

AMATS Technical Memorandum

Existing Congestion Study 2015

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

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Executive Summary

One of the initial steps in the development of a Regional Transportation Plan is to conduct a study of existing highway congestion. This study is a key component of the planning process, because it is critical to have an accurate and realistic assessment of the traffic conditions under which the area's freeways, arterials, and intersections currently operate, in order to effectively plan for the future.

AMATS maintains a Congestion Management Roadway Network to monitor the performance of the transportation system in Summit and Portage Counties and the Chippewa Township and Milton Township areas of Wayne County on a continuing basis. This network was developed to include: all freeways and principal arterials; higher volume minor arterials and collectors; major intersections; and other roadways identified as potential congestion problems by the AMATS Policy Committee. The network contains approximately 540 miles of roadways and 34 intersections and is shown on Map ES-1.

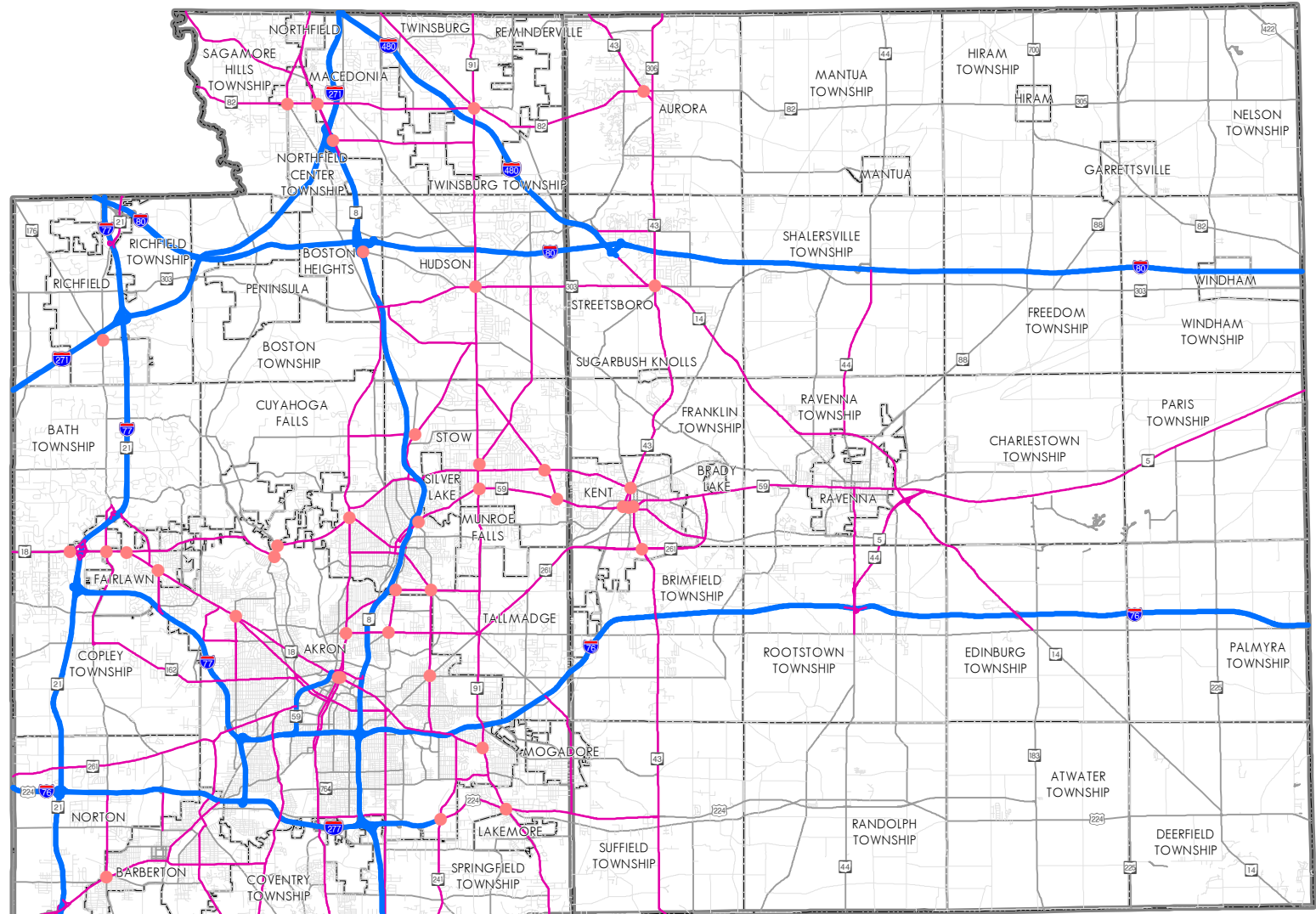
The purpose of this study is to quantify the existing level of traffic congestion on network roadways and intersections. The study contains three analysis chapters: freeway level of service analysis; arterial level of service analysis; and intersection capacity analysis.

The freeway analysis evaluates the level of service (LOS) on the freeways that are included in the network, using analytical techniques described in the *Highway Capacity Manual 2010* (HCM2010). Freeways are analyzed by segments and by weaving areas. Weaving areas are freeway segments that have closely spaced entrance and exit ramps. Of the 206 freeway segments studied by direction of travel no segments operate at LOS "F"; four operate at LOS "E"; and 38 operate at LOS "D". Of the 20 weaving segments studied 10 operate at LOS "F", one at LOS "E", and three at LOS "D".

The arterial analysis evaluates the LOS on the arterial roadways that are included in the network, using a methodology that compares the peak hour traffic counts to planning-level peak hour capacities developed by the AMATS staff. Of the 597 arterial segments studied: no segments operate at LOS "F"; five operate at LOS "E"; and 30 operate at LOS "D".

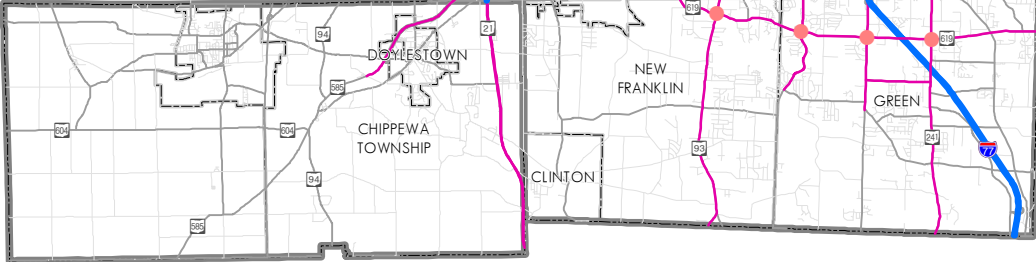
The intersection analysis evaluates the capacity of the intersections that are included in the network, using the planning analysis method described in HCM. Of the 34 intersections studied: five operate "over capacity"; four operate "at capacity"; and 13 operate "near capacity".

The results of all three of these analyses will be used, in conjunction with a study of future traffic congestion, to develop the Congestion Management Process Report, which will contain recommendations for reducing traffic congestion in the AMATS area between now and 2040.



Map ES-1 CONGESTION MANAGEMENT ROADWAY NETWORK

- Intersection
- Freeway
- Arterial



Back of Map ES-1

Chapter 1: Freeway Level of Service Analysis

Introduction

The purpose of the freeway level of service (LOS) analysis is to determine the extent to which there is sufficient capacity on the freeways included in the Congestion Management Roadway Network to accommodate peak-hour travel volumes at a reasonable LOS. The following nine freeways have been analyzed:

I-76	from the Medina County Line to the Mahoning County Line
I-77	from the Stark County Line to the Cuyahoga County Line
I-80	from the Cuyahoga County Line to the Trumbull County Line
I-271	from the Medina County Line to the Cuyahoga County Line
I-277	from I-76 to I-77
I-480	from the Cuyahoga County Line to I-80 (Ohio Turnpike)
SR-8	from I-76/I-77 (Central Interchange) to SR-303
SR 21	from SR 585 to I-77
SR-59 (Innerbelt)	from I-76/I-77 to Howard Street
US-224	from I-77 to SR-241 (Massillon Road)

This chapter is divided into three sections. The first section describes the data collection process. The second section discusses the methodology used to conduct the analysis. The third section summarizes the results of the freeway LOS analysis.

Data Collection

In order to evaluate freeway LOS, the ten freeways included in the network were divided into segments, by direction of travel, from interchange to interchange. In all, approximately 165 miles of freeway were divided into 206 directional segments that were analyzed during the peak hour of travel. Roadway characteristics needed to complete the freeway LOS analysis were then collected on a segment-by-segment basis. Most of these data were obtained from the AMATS roadway inventory. A complete listing of the roadway data collected for the analysis is as follows:

Freeway Characteristic	Data Source
Average Daily Traffic Volume (ADT)	ODOT Traffic Survey Report
K-factor and D-factor	ODOT ATR* data
Number of lanes	AMATS roadway inventory
Interchange spacing	AMATS roadway inventory
Length of grade	AMATS roadway inventory
Percent grade	AMATS roadway inventory
Percent Trucks	ODOT Traffic Survey Report

*Automatic Traffic Recorder

Methodology

The last LOS analysis of existing freeway conditions was completed by AMATS in 2010. This current study is an update of the 2010 analysis, and is based on the methodology described in the *Highway Capacity Manual 2010* (HCM2010) published by the Transportation Research Board of the National Research Council. It is the nationally recognized standard for evaluating LOS on highway and road facilities.

LOS is a qualitative measure describing operational conditions within a traffic stream based on service measures such as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

LOS on a freeway may range from LOS "A" to LOS "F", with "A" being the best, representing uninterrupted traffic flow, and "F" being the worst, representing breakdowns in traffic flow. The six ranges of LOS are described in Appendix A. These LOS descriptions were derived from Chapter 13 of the HCM2010.

A freeway is composed of many elements: basic freeway segments; freeway weaving areas; ramps and ramp junctions; and interchange ramp terminals. This freeway analysis includes basic freeway segments, mainline ramps, and closely spaced weave locations.

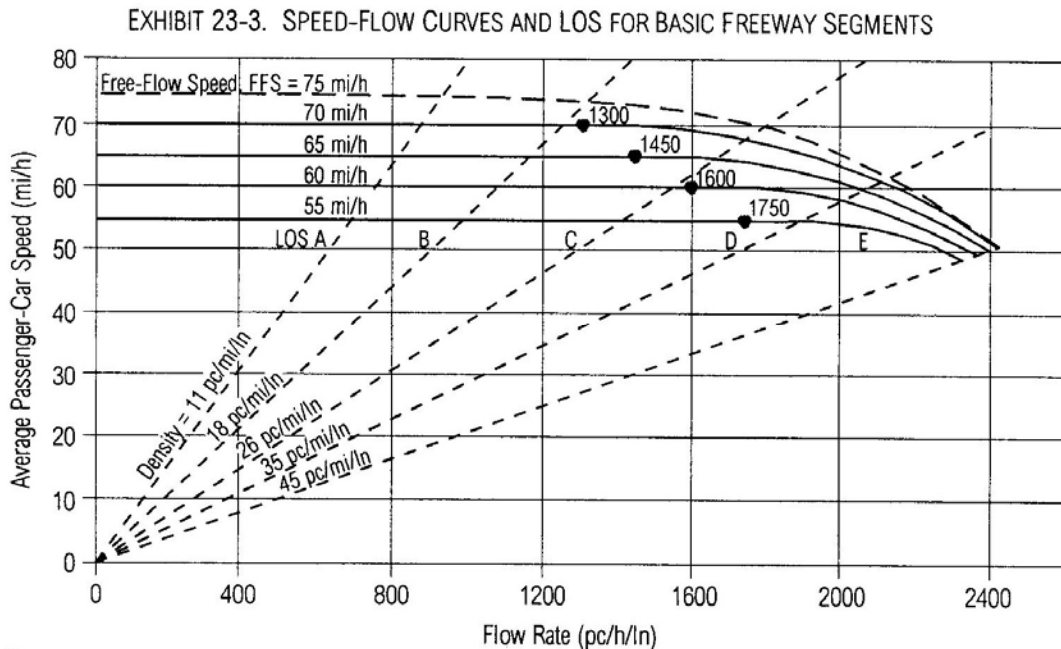
Mainline ramps are those carrying the mainline traffic through a freeway to freeway interchange. An example of a mainline ramp is when I-77 traffic is carried on the ramps through the central interchange. Weave locations were analyzed where weaving would have a significant impact on capacity and data was readily available.

Basic Freeway Segments and Mainline Ramps

The LOS of a freeway is determined by three primary factors: the characteristics of the roadway; the volume and type of traffic; and the capacity of the roadway. Density takes both the volume and the capacity into account. It is the parameter used by the HCM2010 for determining the LOS of a freeway segment. Density is measured in terms of the number of passenger cars per mile per lane (pcpmpl). Freeway LOS is then determined by density range as follows:

<u>Level of Service</u>	<u>Density Range</u>
A	0 to 11.0
B	11.1 to 18.0
C	18.1 to 26.0
D	26.1 to 35.0
E	35.1 to 45.0
F	over 45.0

The density and LOS of a freeway segment are calculated based on flow rate and average speed. Exhibit 23-3 demonstrates the relationship between these four variables.



Flow rate and average speed, and their relationship to density, are described in the following section:

1) Flow Rate is the equivalent hourly rate at which vehicles pass a given point on a freeway lane. It is based on the peak hour vehicle count (V), which is then adjusted to get an equivalent passenger car rate per lane (v) according to the following formula:

$$v = \frac{V}{PHF * N * f_{hv} * f_p}$$

where:

v = Peak Hour Flow Rate – measured in passenger cars per hour per lane (pcphpl)
 PHF = Peak Hour Factor. PHF is the ratio of peak hour volume to the hourly flow rate based on the peak 15 minutes. In conducting this study, the PHF was assigned a default value of 0.90

N = Number of lanes in the freeway segment

f_{hv} = Adjustment factor due to the effect of heavy vehicles (e.g. trucks) in the traffic stream. “ f_{hv} ” depends on the percent of trucks, as well as the percent of grade and length of grade governing the freeway segment.

f_p = Adjustment factor for the effect of driver population, a parameter that accounts for driver characteristics such as commuter traffic and recreational traffic. In the AMATS area, f_p is given a value of 1.00

V = Peak Hour Volume (by direction along the freeway) – measured in vehicles per hour (vph)

Since directional peak hour traffic counts were not directly available for this report, the following formula was used to calculate peak hour volume “V” from average daily traffic data:

$$V = ADT * D * K$$

where:

ADT = Average Daily Traffic. ADT was obtained from ODOT’s 2013 Traffic Survey Report

D = Directional Distribution Factor showing the percentage of traffic traveling in each direction

K = Proportion of ADT by direction occurring in the peak hour

The calculations of the “D” and “K” factors were based on hourly Automatic Traffic Recorder (ATR) data obtained from ODOT. An AMATS Technical Memorandum entitled “*Deriving D and K Factors for Freeway LOS Analysis*” was written in February 2006 documenting the derivation and application of these two factors.

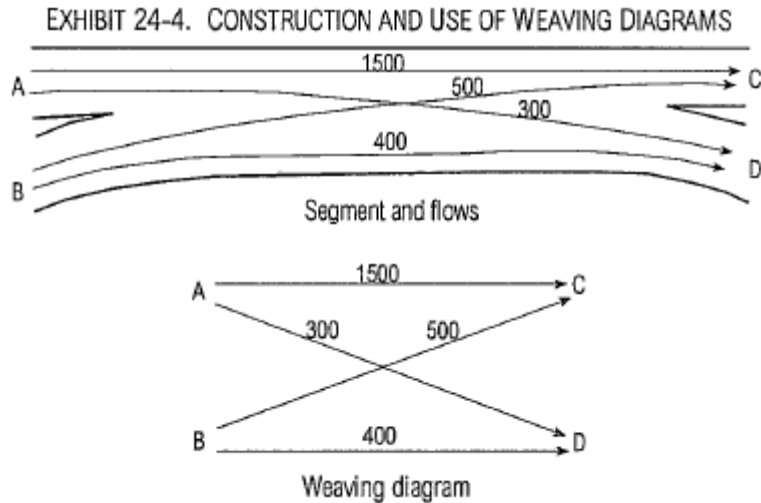
2) Average Speed of a freeway segment is defined in the HCM2010 as the average speed of all vehicles traversing that segment. Average speed may be measured in the field or estimated according to such freeway characteristics as design speed, number of lanes, lane width, lateral clearance, and interchange density. In this report, average speed was estimated, rather than measured in the field.

Weaving Segments

Weaving segment LOS is also determined by density. Densities are determined by free flow speed, number of lanes in weaving area, length between ramps, grade, percent trucks, volumes from weave diagrams, and weave configuration type. Density is measured in terms of the number of passenger cars per mile per lane (pcpmpl). The LOS density ranges are as follows:

<u>Level of Service</u>	<u>Density Range</u>
A	0 to 10.0
B	10.1 to 20.0
C	20.1 to 28.0
D	28.1 to 35.0
E	over 35.0
F	v/c ratio > 1.0

A sample weave diagram is shown on Exhibit 24-4. A volume for each movement in the weave diagram is required for the analysis.



The weave configuration type is based on number of lane changes required to complete each weaving movement. Exhibit 24-5 determines weave type.

EXHIBIT 24-5. DETERMINING CONFIGURATION TYPE

Number of Lane Changes Required by Movement v_{w1}	Number of Lane Changes Required by Movement v_{w2}		
	0	1	≥ 2
0	Type B	Type B	Type C
1	Type B	Type A	N/A
≥ 2	Type C	N/A	N/A

Note:
N/A = not applicable; configuration is not feasible.

Results

All of the calculations described in the preceding section were accomplished by using HCS2010. This software was developed by the Transportation Research Center at the University of Florida as a means of implementing the procedures and formulas described in the HCM2010.

HCS2010 was used to calculate the following four variables: flow rate, average speed, density, and LOS.

In all, 206 freeway segments were analyzed; 42 of which were identified as congested, or operating at worse than LOS "C". The congested segments are shown in Table 1-1 and are ranked in descending order based on density. The last column in Table 1-1 specifies the worst peak hour LOS.

Map 1-1 shows the freeway LOS during the peak hour. This map summarizes the overall condition of the freeway system, without weaving, in the Akron metropolitan area. Of the 42 congested segments displayed; no segment operates at LOS "F", 4

operate at LOS “E”, and 38 operate at LOS “D”. All of the deficient segments are located in Summit County.

Appendix B shows the LOS of all basic freeway segments, together with the corresponding flow rate, average speed, and traffic density. The analysis results are in line with previous freeway level of service studies conducted by AMATS.

Table 1-2 lists all 20 freeway weaving segments analyzed, ranked in descending order based on density. The last column in the table specifies the worst peak hour LOS.

There are 14 weaving segments that were identified as congested or operating at worse than LOS “C”. These weaving segments are shown on Map 1-2 along with the corresponding basic freeway LOS. Of the 14 congested weaving segments displayed; 10 segments operate at LOS “F”, one operates at LOS “E”, and three operate at LOS “D”.

