

BRIDGE AND PAVEMENT CONDITION MANAGEMENT SYSTEM (BPCMS)



2010 – 2011 UPWP

REPORT PREPARED BY:

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BRIDGE & PAVEMENT CONDITION MANAGEMENT SYSTEM

Syracuse Metropolitan Planning Area

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2010-2011 Unified Planning Work Program

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Executive Summary

Introduction

A Bridge Management System is a method for tracking and addressing bridge conditions. Similarly, a Pavement Management System is a systematic method for tracking and addressing pavement conditions. A Bridge Management System exists for New York State, and individual Pavement Management Systems currently exist in the City of Syracuse (City), Onondaga County (County), and New York State. The goal of this project is to combine all of the data from the various jurisdictions into one management system that is linked to a Geographic Information System (GIS). By combining all of the condition ratings into a GIS format, data can be mapped, analyzed, presented and accessed in an efficient manner.

All maps included in this report were compiled utilizing a derivation of the New York State Department of Transportation (NYSDOT) base map system. The NYSDOT digital GIS files are the basis of the calculations in this report.

Data Compilation/Analysis

GIS was used to analyze the pavement datasets provided to the SMTC by member agencies. Utilizing GIS, centerline mileage summations were calculated based on the pavement condition rating (i.e., excellent, good, fair and poor) for each jurisdiction. The centerline mileage calculations in this report are presented in two sections. The first section presents data by both all *federal-aid eligible* and only rated *non federal-aid eligible* roads that are owned by the City of Syracuse, local jurisdictions (federal-aid eligible only), Onondaga, Oswego or Madison County and New York State (NYSDOT or the New York State Thruway Authority (NYSTA)). Jurisdictions are listed independently of each other and include various pavement condition rating descriptions and details as analyzed in GIS, including the number of centerline miles rated and the number of centerline miles per rating. The second pavement section presents data for *federal-aid eligible* roads by each jurisdiction within Onondaga County and the small portions of Oswego and Madison County, which comprise the Metropolitan Planning Area (MPA). In addition, section two further categorizes the federal-aid eligible pavement condition ratings by functional classification per jurisdiction and condition rating category.

All City of Syracuse, local federal-aid eligible, County, and New York State roads included in this report have been rated on or converted to the NYSDOT system.

Additionally, state and local bridges in Onondaga, Oswego and Madison Counties are rated by the NYSDOT on a state bridge condition rating scale.

Although each jurisdiction rates a percentage of roads under their ownership each year, these ratings only portray a sample of data for the entire MPA. Nearly half of the roads in the MPA are under Town/Village jurisdiction, otherwise referred to as “Local” ownership, and are not rated unless federal-aid eligible. These “Local” owned roads account for 1,737 centerline miles or 46% of the total MPA. Only 3%, or 51.4 centerline miles of these roads are federal-aid eligible.

The pavement condition rating data reported on throughout this working document is based on **linear centerline** miles of roads, not lane miles of roads. The number of miles based on the number of lanes (lane miles), for each approach is not calculated. Instead, the road centerline length, disregarding the number of lanes and direction, is calculated. This calculation is a **linear centerline** mile of pavement.

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1. INTRODUCTION

This project was completed by the Syracuse Metropolitan Transportation Council (SMTC) as part of the 2010-2011 Unified Planning Work Program (UPWP). This analysis is the latest installment of the bridge and pavement analyses developed for the SMTC Metropolitan Planning Area (MPA). A Bridge Management System is a method for tracking and addressing bridge conditions. The New York State Department of Transportation (NYSDOT) defines a bridge as “a structure (including supports), erected over a depression, or a obstruction (such as water, etc.), having track or passageway for carrying public traffic, and, measured along the centerline of the roadway, has an opening between supports of 20’-0” or more (may include multiple culvert pipes).” Similarly, a Pavement Management System is a systematic method for tracking and addressing pavement conditions. A Bridge Management System exists for New York State (which includes both state and local bridges), and individual Pavement Management Systems currently exist for the City of Syracuse (City), Onondaga County, and New York State.

All maps included in this document were compiled utilizing a derivation of the NYSDOT base map system. These digital Geographic Information System (GIS) files are the basis of the calculations in this document. Through the process of entering bridge and pavement condition rating data into GIS, a database has been built that is available to all SMTC member agencies with bridge and pavement data from the past several years.

The pavement condition rating data reported on throughout this document is based on **linear centerline** miles of roads, not lane miles of roads. Data in the underlying GIS files, on which the calculations in this report are based, are in the form of linear centerline miles, not lane miles. A linear centerline mile of road is a continuous line of pavement along the center of the length of pavement. A lane mile is the length of each lane in a given section of pavement. For example, one mile of interstate road with two lanes in each direction would have four lane miles. For the purposes of this report, the number of miles based on the number of lanes for each approach was not calculated. Instead, the road centerline length, disregarding the number of lanes and direction, is calculated. This calculation is a **linear centerline** mile of pavement.

The NYSDOT calculates pavement ratings based on linear lane miles. Therefore, the NYSDOT may have different calculations than the results in this report (for example, total miles by jurisdiction, percentages of poor or excellent pavement, etc.). For the NYSDOT official linear lane mile totals, please refer to the NYSDOT Highway Mileage

Chart for Onondaga County or the NYSDOT *Pavement Condition of New York's Highways*.

Pavement ratings in this document are presented in two sections. Section one presents data by both all *federal-aid eligible* (FAE) and only rated *non federal-aid eligible* roads that are owned by the City of Syracuse, local jurisdictions (federal-aid eligible roads only), Onondaga, Madison or Oswego County and New York State. Jurisdictions are listed independently of each other and include various pavement condition rating descriptions and details as analyzed in GIS, including the number of centerline miles rated and the number of centerline miles per rating. The second pavement section presents data for *federal-aid eligible* roads by each jurisdiction and functional classification within Onondaga County and the small portions of Madison and Oswego Counties included in the MPA. In addition, section two further categorizes the federal-aid eligible pavement condition ratings by functional classification per jurisdiction and condition rating category.

All City of Syracuse, Onondaga, Madison or Oswego County, and New York State roads included in this document have been rated on or converted to the NYSDOT system. The overall surface ratings are categorized according to the following chart:

Table 1: Pavement Condition Rating Chart		
Rating		<u>Condition Description</u>
U	Under Construction/No Data	Not rated due to on-going work or no data was available.
1-5	Poor	Distress is frequent and may be severe. These sections are flagged by the NYSDOT for further investigation and possible action.
6	Fair	Distress is clearly visible.
7-8	Good	Distress symptoms are beginning to show.
9-10	Excellent	No pavement distress.

Source: New York State Department of Transportation

The NYSDOT *2007 Highway Sufficiency Rating Manual* for Region 3 and the NYSDOT *Pavement Condition of New York's Highways* contain further information on the pavement rating system used in New York State. National highway and bridge statistics can be obtained from the Federal Highway Administration's annual *Conditions & Performance Report to Congress*.

Pavement ratings have been entered for roads under the jurisdiction of the NYSDOT, Onondaga, Madison or Oswego County, the New York State Thruway Authority, the City of Syracuse Department of Public Works, and Towns/Villages (local federal-aid eligible only). Although each jurisdiction rates a percentage of the roads under its ownership each year, these ratings only portray a sample of data for the entire MPA area. About half of the roads in the MPA are under Town/Village jurisdiction, referred to in this report as being under “Local” ownership; these roads are not rated unless they are federal-aid eligible. These Local roads account for 1,737 centerline miles or 46% of the total MPA area. Only 3%, or 51.4 centerline miles of these roads are federal-aid eligible.

2. BRIDGES

State and local bridges in Onondaga, Madison and Oswego Counties are rated by the NYSDOT on a scale of 1.0 to 7.0. According to the NYSDOT, each element of every bridge span in the state is inspected at least biennially and rated on a scale from 1.0 to



Route 370 bridge over the New York State Thruway,
Town of Salina

7.0. A bridge’s “condition rating” is the weighted average of the scores given to its components during inspection. Bridges with a condition rating less than 5.0 are categorized by the NYSDOT as being in a “deficient” state. They are candidates for rehabilitation work, replacement or perhaps closure. “Critically deficient” bridges are those that have one or more critical bridge component rated less than 3.0. Critical bridge elements include the structural deck, bridge abutments and supporting columns.

Although the terms “deficient” and “critically deficient” are used to describe the condition of these bridges, it should be emphasized that these bridges are considered safe and would be closed if bridge inspectors considered them otherwise.

Table 2: New York State Bridge Condition Rating Chart		
Rating	Category	Condition Description
<3.0 for a “Critical Element”	Critically Deficient	Bridge is given a priority for funding for rehabilitation, replacement or perhaps closure.
<5.0	Deficient	Bridge is a candidate for rehabilitation, replacement or perhaps closure.
5.0-7.0	Non-Deficient	No bridge distress identified.

Source: New York State Department of Transportation

The following bridge charts illustrate the above concept. Each chart shows the non-deficient percentage as well as the deficient percentage. The deficient percentage is then separated into deficient and critically deficient sub-categories. Exhibit 1 is a map that represents all bridge condition rating types in the MPA, and Exhibit 2 represents bridge condition rating types in the City of Syracuse.

A total of 492 bridges have been rated with condition ratings. Exhibit 3 shows the total number of bridges by type of rating within the study area. Exhibit 4 illustrates the total bridges rated in the MPA, and Exhibit 5 categorizes the 492 bridges by jurisdiction and type of rating. Additionally, Exhibit 6 represents the MPA, NYSDOT Region 2 area, NYSDOT Region 3 area, and New York State averages for all rated bridges by type of rating.



Route 48 bridge over the Seneca River, Baldwinsville

Statewide, there are 17,303 rated bridges; the average condition rating of these bridges is 5.37. There are 1,284 total Region 3 bridges, with an average condition rating of 5.23, just below the statewide average. The average rating for the 1,278 rated bridges in Region 2 was 5.43, just above the statewide average. These calculations were completed by the SMTC using data provided by the NYSDOT. Bridges in the SMTC MPA, Region 2, Region 3 and across the State all have similar percentages of critically deficient bridges (SMTC area: 1%, Region 2: 2%, Region 3: 2% and statewide: 1%). Region 3 has the highest percentage of deficient bridges with 42% deficient, while Region 2, New York State and the SMTC MPA have 33%, 35%, and 39% deficient bridges, respectively.

There are three bridges in the MPA rated critically deficient: two are owned by the NYSDOT and one is owned by the OCDOT. Two of these three bridges have been closed to traffic. Critically deficient bridges are those that have an individual component that has been found to be deteriorated or failing, and because this is relatively rare, these bridges make up a small proportion of the total number of rated bridges. None of the bridges in the MPA under the jurisdiction of the City of Syracuse, a town or village or owned by Oswego County, Madison County or the NYSTA are critically deficient.

(Please note that for this report percentages have been calculated individually for each of the three counties found in the MPA: Onondaga, Oswego and Madison. A very small sample of bridges is included in Oswego and Madison Counties' portion of the MPA (4 bridges out of a total of 492 bridges). Overall, 3 bridges are under Oswego County ownership, while 1 bridge is under Madison County ownership. The very small sample size of bridges from these counties should be taken into consideration while reviewing this report.)

Seven bridges in the MPA are owned and maintained by villages. Of these, 5 are deficient, giving villages (aggregated as a single *type* of jurisdiction) the highest proportion of deficient bridges: 71 percent.

The New York State Thruway has the second highest percentage of deficient bridges in the MPA, with 66%, or 27 deficient bridges.

The jurisdictions with the lowest percentage of deficient bridges are Oswego and Madison Counties (0%). As explained above, this is likely related to the very small sample of bridges drawn from these counties.

The Oswego and Madison County bridges in the MPA have the highest percentage of non-deficient ratings (100%), with Onondaga County and the NYSDOT following at 72 percent and 65 percent, respectively. (As noted above, Oswego and Madison County have a small number of bridges under their ownership within the MPA boundaries.) All other jurisdictions have between 47% and 29% non-deficient bridges. Appendix B lists all bridge ratings for the entire study area.

The NYSDOT's goal is to bring 70 to 75% of all bridges to "non-deficient" status by the year 2015. According to the bridge condition ratings calculated by the SMTc, 66% of State bridges and 56% of local bridges in the MPA were non-deficient in 2009.



Town Bridges	Village Bridges	Thruway Bridges
◆ Deficient	● Deficient	✱ Deficient
◆ Non-Deficient	● Non-Deficient	✱ Non-Deficient
County Bridges	City Bridges	State Bridges
✚ Critically Deficient	■ Deficient	▲ Critically Deficient
✚ Deficient	■ Non-Deficient	▲ Deficient
✚ Non-Deficient		▲ Non-Deficient



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Bridge Ratings in the MPA

Bridge & Pavement Condition Management System

Exhibit 1

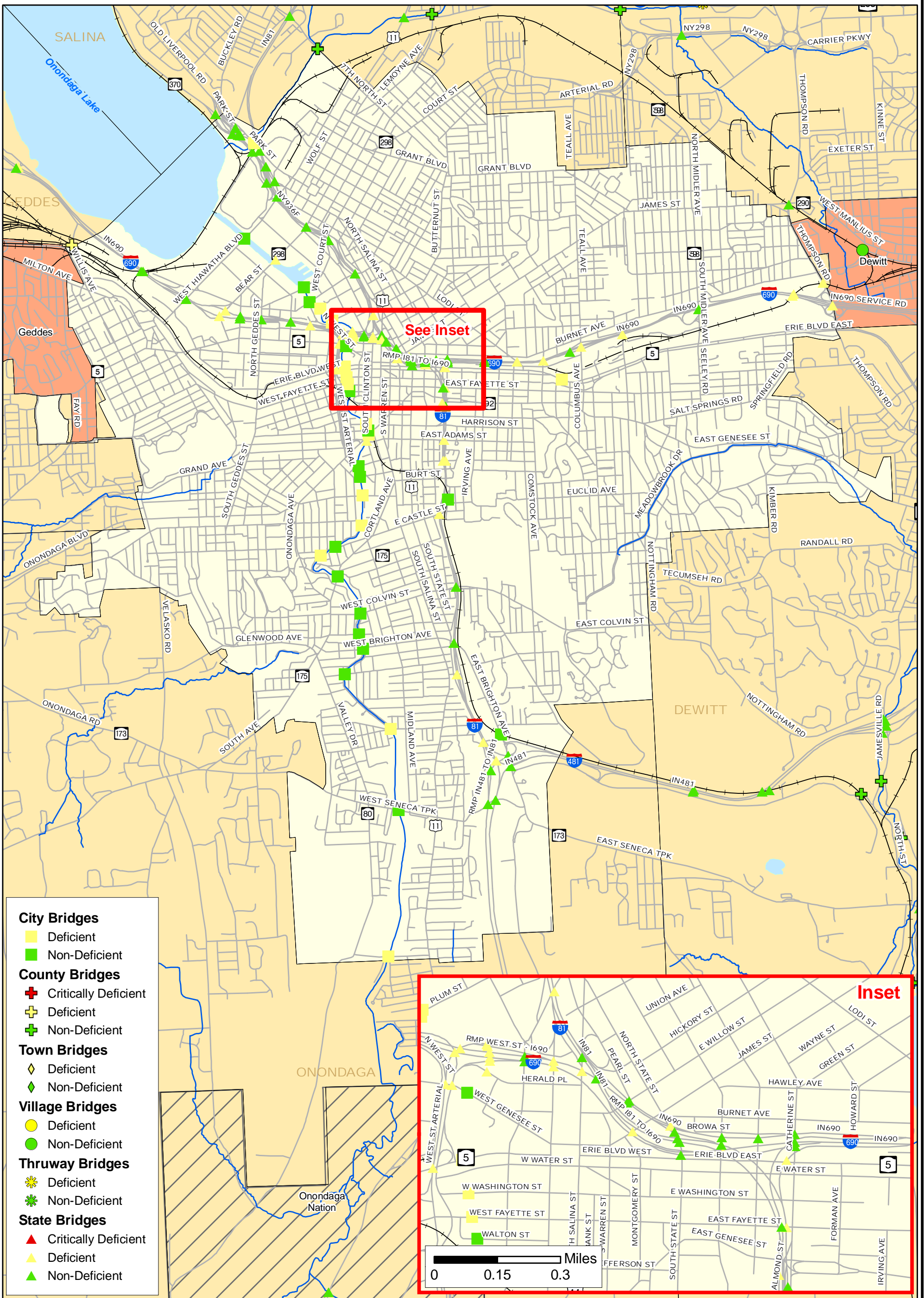
0 1.25 2.5 5 7.5 10 Miles

This map is for presentation purposes only. The SMTC does not guarantee the accuracy or completeness of this map.



- City of Syracuse
- MPA Boundary
- Roads
- Water
- Onondaga Nation
- Villages
- Towns

Basemap Copyrighted by NYSDOT.
Data Sources: SMTC, NYSDOT 2007
Prepared by SMTC, 10/2010



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Bridge Ratings in the City of Syracuse

Bridge & Pavement Condition Management System

Exhibit 2

0 0.25 0.5 1 1.5 2 Miles

This map is for presentation purposes only. The SMTC does not guarantee the accuracy or completeness of this map.



Legend

- Rail lines
- Roads
- Water
- City of Syracuse
- Onondaga Nation
- Villages
- Towns

Basemap Copyrighted by NYSDOT.
Data Sources: SMTC, NYSDOT 2007
Prepared by SMTC, 10/2010

Exhibit 3

Bridge Jurisdiction and Ratings

Bridge Jurisdiction	Total Number of Bridges	Non-Deficient		Deficient Bridges (Both "Deficient" and "Critically Deficient")		Deficient Bridges by Type			
						Deficient Bridges		Critically Deficient Bridges	
		Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
City of Syracuse	32	15	47%	17	53%	17	53%	0	0%
Onondaga County DOT	95	68	72%	27	28%	26	27%	1	1%
Oswego County	3	3	100%	0	0%	0	0%	0	0%
Madison County	1	1	100%	0	0%	0	0%	0	0%
New York State DOT	299	194	65%	105	35%	103	34%	2	1%
New York State Thruway Authority	41	14	34%	27	66%	27	66%	0	0%
Towns in the MPA	14	6	43%	8	57%	8	57%	0	0%
Villages in the MPA	7	2	29%	5	71%	5	71%	0	0%
Total	492	303	62%	189	38%	186	38%	3	1%

*A deficient rating includes all bridges rated as deficient as well as all critically deficient bridges.

