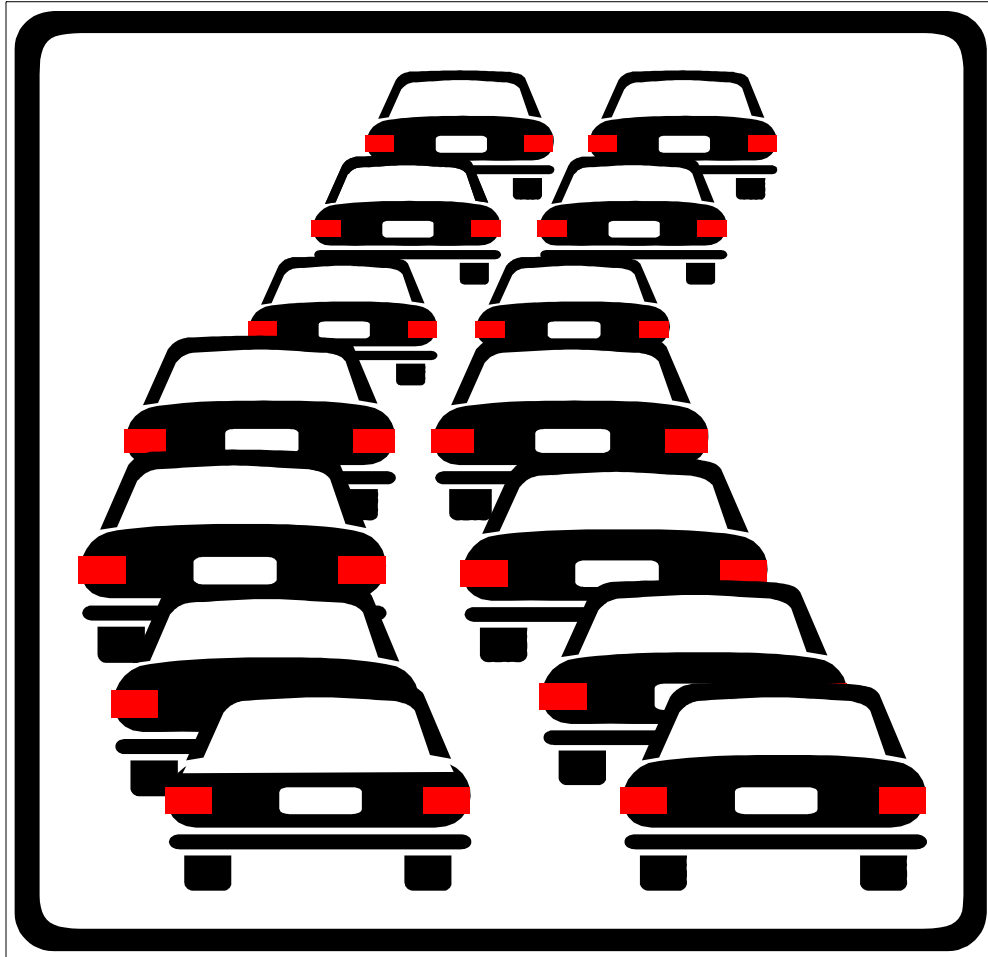


Congestion Management System (CMS)



FINAL REPORT
2001-2002 UPWP

Congestion Management System

Final Report

April 2002

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Executive Summary

Congestion Management System

Introduction

The Syracuse Metropolitan Transportation Council's (SMTC) Congestion Management System (CMS) is currently designed to identify and monitor congestion annually at selected locations throughout Onondaga County and is required by federal legislation. This process aids in identifying locations that need improvements to relieve congestion.

The locations analyzed through the CMS process were selected in the fall of 1997 by the CMS Working Group. Data collected for the CMS consisted of Average Annual Daily Traffic (AADT) counts at approximately one hundred road segments and turning movement counts at nineteen intersections.

Analysis and Results

The level of congestion was evaluated at all of the count locations by examining the volume to capacity (v/c) ratios for the PM peak hour. If the v/c ratio was found to be greater than ($>$) .90, the location was considered to be congested.

Through this year's CMS analysis, one intersection was considered to be congested (with a Level of Service E): South Salina Street at Seneca Turnpike. After examining the individual intersection approaches, a few approaches were determined to be congested, and a few were determined to be failing (Level of Service F).

The CMS analysis also revealed that twenty-seven road segments were congested. The three road segments with the highest level of congestion are listed below:

- I-690 from Access McBride St. to Access I-81 northbound
- I-81 from Junction Route 298 Bear St. to Route 370
- I-81 from Junction E. Adams St. to Access I-690

Through this year's CMS report, the SMTC also obtained speed counts from the New York State Department of Transportation (NYSDOT) at five locations. The relationship between the collected speed counts and the traffic volume congestion analysis is best shown on Southbound Interstate 481, where forty-five percent of vehicles are shown as traveling five miles per hour below the posted speed limit during the PM peak hour.

Conclusion

Various improvement projects that will most likely benefit the identified congested areas have been included on various municipal capital programs, the SMTC Transportation Improvement Program (TIP) or the SMTC Unified Planning Work Program (UPWP). Once completed, these projects should help to alleviate some of the congestion that has been identified through the CMS.

At a CMS Study Advisory Committee meeting held in December 2001, it was determined that the CMS should be completed on a two year cycle as opposed to the current one year cycle. In addition, it was determined that it would prove most useful if the CMS was completed in 'non-TIP' years. As the TIP is on a two-year cycle, if the SMTC continued to collect traffic counts every year for the CMS, one of those two years would be out of date for the upcoming TIP. Therefore, it would be most efficient to collect the traffic counts so that they match up with the biennial CMS process and staggered with the biennial TIP process. This would assist the SMTC's Planning and Policy Committees in determining which potential TIP projects may help to alleviate congestion.

Through this process, the SMTC will continue to collect and analyze data for the monitoring of congestion in the SMTC MPO area on a biennial basis.

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SECTION 1

Congestion Management System Report

Introduction

The Syracuse Metropolitan Transportation Council's (SMTC) Congestion Management System (CMS) is a systematic process for managing congestion that provides information on the performance of the transportation system. Congestion is described in 23 CFR Part 500.109 as "the level at which transportation system performance is no longer acceptable due to traffic interference." The CMS is currently designed to identify and monitor congestion annually at selected locations throughout Onondaga County and is required by federal legislation. This process aids in identifying locations that need improvements to relieve congestion. The SMTC will offer assistance to its member agencies to establish strategies for addressing congestion at the identified locations. These strategies could be included in various municipal capital programs, the SMTC Transportation Improvement Program (TIP), or the SMTC Unified Planning Work Program (UPWP).

There are two tiers of analysis involved in the CMS process. The first level of analysis, Tier 1, consists of performance measures that are used to determine the volume to capacity (v/c) ratios at peak one-hour intervals. The second level of analysis, Tier 2, consists of a more detailed performance measure, excess delay.

Data Acquisition

The specific road segments and intersection locations to be analyzed were selected in the fall of 1997 by the CMS Working Group, which consisted of the following agencies:

- City of Syracuse Department of Public Works (DPW)
- Onondaga County Department of Transportation (OCDOT)
- Syracuse-Onondaga County Planning Agency (SOCPA)
- Central New York Regional Transportation Authority (CNYRTA)
- New York State Department of Transportation (NYSDOT)
- New York State Thruway Authority (NYSTA)

Currently, each year, data collected for the CMS consists of Average Annual Daily Traffic (AADT) counts at approximately one hundred road segment locations collected in one-hour intervals, by direction. The AADT counts are also collected in fifteen-minute intervals for a majority of the locations. These counts are currently collected on a rotating three-year cycle, where one-third of the counts are collected new each year. The NYSDOT currently provides the road segment counts to the SMTC. The locations of the road segment traffic counts are shown in *Figure 1*.

In addition to the road segment traffic counts, nineteen intersections are counted and analyzed during the two-hour morning (7-9 AM) and two-hour evening (4-6 PM) peak periods. These intersections are fundamental to the regional transportation system and have either a high volume of traffic moving through them, or are constrained by geometry and/or adjacent land use. The intersection counts for this year's CMS were completed by Clough, Harbour & Associates. *Figure 2* identifies the locations of the intersection counts.

To reflect the efficiency of the transportation network independent of its capacity for vehicles, twenty-one peak period vehicle occupancy counts were collected at locations shown in **Figure 3**. The peak periods counted were 7-9 AM and 4-6 PM.

Tier 1 Data Analysis

Upon completion of the data collection, **Table 1, Road Segment Traffic Counts**, was compiled. Table 1 contains a description of each road segment count location, traffic volumes, and volume-to-capacity (v/c) ratios. The majority of fifteen-minute interval AADT counts indicated higher AM and PM peak hour volumes than peak hour volumes from the one-hour interval AADT counts. The fifteen-minute interval AADT counts revealed a more defined period of time and volumes indicative of peak hour traffic. Therefore, the fifteen-minute interval AADT counts were used for this analysis.

A factor was created by comparing AM and PM peak hour volumes for the locations that had both the one-hour interval counts and the fifteen-minute interval counts. The factors for all of these locations were then averaged. The new AM and PM peak hour factors were then applied to the locations that had only one-hour interval count data in order to obtain peak hour volumes based on the fifteen-minute interval counts. The only traffic counts available for the seven locations along the Thruway (I-90) were AADT counts by direction. In the future, there are plans to obtain traffic counts in one-hour intervals at these locations.

The next step in the Tier 1 process was to evaluate the level of congestion at all of the count locations by examining the v/c ratios for both the AM and PM peak hours. The CMS Working Group determined that if the v/c ratio was greater than ($>$) 0.90, the location was considered to be congested. The Level of Service was derived for both the AM and PM peak hours as well. The Institute of Transportation Engineers (ITE) defines Level of Service as “the operational conditions within a traffic stream as perceived by users of the facility.” Level of Service factors range from A - F. Level of Service A represents a free flow with individual vehicles unaffected by other vehicles, while a Level of Service E represents operating conditions at capacity, and a Level of Service F defines a breakdown in the flow of traffic. The Level of Service for each road segment location was determined by using the table in **Appendix A**. Highway Capacity Software (HCS), as well as information from the Florida Department of Transportation, was used to create this table.

Intersection counts were completed by Clough, Harbour & Associates for the SMTC for the AM and PM peak hours and compiled into **Table 2, Intersection Traffic Counts**. The counts were entered into either Highway Capacity Software (HCS) or Synchro traffic signal timing software to determine the existing Level of Service that each intersection was operating at for both the AM and PM peak hours. The Level of Service for intersections is based on seconds of vehicle delay. **Appendix B** contains the HCS and Synchro calculations and printouts for each of the nineteen intersections for both the AM and PM peak hours.

Vehicle occupancy counts were previously collected at selected locations for both the AM and PM peak hours. These counts indicate the number of people traveling in each vehicle. The vehicle occupancy counts are found in **Table 3, Vehicle Occupancy Counts**, along with the location of the counts, percentage of single occupancy vehicles (SOV), and the AM and PM average number of occupants per vehicle.

Tier 1 Results

Of the approximate one hundred road segment count locations, twenty-seven had a v/c ratio > 0.90 for the PM peak hour. **Table 4, Congested Road Segment Locations**, lists these twenty-seven locations and **Figure 4** displays the location of these road segments. The PM peak hour was analyzed to determine congestion instead of the AM peak hour, as a majority of the locations had higher traffic volumes during the PM peak hour. **Appendix C** outlines typical congested conditions, by facility type, and lists a number of contributing factors for congestion.

Of the nineteen intersection count locations, each intersection was determined to have a Level of Service (LOS) D or better, except for the intersection of South Salina Street and Seneca Turnpike, which had a LOS E. The LOS for this particular intersection was determined through use of Synchro traffic analysis software. In addition, the SMTTC utilized the most current Synchro file for the intersection of South Salina Street and Seneca Turnpike, provided by the City of Syracuse Traffic Control Center.

According to the ITE Transportation Planning Handbook, LOS E indicates that long delays, from about 55 to 80 seconds per vehicle, occur at this intersection. While LOS E is an acceptable level of service for most intersections, it can indicate that an intersection is congested. Therefore, of the nineteen intersections analyzed, the only intersection determined to be congested is the intersection of South Salina Street and Seneca Turnpike. However, looking at each individual approach of the nineteen intersections, there were a few approaches that had a LOS E, meaning that these approaches may also be congested due to higher intervals of vehicle delay. These intersections are listed in **Table 5, Intersection LOS By Approach**.

In addition, on the whole, no intersection is currently considered to be failing (i.e. a LOS of F). However looking at each individual approach, there were a few intersection approaches that had LOS F, meaning that these individual intersection approaches are failing. These are also found in **Table 5**.

Figure 5 displays the intersections with congested and failing approaches.

The average number of occupants per vehicle for the twenty-one locations counted was 1.29 during the PM peak period from 4-6 PM. According to the 1995 Nationwide Personal Transportation Survey (NPTS) the average vehicle occupancy for New York State was 1.50.

Tier 2 Data Analysis

Tier 2 analysis is a more detailed analysis that further examines congested locations that are identified as having a v/c ratio > 0.90. Tier 2 uses the concept of “excess delay” as a performance measure for congestion.

The Transportation Research Board defines excess delay as “the amount of time spent at a given location that exceeds the maximum amount of time that is generally considered acceptable.” The following formula was applied to the twenty-seven congested road segment locations identified in the Tier 1 analysis:

$$ExcessDelay_{segment}^{**} = FreeflowTime * (1 + 0.15 * (\frac{DirectionalVolume}{DirectionalCapacity_{LOS"C"***}})^4 - 1.366)$$

**The excess delay equation was not used to determine the values for intersections because HCS and Synchro compute a more accurate result with the data given.

***Segment capacities at LOS “C” are 80% of the LOS D/E thresholds shown in the Excess Delay Thresholds chart on the following page.

Free flow Time = Speed limit of the road segment
Directional Volume = PM Peak Hour Volume
Directional Capacity = Number of lanes x (.80)(Excess Delay Threshold)

Excess Delay Thresholds	
Facility Type	Excess Delay Threshold, LOS D/E
Freeway	1500 vehicles/lane, one direction/hour
Multi-lane arterial w/ median	1400 vehicles/lane, one direction/hour
Multi-lane arterial w/o median	1250 vehicles/lane, one direction/hour
Two-lane arterial and collector	1000 vehicles/direction/hour
Local (residential) road	625 vehicles/direction/hour

Magnitude of PM Peak Hour Excess Delay	
Magnitude	Qualifications
0	0.0 hours excess delay
1	0.01 – 29.9 hours
2	30.0 – 59.9 hours
3	60.0 – 199.9 hours
4	200 or more hours
A value of 2 rates as significant	
A value of 3 or 4 rates as critical	

Following the research of methods used to determine excess delay, the SMTC decided to utilize the excess delay segment equation and thresholds utilized by the Capital District Transportation Committee (CDTC) in their CMS report. In terms of population, the CDTC MPO is similar to the SMTC MPO; therefore the equation and thresholds are reasonable for use in the Syracuse MPO area. With input from the member agencies and assistance from other MPOs, the SMTC will continue to refine the thresholds and the excess delay equation.

Tier 2 Results

Of the twenty-seven congested road segment locations identified in the Tier 1 analysis, three locations experienced excess delay:

- I-690 from Access McBride St. to Access I-81 northbound
- I-81 from Junction Route 298 Bear St. to Route 370
- I-81 from Junction E. Adams St. to Access I-690

The same three locations were identified as experiencing excess delay in the 1999-2000 CMS report, which noted that excess delay existed at four locations (this fourth location no longer experiences excess delay). The same three locations were also identified as being congested in the 2000-2001 CMS report.

Figure 6 displays the three locations experiencing excess delay. Only one of the three locations, I-81 between the junction with East Adams Street and Interstate 690, had a significant amount of excess delay time, 38.65 hours. The Magnitude of PM Peak Hour Excess Delay chart above shows that 38.65 hours of excess delay falls under a magnitude of '2', which means it is significant. The remaining two locations both have a magnitude of 1, indicating less substantial excess delay time (*refer to the highlighted locations in Table 4*).

Speed Data

According to guidance received from the NYSDOT, MPOs will need to begin converting from the old measure of effectiveness (Level of Service) to the new method (excess delay) for their CMS reports. For congested roads, the NYSDOT indicates that accurate determination of excess delay can only be done by collecting hourly speed data. The NYSDOT also indicates that using volume to determine excess delay has been found to be inaccurate on congested roads. In order to reduce duplication of volume and speed counts, the NYSDOT has requested that this data be collected in cooperation with the NYSDOT, and preferably by the NYSDOT traffic count stations. This will also allow MPOs to utilize the NYSDOT's roadway characteristics file, which is linked to the speed and volumes files by station number.

To that end, as a starting point, speed counts at five locations throughout the county were provided to the SMTC by the NYSDOT. The five locations, shown in **Figure 7**, are:

- Interstate 481 between NY5/NY92 and I-690.
- NY 5 between the NY 174 interchange and the Newport Road interchange.
- NY 695 between the NY 5 interchange and the Interstate 690 interchange.
- Interstate 81 between Interstate 90 and US 11.
- NY 298 between Midler Avenue Extension and NY 635 (between GM Circle and Carrier Circle).

Each of these road segments are urban freeways with four or more lanes and a 65 mile per hour (mph) speed limit, except for NY 298, which is a four-lane divided highway with a 55 mph limit. **Charts 1 through 5** display the percentage of vehicles traveling within a certain speed interval. These percentages are shown for the AM peak (7AM to 9AM) and the PM peak (4PM to 6PM) for both cardinal directions on each roadway.

With the exception of the speed count location on NY 5, all of the speed count locations are situated on road segments where CMS traffic volume counts were collected. Three of these road segments have been identified in the Tier 1 analysis as having a v/c ratio above .90. This indicates that there may be congestion at these three locations, which include the corresponding segments of Interstate 481, NY 695, and Interstate 81. The relationship between these speed counts and the traffic volume congestion analysis is best shown on Southbound Interstate 481 where forty-five percent of vehicles are shown as traveling five miles per hour below the posted speed limit during the PM peak hour.

Improvement Projects

Some improvement projects that will most likely benefit the identified congested areas have been included on various municipal capital programs, the SMTC TIP or the SMTC UPWP. The limited amount of capital resources and the need to maintain the existing infrastructure are major factors to consider when programming projects to relieve congestion.

The following projects, which are located in close proximity to CMS identified congested locations, are programmed in the 2001-2006 SMTC TIP:

Route #	PIN	Project Name	Project Status
5/92	303472	Routes 5 & 92 Demo Project	- In Preliminary Design - Letting Date*: 07/04
31	303753	Route 31, Route 481 to Henry Clay Blvd, Phase I	- In Final Design - Letting Date: 12/02
31	303756	Route 31 over Seneca River (Belgium Bridge)	- In Final Design - Letting Date: 09/02 (delays due to archeological reasons)
I-81	350138	Interstate 81 ITS Downtown	- In Preliminary Design - Letting Date: 04/04

Route #	PIN	Project Name	Project Status
173	301912	Route 173 (W Genesee St to Syracuse City Line)	- In Final Design - Letting Date: 09/02
173/175	301921	Route 173, OCC to Broad Rd, Route 175, OCC to Route 173	- In Preliminary Design - Letting Date: 12/03

* All letting dates are for the letting of the construction contracts

Once completed, these projects should help to alleviate some of the congestion that has been identified through the CMS.

The Liverpool Area – Onondaga Lake Parkway Transportation Study, a 1999-2000 SMTC Unified Planning Work Program (UPWP) task, analyzed transportation and mobility issues within and surrounding the Village of Liverpool. Many of the congested road segment locations and intersections listed in the CMS for the Liverpool area were included as part of the study area for the Liverpool Area – Onondaga Lake Parkway Transportation Study. The SMTC's consultant for this project analyzed various alternatives and recommended a series of alternatives that would be effective in addressing the needs presented in The Liverpool Area – Onondaga Lake Parkway Transportation Study. The final recommended alternative made by the consultant included the following:

- Combining the benefits of the Onondaga County Settlement Plan* along with the development of a Liverpool Bypass from NYS Route 370 to Electronics Parkway
- Traffic Calming
- Pedestrian Signal Timings
- Reduced Speed Limit on Onondaga Lake Parkway

*The Onondaga County Settlement Plan, prepared by a consultant to Onondaga County, addresses the Village of Liverpool issues such as reducing congestion, strengthening the businesses, and providing a pedestrian and bicycle friendly environment, while the proposed bypass will provide alternative commuter and truck routes.

If implemented, the recommendations for the alternative listed above should assist in reducing congestion in the Liverpool area. In November 2000, the New York State Department of Transportation made a decision to reduce the speed limit along Onondaga Lake Parkway from 55 miles per hour to 45 miles per hour from November 1st to April 1st annually.

In addition, in June 1999, the Village of Liverpool requested and received Enhancement money to complete the Liverpool Commuter Corridor Beautification Project, a TEA-21 Enhancement Project (enhancement projects also receive a TIP PIN, this project's TIP PIN is 395015). The Village has retained a consultant and the project is currently in Preliminary Design. As part of this project, the Village of Liverpool will enhance the streetscape in the village along a major commuter corridor (where Route 370 and County Route 57 divide in the center of the village business district), install sidewalks and improve crosswalks in the corridor, and renovate a public park adjacent to visible from

the corridor. As a result of the project, one of the expected benefits is improved access to and from the Village business district, Village parks, and the adjoining Onondaga Lake Park. The improved access should lend itself to alleviating some of the CMS identified congestion that currently exists in this portion of Liverpool.

Reporting on the CMS in the Future

The Congestion Management System is an ongoing project that has typically been completed on an annual basis. At a CMS Study Advisory Committee held in December 2001, it was determined that the CMS should be completed on a two year cycle as opposed to the current one year cycle. In addition, it was determined that it would prove most useful if the CMS was completed in 'non-TIP' years. As the TIP is on a two-year cycle, if the SMTC continued to collect traffic counts every year for the CMS, one of those two years would be out of date for the upcoming TIP. Therefore, it would be most efficient to collect the traffic counts so that they match up with the biennial CMS process and staggered with the biennial TIP process. This would assist the SMTC's Planning and Policy Committees in determining which potential TIP projects may help to alleviate congestion.

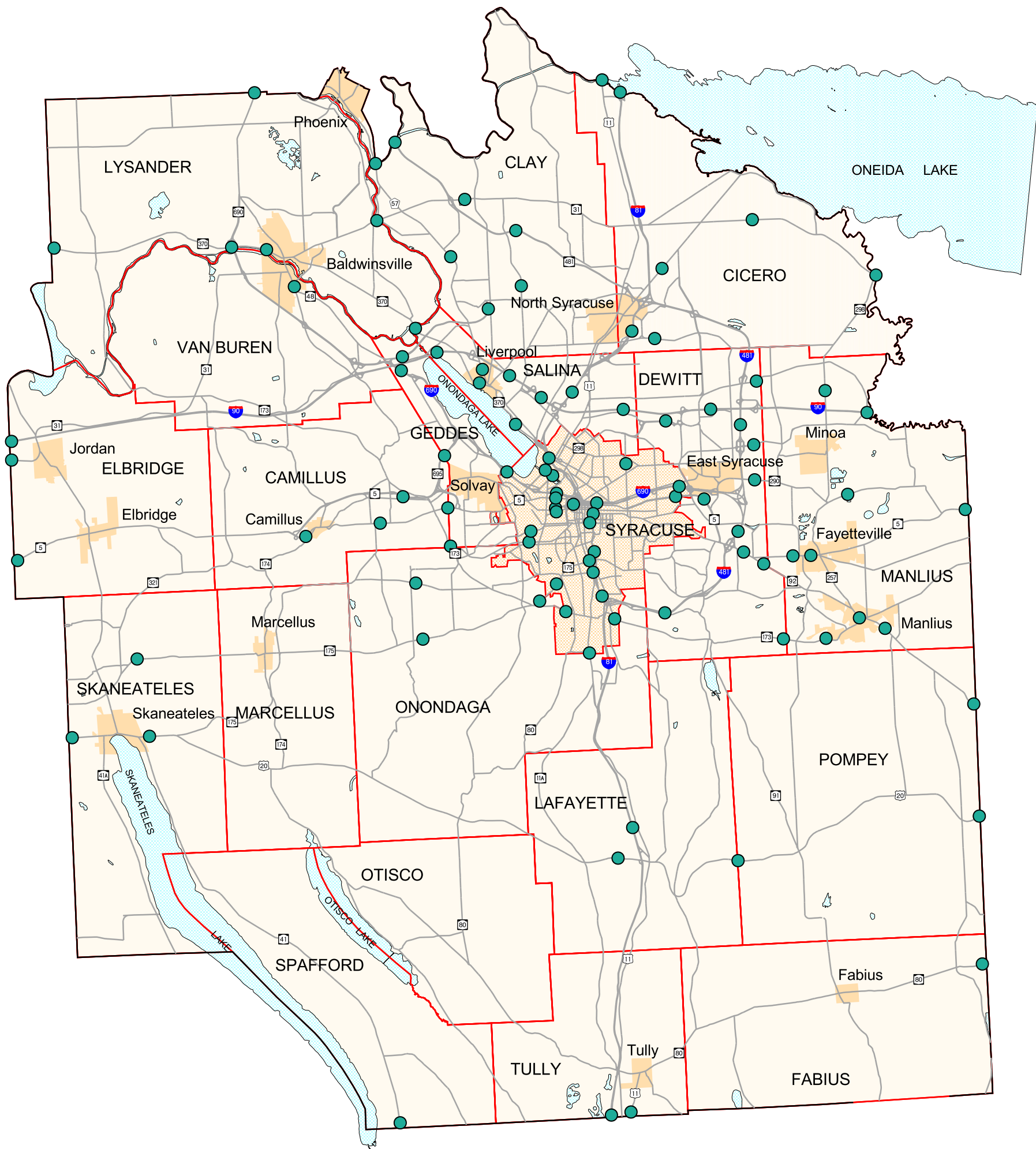
At the December 2001 meeting, the SAC also suggested that the counts be collected on an hourly basis only. At present, the CMS traffic counts are collected on a three-year cycle and are collected in fifteen-minute intervals at most locations. No formal determination was made on the collection of traffic counts, as this topic will be more thoroughly discussed the next time the CMS is developed.