Table 1-1: Deficient Freeway Segments

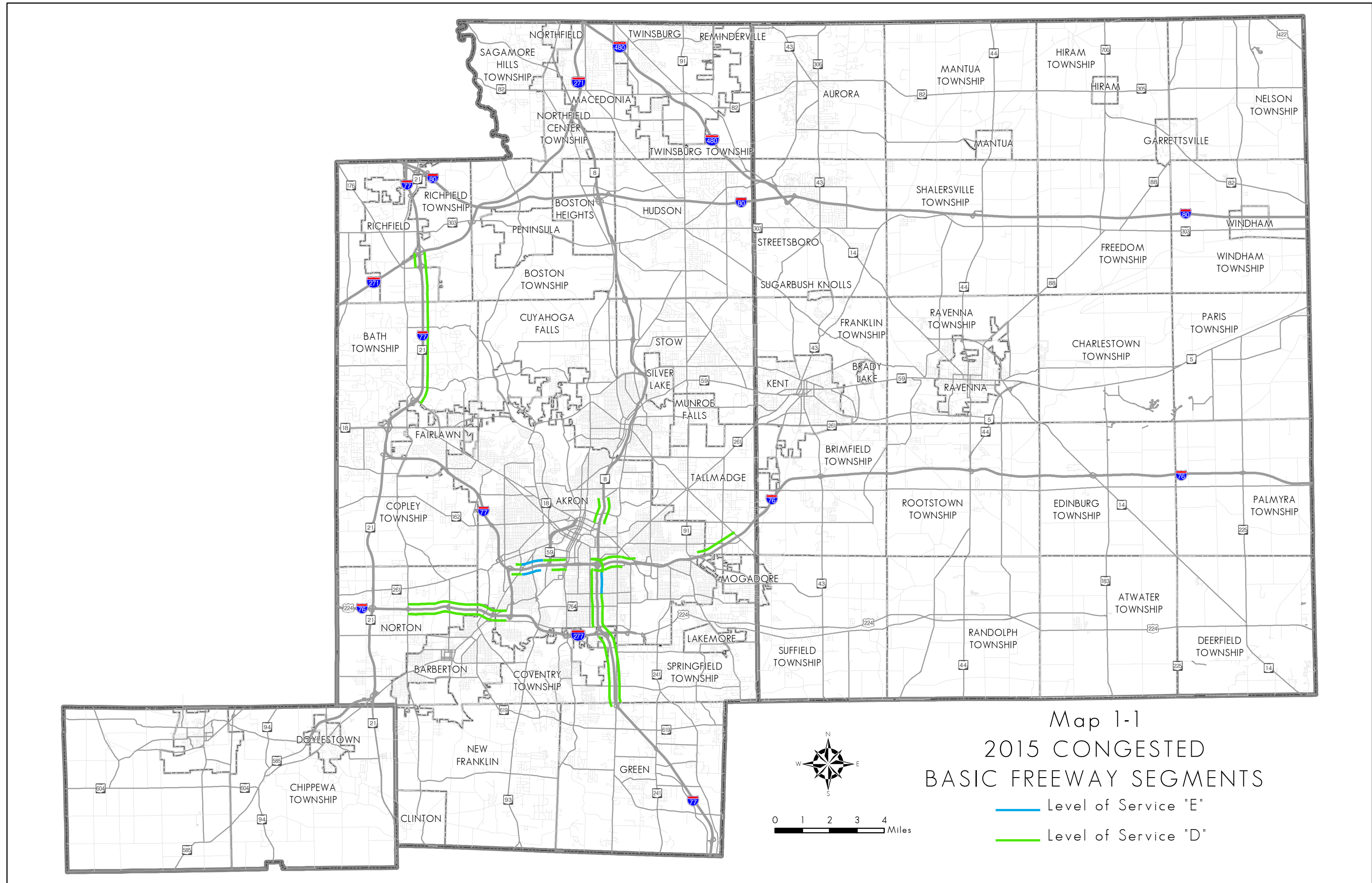
Freeway	From	To	Density	LOS
I-76/77 WB	Innerbelt (SR 59)	East Ave	42.9	E
I-77 NB	Archwood Ave	SR 8	37.2	E
I-76/77 EB	East Ave	South St Off-Ramp	36.6	E
I-76/77 EB	South St Off-Ramp	Innerbelt (SR 59)	35.8	E
I-76/77 WB	East Ave	I-77	35.0	D
I-76 EB	Through the Central Interchange		34.4	D
I-76/US 224 EB	Wooster Rd North	I-277	33.7	D
I-77 SB	SR 8	Archwood Ave	33.5	D
I-76 WB	Through Central Interchange		33.3	D
I-76/77 EB	I-77	East Ave	32.6	D
I-76/US 224 WB	I-277	Wooster Rd North	31.9	D
I-76 EB	Ramp from NB Kenmore Fwy	I-76/77 EB	31.4	D
I-77 NB	Wilbeth Rd	Archwood Ave	30.9	D
I-77 NB	Waterloo Rd	Wilbeth Rd	30.6	D
I-76/77 WB	Main St/Broadway	Russell Ave	30.4	D
I-76/77 WB	Russell Ave	Innerbelt (SR 59)	30.4	D
I-76 WB	Ramp from SB Kenmore Fwy	I-76/US 224 WB	30.0	D
I-77 NB	Wheatley Rd	I-271	29.7	D
I-76 WB	Arlington St Off-Ramp	Kelly Ave On-Ramp	29.6	D
I-76 WB	Kelly Ave On-Ramp	Inman St Off-Ramp	29.6	D
I-76 WB	Inman St Off-Ramp	I-77/SR 8	29.6	D
I-77 NB	Arlington Rd	US 224	29.3	D
I-77 SB	US 224	Arlington Rd	29.3	D
I-76/US 224 EB	Barber Rd	State St	28.6	D
I-77 SB	Archwood Ave	Wilbeth Rd	28.3	D
I-77 SB	Wilbeth Rd	Waterloo Rd	28.0	D
I-77 NB	Ghent Rd	Wheatley Rd	27.7	D
I-76 EB	I-77/SR 8	Kelly Ave Off-Ramp	27.3	D
I-76 EB	Kelly Ave Off-Ramp	Arlington St On-Ramp	27.3	D
I-76/US 224 WB	State St	Barber Rd	27.2	D

Table 1-1: Deficient Freeway Segments (continued)

Freeway	From	To	Density	LOS
I-76/US 224 EB	Cleveland-Massillon Rd	Barber Rd	27.1	D
I-76/77 EB	South St On-Ramp	Main St/Broadway	27.1	D
I-76/US 224 WB	Barber Rd	Cleveland-Massillon Rd	27.1	D
SR 8 SB	Glenwood Ave	Perkins St (SR 59)	26.9	D
I-77 NB	Through Central Interchange		26.9	D
I-77 NB	US 224	Waterloo Rd	26.8	D
I-76/US 224 EB	State St	Wooster Rd North	26.7	D
I-77 SB	Through Central Interchange		26.5	D
SR 8 NB	Perkins St	Glenwood Ave	26.2	D
I-76 WB	Southeast Ave	Gilchrist Rd	26.2	D
I-76 WB	Martha Ave	Arlington St Off-Ramp	26.2	D
I-77 SB	I-271	Wheatley Rd	26.2	D

Table 1-2: Freeway Weaving Segments

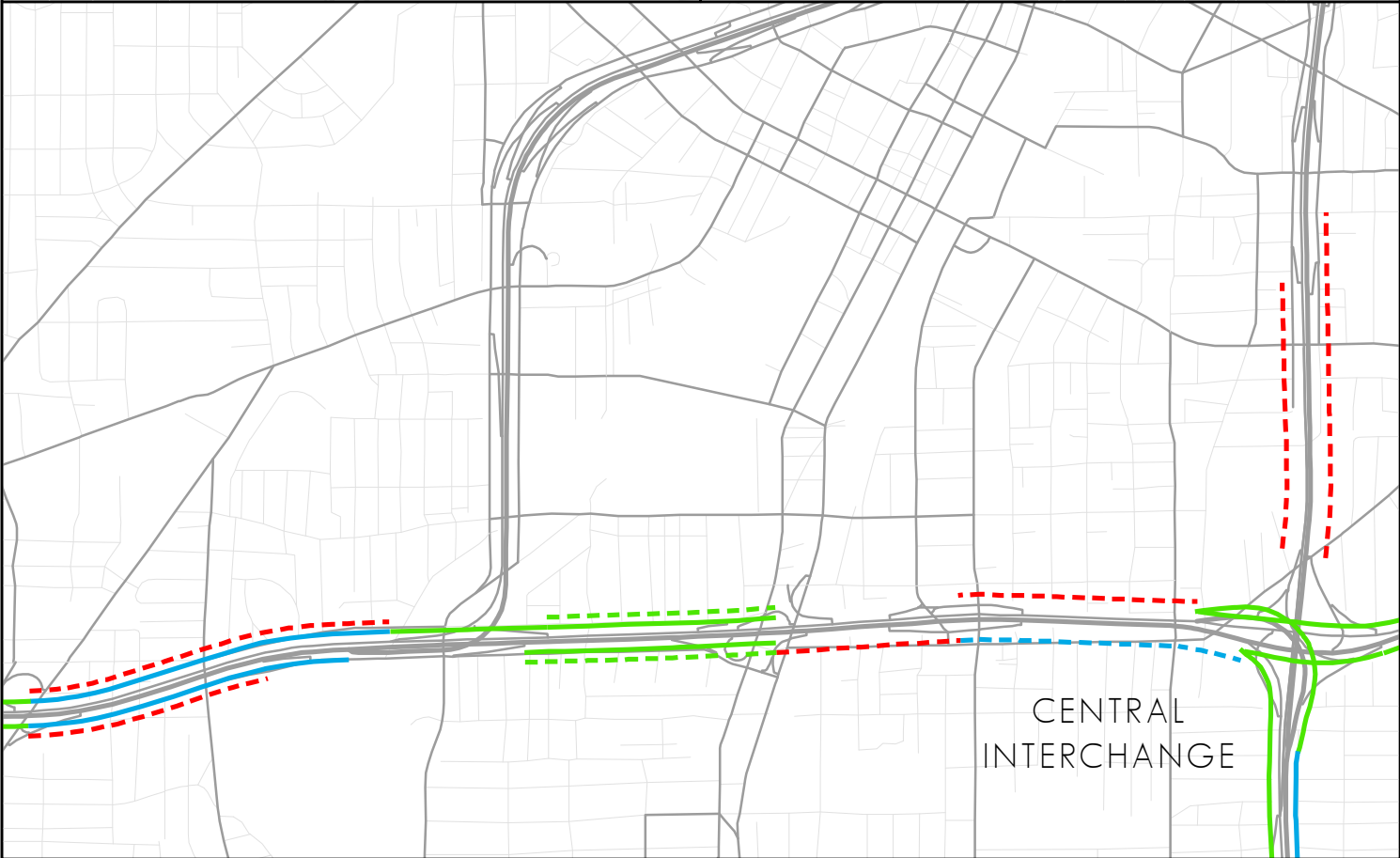
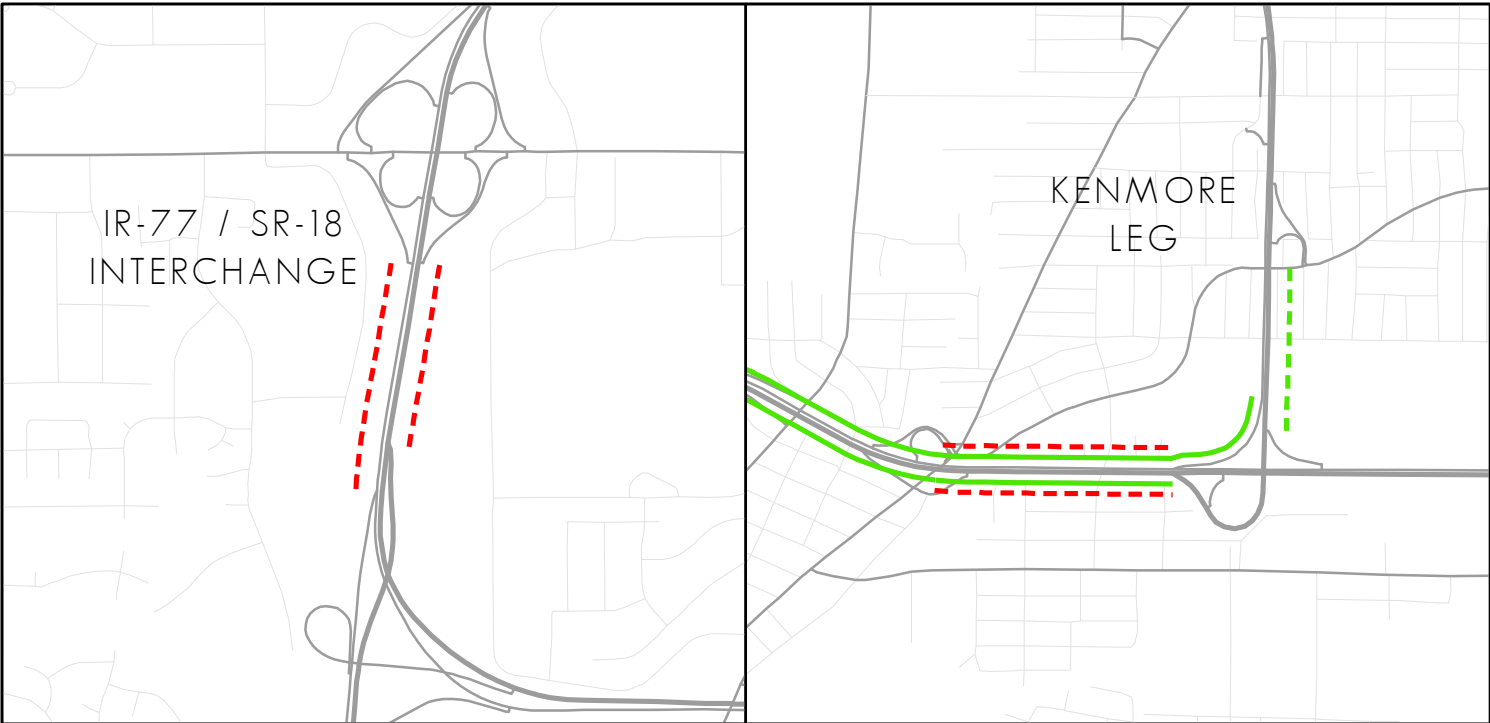
Freeway	From	To	Density	LOS
I-76/77 EB	East Ave	SR 59 Innerbelt	v/c=2.1	F
I-76/77 EB	Main St/Broadway	Wolf Ledges/Grant St	v/c=1.8	F
I-76/77 WB	SR 59 Innerbelt	East Ave	v/c=1.8	F
SR 8 SB	Carroll St	I-76/77 Interchange	v/c=1.7	F
I-76/US 224 EB	Wooster Rd North	I-277	v/c=1.2	F
I-76/US 224 WB	I-277	Wooster Rd North	v/c=1.2	F
I-76/77 WB	I-77/SR 8	Wolf Ledges/Grant St	v/c=1.2	F
I-77 SB	SR 18	SR 21	v/c=1.2	F
SR 8 NB	I-76/77	Carroll St	v/c=1.2	F
I-77 NB	SR 21	SR 18	v/c=1.1	F
I-76/77 EB	Wolf Ledges/Grant St	I-77/SR 8	v/c=1.1	E
I-76/77 WB	Main St/Broadway	Russell Ave	34.1	D
I-76/77 EB	South St On-Ramp	Main St/Broadway	30.4	D
I-76 EB	I-277	Kenmore Blvd	28.0	D
I-76/US 224 WB	Through SR 21 Interchange		28.0	C
SR 21 SB	Through I-76/US 224 Interchange		24.0	C
I-77 NB	Through SR 18 Interchange		22.7	C
I-77 SB	Through SR 18 Interchange		21.1	C
SR 21 NB	Through I-76/US 224 Interchange		19.2	B
I-76/US 224 EB	Through SR 21 Interchange		16.5	B



Map 1-1
 2015 CONGESTED
 BASIC FREEWAY SEGMENTS

- Level of Service "E"
- Level of Service "D"

Back of Map 1-1



Map 1-2
 2015 CONGESTED WEAVING AREAS
 BASIC WEAVE



0 0.1 0.2 0.3 0.4 Miles

- | | |
|----------------------|----------------------|
| Level of Service "F" | Level of Service "F" |
| Level of Service "E" | Level of Service "E" |
| Level of Service "D" | Level of Service "D" |

Back of Map 1-2

Chapter 2: Arterial Level of Service Analysis

Introduction

The purpose of the arterial level of service (LOS) analysis is to determine whether arterial roadways included in the Congestion Management Roadway Network have sufficient capacity to accommodate existing traffic volumes at a reasonable level of service. Arterial LOS is evaluated using a methodology which compares the peak hour traffic volumes to planning-level peak hour roadway capacities developed by the AMATS staff.

This chapter is divided into three sections. The first section describes the data collection process. The second section discusses the methodology used to calculate roadway capacity. The third section summarizes the results of the arterial LOS analysis.

Data Collection

In order to evaluate arterial LOS, the roadways included in the network were first divided into segments, using intersecting major roadways as termini. Then, the roadways were subdivided into smaller segments wherever changes in roadway characteristics could affect capacity (e.g. the number of lanes).

In all, the approximately 375 miles of arterial roadways included in the analysis were divided into 597 separate segments. Traffic counts and roadway characteristics, such as number of lanes and traffic signals, were collected on a segment-by-segment basis. Most of these data were obtained from the AMATS roadway inventory. The data were verified for accuracy, when necessary, by reviewing recent aerial photographs and by contacting local communities. A complete listing of the data collected for this analysis is as follows:

Roadway Characteristic	Data Source
Latest available 24-hour traffic count	AMATS and ODOT traffic count files
Peak hour traffic count	AMATS traffic count files
Number of through lanes	AMATS roadway inventory
Left turn bays and median turn lanes	AMATS roadway inventory
Traffic signal locations	AMATS roadway inventory
Segment length	AMATS roadway inventory
Functional classification	AMATS roadway inventory
Posted speed	AMATS roadway inventory
Area type	AMATS roadway inventory

Please note that the lane configuration along arterial segments currently under construction and nearing completion was based on the final design plans. For example, the Summit St project between S. Lincoln St and Loop Rd in Portage County. Also, the

Montrose West Ave relocation and adding an additional turn lane to SR 18, located in western Summit County.

Methodology

Unlike the freeway level of service and intersection capacity analyses, which use analytical techniques described in the *Highway Capacity Manual* (HCM2010), the arterial level of service analysis is based on a planning-level approach. The HCM2010 arterial analysis is both data-intensive and time consuming; therefore, it is more appropriate for analyzing one roadway, rather than the entire regional transportation system. Due to the large number of arterial segments involved, a generalized planning-level approach is used in this analysis.

Arterial level of service is evaluated using a methodology which compares the latest available peak hour traffic volumes to the generalized planning-level peak hour roadway capacities developed by the AMATS staff. The peak hour volume was determined by one of two methods. The peak hour volume was obtained directly from the latest traffic count or it was calculated by multiplying the latest 24-hour traffic count by an estimated K-factor. A K-factor is the proportion of average daily traffic occurring in the peak hour.

In order to calculate the planning-level roadway capacity many default assumptions were made. The Ohio Department of Transportation (ODOT) capacity calculator provided the basis for this analysis. ODOT uses the calculator to estimate the 24-hour capacity for a roadway. At its most basic level of detail, the capacity calculator determines capacity based on: number of through lanes; functional classification; area type (e.g. urban, suburban, rural); and total roadway width. Assumptions are used for other factors that affect roadway capacity, such as signal timing, percentage of trucks, and type of terrain.