Exhibit 4

Total Bridges Rated

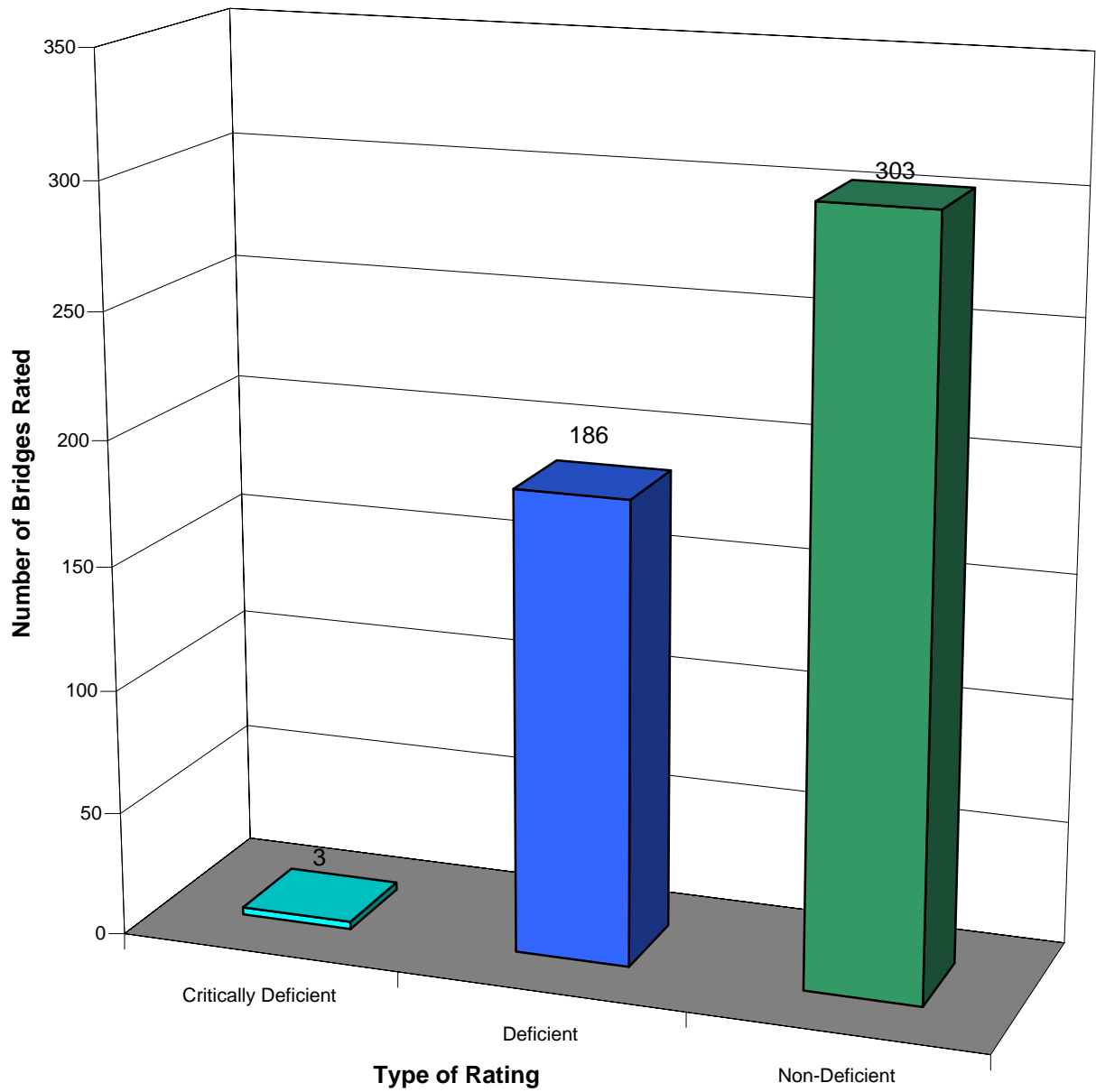
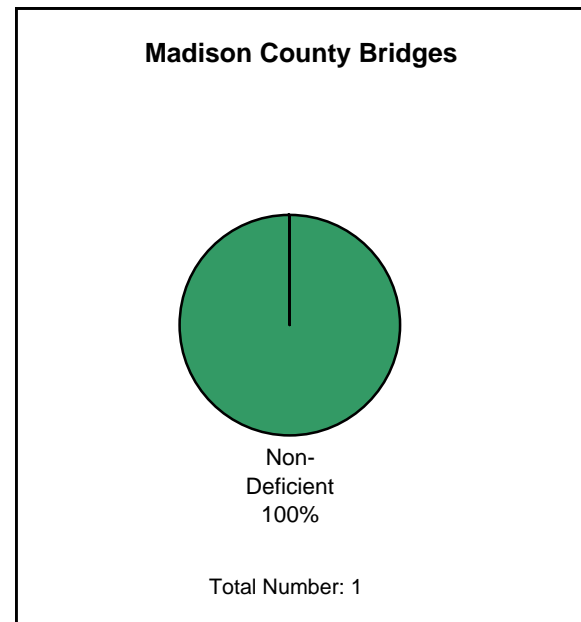
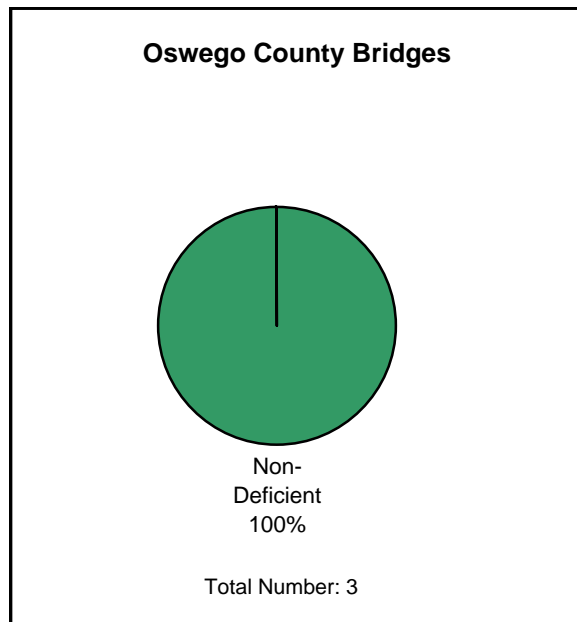
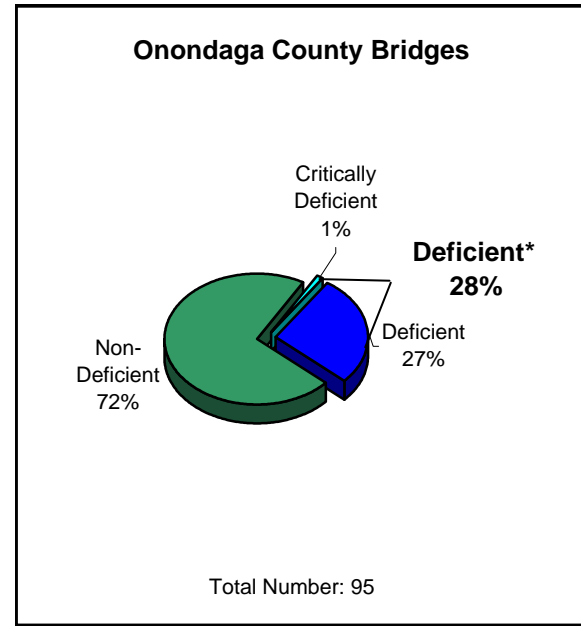
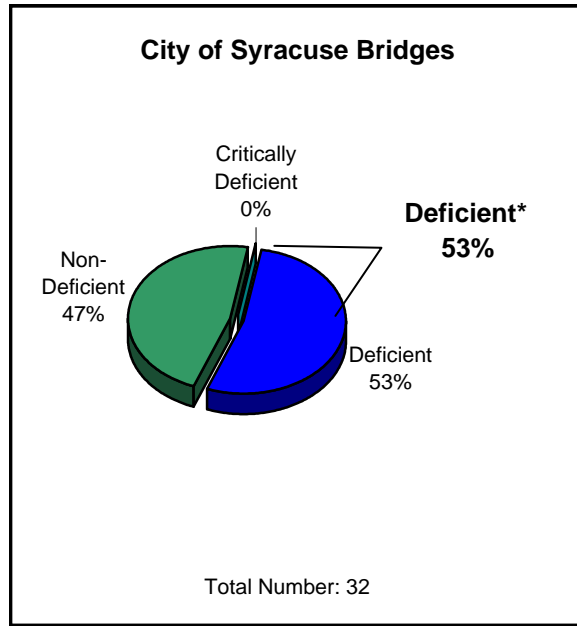


Exhibit 5 Part I

Bridge Ratings by Jurisdiction



Deficient

■ Deficient (not critically deficient)

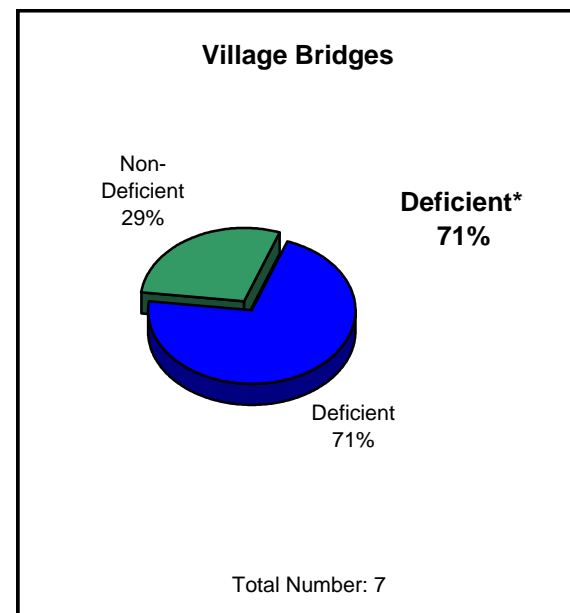
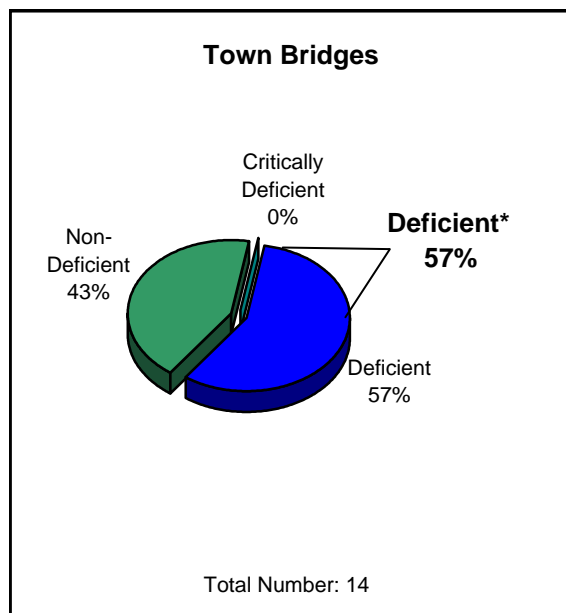
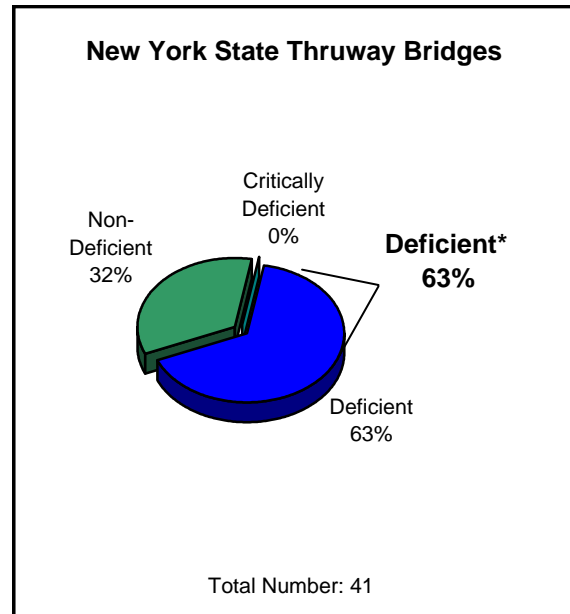
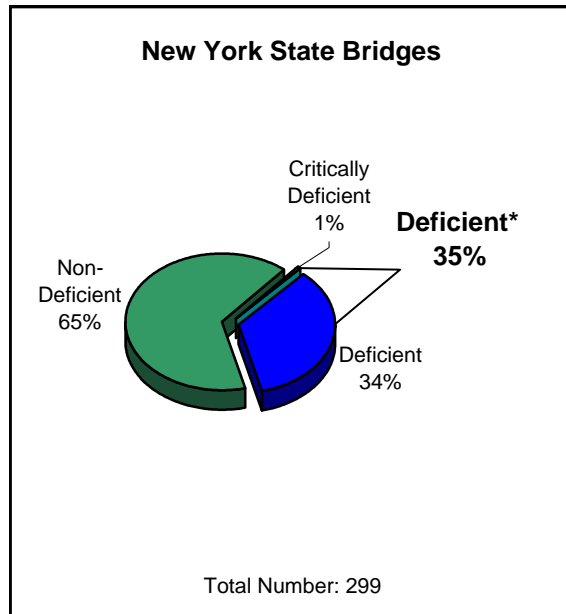
■ Non-Deficient

■ Critically Deficient

*A deficient rating includes all bridges rated as deficient as well as all critically deficient bridges.

Exhibit 5 Part II

Bridge Ratings by Jurisdiction



Deficient

■ Deficient (not critically deficient)

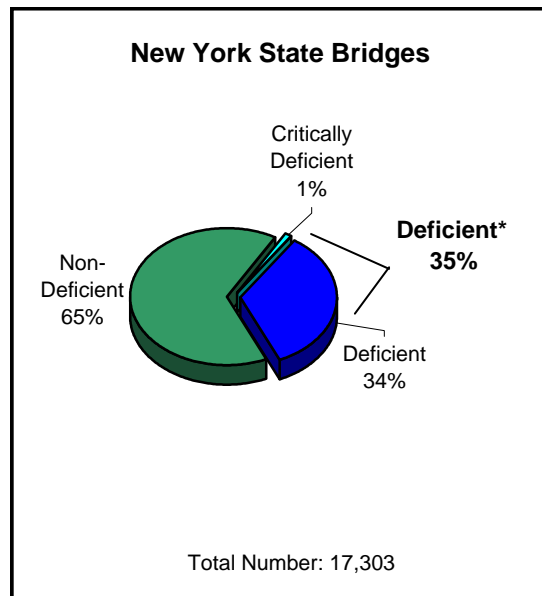
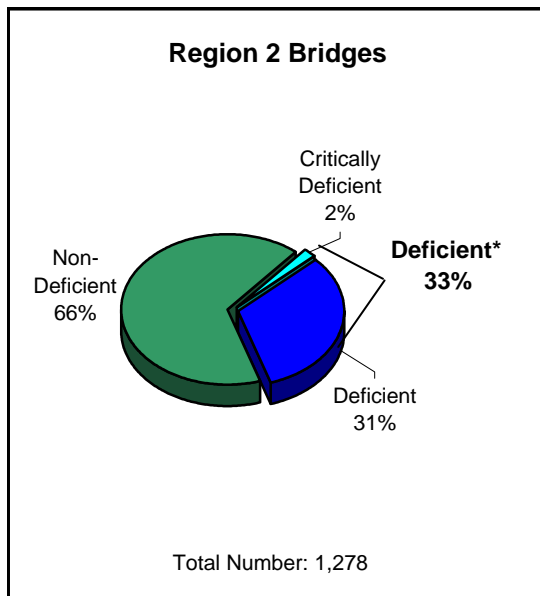
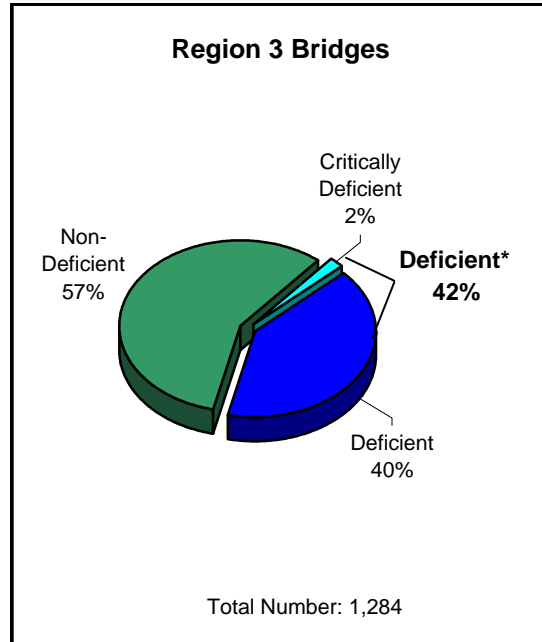
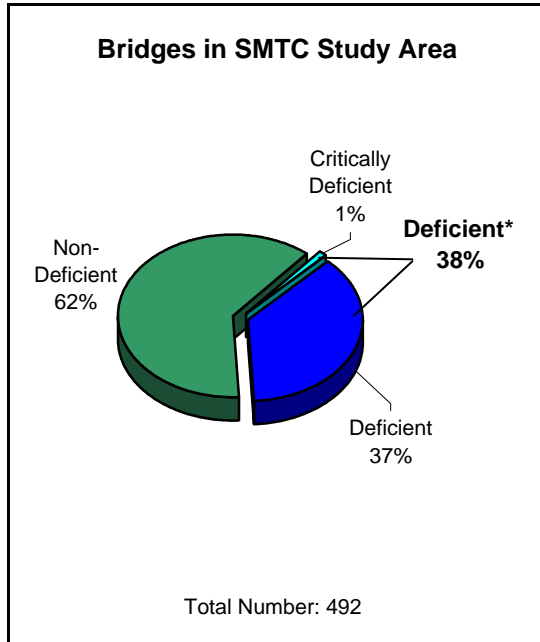
■ Non-Deficient

■ Critically Deficient

*A deficient rating includes all bridges rated as deficient as well as all critically deficient bridges.