Overall, the SAC agreed that moving the CMS reporting to a biennial task would be most supportive of and beneficial to the TIP process. The SAC also agreed that the CMS should be improved so that it functions as a useful tool for the SMTC and its member agencies. One of the ways in which the CMS could be improved would be to tie the Congestion Mitigation and Air Quality (CMAQ) process in with the CMS. Additional data and analysis will be incorporated into the future CMS projects, but the process and format will not change extensively.

Through this process, the SMTC will continue to collect and analyze data for the monitoring of congestion in the SMTC MPO area on a biennial basis.

SECTION 2

Figures 1 - 7



Road Segment Count Locations

2001-2002 CMS Report

Figure 1

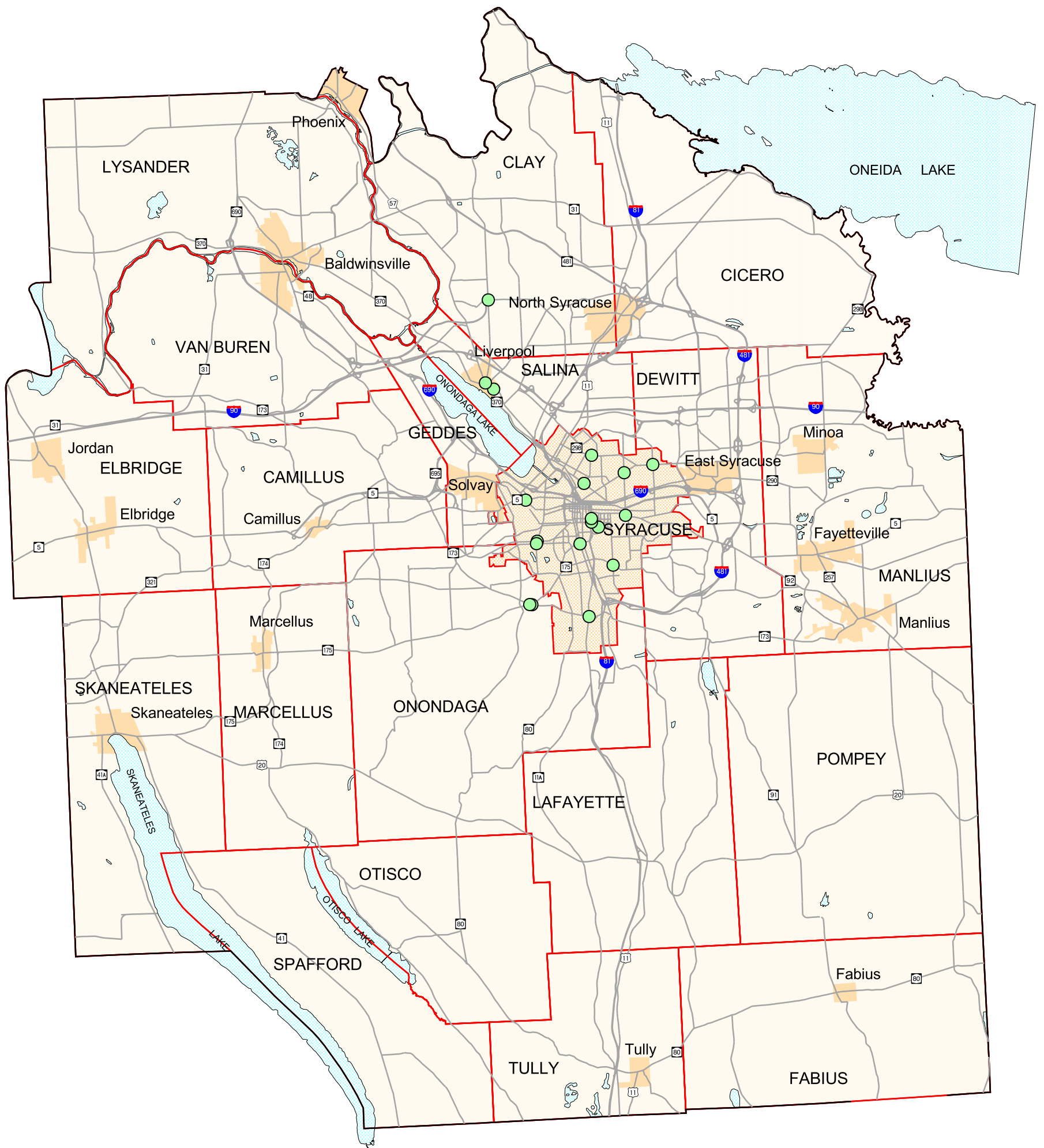


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0 1 2 3 4 5 Miles

- Road Segment Count Locations
- Federal Aid Eligible Roadways
- MPO Boundary
- Water
- Villages
- Cities
- Town Boundaries



Intersection Count Locations

2001-2002 CMS Report

Figure 2

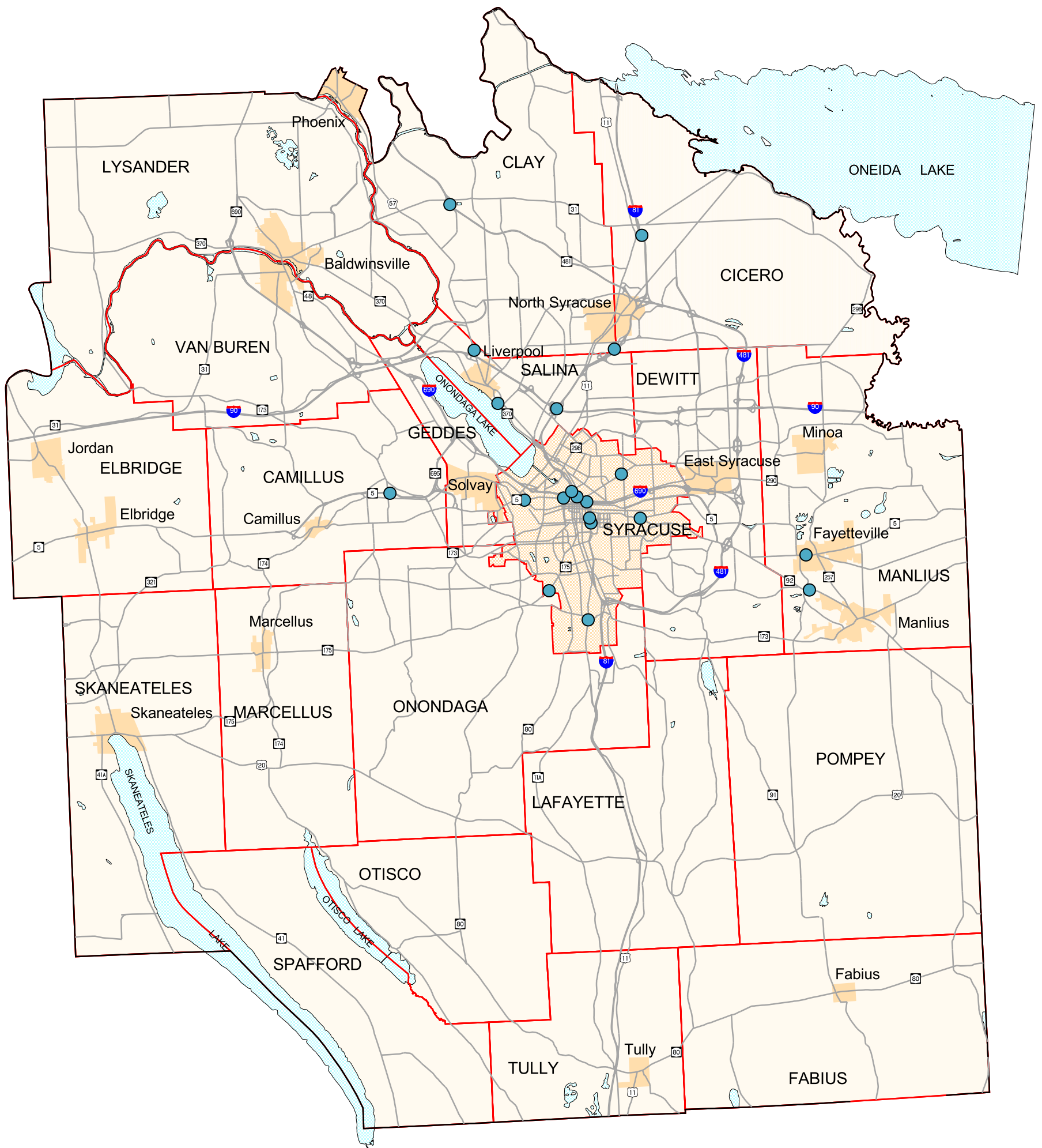


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0 1 2 3 4 5 Miles

- Intersection Count Locations
- Federal Aid Eligible Roadways
- MPO Boundary
- Water
- Villages
- Cities
- Town Boundaries



Occupancy Count Locations

2001-2002 CMS Report

Figure 3

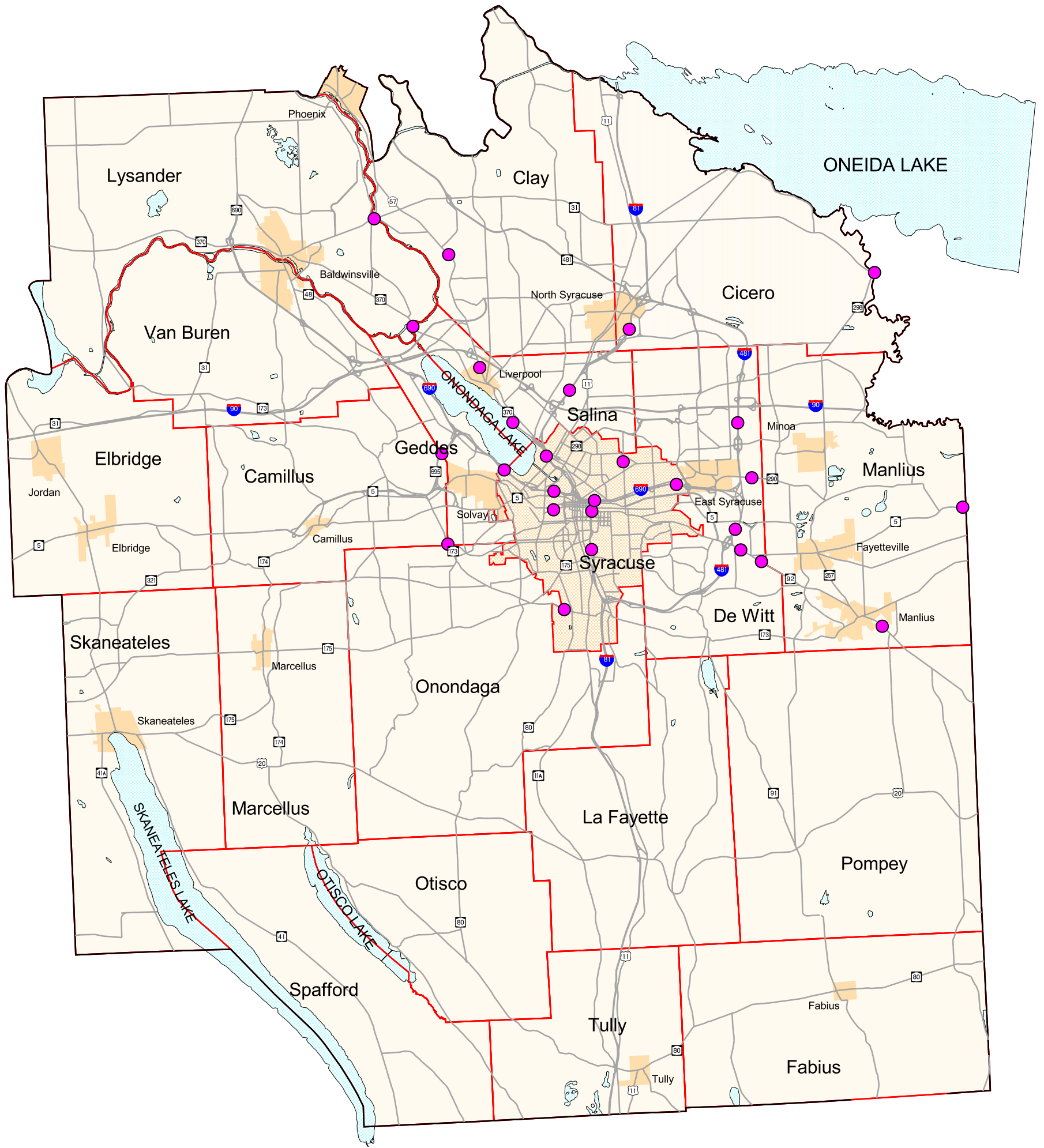


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0 1 2 3 4 5 Miles

- Occupancy Count Locations
- Federal Aid Eligible Roadways
- MPO Boundary
- Water
- Villages
- Cities
- Town Boundaries



* Tier 1 Congestion Locations have been determined on road segments where the volume to capacity ratio is greater than 1.

Tier 1 Congested Locations*

2001-2002 CMS Report

Figure 4



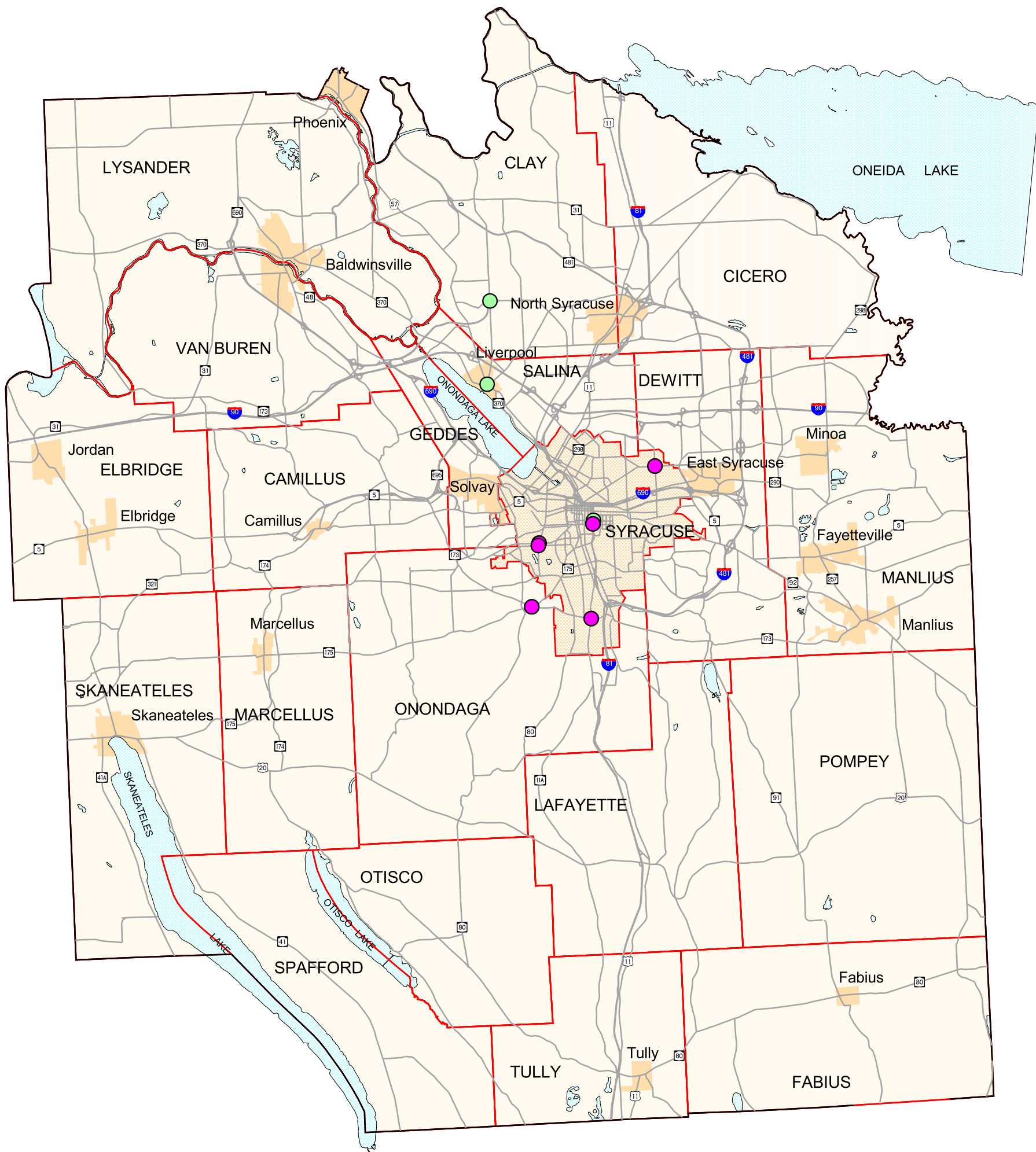
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0 1 2 3 4 5 Miles

- Tier 1 Locations
- Federal Aid Eligible Roadways
- MPO Boundary
- Water
- Villages
- Cities
- Town Boundaries

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Intersections with Congested Approaches 2001-2002 CMS Report

Figure 5

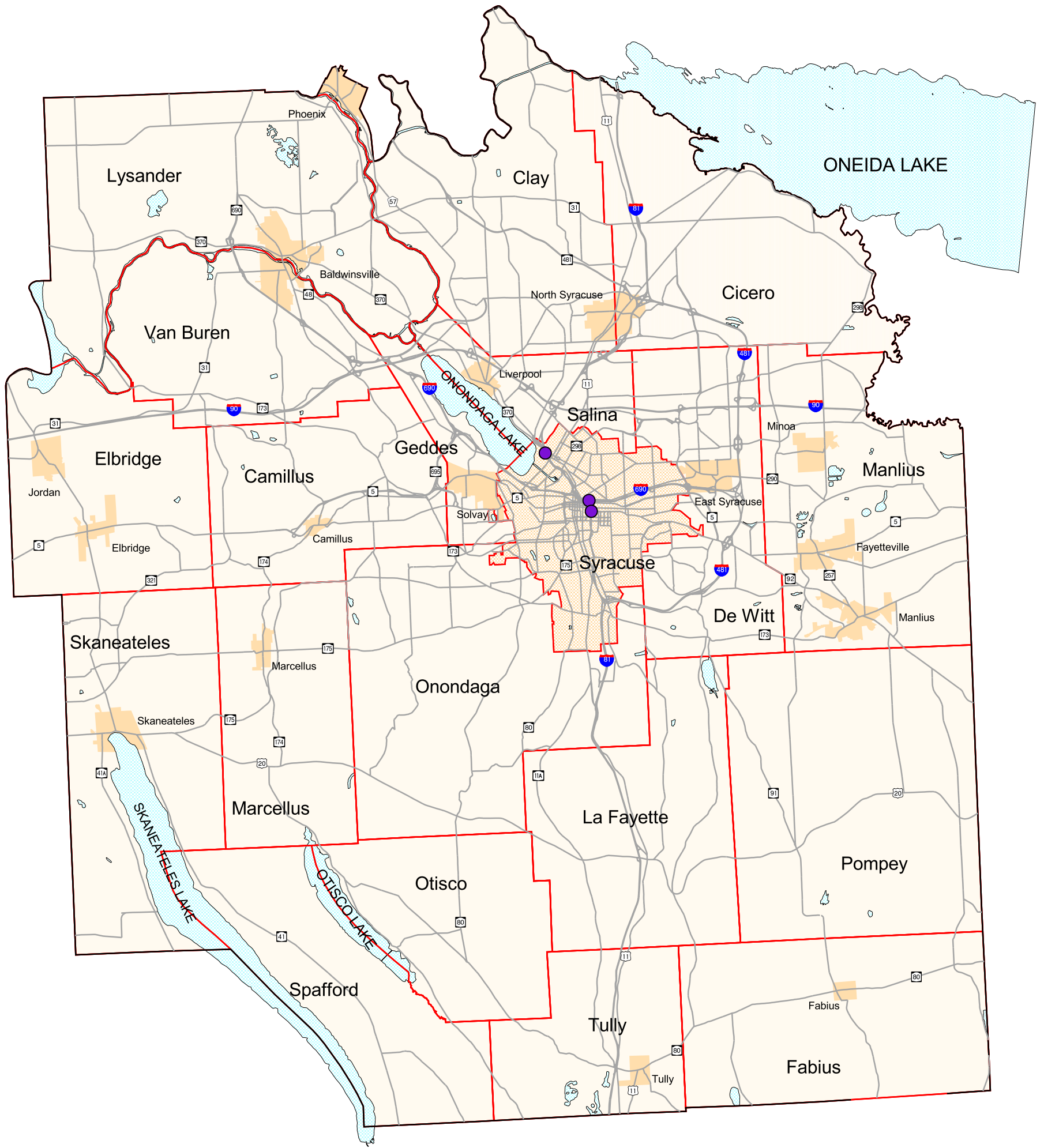


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0 1 2 3 4 5 Miles

- Intersections with:
- LOS F Approach(es)
- LOS E Approach(es)
- Federal Aid Eligible Roadways
- MPO Boundary
- Water
- Villages
- Cities
- Town Boundaries



* Tier 2 Locations have been determined on Tier 1 road segments where there is excess delay. The Transportation Research Board defines excess delay as "the amount of time spent at a given location that exceeds the maximum amount of time that is generally considered acceptable."



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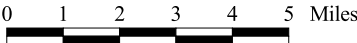
Tier 2 Excess Delay Locations*

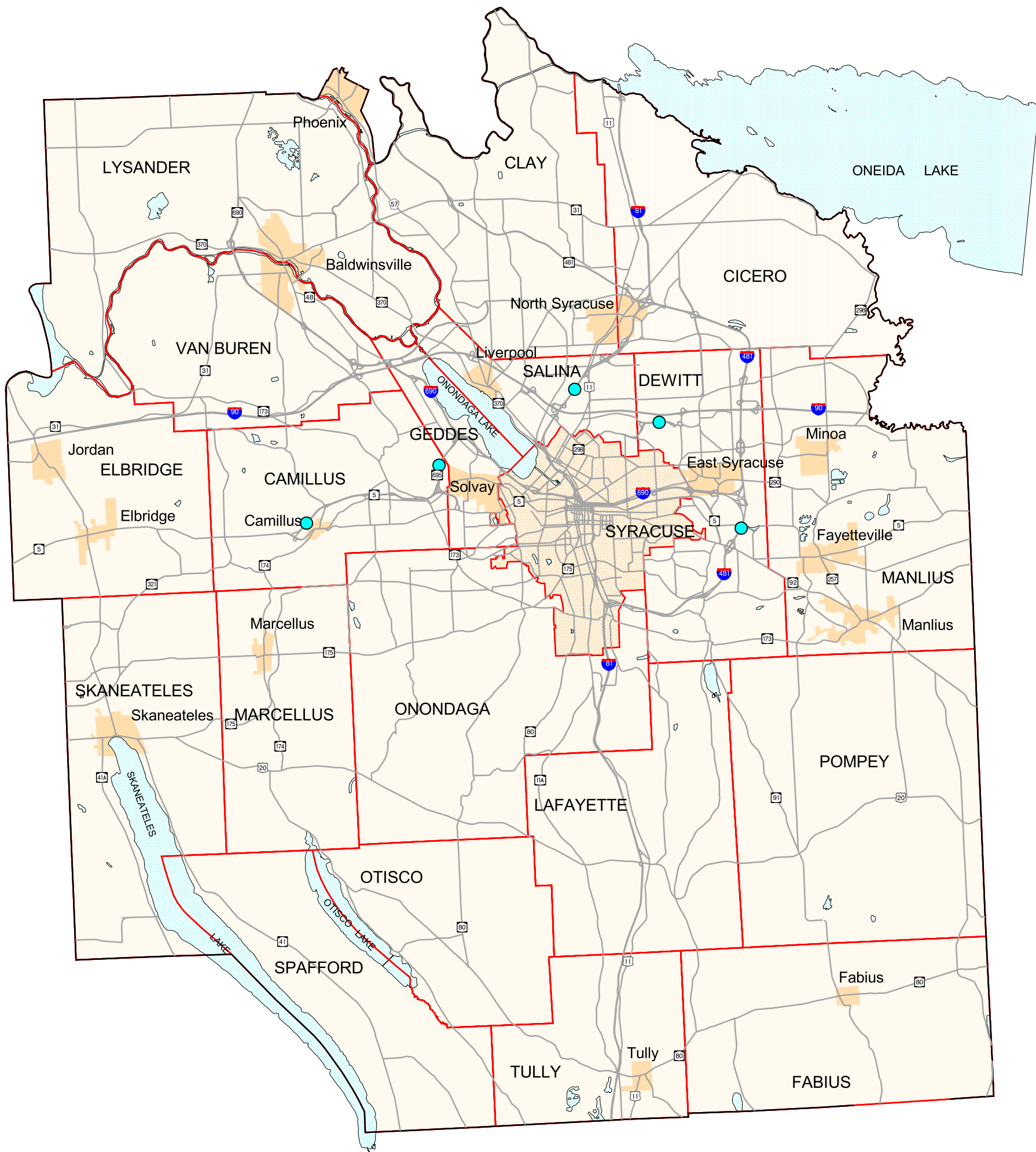
2001-2002 CMS Report

Figure 6

- Tier 2 Locations
- Federal Aid Eligible Roadways
- MPO Boundary
- Water
- Villages
- Cities
- Town Boundaries

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* Speed Count Locations are loactions where vehicle speed data have been collected by NYSDOT.