In order to consider additional roadway characteristics that have a significant effect on capacity, the basic 24-hour capacity calculator roadway capacities were adjusted. Roadway capacities were reduced on arterial segments without dedicated turn lanes and as the number of signals per mile increased. Conversely, roadway capacities were increased if an arterial segment included coordinated signals.

The peak hour capacity was then determined by multiplying the adjusted 24-hour capacity by 10%, the default K-factor used by the capacity calculator. The resulting generalized peak hour capacities are listed in Table 2-1.

Table 2-1: AMATS Generalized Peak Hour Capacities*

Traffic Signal Spacing	Area Type	Number of Through Lanes	Capacity Without Turn Lanes	Capacity With Turn Lanes
0 to 1.99 per mile	Rural/Suburban	2	1,133	1,416
0 to 1.99 per mile	Rural/Suburban	4	2,190	2,738
2 to 3.99 per mile	Suburban/Urban	2	899	1,124
2 to 3.99 per mile	Suburban/Urban	4	1,749	2,186
4 or more per mile	Urban/CBD	2	819	1,024
4 or more per mile	Urban/CBD	4	1,600	2,000
Any	Any	6	2,488	3,110

*NOTE: The generalized peak hour capacities listed in this table represent the total number of vehicles that can traverse a given section of roadway in the peak hour, while still operating at LOS "C".

In order to calculate arterial LOS, the latest available peak hour traffic volumes were compared to the peak hour capacities on a segment-by-segment basis. Roadway segments operating at a volume-to-capacity ratio greater than 1.00 (LOS "D", "E", or "F") were identified as congested. The volume-to-capacity ratios corresponding to each level of service are summarized below.

<u>Level of Service</u>	<u>V/C Ratio</u>
A	less than 0.50
B	0.50 to 0.75
C	0.75 to 1.00
D	1.00 to 1.25
E	1.25 to 1.60
F	greater than 1.60

Results

Table 2-2 lists the 36 congested segments, ranked according to their volume-to-capacity ratio. Map 2-1 shows the location of each of these segments. Of the 35 congested segments displayed: no segments operate at LOS "F", five operate at LOS "E", and 30 operate at LOS "D". The operating conditions at each level of service are described in detail in Appendix C.

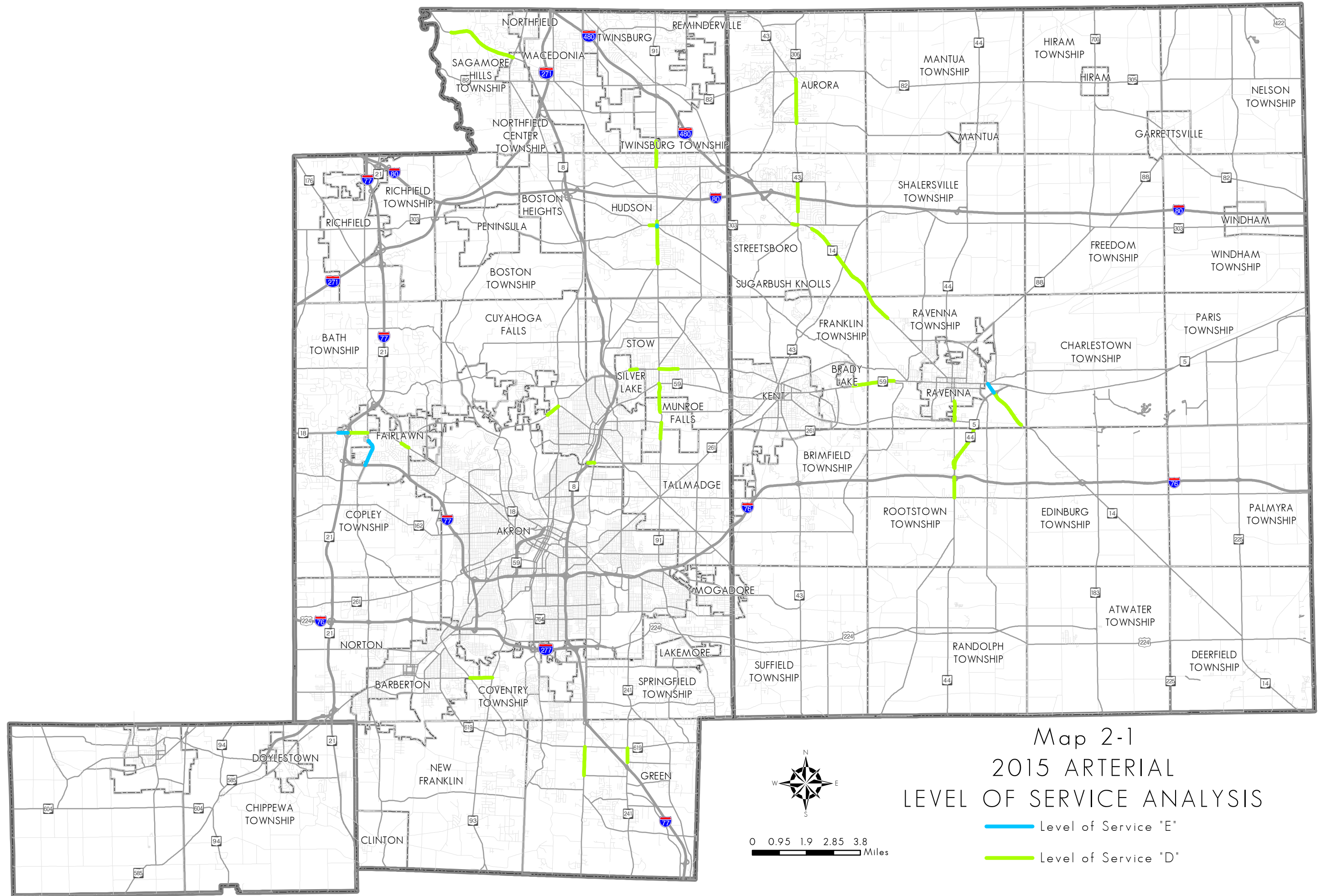
Appendix D shows the LOS for each of the 597 arterial segments which have been analyzed, regardless of whether they were identified as congested. This table is sorted first by county; then by state route in numerical order; and finally, by non-state route in alphabetical order. In addition to displaying the level of service and volume-to-capacity ratio of each segment, Appendix D also shows the hourly volume and hourly capacity.

When interpreting the results of this analysis, it is important to note that the peak hour capacities are intended to be used at the planning-level as a means of identifying areas of likely traffic congestion. The analysis still relies heavily on assumptions, and does

not take every factor that may have an effect on traffic congestion into account. Such factors could include: unique directional characteristics; degree of traffic signal coordination; percentage of turns; and seasonal traffic congestion. Consequently, the actual level of traffic congestion on a given arterial segment during the peak hour may vary from that portrayed in this analysis.

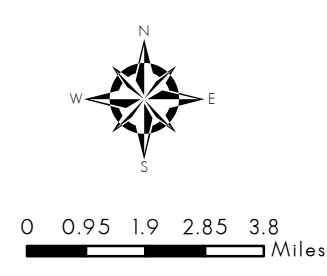
Table 2-2: Deficient Arterial Segments

Highway	From	To	County	V/C Ratio	LOS
Cleveland-Massillon Rd	I-77 NB Ramp	Elgin Rd	Summit	1.44	E
SR 14/44	SR 59	SR 5	Portage	1.39	E
Cleveland-Massillon Rd	Elgin Rd	Bywood Rd	Summit	1.35	E
SR 18 (Medina Rd)	Crystal Lake Rd	I-77	Summit	1.32	E
SR 91 (Main St)	Ravenna Rd	SR 303	Summit	1.25	E
SR 91 (Darrow Rd)	Middleton Rd	Twinsburg Rd	Summit	1.20	D
SR 43 (Chillicothe Rd)	Aurora-Hudson Rd	SR 306	Portage	1.19	D
SR 91 (Main St)	SR 303	Aurora St	Summit	1.19	D
SR 5/44	Prospect St	Hayes Rd	Portage	1.16	D
SR 14	Diagonal Rd	Price Rd	Portage	1.15	D
SR 91 (Darrow Rd/Main St)	Hudson Dr	Ravenna Rd	Summit	1.14	D
SR 44	Tallmadge Rd	I-76	Portage	1.14	D
SR 43	Market Square Dr	Frost Rd	Portage	1.14	D
Robinson Av	State St	SR 93 (Manchester Rd)	Summit	1.12	D
SR 303 (Streetsboro St)	Atterbury Blvd	SR 91 (Main St)	Summit	1.12	D
SR 18 (W. Market St)	Ghent Rd	Miller Rd	Summit	1.10	D
SR 91 (Main St)	Northmoreland Av	Munroe Falls Av	Summit	1.09	D
Valleyview Rd	Chaffee Rd	Boyden Rd	Summit	1.09	D
SR 14	SR 303 (W. Leg)	SR 43	Portage	1.09	D
SR 59	Powder Mill Rd	Menough Rd	Portage	1.09	D
SR 14	Portage Pointe Dr	Diagonal Rd	Portage	1.08	D
Portage Trail	Valley Rd	State Rd	Summit	1.08	D
SR 241 (Massillon Rd)	Raber Rd	SR 619 (Turkeyfoot Lake Rd)	Summit	1.07	D
SR 14	Price Rd	Dawley Rd	Portage	1.06	D
SR 43 (Chillicothe Rd)	Mennonite Rd	Aurora-Hudson Rd	Portage	1.06	D
Howe Av	SR 8 SB Ramps	Main St	Summit	1.04	D
Valleyview Rd	Boyden Rd	Olde Eight Rd	Summit	1.03	D
SR 18 (Medina Rd)	I-77	Cleveland-Massillon Rd	Summit	1.03	D
Graham Rd	SR 91 (Darrow Rd)	Charring Crossing Dr	Summit	1.02	D
Arlington Rd	Boettler Rd	SR 619	Summit	1.02	D
Graham Rd	Dover Rd	Baumberger Rd	Summit	1.01	D
SR 91 (Main St/Darrow Rd)	North River Rd	SR 59 (Kent Rd)	Summit	1.01	D
SR 14	SR 5	Hayes Rd	Portage	1.01	D
Prospect St	Summit Rd	Hayes Rd	Portage	1.00	D
Prospect St	Hayes Rd	Lake Av	Portage	1.00	D



Map 2-1
2015 ARTERIAL
LEVEL OF SERVICE ANALYSIS

- Level of Service "E"
- Level of Service "D"



Back of Map 2-1

Chapter 3: Intersection Capacity Analysis

Introduction

The purpose of the Intersection Capacity Analysis is to evaluate the capacity of the 34 intersections included in the Congestion Management Roadway Network, in light of existing traffic volumes. Intersection capacity is analyzed using the planning analysis method described in Chapter 10 of the *Highway Capacity Manual*. It is published by the Transportation Research Board of the National Research Council, and is the nationally recognized standard for evaluating level of service on highways and street facilities.

This chapter is divided into three sections. The first section discusses the planning analysis methodology used to evaluate intersection capacity. The second section discusses the analytical procedures which were used at various intersections included in the network. The third section summarizes the results of the Intersection Capacity Analysis and includes a table and a map displaying the operational status of each intersection.

Methodology

The *Highway Capacity Manual* describes two ways in which intersection capacities may be analyzed: the operational method (described in Chapter 16); and the planning method (described in Appendix A of Chapter 10). Generally, the requirements for using the operational method are data intensive and time-consuming. As a result, the planning method was used for this analysis due to the large number of intersections that have been analyzed.

The planning method necessitates the gathering of a variety of data regarding the characteristics of each intersection. The collected data were obtained from the local communities, the Ohio Department of Transportation (ODOT), and from field observations. The intersection data needed for the analysis and their sources of information are as follows:

Intersection Characteristic	Data Source
Peak hour traffic volume	AMATS traffic counts
Peak hour turning movements	AMATS traffic counts
Lane configuration and geometry	Field sketches
On-street parking information	Field notes
Traffic signal coordination	Local communities/ODOT
Cycle length (minimum and maximum)	Local communities/field notes
Lost time per cycle	Local communities/field notes
Signal phases and length of green time	Local communities/field notes
Left turn treatment (protected, permitted)	Local communities/field notes
Area type (inside or outside CBD area)	Common knowledge

Other required data for the planning method have little influence on the resulting capacity, and are usually given the following default values:

Intersection Characteristic	Default Value
Lane widths	12 feet
Percent grade	0% (level terrain)
Percent trucks	2%
Bus stops	0 stops per hour
Peak hour factor	0.90

Unlike the operational method, which measures congestion at intersections by means of time delay and level of service, the planning method describes congestion in terms of intersection status criteria. The intersection status criteria is based upon the intersection's volume-to-capacity ratio (v/c) and is classified as follows:

Intersection Status Criteria	Volume-to-Capacity Ratio
Under Capacity	0.85 or less
Near Capacity	0.86 to 0.95
At Capacity	0.96 to 1.00
Over Capacity	1.01 and above

The traffic volumes used in this analysis are derived from peak-hour traffic counts conducted by AMATS between 2009 and 2014. It should be noted that all other intersection characteristics, such as lane configuration, intersection geometry and signal timing, reflect 2015 conditions.

Analytical Procedures

The Highway Capacity Software was used to evaluate the capacity of 30 of the 34 intersections. One of the limitations of the software, however, is that it is not programmed to analyze intersections with more than four approaches (or legs). As a result, the capacities of the following four intersections were evaluated manually by applying the formulas described in Chapter 10 of the manual:

- Brittain Rd/Eastland Ave/Eastwood Ave
- Howe Ave/Northwest Ave/Brittain Rd
- SR 82/Olde Eight Rd/Brandywine Rd
- West Market St/Hawkins Ave/Exchange St

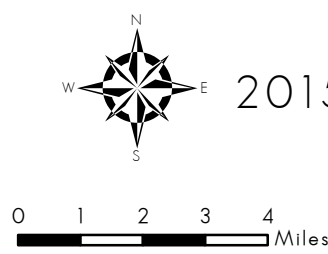
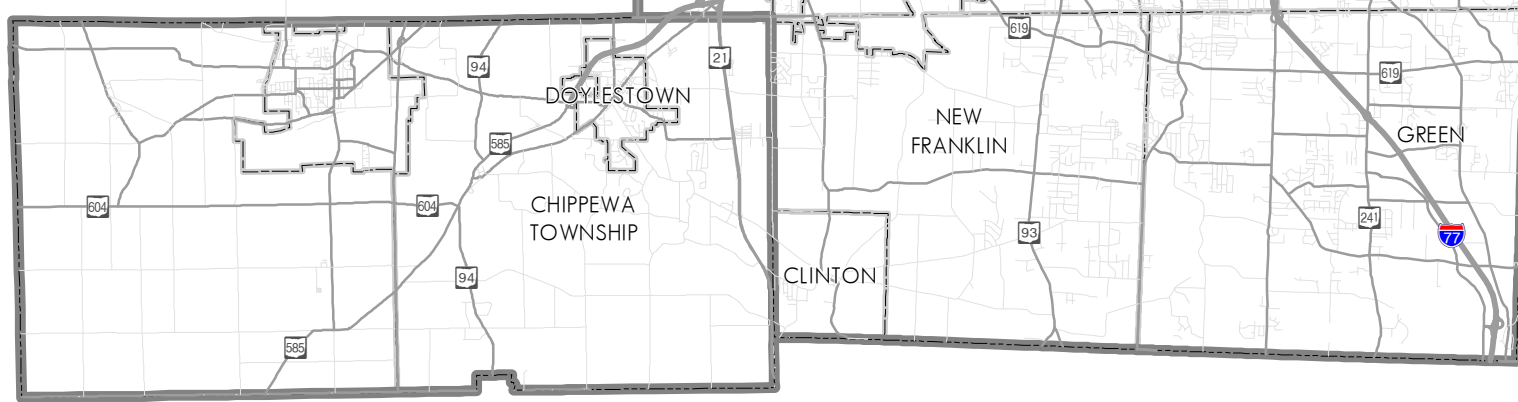
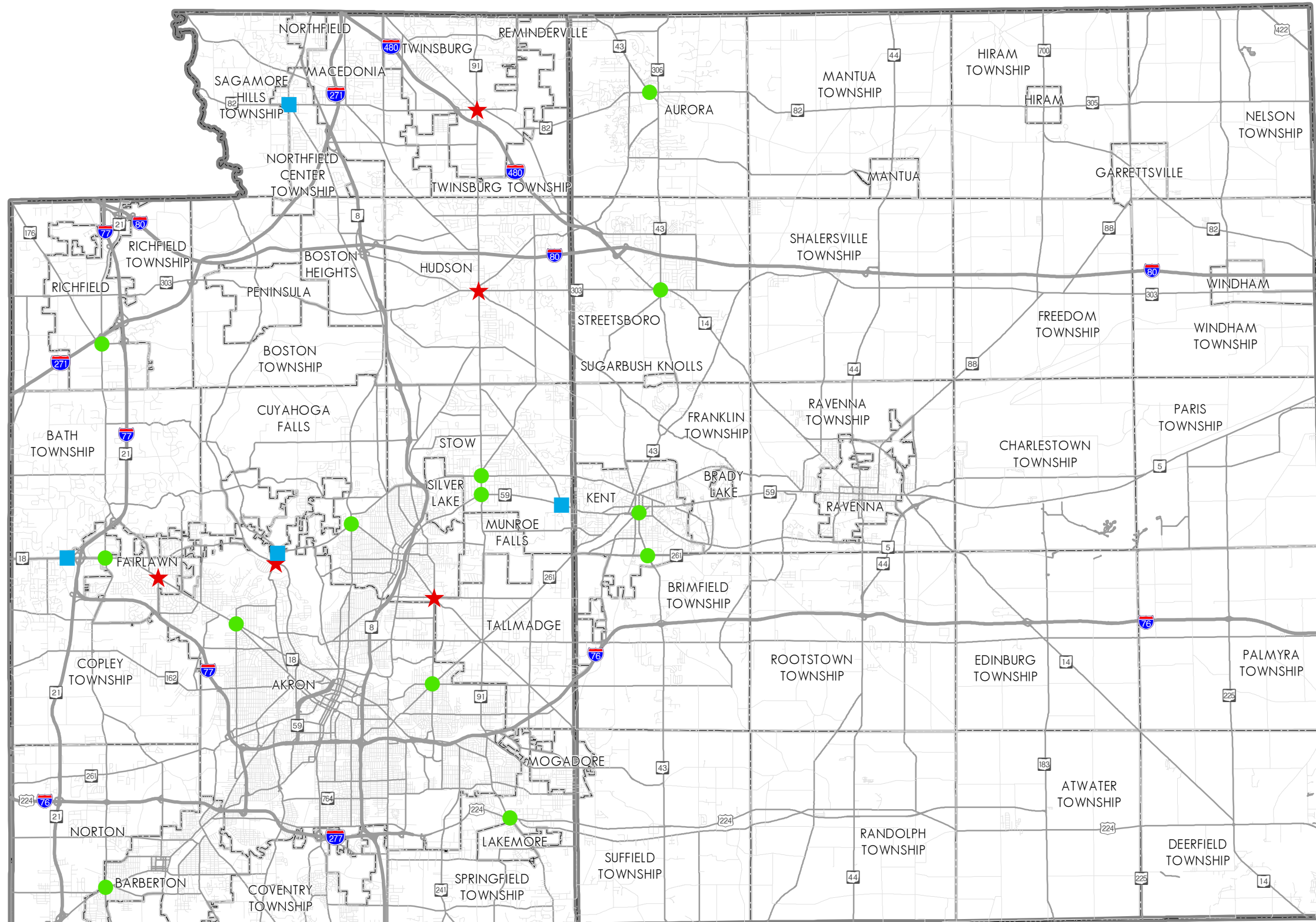
Results

The results of the Intersection Capacity Analysis are displayed in Table 3-1. The 34 intersections analyzed are listed in the table in rank order according to their volume-to-capacity ratio and status classification. The table also includes information regarding the location of each intersection, the year of the latest traffic count, and the peak hour during the day it was analyzed. Some of the counts may be older based on how they ranked in last Intersection Capacity Analysis that was performed in 2010. If the intersections were under capacity and they were in an area that was experiencing little or no growth, they were put on a ten year counting cycle.