Exhibit 6

Comparison of MPA, Region 2, Region 3 and New York State Bridges



Deficient

Deficient (non-priority deficient)

Critically Deficient

Non-Deficient

*A deficient rating includes all bridges rated as deficient as well as all critically deficient bridges

3. PAVEMENT

3.1 Federal-Aid Eligible and Non Federal-Aid Eligible

The jurisdictions of the City of Syracuse, Onondaga County, the NYSDOT and the New York State Thruway Authority each complete a pavement management system on a yearly basis. The rating scale used for each of these jurisdictions is based on or converted to the NYSDOT scale, as described in the introduction.

Although local jurisdictions do not have a pavement management system to rate their roads, the NYSDOT rated all of the federal-aid eligible roads under town and village ownership in Onondaga County and the Village of Phoenix using the NYSDOT rating scale. Additionally, the NYSDOT gathered pavement condition ratings for roads under Madison and Oswego County ownership contained in the MPA.

Federal-aid eligible roads are those that provide critical connections within or between communities. Federal-aid eligible roads are identified by their functional classification, a designation based on factors that reflect how a road or road segment fits into the overall street network. The federal-aid eligible functional classes are: urban principal arterial, urban minor arterial, urban collector, rural principal arterial, rural minor arterial and rural major collector.

The addition of local federal-aid eligible road ratings to this report is intended to promote awareness among local jurisdictions of both the condition of their federal-aid roadways and of the opportunity to apply for federal transportation funding to assist with capital projects that may improve pavement conditions for the traveling public in the MPA.



Newport Road, Camillus



East Genesee Street, Syracuse

In this document, pavement ratings are presented in two sections: section one presents data for all rated roads, both federal-aid eligible and non federal-aid eligible, within the SMTC MPA and section two presents data only for federal-aid eligible roads.

Both sections provide pavement data grouped by the following jurisdictions: City of Syracuse, Local Federal-Aid Eligible (towns and villages), Onondaga County, Madison County, Oswego County, New York State and New York State Thruway Pavement Ratings.

All average pavement ratings presented in this report are based on the segments of road that have a rating of 1-10. If the segment did not have a rating (“no data” or “under construction”), it was not included when the calculation of the average (mean) was determined.

Pavement ratings have been entered for roads under the jurisdiction of the NYSDOT, the Onondaga County Department of Transportation (OCDOT), the New York State Thruway Authority, the City of Syracuse Department of Public Works, Madison County, Oswego County and Towns/Villages (local federal-aid eligible only).

Within the boundaries of the MPA, approximately half of all roadway miles are under Town/Village jurisdiction, otherwise referred to as “Local” ownership. These roadways are not rated unless federal-aid eligible. These “Local” owned roads account for 1,737 centerline miles or 47% of the total MPA area. Only 3%, or 51.4 centerline miles of these roads are federal-aid eligible.

3.1.i City of Syracuse Pavement Ratings

Approximately 4,000 blocks of road (corresponding to 432 centerline miles) are under the jurisdiction of the City of Syracuse and individually rated by the City of Syracuse Department of Public Works according to the NYSDOT overall pavement rating scale. The NYSDOT rates all of the touring routes in the City of Syracuse, although the City owns most of these roads. The data are based on linear centerline miles of roads calculated by the SMTC utilizing the SMTC’s GIS.

Exhibits 7, 8, 9, 10, and 11 include information collected for all federal-aid eligible and non federal-aid eligible roads from the pavement management system for the City of Syracuse.

Exhibit 7 indicates the following:

- Approximately 404.2 centerline miles of road in the City of Syracuse were rated.
- Twenty-eight (28) centerline miles of the 432 centerline miles of roads are not included in this document (this includes parks and other special use roads)
- Of the various pavement rating categories (excellent, good, fair, poor and no data), the highest percentage of rated roads, 37%, were classified as “good”.
- The average rating for the City roads is 6.4 (fair condition).

3.1.ii Local Federal-Aid Eligible Pavement Ratings

All town and village roads under local jurisdiction that are functionally classified as federal-aid eligible (i.e., urban principal arterial, urban minor arterial, urban collector, rural principal arterial, rural minor arterial and rural major collector) in Onondaga County and the Village of Phoenix were rated by the NYSDOT on the NYSDOT scale, as described in the introduction. The Local FAE ratings also included roads classified as rural minor collectors; these road segments were removed from the FAE calculations contained in the FAE section of the document. There are no Local FAE (i.e., Town or Village owned) roads in Madison County or Oswego County (excluding those found in the Village of Phoenix). See Exhibit 34 for a map of the functional classification of each town and village local federal-aid eligible road. The data are based on linear centerline miles of roads calculated by the SMTC utilizing the SMTC’s GIS.

Exhibits 7, 8, 9, 10, and 11 include information collected for all federal-aid eligible roads from the local federal-aid eligible pavement ratings.

Exhibit 7 indicates the following:

- Approximately 54.8 centerline miles of local federal-aid eligible roads are rated.
- Of the various pavement rating categories (excellent, good, fair, poor and no data), most (60%) were rated as either “good” or “fair”.
- The average rating for the local roads is 6.1 (fair condition).

3.1.iii Onondaga County Pavement Ratings

The roads under the jurisdiction of the OCDOT are rated using the Pavement Management System Limited (PMSL) scale, which is based on the NYSDOT Surface Condition Rating Manual. Various components of the roadway are calculated to produce a Surface Distress Index (SDI) score. Although the SDI is calculated in a different method than the NYSDOT based rating scale, the SDI results are also based on a 1–10 score. The SDI is very similar to the NYSDOT pictures, descriptions and distress conditions. For the purposes of this report, SDI and the NYSDOT rating scales are considered interchangeable because of the strong correlation between the two scales. The data are based on linear centerline miles of roads calculated by the SMTC utilizing the SMTC's GIS. The OCDOT rates approximately 25% of their roads each year. Because of this rating cycle, there are roads that have not been rated in several years. To account for plausible system deterioration, the OCDOT has provided an adjusted SDI rating for roads that were rated in previous years but not rated during this rating year. Therefore, percentages included in this report may not portray the actual/current pavement system.

Exhibits 7, 8, 9, 10, and 11 all represent information collected for all federal-aid eligible and non federal-aid eligible roads from the pavement management system for Onondaga County.

Exhibit 7 indicates the following:

- Approximately 802.7 centerline miles of Onondaga County roads are rated.
- Of the various pavement rating categories (excellent, good, fair, poor and no data), the highest percentage of rated roads, 50%, were classified as “good”.
- The average rating for the county roads is 7.4 (good condition).

3.1.iv Oswego County Pavement Ratings

Oswego County does not have a pavement management system established for their road network. Therefore, in order to provide accurate condition ratings for the entire SMTC MPA, the NYSDOT continued to rate those roads under county ownership in Oswego County, both FAE and non-FAE, which are inside the MPA.

Exhibits 7, 8, 9, 10 and 11 represent information collected for all rated roads in Oswego County.

Exhibit 7 indicates the following:

- Approximately 12.2 centerline miles were rated.
- Of the various rating categories, the highest percentage of rated roads, 51% were classified as “fair”.
- The average rating for Oswego County roads is 6.8 (fair condition).

3.1.v Madison County Pavement Ratings

Like Oswego County, Madison County does not have an established pavement management system. Therefore, the NYSDOT rated all Madison County owned roads, both FAE and non-FAE in the SMTC MPA as well.

Exhibits 7, 8, 9, 10, and 11 represent the information collected for those rated roads in Madison County.

Exhibit 7 indicates the following:

- Approximately 10.7 centerline miles were rated.
- Of the various rating categories, the highest percentage of rated roads, 68%, were classified as “good”.
- The average rating for Madison County roads is 6.7 (fair condition).

3.1.vi New York State Department of Transportation Pavement Ratings

All roads under the NYSDOT jurisdiction were rated on the NYSDOT scale, as described in the introduction. The data are based on linear centerline miles of roads calculated by the SMTC utilizing the SMTC’s GIS.

Exhibits 7, 8, 9, 10, and 11 represent information collected for all federal-aid and non federal-aid eligible roads from the pavement management system for New York State.

Exhibit 7 shows the following:

- Approximately 466 centerline miles of the NYSDOT roads within the MPA are rated.
- Of the various pavement rating categories (excellent, good, fair, poor and under construction), the highest percentage of rated roads, 57%, were classified as “good” and 31% were classified as “fair”.

- The average rating for the state roads is 6.8 (fair condition). However, if the state pavement conditions were measured in lane miles, the average would be higher due to the large number of interstate and freeway miles of multiple lane facilities which are in good condition or better.

In Exhibit 27, a comparison was completed between the New York State jurisdiction roads in the MPA, NYSDOT Region 2, and Region 3 and on all New York State roads. The following was determined:

- Within the MPA, in Region 2 and in Region 3, 5% of roads are in excellent condition, while statewide (based on lane miles) 10% of roads are in excellent condition.
- NYSDOT Region 2 has 66% good roads, 23% fair, and 6% poor roads.
- NYSDOT Region 3 has 55% good roads, 34% fair, and 7% poor roads.
- New York State has 54% good roads, 31% fair, and 5% poor roads.
- The MPA has 57% good roads, 31% fair and 7% poor roads.
- Overall, the MPA, NYSDOT Region 3 and New York State have relatively similar pavement condition ratings: between 5% and 10% rated Excellent, between 54% and 66% rated Good, between 23% and 31% rated Fair and between 5% and 7% rated Poor.

3.1.vii New York State Thruway Authority Pavement Ratings

The New York State Thruway is rated on the NYSDOT scale, as described in the introduction. The data are based on linear centerline miles of roads as calculated by the SMTC utilizing the SMTC's GIS.

Exhibits 7, 8, 9, 10, and 11 all represent information collected for all federal-aid eligible roads from the pavement management system for New York State Thruway Authority.

Exhibit 7 shows the following:

- Approximately 31.2 centerline miles of New York State Thruway Authority roads are rated.
- Of the various pavement rating categories (excellent, good, fair, poor and no data), the highest percentage of rated roads, 84%, were classified as "good".
- The average rating for the New York State Thruway pavement is 7.4 (good condition).

Exhibit 7

Pavement Ratings for All Rated Roads in the SMTC Metropolitan Planning Area

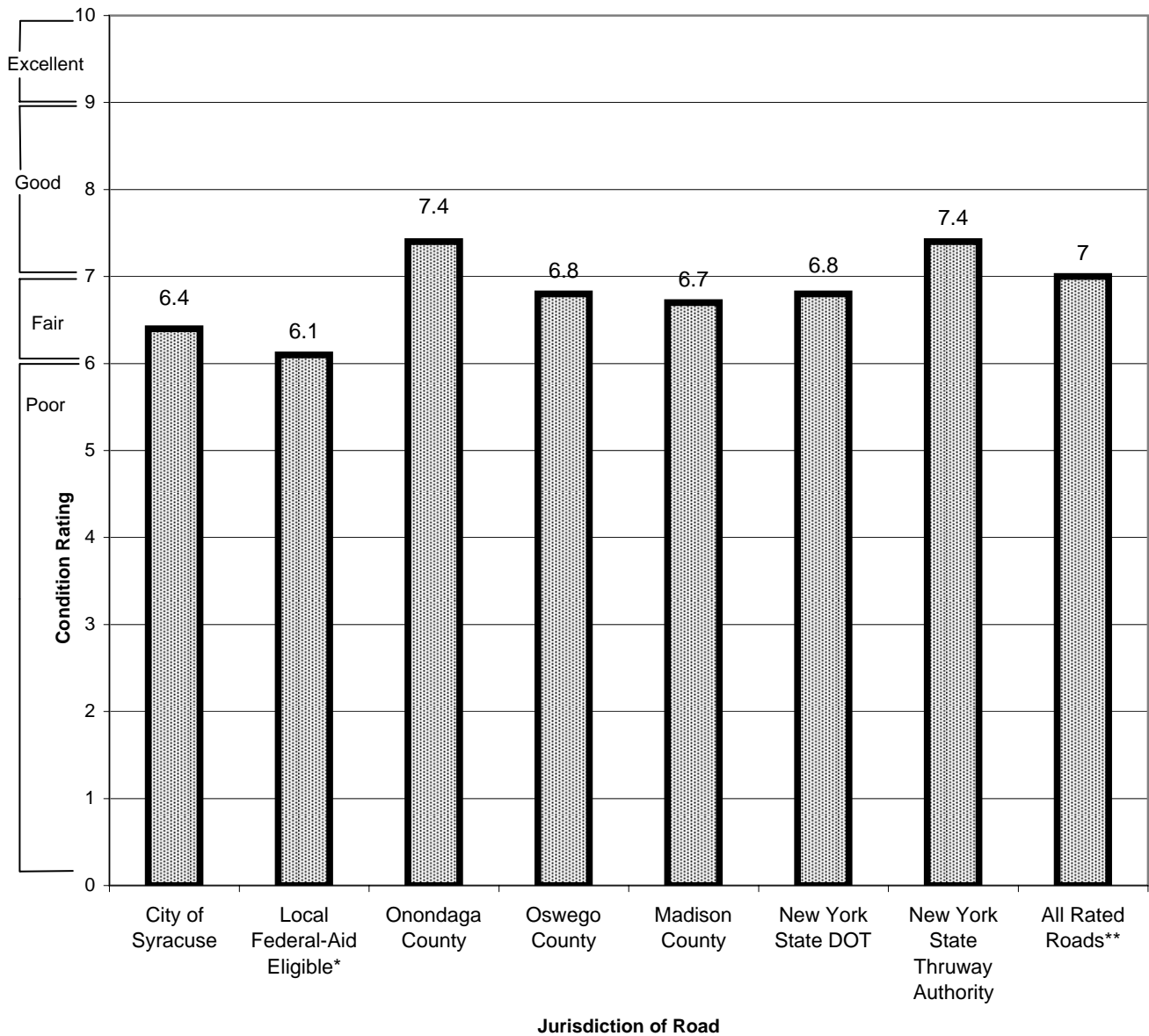
	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads by Jurisdiction	Average Rating
City of Syracuse				6.4 (Fair)
Excellent	165,413	31.3	8%	
Good	780,629	147.8	37%	
Fair	568,415	107.7	27%	
Poor	619,463	117.3	29%	
Total	2,133,920	404.2	100%	
Local Federal-Aid Eligible				6.1 (Fair)
Excellent	21,714	4.1	8%	
Good	54,058	10.2	19%	
Fair	119,191	22.6	41%	
Poor	94,315	17.9	33%	
Total	289,277	54.8	100%	
Madison County				6.7 (Fair)
Excellent	0	0.0	0%	
Good	38,403	7.3	68%	
Fair	11,513	2.2	20%	
Poor	6,774	1.3	12%	
Total	56,690	10.7	100%	
Onondaga County				7.4 (Good)
Excellent	1,231,147	233.2	29%	
Good	2,101,661	398.0	50%	
Fair	446,271	84.5	11%	
Poor	459,088	86.9	11%	
Total	4,238,167	802.7	100%	
Oswego County				6.8 (Fair)
Excellent	4756.3	0.9	7%	
Good	26709.0	5.1	41%	
Fair	33087.7	6.3	51%	
Poor	0.0	0.0	0%	
Total	64,553	12.2	100%	
New York State DOT				6.8 (Fair)
Excellent	111,670	21.1	5%	
Good	1,411,136	267.3	57%	
Fair	754,611	142.9	31%	
Poor	182,925	34.6	7%	
Total	2,460,342	466.0	100%	
New York State Thruway				7.4 (Good)
Excellent	7,232	1.4	4%	
Good	137,978	26.1	84%	
Fair	19,276	3.7	12%	
Poor	0	0.0	0%	
Total	164,486	31.2	100%	
All Rated Roads*				7.0 (Good)
Excellent	1,541,932	292.0	16%	
Good	4,550,573	861.9	48%	
Fair	1,952,366	369.8	21%	
Poor	1,362,564	258.1	14%	
Total	9,407,435	1781.7	100%	

*includes roads under City of Syracuse, County, New York State and select Town/Village (FAE only) ownership

Note: 1. All data for federal-aid eligible and non federal-aid eligible roads calculated by total centerline length.
2. Total percentages may not add to 100% due to rounding.

Exhibit 8

Average (Mean) Pavement Ratings for All Rated Roads by Jurisdiction



Notes:

1. Scale of Condition Rating (1-5: Poor) (6: Fair) (7-8: Good) (9-10: Excellent).
2. Calculations based on Federal-Aid Eligible and Non Federal-Aid Eligible roads measured by total centerline length.

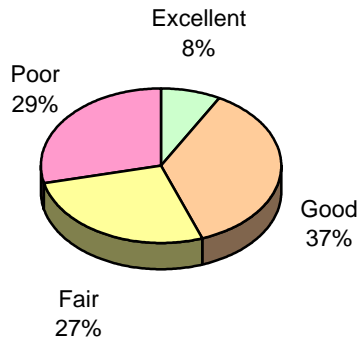
*Town & Village federal-aid eligible roads.

