31.9%
Boston Twp	200	1	0.5%
Brimfield Twp	1,493	170	11.4%
Charlestown Twp	218	1	0.5%
Copley Twp	3,041	493	16.2%
Coventry Twp	1,976	489	24.7%
Cuyahoga Falls	7,942	5,201	65.5%
Fairlawn	1,807	1,003	55.5%
Franklin Twp	848	378	44.6%
Freedom Twp	451	45	10.0%
Garrettsville	416	119	28.6%
Green	4,507	1,159	25.7%
Hiram	100	11	11.0%
Hiram Twp	448	26	5.8%
Hudson	3,604	1,161	32.2%
Kent	2,365	1,291	54.6%
Lakemore	771	233	30.2%
Macedonia	2,044	611	29.9%
Mogadore	454	17	3.7%
Munroe Falls	1,095	254	23.2%
Nelson Twp	665	1	0.2%
Northfield	532	308	57.9%
Northfield Center Twp	1,173	157	13.4%
Norton	2,128	188	8.8%
Ravenna	1,974	1,395	70.7%
Ravenna Twp	1,566	411	26.2%
Richfield	772	200	25.9%
Richfield Twp	593	53	8.9%
Sagamore Hills Twp	2,307	61	2.6%
Shalersville Twp	837	1	0.1%
Silver Lake	520	367	70.6%
Springfield Twp	2,699	477	17.7%
Stow	5,807	2,453	42.2%
Streetsboro	2,234	347	15.5%
Sugar Bush Knolls	62	4	6.5%
Tallmadge (Summit County)	3,729	949	25.4%
Tallmadge (Portage County)	24	12	50.0%
Twinsburg	3,495	656	18.8%
Twinsburg Twp	299	191	63.9%
Windham	213	113	53.1%
Windham Twp	316	42	13.3%
Estimated Elderly Pop. with Transit Access:		46,531	39.6%

Source: American Community Survey - 2017 5-Year Estimates

Map 2 | Transit Coverage of Elderly Population



Low Income Population

Low income populations often are without any other means of travel than the bus. Transit is the most affordable option, but not always the most convenient. The low income population in the AMATS area as a whole has 64.7% transit coverage. Franklin Township has the best transit coverage for this population, at almost 100%. Silver Lake and Akron also have strong transit coverage, around 90% for low income persons. Unfortunately, Green, Stow, Streetsboro, Tallmadge, and Twinsburg cover between 20% and 40% of the low income persons in their communities. This equates to 60% or more of the low income people in these communities having to walk farther than a quarter mile to get to a bus route.

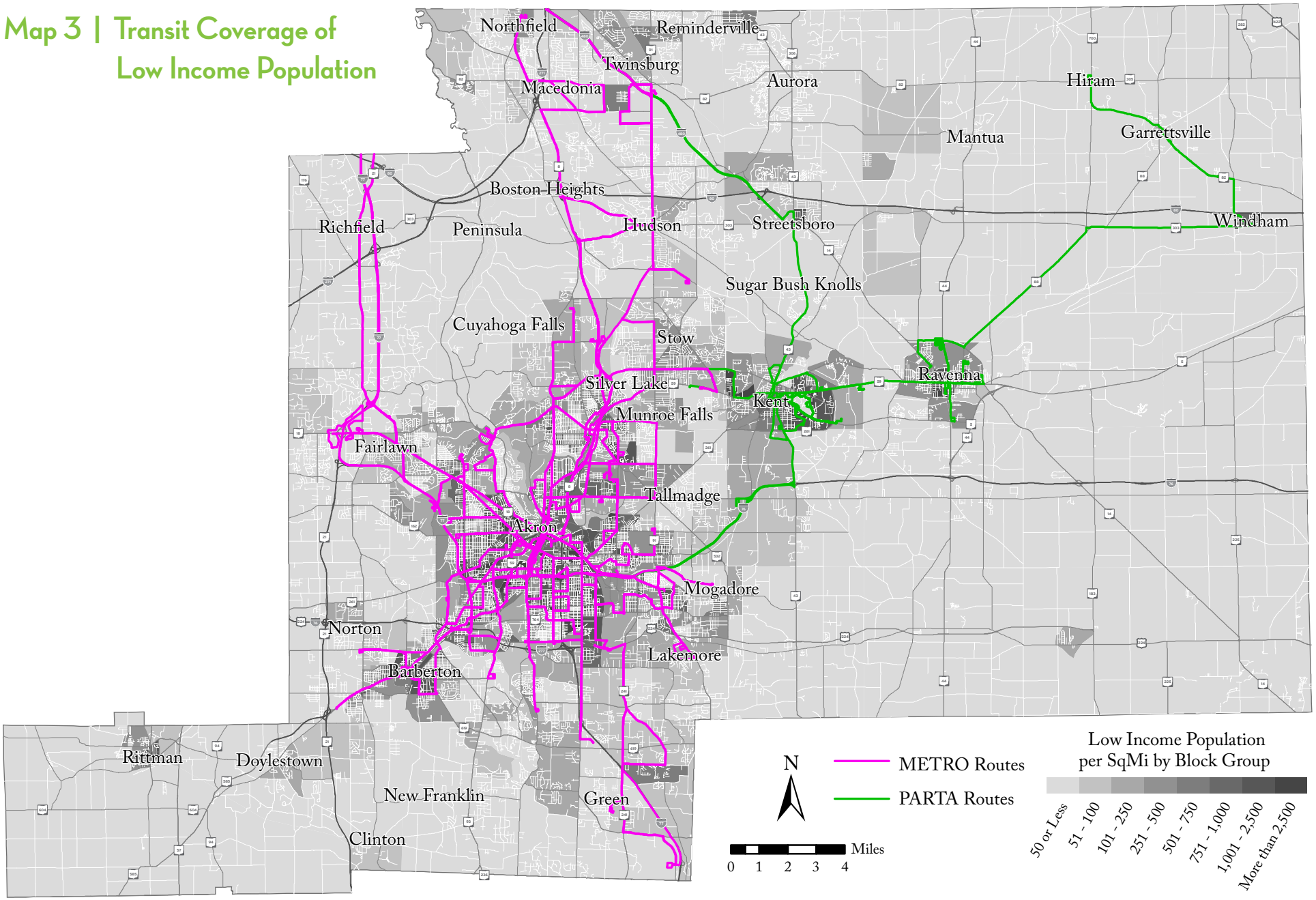
Table 7 | Low Income Population Transit Coverage by Community

(Includes Only Communities with Access to Fixed-Route Transit Service)

COMMUNITY NAME	ESTIMATED LOW INCOME POPULATION	ESTIMATED LOW INCOME POPULATION W/IN 1/4 MILES OF TRANSIT	% TRANSIT COVERAGE
Akron	46,450	41,283	88.9%
Barberton	4,675	3,291	70.4%
Bath Twp	457	73	16.0%
Boston Heights	27	7	25.9%
Boston Twp	36	1	2.8%
Brimfield Twp	1,215	288	23.7%
Charlestown Twp	317	1	0.3%
Copley Twp	546	68	12.5%
Coventry Twp	796	235	29.5%
Cuyahoga Falls	5,105	3,659	71.7%
Fairlawn	472	297	62.9%
Franklin Twp	886	885	99.9%
Freedom Twp	412	18	4.4%
Garrettsville	315	36	11.4%
Green	2,608	732	28.1%
Hiram	14	3	21.4%
Hiram Twp	104	4	3.8%
Hudson	576	177	30.7%
Kent	8,167	5,503	67.4%
Lakemore	394	107	27.2%
Macedonia	203	110	54.2%
Mogadore	289	2	0.7%
Munroe Falls	340	34	10.0%
Nelson Twp	258	0	0.0%
Northfield	426	251	58.9%
Northfield Center Twp	68	3	4.4%
Norton	708	55	7.8%
Ravenna	2,549	1,747	68.5%
Ravenna Twp	976	439	45.0%
Richfield	96	20	20.8%
Richfield Twp	0	0	100.0%
Sagamore Hills Twp	490	5	1.0%
Shalersville Twp	677	1	0.1%
Silver Lake	74	68	91.9%
Springfield Twp	1,175	326	27.7%
Stow	1,915	754	39.4%
Streetsboro	1,605	385	24.0%
Sugar Bush Knolls	4	1	25.0%
Tallmadge (Summit County)	1,505	656	43.6%
Tallmadge (Portage County)	0	0	100.0%
Twinsburg	1,246	244	19.6%
Twinsburg Twp	586	258	44.0%
Windham	522	347	66.5%
Windham Twp	226	32	14.2%
Estimated Low Income Pop. with Transit Access:		62,406	64.7%

Source: American Community Survey - 2017 5-Year Estimates

Map 3 | Transit Coverage of Low Income Population



Minority Population

Sixty-nine percent of the minority population has transit coverage in the AMATS region. Akron has by far the largest minority population in the AMATS area. Research shows that over 88% of minorities in Akron have transit coverage within a quarter mile. Kent has the second highest population of minorities with 76% transit coverage. Ravenna and Franklin Township are two other communities that have 80% and 82% transit coverage, respectively. Twinsburg has a higher population of minorities, but only 19% transit coverage. The greatest discrepancy, however, is in Twinsburg Township. Although there is 33.3% coverage for minorities in that community, minorities make up almost 60% of the total population. An additional bus stop in this small geographic area may be one solution. However, this would potentially provide a long, inefficient trip and might not provide the connections that residents of the township truly need. People living in this area may be looking to travel to Cleveland or Aurora/Streetsboro and therefore regional connections should be looked into for better solutions.

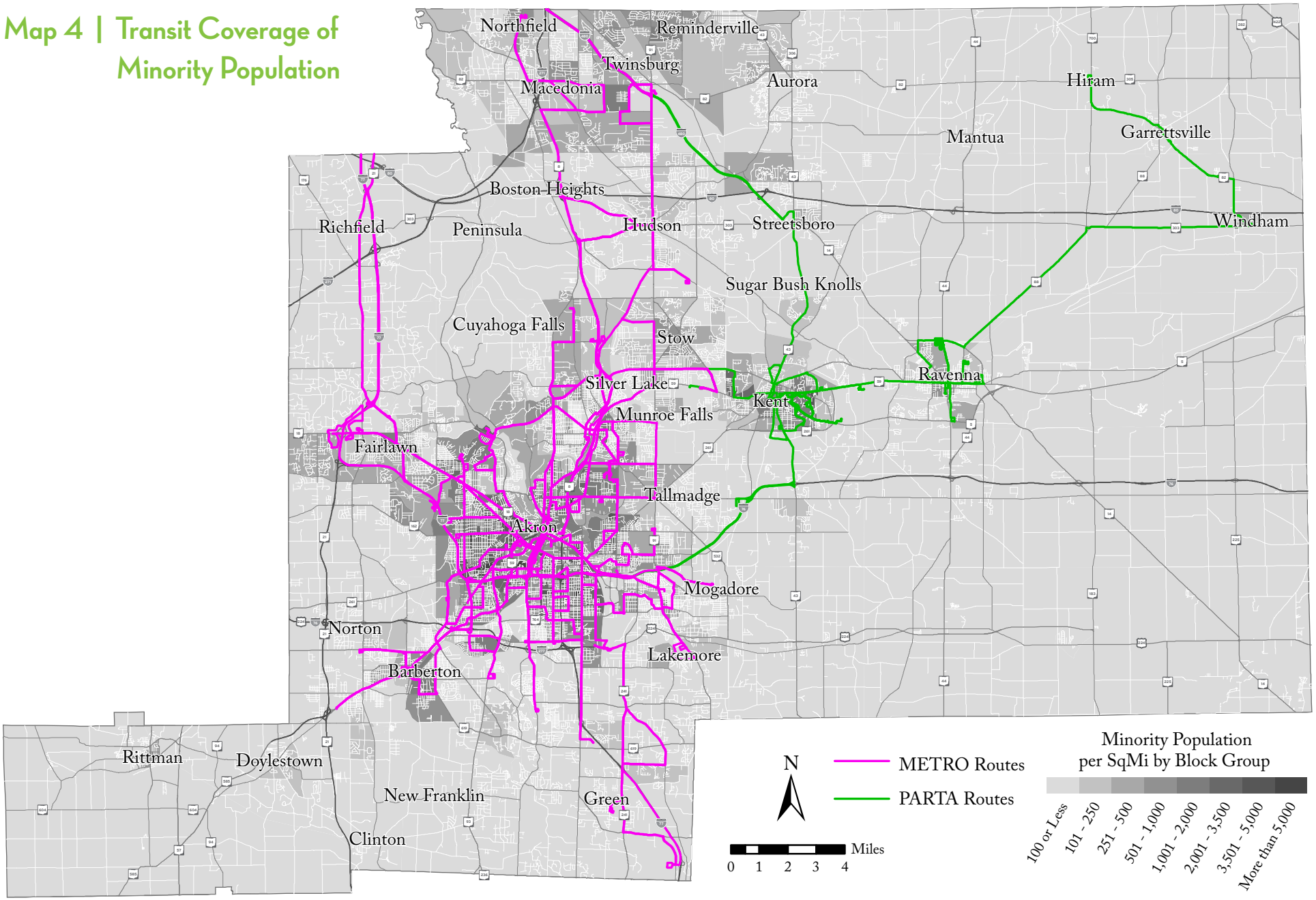
Table 8 | Minority Population Transit Coverage by Community

(Includes Only Communities with Access to Fixed-Route Transit Service)

COMMUNITY NAME	ESTIMATED MINORITY POPULATION	ESTIMATED MINORITY POPULATION W/IN 1/4 MILES OF TRANSIT	% TRANSIT COVERAGE
Akron	78,642	69,553	88.4%
Barberton	3,259	2,093	64.2%
Bath Twp	697	163	23.4%
Boston Heights	0	0	100.0%
Boston Twp	81	0	0.0%
Brimfield Twp	421	104	24.7%
Charlestown Twp	56	0	0.0%
Copley Twp	2,783	587	21.1%
Coventry Twp	426	109	25.6%
Cuyahoga Falls	4,155	3,043	73.2%
Fairlawn	1,234	823	66.7%
Franklin Twp	448	366	81.7%
Freedom Twp	26	5	19.2%
Garrettsville	77	6	7.8%
Green	1,664	485	29.1%
Hiram	234	6	2.6%
Hiram Twp	37	3	8.1%
Hudson	1,691	516	30.5%
Kent	6,338	4,816	76.0%
Lakemore	342	95	27.8%
Macedonia	1,699	705	41.5%
Mogadore	23	2	8.7%
Munroe Falls	302	40	13.2%
Nelson Twp	0	0	100.0%
Northfield	716	437	61.0%
Northfield Center Twp	1,170	184	15.7%
Norton	324	51	15.7%
Ravenna	1,020	813	79.7%
Ravenna Twp	737	337	45.7%
Richfield	126	73	57.9%
Richfield Twp	250	17	6.8%
Sagamore Hills Twp	1,134	31	2.7%
Shalersville Twp	185	1	0.5%
Silver Lake	96	63	65.6%
Springfield Twp	313	119	38.0%
Stow	2,728	823	30.2%
Streetsboro	2,268	333	14.7%
Sugar Bush Knolls	0	0	100.0%
Tallmadge (Summit County)	1,533	711	46.4%
Tallmadge (Portage County)	72	10	13.9%
Twinsburg	4,459	851	19.1%
Twinsburg Twp	1,690	563	33.3%
Windham	166	116	69.9%
Windham Twp	60	8	13.3%
Estimated Minority Pop. with Transit Access:		89,061	69.5%

Source: American Community Survey - 2017 5-Year Estimates

Map 4 | Transit Coverage of Minority Population



Disabled Population

The overall disabled population in the AMATS area is over 80,000 people. This population may be the most vulnerable in that traveling a quarter mile to a bus route might be difficult, but anything farther might be impossible. The communities with the greatest disabled populations (Akron, Cuyahoga Falls, and Barberton) have 77%, 65%, and 53% transit coverage, respectively. Barberton and Twinsburg could work with METRO on finding solutions that would benefit their disabled residents, particularly with better access to existing transit stops through an extensive and connected multi-modal network that makes traveling farther less of a challenge.

Demand Response Services

METRO offers curb to curb service called Call-a-Bus. This service is available in specific areas in Summit County, during weekdays only, and costs riders $4 each way. In addition, METRO offers SCAT services for passengers who have a temporary or permanent disability or are over the age of 62.

PARTA also offers a Dial-A Ride service, available in specific areas of Portage County on specific days. The cost is $6 per ride, with a discount available for seniors, disabled, and others. There are free trips available for non-emergency medical services, as well as for those people with a Developmental Disability Medicaid waiver.

As previously mentioned, both METRO and PARTA offer a specialized service for the disabled per the Americans with Disabilities Act (ADA). This paratransit service provides transportation for people with disabilities who cannot use fixed-route buses. This service complements the fixed-route service, is available at the same time as the fixed-route schedule, with the pick-up location and destination no further than three quarters of a mile from the fixed-route line.

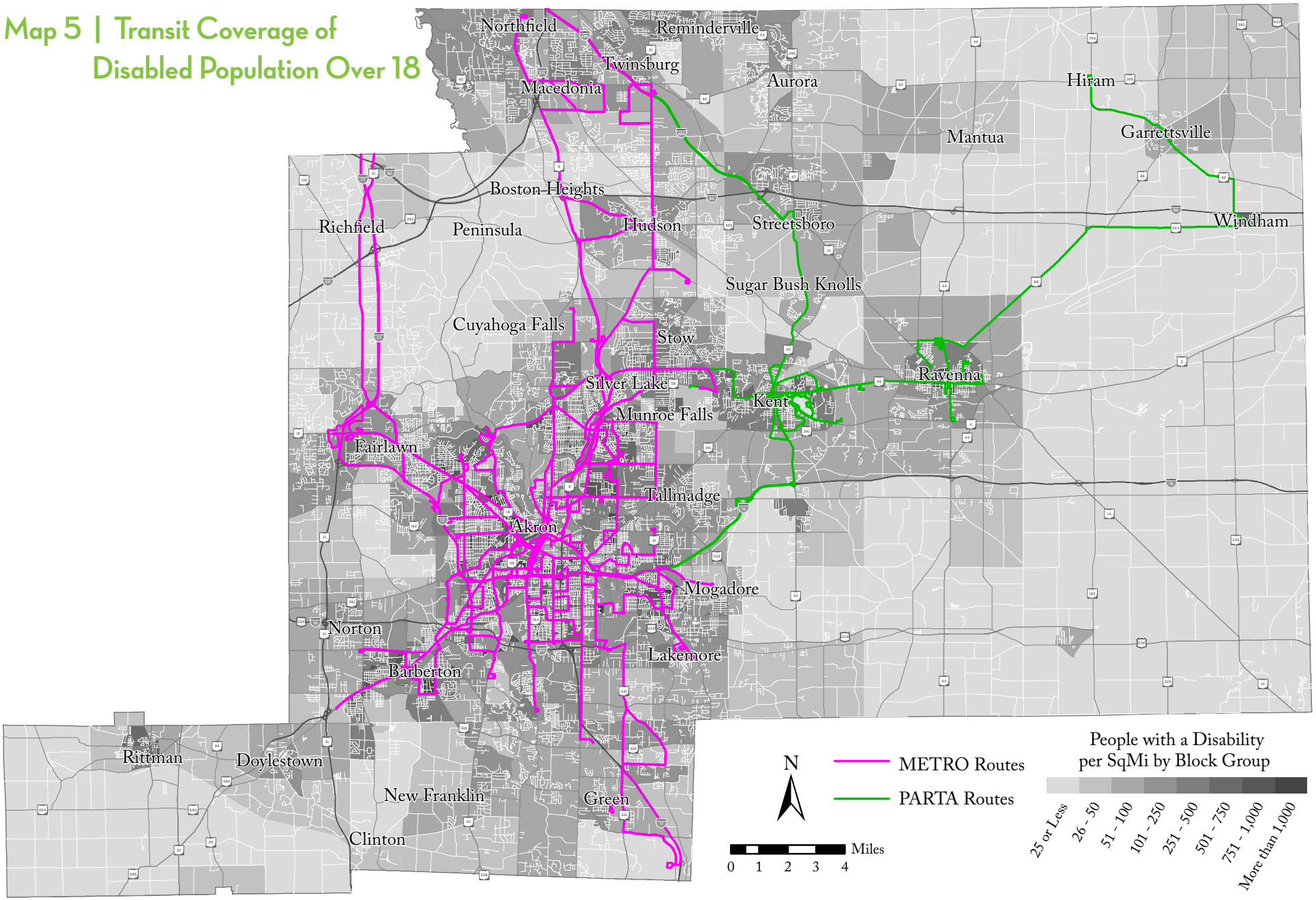
Table 9 | Disabled Population Over 18 Transit Coverage by Community

(Includes Only Communities with Access to Fixed-Route Transit Service)

COMMUNITY NAME	ESTIMATED DISABLED POPULATION OVER 18	ESTIMATED DISABLED POPULATION OVER 18 W/IN 1/4 MILES OF TRANSIT	% TRANSIT COVERAGE
Akron	29,591	22,827	77.1%
Barberton	4,572	2,443	53.4%
Bath Twp	810	278	34.3%
Boston Heights	109	21	19.3%
Boston Twp	101	4	4.0%
Brimfield Twp	1,107	117	10.6%
Charlestown Twp	380	1	0.3%
Copley Twp	1,455	241	16.6%
Coventry Twp	1,427	405	28.4%
Cuyahoga Falls	5,867	3,844	65.5%
Fairlawn	634	356	56.2%
Franklin Twp	615	339	55.1%
Freedom Twp	479	43	9.0%
Garrettsville	296	88	29.7%
Green	2,698	648	24.0%
Hiram	135	6	4.4%
Hiram Twp	224	9	4.0%
Hudson	1,618	492	30.4%
Kent	3,521	1,552	44.1%
Lakemore	482	178	36.9%
Macedonia	1,307	422	32.3%
Mogadore	251	14	5.6%
Munroe Falls	495	53	10.7%
Nelson Twp	656	1	0.2%
Northfield	398	225	56.5%
Northfield Center Twp	441	67	15.2%
Norton	1,623	151	9.3%
Ravenna	2,025	1,385	68.4%
Ravenna Twp	1,853	466	25.1%
Richfield	315	75	23.8%
Richfield Twp	208	26	12.5%
Sagamore Hills Twp	1,256	22	1.8%
Shalersville Twp	715	1	0.1%
Silver Lake	288	185	64.2%
Springfield Twp	1,761	352	20.0%
Stow	3,368	1,349	40.1%
Streetsboro	2,134	311	14.6%
Sugar Bush Knolls	16	3	18.8%
Tallmadge (Summit County)	2,118	629	29.7%
Tallmadge (Portage County)	0	0	100.0%
Twinsburg	1,910	329	17.2%
Twinsburg Twp	185	123	66.5%
Windham	321	196	61.1%
Windham Twp	333	41	12.3%
Estimated Disabled Pop. with Transit Access:		40,318	44.2%

Source: American Community Survey - 2017 5-Year Estimates

Map 5 | Transit Coverage of Disabled Population Over 18



Performance Measures

Performance and asset measures are widely used in the transit industry today, with most transit agencies reporting basic information about their service to the National Transit Database (NTD); reporting data to the NTD is required for most transit agencies to receive federal transit funding. ODOT is considering the following performance measures to be used for transit development:

- Service effectiveness – passengers per hour
- Cost efficiency – cost per hour
- Cost effectiveness – cost per passenger
- Customer satisfaction – portion of riders with high levels of satisfaction
- Transit asset management – fleet and infrastructure capital maintenance.

Transit asset management (TAM) is the strategic and systematic practice of procuring, operating, inspecting, maintaining, rehabilitating, and replacing transit capital assets to manage their performance, risks, and costs over their life cycles to provide safe, cost-effective, and reliable public transportation. TAM uses transit asset condition to guide how to manage capital assets and prioritize funding to improve or maintain a state of good repair.

Federal regulaions require the Federal Transit Administration (FTA) to develop a rule to establish a strategic and systematic process of operating, maintaining and improving public transportation capital assets effectively through their entire life cycle. FTA's national Transit Asset Management system rule defines the term, "state of good repair," requires grantees to develop a TAM plan, establishes performance measures, establishes annual reporting requirements, and requires FTA to provide technical assistance.

In July 2016, FTA published a final rule for TAM. The rule requires FTA grantees to develop asset management plans for their public transportation assets, including vehicles, facilities, equipment, and other infrastructure.

A state of good repair (SGR) is a threshold that identifies the desired performance condition of a capital asset, such as a bus, transfer facility, or office building. An asset is in a state of good repair when it is able to operate at a full level of performance. This means:

- The asset is able to perform its designed function;
- Does not pose a known or unacceptable safety risk (condition); and
- Its life cycle investments have been met or recovered (useful life benchmark (ULB))

SGR performance targets are based on realistic expectations derived from the most recent available data (condition and ULB), FTA performance measure criteria, and the financial resources from all sources that the area reasonably expects to be available during the TAM plan horizon period for capital planning purposes.

PARTA has set a goal to maintain their fleet with at least 100 percent of the vehicles in fair or good condition. Although the entire bus fleet meets this standard, their cutaway and van fleet only has 65 percent of the fleet meeting this standard. PARTA intends to replace vehicles in order to meet this goal.

METRO has set targets for SGR and determined that their overall revenue vehicles should be less than 15% over their ULB, on average. METRO also reviews its Bus Improvement Plan (BIP) annually to ensure the buses are within the ULB of 12 years. This helps to keep their fleet reliable and reduce maintenance costs.

Conditions

Coverage

Overall coverage in Summit and Portage Counties is excellent compared to similar transit agencies nationwide. However, there are still several pockets or gaps in coverage that need improvement. Stow and Twinsburg are two communities that show a large population of elderly, low income, minority, and disabled, and yet have poor transit coverage. The communities of Green and Tallmadge also showed gaps in their transit coverage. These communities would benefit from a discussion and potential coordination with METRO RTA regarding travel patterns and what amenities would better serve the needs of the community.

In Portage County, Streetsboro has larger populations of low income, minority, and disabled people. Due to being far from the bulk of PARTA's fixed route coverage (throughout the KSU campus and City of Kent), there is limited transit coverage for the low income riders, and very poor coverage for both minority and disabled populations. Streetsboro has insufficient pedestrian amenities that assist with transit use: SR 14 and SR 303 are very wide; commercial developments are far from transit stops and surrounded by large parking lots. Additionally, although Kent tends to have strong transit coverage, improvements could be made for the disabled population that is only 44% covered by fixed-route service in that city.

Access

Wait Times

For both METRO and PARTA, the majority of their routes are those that require riders to consult a schedule to know when the next bus will arrive. The elasticity of frequency is the idea that as frequency increases, ridership expands beyond a straight line increase. We can see that at a certain point, ridership increases exponentially when transit riders no longer have to plan their lives around a bus schedule. This point is different depending on the length of a trip or even the location where service is taking place. Some transit riders consider frequent service as arriving every 15 minutes or less. In bigger cities with large populations using transit, the timeframe is even less, down to 6 minutes. Additionally, a rider taking a shorter trip will consider walking if the wait time for a bus is too long. Therefore, transit agencies should consider studying what the average wait time should be to increase their ridership.

PARTA recognized that some of their stops had long wait times, but that it wasn't feasible to expand their routes to increase frequency. In 2016, to make transit more attractive, PARTA implemented their real-time application – SpotPARTA. This app allows passengers waiting for a bus to see where their bus is either by looking at a map on a smart phone or texting the stop ID.

Bus Rapid Transit - As discussed previously, Bus Rapid Transit (BRT) is characterized as frequent service along a specific corridor, potentially with signal preemption, dedicated lanes, and other features to speed up access. The idea behind BRT is that riders can expect reliable and fast service on a specific route, and transit agencies can expect increased ridership. Both METRO and PARTA have route corridors with the potential to become BRT systems.

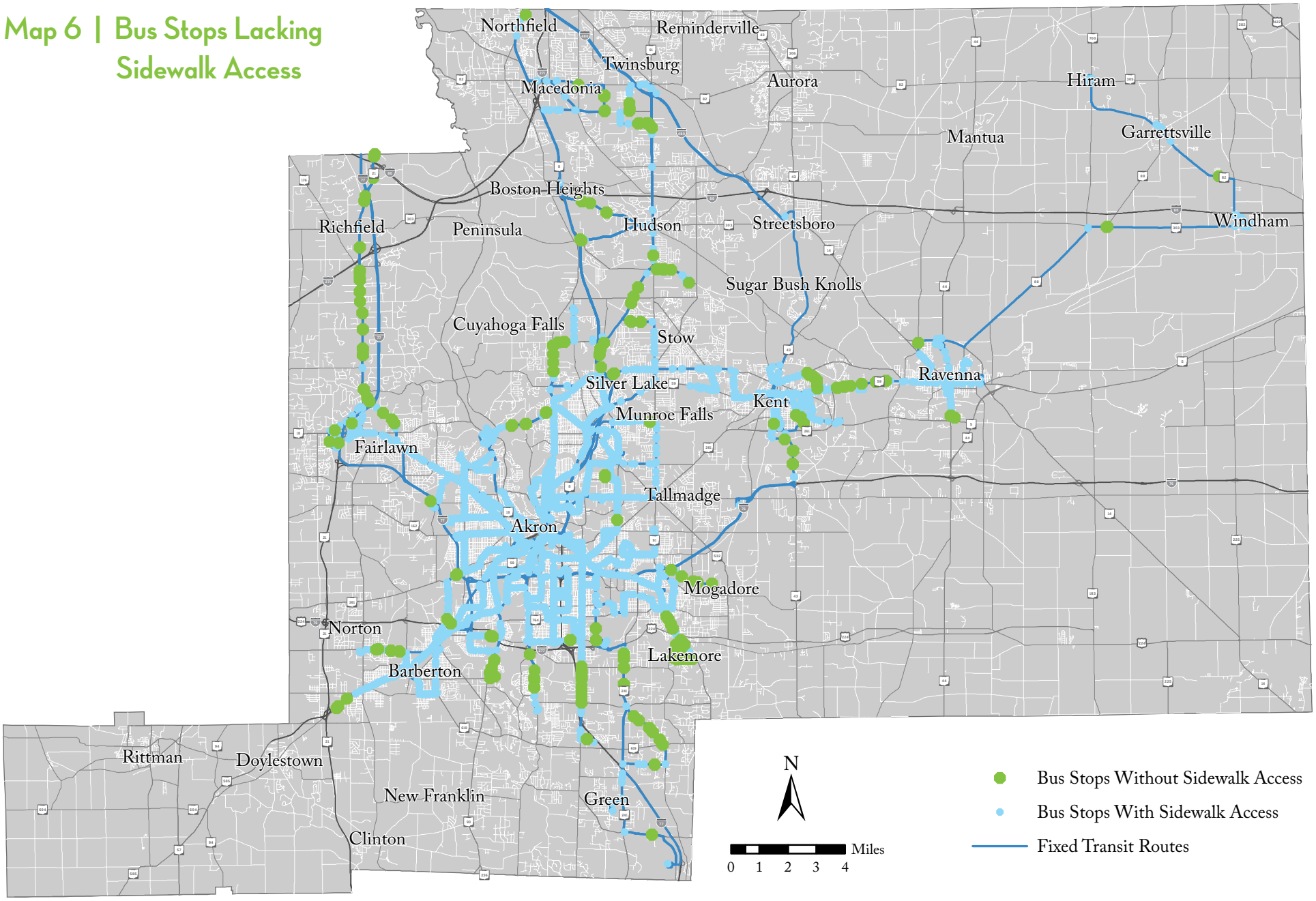
Sidewalks

Sidewalks provide the best available means for many transit-dependent populations – such as people with disabilities, the elderly, and low income persons - to access bus routes and service. It is not a coincidence that most transit stops are located on or near sidewalks. Access to these stops is especially critical for persons using mobility devices. Currently, the Greater Akron area has 2,625 stops located throughout Portage and Summit counties. Of those 2,625 stops, 610 (23 percent) are located in areas without sidewalks.

Bus Shelters

Using data from both PARTA and METRO RTA, transit stops were analyzed for location and amenities. It was determined that there are a total of 2,625 stops in the AMATS region, 366 belonging to PARTA and 2,259 belonging to METRO RTA. Of these, PARTA has 53 stops with bus shelters while METRO RTA has 114. Current policies suggest adding shelters at stops where there are at least 30 boardings a day. Transit shelters have been shown to have a positive impact on ridership and rider satisfaction. Attractive shelters improve the public's perception of transit. Ridership numbers have been known to increase where bus shelters are added. Riders are more comfortable waiting longer periods of time when there is a shelter to wait in, and are willing to walk farther to get to a stop with a shelter. With this information, it is obvious that improvements can be made in the AMATS area. It is important to note that shelters are not the only solution that can encourage an increase in ridership, especially when considering the cost to implement as well as maintain them. At a cost of $5,500 for the shelter, with additional costs for the ADA-accessible concrete pad, transit agencies are careful about where to place shelters. As mentioned previously, a strong multimodal network that includes bike paths, sidewalks, crosswalks, and lighting as well as stops with frequent and reliable service have been shown to attract more transit riders.

Map 6 | Bus Stops Lacking Sidewalk Access



Transit-Oriented Development

The identification of transit corridors is essential in best determining where to concentrate limited funding. Transit corridors not only guide us in the investment of transit service and infrastructure – when implemented correctly, they can guide overall community development and investment. Popular transit corridors and the heavy foot traffic they generate create an opportunity to develop complementary land uses (for example: residential, retail, office, etc.) within close proximity to each other.

Recommendations

Coverage

Improve Coverage in Stow, Tallmadge, and Green

When studying the transit coverage for minority, elderly, low income, and disabled populations, several communities need improved transit coverage for all four of these populations. Coverage in the communities of Stow, Twinsburg, Green, and Tallmadge should be improved to better serve these populations. The communities of Stow and Twinsburg have larger populations of all four of the vulnerable groups, yet have lower transit coverage. Green and Tallmadge both have larger populations of elderly, low income, and disabled, but provide limited transit coverage. These pockets of development at the outer edges of the METRO and PARTA service areas need improved service. Unfortunately, remoteness from the central service area makes additional coverage expensive. Additionally, traditional bus service may not be the best solution for these communities. Finding solutions that meet the needs of the residents in an efficient manner should be the ultimate goal.

Coverage in Streetsboro

Streetsboro has limited coverage for the minority, low income, and disabled riders in its community. PARTA and Streetsboro should explore opportunities to better serve these transit riders and improve coverage.

Access

Increased Headways

Although transit may never replace the automobile for some people, reliable and frequent service attracts new riders. Transit has always been an affordable alternative to cars, but long wait times are inconvenient and become a deterrent for many. The point where riders no longer have to memorize a bus schedule is where we see ridership increase. Comparing both METRO's and PARTA's ridership numbers to their Headway Performance proves this point. Each transit agency has a route with frequent service that sees large ridership numbers. For this reason, it is recommended that both transit agencies review their routes and consider adding more frequent service to certain busy routes, especially those that include shorter trips.

Each transit agency has express routes that should be reviewed for potential improvements. Adding a midday trip to Cleveland for both METRO and PARTA would be helpful for many who may not be commuting, but instead may be traveling north for a doctor appointment. This could make the service more attractive and result in an increase in ridership.

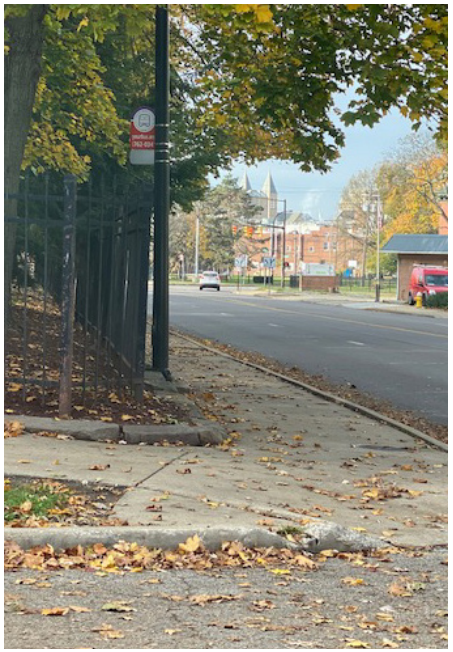
Sidewalks

Since most transit trips include a pedestrian trip at one or both ends, it is important to create good walking conditions near transit routes. According to AMATS' *Active Transportation Plan* (December 2019), communities should seek improvements in the areas of providing pedestrian access to transit service and eliminating gaps in network connections. Many of the Greater Akron area's existing walking networks consist of community sidewalks that are along busy roadways that also serve as transit routes. Communities and project sponsors should make pedestrian safety improvements a priority on those routes and streets with high traffic volumes and speeds (see Map 6 on page 22).

Greater Akron area communities should work in close concert with METRO and PARTA when developing new sidewalk networks and when planning improvements to existing ones. The region's communities and transit authorities should:

- Increase the number of bus stops with a sidewalk connection
- Ensure that networks include pedestrian-friendly bus stops and related amenities

Bus Stop NEEDS Sidewalk Access



Bus Stop HAS Sidewalk Access

- Provide convenient transit access in those locations where there is known heavy pedestrian traffic
- Consider convenient pedestrian access when identifying new transit connections and routes
- Conduct in-depth, periodic analyses of bus stop locations and route connections within the Greater Akron area

Improvements For Transit Stops

Both AMATS area transit agencies have specific policies regarding when a shelter or other amenity can be added to a stop. For METRO RTA, there must be at least 30 boardings a day at a stop to trigger a review for a shelter. Additional considerations include proximity to community facilities, hospitals/medical centers and other key destinations. Although a small percentage of METRO's stops have shelters, the majority of stops that meet the criteria already have shelters in place. For PARTA, demographics and safety as well as ridership are part of their shelter review process. Additionally, PARTA has executed agreements with some communities to place shelters where needed. These communities recognized that their residents would benefit if shelters were in place, and partnered with PARTA to share the expense. Additionally, PARTA has extended this type of agreement to private sector developers in those communities, with some businesses choosing to place their own concrete pads and shelters. AMATS encourages this type of cooperation for the benefit of citizens and communities alike.

In the AMATS area, bus stop amenities are not uniform. A small amount of stops have bus shelters, while the vast majority of stops are simply a sign on the sidewalk, with many different versions in between. It is common knowledge that a person can sometimes have a long wait for a bus. Although the best stop will protect riders from the elements, having a place to sit is helpful as well. In the interest of increasing ridership, we must look at what the riders would prefer. We know that they want higher frequency and faster service, but providing a place to rest while waiting for the bus would go far for many people. Less expensive than a shelter, a Simme Seat ™ *(pictured to the right)* can provide seating for a couple of people per stop at a fraction of the cost. These seats could be added to the existing bus stop sign posts. Shelters are not only more visible, but provide sponsorship opportunities that can offset their costs. Shelters can be used to brand the transit agency and make it more appealing to the community.

If the cost of the shelters prevents their installation, there are other ways to improve the comfort of a bus stop to its riders. Ensuring all stops are on concrete pads, adding sidewalks where needed, incorporating seating, lighting, trash cans, and schedules wherever possible would go a long way in making public transit more appealing.

Transit-Oriented Development

As METRO looks into the possibility of adding a Bus Rapid Transit line to their fixed-route service, development along the corridor should be considered fundamental to the success of the line. Transit-Oriented Development (TOD) is the growth of businesses and residential units within walking distance of a transit stop. Desirable places to live, restaurants, parks, grocery stores, coffee shops, and the like can encourage transit use. In return, transit use near these locations can promote vibrant businesses. Pairing a BRT line with a conscious effort to develop places people want and need encourages less auto-dependency. Taking into account the large populations of elderly, low-income, minority and disabled, as well as young people who prefer walkable places, TOD is essential in providing the ability for these groups to get where they need, or want, to be.

PARTA would also benefit from a transit-oriented development in their area. Although the automobile is fully accommodated for in TOD, these developments are designed to be comfortable for non-motorized transportation, such as walking or bicycling.

Implementation

Transit agencies have access to federal, state, and local funding sources. The local sources primarily include their dedicated sales tax revenue. For METRO RTA, this amounts to a .50% sales tax while PARTA benefits from a .25% sales tax. These sales tax funds can be used for operations as well as a match for federal funds. Another local source of funding is the fare box revenue, which are the funds received from riders. This revenue makes up a small (10%-20%) part of the operating budget, and can vary by month and by route, making it difficult to plan ahead using this source. The transit agency's operating expenses are funded mainly through these two local sources.

Federal Grant Programs

Federal funding programs are generally used for capital expenses. Luckily, transit agencies can utilize several federal funding sources, administered at the state level by the Ohio Department of Transportation.

- The primary source of federal funding for capital and maintenance projects is the Federal Transit Authority's (FTA) Section 5307 Program. These funds are typically used to purchase new buses, equipment, and for preventative maintenance and planning.
- To better serve elderly persons and persons with disabilities, the transit agencies are also eligible for FTA's Section 5310 Enhanced Mobility for the Elderly and Disabled Program funds. Also known as the Specialized Transportation Program, these funds may be used for capital or operating expenses.
- FTA's Section 5339 Bus and Bus Facilities Program can also fund capital projects. These funds are also used for new buses or for capital facilities.
- Federal Highway Administration (FHWA) Surface Transportation Block Grant Program (STBG) is the most versatile funding option that can be used for a variety of projects.
- Congestion Mitigation Air Quality Program (CMAQ) can be used for projects that improve air quality, such as CNG buses, traffic signal improvements, and park and ride lots.

State Grant Programs

The Ohio Transit Partnership Program (OTP2) is a competitive grant program that was established to provide additional capital funding to Ohio's public transit operators for projects emphasizing system preservation. METRO RTA and PARTA have each received OTP2 funds almost every year since 2012. The OTP2 funds have come from ODOT-attributable federal funds (CMAQ or STBG), and now come from state general revenue funds (GRF). Although the OTP2 program now uses state general revenue funds (instead of CMAQ or STBG as it did in the past), the amount of funding is insufficient for the needs of the transit agencies. According to the Ohio Statewide Transit Needs Study from 2015, "The use of GRF (general revenue funds) in Ohio to fund public transit has been in steady decline" since 2000.

The Diesel Emissions Reduction Grant (DERG) Program is offered by ODOT annually in coordination with the Ohio Environmental Protection Agency (OEPA) to public and private sector diesel fleets (motor vehicle, marine, locomotive, and highway construction equipment). METRO and PARTA have each been awarded DERG funds regularly on an annual basis for a number of years.

Need for Additional State Funding

Currently, besides the small amount of OTP2, the State of Ohio has no stable or dedicated funding for transit service. The urban transit program has seen a reduction from $30 million in 2000 to $1.6 million in 2014. Similarly, the rural transit program has seen funding reduce from $4.2 million in 2000 to just over $3 million in 2014. Transit agencies rely on federal funds for their capital, maintenance, and planning expenses, but these aren't always sufficient. The small amount of local funding transit agencies receive from sales tax may not cover their operations. Additionally, smaller transit agencies may not be able to use federal funds because they are unable to come up with the required local match. As the State of Ohio demonstrated in 2019 with the gas tax increase, there is a need for increased and dedicated funding at the state level. Since state general revenue funds for transit have been declining since their peak in 2000, and Ohio's population is continuing to age, a dedicated source of funding at the state level to provide a reliable source of funding for operations for our transit agencies is long overdue.

AMATS Policy Committee discussed the state funding support of transit at their May 16, 2019 meeting and approved a motion for the AMATS staff to provide a letter of support. On June 18, 2019, AMATS signed a letter of support that was sent to Governor Mike DeWine. In the letter, AMATS Director Curtis Baker and Policy Chairwoman Bobbie Beshara, Village of Richfield Mayor, requested that the governor support a $70 million investment beginning with the 2020-21 budget. This amount was substantially smaller than the recommendation that came out of the Ohio Statewide Transit Needs Study in 2015. That study, produced by ODOT, recommended the state invest $120 million a year in transit, rising to $185 million in 2025, in order to cover 10% of the costs to preserve Ohio's transit system and provide the stable and reliable funding source that is so greatly needed.

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

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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 governemtns of Portage and Summit Counties and a portion of Wayne County.

Attachment 5B

AKRON METROPOLITAN AREA TRANSPORTATION STUDY

M E M O R A N D U M

TO: **Policy Committee**
Technical Advisory Committee
Citizens Involvement Committee

FROM: **AMATS Staff**

RE: **Freight Report**

DATE: **September 9, 2020**

The AMATS Freight Report contains an analysis of the region's existing freight system and makes recommendations that are eligible for inclusion in the upcoming Draft 2045 Regional Transportation Plan.

The AMATS Freight Report identifies the elements of the transportation system in the AMATS area that are critical for movement of bulk goods into, out of, and within the region. The report also addresses the factors and trends that affect both railway and roadway freight, and examines highway-rail grade crossings and freight corridors in the area.

This report:

- Analyzes the highway and freight network,
- Identifies regional job hubs that generate freight activity,
- Evaluates the freight network's efficiency in these job hubs, and
- Recommends strategies to improve the freight network in the AMATS region.

Examples of transportation projects that are freight-related or critical to goods movement include bridge replacements, roadway improvements, rail-access improvements and grade separations for highway and rail.

The complete Freight Plan is available on the AMATS website, www.amatsplanning.org.

The staff recommends approval of this document.

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.

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

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

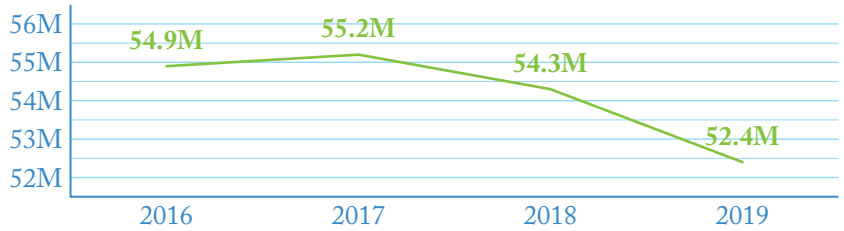
These roads and bridges support the largest portion of freight movement in the AMATS area. The current *Highway Preservation Needs Report* (2045) estimates that it will cost nearly $1.2 billion to maintain the area's roads over the next 25 years. Bridge preservation is estimated to cost $1.9 billion 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

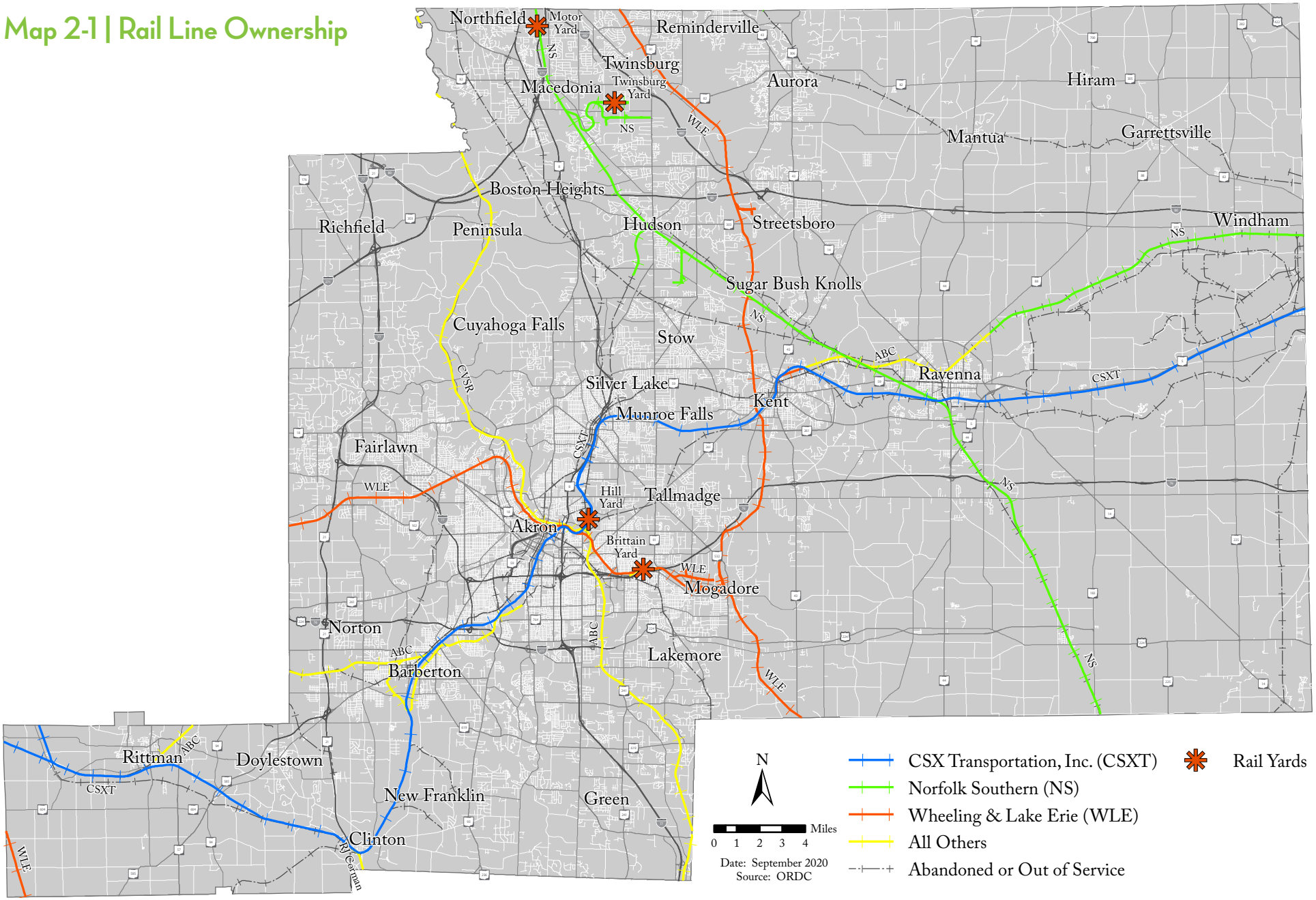
Northeast Ohio lies along the heavily utilized rail route between Chicago and the US East Coast ports. Northeast Ohio serves as a hub where a large block of rail cars moving east from Chicago can be redirected toward New York, Philadelphia, Baltimore, and Virginia. The CSX route between Cleveland and 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 rossings 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

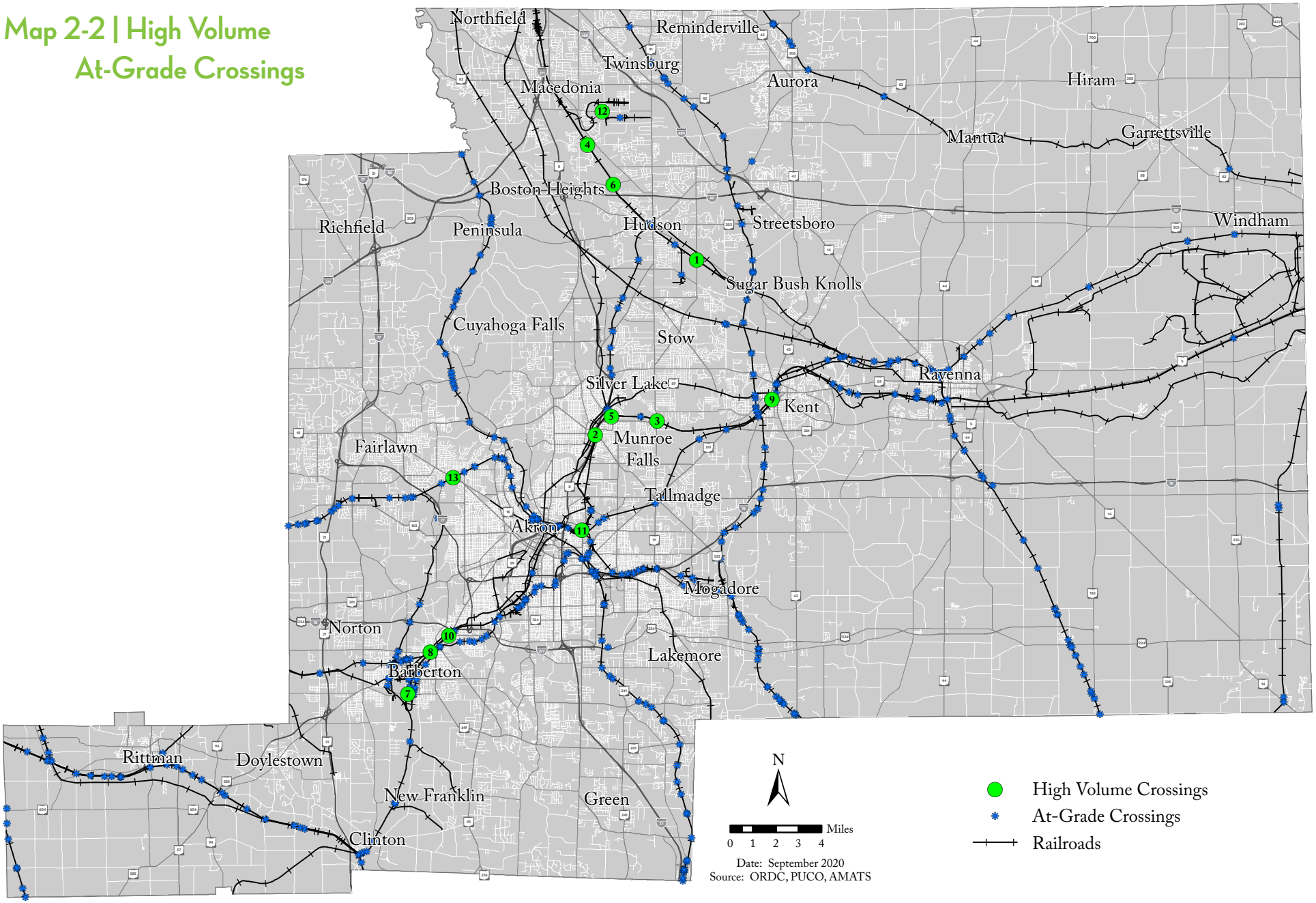


Table 2-1 | High Volume At-Grade Crossings

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 itentified 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.

Key Freeway / Highway Access:

I-77
SR-764

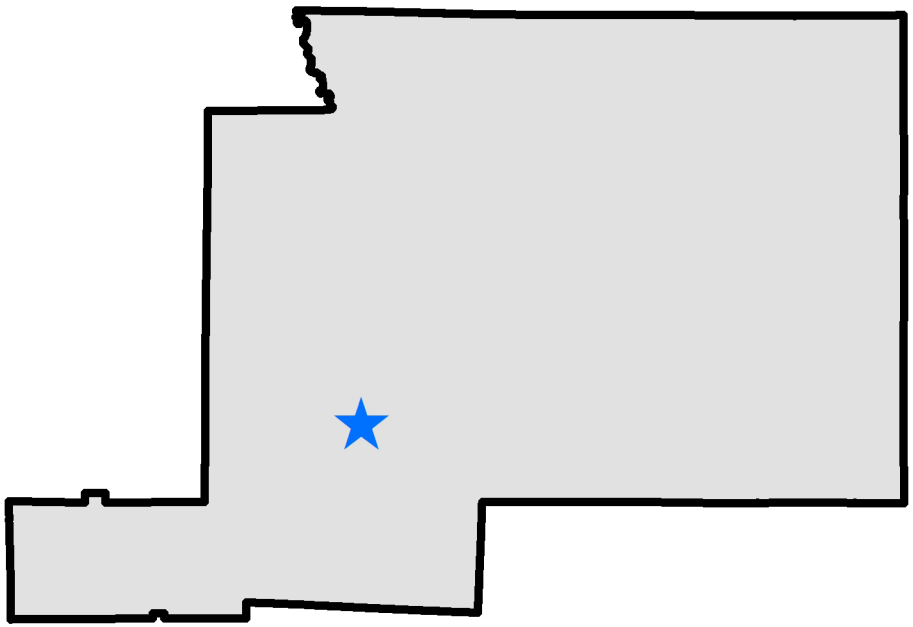
Top 3 Job Types:

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

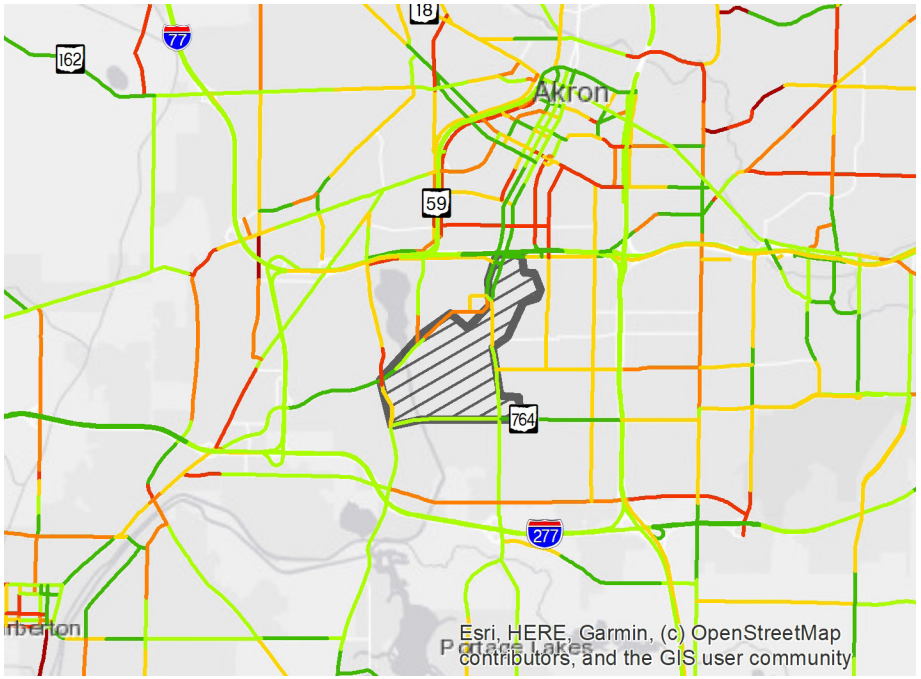
2017 Estimated Jobs:

2,500

Location:



Surrounding Pavement Conditions (2018-2019):



Very Poor Poor Fair Good Very Good Excellent

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 TRAFIC	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

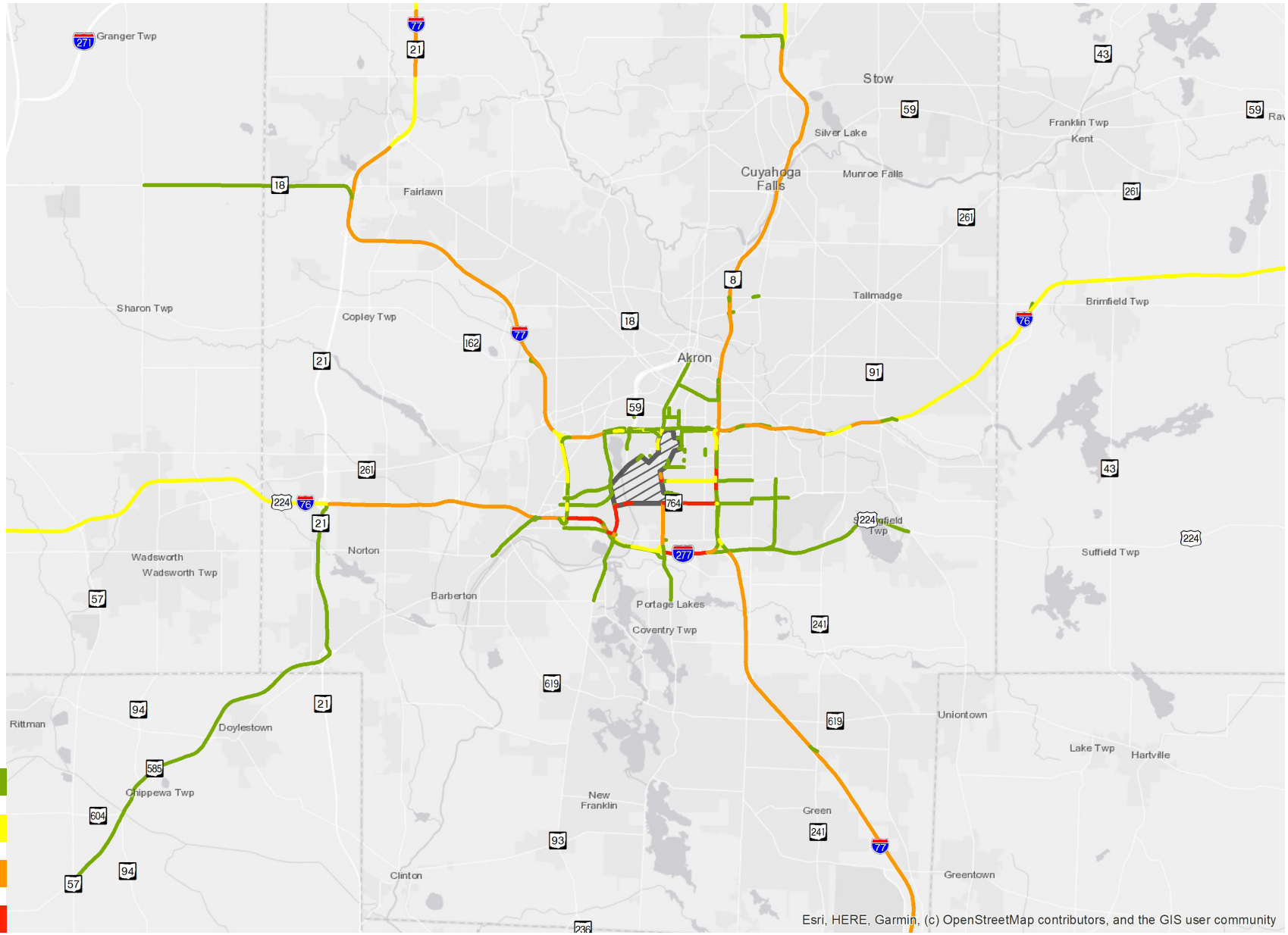
Top Congested Segments

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	Westbouhd	62.46

Firestone Park Freight Corridor

INBOUND TRUCK TRAFFIC

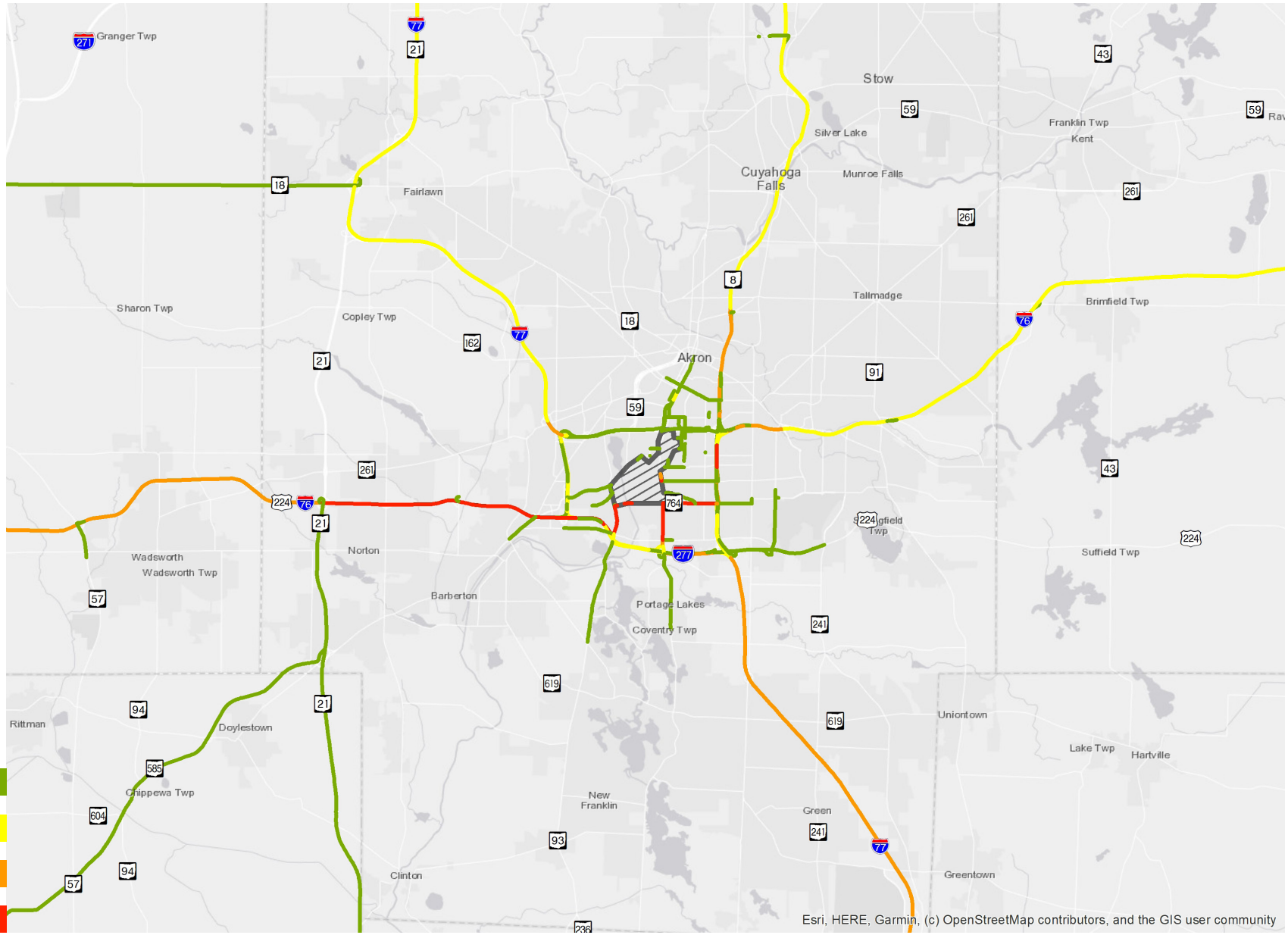


Percentage of Inbound Truck Trips

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

Firestone Park Freight Corridor

OUTBOUND TRUCK TRAFFIC



Percentage of Outbound Truck Trips

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

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.