Map 3-1 shows the location and status identity of the intersections. Of the 34 intersections studied: five operate "over capacity"; four operate "at capacity"; 13 operate "near capacity" and 12 operate "under capacity".

Table 3-1: Intersection Capacity Analysis

Intersection	ADT Volume	Peak Hour Volume	Count Year	Peak Hour	V/C Ratio	Status Criteria
SR 82/SR 91 (Darrow Rd)	36,480	3,256	2013	5:00-6:00	1.07	Over Capacity
N Portage Path/Merriman Rd	27,240	2,740	2013	5:00-6:00	1.05	Over Capacity
SR 18 (W Market St)/Miller Rd	39,990	3,945	2013	5:00-6:00	1.05	Over Capacity
SR 91/SR 303	27,060	2,938	2013	4:45-5:45	1.04	Over Capacity
Howe Ave/Brittain Rd/Northwest Ave	29,860	2,818	2011	5:00-6:00	1.01	Over Capacity
SR 82/Olde Eight Rd/Brandywine Rd	25,010	2,134	2013	5:00-6:00	0.99	At Capacity
Portage Trail/Akron-Peninsula Rd	20,540	2,015	2013	5:00-6:00	0.99	At Capacity
SR 18 (Medina Rd)/Crystal Lake Rd	42,400	3,876	2012	4:45-5:45	0.95	At Capacity
SR 59 (Kent Rd)/Fishcreek Rd	28,980	2,742	2014	5:00-6:00	0.95	At Capacity
SR 59 (Kent Rd)/SR 91 (Darrow Rd)	37,240	3,412	2014	5:00-6:00	0.94	Near Capacity
SR 91 (Darrow Rd)/Graham Rd	41,200	4,199	2015	4:45-5:45	0.92	Near Capacity
SR 14/SR 43/SR 303	48,390	3,921	2014	5:00-6:00	0.90	Near Capacity
SR 176 (Wheatley Rd)/Brecksville Rd	17,470	1,906	2011	5:00-6:00	0.90	Near Capacity
SR 43 (Water St)/SR 59 (Haymaker Pkwy)	30,530	2,688	2012	5:00-6:00	0.90	Near Capacity
State Rd/Portage Trail	33,660	3,133	2015	4:15-5:15	0.90	Near Capacity
SR 18 (W Market St)/Cleveland-Massillon Rd	46,590	4,531	2013	12:00-1:00	0.90	Near Capacity
SR 91 (Canton Rd)/US 224	39,290	3,500	2013	4:45-5:45	0.90	Near Capacity
Wooster Rd W/31st St S.W.	23,840	2,089	2011	5:00-6:00	0.90	Near Capacity
SR 43/SR 261	31,970	3,071	2013	4:45-5:45	0.89	Near Capacity
Brittain Rd/Eastland Ave/Eastwood Ave	21,190	1,893	2011	4:30-5:30	0.86	Near Capacity
SR 43/SR 82	21,320	2,046	2013	4:45-5:45	0.86	Near Capacity
SR 18 (W Market St)/Hawkins Ave/W Exchange St	29,760	2,536	2013	5:00-6:00	0.85	Near Capacity
SR 8/SR 82	41,840	3,993	2013	5:00-6:00	0.81	Under Capacity
Howe Ave/Main St	40,700	3,437	2012	5:00-6:00	0.80	Under Capacity
SR 261(Tallmadge Ave)/Home Ave	30,590	2,794	2012	4:15-5:15	0.78	Under Capacity
SR 93 (Manchester Rd)/SR 619	17,440	1,550	2013	5:00-6:00	0.78	Under Capacity
US 224/SR 241 (Massillon Rd)	36,430	2,624	2013	7:15-8:15	0.78	Under Capacity
SR 59 (Front St)/Hudson Dr	38,930	3,688	2013	4:30-5:30	0.77	Under Capacity
SR 619/S Main St	24,110	2,456	2012	4:45-5:45	0.74	Under Capacity
SR 261 (N Main St)/Tallmadge Ave	25,560	2,566	2013	4:45-5:45	0.73	Under Capacity
SR 241 (Massillon Rd)/SR 619	22,740	2,020	2014	4:30-5:30	0.69	Under Capacity
SR 619/Arlington Rd	27,875	2,788	2012	4:45-5:45	0.68	Under Capacity
Graham Rd/Fishcreek Rd	28,080	2,747	2012	5:00-6:00	0.67	Under Capacity
E Steels Corners Rd/Hudson Dr	24,890	2,321	2009	4:30-5:30	0.60	Under Capacity



Map 3-1
2015 INTERSECTION CAPACITY ANALYSIS

- ★ Over Capacity
- At Capacity
- Near Capacity

Appendix A

Freeway Level of Service Descriptions

(As described in the *Highway Capacity Manual*)

LOS A describes free-flow operations. Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. The effects of incidents or point breakdowns are easily absorbed at this level.

LOS B represents reasonably free flow, and free-flow speeds are maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high. The effects of minor incidents and point breakdowns are still easily absorbed.

LOS C provides for flow with speeds at or near the free-flow speed of the freeway. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver. Minor incidents may still be absorbed, but the local deterioration in service will be substantial. Queues may be expected to form behind any significant blockage.

LOS D is the level at which speeds begin to decline slightly with increasing flows and density begins to increase somewhat more quickly. Freedom to maneuver within the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort levels. Even minor incidents can be expected to create queuing, because the traffic stream has little space to absorb disruptions.

At its highest density value, **LOS E** describes operation at capacity. Operations at this level are volatile, because there are virtually no usable gaps in the traffic stream. Vehicles are closely spaced, leaving little room to maneuver within the traffic stream at speeds that still exceed 49 mph. Any disruption to the traffic stream, such as vehicles entering from a ramp or a vehicle changing lanes, can establish a disruption wave that propagates throughout the upstream traffic flow. At capacity, the traffic stream has no ability to dissipate even the most minor disruption, and any incident can be expected to produce a serious breakdown with extensive queuing. Maneuverability within the traffic stream is extremely limited, and the level of physical and psychological comfort afforded the driver is poor.

LOS F describes breakdowns in vehicular flow. Such conditions generally exist within queues forming behind breakdown points. Breakdowns occur for a number of reasons:

- Traffic incidents can cause a temporary reduction in the capacity of a short segment, so that the number of vehicles arriving at the point is greater than the number of vehicles that can move through it.
- Points of recurring congestion, such as merge or weaving segments and lane drops, experience very high demand in which the number of vehicles arriving is greater than the number of vehicles discharged.
- In forecasting situations, the projected peak-hour (or other) flow rate can exceed the estimated capacity of the location.

Note that in all cases, breakdown occurs when the ratio of existing demand to actual capacity or of forecast demand to estimated capacity exceeds 1.00. Operations immediately downstream of such a point; however, are generally at or near capacity, and downstream operations improve as discharging vehicles move away from the bottleneck.

Appendix B: Freeway LOS Analysis

Freeway	From	To	24-Hour Volume	Peak Hour Volume	Flow Rate	Density	LOS
SR 8 NB	Through Central Interchange		23,520	2,352	1,312	18.8	C
SR 8 NB	I-76/77	Carroll St	49,668	4,470	1,680	25.0	C
SR 8 NB	Carroll St	Buchtel Ave	40,248	3,622	1,362	19.5	C
SR 8 NB	Buchtel Ave	Perkins St	46,525	4,187	1,574	23.0	C
SR 8 NB	Perkins St	Glenwood Ave	51,520	4,637	1,743	26.2	D
SR 8 NB	Glenwood Ave	Tallmadge Ave	45,728	4,116	1,547	22.5	C
SR 8 NB	Tallmadge Ave	Cuyahoga Falls Ave	45,273	4,075	1,532	22.3	C
SR 8 NB	Cuyahoga Falls Ave	Howe Ave	42,436	3,819	1,436	20.7	C
SR 8 NB	Howe Ave	Broad Blvd Off-Ramp	41,738	3,756	1,412	20.3	C
SR 8 NB	Broad Blvd Off-Ramp	Portage Trail Off-Ramp	37,605	3,384	1,278	18.3	C
SR 8 NB	Portage Trail Off-Ramp	Broad Blvd On-Ramp	36,640	3,298	1,246	17.8	B
SR 8 NB	Broad Blvd On-Ramp	Front St (SR59)	36,640	3,298	1,246	17.8	B
SR 8 NB	Front St (SR59)	Hudson Drive	32,235	3,224	1,218	17.4	B
SR 8 NB	Hudson Drive	Graham Rd	33,780	3,378	1,276	18.2	C
SR 8 NB	Graham Rd	Steels Corners Rd	30,755	3,076	1,168	15.6	B
SR 8 NB	Steels Corners Rd	Seasons Rd	24,365	2,437	934	12.5	B
SR 8 NB	Seasons Rd	SR 303	24,800	2,480	951	12.7	B
SR 8 NB	SR 303	I-80	23,270	2,327	892	11.9	B
SR 8 NB/Ramp	I-80	I-271	17,245	1,725	986	13.1	B
SR 8 SB/Ramp	I-271	I-80	17,245	1,725	992	13.2	B
SR 8 SB	I-80	SR 303	23,270	2,327	896	11.9	B
SR 8 SB	SR 303	Seasons Rd	24,800	2,604	998	13.3	B
SR 8 SB	Seasons Rd	Steels Corners Rd	24,365	2,558	985	13.1	B
SR 8 SB	Steels Corners Rd	Graham Rd	30,755	3,229	1,226	16.5	B
SR 8 SB	Graham Rd	Second St	33,780	3,547	1,340	18.2	C
SR 8 SB	Second St	Broad Blvd Off-Ramp	32,235	3,385	1,279	18.3	C
SR 8 SB	Broad Blvd Off-Ramp	Portage Trail On-Ramp	37,380	3,738	1,412	20.3	C
SR 8 SB	Portage Trail On-Ramp	Broad Blvd On-Ramp	38,365	3,836	1,449	20.9	C
SR 8 SB	Broad Blvd On-Ramp	Howe Ave	42,582	4,258	1,601	23.5	C
SR 8 SB	Howe Ave	Cuyahoga Falls Ave	43,294	4,113	1,546	22.5	C
SR 8 SB	Cuyahoga Falls Ave	Tallmadge Ave	46,187	4,388	1,650	24.4	C
SR 8 SB	Tallmadge Ave	Glenwood Ave	46,652	4,432	1,666	24.7	C
SR 8 SB	Glenwood Ave	Perkins St (SR 59)	52,560	4,730	1,778	26.9	D
SR 8 SB	Perkins St	Buchtel Ave	47,465	4,272	1,598	23.4	C
SR 8 SB	Buchtel Ave	Carroll St	41,062	3,696	1,383	19.9	C
SR 8 SB	Carroll St	I-76/77 Interchange	50,672	4,560	1,706	25.5	C
SR 8 SB	Through Central Interchange		23,520	2,352	1,326	19.0	C
I-76/US 224 EB	Medina Co Line	SR 21	23,605	2,242	1,488	20.6	C
I-76/US 224 EB	SR 21	Cleveland-Massillon Rd	29,325	2,786	1,648	23.4	C
I-76/US 224 EB	Cleveland-Massillon Rd	Barber Rd	32,475	3,085	1,825	27.1	D
I-76/US 224 EB	Barber Rd	State St	33,863	3,217	1,894	28.6	D
I-76/US 224 EB	State St	Wooster Rd North	31,626	3,004	1,769	26.7	D
I-76/US 224 EB	Wooster Rd North	I-277	36,927	3,508	2,066	33.7	D
I-76 EB	Ramp from I-76/US 224 EB	NB Kenmore Freeway	18,460	1,846	1,082	15.5	B
I-76 EB	I-277	Kenmore Blvd	27,610	2,485	1,456	21.0	C
I-76 EB	Kenmore Blvd	I-77	29,225	2,630	1,541	21.5	C
I-76 EB	Ramp from NB Kenmore Fwy	I-76/77 EB	18,740	1,687	1,978	31.4	D
I-76/77 EB	I-77	East Ave	59,525	5,060	2,024	32.6	D
I-76/77 EB	East Ave	South St Off-Ramp	66,182	5,626	2,167	36.6	E
I-76/77 EB	South St Off-Ramp	Innerbelt (SR 59)	65,309	5,551	2,138	35.8	E
I-76/77 EB	Innerbelt (SR 59)	South St On-Ramp	52,464	4,197	1,624	23.9	C
I-76/77 EB	South St On-Ramp	Main St/Broadway	57,758	4,621	1,788	27.1	D
I-76/77 EB	Main St/Broadway	Wolf Ledges/Grant St	58,920	4,714	1,368	19.6	C

Appendix B: Freeway LOS Analysis

Freeway	From	To	24-Hour Volume	Peak Hour Volume	Flow Rate	Density	LOS
I-76/77 EB	Wolf Ledges/Grant St	I-77/SR 8	59,875	4,790	1,390	20.0	C
I-76 EB	Through the Central Interchange		38,080	3,427	2,092	34.4	D
I-76 EB	I-77/SR 8	Kelly Ave Off-Ramp	48,410	4,599	1,797	27.3	D
I-76 EB	Kelly Ave Off-Ramp	Arlington St On-Ramp	48,410	4,599	1,797	27.3	D
I-76 EB	Arlington St On-Ramp	Martha Ave Off-Ramp	44,435	4,221	1,657	24.5	C
I-76 EB	Martha Ave Off-Ramp	Seiberling St Off-Ramp	40,970	3,892	1,528	22.2	C
I-76 EB	Seiberling St Off-Ramp	Martha Ave On-Ramp	38,130	3,622	1,422	20.5	C
I-76 EB	Martha Ave On-Ramp	East Market St Off-Ramp	37,749	3,473	1,370	19.7	C
I-76 EB	East Market St Off-Ramp	Mogadore Rd On-Ramp	32,809	3,018	1,196	17.1	B
I-76 EB	Mogadore Rd On-Ramp	Gilchrist Rd	32,809	3,018	1,196	17.1	B
I-76 EB	Gilchrist Rd	Southeast Ave	29,482	2,594	1,549	21.6	C
I-76 EB	Southeast Ave	Tallmadge Rd	29,105	2,474	1,478	20.4	C
I-76 EB	Tallmadge Rd	SR 43	27,110	2,304	1,382	18.8	C
I-76 EB	SR 43	SR 44	22,685	1,928	1,168	15.6	B
I-76 EB	SR 44	SR 14	15,945	1,355	828	11.0	B
I-76 EB	SR 14	SR 225	15,255	1,297	796	10.6	A
I-76 EB	SR 225	Mahoning Co Line	14,960	1,272	788	10.5	A
I-76 WB	Mahoning Co Line	SR 225	14,960	1,272	788	10.5	A
I-76 WB	SR 225	SR 14	15,255	1,297	796	10.6	A
I-76 WB	SR 14	SR 44	15,945	1,355	828	11.0	B
I-76 WB	SR 44	SR 43	22,685	1,928	1,168	15.6	B
I-76 WB	SR 43	Tallmadge Rd	27,110	2,440	1,464	20.2	C
I-76 WB	Tallmadge Rd	Southeast Ave	29,105	2,619	1,564	21.9	C
I-76 WB	Southeast Ave	Gilchrist Rd	30,078	3,008	1,788	26.2	D
I-76 WB	Gilchrist Rd	East Market St	33,471	3,347	1,326	19.0	C
I-76 WB	East Market St	Brittain Rd On-Ramp	38,511	3,851	1,519	22.1	C
I-76 WB	Brittain Rd On-Ramp	Martha Ave	41,380	4,138	1,632	24.1	C
I-76 WB	Martha Ave	Arlington St Off-Ramp	44,435	4,444	1,745	26.2	D
I-76 WB	Arlington St Off-Ramp	Kelly Ave On-Ramp	48,410	4,841	1,901	29.6	D
I-76 WB	Kelly Ave On-Ramp	Inman St Off-Ramp	48,410	4,841	1,901	29.6	D
I-76 WB	Inman St Off-Ramp	I-77/SR 8	48,410	4,841	1,901	29.6	D
I-76 WB	Through Central Interchange		38,850	3,497	2,050	33.3	D
I-76/77 WB	I-77/SR 8	Wolf Ledges/Grant St	64,865	5,189	1,506	21.9	C
I-76/77 WB	Wolf Ledges/Grant St	Main St/Broadway	63,830	5,106	1,482	21.5	C
I-76/77 WB	Main St/Broadway	Russell Ave	62,572	5,006	1,938	30.4	D
I-76/77 WB	Russell Ave	Innerbelt (SR 59)	62,572	5,006	1,938	30.4	D
I-76/77 WB	Innerbelt (SR 59)	East Ave	71,698	6,094	2,347	42.9	E
I-76/77 WB	East Ave	I-77	64,480	5,481	2,111	35.0	D
I-76 WB	I-76/77 WB	SB Kenmore Freeway	16,010	1,441	1,681	25.0	C
I-76 WB	I-77	Battles Ave	29,225	2,776	1,619	23.8	C
I-76 WB	Battles Ave	I-277	27,600	2,622	1,537	22.4	C
I-76 WB	Ramp from SB Kenmore Fwy	I-76/US 224 WB	18,280	1,645	1,919	30.0	D
I-76/US 224 WB	I-277	Wooster Rd North	37,673	3,391	1,997	31.9	D
I-76/US 224 WB	Wooster Rd North	State St	32,264	2,904	1,710	25.5	C
I-76/US 224 WB	State St	Barber Rd	34,547	3,109	1,831	27.2	D
I-76/US 224 WB	Barber Rd	Cleveland-Massillon Rd	32,475	3,085	1,825	27.1	D
I-76/US 224 WB	Cleveland-Massillon Rd	SR 21	29,325	2,786	1,596	22.5	C
I-76/US 224 WB	SR 21	Medina Co Line	23,605	2,242	1,488	20.6	C
I-77 NB	Stark Co Line	Akron-Canton Airport	38,450	3,653	1,394	19.0	C
I-77 NB	Akron-Canton Airport	SR 241	39,695	3,771	1,439	19.7	C
I-77 NB	SR 241	Arlington Rd	46,575	4,425	1,680	24.0	C
I-77 NB	Arlington Rd	US 224	53,245	5,058	1,920	29.3	D
I-77 NB	US 224	Waterloo Rd	51,964	4,677	1,776	26.8	D