Speed Count Locations*

2001-2002 CMS Report

Figure 7



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- Speed Count Locations
- Federal Aid Eligible Roadways
- MPO Boundary
- Water
- Villages
- Cities
- Town Boundaries

0 1 2 3 4 5 Miles

SECTION 3

Tables 1 - 5

TABLE 1

ROAD SEGMENT TRAFFIC COUNTS

Count Location Reference Marker	Station #	Road # or Road Name	From/To	Seg Length	Year of DOT Counts	Exist Road*	Functional Class**	15 Min Counts AM Peak Hour					15 Min Counts PM Peak Hour					Existing Road Service Vol. "D"***	PM PK V/C Ratio	V/C >.90 Requires Tier 2	PM Peak Hour LOS
Non TVR	912	930 C	Rt 11 State St/Jct 811	0.25	Apr-00	4UU-I	MA				1290					2251	2251	4,039	0.56		C-D
481133012052	072	1 481	Acc Rts 5 92/Acc Rt 690I	1.26	Sep-00	6UF	PA										5514	5,506	1.00	x	E
481133012010	087	1 481	Syracuse E City Ln/Acc Jamesville Rd	2.73	Oct-00	4UF	PA	768	1315				1130	1246			2376	3,671	0.65		C-D
481 34021006	101	SR 481	Acc Rt 31/Oswego County Line	2.57	Jul-00	4UF	PA	466	774				1176	807			1983	3,671	0.54		C-D
690133014008	549	1 690	Int 39 90I Rt 690/Rt 90I is Under	1.35	Aug-99	4UF	PA			1890	829				1199	2083	3282	3,671	0.89		C-D
690133011041	545	1 690	Jct Rt 695/Syracuse W City Line	1.99	Apr-01	6UF	PA			4915	1472				2223	5555	7778	5,506	1.41	x	F
690133012018	060	1 690	Acc Geddes St Half Int/Acc West St	0.64	Apr-01	6UF	PA			4946	1785				2062	4860	6922	5,506	1.26	x	F
690133012054	074	1 690	Acc Midler Av/Syracuse E C L Rt 635	1.06	Apr-01	6UF	PA			3745	4347				4198	4093	8291	5,506	1.51	x	F
690133012032	063	1 690	Acc McBride St EB/Acc 811 EB	0.22	Apr-01	6UF	PA			2614	3868				4383	4933	9316	5,506	1.69	x	F
81133033048	134	1 81	Jct Taft Rd/Jct Rt 481	1.30	Apr-00	6UF	PA	985	3665				3724	1761			5485	5,506	1.00	x	C-D
81133033020	550	1 81	Jct Rt 90I/Jct Rt 11	1.79	Oct-00	8UF	PA										6719	7,415	0.91	x	C-D
81133031093	548	1 81	Jct Rt 20/Jct Rt 11	4.91	Jul-01	4UF	PA										2677	3,671	0.73		C-D
81133032017	007	1 81	Acc 4811/Jct Brighton Av	0.98	Apr-01	6UF	PA	2265	913				1611	2284			3895	5,506	0.71		C-D
81133032031	011	1 81	Jct Colvin St/Jct E Adams St	0.97	Mar-99	6UF	PA										6256	5,506	1.14	x	E
81133032042	015	1 81	Jct E Adams St/Acc 690I	0.66	Sep-98	4UF	PA	3238	3929				4908	3206			8114	3,671	2.21	x	F
81133032060	041	1 81	Jct Rt 298 Bear St/Rt 370	0.30	Mar-99	6UF	PA	3016	5962				6764	3177			9941	5,506	1.81	x	F
81134041005	315	1 81	Acc Bartell Road/Acc Rt 49	3.63	Apr-00	6UF	PA	618	2008				2088	883			2971	5,506	0.54		C-D
cc 016CC	1 81		Onondaga Co Ln/Jct Rt 80	1.47	May-00	4UF	PA										2081	3,671	0.57		C-D
11 33031150	039	SR 11	Rt 11A Nedrow/Syracuse S City Line	1.06	Jul-00	4UD-I	MA	325	292				492	477			969	3,172	0.31		A-B
11 33033116	048	SR 11	Acc811 Bartell Rd/Oswego County Line	0.47	Apr-99	2UU-I	MA	194	515				427	338			765	1,267	0.60		C-D
11 33031006	097	SR 11	Onondaga Co Ln/Lake St Tully	0.90	Jul-00	2TU-U	C	55	43				65	76			141	1,647	0.09		A-B
173 33011100	189	SR 173	Genesee St Fairmount/Split Rock	1.82	Jun-01	2UU-I	MA			556	386				512	708	1220	1,267	0.96	x	C-D
173 33013051	180	SR 173	Rt 91 Jamesville/Sweet Rd	2.66	Aug-00	2UU-U	MA			174	336				377	244	621	1,267	0.49		C-D
173 33013067	181	SR 173	Sweet Rd/Stirt Rt 92 OLP Manlius	2.20	May-01	2UU-U	MA			277	299				487	178	665	1,267	0.52		C-D
173 33012020	162	SR 173	Brighton Av/Syracuse E City Line	0.24	Mar-99	2UU-I	MA			207	558				452	307	759	1,267	0.60		C-D
175 33011095	020	SR 175	End 174 Olp Marcellus/Bussey Rd	5.02	Aug-00	2UU-U	MA			564	176				270	580	850	1,267	0.67		C-D
20 33081026	144	SR 20	Rt 41/Rt 175 Lee Mulroy Rd	1.19	Apr-99	2UU-U	PA			254	213				296	324	620	1,267	0.49		C-D
20 33081180	114	SR 20	Rt 11A Cardiff/Acc Rt 81I	1.66	Jun-00	2TU-U	PA			290	126				207	298	505	1,348	0.37		C-D
2033081231	384	SR 20	Apulia Rd Collingwood/Rt 91 Pompey	4.39	Jun-00	2TU-U	PA			93	152				160	128	288	1,348	0.21		A-B
20 33081262	132	SR 20	Rt 91 Pompey/Madison County Line	6.70	Jul-00	2TU-U	PA			90	107				109	122	231	1,348	0.17		A-B
20 33081003	141	SR 20	Onondaga Co Ln/Rt 41A	1.10	Apr-99	2UU-U	PA			230	208				271	315	586	1,267	0.46		C-D
29033012032	036	SR 290	Bridge St/Fremont Rd	1.87	Jun-00	2UU-I	MA			284	961				1239	589	1828	1,267	1.44	x	E
29033012061	188	SR 290	Rt 257/Green Lk State Pk Rd	1.52	Apr-99	2UU-U	MA			105	501				431	192	623	1,267	0.49		C-D
29833011002	031	SR 298	RT 690 Bear St/ Jct RT 81I	0.83	Jul-01	2UU-U	MA										1021	1,267	0.81		C-D
29833012061	093	SR 298	Acc 4811/Fremont Rd	1.36	Apr-99	2UU-U	C			174	758				687	250	937	1,267	0.74		C-D
29833012024	592	SR 298	Midler Ave Ext/Rt 635 Acc 90I	1.71	Jun-00	4UD-I	PA			520	531				498	553	1051	3,172	0.33		A-B
31 33091180	209	SR 31	End Rt 370 OLP/CR 91 Old Rt 57	3.62	May-00	2UU-I	PA			594	468				731	928	1659	1,267	1.31	x	E
31 33091195	076	SR 31	Acc Rt 481/Euclid Morgan Rd	0.81	Apr-99	4UU-I	PA			430	555				837	751	1588	2,692	0.59		C-D
31 33091324	236	SR 31	S Bay Rd/SR 298 Bridgeport	5.94	Apr-99	2UU-U	MA										601	1,267	0.47		C-D
31 33091339	115	SR 31	Rt 298 Bridgeport/Madison County Line	0.08	May-01	2UU-I	MA										1247	1,267	0.98	x	C-D
31 33091005	049	SR 31	Onondaga Co Ln/Rt 31 C Jordan	1.07	Jul-00	2UU-U	MA			118	122				175	149	324	1,267	0.26		A-B
37033031003	056	SR 370	Cayuga Co Ln/Plainville Rd	1.40	Apr-99	2UU-U	PA			368	143				165	351	516	1,267	0.41		C-D
37033031060	193	SR 370	Rt 690/Stirt Rt 31 OLP	0.15	May-99	2UU-I	PA			170	317				132	688	820	1,267	0.65		C-D

TABLE 1
(continued)

ROAD SEGMENT
TRAFFIC COUNTS

Count Location Reference Marker	Station #	Road # or Road Name	From/To	Seg Length	Year of DOT Counts	Exist Road*	Functional Class**	15 Min Counts AM Peak Hour					15 Min Counts PM Peak Hour					Existing Road Service Vol. "D"***	PM PK V/C Ratio	V/C >.90 Requires Tier 2	PM Peak Hour LOS
								NB	SB	EB	WB	Total	NB	SB	EB	WB	Total				
37033031122	058	SR 370	River Rd Cold Springs/John Glenn Blvd	0.77	May-00	2UU-I	MA			782	307	1089			474	1008	1482	1,267	1.17	x	E
37033031149	034	SR 370	Long Branch Rd/Rt 931G Old Rt 57	2.29	Jul-00	2UU-I	MA			637	174	811			601	440	1041	1,267	0.82		C-D
37033031167	222	SR 370	Rt 931G Old Rt 57/Syracuse N City Ln	2.22	Apr-00	4UU-U	PA			1797	692	2489			944	1894	2838	2,692	1.05	x	E
41 33041019	051	SR 41	Cortland Co Ln/Coldbrook Rd Spafford	2.25	May-00	2TU-U	MA					85					149	1,348	0.11		A-B
48 33011047	079	SR 48	CR 159 Van Buren Rd/CR 92 Old Rt 31	0.63	Jul-01	2UU-I	MA	263	324			587	364	684			1048	1,267	0.83		C-D
48 33011112	052	SR 48	Lamson Rd/Oswego County Line	1.04	Jul-01	2UU-U	MA	177	355			532	486	259			745	1,267	0.59		C-D
48133011047	100	SR 481	Rt 11Conn/Acc Rt 31	6.47	Jul-01	4UF	PA					2456					2664	3,671	0.73		C-D
48133012083	103	I 481	Acc Kirkville Rd/Acc Rt 90I	1.13	Apr-01	4UF	PA	1138	2327			3465	2339	1417			3756	3,671	1.02	x	E
5 33081329	198	SR 5	Jct Hinsdale Rd/Acc Rt 173	0.85	Apr-00	6UF	MA					2419					3320	5,506	0.60		C-D
5 33082030	386	SR 5	Rt 11/Rt 635 Syracuse E C L	3.29	Apr-00	4UU-I	PA			392	486	878			1021	891	1912	2,692	0.71		C-D
5 33083011	139cc	SR 5	Rt 635 E C L/Rt 930P	0.78	May-00	6UD-I	PA					522					1848	4,902	0.38		A-B
5 33083027	175	SR 5	Acc 481I/End Rt 92 OLP Lyndon	0.77	Oct-99	4UU-I	PA					4015					4850	2,692	1.80	x	F
5 33083042	106	SR 5	End Rt 92 OLP Lyndon/N Burdick St	1.46	Jul-00	4UU-I	MA			549	1038	1587			1209	868	2077	2,692	0.77		C-D
5 33083048	096	SR 5	Highbridge Rd/Salt Springs Rd	0.41	Jun-01	4UU-I	MA			531	1208	1739			1505	772	2277	2,692	0.85		C-D
NA	387	SR 5	West St Arterial/Rt 11	0.57	Mar-99	4UU-I	PA			601	447	1048			118	820	938	2,692	0.35		A-B
5 33081154	388	SR 5	City of Syracuse/West St Arterial	2.04	May-98	4UU-I	PA			867	285	1152			518	994	1512	2,692	0.56		A-B
5 33083096	045	SR 5	Rt 290 Mycenae/Madison County Line	0.85	Jun-00	2UU-U	MA			226	709	935			793	355	1148	1,267	0.91	x	C-D
5 33081000	044	SR 5	Cayuga Co Ln/E Brutus St Rd	0.41	Jul-00	2UU-U	PA			344	306	650			422	520	942	1,267	0.74		C-D
69533011007	135	SR 695	Rt 5/690I End 695	2.30	Jul-00	6UF	PA					4454					5031	5,506	0.91	x	C-D
80 33012292	131	SR 80	Oran-Delphi Rd/Madison County Line	0.94	Jul-00	2TU-U	C			21	42	63			57	36	93	1,348	0.07		A-B
92 33012023	164	SR 92	End Rt 5 OLP/Woodchuck Hill Rd	1.73	Apr-99	2UU-U	PA			1334	862	2196			534	1461	1995	1,267	1.57	x	E
92 33012055	006	SR 92	Rt 257 Manlius/Strt 173 OLP Manlius	0.40	Apr-99	4UU-I	PA			721	470	1191			1231	892	2123	2,692	0.79		C-D
92 33012063	183	SR 92	End Rt 173 OLP/Pompey Ctr Rd	0.98	Jun-00	2UU-U	PA			456	949	1405			912	590	1502	1,267	1.19	x	E
92 33012100	184	SR 92	Oran-Delphi Rd/Madison County Line	1.68	Jun-00	2UU-U	PA			274	462	736			490	272	762	1,267	0.60		C-D
3133031061	070	SR 31	370 OLAP/RT 48	1.85	Apr-99	2UU-I	PA			273	310	583			375	335	710	1,267	0.56		C-D
17533011134	158	SR 175	SR 173 OLAP/Syracuse S City Line	0.46	Mar-99	2UU-U	MA	492	271			763	198	497			695	1,267	0.55		C-D
17333012002	110	SR 173	City of Syracuse/RT 80 Valley Dr	0.43	Mar-99	2UU-U	MA			597	762	1359			608	846	1454	1,267	1.15	x	E
	311	I 81	.8 mi north of Onondaga/Cortland Co Line	0.80	May-00	4UF	PA					1639					2084	3,671	0.57		C-D
City Locations	501	Grand Ave	Avery Av/Geddes St	0.90	Apr-01	2UU-I	MA					971					1074	1,267	0.85		C-D
	56J	W Onondaga St	Velasko Rd/Geddes St	0.64	Apr-99	2UU-I	MA			255		255			402		402	1,267	0.32		C-D
	158	South Ave	Broad Rd/Valley Dr	0.49	Mar-99	2UU-U	MA	492	271			763	198	497			695	1,267	0.55		C-D
	502	Brighton Ave	Salina St/State St	0.11	Apr-01	2UU-I	PA					656					636	1,267	0.50		C-D
	41J	Colvin St	Salina St/State St	0.11	Apr-99	2UU-I	MA			703		703			587		587	1,267	0.46		C-D
	503	W Fayette St	Geddes St/West St	0.64	Apr-01	2UU-I	MA					1284					1517	1,267	1.20	x	E
	504	Genesee St	Geddes St/West St	0.61	May-01	4UU-I	PA			339	400	739			243	620	863	2,692	0.32		A-B
	505	Teall Ave	James St/Grant Blvd	0.48	Apr-01	2UU-I	PA					988					1179	1,267	0.93	x	C-D
County Locations	68E	Old Route 57	Oswego County Line/SR 31	1.74	May-99	2UU-U	MA			359		359			519		519	1,267	0.41		C-D
	506	Old Route 57	Soule Rd/Wetzel Rd	1.16	May-01	4UU-I	PA			1314	590	1904			1208	1896	3104	2,692	1.15	x	E
	507	South Bay Rd	I81/Thompson Road	1.39	Apr-01	2UU-I	MA					674					924	1,267	0.73		C-D
	11J	John Glenn Blvd	I690/SR 370	1.31	May-01	4UD-I	PA			771	1296	2067			1220	1038	2258	3,172	0.71		C-D

TABLE 1
(continued)

ROAD SEGMENT
TRAFFIC COUNTS

Count Location Reference Marker	Station #	Road # or Road Name	From/To	Seg Length	Year of DOT Counts	Exist Road*	Functional Class**	15 Min Counts AM Peak Hour					15 Min Counts PM Peak Hour					Existing Road Service Vol. "D"***	PM PK V/C Ratio	V/C >.90 Requires Tier 2	PM Peak Hour LOS
								NB	SB	EB	WB	Total	NB	SB	EB	WB	Total				
County Locations (continued)	508	John Glenn Blvd	Old Route 57/End	1.10	Jun-01	4UD-I	PA			514	484	998			561	670	1231	3,172	0.39		A-B
	10J	Henry Clay Blvd	Buckley Road/Wetzel Road	0.65	Apr-99	2UU-I	MA			682		682			908		908	1,267	0.72		C-D
	509	Taft Rd	Church St/Thompson Rd	0.75	May-01	4UU-I	PA			725	604	1329			739	941	1680	2,692	0.62		C-D
	510	Schepps Corners Rd	I90/SR 298	1.46	May-01	2TU-U	C	106	95			201	245	117			362	1,647	0.22		A-B
	511	Old SR 5	SR 5/SR 173	0.66	May-01	4UU-I	MA			712	428	1140			883	1379	2262	2,692	0.84		C-D
	512	Old SR 5	Hinsdale Rd/Kasson Rd	0.46	May-01	4UU-I	MA			972	496	1468			910	1201	2111	2,692	0.78		C-D
	210	Old SR 5	SR 174/SR 5	0.75	Apr-99	2UU-I	MA			161	100	261			179	205	384	1,267	0.30		C-D
	513	Howlett Hill Rd	Harris/Cedarvale Rd	1.31	Apr-01	2UU-U	C					448					553	1,267	0.44		C-D
	514	Old Seneca Tnpk	SR 321/Chapman Rd	2.37	May-01	2TU-U	C			70	117	187			114	95	209	1,348	0.16		A-B
	07J	Old Route 57	I90/Tulip St	0.75	May-99	2UU-I	PA			1197		1197			1478		1478	1,267	1.17	x	E
	16E	Kirkville Rd	I 481/Fremont Rd	1.30	Apr-99	2UU-U	C			1097		1097			1094		1094	1,267	0.86		C-D

Thruway Locations

Road # or Road Name	From/To	Seg Length	Year of DOT Counts	Exist Road*	Functional Class**	ADT Volumes		
						EB	WB	Total
1 90	Exit 34/Exit 34A	3.42	N/A	4UF	PA	16,800	17,000	33,800
1 90	Exit 34A/Exit 35	2.36	N/A	4UF	PA	12,100	12,200	24,300
1 90	Exit 35/Exit 36	4.02	N/A	4UF	PA	14,700	14,500	29,200
1 90	Exit 36/Exit 37	0.88	N/A	4UF	PA	16,700	16,700	33,400
1 90	Exit 37/Exit 38	2.17	N/A	4UF	PA	16,100	16,000	32,100
1 90	Exit 38/Exit 39	3.59	N/A	4UF	PA	14,600	14,600	29,200
1 90	Exit 39/Exit 40	11.15	N/A	4UF	PA	15,700	15,800	31,500

* The first value represents the number of lanes. The second value represents whether the roadway is Urbanized "U" or a Transitional area "T". The third value indicates whether the roadway segment is a Freeway "F", Undivided "U", or Divided "D". The fourth value, separated by a dash, indicates whether the segment is Uninterrupted "U" or Interrupted "I". Example: 4UU-I is a 4 lane, urban, undivided, interrupted (signalized), roadway segment

** PA = Principal Arterial
MA = Minor Arterial
C = Collector

*** Maximum values were obtained from Appendix A, Level of Service Tables

TABLE 2
INTERSECTION TRAFFIC COUNTS

Intersection	Signal Owner	Year of Traffic Counts	Min Std	AM PEAK												Total AM Peak Hr Intersection Volume	AM Peak Hour LOS	PM PEAK												Total PM Peak Hr Intersection Volume	PM Peak Hour LOS
				Southbound			Westbound			Northbound			Eastbound					Southbound			Westbound			Northbound			Eastbound				
				Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Morgan Road @ Buckley Road	County	Nov-01	D	198	701	202	80	248	68	50	221	105	147	442	221	2,683	C	101	276	193	75	518	151	201	668	107	246	316	76	2,928	D
SR 370/Old Liverpool Rd	State	Oct-01	D	403	1,869	0	39	57	284	0	591	26	0	39	51	3,359	B	298	670	2	30	77	619	0	1,779	36	0	89	43	3,643	C
SR 931G @ Tulip St	State	Oct-01	D	0	800	28	676	44	1	5	270	263	11	33	8	2,139	C	4	415	47	287	64	12	0	966	601	46	71	6	2,519	C
Butternut @ Grant Blvd (North)	City	Oct-01	D	0	151	30	112	265	49	0	0	0	0	0	226	833	B	0	122	30	123	329	166	0	0	0	0	0	294	1,064	B
Butternut @ Grant Blvd (South)	City	Oct-01	D	59	68	0	0	0	0	0	0	56	0	0	0	183	A	88	52	0	0	0	0	0	0	73	0	0	0	213	A
Midler Ave @ James St	City	Oct-01	D	129	299	54	47	367	64	141	395	63	45	366	88	2,058	C	169	392	66	33	451	56	202	367	82	27	441	108	2,394	D
James St @ Teall Ave	City	Jan-02	D	6	328	150	68	422	11	138	279	92	56	210	111	1,871	C	11	333	83	98	320	13	113	368	105	160	445	102	2,151	C
Butternut @ Lodi St	City	Oct-01	D	29	298	32	177	328	23	52	142	59	26	169	99	1,434	C	49	197	43	128	284	35	112	253	110	68	373	110	1,762	C
Genesee St @ Erie Blvd West	City	Oct-01	D	21	150	133	0	364	21	53	26	7	0	866	397	2,038	B	27	65	166	0	832	64	204	124	15	0	519	97	2,113	C
W Onondaga St @ Geddes St	City	Oct-01	D	5	296	24	9	19	8	26	607	16	31	63	11	1,115	*	3	108	20	2	33	5	9	99	2	12	18	3	314	*
SR 173 (East) @ SR 175	State	Oct-01	D	8	17	226	43	675	9	51	25	54	486	784	76	2,454	B	13	12	370	27	865	11	29	8	22	249	664	41	2,311	B
SR 175 @ SR 173 (West)	State	Oct-01	D	483	0	6	0	543	335	0	0	0	0	929	0	2,296	C	527	0	5	0	790	478	0	0	0	0	480	0	2,280	C
S Salina St @ Seneca Tpke	City	Oct-01	D	41	187	82	90	375	28	166	290	202	106	506	158	2,231	D	60	275	160	226	504	33	164	203	117	117	417	200	2,476	E
Colvin St @ Comstock	City	Nov-01	D	97	49	42	116	356	209	30	234	239	166	317	7	1,862	C	241	199	189	226	432	250	14	109	212	72	227	15	2,186	C
Columbus @ Genesee St	City	Nov-01	D	106	40	26	0	632	74	6	17	4	46	171	3	1,125	C	161	43	26	2	283	68	5	25	5	126	591	6	1,341	C
S Geddes St @ Bellevue Ave	City	Oct-01	D	28	263	19	3	43	46	11	576	49	27	70	18	1,153	**	34	400	54	6	97	31	18	231	9	38	67	19	1,004	**
Salina St @ Castle St	City	Nov-01	D	10	196	15	53	56	17	41	424	54	32	150	22	1,070	B	12	442	38	152	162	20	51	339	67	41	70	25	1,419	B
Adams St @ Almond	State	Oct-01	D	950	655	0	0	0	0	0	1045	378	481	451	259	4,219	C	452	827	0	0	0	0	0	893	90	1176	436	591	4,465	D
Harrison St @ Almond St	City	Oct-01	D	0	1457	113	104	295	504	444	929	76	0	0	0	3,922	C	0	1086	90	357	295	1171	171	1911	13	0	0	0	5,094	D
Irving Ave @ Waverly Ave	City	Nov-01	D	204	380	0	232	0	64	0	122	123	0	0	0	1,125	B	182	179	0	150	0	92	0	206	265	0	0	0	1,074	B

* and **: The intersections of W Onondaga St @ Geddes St and Bellevue Ave @ Geddes St operate with a flashing traffic light, red flashing on W Onondaga St and Bellevue Ave and yellow flashing on Geddes St. Because of the flashing traffic lights, the intersections essentially operate as unsignalized two-way stop intersections. Therefore, each intersection was evaluated as an unsignalized two-way stop intersection using HCS software. In HCS, Level of Service (LOS) for unsignalized intersections is determined for each approach, not for the intersection as a whole. In addition, for unsignalized intersections in HCS, the software only gives a LOS for conflicting movements. All other movements are considered to be free flow movements.