Key Freeway / Highway Access:

I-76
SR-8

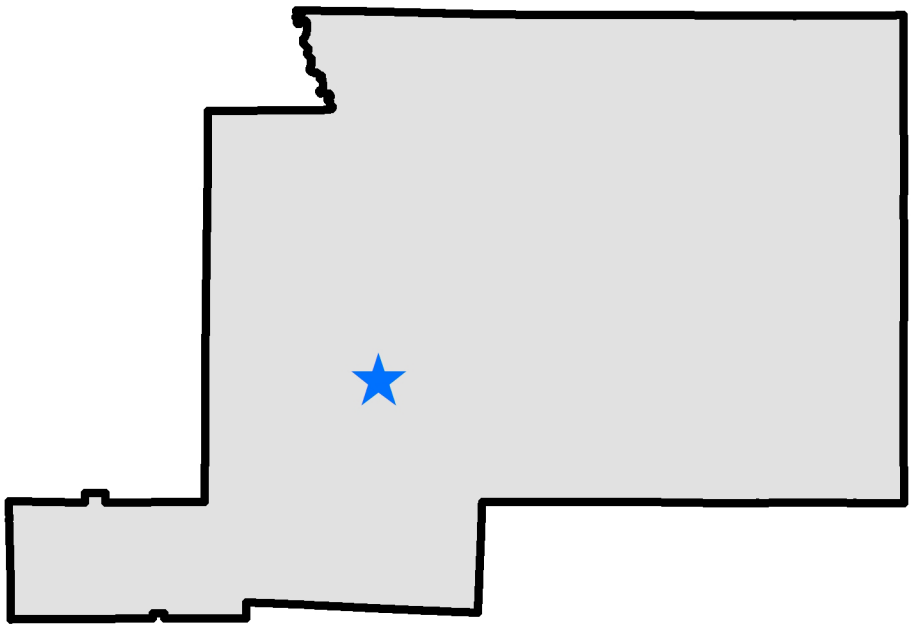
Top 3 Job Types:

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

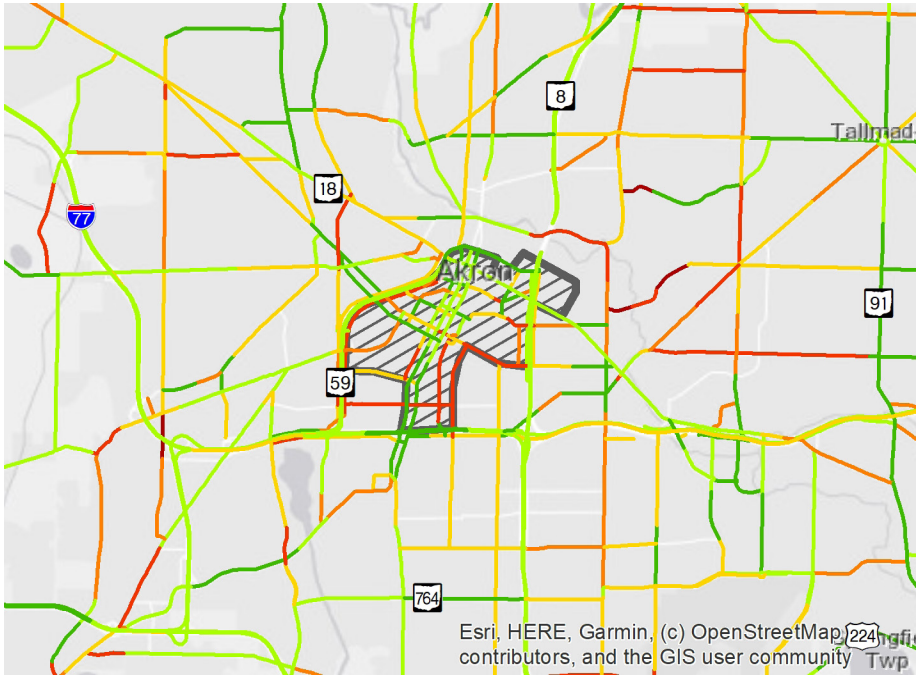
2017 Estimated Jobs:

36,000

Location:



Surrounding Pavement Conditions (2018-2019):



Very Poor Poor Fair Good Very Good Excellent

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 TRAFIC	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

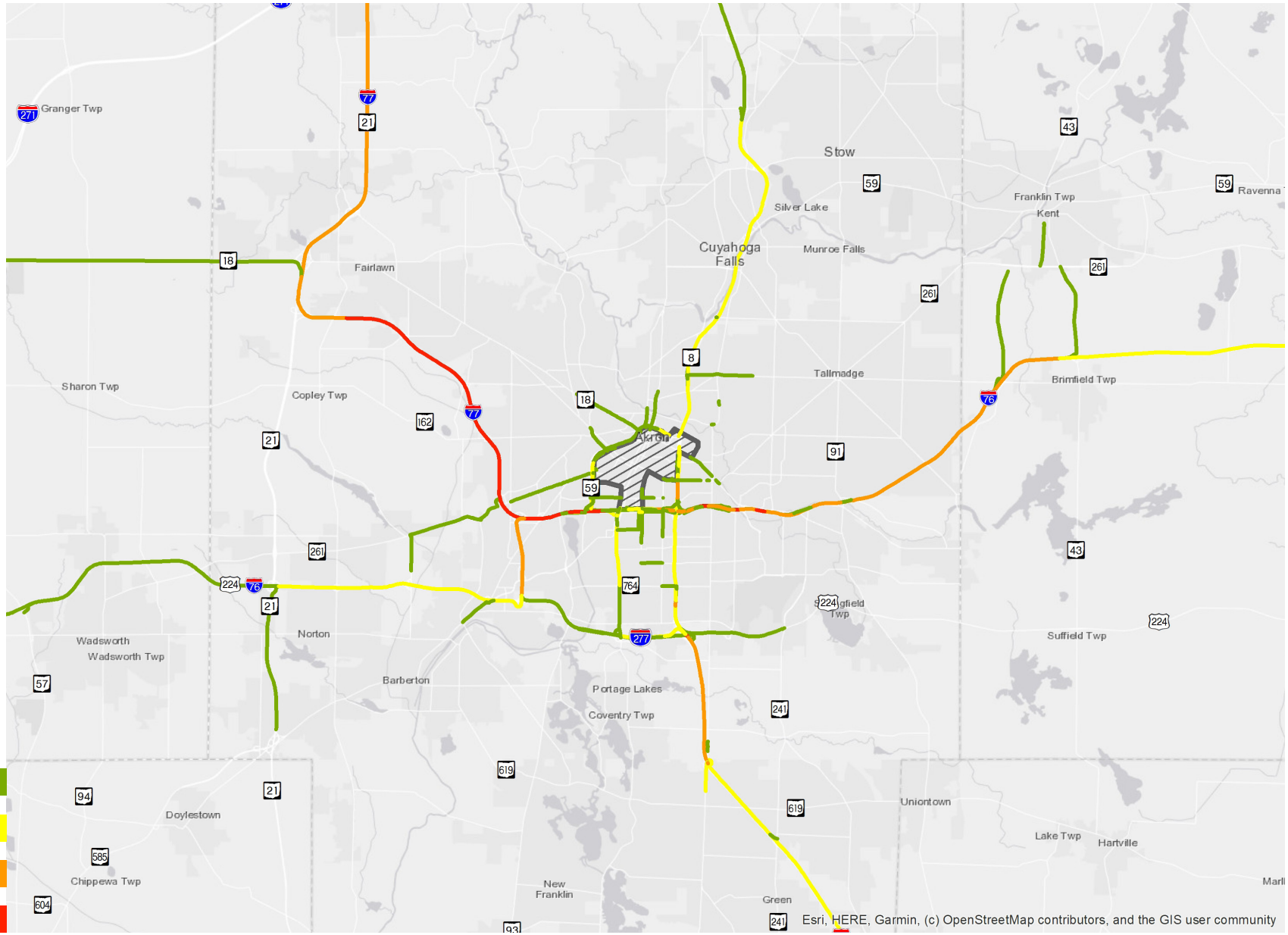
Top Congested Locations

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

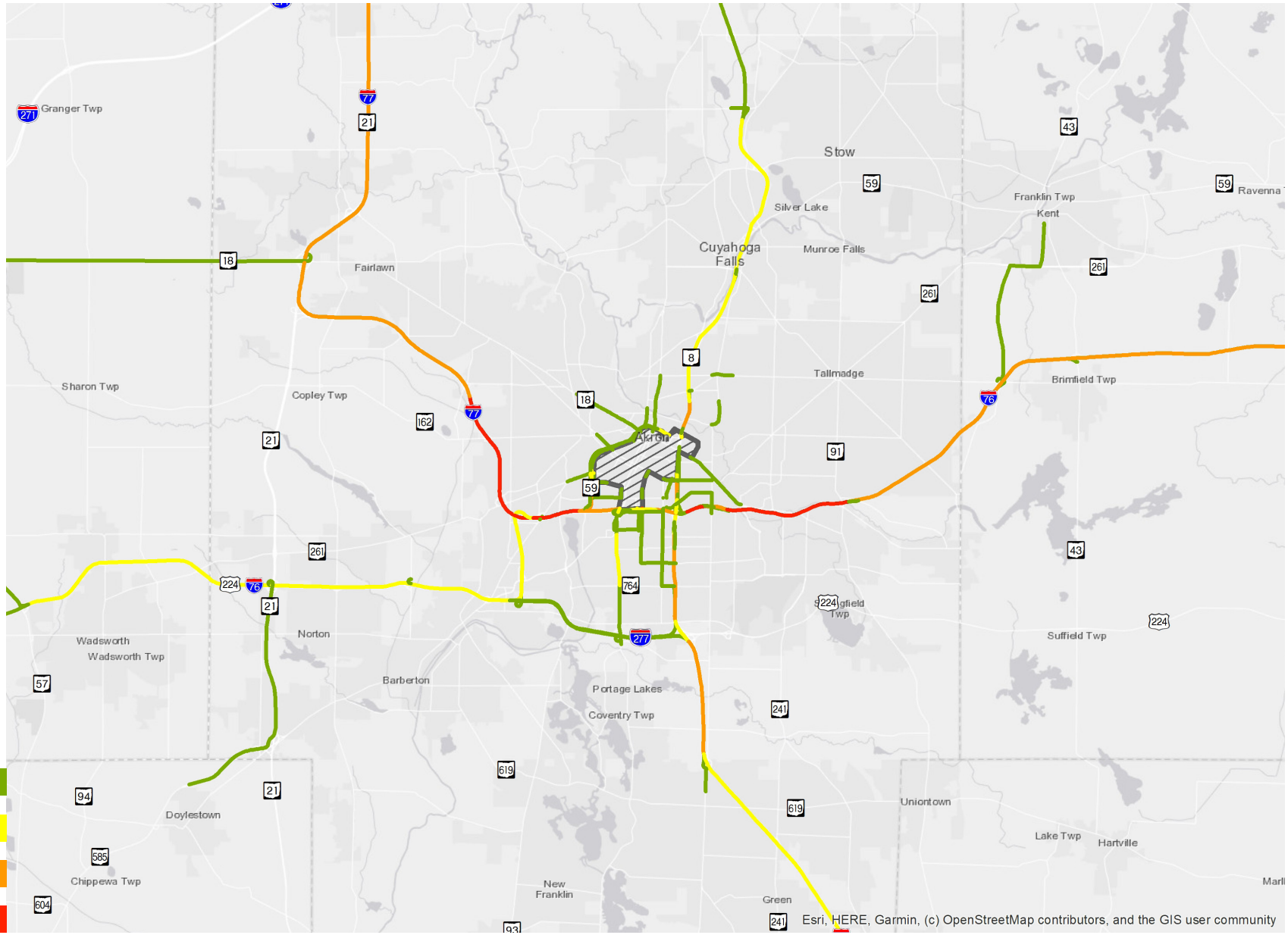


Percentage of Inbound Truck Trips

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

Downtown Akron Freight Corridor

OUTBOUND TRUCK TRAFFIC



Percentage of Outbound Truck Trips

- .1% - 5%
- 5.% - 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.

Key Freeway / Highway Access:

SR-8
SR-261

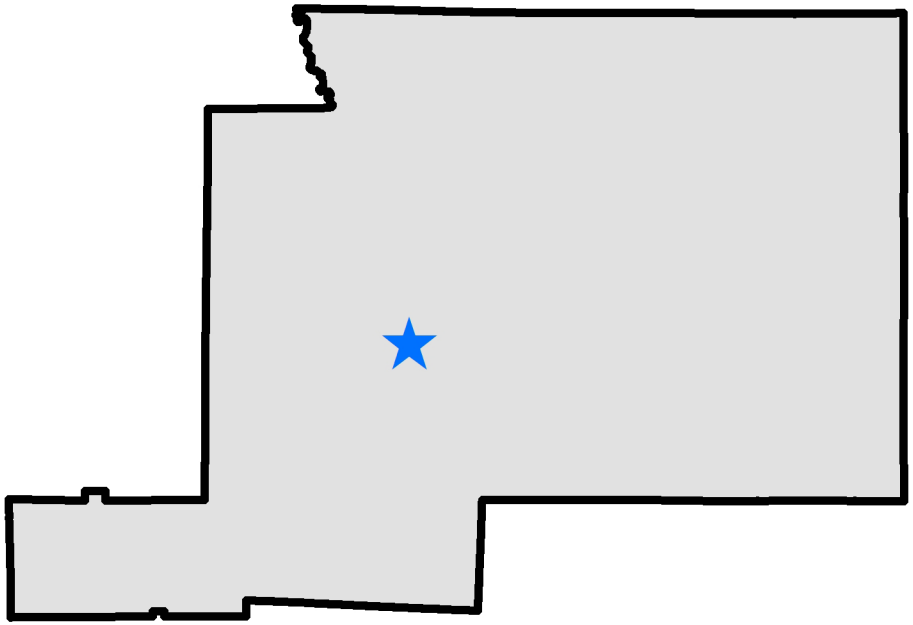
Top 3 Job Types:

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

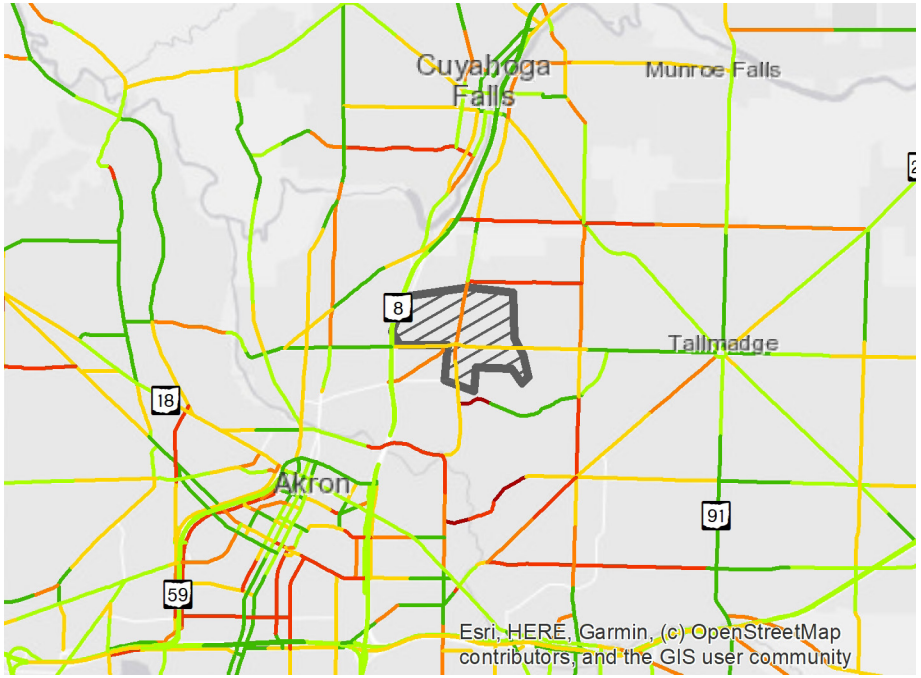
2017 Estimated Jobs:

4,000

Location:



Surrounding Pavement Conditions (2018-2019):



Very Poor Poor Fair Good Very Good Excellent

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 TRAFIC	TOTAL CRASHES	CRASH RATE	SEVERITY INDEX
Cuyahoga Falls	8	44	Howe Ave	Buchholzer Blvd	20,890	44	1.92	1.41

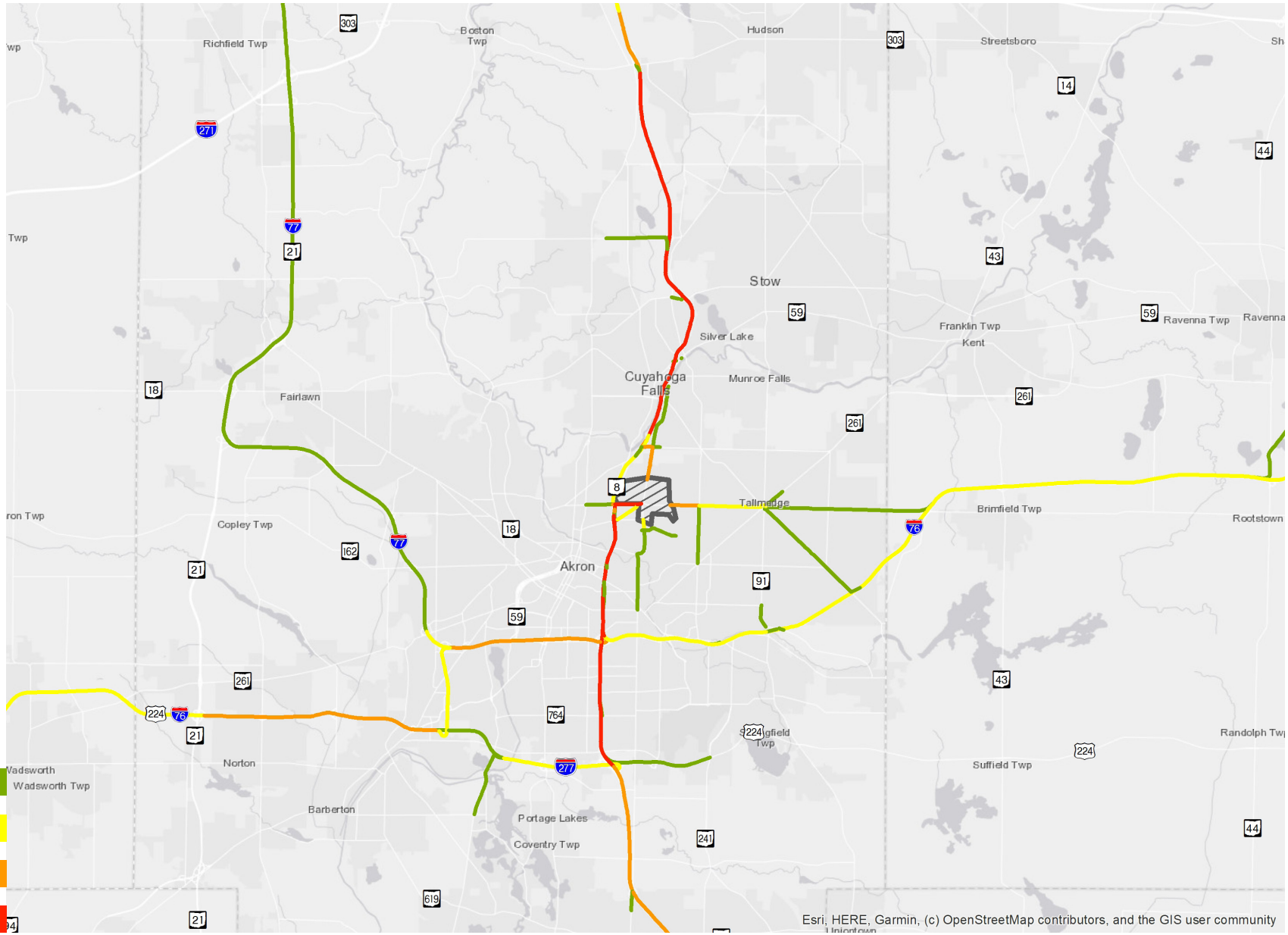
Top Congested Locations

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 Tallmdage 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

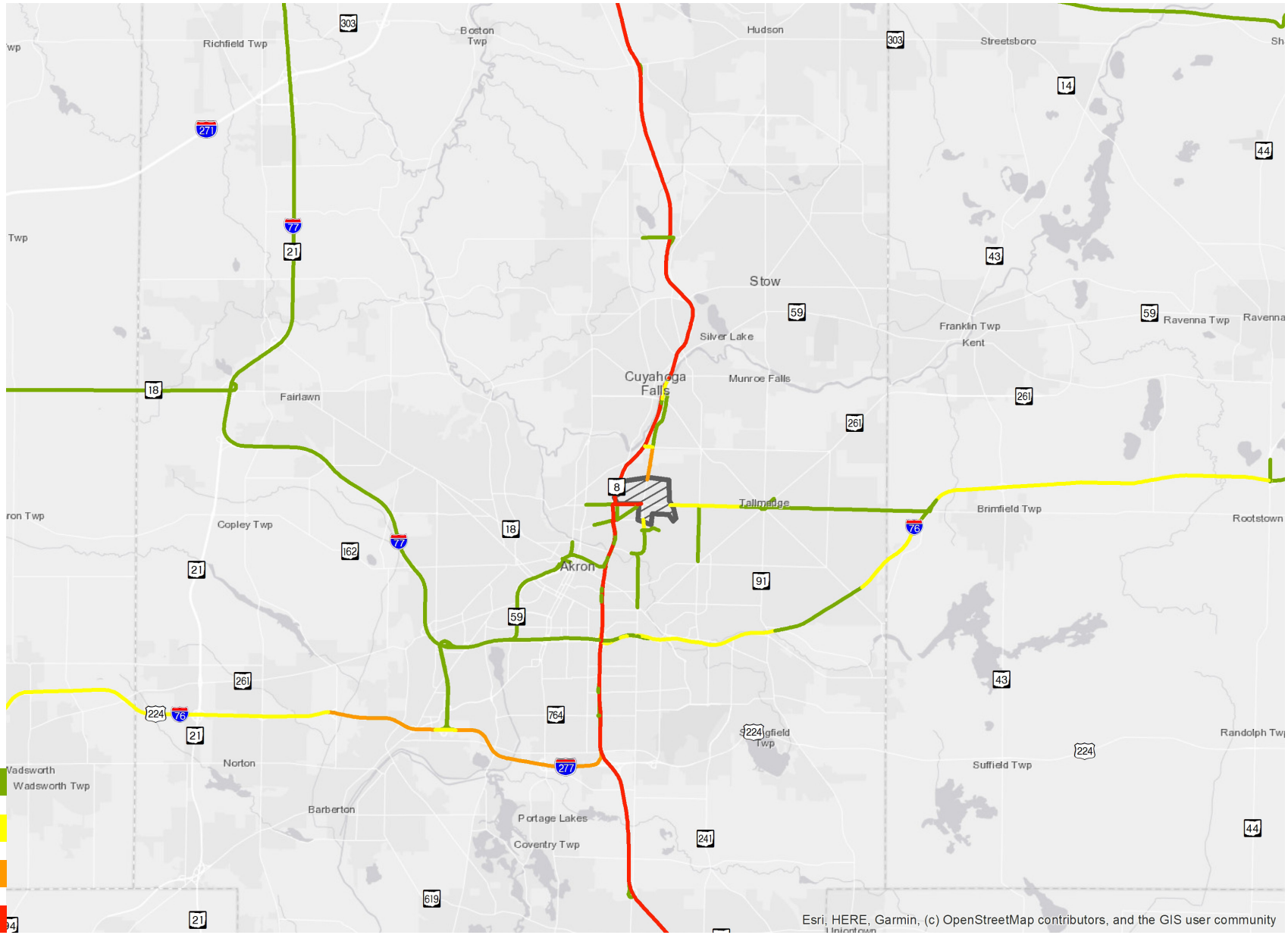


Percentage of Inbound Truck Trips

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

Chapel Hill Freight Corridor

OUTBOUND TRUCK TRAFFIC



Percentage of Outbound Truck Trips

- .1% - 5%
- 5.% - 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.

Key Freeway / Highway Access:

SR-8
SR-59

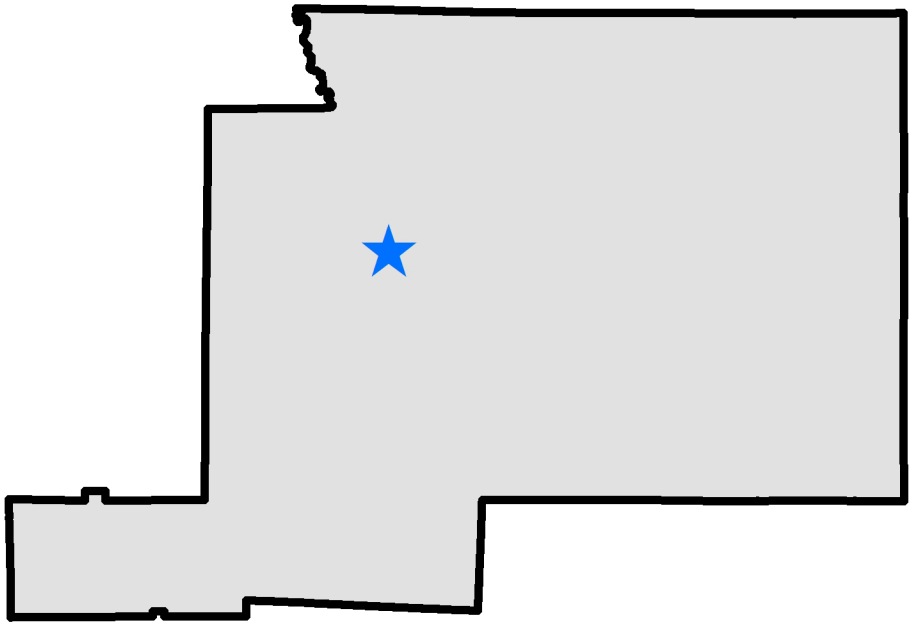
Top 3 Job Types:

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

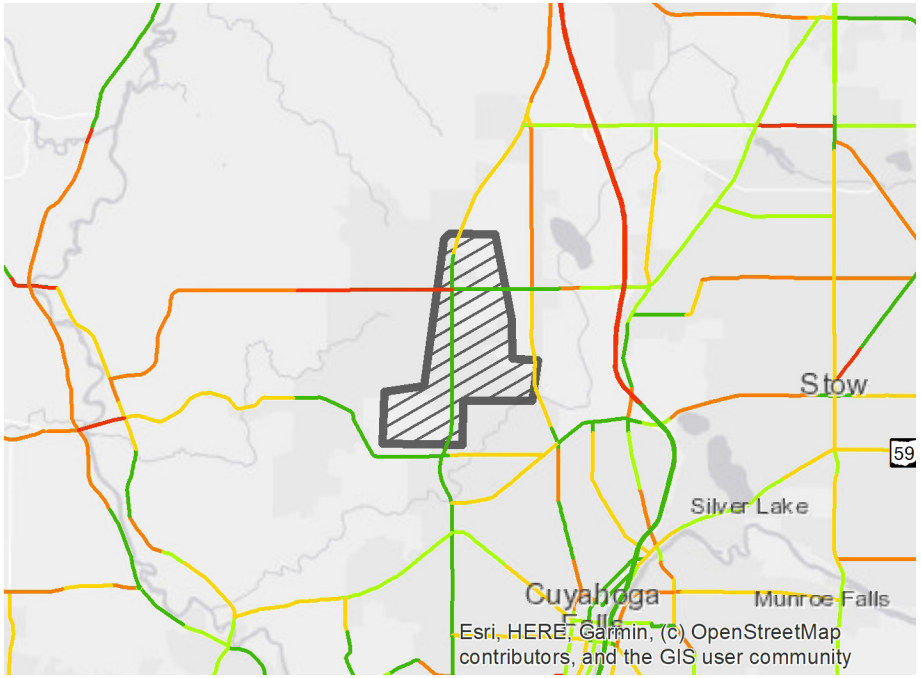
2017 Estimated Jobs:

5,500

Location:



Surrounding Pavement Conditions (2018-2019):



Very Poor Poor Fair Good Very Good Excellent

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 TRAFIC	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

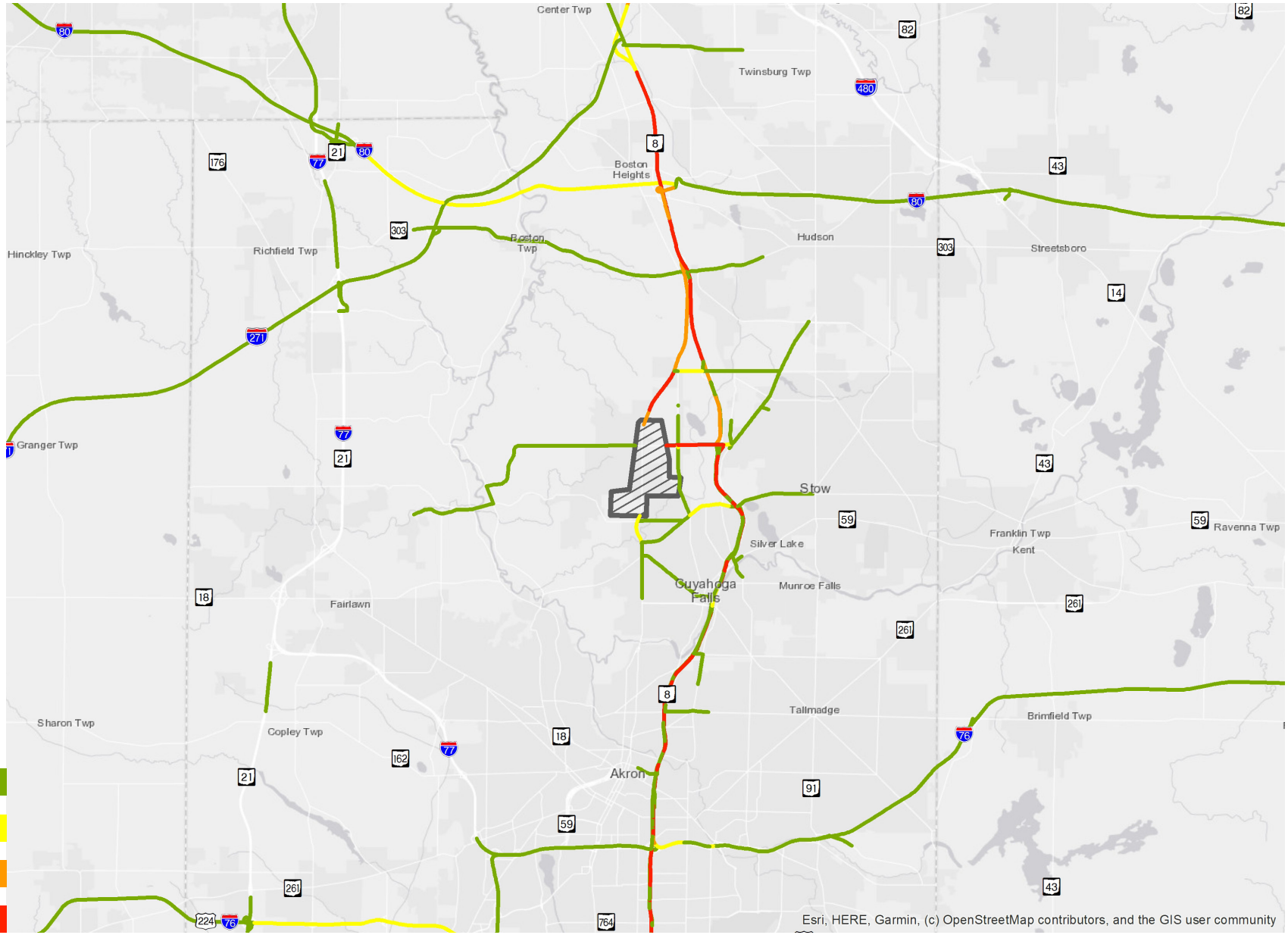
Top Congested Locations

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

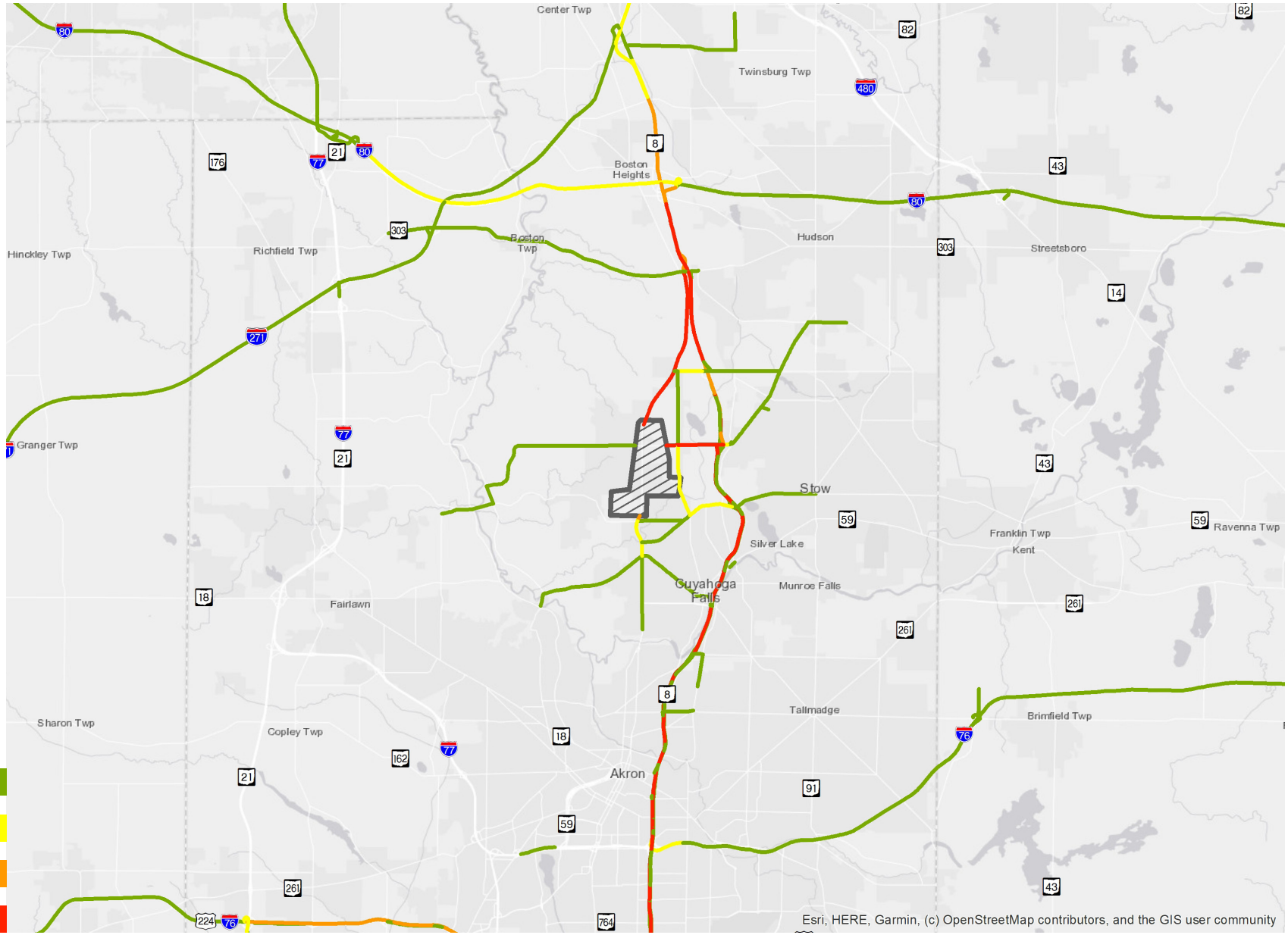


Percentage of Inbound Truck Trips

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

Cuyahoga Falls Freight Corridor

OUTBOUND TRUCK TRAFFIC



Percentage of Outbound Truck Trips

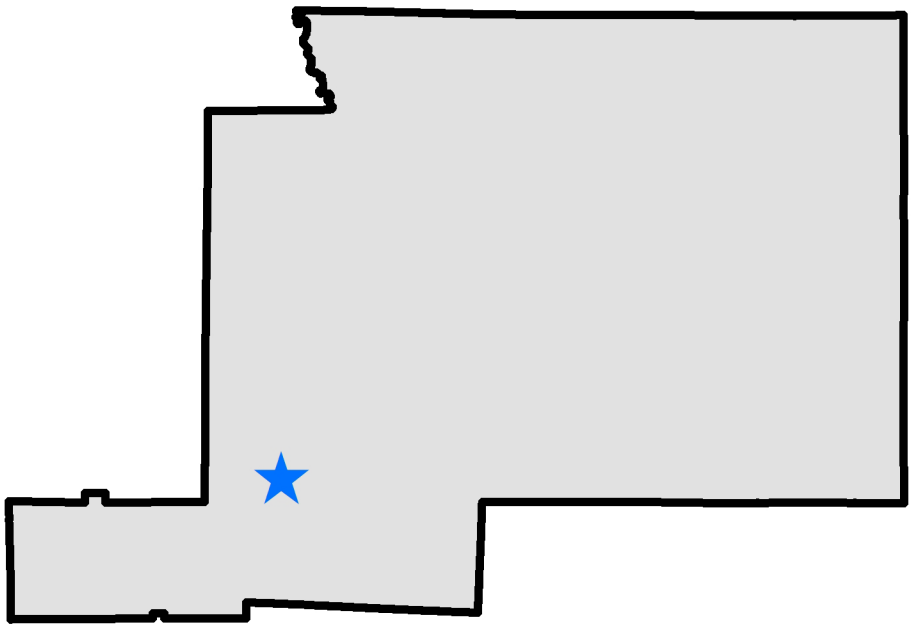
- .1% - 5%
- 5.% - 10%
- 10.1% - 15%
- 15.1% - 44.6%

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

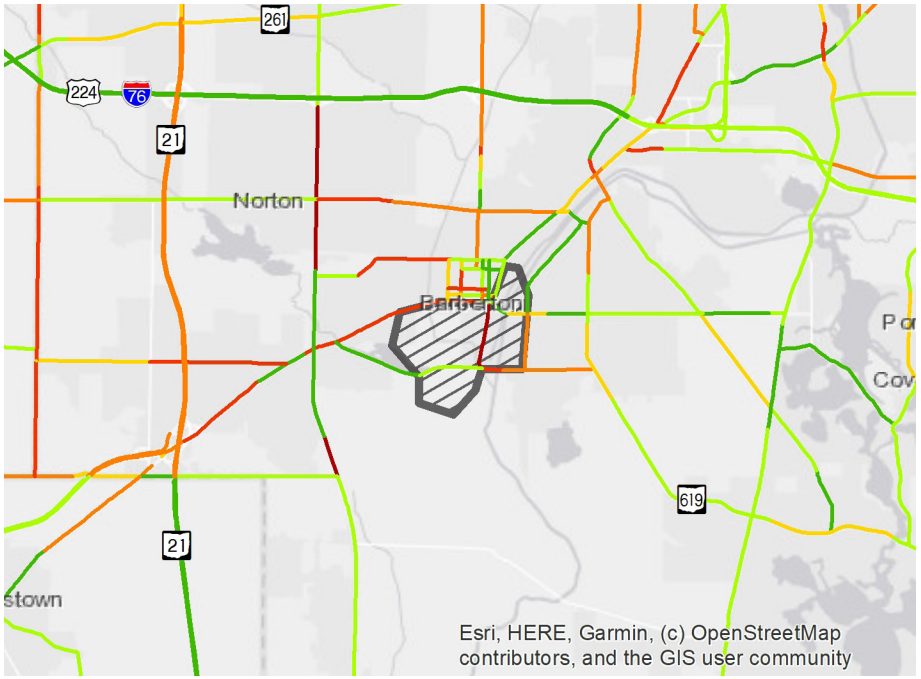
Top 3 Job Types:

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

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 *(crash;es 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 TRAFIC	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

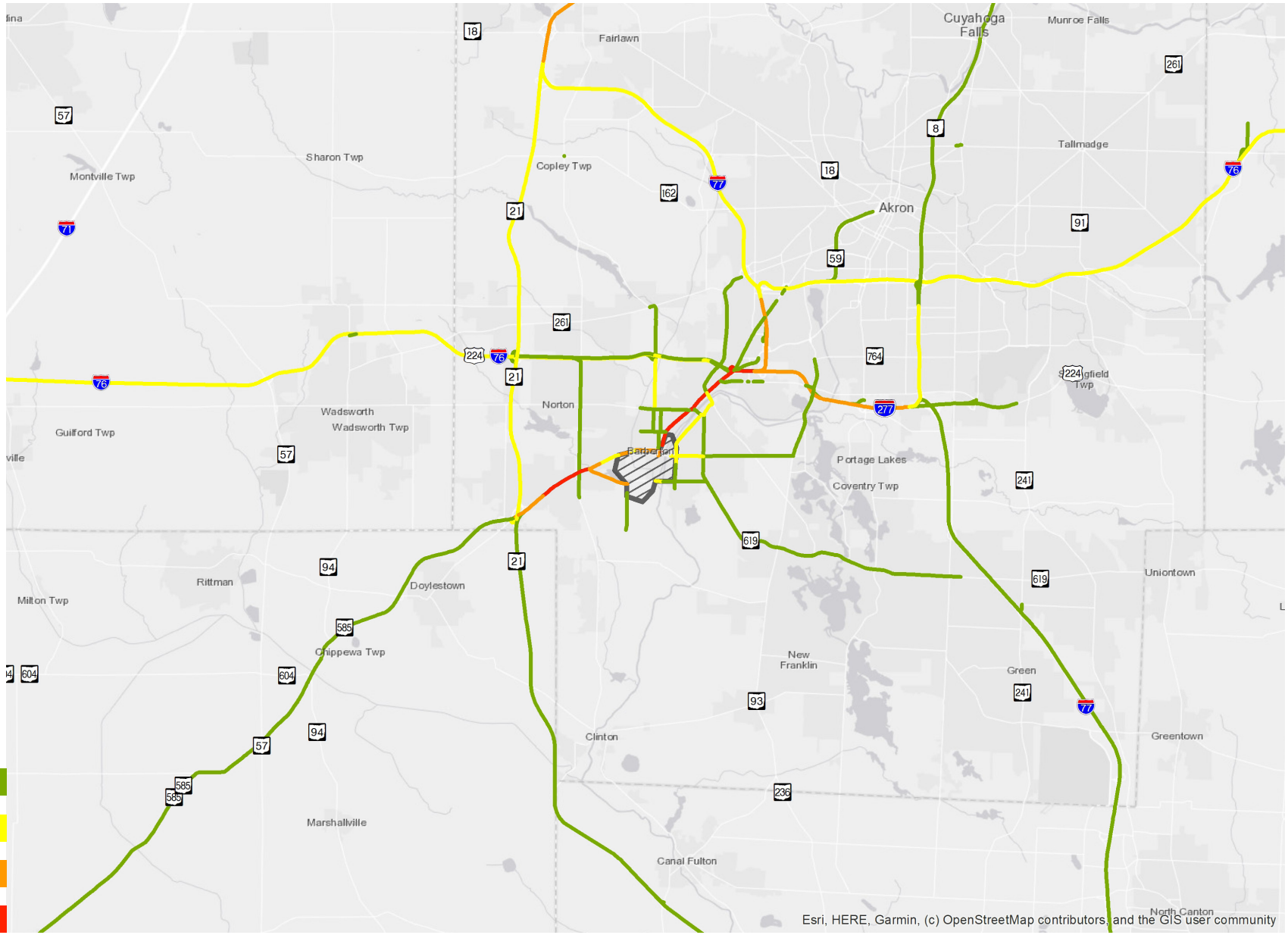
Top Congested Locations

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

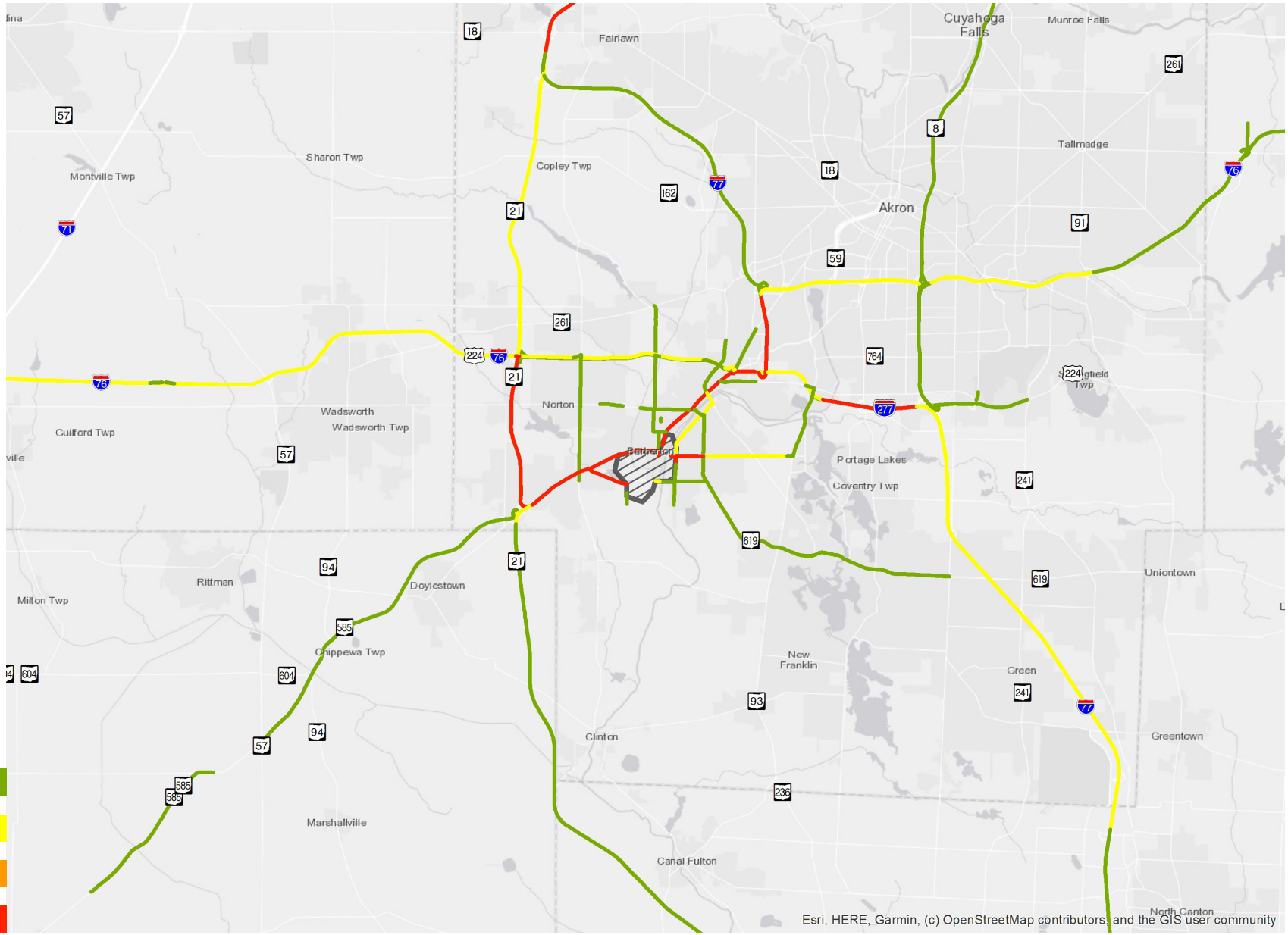


Percentage of Inbound Truck Trips

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

Barberton Freight Corridor

OUTBOUND TRUCK TRAFFIC



Percentage of Outbound Truck Trips

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

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.

Key Freeway / Highway Access:

I-77
SR-619

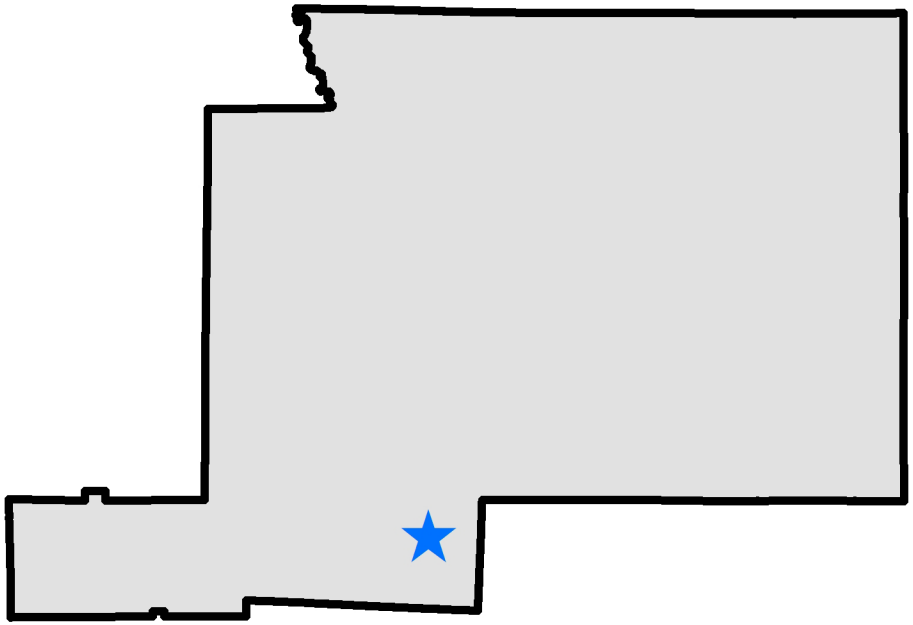
Top 3 Job Types:

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

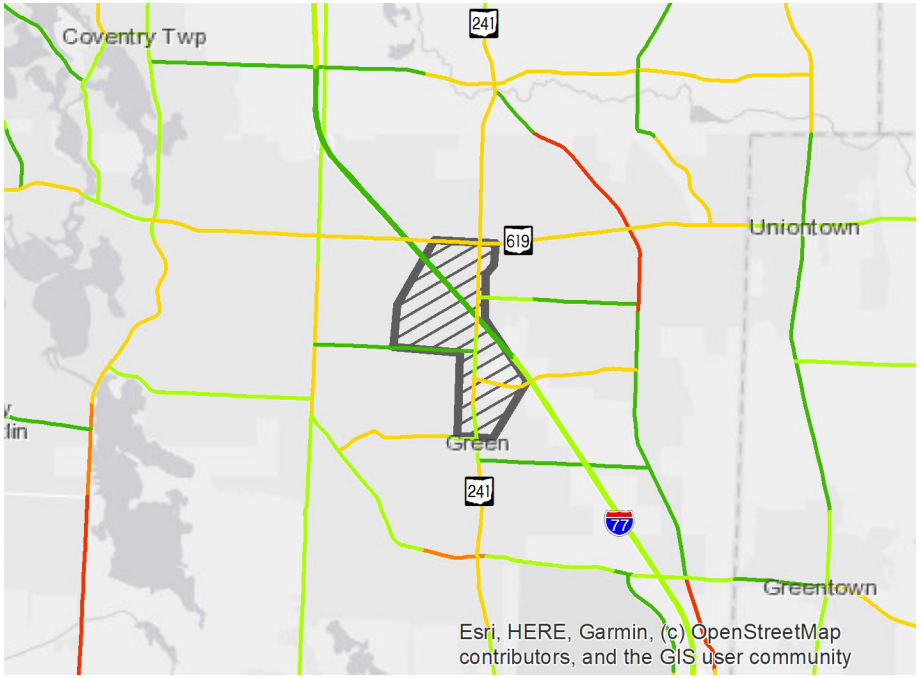
2017 Estimated Jobs:

7,000

Location:



Surrounding Pavement Conditions (2018-2019):



Very Poor Poor Fair Good Very Good Excellent

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 TRAFIC	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

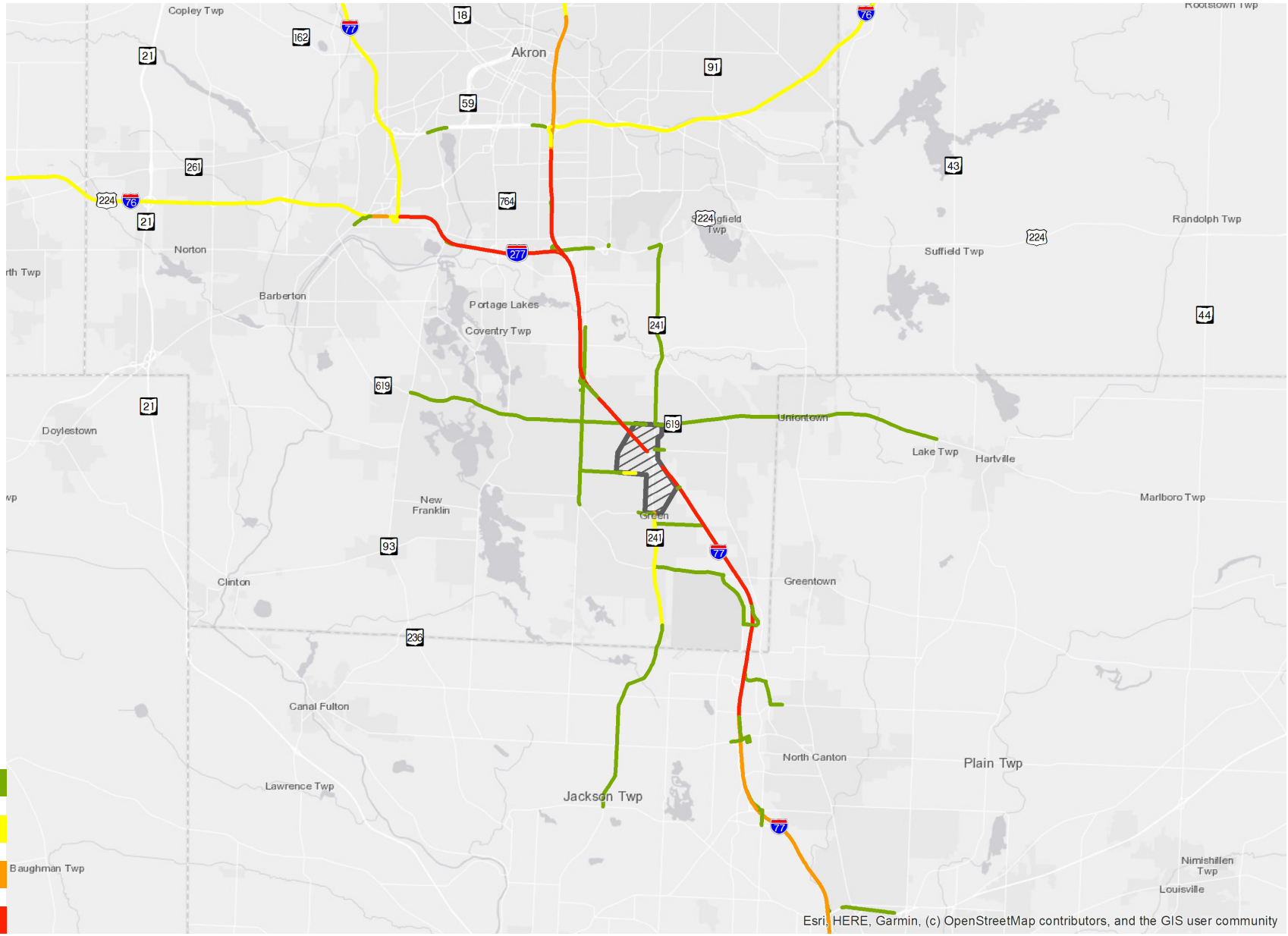
Top Congested Locations

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

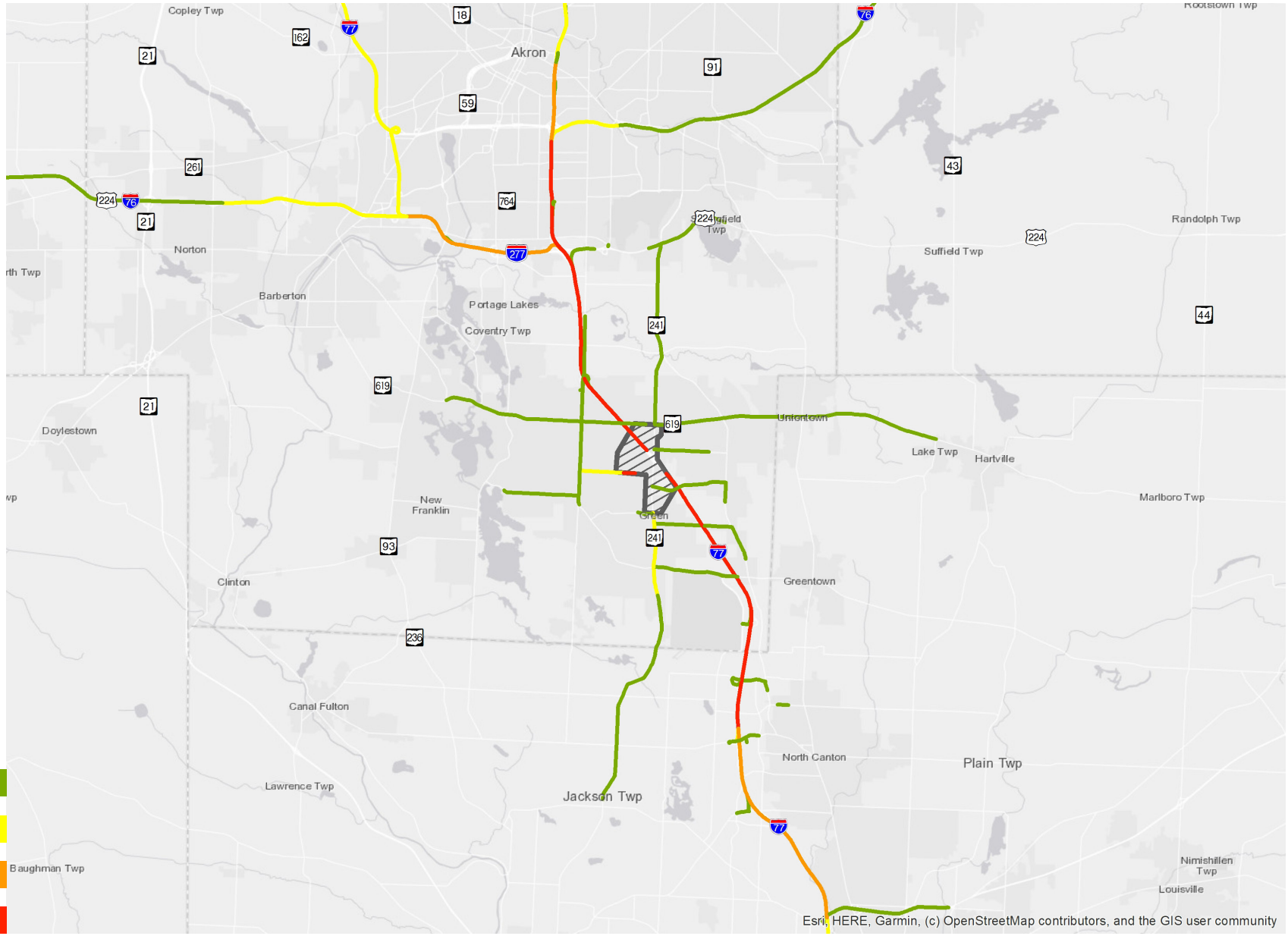


Percentage of Inbound Truck Trips

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

Green Freight Corridor

OUTBOUND TRUCK TRAFFIC



Percentage of Outbound Truck Trips

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

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.

Key Freeway / Highway Access:

I-77
SR-241

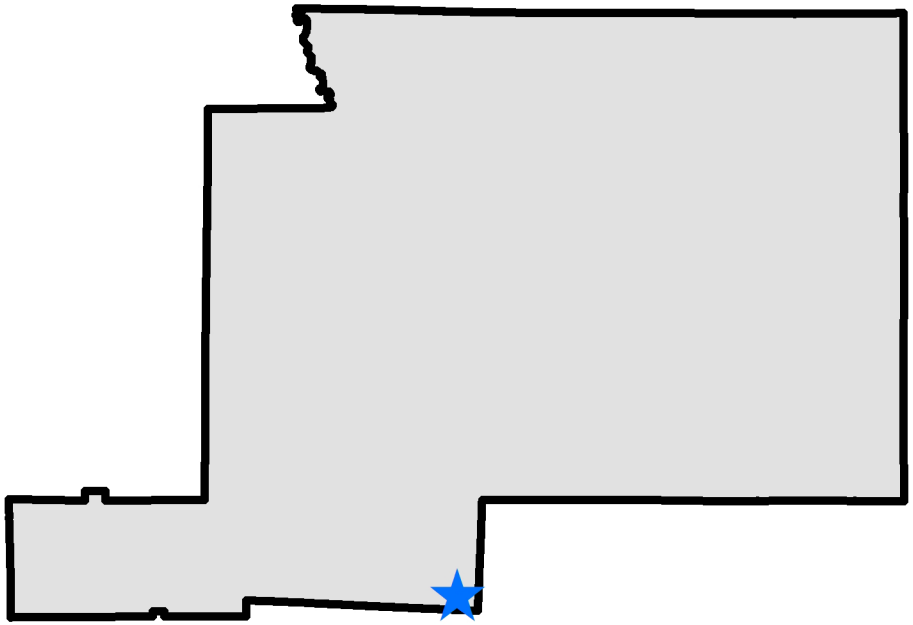
Top 3 Job Types:

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

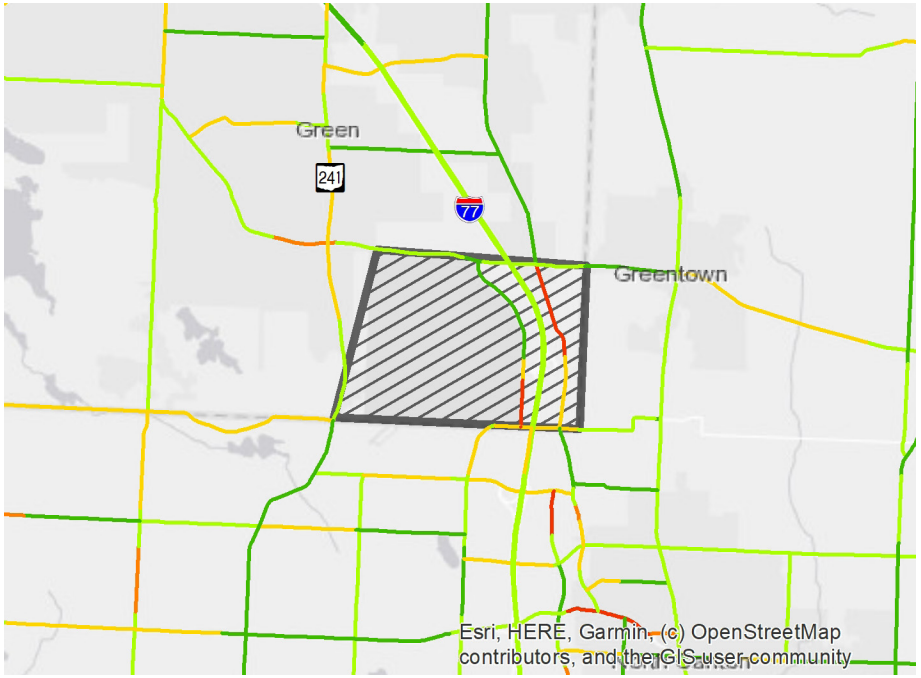
2017 Estimated Jobs:

4,500

Location:



Surrounding Pavement Conditions (2018-2019):



Very Poor Poor Fair Good Very Good Excellent

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 TRAFIC	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

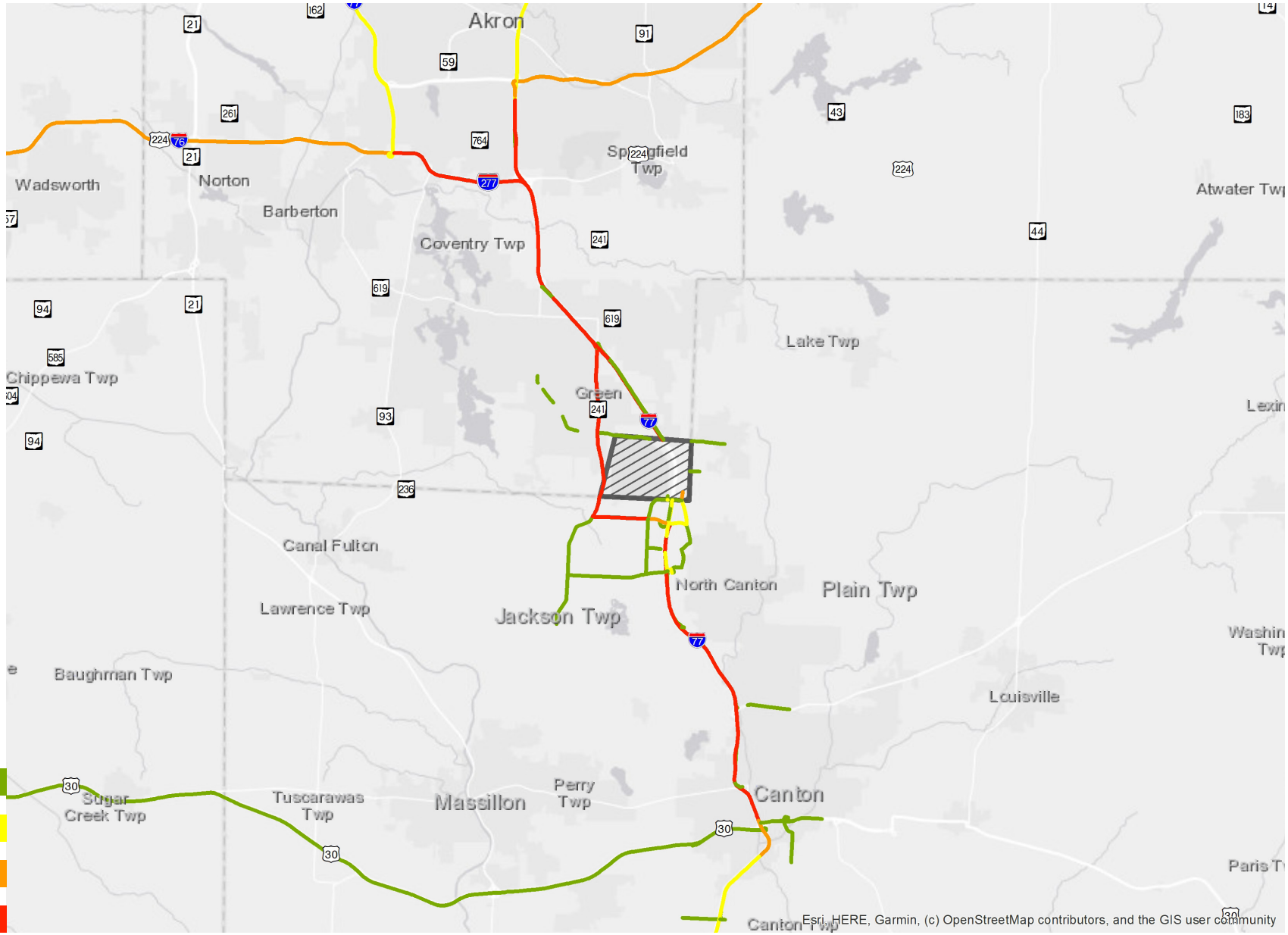
Top Congested Locations

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

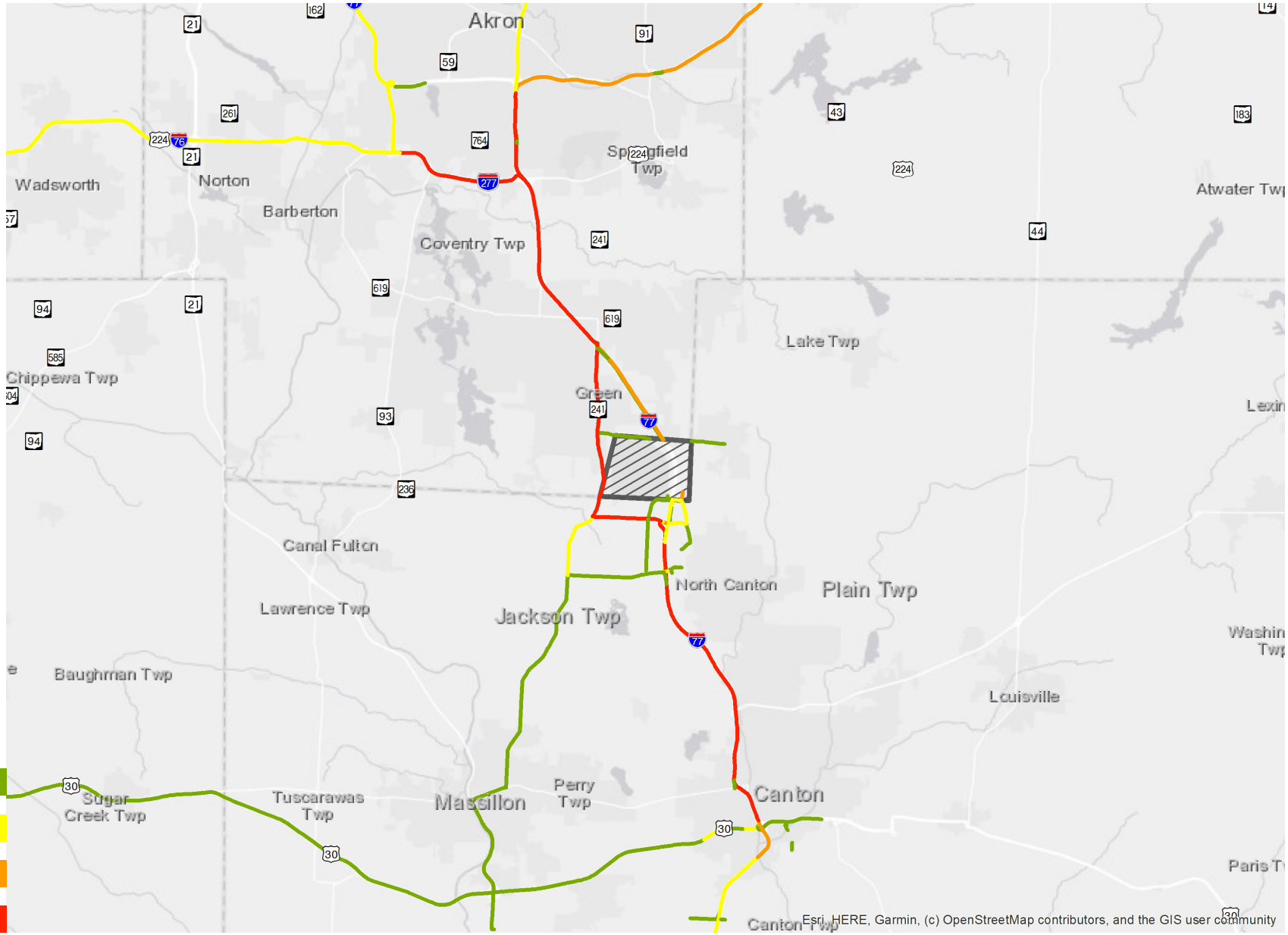


Percentage of Inbound Truck Trips

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

Akron-Canton Airport Freight Corridor

OUTBOUND TRUCK TRAFFIC



Percentage of Outbound Truck Trips

- .1% - 5%
- 5.% - 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.