Appendix B: Freeway LOS Analysis

Freeway	From	To	24-Hour Volume	Peak Hour Volume	Flow Rate	Density	LOS
I-77 NB	Waterloo Rd	Wilbeth Rd	56,851	5,117	1,943	30.6	D
I-77 NB	Wilbeth Rd	Archwood Ave	57,330	5,160	1,959	30.9	D
I-77 NB	Archwood Ave	SR 8	63,984	5,759	2,186	37.2	E
I-77 NB	Through Central Interchange		17,370	1,563	1,780	26.9	D
I-77 NB	I-76/77 West Interchange	Vernon Odom Blvd	46,140	4,153	1,569	22.9	C
I-77 NB	Vernon Odom Blvd	Copley Rd	45,655	4,109	1,552	21.7	C
I-77 NB	Copley Rd	White Pond Drive	43,335	3,900	1,473	20.3	C
I-77 NB	White Pond Drive	Miller Rd/Ridgewood Rd	42,121	3,791	1,367	18.6	C
I-77 NB	Miller Rd/Ridgewood Rd	Cleveland-Massillon Rd	34,955	3,146	1,788	15.9	B
I-77 NB	Cleveland-Massillon Rd	SR 21	27,611	2,485	943	13.5	B
I-77 NB	SR 21	SR 18	38,524	4,045	1,536	22.4	C
I-77 NB	SR 18	Ghent Rd	27,000	3,105	1,179	15.8	B
I-77 NB	Ghent Rd	Wheatley Rd	27,660	3,181	1,856	27.7	D
I-77 NB	Wheatley Rd	I-271	29,160	3,353	1,909	29.7	D
I-77 NB	I-271	Brecksville Rd	25,640	2,949	1,671	23.9	C
I-77 NB	Brecksville Rd	Cuyahoga Co Line	24,730	2,844	1,612	23.7	C
I-77 SB	Cuyahoga Co Line	Brecksville Rd	24,730	2,597	1,472	21.3	C
I-77 SB	Brecksville Rd	I-271	25,640	2,692	1,525	21.2	C
I-77 SB	I-271	Wheatley Rd	29,160	3,062	1,744	26.2	D
I-77 SB	Wheatley Rd	Ghent Rd	27,660	2,904	1,654	23.5	C
I-77 SB	Ghent Rd	SR 18	27,000	2,835	1,076	14.4	B
I-77 SB	SR 18	SR 21	40,096	4,010	1,522	22.1	C
I-77 SB	SR 21	Cleveland-Massillon Rd	26,529	2,388	907	13.0	B
I-77 SB	Cleveland-Massillon Rd	Miller Rd/Ridgewood Rd	33,585	3,023	1,142	15.3	B
I-77 SB	Miller Rd/Ridgewood Rd	White Pond Drive	40,469	3,642	1,376	18.7	C
I-77 SB	White Pond Drive	Copley Rd	41,635	3,747	1,416	19.4	C
I-77 SB	Copley Rd	Vernon Odom Blvd	43,865	3,948	1,491	20.6	C
I-77 SB	Vernon Odom Blvd	I-76/77 West Interchange	44,330	3,990	1,507	21.9	C
I-77 SB	Through Central Interchange		17,180	1,546	1,761	26.5	D
I-77 SB	SR 8	Archwood Ave	60,256	5,423	2,059	33.5	D
I-77 SB	Archwood Ave	Wilbeth Rd	53,990	4,859	1,845	28.3	D
I-77 SB	Wilbeth Rd	Waterloo Rd	53,539	4,819	1,829	28.0	D
I-77 SB	Waterloo Rd	US 224	48,937	4,404	1,672	24.8	C
I-77 SB	US 224	Arlington Rd	53,245	5,058	1,920	29.3	D
I-77 SB	Arlington Rd	SR 241	46,575	4,425	1,680	24.0	C
I-77 SB	SR 241	Akron-Canton Airport	39,695	3,771	1,439	19.7	C
I-77 SB	Akron-Canton Airport	Stark Co Line	38,450	3,653	1,394	19.0	C
I-271 NB	Medina Co Line	Brecksville Rd	12,945	1,489	864	11.5	B
I-271 NB	Brecksville Rd	I-77	11,580	1,332	773	11.0	B
I-271 NB	I-77	SR 303	15,100	1,737	1,016	13.5	B
I-271 NB	SR 303	SR 8	14,555	1,674	1,028	13.7	B
I-271 NB	SR 8	SR 82	27,945	2,794	1,066	15.2	B
I-271 NB	SR 82	Cuyahoga Co Line	34,550	3,455	1,312	17.7	B
I-271 SB	Cuyahoga Co Line	SR 82	35,960	3,776	1,433	19.7	C
I-271 SB	SR 82	SR 8	29,085	3,054	1,165	16.6	B
I-271 SB	SR 8	SR 303	14,555	1,601	983	13.1	B
I-271 SB	SR 303	I-77	15,100	1,661	955	12.7	B
I-271 SB	I-77	Brecksville Rd	11,580	1,274	740	10.6	A
I-271 SB	Brecksville Rd	Medina Co Line	12,945	1,424	827	11.0	B
I-277 EB	I-76	Waterloo/Manchester Rd	28,289	2,687	1,035	13.8	B
I-277 EB	Waterloo/Manchester Rd	South Main St	31,348	2,978	1,192	15.3	B
I-277 EB	South Main St	I-77	30,812	2,927	1,122	15.0	B
I-277 WB	I-77	South Main St	29,018	2,612	1,001	13.3	B

Appendix B: Freeway LOS Analysis

Freeway	From	To	24-Hour Volume	Peak Hour Volume	Flow Rate	Density	LOS
I-277 WB	South Main St	Waterloo/Manchester Rd	29,522	2,657	1,019	13.6	B
I-277 WB	Waterloo/Manchester Rd	I-76	26,641	2,398	924	12.3	B
I-480 EB	Cuyahoga Co Line	SR 82	21,235	1,911	1,104	14.7	B
I-480 EB	SR 82	SR 91	19,145	1,723	996	14.2	B
I-480 EB	SR 91	Aurora-Hudson Rd	17,820	1,604	931	12.4	B
I-480 EB	Aurora-Hudson Rd	I-80	21,430	1,929	1,120	16.0	B
I-480 WB	I-80	Aurora-Hudson Rd	21,430	2,143	1,244	17.8	B
I-480 WB	Aurora-Hudson Rd	SR 91	17,820	1,782	1,035	13.8	B
I-480 WB	SR 91	SR 82	19,145	1,915	1,106	15.8	B
I-480 WB	SR 82	Cuyahoga Co Line	21,235	2,124	1,227	16.5	B
SR 21 NB	SR 585	I-76	16,029	2,052	1,186	15.9	B
SR 21 NB	I-76	Wadsworth Rd (SR 261)	12,653	1,620	936	13.4	B
SR 21 NB	Wadsworth Rd (SR 261)	Minor Road	14,265	1,826	1,045	13.9	B
SR 21 NB	Minor Road	Copley Rd (SR 162)	14,265	1,826	1,045	13.9	B
SR 21 NB	Copley Rd (SR 162)	I-77 Interchange	17,381	2,225	1,273	17.2	B
SR 21 SB	I-77 Interchange	Copley Rd (SR 162)	16,699	1,971	1,128	15.1	B
SR 21 SB	Copley Rd (SR 162)	Minor Road	13,705	1,617	928	12.3	B
SR 21 SB	Minor Road	Wadsworth Rd (SR 261)	13,705	1,617	925	12.3	B
SR 21 SB	Wadsworth Rd (SR 261)	I-76	12,157	1,435	829	11.8	B
SR 21 SB	I-76	SR 585	15,401	1,817	1,050	14.0	B
SR 59 NB	I-76/77 EB	Wooster Ave Off-Ramp	13,380	1,927	1,081	15.4	B
SR 59 NB	Wooster Ave Off-Ramp	Cedar St Off-Ramp	9,020	1,272	476	6.8	A
SR 59 NB	Cedar St Off-Ramp	Euclid Ave On-Ramp	9,020	1,344	503	7.2	A
SR 59 NB	Euclid Ave On-Ramp	State St Off-Ramp	9,585	1,313	491	7.0	A
SR 59 NB	State St Off-Ramp	Exchange St On-Ramp	6,385	753	283	4.0	A
SR 59 NB	Exchange St On-Ramp	Dart Ave On-Ramp	6,385	715	269	3.8	A
SR 59 NB	Dart Ave On-Ramp	Main St/Howard St	10,815	1,136	660	9.4	A
SR 59 SB	Main St/Howard St	Mill St Off-Ramp	10,815	1,157	672	9.6	A
SR 59 SB	Mill St Off-Ramp	Rand Ave On-Ramp	6,385	683	257	3.7	A
SR 59 SB	Rand Ave On-Ramp	Euclid Ave Off-Ramp	9,585	1,236	465	6.6	A
SR 59 SB	Euclid Ave Off-Ramp	Cedar St On-Ramp	9,020	1,182	442	6.3	A
SR 59 SB	Cedar St On-Ramp	Wooster Ave On-Ramp	9,020	1,182	442	6.3	A
SR 59 SB	Wooster Ave On-Ramp	I-76/77 WB	13,380	1,726	968	13.8	B
US 224 EB	I-77	Kelly Ave	14,680	1,600	604	8.6	A
US 224 EB	Kelly Ave	SR 241	15,330	1,671	942	13.5	B
US 224 WB	SR 241	Kelly Ave	15,330	1,579	890	12.7	B
US 224 WB	Kelly Ave	I-77	14,680	1,512	571	8.2	A

Appendix C

Arterial Level of Service Descriptions

(As described in the *Highway Capacity Manual*)

LOS A describes primarily free-flow operations at average travel speeds, usually about 90 percent of the free-flow speed for the given street class. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal.

LOS B describes reasonably unimpeded operations at average travel speeds, usually about 70 percent of the free-flow speed for the street class. The ability to maneuver within the traffic stream is only slightly restricted, and control delays at signalized intersections are not significant.

LOS C describes stable operations; however, ability to maneuver and change lanes in midblock locations may be more restricted than in LOS B, and longer queues, adverse signal coordination, or both may contribute to lower average travel speeds of about 50 percent of the average free-flow speed for the street class.

LOS D borders on a range in which small increases in flow may cause substantial increases in delay and decreases in travel speed. LOS D may be due to adverse signal progression, inappropriate signal timing, high volumes, or some combination of these factors. Average travel speeds are about 40 percent of free-flow speed.

LOS E is characterized by significant delays and average travel speeds of 33 percent or less of the free-flow speed or less. Such operations are caused by a combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing.

LOS F is characterized by urban street flow at extremely low speeds, typically one-third to one-fourth of the free-flow speed. Intersection congestion is likely at critical signalized locations, with high delays, high volumes, and extensive queuing.

Appendix D: Arterial LOS Analysis

Highway	From	To	County	Peak Hour Volume	Peak Hour Capacity	Peak V/C Ratio	Peak Hour Segment LOS
SR 5/44	I-76	Prospect St	Portage	1,318	2,186	0.60	B
SR 5/44	Prospect St	Hayes Rd	Portage	1,312	1,133	1.16	D
SR 5/44	Hayes Rd	SR 14	Portage	1,312	1,416	0.93	C
SR 5	SR 14	SR 59	Portage	383	2,738	0.14	A
SR 5	SR 59	Rock Spring Rd	Portage	631	1,416	0.45	A
SR 5	Rock Spring Rd	Newton Falls Rd (E. Side)	Portage	521	1,416	0.37	A
SR 5	Newton Falls Rd (E. Side)	SR 225	Portage	484	1,416	0.34	A
SR 5	SR 225	Trumbull County Line	Portage	548	1,416	0.39	A
SR 14	I-80	SR 303 (W. Leg)	Portage	2,227	2,648	0.84	C
SR 14	SR 303 (W. Leg)	SR 43	Portage	2,977	2,738	1.09	D
SR 14	SR 43	Portage Pointe Dr	Portage	2,347	2,738	0.86	C
SR 14	Portage Pointe Dr	Diagonal Rd	Portage	1,534	1,416	1.08	D
SR 14	Diagonal Rd	Price Rd	Portage	1,632	1,416	1.15	D
SR 14	Price Rd	Dawley Rd	Portage	1,500	1,416	1.06	D
SR 14	Dawley Rd	Cleveland Rd	Portage	1,215	1,416	0.86	C
SR 14	Cleveland Rd	Infirmiry Rd	Portage	1,044	1,416	0.74	B
SR 14	Infirmiry Rd	SR 44	Portage	1,187	1,416	0.84	C
SR 14/44	SR 44	SR 88	Portage	1,537	2,738	0.56	B
SR 14/44	SR 88	SR 59	Portage	1,277	1,416	0.90	C
SR 14/44	SR 59	SR 5	Portage	1,969	1,416	1.39	E
SR 14	SR 5	Hayes Rd	Portage	1,139	1,133	1.01	D
SR 14	Hayes Rd	Booth Rd	Portage	821	1,133	0.72	B
SR 14	Booth Rd	I-76	Portage	853	1,133	0.75	C
SR 14	I-76	Tallmadge Rd	Portage	932	1,133	0.82	C
SR 43	Stark County Line	Manning Rd	Portage	571	1,133	0.50	B
SR 43	Manning Rd	Waterloo Rd	Portage	655	1,133	0.58	B
SR 43	Waterloo Rd	US 224	Portage	804	1,133	0.71	B
SR 43	US 224	Randolph Rd	Portage	623	1,133	0.55	B
SR 43	Randolph Rd	Old Forge Rd	Portage	891	1,133	0.79	C
SR 43	Old Forge Rd	Tallmadge Rd	Portage	916	1,133	0.81	C
SR 43	Tallmadge Rd	I-76	Portage	1,109	2,738	0.40	A
SR 43	I-76	Howe Rd	Portage	1,655	2,738	0.60	B
SR 43	Howe Rd	SR 261	Portage	1,655	2,738	0.60	B
SR 43 (Water St)	SR 261	Cherry St	Portage	1,234	2,184	0.57	B
SR 43 (Water St)	Cherry St	Summit St	Portage	1,309	2,184	0.60	B
SR 43 (Water St)	Summit St	SR 59 (Haymaker Pkwy)	Portage	2,248	2,738	0.82	C
SR 43/59	SR 43 (Water St)	SR 43 (River St)	Portage	1,647	2,738	0.60	B
SR 43/59	SR 43 (River St)	SR 43 (Mantua St)	Portage	1,380	2,738	0.50	B
SR 43 (River St)	SR 59	W. Main St	Portage	347	1,133	0.31	A
SR 43 (Gougler)	W. Main St	Fairchild Av	Portage	599	1,416	0.42	A
SR 43 (Mantua St)	SR 59	W. Main St	Portage	628	1,416	0.44	A
SR 43 (Mantua St)	W. Main St	Fairchild Av	Portage	740	1,133	0.65	B
SR 43 (Mantua St)	Fairchild Av	Crain Av	Portage	2,124	2,738	0.78	C
SR 43 (Mantua St)	Crain Av	Kent North Corp.	Portage	2,124	2,190	0.97	C
SR 43	Kent North Corp.	Diagonal Rd	Portage	1,362	1,416	0.96	C
SR 43	Diagonal Rd	Ravenna Rd (E. Leg)	Portage	1,362	1,416	0.96	C
SR 43	Ravenna Rd (E. Leg)	Ravenna Rd (W. Leg)	Portage	1,362	1,416	0.96	C
SR 43	Ravenna Rd (W. Leg)	Lake Martin Dr	Portage	1,118	1,133	0.99	C
SR 43	Lake Martin Dr	Seasons Rd	Portage	1,092	1,133	0.96	C
SR 43	Seasons Rd	SR 14/303	Portage	1,299	2,738	0.47	A
SR 43	SR 14/303	Market Square Dr	Portage	1,648	2,738	0.60	B
SR 43	Market Square Dr	Frost Rd	Portage	1,611	1,416	1.14	D
SR 43	Frost Rd	Mennonite Rd	Portage	957	1,416	0.68	B
SR 43 (Chillicothe Rd)	Mennonite Rd	Aurora-Hudson Rd	Portage	1,186	1,124	1.06	D
SR 43 (Chillicothe Rd)	Aurora-Hudson Rd	SR 306	Portage	1,341	1,124	1.19	D
SR 43 (Aurora Rd)	SR 306	SR 82	Portage	733	1,416	0.52	B
SR 43 (Aurora Rd)	SR 82	Bissell Rd	Portage	1,322	2,738	0.48	A
SR 43 (Aurora Rd)	Bissell Rd	Treat Rd	Portage	1,377	2,738	0.50	B
SR 43 (Aurora Rd)	Treat Rd	Geauga County Line	Portage	1,352	2,186	0.62	B
SR 44	Tallmadge Rd	I-76	Portage	1,612	1,416	1.14	D
SR 44	SR 14	Lake Rockwell Rd	Portage	700	1,133	0.62	B
SR 44	Lake Rockwell Rd	SR 303	Portage	474	1,133	0.42	A
SR 44	SR 303	I-80 Ramps	Portage	728	2,738	0.27	A
SR 59 (W. Main St)	Summit County Line	West Main St	Portage	1,495	1,749	0.85	C
SR 59 (Haymaker Pkwy)	West Main St	Middlebury Rd	Portage	1,330	2,738	0.49	A
SR 59 (Haymaker Pkwy)	Middlebury Rd	Mantua St	Portage	1,202	2,186	0.55	B