**Includes roads under City of Syracuse, County, New York State and select Town/Village (FAE only) ownership.

Exhibit 9 Part I

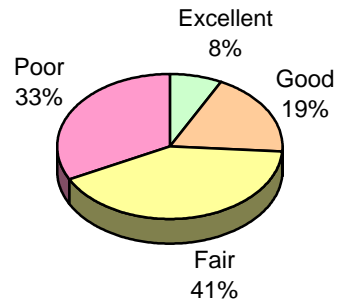
Pavement Ratings for *All Rated Roads* by Jurisdiction

City of Syracuse Pavement Ratings



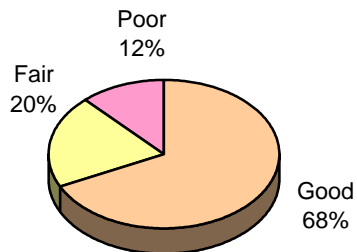
Total centerline miles: 404.2

Local Federal-Aid Eligible Pavement Ratings



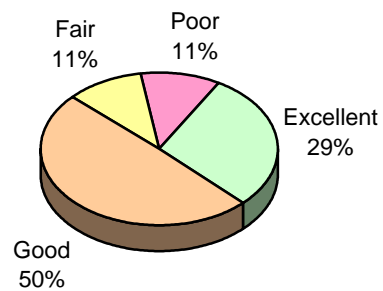
Total centerline miles: 54.8

Madison County Pavement Ratings



Total centerline miles: 10.7

Onondaga County DOT Pavement Ratings



Total centerline miles: 802.7

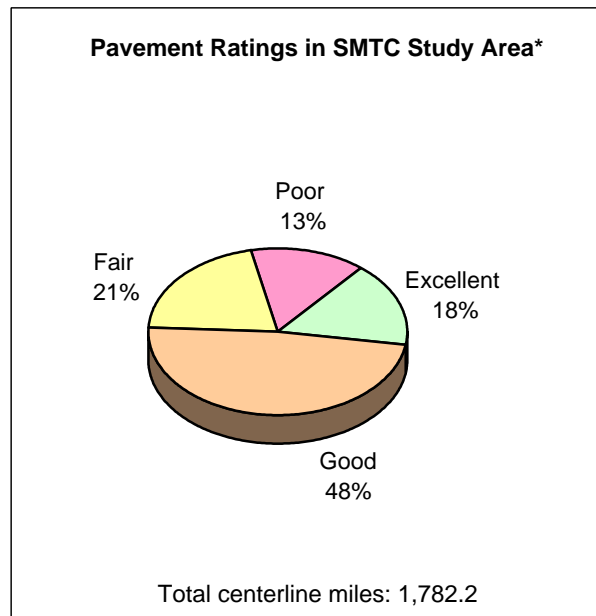
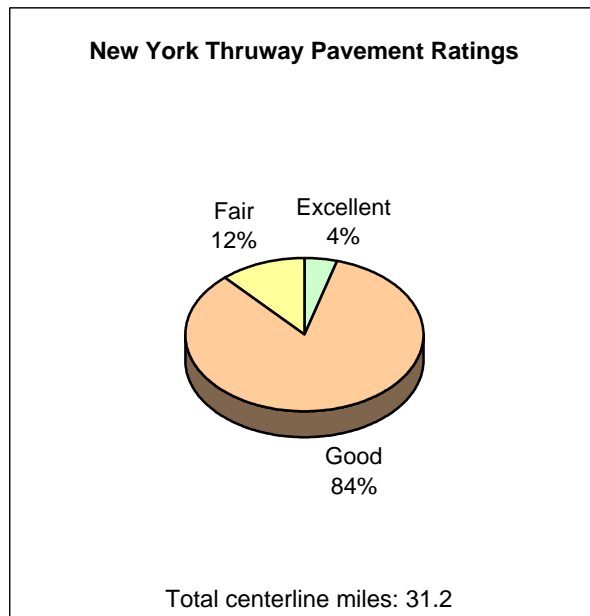
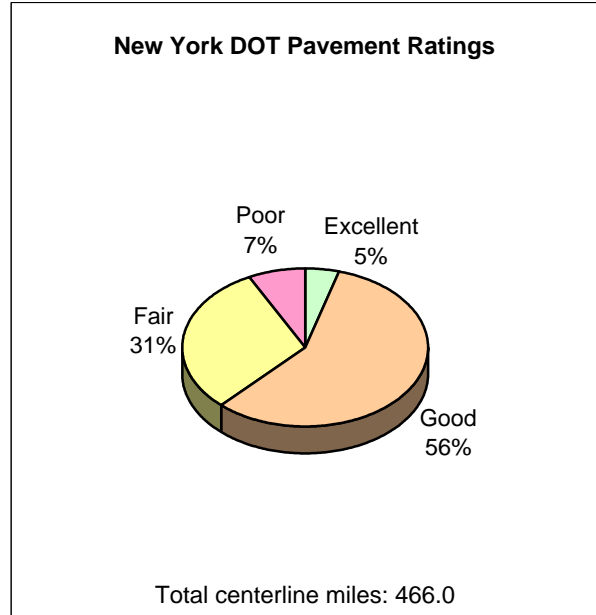
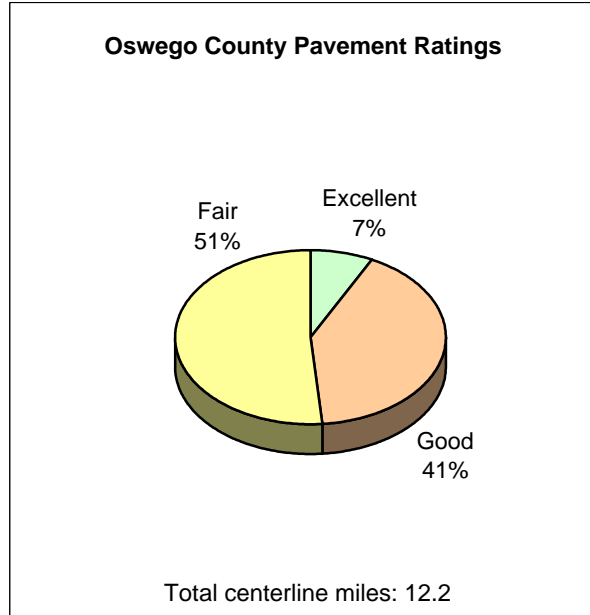
Excellent Good Fair Poor

Notes:

1. All data for Federal-Aid Eligible and Non Federal-Aid Eligible roads calculated by total centerline length.
2. The only local owned roads rated are town and village federal-aid eligible roads.

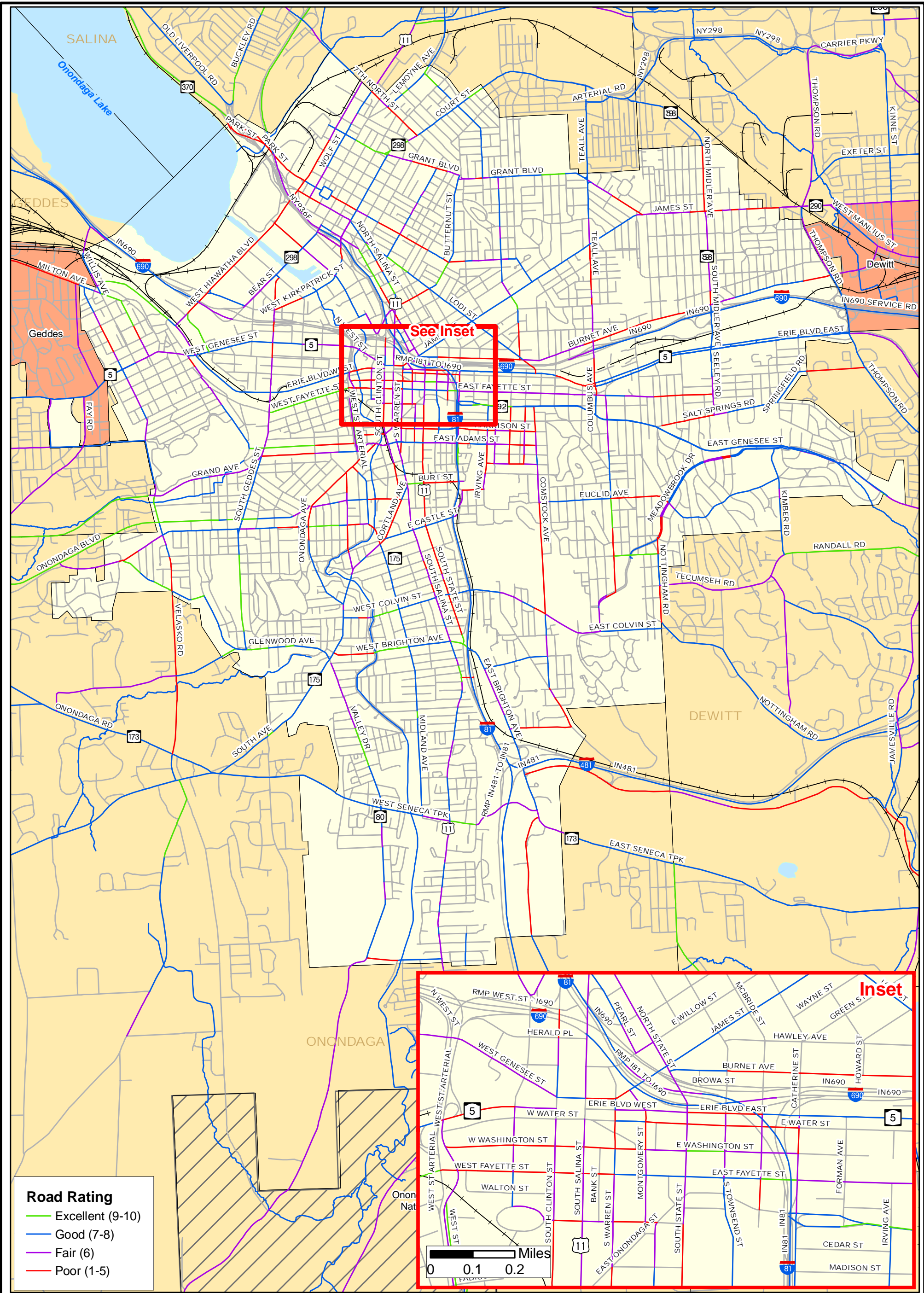
Exhibit 9 Part II

Pavement Ratings for *All Rated Roads* by Jurisdiction



Excellent Good Fair Poor

Note: All data for Federal-Aid Eligible and Non Federal-Aid Eligible Roads calculated by total centerline length.
*includes roads under City of Syracuse, OCDOT, New York State and select Town/Village (FAE only) ownership.



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All Rated Roads* in the City of Syracuse

Bridge & Pavement Condition Management System

Exhibit 11

0 0.25 0.5 1 1.5 2 Miles

This map is for presentation purposes only. The SMTC does not guarantee the accuracy or completeness of this map.



Legend

- Roads
- Rail lines
- Water
- City of Syracuse
- Villages
- Towns
- Onondaga Nation

*Including all federal-aid eligible roads and rated non federal-aid eligible roads.

Basemap Copyrighted by NYSDOT.
Data Sources: SMTC, NYSDOT 2007
Prepared by SMTC, 10/2010

3.2 Federal-Aid Eligible Pavement Ratings

There are nine functional classification codes in the SMTC study area used to describe the road network. Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.ⁱ

<i>Urban Classifications</i>	<i>Rural Classifications</i>
Urban Principal Arterial (interstates, other expressways and other principal arterials)	Rural Principal Arterial (interstate and other)
Urban Minor Arterial	Rural Minor Arterial
Urban Collector	Rural Major Collector Rural Minor Collector
Urban Local	Rural Local

Arterials provide the highest level of mobility, at the highest speed, for long, uninterrupted travel. Arterials generally have higher design standards than other roads, often with multiple lanes and some degree of access control. Collectors provide a lower degree of mobility than arterials. They are designed for travel at lower speeds and for shorter distances. Collectors are typically two-lane roads that collect and distribute traffic from the arterial system.ⁱⁱ The rural functional classification codes apply to those road segments that are outside the SMTC urban area boundary. Two of these rural functional classification codes, rural minor collector and rural local, along with the urban local functional classification are **not** categorized within the federal-aid eligible network and are therefore not eligible for traditional federal surface transportation program funds.

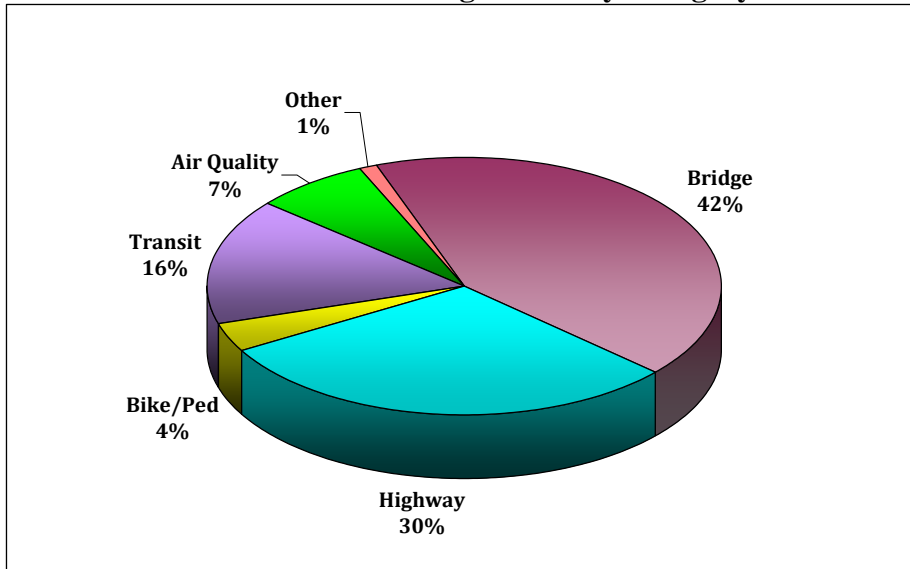
Total funding programmed to the 2011-2015 TIP equates to approximately \$339,000,000. Consistent with previous multi-year capital programs, 72% of funds have been programmed to bridge (42%) and highway (30%) projects (see Chart I, below). The TIP identifies the timing and funding of all transportation projects scheduled for implementation in the MPA over a multi-year period using federal transportation funds (federal highway and federal transit). Projects selected for funding relate to specific goals and objectives established for the MPA, which include improving the average pavement condition rating for medium and high volume roads, increasing the number of non-

ⁱ Federal Highway Administration. Highway Functional Classification Concepts, Criteria and Procedures. Revised March 1989. Section II-1.

ⁱⁱ Definitions taken from the Federal Highway Administration's Conditions and Performance Report, Chapter 2

deficient bridges and improving the accessibility, mobility and safety of the existing transportation network in the SMTC MPA.

Chart 1: 2011-2015 TIP Percentage Share by Category



Data for linear centerline length of all FAE roads under the jurisdiction of the City of Syracuse, local roads, Onondaga, Madison or Oswego County, New York State, and the New York State Thruway is included in Exhibits 12-28.

Exhibits 12, 13 and 14 display total centerline miles of road by rating category in the SMTC MPA. Exhibit 12 shows that approximately 121.1 miles of centerline miles of road under the jurisdiction of the City of Syracuse, 51.4 miles under local jurisdiction, 8.9 miles under the jurisdiction of Madison County, 9.6 miles under the jurisdiction of Oswego County, 290.1 miles under the jurisdiction of Onondaga County, 423.9 miles under the jurisdiction of New York State, and 31.6 under the jurisdiction of New York State Thruway Authority are federal-aid eligible.

Exhibits 31, 32 and 33 show the functional classification code for roads in the MPA (excluding rural minor collectors and rural/urban local functional classifications), and Exhibit 34 is a map of the functional classification system in the MPA. Exhibit 35 displays the jurisdiction of each road in the MPA.

Exhibits 15, 17, 19, 21, 23, 25, 28 and the corresponding charts illustrate the condition of each of the types of functional classifications for each jurisdiction. Exhibit 29 is a map of all the federal-aid eligible pavement condition ratings.

Exhibit 12 presents data for all federal-aid eligible roads in the MPA:

- The highest percentage of rated roads in the “excellent” rating category are under Onondaga County’s jurisdiction (20%).
- Of the various pavement rating categories (excellent, good, fair, poor and no data), the highest percentage of rated roads in the “poor” category are local federal-aid eligible roads (35%).