Key Freeway / Highway Access:

I-76
SR-43

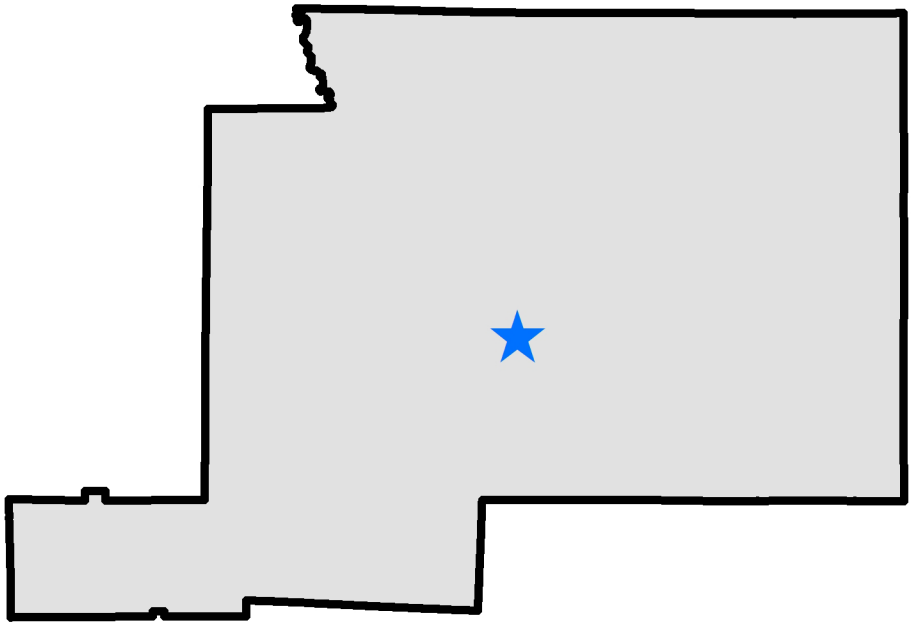
Top 3 Job Types:

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

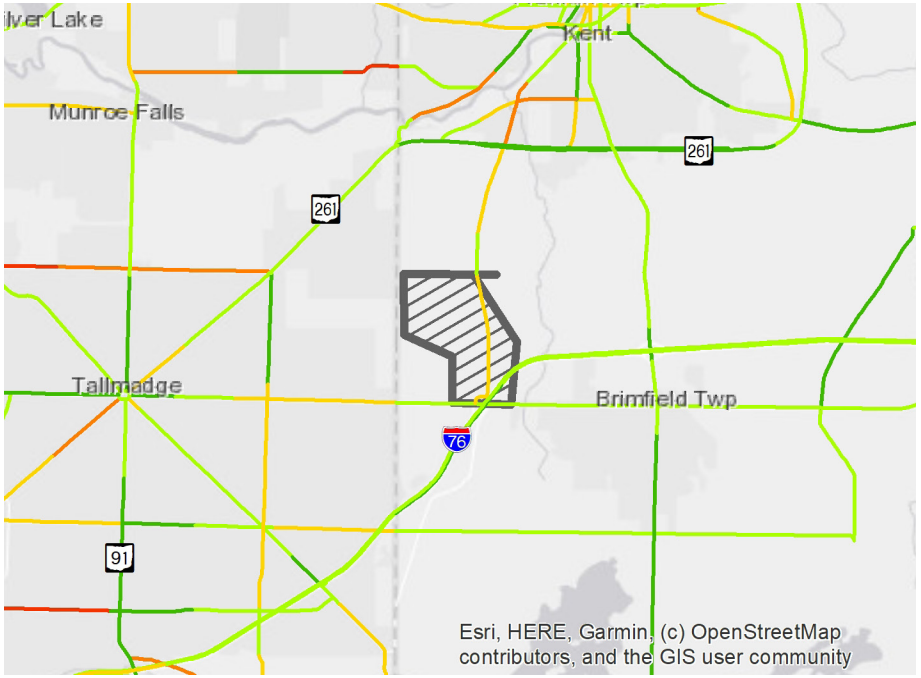
2017 Estimated Jobs:

1,000

Location:



Surrounding Pavement Conditions (2018-2019):



Very Poor Poor Fair Good Very Good Excellent

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 TRAFIC	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

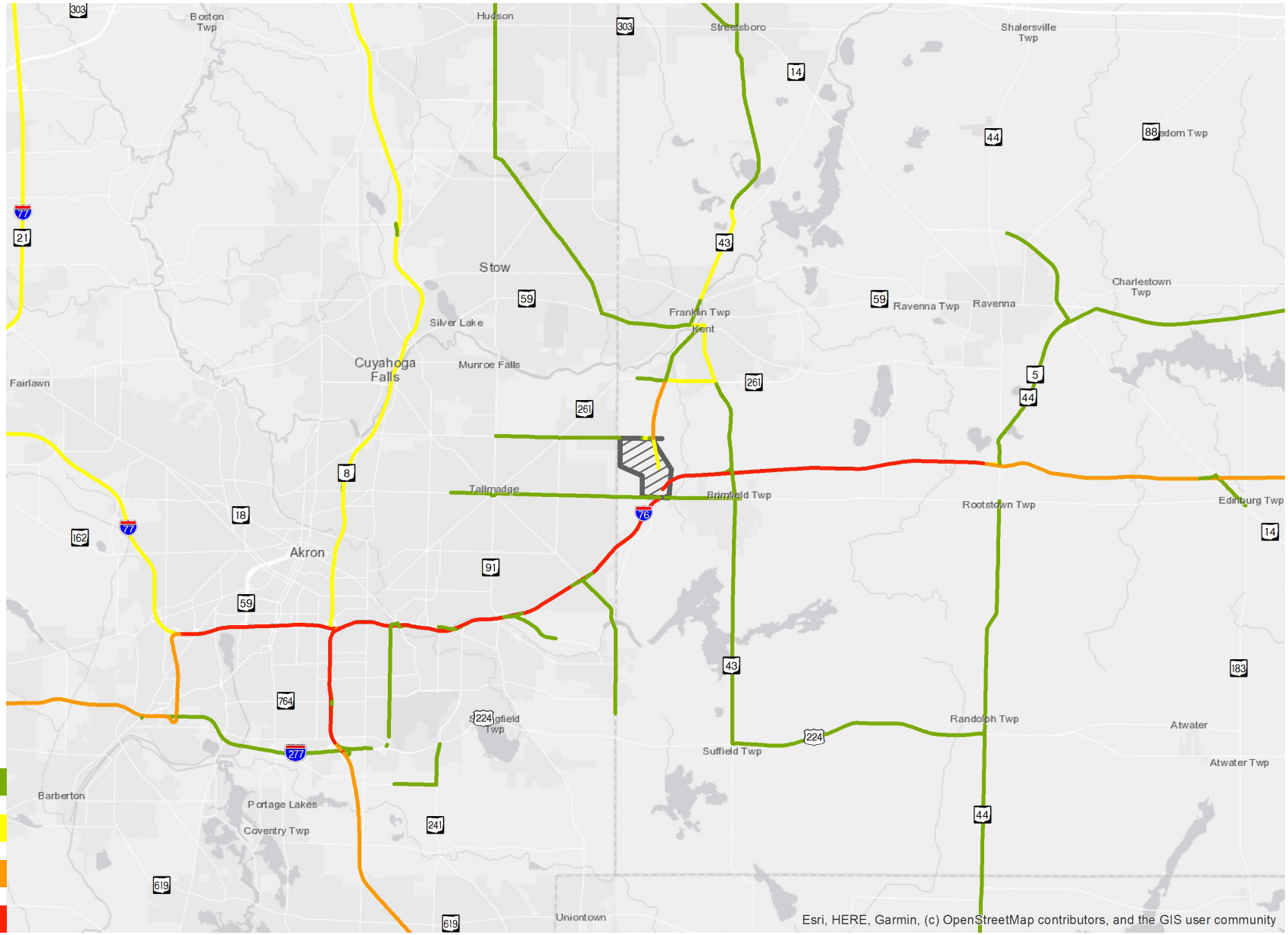
Top Congested Locations

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

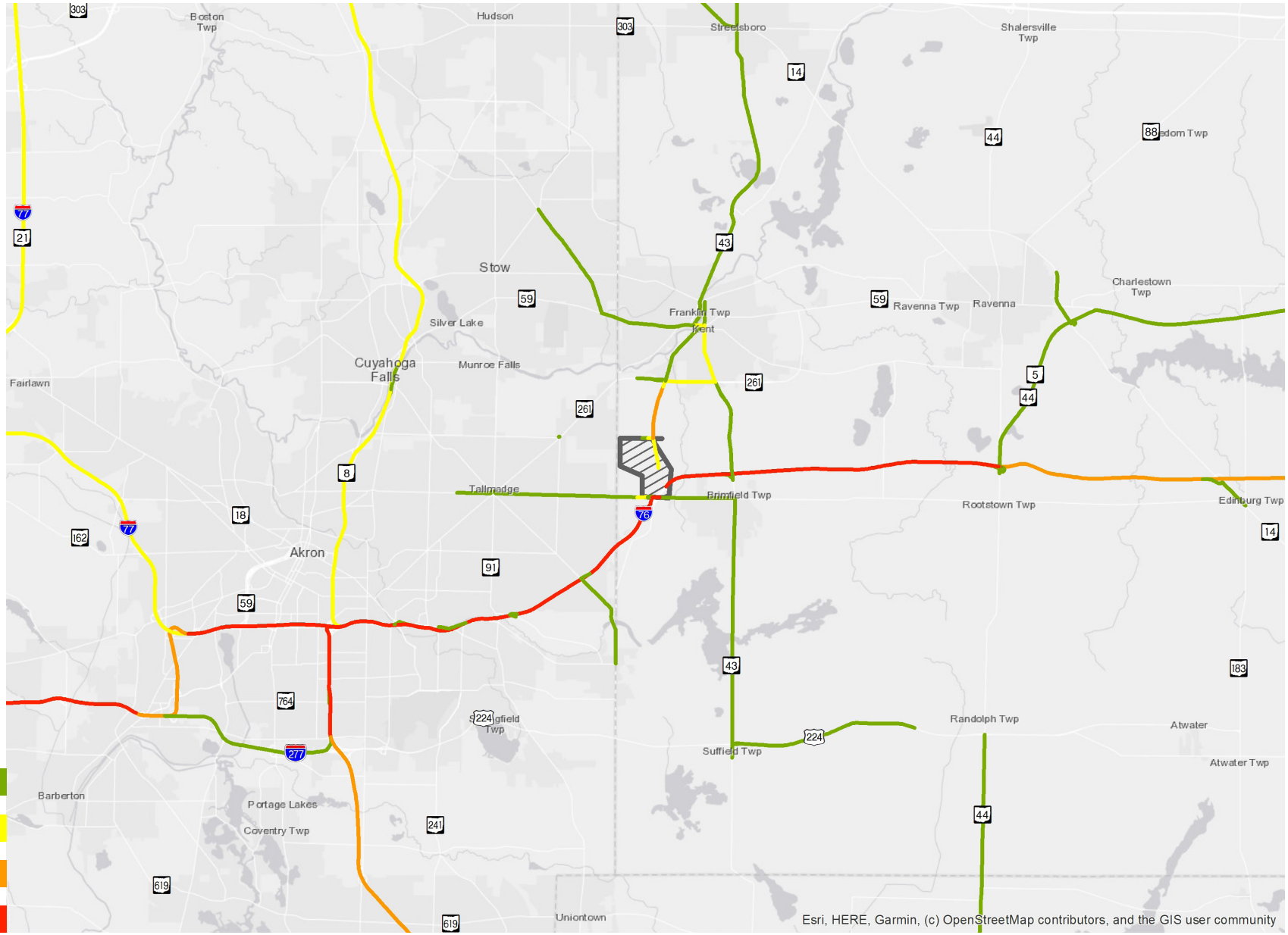


Percentage of Inbound Truck Trips

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

Brimfield Freight Corridor

OUTBOUND TRUCK TRAFFIC



Percentage of Outbound Truck Trips

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

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.

Key Freeway / Highway Access:

I-76
SR-91

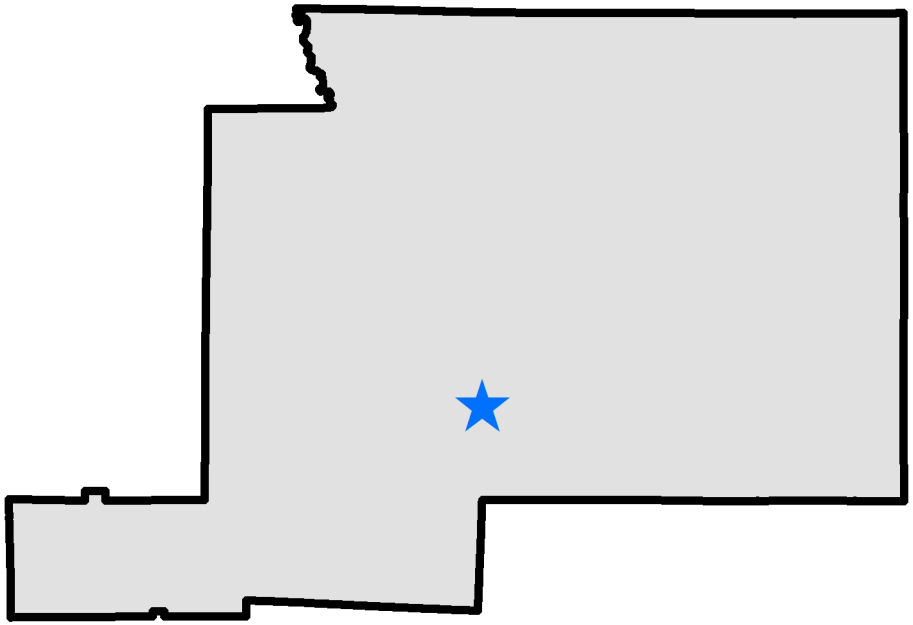
Top 3 Job Types:

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

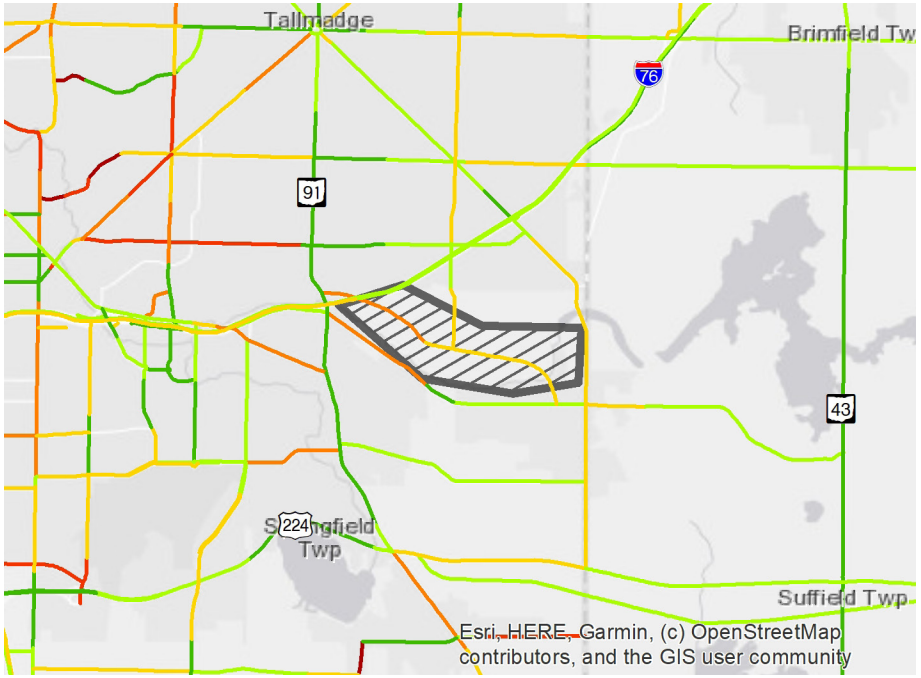
2017 Estimated Jobs:

3,000

Location:



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 *(crash;es 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 TRAFIC	TOTAL CRASHES	CRASH RATE	SEVERITY INDEX
Akron	131	263	Canton Rd (SR-91)	Gilchrist Rd	25,365	29	1.045	1.28

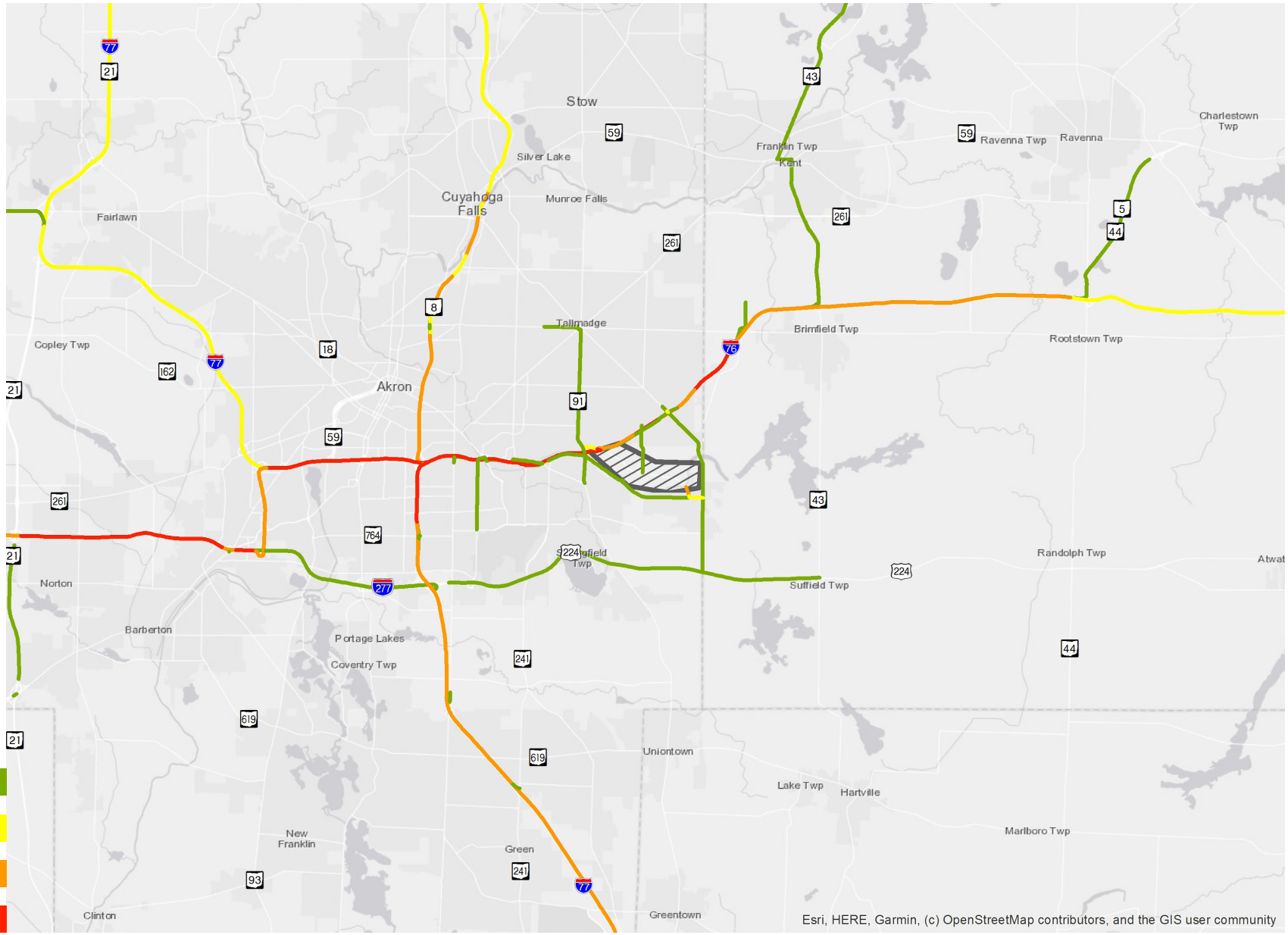
Top Congested Locations

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

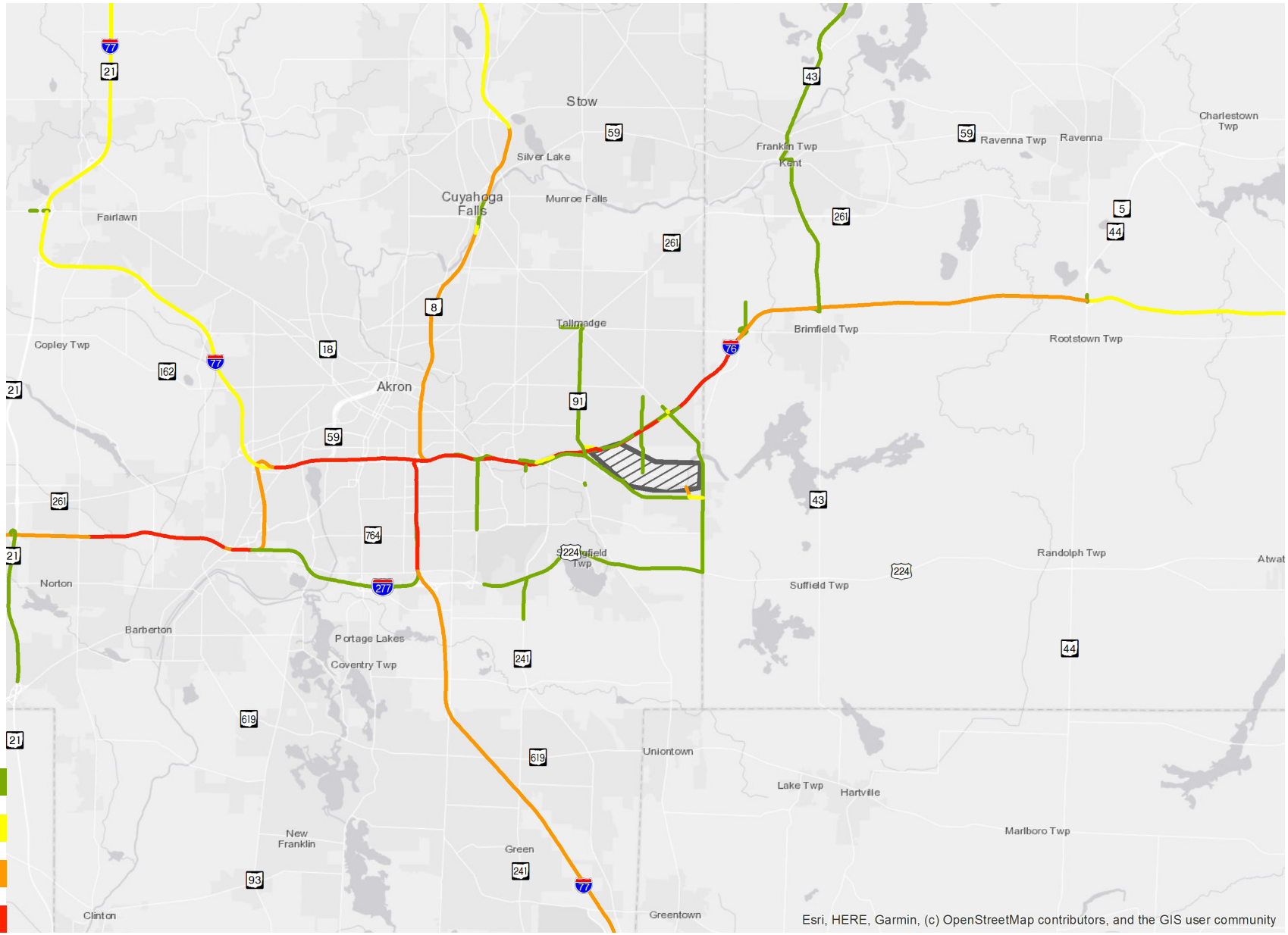


Percentage of Inbound Truck Trips

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

Gilchrist Road Freight Corridor

OUTBOUND TRUCK TRAFFIC



Percentage of Outbound Truck Trips

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

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.

Key Freeway / Highway Access:

I-80
I-271

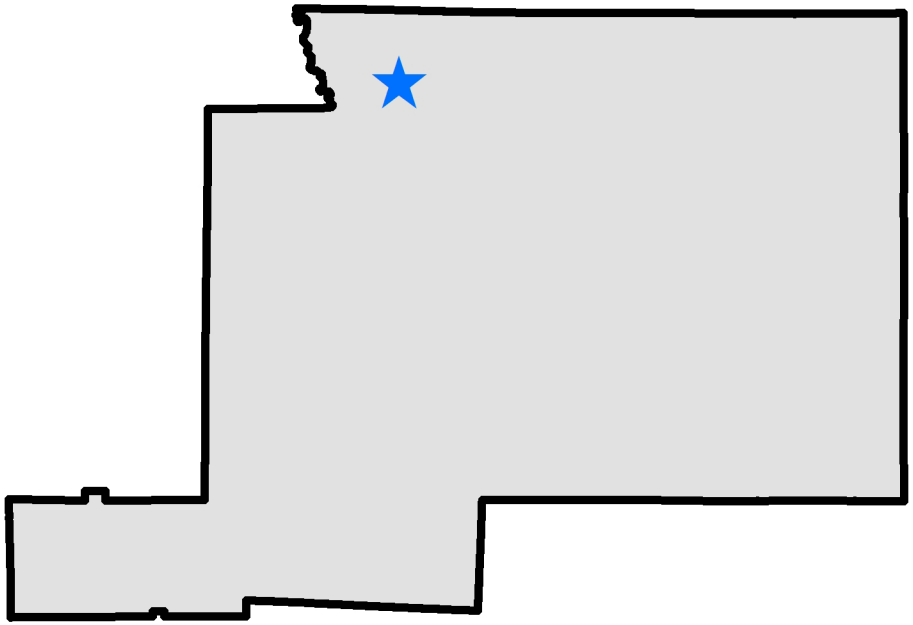
Top 3 Job Types:

1. Manufacturing
2. Wholesale Trade
3. Retail Trade

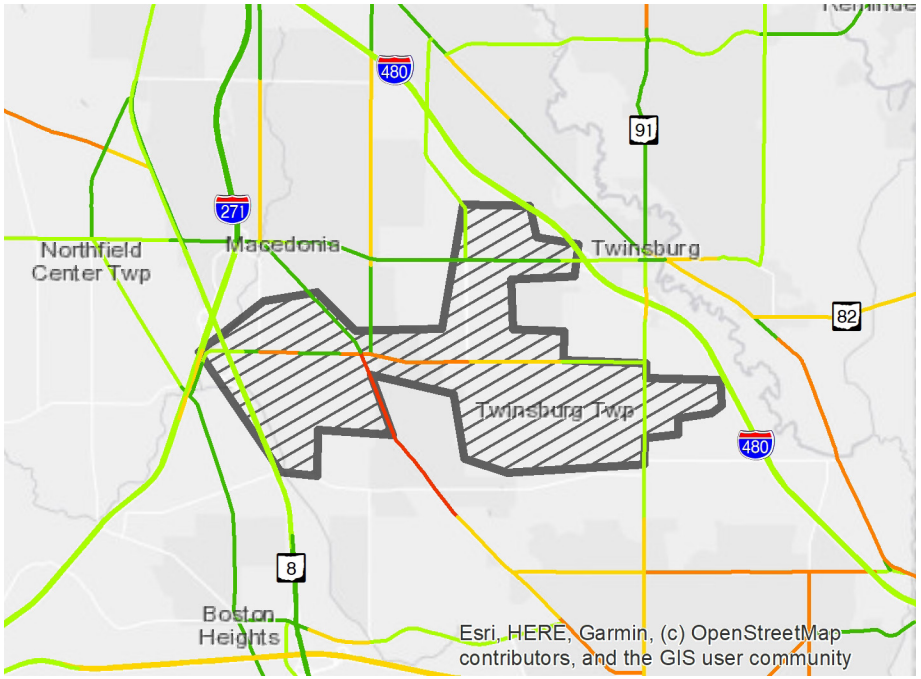
2017 Estimated Jobs:

17,000

Location:



Surrounding Pavement Conditions (2018-2019):



Very Poor Poor Fair Good Very Good Excellent

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 *(crash;es 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	Darrpw 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	Darrpw Rd (SR-91)	0.56	18,250	30	18	2.67
Twinsburg	3	164	W Aurora Rd / Ravenna Rd (SR-82)	Darrpw 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 TRAFIC	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

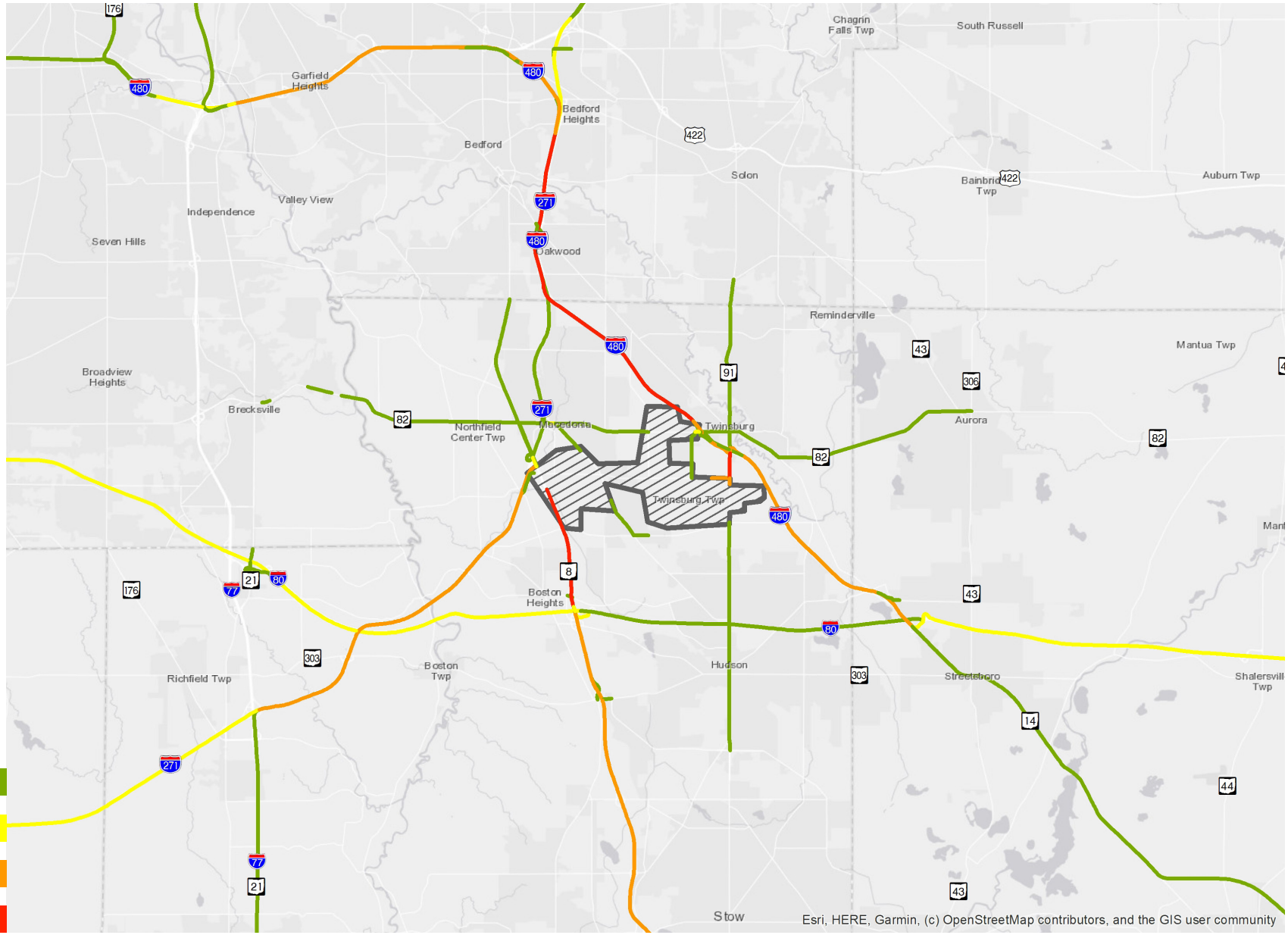
Top Congested Locations

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

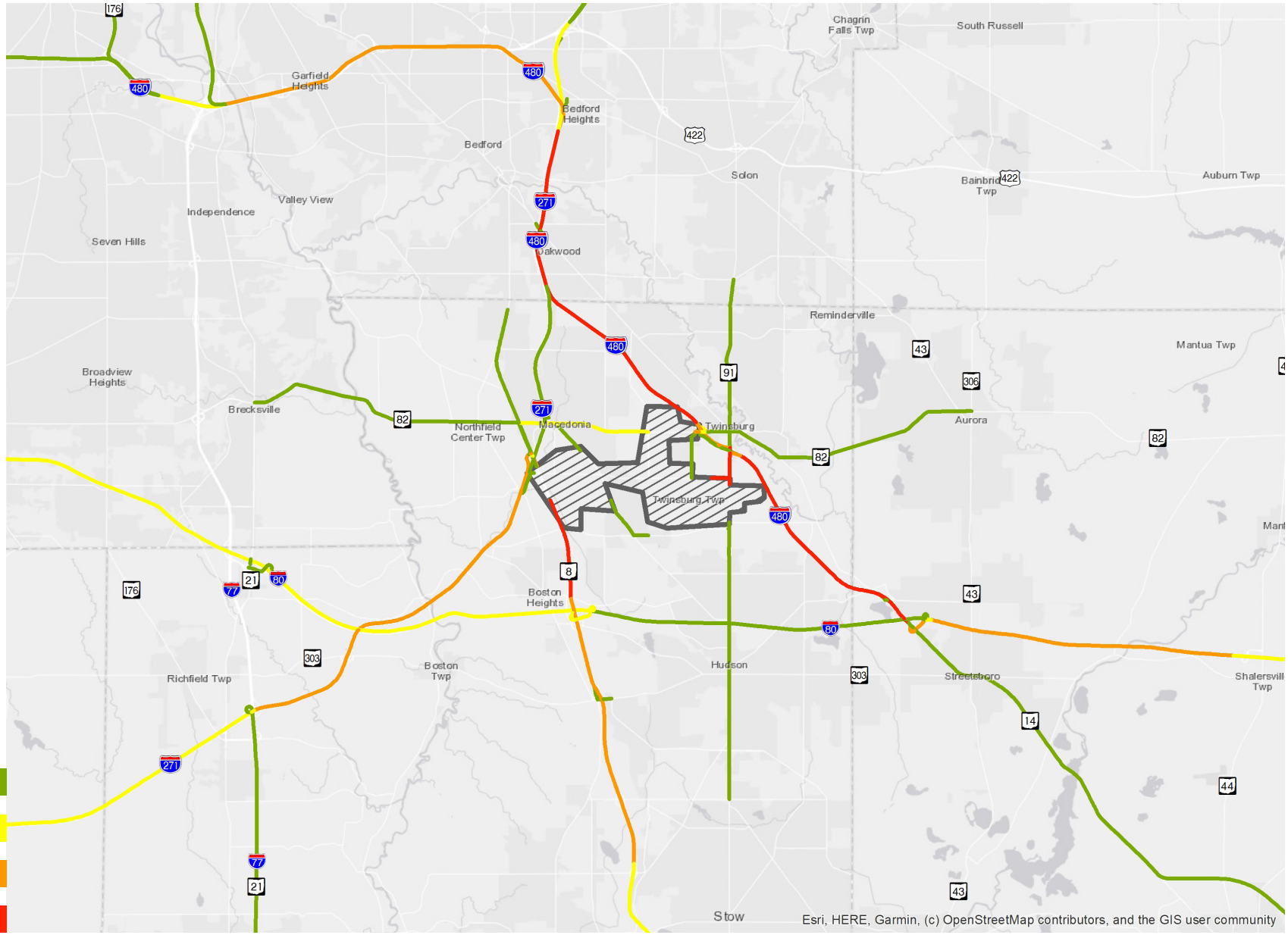


Percentage of Inbound Truck Trips

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

Twinsburg Freight Corridor

OUTBOUND TRUCK TRAFFIC



Percentage of Outbound Truck Trips

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

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.

Key Freeway / Highway Access:

I-80
SR-43

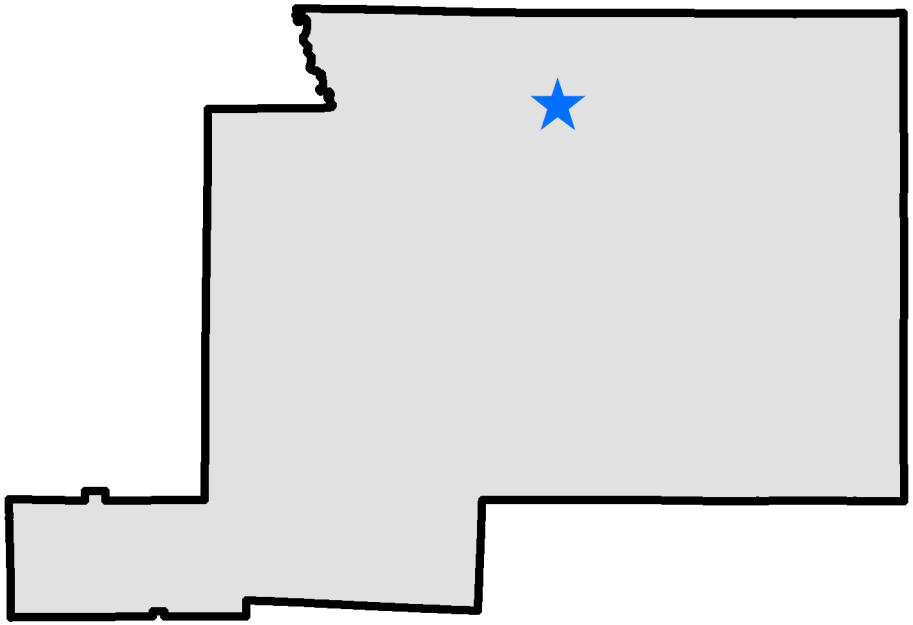
Top 3 Job Types:

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

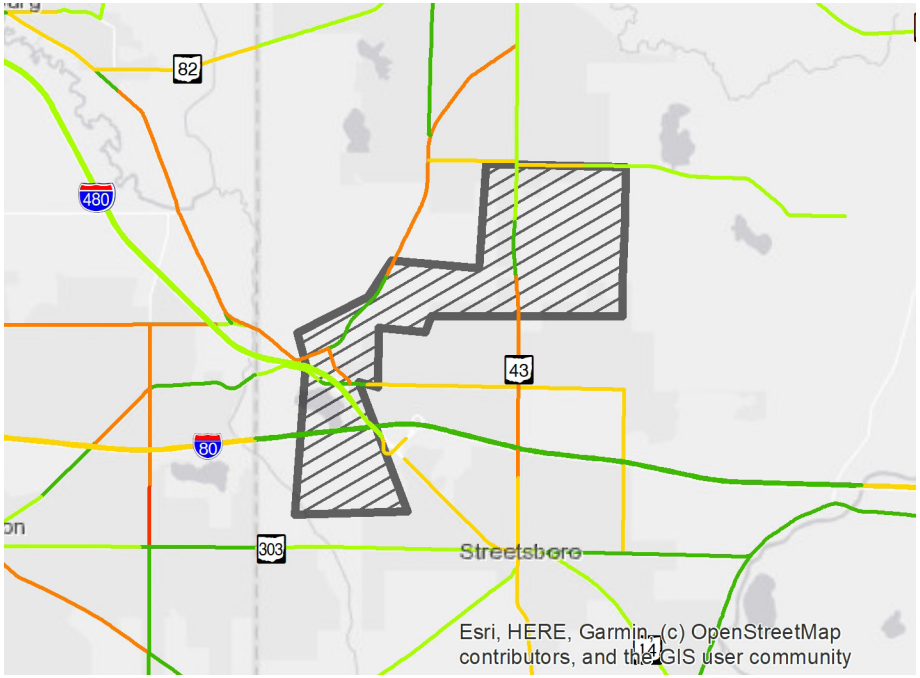
2017 Estimated Jobs:

6,500

Location:



Surrounding Pavement Conditions (2018-2019):



Very Poor Poor Fair Good Very Good Excellent

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 TRAFIC	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

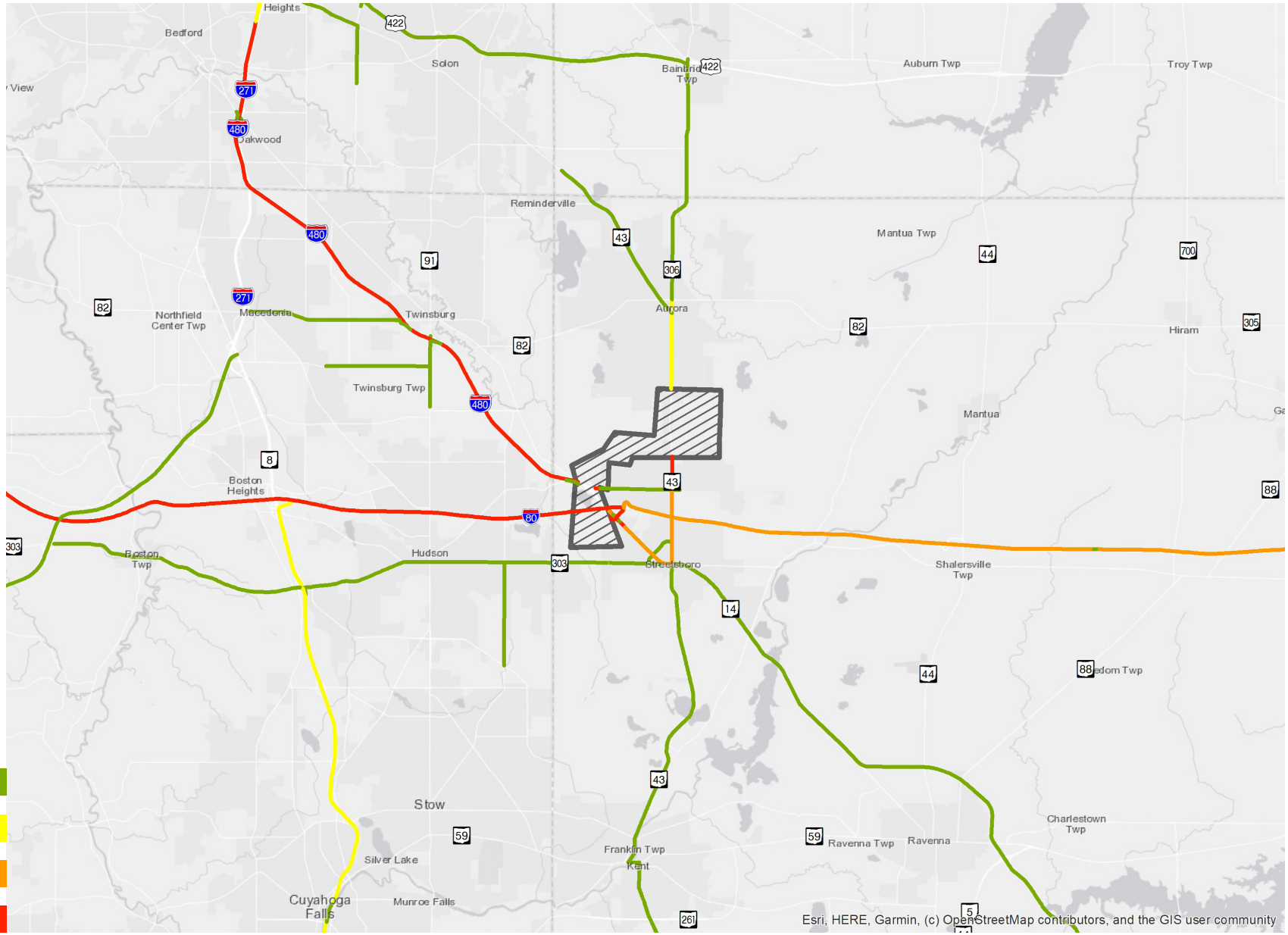
Top Congested Locations

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

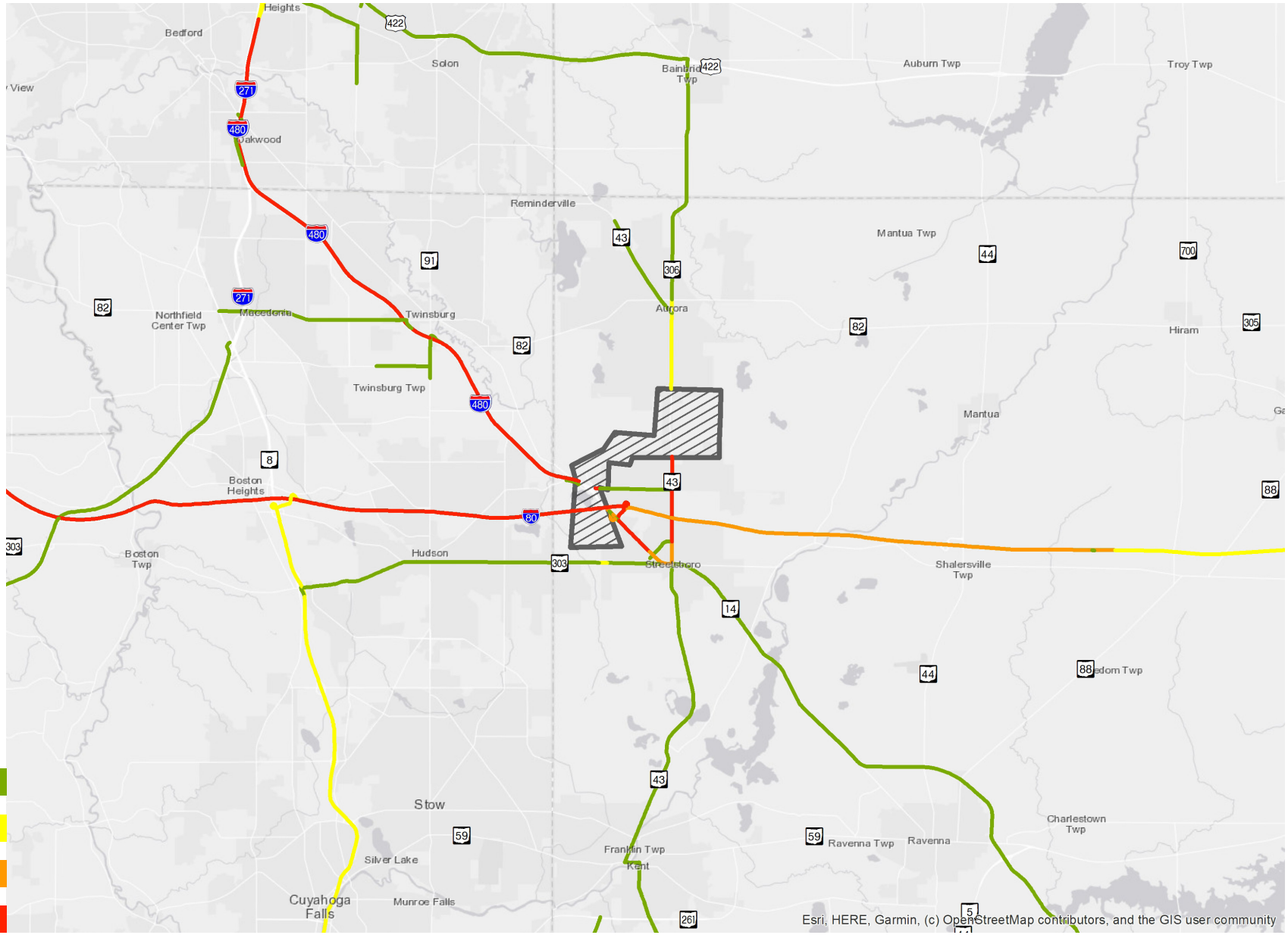


Percentage of Inbound Truck Trips

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

Aurora / Streetsboro Freight Corridor

OUTBOUND TRUCK TRAFFIC



Percentage of Outbound Truck Trips

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

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.

Key Freeway / Highway Access:

I-76
US-224

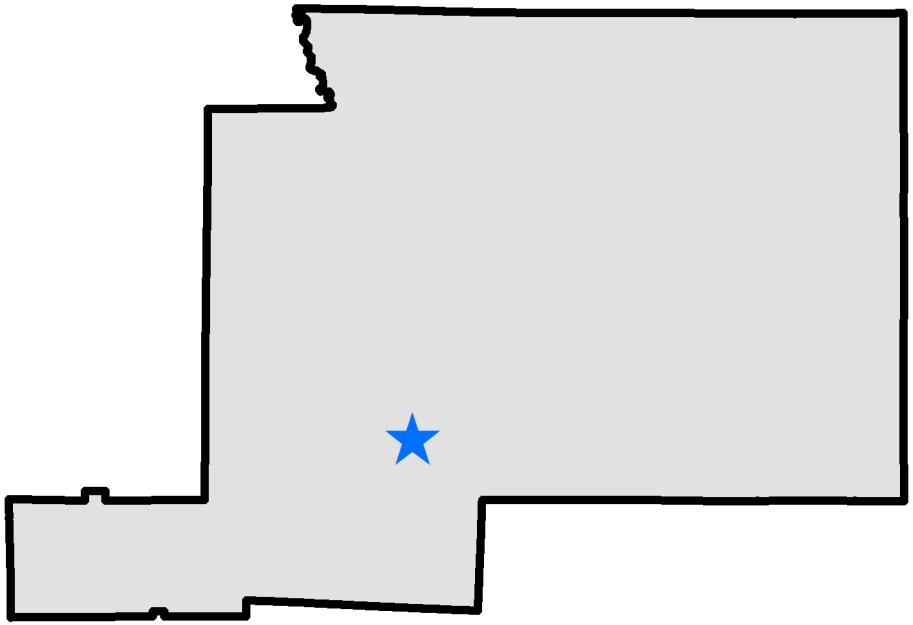
Top 3 Job Types:

1. Manufacturing
2. Construction
3. Transportation and Warehousing

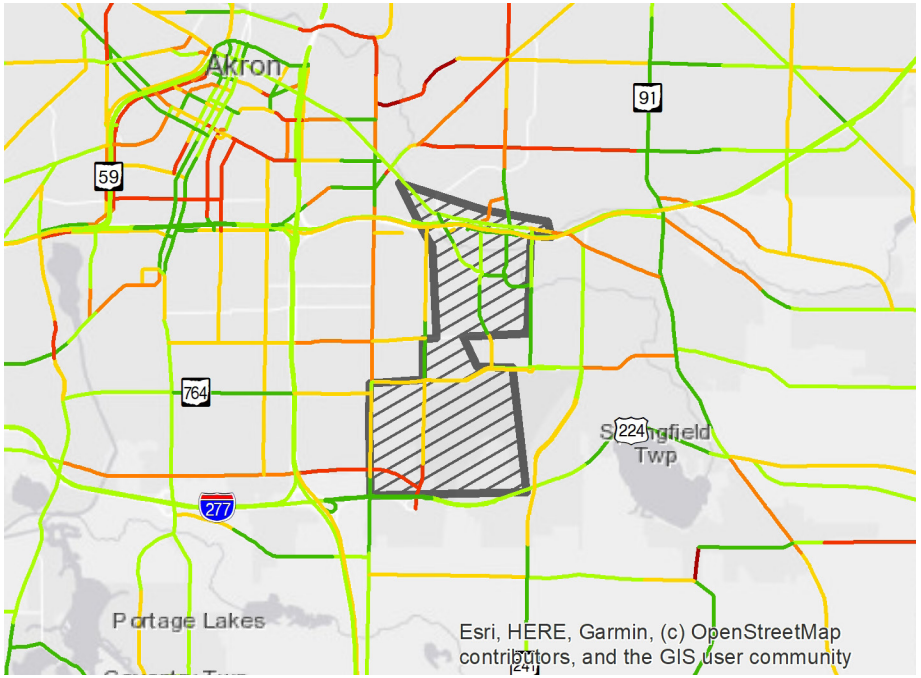
2017 Estimated Jobs:

8,000

Location:



Surrounding Pavement Conditions (2018-2019):



Very Poor Poor Fair Good Very Good Excellent

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 TRAFIC	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

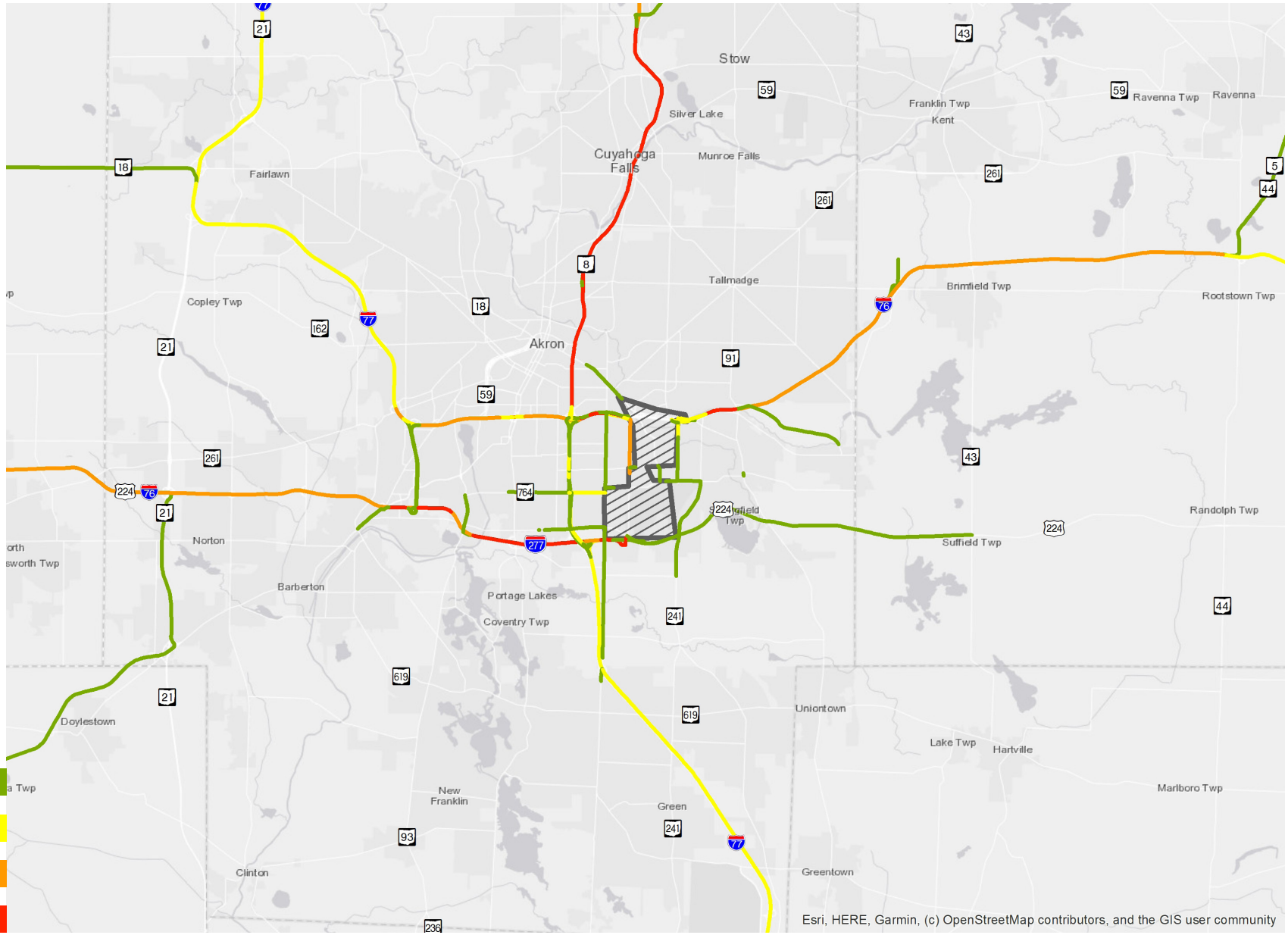
Top Congested Locations

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

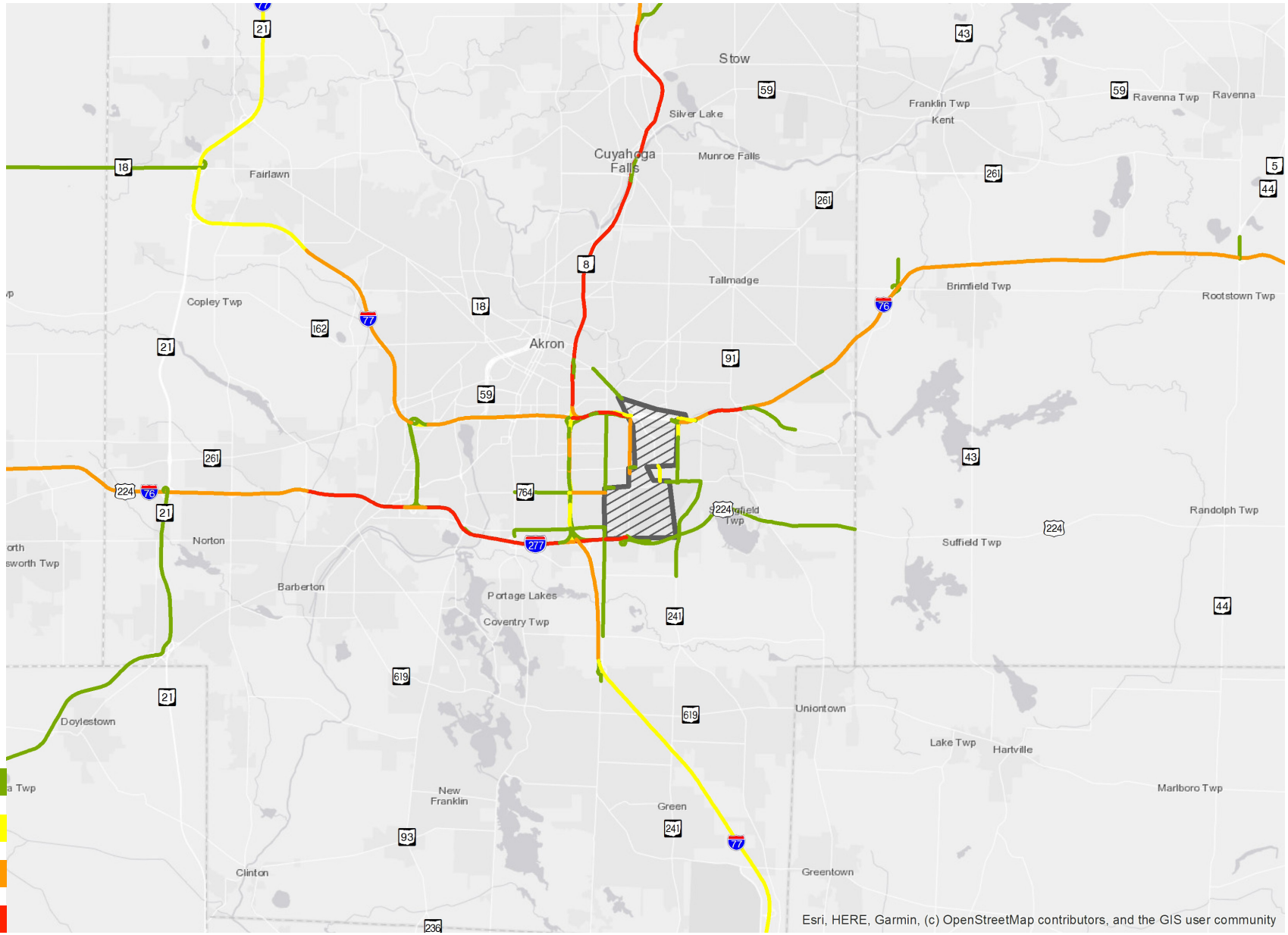


Percentage of Inbound Truck Trips

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

East Akron / Airport Freight Corridor

OUTBOUND TRUCK TRAFFIC



Percentage of Outbound Truck Trips

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

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.