Appendix D: Arterial LOS Analysis

Highway	From	To	County	Peak Hour Volume	Peak Hour Capacity	Peak V/C Ratio	Peak Hour Segment LOS
SR 59 (Haymaker Pkwy)	SR 43 (S. Water St)	E. Main St	Portage	1,013	2,186	0.46	A
SR 59 (E. Main St)	Haymaker Pkwy	Luther Av	Portage	1,669	2,186	0.76	C
SR 59 (E. Main St)	Luther Av	Horning Rd	Portage	1,542	2,186	0.71	B
SR 59 (E. Main St)	Horning Rd	SR 261	Portage	1,638	2,186	0.75	B
SR 59	SR 261	Powder Mill Rd	Portage	1,621	2,077	0.78	C
SR 59	Powder Mill Rd	Menough Rd	Portage	1,537	1,416	1.09	D
SR 59	Menough Rd	Brady Lake Rd	Portage	1,620	2,738	0.59	B
SR 59 (W. Main St)	Brady Lake Rd	Diamond St	Portage	1,039	2,000	0.52	B
SR 59 (W. Main St)	Diamond St	Sycamore St	Portage	948	2,186	0.43	A
SR 59 (W. Main St)	Sycamore St	Chestnut St	Portage	1,007	1,416	0.71	B
SR 59 (E. Main St)	Chestnut St	Prospect St	Portage	1,218	1,416	0.86	C
SR 59 (E. Main St)	Prospect St	SR 88 (Freedom St)	Portage	1,075	1,124	0.96	C
SR 59 (E. Main St)	SR 88 (Freedom St)	SR 14/44	Portage	1,302	2,186	0.60	B
SR 59	SR 14/44	SR 5	Portage	527	1,416	0.37	A
SR 82	Summit County Line	Bissell Rd	Portage	872	1,416	0.62	B
SR 82	Bissell Rd	SR 43	Portage	925	1,416	0.65	B
SR 82	SR 43	SR 306	Portage	905	1,416	0.64	B
US 224	Summit County Line	Martin Rd	Portage	801	1,416	0.57	B
US 224	Martin Rd	SR 43	Portage	721	1,416	0.51	B
SR 261	Summit County Line	Cherry St	Portage	905	1,416	0.64	B
SR 261	Cherry St	Mogadore Rd	Portage	722	1,416	0.51	B
SR 261	Mogadore Rd	Franklin St	Portage	944	2,738	0.34	A
SR 261	Franklin St	SR 43	Portage	863	2,738	0.32	A
SR 261	SR 43	Campus Center Dr	Portage	1,125	2,738	0.41	A
SR 261	Campus Center Dr	Summit Rd	Portage	890	2,077	0.43	A
SR 261	Summit Rd	SR 59	Portage	966	1,416	0.68	B
SR 303	Summit County Line	SR 14	Portage	683	1,416	0.48	A
SR 306	SR 43	SR 82	Portage	694	1,416	0.49	A
SR 306	SR 82	Treat Rd	Portage	804	1,416	0.57	B
SR 306	Treat Rd	Geauga County Line	Portage	1,132	1,416	0.80	C
US 422	Geauga County Line	Trumbull County Line	Portage	894	2,190	0.41	A
Aurora-Hudson Rd	I-480 SB Ramp	Frost Rd	Portage	995	1,124	0.89	C
Fairchild Av	Summit County Line	Majors Lane	Portage	993	1,416	0.70	B
Fairchild Av	Majors Lane	Hudson Rd	Portage	1,069	1,416	0.76	C
Fairchild Av	Hudson Rd	SR 43	Portage	1,163	1,416	0.82	C
Frost Rd	Aurora-Hudson Rd	SR 43	Portage	995	1,416	0.70	B
Prospect St	SR 44	Sandy Lake Rd	Portage	805	1,133	0.71	B
Prospect St	Sandy Lake Rd	Summit Rd	Portage	957	1,133	0.84	C
Prospect St	Summit Rd	Hayes Rd	Portage	1,136	1,133	1.00	D
Prospect St	Hayes Rd	Lake Av	Portage	1,136	1,133	1.00	D
Prospect St	Lake Av	Riddle Av	Portage	854	1,133	0.75	C
Prospect St	Riddle Av	Main St	Portage	466	1,133	0.41	A
Summit St	SR 43 (S. Water St)	Depeyster St	Portage	701	1,416	0.50	A
Summit St	Depeyster St	Lincoln St	Portage	846	1,133	0.75	B
Summit St	Lincoln St	Campus Center Dr	Portage	912	1,416	0.64	B
Summit St	Campus Center Dr	Loop Rd	Portage	1,258	1,416	0.89	C
Summit St	Loop Rd	Horning Rd	Portage	620	1,133	0.55	B
Summit St	Horning Rd	SR 261	Portage	718	1,416	0.51	B
SR 8	I-271 Ramps	Highland Rd	Summit	2,231	2,738	0.81	C
SR 8	Highland Rd	I-271 WB Ramps	Summit	1,741	2,738	0.64	B
SR 8	I-271 WB Ramps	SR 82 (Aurora Rd)	Summit	1,741	2,738	0.64	B
SR 8	SR 82 (Aurora Rd)	Valleyview Rd	Summit	1,706	2,738	0.62	B
SR 8	Valleyview Rd	Olde Eight Rd	Summit	1,128	2,738	0.41	A
SR 8	Olde Eight Rd	Cuyahoga County Line	Summit	1,996	2,186	0.91	C
SR 18 (Medina Rd)	Medina County Line	S. Hametown Rd	Summit	1,964	2,738	0.72	B
SR 18 (Medina Rd)	S. Hametown Rd	Crystal Lake Rd	Summit	2,605	2,738	0.95	C
SR 18 (Medina Rd)	Crystal Lake Rd	I-77	Summit	3,871	2,924	1.32	E
SR 18 (Medina Rd)	I-77	Cleveland-Massillon Rd	Summit	3,189	3,110	1.03	D
SR 18 (W. Market St)	Cleveland-Massillon Rd	Smith Rd	Summit	1,846	3,110	0.59	B
SR 18 (W. Market St)	Smith Rd	Morewood	Summit	1,949	2,738	0.71	B
SR 18 (W. Market St)	Morewood	Ghent Rd	Summit	1,759	2,738	0.64	B
SR 18 (W. Market St)	Ghent Rd	Miller Rd	Summit	2,408	2,186	1.10	D
SR 18 (W. Market St)	Miller Rd	Revere Rd	Summit	1,852	2,000	0.93	C
SR 18 (W. Market St)	Revere Rd	Sand Run Rd	Summit	1,795	2,186	0.82	C
SR 18 (W. Market St)	Sand Run Rd	Frank Blvd	Summit	2,103	2,186	0.96	C
SR 18 (W. Market St)	Frank Blvd	Bryden Dr	Summit	1,819	2,186	0.83	C

Appendix D: Arterial LOS Analysis

Highway	From	To	County	Peak Hour Volume	Peak Hour Capacity	Peak V/C Ratio	Peak Hour Segment LOS
SR 18 (W. Market St)	Bryden Dr	Hawkins Av	Summit	1,764	2,186	0.81	C
SR 18 (W. Market St)	Hawkins Av	Castle Blvd	Summit	1,122	2,186	0.51	B
SR 18 (W. Market St)	Castle Blvd	Twin Oaks Rd	Summit	1,263	2,186	0.58	B
SR 18 (W. Market St)	Twin Oaks Rd	Portage Path	Summit	974	1,416	0.69	B
SR 18 (W. Market St)	Portage Path	S. Highland Av	Summit	1,285	1,416	0.91	C
SR 18 (W. Market St)	S. Highland Av	Merriman Rd	Summit	1,242	2,738	0.45	A
SR 18 (W. Market St)	Merriman Rd	Balch St	Summit	1,906	2,738	0.70	B
SR 18 (W. Market St)	Balch St	North St	Summit	2,027	2,738	0.74	B
SR 18 (W. Market St)	North St	Maple St	Summit	1,810	2,738	0.66	B
SR 18 (W. Market St)	Maple St	SR 162 (Rand Av)	Summit	2,108	2,738	0.77	C
SR 18 (W. Market St/E. Market St)	SR 162 (Rand Av)	Main St	Summit	2,107	3,110	0.68	B
SR 18 (W. Market St/E. Market St)	Main St	SR 261 (High St)	Summit	2,067	3,110	0.66	B
SR 18 (E. Market St)	SR 261 (High St)	SR 261 (Broadway St)	Summit	2,059	2,738	0.75	C
SR 18 (E. Market St)	SR 261 (Broadway St)	Summit St	Summit	1,787	2,738	0.65	B
SR 18 (E. Market St)	Summit St	Union St	Summit	1,998	2,738	0.73	B
SR 18 (E. Market St)	Union St	Forge St	Summit	1,566	2,738	0.57	B
SR 18 (E. Market St)	Forge St	SR 8	Summit	1,687	2,738	0.62	B
SR 18 (E. Market St)	SR 8	Butchel Av	Summit	1,612	2,186	0.74	B
SR 18 (E. Market St)	Butchel Av	Arlington St	Summit	1,239	2,118	0.58	B
SR 18 (E. Market St)	Arlington St	E. Exchange St	Summit	697	2,190	0.32	A
SR 18 (E. Market St)	E. Exchange St	Case Av	Summit	1,316	2,738	0.48	A
SR 18 (E. Market St)	Case Av	Goodyear Blvd	Summit	725	2,648	0.27	A
SR 18 (E. Market St)	Goodyear Blvd	Martha Av	Summit	830	2,738	0.30	A
SR 18 (E. Market St)	Martha Av	Seiberling St	Summit	957	1,749	0.55	B
SR 18 (E. Market St)	Seiberling St	General St	Summit	850	2,190	0.39	A
SR 18 (E. Market St)	General St	SR 241 (Massillon Rd)	Summit	1,249	2,190	0.57	B
SR 18 (E. Market St)	SR 241 (Massillon Rd)	I-76	Summit	991	2,190	0.45	A
SR 18 (E. Market St)	I-76	Hilbish Av	Summit	1,585	2,738	0.58	B
SR 18 (E. Market St)	Hilbish Av	SR 91 (Canton Rd)	Summit	1,019	2,190	0.47	A
SR 21	Eastern Rd	SR 585	Summit	1,584	4,642	0.34	A
SR 21 (Brecksville Rd)	I-77	I-80 WB Ramps	Summit	947	2,738	0.35	A
SR 21 (Brecksville Rd)	I-80 WB Ramps	Cuyahoga County Line	Summit	1,480	2,738	0.54	B
SR 59 (Front St)	SR 8 NB Ramp	Bailey Rd	Summit	1,924	2,738	0.70	B
SR 59 (Front St)	Bailey Rd	Hudson Dr	Summit	2,375	2,738	0.87	C
SR 59 (Kent Rd)	Hudson Dr	Silver Lake Blvd	Summit	1,508	1,749	0.86	C
SR 59 (Kent Rd)	Silver Lake Blvd	Englewood Dr	Summit	1,461	2,190	0.67	B
SR 59 (Kent Rd)	Englewood Dr	SR 91 (Darrow Rd)	Summit	1,561	2,190	0.71	B
SR 59 (Kent Rd)	SR 91 (Darrow Rd)	Charring Crossing Dr	Summit	1,483	1,749	0.85	C
SR 59 (Kent Rd)	Charring Crossing Dr	Fishcreek Rd	Summit	1,582	2,186	0.72	B
SR 59 (Kent Rd)	Fishcreek Rd	Portage County Line	Summit	1,924	2,190	0.88	C
SR 59 (MLK Jr Blvd)	Howard St	SR 261 (High St)	Summit	1,932	2,738	0.71	B
SR 59 (MLK Jr Blvd)	SR 261 (High St)	SR 261 (Broadway St)	Summit	1,495	2,738	0.55	B
SR 59 (MLK Jr Blvd)	SR 261 (Broadway St)	Summit St	Summit	1,459	2,738	0.53	B
SR 59 (Perkins St)	Summit St	Union St	Summit	1,459	2,738	0.53	B
SR 59 (Perkins St)	Union St	SR 8 NB Ramps	Summit	1,922	2,738	0.70	B
SR 82 (Aurora Rd)	Cuyahoga County Line	Chaffee Rd	Summit	970	1,133	0.86	C
SR 82 (Aurora Rd)	Chaffee Rd	Boyden Rd	Summit	1,241	1,416	0.88	C
SR 82 (Aurora Rd)	Boyden Rd	Olde Eight Rd	Summit	1,289	1,416	0.91	C
SR 82 (Aurora Rd)	Olde Eight Rd	SR 8	Summit	1,266	2,738	0.46	A
SR 82 (Aurora Rd)	SR 8	I-271	Summit	1,459	2,738	0.53	B
SR 82 (Aurora Rd)	I-271	S. Bedford Rd	Summit	2,200	2,738	0.80	C
SR 82 (Aurora Rd)	S. Bedford Rd	N. Bedford Rd	Summit	2,200	2,738	0.80	C
SR 82 (Aurora Rd)	N. Bedford Rd	Shepard Rd	Summit	1,319	2,738	0.48	A
SR 82 (Aurora Rd)	Shepard Rd	Chamberlin Rd	Summit	1,399	1,416	0.99	C
SR 82 (Aurora Rd)	Chamberlin Rd	I-480	Summit	1,514	2,738	0.55	B
SR 82 (Aurora Rd)	I-480	SR 91 (Darrow Rd)	Summit	1,681	2,738	0.61	B
SR 82 (Aurora Rd)	SR 91	Ravenna Rd (N. Int)	Summit	1,076	1,416	0.76	C
SR 82 (Ravenna Rd)	Ravenna Rd (N. Int)	Ravenna Rd (S. Int)	Summit	1,016	1,416	0.72	B
SR 82 (Aurora Rd)	Ravenna Rd (S. Int)	Portage County Line	Summit	769	1,416	0.54	B
SR 91 (Canton Rd)	US 224 (Waterloo Rd)	Triplett Blvd	Summit	1,263	2,738	0.46	A
SR 91 (Canton Rd)	Triplett Blvd	SR 18 (E. Market St)	Summit	1,651	2,000	0.83	C
SR 91 (Canton Rd)	SR 18 (E. Market St)	Mogadore Rd	Summit	978	2,190	0.45	A
SR 91 (Canton Rd)	Mogadore Rd	Gilchrist Rd	Summit	1,560	2,738	0.57	B
SR 91 (Canton Rd/ Darrow Rd)	Gilchrist Rd	Newton St	Summit	1,951	2,186	0.89	C
SR 91 (Darrow Rd)	Newton St	Eastwood Av	Summit	1,166	2,186	0.53	B
SR 91 (Darrow Rd)	Eastwood Av	Van Evera Rd	Summit	1,115	1,416	0.79	C

Appendix D: Arterial LOS Analysis

Highway	From	To	County	Peak Hour Volume	Peak Hour Capacity	Peak V/C Ratio	Peak Hour Segment LOS
SR 91 (South Av)	Van Evera Rd	Tallmadge Cir	Summit	1,066	1,416	0.75	C
SR 91 (North Av)	Tallmadge Cir	Overdale Dr	Summit	616	1,416	0.44	A
SR 91 (North Av)	Overdale Dr	Howe Rd	Summit	817	1,416	0.58	B
SR 91 (North Av/Main St)	Howe Rd	Steeplechase La	Summit	1,122	1,416	0.79	C
SR 91 (North Av)	Steeplechase La	Northmoreland Av	Summit	1,156	1,416	0.82	C
SR 91 (Main St)	Northmoreland Av	Munroe Falls Av	Summit	1,547	1,416	1.09	D
SR 91 (Main St)	Munroe Falls Av	North River Rd	Summit	1,060	1,416	0.75	B
SR 91 (Main St/Darrow Rd)	North River Rd	SR 59 (Kent Rd)	Summit	1,427	1,416	1.01	D
SR 91 (Darrow Rd)	SR 59 (Kent Rd)	Graham Rd	Summit	1,878	2,186	0.86	C
SR 91 (Darrow Rd)	Graham Rd	Stow Rd	Summit	2,164	2,738	0.79	C
SR 91 (Darrow Rd)	Stow Rd	Arndale Rd	Summit	1,442	2,186	0.66	B
SR 91 (Darrow Rd)	Arndale Rd	Commerce Dr	Summit	1,172	2,738	0.43	A
SR 91 (Darrow Rd)	Commerce Dr	Fishcreek Rd	Summit	1,176	2,738	0.43	A
SR 91 (Darrow Rd)	Fishcreek Rd	Norton Rd	Summit	1,783	2,738	0.65	B
SR 91 (Darrow Rd)	Norton Rd	Georgetown Rd	Summit	1,779	2,738	0.65	B
SR 91 (Darrow Rd)	Georgetown Rd	Terex Rd	Summit	1,424	2,738	0.52	B
SR 91 (Darrow Rd)	Terex Rd	Hudson Dr	Summit	1,345	2,738	0.49	A
SR 91 (Darrow Rd/Main St)	Hudson Dr	Ravenna Rd	Summit	1,613	1,416	1.14	D
SR 91 (Main St)	Ravenna Rd	SR 303	Summit	1,776	1,416	1.25	E
SR 91 (Main St)	SR 303	Aurora St	Summit	1,683	1,416	1.19	D
SR 91 (Main St)	Aurora St	Valleyview Rd	Summit	815	1,416	0.58	B
SR 91 (Darrow Rd)	Valleyview Rd	Middleton Rd	Summit	1,236	1,416	0.87	C
SR 91 (Darrow Rd)	Middleton Rd	Twinsburg Rd	Summit	1,694	1,416	1.20	D
SR 91 (Darrow Rd)	Twinsburg Rd	Old Mill Rd	Summit	1,888	2,738	0.69	B
SR 91 (Darrow Rd)	Old Mill Rd	Highland Rd	Summit	2,137	2,186	0.98	C
SR 91 (Darrow Rd)	Highland Rd	I-480	Summit	2,666	2,738	0.97	C
SR 91 (Darrow Rd)	I-480	SR 82 (Aurora Rd)	Summit	1,985	2,738	0.73	B
SR 91 (Darrow Rd)	SR 82 (Aurora Rd)	Ravenna Rd	Summit	1,017	2,077	0.49	A
SR 91 (Darrow Rd)	Ravenna Rd	Post Rd	Summit	1,017	1,416	0.72	B
SR 91 (Darrow Rd)	Post Rd	Glenwood Dr	Summit	1,331	1,416	0.94	C
SR 91 (Darrow Rd)	Glenwood Dr	Cuyahoga County Line	Summit	1,329	1,416	0.94	C
SR 93 (Manchester Rd)	Stark County Line	SR 236 (Canal Fulton Rd)	Summit	701	1,133	0.62	B
SR 93 (Manchester Rd)	SR 236 (Canal Fulton Rd)	W. Nimisila Rd	Summit	729	1,133	0.64	B
SR 93 (Manchester Rd)	W. Nimisila Rd	Center Rd	Summit	795	1,416	0.56	B
SR 93 (Manchester Rd)	Center Rd	Vanderhoof Rd	Summit	1,019	1,416	0.72	B
SR 93 (Manchester Rd)	Vanderhoof Rd	SR 619 (Turkeyfoot Lake Rd)	Summit	1,199	1,416	0.85	C
SR 93 (Manchester Rd)	SR 619 (Turkeyfoot Lake Rd)	State St	Summit	841	1,416	0.59	B
SR 93 (Manchester Rd)	State St	Portage Lakes Dr	Summit	1,109	1,416	0.78	C
SR 93 (Manchester Rd)	Portage Lakes Dr	Robinson Av	Summit	1,247	1,416	0.88	C
SR 93 (Manchester Rd)	Robinson Av	Cormany Rd	Summit	1,793	2,738	0.65	B
SR 93 (Manchester Rd)	Cormany Rd	Carnegie Av	Summit	1,688	2,738	0.62	B
SR 93 (Manchester Rd)	Carnegie Av	I-277	Summit	2,075	2,190	0.95	C
SR 93 (Manchester Rd)	I-277	Waterloo Rd	Summit	2,314	2,738	0.85	C
SR 93 (Manchester Rd)	Waterloo Rd	SR 764 (Wilbeth Rd)	Summit	1,039	2,186	0.48	A
SR 93 (Manchester Rd)	SR 764 (Wilbeth Rd)	Kenmore Blvd Ramps	Summit	995	2,738	0.36	A
SR 93 (Manchester Rd)	Kenmore Blvd Ramps	Lakeview Av	Summit	330	1,133	0.29	A
SR 93 (Manchester Rd)	Lakeview Av	Indian Trail	Summit	473	1,133	0.42	A
SR 93 (Manchester Rd)	Indian Trail	South Av	Summit	411	1,133	0.36	A
SR 93 (Manchester Rd)	South Av	East Av	Summit	322	1,133	0.28	A
SR 93 (East Av)	Manchester Rd	SR 261 (Wooster Av)	Summit	621	2,738	0.23	A
SR 162 (Copley Rd)	Cleveland-Massillon Rd	Jacoby Rd	Summit	631	1,133	0.56	B
SR 162 (Copley Rd)	Jacoby Rd	Schocalog Rd	Summit	781	1,133	0.69	B
SR 162 (Copley Rd)	Schocalog Rd	White Pond Dr	Summit	578	1,133	0.51	B
SR 162 (Copley Rd)	White Pond Dr	Collier Rd	Summit	860	1,133	0.76	C
SR 162 (Copley Rd)	Collier Rd	I-77	Summit	700	1,416	0.49	A
SR 162 (Copley Rd)	I-77	Hawkins Av	Summit	1,086	1,416	0.77	C
SR 162 (Copley Rd)	Hawkins Av	Storer Ave	Summit	1,087	1,416	0.77	C
SR 162 (Copley Rd)	Storer Ave	Diagonal Rd	Summit	990	2,190	0.45	A
SR 162 (Copley Rd/Maple St)	Diagonal Rd	W. Exchange St	Summit	850	2,190	0.39	A
US 224 (Waterloo Rd)	SR 241 (George Washington Blvd)	Hilbish Av	Summit	1,876	2,190	0.86	C
US 224 (Waterloo Rd)	Hilbish Av	Kuebler Tr	Summit	1,992	2,738	0.73	B
US 224 (Waterloo Rd)	Kuebler Tr	SR 91 (Canton Rd)	Summit	1,859	2,738	0.68	B
US 224 (Waterloo Rd)	SR 91 (Canton Rd)	E. Waterloo Rd	Summit	1,281	2,924	0.44	A
US 224	E. Waterloo Rd	Portage County Line	Summit	954	2,738	0.35	A
SR 241 (Massillon Rd)	Stark County Line	International Gateway	Summit	907	1,416	0.64	B
SR 241 (Massillon Rd)	International Gateway	Greensburg Rd	Summit	863	1,416	0.61	B