Exhibit 12

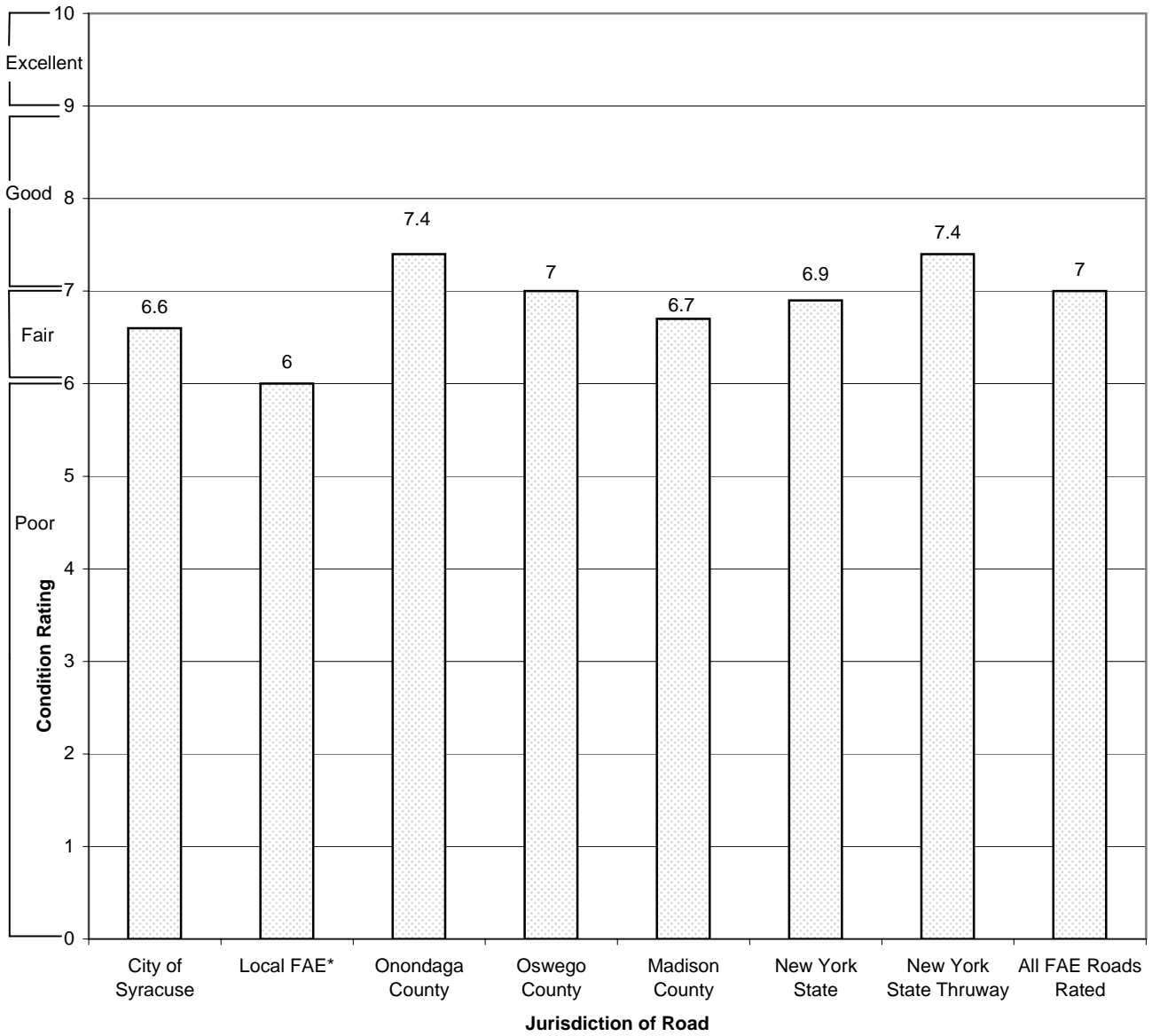
Pavement Ratings for Federal-Aid Eligible Roads

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads	Average Rating
City of Syracuse				
				6.6 (Good)
Excellent	53,036	10.0	8%	
Good	263,338	49.9	41%	
Fair	168,141	31.8	26%	
Poor	154,949	29.3	24%	
Total	639,465	121.1	100%	
Local Federal-Aid Eligible				
				6.0 (Fair)
Excellent	16,219	3.1	6%	
Good	41,730	7.9	15%	
Fair	119,191	22.6	44%	
Poor	94,315	17.9	35%	
Total	271,455	51.4	100%	
Madison County				
				6.7 (Fair)
Excellent	0	0.0	0%	
Good	28,486	5.4	61%	
Fair	11,513	2.2	25%	
Poor	6,774	1.3	14%	
Total	46,773	8.9	100%	
Onondaga County				
				7.4(Good)
Excellent	304,221	57.6	20%	
Good	909,518	172.3	59%	
Fair	206,811	39.2	14%	
Poor	111,210	21.1	7%	
Total	1,531,760	290.1	100%	
Oswego County				
				7.0 (Good)
Excellent	4,756	0.9	9%	
Good	19,328	3.7	38%	
Fair	26,662	5.0	53%	
Poor	0	0.0	0%	
Total	50,746	9.6	100%	
New York State				
				6.9 (Fair)
Excellent	111,670	21.1	5%	
Good	1,319,481	249.9	58%	
Fair	693,669	131.4	31%	
Poor	138,799	26.3	6%	
Total	2,263,619	428.7	100%	
New York State Thruway				
				7.4 (Good)
Excellent	7,232	1.4	4%	
Good	137,978	26.1	84%	
Fair	19,276	3.7	12%	
Poor	0	0.0	0%	
Total	164,486	31.2	100%	
All Federal-Aid Eligible				
				7.0 (Good)
Excellent	497,135	94.2	10%	
Good	2,719,858	515.1	55%	
Fair	1,245,264	235.8	25%	
Poor	506,047	95.8	10%	
Total	4,968,304	941.0	100%	

- Notes: 1. Calculations based on total centerline length of road.
2. Total percentages may not add to 100% due to rounding.
3. Calculations exclude rural minor collectors that are eligible for minimal federal funds.

Exhibit 13

Federal-Aid Eligible (FAE) Pavement Condition Average (Mean) Rating Scores by Jurisdiction



Notes:

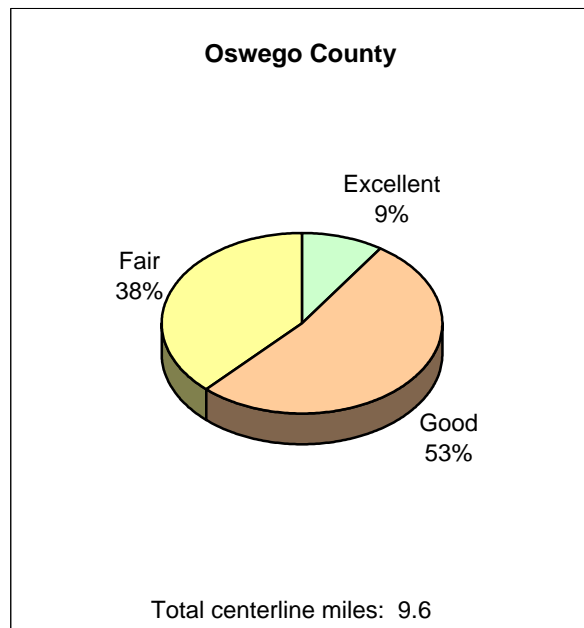
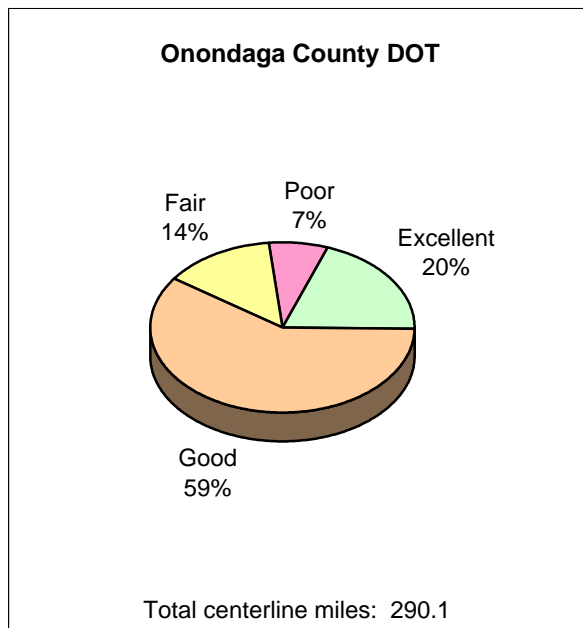
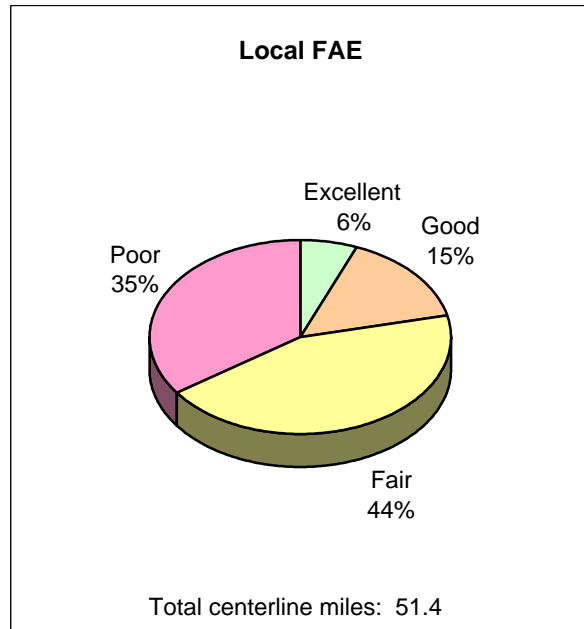
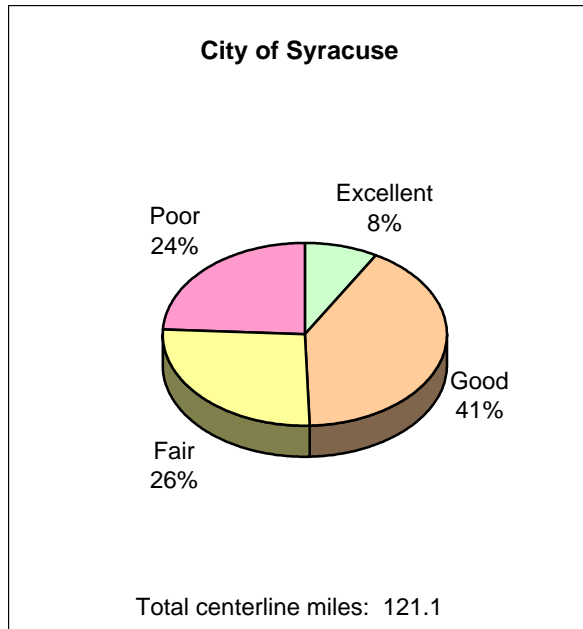
1. Scale of Condition Rating (1-5: Poor) (6: Fair) (7-8: Good) (9-10: Excellent)
2. Calculations based on total centerline length of road.

*Town & Village federal-aid eligible roads.

Exhibit 14

Part I

Federal-Aid Eligible Rated Roads by Jurisdiction

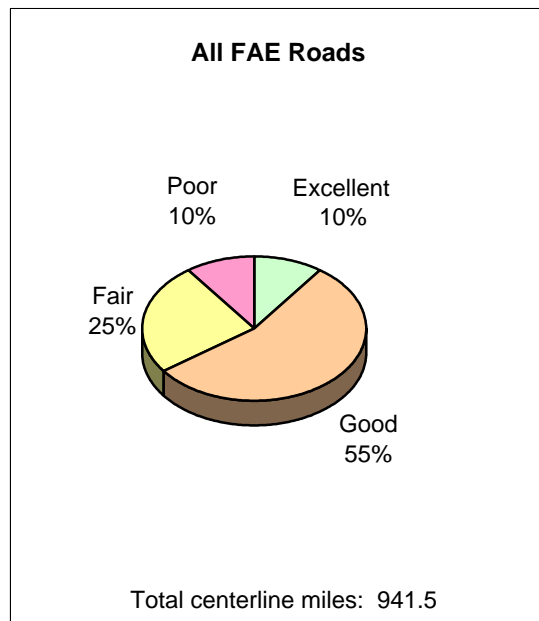
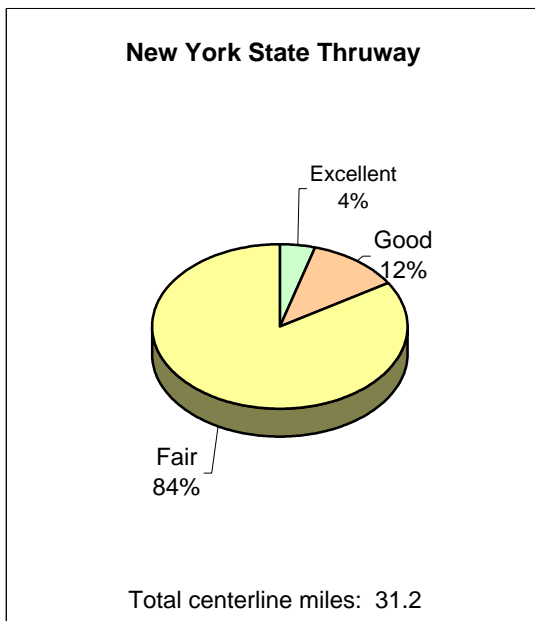
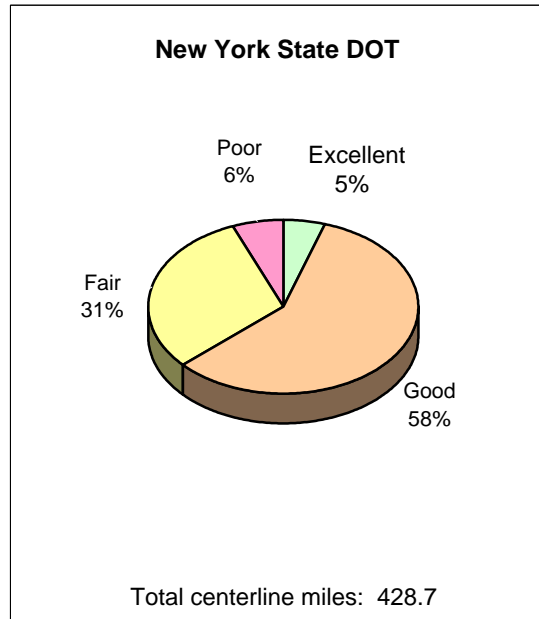
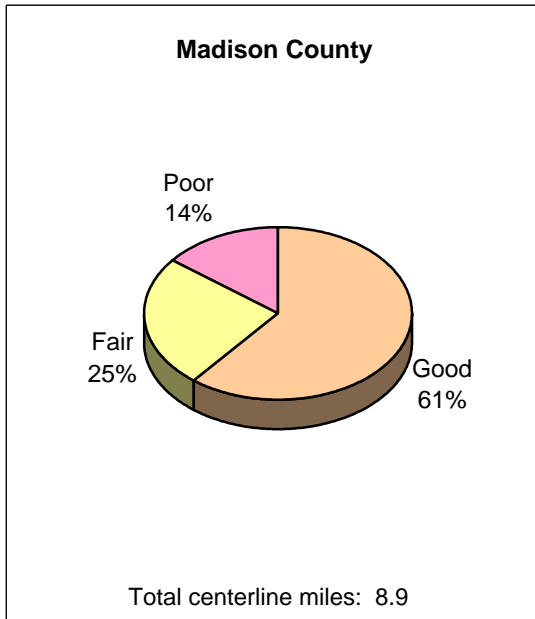


Excellent Good Fair Poor

Note: Percentages determined by total centerline length in miles of road.

Exhibit 14
Part II

**Federal-Aid Eligible
Rated Roads by Jurisdiction**



Excellent Good Fair Poor

Note: Percentages determined by total centerline length in miles of road.

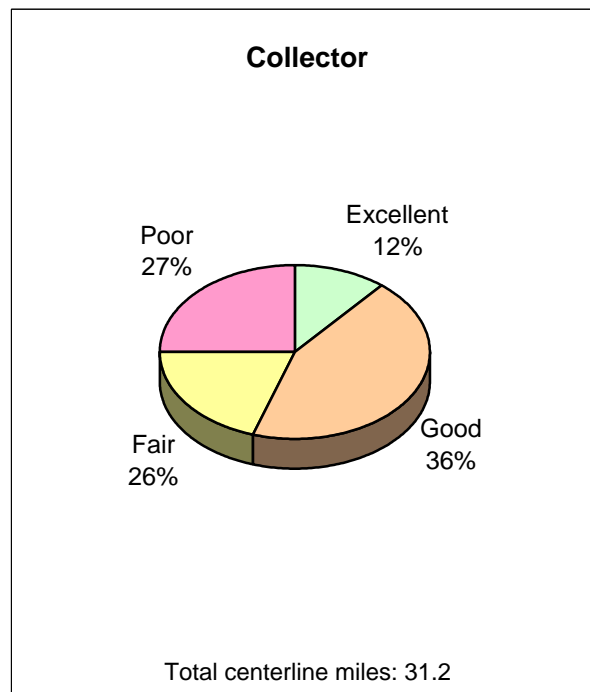
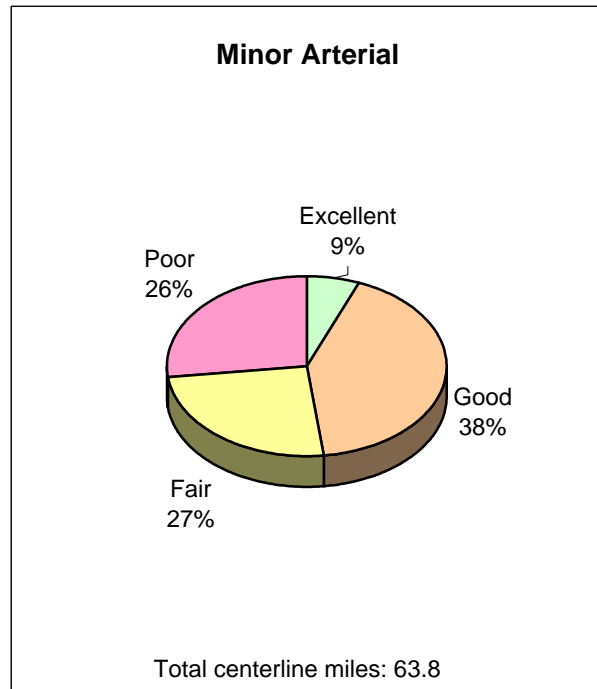
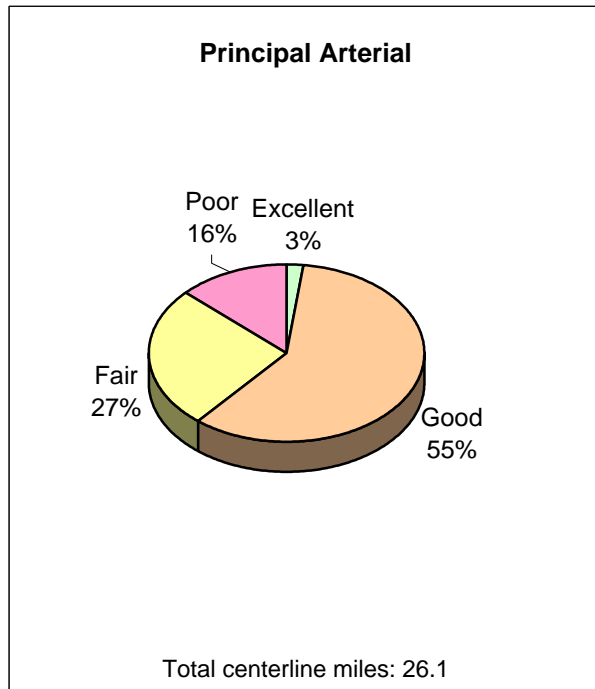
Exhibit 15
Pavement Ratings by Functional Classification
City of Syracuse

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
City of Syracuse			
Principal Arterial			
Excellent	4,031	0.8	3%
Good	75,124	14.2	55%
Fair	36,582	6.9	27%
Poor	22,000	4.2	16%
Total	137,737	26.1	100%
Minor Arterial			
Excellent	29,860	5.7	9%
Good	128,544	24.3	38%
Fair	89,348	16.9	27%
Poor	89,083	16.9	26%
Total	336,834	63.8	100%
Collector			
Excellent	19,146	3.6	12%
Good	59,670	11.3	36%
Fair	42,211	8.0	26%
Poor	43,866	8.3	27%
Total	164,894	31.2	100%
All Federal-Aid City Roads			
Excellent	53,036	10.0	8%
Good	263,338	49.9	41%
Fair	168,141	31.8	26%
Poor	154,949	29.3	24%
Total	639,465	121.1	100%

Notes: 1. Calculations based on total centerline length of road.
2. Total percentages may not add to 100% due to rounding.