Key Freeway / Highway Access:

I-77
I-271

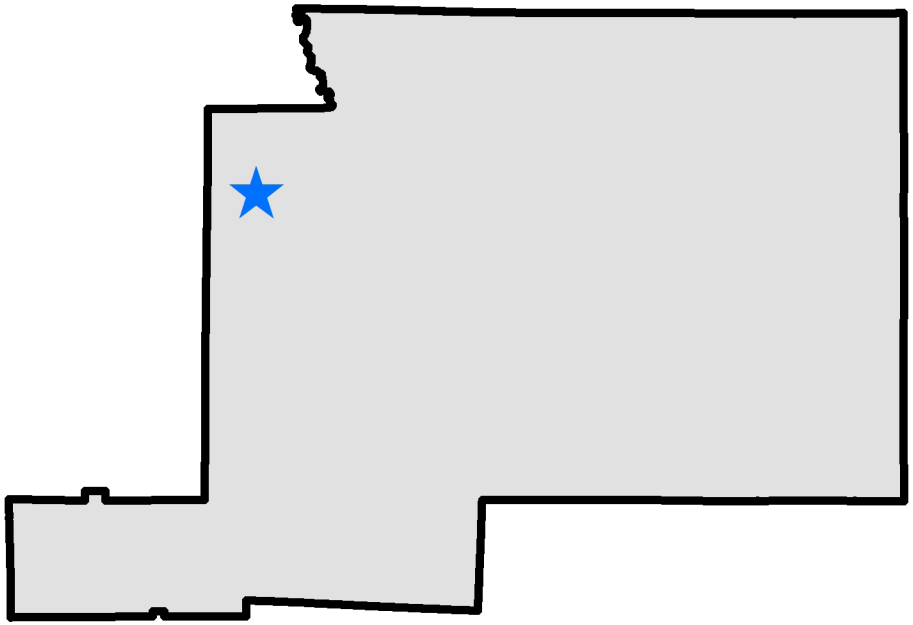
Top 3 Job Types:

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

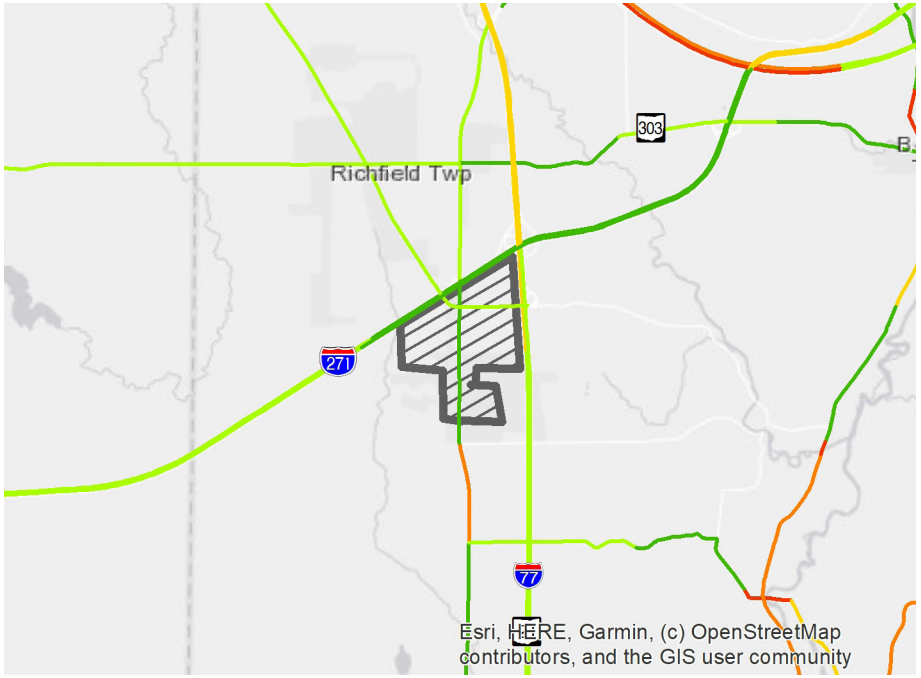
2017 Estimated Jobs:

4,000

Location:



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 TRAFIC	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

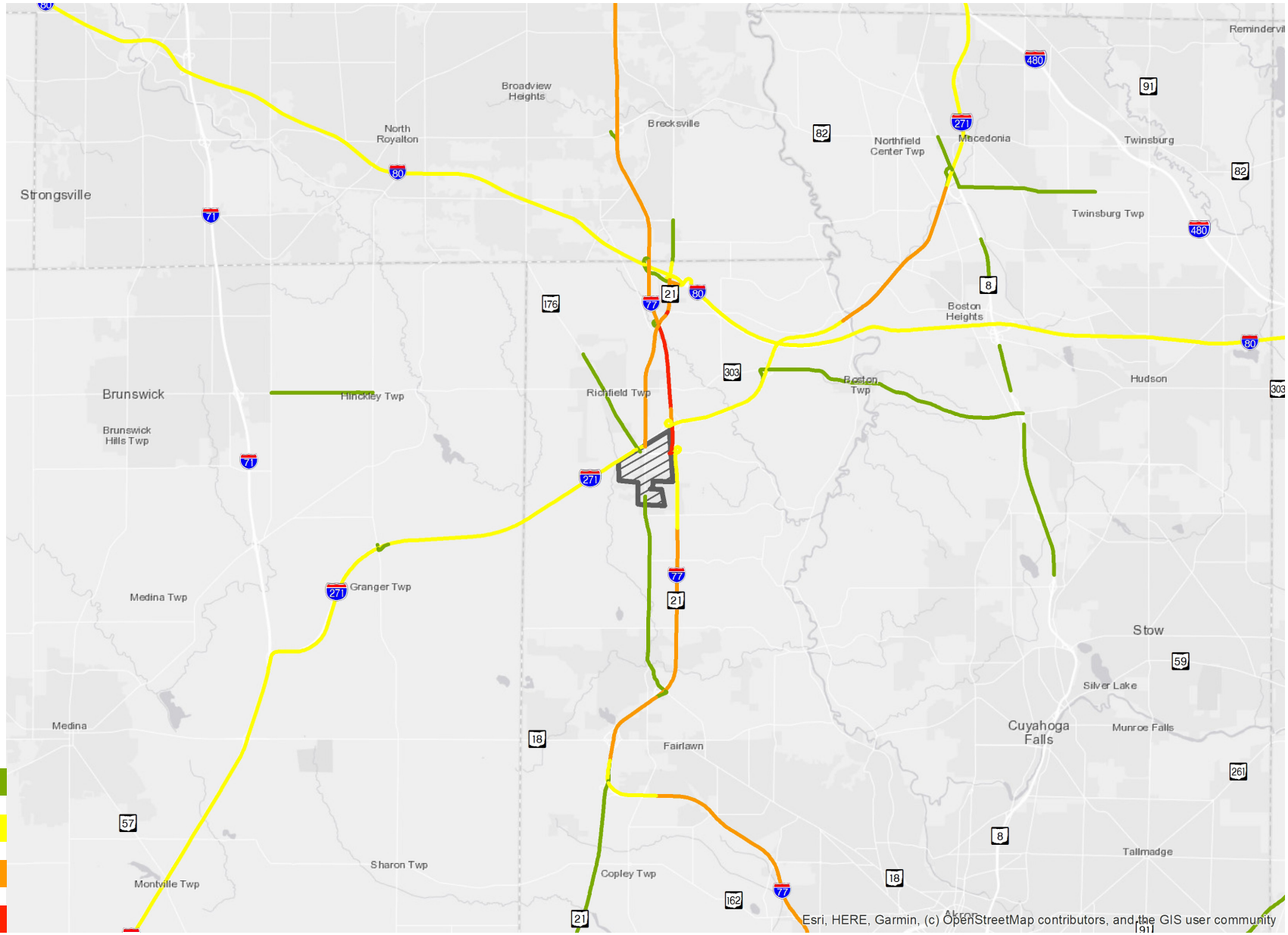
Top Congested Locations

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

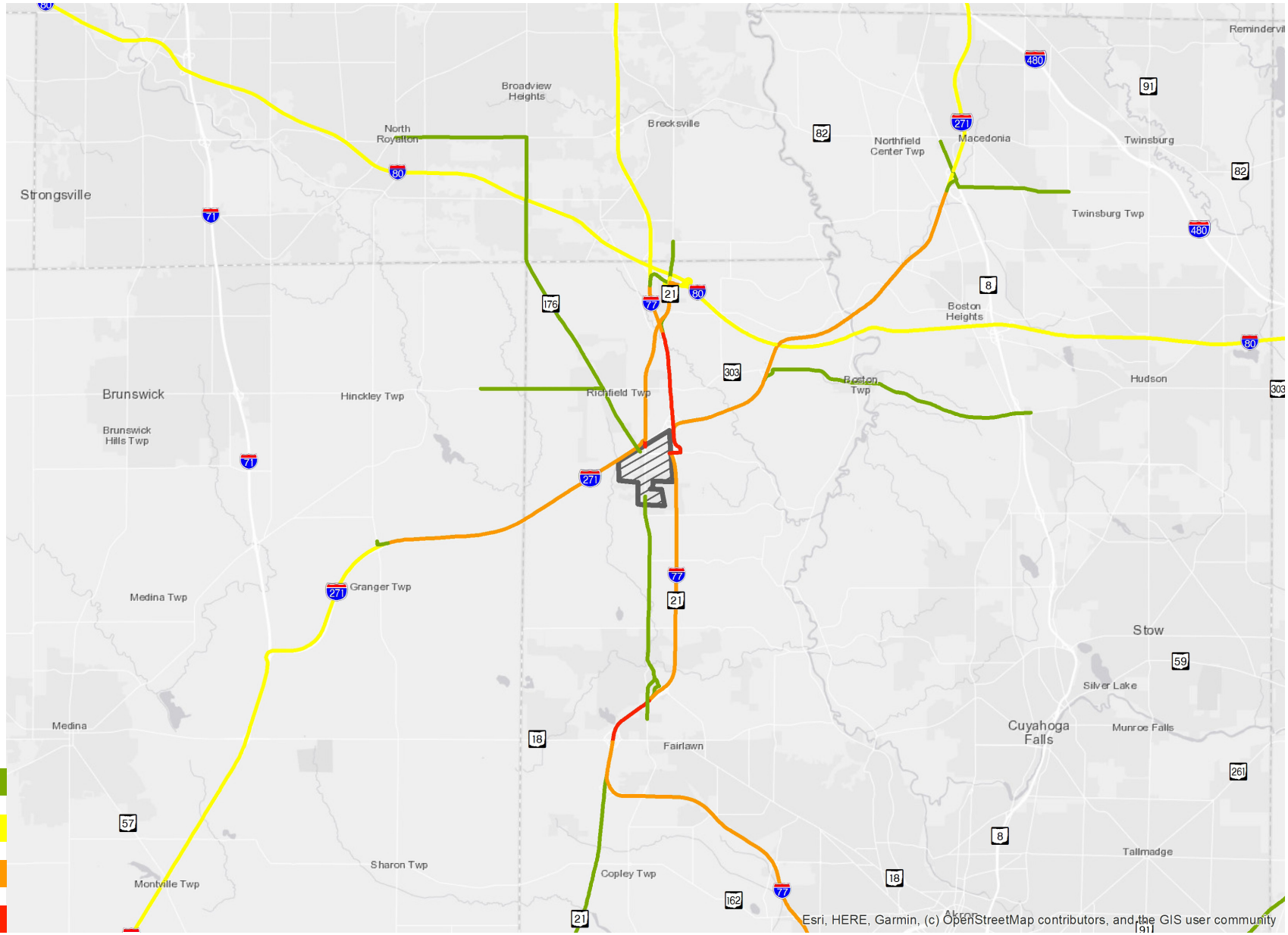


Percentage of Inbound Truck Trips

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

Richfield Freight Corridor

OUTBOUND TRUCK TRAFFIC



Percentage of Outbound Truck Trips

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

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.

Key Freeway / Highway Access:

I-80
SR-8

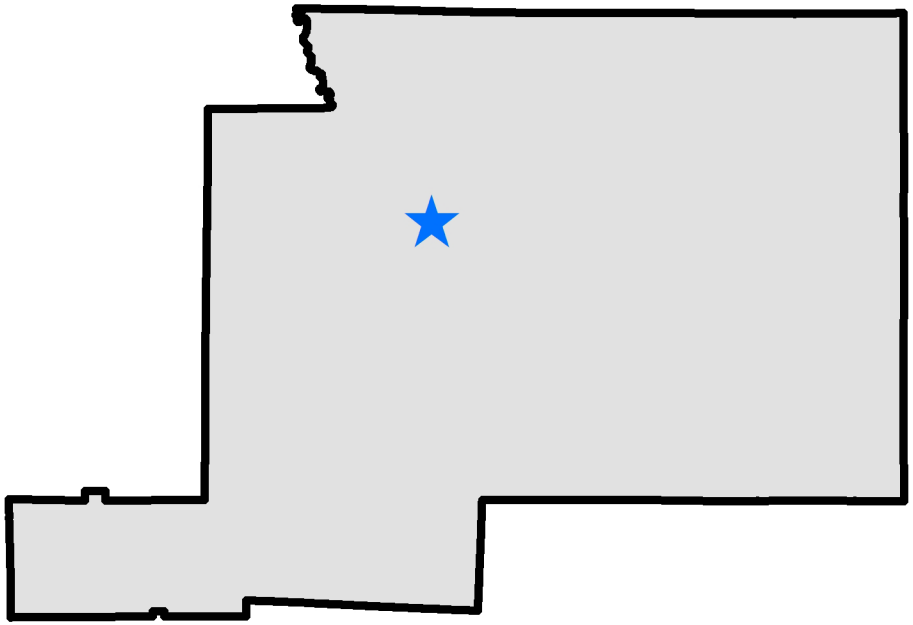
Top 3 Job Types:

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

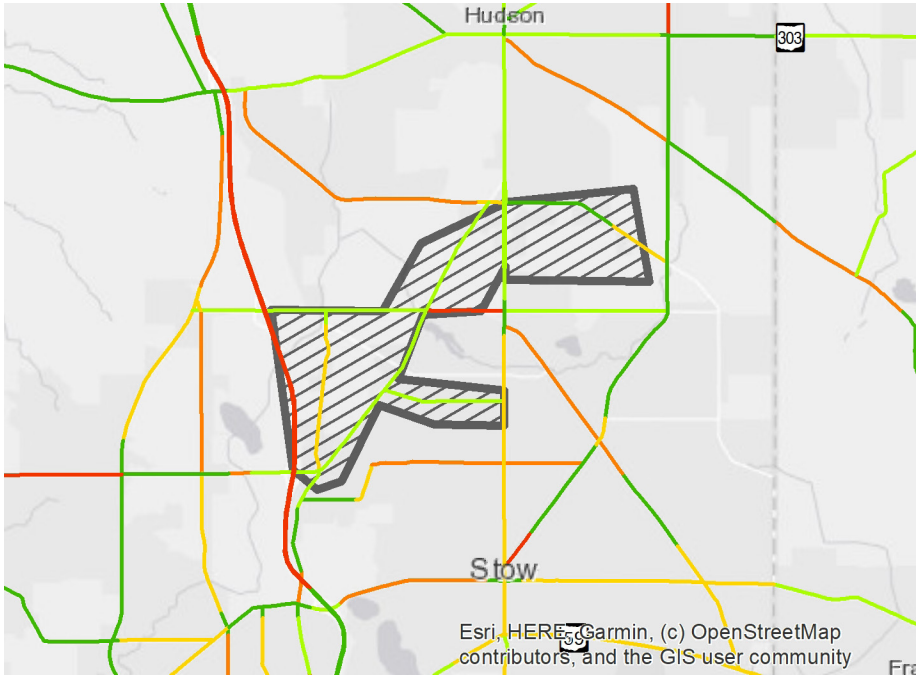
2017 Estimated Jobs:

7,000

Location:



Surrounding Pavement Conditions (2018-2019):



Very Poor Poor Fair Good Very Good Excellent

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 TRAFIC	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

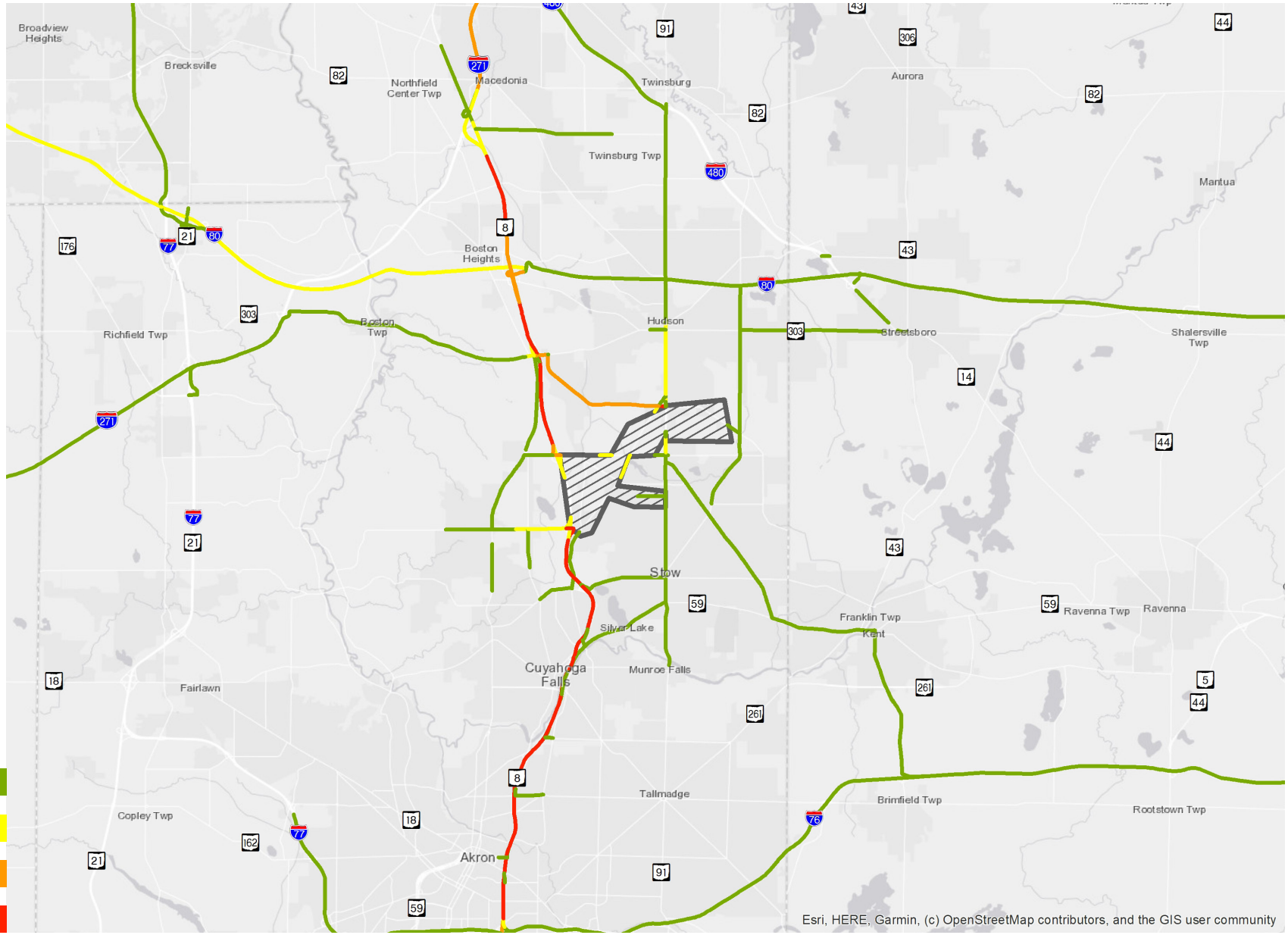
Top Congested Locations

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

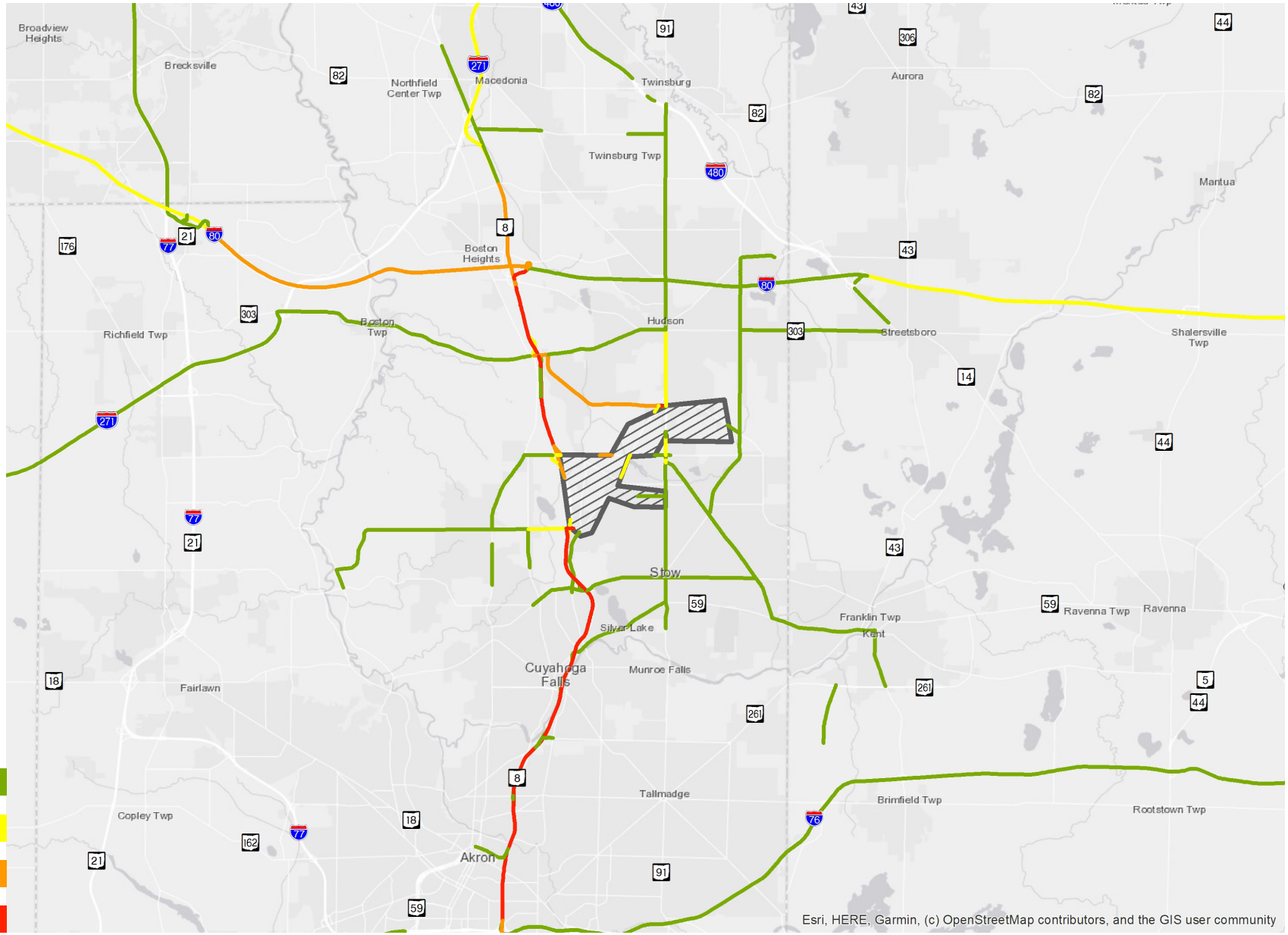


Percentage of Inbound Truck Trips

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

Hudson / Stow Freight Corridor

OUTBOUND TRUCK TRAFFIC



Percentage of Outbound Truck Trips

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

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 (LOTTR) 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 governemtns of Portage and Summit Counties and a portion of Wayne County.

Attachment 5C

AKRON METROPOLITAN AREA TRANSPORTATION STUDY

M E M O R A N D U M

TO: **Policy Committee**
Technical Advisory Committee
Citizens Involvement Committee

FROM: **AMATS Staff**

RE: **Draft Congestion Management Process Report**

DATE: **September 10, 2020**

The Draft AMATS Congestion Management Process Report (CMP) identifies existing congestion on our region's freeways, arterials and intersections. It also examines public transit levels of service availability, freight needs, and the impact that crashes have on congestion. The report discusses performance measures for travel time reliability, truck travel time reliability, peak hour excessive delay and non-single occupancy vehicle travel. It identifies demand and supply-side strategies to manage regional congestion. In the final sections, it defines specific recommendations to address congested locations and evaluates strategy effectiveness based on past projects.

This is the first AMATS CMP that uses GPS device tracking technology to calculate congestion. Historically, traffic congestion was measured using a volume-to-capacity (V/C) ratio. This ratio is based on the volume of traffic during peak hours versus the capacity of the roadway. New technology has enabled traffic engineers and planners to obtain traffic data through tracking actual vehicle movement using cell phone and other GPS devices in vehicles. Traffic data collected in this manner is done over months or years and is more representative than data collected over just one or two days.

The Draft CMP includes highway recommendations and various transit, freight, and system-wide recommendations. These recommendations will be considered for inclusion in the upcoming 2045 Regional Transportation Plan based on fiscal constraint, cost benefit ratio, and the changing demand for transportation.

The AMATS staff will bring the Final CMP for Approval in December, 2020.

2020 Congestion Management Process

2020 Congestion Management Process

DRAFT

September 2020

Akron Metropolitan Area Transportation Study
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Introduction

In 2020, the COVID-19 pandemic rapidly altered future transportation assumptions. In the opening months of the pandemic, many businesses were forced to temporarily close or radically change their operations. Statewide stay-at-home orders encouraged people to stay home, schools shifted to virtual classes and employees worked from home if they were able.

Data collected during the first half of 2020 indicated that traffic volumes fell over 40 percent. Transit ridership fell 60 percent. Demand for bicycles left stores with empty shelves and park usage increased. Many normally congested highways flowed smoothly as adjacent parking lots for malls, plazas, schools, and office buildings were nearly empty. While most stay-at-home orders have expired, the question has become what does the future look like? Many businesses have committed to keeping employees home for the foreseeable future. Others have returned to business as usual. What will be the long term impacts of the COVID-19 pandemic on transportation?

The Akron Metropolitan Area Transportation Study (AMATS) is the Metropolitan Planning Organization (MPO) for the Akron metropolitan area. One of the primary duties of AMATS is to identify congestion in the region, as well as to provide solutions to reduce or eliminate it. More than just a daily inconvenience, congestion affects the overall economy, reducing our ability to travel reliably to work, school and to complete the timely delivery of goods and services. Idling vehicles emit unnecessary pollutants into the atmosphere and waste costly and limited fuel.

This AMATS *2020 Congestion Management Process (CMP)* identifies existing congestion on our region's arterials, intersections, freeways, freeway interchanges, and ramps. It examines public transit levels of service availability and freight needs. It also isolates and examines congestion related to traffic incidents. Later sections identify demand and supply-side strategies, as well as other strategies to manage regional congestion. In the final section, specific recommendations to address congested areas will be presented.

The Congestion Management Process

The Congestion Management Process (CMP) is a federally required effort for metropolitan areas that are designated as Transportation Management Areas (TMAs). A TMA is a Census Bureau designated urban area with more than 200,000 residents. The Federal Highway Administration (FHWA) defines a CMP as: "a systematic and regionally accepted approach for managing congestion that provides accurate, up-to-date information on transportation system performance and assesses alternative strategies for congestion management that meets state and local needs."

Each CMP is required to include the following criteria per the Congestion Management Process: A Guidebook by FHWA and CFR 450.322(a).

1. Develop regional objectives
2. Define the CMP network
3. Develop multimodal performance measures
4. Collect data and monitor system performance
5. Analyze congestion problems and needs
6. Identify and assess strategies
7. Program and implement strategies
8. Evaluate strategy effectiveness

A sound, effective CMP integrates with the entire metropolitan planning process, working to achieve the goals and objectives outlined in the long-range transportation plan and influencing the prioritization and programming of projects for the short- and medium-term. CMPs provide transparent structure and information to decision-makers by analyzing system performance and assessing alternative strategies to improve performance. Strategies are attainable policies or projects that are tailored to local, state, and regional needs.

A periodic congestion performance report is published describing the change in federal performance measures. The performance report identifies effective strategies for congestion management, enabling the region to methodically improve system performance.

Regional Objectives

The objective of the CMP is to identify and minimize congestion and delay on the transportation system. Minimizing congestion and delay will improve the efficiency of the movement of people and goods. Congestion management objectives define what the region wants to achieve regarding congestion management, and are an essential part of an objectives-driven, performance-based approach to planning for operations. Congestion management objectives should serve as one of the primary points of connection between the CMP and the Metropolitan Transportation Plan (MTP), and will serve as a basis for defining the direction of the CMP and performance measures that are used. The development of congestion management objectives should rely heavily on stakeholder participation and an understanding of the needs and desires of the public related to congestion. Traditionally, the CMP has often focused on capacity issues, and used engineering measures focused on motor vehicles, such as volume-to-capacity ratios. In defining appropriate congestion management objectives, planners and decision-makers should consider the following questions:

- What does the public really care about with regard to congestion?
- How high of a priority is traffic congestion in the region?
- What type of congestion is most problematic for the public and freight shippers?
- What aspects of congestion are most important to address to support livability, safety, and economic vitality, among other goals?

Regional objectives should ideally focus on outcomes – such as hours of delay, system reliability, and access to traveler information. However, they may also be written using output measures – such as incident clearance time or number of traffic signals retimed annually. In all cases, objectives should be stated in a way that meaningful performance measures can be derived from the objectives. An ideal objective should be **SMART**: **S**pecific, **M**easurable, **A**greed, **R**ealistic, and **T**ime restricted.

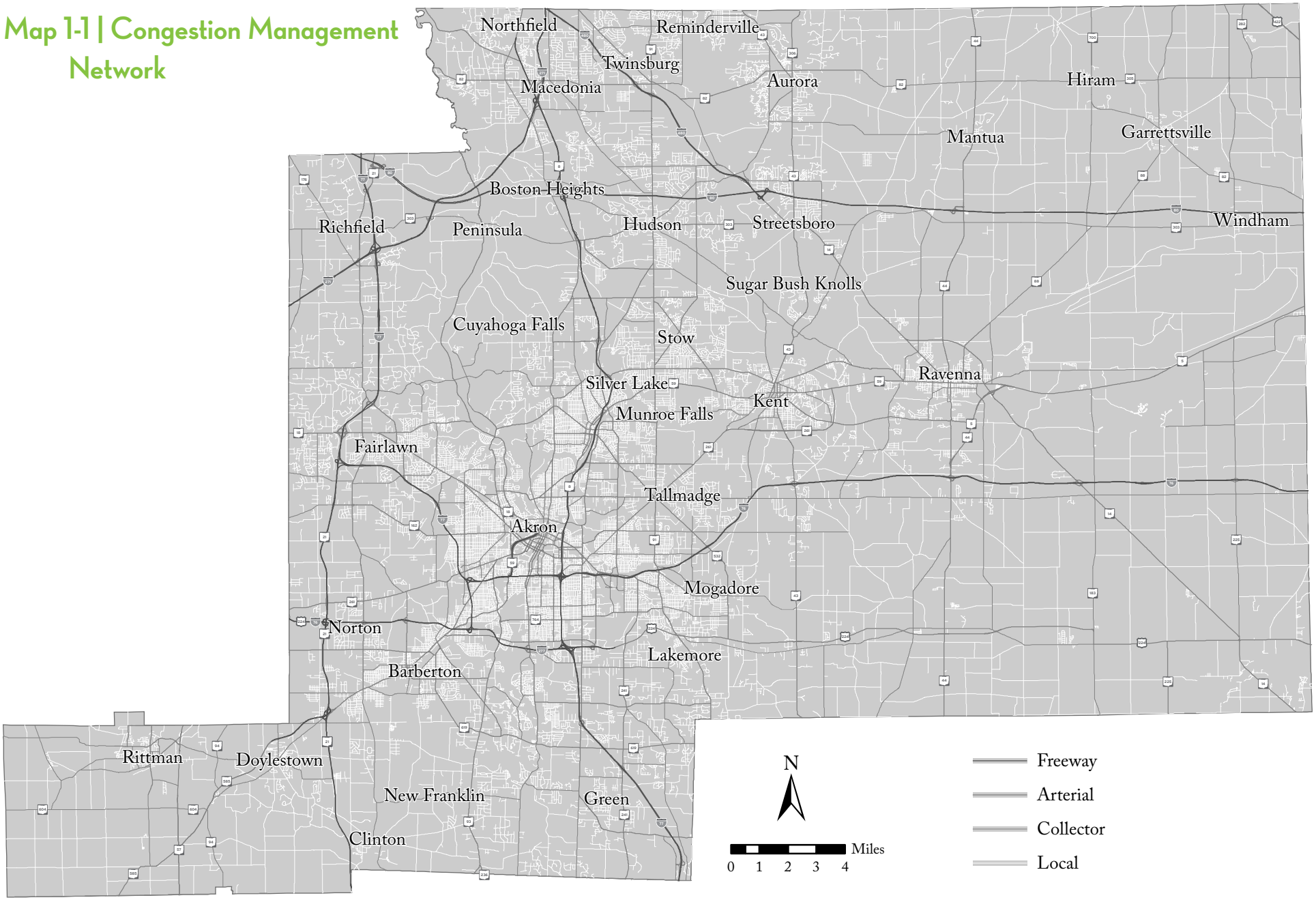
The CMP Network

The roadway network considered for the CMP analysis is made up of 540 miles of roadways in the Akron metropolitan area and is shown on Map 1-1. The following roadways are included in the network for the CMP:

- All roadways included on the National Highway System
- All roadways classified as Principal Arterials in the Federal Functional Classification System
- Major intersections that experience high traffic volumes
- All roadways identified as potential congestion problems by the AMATS Policy Committee
- Other roadways to ensure a continuous CMP highway system

Although the CMP has traditionally focused primarily on the road network, the CMP network should consider the transit, bicycle, and pedestrian networks as well as their interface with the highway network. Doing so can help take advantage of strategies that rely upon the other modes to reduce single occupancy vehicle (SOV) travel. Typically,

Map 1-1 | Congestion Management Network



collectors and local roadways are not included in the roadway analysis of the CMP since it would be time-consuming to address these roadways and they generally have relatively low traffic volumes and congestion levels; however, these facilities should still be considered as potential bicycle, pedestrian, or transit corridors.

Multimodal Performance Measures

Performance measures are a critical component of the CMP. According to Federal regulations, the CMP must include "appropriate performance measures to assess the extent of congestion and support the evaluation of the effectiveness of congestion reduction and mobility enhancement strategies for the movement of people and goods." Performance measures can be used at the regional level and the local level. At the regional level, performance measures can be used to compare plan alternatives in the development of the MTP. At the local level, performance measures are used to identify locations currently experiencing or anticipated to experience congestion problems in the future. They also are used to support assessment and selection of congestion mitigation strategies and evaluation of implemented strategies. Transit performance measures provide information on the conditions experienced by transit travelers. Aspects of transit travel conditions include:

- Passenger crowding or utilization – measured by passenger loads relative to vehicle capacities
- Reliability of performance or schedule adherence – measured by percentage of on-time performance

Freight performance measures focus on the movement of goods that generally utilize other types of performance measures but focus on roadways with a high volume of trucks or designated as freight corridors.

Collect Data and Monitor System Performance

There are many types of data that can be used as part of the CMP process. The following list is not exhaustive, but includes several common types of data that are used in the CMP.

Traffic Volume Counts – It is necessary to collect traffic data in order to measure the performance of the transportation system. Traffic counts are taken on a regular basis on the roadway network. AMATS and ODOT coordinate traffic data collection efforts to make sure all necessary highways are included. This data is then used as an input to model traffic congestion on the existing and future roadway network. Public transit information was received from both public transit agencies (METRO RTA and PARTA) within the AMATS area. This information is summarized in chapter 4. Freight analysis can be found in chapter 5. The CMP focuses on traffic congestion that is identified both at specific locations and at the system level.

Electronic Traffic Datasets – Cell phone data collected by phone companies along highway corridors can be used to report travel speeds and origin-destination data. Cellular service providers and joint ventures with other private companies have begun to offer this service to some transportation agencies. This CMP report utilized data provided through INRIX and Streetlight.

Transit Data – A wide range of transit data is available and gathered from transit agencies, including boarding and alighting statistics, total ridership, on-time performance, and transit vehicle capacity. Public transit information was received from both transit agencies (METRO RTA and PARTA) within the AMATS area.

Bicycle / Pedestrian Data – Many MPOs collect data on the location and condition of bicycle/pedestrian facilities, such as sidewalks, bicycle lanes, and off-road paths. AMATS collects count information on the use of bicycle and pedestrian facilities, either manually or through the use of Miovision technology.

Crash Data – AMATS publishes an annual report detailing traffic crashes in our region; the latest version being published in December 2019. Traffic Crashes 2016-2018 analyzed traffic crashes for arterials and intersections between 2016 and 2018, utilizing crash records provided by the Ohio Department of Public Safety (ODPS) and the Ohio Department of Transportation (ODOT) for the years 2016, 2017 and 2018. This report is useful in determining locations where non-recurring congestion due to incidents is likely to occur.

Analyze Congestion Problems and Needs

Data collected must be translated into meaningful measures of performance. Specific locations with congestion problems need to be identified along with the sources of these problems. The complexity of translating data into meaningful information for analysis varies. Sometimes it takes time to understand the data and how to process it. One example is the use of electronic cell phone data. This data is collected continuously and represents a large volume of data that must be collapsed into some form that provides useful information. While this type of data can be extremely helpful to MPOs in understanding reliability issues and sources of delay, considerable effort may be needed to convert the data into a useful format for planning purposes.

Identify and Assess Strategies

The identification and assessment of appropriate congestion mitigation strategies is a key component of the CMP. AMATS now needs to turn the data and analysis into a set of recommended solutions to effectively manage congestion and achieve congestion management objectives. One size does not fit all and congestion management strategies need to be designed according to the specific characteristics of the highway and adjacent area. These strategies are categorized into five tiers, ranked generally by efficacy of mitigating congestion:

Tier 1: Demand management
Tier 2: Traffic and roadway operational improvements
Tier 3: Public Transportation and multi-model improvements
Tier 4: ITS Strategies
Tier 5: Capacity expansion

Program and Implement Strategies

Implementation of CMP strategies occurs on three levels: system or regional, corridor, and project. Regional-level implementation of congestion management strategies occurs through inclusion of strategies in the fiscally-constrained MTP and the TIP. At the corridor level, more specific strategies such as bicycle and pedestrian improvements and operational improvements can be assessed in studies and implemented using a variety of funding sources such as Surface Transportation Block Grant (STBG) program and Congestion Mitigation and Air Quality (CMAQ) program. Scoring systems could treat projects differently based on location or strategy type according to congestion levels, or community goals. For instance, more points might be allotted to projects in very congested locations, or, specifically to certain types of projects in the urban core than to projects in areas where further development is not desired.

Evaluate Strategy Effectiveness

Evaluation of strategy effectiveness can be seen as either a sequential step within the CMP process or as an on-going process. This is an essential, required element of the CMP that is often overlooked. The primary goal of this action is to ensure that implemented strategies are effective at addressing congestion as intended, and to make changes based on the findings as necessary. Two general approaches are used for this type of analysis:

- System-level performance evaluation - Regional analysis of historical trends to identify improvement or degradation in system performance, in relation to objectives; and
- Strategy effectiveness evaluation - Project-level or program-level analysis of conditions before and after the implementation of a congestion mitigation effort

Findings that show improvement in congested conditions due to specific implemented strategies can be used to encourage further implementation of these strategies, while negative findings may be useful for discouraging similar strategies in similar situations.

What is Congestion?

One of the critical and complex tasks of the CMP is to define congestion. Studies have shown that congestion is a relative rather than an absolute condition. People "feel" roads are congested at different levels of operations. Technically, congestion occurs when the number of vehicles on a facility exceeds the maximum number of vehicles that a roadway or intersection can accommodate at that point in time, whether because of the physical limitations of the facility or because an event (such as rain) has temporarily hindered vehicular movement. Traffic congestion is characterized by slower speeds, longer trip times, vehicular queueing, travel time uncertainty, and increased traffic collisions.

Components of Congestion

While it is difficult to use a single value to describe all individuals' concerns about congestion, there are four components that interact in a congested roadway or system. These components vary among and within urban areas – smaller urban areas, for example, have shorter durations of congestion than larger areas.

Duration – this is how much time congestion affects the travel system.

Extent – this is an estimate of the number of people or vehicles affected by congestion, and by the geographic distribution of congestion.

Intensity – this is the severity of the congestion that affects travel. It is typically used to differentiate between levels of congestion on transportation systems and to define the total amount of congestion.

Reliability – this is the variation in the other three elements. Reliability is a measure of the extent to which the traveler's experience matches their expectation. The variable is the impact of non-recurrent congestion on the transportation system.

Recurring and Non-Recurring Congestion

Research into travelers' views of congestion has shown that predictable travel times are a primary concern. Having reliable travel time is a crucial factor affecting traveler behaviors, including choices of route, departure time, and mode. One commonly accepted definition of travel time reliability, given by the Federal Highway Administration, states that "Drivers are used to congestion and they expect and plan for some delay, but most travelers are less tolerant of unexpected delays. Travel time reliability measures the extent of this unexpected delay." Travelers and firms may account for the variability in their trips and transport of goods by building in time-buffers as insurance against late arrival. This implies that the consequences of late arrivals are costly. Congestion is broadly categorized as either recurring (predictable) or non-recurring (unpredictable) congestion. Congestion, both recurring and non-recurring, vary significantly depending on the season, day of the week, and even time of day. Furthermore, both recurring and nonrecurring congestion may occur at the same time, exacerbating any event.

Recurring Congestion

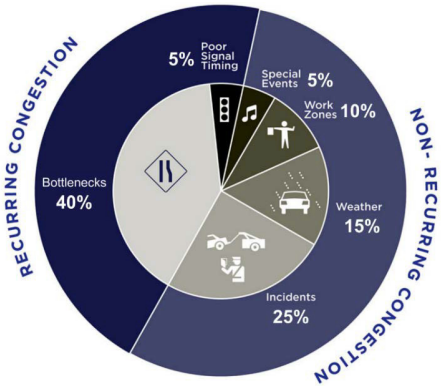
Recurring congestion is congestion that occurs repeatedly at predictable times and locations, e.g. at bottlenecks or on corridors with poorly coordinated traffic signals, usually during the peak hour periods. Simply put, recurring congestion occurs because travel demand exceeds system capacity. There are many strategies available to mitigate this type of congestion through demand management, operational improvements, and multimodal strategies. Integration of land-use and transportation decisions enables agencies to coordinate efforts to address this demand side of congestion. Elimination of all recurring congestion may not be either feasible (due to physical and financial constraints) or desirable (in terms of the implications to community of unfettered vehicular travel). Recurring congestion is generally considered the least frustrating because its effects are known and can be planned for.

Non-Recurring Congestion

In contrast, non-recurring congestion incidents can occur at any time, including during non-peak travel times, and is often associated with traffic crashes, weather events, special events, work zones, and emergencies. This is the congestion that most often frustrates people. It is especially bad when a non-recurring incident magnifies the magnitude and extent of congestion during "normal" recurring congestion. Non-recurring congestion is difficult to address without proper prior planning. The sources of non-recurring congestion are broad:

- Roadway debris
- Roadway construction and maintenance work zones
- Inclement weather
- Disabled vehicles
- Law enforcement activities
- Traffic crashes
- Special events

The chart to the right illustrates the distribution of the various types of congestion on U.S. transportation networks.



Congestion Caused by Trucks

Trucks are often slower to get moving; therefore, they can add to the length of congestion time. Once slowed down a truck will take longer to get started than a passenger car. Roadways with high volumes of truck might be more congested then those that are almost exclusively passenger cars. It is very important to recognize corridors with high percentage of trucks when analyzing congestion. Truck freight movement is very important to keep the economy thriving.

Congestion Caused by Railroad Grade Crossings

An at-grade crossing is where a railway and roadway intersect. The AMATS area has a number of at-grade crossings with significant train and vehicle volumes. This source of congestion is often overlooked when addressing congestion. When a passing train delays traffic on a busy roadway it creates a large platoon of vehicles that cause problems throughout the roadway network. Ideally, highway-rail grade crossings would be separated if feasible.

Roadway Methodology and Analysis

Historically traffic congestion in the AMATS CMP was measured by using a volume to capacity (V/C) ratio. This ratio is based on the volume of traffic during peak hours verses the capacity of the roadway. This method requires the collecting traffic volume data and knowing the physical characteristics of the highway itself. However in recent years new technology has enabled traffic engineers and planners to obtain traffic data through the collection of cell phone and other GPS device location data. Traffic data collected in this manner is done over a period of months or years and is more representative than data collected over one or two days. Once collected this data is aggregated and analyzed to provide transportation analysis.

INRIX is one such aggregator and monitors real-time traffic flow on some 260,000 miles of roadway in the United States. INRIX data is made available to AMATS through the Ohio Department of Transportation (ODOT). As real-time data is collected it is then stored and becomes historical data. The data used for this CMP Report was collected over the calendar year of 2017.

The first analysis portion of the CMP was done using data from the INRIX platform. However there were some streets and roads that needed analyzed that INRIX did not have data for. For those remaining segments AMATS used another application called Streetlight. This application uses the same principles that INRIX allowed AMATS to develop unique highway segments for analysis. The analysis process is different but the results are calculated using a similar methodology as INRIX.

The segment lengths using INRIX are predetermined and cannot be altered. In Summit and Portage counties there were 1,627 predetermined segments. The Streetlight platform allows AMATS to identify termini for segments. AMATS used segments used in previous CMP reports as a guideline when defining Streetlight segments. Once INRIX and Streetlight data was combined, AMATS further defined the segments as: Freeway Segments, Freeway Ramps, Freeway Interchanges, Arterial Segments, and Intersections.

Each segment that is bi-directional is analyzed by direction. For example, if a segment runs east and west it is analyzed in the westbound direction and the eastbound direction separately. The congestion analyses focused on three time periods:

- Morning from 5:00 AM to 11:00 AM
- Mid-day from 11:00 AM to 4:00 PM
- Evening from 4:00 PM to 10:00 PM

The daily AM peak and the PM peak were derived from the morning and evening time periods. Some areas that have a high concentration of restaurants and retail businesses may also have a mid-day peak and these were also considered. Only weekdays were used since this is when most recurring congestion occurs. The roadway network considered for the CMP analysis is made up of 540 miles of roadways in the Akron metropolitan area and is shown on Map 1-1, in Chapter 1). The following roadways are included in the network for the CMP analysis:

- All roadways included on the National Highway System
- All roadways classified as Principal Arterials in the Federal Functional Classification System
- Major intersections that experience high traffic volumes
- All roadways identified as potential congestion problems by the AMATS Policy Committee
- Other roadways to ensure a continuous CMP highway system

Next congestion was determined. According to INRIX the definition of congestion is anytime the travel speed falls below 65 percent of the free-flow speed. The free flow speed is determined by measuring what the speed is when the traffic is presumed to be flowing unrestricted. The free-flow speed is not the speed limit. The free-flow speed on a highway that has a posted speed limit of 55 miles per hour (mph) would normally be between 60 and 65 mph. The 65 percent of free-flow speed was chosen for all roadway segment type except freeway segments. AMATS decided to use 75 percent of free-flow speed on freeway segments given their higher speed and smaller changes can have a greater impact on the system.

The speeds were compiled in 15 minute periods and averaged over the entire year for the same day and time period. If an event such as an accident or construction activity slowed traffic just temporarily the other days would average out that event. In the analysis the real speed has to be less than 65 percent (75 percent for freeway segments) of the free-flow speed averaged over four consecutive 15 minute periods or one hour to be considered congested.

Based on the methodology described above, AMATS completed a roadway analysis. A comprehensive listing of all freeway segments, freeway ramps, freeway interchanges, arterial segments, and intersections analyzed is listed in Appendix A. All congested roadways are listed in the recommendations chapter sorted from most to least congested. Recommendations for improving these congested segments are in Chapter 10 of this report.

Transit Methodology and Analysis

Funding and promoting transit is a key element in a multi-modal transportation system. With a reliable and efficient transit system in place, overall roadway congestion can be relieved. Improving transit operations, improving access to transit, and expanding transit service can help reduce the number of vehicles on the road by making transit more attractive and accessible. In this chapter transit level of service has been analyzed. It is discussed more fully in the AMATS *2020 Transit Plan*.

There are two primary providers of public transportation in our region: METRO RTA, which serves Summit County, and the Portage Area Regional Transportation Authority (PARTA), which serves Portage County. Both agencies operate traditional fixed-route bus service, demand-response services for low-income, elderly and disabled passengers, and express bus service to key communities, such as Cleveland. AMATS assists these local transit agencies in providing the best possible public transportation service for the greater Akron area.

While passenger overcrowding is not a general system-wide issue in our area, on-time performance and reliability are important to effective transit service. Transit on-time performance is affected by congestion on the roadway as well as passenger loading and unloading, payment, etc. Congested transit routes can lead to poor on-time performance and unreliability of the transit network. This is an issue to those who rely on transit, especially vulnerable populations such as individuals and families living in poverty, older adults, and the disabled. When transit is efficient and reliable, it can provide an effective alternative to single occupancy vehicle travel and help reduce traffic congestion.

Transit Headway Performance Analysis

In previous reports, AMATS staff has analyzed the Level of Service of routes for both METRO RTA and PARTA. For this report, a different approach has been used that better characterizes the service that is provided by these transit agencies.

Superior Performance – Frequent service, passengers don't need schedules

Acceptable Performance – Service unattractive to choice riders, maximum desirable wait time

Potential Service Improvement – Extended wait time, service unattractive to all riders

Headway Performance Analysis

METRO's Downtown Akron Shuttle (DASH) service is listed as Superior Performance. The DASH is a recent addition to METRO's service, and provides frequent service every 10 minutes between the hours of 7 a.m. and 7 p.m. as well as 15 minute service on weekday evenings. The route quite often attracts choice riders - people who have a car or another transportation option. Attracting choice riders to transit helps alleviate traffic congestion, particularly during peak periods of travel.

METRO RTA shows the vast majority of their routes as Potential Service Improvement, which means that passengers are waiting a minimum of 30 minutes for the bus to pick them up, and many of them are waiting even longer. The majority of routes after 6 pm have extended wait times, which make them unattractive to riders, while some routes don't run at all. This creates a burden for those workers whose shift ends after this time. Retail and restaurant workers who very often return home in the evening or late at night are more likely to use transit due to low-wage jobs, and have to wait over an hour for a bus. METRO could work to improve the headways for second-shift workers by adding buses to routes in the evening; however this would require large capital and operating expenses.

METRO is in the process of collecting feedback for their Strategic Plan, which they expect to complete in the summer of 2020. Additionally, they are currently exploring the idea of adding a Bus Rapid Transit (BRT) corridor to the Akron area. This could greatly improve the overall LOS for the agency. The costs for BRT are lower than for light passenger rail service.

Characteristics of BRT may include:

- Dedicated Bus Lanes
- Signal preemption
- Increased Bus Frequency
- Off-board Fare Collection
- Platform-level boarding

METRO anticipates a decision by early 2021 regarding the feasibility of a BRT being added to their system. A consultant has already been hired and the process has commenced.

PARTA removed three routes and added one since the last time their Headway Performance was studied in 2016. About half of the routes are split between being Superior Performance and Acceptable Performance. This means that riders wait at most 15 minutes for the bus, making the service attractive to most transit riders. The other half of the routes is listed as Potential Service Improvement. Although this type of service is extremely undesirable due to its extended wait times, and choice riders would likely find another form of transportation, these routes provide the opportunity to increase bus service and attract new riders. In 2016, PARTA had more routes

operating frequently, but had some routes that didn't run at all in the evenings. Now, all routes run approximately 16 hours a day on weekdays, with limited service on the weekends. This change could mean that there are fewer buses to go around, reducing the frequency for bus service and contributing to the reduction in performance. More buses and more drivers are a costly solution, but would give the routes increased frequency.

Table 4-1 | PARTA Fixed-Route Headway Performance Analysis

ROUTE #	DESCRIPTION	AM PEAK (7-9 AM) AVG HEADWAY (MINS)	HEADWAY PERFORMANCE	DAYTIME (9AM - 4PM) AVG HEADWAY (MINS)	HEADWAY PERFORMANCE	PM PEAK (4-6 PM) AVG HEADWAY (MINS)	HEADWAY PERFORMANCE	EVENING (7 PM +) AVG HEADWAY (MINS)	HEADWAY PERFORMANCE
COUNTY SERVICE									
30	Interurban West (Kent to Stow)	30	AP	30	AP	30	AP	38	PSI
35	Interurban East (Kent to Ravenna)	30	AP	30	AP	30	AP	38	PSI
40	Suburban North (Kent)	45	PSI	45	PSI	45	PSI	65	PSI
45	Suburban South (Kent)	45	PSI	45	PSI	45	PSI	58	PSI
60	Black Squirrel	30	AP	30	AP	-	PSI	-	PSI
70	Windham / Garrettsville	105	PSI	105	PSI	105	PSI	105	PSI
80	Raven West (Ravenna)	60	PSI	60	PSI	60	PSI	60	PSI
85	Raven East (Ravenna)	60	PSI	60	PSI	60	PSI	60	PSI
90	Akron Express	90	PSI	105	PSI	90	PSI	-	PSI
100	Cleveland Express								
CAMPUS SERVICE									
51	Campus Loop	21	AP	15	AP	15	AP	30	AP
53	Reverse Loop	30	AP	15	AP	30	AP	30	AP
55	Allerton	15	AP	15	AP	15	AP	15	AP
57	Stadium Loop (Summer / KSU Breaks)	30	AP	30	AP	30	AP	-	PSI
58	Summit East / Front Campus	8	SP	8	SP	12	SP	31	PSI
59	Stadium Night Loop	-	PSI	-	PSI	-	PSI	30	AP

Table 4-2 | METRO RTA Fixed-Route Headway Performance Analysis

ROUTE #	DESCRIPTION	AM PEAK (7-9 AM) AVG HEADWAY (MINS)	HEADWAY PERFORMANCE	DAYTIME (9AM - 4PM) AVG HEADWAY (MINS)	HEADWAY PERFORMANCE	PM PEAK (4-6 PM) AVG HEADWAY (MINS)	HEADWAY PERFORMANCE	EVENING (6 PM +) AVG HEADWAY (MINS)	HEADWAY PERFORMANCE
LOCAL ROUTES									
1	West Market	21	AP	21	AP	31	PSI	36	PSI
2	Arlington	22	AP	21	AP	31	PSI	38	PSI
3	Copley / Hawkins	24	AP	21	AP	29	AP	69	PSI
4	Delia / N Hawkins	33	PSI	48	PSI	29	AP	-	PSI
5	Joy Park / Gilchrist	43	PSI	51	PSI	53	PSI	-	PSI
6	East Market / Lakemore	30	AP	33	PSI	28	AP	66	PSI
7	Cuyahoga Falls Ave	32	PSI	36	PSI	37	PSI	70	PSI
8	Kenmore / Barberton	35	PSI	41	PSI	39	PSI	70	PSI
9	Vern Odom Blvd / East Ave	40	PSI	37	PSI	38	PSI	60	PSI
10	Howard / Portage Trail	32	PSI	46	PSI	51	PSI	71	PSI
11	South Akron	87	PSI	75	PSI	-	PSI	-	PSI
12	Tallmadge Hill	28	AP	38	PSI	38	PSI	57	PSI
13	Grant / Firestone Park	32	PSI	38	PSI	44	PSI	70	PSI
14	Euclid / Barberton Express	26	AP	36	PSI	34	PSI	68	PSI
17	Brown / Inman	25	AP	40	PSI	58	PSI	71	PSI
18	Thornton / Manchester	80	PSI	61	PSI	77	PSI	72	PSI
19	Eastland	46	PSI	43	PSI	46	PSI	61	PSI
21	South Main	40	PSI	40	PSI	40	PSI	40	PSI
24	Lakeshore	43	PSI	34	PSI	50	PSI	70	PSI
26	W. Exchange / White Pond	37	PSI	40	PSI	69	PSI	80	PSI
28	Merriman Valley	69	PSI	56	PSI	40	PSI	-	PSI
30	Goodyear / Darrow	40	PSI	40	PSI	43	PSI	70	PSI
33	State Road / Wyoga Lake	60	PSI	40	PSI	120	PSI	95	PSI
34	Cascade Village / Uhler	34	PSI	34	PSI	43	PSI	71	PSI
CIRCULATOR ROUTES									
50	Montrose Circulator	35	PSI	35	PSI	35	PSI	33	PSI
51	Stow Circulator	36	PSI	36	PSI	37	PSI	36	PSI
53	Portage / Graham	44	PSI	74	PSI	-	PSI	-	PSI
59	Chapel Hill Circulator	50	PSI	35	PSI	45	PSI	33	PSI
DOWNTOWN CIRCULATOR									
54	DASH	10	SP	10	SP	10	SP	14	
NORTH COAST EXPRESS COMMUTER SERVICE TO CLEVELAND									
60	NCX - Cuyahoga Falls to Cleveland	35	PSI	-	PSI	60	PSI	-	PSI
61	NCX - RKP to Cleveland	26	AP	121	PSI	33	PSI	-	PSI
TOWN CENTER ROUTES									
101	Richfield / Bath	55	PSI	104	PSI	-	PSI	-	PSI
102	Northfield	54	PSI	48	PSI	41	PSI	66	PSI
103	Stow / Hudson	113	PSI	93	PSI	94	PSI	-	PSI
104	Twinsburg / Creekside	91	PSI	101	PSI	94	PSI	68	PSI
110	Green / Springfield	55	PSI	99	PSI	53	PSI	-	PSI

On-Time Performance Analysis

Transit Reliability or schedule adherence is an important component of transit service. If transit is able to maintain acceptable levels of reliability it provides confidence to passengers that they will not miss their bus or be late to their intended destination. Both METRO RTA and PARTA maintain on time data for all of their transit routes. The table below shows that METRO RTA and PARTA maintain strong reliability and overall have improved the reliability of their system from 2018 to 2019.

Table 4-3 | PARTA On-Time Performance Analysis

ROUTE #	DESCRIPTION	2018 ON-TIME %	2019 ON-TIME%
30	Interurban West (Kent to Stow)	85.4%	85.5%
35	Interurban East (Kent to Ravenna)	73.8%	78.3%
35S	Interurban East (Kent to Ravenna) Saturday	77.1%	74.1%
40	Suburban North (Kent)	80.3%	77.7%
45	Suburban South (Kent)	85.0%	81.3%
51	Campus Loop	74.9%	77.5%
53	Reverse Loop	68.9%	79.3%
55	Allerton	37.5%	68.9%
57	Stadium Loop (Summer / KSU Breaks)	70.8%	76.0%
58	Summit East / Front Campus	60.7%	65.3%
59	Stadium Night Loop	69.8%	76.3%
60	Black Squirrel	60.0%	75.2%
70	Windham / Garrettsville	84.9%	83.4%
80	Raven West (Ravenna)	83.5%	80.1%
85	Raven East (Ravenna)	84.6%	86.8%
90	Akron Express	74.1%	75.9%
100	Cleveland Express	57.0%	49.9%
Annual System Total On-Time %		**71.9%**	**76.0%**

Table 4-4 | METRO RTA On-Time Performance Analysis

ROUTE #	DESCRIPTION	2018 ON-TIME %	2019 ON-TIME%
1	West Market	57.8%	65.6%
2	Arlington	74.1%	74.8%
3	Copley / Hawkins	72.3%	75.9%
4	Delia / N Hawkins	74.5%	75.5%
5	Joy Park / Gilchrist	67.5%	68.0%
6	East Market / Lakemore	74.8%	75.7%
7	Cuyahoga Falls Ave	79.8%	76.2%
8	Kenmore / Barberton	79.9%	80.6%
9	Vern Odom Blvd / East Ave	73.6%	74.2%
10	Howard / Portage Trail	71.8%	74.7%
11	South Akron	81.6%	83.7%
12	Tallmadge Hill	84.6%	83.3%
13	Grant / Firestone Park	84.5%	86.6%
14	Euclid / Barberton Express	83.1%	81.6%
17	Brown / Inman	74.9%	73.3%
18	Thornton / Manchester	78.1%	79.3%
19	Eastland	78.7%	81.6%
21	South Main	80.5%	89.7%
24	Lakeshore	52.4%	53.8%
26	W. Exchange / White Pond	78.9%	79.1%
28	Merriman Valley	81.9%	78.5%
30	Goodyear / Darrow	81.6%	81.7%
33	State Road / Wyoga Lake	81.4%	81.3%
34	Cascade Village / Uhler	75.0%	73.1%
50	Montrose Circulator	82.5%	83.8%
51	Stow Circulator	81.5%	79.0%
53	Portage / Graham	83.1%	79.5%
59	Chapel Hill Circulator	86.9%	87.2%
54	DASH	72.2%	67.3%
60	NCX - Cuyahoga Falls to Cleveland	61.4%	59.2%
61	NCX - RKP to Cleveland	57.7%	58.4%
101	Richfield / Bath	72.0%	66.3%
102	Northfield	58.4%	61.0%
103	Stow / Hudson	69.6%	61.3%
104	Twinsburg / Creekside	66.7%	63.4%
110	Green / Springfield	71.6%	70.0%
Annual System Total On-Time %		**75.0%**	**75.6%**

Freight Methodology and Analysis

The movement of freight is an important part of a fully functioning transportation system. The efficient movement of freight within and through a region is critically important to industry, retail commerce, agriculture, international trade and terminal operators. Metropolitan areas with their air cargo airports, freight yards, trucking terminals, and shipping facilities, are especially affected by freight movement issues. Freight congestion can include delays at airports, water ports, rail facilities, and on highways. In this CMP we mostly focus on highway-based freight congestion, where AMATS could assist in funding improvements.

The AMATS freight planning process:

- Defines those elements of the area's transportation system that are critical for the efficient movement of freight
- Identifies ways to measure system performance in terms of freight movement
- Develops freight-oriented data collection and modeling in order to identify problems and potential solutions, and ultimately
- Recommends broad strategies and specific projects designed to improve the movement of freight throughout the transportation network

The highest priority needs in the AMATS area regarding freight movement involve improvements to the highway system. The AMATS *Highway Preservation Needs* Report and the *Congestion Management Process (CMP)* Report address the needs of the AMATS area in terms of highway improvements that streamline the flow of freight in the region.

AMATS's freight planning process includes three primary strategies:

- Developing and maintaining databases and analysis tools for decision-making
- Interacting with AMATS members and freight stakeholders to better understand the freight system, identify common issues, and build consensus
- Incorporating freight into the regional transportation planning process

Trucks

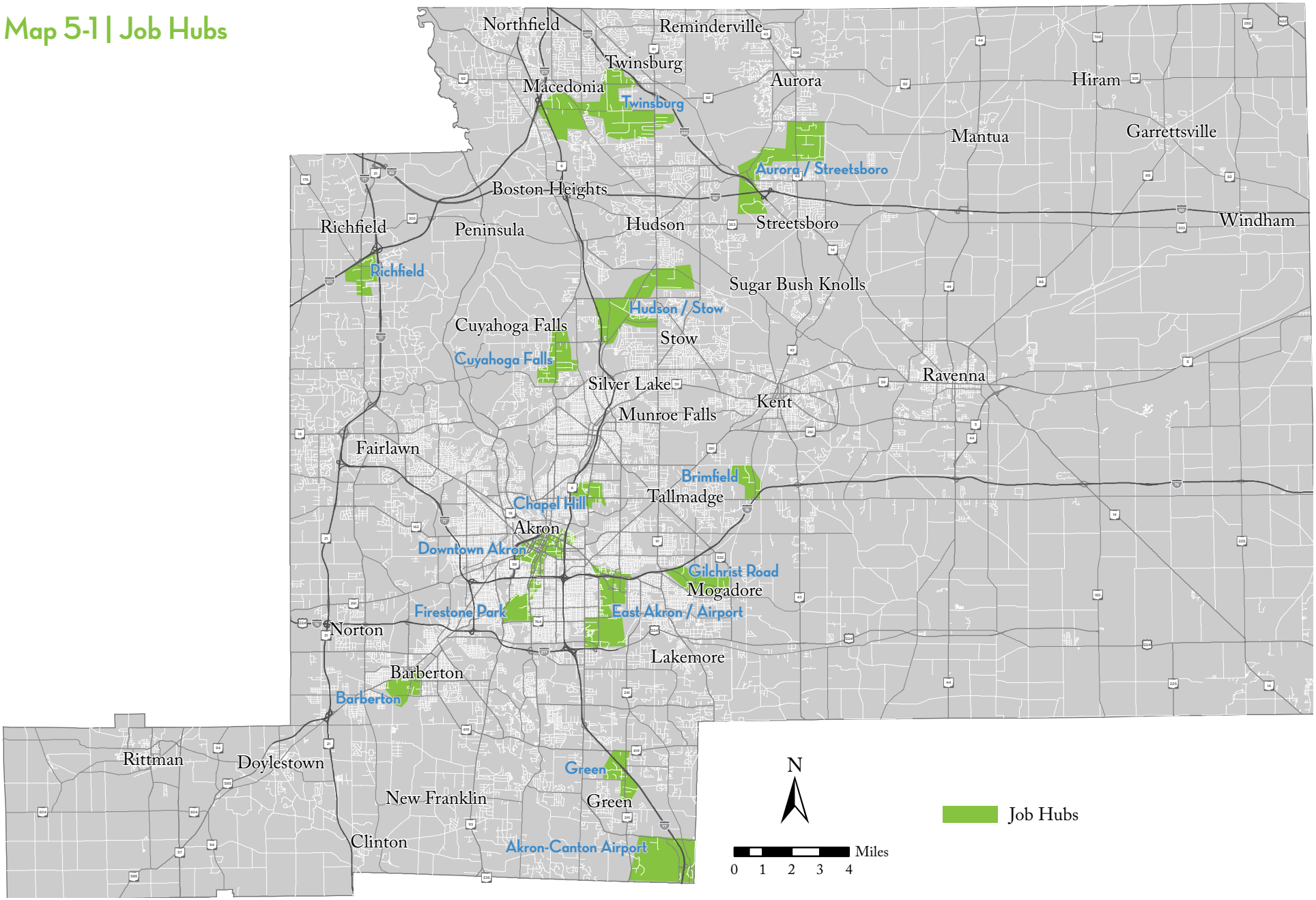
Freight movement, by way of trucks, is heavily concentrated on freeways and major state routes. The number of trucks on these roads range from 50 to 15,000 trucks per day, with I-76 through Summit and Portage counties being the busiest freeway for trucks. Highway improvements such as the widening of I-76 east of SR 21 and the improvement of the High St / Broadway St interchange along with planned improvements to the Central Interchange and widening of SR 8 and I-77 through and south of Akron will help improve the efficiency of freight movement on the area's roadways.

In its *2020 Freight Plan*, AMATS analyzed truck freight as it relates to key job hubs in the greater Akron area. Job hubs were identified 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 job hubs are 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. Table 5-1 below includes congested locations near the 14 job hubs identified in the AMATS *2020 Freight Plan*.

Table 5-1 | Job Hub Congestion Locations

LOCATION	DESCRIPTION	JOB HUB
Akron	Firestone Blvd from S Main St to Grant St	Firestone Park
Akron	Firestone Blvd from Grant St to S Main St	Firestone Park
Akron	Wilbeth Rd (SR-764) at Manchester Rd (SR-93)	Firestone Park
Akron	Euclid Ave from Rand St to Dart Ave	Downtown Akron
Akron	SR-8 SB from Forge St to E Market St (SR-18)	Downtown Akron
Akron	SR-8 SB from Perkins St Off Ramp to Perkins St On Ramp	Downtown Akron
Akron	SR-8 SB from Glenwood Ave On Ramp to Perkins St Off Ramp	Downtown Akron
Akron	W Exchange St from Paul Williams St to S Main St	Downtown Akron
Akron	Perkins St (SR-59) from Union St to SR-8 SB Ramps	Downtown Akron
Akron	SR-8 SB from Tallmadge Ave Off Ramp to Tallmadge Ave On Ramp	Chapel Hill
Akron	SR-8 SB from E Cuyahoga Falls Ave On Ramp to Tallmdage Ave Off Ramp	Chapel Hill
Akron	E Tallmadge Ave (SR-261) from Gorge Blvd to SR-8 SB Ramps	Chapel Hill
Akron	Home Ave from Annapolis Ave to Howe Ave	Chapel Hill
Akron	E Tallmadge Ave (SR-261) from SR-8 SB Ramps to Gorge Blvd	Chapel Hill
Akron	Home Ave from Howe Ave to Annapolis Ave	Chapel Hill
Cuyahoga Falls	State Rd from Marc Dr to Bath Rd	Cuyahoga Falls
Cuyahoga Falls / Stow	Steels Corners Rd from Wyoga Lake Rd to Bridgewater Pkwy	Cuyahoga Falls
Cuyahoga Falls	State Rd from Marc Dr to Steels Corners Rd	Cuyahoga Falls
Cuyahoga Falls	State Rd from Bath Rd to Graham Rd	Cuyahoga Falls
Cuyahoga Falls	State Rd from Quick Rd to Steels Corners Rd	Cuyahoga Falls
Green	Massillon Rd (SR-241) from I-77 SB Ramps to I-77 NB Ramps	Green
Green	Massillon Rd (SR-241) from I-77 NB Ramps to I-77 SB Ramps	Green
Brimfield Township	Tallmadge Rd from I-76 WB Ramps to I-76 EB Ramps	Brimfield
Brimfield Township	Tallmadge Rd from I-76 EB Ramps to I-76 WB Ramps	Brimfield
Macedonia	I-271 NB Off Ramp to SR-8	Twinsburg
Macedonia	SR-8 SB from I-271 SB On Ramp to I-271 NB Off Ramp	Twinsburg
Twinsburg	E Aurora Rd (SR-82) from I-480 WB Ramps to Darrow Rd (SR-91)	Twinsburg
Streetsboro	SR-14 from I-80 Ramps to SR-43	Aurora / Streetsboro
Streetsboro	I-480 SB Ramp to I-80	Aurora / Streetsboro
Streetsboro	Aurora Hudson Rd from I-480 SB Ramps to Frost Rd	Aurora / Streetsboro
Akron	Waterloo Rd (US-224) at George Washington Blvd (SR-241)	East Akron / Airport
Akron	Waterloo Rd (US-224) at George Washington Blvd (SR-241)	East Akron / Airport
Akron	Waterloo Rd at Arlington St	East Akron / Airport
Richfield	Wheatley Rd at Brecksville Rd	Richfield
Richfield	Brecksville Rd at Wheatley Rd	Richfield
Richfield	Brecksville Rd at Wheatley Rd	Richfield
Richfield	Wheatley Rd at Brecksville Rd	Richfield
Stow	Steels Corners Rd from Bridgewater Pkwy to SR-8	Hudson / Stow
Hudson	Terex Rd from Hudson Dr to Darrow Rd (SR-91)	Hudson / Stow
Stow	Steels Corners Rd from SR-8 to Hudson Dr	Hudson / Stow
Hudson	Terex Rd from Darrow Rd (SR-91) to Hudson Dr	Hudson / Stow

Map 5-1 | Job Hubs



Railways

There are approximately 393 at-grade crossings in the AMATS area (many are on abandoned or out of service rail lines). High volume crossings are prioritized by scoring the number of trains per day and the average daily traffic volume (ADT). The table below lists locations that have scores greater than 100. The number of trains per day varies from year to year depending on the count locations provided by ORDC and PUCO. 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 very costly, and not always feasible due to geographic configuration.