* W Onondaga St @ Geddes St:

AM Peak LOS for W Onondaga St Westbound: E
AM Peak LOS for W Onondaga St Eastbound: F

PM Peak LOS for W Onondaga St Westbound: E
PM Peak LOS for W Onondaga St Eastbound: F

** Bellevue Ave @ Geddes St:

AM Peak LOS for Bellevue Ave Westbound: D
AM Peak LOS for Bellevue Ave Eastbound: F

PM Peak LOS for Bellevue Ave Westbound: E
PM Peak LOS for Bellevue Ave Eastbound: F

TABLE 3
VEHICLE OCCUPANCY COUNTS

Location Description	Segment	AM	PM	Count Week	AM Vehicle Occupancy						Total	Percent SOV*	AM Ave. #	PM Vehicle Occupancy						Total	Percent SOV*	PM Ave. #
					Occupants per Vehicle	1	2	3	4	5			6	1	2	3	4	5	6			Occupants per Vehicle
SR 481 @ SR 31	Near park entrance	481 SB entrance ramp	481 NB exit ramp	5/12/1998	2097	176	14	3	0	1	2291	91.53%	1.10	1429	216	23	9	1	0	1678	85.16%	1.17
I81 @ SR 31		I81 SB entrance ramp	I81 NB exit ramp	6/11/1998	1351	142	16	6	0	0	1515	89.17%	1.13	1355	267	40	12	3	1	1678	80.75%	1.24
I81 @ Taft Rd		I81 SB entrance ramp	I81 NB exit ramp	5/19/1998	930	116	3	0	0	0	1049	88.66%	1.12	1233	254	27	2	0	0	1516	81.33%	1.21
I81 @ I90		both directions	both directions	7/7/1998	1322	302	52	19	1	0	1696	77.95%	1.28	1518	752	150	60	6	0	2486	61.06%	1.51
I81 @ I90		both directions	both directions	8/19/1998	1202	281	43	25	6	1	1558	77.15%	1.30	1388	671	136	75	10	3	2283	60.80%	1.54
I90 @ SR 57		I90 ramp both directions	I90 ramp both directions	5/26/1998	1152	124	19	4	0	0	1299	88.68%	1.13	1004	161	20	5	2	0	1192	84.23%	1.19
Onondaga Lake Parkway		both directions	both directions	7/1/1998	3306	423	25	5	1	0	3760	87.93%	1.13	3748	878	118	48	2	0	4794	78.18%	1.26
SR 5 @Hinsdale Rd		SR 5 entrance ramp	SR 5 exit ramp	6/8/1998	2155	217	23	2	1	0	2398	89.87%	1.11	1532	304	37	9			1882	81.40%	1.22
W Genesee @ Erie Blvd		both directions	both directions	7/14/1998	2184	325	27	13	1	1	2551	85.61%	1.17	2225	583	110	36	0	1	2955	75.30%	1.31
James St @ Teall Av		both directions	both directions	7/2/1998	1252	278	24	8	0	0	1562	80.15%	1.22	1576	528	68	29	5	1	2207	71.41%	1.35
SR 5	Highbridge/Rt 257	both directions	both directions	6/17/1998	1957	214	10	3	0	0	2184	89.61%	1.11	1710	520	105	31	6	0	2372	72.09%	1.36
SR 92		both directions	both directions	6/24/1998	2396	258	28	7	3	0	2692	89.00%	1.13	2000	521	113	26	9	3	2672	74.85%	1.33
E Genesee @ Salt Springs Rd	SR 173/ Valley Dr	both directions	both directions	7/8/1998	1075	181	19	3	0	0	1278	84.12%	1.18	1269	404	64	24	6	1	1768	71.78%	1.36
S Salina St @ Seneca Tnpk		both directions	both directions	6/25/1998	1021	195	13	2	1	0	1232	82.87%	1.19	1432	523	102	20	7	1	2085	68.68%	1.39
South Av				6/10/1998	1343	166	17	6	0	0	1532	87.66%	1.14	1226	249	37	14			1526	80.34%	1.24
I81 @ Harrison/Almond		SB on Almond & ramp	WB on Harrison	8/5/1998	2921	511	41	14	0	0	3487	83.77%	1.18	2267	563	85	21	4	1	2941	77.08%	1.28
I81 @ Adams/Almond		NB on Almond from ramp	Adams EB & 81 SB ramp	8/12/1998	1775	303	42	9	2	0	2131	83.29%	1.20	3332	611	86	30	7	2	4068	81.91%	1.22
I 690 @ Townsend/McBride		exit ramp @ Townsend	entrance ramp @ McBride	8/26/1998	2333	376	28	8	1	1	2747	84.93%	1.17	1356	250	22	7	0	0	1635	82.94%	1.19
I81 @ Clinton/Salina Exit		Clinton/Salina	I81 on ramp @ Pearl St	7/22/1998	2284	328	9	2	0	0	2623	87.08%	1.13	1877	368	57	12	6	1	2321	80.87%	1.24
I81 @ Franklin/West Exit		I81 off ramp @ West St	I81 on ramp @ Butternut	7/29/1998	1291	104	8	2	0	0	1405	91.89%	1.09	1596	296	37	13	2	0	1944	82.10%	1.21
I690 off ramp @ Genesee St		ramp & Genesee	ramp & Genesee	7/15/1998	2111	329	29	3	2	0	2474	85.33%	1.16	1426	384	56	17	7	1	1891	75.41%	1.31
Totals					37,458	5,349	490	144	19	4	43,464	86.01%	1.16	36,499	9,303	1,493	500	83	16	47,894	76.56%	1.29

* Single Occupancy Vehicle

TABLE 4

CONGESTED ROAD SEGMENT LOCATIONS

Count Location Reference Marker	Station #	Road #	From/To	Year of DOT Counts	Exist Road *	Functional Class **	Min Std	15 Min Counts AM Peak Hour					15 Min Counts PM Peak Hour					Existing Road Service Vol "D" ***	PM PK V/C Ratio	AM Peak Hour LOS	PM Peak Hour LOS	Excess Delay (hours)	
								NB	SB	EB	WB	Total	NB	SB	EB	WB	Total						
481133012052	072	I 481	Acc Rts 5 92/Acc Rt 690I	Sep-00	6UF	PA	D					5668					5514	5,506	1.00	E	E	-20.44	
690133011041	545	I 690	Jct Rt 695/Syracuse W City Ln	Apr-01	6UF	PA	D				4915	1472	6387			2223	5555	7778	5,506	1.41	E	F	-8.89
690133012018	060	I 690	Acc Geddes St Half Int/Acc West St	Apr-01	6UF	PA	D				4946	1785	6731			2062	4860	6922	5,506	1.26	F	F	-10.70
690133012054	074	I 690	Acc Midler Av/Syracuse E C L Rt 635	Apr-01	6UF	PA	D				3745	4347	8092			4198	4093	8291	5,506	1.51	F	F	-5.62
690133012032	063	I 690	Acc McBride St EB/Acc 811 EB	Apr-01	6UF	PA	D				2614	3868	6482			4383	4933	9316	5,506	1.69	E	F	2.45
81133033048	134	I 81	Jct Taft Rd/Jct Rt 481	Apr-00	6UF	PA	D	985	3665			4650	3724	1761			5485	5,506	1.00	C-D	C-D	-20.51	
81133033020	550	I 81	Jct Rt 90I/Jct Rt 11	Oct-00	8UF	PA	D					6802					6719	7,415	0.91	C-D	C-D	-21.45	
81133032031	011	I 81	Jct Colvin St/Jct E Adams St	Mar-99	6UF	PA	D					6052					6256	5,506	1.14	E	E	-12.62	
81133032042	015	I 81	Jct E Adams St/Acc 690I	Sep-98	4UF	PA	D	3238	3929			7167	4908	3206			8114	3,671	2.21	F	F	38.65	
81133032060	041	I 81	Jct Rt 298 Bear St/Rt 370	Mar-99	6UF	PA	D	3016	5962			8978	6764	3177			9941	5,506	1.81	F	F	9.85	
173 33011100	189	SR 173	Genesee St Fairmount/Split Rock	Jun-01	2UU-I	MA	D			556	386	942			512	708	1220	1,267	0.96	C-D	C-D	-11.04	
29033012032	036	SR 290	Bridge St/Fremont Rd	Jun-00	2UU-I	MA	D			284	961	1245			1239	589	1828	1,267	1.44	C-D	E	-4.42	
31 33091180	209	SR 31	End Rt 370 OLP/CR 91 Old Rt 57	May-00	2UU-I	PA	D			594	468	1062			731	928	1659	1,267	1.31	C-D	E	-8.67	
31 33091339	115	SR 31	Rt 298 Bridgeport/Madison County Line	May-01	2UU-I	MA	D					919					1247	1,267	0.98	C-D	C-D	-9.32	
37033031122	058	SR 370	River Rd Cold Springs/John Glenn Blvd	May-00	2UU-I	MA	D			782	307	1089			474	1008	1482	1,267	1.17	C-D	E	-10.22	
37033031167	222	SR 370	Rt 931G Old Rt 57/Syracuse N City Ln	Apr-00	4UU-U	PA	D			1797	692	2489			944	1894	2838	2,692	1.05	C-D	E	-14.76	
48133012083	103	I 481	Acc Kirkville Rd/Acc Rt 90I	Apr-01	4UF	PA	D	1138	2327			3465	2339	1417			3756	3,671	1.02	C-D	E	-20.13	
5 33083027	175	SR 5	Acc 481I/End Rt 92 OLP Lyndon	Oct-99	4UU-I	PA	D					4015					4850	2,692	1.80	F	F	-1.67	
5 33083096	045	SR 5	Rt 290 Mycenae/Madison County Line	Jun-00	2UU-U	MA	D			226	709	935			793	355	1148	1,267	0.91	C-D	C-D	-14.68	
69533011007	135	SR 695	Rt 5/690I End 695	Jul-00	6UF	PA	D					4454					5031	5,506	0.91	C-D	C-D	-18.16	
92 33012023	164	SR 92	End Rt 5 OLP/Woodchuck Hill Rd	Apr-99	2UU-U	PA	D			1334	862	2196			534	1461	1995	1,267	1.57	E	E	-0.17	
92 33012063	183	SR 92	End Rt 173 OLP/Pompey Ctr Rd	Jun-00	2UU-U	PA	D			456	949	1405			912	590	1502	1,267	1.19	E	E	-9.98	
17333012002	110	SR 173	City of Syracuse/RT 80 Valley Dr	Mar-99	2UU-U	MA	D			597	762	1359			608	846	1454	1,267	1.15	E	E	-7.91	
	503	W Fayette St	Geddes St/West St	Apr-01	2UU-I	MA	D					1284					1517	1,267	1.20	E	E	-7.34	
	505	Teall Ave	James St/Grant Blvd	Apr-01	2UU-I	PA	D					988					1179	1,267	0.93	C-D	C-D	-9.65	
	506	CR 57	Soule Rd/Wetzel Rd	May-01	4UU-I	PA	D			1314	590	1904			1208	1896	3104	2,692	1.15	C-D	E	-12.46	
	07J	CR 57	190/Tulip St	May-99	2UU-I	PA	D			1197		1197			1478		1478	1,267	1.17	C-D	E	-7.70	

Note: Locations with Excess Delay are highlighted. A location has Excess Delay when the value is > .01 (refer to Magnitude of PM Peak Hour Excess Delay, pg. 4).

* The first value represents the number of lanes. The second value represents whether the roadway is Urbanized "U" or a Transitional area "T". The third value indicates whether the roadway segment is a Freeway "F", Undivided "U", or Divided "D". The fourth value, separated by a dash, indicates whether the segment is Uninterrupted "U" or Interrupted "I". Example: 4UU-I is a 4 lane, urban, undivided, interrupted (signalized), roadway segment

** PA = Principal Arterial
MA = Minor Arterial
C = Collector

*** Maximum values were obtained from Appendix A, Level of Service Tables

TABLE 5

INTERSECTION LEVEL OF SERVICE (LOS) BY APPROACH

Intersection	Signal Owner	Year of Traffic Counts	Min Std	AM PEAK LOS by Approach				AM Peak Entire Intersection	PM PEAK LOS by Approach				PM Peak Entire Intersection
				Southbound	Westbound	Northbound	Eastbound		Southbound	Westbound	Northbound	Eastbound	
Morgan Road @ Buckley Road	County	Nov-01	D	C	D	D	C	C	D	E	D	C	D
SR 370/Old Liverpool Rd	State	Oct-01	D	B	D	B	D	B	C	D	C	D	C
SR 931G @ Tulip St	State	Oct-01	D	C	C	C	C	C	A	C	B	E	C
Butternut @ Grant Blvd (North)	City	Oct-01	D	B	B		B	B	B	B		B	B
Butternut @ Grant Blvd (South)	City	Oct-01	D	A		A		A	A		A		A
Midler Ave @ James St	City	Oct-01	D	Left = D Thru = C	Left = B Thru = C	Left = D Thru = D	Left = B Thru = C	C	Left = E Thru = D	Left = C Thru = C	Left = F Thru = D	Left = B Thru = C	D
James St @ Teall Ave	City	Jan-02	D	C	C	D	C	C	C	C	C	C	C
Butternut @ Lodi St	City	Oct-01	D	C	B	C	B	C	C	B	D	C	C
Genesee St @ Erie Blvd West	City	Oct-01	D	C	B	D	B	B	C	C	C	B	C
W Onondaga St @ Geddes St	City	Oct-01	D	*	E	*	F	*	*	E	*	F	*
SR 173 (East) @ SR 175	State	Oct-01	D	B	C	E	A	B	B	C	D	A	B
SR 175 @ SR 173 (West)	State	Oct-01	D	D	A		B	C	F	B		B	C
S Salina St @ Seneca Tpke	City	Oct-01	D	Left = D Thru = D	Left = E Thru = C	Left = F Thru = E	Left = F Thru = C	D	Left = D Thru = E	Left = E Thru = C	Left = F Thru = C	Left = E Thru = E	E
Colvin St @ Comstock	City	Nov-01	D	B	C	C	C	C	C	D	B	C	C
Columbus @ Genesee St	City	Nov-01	D	D	B	C	B	C	D	B	C	C	C
S Geddes St @ Bellevue Ave	City	Oct-01	D	*	D	*	F	*	*	E	*	F	*
Salina St @ Castle St	City	Nov-01	D	A	C	A	C	B	A	C	B	C	B
Adams St @ Almond	State	Oct-01	D	B		D	D	C	C		C	F	D
Harrison St @ Almond St	City	Oct-01	D	D	C	B		C	C	E	B		D
Irving Ave @ Waverly Ave	City	Nov-01	D	B	C	B		B	B	B	C		B

* The intersections of W Onondaga St @ Geddes St and Bellevue Ave @ Geddes St operate with a flashing traffic light, red flashing on W Onondaga St and Bellevue Ave and yellow flashing on Geddes St. Because of the flashing traffic lights, the intersections essentially operate as unsignalized two-way stop intersections. Therefore, each intersection was evaluated as an unsignalized two-way stop intersection using HCS software. In HCS, Level of Service (LOS) for unsignalized intersections is determined for each approach, not for the intersection as a whole. In addition, for unsignalized intersections in HCS, the software only gives a LOS for conflicting movements. All other movements are considered to be free flow movements.

SECTION 4

Charts 1 - 5

CHART 1

TRAFFIC VOLUMES BY SPEED CLASSIFICATION

Interstate 481 Between NY 5/NY 92 and I-690

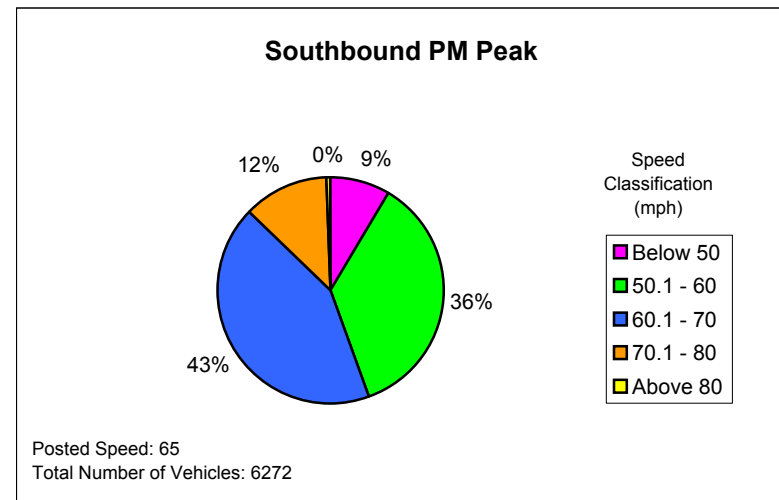
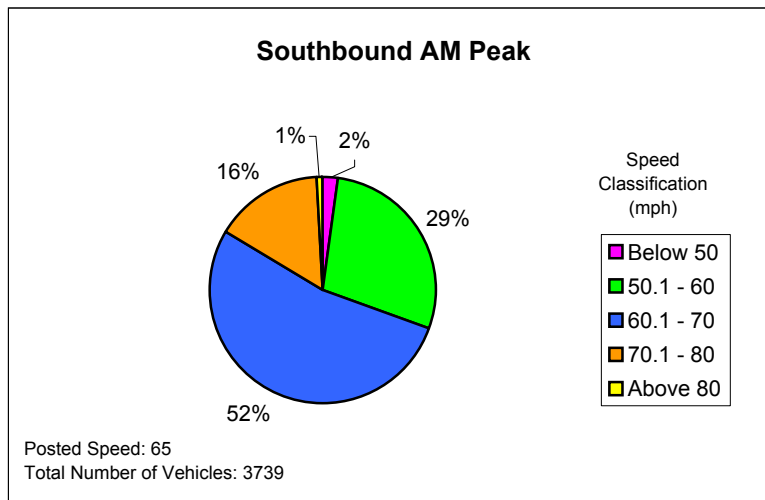
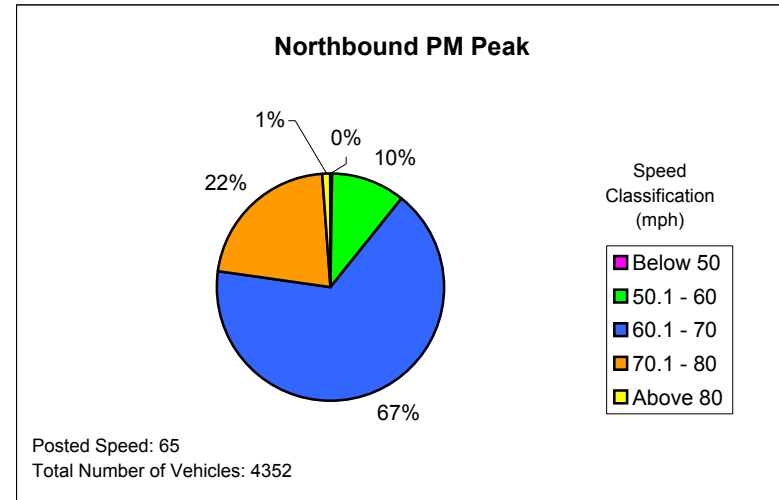
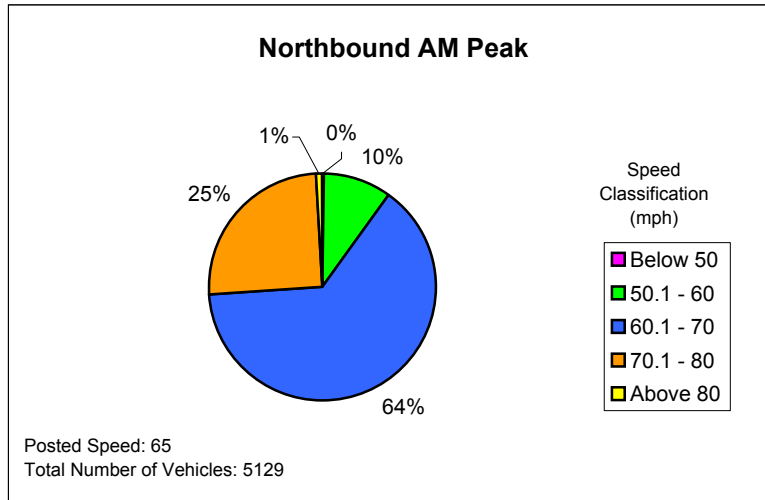


CHART 2

TRAFFIC VOLUMES BY SPEED CLASSIFICATION

NY 5 Between NY 174 and Newport Road

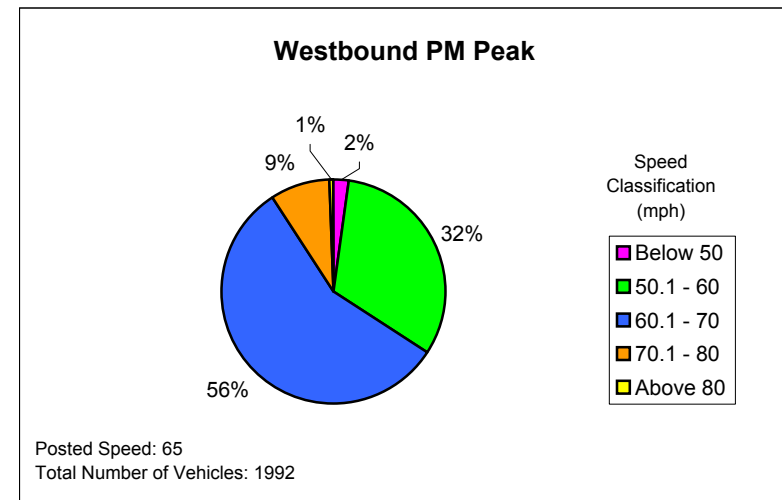
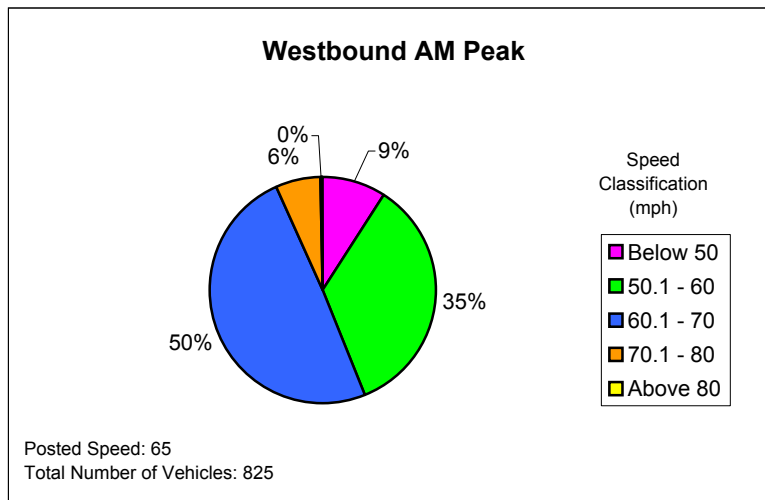
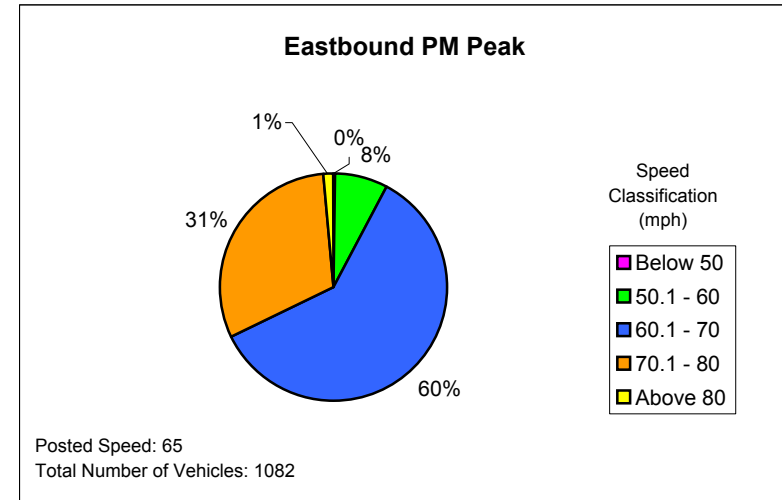
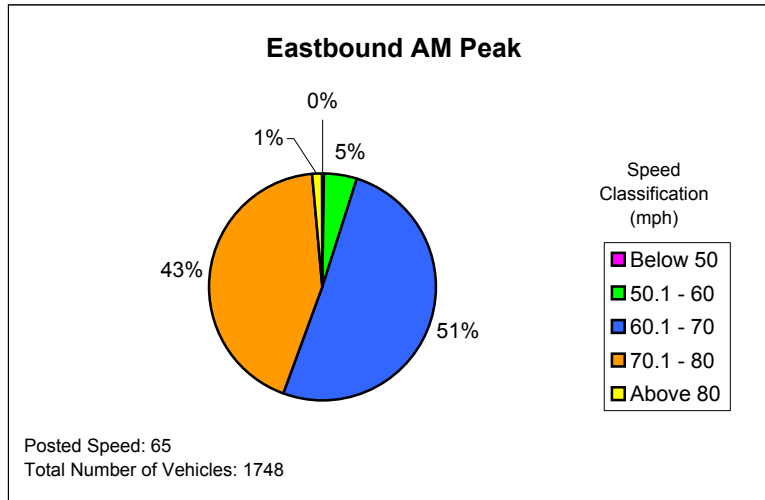


CHART 3

TRAFFIC VOLUMES BY SPEED CLASSIFICATION

NY 695 Between NY 5 and I-690

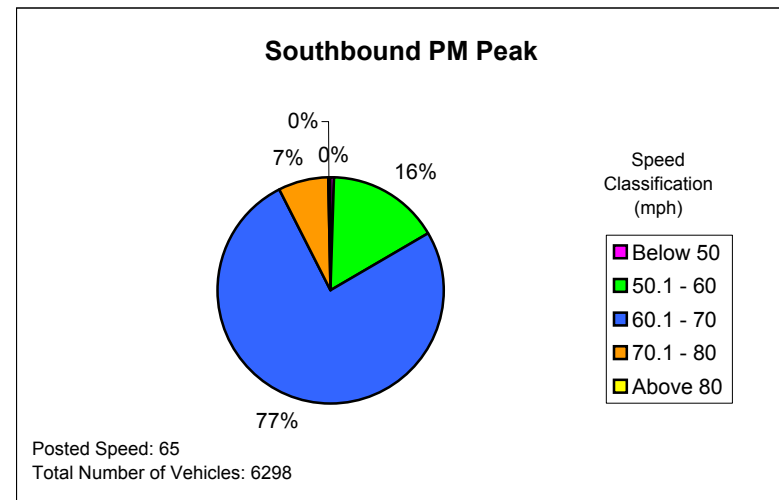
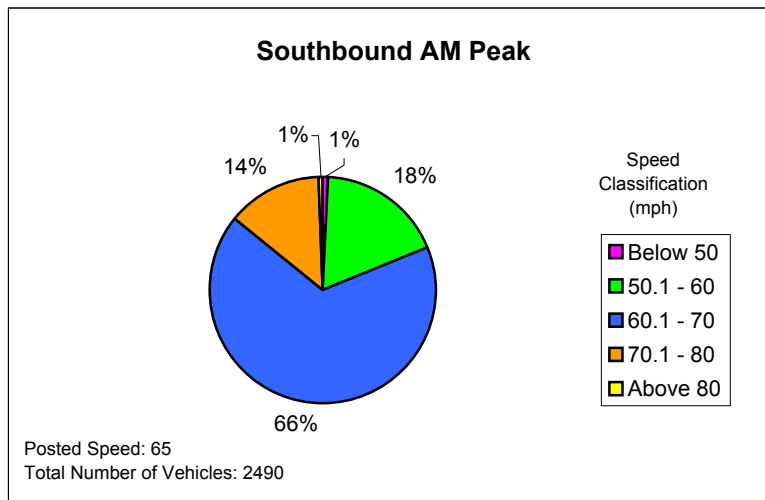
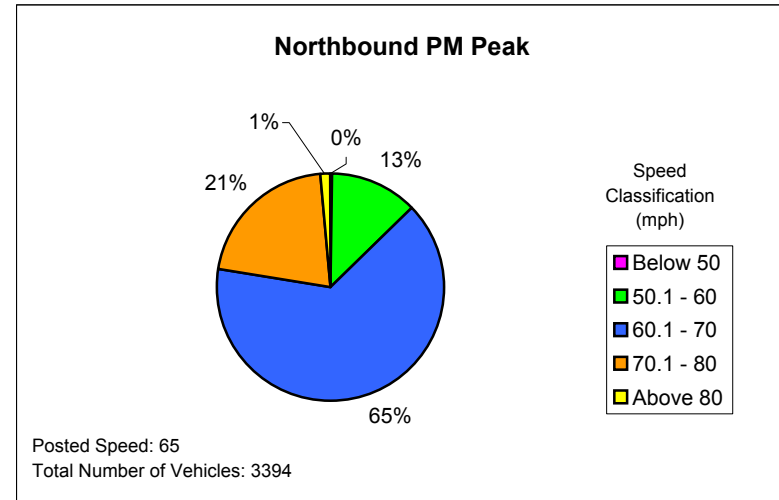
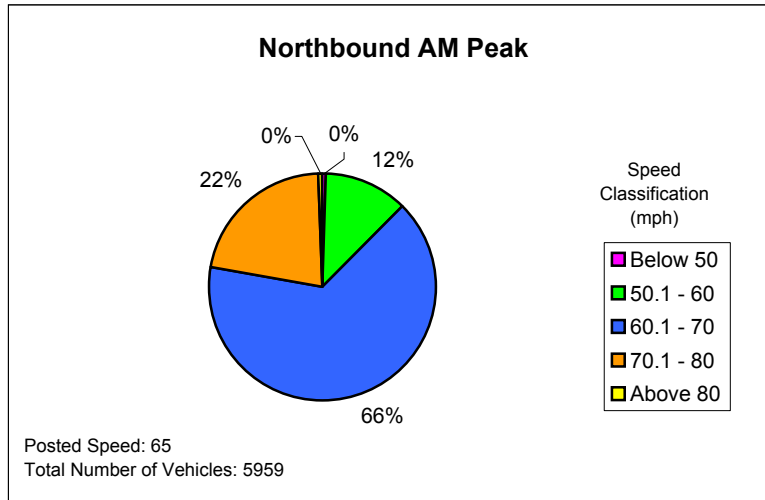