Exhibit 16

Pavement Ratings by Functional Classification City of Syracuse Roads



Excellent Good Fair Poor

Notes: 1. Percentages determined by total centerline length in miles of road.
2. See Exhibit 14 for all rated FAE roads graph.

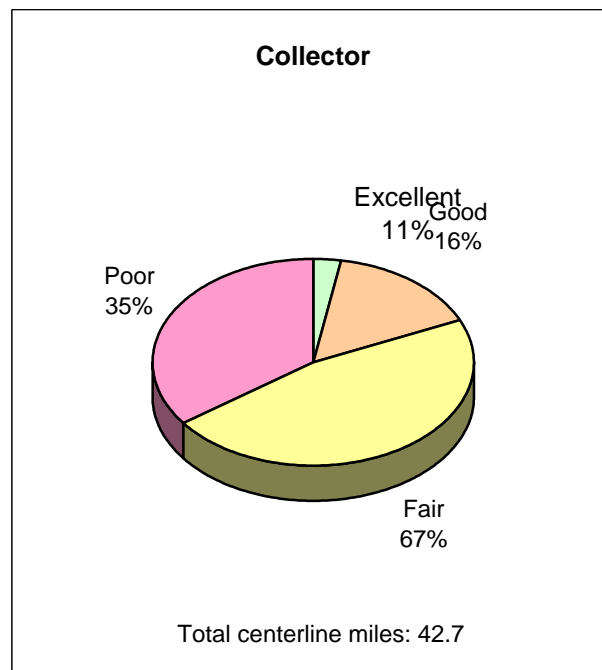
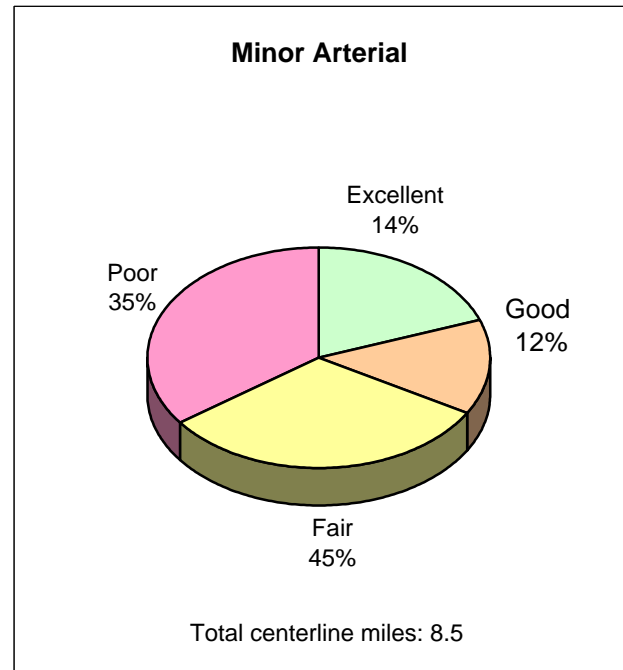
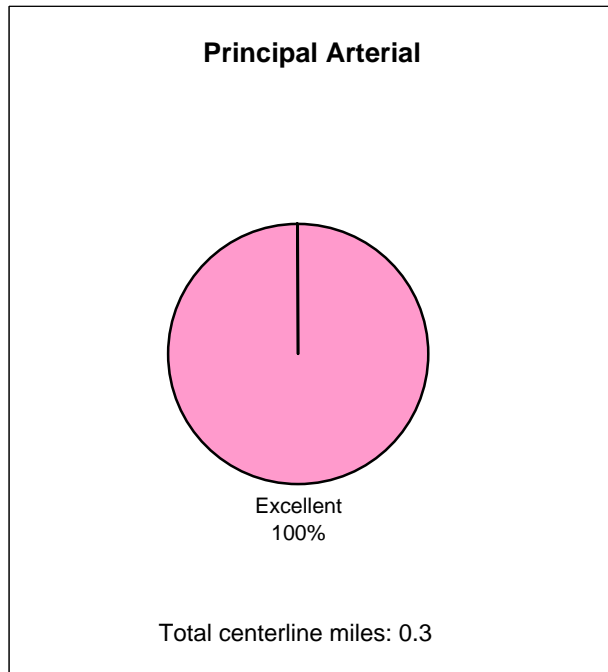
Exhibit 17
Pavement Ratings by Functional Classification
Local Federal-Aid Eligible Roads

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
Local Federal-Aid Eligible			
Principal Arterial			
Excellent	1,442	0.3	100%
Good	0	0.0	0%
Fair	0	0.0	0%
Poor	0	0.0	0%
Total	1,442	0.3	100%
Minor Arterial			
Excellent	8,670	1.6	19%
Good	6,210	1.2	14%
Fair	14,132	2.7	32%
Poor	15,604	3.0	35%
Total	44,616	8.5	100%
Collector			
Excellent	6,107	1.2	3%
Good	35,520	6.7	16%
Fair	105,060	19.9	47%
Poor	78,711	14.9	35%
Total	225,397	42.7	100%
All Federal-Aid Roads			
Excellent	16,219	3.1	6%
Good	41,730	7.9	15%
Fair	119,191	22.6	44%
Poor	94,315	17.9	35%
Total	271,455	51.4	100%

Notes: 1. Calculations based on total centerline length of road.
2. Total percentages may not add to 100% due to rounding.

Exhibit 18

Pavement Ratings by Functional Classification Local Federal-Aid Eligible Roads



Excellent Good Fair Poor

Notes: 1. Percentages determined by total centerline length in miles of road.
2. See Exhibit 14 for all rated FAE roads graph.

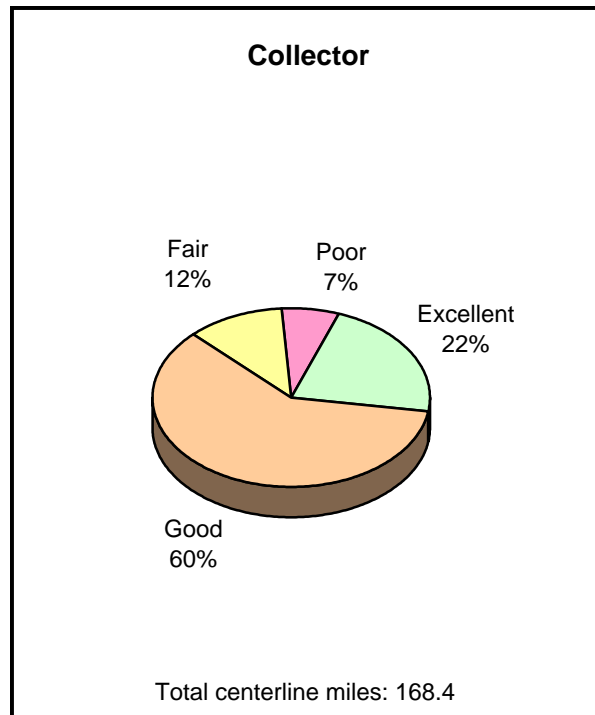
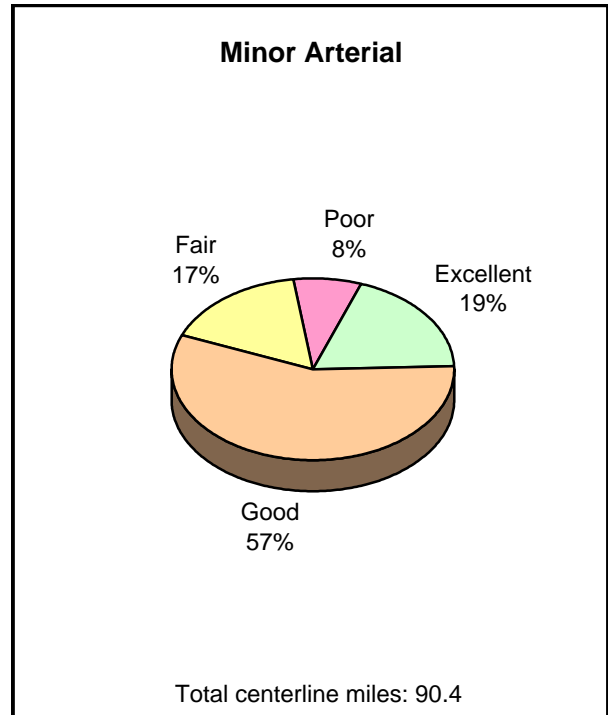
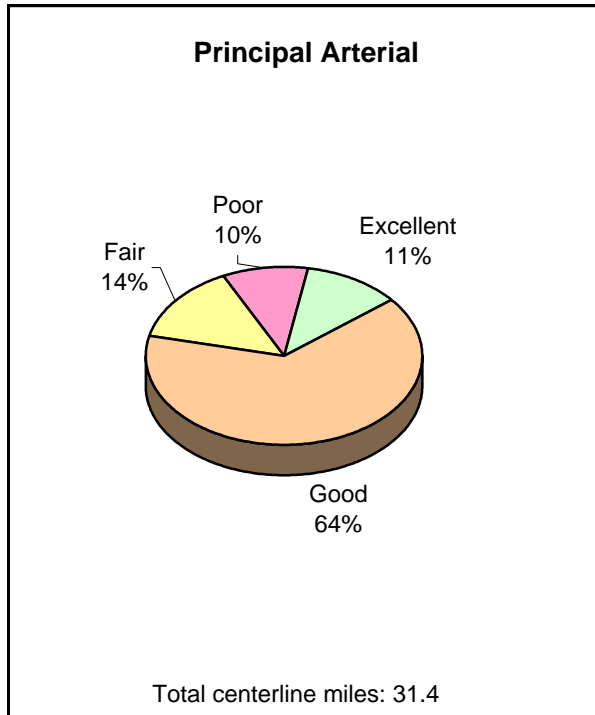
Exhibit 19
Pavement Ratings by Functional Classification
Onondaga County DOT Roads

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
Onondaga County			
Principal Arterial			
Excellent	18,797	3.6	11%
Good	106,773	20.2	64%
Fair	23,641	4.5	14%
Poor	16,390	3.1	10%
Total	165,602	31.4	100%
Minor Arterial			
Excellent	90,521	17.1	19%
Good	269,884	51.1	57%
Fair	79,963	15.1	17%
Poor	36,696	7.0	8%
Total	477,064	90.4	100%
Collector			
Excellent	194,902	36.9	22%
Good	532,861	100.9	60%
Fair	103,207	19.5	12%
Poor	58,124	11.0	7%
Total	889,094	168.4	100%
All County Federal-Aid Roads			
Excellent	304,221	57.6	20%
Good	909,518	172.3	59%
Fair	206,811	39.2	14%
Poor	111,210	21.1	7%
Total	1,531,760	290.1	100%

Notes: 1. Calculations based on total centerline length of road.
2. Total percentages may not add to 100% due to rounding.

Exhibit 20

Pavement Ratings by Functional Classification Onondaga County DOT Roads



Excellent Good Fair Poor

Notes: 1. Percentages determined by total centerline length in miles of road.
2. See Exhibit 14 for all rated FAE roads graph.

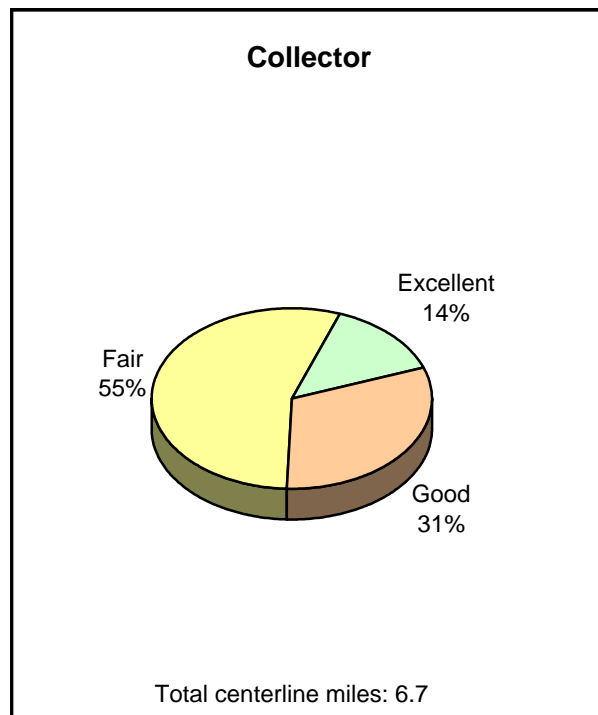
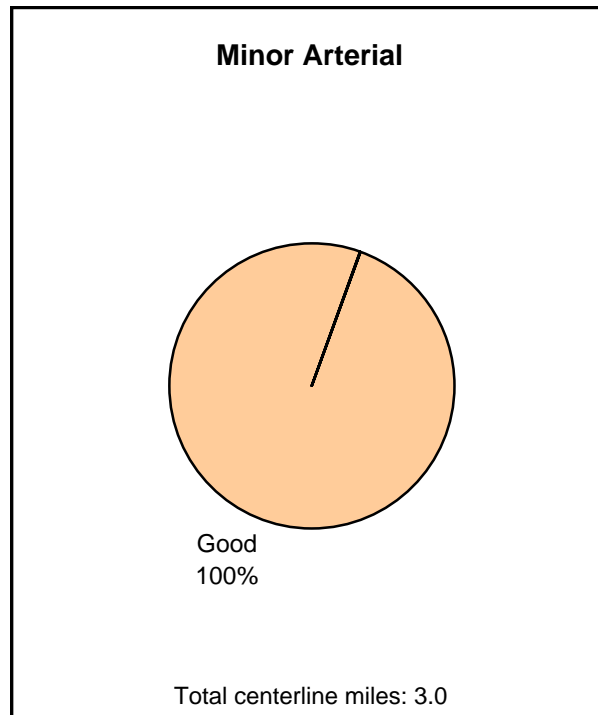
Exhibit 21
Pavement Ratings by Functional Classification
Oswego County

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
Oswego County			
Principal Arterial			
Excellent	0	0.0	0%
Good	0	0.0	0%
Fair	0	0.0	0%
Poor	0	0.0	0%
Total	0	0.0	0%
Minor Arterial			
Excellent	0	0.0	0%
Good	15,607	3.0	100%
Fair	0	0.0	0%
Poor	0	0.0	0%
Total	15,607	3.0	100%
Collector			
Excellent	4,756	2.0	14%
Good	11,054	2.0	31%
Fair	19,328	2.6	55%
Poor	0	0.0	0%
Total	35,138	6.7	100%
All County Federal-Aid Roads			
Excellent	4,756	0.9	9%
Good	26,662	5.0	53%
Fair	19,328	3.7	38%
Poor	0	0.0	0%
Total	50,746	9.6	100%

Notes: 1. Calculations based on total centerline length of road.
2. Total percentages may not add to 100% due to rounding.

Exhibit 22

Pavement Ratings by Functional Classification Oswego County Roads



Excellent Good Fair

Notes: 1. Percentages determined by total centerline length in miles of road.
2. See Exhibit 14 for all rated FAE roads graph.

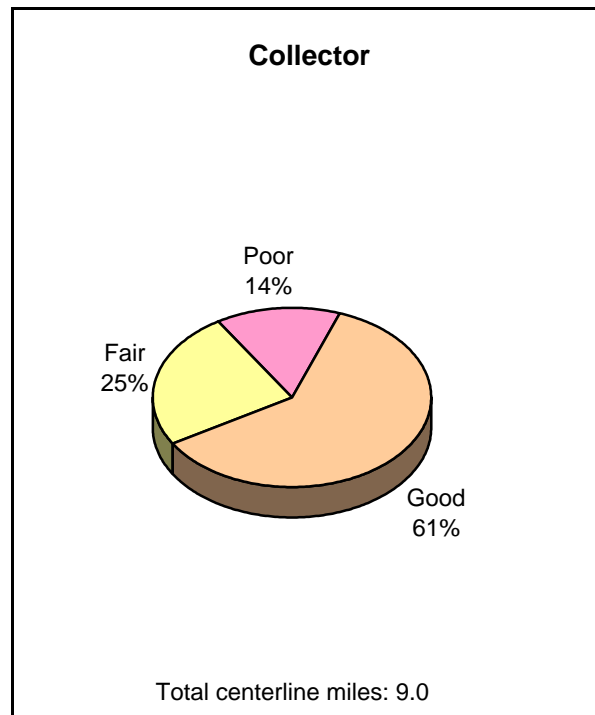
Exhibit 23
Pavement Ratings by Functional Classification
Madison County

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
Madison County			
Principal Arterial			
Excellent	0	0.0	0%
Good	0	0.0	0%
Fair	0	0.0	0%
Poor	0	0.0	0%
Total	0	0.0	0%
Minor Arterial			
Excellent	0	0.0	0%
Good	0	0.0	0%
Fair	0	0.0	0%
Poor	0	0.0	0%
Total	0	0.0	0%
Collector			
Excellent	0	0.0	0%
Good	28,486	5.4	61%
Fair	11,513	2.2	25%
Poor	6,774	1.3	14%
Total	46,773	8.9	100%
All County Federal-Aid Roads			
Excellent	0	0.0	0%
Good	28,486	5.4	61%
Fair	11,513	2.2	25%
Poor	6,774	1.3	14%
Total	46,773	8.9	100%

Notes: 1. Calculations based on total centerline length of road.
2. Total percentages may not add to 100% due to rounding.