Table 5-2 | 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

Freight recommendations are included in Chapter 9 of this report along with other highway and transit recommendations.

Incident-Related Traffic Congestion

Incident-related traffic congestion is congestion that occurs due to a non-recurring incident. In most cases, this incident is a traffic crash. While crashes can happen anywhere at any time, some locations are more prone to crashes than others. Locations with both frequent crashes and recurrent congestion will be significantly more congested. Effective transportation planning requires that incident-related congestion be analyzed.

In order to analyze incident-related traffic congestion, traffic crash data must be reviewed. AMATS publishes an annual report detailing traffic crashes in our region; the latest version being published in December 2019. *Traffic Crashes and Safety Performance Measures 2016-2018* analyzed traffic crashes for arterials and intersections between 2016 and 2018, utilizing crash records provided by the Ohio Department of Public Safety (ODPS) and the Ohio Department of Transportation (ODOT) for the years 2016, 2017 and 2018.

Arterials

Areas of incident-related congestion are determined based on a composite score which considers both number of crashes and their severity to determine locations where incident-related congestion is most likely to occur. For a complete description of how the composite score is determined, please review the methodology in the AMATS *Traffic Crashes and Safety Performance Measures 2016-2018* report. Table 6-1 and Map 6-1 displays the top 50 arterial locations.

Intersections

Similar to arterial segments, areas of incident-related intersection congestion are determined based on composite score. The top 50 high crash intersections are listed on Table 6-2 and displayed on Map 6-2.

Locations where the two previously mentioned lists coincide with areas of recurring congestion are shown on Map 6-3.

Freeways

The analysis of freeway crashes in the AMATS area is done by the central office of the Ohio Department of Transportation (ODOT) in Columbus. ODOT's analysis of freeways is done using their own methodology which is derived from the Highway Safety Manual. The freeway system is divided into rural and urban and is analyzed by examining segments that are one-tenth of a mile long.

In an effort to make data-driven decisions and determine operationally sensitive corridors throughout the state, ODOT has developed the Traffic Operations Assessment Systems Tool (TOAST). In TOAST routes are segmented into the State Priority System with breaks at the urban area boundaries, interchange center points, and road functional class changes. Multiple data categories make up TOAST. For each category, data ranges were normalized into values of 0-10, then multiplied by a weighting factor. The total score for a route is calculated as a percent based on the score for each category divided by the total possible maximum score. In general, the higher the percent, the better the route is performing; whereas, the lower the percent, the more likely a route is to benefit from improvements. The data categories that make up TOAST are listed below:

Travel Time Performance – Percent of time motorists can travel at or near (90%) of the reference speed (free-flow speed defined by data provider).

Bottlenecks – A potential bottleneck is detected when speeds on a segment drop to 65% of reference speeds and cause at least a two-minute delay.

Incident Clearance – The time from report of an incident until the entire scene is cleared.

Secondary Crashes – Percent of crashes that occurred as a result of a previous incident.

Volume Per Lane – Calculated based on a weighted average for each segment.

Freight Corridors – Weighted average of percent trucks (average daily truck volume ÷ average daily total volume).

Safety Performance – A route's potential for safety improvement by density based on its peer group.

ODOT has analyzed the freeway network in the AMATS area. The results of this analysis are shown on Map 6-4.

Table 6-1 | High Crash Roadway Segments 2016-2018

RANK	ROADWAY SECTION	FROM	TO	LENGTH (MILES)	AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASHES PER MILE PER YEAR	CRASH RATE	SEVERITY INDEX	BIKE RELATED	PED RELATED	LOCATION
1	E Main St (SR-59)	Willow St	Luther Ave	0.41	18,195	86	69	10.46	1.53		2	Kent
2	S Cleveland-Massillon Rd	IR-77	Rosemont Blvd / Elgin Dr	0.53	21,780	65	41	5.15	1.71			Fairlawn
3	Medina Rd (SR-18)	IR-77	Cleveland-Massillon Rd (CR-17)	0.69	30,889	149	71	6.34	1.54			Copley Twp
4	W Market St (SR-18)	Cleveland-Massillon Rd	Smith Rd	0.57	24,530	95	56	6.21	1.53		2	Fairlawn
5	Copley Rd (SR-162)	St Micheals	S Hawkins Ave	0.49	9,328	39	26	7.78	1.62		1	Akron
6	S Prospect St	Ravenna SCL	Lake Ave	0.18	9,640	11	21	5.84	2.09			Ravenna
7	E Aurora Rd (SR-82)	Olde Eight Rd	SR-8	0.82	15,150	76	31	5.61	1.50			Macedonia
8	Canton Rd (CR-66)	Sanitarium Rd (CR-136)	Waterloo Rd (US-224)	1.01	14,870	85	28	5.19	1.56		2	Springfield Twp
9	Ghent Rd	W Market St (SR-18)	Smith Rd	0.38	9,230	36	31	9.31	1.44			Fairlawn
10	SR-14	SR-303 (W)	SR-303 (E)	0.36	25,578	51	48	5.10	1.47			Streetsboro
11	SR-14 / SR-44	SR-59	SR-5 (end SR-14 overlap)	0.39	17,345	34	29	4.63	1.59			Ravenna Twp
12	Arlington Rd	Turkeyfoot Lake Rd (SR-619)	Green North Corp Line	0.95	20,305	145	51	6.86	1.37		1	Green
13	W&E Main St (SR-59)	Sycamore St	Prospect St	0.26	14,100	39	50	9.81	1.36		1	Ravenna
14	Massillon Rd (SR-241)	Boettler Rd	Turkeyfoot Lake Rd (SR-619)	1.01	21,609	130	43	5.46	1.38			Green
15	Kent Rd (SR-59)	Fishcreek Rd	Stow East Corp Line	0.35	18,730	26	25	3.62	1.69			Stow
16	State Rd	Portage Trail	Graham Rd	0.27	22,210	24	30	3.70	1.50	2	2	Cuyahoga Falls
17	Howe Ave	Cuyahoga Falls Corp Line	Main St	0.27	29,263	42	51	4.77	1.38		1	Cuyahoga Falls
18	E Main St (SR-59)	Horning Rd	Kent East Corp Line	0.52	19,184	48	31	4.44	1.46		2	Kent
19	State Rd	Cuyahoga Falls Corp Line	Broad Blvd	0.70	14,700	43	21	3.83	1.70			Cuyahoga Falls
20	Graham Rd	Fishcreek Rd	Stow East Corp Line	0.66	14,750	53	27	5.00	1.45			Stow
21	SR-44	Tallmadge Rd (CR-18)	SR 5 (NB off from IR-76)	0.66	27,333	56	28	2.84	1.68			Rootstown Twp
22	Brittain Rd	Eastwood Ave	E Tallmadge Ave (SR-261)	1.19	12,350	73	21	4.55	1.62		2	Akron
23	W Market St (SR-18)	Miller Rd	Fairlawn East Corp Line	0.68	17,540	73	36	5.61	1.36			Fairlawn
24	S Arlington St	E Waterloo Rd	E Wilbeth Rd (SR-764)	0.70	12,800	49	23	4.96	1.45		3	Akron
25	Howe Ave	Main St	Buchholzer Blvd	0.69	24,551	58	28	3.13	1.52			Cuyahoga Falls
26	W Exchange St	Rhodes Ave	Dart Ave	0.54	8,040	32	20	6.67	1.44			Akron
27	E Main St (SR-59)	Freedom St (SR 88)	SR 14/SR 44	0.76	13,724	57	25	5.01	1.39			Ravenna
28	S Water St	Haymaker Pkwy (SR 59)	E Main St	0.18	5,260	14	26	13.78	1.29		1	Kent
29	Broad Blvd / Broadway East	Second St	Newberry St	0.29	16,170	36	41	6.90	1.17			Cuyahoga Falls
29	Arlington Rd (CR-15)	IR-77 / Green NCL	Killian Rd (CR-135)	0.61	18,130	55	30	4.52	1.36		1	Springfield Twp
31	Fuller Rd	7th Ave	5th Ave	0.28	1,000	14	17	45.99	1.43			Akron
32	W Streetsboro St (SR-303)	Boston Mills Rd	Main St (SR-91)	0.55	14,446	42	26	4.86	1.38	1		Hudson
33	E Tallmadge Ave (SR-261)	N Main St	Gorge Blvd	0.60	16,610	53	29	4.84	1.34		1	Akron
34	SR-14	IR-480 ramp to Turnpike	SR 303 (W)	1.18	31,551	113	32	2.77	1.48			Streetsboro
35	Goodkirk St	Buchtel Ave	E Market St (SR-18)	0.24	29,263	31	43	4.02	1.32			Akron
36	E Exchange St	S Broadway St (SR-261)	Spicer St	0.76	21,113	95	42	5.43	1.21	1	3	Akron
37	Graham Rd	Hudson Dr	Silver Lake West Corp Line	0.44	28,680	42	32	3.05	1.43			Stow
38	W Market St (SR-18)	Ghent Rd	Miller Rd	0.29	28,390	44	50	4.83	1.27			Fairlawn
39	Graham Rd	Oakwood Dr / Wyoga Lake Rd	Hudson Dr	0.72	21,205	45	21	2.70	1.67			Stow
40	E Main St	Water St	Willow St	0.27	9,070	22	27	8.20	1.18			Kent
41	Brittain Rd	E Tallmadge Ave (SR-261)	Independence Ave	0.61	12,614	45	24	5.31	1.31		2	Akron
42	Wooster Rd W	14th St NW	Wooster Rd N	0.75	10,919	35	16	3.91	1.63		1	Barberton
43	N Main St	E Tallmadge Ave	E Cuyahoga Falls Ave	0.36	10,420	17	16	4.14	1.59		2	Akron
44	Front St / Kent Rd (SR-59)	Bailey Rd	Oak Park Blvd	0.36	12,791	26	24	5.20	1.31			Cuyahoga Falls
45	Canton Rd (SR-91)	Akron SCL	Triplett Blvd	0.35	15,180	21	20	3.58	1.48			Akron
46	N Main St (SR-91)	Streetsboro St (SR-303)	Owen Brown St	0.23	20,220	25	36	4.88	1.16			Hudson
47	Darrow Rd (SR-91)	Kent Rd (SR-59)	Stow Rd	0.65	14,896	41	21	3.88	1.39			Stow
48	State Rd	Broad Blvd	Portage Trail	0.96	15,343	61	21	3.78	1.39	2	1	Cuyahoga Falls
49	S High St (SR-261)	E Exchange St	E Market St (SR-18)	0.67	7,771	46	23	8.11	1.13			Akron
50	Garfield Rd W (SR-82)	Aurora Rd (SR-43)	Chillicothe Rd (SR-306)	0.24	9,885	16	22	6.19	1.25			Aurora

Map 6-1 | Top 50 High-Crash Roadway Sections

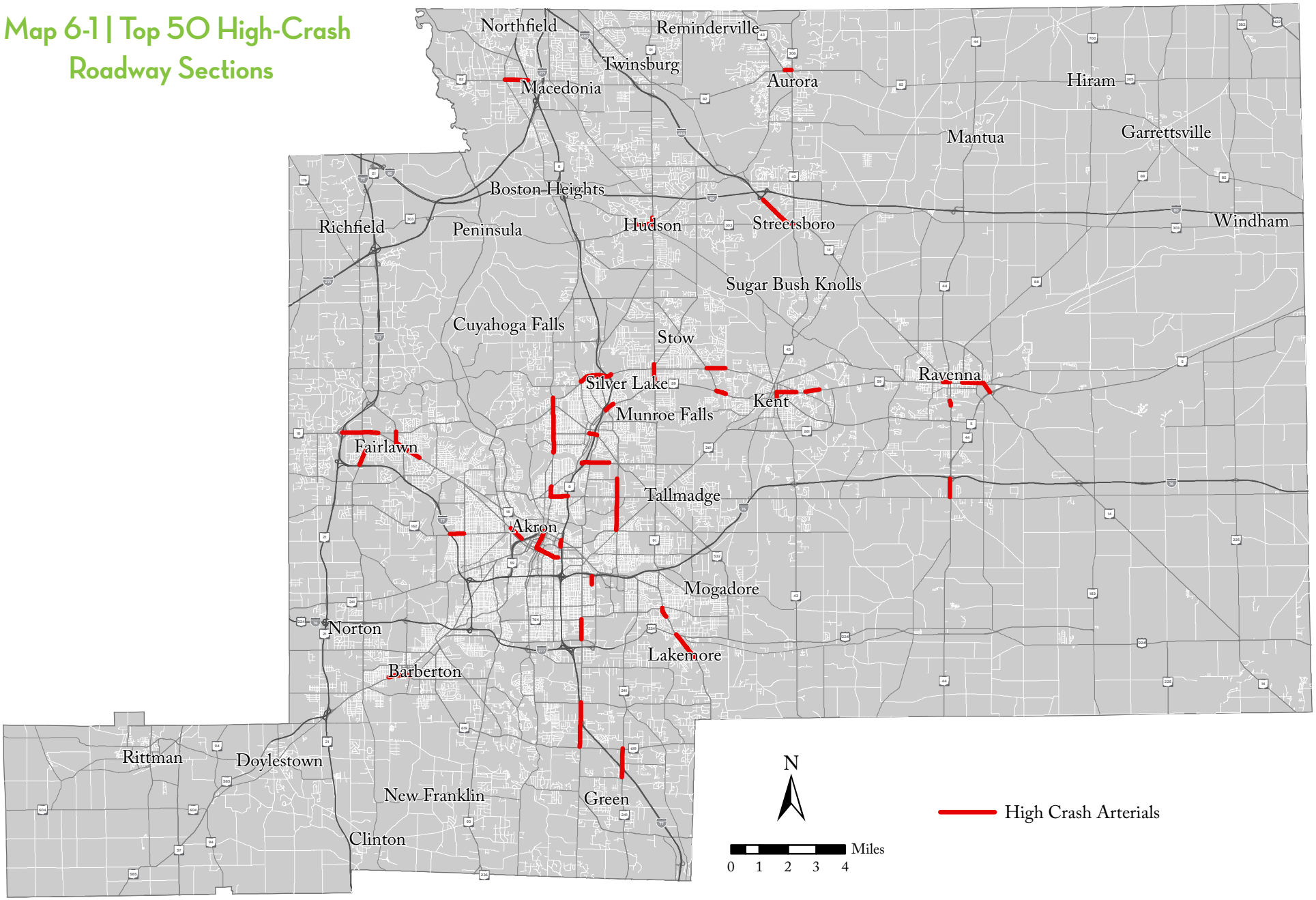
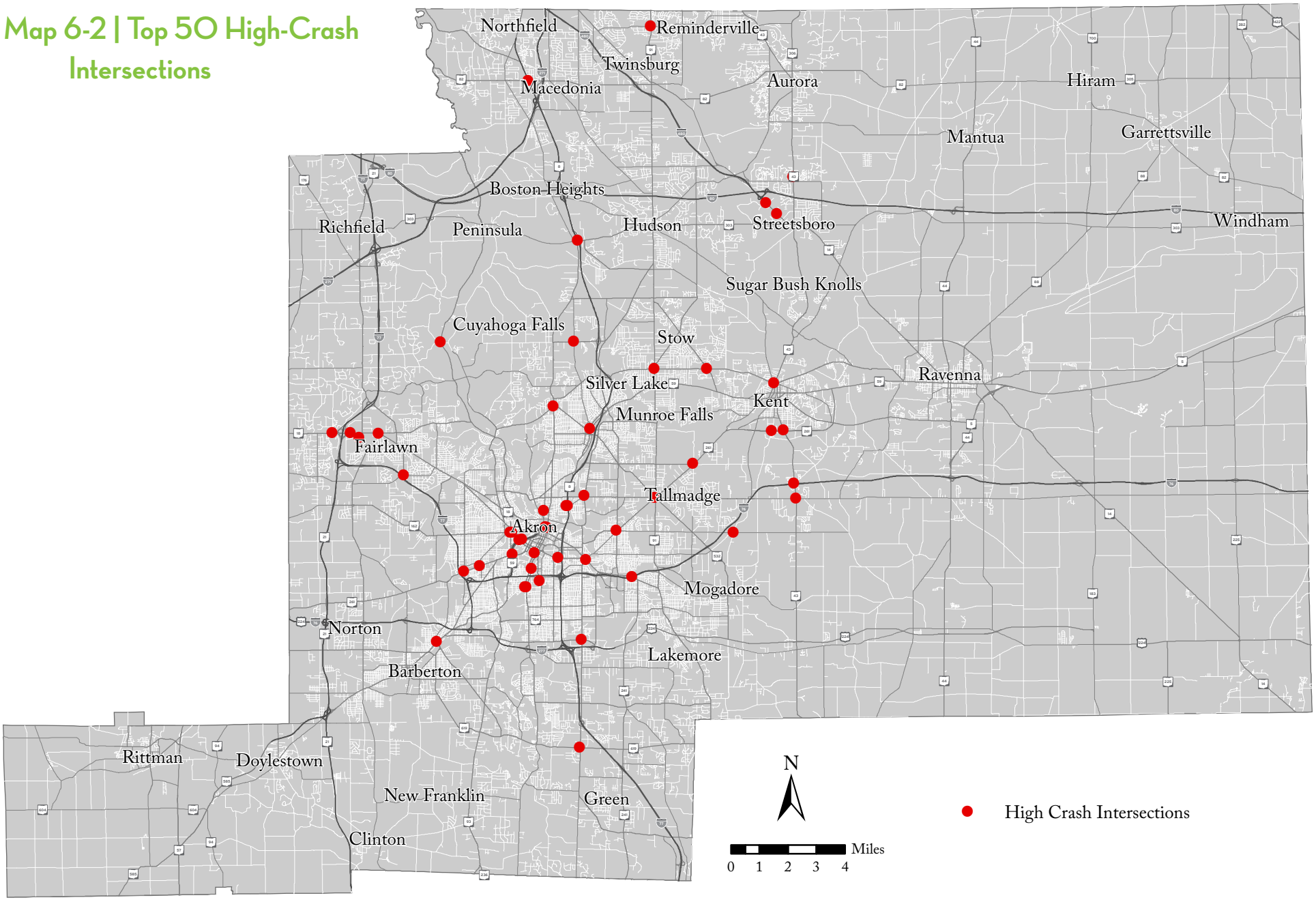


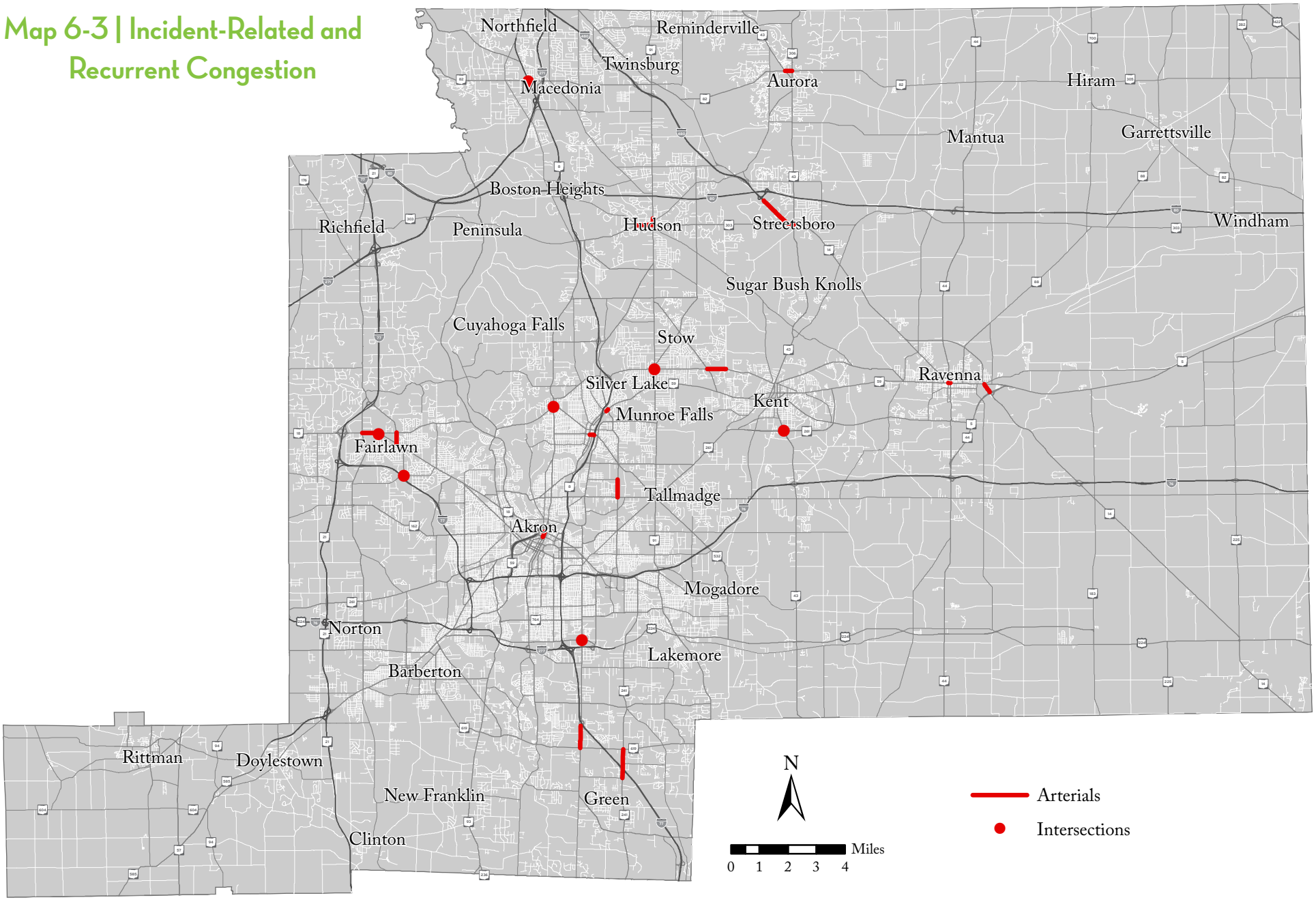
Table 6-2 | High Crash Intersections 2016-2018

RANK	STREET	INTERSECTING STREET(S)	APPROACH AVERAGE DAILY TRAFFIC	TOTAL CRASHES	CRASH RATE	SEVERITY INDEX	BIKE RELATED	PED RELATED	LOCATION
1	S Maple St (SR-162)	Rhodes Ave	13,195	43	2.98	1.84	1		Akron
2	S Maple St (SR-162)	W Cedar St	13,820	36	2.38	1.83	1		Akron
3	SR-14 / SR-303	SR-43	41,044	135	3.00	1.47			Streetsboro
4	Darrow Rd (SR-91)	Graham Rd	34,456	80	2.12	1.53			Stow
5	S Broadway St	E Miller Ave	16,680	40	2.19	1.65		2	Akron
6	Portage Trail	2nd St	29,350	61	1.90	1.56			Cuyahoga Falls
7	W Market St (SR-18)	Smith Rd	24,604	44	1.63	1.77			Fairlawn
8	Vernon Odom Blvd (SR-261)	Superior Ave	13,265	32	2.20	1.75			Akron
9	E Tallmadge Ave (SR-261)	Home Ave	29,800	57	1.75	1.56			Akron
10	SR-14	Brook Valley Trail / Shady Lake Dr	31,551	49	1.42	1.94			Streetsboro
11	S Broadway St	E Thornton St	19,670	53	2.46	1.45			Akron
12	Graham Rd	Fishcreek Rd	28,940	55	1.74	1.55	1		Stow
13	Opportunity Pkwy (SR-261)	Dart Ave	12,938	31	2.19	1.71			Akron
14	MLK Jr. Blvd (SR-59)	N Broadway St (SR-261)	22,402	46	1.88	1.57			Akron
15	S Miller Rd	Ridgewood Rd / IR-77 Ramps	28,552	52	1.66	1.58			Fairlawn
16	SR-43	Tallmadge Rd	19,640	34	1.58	2.09		2	Brimfield Twp
17	Bellows St	Crosier St	3,230	27	7.63	1.67			Akron
18	N Howard St	Glenwood Ave	10,360	25	2.20	1.80			Akron
18	SR-14	Mondial Pkwy / Singletary Dr	31,551	53	1.53	1.57			Streetsboro
20	Riverview Rd	Ira Rd	5,266	22	3.82	1.82			Cuyahoga Falls
21	MLK Jr. Blvd (SR-59)	N High St (SR-261)	25,308	40	1.44	1.75		1	Akron
22	W Exchange St	Rand Ave	14,630	31	1.94	1.65			Akron
23	Vernon Odom Blvd (SR-261)	S Hawkins Ave	18,960	45	2.17	1.44			Akron
24	E Exchange St	Spicer St	22,975	46	1.83	1.48	1		Akron
25	Darrow Rd (SR-91)	Glenwood Dr	19,320	64	3.03	1.28			Twinsburg
26	E Market St (SR-18)	Case Ave	19,260	44	2.09	1.45		2	Akron
27	SR-261	Franklin Ave / Sunnybrook Rd	10,762	23	1.95	2.22			Kent
28	Brookmont Dr	Brookwall Dr	6,020	20	3.03	1.80			Fairlawn
29	E Turkeyfoot Lake Rd (SR-619)	Arlington Rd	29,089	50	1.57	1.52			Green
30	Mantua St (SR-43)	SR-261	28,953	56	1.77	1.43			Kent
31	Steels Corners Rd	Wyoga Lake Rd	16,569	38	2.09	1.47			Cuyahoga Falls
32	Old Forge Rd	Mogadore Rd	2,320	20	7.87	1.70			Brimfield Twp
33	S Arlington St	E Waterloo Rd	21,783	40	1.68	1.50			Akron
34	SR-43	IR-76 Ramps / Edson Rd	51,626	59	3.24	1.24			Brimfield Twp
34	Portage Trail	State Rd	34,965	86	2.25	1.26		1	Cuyahoga Falls
36	Tallmadge Circle		38,034	249	5.98	1.15	1		Tallmadge
37	SR-303	Akron Cleveland Rd / SR-8 Ramps	20,971	50	2.18	1.36			Boston Heights
38	Medina Rd (SR-18)	Springside Dr	37,789	51	1.23	1.71			Bath Twp
39	Glenwood Ave	SR-8 Ramps / Gorge Blvd	10,988	38	3.16	1.37			Akron
40	N Mantua St (SR-43)	Fairchild Ave	28,500	49	1.57	1.49	1		Kent
41	E Market St (SR-18)	Mogadore Rd / IR-76 Ramps	37,408	63	1.54	1.44	1	1	Akron
41	S Main St	Miller Ave / Old Main St	10,010	29	2.65	1.52	1		Akron
43	Northeast Ave (SR-261)	E Howe Rd / N Munroe Ave	18,426	57	2.83	1.25			Tallmadge
44	W Cedar St	Rand Ave	13,120	24	1.67	2.00			Akron
45	Medina Rd (SR-18)	Crystal Lake Rd / Montrose West Ave	48,380	66	1.25	1.58			Bath Twp
46	Brittain Rd	Eastland Ave / Eastwood Ave	21,735	48	2.02	1.38		1	Akron
47	State St (SR-619)	Wooster Rd N (SR-619)	23,600	39	1.51	1.56			Barberton
48	S High St	Selle St	14,420	28	1.77	1.64			Akron
49	SR-8	Aurora Rd (SR-82)	35,035	80	2.09	1.25			Macedonia
50	Tallmadge Ave	N Howard St	16,050	33	1.88	1.48	1	1	Akron

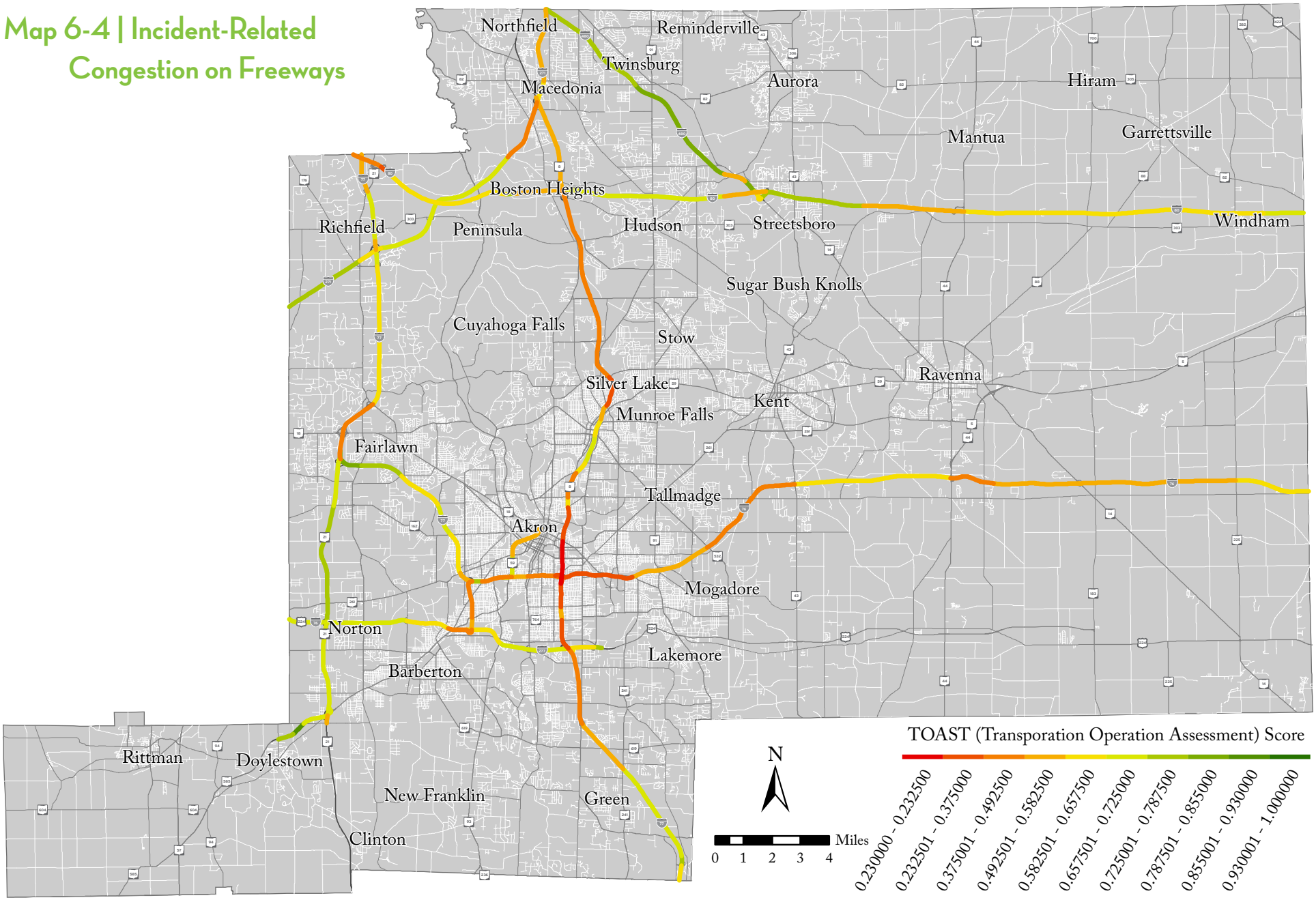
Map 6-2 | Top 50 High-Crash Intersections



Map 6-3 | Incident-Related and Recurrent Congestion



Map 6-4 | Incident-Related Congestion on Freeways



Performance Measures

Transportation Performance Management is required by MPOs as stated in MAP-21 and continued in the FAST Act. Transportation Performance Management is defined as a strategic approach that uses system information to make investment and policy decisions to achieve national performance goals. Within Transportation Performance Management, there are performance measures. Performance measures related to the CMP include Level of Travel Time Reliability (LOTTR) and Level of Truck Travel Time Reliability (LOTTTR), Peak Hour Excessive Delay (PHED) and Mode Share or Non Single Occupancy Vehicle (Non-SOV) travel. Each of these performance measures have their own respective targets.

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 7-1 below:

Table 7-1 | 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 (LOTTR) 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. If the longer travel time is greater than or equal to 1.5, the roadway segment or corridor is considered unreliable.

The variability or change in congestion on a day-to-day basis provides a measure of reliability. Recurring congestion is generally predictable, regularly occurring, and typically caused by excess demand compared to the capacity of the system. Conversely, non-recurring congestion causes unreliable travel times and is caused by transient events such as traffic incidents, weather conditions, work zones, or special events. This form of congestion is often the most frustrating for travelers. National estimates indicate that nearly 50% of all congestion is non-recurring (FHWA, October 2019).

LOTTR assesses the consistency or dependability of travel times from day to day or across different times of the day on the Interstate and Non-Interstate NHS systems. FHWA defines LOTTR as the percent of person-miles on the Interstate and NHS that are reliable. LOTTR is calculated as the ratio of the longer travel times (80th percentile) to a "normal" travel time (50th percentile), using NPMRDS or equivalent data. Data are collected in 15-minute segments during all time periods between 6 AM and 8 PM. Reliability measures are grouped into three weekday time periods (6-10 AM, 10 AM - 4 PM, 4- 8 PM) and one weekend time period (6 AM – 8 PM). Any roadway segment or corridor that has a reliability index of 1.5 or greater during any time period is considered to be unreliable. For example, a roadway segment with a free-flow speed of 60 mph where the observed average travel speed during one of the time study periods is 40 mph, would have a LOTTR value of 1.5.

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. If the longer truck travel time is greater than or equal to 1.5, the roadway segment or corridor is considered unreliable.

Data for TTTR are also collected in 15-minute segments during all time periods throughout the day. Reliability measures were grouped into three weekday time periods (6-10 AM, 10 AM-4 PM, 4-8 PM), one weekend time period (6 AM – 8 PM), and one overnight time period for all days (8 PM-6 AM). Any roadway segment or corridor that has a reliability index of 1.5 or greater during any time period is considered to be unreliable.

The data used 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 7-2:

Table 7-2 | 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 7-3 below:

Table 7-3 | 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

Peak Hour Excessive Delay (PHED)

ODOT and the Ohio MPOs collectively established a single target for each applicable urbanized area for the first performance period by May 20, 2018. As part of a phased implementation approach, only four-year targets were reported in the State's baseline performance period report that was due on October 1, 2018. There is no requirement for states to report two-year targets or baseline condition for this specific measure in the report for the first performance period. With the first mid-performance period progress report, due October 1, 2020, four-year targets may be adjusted, and two-year condition/performance will be reported as baselines.

Traffic congestion will be measured by the annual hours of peak hour excessive delay (PHED) per capita on the National Highway System (NHS). The threshold for excessive delay will be based on the travel time at 20 miles per hour or 60% of the posted speed limit travel time, whichever is greater, and will be measured in 15-minute intervals. Peak travel hours are defined as 6-10 am local time on weekday mornings and 3-7 pm on weekday afternoons, providing flexibility to state DOTs and MPOs. The total excessive delay metric will be weighted by vehicle volumes and occupancy.

For the establishment of the PHED measure, ODOT and its partner agencies reviewed data from 2017 using the RITIS Analytics Tool, which draws data from the NPMRDS. For the establishment of the Percent of Non-SOV Travel Measure, ODOT and its partner agencies used the American Community Survey data's estimates of the percentage of people that travel to work by means other than driving alone (i.e. carpooling, telework, biking, walking, or taking the bus). ODOT was able to review five years of data, noting stable travel patterns for this measure. Upon analysis, ODOT and its partner agencies adopted targets based on recent travel trends and future expected performance.

AMATS is located in part of the Cleveland urbanized area (UZA). Consequently, ODOT, NOACA and AMATS coordinated the setting of targets for the Cleveland area. The Cleveland urbanized area performance is documented in the Charts 7-1 and 7-2.

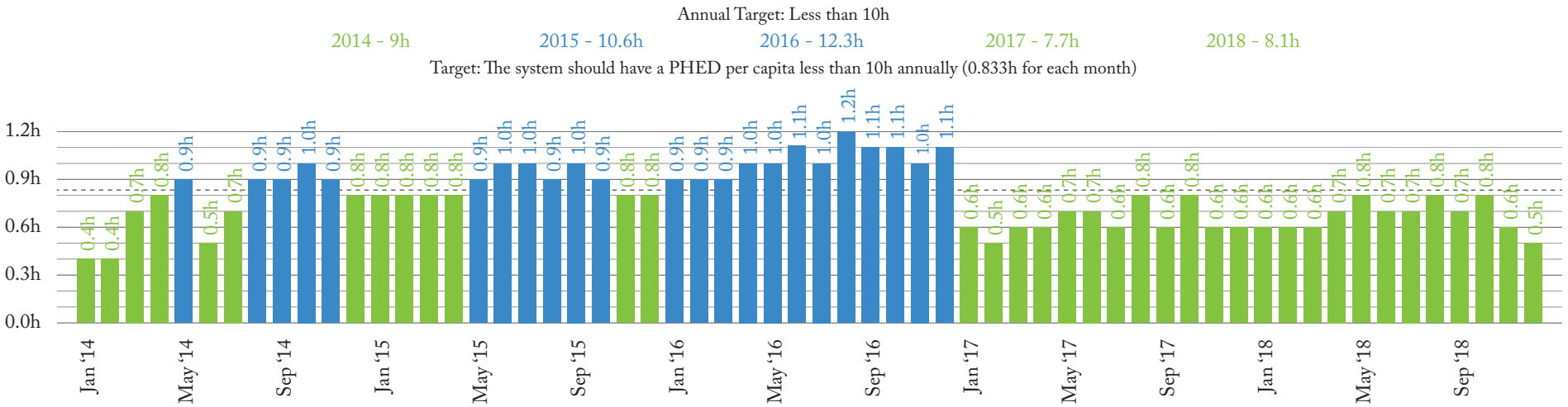
Mode Share (Non-SOV Travel)

Mode share is a measure of the percentage of each mode on all surface transportation occurring in the urbanized area. Modes of surface transportation include driving alone in a motorized vehicle (Single Occupancy Vehicle), car or van pooling, public transportation, commuter rail, walking, or bicycling as well as travel that is avoided by telecommuting. Non-SOV travel, defined by the FHWA, applies to any travel occurring on modes other than driving alone in a motorized vehicle. An analysis of mode share includes a calculation of the percent of Non-SOV travel within the urbanized area. This metric is derived from the U.S. Census Bureau's American Community Survey (ACS) data. Higher levels of Non-SOV travel can reduce an area's traffic congestion by removing additional vehicles from the roadways. The PHED and Non-SOV measures and targets are listed in Table 7-4 as follows:

Table 7-4 | Peak Hour Excessive Delay and Non-Single Occupancy Vehicle Travel

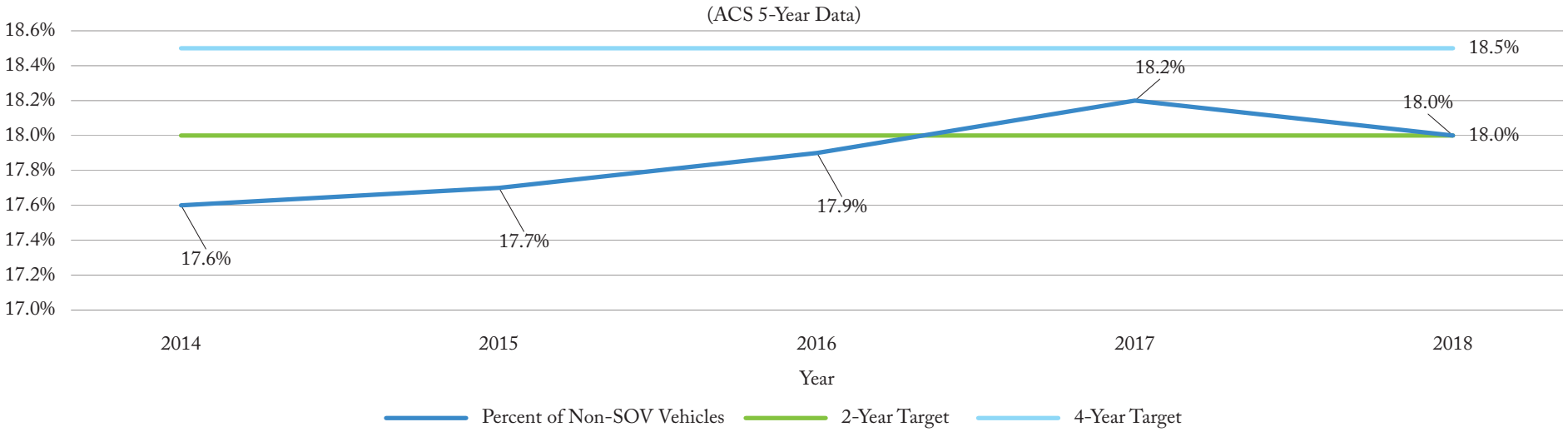
Peak Hour Excessive Delay (PHED)		
URBANIZED AREA PHED	2-YEAR TARGET	4-YEAR TARGET
Peak Hour Excessive Delay per Capita - Cincinnati	N/A	< 12 hrs / yr
Peak Hour Excessive Delay per Capita - Cleveland	N/A	< 10 hrs / yr
Peak Hour Excessive Delay per Capita - Columbus	N/A	< 12 hrs / yr
Non-Single Occupancy Vehicle (Non-SOV) Travel		
URBANIZED AREA PERCENT OF NON-SOV TRAVEL	2-YEAR TARGET	4-YEAR TARGET
Percent of Non-SOV Travel - Cincinnati	17.4%	17.4%
Percent of Non-SOV Travel - Cleveland	18.0%	18.5%
Percent of Non-SOV Travel - Columbus	18.2%	19.0%

Chart 7-1 | Cleveland Urbanized Area: MAP-21 Peak Hours Excessive Delay per Capita



Calculated using 87.93% of Miles in Cleveland
Data source: NPMRDS HERE (2014-2016) and NPMRDS INRIX (2017-2019)

Chart 7-2 | Cleveland Urbanized Area: Annual % of Non-Single Occupant Vehicles



Congestion Management Strategies and Assessments

After thoroughly scanning and assessing the defined CMP network, AMATS has established generalized strategies that best match the Code of Federal Regulations (CFR), FHWA guidance, and regional transportation planning context. A strategy or combination of strategies that are appropriate for deficient corridors and segments are selected based on the type of congestion. Effectively managing congestion over time requires a multi-faceted approach. Thus, the strategies are categorized into five tiers, ranked generally by the efficacy of mitigating congestion. The strategies in the top tiers should be given priority over the lower ones. The tiers are:

Tier 1: Demand management
Tier 2: Traffic and roadway operational improvements
Tier 3: Public Transportation improvements
Tier 4: ITS Strategies
Tier 5: Capacity expansion

Tier 1: Demand Management

Demand-side strategies represent a more modern approach to managing traffic congestion. Demand-side strategies include those that focus on reducing vehicles on the roadway either permanently or during the busiest times of the day. City rush-hours are an example of when demand exceeds supply. A highway that easily accommodates traffic throughout most of the day is congested with vehicles during morning and afternoon peak hours. Demand-side management is any strategy that reduces the number of vehicles on the road at one time. Generally, demand-side congestion strategies cost significantly less than supply-side ones do. Below are examples of potential demand management strategies:

- Telecommuting – AMATS is one of many organizations that have had employees work from home, i.e., telecommuting. Telecommuting can directly reduce work-related trips during the peak hours of the day when most congestion occurs. Another related benefit is an improvement in air quality. While in previous reports, telecommuting was not seen as being feasibly on a large scale, the COVID-19 pandemic has shown the impacts of large scale telecommuting by drastically reducing traffic.
- Flexible/Alternative Work Hours – Working outside the typical workweek and workday timeframe. It may not eliminate vehicles on the road but could eliminate vehicles on the road during peak hours when congestion is the worst.
- Carpooling – More than one person using a vehicle for a trip with similar origin or destination. Carpooling reduces SOV due to commuters sharing a ride with one or more people for trips. This reduces the number of vehicles on the road. Software makes it easier to create carpools and vanpools by matching similar trip origins, destinations, and times.
- Employer Incentive Program – Incentives may be offered by employers to encourage carpooling or public transportation. This may be financial or some other sort of perk.
- Encouraging a Shift to Alternative Modes of Transportation – using transit, bicycling, walking, or other non-motorized travel. Bicycle and pedestrian modes may also include e-bikes, scooters, skateboards, mobility-assistance devices, etc. Though buses do count as a vehicle on the road, they retain the capability to significantly reduce the total number of vehicle miles traveled. Bicycling, walking, and other modes of alternative transportation can eliminate vehicle miles traveled. However, these modes may not be feasible if trip lengths are too long. Typical trip length for a bicycle commute is up to four miles and up to one mile for a pedestrian.

Tier 2: Traffic and Roadway Operational Improvements

Tier 2 strategies play an important role in congestion management. These strategies emphasize on getting more out of the existing transportation system. The strategies include but not limited to the following:

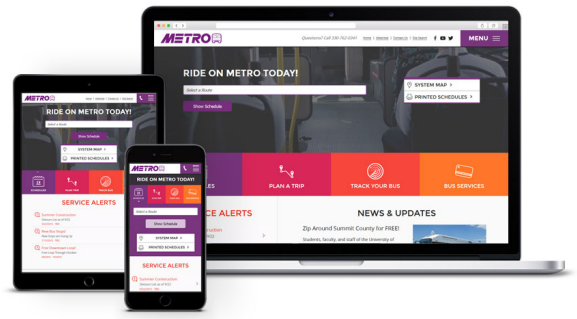
- Intersection and street improvements by adding and extending exclusive turning lanes – exclusive and safe space for vehicles waiting to turn left.
- Reversible commuter lanes on the freeways – more lanes for peak demand traffic flow without more pavement width.
- Variable speed limits – allows traffic to efficiently utilize capacity at a safe speed.
- Variable message signs – enables drivers to take alternative routes to avoid congestion.
- Exclusive shoulder lanes for buses – frequent stopping can occur outside of the flow of traffic.
- Geometric improvements to road and intersections – improves traffic flow and reduces incident related congestion by correcting geometric deficiencies.
- Channelization – facilitates the safe and orderly movement of traffic and defines the paths of traffic by physical separation.
- Median barriers (moveable) to facilitate more capacity during peak periods – more lanes for peak demand flow without adding more pavement.
- Traveler information – information given to travelers to help reduce uncertainty and stress. It also can help avoid congestion, improve safety and save time.
- Complete Streets – Designing streets to enable safe access for users of all ages

and abilities, including pedestrians, bicyclists, motorists, and transit riders.
- Overpasses or underpasses at congested intersections or railroads – provides uninterrupted traffic flow by removing intersection conflict points.

Tier 3: Public Transportation (Transit) Improvements

The public transportation improvement strategies focus on making public transportation more convenient and accessible in the AMATS region. It is worth mentioning that these strategies may be linked with tier 1 and tier 2 strategies. METRO and PARTA control the transit service strategies within the AMATS region with AMATS offering suggestions. The following strategies are included in this category:

- Expanding transit services – adds new vehicles to expand transit services.
- Optimal control of headways by realigning transit service schedules and stop locations – provides better accessibility to transit to a greater share of the population.
- Providing real-time information on transit schedules and arrivals using various ITS strategies – provides real-time information so potential transit riders can estimate wait time.
- Universal transit fare cards and incentives – may be offered to students, employees, or residents to help reduce the cost of transit to the user.
- Bus Rapid Transit – high-quality bus-service that utilizes dedicated lanes, busways, traffic signal priority, off-board fare collection and enhanced or elevated stations to make transit more efficient and reliable. These lines work best in dense urban areas.
- Prioritizing transit vehicles at traffic signals – gives transit vehicles priority at signals to help them run on schedule.



Tier 4: ITS Strategies

These strategies are strongly linked with most of the congestion management strategies. The recommended ITS strategies in the AMATS region are listed below:

- Traffic Signal Improvements – Optimizing and coordinating the timing of traffic signals to improve traffic flow through a corridor or specific intersections.
- Simulation models – Although, the AMATS has established travel demand models for predicting and evaluating the traffic in the region, simulation models may be used to analyze and evaluate the impact of operational strategies.
- Cars Connected to Cars / Cars Connected to Infrastructure – When one vehicle can communicate to another vehicle nearby—in front, behind, etc. it's the core of autonomous driving technology. Sensors detect what's going on around the vehicle and additional technology can share that data with other vehicles on the road. The vehicle is also able to send and receive information about the infrastructure that can include physical things such as traffic signals and weather alert systems. The vehicle can send that data out while simultaneously the infrastructure can send important data back to it.
- Real-time traffic feedback – The real-time traffic feedback provides information about the traffic around the city. A popular real-time feedback app used in Ohio was developed by ODOT and is called OHGO. It provides real-time information about traffic conditions, incidents, construction projects, and weather. It can be viewed on cell phones and computers.

Tier 5: Capacity Expansion

As our national road network has grown dramatically over the last several decades, only a limited amount of funding remains for new road and lane construction. Construction and right-of-way costs for new roads are very expensive. New roads and adding additional through lanes is considered a last resort as system preservation is the main objective in the AMATS region. Financial restrictions, adverse environmental impacts, and project duration also make capacity improvements less attractive and feasible.

Capacity expansion may be necessary on major arterials and freeways as most other are not congested enough to warrant such an improvement. These roadways may benefit from capacity expansion projects as it will improve flow of all vehicles including transit and freight vehicles, not just passenger vehicles. This could reduce emissions and fuel consumption, and increased productivity and economic development. However,

typically constructing new lanes is followed with additional demand for the roadway as travel times improve. More vehicles begin to use the roadway which then begins to reduce travel times. This is referred to as induced demand.

The capacity improvements include the following strategies:

- Removing bottlenecks by constructing new lanes – removes or corrects short, isolated, and temporary lane reductions and substandard design elements.
- Closing gaps in the existing network - provides more connections and means of traveling between places.
- Add travel lanes on major freeways and streets (including truck climbing lanes on grades) - allows for additional vehicles to move through an area uninhibited by congestion.

Evaluation of Strategies

Congestion management strategies were evaluated based upon their effectiveness and feasibility. The effectiveness was determined by how well each strategy would reduce congestion in the AMATS area. To make this determination, the strategies were reviewed by examining regional characteristics, previous local success of the strategies and examples from other urban areas. Decisions on the effectiveness of each strategy were made based on the data collected and staff input. Feasibility was rated by the degree to which the strategy could be realistically implemented in the region. Table 8-1 lists the strategies along with their corresponding effectiveness and feasibility.

Table 8-1 | Congestion Management Strategies

TIER	STRATEGY	BENEFITS	EFFECTIVENESS	FEASIBILITY
Tier 1: Demand Management	Telecommuting	Reduces traffic, especially during peak hours	Medium / High	Medium
	Flexible / Alternative Work Hours	Reduces traffic, especially during peak hours	Medium	Low / Medium
	Carpooling	Reduces traffic, especially during peak hours	Medium / High	High
	Employer Incentive Program	Reduces traffic, especially during peak hours	Medium / High	Low
	Alternative Modes of Transportation	Reduces traffic	Low / Medium	Low
Tier 2: Operational Improvements	Adding Exclusive Left Turning Lanes	Improves traffic flow / safety	Medium / High	Medium
	Reversible Commuter Lanes on Freeways	Improves traffic capacity / flow	Medium / High	Low
	Variable Speed Limits	Improves traffic capacity / flow	Low / Medium	Low
	Variable Message Signs	Improves traffic flow and reduces additional congestion	Low / Medium	Medium
	Exclusive Shoulder Lanes for Buses	Improves traffic flow / safety	Medium	Low
	Geometric Improvements to Road and Intersections	Improves traffic flow / safety	Medium / High	High
	Channelization	Improves traffic flow / safety	Low / Medium	Medium
	Median Barriers (Moveable) to Facilitate More Capacity During Peak Period	Improves traffic capacity / flow	Medium / High	Low
	Traveler Information	Improves traffic flow / safety	Low / Medium	High
	Complete Streets	Improves capacity for alternative modes of transportation	Low / Medium	Medium
	Overpasses or Underpasses at Congested Intersections or Railroads	Improves traffic flow / safety	High	Low / Medium
Tier 3: Public Transit Improvements	Expanding Transit Services	Encourage transit use / reduces SOV vehicles	Low	Low
	Optimal Control of Headways by Realigning Transit Service Schedules and Stop Locations	Makes transit easier to use / reduces SOV vehicles	Low	Medium
	Providing Real-Time Information on Transit Schedules and Arrivals Using Various ITS Strategies	Makes transit easier to use / reduces SOV vehicles	Low	Medium
	Universal Transit Fare Cards and Incentives	Makes transit easier to use / reduces SOV vehicles	Low	High
	Bus Rapid Transit	Makes transit easier to use / reduces SOV vehicles	Medium	Medium
	Prioritizing Transit Vehicles at Traffic Signals	Makes transit easier to use / reduces SOV vehicles	Medium	Medium
Tier 4: ITS Strategies	Traffic Signal Improvements	Improves traffic flow / safety	Medium / High	High
	Simulation Models	Helps determine and fund projects with the most impact	Medium / High	Medium
	Cars Connected to Cars / Cars Connected to Infrastructure	Improves traffic flow / safety	Medium / High	Low
	Real-Time Traffic Feedback	Improves traffic flow / reduces additional congestion	Medium / High	High
Tier 5: Capacity Expansion	Removing Bottlenecks by Constructing New Lanes	Improves traffic flow / safety	Medium	Low
	Closing Gaps in the Existing Network	Improves traffic flow / safety	Medium	Low
	Add Travel Lanes on Major Freeways and Streets (Including Truck Climbing Lanes on Grades)	Improves traffic flow / safety	Medium	Low

Congestion Management Recommendations

Roadways

In the previous chapter, 5 tiers of congestion management strategies were identified and evaluated to determine their effectiveness and political feasibility. In this chapter AMATS applies these strategies to areas of congestion within the AMATS region.

As a reminder the tiers are as follows:

Tier 1: Demand management
Tier 2: Traffic and roadway operational improvements
Tier 3: Public Transportation improvements
Tier 4: ITS Strategies
Tier 5: Capacity expansion

Freeway Segments

Each freeway segment was analyzed by direction throughout the 2017 year. Then, the peak-hour with the lowest speed percent was used to determine congestion levels for each segment. Table 9-1 and Map 9-1 includes 32 freeway segment locations that have a speed of 75 percent or lower of free-flow speed, i.e., congested. Recommendations have been listed for each congested segment. Given that the data was taken from calendar year 2017, a few locations have had projects completed or have upcoming projects soon; therefore, the recommendation for these locations is to monitor them in the future. These are still listed in the table with the project number and description included to make future monitoring easier.

Overall, the freeways within the AMATS region function well, and most will continue to do so into the future. Ohio Department of Transportation (ODOT) is in charge of maintaining freeway segments and funding improvements on these segments. ODOT coordinates with AMATS on a regular basis to define potential projects. This coordination helps maintain good traffic flow throughout the region.

Freeway Ramps

Each freeway ramp was analyzed throughout the 2017 year. Those freeway ramps that had a speed of 65 percent or less of free-flow speed are considered congested. Table 9-2 lists and Map 9-2 shows the 10 freeway ramps that were considered congested. Please note that many of these ramps are related to I-80, the Ohio Turnpike, and are therefore are controlled and maintained by their commission.

Freeway Interchanges

Each freeway interchange was analyzed throughout the 2017 year. Freeway interchange segments are typically segments on arterial roadway that are between freeway interchange ramps. The freeway interchange segments that had a speed of 65 percent or less than free-flow speed are considered congested. Table 9-3 lists and Map 9-3 displays the 15 freeway interchange segments that were considered congested. Please note that many of these segments are adjacent to congested arterial segments or intersections.

Arterial Segments

Each arterial segment on the network was analyzed by direction throughout the 2017 year. Then, the peak-hour with the lowest speed was used to determine whether a segment is congested. Table 9-4 and Map 9-4 include 89 arterial segment locations that have a speed of 65 percent or lower of free-flow speed, i.e., congested. Recommendations are listed for each congested segment. Given that the data was taken from calendar year 2017, a few locations have had projects completed or have upcoming projects soon; therefore, the recommendation for these locations is to monitor them in the future. These locations are still listed in the table with the corresponding project number and description to make future analysis easier. Some congested locations might only have a recommendation to monitor after nearby construction is complete because these segments might be impacted by other construction projects nearby and that specific location might also have limited feasibility for improvements.

Intersections

Intersections were analyzed throughout the 2017 year to determine congested approaches. Intersections were considered congested if the peak-hour speed was 65 percent or less of the free-flow speed. These congested intersections are listed in Table 9-5 and shown on Map 9-5. Each congested segment in the table includes a recommendation, even if that recommendation is to monitor the intersection in the future, similar to arterials.