Appendix D: Arterial LOS Analysis

Highway	From	To	County	Peak Hour Volume	Peak Hour Capacity	Peak V/C Ratio	Peak Hour Segment LOS
SR 241 (Massillon Rd)	Greensburg Rd	Steese Rd	Summit	880	1,416	0.62	B
SR 241 (Massillon Rd)	Steese Rd	Graybill Rd	Summit	1,012	2,738	0.37	A
SR 241 (Massillon Rd)	Graybill Rd	Boettler Rd	Summit	2,042	2,738	0.75	B
SR 241 (Massillon Rd)	Boettler Rd	I-77	Summit	1,967	2,738	0.72	B
SR 241 (Massillon Rd)	I-77	Raber Rd	Summit	2,636	2,738	0.96	C
SR 241 (Massillon Rd)	Raber Rd	SR 619 (Turkeyfoot Lake Rd)	Summit	1,514	1,416	1.07	D
SR 241 (Massillon Rd)	SR 619 (Turkeyfoot Lake Rd)	Mayfair Rd	Summit	858	1,416	0.61	B
SR 241 (Massillon Rd)	Mayfair Rd	Killian Rd	Summit	1,401	1,416	0.99	C
SR 241 (Massillon Rd)	Killian Rd	Boyer Pkwy	Summit	1,197	1,416	0.85	C
SR 241 (Massillon Rd)	Boyer Pkwy	Krumroy Rd	Summit	1,059	1,416	0.75	B
SR 241 (Massillon Rd)	Krumroy Rd	US 224	Summit	1,138	1,416	0.80	C
SR 241 (George Washington Blvd)	US 224	Triplett Blvd	Summit	1,165	2,738	0.43	A
SR 241 (Seiberling St)	Triplett Blvd	Archwood Ave	Summit	512	1,416	0.36	A
SR 241 (Seiberling St)	Archwood Ave	Innovation Way	Summit	644	2,738	0.24	A
SR 241 (Innovation Way)	Seiberling St	SR 18 (E. Market St)	Summit	947	2,738	0.35	A
SR 261 (Wadsworth Rd)	Medina County Line	SR 21	Summit	739	1,133	0.65	B
SR 261 (Wadsworth Rd)	SR 21	Easton Rd	Summit	613	1,133	0.54	B
SR 261 (Wadsworth Rd)	Easton Rd	Cleveland-Massillon Rd	Summit	496	1,133	0.44	A
SR 261 (Wadsworth Rd)	Cleveland-Massillon Rd	Summit Rd (S. Leg)	Summit	506	1,416	0.36	A
SR 261 (Wadsworth Rd)	Summit Rd (S. Leg)	Collier Rd	Summit	581	1,133	0.51	B
SR 261 (V Odom Blvd)	Collier Rd	Romig Rd	Summit	534	1,416	0.38	A
SR 261 (V Odom Blvd)	Romig Rd	I-77	Summit	1,275	2,186	0.58	B
SR 261 (V Odom Blvd)	I-77	Frederick Blvd	Summit	1,271	2,738	0.46	A
SR 261 (V Odom Blvd)	Frederick Blvd	Hawkins Av	Summit	1,027	2,738	0.38	A
SR 261 (V Odom Blvd)	Hawkins Av	Superior Av	Summit	888	2,190	0.41	A
SR 261 (V Odom Blvd)	Superior Av	SR 93 (East Av)	Summit	532	1,416	0.38	A
SR 261 (V Odom Blvd)	SR 93 (East Av)	Moon St	Summit	826	1,416	0.58	B
SR 261 (V Odom Blvd)	Moon St	SR 59	Summit	752	2,186	0.34	A
SR 261 (Broadway St)	Cedar St	Exchange St	Summit	1,799	2,738	0.66	B
SR 261 (Broadway St)	Exchange St	University Av	Summit	1,530	2,738	0.56	B
SR 261 (Broadway St)	University Av	Mill St	Summit	912	2,190	0.42	A
SR 261 (Broadway St)	Mill St	E. Market St	Summit	500	1,416	0.35	A
SR 261 (Broadway St)	E. Market St	SR 59 (MLK Jr Blvd)	Summit	607	1,416	0.43	A
SR 261 (Broadway St/Y-Bridge)	SR 59 (MLK Jr Blvd)	Olive St (W. Leg)	Summit	1,251	1,416	0.88	C
SR 261 (Cedar St)	SR 261 (Locust St)	Main St	Summit	833	1,749	0.48	A
SR 261 (Cedar St)	Main St	SR 261 (Broadway St)	Summit	511	1,749	0.29	A
SR 261 (Exchange St)	SR 261 (Locust St)	Main St	Summit	1,012	1,749	0.58	B
SR 261 (Exchange St)	Main St	SR 261 (High St)	Summit	1,039	2,924	0.36	A
SR 261 (High St)	SR 261 (W. Exchange St)	University Av	Summit	1,090	1,416	0.77	C
SR 261 (High St)	University Av	Mill St	Summit	846	1,416	0.60	B
SR 261 (High St)	Mill St	SR 18 (E. Market St)	Summit	1,007	2,077	0.48	A
SR 261 (High St)	SR 18 (E. Market St)	SR 59 (MLK Jr Blvd)	Summit	720	1,661	0.43	A
SR 261 (N. Main St/Y-Bridge)	SR 59 (MLK Jr Blvd)	Olive St (W. Leg)	Summit	781	1,416	0.55	B
SR 261 (N. Main St)	Olive St (W. Leg)	SR 261 (Tallmadge Av)	Summit	1,318	2,186	0.60	B
SR 261 (Tallmadge Av)	SR 261 (N. Main St)	SR 8	Summit	1,427	1,749	0.82	C
SR 261 (Tallmadge Av)	SR 8	Glenwood Av	Summit	1,476	1,749	0.84	C
SR 261 (Tallmadge Av)	Glenwood Av	Home Av	Summit	2,174	2,186	0.99	C
SR 261 (Tallmadge Av)	Home Av	Breiding Rd	Summit	1,536	2,186	0.70	B
SR 261 (Tallmadge Av)	Breiding Rd	Brittain Rd	Summit	1,485	2,186	0.68	B
SR 261 (West Av)	Brittain Rd	Thomas Rd	Summit	1,129	2,738	0.41	A
SR 261 (West Av)	Thomas Rd	Tallmadge Cir	Summit	1,396	2,186	0.64	B
SR 261 (Northeast Av)	Tallmadge Cir	N. Munroe Rd	Summit	787	1,416	0.56	B
SR 261 (Northeast Av)	N. Munroe Rd	Portage County Line	Summit	574	1,133	0.51	B
SR 303 (Streetsboro Rd)	Olde Eight Rd	Akron Cleveland Rd	Summit	894	1,416	0.63	B
SR 303 (Streetsboro Rd)	Akron Cleveland Rd	Terex Rd	Summit	2,139	2,738	0.78	C
SR 303 (Streetsboro Rd)	Terex Rd	Boston Mills Rd	Summit	1,064	1,416	0.75	C
SR 303 (Streetsboro St)	Boston Mills Rd	Atterbury Blvd	Summit	1,164	2,190	0.53	B
SR 303 (Streetsboro St)	Atterbury Blvd	SR 91 (Main St)	Summit	1,590	1,416	1.12	D
SR 303 (Streetsboro St)	SR 91 (Main St)	Hayden Pkwy	Summit	854	1,133	0.75	C
SR 303 (Streetsboro St)	Hayden Pkwy	Stow Rd	Summit	621	1,133	0.55	B
SR 303 (Streetsboro St)	Stow Rd	Portage County Line	Summit	857	1,133	0.76	C
SR 532 (Portage Line Rd)	US 224	Albrecht Av	Summit	835	1,133	0.74	B
SR 532 (Cleveland Av)	Albrecht Av	Mogadore Rd	Summit	851	1,133	0.75	C
SR 532 (Cleveland Av)	Mogadore Rd	Newton St	Summit	730	1,133	0.64	B
SR 532 (Southwest Av)	Newton St	I-76	Summit	925	1,133	0.82	C
SR 585	Wayne County Line	Hametown Rd	Summit	1,711	2,190	0.78	C

Appendix D: Arterial LOS Analysis

Highway	From	To	County	Peak Hour Volume	Peak Hour Capacity	Peak V/C Ratio	Peak Hour Segment LOS
SR 585	Hametown Rd	SR 21	Summit	2,010	2,190	0.92	C
SR 619 (Wooster Rd N)	SR 619 (State St)	Waterloo Rd	Summit	1,467	2,190	0.67	B
SR 619 (Wooster Rd N)	Waterloo Rd	I-76 WB Ramps	Summit	1,500	1,749	0.86	C
SR 619 (State St)	5th St NE	Wooster Rd N	Summit	1,242	2,738	0.45	A
SR 619 (5th St NE)	SR 619 (State St)	Fairview Av	Summit	859	1,133	0.76	C
SR 619 (5th St NE)	Fairview Av	Paige Av	Summit	995	1,133	0.88	C
SR 619 (5th St NE)	Paige Av	Tuscarawas Av	Summit	1,022	2,190	0.47	A
SR 619 (5th St NE)	Tuscarawas Av	Robinson Av	Summit	646	2,190	0.29	A
SR 619 (5th St SE)	Robinson Av	Snyder Av	Summit	966	1,124	0.86	C
SR 619 (5th St SE)	Snyder Av	Lockwood Rd	Summit	729	1,133	0.64	B
SR 619 (Turkeyfoot Lake Rd)	Lockwood Rd	Eastern Rd	Summit	636	1,133	0.56	B
SR 619 (Turkeyfoot Lake Rd)	Eastern Rd	SR 93 (Manchester Rd)	Summit	589	1,133	0.52	B
SR 619 (Turkeyfoot Lake Rd)	SR 93 (Manchester Rd)	State St	Summit	597	1,133	0.53	B
SR 619 (Turkeyfoot Lake Rd)	State St	Turkeyfoot Rd	Summit	1,116	1,416	0.79	C
SR 619 (Turkeyfoot Lake Rd)	Turkeyfoot Rd	S. Main St	Summit	1,130	1,416	0.80	C
SR 619 (Turkeyfoot Lake Rd)	S. Main St	Cottage Grove Rd	Summit	1,165	1,416	0.82	C
SR 619 (Turkeyfoot Lake Rd)	Cottage Grove Rd	Arlington Rd	Summit	1,100	1,416	0.78	C
SR 619 (Turkeyfoot Lake Rd)	Arlington Rd	Pickle Rd	Summit	987	1,416	0.70	B
SR 619 (Turkeyfoot Lake Rd)	Pickle Rd	SR 241 (Massillon Rd)	Summit	1,099	1,416	0.78	C
SR 619 (Turkeyfoot Lake Rd)	SR 241 (Massillon Rd)	Mayfair Rd	Summit	936	1,133	0.83	C
SR 619 (Turkeyfoot Lake Rd)	Mayfair Rd	Myersville Rd	Summit	933	1,133	0.82	C
SR 619 (Turkeyfoot Lake Rd)	Myersville Rd	Stark County Line	Summit	1,105	1,133	0.98	C
31st St	Wooster Rd W	South Av	Summit	1,088	1,416	0.77	C
31st St	South Av	Shannon Av	Summit	959	1,416	0.68	B
Arlington Rd	Greensburg Rd	E. Caston Rd	Summit	1,161	1,416	0.82	C
Arlington Rd	E. Caston Rd	Boettler Rd	Summit	1,190	1,416	0.84	C
Arlington Rd	Boettler Rd	SR 619	Summit	1,441	1,416	1.02	D
Arlington Rd	SR 619	Moore Rd	Summit	1,547	2,738	0.57	B
Arlington Rd	Moore Rd	I-77 SB Ramps	Summit	1,894	2,738	0.69	B
Arlington Rd	I-77 SB Ramps	Killian Rd	Summit	1,538	2,186	0.70	B
Arlington Rd	Killian Rd	Warner Rd	Summit	1,204	2,738	0.44	A
Arlington Rd	Warner Rd	Krumroy Rd	Summit	1,200	2,190	0.55	B
Arlington Rd	Krumroy Rd	Swartz Rd	Summit	1,307	2,738	0.48	A
Arlington St	Swartz Rd	Waterloo Rd	Summit	1,091	2,186	0.50	A
Arlington St	Waterloo Rd	SR 764 (Wilbeth Rd)	Summit	1,217	2,738	0.44	A
Arlington St	SR 764 (Wilbeth Rd)	SR 764 (Triplett Blvd)	Summit	1,463	2,738	0.53	B
Arlington St	SR 764 (Triplett Blvd)	E. Archwood Av	Summit	1,111	2,738	0.41	A
Arlington St	E. Archwood Av	Lovers Ln	Summit	1,276	2,738	0.47	A
Arlington St	Lovers Ln	I-76 EB Ramps	Summit	1,085	2,190	0.50	A
Arlington St	I-76 EB Ramps	Case Av/Johnston St	Summit	1,198	2,738	0.44	A
Arlington St	Case Av/Johnston St	E. Exchange St	Summit	921	2,738	0.34	A
Arlington St	E. Exchange St	SR 18 (E. Market St)	Summit	887	2,738	0.32	A
Akron Cleveland Rd	Seasons Rd	SR 303	Summit	895	1,416	0.63	B
Barber Rd	Norton Av	Morgan St	Summit	883	1,416	0.62	B
Barber Rd	Morgan St	I-76	Summit	879	1,416	0.62	B
Boettler Rd	Arlington Rd	Golden Woods Way	Summit	774	1,416	0.55	B
Boettler Rd	Golden Woods Way	SR 241 (Massillon Rd)	Summit	1,183	1,416	0.84	C
Brittain Rd	E. Market St Ramp	Bauer Blvd	Summit	838	1,416	0.59	B
Brittain Rd	Bauer Blvd	Goodyear Blvd	Summit	1,012	1,416	0.71	B
Brittain Rd	Goodyear Blvd	Newton St	Summit	714	1,416	0.50	B
Brittain Rd	Newton St	Eastwood Av	Summit	853	1,416	0.60	B
Brittain Rd	Eastwood Av	Champman Dr	Summit	1,035	2,190	0.47	A
Brittain Rd	Champman Dr	Evans Av	Summit	1,441	2,190	0.66	B
Brittain Rd	Evans Av	Tallmadge Av	Summit	1,409	2,190	0.64	B
Brittain Rd	Tallmadge Av	Independence Av	Summit	1,092	2,186	0.50	A
Brittain Rd	Independence Av	Main Entr. - Chapel Hill Mall	Summit	731	2,738	0.27	A
Brittain Rd	Main Entr. - Chapel Hill Mall	Howe Av	Summit	820	2,738	0.30	A
Broad Blvd	Second St	SR 8 SB Ramps	Summit	1,442	2,186	0.66	B
Broad Blvd	SR 8 SB Ramps	Newberry St	Summit	1,406	2,186	0.64	B
Broadway St	S. Main St	Voris St	Summit	1,070	2,339	0.46	A
Broadway St	Voris St	Thornton St	Summit	2,008	2,924	0.69	B
Broadway St	Thornton St	Bartges St	Summit	1,266	2,077	0.61	B
Broadway St	Bartges St	Cedar St	Summit	933	1,749	0.53	B
Canton Rd	Stark County Line	Killian Rd	Summit	1,202	2,190	0.55	B
Canton Rd	Killian Rd	Sanitarium Rd	Summit	1,192	2,190	0.54	B
Canton Rd	Sanitarium Rd	Plaza Ct	Summit	1,441	2,190	0.66	B