Exhibit 24

Pavement Ratings by Functional Classification Madison County Roads



Good Fair

Notes: 1. Percentages determined by total centerline length in miles of road.
2. See Exhibit 14 for all rated FAE roads graph.

Exhibit 25

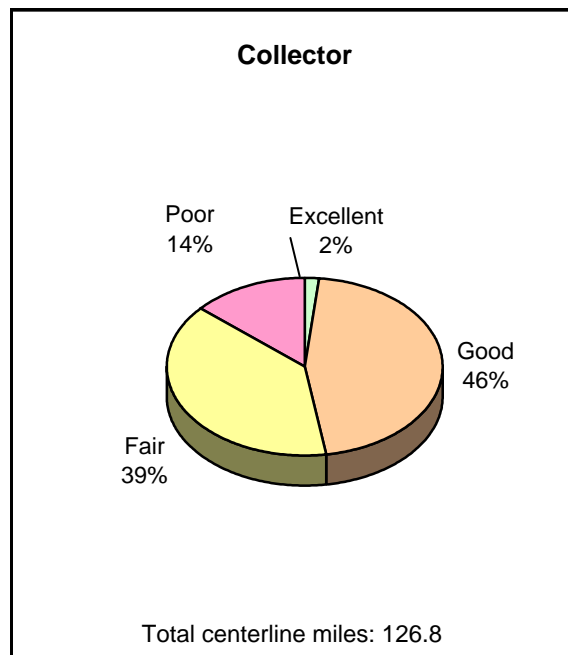
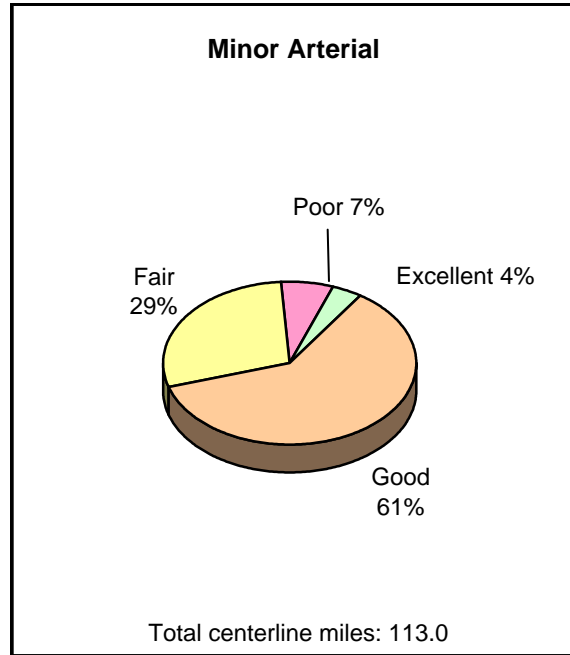
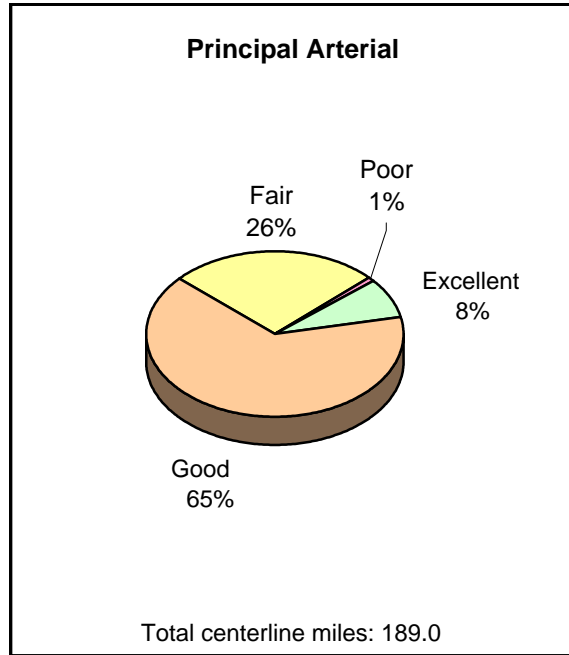
**Pavement Ratings by Functional Classification
New York State DOT Roads**

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
New York State			
Principal Arterial			
Excellent	76,346	14.5	8%
Good	650,922	123.3	65%
Fair	261,655	49.6	26%
Poor	8,830	1.7	1%
Total	997,753	189.0	100%
Minor Arterial			
Excellent	23,285	4.4	4%
Good	362,457	68.6	61%
Fair	171,691	32.5	29%
Poor	39,160	7.4	7%
Total	596,593	113.0	100%
Collector			
Excellent	12,039	2.3	2%
Good	306,102	58.0	46%
Fair	260,323	49.3	39%
Poor	90,809	17.2	14%
Total	669,273	126.8	100%
All State Federal-Aid Roads			
Excellent	111,670	21.1	5%
Good	1,319,481	249.9	58%
Fair	693,669	131.4	31%
Poor	138,799	26.3	6%
Total	2,263,619	428.7	100%

Notes: 1. Calculations based on total centerline length of road.
2. Total percentages may not add to 100% due to rounding.

Exhibit 26

Pavement Ratings by Functional Classification New York State DOT Roads

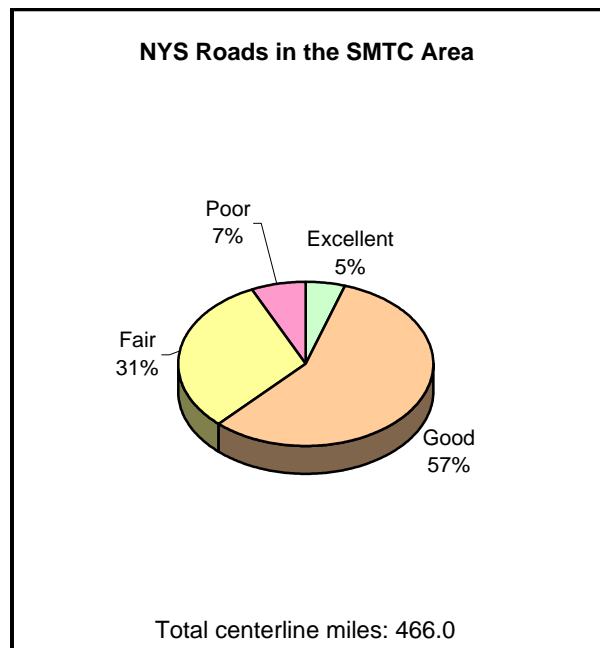
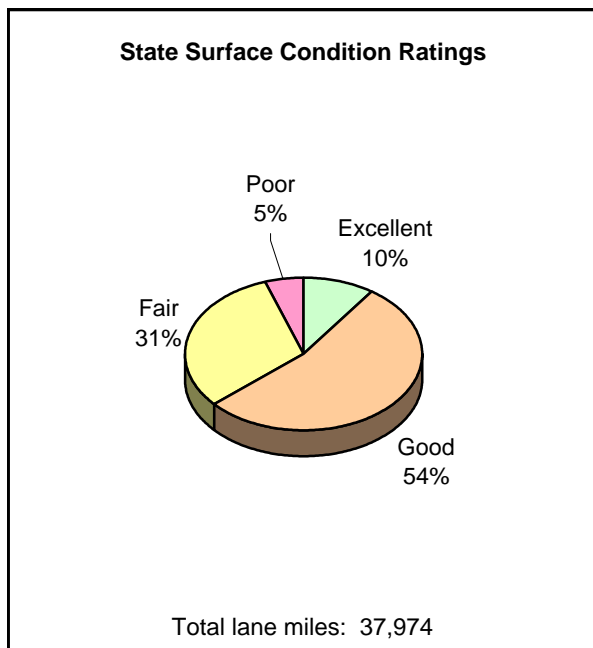
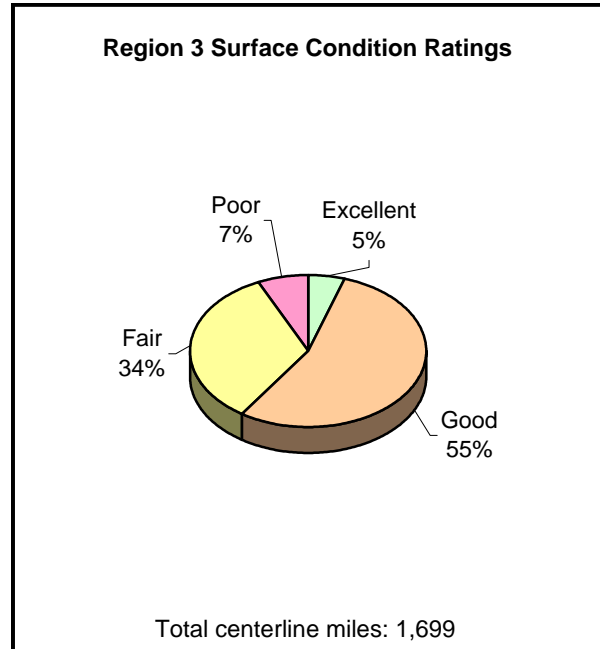
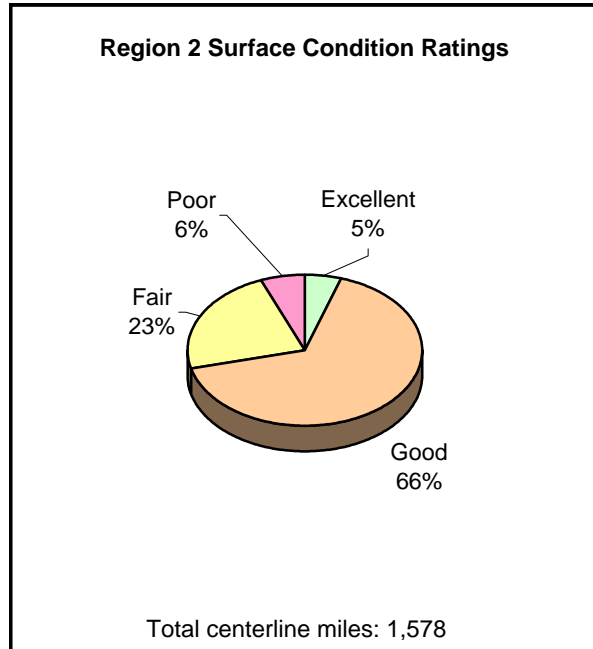


Excellent Good Fair Poor

Note: Percentages determined by total centerline length in miles of road.

Exhibit 27

Comparison of State Pavement Ratings



Excellent Good Fair Poor

Note: Percentages determined by total centerline length in miles of road.

Exhibit 28
Pavement Ratings by Functional Classification
New York State Thruway Roads

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
Thruway			
Principal Arterial			
Excellent	7,232	1.4	4%
Good	137,978	26.1	84%
Fair	19,276	3.7	12%
Poor	0	0.0	0%
Total	164,486	31.2	100%
Minor Arterial			
Excellent	0	0.0	0%
Good	0	0.0	0%
Fair	0	0.0	0%
Poor	0	0.0	0%
Total	0	0.0	0%
Collector			
Excellent	0	0.0	0%
Good	0	0.0	0%
Fair	0	0.0	0%
Poor	0	0.0	0%
Total	0	0.0	0%
All Thruway Federal-Aid Roads			
Excellent	7,232	1.4	4%
Good	137,978	26.1	84%
Fair	19,276	3.7	12%
Poor	0	0.0	0%
Total	164,486	31.2	100%

Notes: 1. Calculations based on total centerline length of road.
2. Total percentages may not add to 100% due to rounding.
3. See Exhibit 14 for all rated FAE roads graph.