CHART 4

TRAFFIC VOLUMES BY SPEED CLASSIFICATION

Interstate 81 Between I-90 and US 11

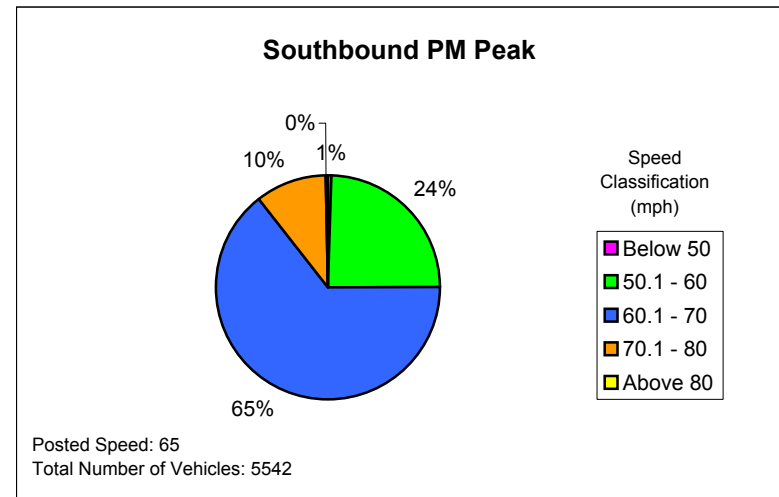
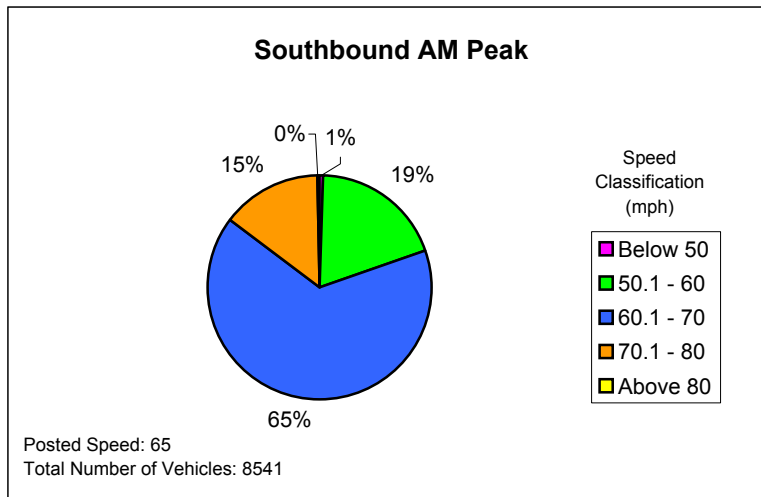
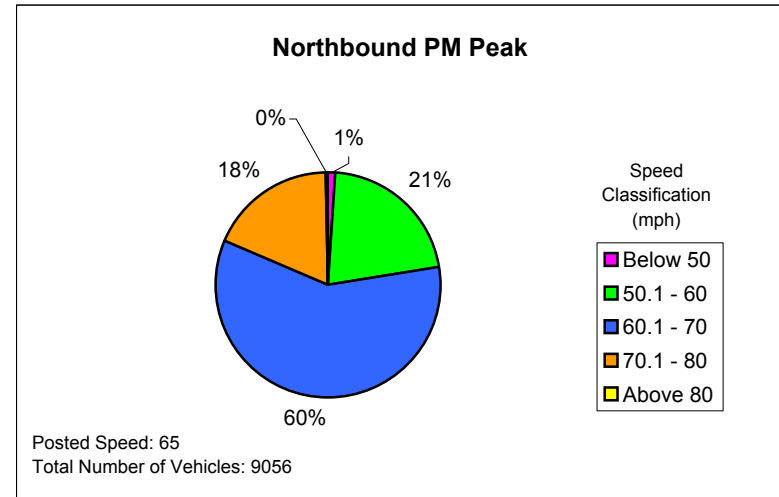
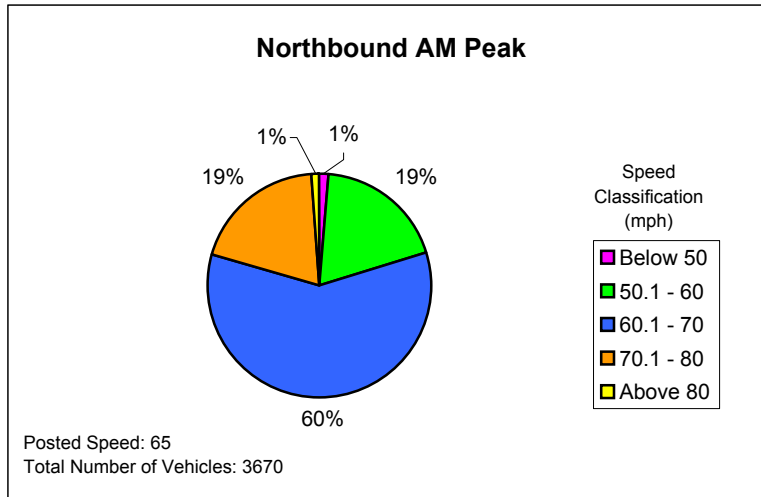
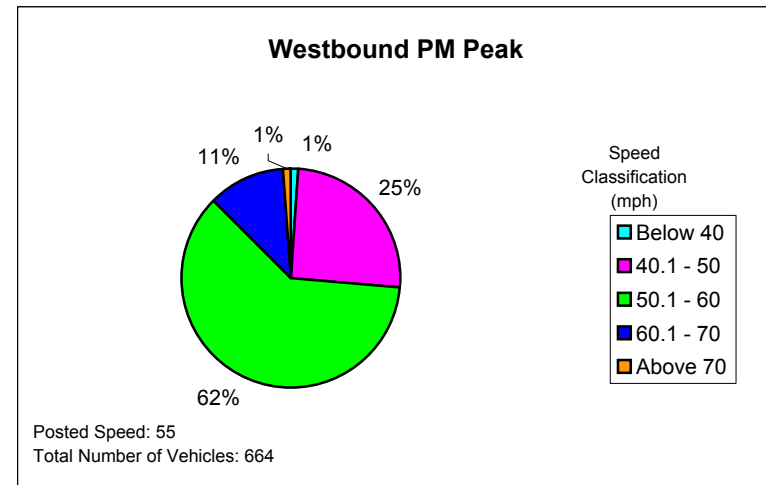
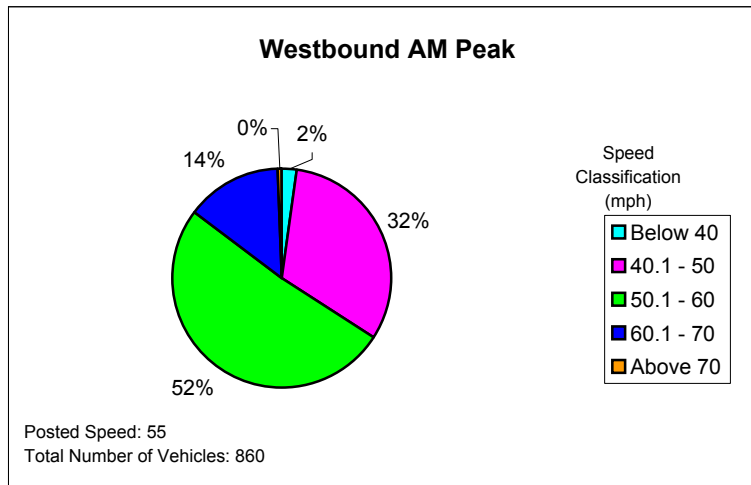
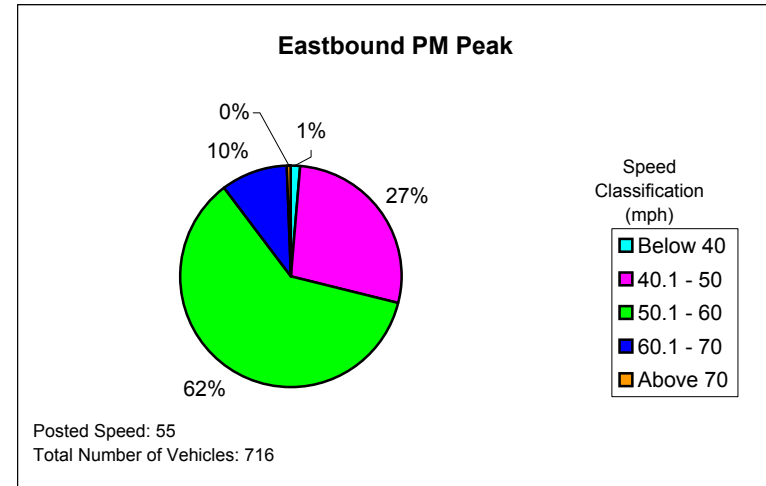
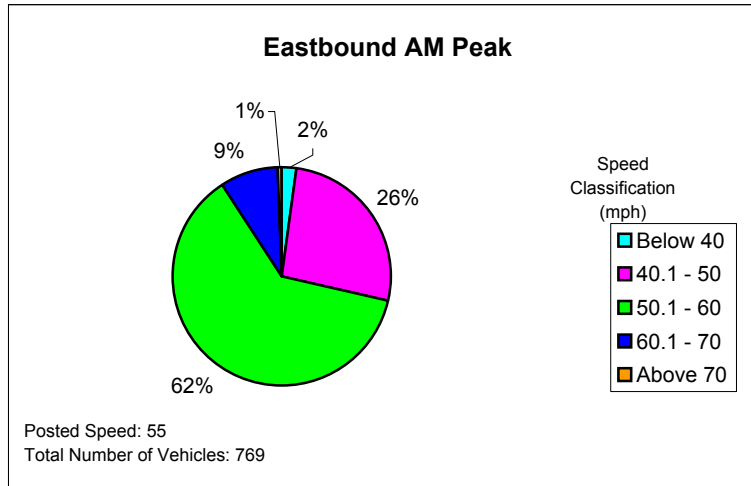


CHART 5

TRAFFIC VOLUMES BY SPEED CLASSIFICATION

NY 298 Between Midler Ave Extension and NY 635 (between GM Circle and Carrier Circle)



APPENDIX A

Level of Service Tables

Level of Service Tables

Maximum Service Volumes for AADT

Roadway Class	LOS A	LOS B	LOS C	LOS D	LOS E
Urban Freeways					
4 lane	20,300	32,500	48,800	61,800	74,500
6 lane	30,600	48,900	73,400	93,000	117,300
8 lane	40,800	65,200	97,900	124,000	156,300
Urban Divided Streets (interrupted flow)					
4 lane	*	*	26,250	33,400	34,900
6 lane	*	*	39,850	50,600	52,550
8 lane	*	*	48,900	61,900	64,350
Urban Undivided Streets (uninterrupted flow)					
2 lane	8,900	13,900	18,900	24,800	33,100
4 lane	15,450	25,875	35,850	42,750	49,725
Urban Undivided Streets (interrupted flow)					
2 lane	*	*	12,000	15,450	16,450
4 lane	*	*	19,688	25,050	26,175
Transition to Urban Areas					
Undivided Streets (uninterrupted flow)					
2 lane	8,400	13,000	17,700	23,300	31,000

Maximum Service Volumes for Peak Hour Traffic

Roadway Class	LOS A	LOS B	LOS C	LOS D	LOS E
Urban Freeways					
4 lane	1,223	1,957	2,926	3,671	4,139
6 lane	1,835	2,936	4,389	5,506	6,491
8 lane	2,447	3,914	5,852	7,415	8,741
Urban Divided Streets (interrupted flow)					
4 lane	1,120	1,867	2,612	3,172	3,825
6 lane	1,731	2,885	4,036	4,902	6,200
Urban Undivided Streets (uninterrupted flow)					
2 lane	89	354	709	1,267	2,553
4 lane	950	1,584	2,216	2,692	3,168
6 lane	1,426	2,377	3,325	4,039	4,153
Urban Undivided Streets (interrupted flow)					
2 lane	89	354	709	1,267	2,553
4 lane	950	1,584	2,216	2,692	3,168
6 lane	1,426	2,377	3,325	4,039	4,153
Transition to Urban Areas					
Undivided Streets (uninterrupted flow)					
2 lane -rolling	185	493	907	1,348	2,385
2 lane -level	247	574	984	1,647	2,745

* Volumes were obtained by averaging volumes for road segments with >0.00 to 2.49 signalized intersections per mile and segments with 2.50 to 4.50 signalized intersections per mile

Source: Florida Department of Transportation, 1995

APPENDIX B

HCS/Synchro Intersection Analyses (Intersections are in alphabetical order)

SHORT REPORT													
General Information						Site Information							
Analyst	SWM					Intersection	Adams St/Almond St						
Agency or Co.	SMTC					Area Type	All other areas						
Date Performed	1/22/2002					Jurisdiction							
Time Period	AM					Analysis Year	2002						
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	2	2	1	0	0	0	0	3	1	2	2	0	
Lane group	L	T	R					T	R	L	T		
Volume (vph)	481	451	259					1045	378	950	655		
% Heavy veh	2	2	2					2	2	2	2		
PHF	0.95	0.95	0.95					0.96	0.96	0.95	0.95		
Actuated (P/A)	A	A	A					A	A	A	A		
Startup lost time	2.0	2.0	2.0					2.0	2.0	2.0	2.0		
Ext. eff. green	2.0	2.0	2.0					2.0	2.0	2.0	2.0		
Arrival type	3	3	3					3	3	3	3		
Unit Extension	3.0	3.0	3.0					3.0	3.0	3.0	3.0		
Ped/Bike/RTOR Volume	18		0	0			44		0				
Lane Width	12.0	12.0	12.0					12.0	12.0	12.0	12.0		
Parking/Grade/Parking	N	0	N	N		N	N	0	N	N	0	N	
Parking/hr													
Bus stops/hr	0	0	0					0	0	0	0		
Unit Extension	3.0	3.0	3.0					3.0	3.0	3.0	3.0		
Phasing	EB Only	02	03	04	SB Only	Thru & RT	07	08					
Timing	G = 14.0	G =	G =	G =	G = 29.0	G = 22.0	G =	G =					
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =					
Duration of Analysis (hrs) = 0.25						Cycle Length C = 80.0							
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate	506	475	273					1089	394	1000	689		
Lane group cap.	601	619	277					1398	435	1244	2477		
v/c ratio	0.84	0.77	0.99					0.78	0.91	0.80	0.28		
Green ratio	0.17	0.17	0.17					0.28	0.28	0.36	0.70		
Unif. delay d1	31.9	31.4	32.9					26.8	28.0	22.9	4.5		
Delay factor k	0.38	0.32	0.49					0.33	0.43	0.35	0.11		
Increm. delay d2	10.5	5.8	49.9					2.9	22.2	3.9	0.1		
PF factor	1.000	1.000	1.000					1.000	1.000	1.000	1.000		
Control delay	42.4	37.2	82.8					29.6	50.2	26.9	4.5		
Lane group LOS	D	D	F					C	D	C	A		
Apprch. delay	49.2						35.1			17.8			
Approach LOS	D						D			B			
Intersec. delay	32.5			Intersection LOS						C			

SHORT REPORT													
General Information						Site Information							
Analyst	SWM					Intersection	Adams St/Almond St						
Agency or Co.	SMTC					Area Type	All other areas						
Date Performed	1/22/2002					Jurisdiction							
Time Period	PM					Analysis Year	2002						
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	2	2	1	0	0	0	0	3	1	2	2	0	
Lane group	L	T	R					T	R	L	T		
Volume (vph)	1176	436	591					893	90	452	827		
% Heavy veh	2	2	2					2	2	2	2		
PHF	0.95	0.95	0.95					0.96	0.96	0.95	0.95		
Actuated (P/A)	A	A	A					A	A	A	A		
Startup lost time	2.0	2.0	2.0					2.0	2.0	2.0	2.0		
Ext. eff. green	2.0	2.0	2.0					2.0	2.0	2.0	2.0		
Arrival type	3	3	3					3	3	3	3		
Unit Extension	3.0	3.0	3.0					3.0	3.0	3.0	3.0		
Ped/Bike/RTOR Volume	5		0	0			37		0				
Lane Width	12.0	12.0	12.0					12.0	12.0	12.0	12.0		
Parking/Grade/Parking	N	0	N	N		N	N	0	N	N	0	N	
Parking/hr													
Bus stops/hr	0	0	0					0	0	0	0		
Unit Extension	3.0	3.0	3.0					3.0	3.0	3.0	3.0		
Phasing	EB Only	02	03	04	SB Only	Thru & RT	07	08					
Timing	G = 28.0	G =	G =	G =	G = 14.0	G = 28.0	G =	G =					
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =					
Duration of Analysis (hrs) = 0.25						Cycle Length C = 85.0							
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate	1238	459	622					930	94	476	871		
Lane group cap.	1131	1166	521					1675	521	565	1957		
v/c ratio	1.09	0.39	1.19					0.56	0.18	0.84	0.45		
Green ratio	0.33	0.33	0.33					0.33	0.33	0.16	0.55		
Unif. delay d1	28.5	22.0	28.5					23.4	20.3	34.4	11.3		
Delay factor k	0.50	0.11	0.50					0.15	0.11	0.38	0.11		
Increm. delay d2	56.5	0.2	104.9					0.4	0.2	11.1	0.2		
PF factor	1.000	1.000	1.000					1.000	1.000	1.000	1.000		
Control delay	85.0	22.2	133.4					23.8	20.5	45.5	11.4		
Lane group LOS	F	C	F					C	C	D	B		
Apprch. delay	85.5						23.5			23.5			
Approach LOS	F						C			C			
Intersec. delay	54.2			Intersection LOS						D			

TWO-WAY STOP CONTROL SUMMARY									
General Information					Site Information				
Analyst	SWM				Intersection	Bellevue Ave/S Geddes St			
Agency/Co.	SMTC				Jurisdiction				
Date Performed	1/14/2002				Analysis Year	2002			
Analysis Time Period	AM								
Project Description									
East/West Street: Bellevue Ave					North/South Street: S Geddes St				
Intersection Orientation: North-South					Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments									
Major Street	Northbound			Southbound					
Movement	1	2	3	4	5	6			
	L	T	R	L	T	R			
Volume	11	576	49	28	263	19			
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.79	0.79	0.79			
Hourly Flow Rate, HFR	12	640	54	35	332	24			
Percent Heavy Vehicles	2	--	--	2	--	--			
Median Type	Undivided								
RT Channelized			0			0			
Lanes	0	1	0	0	1	0			
Configuration	LTR			LTR					
Upstream Signal		0			0				
Minor Street	Westbound			Eastbound					
Movement	7	8	9	10	11	12			
	L	T	R	L	T	R			
Volume	3	43	46	27	70	18			
Peak-Hour Factor, PHF	0.73	0.73	0.73	0.80	0.80	0.80			
Hourly Flow Rate, HFR	4	58	63	33	87	22			
Percent Heavy Vehicles	2	2	2	2	2	2			
Percent Grade (%)	0			0					
Flared Approach		N			N				
Storage		0			0				
RT Channelized			0			1			
Lanes	0	1	0	0	1	1			
Configuration		LTR		LT		R			
Delay, Queue Length, and Level of Service									
Approach	NB	SB	Westbound			Eastbound			
Movement	1	4	7	8	9	10	11	12	
Lane Configuration	LTR	LTR		LTR		LT		R	
v (vph)	12	35		125		120		22	
C (m) (vph)	1197	895		250		148		636	
v/c	0.01	0.04		0.50		0.81		0.03	
95% queue length	0.03	0.12		2.58		5.18		0.11	
Control Delay	8.0	9.2		33.0		90.1		10.9	
LOS	A	A		D		F		B	
Approach Delay	--	--	33.0			77.9			
Approach LOS	--	--	D			F			

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TWO-WAY STOP CONTROL SUMMARY									
General Information					Site Information				
Analyst	SWM				Intersection	Bellevue Ave/S Geddes St			
Agency/Co.	SMTC				Jurisdiction				
Date Performed	1/14/2002				Analysis Year	2002			
Analysis Time Period	PM								
Project Description									
East/West Street: Bellevue Ave					North/South Street: S Geddes St				
Intersection Orientation: North-South					Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments									
Major Street	Northbound			Southbound					
Movement	1	2	3	4	5	6			
	L	T	R	L	T	R			
Volume	18	231	9	34	400	54			
Peak-Hour Factor, PHF	0.80	0.80	0.80	0.87	0.87	0.87			
Hourly Flow Rate, HFR	22	288	11	39	459	62			
Percent Heavy Vehicles	2	--	--	2	--	--			
Median Type	Undivided								
RT Channelized			0			0			
Lanes	0	1	0	0	1	0			
Configuration	LTR			LTR					
Upstream Signal		0			0				
Minor Street	Westbound			Eastbound					
Movement	7	8	9	10	11	12			
	L	T	R	L	T	R			
Volume	6	97	31	38	67	19			
Peak-Hour Factor, PHF	0.73	0.73	0.73	0.90	0.90	0.90			
Hourly Flow Rate, HFR	8	132	42	42	74	21			
Percent Heavy Vehicles	2	2	2	2	2	2			
Percent Grade (%)	0			0					
Flared Approach		N			N				
Storage		0			0				
RT Channelized			0			1			
Lanes	0	1	0	0	1	1			
Configuration		LTR		LT		R			
Delay, Queue Length, and Level of Service									
Approach	NB	SB	Westbound			Eastbound			
Movement	1	4	7	8	9	10	11	12	
Lane Configuration	LTR	LTR		LTR		LT		R	
v (vph)	22	39		182		116		21	
C (m) (vph)	1027	1239		271		165		553	
v/c	0.02	0.03		0.67		0.70		0.04	
95% queue length	0.07	0.10		4.40		4.21		0.12	
Control Delay	8.6	8.0		41.7		66.6		11.8	
LOS	A	A		E		F		B	
Approach Delay	--	--	41.7			58.2			
Approach LOS	--	--	E			F			

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SHORT REPORT													
General Information							Site Information						
Analyst	SWM						Intersection						Butternut St/Grant Blvd
Agency or Co.	SMTc						Area Type						North
Date Performed	1/11/2002						Jurisdiction						All other areas
Time Period	AM						Analysis Year						2002
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	0	0	1	1	1	1	0	0	0	0	1	0	
Lane group			R	L	T	R					TR		
Volume (vph)			226	112	265	49					151	30	
% Heavy veh			2	2	2	2					2	2	
PHF			0.82	0.83	0.83	0.83					0.91	0.91	
Actuated (P/A)			P	P	P	P					P	P	
Startup lost time			2.0	2.0	2.0	2.0					2.0		
Ext. eff. green			2.0	2.0	2.0	2.0					2.0		
Arrival type			3	3	3	3					3		
Unit Extension			3.0	3.0	3.0	3.0					3.0		
Ped/Bike/RTOR Volume	15		0	15		0				11		0	
Lane Width			12.0	12.0	12.0	12.0					12.0		
Parking/Grade/Parking	N	0	N	N	0	N	N		N	N	0	N	
Parking/hr													
Bus stops/hr			0	0	0	0					0		
Unit Extension			3.0	3.0	3.0	3.0					3.0		
Phasing	EW Perm	02	03	04	SB Only	06	07	08					
Timing	G = 27.0	G =	G =	G =	G = 19.8	G =	G =	G =					
	Y = 6.6	Y =	Y =	Y =	Y = 6.6	Y =	Y =	Y =					
Duration of Analysis (hrs) = 0.25			Cycle Length C = 60.0										
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Adj. flow rate			276	135	319	59					199		
Lane group cap.			725	797	838	712					601		
v/c ratio			0.38	0.17	0.38	0.08					0.33		
Green ratio			0.45	0.45	0.45	0.45					0.33		
Unif. delay d1			11.0	9.8	11.0	9.4					15.1		
Delay factor k			0.50	0.50	0.50	0.50					0.50		
Increm. delay d2			1.5	0.5	1.3	0.2					1.5		
PF factor			1.000	1.000	1.000	1.000					1.000		
Control delay			12.5	10.3	12.3	9.7					16.6		
Lane group LOS			B	B	B	A					B		
Apprch. delay	12.5			11.4						16.6			
Approach LOS	B			B						B			
Intersec. delay	12.8			Intersection LOS						B			

SHORT REPORT													
General Information							Site Information						
Analyst	SWM						Intersection						Butternut St/Grant Blvd
Agency or Co.	SMTc						Area Type						North
Date Performed	1/11/2002						Jurisdiction						All other areas
Time Period	PM						Analysis Year						2002
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	0	0	1	1	1	1	0	0	0	0	1	0	
Lane group			R	L	T	R					TR		
Volume (vph)			294	123	329	166					122	30	
% Heavy veh			2	2	2	2					2	2	
PHF			0.90	0.92	0.92	0.92					0.82	0.82	
Actuated (P/A)			P	P	P	P					P	P	
Startup lost time			2.0	2.0	2.0	2.0					2.0		
Ext. eff. green			2.0	2.0	2.0	2.0					2.0		
Arrival type			3	3	3	3					3		
Unit Extension			3.0	3.0	3.0	3.0					3.0		
Ped/Bike/RTOR Volume	8		0	7		0				15		0	
Lane Width			12.0	12.0	12.0	12.0					12.0		
Parking/Grade/Parking	N	0	N	N	0	N	N		N	N	0	N	
Parking/hr													
Bus stops/hr			0	0	0	0					0		
Unit Extension			3.0	3.0	3.0	3.0					3.0		
Phasing	EW Perm	02	03	04	SB Only	06	07	08					
Timing	G = 27.0	G =	G =	G =	G = 19.8	G =	G =	G =					
	Y = 6.6	Y =	Y =	Y =	Y = 6.6	Y =	Y =	Y =					
Duration of Analysis (hrs) = 0.25			Cycle Length C = 60.0										
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate			327	134	358	180					186		
Lane group cap.			725	797	838	712					598		
v/c ratio			0.45	0.17	0.43	0.25					0.31		
Green ratio			0.45	0.45	0.45	0.45					0.33		
Unif. delay d1			11.4	9.8	11.2	10.2					15.0		
Delay factor k			0.50	0.50	0.50	0.50					0.50		
Increm. delay d2			2.0	0.5	1.6	0.9					1.4		
PF factor			1.000	1.000	1.000	1.000					1.000		
Control delay			13.4	10.3	12.8	11.1					16.4		
Lane group LOS			B	B	B	B					B		
Apprch. delay	13.4			11.9						16.4			
Approach LOS	B			B						B			
Intersec. delay	13.0			Intersection LOS						B			