Table 9-1 | Freeway Segment Recommendations

NAME	POLITICAL UNIT	PEAK TIME	% FREE FLOW	RECOMMENDED TIER
I-271 NB bet SR 82 and I-480	Macedonia	7:30-8:30 AM	32.04	Project 89548 complete, included adding through lanes; Monitor
SR 8 SB bet Forge St and Market St	Akron	4:45-5:45 PM	32.61	Project 102329 planned, includes added through lanes; Monitor
SR 8 SB bet Glenwood Ave and SB On-ramp	Akron	4:45-5:45 PM	33.74	Project 91710 planned, includes new bridges with auxiliary lanes; Monitor
SR 8 SB through the Perkins St interchange	Akron	4:45-5:45 PM	34.00	Project 102329 planned, includes added through lanes; Monitor
SR 8 SB bet Tallmadge On-ramp and Glenwood Ave Bridge	Akron	4:45-5:45 PM	34.68	Project 91710 planned, includes new bridges with auxiliary lanes; Monitor
SR 8 SB bet Glenwood Ave On-ramp and Perkins St Off-ramp	Akron	4:45-5:45 PM	37.56	Project 91710 planned, includes new bridges with auxiliary lanes; Monitor
SR 8 SB through the Tallmadge Ave interchange	Akron	4:45-5:45 PM	38.06	Project 91710 planned, includes new bridges with auxiliary lanes; Monitor
I-77 NB through the I-80 Interchange	Richfield	7:30-8:30 AM	40.70	Project 111405 planned, includes adding through lanes; Increased express bus service; Monitor
SR 8 SB bet Market St and the Central Interchange	Akron	4:45-5:45 PM	41.16	Project 102329 planned, includes added through lanes; Monitor
I-77 NB S of I-80 Ramps	Richfield	7:30-8:30 AM	42.96	Project 111405 planned, includes adding through lanes; Increased express bus service; Monitor
SR 8 SB bet Cuyahoga Falls on ramp and Tallmadge off ramp	Akron	4:45-5:45 PM	48.03	1 and 4
I-77 NB bet Brecksville Rd and I-80	Richfield	7:30-8:30 AM	57.66	Project 111405 planned, includes adding through lanes; Increased express bus service; Monitor
SR 8 SB bet Gorge Blvd and On-ramp from Cuyahoga Falls Ave	Akron	4:00-5:00 PM	63.53	1 and 4
SR 8 SB bet Valley View Rd and SR 82	Macedonia / Sagamore Hills Twp	5:00-6:00 PM	64.31	1 and 4
I-76/77 EB through the Main St/Broadway St interchange	Akron	4:45-5:45 PM	65.28	Project 77269 nearly complete, included reconstruction and modification of access points; Monitor
I-76/77 EB bet west of Wolf Ledges Off-ramp to Wolf Ledges Off-ramp	Akron	4:45-5:45 PM	65.59	Project 77269 nearly complete, included reconstruction and modification of access points; Monitor
I-76/77 EB bet Wolf Ledges Off-ramp and Wolf Ledges bridge	Akron	4:45-5:45 PM	65.85	Project 77269 nearly complete, included reconstruction and modification of access points; Monitor
SR 8 SB bet ramp split and I-76 mainline	Akron	5:00-6:00 PM	66.89	Project 102329 planned, includes added through lanes; Monitor
SR 8/I-77 SB bet I-76 and Lovers Lane	Akron	5:00-6:00 PM	67.1	Project 102329 planned, includes added through lanes; Monitor
I-76/77 EB bet South St On-ramp and Main St Off-ramp	Akron	4:45-5:45 PM	67.12	Project 77269 nearly complete, included reconstruction and modification of access points; Monitor
SR 8 SB bet Front St and Howe Ave On-ramp	Akron	4:00-5:00 PM	67.13	1 and 4
I-76/77 EB bet Wolf Ledges and Grant St	Akron	4:45-5:45 PM	68.08	Project 77269 nearly complete, included reconstruction and modification of access points; Monitor
I-76/77 EB bet Grant St and Grant St On-ramp	Akron	4:45-5:45 PM	69.51	Project 77269 nearly complete, included reconstruction and modification of access points; Monitor
I-77 NB bet Arlington Rd and I-277/US 224	Coventry Twp	7:30-8:30 AM	71.0	Project 106002 planned, includes add through lanes; Monitor
I-77 NB at Waterloo Rd	Akron / Coventry Twp	7:30-8:30 AM	71.87	1 and 4
I-77 NB bet Waterloo Rd and Wilbeth Rd	Akron	7:30-8:30 AM	72.09	1 and 4
SR 8 NB bet E Market St and Perkins Off-ramp	Akron	5:00-6:00 PM	72.89	Project 102329 planned, includes added through lanes; Monitor
SR 8 SB through the Portage Trail interchange	Cuyahoga Falls	7:30-8:30 AM	72.99	1 and 4
SR 8 SB through the Howe Ave interchange	Cuyahoga Falls	4:00-5:00 PM	73.34	1 and 4
SR 8 NB bet Perkins St Off-ramp and the High Level Bridge	Akron	5:00-6:00 PM	73.48	Project 91710 planned, includes new bridges with auxiliary lanes; Monitor
I-77 SB bet Lovers Lane and Cole Ave	Akron	5:00-6:00 PM	73.64	1 and 4
SR 8 SB bet Broad Blvd and the SB On-ramp	Cuyahoga Falls	7:30-8:30 AM	73.78	1 and 4

Table 9-2 | Freeway Ramp Recommendations

NAME	POLITICAL UNIT	PEAK TIME	% FREE FLOW	RECOMMENDED TIER
SR 8 NB to I-80 EB Connector	Boston Heights	5:00-6:00 PM	40.71	1, 2 and 4
I-271 NB to SR 8 intersection	Macedonia	7:45-8:45 AM	44.37	1, 2 and 4
I-80 WB Connector bet I-80 and SR 8	Boston Heights	5:15-6:15 PM	46.69	1, 2 and 4
Ramp from I-80 WB Connector to I-77 NB	Richfield	7:30-8:30 AM	54.98	Project 111405 planned, includes adding through lanes; Monitor
I-271 SB to SR 8 intersection	Macedonia	9:00-10:00 PM	55.33	1, 2 and 4
I-480 SWB Connector bet I-480 and I-80	Streetsboro	9:15-10:15 PM	57.22	1, 2 and 4
I-80 EB Connector bet SR 8 SB and I-80	Boston Heights	5:00-6:00 PM	57.23	1, 2 and 4
I-80 EB to I-80 WB connector (SR 8 exit)	Boston Heights	5:15-6:15 PM	59.16	1, 2 and 4
SR 21 SB to I-76 WB	Norton	9:30-10:30 AM	60.80	1, 2 and 4
I-80 WB to I-80 WB connector (SR 8 exit)	Boston Heights	5:00-6:00 PM	64.10	1, 2 and 4

Table 9-3 | Freeway Interchange Recommendations

NAME	DIRECTION	POLITICAL UNIT	PEAK TIME	% FREE FLOW	RECOMMENDED TIER
SR 59 Perkins St through the SR 8 interchange	EB	Akron	4:30-5:30 PM	46.68	2 and 5
Tallmadge Ave through the SR 8 interchange	WB	Akron	3:00-4:00 PM	51.79	2 and 5
White Pond Dr through the I-77 interchange	SB	Akron	4:15-5:15 PM	52.19	2 and 5
Tallmadge Rd through the I-76 interchange	WB	Por Co-Brimfield Twp	12:00-1:00 PM	53.01	Project 98585 planned, includes operational improvements; Monitor
White Pond Dr through the I-77 Interchange	NB	Akron	7:30-8:30 AM	56.31	2 and 5
SR 241 Massillon Rd through the I-77 interchange	NB	Green	3:00-4:00 PM	56.73	Project 90415 underway, includes widening and roundabouts; Projects 103172 & 103173 upcoming, includes roundabouts; Monitor
Tallmadge Rd through the I-76 interchange	EB	Por Co-Brimfield Twp	4:15-5:15 PM	57.68	Project 98585 planned, includes operational improvements; Monitor
Howe Ave through the SR 8 interchange	EB	Cuyahoga Falls	12:15-1:15 PM	57.77	2 and 5
SR 303 through the SR 8 interchange	WB	Boston Heights	7:30-8:30 AM	57.81	2 and 5
Broad Blvd through the SR 8 interchange	EB	Cuyahoga Falls	3:00-4:00 PM	57.84	2 and 5
SR 8 SB through the I-271 interchange	SB	Macedonia	7:30-8:30 AM	62.26	2 and 5
Massillon Rd through the I-77 interchange	SB	Green	4:15-5:15 PM	62.38	Project 90415 underway, includes widening and roundabouts; Projects 103172 & 103173 upcoming, includes roundabouts; Monitor
SR 261 Tallmadge Ave through the SR 8 interchange	EB	Akron	3:00-4:00 PM	62.58	2 and 5
SR 532 Southeast Ave through the I-76 interchange	SB	Tallmadge	5:15-6:15 PM	62.70	2 and 5
Ghent Rd through the I-77 interchange	NB	Sum Co-Bath Twp	5:00-6:00 PM	63.64	2 and 5

Table 9-4 | Arterial Segment Recommendations

NAME	DIRECTION	POLITICAL UNIT	PEAK TIME	% FREE FLOW	RECOMMENDED TIER
Brittain Rd from Independence Ave to Howe Ave	NB	Akron	7:00-8:00 AM	28.60	2, 3 and 4
SR 91 from Aurora St to SR 303	SB	Hudson	4:00-5:00 PM	30.80	4
SR 91 from Veterans Way to SR 303	NB	Hudson	7:00-8:00 AM	32.80	4
SR 91 from SR 303 to Aurora St	NB	Hudson	5:00-6:00 PM	37.80	4
SR 91 from Valley View Rd to Aurora St	SB	Hudson	5:00-6:00 PM	38.00	4
SR 59 from Union St to SR 8 SB ramps	EB	Akron	3:00-4:00 PM	40.50	2 and 4
SR 303 from Boston Mills to Atterbury Blvd	EB	Hudson	5:00-6:00 PM	41.10	4
Cedar St from Rand St to Dart Ave	EB	Akron	7:45-8:45 AM	43.48	Project PID 88990 completed, included signal interconnect and bike lanes, Monitor
SR 14 from SR 303 W Jct to SR 303 E Jct	EB	Streetsboro	5:00-6:00 PM	44.02	Project PID 99879 completed, included signal interconnect, Monitor
SR 18 from SR 59 to High St	EB	Akron	8:30-9:30 AM	44.85	3 and 4
SR 303 from Atterbury Blvd to SR 91	EB	Hudson	5:00-6:00 PM	47.10	4
SR 91 from Georgetown Rd to Terex Rd	SB	Hudson	6:00-7:00 PM	47.30	4
SR 14 from SR 5 WB ramps to SR 59	WB	Por Co-Ravenna Twp	7:15-8:15 AM	47.53	2
Firestone Blvd from S Main St and Grant St	EB	Akron	5:00-6:00 AM	48.53	Monitor after nearby construction is complete
SR 241 from Raber Rd to Boettler Rd	SB	Green	10:00-11:00 AM	49.50	Project 90415 underway, includes widening and roundabouts; Projects 103172 & 103173 upcoming, includes roundabouts, Monitor
West Ave from Brittain Rd to Tallmadge Circle	EB	Tallmadge	3:00-4:00 PM	51.44	2
SR 91 from SR 303 to Veterans Way	SB	Hudson	5:00-6:00 PM	51.50	4
SR 59 Front St from 2nd St to Hudson Dr	EB	Cuyahoga Falls	3:00-4:00 PM	51.56	2
SR 241 from Graybill Rd to Steese Rd	SB	Green	1:00-2:00 PM	51.90	Monitor after nearby construction is complete
SR 241 from SR 619 to Raber Rd	SB	Green	5:00-6:00 PM	52.20	Project 90415 underway, includes widening and roundabouts, Monitor
Steels Corners Rd from Bridgewater Pkwy to SR 8	EB	Stow	3:00-4:00 PM	52.70	4
Ravenna Rd from SR 91 to Idlewood Dr	NB	Twinsburg	6:00-7:00 PM	53.10	4
SR 303 from Akron Cleveland Rd to Terex Rd	EB	Hudson	7:00-8:00 AM	53.30	4
SR 303 from Hayden Pkwy to SR 91	WB	Hudson	4:00-5:00 PM	53.40	4
W Exchange St from Dart Ave to Rand St	WB	Akron	6:15-7:15 AM	53.76	Project 88990 completed, included signal interconnect and bike lanes, Monitor
Hudson Dr from Walmart Dr to Graham Rd	SB	Stow	12:00-1:00 PM	54.10	Monitor after nearby construction is complete
SR 14 from I-80 ramps to SR 43	EB	Streetsboro	4:45-5:45 PM	54.14	Project 99879 completed, included signal interconnect; Monitor

Table 9-4 | Arterial Segment Recommendations

NAME	DIRECTION	POLITICAL UNIT	PEAK TIME	% FREE FLOW	RECOMMENDED TIER
SR 82 from SR 306 to SR 43	WB	Aurora	9:15-10:15 AM	54.43	Project 107761 planned, includes signal interconnect; Monitor
State Rd from Marc Dr to Bath Rd	SB	Cuyahoga Falls	3:00-4:00 PM	55.20	Monitor after nearby construction is complete
SR 303 from Hayden Pkwy to Stow Rd	EB	Hudson	7:00-8:00 AM	55.50	4
Steels Corners Rd from Wyoga Lake Rd to Bridgewater Pkwy	EB	Cuyahoga Falls/Stow	7:00-8:00 AM	55.60	4
High St from SR 59 to SR 18	SB	Akron	7:45-8:45 AM	55.75	2 and 4
SR 241 from Boettler Rd to Raber Rd	NB	Green	4:00-5:00 PM	55.80	Project 90415 underway, includes widening and roundabouts; Projects 103172 & 103173 upcoming, includes roundabouts; Monitor
Brittain Rd from Howe Ave to Independence Ave	SB	Akron	10:00-11:00 AM	56.30	2, 3 and 4
SR 241 from Graybill Rd to Boettler Rd	NB	Green	4:00-5:00 PM	56.30	Monitor after nearby construction is complete
Ridgewood Rd from I-77 NB On-ramp to Miller Rd	EB	Fairlawn/Copley Twp	7:45-8:45 AM	56.43	4
SR 241 from SR 619 to Raber Rd	SB	Green	5:00-6:00 PM	52.20	Project 90415 underway, includes widening and roundabouts, Monitor
Steels Corners Rd from Bridgewater Pkwy to SR 8	EB	Stow	3:00-4:00 PM	52.70	4
Ravenna Rd from SR 91 to Idlewood Dr	NB	Twinsburg	6:00-7:00 PM	53.10	4
SR 303 from Akron Cleveland Rd to Terex Rd	EB	Hudson	7:00-8:00 AM	53.30	4
SR 303 from Hayden Pkwy to SR 91	WB	Hudson	4:00-5:00 PM	53.40	4
W Exchange St from Dart Ave to Rand St	WB	Akron	6:15-7:15 AM	53.76	Project 88990 completed, included signal interconnect and bike lanes, Monitor
Hudson Dr from Walmart Dr to Graham Rd	SB	Stow	12:00-1:00 PM	54.10	Monitor after nearby construction is complete
SR 14 from I-80 ramps to SR 43	EB	Streetsboro	4:45-5:45 PM	54.14	Project 99879 completed, included signal interconnect; Monitor
SR 82 from SR 306 to SR 43	WB	Aurora	9:15-10:15 AM	54.43	Project 107761 planned, includes signal interconnect; Monitor
State Rd from Marc Dr to Bath Rd	SB	Cuyahoga Falls	3:00-4:00 PM	55.20	Monitor after nearby construction is complete
SR 303 from Hayden Pkwy to Stow Rd	EB	Hudson	7:00-8:00 AM	55.50	4
Steels Corners Rd from Wyoga Lake Rd to Bridgewater Pkwy	EB	Cuyahoga Falls/Stow	7:00-8:00 AM	55.60	4
High St from SR 59 to SR 18	SB	Akron	7:45-8:45 AM	55.75	2 and 4
SR 241 from Boettler Rd to Raber Rd	NB	Green	4:00-5:00 PM	55.80	Project 90415 underway, includes widening and roundabouts; Projects 103172 & 103173 upcoming, includes roundabouts; Monitor
Brittain Rd from Howe Ave to Independence Ave	SB	Akron	10:00-11:00 AM	56.30	2, 3 and 4
SR 241 from Graybill Rd to Boettler Rd	NB	Green	4:00-5:00 PM	56.30	Monitor after nearby construction is complete
Ridgewood Rd from I-77 NB On-ramp to Miller Rd	EB	Fairlawn/Copley Twp	7:45-8:45 AM	56.43	4
SR 241 from SR 619 to Raber Rd	SB	Green	5:00-6:00 PM	52.20	Project 90415 underway, includes widening and roundabouts, Monitor
Steels Corners Rd from Bridgewater Pkwy to SR 8	EB	Stow	3:00-4:00 PM	52.70	4
Ravenna Rd from SR 91 to Idlewood Dr	NB	Twinsburg	6:00-7:00 PM	53.10	4
SR 303 from Akron Cleveland Rd to Terex Rd	EB	Hudson	7:00-8:00 AM	53.30	4
SR 303 from Hayden Pkwy to SR 91	WB	Hudson	4:00-5:00 PM	53.40	4
W Exchange St from Dart Ave to Rand St	WB	Akron	6:15-7:15 AM	53.76	Project 88990 completed, included signal interconnect and bike lanes, Monitor
Hudson Dr from Walmart Dr to Graham Rd	SB	Stow	12:00-1:00 PM	54.10	Monitor after nearby construction is complete
SR 14 from I-80 ramps to SR 43	EB	Streetsboro	4:45-5:45 PM	54.14	Project 99879 completed, included signal interconnect; Monitor
SR 82 from SR 306 to SR 43	WB	Aurora	9:15-10:15 AM	54.43	Project 107761 planned, includes signal interconnect; Monitor
State Rd from Marc Dr to Bath Rd	SB	Cuyahoga Falls	3:00-4:00 PM	55.20	Monitor after nearby construction is complete
SR 303 from Hayden Pkwy to Stow Rd	EB	Hudson	7:00-8:00 AM	55.50	4
Steels Corners Rd from Wyoga Lake Rd to Bridgewater Pkwy	EB	Cuyahoga Falls/Stow	7:00-8:00 AM	55.60	4
High St from SR 59 to SR 18	SB	Akron	7:45-8:45 AM	55.75	2 and 4
SR 241 from Boettler Rd to Raber Rd	NB	Green	4:00-5:00 PM	55.80	Project 90415 underway, includes widening and roundabouts; Projects 103172 & 103173 upcoming, includes roundabouts; Monitor
Brittain Rd from Howe Ave to Independence Ave	SB	Akron	10:00-11:00 AM	56.30	2, 3 and 4
SR 241 from Graybill Rd to Boettler Rd	NB	Green	4:00-5:00 PM	56.30	Monitor after nearby construction is complete
Ridgewood Rd from I-77 NB On-ramp to Miller Rd	EB	Fairlawn/Copley Twp	7:45-8:45 AM	56.43	4
Ravenna Rd from Chamberlin Rd to Cuyahoga Co Line	NB	Twinsburg	7:00-8:00 AM	60.60	Project 113165 planned, includes intersection improvements at Shephard; Monitor
SR 59 from Prospect St to Chestnut St	WB	Ravenna	12:15-1:15 PM	60.63	4

Table 9-4 | Arterial Segment Recommendations

NAME	DIRECTION	POLITICAL UNIT	PEAK TIME	% FREE FLOW	RECOMMENDED TIER
Brittain Rd from Independence Ave to Tallmadge Ave	SB	Akron	6:00-7:00 AM	60.70	2, 3 and 4
SR 59 from Chestnut St to Prospect St	EB	Ravenna	12:00-1:00 PM	60.70	4
Aurora Hudson Rd from I-480 SB Ramps to Frost Rd	EB	Streetsboro	7:00-8:00 AM	60.90	Project 92561 completed, included signal interconnect, turn lanes, bridge widening; Monitor
SR 303 from SR 91 to Atterbury Blvd	WB	Hudson	5:00-6:00 PM	60.90	4
Locust St from Exchange St to Cedar St	SB	Akron	6:00-7:00 AM	61.34	Monitor after nearby construction is complete
SR 82 from SR 91 to Cannon Rd	WB	Twinsburg	5:00-6:00 PM	61.37	4
Newberry St from Broad Blvd to Portage Trail	NB	Cuyahoga Falls	1:00-2:00 PM	61.40	2 and 4
SR 82 from SR 43 to SR 306	EB	Aurora	10:00-11:00 AM	61.48	Project 107761 planned, includes signal interconnect; Monitor
SR 303 from Atterbury Blvd to Boston Mills	WB	Hudson	12:00-1:00 PM	61.70	4
SR 91 from Hudson Dr to Terex Rd	SB	Hudson	6:00-7:00 PM	61.70	4
Terex Rd from SR 91 to Hudson Dr	WB	Hudson	4:00-5:00 PM	61.80	Monitor after nearby construction is complete
S Arlington Rd from SR 619 to I-77 SB ramps	NB	Green	5:00-6:00 PM	62.36	4
SR 91 from Terex Rd to Hudson Dr	NB	Hudson	12:00-1:00 PM	62.70	4
Ghent Rd from Smith Rd to Market St	SB	Fairlawn	5:00-6:00 PM	63.00	2 and 4
SR 18 from High St to SR 59	WB	Akron	4:45-5:45 PM	63.15	3 and 4
Cleveland Massillon Rd from Bywood Ave to Elgin Dr	SB	Fairlawn	5:00-6:00 PM	63.20	Project 103293 underway, includes widen to 5 lanes, roundabout, signal upgrade; Monitor
State Rd from Bath Rd to Graham Rd	SB	Cuyahoga Falls	3:00-4:00 PM	63.20	Monitor after nearby construction is complete
SR 18 from Union St to High St	WB	Akron	4:45-5:45 PM	63.21	3 and 4
SR 91 from Terex Rd to Georgetown Rd	NB	Hudson	12:00-1:00 PM	63.30	4
Ghent Rd from I-77 SB Ramps to Cleveland Massillon Rd	NB	Sum Co-Bath Twp	5:00-6:00 PM	63.37	Project to realign intersection and add new right turn lane underway; Monitor
Cedar St from Dart Ave to Locust St	EB	Akron	7:45-8:45 AM	63.41	Monitor
SR 91 North Ave from Howe Rd to Tallmadge Circle	SB	Tallmadge	4:45-5:45 PM	63.44	Project 93444 completed, included reconstruction with turn lanes and sidewalks; Monitor
SR 59 under the SR 18 Market St bridge	EB	Akron	7:00-8:00 AM	63.85	Project 75436 completed, included SR 59 rerouting and intersection improvements at Howard/ Main; Monitor
Graham Rd from Bath Rd to Wyoga Lake Rd	EB	Cuyahoga Falls	4:00-5:00 PM	63.90	2
Opportunity Pkwy from Cedar St to SR 59	WB	Akron	5:00-6:00 AM	63.95	Monitor after nearby construction is complete
SR 59 from River St to Water St	EB	Kent	5:00-6:00 PM	64.15	Monitor after nearby construction is complete
SR 18 Market St bridge over SR 59	EB	Akron	8:00-9:00 AM	64.21	3 and 4
N Miller Rd from Sand Run Pkwy to Market St	SB	Fairlawn	5:00-6:00 PM	64.33	2
Broad Blvd from 2nd St to SR 8 SB ramps	EB	Cuyahoga Falls	5:00-6:00 PM	64.45	2 and 4
Reimer Rd from Medina Line Rd to Cleveland Massillon Rd	EB	Norton	5:00-6:00 AM	64.56	Monitor after nearby construction is complete
SR 82 from I-480 WB ramps to SR 91	EB	Twinsburg	5:00-6:00 PM	64.74	4
State Rd from Quick Rd to Steels Corners Rd	SB	Cuyahoga Falls	2:00-3:00 PM	65.00	Monitor after nearby construction is complete

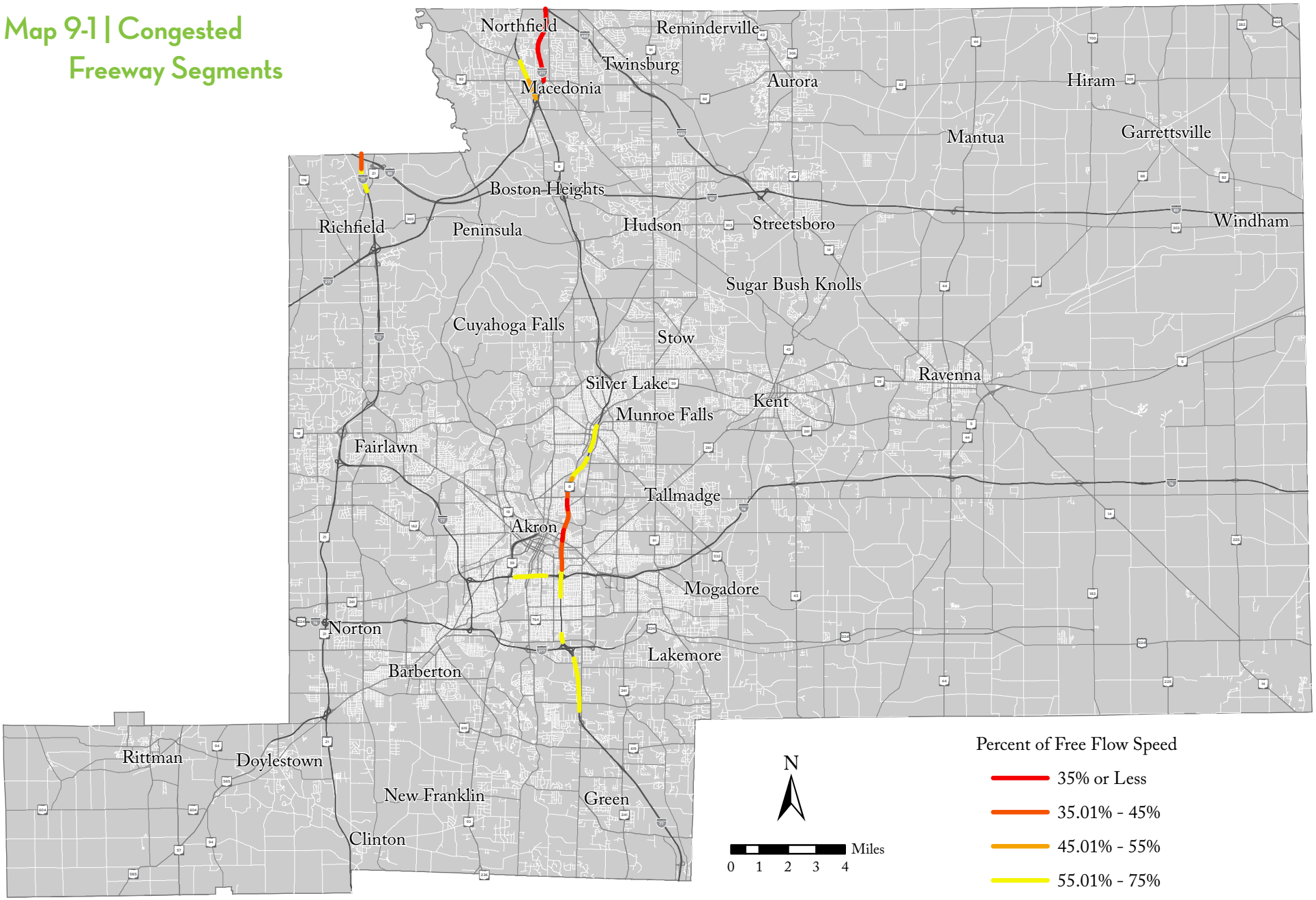
Table 9-5 | Intersection Recommendations

NAME	DIRECTION	POLITICAL UNIT	PEAK TIME	% FREE FLOW	RECOMMENDED TIER
SR 8 NB S of and adjacent to SR 82	NB	Macedonia	3:00-4:00 PM	33.99	4
SR 8 SB north leg of SR 82 intersection	SB	Macedonia	12:00-1:00 PM	34.57	4
SR 14/44 N of and adjacent to SR 59	EB	Por Co-Ravenna Twp	1:15-2:15 PM	47.76	Monitor after nearby construction is complete
SR 8 NB S of and adjacent to Valley View Rd	NB	Macedonia	3:00-4:00 PM	49.82	4
Southeast Ave NW of Eastwood Ave	SB	Tallmadge	4:45-5:45 PM	51.19	2
US 224 E of and adjacent to SR 241	WB	Akron	9:15-10:15 AM	52.79	Monitor after nearby construction is complete
SR 91 both legs of Graham Rd intersection	SB	Stow	5:00-6:00 PM	54.67	Monitor after nearby construction is complete
SR 18 W Market St at Ghent Rd	EB	Fairlawn	1:45-2:45 PM	54.83	4
US 224 W of and adjacent to SR 241	EB	Akron	7:15-8:15 AM	55.81	Monitor after nearby construction is complete
SR 44 through US 224 intersection	NB	Randolph Twp	5:00-6:00 PM	55.83	4
Ridgewood Rd bet I-77 NB on ramp and Miller Rd	EB	Fairlawn/Copley Twp	7:45-8:45 AM	56.43	4

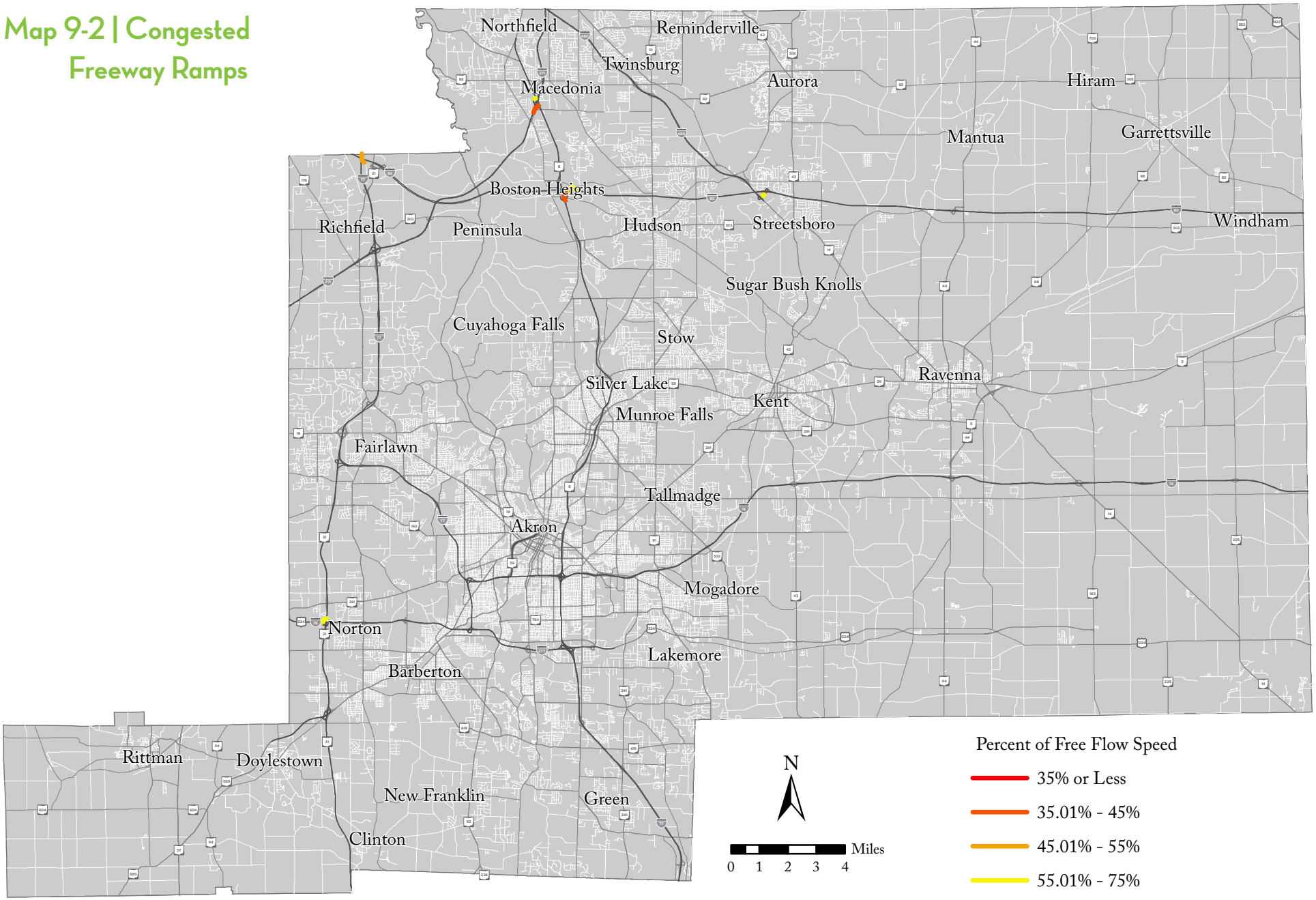
Table 9-5 | Intersection Recommendations

NAME	DIRECTION	POLITICAL UNIT	PEAK TIME	% FREE FLOW	RECOMMENDED TIER
Wheatley Rd through the Brecksville Rd intersection	NB	Richfield	5:30-6:30 PM	56.62	2
Cleveland Massillon Rd through Copley Circle	SB	Sum Co-Copley Twp	7:30-8:30 AM	57.33	Project 103171 completed, included additional turn lanes; Monitor
Brecksville Rd through the Wheatley Rd Intersection	SB	Richfield	5:15-6:15 PM	57.86	2
Broad Blvd bet RR tracks and SR 8 NB ramps	WB	Cuyahoga Falls	4:30-5:30 PM	58.04	Monitor after nearby construction is complete
Merriman Rd W of and adjacent to Portage Path	SB	Akron	5:00-6:00 PM	58.69	2
Ghent Rd N of and adjacent to W Market St	SB	Fairlawn	5:00-6:00 PM	58.89	4
SR 261 S of and adjacent to Summit Rd	EB	Kent/Franklin Twp	4:00-5:00 PM	58.96	4
SR 43 through SR 261 intersection	NB	Kent	4:45-5:45 PM	59.13	2
Portage Trail Ext W of and adjacent to State Rd	EB	Cuyahoga Falls	12:00-1:00 PM	60.10	Project 108084 planned, includes add two-way left turn lane; Monitor
SR 91 N of and adjacent to Graham Rd	NB	Stow	5:00-6:00 PM	60.87	Monitor after nearby construction is complete
Canton Rd through the US 224 Intersection	NB	Sum Co-Springfield Twp	4:00-5:00 PM	61.31	Project 89113 underway, includes concrete median and turn lanes; Monitor
Cleveland Massillon Rd through Copley Circle	NB	Sum Co-Copley Twp	7:30-8:30 AM	61.31	Project 103171 completed, included additional turn lanes; Monitor
SR 44 at the US 224 intersection	SB	Por Co-Randolph Twp	5:00-6:00 PM	61.44	4
US 224 through the SR 91 intersection	EB	Sum Co-Springfield Twp	4:45-5:45 PM	61.61	Project 89113 underway, includes concrete median and turn lanes; Monitor
Brecksville Rd through the Wheatley Rd Intersection	NB	Richfield	7:45-8:45 AM	62.03	2
SR 91 Canton Rd through the US 224 intersection	SB	Sum Co-Springfield Twp	5:00-6:00 PM	62.32	Project 89113 underway, includes concrete median and turn lanes; Monitor
Wilbeth Rd E of and adjacent to SR 93	WB	Akron	4:00-5:00 PM	62.46	Monitor after nearby construction is complete
Cleveland Massillon Rd bet the Ridgewood Roads	NB	Fairlawn/Copley Twp	3:00-4:00 PM	63.44	Project 108131 completed, included add turn lanes; Monitor
Merriman Rd at Portage Path Intersection	NB	Akron	5:00-6:00 AM	63.67	2
Waterloo Rd through the Arlington St intersection	EB	Akron	3:00-4:00 PM	63.99	Project 96359 completed, included intersection improvements; Monitor
SR 43 through US 224 intersection	NB	Por Co-Suffield Twp	8:00-9:00 PM	64.01	4
E Main St W of and adjacent to Willow/Haymaker	EB	Kent	4:00-5:00 PM	64.11	Project 112026 planned, includes reconstruction with median, roundabouts, and bus pull-outs; Monitor
Cleveland Massillon Rd through Ghent Rd intersection	NB	Sum Co-Bath Twp	7:45-8:45 AM	64.14	Project to realign intersection and add new right turn lane underway; Monitor
SR 18 E of and adjacent to Smith Rd	WB	Fairlawn	4:00-5:00 PM	64.49	4
Wheatley Rd through the Brecksville Rd intersection	SB	Richfield	5:00-6:00 PM	64.51	2
SR 82 through the SR 8 intersection	WB	Macedonia	12:15-1:15 PM	64.59	4
Portage Trail Ext E of and adjacent to Portage Path	WB	Akron/Cuyahoga Falls	11:30 AM-12:30 PM	64.63	Monitor after nearby construction is complete

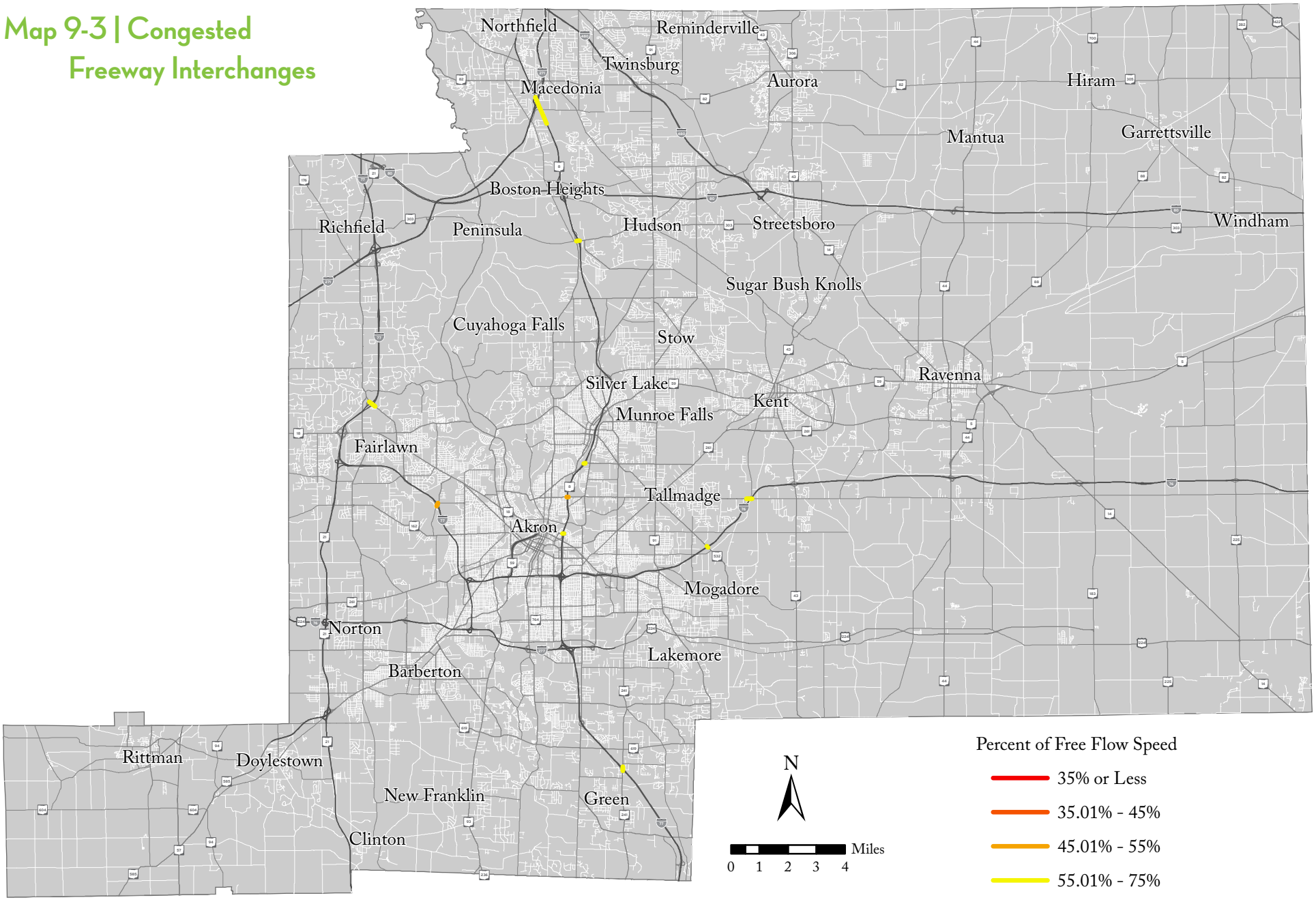
Map 9-1 | Congested Freeway Segments



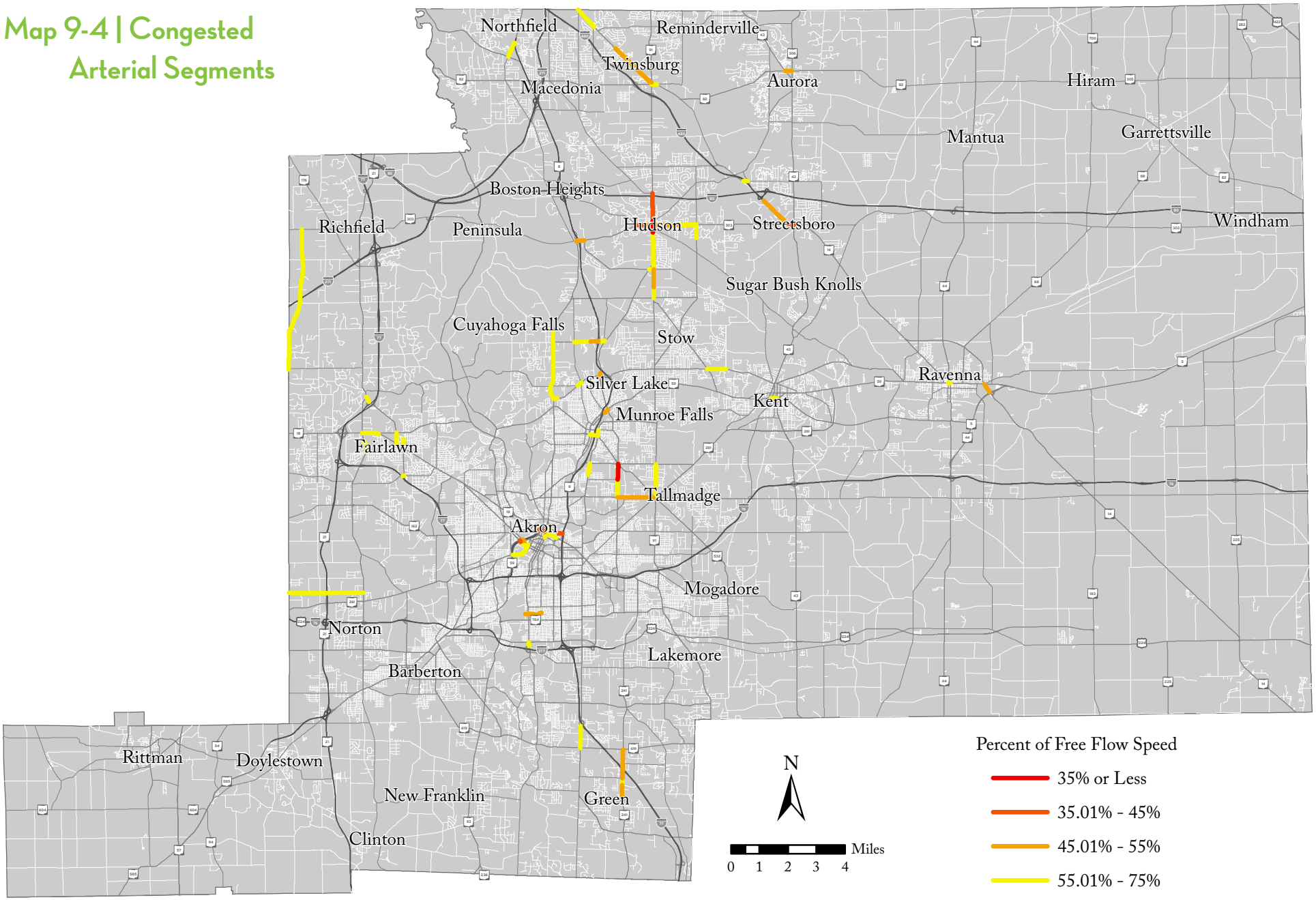
Map 9-2 | Congested Freeway Ramps



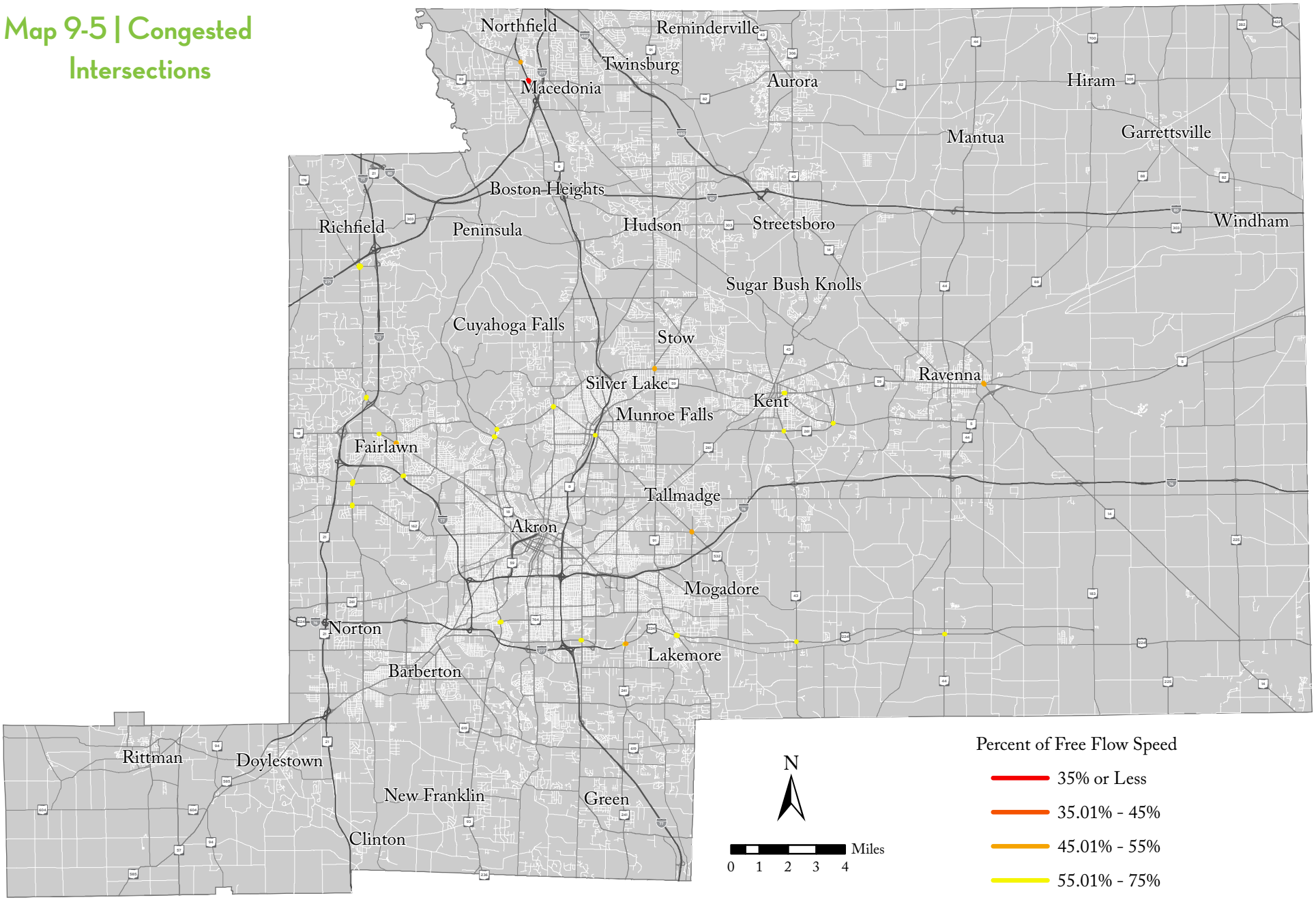
Map 9-3 | Congested Freeway Interchanges



Map 9-4 | Congested Arterial Segments



Map 9-5 | Congested Intersections



Public Transit

As part of the congestion management process, AMATS identifies potential strategies to alleviate congestion and evaluates the expected effectiveness of those strategies in improving the efficiency and safety of existing and future transportation systems. As an established method for reducing single occupancy vehicles (SOVs), strategies aimed at making transit more attractive or accessible can help to reduce the number of vehicles on the road.

The 2020 AMATS Transit Plan made a number of recommendations suited for congestion management. Specific strategies include: high frequency fixed route transit service on congested arterials, realigning routes and services to meet demographic changes, flexible fare policies and employer-based incentive programs, transit oriented land use development, integrating the scheduling and services of the region's transit agencies and improving access to multiple modes of travel (pedestrian, bicycle, vehicle).

Public transportation will never completely replace the automobile for most people. However, with a well maintained and effective public transit system, an increasing percentage of people may come to rely on transit for their transportation needs. Ultimately, any increase in transit use will reduce congestion and vehicle emissions in the AMATS area.

Increased Service Frequency (Headways)

High ridership transit routes on congested roadways have the potential to improve transportation if headways are improved. Transit has always been an affordable alternative to cars. With headways improved to the point that schedules are no longer necessary, transit becomes an easy choice in high density development areas. For this reason, it is recommended that transit agencies review their routes and consider adding more frequent service on their busiest routes.

Consider Transit Oriented Development

Certain intersections or neighborhoods are particularly viable for frequent transit service. Transit stops with characteristics such as high population and job densities, proximity to popular destinations and overall neighborhood vitality may be greatly enhanced through the establishment of transit oriented development/design (TOD) nodes.

METRO's restructured route system intends to use a number of nodes outside of the city center to connect multiple routes beyond the standard radial system. TOD at these nodes would aid in transit ridership and efficiency. Common TOD treatments include:

- Wide, pedestrian friendly sidewalks
- Buildings containing a mixture of uses, built near and facing towards the street
- Incorporation of an inviting ground-level feel: active uses, transparency, pedestrian shelters, bicycle racks, attractive signage, etc.
- Parking located behind the building, typically with alleyway access
- Well-designed bus shelters, bus stops and bus pull-offs (bus bays) for comfortable waiting and loading/unloading, developed in coordination with local communities

Continued Support for NEORide – Cross County Service and Coordination

Public transportation in Ohio has historically been funded through a dedicated portion of the county sales tax. Because of this funding structure, there has been a long-standing principle of only operating services within an agency's home county. NEORide is a Council of Governments (COG) formed originally by Akron METRO RTA, PARTA and SARTA (Stark County) in 2014 to coordinate fixed route and demand response service in northeast Ohio. This on-going transit study is examining the potential for expanded transit service linking Portage, Summit and Stark counties. Integrated services would create transit connections that are needed by transit users across the three counties, improve the efficiency and effectiveness of existing services, and would reduce the operating costs of all three agencies. The NEORide Inter-County Transit study identifies these inter-county transit needs and develops innovative approaches to improve inter-county services in the region. Cross-county service is a key strategy to growing overall transit ridership and a positive transit culture in our region. Key cross-county corridors include:

- Aurora - Streetsboro - Hudson - Stow - Cuyahoga Falls - Akron
- Akron - Cuyahoga Falls - Stow - Kent - Ravenna
- Akron - Green - North Canton - Canton
- Akron - Barberton - Norton - Wadsworth
- Solon - Aurora - Streetsboro

Please see the *2020 Transit Plan* for more specific details regarding transit recommendations.

Freight (Trucks and Railroads)

Proper freight movement can help reduce congestion on highly traveled roadways. Most truck freight movement is on interstates and state routes, so an improvement to those roadways will help both car and truck traffic. Please see the recommended highway improvements above, as many of those improvements will significantly impact freight.

Railroad-highway intersections are a source of congestion and safety concerns. Specific improvements related to rail recommendations are listed below.

- Provide support or engage in public-private partnerships to alleviate congestion on rail lines (such as CSX Lambert to Warwick section near Clinton and NS Cleveland to Pennsylvania Line that passes through Macedonia, Hudson and Ravenna on its way to Alliance)
- Improve rail lines owned by METRO RTA and make them available to local industry.
- Preserve out of service rail lines for future rail use or conversion to bike/pedestrian trails
- Consider public/private partnerships with the rail companies in order to improve freight service in the area
- Improve the Hines Hill Road crossing of the Norfolk-Southern line in Hudson
- Rail grade separation at the following locations:
  - 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

Please see the *2020 Freight Plan* for more detailed information regarding freight.

Evaluating Strategy Effectiveness

Performance monitoring is not a one-time event, but rather an ongoing activity that must be matched to existing and future resources. This is how the AMATS will monitor not only the ongoing performance of the region's transportation system, but also the effectiveness of the strategies and projects that are put in place. By evaluating congestion in the area, AMATS can determine which strategies worked the best in mitigating specific types of congestion, and which had the least impact. This will in turn identify the best actions in subsequent CMP updates.

The CMP provides a framework for weighing congestion relief projects against one another in terms of effectiveness but does not establish priorities for the region. To effectively monitor the performance of the system, access to good, reliable and consistent data is important. AMATS and ODOT have longstanding data collection efforts, such as traffic volumes, pavement conditions and crashes, but there are issues related to standardization of data. AMATS is committed to an effective regional transportation monitoring system. It is important for AMATS to ensure the data collection efforts are coordinated to facilitate meaningful and efficient analysis. Performance measures are applied at multiple dimensions within the AMATS planning process and include evaluation of strategies at every stage in the process:

- Regional Analysis of Performance Measures
- Project-level Analysis of Performance Measures
- Determination of progress towards regional goals and objectives

The implemented strategies will be monitored to assess their effectiveness. Monitoring techniques and schedules will be dependent on the type of improvement that is implemented, and the data availability. It may take years to assess the benefits of safety-type improvements that are intended to reduce crash rates, crash severity, or incidents. Conversely, the benefits of capacity improvements are relatively easy to measure and assess.

The benefits of the implemented strategies will be documented in a biannual report. For the improvements that may not be accurately measured in a two-year time frame, results will be presented with a description of the limitations of monitoring. Capacity projects and other improvements that are implemented through non- CMP methods will still be monitored to determine their benefits. Based upon the monitoring results, the learned facts will feedback for the CMP to verify and update the used performance measures, the applied data analysis techniques, and the considered strategies. If necessary, the CMP objectives and the CMP itself will be adjusted.

All AMATS funded projects, related to improving congestion, sold between 2016 and 2019 were evaluated for effectiveness of reducing congestion. AMATS analyzed the projects' percent free flow speed in 2016 and 2019 to try to capture the percent before and after the project. This process can help AMATS determine the effectiveness of congestion related strategies. While AMATS included projects sold in 2019 those projects will continue to be monitored because most were not operational until at least 2020. A few of the earlier projects were multi-year projects meaning that their completion date might be in 2019 or later. These projects will also need to be monitored as new data becomes available.

It is important to keep in mind that while these projects were related to congestion, the main intent of the project may not have been congestion alleviation. Some projects were designed to improve safety, sometimes not just for vehicles but also pedestrians and bicyclists. If the project's main goal was not to reduce recurring congestion, the percent free flow speed may not have changed after project completion. This is not an indictment of the project and each project must be analyzed individually while keeping in mind the goals and intent of the project.

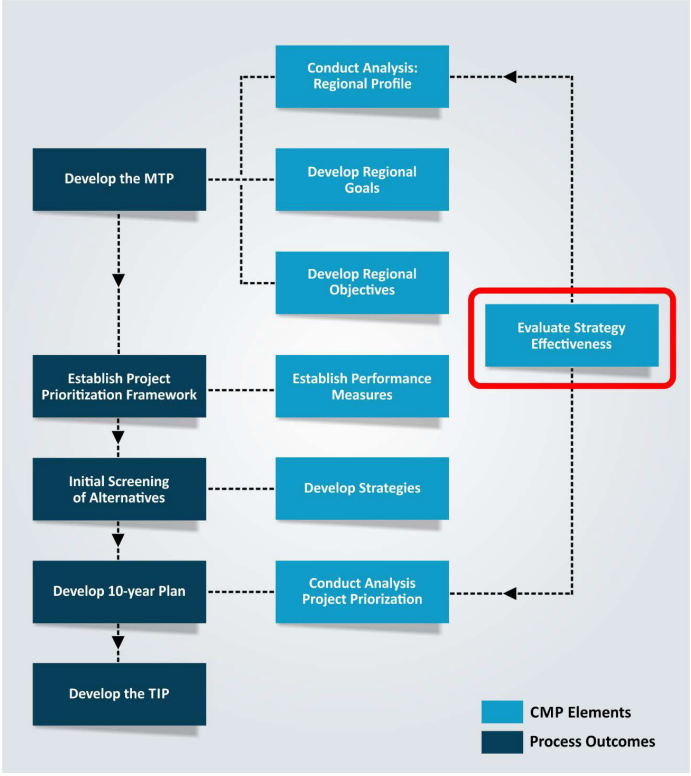


Table 10-1 | Evaluation of Strategies Effectiveness and Congestion

FY SOLD	CY COMPLETED	PID	POLITICAL UNIT	LOCATION	TYPE OF WORK	SEGMENT / DIRECTION	2016 WORST % FREFLOW	2019 WORST % FREFLOW	2016 PEAK PERIOD TRAFFIC VOL	2019 PEAK PERIOD TRAFFIC VOL	IMPROVEMENT TYPE	AFFECT ON CONGESTION AND TRAFFIC
2016	2019	84546	Kent	E Summit St from S Lincoln St to Loop Rd	Coordinated Signals, Intersection Improvements, Raised Median, Sidewalks, Bike Lanes	S Lincoln St to Risman Dr (2-way)	64	61	1,619	1,765	Operational, Bike / Ped, Safety	No significant change
						Risman Dr to Johnston Dr (EB only)	N/A	65	N/A	1,638		N/A
						Johnston Dr to Fraternity Cir (WB only)	60	61	942	1,785		No significant change in congestion / Traffic increased
						Johnston Dr to Campus Center Dr (EB only)	65	68	1,683	1,674		Congestion decreased
						Campus Center Dr to Johnston Dr (WB only)	55	67	1,502	1,568		Congestion significantly decreased / No significant change in traffic
						Campus Center Dr to Loop Rd (2-way)	65	64	2,141	2,782		No significant change in congestion/traffic increased
2016	2017	93441	Ravenna	Highland Ave & Diamond St, Highland Ave & Sycamore St, Diamond St & Cleveland Ave	Signal Coordination, Preemption, Ped Signals, Curb Ramps	N Diamond St from W Main St to Cleveland Rd (2-way)	42	79	56	N/A	Operational, Ped, Safety	Congestion significantly decreased
						Cleveland Rd from W Highland Ave to N Diamond St (2-way)	77	76	1,897	1,845		No significant change in both congestion and traffic
						W Highland Ave from Phelps St to Day St (2-way)	84	83	113	281		No significant change in congestion / Traffic increased
						N Sycamore St from W Main St to W Highland Ave (2-way)	80	69	1,047	1,747		Congestion and traffic both increased
2016	2017	88528	Coventry Twp Springfield Twp	Arlington Rd	NB Left Turn Lane at Warner Rd, Signal Interconnect, Sidewalks	Chenoweth Rd to Akron S Corp line (2-way)	74	70	2,720	1,653	Operational, Ped	No significant change in congestion / Traffic decreased
2016	2019	93432	Akron	Brittain Rd	Signal Coordination, Fiber Optics	E Market St to Eastwood Ave (2-way)	65	77	594	933	Operational	Congestion significantly decreased / Traffic increased
2016	2017	85076	Norton	Cleveland Massillon Rd	Median Turn Lane, Signal Upgrades	Pleasant Dr to Greenridge Rd (2-way)	70	76	3,505	3,063	Operational	Congestion decreased / Traffic decreased
2016	2019	88990	Akron	W Exchange St / Cedar St	Signal Interconnect, Lane Reduction, Parking, Bike Lanes	W Exchange St from S Portage Path to Rhodes Ave (2-way)	83	78	4,900	4,858	Operational, Bike, Safety	No significant change in both congestion and traffic
						W Exchange St from Rand Ave to Rhodes Ave (WB Only)	85	79	2,857	2,786		No significant change in both congestion and traffic
						W Exchange St from S Broadway St to Rand Ave (WB Only)	78	68	2,055	1,906		Congestion slightly increased
						Cedar St from Water St to Broadway St (2-way)	74	76	123	1,072		Congestion decreased / Traffic decreased
						W Cedar St from Rhodes Ave to Water St (EB only)	80	78	1,068	1,136		Congestion decreased / Traffic decreased
2016	2019	93435	Akron	W Market St	Upgrade Signals	Portage Path to S Summit St (2-way)	65	61	1,410	1,248	Operational	Congestion decreased
2016	2020	75436	Akron	SR-59 Rerouting	Reconstruct SR-59 on Rand Ave and Dart Ave	N Howard St to Exchange St (SB Only)	87	80	6,090	2,754	Reconfigure, Safety	Congestion increased / Traffic significantly decreased
						Exchange St to N Howard St (NB Only)	80	73	5,656	180		Congestion increased / Traffic significantly decreased
2016	2020	77269	Akron	Main / Broadway Interchange	Reconstruct & Modify Access to Main / Broadway Interchange, Remove Freeway Access to/from Wolf Ledges Pkwy / Grant Interchange	IR-76/77 from Princeton St to Summer St (EB Only)	87	86	8,485	12,386	Reconfigure, Safety	Congestion decreased / Traffic significantly increased
						S Main St from Thornton St to Miller Ave (SB Only)	N/A	72	N/A	2,197		Low congestion
						IR-76/77 W of Main St Interchange On-ramp (WB Only)	78	90	3,112	195		Congestion decreased / Traffic significantly decreased
						IR-76/77 W of Main St Interchange Off-ramp (WB Only)	N/A	83	N/A	4		No congestion
						Wolf Ledges Pkwy over IR-76/77 (2-way)	79	73	1,371	3,109		Congestion slightly increased / Traffic significantly increased
						Grant St over IR-76/77 (2-way)	75	81	642	1,378		Congestion decreased / Traffic significantly increased
2016	2017	93444	Tallmadge	SR-91 North Ave	Median Turn Lane, Sidewalks	Tallmadge Circle to Garwood Dr (2-way)	65	69	2,611	3,700	Operational, ped, and safety	Congestion decreased/Traffic significantly increased
2016	2017	82956	Hudson Stow Boston Heights	SR-91 Darrow Rd	Turn Lanes, New Signal, Bridge Replacement	Norton Rd from Lawnmark Dt to Sodalite Dr (2-way)	70	71	1,459	1,681	Operational, bike/ped, and safety	Congestion slightly increased / Traffic increased
						SR-91 from Fishcreek Rd to Norton Rd (2-way)	70	69	4,288	4,593		Congestion decreased / Traffic increased
						SR-303 Bridge over Hike & Bike Trail (2-way)	72	76	4,601	4,683		Congestion decreased / Traffic increased
2016	2019	88968	Akron	SR-162 Signals	Signal Interconnect	Collier Rd to Glendale Ave (2-way)	59	67	16	131	Operational	Both congestion and traffic increased
2016	2019	93439	Akron	SR-261 Signals	Signal Coordination	Home Ave to Brittain Rd (2-way)	72	72	4,119	4,333	Operational	No significant change
2017	2018	92561	Streetsboro	Frost Rd	Turn Lanes, Signal Interconnect, Bridge Widening	IR-480 to SR-43 (2-way)	77	80	1,127	1,336	Operational, Safety	No significant change
2017	2017	88548	Hudson	SR-91 / Prospect St	Signal Interconnect, Bike Lanes, Sidewalk	SR-91 (Main St) at Prospect St	60	56	5,417	5,153	Operational, Bike / Ped	No significant change

Table 10-1 | Evaluation of Strategies Effectiveness and Congestion

FY SOLD	CY COMPLETED	PID	POLITICAL UNIT	LOCATION	TYPE OF WORK	SEGMENT / DIRECTION	2016 WORST % FREFLOW	2019 WORST % FREFLOW	2016 PEAK PERIOD TRAFFIC VOL	2019 PEAK PERIOD TRAFFIC VOL	IMPROVEMENT TYPE	AFFECT ON CONGESTION AND TRAFFIC
2017	2018	93436	Akron	SR-18 Signals	Signal Coordination, Reconstruct Kenilworth / Elmdale Intersection	Hawkins Ave to Portage Path (2-way)	69	72	2,294	2,052	Operational, Safety	No significant change
2018	2018	93442	Kent	SR-43 (S Water St)	Turn Lanes, Signal Interconnect, Sidewalk Ramps	SR-261 to Summit St (2-way)	71	75	4,067	4,455	Operational, Ped	No significant change
2018	2020	104042	Akron	S Main St, Phase 1	Street and Sidewalk Replacement, Roundabout, Bike Lanes	Cedar St to Mill St (2-way)	N/A	69	N/A	642	Operational, Bike / Ped	No significant change
2018	2020	92032	Twinsburg	SR-91 (Darrow Rd)	Widen to 4 Lanes, Sidewalk, Intersection Improvements	Glenwood Dr to North Corp line (2-way)	70	73	4,805	5,265	Add Capacity, Ped	No significant change
2019	2020	99879	Streetsboro	Streetsboro Signal Upgrade	Signal Interconnect, Emergency Preemption	SR-14 from Mondial Pkwy to Diagonal Rd (2-way)	69	64	2,323	2,834	Operational, Safety	Both congestion and traffic increased
						SR-43 from Pike Pwky to Seasons Rd (2-way)	67	67	2,001	2,241		No significant change
						SR-303 From Market Sq to SR-14 (2-way)	59	71	869	1,354		Congestion significantly decreased / Traffic increased
						Streetsboro Rd from SR-14 to Root Dr (2-way)	66	67	161	315		No significant change
2019	2020	97638	Norton	Cleveland Massillon Rd	Median Turn Lane, Signal Upgrades, Sidewalk	Shannon Ave to Pleasant Dr (2-way)	76	73	1,547	1,233	Operational, Ped, Safety	Congestion slightly increased / Traffic decreased
2019	2021	108164	Akron	S Main St, Phase 2	Street and Sidewalk Replacement, Roundabout, Bike Lanes	Mill St to SR-59 (NB only)	65	49	536	688	Operational, Bike / Ped	Congestion significantly decreased / Traffic increased
						SR-59 to Mill St (SB only)	71	61	783	484		Congestion significantly decreased / Traffic decreased
2019	2022	96670	Akron Barberton	IR-76	Reconstruct IR-76 / Wooster / East Ave / State St Interchanges	Central Ave to 27th St (EB Only)	94	95	8,478	8,386	Reconfigure, Safety	No significant change
2019	2021	89113	Lakemore	SR-91 / US-224 / Canton Rd	Standard lanes, raised median, turn lanes, sidewalk	Springfield Lake Dr to Farmdale Rd (2-way)	73	65	3,151	3,613	Operational, Ped, Safety	No significant change
2019	2020	103171	Copley Twp	SR-162 (Copley Rd)	New EB Left Turn Lane, New SB Right Turn Lane	Sunset Dr to Cleveland Massillon Rd (Copley Circle) (2-way)	81	77	3,271	2,551	Operational, Safety	No significant change
						Schoolcraft Ave to Cleveland Massillon Rd (Copley Circle) (2-way)	73	83	1,846	3,096		Congestion significantly decreased / Traffic significantly increased
2019	2021	88556	Akron	SR-261 (Tallmadge Ave)	Reduce to 3 Lanes, Realign Dayton St Intersections, Signal Upgrades, Sidewalk Upgrade	N Main St to Gorge Blvd (2-way)	74	56	2,580	2,444	Operational, Ped, Safety	Congestion increased / Traffic decreased

Conclusion

Congestion management is an important element of the transportation planning process. Millions of federal, state and local transportation improvement dollars have been invested in highly effective projects all throughout the AMATS region, which has greatly reduced overall congested within the region. With limited availability of funding for transportation improvements expected into the foreseeable future, it is to our advantage to focus our resources on these most congested segments of our region's roadway network.

In summary, there are fewer extremely congested areas today than in the past. The benefit of this reduction is that we can better leverage decreasing transportation funding by focusing on only the most important regional areas of concern. Unfortunately, most of these remaining areas of concern have not yet been addressed due to their tremendous complexity and/or cost. The many communities and agencies that comprise AMATS must continue diligently working together to find unique solutions to address our remaining congested areas, and to wisely allocate available resources to implement those solutions.

The recommendations in this report will be considered for inclusion into the upcoming long-range regional transportation plan, *Transportation Outlook 2045*. If the recommendations from this report are adopted in the Plan, they will include a more detailed project description and will include costs and an estimated implementation schedule.

Appendix

Table A-1 | CMP Final Analysis Segments

POLITICAL UNIT	NAME	% FREEFLOW	TIME	TYPE	DIRECTION	TIME PERIOD
Akron	Brittain Rd from Independence to Howe Ave	28.60	7:00 - 8:00	Arterial	Northbound	PM
Akron	SR-8 SB bet Forge and Market St	32.61	4:45 - 5:45	Freeway	Southbound	PM
Akron	SR-8 SB bet Glenwood Ave and SB on Ramp	33.74	4:45 - 5:45	Freeway	Southbound	PM
Akron	SR-8 SB through the Perkins St Interchange	34.00	4:45 - 5:45	Freeway	Southbound	PM
Akron	SR-8 SB bet Tallmadge on Ramp and Glenwood Ave Bridge	34.68	4:45 - 5:45	Freeway	Southbound	PM
Akron	SR-8 SB bet Glenwood Ave on Ramp and Perkins St off Ramp	37.56	4:45 - 5:45	Freeway	Southbound	PM
Akron	SR-8 SB Through the Tallmadge Ave Interchange	38.06	4:45 - 5:45	Freeway	Southbound	PM
Akron	Exchange St bet Main St and Paul Williams St	39.97	4:00 - 5:00	Arterial	Eastbound	PM
Akron	SR-59 bet Union St and SR-8 SB Ramps	40.50	4:45 - 5:45	Arterial	Eastbound	PM
Akron	SR-8 SB bet Market St and the Central Interchange	41.16	4:45 - 5:45	Freeway	Southbound	PM
Akron	Cedar St bet Rand St and Dart Ave	43.48	7:45 - 8:45	Arterial	Eastbound	AM
Akron	SR-18 bet High St and SR-59	44.85	4:45 - 5:45	Arterial	Eastbound	PM
Akron	SR-59 Perkins St through the SR-8 Interchange	46.68	4:30 - 5:30	Freeway Interchange	Eastbound	PM
Akron	SR-8 SB bet Cuyahoga Falls on Ramp and Tallmadge off Ramp	48.03	4:45 - 5:45	Freeway	Southbound	PM
Akron	Firestone Blvd bet S Main and Grant St	48.53	5:00 - 6:00	Arterial	Eastbound	AM
Akron	US-224 E of and adjacent to SR-241	51.63	2:00 - 3:00	Intersection	Westbound	MD
Akron	Tallmadge Ave through the SR-8 Interchange	51.79	3:00 - 4:00	Freeway Interchange	Westbound	MD
Akron	White Pond Dr through the IR-77 Interchange	52.19	4:15 - 5:15	Freeway Interchange	Southbound	PM
Akron	W Exchange St bet Dart Ave and Rand St	53.76	6:15 - 7:15	Arterial	Westbound	AM
Akron	IR-76 / IR-77 EB	55.63	4:45 - 5:45	Ramp		PM
Akron	High St bet SR-18 and SR-59	55.75	4:45 - 5:45	Arterial	Westbound	PM
Akron	US-224 W of and adjacent to SR-241	55.81	7:15 - 815	Intersection	Eastbound	AM
Akron	Brittain Rd from Howe to Independence	56.30	5:00 - 6:00	Arterial	Southbound	PM
Akron / Cuyahoga Falls	Home Ave from Annapolis to Howe	57.40	12:00 - 1:00	Arterial	Northbound	MD
Akron	Broadway St bet Mill St and SR-18 Market St	57.62	4:45 - 5:45	Arterial	Eastbound	PM
Akron	Euclid Ave from Dart to Rand	58.00	8:00 - 9:00	Arterial	Eastbound	AM
Akron	Merriman Rd W of and adjacent to Portage Path	58.69	5:00 - 6:00	Intersection	Southbound	PM
Akron	Firestone Blvd from S Main St to Grant St	58.80	10:00 - 11:00	Arterial	Westbound	PM
Akron / Coventry Twp	S Main St bet Waterloo Rd and IR-277 EB Ramps	60.27	4:00 - 5:00	Arterial	Southbound	PM
Akron	Brittain Rd from Independence to Tallmadge Ave	60.30	4:00 - 5:00	Arterial	Southbound	PM
Akron	Locust St bet Cedar St and Exchange St	61.34	6:00 - 7:00	Arterial	Westbound	AM
Akron	Wilbeth Rd E of and adjacent to SR-93	62.46	4:00 - 5:00	Intersection	Westbound	PM
Akron	SR-261 Tallmadge Ave through the SR-8 Interchange	62.58	3:00 - 4:00	Freeway Interchange	Eastbound	MD
Akron	SR-18 bet Union St and High St	63.21	4:45 - 5:45	Arterial	Westbound	PM
Akron	Cedar St bet Dart Ave and Locust St	63.41	7:45 - 8:45	Arterial	Eastbound	AM
Akron / Cuyahoga Falls	Home Ave from Howe to Annapolis	63.50	12:00 - 1:00	Arterial	Southbound	MD
Akron	SR-8 SB bet Gorge Blvd and on Ramp from Cuyahoga Falls Ave	63.53	4:00 - 5:00	Freeway	Southbound	PM
Akron	Merriman Rd at Portage Path Intersection	63.67	5:00 - 6:00	Intersection	Northbound	AM
Akron	SR-59 under the SR-18 Market St bridge	63.85	7:00 - 8:00	Arterial	Eastbound	AM
Akron	Opportunity Pkwy bet Cedar St and SR-59	63.95	5:00 - 6:00	Arterial	Westbound	AM
Akron	Waterloo Rd through the Arlington St Intersection	63.99	3:00 - 4:00	Intersection	Eastbound	MD
Akron	SR-18 Market St bridge over SR-59	64.21	5:00 - 6:00	Arterial	Eastbound	PM
Akron / Cuyahoga Falls	Portage Trail Ext E of and adjacent to Portage Path	64.63	11:30 - 12:30	Intersection	Westbound	MD
Akron	Brittain Rd from Chapman to Eastwood	65.10	5:00 - 6:00	Arterial	Southbound	PM
Akron	Ramp from IR-76 WB to IR-77 SB	65.17	4:45 - 5:45	Ramp		PM
Akron	Brittain Rd from E Market St to Bauer	65.20	7:00 - 8:00	Arterial	Northbound	AM

*Table sorted alphabetically by Political Unit, then by Percent Free Flow Speed.