Appendix D: Arterial LOS Analysis

Highway	From	To	County	Peak Hour Volume	Peak Hour Capacity	Peak V/C Ratio	Peak Hour Segment LOS
Canton Rd	Plaza Ct	US 224 (Waterloo Rd)	Summit	1,816	2,738	0.66	B
Cedar St	Rhodes Av	SR 162 (Maple St)	Summit	799	1,416	0.56	B
Cedar St	SR 162 (Maple St)	Dart Av	Summit	1,163	1,749	0.67	B
Cedar St	Dart Av	SR 261 (Locust St)	Summit	853	1,749	0.49	A
Cleveland-Massillon Rd	Shannon Av	Gardner Blvd	Summit	1,053	1,416	0.74	B
Cleveland-Massillon Rd	Gardner Blvd	Norton Av	Summit	1,266	1,416	0.89	C
Cleveland-Massillon Rd	Norton Av	I-76 WB Ramps	Summit	1,217	1,416	0.86	C
Cleveland-Massillon Rd	SR 162 (Copley Rd (S. Leg))	Ridgewood Rd (S. leg)	Summit	897	1,133	0.79	C
Cleveland-Massillon Rd	Ridgewood Rd (S. leg)	Ridgewood Rd (N. leg)	Summit	1,060	1,416	0.75	B
Cleveland-Massillon Rd	Ridgewood Rd (N. leg)	I-77 NB Ramp	Summit	1,076	1,416	0.76	C
Cleveland-Massillon Rd	I-77 NB Ramp	Elgin Rd	Summit	2,044	1,416	1.44	E
Cleveland-Massillon Rd	Elgin Rd	Bywood Rd	Summit	1,911	1,416	1.35	E
Cleveland-Massillon Rd	Bywood Rd	SR 18 (W. Market St/Medina Rd)	Summit	1,527	2,738	0.56	B
Cleveland-Massillon Rd	SR 18 (W. Market St/Medina Rd)	Springside Dr	Summit	1,068	2,077	0.51	B
Cleveland-Massillon Rd	Springside Dr	Embassy Pkwy	Summit	1,037	1,416	0.73	B
Cleveland-Massillon Rd	Embassy Pkwy	Ghent Rd	Summit	1,044	1,416	0.74	B
Cuyahoga Falls Av	N. Main St	Patterson Av	Summit	871	1,416	0.62	B
Cuyahoga Falls Av	Patterson Av	Front St	Summit	950	1,416	0.67	B
Cuyahoga Falls Av	Front St	SR 8 SB Ramps	Summit	866	1,416	0.61	B
Exchange St	Hawkins Av	Elmdale Av	Summit	697	1,416	0.49	A
Exchange St	Elmdale Av	Rose Blvd	Summit	737	1,124	0.66	B
Exchange St	Rose Blvd	Delia Av	Summit	737	1,416	0.52	B
Exchange St	Delia Av	Dodge Av	Summit	1,103	1,416	0.78	C
Exchange St	Dodge Av	S. Portage Path (N. Leg)	Summit	921	1,749	0.53	B
Exchange St	S. Portage Path (N. Leg)	Rhodes Av	Summit	1,111	2,186	0.51	B
Exchange St	Rhodes Av	SR 162 (Maple St)	Summit	862	1,416	0.61	B
Exchange St	SR 162 (Maple St)	Dart Av	Summit	1,143	1,749	0.65	B
Exchange St	Dart Av	SR 261 (Locust St)	Summit	1,059	1,749	0.61	B
Exchange St	SR 261 (High St)	SR 261 (Broadway St)	Summit	1,256	2,924	0.43	A
Exchange St	SR 261 (Broadway St)	Arc Dr	Summit	1,900	3,110	0.61	B
Exchange St	Arc Dr	Grant St	Summit	1,875	2,648	0.71	B
Exchange St	Grant St	Brown St	Summit	1,913	2,186	0.88	C
Exchange St	Brown St	Spicer Rd	Summit	1,882	2,186	0.86	C
Exchange St	Spicer Rd	Fountain St	Summit	1,538	2,186	0.70	B
Exchange St	Fountain St	Beaver St	Summit	921	2,190	0.42	A
Exchange St	Beaver St	Arlington St	Summit	777	2,190	0.35	A
Exchange St	Arlington St	SR 18 (E. Market St)	Summit	649	2,738	0.24	A
Fishcreek Rd	SR 91 (Darrow Rd)	Call Rd	Summit	709	1,133	0.63	B
Fishcreek Rd	Call Rd	Stow Rd	Summit	1,061	1,416	0.75	B
Fishcreek Rd	Stow Rd	Laurel Woods	Summit	1,297	1,416	0.92	C
Fishcreek Rd	Laurel Woods	Graham Rd	Summit	1,195	2,738	0.44	A
Fishcreek Rd	Graham Rd	SR 59 (Kent Rd)	Summit	1,570	2,186	0.72	B
Frank Blvd	White Pond Dr	SR 18 (W. Market St)	Summit	722	1,133	0.64	B
Front St	Oakwood Dr	Northland St	Summit	565	1,133	0.50	A
Front St	Northland St	SR 8 NB Ramps	Summit	753	1,133	0.66	B
Ghent Rd	SR 18 (W. Market St)	Smith Rd	Summit	1,030	2,738	0.38	A
Ghent Rd	Smith Rd	Sourek Rd Ext	Summit	1,799	2,738	0.66	B
Ghent Rd	Sourek Rd Ext	I-77 SB Ramps	Summit	1,699	2,190	0.78	C
Ghent Rd	I-77 SB Ramps	Cleveland-Massillon Rd	Summit	1,267	2,190	0.58	B
Graham Rd	State Rd	Lillis Dr	Summit	1,109	2,190	0.51	B
Graham Rd	Lillis Dr	Bath Rd	Summit	814	2,190	0.37	A
Graham Rd	Bath Rd	Wyoga Lake Rd	Summit	1,541	2,738	0.56	B
Graham Rd	Wyoga Lake Rd	Bailey Rd	Summit	1,699	2,738	0.62	B
Graham Rd	Bailey Rd	Hudson Dr	Summit	1,750	2,738	0.64	B
Graham Rd	Hudson Dr	SR 8 SB Ramps	Summit	2,378	2,738	0.87	C
Graham Rd	SR 8 SB Ramps	Dover Rd	Summit	2,105	2,190	0.96	C
Graham Rd	Dover Rd	Baumberger Rd	Summit	2,221	2,190	1.01	D
Graham Rd	Baumberger Rd	SR 91 (Darrow Rd)	Summit	2,163	2,186	0.99	C
Graham Rd	SR 91 (Darrow Rd)	Charring Crossing Dr	Summit	1,447	1,416	1.02	D
Graham Rd	Charring Crossing Dr	Baird Rd	Summit	1,399	1,416	0.99	C
Graham Rd	Baird Rd	Fishcreek Rd	Summit	1,104	1,416	0.78	C
Graham Rd	Fishcreek Rd	Portage County Line	Summit	1,259	1,416	0.89	C
Hawkins Av	Copley Rd (SR 162)	Delia Av	Summit	646	1,416	0.46	A
Hawkins Av	Delia Av	Mull Av	Summit	713	1,133	0.63	B
Hawkins Av	Mull Av	Idlewood Av	Summit	932	1,133	0.82	C
Hawkins Av	Idlewood Av	SR 18 (W. Market St)	Summit	1,357	2,738	0.50	A

Appendix D: Arterial LOS Analysis

Highway	From	To	County	Peak Hour Volume	Peak Hour Capacity	Peak V/C Ratio	Peak Hour Segment LOS
High St	SR 261 (W. Exchange St)	SR 261 (Cedar St)	Summit	923	2,077	0.44	A
High St	SR 261 (Cedar St)	Bartges St	Summit	1,410	2,077	0.68	B
Highland Rd	SR 8	S. Bedford Rd	Summit	1,269	1,416	0.90	C
Highland Rd	S. Bedford Rd	E. Valleyview Rd	Summit	1,351	1,416	0.95	C
Highland Rd	E. Valleyview Rd	Chamberlin Rd	Summit	938	1,416	0.66	B
Highland Rd	Chamberlin Rd	Boyle Pkwy	Summit	798	1,133	0.70	B
Highland Rd	Boyle Pkwy	Hadden Rd	Summit	748	1,133	0.66	B
Highland Rd	Hadden Rd	SR 91 (Darrow Rd)	Summit	706	1,133	0.62	B
Home Av	SR 261 (Tallmadge Av)	Independence Av	Summit	1,211	2,186	0.55	B
Home Av	Independence Av	Annapolis Av	Summit	1,148	2,738	0.42	A
Home Av/Main St	Annapolis Av	Howe Av	Summit	1,349	2,186	0.62	B
Howe Av	SR 8 SB Ramps	Main St	Summit	2,843	2,738	1.04	D
Howe Av	Main St	Home Depot Driveway	Summit	1,918	2,738	0.70	B
Howe Av	Home Depot Driveway	Buchholzer Blvd	Summit	1,851	2,738	0.68	B
Howe Av	Buchholzer Blvd	Brittain Rd	Summit	1,094	2,738	0.40	A
Howe Av	Brittain Rd	Buckingham Gate Cir	Summit	1,016	2,738	0.37	A
W. Howe Rd	Buckingham Gate Cir	Starrline Dr	Summit	911	2,190	0.42	A
W. Howe Rd	Starrline Dr	SR 91 (North Av)	Summit	1,000	2,738	0.37	A
Hudson Dr	Graham Rd	Walmart driveway	Summit	870	2,738	0.32	A
Hudson Dr	Walmart driveway	Springdale Rd	Summit	798	1,416	0.56	B
Hudson Dr	Springdale Rd	Steels Corners Rd	Summit	819	1,416	0.58	B
Hudson Dr	Steels Corners Rd	Commerce Dr	Summit	1,345	2,738	0.49	A
Hudson Dr	Commerce Dr	McCauley Rd	Summit	868	1,416	0.61	B
Hudson Dr	McCauley Rd	Norton Rd	Summit	861	1,133	0.76	C
Hudson Dr	Norton Rd	Terex Rd	Summit	718	1,133	0.63	B
S. Main St	Caston Rd (N. Leg)	SR 619 (Turkeyfoot Lake Rd)	Summit	1,081	1,416	0.76	C
S. Main St	SR 619 (Turkeyfoot Lake Rd)	Moore Rd	Summit	1,311	2,738	0.48	A
S. Main St	Moore Rd	Whitefriars Dr	Summit	801	2,738	0.29	A
S. Main St	Whitefriars Dr	Killian Rd	Summit	834	2,190	0.38	A
S. Main St	Killian Rd	Portage Lakes Dr	Summit	1,553	2,738	0.57	B
S. Main St	Portage Lakes Dr	Warner Rd	Summit	1,199	2,190	0.55	B
S. Main St	Warner Rd	Turkeyfoot Rd	Summit	1,161	2,190	0.53	B
S. Main St	Turkeyfoot Rd	I-277 WB Ramp	Summit	1,854	2,738	0.68	B
S. Main St	I-277 WB Ramp	Waterloo Rd	Summit	1,773	2,738	0.65	B
S. Main St	Waterloo Rd	Wilbeth Rd	Summit	1,382	2,190	0.63	B
S. Main St	Wilbeth Rd	Firestone Blvd	Summit	1,314	2,190	0.60	B
S. Main St	Firestone Blvd	E. Archwood Av	Summit	1,317	2,190	0.60	B
S. Main St	E. Archwood Av	Cole Av	Summit	1,184	2,190	0.54	B
S. Main St	Cole Av	E. Miller Av	Summit	1,332	2,488	0.54	B
S. Main St	E. Miller Av	Russell Av	Summit	1,107	2,438	0.45	A
S. Main St	Russell Av	Thornton St	Summit	2,190	2,190	1.00	C
S. Main St	Thornton St	Bartges St	Summit	1,747	2,190	0.80	C
N. Main St	SR 261 (Tallmadge Av)	Cuyahoga Falls Av	Summit	1,294	2,186	0.59	B
N. Main St	Cuyahoga Falls Av	Howard St	Summit	932	1,749	0.53	B
Merriman Rd	Portage Path	Weathervane Lane	Summit	1,509	2,190	0.69	B
Merriman Rd/Riverview Rd	Weathervane Lane	Smith Rd	Summit	1,270	1,416	0.90	C
Miller Rd	Ridgewood Rd	SR 18 (W. Market St)	Summit	1,789	2,186	0.82	C
Mull Av	White Pond Dr	Hawkins Av	Summit	1,219	1,416	0.86	C
Oakwood Dr	Second St	Front St	Summit	572	1,416	0.40	A
Olde Eight Rd	SR 82 (Aurora Rd)	Valleyview Rd	Summit	811	1,416	0.57	B
Olde Eight Rd	Valleyview Rd	SR 8	Summit	783	1,416	0.55	B
Portage Path	Merriman Rd	Portage Trail	Summit	1,624	2,186	0.74	B
Portage Trail	Portage Path	Northampton Rd	Summit	1,332	1,416	0.94	C
Portage Trail	Northampton Rd	Valley Rd	Summit	1,388	1,416	0.98	C
Portage Trail	Valley Rd	State Rd	Summit	1,523	1,416	1.08	D
Portage Trail	State Rd	Lillis Dr	Summit	1,178	2,190	0.54	B
Portage Trail	Lillis Dr	13th St	Summit	1,815	2,190	0.83	C
Portage Trail	13th St	6th St	Summit	1,491	2,190	0.68	B
Portage Trail	6th St	2nd St	Summit	1,841	2,190	0.84	C
Portage Trail	2nd St	SR 8 NB Ramp	Summit	1,517	2,190	0.69	B
Portage Trail	SR 8 NB Ramp	Munroe Falls Av	Summit	1,970	2,190	0.90	C
Ravenna Rd	Cuyahoga County Line	Chamberlin Rd	Summit	1,103	1,416	0.78	C
Ravenna Rd	Chamberlin Rd	E. Idlewood Dr	Summit	916	1,416	0.65	B
Ravenna Rd	E. Idlewood Dr	SR 91 (Darrow Rd)	Summit	1,104	1,416	0.78	C
Robinson Av	Wooster Rd W	Van Buren Av	Summit	1,096	2,738	0.40	A
Robinson Av	Van Buren Av	SR 619 (5th St NE)	Summit	961	2,738	0.35	A

Appendix D: Arterial LOS Analysis

Highway	From	To	County	Peak Hour Volume	Peak Hour Capacity	Peak V/C Ratio	Peak Hour Segment LOS
Robinson Av	SR 619 (5th St NE)	State St	Summit	776	1,416	0.55	B
Robinson Av	State St	SR 93 (Manchester Rd)	Summit	1,592	1,416	1.12	D
Romig Rd	I-76/US224	Grand Blvd	Summit	660	2,190	0.30	A
Romig Rd	Grand Blvd	Main Entr. Rolling Acres Mall	Summit	669	2,738	0.24	A
Romig Rd	Main Entr. Rolling Acres Mall	SR 261 (V Odom Blvd)	Summit	848	2,738	0.31	A
Second St	SR 8 SB Ramps	Oakwood Dr	Summit	798	2,077	0.38	A
Second St	Oakwood Dr	Portage Trail	Summit	1,334	2,738	0.49	A
Second St	Portage Trail	Broad Blvd	Summit	697	2,738	0.25	A
Smith Rd	SR 18 (W. Market St)	Ghent Rd	Summit	1,117	2,186	0.51	B
Smith Rd	Ghent Rd	Corunna Av	Summit	1,234	1,416	0.87	C
Smith Rd	Corunna Av	Revere Rd	Summit	1,183	1,416	0.84	C
Smith Rd	Revere Rd	Sand Run Rd	Summit	1,342	1,416	0.95	C
Smith Rd	Sand Run Rd	Riverview Rd	Summit	1,291	1,416	0.91	C
State Rd	Howard St	Chesnut Blvd	Summit	1,304	2,738	0.48	A
State Rd	Chesnut Blvd	Broad Blvd	Summit	1,380	2,738	0.50	B
State Rd	Broad Blvd	Valley Rd	Summit	1,410	2,190	0.64	B
State Rd	Valley Rd	Portage Trail	Summit	1,282	2,190	0.59	B
State Rd	Portage Trail	Graham Rd	Summit	1,860	2,738	0.68	B
State Rd	Graham Rd	Bath Rd	Summit	1,130	1,416	0.80	C
State Rd	Bath Rd	Marc Av	Summit	1,083	1,416	0.76	C
State Rd	Marc Av	Steels Corners Rd	Summit	981	1,124	0.87	C
State Rd	Steels Corners Rd	Quick Rd	Summit	1,105	1,416	0.78	C
State Rd	Quick Rd	Seasons Rd	Summit	702	1,133	0.62	B
State St	Wooster Rd N	I-76/US224	Summit	878	1,749	0.50	B
Steels Corners Rd	State Rd	Wyoga Lake Rd	Summit	862	1,416	0.61	B
Steels Corners Rd	Wyoga Lake Rd	Bridgewater pkwy	Summit	1,125	1,416	0.79	C
Steels Corners Rd	Bridgewater pkwy	SR 8	Summit	2,043	2,738	0.75	B
Steels Corners Rd	SR 8	Hudson Dr	Summit	2,043	2,738	0.75	B
Stow Rd	SR 91 (Darrow Rd)	Fishcreek Rd	Summit	743	1,416	0.52	B
Stow Rd	Fishcreek Rd	Norton Rd	Summit	680	1,133	0.60	B
Stow Rd	Norton Rd	Barlow Rd	Summit	883	1,416	0.62	B
Stow Rd	Barlow Rd	Ravenna Rd	Summit	1,074	1,416	0.76	C
Stow Rd	Ravenna Rd	Canterbury Dr	Summit	1,047	1,416	0.74	B
Stow Rd	Canterbury Dr	SR 303	Summit	1,014	1,416	0.72	B
Tallmadge Rd	Newberry St	Clyde Av	Summit	970	1,416	0.69	B
Tallmadge Rd	Clyde Av	Howe Av	Summit	965	1,416	0.68	B
Terex Rd	SR 303	Barlow Rd	Summit	682	1,133	0.60	B
Terex Rd	Barlow Rd	Hudson Dr	Summit	673	1,416	0.48	A
Terex Rd	Hudson Dr	SR 91 (Darrow Rd)	Summit	1,146	2,738	0.42	A
Triplett Blvd	Hilbish Av	Abington Rd	Summit	919	1,416	0.65	B
Triplett Blvd	Abington Rd	SR 91 (Canton Rd)	Summit	721	1,416	0.51	B
Valleyview Rd	Cuyahoga County Line	Chaffee Rd	Summit	1,061	1,133	0.94	C
Valleyview Rd	Chaffee Rd	Boyden Rd	Summit	1,235	1,133	1.09	D
Valleyview Rd	Boyden Rd	Olde Eight Rd	Summit	1,165	1,133	1.03	D
Waterloo Rd	S. Main St	Glenmount Av	Summit	991	2,738	0.36	A
Waterloo Rd	Glenmount Av	Brown St	Summit	1,317	2,186	0.60	B
Waterloo Rd	Brown St	I-77 SB Ramps	Summit	2,004	2,186	0.92	C
Waterloo Rd	I-77 SB Ramps	Arlington St	Summit	1,110	2,077	0.53	B
White Pond Dr	I-77 SB Ramps	Pine Grove Dr	Summit	1,083	1,416	0.76	C
White Pond Dr	Pine Grove Dr	Frank Blvd	Summit	699	1,416	0.49	A
Wooster Rd W	SR 21	Taylor Rd	Summit	608	1,133	0.54	B
Wooster Rd W	Taylor Rd	Johnson Rd	Summit	768	1,133	0.68	B
Wooster Rd W	Johnson Rd	31st St	Summit	1,064	1,416	0.75	C
Wooster Rd W	31st St	Hudson Run Rd	Summit	1,286	2,738	0.47	A
Wooster Rd W	Hudson Run Rd	25th St	Summit	1,098	2,190	0.50	B
Wooster Rd W	25th St	14th St	Summit	934	1,124	0.83	C
Wooster Rd W	14th St	10th St	Summit	953	2,190	0.44	A
Wooster Rd W	10th St	8th St	Summit	960	2,190	0.44	A
Wooster Rd W	8th St	4th St	Summit	898	2,190	0.41	A
Wooster Rd W	4th St	3rd St	Summit	898	1,661	0.54	B
Wooster Rd W	3rd St	2nd St	Summit	952	2,190	0.43	A
Wooster Rd W	2nd St	Robinson Av	Summit	1,212	2,738	0.44	A
Wooster Rd N	Robinson Av	Hopocan Av	Summit	746	1,749	0.43	A
Wooster Rd N	Hopocan Av	Norton Av	Summit	919	2,190	0.42	A
Wooster Rd N	Norton Av	SR 619 (State St)	Summit	997	1,416	0.70	B
SR 21	Stark County Line	Edwards Rd	Wayne	1,139	4,640	0.25	A

Appendix D: Arterial LOS Analysis

Highway	From	To	County	Peak Hour Volume	Peak Hour Capacity	Peak V/C Ratio	Peak Hour Segment LOS
SR 21	Edwards Rd	Eastern Rd	Wayne	1,566	4,640	0.34	A
SR 585	Moine Rd	Gates St	Wayne	944	1,133	0.83	C
SR 585	Gates St	Summit County Line	Wayne	944	2,190	0.43	A