SHORT REPORT												
General Information						Site Information						
Analyst	SWM					Intersection	Butternut St/Grant Blvd					
Agency or Co.	SMTC					Area Type	South					
Date Performed	1/11/2002					Jurisdiction	All other areas					
Time Period	AM					Analysis Year	2002					
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	0	0	0	0	0	0	0	1	1	1	0
Lane group									R	L	T	
Volume (vph)									174	222	255	
% Heavy veh									2	2	2	
PHF									0.77	0.94	0.94	
Actuated (P/A)									P	P	P	
Startup lost time									2.0	2.0	2.0	
Ext. eff. green									2.0	2.0	2.0	
Arrival type									3	3	3	
Unit Extension									3.0	3.0	3.0	
Ped/Bike/RTOR Volume							10		0			
Lane Width									12.0	12.0	12.0	
Parking/Grade/Parking	N		N	N		N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr									0	0	0	
Unit Extension									3.0	3.0	3.0	
Phasing	01	02	03	04	NS Perm	SB Only	07	08				
Timing	G =	G =	G =	G =	G = 87.0	G = 29.0	G =	G =				
	Y =	Y =	Y =	Y =	Y = 4	Y = 0	Y =	Y =				
Duration of Analysis (hrs) = 0.25						Cycle Length C = 120.0						
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate									226	236	271	
Lane group cap.									1168	1770	1351	
v/c ratio									0.19	0.13	0.20	
Green ratio									0.73	1.00	0.73	
Unif. delay d1									5.3	0.0	5.3	
Delay factor k									0.50	0.50	0.50	
Increm. delay d2									0.4	0.2	0.3	
PF factor									1.000	0.950	1.000	
Control delay									5.6	0.2	5.6	
Lane group LOS									A	A	A	
Apprch. delay							5.6			3.1		
Approach LOS							A			A		
Intersec. delay	3.9			Intersection LOS						A		

SHORT REPORT													
General Information						Site Information							
Analyst	SWM					Intersection	Butternut St/Grant Blvd						
Agency or Co.	SMTC					Area Type	South						
Date Performed	1/11/2002					Jurisdiction	All other areas						
Time Period	PM					Analysis Year	2002						
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	0	0	0	0	0	0	0	0	1	1	1	0	
Lane group									R	L	T		
Volume (vph)									273	336	196		
% Heavy veh									2	2	2		
PHF									0.93	0.95	0.95		
Actuated (P/A)									P	P	P		
Startup lost time									2.0	2.0	2.0		
Ext. eff. green									2.0	2.0	2.0		
Arrival type									3	3	3		
Unit Extension									3.0	3.0	3.0		
Ped/Bike/RTOR Volume							2		0				
Lane Width									12.0	12.0	12.0		
Parking/Grade/Parking	N		N	N		N	N	0	N	N	0	N	
Parking/hr													
Bus stops/hr									0	0	0		
Unit Extension									3.0	3.0	3.0		
Phasing	01	02	03	04	NS Perm	SB Only	07	08					
Timing	G =	G =	G =	G =	G =	G = 29.0	G =	G =					
	Y =	Y =	Y =	Y =	Y = 4	Y = 0	Y =	Y =					
Duration of Analysis (hrs) = 0.25						Cycle Length C = 180.0							
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate									294	354	206		
Lane group cap.									1316	1770	1521		
v/c ratio									0.22	0.20	0.14		
Green ratio									0.82	1.00	0.82		
Unif. delay d1									3.7	0.0	3.4		
Delay factor k									0.50	0.50	0.50		
Increm. delay d2									0.4	0.3	0.2		
PF factor									1.000	0.950	1.000		
Control delay									4.1	0.3	3.6		
Lane group LOS									A	A	A		
Apprch. delay							4.1			1.5			
Approach LOS							A			A			
Intersec. delay	2.4			Intersection LOS						A			

SHORT REPORT													
General Information							Site Information						
Analyst	SWM						Intersection	Butternut St/Lodi St					
Agency or Co.	SMTC						Area Type	All other areas					
Date Performed	1/22/2002						Jurisdiction						
Time Period	AM						Analysis Year	2002					
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0	
Lane group	L	TR		L	TR			LTR			LTR		
Volume (vph)	26	169	99	177	328	23	52	142	59	29	298	32	
% Heavy veh	2	2	2	2	2	2	2	2	2	2	2	2	
PHF	0.84	0.84	0.84	0.85	0.85	0.85	0.96	0.96	0.96	0.78	0.78	0.78	
Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P	
Startup lost time	2.0	2.0		2.0	2.0			2.0			2.0		
Ext. eff. green	2.0	2.0		2.0	2.0			2.0			2.0		
Arrival type	3	3		3	3			3			3		
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0		
Ped/Bike/RTOR Volume	23		0	16		0	14		0	14		0	
Lane Width	12.0	12.0		12.0	12.0			12.0			12.0		
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N	
Parking/hr													
Bus stops/hr	0	0		0	0			0			0		
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0		
Phasing	Excl. Left	EW Perm	03	04	NS Perm	06	07	08					
Timing	G = 7.0	G = 27.3	G =	G =	G = 25.2	G =	G =	G =					
	Y = 3.5	Y = 3.5	Y =	Y =	Y = 3.5	Y =	Y =	Y =					
Duration of Analysis (hrs) = 0.25			Cycle Length C = 70.0										
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate	31	319		208	413			263			460		
Lane group cap.	427	686		503	719			545			636		
v/c ratio	0.07	0.47		0.41	0.57			0.48			0.72		
Green ratio	0.54	0.39		0.54	0.39			0.36			0.36		
Unif. delay d1	8.7	15.9		9.1	16.8			17.4			19.4		
Delay factor k	0.50	0.50		0.50	0.50			0.50			0.50		
Increm. delay d2	0.3	2.3		2.5	3.3			3.0			7.0		
PF factor	1.000	1.000		1.000	1.000			1.000			1.000		
Control delay	9.1	18.2		11.6	20.1			20.4			26.4		
Lane group LOS	A	B		B	C			C			C		
Apprch. delay	17.4			17.3			20.4			26.4			
Approach LOS	B			B			C			C			
Intersec. delay	20.2			Intersection LOS						C			

SHORT REPORT													
General Information							Site Information						
Analyst	SWM						Intersection	Butternut St/Lodi St					
Agency or Co.	SMTc						Area Type	All other areas					
Date Performed	1/22/2002						Jurisdiction						
Time Period	PM						Analysis Year	2002					
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0	
Lane group	L	TR		L	TR			LTR			LTR		
Volume (vph)	68	373	110	128	284	35	112	253	110	49	197	43	
% Heavy veh	2	2	2	2	2	2	2	2	2	2	2	2	
PHF	0.93	0.93	0.93	0.94	0.94	0.94	0.93	0.93	0.93	0.89	0.89	0.89	
Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P	
Startup lost time	2.0	2.0		2.0	2.0			2.0			2.0		
Ext. eff. green	2.0	2.0		2.0	2.0			2.0			2.0		
Arrival type	3	3		3	3			3			3		
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0		
Ped/Bike/RTOR Volume	47		0	24		0	38		0	37		0	
Lane Width	12.0	12.0		12.0	12.0			12.0			12.0		
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N	
Parking/hr													
Bus stops/hr	0	0		0	0			0			0		
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0		
Phasing	Excl. Left	EW Perm	03	04	NS Perm	06	07	08					
Timing	G = 7.0	G = 27.3	G =	G =	G = 25.2	G =	G =	G =					
	Y = 3.5	Y = 3.5	Y =	Y =	Y = 3.5	Y =	Y =	Y =					
Duration of Analysis (hrs) = 0.25			Cycle Length C = 70.0										
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate	73	519		136	339			510			324		
Lane group cap.	487	702		346	714			525			562		
v/c ratio	0.15	0.74		0.39	0.47			0.97			0.58		
Green ratio	0.54	0.39		0.54	0.39			0.36			0.36		
Unif. delay d1	8.5	18.3		10.6	16.0			22.0			18.1		
Delay factor k	0.50	0.50		0.50	0.50			0.50			0.50		
Increm. delay d2	0.7	6.9		3.3	2.3			32.8			4.3		
PF factor	1.000	1.000		1.000	1.000			1.000			1.000		
Control delay	9.1	25.2		13.9	18.2			54.9			22.4		
Lane group LOS	A	C		B	B			D			C		
Apprch. delay	23.2			17.0			54.9			22.4			
Approach LOS	C			B			D			C			
Intersec. delay	30.0			Intersection LOS						C			

SHORT REPORT													
General Information							Site Information						
Analyst	SWM						Intersection	Columbus Ave/Genesee St					
Agency or Co.	SMTC						Area Type	All other areas					
Date Performed	1/11/2002						Jurisdiction						
Time Period	AM						Analysis Year	2002					
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	0	2	0	0	2	0	0	1	0	0	1	0	
Lane group		LTR			LTR			LTR			LTR		
Volume (vph)	46	171	3	0	632	74	6	17	4	106	40	26	
% Heavy veh	2	2	2	2	2	2	2	2	2	2	2	2	
PHF	0.83	0.83	0.83	0.89	0.89	0.89	0.80	0.80	0.80	0.83	0.83	0.83	
Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P	
Startup lost time		2.0			2.0			2.0			2.0		
Ext. eff. green		2.0			2.0			2.0			2.0		
Arrival type		3			3			3			3		
Unit Extension		3.0			3.0			3.0			3.0		
Ped/Bike/RTOR Volume	6		0	6		0	3		0	3		0	
Lane Width		12.0			12.0			12.0			12.0		
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N	
Parking/hr													
Bus stops/hr		0			0			0			0		
Unit Extension		3.0			3.0			3.0			3.0		
Phasing	EW Perm	02	03	04	SB Only	NB Only	07	08					
Timing	G = 35.0	G =	G =	G =	G = 17.0	G = 17.0	G =	G =					
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =					
Duration of Analysis (hrs) = 0.25							Cycle Length C = 84.0						
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate		265			793			33			207		
Lane group cap.		1054			1452			365			358		
v/c ratio		0.25			0.55			0.09			0.58		
Green ratio		0.42			0.42			0.20			0.20		
Unif. delay d1		16.0			18.5			27.2			30.3		
Delay factor k		0.50			0.50			0.50			0.50		
Increm. delay d2		0.6			1.5			0.5			6.7		
PF factor		1.000			1.000			1.000			1.000		
Control delay		16.5			20.0-			27.7			36.9		
Lane group LOS		B			B			C			D		
Apprch. delay	16.5			20.0-			27.7			36.9			
Approach LOS	B			B			C			D			
Intersec. delay	22.2			Intersection LOS						C			

SHORT REPORT													
General Information							Site Information						
Analyst	SWM						Intersection	Columbus Ave/Genesee St					
Agency or Co.	SMTc						Area Type	All other areas					
Date Performed	1/11/2002						Jurisdiction						
Time Period	PM						Analysis Year	2002					
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	0	2	0	0	2	0	0	1	0	0	1	0	
Lane group		LTR			LTR			LTR			LTR		
Volume (vph)	126	591	6	2	283	68	5	25	5	161	43	26	
% Heavy veh	2	2	2	2	2	2	2	2	2	2	2	2	
PHF	0.88	0.88	0.88	0.93	0.93	0.93	0.94	0.94	0.94	0.83	0.83	0.83	
Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P	
Startup lost time		2.0			2.0			2.0			2.0		
Ext. eff. green		2.0			2.0			2.0			2.0		
Arrival type		3			3			3			3		
Unit Extension		3.0			3.0			3.0			3.0		
Ped/Bike/RTOR Volume	4		0	3		0	11		0	10		0	
Lane Width		12.0			12.0			12.0			12.0		
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N	
Parking/hr													
Bus stops/hr		0			0			0			0		
Unit Extension		3.0			3.0			3.0			3.0		
Phasing	EW Perm	02	03	04	NB Only	SB Only	07	08					
Timing	G = 37.0	G =	G =	G =	G = 18.0	G = 18.0	G =	G =					
	Y = 5	Y =	Y =	Y =	Y = 4	Y = 4	Y =	Y =					
Duration of Analysis (hrs) = 0.25							Cycle Length C = 86.0						
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate		822			379			37			277		
Lane group cap.		1180			1408			380			371		
v/c ratio		0.70			0.27			0.10			0.75		
Green ratio		0.43			0.43			0.21			0.21		
Unif. delay d1		19.9			15.8			27.4			31.9		
Delay factor k		0.50			0.50			0.50			0.50		
Increm. delay d2		3.4			0.5			0.5			12.8		
PF factor		1.000			1.000			1.000			1.000		
Control delay		23.4			16.3			28.0			44.7		
Lane group LOS		C			B			C			D		
Apprch. delay	23.4			16.3			28.0			44.7			
Approach LOS	C			B			C			D			
Intersec. delay	25.6			Intersection LOS						C			

SHORT REPORT												
General Information							Site Information					
Analyst SWM Agency or Co. SMTC Date Performed 1/14/2002 Time Period AM							Intersection Colvin St/Comstock Ave Area Type All other areas Jurisdiction Analysis Year 2002					
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Lane group	L	TR		L	T	R	L	T		L	T	R
Volume (vph)	166	317	7	116	356	209	30	234		97	49	42
% Heavy veh	2	2	2	2	2	2	2	2		2	2	2
PHF	0.82	0.82	0.82	0.92	0.92	0.92	0.84	0.84		0.88	0.88	0.88
Actuated (P/A)	P	P	P	P	P	P	P	P		P	P	P
Startup lost time	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Ext. eff. green	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Arrival type	3	3		3	3	3	3	3		3	3	3
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Ped/Bike/RTOR Volume	3		0	3		0	3			3		0
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0		12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr	0	0		0	0	0	0	0		0	0	0
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Phasing	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08				
Timing	G = 12.0	G = 20.0	G =	G =	G = 20.0	G =	G =	G =				
	Y = 4.5	Y = 4.5	Y =	Y =	Y = 4.5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25			Cycle Length C = 65.5									
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate	202	396		126	387	227	36	279		110	56	48
Lane group cap.	324	567		324	569	483	410	569		270	569	483
v/c ratio	0.62	0.70		0.39	0.68	0.47	0.09	0.49		0.41	0.10	0.10
Green ratio	0.18	0.31		0.18	0.31	0.31	0.31	0.31		0.31	0.31	0.31
Unif. delay d1	24.7	20.1		23.5	19.9	18.5	16.2	18.6		18.0	16.3	16.3
Delay factor k	0.50	0.50		0.50	0.50	0.50	0.50	0.50		0.50	0.50	0.50
Increm. delay d2	8.7	7.0		3.5	6.4	3.3	0.4	3.0		4.5	0.3	0.4
PF factor	1.000	1.000		1.000	1.000	1.000	1.000	1.000		1.000	1.000	1.000
Control delay	33.4	27.1		27.0	26.4	21.7	16.7	21.6		22.6	16.6	16.7
Lane group LOS	C	C		C	C	C	B	C		C	B	B
Apprch. delay	29.2			25.1			21.0			19.7		
Approach LOS	C			C			C			B		
Intersec. delay	25.1			Intersection LOS						C		

SHORT REPORT												
General Information						Site Information						
Analyst SWM Agency or Co. SMTC Date Performed 1/14/2002 Time Period PM						Intersection Colvin St/Comstock Ave Area Type All other areas Jurisdiction Analysis Year 2002						
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Lane group	L	TR		L	T	R	L	T		L	T	R
Volume (vph)	72	227	15	226	432	250	14	109		241	199	189
% Heavy veh	2	2	2	2	2	2	2	2		2	2	2
PHF	0.95	0.95	0.95	0.87	0.87	0.87	0.90	0.90		0.87	0.87	0.87
Actuated (P/A)	P	P	P	P	P	P	P	P		P	P	P
Startup lost time	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Ext. eff. green	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Arrival type	3	3		3	3	3	3	3		3	3	3
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Ped/Bike/RTOR Volume	6		0	6		0	3			2		0
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0		12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr	0	0		0	0	0	0	0		0	0	0
Unit Extension	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Phasing	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08				
Timing	G = 12.0	G = 20.0	G =	G =	G = 20.0	G =	G =	G =				
	Y = 4.5	Y = 4.5	Y =	Y =	Y = 4.5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25			Cycle Length C = 65.5									
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate	76	255		260	497	287	16	121		277	229	217
Lane group cap.	324	563		324	569	483	313	569		386	569	483
v/c ratio	0.23	0.45		0.80	0.87	0.59	0.05	0.21		0.72	0.40	0.45
Green ratio	0.18	0.31		0.18	0.31	0.31	0.31	0.31		0.31	0.31	0.31
Unif. delay d1	22.8	18.3		25.6	21.6	19.3	16.1	16.9		20.2	18.0	18.3
Delay factor k	0.50	0.50		0.50	0.50	0.50	0.50	0.50		0.50	0.50	0.50
Increm. delay d2	1.7	2.6		18.7	16.9	5.3	0.3	0.9		10.9	2.1	3.0
PF factor	1.000	1.000		1.000	1.000	1.000	1.000	1.000		1.000	1.000	1.000
Control delay	24.5	21.0		44.3	38.4	24.6	16.4	17.8		31.2	20.1	21.3
Lane group LOS	C	C		D	D	C	B	B		C	C	C
Apprch. delay	21.8			36.1			17.6			24.7		
Approach LOS	C			D			B			C		
Intersec. delay	29.1			Intersection LOS						C		

SHORT REPORT												
General Information						Site Information						
Analyst SWM Agency or Co. SMTC Date Performed 1/10/2002 Time Period AM						Intersection Erie Blvd/Genesee St Area Type All other areas Jurisdiction Analysis Year 2002						
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	2	1	0	2	0	2	1	0	0	1	1
Lane group		T	R		TR		L	TR			LT	R
Volume (vph)		866	397		364	21	53	26	7	21	150	133
% Heavy veh		2	2		2	2	2	2	2	2	2	2
PHF		0.81	0.81		0.84	0.84	0.85	0.85	0.85	0.89	0.89	0.89
Actuated (P/A)		P	P		P	P	P	P	P	P	P	P
Startup lost time		2.0	2.0		2.0		2.0	2.0			2.0	2.0
Ext. eff. green		2.0	2.0		2.0		2.0	2.0			2.0	2.0
Arrival type		3	3		3		3	3			3	3
Unit Extension		3.0	3.0		3.0		3.0	3.0			3.0	3.0
Ped/Bike/RTOR Volume	0		0	0		0	9		0	9		0
Lane Width		12.0	12.0		12.0		12.0	12.0			12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr		0	0		0		0	0			0	0
Unit Extension		3.0	3.0		3.0		3.0	3.0			3.0	3.0
Phasing	Thru & RT	02	03	04	NB Only	SB Only	07	08				
Timing	G = 46.9	G =	G =	G =	G = 11.7	G = 19.8	G =	G =				
	Y = 4.5	Y =	Y =	Y =	Y = 3.6	Y = 3.6	Y =	Y =				
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.1						
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate		1069	490		458		62	39			193	149
Lane group cap.		1842	824		1827		446	234			407	348
v/c ratio		0.58	0.59		0.25		0.14	0.17			0.47	0.43
Green ratio		0.52	0.52		0.52		0.13	0.13			0.22	0.22
Unif. delay d1		14.8	15.0		11.9		34.7	34.9			30.6	30.3
Delay factor k		0.50	0.50		0.50		0.50	0.50			0.50	0.50
Increm. delay d2		1.3	3.2		0.3		0.7	1.5			3.9	3.8
PF factor		1.000	1.000		1.000		1.000	1.000			1.000	1.000
Control delay		16.2	18.1		12.2		35.4	36.4			34.5	34.1
Lane group LOS		B	B		B		D	D			C	C
Apprch. delay	16.8			12.2			35.8			34.3		
Approach LOS	B			B			D			C		
Intersec. delay	19.2			Intersection LOS						B		

SHORT REPORT												
General Information						Site Information						
Analyst SWM Agency or Co. SMTC Date Performed 1/10/2002 Time Period PM						Intersection Erie Blvd/Genesee St Area Type All other areas Jurisdiction Analysis Year 2002						
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	2	1	0	2	0	2	1	0	0	1	1
Lane group		T	R		TR		L	TR			LT	R
Volume (vph)		519	97		832	64	204	124	15	27	65	166
% Heavy veh		2	2		2	2	2	2	2	2	2	2
PHF		0.90	0.90		0.90	0.90	0.85	0.85	0.85	0.84	0.84	0.84
Actuated (P/A)		P	P		P	P	P	P	P	P	P	P
Startup lost time		2.0	2.0		2.0		2.0	2.0			2.0	2.0
Ext. eff. green		2.0	2.0		2.0		2.0	2.0			2.0	2.0
Arrival type		3	3		3		3	3			3	3
Unit Extension		3.0	3.0		3.0		3.0	3.0			3.0	3.0
Ped/Bike/RTOR Volume	0		0	0		0	6		0	6		0
Lane Width		12.0	12.0		12.0		12.0	12.0			12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr		0	0		0		0	0			0	0
Unit Extension		3.0	3.0		3.0		3.0	3.0			3.0	3.0
Phasing	Thru & RT	02	03	04	NB Only	SB Only	07	08				
Timing	G = 36.6	G =	G =	G =	G = 17.9	G = 18.7	G =	G =				
	Y = 4.3	Y =	Y =	Y =	Y = 4.3	Y = 3.4	Y =	Y =				
Duration of Analysis (hrs) = 0.25								Cycle Length C = 85.0				
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate		577	108		995		240	164			109	198
Lane group cap.		1523	681		1507		721	384			404	348
v/c ratio		0.38	0.16		0.66		0.33	0.43			0.27	0.57
Green ratio		0.43	0.43		0.43		0.21	0.21			0.22	0.22
Unif. delay d1		16.5	14.8		19.3		28.5	29.2			27.5	29.6
Delay factor k		0.50	0.50		0.50		0.50	0.50			0.50	0.50
Increm. delay d2		0.7	0.5		2.3		1.2	3.4			1.6	6.6
PF factor		1.000	1.000		1.000		1.000	1.000			1.000	1.000
Control delay		17.2	15.3		21.6		29.8	32.6			29.2	36.2
Lane group LOS		B	B		C		C	C			C	D
Apprch. delay	16.9			21.6			30.9			33.7		
Approach LOS	B			C			C			C		
Intersec. delay	23.4			Intersection LOS						C		

SHORT REPORT													
General Information						Site Information							
Analyst	SWM					Intersection	Harrison St/Almond St						
Agency or Co.	SMTC					Area Type	All other areas						
Date Performed	1/14/2002					Jurisdiction							
Time Period	AM					Analysis Year	2002						
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	0	0	0	1	2	2	2	3	0	0	3	0	
Lane group				L	T	R	L	TR			TR		
Volume (vph)				104	295	504	444	929	76		1457	113	
% Heavy veh				2	2	2	2	2	2		2	2	
PHF				0.92	0.92	0.92	0.94	0.94	0.94		0.94	0.94	
Actuated (P/A)				A	A	A	A	A	A		A	A	
Startup lost time				2.0	2.0	2.0	2.0	2.0			2.0		
Ext. eff. green				2.0	2.0	2.0	2.0	2.0			2.0		
Arrival type				3	3	3	3	3			3		
Unit Extension				3.0	3.0	3.0	3.0	3.0			3.0		
Ped/Bike/RTOR Volume	5			5		0	16		0	15		0	
Lane Width				12.0	12.0	12.0	12.0	12.0			12.0		
Parking/Grade/Parking	N		N	N	0	N	N	0	N	N	0	N	
Parking/hr													
Bus stops/hr				0	0	0	0	0			0		
Unit Extension				3.0	3.0	3.0	3.0	3.0			3.0		
Phasing	WB Only	02	03	04	NB Only	Thru & RT	07	08					
Timing	G = 21.0	G =	G =	G =	G = 16.0	G = 28.0	G =	G =					
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =					
Duration of Analysis (hrs) = 0.25						Cycle Length C = 80.0							
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate				113	321	548	472	1069			1670		
Lane group cap.				465	929	732	687	3079			1760		
v/c ratio				0.24	0.35	0.75	0.69	0.35			0.95		
Green ratio				0.26	0.26	0.26	0.20	0.61			0.35		
Unif. delay d1				23.2	23.9	27.1	29.7	7.6			25.3		
Delay factor k				0.11	0.11	0.30	0.26	0.11			0.46		
Increm. delay d2				0.3	0.2	4.3	2.9	0.1			11.6		
PF factor				1.000	1.000	1.000	1.000	1.000			1.000		
Control delay				23.5	24.2	31.4	32.6	7.7			36.9		
Lane group LOS				C	C	C	C	A			D		
Apprch. delay				28.1			15.3			36.9			
Approach LOS				C			B			D			
Intersec. delay	26.9			Intersection LOS							C		