Table A-1 | CMP Final Analysis Segments

POLITICAL UNIT	NAME	% FREEFLOW	TIME	TYPE	DIRECTION	TIME PERIOD
Akron	IR-76/77 EB through the Main St / Broadway St Interchange	65.28	4:45 - 5:45	Freeway	Eastbound	PM
Akron	Waterloo Rd through the Arlington Rd Intersection	65.29	5:00 - 6:00	Intersection	Westbound	AM
Akron	Perkins St through the SR-8 Interchange	65.30	7:30 - 8:30	Freeway Interchange	Westbound	AM
Akron	SR-93 between IR-277 EB on Ramp and Waterloo Rd	65.53	3:00 - 4:00	Arterial	Northbound	MD
Akron	Waterloo Rd bet SR-93 and IR-277 WB on Ramp	65.57	3:00 - 4:00	Arterial	Eastbound	MD
Akron	IR-76/77 EB bet South St West of Wolf Ledges off Ramp	65.59	4:45 - 5:45	Freeway	Eastbound	PM
Akron	IR-76/77 EB bet Wolf Ledges off Ramp and Wolf Ledges bridge	65.85	4:45 - 5:45	Freeway	Eastbound	PM
Akron	Brittain Rd from Bauer to E Market St	66.50	7:00 - 8:00	Arterial	Southbound	AM
Akron	Cuyahoga Falls Ave bet Riverside Dr and SR-8 SB Ramps	66.71	5:00 - 6:00	Arterial	Westbound	PM
Akron	SR-8 SB bet Ramp split and IR-76 Mainline	66.89	5:00 - 6:00	Freeway	Southbound	PM
Akron	SR-93 between IR-277 EB Ramp and Waterloo Rd	66.89	4:00 - 5:00	Freeway Interchange	Northbound	PM
Akron / Fairlawn / Copley Twp	Ridgewood Rd at Miller Rd	66.96	5:00 - 6:00	Intersection	Eastbound	PM
Akron	SR-8 / IR-77 bet IR-76 and Lovers Lane	67.10	5:00 - 6:00	Freeway	Southbound	PM
Akron	IR-76/77 EB bet South St on Ramp and Main St off Ramp	67.12	4:45 - 5:45	Freeway	Eastbound	PM
Akron	SR-8 SB bet Front St and Howe Ave on Ramp	67.13	4:00 - 5:00	Freeway	Southbound	PM
Akron	Cuyahoga Falls Ave from Riverside Dr to SR-8 SB Ramps	67.51	4:45 - 5:45	Arterial	Eastbound	PM
Akron	Arlington St bet Market St and Buchtel Ave	67.75	4:45 - 5:45	Arterial	Southbound	PM
Akron	SR-241 NB just S of and adjacent to US-224	67.75	4:00 - 5:00	Intersection	Northbound	PM
Akron	Cedar from Rand to Dart	67.80	10:00 - 11:00	Arterial	Eastbound	AM
Akron	Brittain Rd from Goodyear to Newton St	67.80	3:00 - 4:00	Arterial	Northbound	MD
Akron	Brittain Rd from Goodyear to Bauer	67.90	7:00 - 8:00	Arterial	Southbound	AM
Akron	IR-76/77 EB bet Wolf Ledges and Grant St	68.08	4:45 - 5:45	Freeway	Eastbound	PM
Akron	IR-271 NB bet SR-82 and IR-480	68.22	5:15 - 6:15	Freeway	Northbound	PM
Akron	Brittain Rd from Tallmadge Ave to Independence	68.30	2:00 - 3:00	Arterial	Northbound	MD
Akron	W Thornton St bet Dart Ave and S Main St	68.41	6:00 - 7:00	Arterial	Eastbound	AM
Akron / Fairlawn / Copley Twp	Ridgewood Rd at Miller Rd Intersection	68.48	4:00 - 5:00	Intersection	Westbound	PM
Akron	Kelly Ave bet US-224 WB Ramps and Exeter Rd	68.58	4:45 - 5:45	Arterial	Southbound	PM
Akron	Ridgewood Rd bet Miller Rd and Halifax Rd	68.68	11:00 - 12:00	Arterial	Eastbound	MD
Akron	Grant St bet Thornton St and IR-76/77	68.75	4:15 - 5:15	Arterial	Southbound	PM
Akron	High St from Cedar to Bartges	68.80	12:00 - 1:00	Arterial	Westbound	MD
Akron / Bath Twp	Smith Rd bet Revere Rd and Sand Run Rd	69.22	5:00 - 6:00	Arterial	Eastbound	PM
Akron	Kenmore Blvd bet Lakeshore Blvd and Ira Ave	69.30	5:00 - 6:00	Arterial	Eastbound	AM
Akron	IR-76/77 EB bet Grant St and Grant St on Ramp	69.51	4:45 - 5:45	Freeway	Eastbound	PM
Akron	IR-77 SB bet Lafollette St and Mckinley St	69.59	4:45 - 5:45	Ramp		PM
Akron	N Firestone Blvd bet Grant St and Coventry St	69.63	6:00 - 7:00	Arterial	Eastbound	AM
Akron	Grant St through the IR-76 Interchange	69.77	3:00 - 4:00	Freeway Interchange	Southbound	MD
Akron	Euclid Ave bet East Ave and Diagonal Rd	69.83	11:00 - 12:00	Arterial	Westbound	MD
Akron	Tallmadge Ave bet N Main St and SR-8	69.90	3:00 - 4:00	Arterial	Eastbound	MD
Akron	Brittain Rd from Bauer to Goodyear Ave	70.00	3:00 - 4:00	Arterial	Northbound	MD
Akron	Brittain Rd from Evans to Tallmadge Ave	70.00	12:00 - 1:00	Arterial	Northbound	MD
Akron	SR-261 bet SR-59 NB off ranp and Rand	70.02	5:00 - 6:00	Arterial	Westbound	AM
Akron	Tallmadge Ave bet SR-8 and N Main St	70.03	4:15 - 5:15	Arterial	Westbound	PM
Akron / Coventry Twp	S Main St bet IR-277 WB Ramps and Waterloo Rd	70.09	815 - 9:15	Arterial	Northbound	AM
Akron	SR-59 bet SR-18 and Union St	70.12	7:45 - 8:45	Arterial	Westbound	AM
Akron	SR-18 E Market St through the IR-76 Interchange	70.32	4:00 - 5:00	Freeway Interchange	Westbound	PM
Akron	Buchtel Ave bet Fountain St and Goodkirk St	70.45	11:00 - 12:00	Arterial	Westbound	MD

*Table sorted alphabetically by Political Unit, then by Percent Free Flow Speed.

Table A-1 | CMP Final Analysis Segments

POLITICAL UNIT	NAME	% FREEFLOW	TIME	TYPE	DIRECTION	TIME PERIOD
Akron	SR-241 South leg of US-224 Intersection	70.51	5:00 - 6:00	Intersection	Southbound	PM
Akron	Grant St from IR-76 to E Thornton St	70.96	5:00 - 6:00	Arterial	Northbound	AM
Akron	Brittain Rd from Newton to Goodyear	71.00	5:00 - 6:00	Arterial	Southbound	PM
Akron	White Pond Dr bet Mull Ave and Frank Blvd	71.03	4:00 - 5:00	Arterial	Southbound	PM
Akron / Springfield Twp	US-224 bet Massillon Rd and Canton Rd	71.10	4:45 - 5:45	Arterial	Eastbound	PM
Akron	SR-18 bet General St and Seiberling St	71.20	7:30 - 8:30	Arterial	Westbound	AM
Akron	Thornton Ave bet East Ave and SR-93	71.28	6:00 - 7:00	Arterial	Eastbound	PM
Akron	Exchange St bet Main St and Broadway St	71.32	5:00 - 6:00	Arterial	Eastbound	AM
Akron	Thronton bet S Main and Dart Ave	71.36	5:00 - 6:00	Arterial	Westbound	AM
Akron	IR-77 / Vietnam Veterans Memorial Hwy NB	71.44	7:30 - 8:30	Ramp		AM
Akron	Grant St from Cole to IR-76/77	71.70	5:00 - 6:00	Arterial	Northbound	AM
Akron	Brittain Rd from Eastwood to Tonawanda	71.70	4:00 - 5:00	Arterial	Southbound	PM
Akron / Coventry Twp	IR-77 NB at Waterloo Rd	71.87	7:30 - 8:30	Freeway	Northbound	AM
Akron	SR-93 Manchester Rd North leg of Wilbeth Rd Intersection	71.92	1:45 - 2:45	Intersection	Southbound	MD
Akron / Coventry Twp	S Main St through the IR-277 Interchange	72.08	4:00 - 5:00	Freeway Interchange	Southbound	PM
Akron	IR-77 NB bet Waterloo Rd and Wilbeth Rd	72.09	7:30 - 8:30	Freeway	Northbound	AM
Akron	Manchester Rd bet IR-277 EB Ramps and Waterloo Rd	72.26	5:00 - 6:00	Arterial	Southbound	PM
Akron	S Arlington Rd S of and adjacent to Waterloo Rd	72.44	5:00 - 6:00	Intersection	Northbound	PM
Akron	Buchtel Ave bet E Market and N Arlington St	72.55	11:00 - 12:00	Arterial	Eastbound	MD
Akron / Fairlawn	SR-18 bet Rand St and Ghent Rd	72.55	3:00 - 4:00	Arterial	Westbound	MD
Akron	Buchtel Ave bet Union St and Goodkirk St	72.84	3:00 - 4:00	Arterial	Eastbound	MD
Akron	SR-8 NB bet E Market and Perkins off Ramp	72.89	5:00 - 6:00	Freeway	Northbound	PM
Akron	SR-59 bet Market St and Union St	72.93	7:00 - 8:00	Arterial	Eastbound	AM
Akron	Wilbeth Rd bet Allendale St and Coventry St	72.99	3:00 - 4:00	Arterial	Westbound	MD
Akron	Buchtel Ave from Arlington St to E Market	73.17	11:45 - 12:45	Arterial	Westbound	MD
Akron / Cuyahoga Falls	Portage Trail bet N Portage Path and Northampton Rd	73.29	5:15 - 6:15	Arterial	Eastbound	PM
Akron	Home Ave from Tallmadge to Independence	73.30	3:00 - 4:00	Arterial	Northbound	MD
Akron	Broadway St bet SR-18 Market St and SR-59	73.38	5:00 - 6:00	Arterial	Eastbound	PM
Akron	SR-8 NB bet E Market and the High Level Bridge	73.48	5:00 - 6:00	Freeway	Northbound	PM
Akron	Grant St from N Firestone Blvd to Cole Ave	73.60	5:00 - 6:00	Arterial	Northbound	AM
Akron	IR-77 SB bet Lovers Lane and Cole Ave	73.64	5:00 - 6:00	Freeway	Southbound	PM
Akron	Brittain Rd from Tonawanda to Newton	73.70	4:00 - 5:00	Arterial	Southbound	PM
Akron / Fairlawn / Bath Twp	Smith Rd bet Ghent Rd and Revere Rd	73.86	5:00 - 6:00	Arterial	Eastbound	PM
Akron	SR-261 bet Rand and the NB exit Ramp	74.03	7:00 - 8:00	Arterial	Eastbound	AM
Akron	Kenmore Blvd E of and adjacent to 4th St	74.23	5:00 - 6:00	Intersection	Westbound	PM
Akron	SR-18 E Market bet Seiberling St and General St	74.43	7:00 - 8:00	Arterial	Eastbound	AM
Akron	Arlington St bet Wilbeth and Triplett Blvd	74.55	7:00 - 8:00	Arterial	Northbound	PM
Akron	Arlington St bet Wilbeth Rd and Triplett Blvd	74.55	7:00 - 8:00	Arterial	Eastbound	PM
Akron	E Market bet Union St and Goodkirk Rd	74.56	4:45 - 5:45	Arterial	Eastbound	PM
Akron	Home Ave from Independence to Annapolis	74.70	4:00 - 5:00	Arterial	Northbound	PM
Akron / Springfield Twp	Hillbish Ave from Krumroy Rd to US-224	74.86	5:00 - 6:00	Arterial	Northbound	AM
Akron	N Arlington St bet E Market St and Buchtel Ave	74.92	6:45 - 7:45	Arterial	Northbound	AM
Aurora	SR-82 bet SR-43 and SR-306	54.43	5:00 - 6:00	Arterial	Westbound	PM
Barberton	Robinson Ave from SR-619 to Van Buren	65.50	3:00 - 4:00	Arterial	Westbound	MD

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Table A-1 | CMP Final Analysis Segments

POLITICAL UNIT	NAME	% FREEFLOW	TIME	TYPE	DIRECTION	TIME PERIOD
Barberton	Norton Ave bet Barber Rd and Wooster Rd N	69.40	7:00 - 8:00	Arterial	Eastbound	AM
Barberton	Wooster Rd North through the IR-76 Interchange	71.82	3:00 - 4:00	Freeway Interchange	Westbound	MD
Barberton	Wooster Rd N through the IR-76 Interchange	72.51	3:00 - 4:00	Freeway Interchange	Eastbound	MD
Barberton	Robinson Ave from Van Buren to Wooster Rd W	72.70	3:00 - 4:00	Arterial	Westbound	MD
Barberton	Robinson Ave from Wooster Rd W to Van Buren	74.20	3:00 - 4:00	Arterial	Eastbound	MD
Boston Heights	SR-8 NB to IR-80	40.71	5:00 - 6:00	Ramp		PM
Boston Heights	WB Connector bet IR-80 and SR-8	46.69	5:15 - 6:15	Ramp		PM
Boston Heights	EB Connector bet SR-8 SB and IR-80	57.23	5:00 - 6:00	Ramp		PM
Boston Heights	SR-303 through the SR-8 Interchange	57.81	5:15 - 6:15	Freeway Interchange	Westbound	PM
Boston Heights	IR-80 EB to SR-8	59.16	5:15 - 6:15	Ramp		PM
Boston Heights	IR-80 WB to SR-8	64.10	5:00 - 6:00	Ramp		PM
Boston Heights / Boston Twp	Akron Cleveland Rd from Seasons Rd to SR-303	73.30	7:00 - 8:00	Arterial	Northbound	AM
Cuyahoga Falls	SR-59 Front St bet 2nd St and Hudson Dr	51.56	5:00 - 6:00	Arterial	Eastbound	PM
Cuyahoga Falls	State Rd from Marc to Bath	55.20	5:00 - 6:00	Arterial	Southbound	PM
Cuyahoga Falls / Stow	Steels Corners Rd from Bridgewater to Wyoga Lake	55.60	7:00 - 8:00	Arterial	Eastbound	AM
Cuyahoga Falls	Graham Rd from Lillis to State Rd	57.10	3:00 - 4:00	Arterial	Westbound	MD
Cuyahoga Falls / Stow	Steels Corners Rd from Wyoga Lake to Bridgewater	57.10	5:00 - 6:00	Arterial	Eastbound	PM
Cuyahoga Falls	Howe Ave through the SR-8 Interchange	57.77	4:45 - 5:45	Freeway Interchange	Eastbound	PM
Cuyahoga Falls	Broad Blvd through the SR-8 Interchange	57.84	5:00 - 6:00	Freeway Interchange	Eastbound	PM
Cuyahoga Falls	Broad Blvd bet RR tracks and SR-8 NB Ramps	58.04	4:30 - 5:30	Intersection	Southbound	PM
Cuyahoga Falls	State Rd from Marc to Steels Corners	59.00	7:00 - 8:00	Arterial	Northbound	AM
Cuyahoga Falls	Portage Trail Ext W of and adjacent to State Rd	60.10	12:00 - 1:00	Intersection	Eastbound	MD
Cuyahoga Falls	Newberry St from Broad to Portage Tr	61.40	6:00 - 7:00	Arterial	Northbound	PM
Cuyahoga Falls	State Rd from Bath to Graham	63.20	4:00 - 5:00	Arterial	Southbound	PM
Cuyahoga Falls	Graham Rd from Bath Rd to Wyoga Lake Rd	63.90	4:00 - 5:00	Arterial	Eastbound	PM
Cuyahoga Falls	Broad Blvd EB bet 2nd St and SR-8 SB Ramps	64.45	5:00 - 6:00	Arterial	Eastbound	PM
Cuyahoga Falls	State Rd from Quick to Steels Corners	65.00	2:00 - 3:00	Arterial	Southbound	MD
Cuyahoga Falls	Portage Trail through the SR-8 Interchange	65.08	7:15 - 815	Freeway Interchange	Westbound	AM
Cuyahoga Falls	Front St at the Broad Blvd Intersection	66.06	9:00 - 10:00	Intersection	Northbound	PM
Cuyahoga Falls	State Rd from Graham to Bath	68.10	4:00 - 5:00	Arterial	Northbound	PM
Cuyahoga Falls	Graham Rd from Wyoga Lake Rd to Bath Rd	68.10	2:00 - 3:00	Arterial	Westbound	MD
Cuyahoga Falls	Front St bet 2nd St and Hudson Dr	68.14	4:45 - 5:45	Arterial	Westbound	PM
Cuyahoga Falls	2nd St South and adjacent to Oakwood Dr	69.33	9:00 - 10:00	Intersection	Northbound	PM
Cuyahoga Falls	Broad Blvd EB bet 6th St and 2nd St	69.69	3:00 - 4:00	Arterial	Eastbound	MD
Cuyahoga Falls	Steels Corners Rd from State to Wyoga Lake Rd	69.90	7:00 - 8:00	Arterial	Eastbound	AM
Cuyahoga Falls	Hudson Dr from Graham to SR-8 NB Ramp	70.40	3:00 - 4:00	Arterial	Southbound	MD
Cuyahoga Falls	Portage Trail bet 6th St and SR-8	70.50	3:00 - 4:00	Arterial	Eastbound	MD
Cuyahoga Falls	State Rd from Steels Corners to Marc	70.50	3:00 - 4:00	Arterial	Southbound	MD
Cuyahoga Falls	Graham Rd from State Rd to Lillis	70.60	1:00 - 2:00	Arterial	Eastbound	MD
Cuyahoga Falls	State Rd from Steels Corners to Quick	70.80	7:00 - 8:00	Arterial	Northbound	AM
Cuyahoga Falls	Broad Blvd E of and adjacent to 2nd St	70.93	5:00 - 6:00	Intersection	Eastbound	PM
Cuyahoga Falls	Hudson Dr from SR-59 to SR-8 NB Ramp	71.10	7:00 - 8:00	Arterial	Northbound	AM
Cuyahoga Falls	Newberry St from Portage Tr to Broad	71.20	1:00 - 2:00	Arterial	Southbound	MD
Cuyahoga Falls	State Rd from Bath to Marc	71.50	4:00 - 5:00	Arterial	Northbound	PM

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POLITICAL UNIT	NAME	% FREEFLOW	TIME	TYPE	DIRECTION	TIME PERIOD
Cuyahoga Falls	State Rd from Seasons to Quick	71.60	7:00 - 8:00	Arterial	Southbound	AM
Cuyahoga Falls	Hudson Dr from SR-8 NB Ramp to Graham	71.70	7:00 - 8:00	Arterial	Northbound	AM
Cuyahoga Falls	Hudson Dr from SR-8 NB Ramp to SR-59 SB	72.70	5:00 - 6:00	Arterial	Southbound	PM
Cuyahoga Falls	SR-8 SB Through the Portage Trail Interchange	72.99	7:30 - 8:30	Freeway	Southbound	AM
Cuyahoga Falls	Steels Corners Rd from Wyoga Lake to State	73.10	7:00 - 8:00	Arterial	Eastbound	AM
Cuyahoga Falls	2nd St through and N of Broad Blvd	73.13	5:00 - 6:00	Intersection	Southbound	AM
Cuyahoga Falls	Graham Rd from Bath Rd to Lillis	73.30	12:00 - 1:00	Arterial	Westbound	MD
Cuyahoga Falls	SR-8 SB through the Howe Ave Interchange	73.34	4:00 - 5:00	Freeway	Southbound	PM
Cuyahoga Falls	Portage Trail Ext bet Northampton Rd and State Rd	73.40	5:15 - 6:15	Arterial	Westbound	PM
Cuyahoga Falls	SR-8 SB bet Broad Blvd and the SB on Ramp	73.78	7:30 - 8:30	Freeway	Southbound	AM
Cuyahoga Falls	Portage Trail bet 6th St and SR-8 SB Ramps	74.07	3:00 - 4:00	Arterial	Westbound	MD
Cuyahoga Falls	Bailey Rd / Hudson Dr from Munroe Falls Ave to SR-59	74.30	7:00 - 8:00	Arterial	Northbound	AM
Cuyahoga Falls	2nd St bet Portage Trail and Oakwood Dr	74.50	5:00 - 6:00	Arterial	Southbound	PM
Cuyahoga Falls	2nd St-Portage Trail to Oakwood Dr	74.90	5:00 - 6:00	Arterial	Northbound	AM
Fairlawn	SR-18 W Market St at Ghent Rd	54.83	1:45 - 2:45	Intersection	Eastbound	MD
Fairlawn / Copley Twp	Ridgewood Rd bet IR-77 NB on Ramp and Miller Rd	56.43	7:45 - 8:45	Arterial	Eastbound	AM
Fairlawn	Ghent Rd N of and adjacent to W Market St	58.89	5:00 - 6:00	Intersection	Southbound	PM
Fairlawn / Bath Twp	SR-18 bet Smith Rd and Cleveland Massillon Rd	60.15	4:45 - 5:45	Arterial	Westbound	PM
Fairlawn	Ghent Rd bet Market St and Smith Rd	63.00	5:00 - 6:00	Arterial	Southbound	PM
Fairlawn	Cleveland Massillon Rd Bywood to Elgin	63.20	5:00 - 6:00	Arterial	Southbound	PM
Fairlawn / Copley Twp	Cleveland Massillon Rd bet the Ridgewood Roads	63.44	3:00 - 4:00	Intersection/Arterial	Northbound	MD
Fairlawn	N Miller Rd bet Market St and Sand Run Pkwy	64.33	5:00 - 6:00	Arterial	Southbound	PM
Fairlawn	SR-18 E of and adjacent to Smith Rd	64.49	4:00 - 5:00	Intersection	Westbound	PM
Fairlawn	Cleveland Massillon from IR-77 to Elgin	66.20	5:00 - 6:00	Arterial	Southbound	PM
Fairlawn	Smith Rd N of and adjacent to SR-18	66.72	1:15 - 2:15	Intersection	Westbound	MD
Fairlawn / Copley Twp	Cleveland Massillon Rd bet IR-77 and SR-18	70.13	5:00 - 6:00	Arterial	Southbound	PM
Fairlawn	Cleveland Massillon Rd from Elgin to Bywood	71.90	12:00 - 1:00	Arterial	Northbound	MD
Fairlawn	SR-18 bet Cleveland Massillon Rd and Smith Rd	73.36	1:15 - 2:15	Arterial	Eastbound	MD
Fairlawn / Copley Twp	Ridgewood Rd through the IR-77 Interchange	73.77	8:00 - 9:00	Freeway Interchange	Eastbound	AM
Fairlawn / Copley Twp	Cleveland Massillon Rd bet the Ridgewood Rd offset legs	74.19	8:00 - 9:00	Intersection/Arterial	Southbound	AM
Green	SR-241 from Boettler to Raber SB	50.50	4:00 - 5:00	Arterial	Southbound	PM
Green	SR-241 from Steese to Graybill SB	51.90	1:00 - 2:00	Arterial	Southbound	MD
Green	SR-241 from Raber to SR-619 SB	52.20	5:00 - 6:00	Arterial	Southbound	PM
Green	SR-241 from Raber to SR-619 SB	52.70	12:00 - 1:00	Arterial	Southbound	MD
Green	SR-241 from Raber to SR-619 SB	54.00	7:00 - 8:00	Arterial	Southbound	AM
Green	SR-241 from Boettler to Raber SB	54.30	12:00 - 1:00	Arterial	Southbound	MD
Green	SR-241 from Boettler to Raber NB	55.80	4:00 - 5:00	Arterial	Northbound	PM
Green	SR-241 from Graybill to Boettler NB	56.30	4:00 - 5:00	Arterial	Northbound	PM
Green	SR-241 Massillon Rd through the IR-77 Interchange	56.73	4:45 - 5:45	Freeway Interchange	Northbound	PM
Green	SR-241 from Graybill to Boettler NB	57.80	2:00 - 3:00	Arterial	Northbound	MD
Green	SR-241 from Boettler to Raber SB	59.60	10:00 - 11:00	Arterial	Southbound	AM
Green	SR-241 from Graybill to Boettler SB	60.50	4:00 - 5:00	Arterial	Southbound	PM
Green	SR-241 from Graybill to Boettler SB	61.30	12:00 - 1:00	Arterial	Southbound	MD
Green	SR-241 from Graybill to Boettler NB	62.00	10:00 - 11:00	Arterial	Northbound	AM

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POLITICAL UNIT	NAME	% FREEFLOW	TIME	TYPE	DIRECTION	TIME PERIOD
Green	S Arlington Rd bet SR-619 and IR-77 SB Ramps	62.36	5:00 - 6:00	Arterial	Northbound	PM
Green	Massillon Rd through the IR-77 Interchange	62.38	4:15 - 5:15	Freeway Interchange	Southbound	PM
Green	SR-241 from Steese to Graybill SB	64.40	10:00 - 11:00	Arterial	Southbound	AM
Green	SR-241 from Graybill to Boettler SB	64.50	9:00 - 10:00	Arterial	Southbound	AM
Green	Lauby Rd NB S of exit Ramp / CAK entrance	65.35	5:00 - 6:00	Intersection	Northbound	PM
Green	S Arlington Rd through the IR-77 Interchange	65.72	5:00 - 6:00	Freeway Interchange	Southbound	PM
Green	Arlington Rd bet IR-77 SB Ramps and SR-619	66.18	5:00 - 6:00	Arterial	Southbound	PM
Green	Lauby Rd at the IR-77 Ramps / Airport Entrance Intersection	66.58	5:00 - 6:00	Intersection	Southbound	PM
Green / Coventry Twp	IR-77 NB through the Arlington Rd Interchange	71.49	7:30 - 8:30	Freeway Interchange	Northbound	AM
Green	Arlington from Greensburg to E Caston	71.90	7:00 - 8:00	Arterial	Northbound	AM
Green	Lauby Rd NB S of and adjacent to Greensburg Rd	74.27	9:00 - 10:00	Intersection	Northbound	PM
Hudson	SR-91 From SR-303 to Aurora St SB	30.80	4:00 - 5:00	Arterial	Southbound	PM
Hudson	SR-91 from Veterans Way to SR-303 NB	32.80	7:00 - 8:00	Arterial	Northbound	AM
Hudson	SR-91 From SR-303 to Aurora St SB	36.10	3:00 - 4:00	Arterial	Southbound	MD
Hudson	SR-91 From SR-303 to Aurora St NB	37.70	7:00 - 8:00	Arterial	Northbound	AM
Hudson	SR-91 From SR-303 to Aurora St NB	37.80	5:00 - 6:00	Arterial	Northbound	PM
Hudson	SR-91 from Aurora to Valleyview SB	38.00	5:00 - 6:00	Arterial	Southbound	PM
Hudson	SR-303 from Boston Mills to Atterbury EB	41.10	5:00 - 6:00	Arterial	Eastbound	PM
Hudson	SR-91 From SR-303 to Aurora St NB	41.40	12:00 - 1:00	Arterial	Northbound	MD
Hudson	SR-91 from Veterans Way to SR-303 NB	42.00	5:00 - 6:00	Arterial	Northbound	PM
Hudson	SR-91 From SR-303 to Aurora St SB	43.80	8:00 - 9:00	Arterial	Southbound	AM
Hudson	SR-303 from Atterbury to SR-91 EB	47.10	5:00 - 6:00	Arterial	Eastbound	PM
Hudson	SR-91 Georgetown to Terex SB	47.30	6:00 - 7:00	Arterial	Southbound	PM
Hudson	SR-303 from Boston Mills to Atterbury EB	49.70	12:00 - 1:00	Arterial	Eastbound	MD
Hudson	SR-91 from Veterans Way to SR-303 NB	49.90	12:00 - 1:00	Arterial	Northbound	MD
Hudson	SR-91 from Aurora to Valleyview SB	50.10	3:00 - 4:00	Arterial	Southbound	MD
Hudson	SR-91 from Veterans Way to SR-303 SB	51.50	5:00 - 6:00	Arterial	Southbound	PM
Hudson	SR-303 from Boston Mills to Atterbury EB	52.10	7:00 - 8:00	Arterial	Eastbound	AM
Hudson	SR-303 from Atterbury to SR-91 EB	52.30	3:00 - 4:00	Arterial	Eastbound	MD
Hudson	SR-303 from Akron Cleveland to Terex EB	53.30	7:00 - 8:00	Arterial	Eastbound	AM
Hudson	SR-303 from SR-91 to Hayden Pkwy WB	53.40	4:00 - 5:00	Arterial	Westbound	PM
Hudson	SR-91 from Veterans Way to SR-303 SB	53.60	3:00 - 4:00	Arterial	Southbound	MD
Hudson	SR-303 from Atterbury to SR-91 EB	55.10	7:00 - 8:00	Arterial	Eastbound	AM
Hudson	SR-303 from Hayden to Stow EB	55.50	7:00 - 8:00	Arterial	Eastbound	AM
Hudson	SR-91 from Norton to Georgetown SB	57.10	5:00 - 6:00	Arterial	Southbound	PM
Hudson	Stow Rd from Canterbury to SR-303	57.60	7:00 - 8:00	Arterial	Northbound	AM
Hudson	Terex Rd from Hudson to SR-91	57.80	4:00 - 5:00	Arterial	Eastbound	PM
Hudson	SR-91 from Norton to Georgetown SB	58.80	12:00 - 1:00	Arterial	Southbound	MD
Hudson	SR-91 from Hudson to Veterans Way NB	59.10	7:00 - 8:00	Arterial	Northbound	AM
Hudson	SR-303 from SR-91 to Hayden Pkwy EB	60.00	8:00 - 9:00	Arterial	Eastbound	AM
Hudson	SR-303 from Akron Cleveland to Terex WB	60.10	7:00 - 8:00	Arterial	Westbound	AM
Hudson	SR-303 from Hayden to Stow EB	60.20	3:00 - 4:00	Arterial	Eastbound	MD
Hudson	SR-91 from Veterans Way to SR-303 SB	60.50	8:00 - 9:00	Arterial	Southbound	AM
Hudson	SR-303 from Akron Cleveland to Terex WB	60.80	5:00 - 6:00	Arterial	Westbound	PM
Hudson	SR-303 from Atterbury to SR-91 WB	60.90	5:00 - 6:00	Arterial	Westbound	PM

*Table sorted alphabetically by Political Unit, then by Percent Free Flow Speed.

Table A-1 | CMP Final Analysis Segments

POLITICAL UNIT	NAME	% FREEFLOW	TIME	TYPE	DIRECTION	TIME PERIOD
Hudson	SR-91 Terex to Hudson Dr SB	61.70	6:00 - 7:00	Arterial	Southbound	PM
Hudson	SR-303 from Boston Mills to Atterbury WB	61.70	12:00 - 1:00	Arterial	Westbound	MD
Hudson	Terex Rd from SR-91 to Hudson Dr	61.80	4:00 - 5:00	Arterial	Westbound	PM
Hudson	SR-303 from Atterbury to SR-91 WB	61.80	12:00 - 1:00	Arterial	Westbound	MD
Hudson	SR-91 Terex to Hudson Dr SB	62.30	8:00 - 9:00	Arterial	Southbound	AM
Hudson	SR-303 from SR-91 to Hayden Pkwy EB	62.40	3:00 - 4:00	Arterial	Eastbound	MD
Hudson	SR-91 Terex to Hudson Dr NB	62.70	12:00 - 1:00	Arterial	Northbound	MD
Hudson	SR-91 from Hudson to Veterans Way NB	63.20	5:00 - 6:00	Arterial	Northbound	PM
Hudson	SR-91 Georgetown to Terex NB	63.30	12:00 - 1:00	Arterial	Northbound	MD
Hudson	SR-303 from Boston Mills to Atterbury WB	63.70	5:00 - 6:00	Arterial	Westbound	PM
Hudson	SR-91 from Aurora to Valleyview SB	64.10	8:00 - 9:00	Arterial	Southbound	AM
Hudson	SR-303 from Hayden to Stow EB	64.10	4:00 - 5:00	Arterial	Eastbound	PM
Hudson	Hudson Dr from Terex to Norton	68.20	5:00 - 6:00	Arterial	Southbound	PM
Hudson	Stow Rd from Barlow to Norton	69.40	5:00 - 6:00	Arterial	Southbound	PM
Hudson	Stow Rd from Ravenna to Barlow	70.30	5:00 - 6:00	Arterial	Southbound	PM
Hudson	Stow Rd from Barlow to Ravenna	70.40	7:00 - 8:00	Arterial	Northbound	AM
Hudson	SR-303 bet SR-91 and Stow Rd	71.58	3:00 - 4:00	Arterial	Westbound	MD
Hudson / Twinsburg Twp	SR-91 bet SR-303 and Twinsburg Rd	72.09	5:00 - 6:00	Arterial	Southbound	PM
Hudson	Stow Rd from Norton to Barlow	72.40	7:00 - 8:00	Arterial	Northbound	AM
Hudson	Stow Rd from Canterbury to Ravenna	73.00	5:00 - 6:00	Arterial	Southbound	PM
Hudson	Terex Rd from Barlow to SR-303	73.50	5:00 - 6:00	Arterial	Westbound	PM
Hudson	Stow Rd from Ravenna to Canterbury	74.40	7:00 - 8:00	Arterial	Northbound	AM
Hudson	SR-91 bet Hudson Dr and SR-303	74.90	7:30 - 8:30	Arterial	Northbound	AM
Kent / Franklin Twp	SR-261 S of and adjacent to Summit Rd	58.96	4:00 - 5:00	Intersection	Eastbound	PM
Kent	SR-43 through SR-261 Intersection	59.13	4:45 - 5:45	Intersection	Northbound	PM
Kent	E Main St W of and adjacent to Willow / Haymaker	64.11	4:00 - 5:00	Intersection	Eastbound	PM
Kent	SR-59 bet River St and Water St	64.15	5:00 - 6:00	Arterial	Eastbound	PM
Kent	E Main St bet Willow St and Gougler Ave	67.74	5:00 - 6:00	Arterial	Westbound	PM
Kent	Fairchild from SR-43 to Hudson Dr	70.50	5:00 - 6:00	Arterial	Westbound	PM
Macedonia	SR-8 NB South of and adjacent to SR-82	33.99	3:00 - 4:00	Intersection	Northbound	MD
Macedonia	SR-8 SB North leg of SR-82 Intersection	34.57	12:00 - 1:00	Intersection	Southbound	MD
Macedonia	IR-271 NB to SR-8	44.37	7:45 - 8:45	Ramp		AM
Macedonia	SR-8 NB South of and adjacent to Valley View Rd	49.82	3:00 - 4:00	Intersection	Northbound	MD
Macedonia	IR-271 SB to SR-8	55.33	9:00 - 10:00	Ramp		PM
Macedonia	IR-271 NB just North of SR-82	57.09	7:30 - 8:30	Freeway	Northbound	AM
Macedonia	SR-8 NB South of and adjacent to Valley View Rd	57.40	7:15 - 815	Intersection	Northbound	AM
Macedonia	SR-8 SB through the IR-271 Interchange	62.26	7:30 - 8:30	Freeway Interchange	Southbound	AM
Macedonia / Sagamore Hills Twp	SR-8 SB bet Valleyview and SR-82	64.31	5:00 - 6:00	Arterial	Southbound	PM
Macedonia	SR-82 through the SR-8 Intersection	64.59	12:15 - 1:15	Intersection	Westbound	MD
Macedonia	SR-82 through the IR-271 Interchange	65.45	12:15 - 1:15	Freeway Interchange	Westbound	MD
Macedonia / Sagamore Hills Twp	SR-82 bet SR-8 and Boyden Rd	67.46	5:00 - 6:00	Arterial	Westbound	PM
Macedonia	SR-82 at the SR-8 Intersection	70.60	7:45 - 8:45	Intersection	Eastbound	PM
Macedonia	SR-8 through the IR-271 Interchange	70.94	7:30 - 8:30	Freeway Interchange	Northbound	AM
Macedonia	SR-8 to IR-271 SB	72.13	5:00 - 6:00	Ramp		AM

*Table sorted alphabetically by Political Unit, then by Percent Free Flow Speed.

Table A-1 | CMP Final Analysis Segments

POLITICAL UNIT	NAME	% FREEFLOW	TIME	TYPE	DIRECTION	TIME PERIOD
Macedonia / Sagamore Hills Twp	SR-82 bet Boyden Rd and SR-8	72.15	5:15 - 6:15	Arterial	Eastbound	PM
Macedonia	SR-8 SB to IR-271 SB	72.53	4:45 - 5:45	Ramp		PM
Macedonia	SR-8 SB South leg of Valleyview Intersection	72.68	5:00 - 6:00	Intersection	Southbound	PM
Macedonia / Sagamore Hills Twp	SR-8 NB bet SR-82 and Valley View Rd	73.32	5:15 - 6:15	Arterial	Northbound	PM
Northfield / Sagamore Hills Twp	Olde Eight Rd from SR-8 to Valleyview	67.10	5:00 - 6:00	Arterial	Southbound	AM
Northfield / Sagamore Hills Twp	Olde Eight Rd from Valleyview to SR-8	71.20	5:00 - 6:00	Arterial	Northbound	PM
Norton	SR-21 SB to IR-76 WB	60.80	9:30 - 10:30	Ramp		AM
Norton	Reimer Rd bet Medina Line and Cleve Mass Rd	64.56	5:00 - 6:00	Arterial	Eastbound	AM
Norton	IR-76 WB to SR-21 SB	65.62	9:00 - 10:00	Ramp		AM
Norton	SR-21 NB to IR-76 WB	67.36	9:00 - 10:00	Ramp		AM
Norton	Cleveland Massillon Rd through the IR-76 Interchange	69.92	3:00 - 4:00	Freeway Interchange	Southbound	MD
Norton	Barber Rd bet Clark Mill and Summit Rd	73.37	5:00 - 6:00	Arterial	Northbound	PM
Norton	SR-21 SB to IR-76 EB	73.46	12:15 - 1:15	Ramp		MD
Norton	SR-261 through the SR-21 Intersection	74.44	7:15 - 815	Freeway Interchange	Eastbound	AM
Portage Co - Ravenna Twp	SR-14 bet SR-5 WB Ramps and SR-59	47.53	7:15 - 815	Arterial	Westbound	AM
Portage Co - Ravenna Twp	SR-14/44 N of and adjacent to SR-59	47.76	1:15 - 2:15	Intersection	Eastbound	MD
Portage Co - Ravenna Twp	SR-14/44 North leg of SR-59 Intersection	48.07	1:15 - 2:15	Intersection	Southbound	MD
Portage Co - Brimfield Twp	Tallmadge Rd through the IR-76 Interchange	53.01	4:00 - 5:00	Freeway Interchange	Westbound	PM
Portage Co - Randolph Twp	SR-44 through US-224 Intersection	55.83	5:00 - 6:00	Intersection	Northbound	PM
Portage Co - Randolph Twp	SR-44 at the US-224 Intersection	61.44	5:00 - 6:00	Intersection	Southbound	PM
Portage Co - Suffield Twp	SR-43 through US-224 Intersection	64.01	8:00 - 9:00	Intersection	Northbound	PM
Portage Co - Ravenna Twp	SR-14/44 North of and adjacent to SR-59	64.20	4:00 - 5:00	Intersection	Northbound	PM
Portage Co - Rootstown Twp	SR-44 bet Tallmadge Rd and IR-76 EB Ramps	65.17	4:45 - 5:45	Arterial	Southbound	PM
Portage Co - Suffield Twp	SR-43 through the US-224 Intersection	65.97	10:00 - 11:00	Intersection	Southbound	AM
Portage Co - Suffield Twp	SR-43 through the SR-261 Intersection	66.31	4:45 - 5:45	Intersection	Southbound	PM
Portage Co - Ravenna Twp	SR-59 W of and adjacent to SR-14/44	66.61	5:00 - 6:00	Intersection	Westbound	AM
Portage Co - Rootstown Twp	SR-44 NB through the IR-76 Interchange	67.19	4:45 - 5:45	Freeway Interchange	Northbound	PM
Portage Co - Rootstown Twp	SR-44 bet Tallmadge Rd and IR-76	67.34	7:15 - 815	Arterial	Northbound	AM
Portage Co - Ravenna Twp	SR-14/44 bet SR-5 and SR-59	70.33	3:00 - 4:00	Arterial	Northbound	MD
Portage Co - Rootstown Twp	SR-44 bet Prospect St and IR-76 WB Ramps	71.11	5:15 - 6:15	Arterial	Southbound	PM
Portage Co - Franklin Twp	SR-261 South leg of Intersection with Summit St	73.19	4:45 - 5:45	Intersection	Westbound	PM
Portage Co - Edinburg Twp	SR-14 bet IR-76 EB Ramps and Rock Spring Rd	73.63	5:00 - 6:00	Arterial	Eastbound	PM
Portage Co - Ravenna Twp / Ravenna	SR-14 bet Infirmary Rd and SR-44 / Chestnut St	74.55	4:00 - 5:00	Arterial	Eastbound	PM
Ravenna	SR-59 bet S Prospect St and N Chestnut St	60.63	12:15 - 1:15	Arterial	Westbound	MD
Ravenna	SR-59 Main St bet Chestnut St and Prospect St	60.67	4:00 - 5:00	Arterial/Intersection	Eastbound	PM
Ravenna	SR-59 bet Diamond St and Chestnut St	67.25	3:00 - 4:00	Arterial	Eastbound	MD
Richfield	IR-77 NB Through the IR-80 Interchange	40.70	7:30 - 8:30	Freeway	Northbound	AM
Richfield	IR-77 NB South of IR-80 Ramps	42.96	7:30 - 8:30	Freeway	Northbound	AM
Richfield	Ramp from IR-80 to IR-77 NB	54.98	7:30 - 8:30	Ramp		AM
Richfield	Wheatley Rd through the Brecksville Rd Intersection	56.62	5:30 - 6:30	Intersection	Northbound	PM
Richfield	IR-77 NB bet Brecksville Rd and IR-80	57.66	7:30 - 8:30	Freeway	Northbound	AM
Richfield	Brecksville Rd through the Wheatly Rd Intersection	57.86	5:15 - 6:15	Intersection	Southbound	PM

*Table sorted alphabetically by Political Unit, then by Percent Free Flow Speed.

Table A-1 | CMP Final Analysis Segments

POLITICAL UNIT	NAME	% FREEFLOW	TIME	TYPE	DIRECTION	TIME PERIOD
Richfield	Brecksville Rd through Intersection with Wheatly Road	62.03	7:45 - 8:45	Intersection	Northbound	AM
Richfield	Wheatly Rd through the Brecksville Rd Intersection	64.51	5:00 - 6:00	Intersection	Southbound	PM
Richfield / Richfield Twp	Wheatly Rd through the IR-77 Interchange	69.80	4:45 - 5:45	Freeway Interchange	Southbound	PM
Richfield	WB Connector bet IR-80 and SR-21	72.48	8:45 - 9:45	Ramp		PM
Richfield	Bet IR-80 Connector Rd WB to SR-21	72.71	8:45 - 9:45	Ramp		PM
Richfield	Brecksville Rd at IR-80 Interchange	74.29	7:45 - 8:45	Freeway Interchange	Northbound	AM
Stow	Steels Corners Rd from Bridgewater to SR-8	52.70	5:00 - 6:00	Arterial	Eastbound	PM
Stow	Hudson Dr from Walmart Dr to Graham	54.10	5:00 - 6:00	Arterial	Southbound	PM
Stow	SR-91 North Leg of Graham Rd Intersection	54.67	5:00 - 6:00	Intersection	Southbound	PM
Stow	Graham Rd from Portage Co Line to Fishcreek	57.70	2:00 - 3:00	Arterial	Westbound	MD
Stow	Steels Corners Rd from SR-8 to Hudson	58.80	5:00 - 6:00	Arterial	Eastbound	PM
Stow	SR-91 N of and adjacent to Graham Rd	60.87	5:00 - 6:00	Intersection	Northbound	PM
Stow	Graham Rd from Baird to Fishcreek Rd	66.00	7:00 - 8:00	Arterial	Eastbound	AM
Stow	SR-91 bet SR-59 and Graham Rd	66.36	5:00 - 6:00	Arterial	Southbound	PM
Stow	Steels Corners Rd from SR-8 to Bridgewater	66.50	5:00 - 6:00	Arterial	Eastbound	PM
Stow	Stow Rd from Fishcreek to SR-91	66.60	3:00 - 4:00	Arterial	Southbound	MD
Stow	Hudson Dr from Graham to Walmart Dr	67.50	8:00 - 9:00	Arterial	Northbound	PM
Stow	Graham Rd from Fishcreek to Portage Co Line	67.70	7:00 - 8:00	Arterial	Eastbound	AM
Stow	Steels Corners Rd from Hudson to SR-8	68.20	5:00 - 6:00	Arterial	Eastbound	PM
Stow	Hudson Dr from Steels Corners to Springdale	69.40	12:00 - 1:00	Arterial	Southbound	MD
Stow	Stow Rd from SR-91 to Fishcreek	70.70	4:00 - 5:00	Arterial	Northbound	PM
Stow	Graham Rd from Fishcreek to Baird	71.30	3:00 - 4:00	Arterial	Westbound	MD
Stow	Hudson Dr from Springdale to Steels Corners	72.80	12:00 - 1:00	Arterial	Northbound	MD
Stow	Graham Rd from SR-91 to Charring Cross	73.10	5:00 - 6:00	Arterial	Eastbound	PM
Stow	Graham Rd from Charring Cross to SR-91	74.30	3:00 - 4:00	Arterial	Westbound	MD
Streetsboro	SR-14/303 bet W jct and E jct	44.02	5:00 - 6:00	Arterial	Eastbound	PM
Streetsboro	SR-14 bet IR-80 Ramps and SR-43	54.14	4:45 - 5:45	Arterial	Eastbound	PM
Streetsboro	SWB Connector bet IR-480 and IR-80	57.22	9:15 - 10:15	Ramp		PM
Streetsboro	Aurora Hudson Rd from IR-480 SB Ramps to Frost Rd	60.90	7:00 - 8:00	Arterial	Eastbound	AM
Streetsboro	NEB Connector bet IR-480 and IR-80	67.12	9:15 - 10:15	Ramp		PM
Streetsboro	SR-14/303 bet West Junction and East Junction	72.19	3:00 - 4:00	Arterial	Westbound	MD
Streetsboro	SR-14 bet SR-43 and the IR-80 Ramps	73.60	12:15 - 1:15	Arterial	Westbound	MD
Streetsboro	SR-303 E of and adjacent to SR-14 (East)	73.86	7:00 - 8:00	Intersection	Westbound	AM
Summit Co - Copley Twp	Cleveland Massillon Rd through Copley Circle	57.33	7:30 - 8:30	Intersection	Southbound	AM
Summit Co - Northfield Center Twp	Olde Eight Rd from Valleyview to SR-82	58.70	12:00 - 1:00	Arterial	Southbound	MD
Summit Co - Richfield Twp	Medina Line Rd bet Bath Rd and SR-303	59.89	6:00 - 7:00	Arterial	Southbound	AM
Summit Co - Copley Twp	Cleveland Massillon Rd through the circle	61.31	7:30 - 8:30	Intersection	Northbound	AM
Summit Co - Springfield Twp	Canton Rd through the US-224 Intersection	61.31	4:00 - 5:00	Intersection	Northbound	PM
Summit Co - Springfield Twp	US-224 through the SR-91 Intersection	61.61	4:45 - 5:45	Intersection	Eastbound	PM
Summit Co - Springfield Twp	SR-91 through the US-224 Intersection	62.32	5:00 - 6:00	Intersection	Southbound	PM
Summit Co - Bath Twp	Ghent Rd bet Cleveland Mass Rd and IR-77 SB ent Ramp	63.37	5:00 - 6:00	Arterial	Northbound	PM
Summit Co - Bath Twp	Ghent Rd through the IR-77 Interchange	63.64	5:00 - 6:00	Freeway Interchange	Northbound	PM
Summit Co - Bath Twp	Cleveland Massillon Rd through Ghent Rd Intersection	64.14	7:45 - 8:45	Intersection	Northbound	AM

*Table sorted alphabetically by Political Unit, then by Percent Free Flow Speed.

Table A-1 | CMP Final Analysis Segments

POLITICAL UNIT	NAME	% FREEFLOW	TIME	TYPE	DIRECTION	TIME PERIOD
Summit Co - Northfield Center Twp	Olde Eight Rd from SR-82 to Valleyview	65.50	3:00 - 4:00	Arterial	Northbound	MD
Summit Co - Bath Twp / Copley Twp	SR-18 bet Cleveland Massillon Rd and IR-77 NB Ramps	67.03	12:30 - 1:30	Arterial	Westbound	MD
Summit Co - Coventry Twp	S Main St bet Swartz Rd and N Turkeyfoot Rd	67.47	7:30 - 8:30	Arterial	Northbound	AM
Summit Co - Coventry Twp	S Main St at the Killian Rd Intersection	68.58	9:00 - 10:00	Intersection	Northbound	PM
Summit Co - Copley Twp	SR-162 Copley Rd through the SR-21 Interchange	68.69	7:45 - 8:45	Freeway Interchange	Eastbound	AM
Summit Co - Bath Twp / Copley Twp	SR-18 E of and adjacent to Medina Line Rd	68.87	5:15 - 6:15	Intersection	Westbound	PM
Summit Co - Bath Twp / Copley Twp	SR-18 bet IR-77 NB Ramps and Cleveland Massillon Rd	69.60	5:15 - 6:15	Arterial	Eastbound	PM
Summit Co - Coventry Twp	IR-77 NB bet Arlington Rd and IR-277 / US-224	70.96	7:30 - 8:30	Freeway	Northbound	AM
Summit Co - Bath Twp	Cleveland Massillon Rd through the Ghent Rd Intersection	71.36	5:00 - 6:00	Intersection	Southbound	PM
Summit Co - Copley Twp	Cleveland Massillon Rd bet Copley Rd and Ridgewood Rd	72.86	4:45 - 5:45	Arterial	Southbound	PM
Summit Co - Bath Twp	Ghent Rd bet IR-77 SB Ramps and Cleveland Massillon Rd	73.16	5:00 - 6:00	Arterial	Southbound	PM
Tallmadge	SouthEast Ave NW of Eastwood Ave	51.19	4:45 - 5:45	Intersection	Southbound	PM
Tallmadge	West Ave bet Brittain Rd and Tallmadge Circle	51.44	4:45 - 5:45	Arterial	Eastbound	PM
Tallmadge	SR-532 SouthEast Ave through the IR-76 Interchange	62.70	5:15 - 6:15	Freeway Interchange	Southbound	PM
Tallmadge	SR-91 North Ave bet Tallmadge Circle and Howe Rd	63.44	4:45 - 5:45	Arterial	Southbound	PM
Tallmadge	SouthEast Ave through the IR-76 Interchange	70.42	3:00 - 4:00	Freeway Interchange	Northbound	MD
Tallmadge	NorthWest Ave bet Howe Rd and Tallmadge Circle	70.52	4:00 - 5:00	Arterial	Southbound	PM
Tallmadge	SouthEast Ave bet Eastwood / Munroe and IR-76	71.58	5:00 - 6:00	Arterial	Northbound	PM
Tallmadge	SouthEast Ave NW and adjacent to Eastwood / Munroe Intersection	74.57	11:15 - 12:15	Intersection	Northbound	MD
Twinsburg	Ravenna Rd from SR-91 to Idlewood	49.90	2:00 - 3:00	Arterial	Northbound	MD
Twinsburg	Ravenna Rd from Idlewood to SR-91	57.60	6:00 - 7:00	Arterial	Southbound	AM
Twinsburg	Ravenna Rd from Chamberlin to Cuyahoga Co Line	60.60	7:00 - 8:00	Arterial	Northbound	AM
Twinsburg	SR-82 bet SR-91 and Cannon Rd	61.37	5:00 - 6:00	Arterial	Westbound	PM
Twinsburg	SR-82 bet IR-480 WB Ramps and SR-91	64.74	5:00 - 6:00	Arterial	Eastbound	PM
Twinsburg	SR-91 NB through the IR-480 Interchange	68.13	4:45 - 5:45	Freeway Interchange	Northbound	PM
Twinsburg	Ravenna Rd from Cuyahoga Co Line to Chamberlin	69.30	5:00 - 6:00	Arterial	Southbound	PM
Twinsburg	SR-91 bet Twinsburg Rd and IR-480	71.64	4:45 - 5:45	Arterial	Northbound	PM
Twinsburg	SR-82 EB through the IR-480 Interchange	72.17	4:45 - 5:45	Freeway Interchange	Eastbound	PM
Twinsburg	Ravenna Rd from Chamberlin to Idlewood	72.40	7:00 - 8:00	Arterial	Southbound	AM

*Table sorted alphabetically by Political Unit, then by Percent Free Flow Speed.

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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 governemtns of Portage and Summit Counties and a portion of Wayne County.

AKRON METROPOLITAN AREA TRANSPORTATION STUDY

M E M O R A N D U M

TO: **Policy Committee**
Technical Advisory Committee
Citizens Involvement Committee

FROM: **AMATS Staff**

RE: **Resolution 2020-11 – Approving FY 2021 Elderly and Disabled Program Project Recommendations (FY 2021-2024 TIP Amendment #1).**

DATE: **September 9, 2020**

Executive Summary

This memorandum discusses the latest round of funding for the area's Elderly and Disabled Program. The staff is recommending that the Policy Committee approve $1,014,879 in federal funds from the Elderly and Disabled Program for handicap-accessible buses and associated equipment for METRO RTA, PARTA, United Disability Services, Family & Community Services, Easter Seals and Hattie Larlham. The approved projects will be programmed into FY 2021 of the TIP.

Introduction

On June 15, 2020, AMATS posted an announcement that it would be accepting applications to receive funding under the Federal Transit Administration's Enhanced Mobility of Seniors and Individuals with Disabilities Program. Eligible sponsors include non-profit organizations, state or local government authorities, and operators of public transportation services, including private operators of public transportation for services in Summit County, Portage County, or the AMATS portions of Wayne County. AMATS awards these funds biennially.

Projects awarded through the Elderly and Disabled Program must be included in, or consistent with, the AMATS Area Coordinated Public Transit Human Services Transportation Plan. The AMATS Policy Committee approved the current Coordinated Plan in May 2018. The function of the Coordinated Plan is to improve transportation services for persons with disabilities, older Americans, and individuals with lower incomes.

The deadline for project applications was August 7, 2020.

Background

The purpose of the Elderly and Disabled Program is to improve mobility for seniors and individuals with disabilities by removing barriers to transportation services and expanding the

transportation mobility options available. Capital and operating expenses are eligible. Capital expenses include the acquisition of vehicles, handicap-accessible equipment and computer hardware and scheduling software. Operating expenses may be used to meet and exceed the requirements of the Americans with Disabilities Act (ADA) and to fill the gaps between human services and public transportation services previously available and to facilitate the integration of individuals with disabilities into the workforce; including transportation to and from jobs and employment support services.

The total amount of Elderly and Disabled funds allocated to the AMATS area from Federal Fiscal Year 2019 is $558,729, and from FFY 2020 is $568,914. Ten percent of these funds, $112,764, will be used for program management by METRO RTA and PARTA, yielding total federal funds available for this application cycle of $1,014,879. Approved projects will be programmed into FY 2021 of the TIP.

Review of Applications

The staff received six applications for funding. METRO RTA, PARTA, United Disability Services (UDS), Hattie Larlham, Easter Seals Northern Ohio, and Family & Community Services (FCS) submitted applications. All six agencies are eligible to submit applications under this program. The six applicants requested $1,575,388 in federal funds, while only $1,014,879 is available.

METRO RTA applied for $242,054 in federal funds for capital expenses for the acquisition of three Light Transit Vehicles (LTVs). Federal funds may not exceed 80% of the total project cost. The total project cost is estimated at $302,568. These vehicles would be used as replacement vehicles for existing elderly and disabled service provided through the SCAT program.

PARTA applied for $216,000 in federal funds for capital expenses for the acquisition of three Light Transit Vehicles (LTVs). Federal funds may not exceed 80% of the total project cost. The total project cost is estimated at $270,000. These vehicles would be used as replacement vehicles for existing elderly and disabled service.

UDS applied for $764,211 in federal funds for 12 converted vans and six Light Transit Vehicles (LTVs). The total project cost is $955,264 and includes radio equipment.

Hattie Larlham Center for Children with Disabilities is applying for $204,800 in federal funds for two converted vans (CVs). The total project cost is $256,000. Federal funds may not exceed 80% of the total project cost for capital items.

Easter Seals Northern Ohio, is applying for $48,323 in federal funds for one handicap-accessible converted van (CV). The total project cost is $60,403.

FCS is applying for $100,000 in federal funds for two Light Transit Vehicles (LTVs). The total project cost is $125,000.

The attached Table 1 shows the project scoring for all six agencies' applications. Scoring criteria are found in the AMATS Funding Policy Guidelines. Projects are scored based on project type, level of coordination with other agencies, project effectiveness, the management capacity of the applicant, and the completeness of the application.

Staff Comment

As with all TIP amendments, considerations with respect to public participation, financial capability, air quality, environmental justice and Regional Transportation Plan consistency are important. Sufficient funding is forecasted from federal and state sources for this amendment. The new projects listed meet all amendment requirements mentioned above. Therefore, this amendment is free of negative impact.

Recommendations

After review and discussion with the project applicants, the staff recommends that the Policy Committee approve $298,436 in federal funds through the Elderly and Disabled Program for METRO RTA for the acquisition of three Light Transit Vehicles (LTVs), and the administration of the program in Summit County; and $272,382 for PARTA for the acquisition of three Light Transit Vehicles (LTVs), as well as for the administration of the program in Portage County.

The staff also recommends $373,600 in federal funds for United Disability Services for the purchase of two converted vans (CVs) and six LTVs; $48,423 in federal funds for Easter Seals Northern Ohio for the purchase of one converted van (CV); $50,000 in federal funds for Family & Community Services for the purchase of one LTV; and $84,800 for Hattie Larlham to purchase two converted vans (CVs). This recommendation utilizes the full amount of funding available to the AMATS area at this time, and provides funding to all six applicants. These projects are programmed under ODOT PIDs: 111808 and 111811 in FY 2021.

Attached to this memo is Resolution 2020-11. This resolution approves the requested changes to FY 2021 of the TIP as described above. The Staff recommends approval.

Table 1

Enhanced Mobility for the Elderly and Disabled

Draft Project Recommendations

NO.	SPONSOR	PROJECT	LOCATION	DESCRIPTION	TOTAL PROJECT COST	FEDERAL OPERATING FUNDS REQ'D	FEDERAL CAPITAL FUNDS REQ'D	TOTAL FED. FUNDS REQUESTED	COORDINATED PLAN PAGE #	1 PROJECT TYPE	1 SCORE	2 COORDINATION	2 SCORE	3 PROJECT EFFECTIVENESS	3 SCORE	4 MANAGEMENT CAPACITY	4 SCORE	5 APPLICATION COMPLETENESS	5 SCORE	TOTAL SCORE
1	**United Disability Services**	Replacement Vehicles - Transportation for the Elderly and Disabled	Summit and Portage Counties	Capital Project - Purchase of Accessible Vehicles and Radios: 12 CVs and 6 LTVs	$955,264	$0	$764,211	**$764,211**	33	Vehicle Purchase	30	2 RTAs + SS Agencies	30	Impact, Cost, Effect	25	Organized, Capable	5	Complete	5	**95**
2	**METRO RTA**	Replacement Vehicles - Transportation for the Elderly and Disabled	Summit County	Capital Project - Purchase of Accessible Vehicles: Three LTVs	$302,568	$0	$242,054	**$242,054**	33	Vehicle Purchase	30	2 RTAs + SS Agencies	27	Impact, Cost, Effect	25	Organized, Capable	5	Complete	5	**92**
3	**PARTA**	Replacement Vehicles - Transportation for the Elderly and Disabled	Portage County	Capital Project - Purchase of Accessible Vehicles: Three LTVs	$270,000	$0	$216,000	**$216,000**	33	Vehicle Purchase	30	2 RTAs + SS Agencies	27	Impact, Cost, Effect	25	Organized, Capable	5	Complete	5	**92**
4	**Hattie Larlham**	Replacement and Expansion Vehicles - Transportation for the Elderly and Disabled	Portage County	Capital Project - Purchase of Accessible Vehicles: Two CVs and Two LTVs	$256,000	$0	$204,800	**$204,800**	33	Vehicle Purchase	30	RTA + SS Agencies	20	Impact, Cost, Effect	20	Organized, Capable	5	Complete	5	**80**
5	**Family & Community Services**	Expansion Vehicles - Transportation for the Elderly and Disabled	Portage County	Capital Project - Purchase of Accessible Vehicles: Two LTNs	$125,000	$0	$100,000	**$100,000**	33	Vehicle Purchase	30	RTA + SS Agencies	20	Impact, Cost, Effect	18	Organized, Capable	4	Complete	5	**77**
6	**Easter Seals**	Expansion Vehicles - Transportation for the Elderly and Disabled	Summit County	Capital Project - Purchase of Accessible Vehicles: One CV	$60,403	$0	$48,323	**$48,323**	33	Vehicle Purchase	30	RTA + SS Agencies	18	Impact, Cost, Effect	18	Organized, Capable	4	Complete	5	**75**
								$1,575,388												

	Maximum RTA Project Budget
METRO	**$319,687**
PARTA	**$137,009**
	$456,695

Federal Funds Allocation		-10%	Admin.		Projects
FY 2019	**$558,729**	**-**	**$55,873**	**=**	**$502,856**
FY 2020	**$568,914**	**-**	**$56,891**	**=**	**$512,023**
	$1,127,643	**-**	**$112,764**	**=**	**$1,014,879** **Maximum Federal Funds Available**

Recommendations:

METRO RTA	**$56,382**	**+**	**$242,054**	**= $298,436**
PARTA	**$56,382**	**+**	**$216,000**	**= $272,382**
Hattie Larlham			**$84,800**	
Easter Seals			**$48,423**	
UDS			**$373,600**	
FCS			**$50,000**	
Total Federal Funds Recommended			**$1,014,877**	

RESOLUTION NUMBER 2020-11

OF THE METROPOLITAN TRANSPORTATION POLICY COMMITTEE OF THE AKRON METROPOLITAN AREA TRANSPORTATION STUDY

APPROVING FY 2021 ELDERLY AND DISABLED PROGRAM PROJECT RECOMMENDATIONS (TIP AMENDMENT #1)

WHEREAS, the Akron Metropolitan Area Transportation Study (AMATS) is designated as the Metropolitan Planning Organization (MPO) by the Governor, acting through the Ohio Department of Transportation and in cooperation with locally elected officials in Summit and Portage Counties and the Chippewa Township and Milton Township areas of Wayne County; and

WHEREAS, it is the responsibility of AMATS to develop and maintain the Transportation Improvement Program (TIP) for the area in cooperation with ODOT and the area's transit authorities; and

WHEREAS, the Akron Metropolitan Area Transportation Study accepted applications from eligible agencies in the AMATS area to receive funding under the Federal Transit Administration (FTA) Section 5310 Enhanced Mobility of Seniors and Individuals with Disabilities Program; and

WHEREAS, six applications were submitted by eligible agencies in the AMATS area; and

WHEREAS, the Staff has reviewed and scored these applications; and

WHEREAS, the Staff recommends the projects submitted by METRO RTA, PARTA, United Disability Services, Easter Seals Northern Ohio, Family & Community Services and Hattie Larlham as described in the accompanying memorandum; and

WHEREAS, METRO RTA, PARTA, United Disability Services, Easter Seals Northern Ohio, Family & Community Services and Hattie Larlham are eligible recipients, or subrecipients, of FTA Section 5310 Enhanced Mobility of Seniors and Individuals with Disabilities Program funds; and

WHEREAS, the AMATS Policy Committee have previously designated METRO RTA and PARTA as the recipients of FTA Section 5310 Enhanced Mobility funds for the area; and

WHEREAS, METRO RTA and PARTA, as the designated recipients, are responsible for administering the grant process and providing oversight for any subrecipients of FTA Section 5310 funds; and

WHEREAS, these projects will be viewed as air quality neutral for TIP purposes; and

RESOLUTION NUMBER 2020-11 (continued)

WHEREAS, the requested TIP amendment described above was posted online via several media, as well as presented to the AMATS Citizens Involvement Committee (CIC) on September 17, 2020; and

WHEREAS, this Committee has reviewed the public comments collected prior to the September 24, 2020, Policy Committee meeting; and

WHEREAS, the projects submitted by METRO RTA, PARTA, United Disability Services Easter Seals Northern Ohio, Family & Community Services and Hattie Larlham are consistent with the *AMATS Area Coordinated Public Transit Human Services Transportation Plan*; and

WHEREAS, the environmental justice impacts of this amendment have been considered to be consistent with "Executive Order 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations"; and

WHEREAS, this Committee has analyzed these requests and found them to be consistent with *Transportation Outlook*, the area's Regional Transportation Plan; and

WHEREAS, this Committee has been requested to amend FY 2021 of the AMATS FY 2021-2024 Transportation Improvement Program as discussed in the accompanying memorandum.

NOW THEREFORE BE IT RESOLVED:

1. That this Committee amends the Transportation Improvement Program FY 2021-2024 as specified above.

2. That this Committee authorizes that METRO RTA receive $242,054 in federal funds from the Elderly and Disabled Program in support of their vehicle acquisition project, along with $56,382 for the administration of grants and subrecipient oversight.

3. That this Committee authorizes that PARTA receive $216,000 in federal funds from the Elderly and Disabled Program in support of their acquisition of scheduling, monitoring and tracking hardware (computers and cameras), along with $56,382 for the administration of grants and subrecipient oversight.

4. That this Committee authorizes that United Disability Services (UDS) receive $373,600 in federal funds from the Elderly and Disabled Program in support of their acquisition of eight replacement vehicles.

RESOLUTION NUMBER 2020-11 (continued)

5. That this Committee authorizes that Easter Seals Northern Ohio receive $48,423 in federal funds from the Elderly and Disabled Program in support of their acquisition of a converted van.

6. That this Committee authorizes that Family & Community Services (FCS) receive $50,000 in federal funds from the Elderly and Disabled Program in support of their acquisition of one LTV.

7. That this Committee authorizes that Hattie Larlham receive $84,800 from the Elderly and Disabled Program in support of their acquisition of two converted vans.

8. That this Committee considers the Citizens Involvement Committee meeting of September 17, 2020, and online public notices as adequately providing an opportunity for public involvement.

9. That this Committee authorizes the Staff to provide copies of this Resolution to the appropriate agencies as evidence of action by the Metropolitan Planning Organization.

_____

Mayor Linda Clark, 2020 Chairwoman
Metropolitan Transportation Policy Committee

_____

Date

AKRON METROPOLITAN AREA TRANSPORTATION STUDY

M E M O R A N D U M

TO: **Policy Committee**
Technical Advisory Committee
Citizens Involvement Committee

FROM: **AMATS Staff**

RE: **Resolution 2020-12 – To Add ODOT and FTA Funds in FY 2021 for PARTA - (FY 2021-2024 TIP Amendment #2).**

DATE: **September 9, 2020**

Executive Summary

This memorandum discusses a TIP amendment to the FY 2021 program of projects for PARTA to add recently awarded funding from ODOT and FTA.

The Ohio Department of Transportation (ODOT) has awarded METRO RTA and PARTA funding through its Ohio Transit Partnership Program (OTP2). This competitive grant program was established to provide additional capital funding to Ohio's public transit operators for projects emphasizing system preservation. In August, METRO and PARTA were both awarded funds through this program for inclusion in FY 2021 of the AMATS Transportation Improvement Program (TIP). METRO received $2,215,775. PARTA received $485,800. The source of the OTP2 funds is State of Ohio General Revenue Funds (GRF).