SHORT REPORT													
General Information						Site Information							
Analyst	SWM					Intersection	Harrison St/Almond St						
Agency or Co.	SMTC					Area Type	All other areas						
Date Performed	1/14/2002					Jurisdiction							
Time Period	PM					Analysis Year	2002						
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	0	0	0	1	2	2	2	3	0	0	3	0	
Lane group				L	T	R	L	TR			TR		
Volume (vph)				357	295	1171	171	1911	13		1086	90	
% Heavy veh				2	2	2	2	2	2		2	2	
PHF				0.96	0.96	0.96	0.93	0.93	0.93		0.97	0.97	
Actuated (P/A)				A	A	A	A	A	A		A	A	
Startup lost time				2.0	2.0	2.0	2.0	2.0			2.0		
Ext. eff. green				2.0	2.0	2.0	2.0	2.0			2.0		
Arrival type				3	3	3	3	3			3		
Unit Extension				3.0	3.0	3.0	3.0	3.0			3.0		
Ped/Bike/RTOR Volume	6			6		84	24		0	24		0	
Lane Width				12.0	12.0	12.0	12.0	12.0			12.0		
Parking/Grade/Parking	N		N	N	0	N	N	0	N	N	0	N	
Parking/hr													
Bus stops/hr				0	0	0	0	0			0		
Unit Extension				3.0	3.0	3.0	3.0	3.0			3.0		
Phasing	WB Only	02	03	04	NB Only	Thru & RT	07	08					
Timing	G = 31.0	G =	G =	G =	G = 12.0	G = 27.0	G =	G =					
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =					
Duration of Analysis (hrs) = 0.25						Cycle Length C = 85.0							
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate				372	307	1132	184	2069			1213		
Lane group cap.				646	1291	1016	485	2630			1597		
v/c ratio				0.58	0.24	1.11	0.38	0.79			0.76		
Green ratio				0.36	0.36	0.36	0.14	0.52			0.32		
Unif. delay d1				21.7	18.8	27.0	33.1	16.7			26.1		
Delay factor k				0.17	0.11	0.50	0.11	0.33			0.31		
Increm. delay d2				1.3	0.1	65.0	0.5	1.7			2.2		
PF factor				1.000	1.000	1.000	1.000	1.000			1.000		
Control delay				23.0	18.9	92.0	33.6	18.3			28.3		
Lane group LOS				C	B	F	C	B			C		
Apprch. delay				65.5			19.6			28.3			
Approach LOS				E			B			C			
Intersec. delay	37.3			Intersection LOS						D			

SHORT REPORT												
General Information							Site Information					
Analyst SWM Agency or Co. SMTC Date Performed 1/14/2002 Time Period AM							Intersection Irving Ave/Waverly Ave Area Type All other areas Jurisdiction Analysis Year 2002					
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	0	0	1	0	1	0	1	1	1	1	0
Lane group				L		R		T	R	L	T	
Volume (vph)				232		64		122	123	204	380	
% Heavy veh				2		2		2	2	2	2	
PHF				0.90		0.90		0.84	0.84	0.93	0.93	
Actuated (P/A)				P		P		P	P	P	P	
Startup lost time				2.0		2.0		2.0	2.0	2.0	2.0	
Ext. eff. green				2.0		2.0		2.0	2.0	2.0	2.0	
Arrival type				3		3		3	3	3	3	
Unit Extension				3.0		3.0		3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	37			37		0	29		0			
Lane Width				12.0		12.0		12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N		N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr				0		0		0	0	0	0	
Unit Extension				3.0		3.0		3.0	3.0	3.0	3.0	
Phasing	WB Only	02	03	04	SB Only	NS Perm	07	08				
Timing	G = 30.0	G =	G =	G =	G = 9.0	G = 31.0	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 85.0					
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate				258		71		145	146	219	409	
Lane group cap.				625		819		679	577	604	986	
v/c ratio				0.41		0.09		0.21	0.25	0.36	0.41	
Green ratio				0.35		0.52		0.36	0.36	0.53	0.53	
Unif. delay d1				20.8		10.4		18.6	18.9	11.2	12.1	
Delay factor k				0.50		0.50		0.50	0.50	0.50	0.50	
Increm. delay d2				2.0		0.2		0.7	1.1	1.7	1.3	
PF factor				1.000		1.000		1.000	1.000	1.000	1.000	
Control delay				22.8		10.6		19.3	20.0-	12.9	13.3	
Lane group LOS				C		B		B	B	B	B	
Apprch. delay				20.2			19.6			13.2		
Approach LOS				C			B			B		
Intersec. delay	16.5			Intersection LOS						B		






















SHORT REPORT												
General Information						Site Information						
Analyst SWM Agency or Co. SMTC Date Performed 1/14/2002 Time Period PM						Intersection Irving Ave/Waverly Ave Area Type All other areas Jurisdiction Analysis Year 2002						
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	0	0	1	0	1	0	1	1	1	1	0
Lane group				L		R		T	R	L	T	
Volume (vph)				150		92		206	265	182	179	
% Heavy veh				2		2		2	2	2	2	
PHF				0.82		0.82		0.90	0.90	0.88	0.88	
Actuated (P/A)				P		P		P	P	P	P	
Startup lost time				2.0		2.0		2.0	2.0	2.0	2.0	
Ext. eff. green				2.0		2.0		2.0	2.0	2.0	2.0	
Arrival type				3		3		3	3	3	3	
Unit Extension				3.0		3.0		3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	29			29		0	34		0			
Lane Width				12.0		12.0		12.0	12.0	12.0	12.0	
Parking/Grade/Parking	N		N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr				0		0		0	0	0	0	
Unit Extension				3.0		3.0		3.0	3.0	3.0	3.0	
Phasing	WB Only	02	03	04	SB Only	NS Perm	07	08				
Timing	G = 25.0	G =	G =	G =	G = 10.0	G = 30.0	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =				
Duration of Analysis (hrs) = 0.25						Cycle Length C = 80.0						
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate				183		112		229	294	207	203	
Lane group cap.				553		792		699	594	582	1048	
v/c ratio				0.33		0.14		0.33	0.49	0.36	0.19	
Green ratio				0.31		0.50		0.38	0.38	0.56	0.56	
Unif. delay d1				21.1		10.8		17.8	19.2	9.5	8.6	
Delay factor k				0.50		0.50		0.50	0.50	0.50	0.50	
Increm. delay d2				1.6		0.4		1.2	2.9	1.7	0.4	
PF factor				1.000		1.000		1.000	1.000	1.000	1.000	
Control delay				22.7		11.1		19.1	22.1	11.2	9.0	
Lane group LOS				C		B		B	C	B	A	
Apprch. delay				18.3			20.8			10.1		
Approach LOS				B			C			B		
Intersec. delay	16.6			Intersection LOS						B		

James St & Midler Ave

AM Peak

4/5/2002

Lanes, Volumes, Timings

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1676	1714	0	1676	1726	0	1676	1726	0	1676	1721	0
Flt Perm.	0.258			0.243			0.950			0.950		
Satd. Flow (perm)	455	1714	0	429	1726	0	1676	1726	0	1676	1721	0
Satd. Flow (RTOR)		20			14			11				
Volume (vph)	45	366	88	47	367	64	141	395	63	129	299	56
Lane Group Flow (vph)	52	522	0	55	507	0	170	552	0	137	378	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2			6								
Total Split (s)	34.0	34.0	0.0	34.0	34.0	0.0	13.0	28.0	0.0	13.0	28.0	0.0
Lane Grp Cap (vph)	188	720		177	722		223	583		223	574	
v/s Ratio Prot		0.30			0.29		0.10	0.32		0.08	0.22	
v/s Ratio Perm	0.11			0.13								
Critical LG?		Yes					Yes	Yes				
Act Effct Green (s)	31.0	31.0		31.0	31.0		10.0	25.0		10.0	25.0	
Actuated g/C Ratio	0.41	0.41		0.41	0.41		0.13	0.33		0.13	0.33	
v/c Ratio	0.28	0.72		0.31	0.70		0.76	0.95		0.61	0.66	
Uniform Delay, d1	14.6	17.6		14.8	17.6		31.3	23.8		30.6	21.3	
Platoon Factor	1.05	1.06		1.00	1.00		1.00	1.00		1.00	1.00	
Incr. Delay, d2	3.3	5.7		4.5	5.6		21.5	26.2		12.0	5.8	
Webster Delay	18.5	24.3		19.3	23.2		52.9	50.1		42.7	27.2	
Webster LOS	B	C		B	C		D	D		D	C	

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 50 (67%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Control Type: Actuated-Coordinated

Total Lost Time: 9







Sum of Critical v/s Ratios: 0.72

Intersection v/c Ratio: 0.82

Intersection Webster Signal Delay: 33.4

Intersection LOS: C

Splits and Phases: 24: James St. & N Midler Ave






















		
ø2	ø3	ø4
34 s	13 s	28 s
		
ø6	ø7	ø8
34 s	13 s	28 s

James St & Midler Ave

PM Peak

4/5/2002

Lanes, Volumes, Timings

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1676	1712	0	1676	1735	0	1676	1714	0	1676	1724	0
Flt Perm.	0.221			0.133			0.950			0.950		
Satd. Flow (perm)	390	1712	0	235	1735	0	1676	1714	0	1676	1724	0
Satd. Flow (RTOR)		20			10			16				
Volume (vph)	27	441	108	33	451	56	202	367	82	169	392	66
Lane Group Flow (vph)	31	639	0	35	545	0	235	522	0	186	504	0
Turn Type	Perm			Perm			Prot			Prot		
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2			6								
Total Split (s)	34.0	34.0	0.0	34.0	34.0	0.0	13.0	28.0	0.0	13.0	28.0	0.0
Lane Grp Cap (vph)	161	719		97	723		223	582		223	575	
v/s Ratio Prot		0.37			0.31		0.14	0.30		0.11	0.29	
v/s Ratio Perm	0.08			0.15								
Critical LG?		Yes					Yes	Yes				
Act Effct Green (s)	31.0	31.0		31.0	31.0		10.0	25.0		10.0	25.0	
Actuated g/C Ratio	0.41	0.41		0.41	0.41		0.13	0.33		0.13	0.33	
v/c Ratio	0.19	0.89		0.36	0.75		1.05	0.90		0.83	0.88	
Uniform Delay, d1	14.0	19.7		15.2	18.3		32.5	23.0		31.7	23.5	
Platoon Factor	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Incr. Delay, d2	2.4	14.0		10.1	7.2		75.1	19.1		29.2	17.0	
Webster Delay	16.3	33.5		25.3	25.5		107.6	42.1		60.9	40.6	
Webster LOS	B	C		C	C		F	D		E	D	

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 50 (67%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Control Type: Actuated-Coordinated

Total Lost Time: 9







Sum of Critical v/s Ratios: 0.81

Intersection v/c Ratio: 0.92

Intersection Webster Signal Delay: 42.9

Intersection LOS: D

Splits and Phases: 24: James St. & N Midler Ave

 ø2	 ø3	 ø4
34 s	13 s	28 s
 ø6	 ø7	 ø8
34 s	13 s	28 s

SHORT REPORT													
General Information							Site Information						
Analyst	SWM						Intersection	James St/Teall Ave					
Agency or Co.	SMTC						Area Type	All other areas					
Date Performed	1/22/2002						Jurisdiction						
Time Period	AM						Analysis Year	2002					
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0	
Lane group	L	TR		L	TR			LTR			LTR		
Volume (vph)	56	210	111	68	422	11	138	279	92	6	328	150	
% Heavy veh	2	2	2	2	2	2	2	2	2	2	2	2	
PHF	0.79	0.79	0.79	0.90	0.90	0.90	0.88	0.88	0.88	0.73	0.73	0.73	
Actuated (P/A)	A	P	P	A	P	P	A	A	A	A	A	A	
Startup lost time	2.0	2.0		2.0	2.0			2.0			2.0		
Ext. eff. green	2.0	2.0		2.0	2.0			2.0			2.0		
Arrival type	3	3		3	3			3			3		
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0		
Ped/Bike/RTOR Volume	4		0	4		0	7		0	7		0	
Lane Width	12.0	12.0		12.0	12.0			12.0			12.0		
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N	
Parking/hr													
Bus stops/hr	0	0		0	0			0			0		
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0		
Phasing	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08					
Timing	G = 9.0	G = 24.0	G =	G =	G = 24.0	G =	G =	G =					
	Y = 6	Y = 6	Y =	Y =	Y = 6	Y =	Y =	Y =					
Duration of Analysis (hrs) = 0.25			Cycle Length C = 75.0										
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate	71	407		76	481			579			662		
Lane group cap.	212	1074		212	1128			659			1022		
v/c ratio	0.33	0.38		0.36	0.43			0.88			0.65		
Green ratio	0.12	0.32		0.12	0.32			0.32			0.32		
Unif. delay d1	30.3	19.7		30.3	20.1			24.1			21.9		
Delay factor k	0.11	0.50		0.11	0.50			0.41			0.23		
Increm. delay d2	0.9	1.0		1.0	1.2			13.0			1.4		
PF factor	1.000	1.000		1.000	1.000			1.000			1.000		
Control delay	31.2	20.8		31.4	21.3			37.1			23.3		
Lane group LOS	C	C		C	C			D			C		
Apprch. delay	22.3			22.6			37.1			23.3			
Approach LOS	C			C			D			C			
Intersec. delay	26.4			Intersection LOS						C			

SHORT REPORT													
General Information							Site Information						
Analyst	SWM						Intersection	James St/Teall Ave					
Agency or Co.	SMTC						Area Type	All other areas					
Date Performed	1/22/2002						Jurisdiction						
Time Period	PM						Analysis Year	2002					
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0	
Lane group	L	TR		L	TR			LTR			LTR		
Volume (vph)	160	445	102	98	320	13	112	368	105	11	333	83	
% Heavy veh	2	2	2	2	2	2	2	2	2	2	2	2	
PHF	0.87	0.87	0.87	0.93	0.93	0.93	0.87	0.87	0.87	0.84	0.84	0.84	
Actuated (P/A)	A	P	P	A	P	P	A	A	A	A	A	A	
Startup lost time	2.0	2.0		2.0	2.0			2.0			2.0		
Ext. eff. green	2.0	2.0		2.0	2.0			2.0			2.0		
Arrival type	3	3		3	3			3			3		
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0		
Ped/Bike/RTOR Volume	0		0	1		0	3		0	4		0	
Lane Width	12.0	12.0		12.0	12.0			12.0			12.0		
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N	
Parking/hr													
Bus stops/hr	0	0		0	0			0			0		
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0		
Phasing	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08					
Timing	G = 9.0	G = 24.0	G =	G =	G = 24.0	G =	G =	G =					
	Y = 6	Y = 6	Y =	Y =	Y = 6	Y =	Y =	Y =					
Duration of Analysis (hrs) = 0.25			Cycle Length C = 75.0										
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate	184	628		105	358			673			508		
Lane group cap.	212	1101		212	1126			779			1022		
v/c ratio	0.87	0.57		0.50	0.32			0.86			0.50		
Green ratio	0.12	0.32		0.12	0.32			0.32			0.32		
Unif. delay d1	32.4	21.2		30.9	19.3			24.0			20.6		
Delay factor k	0.40	0.50		0.11	0.50			0.39			0.11		
Increm. delay d2	29.6	2.1		1.8	0.7			9.9			0.4		
PF factor	1.000	1.000		1.000	1.000			1.000			1.000		
Control delay	62.0	23.4		32.7	20.0+			33.9			21.0		
Lane group LOS	E	C		C	C			C			C		
Apprch. delay	32.1			22.9			33.9			21.0			
Approach LOS	C			C			C			C			
Intersec. delay	28.6			Intersection LOS						C			

SHORT REPORT												
General Information							Site Information					
Analyst SWM Agency or Co. SMTC Date Performed 1/14/2002 Time Period AM							Intersection Morgan Rd/Buckley Rd Area Type All other areas Jurisdiction Analysis Year 2002					
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	1	2	0	1	2	0	1	2	0	1	2	1
Lane group	L	TR		L	TR		L	TR		L	T	R
Volume (vph)	147	442	221	80	248	68	50	221	105	198	701	202
% Heavy veh	2	2	2	2	2	2	2	2	2	2	2	2
PHF	0.90	0.90	0.90	0.83	0.83	0.83	0.83	0.83	0.83	0.79	0.79	0.79
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Ext. eff. green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Arrival type	3	3		3	3		3	3		3	3	3
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Ped/Bike/RTOR Volume	0		0	0		0	0		0	0		0
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr	0	0		0	0		0	0		0	0	0
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Phasing	Excl. Left	EB Only	Thru & RT	04		Excl. Left	SB Only	Thru & RT	08			
Timing	G = 8.0	G = 5.0	G = 16.0	G =		G = 5.0	G = 10.0	G = 15.0	G =			
	Y = 6	Y = 6	Y = 6	Y =		Y = 6	Y = 6	Y = 6	Y =			
Duration of Analysis (hrs) = 0.25								Cycle Length C = 95.0				
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate	163	737		96	381		60	393		251	887	256
Lane group cap.	354	956		149	577		93	532		391	1155	933
v/c ratio	0.46	0.77		0.64	0.66		0.65	0.74		0.64	0.77	0.27
Green ratio	0.20	0.28		0.08	0.17		0.05	0.16		0.22	0.33	0.59
Unif. delay d1	33.5	31.2		42.1	37.0		44.1	38.1		33.6	28.8	9.5
Delay factor k	0.11	0.32		0.22	0.24		0.22	0.30		0.22	0.32	0.11
Increm. delay d2	1.0	3.9		9.2	2.8		14.4	5.4		3.6	3.2	0.2
PF factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	1.000
Control delay	34.4	35.1		51.3	39.8		58.5	43.5		37.2	32.0	9.7
Lane group LOS	C	D		D	D		E	D		D	C	A
Apprch. delay	35.0-			42.1			45.5			28.8		
Approach LOS	C			D			D			C		
Intersec. delay	34.8			Intersection LOS						C		

SHORT REPORT													
General Information							Site Information						
Analyst	SWM						Intersection	Morgan Rd/Buckley Rd					
Agency or Co.	SMTC						Area Type	All other areas					
Date Performed	1/14/2002						Jurisdiction						
Time Period	PM						Analysis Year	2002					
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	1	2	0	1	2	0	1	2	0	1	2	1	
Lane group	L	TR		L	TR		L	TR		L	T	R	
Volume (vph)	246	316	76	75	518	151	201	668	107	101	276	193	
% Heavy veh	2	2	2	2	2	2	2	2	2	2	2	2	
PHF	0.98	0.98	0.98	0.80	0.80	0.80	0.98	0.98	0.98	0.94	0.94	0.94	
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A	
Startup lost time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0	
Ext. eff. green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0	
Arrival type	3	3		3	3		3	3		3	3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0	
Ped/Bike/RTOR Volume	1		0	0		0	0		0	0		0	
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N	
Parking/hr													
Bus stops/hr	0	0		0	0		0	0		0	0	0	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0	
Phasing	Excl. Left	EB Only	Thru & RT	04			Excl. Left	NB Only	Thru & RT	08			
Timing	G = 7.0	G = 8.0	G = 26.0	G =			G = 8.0	G = 5.0	G = 15.0	G =			
	Y = 6	Y = 6	Y = 6	Y =			Y = 6	Y = 6	Y = 6	Y =			
Duration of Analysis (hrs) = 0.25									Cycle Length C = 105.0				
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate	251	400		94	836		205	791		107	294	205	
Lane group cap.	354	1309		118	847		320	858		135	506	633	
v/c ratio	0.71	0.31		0.80	0.99		0.64	0.92		0.79	0.58	0.32	
Green ratio	0.20	0.38		0.07	0.25		0.18	0.25		0.08	0.14	0.40	
Unif. delay d1	39.2	22.8		48.3	39.3		39.8	38.5		47.7	42.1	21.7	
Delay factor k	0.27	0.11		0.34	0.49		0.22	0.44		0.34	0.17	0.11	
Increm. delay d2	6.4	0.1		30.6	27.6		4.3	15.2		26.8	1.7	0.3	
PF factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	1.000	
Control delay	45.6	22.9		78.9	67.0		44.1	53.7		74.5	43.8	22.0	
Lane group LOS	D	C		E	E		D	D		E	D	C	
Apprch. delay	31.7			68.2			51.7			41.8			
Approach LOS	C			E			D			D			
Intersec. delay	50.5			Intersection LOS						D			

SHORT REPORT												
General Information							Site Information					
Analyst SWM Agency or Co. SMTC Date Performed 1/22/2002 Time Period AM							Intersection NY 370/Old Liverpool/First Area Type All other areas Jurisdiction Analysis Year 2002					
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	1	0	0	1	2	0	2	0	2	2	0
Lane group		TR			LT	R		T		L	TR	
Volume (vph)		39	51	39	57	284		591		403	1869	0
% Heavy veh		2	2	2	2	2		2		2	2	2
PHF		0.68	0.68	0.91	0.91	0.91		0.80		0.90	0.90	0.90
Actuated (P/A)		A	A	A	A	A		A		A	A	A
Startup lost time		2.0			2.0	2.0		2.0		2.0	2.0	
Ext. eff. green		2.0			2.0	2.0		2.0		2.0	2.0	
Arrival type		3			3	3		3		3	3	
Unit Extension		3.0			3.0	3.0		3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0		0	0		0	0			0		0
Lane Width		12.0			12.0	12.0		12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr		0			0	0		0		0	0	
Unit Extension		3.0			3.0	3.0		3.0		3.0	3.0	
Phasing	EW Perm	02	03	04	SB Only	Thru & RT	07	08				
Timing	G = 10.0	G =	G =	G =	G = 14.0	G = 40.0	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 6	Y = 5	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 80.0					
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate		132			106	312		739		448	2077	
Lane group cap.		215			99	1010		1770		601	2654	
v/c ratio		0.61			1.07	0.31		0.42		0.75	0.78	
Green ratio		0.13			0.13	0.36		0.50		0.17	0.75	
Unif. delay d1		33.2			35.0	18.3		12.6		31.3	6.1	
Delay factor k		0.20			0.50	0.11		0.11		0.30	0.33	
Increm. delay d2		5.1			110.8	0.2		0.2		5.1	1.6	
PF factor		1.000			1.000	1.000		1.000		1.000	1.000	
Control delay		38.3			145.8	18.5		12.8		36.4	7.6	
Lane group LOS		D			F	B		B		D	A	
Apprch. delay	38.3			50.8			12.8			12.7		
Approach LOS	D			D			B			B		
Intersec. delay	17.8			Intersection LOS						B		

SHORT REPORT												
General Information							Site Information					
Analyst SWM Agency or Co. SMTC Date Performed 1/22/2002 Time Period PM							Intersection NY 370/Old Liverpool/First Area Type All other areas Jurisdiction Analysis Year 2002					
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	1	0	0	1	2	0	2	0	2	2	0
Lane group		TR			LT	R		T		L	TR	
Volume (vph)		89	43	30	77	619		1779		298	670	0
% Heavy veh		2	2	2	2	2		2		2	2	2
PHF		0.66	0.66	0.91	0.91	0.91		0.93		0.93	0.93	0.93
Actuated (P/A)		A	A	A	A	A		A		A	A	A
Startup lost time		2.0			2.0	2.0		2.0		2.0	2.0	
Ext. eff. green		2.0			2.0	2.0		2.0		2.0	2.0	
Arrival type		3			3	3		3		3	3	
Unit Extension		3.0			3.0	3.0		3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0		0	0		0	1			2		0
Lane Width		12.0			12.0	12.0		12.0		12.0	12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr		0			0	0		0		0	0	
Unit Extension		3.0			3.0	3.0		3.0		3.0	3.0	
Phasing	EW Perm	02	03	04	SB Only	Thru & RT	07	08				
Timing	G = 15.0	G =	G =	G =	G = 9.0	G = 50.0	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 6	Y = 5	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 90.0					
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate		200			118	680		1913		320	720	
Lane group cap.		297			147	898		1966		343	2556	
v/c ratio		0.67			0.80	0.76		0.97		0.93	0.28	
Green ratio		0.17			0.17	0.32		0.56		0.10	0.72	
Unif. delay d1		35.2			36.1	27.3		19.3		40.2	4.4	
Delay factor k		0.25			0.35	0.31		0.48		0.45	0.11	
Increm. delay d2		5.9			26.6	3.8		14.4		31.8	0.1	
PF factor		1.000			1.000	1.000		1.000		1.000	1.000	
Control delay		41.1			62.6	31.1		33.8		72.0	4.4	
Lane group LOS		D			E	C		C		E	A	
Apprch. delay	41.1			35.8			33.8			25.2		
Approach LOS	D			D			C			C		
Intersec. delay	32.3			Intersection LOS						C		

SHORT REPORT												
General Information						Site Information						
Analyst	SWM					Intersection	NY 173/NY 175 East					
Agency or Co.	SMTc					Area Type	All other areas					
Date Performed	1/24/2002					Jurisdiction						
Time Period	AM					Analysis Year	2002					
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	1	1	0	1	2	0	0	1	1	0	1	2
Lane group	L	TR		L	T			LT	R		LT	R
Volume (vph)	486	784	76	43	675		51	25	54	8	17	226
% Heavy veh	2	2	2	2	2		2	2	2	2	2	2
PHF	0.89	0.89	0.89	0.90	0.90		0.88	0.88	0.88	0.77	0.77	0.77
Actuated (P/A)	A	A	A	A	A		A	A	A	A	A	
Startup lost time	2.0	2.0		2.0	2.0			2.0	2.0		2.0	2.0
Ext. eff. green	2.0	2.0		2.0	2.0			2.0	2.0		2.0	2.0
Arrival type	5	5		3	3			3	3		3	3
Unit Extension	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Ped/Bike/RTOR Volume	0		0	0			0		0	0		0
Lane Width	12.0	12.0		12.0	12.0			12.0	12.0		12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr	0	0		0	0			0	0		0	0
Unit Extension	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Phasing	WB Only	EW Perm	EB Only	04	NS Perm	06	07	08				
Timing	G = 4.0	G = 18.0	G = 34.0	G =	G = 5.5	G =	G =	G =				
	Y = 4	Y = 5	Y = 6	Y =	Y = 3.5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 80.0					
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate	546	966		48	750			86	61		32	294
Lane group cap.	1020	1310		89	1150			99	109		91	1184
v/c ratio	0.54	0.74		0.54	0.65			0.87	0.56		0.35	0.25
Green ratio	0.71	0.71		0.05	0.32			0.07	0.07		0.07	0.43
Unif. delay d1	9.2	7.0		37.1	23.1			36.9	36.1		35.5	14.8
Delay factor k	0.14	0.30		0.14	0.23			0.40	0.16		0.11	0.11
Increm. delay d2	0.6	2.2		6.5	1.3			51.2	6.4		2.3	0.1
PF factor	0.174	0.174		1.000	1.000			1.000	1.000		1.000	1.000
Control delay	2.2	3.4		43.6	24.5			88.1	42.4		37.9	14.9
Lane group LOS	A	A		D	C			F	D		D	B
Apprch. delay	3.0			25.6			69.2			17.2		
Approach LOS	A			C			E			B		
Intersec. delay	14.6			Intersection LOS						B		

SHORT REPORT												
General Information						Site Information						
Analyst	SWM					Intersection	NY 173/NY 175 East					
Agency or Co.	SMTc					Area Type	All other areas					
Date Performed	1/25/2002					Jurisdiction						
Time Period	PM					Analysis Year	2002					
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	1	1	0	1	2	0	0	1	1	0	1	2
Lane group	L	TR		L	T			LT	R		LT	R
Volume (vph)	249	664	41	27	865		29	8	22	13	12	370
% Heavy veh	2	2	2	2	2		2	2	2	2	2	2
PHF	0.98	0.98	0.98	0.93	0.93		0.74	0.74	0.74	0.92	0.92	0.92
Actuated (P/A)	A	A	A	A	A		A	A	A	A	A	
Startup lost time	2.0	2.0		2.0	2.0			2.0	2.0		2.0	2.0
Ext. eff. green	2.0	2.0		2.0	2.0			2.0	2.0		2.0	2.0
Arrival type	5	5		3	3			3	3		3	3
Unit Extension	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Ped/Bike/RTOR Volume	0		0	0			0		0	0		0
Lane Width	12.0	12.0		12.0	12.0			12.0	12.0		12.0	12.0
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr	0	0		0	0			0	0		0	0
Unit Extension	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Phasing	WB Only	EW Perm	EB Only	04	NS Perm	06	07	08				
Timing	G = 4.0	G = 20.0	G = 40.0	G =	G = 4.0	G =	G =	G =				
	Y = 4	Y = 5	Y = 5	Y =	Y = 3.5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25			Cycle Length C = 85.5									
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate	254	720		29	930			50	30		27	402
Lane group cap.	1039	1403		83	1159			78	74		71	1304
v/c ratio	0.24	0.51		0.35	0.80			0.64	0.41		0.38	0.31
Green ratio	0.76	0.76		0.05	0.33			0.05	0.05		0.05	0.47
Unif. delay d1	7.4	4.0		39.5	26.2			40.0	39.6		39.5	14.1
Delay factor k	0.11	0.12		0.11	0.35			0.22	0.11		0.11	0.11
Increm. delay d2	0.1	0.3		2.5	4.2			16.5	3.6		3.4	0.1
PF factor	0.209	0.209		1.000	1.000			1.000	1.000		1.000	1.000
Control delay	1.7	1.2		42.0	30.4			56.5	43.2		42.9	14.3
Lane group LOS	A	A		D	C			E	D		D	B
Apprch. delay	1.3			30.7			51.5			16.1		
Approach LOS	A			C			D			B		
Intersec. delay	17.1			Intersection LOS						B		

SHORT REPORT												
General Information						Site Information						
Analyst SWM Agency or Co. SMTC Date Performed 1/24/2002 Time Period AM						Intersection NY173/NY175 West Area Type All other areas Jurisdiction Analysis Year 2002						
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	2	0	0	2	0	0	0	0	1	0	0
Lane group		T			T					L		
Volume (vph)		929			543					483		
% Heavy veh		2			2					2		
PHF		0.87			0.81					0.96		
Actuated (P/A)		A			A					A		
Startup lost time		2.0			2.0					2.0		
Ext. eff. green		2.0			2.0					2.0		
Arrival type		3			4					3		
Unit Extension		3.0			3.0					3.0		
Ped/Bike/RTOR Volume							0					
Lane Width		12.0			12.0					12.0		
Parking/Grade/Parking	N	0	N	N	0	N	N		N	N	0	N
Parking/hr												
Bus stops/hr		0			0					0		
Unit Extension		3.0			3.0					3.0		
Phasing	WB Only	Thru Only	03	04	SB Only	06	07	08				
Timing	G = 4.0	G = 37.0	G =	G =	G = 24.0	G =	G =	G =				
	Y = 4	Y = 6	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25			Cycle Length C = 80.0									
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
Adj. flow rate		1068			670					503		
Lane group cap.		1637			1991					531		
v/c ratio		0.65			0.34					0.95		
Green ratio		0.46			0.56					0.30		
Unif. delay d1		16.6			9.4					27.4		
Delay factor k		0.23			0.11					0.46		
Increm. delay d2		0.9			0.1					26.4		
PF factor		1.000			0.657					1.000		
Control delay		17.5			6.3					53.8		
Lane group LOS		B			A					D		
Apprch. delay	17.5			6.3						53.8		
Approach LOS	B			A						D		
Intersec. delay	22.3			Intersection LOS						C		

SHORT REPORT													
General Information						Site Information							
Analyst	SWM					Intersection	NY 173/NY 175 West						
Agency or Co.	SMTc					Area Type	All other areas						
Date Performed	1/25/2002					Jurisdiction							
Time Period	PM					Analysis Year	2002						
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	0	2	0	0	2	0	0	0	0	1	0	0	
Lane group		T			T					L			
Volume (vph)		480			790					527			
% Heavy veh		2			2					2			
PHF		0.88			0.97					0.96			
Actuated (P/A)		A			A					A			
Startup lost time		2.0			2.0					2.0			
Ext. eff. green		2.0			2.0					2.0			
Arrival type		3			4					3			
Unit Extension		3.0			3.0					3.0			
Ped/Bike/RTOR Volume							1						
Lane Width		12.0			12.0					12.0			
Parking/Grade/Parking	N	0	N	N	0	N	N		N	N	0	N	
Parking/hr													
Bus stops/hr		0			0					0			
Unit Extension		3.0			3.0					3.0			
Phasing	WB Only	Thru Only	03	04	SB Only	06	07	08					
Timing	G = 4.0	G = 35.0	G = 4.0	G =	G = 25.0	G =	G =	G =					
	Y = 4	Y = 5	Y = 3.5	Y =	Y = 5	Y =	Y =	Y =					
Duration of Analysis (hrs) = 0.25			Cycle Length C = 85.5										
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate		545			814					549			
Lane group cap.		1449			1780					518			
v/c ratio		0.38			0.46					1.06			
Green ratio		0.41			0.50					0.29			
Unif. delay d1		17.6			13.7					30.3			
Delay factor k		0.11			0.11					0.50			
Increm. delay d2		0.2			0.2					56.3			
PF factor		1.000			0.762					1.000			
Control delay		17.8			10.6					86.6			
Lane group LOS		B			B					F			
Apprch. delay	17.8			10.6						86.6			
Approach LOS	B			B						F			
Intersec. delay	34.5			Intersection LOS						C			

SHORT REPORT													
General Information							Site Information						
Analyst	SWM						Intersection	Old Route 57/Tulip St					
Agency or Co.	SMTC						Area Type	All other areas					
Date Performed	1/14/2002						Jurisdiction						
Time Period	AM						Analysis Year	2002					
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0	
Lane group	L	TR		L	TR			LTR			TR		
Volume (vph)	11	33	8	676	44	1	5	270	263		800	28	
% Heavy veh	2	2	2	2	2	2	2	2	2		2	2	
PHF	0.85	0.85	0.85	0.88	0.88	0.88	0.86	0.86	0.86		0.94	0.94	
Actuated (P/A)	A	A	A	A	A	A	A	A	A		A	A	
Startup lost time	2.0	2.0		2.0	2.0			2.0			2.0		
Ext. eff. green	2.0	2.0		2.0	2.0			2.0			2.0		
Arrival type	3	3		3	3			3			3		
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0		
Ped/Bike/RTOR Volume	3		0	3		0	1		0	1		0	
Lane Width	12.0	12.0		12.0	12.0			12.0			12.0		
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N	
Parking/hr													
Bus stops/hr	0	0		0	0			0			0		
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0		
Phasing	WB Only	EW Perm	03	04	NS Perm	06	07	08					
Timing	G = 30.5	G = 11.0	G =	G =	G = 25.0	G =	G =	G =					
	Y = 4.5	Y = 4.5	Y =	Y =	Y = 4.5	Y =	Y =	Y =					
Duration of Analysis (hrs) = 0.25			Cycle Length C = 80.0										
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate	13	48		768	51			626			881		
Lane group cap.	185	249		863	1068			970			1100		
v/c ratio	0.07	0.19		0.89	0.05			0.65			0.80		
Green ratio	0.14	0.14		0.57	0.57			0.31			0.31		
Unif. delay d1	30.0	30.6		13.1	7.4			23.7			25.2		
Delay factor k	0.11	0.11		0.41	0.11			0.22			0.34		
Increm. delay d2	0.2	0.4		11.4	0.0			1.5			4.3		
PF factor	1.000	1.000		1.000	1.000			1.000			1.000		
Control delay	30.2	30.9		24.4	7.4			25.2			29.5		
Lane group LOS	C	C		C	A			C			C		
Apprch. delay	30.8			23.4			25.2			29.5			
Approach LOS	C			C			C			C			
Intersec. delay	26.3			Intersection LOS						C			

SHORT REPORT													
General Information							Site Information						
Analyst	SWM						Intersection	Old Route 57/Tulip St					
Agency or Co.	SMTc						Area Type	All other areas					
Date Performed	1/14/2002						Jurisdiction						
Time Period	PM						Analysis Year	2002					
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0	
Lane group	L	TR		L	TR			TR			LTR		
Volume (vph)	46	71	6	287	64	12		966	601	4	415	47	
% Heavy veh	2	2	2	2	2	2		2	2	2	2	2	
PHF	0.70	0.70	0.70	0.94	0.94	0.94		0.95	0.95	0.90	0.90	0.90	
Actuated (P/A)	A	A	A	A	A	A		A	A	A	A	A	
Startup lost time	2.0	2.0		2.0	2.0			2.0			2.0		
Ext. eff. green	2.0	2.0		2.0	2.0			2.0			2.0		
Arrival type	3	3		3	3			3			3		
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0		
Ped/Bike/RTOR Volume	4		0	4		0	8		0	7		0	
Lane Width	12.0	12.0		12.0	12.0			12.0			12.0		
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N	
Parking/hr													
Bus stops/hr	0	0		0	0			0			0		
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0		
Phasing	WB Only	EW Perm	03	04	NS Perm	06	07	08					
Timing	G = 15.0	G = 7.0	G =	G =	G = 54.5	G =	G =	G =					
	Y = 4.5	Y = 4.5	Y =	Y =	Y = 4.5	Y =	Y =	Y =					
Duration of Analysis (hrs) = 0.25			Cycle Length C = 90.0										
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate	66	110		305	81			1650			517		
Lane group cap.	102	143		388	535			2020			1991		
v/c ratio	0.65	0.77		0.79	0.15			0.82			0.26		
Green ratio	0.08	0.08		0.29	0.29			0.61			0.61		
Unif. delay d1	40.3	40.7		27.3	23.4			13.9			8.3		
Delay factor k	0.22	0.32		0.33	0.11			0.36			0.11		
Increm. delay d2	13.4	22.1		10.3	0.1			2.7			0.1		
PF factor	1.000	1.000		1.000	1.000			1.000			1.000		
Control delay	53.7	62.8		37.5	23.6			16.6			8.4		
Lane group LOS	D	E		D	C			B			A		
Apprch. delay	59.4			34.6			16.6			8.4			
Approach LOS	E			C			B			A			
Intersec. delay	20.4			Intersection LOS						C			

TWO-WAY STOP CONTROL SUMMARY									
General Information					Site Information				
Analyst	SWM				Intersection	Onondaga St/Geddes St			
Agency/Co.	SMTc				Jurisdiction				
Date Performed	1/14/2002				Analysis Year	2002			
Analysis Time Period	AM								
Project Description									
East/West Street: Onondaga St					North/South Street: Geddes St				
Intersection Orientation: North-South					Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments									
Major Street	Northbound			Southbound					
Movement	1	2	3	4	5	6			
	L	T	R	L	T	R			
Volume	26	607	16	5	296	24			
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.77	0.77	0.77			
Hourly Flow Rate, HFR	28	674	17	6	384	31			
Percent Heavy Vehicles	2	--	--	2	--	--			
Median Type	Undivided								
RT Channelized			0			0			
Lanes	0	1	0	0	1	0			
Configuration	LTR			LTR					
Upstream Signal		0			0				
Minor Street	Westbound			Eastbound					
Movement	7	8	9	10	11	12			
	L	T	R	L	T	R			
Volume	9	19	8	31	63	11			
Peak-Hour Factor, PHF	0.63	0.63	0.63	0.67	0.67	0.67			
Hourly Flow Rate, HFR	14	30	12	46	94	16			
Percent Heavy Vehicles	2	2	2	2	2	2			
Percent Grade (%)	0			0					
Flared Approach		N			N				
Storage		0			0				
RT Channelized			0			0			
Lanes	0	1	0	0	1	0			
Configuration		LTR			LTR				
Delay, Queue Length, and Level of Service									
Approach	NB	SB	Westbound			Eastbound			
Movement	1	4	7	8	9	10	11	12	
Lane Configuration	LTR	LTR		LTR			LTR		
v (vph)	28	6		56			156		
C (m) (vph)	1136	898		153			172		
v/c	0.02	0.01		0.37			0.91		
95% queue length	0.08	0.02		1.54			6.71		
Control Delay	8.2	9.0		41.5			99.8		
LOS	A	A		E			F		
Approach Delay	--	--	41.5			99.8			
Approach LOS	--	--	E			F			






















TWO-WAY STOP CONTROL SUMMARY									
General Information					Site Information				
Analyst	SWM				Intersection	Onondaga St/Geddes St			
Agency/Co.	SMTc				Jurisdiction				
Date Performed	1/14/2002				Analysis Year	2002			
Analysis Time Period	PM								
Project Description									
East/West Street: Onondaga St					North/South Street: Geddes St				
Intersection Orientation: North-South					Study Period (hrs): 0.25				
Vehicle Volumes and Adjustments									
Major Street	Northbound			Southbound					
Movement	1	2	3	4	5	6			
	L	T	R	L	T	R			
Volume	26	289	7	11	406	76			
Peak-Hour Factor, PHF	0.73	0.73	0.73	0.94	0.94	0.94			
Hourly Flow Rate, HFR	35	395	9	11	431	80			
Percent Heavy Vehicles	2	--	--	2	--	--			
Median Type	Undivided								
RT Channelized			0			0			
Lanes	0	1	0	0	1	0			
Configuration	LTR			LTR					
Upstream Signal		0			0				
Minor Street	Westbound			Eastbound					
Movement	7	8	9	10	11	12			
	L	T	R	L	T	R			
Volume	9	120	20	45	66	10			
Peak-Hour Factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91			
Hourly Flow Rate, HFR	9	131	21	49	72	10			
Percent Heavy Vehicles	2	2	2	2	2	2			
Percent Grade (%)	0			0					
Flared Approach		N			N				
Storage		0			0				
RT Channelized			0			0			
Lanes	0	1	0	0	1	0			
Configuration		LTR			LTR				
Delay, Queue Length, and Level of Service									
Approach	NB	SB	Westbound			Eastbound			
Movement	1	4	7	8	9	10	11	12	
Lane Configuration	LTR	LTR		LTR			LTR		
v (vph)	35	11		161			131		
C (m) (vph)	1054	1155		242			166		
v/c	0.03	0.01		0.67			0.79		
95% queue length	0.10	0.03		4.21			5.15		
Control Delay	8.5	8.1		45.2			79.0		
LOS	A	A		E			F		
Approach Delay	--	--	45.2			79.0			
Approach LOS	--	--	E			F			

Seneca Turnpike & Salina Street

AM Peak

4/5/2002

Lanes, Volumes, Timings

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1796	0	1770	1842	0	1770	1747	0	1770	1777	0
Flt Perm.	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1796	0	1770	1842	0	1770	1747	0	1770	1777	0
Satd. Flow (RTOR)		20			5			36			21	
Volume (vph)	106	506	158	90	375	28	166	290	202	41	187	82
Lane Group Flow (vph)	116	730	0	102	458	0	193	572	0	52	341	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases		4			8			2				
Total Split (s)	10.0	46.0	0.0	10.0	46.0	0.0	15.0	33.0	0.0	11.0	29.0	0.0
Lane Grp Cap (vph)	124	798		124	810		212	556		120	464	
v/s Ratio Prot	0.07	0.40		0.06	0.25		0.11	0.31		0.03	0.19	
v/s Ratio Perm												
Critical LG?	Yes	Yes					Yes	Yes				
Act Effct Green (s)	7.0	43.8		7.0	43.8		12.0	30.4		6.8	25.2	
Actuated g/C Ratio	0.07	0.44		0.07	0.44		0.12	0.30		0.07	0.25	
v/c Ratio	0.94	0.91		0.82	0.57		0.91	1.03		0.43	0.73	
Uniform Delay, d1	46.3	25.6		45.9	20.7		43.4	32.5		44.7	32.1	
Platoon Factor	1.16	0.71		1.00	1.03		1.00	1.01		0.97	0.98	
Incr. Delay, d2	53.9	14.5		33.7	2.8		38.0	45.7		2.5	6.0	
Webster Delay	107.5	32.7		79.5	24.2		81.4	78.4		46.1	37.3	
Webster LOS	F	C		E	C		F	E		D	D	

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 55 (55%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Control Type: Actuated-Coordinated

Total Lost Time: 9









Sum of Critical v/s Ratios: 0.86

Intersection v/c Ratio: 0.95

Intersection Webster Signal Delay: 51.2

Intersection LOS: D

Splits and Phases: 3: Seneca Tnpk. & Salina St.






















			
ø1	ø2	ø3	ø4
11 s	33 s	10 s	46 s
			
ø5	ø6	ø7	ø8
15 s	29 s	10 s	46 s

Seneca Turnpike & Salina Street

PM Peak

4/5/2002

Lanes, Volumes, Timings

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Satd. Flow (prot)	1770	1771	0	1770	1846	0	1770	1760	0	1770	1760	0
Flt Perm.	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1771	0	1770	1846	0	1770	1760	0	1770	1760	0
Satd. Flow (RTOR)		28			4			29			28	
Volume (vph)	117	417	200	226	504	33	164	203	117	60	275	160
Lane Group Flow (vph)	134	709	0	248	590	0	184	359	0	64	463	0
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases		4			8			2				
Total Split (s)	13.0	41.0	0.0	18.0	46.0	0.0	12.0	31.0	0.0	10.0	29.0	0.0
Lane Grp Cap (vph)	177	673		266	778		159	548		106	496	
v/s Ratio Prot	0.08	0.39		0.14	0.32		0.10	0.20		0.04	0.25	
v/s Ratio Perm												
Critical LG?		Yes		Yes			Yes	Yes			Yes	
Act Effct Green (s)	10.0	37.0		15.0	42.0		9.0	30.0		6.0	27.0	
Actuated g/C Ratio	0.10	0.37		0.15	0.42		0.09	0.30		0.06	0.27	
v/c Ratio	0.76	1.05		0.93	0.76		1.16	0.66		0.60	0.93	
Uniform Delay, d1	43.8	30.2		42.0	24.5		45.5	27.8		45.8	33.4	
Platoon Factor	1.09	0.88		1.00	0.97		1.00	1.06		0.98	1.03	
Incr. Delay, d2	14.6	47.1		37.2	6.8		119.9	2.8		9.3	24.8	
Webster Delay	62.2	73.6		79.2	30.5		165.4	32.2		54.2	59.1	
Webster LOS	E	E		E	C		F	C		D	E	

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 89 (89%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Control Type: Actuated-Coordinated

Total Lost Time: 15









Sum of Critical v/s Ratios: 0.86

Intersection v/c Ratio: 1.01

Intersection Webster Signal Delay: 62.1

Intersection LOS: E

Splits and Phases: 3: Seneca Tnpk. & Salina St.

			
ø1	ø2	ø3	ø4
10 s	31 s	18 s	41 s
			
ø5	ø6	ø7	ø8
12 s	29 s	13 s	46 s

SHORT REPORT													
General Information							Site Information						
Analyst	SWM						Intersection	S. Salina St/Castle St					
Agency or Co.	SMTC						Area Type	All other areas					
Date Performed	1/14/2002						Jurisdiction						
Time Period	AM						Analysis Year	2002					
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	1	1	0	1	1	0	0	1	0	0	2	0	
Lane group	L	TR		L	TR			LTR			LTR		
Volume (vph)	32	150	22	53	56	17	41	424	54	10	196	15	
% Heavy veh	2	2	2	2	2	2	2	2	2	2	2	2	
PHF	0.96	0.96	0.96	0.81	0.81	0.81	0.85	0.85	0.85	0.88	0.88	0.88	
Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P	
Startup lost time	3.0	3.0		3.0	3.0			3.0			3.0		
Ext. eff. green	2.0	2.0		2.0	2.0			2.0			2.0		
Arrival type	3	3		3	3			3			3		
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0		
Ped/Bike/RTOR Volume	10		0	10		0	4		0	3		0	
Lane Width	12.0	12.0		12.0	12.0			12.0			12.0		
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N	
Parking/hr													
Bus stops/hr	0	0		0	0			0			0		
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0		
Phasing	EW Perm	02	03	04	NS Perm	06	07	08					
Timing	G = 17.0	G =	G =	G =	G = 53.0	G =	G =	G =					
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =					
Duration of Analysis (hrs) = 0.25								Cycle Length C = 80.0					
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate	33	179		65	90			611			251		
Lane group cap.	260	365		224	360			1142			2144		
v/c ratio	0.13	0.49		0.29	0.25			0.54			0.12		
Green ratio	0.20	0.20		0.20	0.20			0.65			0.65		
Unif. delay d1	26.3	28.4		27.2	26.9			7.5			5.3		
Delay factor k	0.50	0.50		0.50	0.50			0.50			0.50		
Increm. delay d2	1.0	4.7		3.3	1.7			1.8			0.1		
PF factor	1.000	1.000		1.000	1.000			1.000			1.000		
Control delay	27.3	33.0		30.4	28.6			9.3			5.4		
Lane group LOS	C	C		C	C			A			A		
Apprch. delay	32.1			29.4			9.3			5.4			
Approach LOS	C			C			A			A			
Intersec. delay	15.0			Intersection LOS						B			

SHORT REPORT													
General Information							Site Information						
Analyst	SWM						Intersection	S. Salina St/Castle St					
Agency or Co.	SMTC						Area Type	All other areas					
Date Performed	1/14/2002						Jurisdiction						
Time Period	PM						Analysis Year	2002					
Volume and Timing Input													
	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Num. of Lanes	1	1	0	1	1	0	0	1	0	0	2	0	
Lane group	L	TR		L	TR			LTR			LTR		
Volume (vph)	41	70	25	152	162	20	51	339	67	12	442	38	
% Heavy veh	2	2	2	2	2	2	2	2	2	2	2	2	
PHF	0.89	0.89	0.89	0.84	0.84	0.84	0.99	0.99	0.99	0.86	0.86	0.86	
Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P	
Startup lost time	3.0	3.0		3.0	3.0			3.0			3.0		
Ext. eff. green	2.0	2.0		2.0	2.0			2.0			2.0		
Arrival type	3	3		3	3			3			3		
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0		
Ped/Bike/RTOR Volume	6		0	7		0	4		0	4		0	
Lane Width	12.0	12.0		12.0	12.0			12.0			12.0		
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N	
Parking/hr													
Bus stops/hr	0	0		0	0			0			0		
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0		
Phasing	EW Perm	02	03	04	NS Perm	06	07	08					
Timing	G = 25.0	G =	G =	G =	G = 50.0	G =	G =	G =					
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =					
Duration of Analysis (hrs) = 0.25								Cycle Length C = 85.0					
Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
Adj. flow rate	46	107		181	217			462			572		
Lane group cap.	295	505		362	517			934			1912		
v/c ratio	0.16	0.21		0.50	0.42			0.49			0.30		
Green ratio	0.28	0.28		0.28	0.28			0.58			0.58		
Unif. delay d1	22.9	23.3		25.5	24.8			10.7			9.2		
Delay factor k	0.50	0.50		0.50	0.50			0.50			0.50		
Increm. delay d2	1.1	1.0		4.9	2.5			1.9			0.4		
PF factor	1.000	1.000		1.000	1.000			1.000			1.000		
Control delay	24.0	24.2		30.4	27.3			12.5			9.6		
Lane group LOS	C	C		C	C			B			A		
Apprch. delay	24.2			28.7			12.5			9.6			
Approach LOS	C			C			B			A			
Intersec. delay	16.7			Intersection LOS						B			

APPENDIX C

Congestion Factors

IDENTIFYING TYPES AND CAUSES OF CONGESTION

In evaluating the performance of the system, it is critical to determine the “type” of congestion and its cause(s) in order to properly evaluate the potential benefit to be derived from different strategies. The following section outlines typical congested conditions, by facility type, and offers a variety of factors that may contribute to the congestion.

Congestion on Freeway/Thruway Facilities

- High volumes on the mainline
- Ramp Congestion
 - Off-ramp back-ups (where ramp intersects @ cross street)
 - On-ramp backups (congested volumes on mainline)
- Tollbooth back-ups - high approach volumes (usually during peak hour - PKHR)
- Mainline to Mainline merges & exits (weaving)
 - High volumes of traffic switching mainlines
 - Converging mainlines
 - Diverging mainlines
- Lane closures/ramp closures
 - Construction
 - Incidents (crashes/break-downs)

Contributing Factors

- Long distance commuting
- High SOV usage
- Interchanges too close together
- Inadequate signage
- Excessive “local” traffic on facility
- Excessive “through” traffic on facility
- Ramp length inadequate
- Signal timing/cycle length inadequate at off-ramp and cross street intersection

Congestion on Arterial Highways

- High volumes – mainline – commuter & daily volumes
- High volumes intersections (signalized)
- Unsignalized intersections
- Excessive side friction (adjacent parcel access)
- Incidents (crashes/break-downs)
- Construction areas

- Lane closure
- Detours
- Reduced speed zones

Contributing Factors

- Lack of turn lanes at intersections
- Improper spacing of access points
- Access points too close to intersections
- Lack of deceleration lanes at major parcel access points
- Signal spacing inadequate
- Lack of signal coordination/interconnection
- Improper signal phase/cycle length
- Lack of interconnected land uses
- “Strip” commercial development

Congestion on Minor Arterial Highways and Collectors Streets

- High volumes – daily and peak hours
- High volume signalized intersections
- Multi-way stops
- “No Right Turn on Red” at intersection
- High volumes of pedestrian and bicycle traffic
- Incidents (crashes/breakdowns)
- Legal parking (parallel)
- Illegal parking (double parking, deliveries, etc.)
- Transit Stops
- Construction areas – lane closures, detours, etc.

Contributing Factors

- Lack of loading/unloading in business areas
- Lack of adequate off-street parking
- Improper spacing of access points
- Access points too close to intersections
- Signal spacing inadequate
- Lack of signal coordination/interconnections
- Improper signal phase/cycle length
- Lack of interconnected land uses
- “Strip” development patterns
- Improper/illegal pedestrian and bicycle movements

Source: 1997 SMTCC Congestion Management System Report for Onondaga County