The Ohio Department of Transportation (ODOT) has also awarded METRO RTA and PARTA funding through its Urban Transit Program (UTP). These funds are generally used to help match federal funds. For FY 2021, ODOT awarded $1,037,827 to METRO, and $222,398 to PARTA. The source of the UTP funds is likewise state GRF funds.

The United States Department of Transportation (USDOT) has awarded PARTA funding through its Federal Transit Administration (FTA) Bus and Bus Infrastructure Program (Section 5339-b). This nationally competitive capital grant program was established to assist in the financing of buses and bus facilities projects, including replacing, rehabilitating, purchasing or leasing buses or related bus facilities and equipment. On August 11, 2020, PARTA was awarded $446,742 in funding through this program for the purchase of a large Compressed Natural Gas (CNG) bus to replace an ageing diesel bus.

Consequently, PARTA is requesting that these additional funds be added to the TIP to include the recently awarded OTP2, UTP and FTA Section 5339-b funded projects. The bulk of these funds will be used for the maintenance of PARTA's capital assets.

PARTA is requesting the following changes to the TIP:

- **Add Capital Funds for a CDL Driver Training Pad (PID 113728)**

  This new project is intended to provide on-site driver training at PARTA's main facility. ODOT awarded $400,000 through the OTP2 Program for FY 2021. The total project cost is $400,000. PARTA local share funding will not be required. The OTP2 funds are derived from state General Revenue Funds (GRF) and cover 100% of the project cost.

- **Revise and Add Capital Funds for the Purchase of an Additional Large Bus (PID 102992)**

  This project is intended to maintain PARTA's vehicle fleet. PARTA has been awarded $446,742 in federal funds through the FTA's Section 5339-b Program. PARTA requests to add these recently awarded funds to an existing bus purchase project using CMAQ funds. This amendment increases the number of large CNG buses to be purchased from two to three vehicles. The federal funding will increase to $1,278,742. The total project cost will increase to $1,598,458. The project is scheduled for FY 2021.

- **Add Capital Funds for Mobility Management (PID 113902)**

  This new project is intended to facilitate mobility management for PARTA. The mobility management project involves community outreach events and travel training sessions for groups as well as individual riders. Federal funds ($50,000) are derived from PARTA's share of the area's FTA Section 5307 funds. PARTA's local share funding will be $12,500. The total project cost will be approximately $62,500, to be scheduled in FY 2021.

- **Perform an Administrative Modification to an Existing Project to Include OTP2 Funds**

  PARTA will add OTP2 funds to the following project from FY 2020 in order to replace the local share:

  - Purchase of Six Small Buses (PID 104391) – adding $85,000 in OTP2 (GRF) funds

STAFF COMMENTS

As with all TIP amendments, considerations with respect to consistency with the Regional Transportation Plan, financial capability, air quality conformity, public involvement, and environmental justice are important.

Regional Transportation Plan

The project proposed in this amendment is consistent with *Transportation Outlook*, the area's Regional Transportation Plan.

Financial Capability

With respect to financial capability, there are sufficient funds available for this amendment.

Air Quality

The project can be viewed as either exempt from air quality or has been analyzed as part of the air quality networks and has resulted in a finding of compliance with the Clean Air Act. Therefore, this amendment will not affect adversely the air quality conformity approval of *Transportation Outlook* or the TIP.

Public Involvement

The Staff is recommending that the Policy Committee consider this action as not regionally significant. As a result, the modified procedures in the AMATS *Public Participation Plan* are appropriate.

Environmental Justice

Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations states that, "each federal agency shall make achieving environmental justice part of its mission by identifying and addressing as appropriate, disproportionately high and adverse human health or environmental effects of its programs policies and activities on minority and low-income populations." This requirement also applies to recipients of federal funds, such as METRO RTA and PARTA.

The project that will result from this TIP amendment does not appear to impose disproportionately high and adverse human health or environmental effects on minorities and/or low-income people who reside in the METRO RTA or PARTA service areas.

STAFF RECOMMENDATION

Attached to this memo is Resolution 2020-12. This resolution approves the requested changes to FY 2021 of the TIP as described above. The Staff recommends approval.

RESOLUTION NUMBER 2020-12

OF THE METROPOLITAN TRANSPORTATION POLICY COMMITTEE OF THE AKRON METROPOLITAN AREA TRANSPORTATION STUDY

TO ADD ODOT AND FTA FUNDS IN FY 2021 FOR PARTA - (FY 2021-2024 TIP AMENDMENT #2)

WHEREAS, the Akron Metropolitan Area Transportation Study (AMATS) is designated as the Metropolitan Planning Organization (MPO) by the Governor, acting through the Ohio Department of Transportation and in cooperation with locally elected officials in Summit and Portage Counties and the Chippewa Township and Milton Township areas of Wayne County; and

WHEREAS, it is the responsibility of this Committee to develop and maintain the area's Transportation Improvement Program (TIP); and

WHEREAS, METRO RTA and PARTA provide public transportation services in the AMATS area; and

WHEREAS, METRO RTA and PARTA intend to maintain their capital assets in a state of good repair as described more fully in their Transit Asset Management (TAM) Plans; and

WHEREAS, METRO RTA and PARTA are eligible recipients of Federal Transit Administration (FTA) funds; and

WHEREAS, METRO RTA and PARTA are eligible recipients of state of Ohio General Revenue Funds (GRF); and

WHEREAS, PARTA has requested that FY 2021 of the TIP be amended to add funds awarded through ODOT's Ohio Transit Partnership Program (OTP2) and Urban Transit Program; and

WHEREAS, PARTA has requested that FY 2021 of the TIP be amended to add funds awarded through FTA's Bus and Bus Infrastructure Program (Section 5339-b); and

WHEREAS, this Committee has analyzed this request and found it to be consistent with *Transportation Outlook*, the area's Regional Transportation Plan; and

WHEREAS, this project has been determined to be in conformity with the State Implementation Plan for air quality; and

WHEREAS, this Committee has determined that the effects of this amendment are consistent with *Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*.

RESOLUTION NUMBER 2020-12 Continued

NOW THEREFORE BE IT RESOLVED:

1. That this Committee amends the FY 2021-2024 Transportation Improvement Program as previously specified in the attached memorandum.

2. That this Committee affirms that the FY 2021-2024 Transportation Improvement Program is in reasonable fiscal constraint.

3. That this Committee affirms consistency with *Transportation Outlook*, the Regional Transportation Plan.

4. That this Committee reaffirms the air quality conformity determination of *Transportation Outlook*.

5. That this Committee considers the necessary public involvement has been carried out as described in the AMATS Public Participation Plan.

6. That this Committee affirms consistency with environmental justice requirements.

7. That this Committee authorizes the Staff to provide copies of this Resolution to the appropriate agencies as evidence of action by the Metropolitan Planning Organization.

_____

Mayor Linda Clark, 2020 Chairwoman
Metropolitan Transportation Policy Committee

_____

Date

Attachment 6C

AKRON METROPOLITAN AREA TRANSPORTATION STUDY

M E M O R A N D U M

TO: **Policy Committee**
Technical Advisory Committee
Citizens Involvement Committee

FROM: **AMATS Staff**

RE: **Resolution 2020-13 –Approving Amendment #3 to the FY 2021-2024 Transportation Improvement Program to cancel one existing project, add two new projects, and revise the funding and scope of work to one existing project and one of the new projects.**

DATE: **September 10, 2020**

The following changes have been requested to the FY 2021-2024 Transportation Improvement Program:

Cancel an Existing Project

2nd Street SW/Wooster Road – Is a resurfacing and road diet project on 2nd Street from Hudson Run Road to Wooster Avenue and a shared use path on Wooster Avenue from 2nd Street to 4th Street. Although this Project ID (PID) is being cancelled the scope of work and funding is being absorbed by other nearby projects planned in Barberton and discussed below.

Add the Following New Project to the FY 2021-2024 TIP

East Avenue – Is a project in the City of Tallmadge to construct a center two way left turn lane with new curbs and sidewalks from Community Road to the Portage County Line. Right of way is scheduled in FY 2021 using $859,500 of federal and state Highway Safety Improvement Program (HSIP) funds.

Add The Following New Project to the FY 2021-2024 TIP and Revise the Funding and Scope of Work.

Wooster Road/Robinson Avenue- Is a project in the City of Barberton to improve the intersection of Wooster Road and Robinson Avenue. This was exclusively an ODOT project and was listed in the "Line Item" portion of the TIP. Since $422,600 of TASA funds are now being added to construct a shared use path on Wooster Avenue between 2nd Street and 4th Street it is being added to the list of AMATS funded projects. The TASA funds are from cancelled project 105373. Construction is scheduled in FY 2022.

Revise the Funding and Scope of Work to the Following Existing Project

2nd Street/Wooster Road N/Norton Road – Is a resurfacing project in the City of Barberton. 2nd Street between Hudson Run Road and Wooster Avenue is being added to the scope of work. 2nd Street will also receive a road diet with the additional space allocated to bike lanes. An additional $408,400 of STBG funding is also being added to the project. The additional work and funding is from the cancelled project above. Construction is scheduled in FY 2021.

STAFF COMMENTS

As with all TIP amendments, considerations with respect to public participation, financial capability, air quality, environmental justice and Plan consistency are important. Sufficient funding is forecasted from federal and state sources for this amendment. The new project listed meet all amendment requirements mentioned above. Therefore this amendment does not cause any negative impact.

STAFF RECOMMENDATION

Attached to this memo is Resolution Number 2020-13. This Resolution approves the amendment to the TIP FY 2021-2024. The Staff recommends approval.

RESOLUTION NUMBER 2020-13

OF THE METROPOLITAN TRANSPORTATION POLICY COMMITTEE OF THE AKRON METROPOLITAN AREA TRANSPORTATION STUDY

Approving Amendment #3 to the Transportation Improvement Program FY 2021-2024 to cancel one existing project, add two new projects, and revise the funding and scope of work to one existing project and one of the new projects.

WHEREAS, the Akron Metropolitan Area Transportation Study (AMATS) is designated as the Metropolitan Planning Organization (MPO) by the Governor, acting through the Ohio Department of Transportation and in cooperation with locally elected officials in Summit and Portage Counties and the Chippewa Township and Milton Township areas of Wayne County and,

WHEREAS, it is the responsibility of this Committee to develop and maintain the Transportation Improvement Program (TIP) and,

WHEREAS, this Committee has been requested to amend the AMATS FY 2021-2024 Transportation Improvement Program to cancel one existing project, add two new projects, and revise the funding and scope of work to one existing project and one of the new project as discussed in the accompanying memorandum:

1. **2nd Street SW/Wooster Road (PID 105373)** - Is a resurfacing and road diet project on 2nd Street from Hudson Run Road to Wooster Avenue and a shared use path on Wooster Avenue from 2nd Street to 4th Street. Although this Project ID (PID) is being cancelled the scope of work and funding is being absorbed by other nearby projects planned in Barberton and discussed below.

2. **East Avenue (PID 112869) –** Is adding a new project in the City of Tallmadge to construct a center two way left turn lane with new curbs and sidewalks from Community Road to the Portage County Line. Right of way is scheduled in FY 2021 using $859,500 of federal and state Highway Safety Improvement Program (HSIP) funds.

3. **Wooster Road/Robinson Avenue (PID 106539)** - Is a project in the City of Barberton to improve the intersection of Wooster Road and Robinson Avenue. This was exclusively an ODOT project and was listed in the "Line Item" portion of the TIP. Since $422,600 of TASA funds are now being added to construct a shared use path on Wooster Avenue between 2nd Street and 4th Street it is being added to the list of AMATS funded projects. The TASA funds are from cancelled project 105373. Construction is scheduled in FY 2022.

4. **2nd Street/Wooster Road N/Norton Road (PID 108372) –** Is a resurfacing project in the City of Barberton. 2nd Street between Hudson Run Road and Wooster Avenue is being added to the scope of work. 2nd Street will also receive a road diet with the additional space allocated to bike lanes. An additional $408,400 of STBG funding is also being added to the project. The additional work and funding is from cancelled project 105373 above. Construction is scheduled in FY 2021.

RESOLUTION NUMBER 2020-13 (Continued)

WHEREAS, the necessary public involvement has been carried out as described in the AMATS Public Participation Plan and,

WHEREAS, the amendment has been judged to be air quality neutral and is, therefore, excluded from additional regional air quality conformity analysis and,

WHEREAS, the environmental justice impacts of this amendment has been considered consistent with "Executive Order 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations" and,

WHEREAS, this Committee has analyzed this request and found this amendment to be consistent with Transportation Outlook, the Regional Transportation Plan, and with the availability of federal funds forecasted for the AMATS area.

NOW THEREFORE BE IT RESOLVED:

1. That this Committee amends the Transportation Improvement Program FY 2021-2024 as previously specified.

2. That this Committee considers the necessary public involvement has been carried out as described in the AMATS Public Participation Plan.

3. That this Committee affirms that sufficient federal funding is expected to be available for the Akron Urbanized Area to maintain financial constraint.

4. That this Committee reaffirms the air quality conformity determination of Transportation Outlook, the Regional Transportation Plan.

5. That this Committee affirms conformity with environmental justice requirements.

6. That this Committee affirms consistency with Transportation Outlook, the Regional Transportation Plan.

7. That this Committee authorizes the Staff to provide copies of this Resolution to the appropriate agencies as evidence of action by the Metropolitan Planning Organization.

_____

Mayor Linda Clark, 2020 Chairwoman
Metropolitan Transportation Policy Committee

_____

Date

AMENDMENT # 3 - 09/09/20

AMATS TRANSPORTATION IMPROVEMENT PROGRAM FY 2021-2024

TABLE H-3

HIGHWAY IMPROVEMENTS

PID #	CO-RTE-SECTION	LENGTH (MILES)	LOCATION & TERMINI	TYPE OF WORK	FUND TYPE	PHASE	2021	2022	2023	2024	TOTAL PROJECT COST ($000)	PROJECT SPONSOR	AIR QUALITY STATUS
105373	**SUM-2ND ST SW/WOOSTER RD** **(Cancel Project)**	0.74	BARBERTON 2ND FROM HUDSON RUN RD TO WOOSTER RD WOOSTER RD FROM 2ND ST SW TO 4TH ST NW	RESURFACING ROAD DIET SHARED USE PATH ALONG WOOSTER	~~TASA~~ ~~STBG~~ ~~LOCAL~~	~~C~~ ~~C~~ ~~C~~		~~422.6~~ ~~408.4~~ ~~207.8~~			1,057.5	BARBERTON	EXEMPT
112869	**SUM-EAST AVE** (Tallmadge) **(Add New Project)**	2.19	TALLMADGE EAST AVENUE FROM COMMUNITY RD TO THE PORTAGE COUNTY LINE	CENTER TWO-WAY LEFT TURN LANE, NEW CURBS AND SIDEWALKS ON BOTH SIDES	HSIP STATE	R R	773.6 85.9				2,936.2	TALLMADGE	EXEMPT
106539	**SUM-WOOSTER RD/ROBINSON AVE** **(Add New Project)** **(Add TASA funds from PID 105373)** **(Revise Scope of Work)**	0.03	BARBERTON WOOSTER RD W FROM ROBINSON AVE TO ~~2ND ST~~ **4TH ST**	ELIMINATE WB OUTSIDE LANE IMPROVE INTERSECTION SIGNAL COORDINATION **CONSTRUCT SHARED USE PATH**	HSIP LOCAL **TASA** HSIP STATE LOCAL	P P **C** C C C	48.0 5.3	 **422.6** 793.0 150.0 190.8			1,544.6	BARBERTON	EXEMPT
108372	**SUM-2ND ST/WOOSTER RD N/NORTON RD** **(Add STBG funds from PID 105373)** **(Revise Scope of Work)**	1.00	BARBERTON **2ND ST FROM HUDSON RUN TO WOOSTER RD** WOOSTER RD FROM NORTON AVE TO BURT ST NORTON RD FROM BARBER RD TO WOOSTER RD **ROAD DIET ON 2ND STREET**	RESURFACING ROAD DIET	STBG **STBG** LOCAL	C **C** C	767.2 **408.4** 411.5				1,587.1	BARBERTON	EXEMPT

AKRON METROPOLITAN AREA TRANSPORTATION STUDY

M E M O R A N D U M

TO: **Policy Committee Members**
Technical Advisory Committee Members
Citizens Involvement Committee Members

FROM: **AMATS Staff**

RE: **Resolution 2020-14 – Approving the FY 2020 Year End Completion Report**

DATE: **September 8, 2020**

This memorandum discusses the status of activities and expenditures for transportation planning in the Akron Metropolitan Area for the state fiscal year ending June 30, 2020. The purpose of this resolution is to approve the Fiscal Year 2020 Year End Completion Report for transmittal to ODOT.

Each year AMATS prepares a Transportation Planning Work Program that is the basis for federal financial assistance for planning. ODOT requires AMATS, following the close of each fiscal year (June 30), to review the previous year's Work Program and compare the scope of work that was originally proposed to that which was completed. Completion of the Work Program is a prerequisite for certification of the planning process. This memorandum summarizes the Fiscal Year 2020 Year End Completion Report. The planning work necessary for FY 2020 was completed, and the expenditures were within the budgeted amounts. All items were completed by the end of the fiscal year on June 30, with few exceptions due to the COVID-19 pandemic. A DRAFT copy of the report can be viewed here FY 2020 Year End Completion DRAFT.

Upon approval, this report will be submitted to the Ohio Department of Transportation (ODOT).

Attached is a financial summary of the Fiscal Year 2020 Year End Completion Report for all of the work elements scheduled during FY 2020. A number of significant products and activities were completed during FY 2020. These include:

1. Developed and approved the FY 2021-2024 Transportation Improvement Program
2. Participated in the Statewide CMAQ Discretionary Funds Program
3. Monitored projects that use federal funds sub-allocated to AMATS
4. Maintained the current Regional Transportation Plan: *Transportation Outlook 2040*
5. The Traffic Crashes and Safety Performance Measures (2016-2018) Technical Memorandum
6. Over 180 Traffic Counts
7. 2019 AMATS Annual Report

8. The promotion of commuter alternatives through bicycle and pedestrian advocacy
9. Management of the Gohio Commute Program
10. Continued implementation of performance measures as part of the Plan and TIP processes consistent with the FAST Act

Because AMATS is well within budget, funds were able to be carried over from FY 2020. These funds total approximately $498,800 (see the attached summary table) and must be expended by December 31, 2020.

Attached is Resolution Number 2020-14 approving the FY 2020 Year End Completion Report and authorizing its submission to ODOT and USDOT as evidence of completing the FY 2020 Transportation Planning Work Program. All work elements remain within budget. The Staff recommends approval.

YEAR END FINANCIAL PROGRESS REPORT
AKRON METROPOLITAN AREA TRANSPORTATION STUDY
July 1, 2019 thru June 30, 2020

	Description	Annual Budget	FY2020 Expenses	% Budget Expended	Carryover to FY2021
I.	**Short Range Planning**	**$546,000**	**$531,966**	**97%**	**$14,700**
	FY2019 Carryover	146,000	146,723		0
	FY2020	400,000	385,243		14,700
II.	**Transportation Improvement Program**	**$331,550**	**$244,749**	**74%**	**$86,100**
	FY2019 Carryover	69,050	68,407		0
	FY2020	262,500	176,342		86,100
III.	**Continuing Planning & Data Collection Transportation System Update**	**$243,800**	**$235,584**	**97%**	**$7,600**
	FY2019 Carryover	63,800	63,281		0
	FY2020	180,000	172,303		7,600
IV.	**Long Range Plan Activity**	**$304,000**	**$217,702**	**72%**	**$86,000**
	FY2019 Carryover	54,000	53,874		0
	FY2020	250,000	163,828		86,000
V.	**Service**	**$449,500**	**$338,801**	**75%**	**$110,500**
	FY2019 Carryover	124,500	124,304		0
	FY2020	325,000	214,497		110,500
VI.	**OhioRideshare and AQ Advocacy**	**$241,630**	**$14,825**	**6%**	**$147,000**
	FY2019 OhioRideshare Carryover	33,480	1,092		0
	FY2020 OhioRideshare	60,000	12,975		47,000
	FY2019 Air Quality Carryover	48,150	757		0
	FY2020 Air Quality	100,000	0		100,000
VII.	**Local**	**$25,000**	**$32,797**	**131%**	**$0**
	AMATS local Costs	25,000	32,797		0
VIII.	**AMATS Transportation Quarterly**	**$85,342**	**$38,290**	**45%**	**$46,900**
	FY2019 Carryover	15,750	15,660		0
	FY2020	69,592	22,629		46,900
IX.	**GRAND TOTAL AMATS BUDGET**	**$2,226,822**	**$1,654,714**	**74%**	**$498,800**

RESOLUTION NUMBER 2020-14

OF THE METROPOLITAN TRANSPORTATION POLICY COMMITTEE OF THE AKRON METROPOLITAN AREA TRANSPORTATION STUDY

APPROVING THE FISCAL YEAR 2020 YEAR END COMPLETION REPORT

WHEREAS, the Akron Metropolitan Area Transportation Study (AMATS) is designated as the Metropolitan Planning Organization (MPO) by the Governor, acting through the Ohio Department of Transportation (ODOT) and in cooperation with locally elected officials in Summit and Portage counties and the Chippewa and Milton Township areas of Wayne County; and

WHEREAS, this Committee is responsible for directing, coordinating and administering the Transportation Planning Work Program for the AMATS area; and

WHEREAS, an AMATS Year End Completion Report that compares the scope of work proposed in the Transportation Planning Work Program to the work that was completed, must be prepared annually; and

WHEREAS, this Committee has reviewed and found acceptable the Fiscal Year 2020 Year End Completion Report containing the work scheduled in the FY 2020 Transportation Planning Work Program and a comparison with progress made on those products.

NOW THEREFORE BE IT RESOLVED:

1. That this Committee approves the FY 2020 Year End Completion Report.

2. That this Committee directs the AMATS Staff to transmit a copy of this resolution to the United States Department of Transportation and the Ohio Department of Transportation as evidence of completing the FY 2020 Transportation Planning Work Program.

_____

Mayor Linda Clark, 2020 Chairwoman
Metropolitan Transportation Policy Committee

_____

Date

AKRON METROPOLITAN AREA TRANSPORTATION STUDY

M E M O R A N D U M

TO: **Policy Committee Members**
Technical Advisory Committee Members
Citizens Involvement Committee Members

FROM: **AMATS Staff**

RE: **Resolution 2020-15 – Authorizing the AMATS Staff to adjust Transportation Planning Work Program and Budget element allocations.**

DATE: **September 8, 2020**

This memorandum discusses a resolution regarding the Fiscal Year 2021 Transportation Planning Work Program and Budget for the state fiscal year beginning July 1, 2020. The FY 2021 Transportation Work Program and Budget was approved by the Policy Committee at its meeting on May 14, 2020. Since that approval, new guidance received from ODOT requires that the Policy Committee approve a resolution that allows staff to reallocate funds between Work Program elements, as necessary, to reduce carryover and ensure appropriate expenditure of AMATS Consolidated Planning Grant (CPG) funds. It provides staff the authority to make changes to work element budgets as long as it does not impact the intent of the Work Program and Budget. It codifies existing Work Program and Budget procedures. The Work Program and Budget remain the same as the version presented to, and approved by, the Policy Committee in May.

Staff Recommendation

Attached is Resolution 2020-15 for your review and consideration. This resolution authorizes the AMATS staff to adjust Work Program and Budget elements as necessary to carry out the urban transportation process. Adjustments to the FY 2021 Work Program and Budget are made to fully utilize CPG funds and reduce carryover. This resolution does not impact the funding levels for the Work Program and Budget, local shares or any transportation projects. The Policy Committee's approval is requested.

RESOLUTION NUMBER 2020-15

OF THE METROPOLITAN TRANSPORTATION POLICY COMMITTEE OF THE AKRON METROPOLITAN AREA TRANSPORTATION STUDY

AUTHORIZING THE AMATS STAFF TO ADJUST TRANSPORTATION PLANNING WORK PROGRAM AND BUDGET ELEMENT ALLOCATIONS, AS NECESSARY, TO CARRY OUT THE URBAN TRANSPORTATION PLANNING PROCESS

WHEREAS, the Akron Metropolitan Area Transportation Study (AMATS) is designated as the Metropolitan Planning Organization (MPO) by the Governor, acting through the Ohio Department of Transportation (ODOT) and in cooperation with locally elected officials in Summit and Portage Counties and the Chippewa Township and Milton Township areas of Wayne County; and

WHEREAS, this Committee annually reviews and approves a Work Program and Budget for the continuation of the transportation planning process; and

WHEREAS, this Committee has reviewed the Transportation Planning Work Program for Fiscal Year 2021 and has found it to be consistent with local, State and Federal transportation planning priorities.

WHEREAS, this Committee has been requested to authorize staff to make changes to the Transportation Planning Work Program and Budget work elements, when necessary, that will not change the intent of the activity of the Transportation Planning Work Program and Budget.

NOW THEREFORE BE IT RESOLVED:

1. That this Committee affirms the Fiscal Year 2021 Transportation Planning Work Program and Budget.
2. That this Committee authorizes the AMATS staff to adjust the FY 2021 Transportation Planning Work Program and Budget as previously specified to make such changes to the work element budgets as are needed to satisfy clarifying comments from the Ohio and U.S. Departments of Transportation, or to make such changes to fully utilize funds and minimize carryover, but which do not change the intent of the activity.
3. That this Committee authorizes the Staff to provide copies of this Resolution to the appropriate agencies as evidence of action by the Metropolitan Planning Organization.

_____

Mayor Linda Clark, 2020 Chairwoman
Metropolitan Transportation Policy Committee

_____

Date

AKRON METROPOLITAN AREA TRANSPORTATION STUDY

M E M O R A N D U M

TO: **Policy Committee Members**
Technical Advisory Committee Members
Citizens Involvement Committee Members

FROM: **AMATS Staff**

RE: **Resolution 2020-16 – CMAQ Performance Plan Mid-Period Progress Report**

DATE: **September 9, 2020**

Executive Summary

The purpose of this resolution is to approve the area's CMAQ performance plan mid-period progress report.

Background

Federal legislation features an emphasis on performance measurement. This focus is consistent with AMATS' goals and objectives, which promote the transparency of public data and decision-making and seeks to improve the accountability of public spending by better linking investments to outcomes.

Performance measures are central to implementing a Performance-Based Planning Process (PBPP) that guides decision making. How performance is defined and measured can significantly affect the types of projects and strategies that are advanced by decision makers. Moreover, performance results inform agencies whether the types of projects and strategies they are implementing are in fact helping them achieve their goals. Performance measures aim to answer questions about whether the performance of the transportation system is getting better or worse over time. Performance measures also aim to demonstrate whether transportation investments are correlated or linked to stated goals and whether they produce desired outcomes.

Introducing a performance management approach to planning is intended to improve project and program delivery, inform investment decision making, focus staff efforts on priorities, and provide greater transparency and accountability to the public. Recent federal legislation applies performance measurement at the programmatic, rather than project level and links performance measures and targets to funding decisions by way of performance-based funding. The purpose of this approach is to move towards performance-based decision-making for project selection in the future.

With federal guidance, ODOT is continuing to implement performance planning in coordination with MPOs like AMATS, and other partners. State investments must make progress toward

these performance targets, and MPOs must incorporate these performance measures and targets into their Transportation Improvement Programs (TIPs) and long range Regional Transportation Plans. Federal guidance imposes financial penalties on states that fail to make progress toward these performance goals.

Like all planning, the performance based planning process is cyclical. As planning cycles evolve, goals and objectives may be adjusted and performance measures and targets may be refined. Making adjustments ensures that agencies focus on the most important priorities and that those priorities remain achievable.

The AMATS CMAQ Performance Plan was initially prepared two years ago as an element of the Ohio Department of Transportation (ODOT) statewide CMAQ performance report by the AMATS staff in collaboration with ODOT, Federal Highway Administration (FHWA), and other stakeholders. Specifically, the report addresses performance measures promulgated through the PM3 regulations. PM3 is the third category of performance management, addressing system performance and reliability, using a broad range of measures that help agencies to examine the overall dependability of the transportation system, urban area congestion and contributions toward air quality improvement.

The purpose of the accompanying report (CMAQ Mid Performance Period Progress Report) is to show the progress that was made over the last two years since the adoption of the area's CMAQ Plan in 2018. In 2022, a full period progress report will be produced, along with a new baseline report. Air quality related targets and progress are monitored on an on-going basis and tracked in relation to CMAQ funded projects. A full discussion of all performance measures, including air quality related performance measures, can be found in Appendix H of the AMATS Transportation Improvement Program (TIP) FY 2021-2024.

CMAQ Traffic Congestion Performance Measures

Federal rule 23 CFR 490.707 establishes Congestion Mitigation and Air Quality (CMAQ) Traffic Congestion performance measures for large urbanized areas in Ohio. One measure focuses on monitoring the Peak Hour Excessive Delay (PHED), which is the effort to monitor the time people spend in traffic delays. Another measure focuses on decreasing single occupant vehicle trips (Percent of Non-Single Occupancy Vehicle (Non-SOV) Travel). See the accompanying AMATS CMAQ Performance Plan Mid Period Progress Report for further discussion.

Peak Hour Excessive Delay (PHED)

In 2018, ODOT and the Ohio MPOs collectively established a single target for each applicable urbanized area for the first performance period. With the first mid-performance period progress report, due October 1, 2020, AMATS is required to assess the two-year condition/performance compared to the target/goal.

Traffic congestion is measured by the annual hours of peak hour excessive delay (PHED) per capita on the National Highway System (NHS). The threshold for excessive delay will be based

on the travel time at 20 miles per hour or 60% of the posted speed limit travel time, whichever is greater, and will be measured in 15-minute intervals. Peak travel hours are defined as 6-10 am local time on weekday mornings; the weekday afternoon period is 3-7 pm, providing flexibility to state DOTs and MPOs. The total excessive delay metric will be weighted by vehicle volumes and occupancy. The four year target for PHED is ten hours per person annually. Subsequently, the PHED target was achieved each year of the 2017-2019 period (see Table 1 below).

Table 1
Traffic Congestion Measures: Peak Hour Excessive Delay (PHED)
Annual Hours per Person
Cleveland Urbanized Area
Progress
2014 - 2019

Year	2014	2015	2016	2017	2018	2019
Actual Data	9.1	10.6	12.3	7.7	8.1	6.2
Target	10.0	10.0	10.0	10.0	10.0	10.0

Mode Share (Non-SOV Travel)

In 2018, ODOT and the Ohio MPOs collectively established a single, unified two-year and four-year target for each applicable urbanized area for the first performance period. The baseline report for the first performance period was October 1, 2018 and included two and four-year targets and a description of the data collection method used. The two-year Mid Period Progress Report is due October 1, 2020.

Mode Share is a calculation of the percent of Non-SOV travel within the urbanized area. Non-SOV travel, defined by the FHWA, applies to travel occurring on modes other than driving alone in a motorized vehicle (Single Occupancy Vehicle) and includes travel that is avoided by telecommuting. It is a measure of the percentage of all surface transportation occurring in the urbanized area.

For the establishment of the percent of Non-SOV Travel Measure, ODOT and its partner agencies used the American Community Survey data's estimates of the percentage of people that travel to work by means other than driving alone (i.e. carpooling, telework, biking, walking, or taking the bus). ODOT was able to review five years of data, noting stable travel patterns for this measure. Upon analysis, ODOT and its partner agencies adopted targets based on recent travel trends and future expected performance.

AMATS is located in part of the Cleveland urbanized area (UZA). Consequently, ODOT, NOACA and AMATS coordinated the setting of targets for the Cleveland area.

Progress toward the non-SOV travel target is shown below (Table 2). For the period 2012-2019, non-SOV travel hovers near the two-year target of 18.0 percent, showing slight improvement towards the four-year target of 18.5 percent. Accordingly, the Cleveland urbanized area is

currently meeting the PHED target and the 2 year non-SOV target. The Cleveland urbanized area is not currently meeting the 4 year non-SOV target of 18.5%.

Table 2
Traffic Congestion Measures: Non-Single Occupancy Vehicle (Non-SOV) Travel
Percent of Non-SOV Travel
Progress

Non-SOV Travel - Cleveland Urbanized Area					
Year	Percent Drive Alone (SOV)	**Percent Non-SOV**	2-Year Target	4-Year Target	ACS 5YR Estimates
2012	82.00%	**18.00%**	18.00%	18.50%	DP03
2013	82.20%	**17.80%**	18.00%	18.50%	DP03
2014	82.40%	**17.60%**	18.00%	18.50%	DP03
2015	82.30%	**17.70%**	18.00%	18.50%	DP03
2016	82.10%	**17.90%**	18.00%	18.50%	DP03
2017	81.80%	**18.20%**	18.00%	18.50%	ACS 2016 5-Year DP03
2018	82.00%	**18.00%**	18.00%	18.50%	ACS 2017 5-Year DP03
2019	81.90%	**18.10%**	18.00%	18.50%	ACS 2018 5-Year DP03

Total CMAQ Emission Reduction Performance Measures

Federal rule 23 CFR 490.807 establishes Total CMAQ Emission Reduction performance measures for Ohio's US EPA designated air quality nonattainment and maintenance areas. There are three mobile source pollutants Ohio is required to set performance targets for: Volatile Organic Compounds (VOCs), Nitrous Oxide (NO_x), and Particulate Matter at 2.5 micrometers in diameter ($PM_{2.5}$). For all three measures, ODOT is required to set both 2-year and 4-year targets within a four year performance period.

Emissions Reduction

ODOT, in coordination with the Ohio MPOs, established statewide two and four-year targets for total emissions reduction of on-road mobile source emissions for each performance period for all non-attainment and maintenance areas within the state boundary, for each applicable criteria pollutants and precursors. ODOT set targets prior to the deadline of May 20, 2018 and targets were reported to FHWA by October 1, 2018. MPOs, in coordination with State DOTs, must establish two and four-year targets for all nonattainment and maintenance areas within the metropolitan planning area. Targets are to be set within 180 days after state DOTs have set their targets. In both cases, the targets shall reflect the anticipated cumulative emissions reductions to be reported in the CMAQ Public Access System.

Emissions reduction is defined as the total on-road mobile source total emission reductions for each applicable criteria pollutant and precursor for a nonattainment area. For nonattainment and maintenance areas, the applicable criteria pollutants are Volatile Organic Compounds (VOCs),

Nitrogen Oxides (NO_x) and Particulate Matter having a diameter of less than 2.5 micrometers ($PM_{2.5}$). This performance measure applies to projects that receive or are programmed for CMAQ funding. Data was collected from the CMAQ Public Access System, as specified in the federal rulemaking.

Table 3 aggregates the emission reduction benefits for the CMAQ funded projects for the AMATS area for the period 2015-2019. These figures were provided by ODOT Central Office, and were derived from the FHWA CMAQ Public Access System, and contribute towards statewide emissions reductions. AMATS is acting in support of ODOT's targets.

Table 3
AMATS Area – CMAQ Funded Projects – Emissions Reduction Benefit
2015-2019

	Total VOC Emissions Reduction			Total NO_X Emissions Reduction			Total PM2.5 Emissions Reduction		
Year	Total Reduction (kg/day)	5-Year Avg.	OH 2 and 4-Year Targets	Total Reduction (kg/day)	5-Year Avg.	OH 2 and 4-Year Targets	Total Reduction (kg/day)	5-Year Avg.	OH 2 and 4-Year Targets
2015	5.417	8.332	69.000	19.512	31.869	537.000	1.170	1.359	36.000
2016	2.187	8.332	69.000	1.485	31.869	537.000	0.038	1.359	36.000
2017	7.265	8.332	69.000	85.655	31.869	537.000	3.745	1.359	36.000
2018	15.740	8.332	69.000	26.300	31.869	537.000	0.739	1.359	36.000
2019	11.053	8.332	69.000	26.395	31.869	537.000	1.101	1.359	36.000

Staff Recommendation

Attached is Resolution 2020-16 for your review and consideration. This resolution approves the AMATS area's CMAQ performance plan mid period progress report. The staff recommends approval of this resolution.

RESOLUTION NUMBER 2020-16

OF THE METROPOLITAN TRANSPORTATION POLICY COMMITTEE OF THE AKRON METROPOLITAN AREA TRANSPORTATION STUDY

CMAQ PERFORMANCE PLAN MID PERIOD PROGRESS REPORT

WHEREAS, the Akron Metropolitan Area Transportation Study (AMATS) is designated as the Metropolitan Planning Organization (MPO) by the Governor, acting through the Ohio Department of Transportation (ODOT) and in cooperation with locally elected officials in Summit and Portage Counties and the Chippewa Township and Milton Township areas of Wayne County; and

WHEREAS, the federal authorization legislation: the Moving Ahead for Progress in the 21st Century Act (MAP-21) and the Fixing America's Surface Transportation Act (FAST) direct state DOTs and MPOs to collectively implement performance based transportation planning processes; and

WHEREAS, AMATS is required to establish and set targets for five safety performance measures (per Title 23 CFR part 490), those measures applicable to all public roads: as the number of fatalities, number of serious injuries, fatality rate, serious injury rate, and number of non-motorized fatalities and serious injuries; and

WHEREAS, the development of performance measures is being required in order to foster transparency and accountability, and help track safety progress at regional, state, and national levels; and

WHEREAS, the Ohio Department of Transportation (ODOT) has established performance targets for congestion and emissions reduction according to federal guidance and timetables; and

WHEREAS, AMATS must establish its own performance targets for the area or support the targets set by ODOT within 180 days of ODOT's establishment of targets; and

WHEREAS, the AMATS Policy Committee has determined that it will support the established Ohio Department of Transportation's statewide performance targets; and

WHEREAS, Summit County and Portage County are part of the U.S. Census-designated eight-county Cleveland-Akron-Lorain Combined Statistical Area (CSA), and this area includes: Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, and Summit counties; based on air quality readings, the United States Environmental Protection Agency (USEPA) designated this area as marginal non-attainment for the 2015 8-hour ozone standard and as a maintenance area for the 2008 8-hour ozone standard; and

WHEREAS, USEPA has designated several of the counties in this area (including Summit and Portage) as maintenance areas for $PM_{2.5}$ (particulate matter) under the 2006 standard; and

RESOLUTION NUMBER 2020-16 (continued)

WHEREAS, the necessary coordination between the Cleveland-Akron-Lorain air quality area partners (Erie Regional Planning Commission for the Lorain County portion of the City of Vermilion; AMATS for Portage and Summit Counties; NOACA for Cuyahoga, Geauga, Lake, Lorain, and Medina Counties; and ODOT for Ashtabula County) has occurred in order to develop CMAQ program performance targets; and

WHEREAS, AMATS, NOACA and Erie County manage the transportation planning process in this non-attainment or maintenance area, and coordinate on air quality issues. Consequently, AMATS has coordinated with ODOT, NOACA and ERPC in developing the Cleveland urbanized area traffic congestion (PHED and Non-SOV) targets as described in the above memorandum; and

WHEREAS, AMATS has developed performance targets for the Congestion Mitigation and Air Quality Improvement (CMAQ) Program in coordination with ODOT and NOACA; and

WHEREAS, it is the responsibility of the AMATS Policy Committee to develop and maintain the Transportation Improvement Program (TIP) in accordance with current state and federal guidelines; and

WHEREAS, it is the responsibility of the AMATS Policy Committee to develop and maintain the area's Regional Transportation Plan, *Transportation Outlook,* in accordance with current state and federal guidelines; and

WHEREAS, the AMATS Policy Committee agrees to plan and program projects so that they contribute toward the achievement of ODOT's targets for the performance measures described in the attached memorandum.

NOW THEREFORE BE IT RESOLVED:

1. That this Committee approves the AMATS Area CMAQ Performance Plan Mid Period Progress Report described in the above memorandum.

2. That this Committee reaffirms a Cleveland urbanized area 4-year target of less than 10 hours annual of peak hour excessive delay (PHED) per person.

3. That this Committee reaffirms a Cleveland urbanized area non-single occupancy vehicle (Non-SOV) travel 2-year target of 18 percent and 4-year target of 18.5 percent.

4. That this Committee supports the emissions reductions targets as part of the Cleveland-Akron-Lorain non-attainment area as described in the attached memorandum.

5. That this Committee agrees to plan and program projects so that they contribute toward the accomplishment of the Ohio Department of Transportation's targets for each performance measure as discussed in the attached memorandum.

6. That this Committee agrees to modify or amend the Transportation Improvement Program and Regional Transportation Plan, *Transportation Outlook*, to include further discussion of performance measures, including support for ODOT's performance goals and targets, as well as include performance-based decision-making as part of the project selection and funding process in order to contribute towards the accomplishment of those ODOT performance goals and targets.

7. That this Committee approves that AMATS, as part of the Cleveland-Akron-Lorain non-attainment area, supports the intent of ODOT's statewide targets for air quality improvements.

8. That this committee allows the AMATS staff to address any ODOT or USDOT comments following submittal and review.

9. That this Committee authorizes the Staff to provide copies of this Resolution to the appropriate agencies as evidence of action by the Metropolitan Planning Organization.

_____

Mayor Linda Clark, 2020 Chairwoman
Metropolitan Transportation Policy Committee

_____

Date

CMAQ Performance Plan

Mid Performance Period Progress Report

AMATS

September 9, 2020

Akron Metropolitan Area Transportation Study

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AMATS CMAQ Performance Plan
Mid Performance Period Progress Report

MPO Name: Akron Metropolitan Area Transportation Study

TMA and State(s): Akron, Ohio

The AMATS CMAQ Performance Plan was initially prepared two years ago as an element of the Ohio Department of Transportation (ODOT) statewide CMAQ performance report for the baseline period in accordance with the requirements of 23 CFR 490.107(c) and 23 USC 149(I) by AMATS staff in collaboration with ODOT, Federal Highway Administration (FHWA), and other stakeholders. Specifically, the report addresses performance measures promulgated through the PM3 regulation Subpart G (Measures to Assess the CMAQ Program – Traffic Congestion) and Subpart H (Measures to Assess the CMAQ Program – On-Road Mobile Source Emissions). PM3 is the third category of performance management, addressing system performance and reliability, using a broad range of measures that help agencies to examine the overall dependability of the transportation system, urban area congestion and contributions toward air quality improvement.

US DOT requires agencies to adopt travel time reliability measures to better manage and operate their transportation system. Traffic professionals have come to recognize the importance of travel time reliability because it better quantifies the benefits of traffic management and operation activities than simple averages over a twenty-four hour period.

Federal rule 23 CFR 490.707 establishes Congestion Mitigation and Air Quality (CMAQ) Traffic Congestion performance measures for large urbanized areas in Ohio. One measure focuses on monitoring the Peak Hour Excessive Delay (PHED), which is the effort to monitor the time people spend in traffic delays. Another measure focuses on decreasing single occupant vehicle trips by analyzing the Percent of Non-Single Occupancy Vehicle (Non-SOV) Travel.

The purpose of this report (CMAQ Mid Performance Period Progress Report) is to show the progress that was made over the last two years since the adoption of the area's CMAQ Plan in 2018. In 2022, a full period progress report will be produced, along with a new baseline report. Air quality related targets and progress are monitored on an on-going basis and tracked in relation to CMAQ funded projects. These activities are performed in coordination with AMATS' air quality partners in the area, along with ODOT. A full discussion of performance measures, including air quality related performance measures, can be found in Appendix H of the AMATS Transportation Improvement Program (TIP) FY 2021-2024.

Table 1a shows the baseline and four-year target for peak hours of excessive delay (PHED) per person, per year for the Cleveland urbanized area. The data for this metric was derived from FHWA vehicle occupancy factors, HPMS traffic count data, and the NPMRDS travel time data set. Federal rules required that the Cleveland, Cincinnati and Columbus urbanized areas set air quality related targets in 2018 (performance period 1). The northern portions of the AMATS area are located in the Cleveland urbanized area. Consequently, AMATS must coordinate with

the Northeast Ohio Areawide Coordinating Agency (NOACA) to set targets for the Cleveland urbanized area.

Peak Hour Excessive Delay (PHED) is based on the calculation of all segments of the National Highway System. PHED is defined as the extra amount of time spent in congested conditions defined by speed thresholds that are lower than a normal delay threshold. For this measure, the speed threshold is 20 mph or 60% of the posted speed limit, or whichever is greater. The FHWA requires that the data collected must occur during weekdays (Monday through Friday), with a required morning peak timeframe of 6:00am-10:00am, and a variable evening peak timeframe. This metric measures the number of hours of excessive traffic delay (per capita) each year.

The PHED measure currently only applies to metropolitan areas with one million or more in population. However, in 2022, urbanized areas of 200,000 or greater will also be subject to the PHED measure. For this metric, excess delay is defined as travel time at 20 mph or 60% of the posted speed limit, whichever is greater, measured in 15 minute intervals during key travel windows.

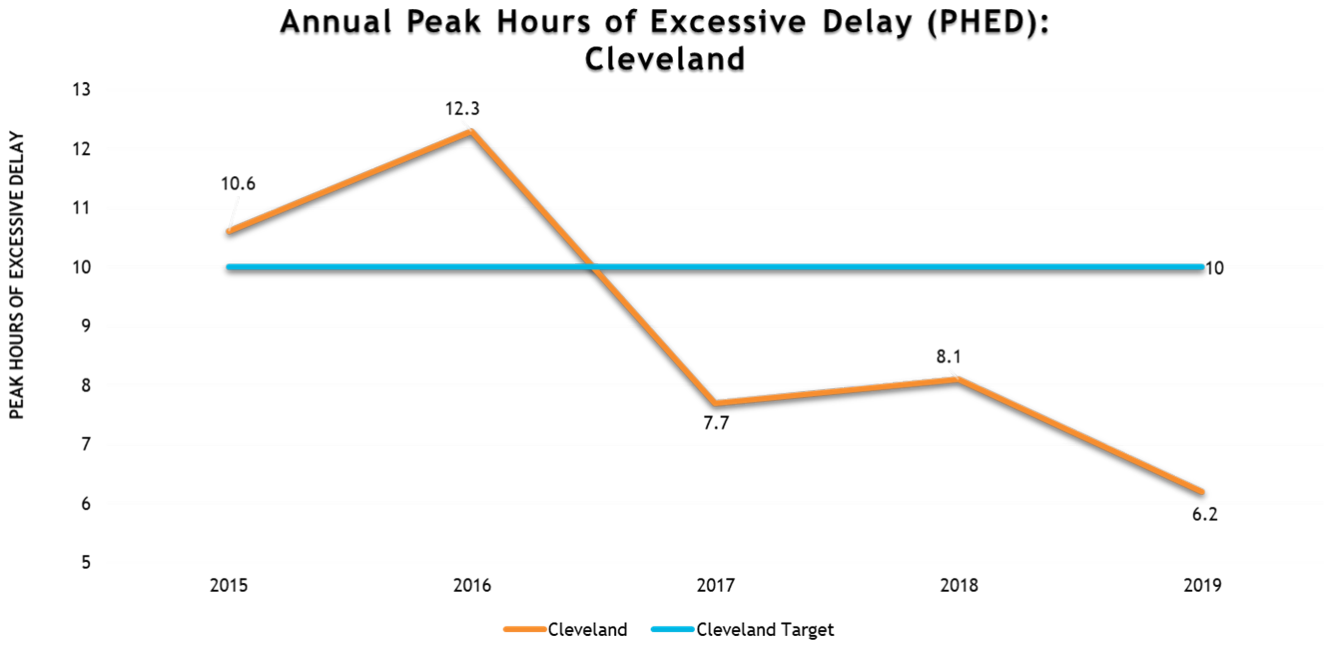
Table 1a
Traffic Congestion Measures: Target for Peak Hour Excessive Delay (PHED)
Annual Hours per Person
Cleveland Urbanized Area

PHED 2017 Baseline	7.7 Hours per Person
PHED 2020 2-Year Target	N/A
PHED 2022 4-Year Target	<10.0 Hours per Person

Table 1b, and the graph that follows, show the progress made toward achieving the PHED target. Note the trend in the declining amount of delay during the period of analysis (2014-2019).

Table 1b
Traffic Congestion Measures: Peak Hour Excessive Delay (PHED)
Annual Hours per Person
Cleveland Urbanized Area
Progress
2014 - 2019

Year	2014	2015	2016	2017	2018	2019
Actual Data	9.1	10.6	12.3	7.7	8.1	6.2
Target	10.0	10.0	10.0	10.0	10.0	10.0



Mode share is a measure of the percentage by mode of all surface transportation occurring in the urbanized area. Modes of surface transportation include driving alone in a motorized vehicle (Single Occupancy Vehicle), car or van pooling, public transportation, commuter rail, walking, or bicycling, as well as travel that is avoided by telecommuting. Non-SOV travel, defined by the FHWA, applies to any travel occurring on modes other than driving alone in a motorized vehicle. An analysis of mode share includes a calculation of the percent of Non-SOV travel within the urbanized area. This metric, which is derived from the U.S. Census Bureau's American Community Survey (ACS) data, illustrates the percentage of an urbanized area's traffic in which multiple people are in a vehicle. Higher levels of Non-SOV travel can reduce an area's traffic congestion by removing additional vehicles from the roadways, and also lowering the amount of mobile emissions.

Table 2a shows the baseline, two-year, and four-year targets for non-single occupancy vehicle travel (Non-SOV) in the Cleveland urbanized area. The data for this metric was derived from the American Community Survey Economic Characteristics table.

Table 2a
Traffic Congestion Measures: Target for Non-Single Occupancy Vehicle (Non-SOV) Travel
Percent of Total Travel Modes

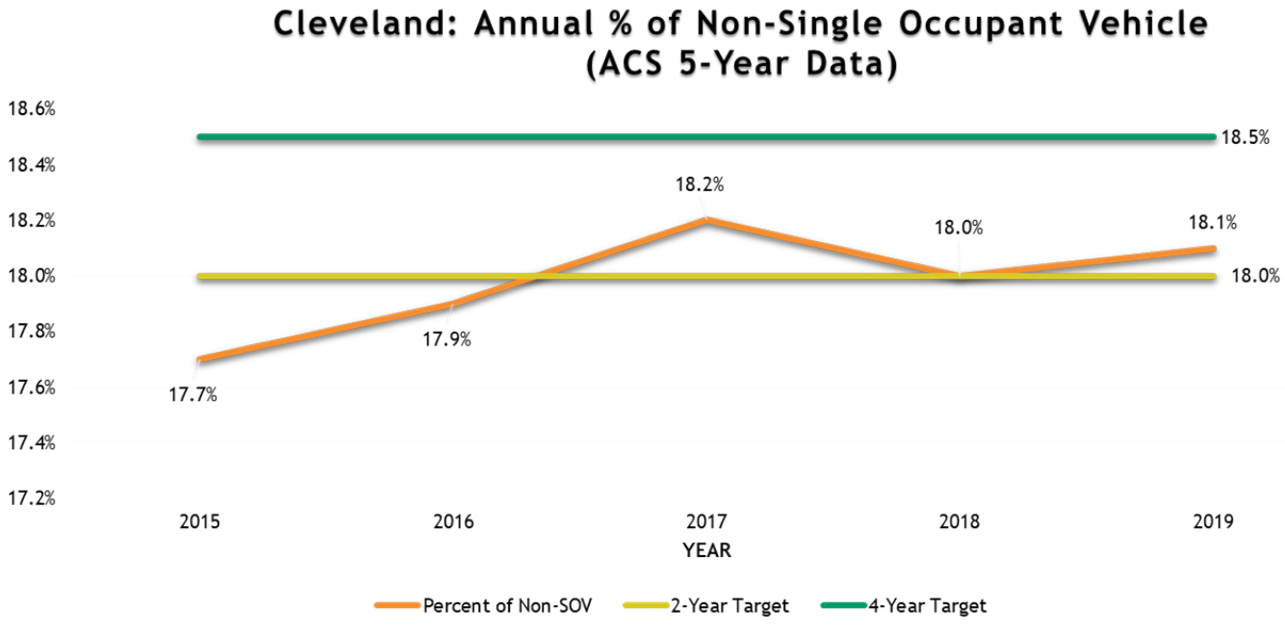
Percent of Non-SOV Travel Baseline - 2016	17.9%
Percent of Non-SOV Travel 2020 2-Year Target	≥ 18.0%

Percent of Non-SOV Travel 2022 4-Year Target	≥ 18.5%

Table 2b, and the graph that follows, show the progress made toward reaching the target for non-SOV travel. For the period 2012-2019, non-SOV travel hovers near the two-year target of 18.0 percent, showing slight improvement towards the four-year target of 18.5 percent or greater. Thus, the Cleveland urbanized area is currently meeting the PHED target and the 2 year non-SOV target. The Cleveland urbanized area is not currently meeting the 4 year non-SOV target of 18.5%.

Table 2b
Traffic Congestion Measures: Non-Single Occupancy Vehicle (Non-SOV) Travel
Percent of Non-SOV Travel
Progress

Non-SOV Travel - Cleveland Urbanized Area					
Year	Percent Drive Alone (SOV)	**Percent Non-SOV**	2-Year Target	4-Year Target	ACS 5YR Estimates
2012	82.00%	**18.00%**	18.00%	18.50%	DP03
2013	82.20%	**17.80%**	18.00%	18.50%	DP03
2014	82.40%	**17.60%**	18.00%	18.50%	DP03
2015	82.30%	**17.70%**	18.00%	18.50%	DP03
2016	82.10%	**17.90%**	18.00%	18.50%	DP03
2017	81.80%	**18.20%**	18.00%	18.50%	ACS 2016 5-Year DP03
2018	82.00%	**18.00%**	18.00%	18.50%	ACS 2017 5-Year DP03
2019	81.90%	**18.10%**	18.00%	18.50%	ACS 2018 5-Year DP03



Air quality emissions reduction analyses calculate the total reduction in three mobile source (i.e. vehicle-based) pollutants: Volatile Organic Compounds (VOC), Oxides of Nitrogen (NOx), and Particulate Matter having a diameter of less than 2.5 micrometers ($PM_{2.5}$).

Table 3a shows the on-road baseline, two-year, and four-year quantitative emissions targets for VOC, NOx, and $PM_{2.5}$. The baseline data was derived from the CMAQ Pubic Access System and aggregated, by state and pollutant type for the years 2014 – 2017. The data for the two and four-year targets was derived from projects in the TIP with quantitative emissions benefits, for the years 2021 – 2024. Data is expressed in kilograms of pollutant per day. The 2014-2017 baseline data is for the AMATS area. The two-year and four-year statewide targets have been set by ODOT, and are supported by AMATS.

To determine the progress being made toward the established targets, the reduction attributed to every CMAQ-funded transportation project in a non-attainment or maintenance area is calculated for each applicable pollutant. The total statewide reduction for each pollutant is then summed up and compared to its respective target.

Table 3a – Target for On-Road Mobile Source Emissions (kg/day)

	NOx	VOC	$PM_{2.5}$
2014-2017 AMATS Baseline	18.850	125.061	5.903
2020 ODOT 2-Year Target	537	69	36
2022 ODOT 4-Year Target	537	69	36

Table 3b aggregates the emission reduction benefits for the CMAQ funded projects for the AMATS area for the period 2015-2019. These figures were provided by ODOT Central Office, and were derived from the FHWA CMAQ Public Access System.

Table 3b
AMATS Area – CMAQ Funded Projects – Emissions Reduction Benefit
2015-2019

	Total VOC Emissions Reduction			Total NO_X Emissions Reduction			Total PM2.5 Emissions Reduction		
Year	Total Reduction (kg/day)	5-Year Avg.	OH 2 and 4-Year Targets	Total Reduction (kg/day)	5-Year Avg.	OH 2 and 4-Year Targets	Total Reduction (kg/day)	5-Year Avg.	OH 2 and 4-Year Targets
2015	5.417	8.332	69.000	19.512	31.869	537.000	1.170	1.359	36.000
2016	2.187	8.332	69.000	1.485	31.869	537.000	0.038	1.359	36.000
2017	7.265	8.332	69.000	85.655	31.869	537.000	3.745	1.359	36.000
2018	15.740	8.332	69.000	26.300	31.869	537.000	0.739	1.359	36.000
2019	11.053	8.332	69.000	26.395	31.869	537.000	1.101	1.359	36.000

Table 4 lists all of the CMAQ projects in the TIP with quantitative emissions benefits for the years 2021-2024. Additionally, each project includes a description on how AMATS anticipates these projects will contribute to the achievement of the PHED and Non-SOV targets.

Table 4 – AMATS Area FY 2021-2024 CMAQ Projects and Estimated Emissions Benefits

Project	Project Description	Year of Anticipated CMAQ Obligation	NOx Benefit (kg/ day	VOC Benefit (kg/ day)	$PM_{2.5}$ Benefit (kg/ day)	PHED Benefit	Non-SOV Benefit
AMATS FY 2021 Rideshare PID: 100691	Carpooling and Vanpooling, Marketing	2021	5.4543	2.9067	0.4569	Removes Multiple Vehicles from the Network	Reduces SOV Travel
AMATS FY 2021 Air Quality Advocacy PID: 100692	Demand Management Project – Public Education	2021	0.0832	0.0443	0.0069	Removes Multiple Vehicles from the Network	Encourages Alternate Modes
Canton Rd/East Market St PID: 93433	Roundabout, Intersection Realignment	2021	0.1802	0.1533	0.0050	Reduces Congestion and Delay	N/A
PARTA CNG Bus Replacement PID: 102992	Replace older diesel buses with 2 CNG buses	2021	0.1310	1.7450	0.0430	Removes Multiple Vehicles from the Network	Encourages Transit Ridership
Tallmadge Rd Interchange PID: 98585	Reconstruction of I-76 WB off-ramp to relocation Mogadore Rd intersection & add turn lanes	2021	1.2954	1.8077	0.0923	Reduces Congestion and Delay	N/A
Cleveland Massillon Rd PID: 103293	Roundabout at Rothrock & restricting I-77 ramp to right-turn only	2021	0.3025	0.4222	0.0216	Reduces Congestion and Delay	N/A
Massillon Rd (SR 241) Ph 3/Boettler PID: 103173	Hybrid Roundabout	2021/2022	0.3094	0.4318	0.0220	Reduces Congestion and Delay	N/A
AMATS FY 2022 Rideshare PID: 111431	Carpooling/Vanpooling, Marketing, Outreach	2022	5.4543	2.9067	0.4569	Removes Multiple Vehicles from the Network	Reduces SOV Travel
AMATS FY 2022 Air Quality Advocacy PID: 111426	Public Education, Outreach	2022	0.0832	0.0443	0.0069	Removes Multiple Vehicles from the Network	Encourages Alternate Modes

PARTA CNG Bus Replacement PID: 111777	Replace older diesel buses with 2 CNG buses	2022	0.1740	2.1640	0.0480	Removes Multiple Vehicles from the Network	Encourages Transit Ridership
Massillon Rd (SR 241) Ph 2/Corp Woods Circle PID: 103172	Hybrid Roundabout	2022/2024	0.2710	0.2300	0.0080	Reduces Congestion and Delay	N/A
SR 91-13.45 Hudson PID: 106445	TWLTL, Bike Lanes	2022	0.1300	0.1110	0.0040	Reduces Congestion and Delay	Encourages Alternate Modes
AMATS FY 2023 Rideshare PID: 111432	Carpooling/Vanpooling, Marketing, Outreach	2023	5.4543	2.9067	0.4569	Removes Multiple Vehicles from the Network	Reduces SOV Travel
AMATS FY 2023 Air Quality Advocacy PID: 111428	Public Education, Outreach	2023	0.0832	0.0443	0.0069	Removes Multiple Vehicles from the Network	Encourages Alternate Modes
METRO RTA CNG Bus Replacement PID: 112270	Replace older diesel with 3 CNG buses	2023	0.1840	0.7700	0.0120	Removes Multiple Vehicles from the Network	Encourages Transit Ridership
SR 43 Widening Streetsboro PID: 106416	TWLTL	2023	0.2370	0.2340	0.0080	Reduces Congestion and Delay	N/A
AMATS FY 2024 Rideshare PID: 111433	Carpooling/Vanpooling, Marketing, Outreach	2024	5.4543	2.9067	0.4569	Removes Multiple Vehicles from the Network	Reduces SOV Travel
AMATS FY 2024 Air Quality Advocacy PID: 111429	Public Education, Outreach	2024	0.0832	0.0443	0.0069	Removes Multiple Vehicles from the Network	Encourages Alternate Modes
PARTA Clean Diesel Bus Replacement PID: 112244	Replace older diesel with 2 clean diesel buses	2024	1.8470	0.3000	0.1010	Removes Multiple Vehicles from the Network	Encourages Transit Ridership
METRO RTA CNG Bus Replacement PID: 112245	Replace older diesel with 3 CNG buses	2024	0.1840	0.7700	0.0120	Removes Multiple Vehicles from the Network	Encourages Transit Ridership

Valley View Rd / Olde Eight Rd PID: 112797	Intersection Improvements	2024	0.0060	0.0070	0.00001	Reduces Congestion and Delay	N/A

Cleveland-Akron-Lorain Air Quality Non-Attainment Area

Summit County and Portage County are part of the U.S. Census-designated eight-county Cleveland-Akron-Lorain Combined Statistical Area (CSA). This area includes: Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, and Summit counties. Based on air quality readings, the United States Environmental Protection Agency (USEPA) designated this area as marginal non-attainment for the 2015 8-hour ozone standard, except for Ashtabula County which is a maintenance area. This area is designated as a maintenance area for the 2008 8-hour ozone standard.

USEPA also designated several of the counties in this area (including Summit and Portage) as maintenance for PM2.5 (particulate matter) under the 2006 standard. These areas include Cuyahoga, Lake, Lorain, Medina, Portage, and Summit Counties, and Ashtabula Township in Ashtabula County.

Three Metropolitan Planning Organizations (MPOs) serve seven of these counties. The Northeast Ohio Areawide Coordinating Agency (NOACA) serves Cuyahoga, Geauga, Lake, Lorain, and Medina counties. AMATS serves Summit and Portage counties. The Erie Regional Planning Commission (ERPC) serves the City of Vermilion in Lorain County. Ashtabula County is not part of a Metropolitan Planning Organization.

The USDOT requires air quality conformity determinations every time a new TIP or Regional Transportation Plan is completed. This conformity analysis reflects the aggregate regional mobile emissions generated by vehicles using the transportation system recommended in the TIP and Regional Transportation Plan. Conformity is demonstrated when the forecasted regional emissions are below the applicable State Implementation Plan (SIP) budgets that have been established by Ohio EPA.

AMATS, NOACA and ERPC manage the transportation planning process in this non-attainment area, and coordinate on air quality issues. Consequently, AMATS has coordinated with ODOT, NOACA and ERPC in developing the Cleveland urbanized area traffic congestion (PHED and Non-SOV) targets shown below.

NOACA's air quality emissions targets are shown below for informational purposes. AMATS is supporting ODOT's statewide emissions targets as discussed above.

Cleveland Urbanized Area Traffic Congestion Targets

CMAQ Traffic Congestion Measures	Current	ODOT 2 Yr. Target	ODOT 4 Yr. Target	Cleveland UZA Recommended 2 Yr. Target	Cleveland UZA Recommended 4 Yr. Target
Cleveland UZA - Peak Hour Excessive Delay (PHED) per Person	7 hr 23 min	N / A	<10 hrs / yr	N / A	<10 hrs / yr
Cleveland UZA - Percent of Non-SOV Travel	17.90%	17.80%	17.80%	18.00%	18.50%

NOACA Area Air Quality Targets

CMAQ On-Road Mobile Source Emissions	Current (Statewide)	ODOT 2 Yr. Target	ODOT 4 Yr. Target	NOACA Recommended 2 Yr. Target	NOACA Recommended 4 Yr. Target
Volatile Organic Compounds Total Emission Reduction	5 yr avg - 85.90 kg/day	69 kg/day	69 kg/day	**16.16 kg/day**	**38.56 kg/day**
Nitrous Oxide Total Emission Reduction	5 yr avg - 671.31 kg/day	537 kg/day	537 kg/day	**56.71 kg/day**	**107.17 kg/day**
Particulate Matter at 2.5 Micrometers Total Emission Reduction	5 yr avg - 44.97 kg/day	36 kg/day	36 kg/day	**3.96 kg/day**	**7.58 kg/day**

FEDERAL REQUIREMENTS FOR CMAQ PROJECT FUNDING

The Congestion Mitigation and Air Quality (CMAQ) program supports two important goals of the U.S. Department of Transportation: improving air quality and relieving congestion. Reducing congestion is a key objective of federal surface transportation policy. The costs of congestion can be an obstacle to economic activity. In addition, congestion can hamper quality of life through diminished air quality, lost personal time, and other negative factors. Accordingly, the CMAQ Program includes federal funds programmatically allocated to each state for funding applicable projects.

A CMAQ project must meet three basic criteria: it must be a transportation project, it must generate an emissions reduction, and it must be in or benefit a nonattainment or maintenance area. Additionally, as with all federal-aid projects, CMAQ projects must be included in the MPO's current transportation plan and Transportation Improvement Program (TIP), or the current Statewide Transportation Improvement Program (STIP) in areas without an MPO. In nonattainment and maintenance areas, the project also must meet the conformity provisions contained in section 176(c) of the Clean Air Act (CAA) and the transportation conformity regulations. Lastly, all CMAQ-funded projects need to complete National Environmental Policy Act (42 U.S.C. 4321 et seq.) (NEPA) requirements and satisfy the basic eligibility requirements under titles 23 and 49 of the United States Code.

AMATS and ODOT each receive CMAQ funding and allocate it annually to fund applicable projects. In 2012, ODOT created of the Ohio Statewide Urban Congestion Mitigation and Air Quality CMAQ Program (OSUCC). The intent of the program is to more quickly advance eligible projects that improve air quality, reduce congestion, and eliminate delay/improve safety, in addition to utilizing statewide CMAQ funding in the year funds are allocated. OSUCC is administered as a subcommittee of the Ohio Association of Regional Councils (OARC) Executive Directors. OSUCC is charged with developing protocols for managing the program, along with project selection. The CMAQ Program provides approximately $60 plus million annually, to Ohio's eight largest Metropolitan Planning Organizations (MPOs) with populations larger than 200,000.

OSUCC/AMATS opens the program for applications once every two years. The next project

solicitation will most likely occur in spring of 2021. Projects are selected on various criteria, only one of which is estimated emissions reduction benefits. Projects are not required to have quantifiable emissions reduction benefits; a quantitative assessment is sufficient. All projects awarded annually must be entered into the FHWA's CMAQ Public Access System (PAS). Data for the CMAQ Emissions Reduction performance measure for the region is taken from the quantified benefits included in the projects listed in the PAS that have been funded in the region. Table 3 above lists the quantified benefits included in the PAS for the AMATS area for recent years (2021 to 2024). Further information on the joint MPO/ODOT CMAQ project process can be found in the AMATS Funding Policy Guidelines.