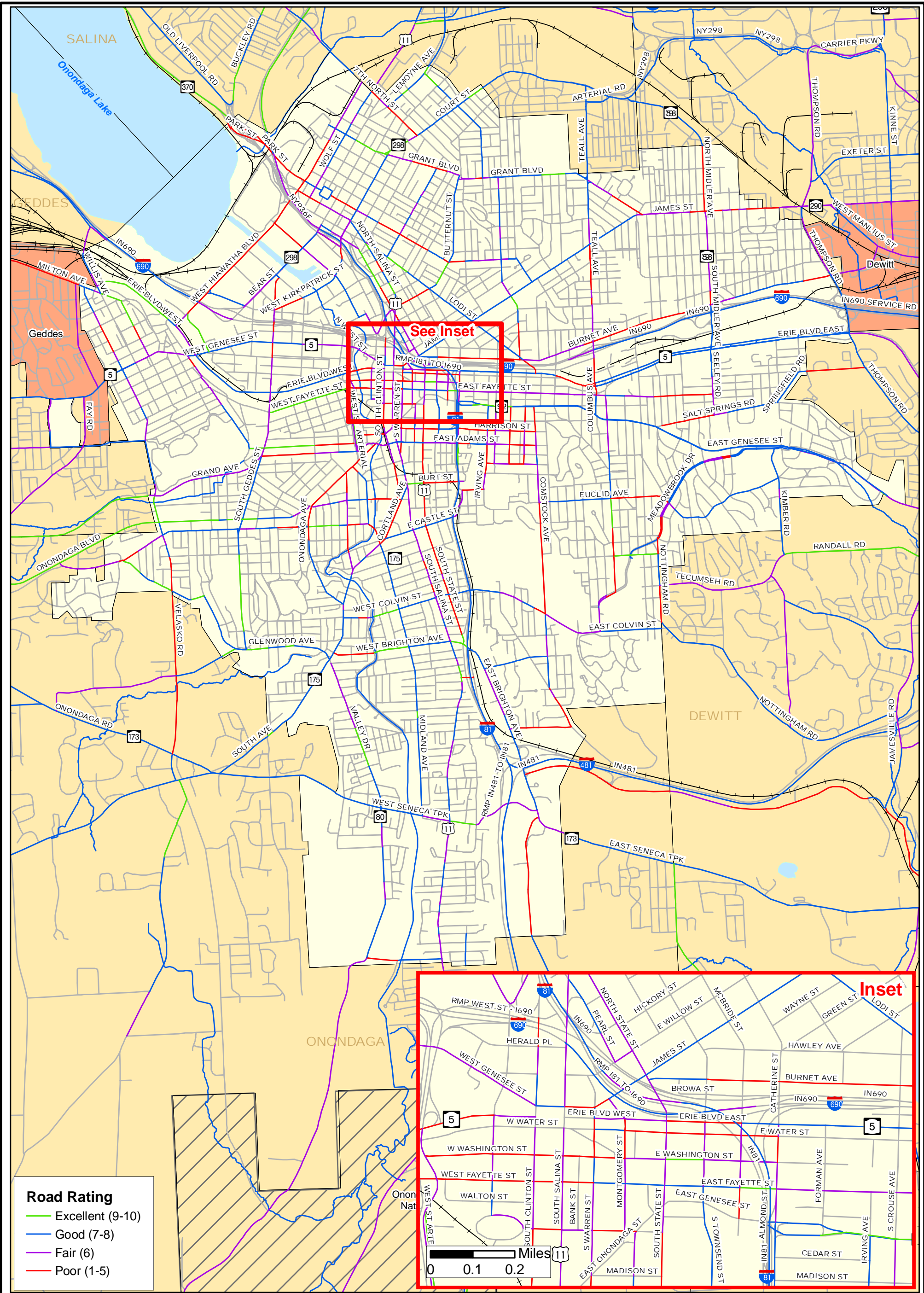


Exhibit 31

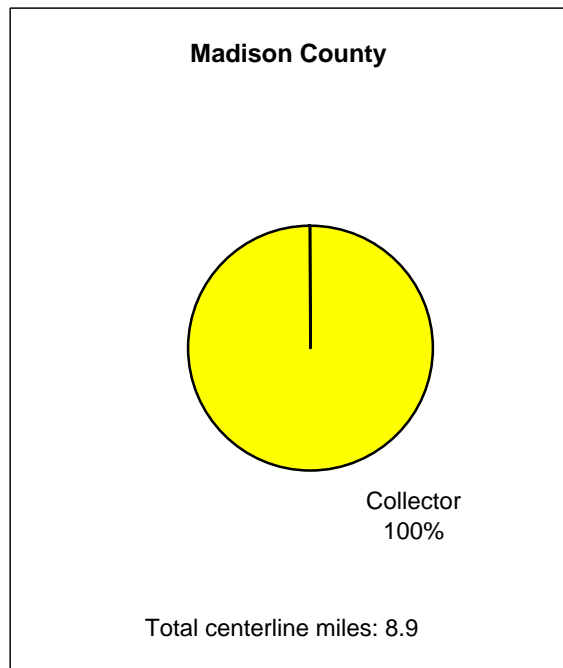
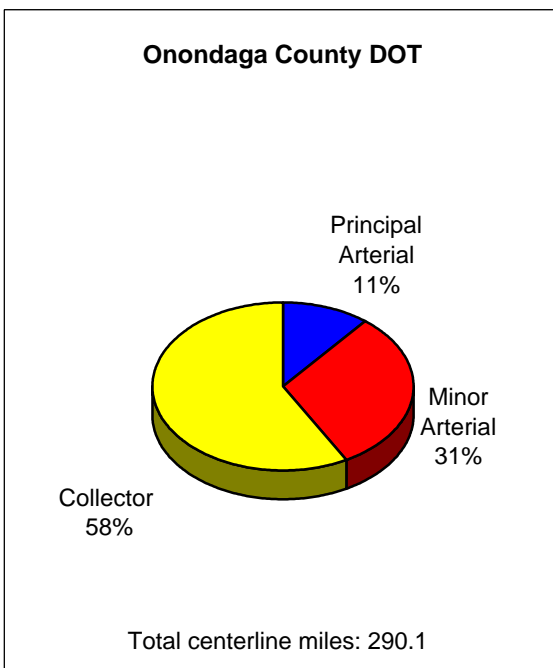
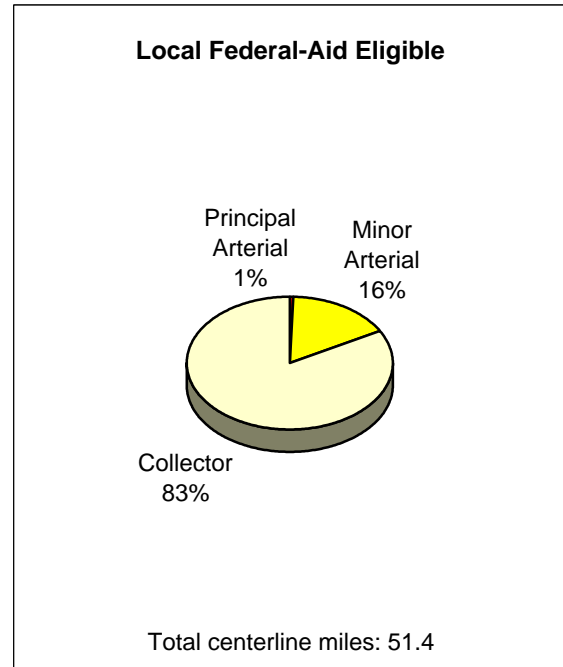
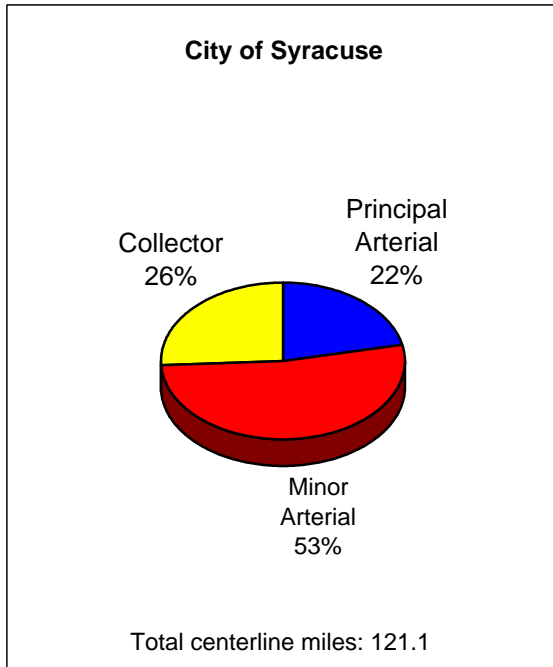
Functional Classification for *Federal-Aid Eligible Roads*

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
City of Syracuse			
Principal Arterial	137,737	26.1	22%
Minor Arterial	336,834	63.8	53%
Collector	164,894	31.2	26%
Total	639,465	121.1	100%
Local Federal-Aid Eligible			
Principal Arterial	1,442	0.3	1%
Minor Arterial	44,616	8.5	16%
Collector	225,397	42.7	83%
Total	271,455	51.4	100%
Madison County			
Principal Arterial	0	0.0	0%
Minor Arterial	0	0.0	0%
Collector	46,773	8.9	100%
Total	46,773	8.9	100%
Onondaga County			
Principal Arterial	165,602	31.4	11%
Minor Arterial	477,064	90.4	31%
Collector	889,094	168.4	58%
Total	1,531,760	290.1	100%
Oswego County			
Principal Arterial	0	0.0	0%
Minor Arterial	15,607	3.0	31%
Collector	35,139	6.7	69%
Total	50,746	9.6	100%
New York State			
Principal Arterial	997,753	189.0	44%
Minor Arterial	596,593	113.0	26%
Collector	669,273	126.8	30%
Total	2,263,619	428.7	100%
New York State Thruway Authority			
Principal Arterial	164,486	31.2	100%
Minor Arterial	0	0.0	0%
Collector	0	0.0	0%
Total	164,486	31.2	100%
All Rated Federal-Aid Eligible Roads			
Principal Arterial	1,467,020	277.8	30%
Minor Arterial	1,470,714	278.5	30%
Collector	2,030,570	384.6	41%
Total	4,968,304	941.0	100%

Notes: 1. Calculations based on total centerline length of road.
2. Total percentages may not add to 100% due to rounding.

Exhibit 32
Part I

**Functional Classification of Federal-Aid Eligible Roads
by Jurisdiction**

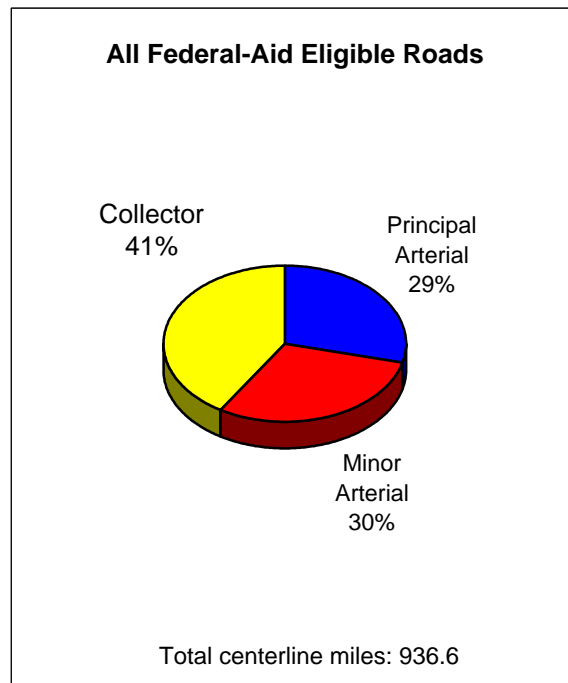
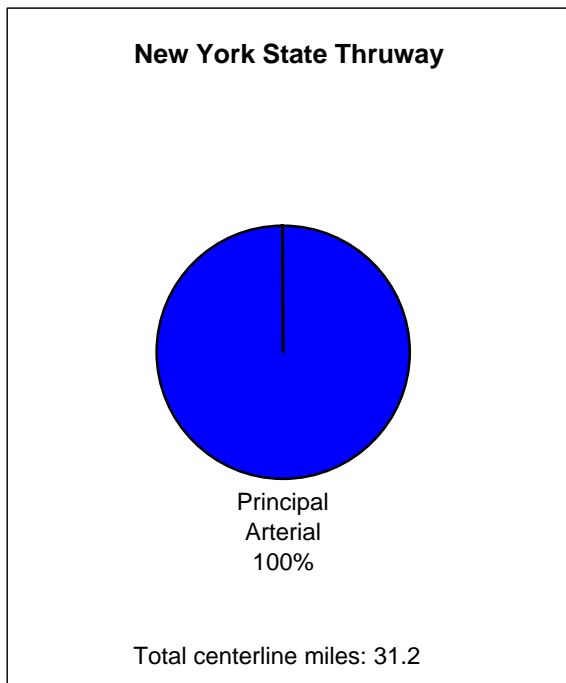
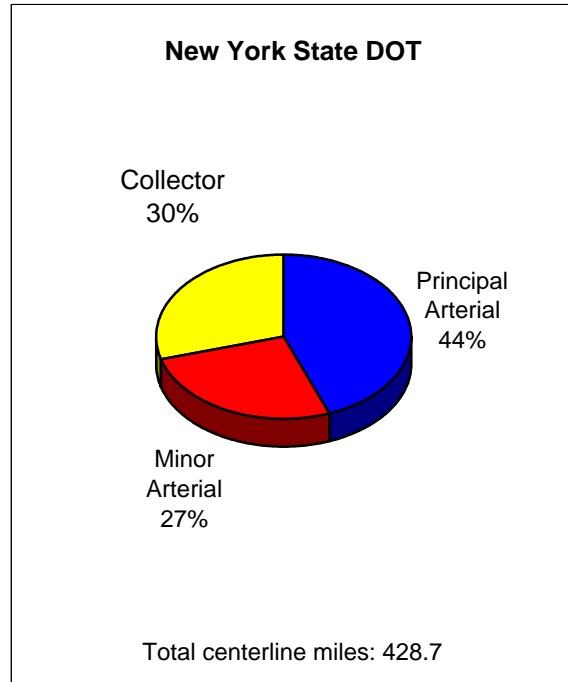
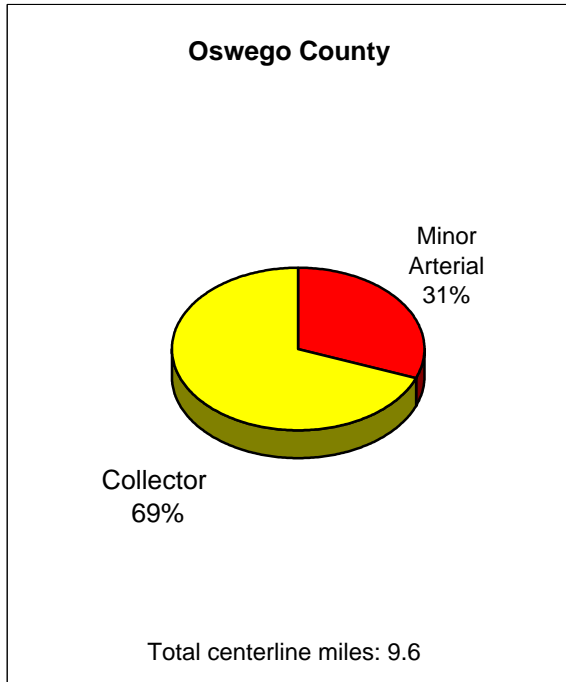


 Principal Arterial  Minor Arterial  Collector

Note: Percentages determined by total centerline length in miles of road.

Exhibit 32
Part II

**Functional Classification of Federal-Aid Eligible Roads
by Jurisdiction**

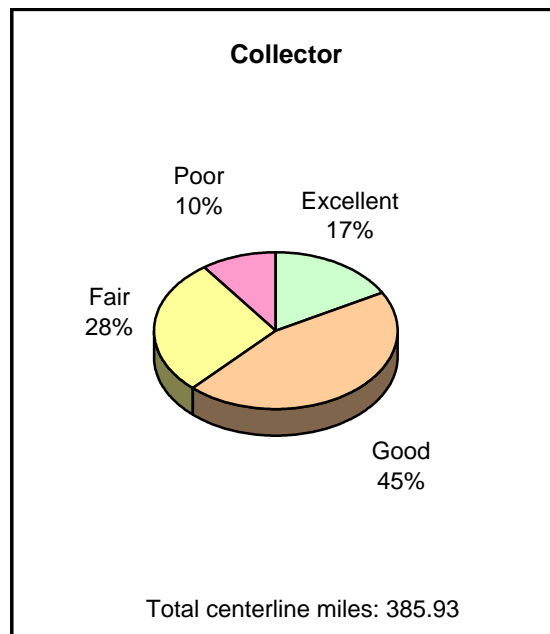
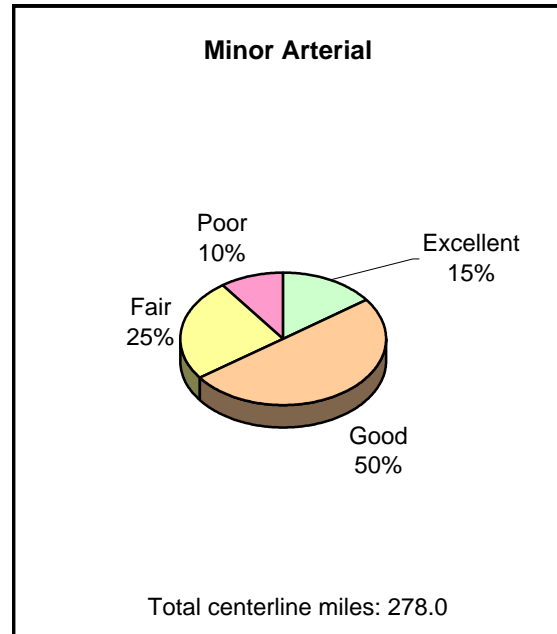
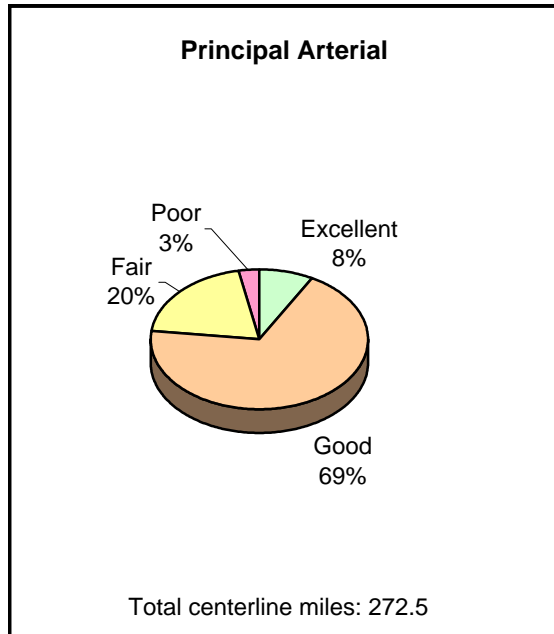


Principal Arterial Minor Arterial Collector

Note: Percentages determined by total centerline length in miles of road.

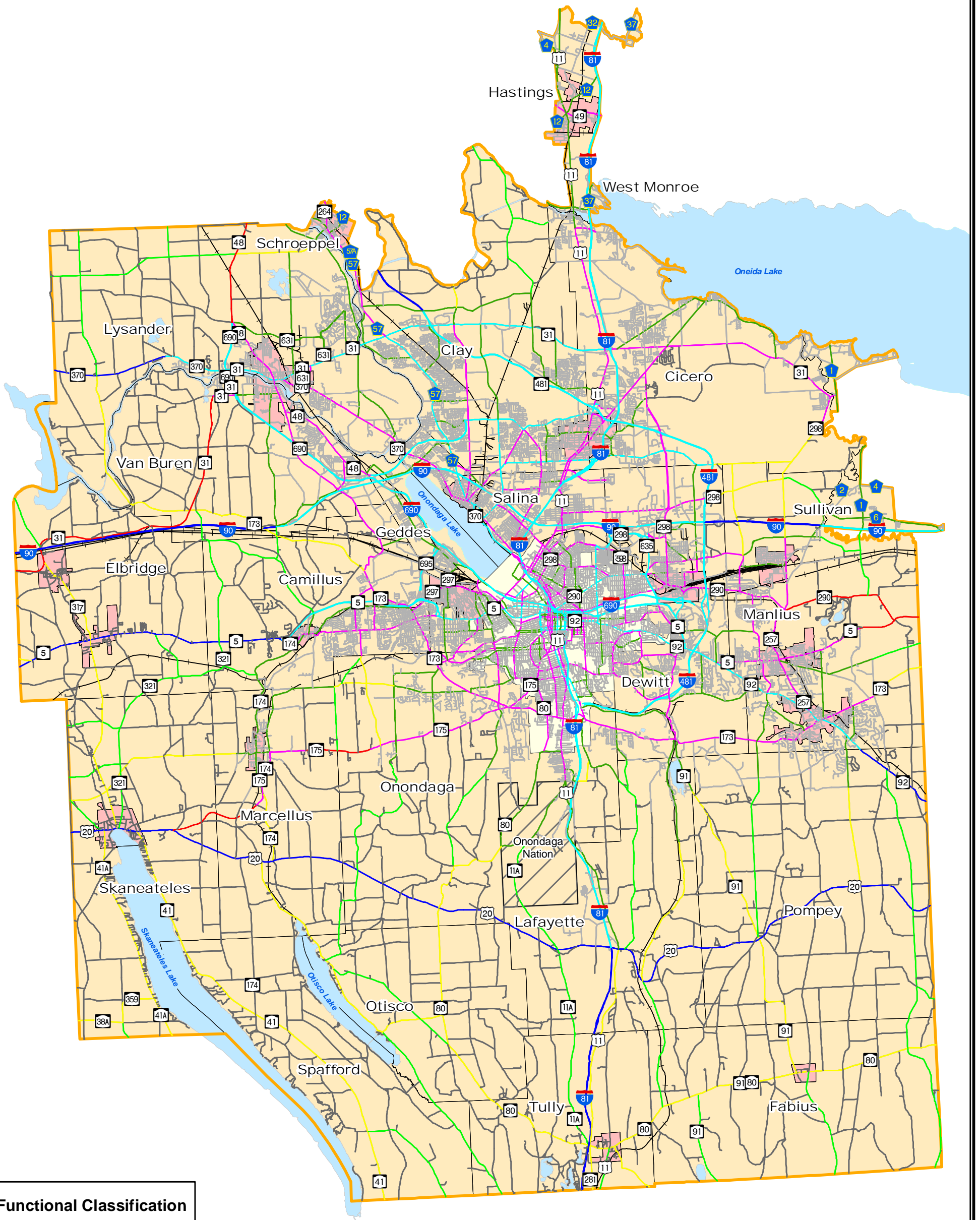
Exhibit 33

Pavement Ratings of Federal-Aid Eligible Roads by Functional Classification



Excellent Good Fair Poor

Note: Percentages determined by total centerline length in miles of road.



Functional Classification

- Urban**
 - Principal Arterial
 - Minor Arterial
 - Collector
 - Local
- Rural**
 - Principal Arterial
 - Minor Arterial
 - Major Collector
 - Minor Collector
 - Local

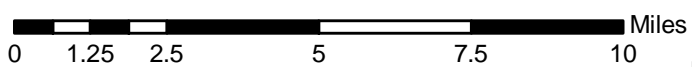


100 Clinton Square
126 N Salina St, Suite 100
Syracuse, NY 13202
(315) 422-5716
Fax: (315) 422-7753

Functional Classification

Bridge & Pavement Condition Management System

Exhibit 34

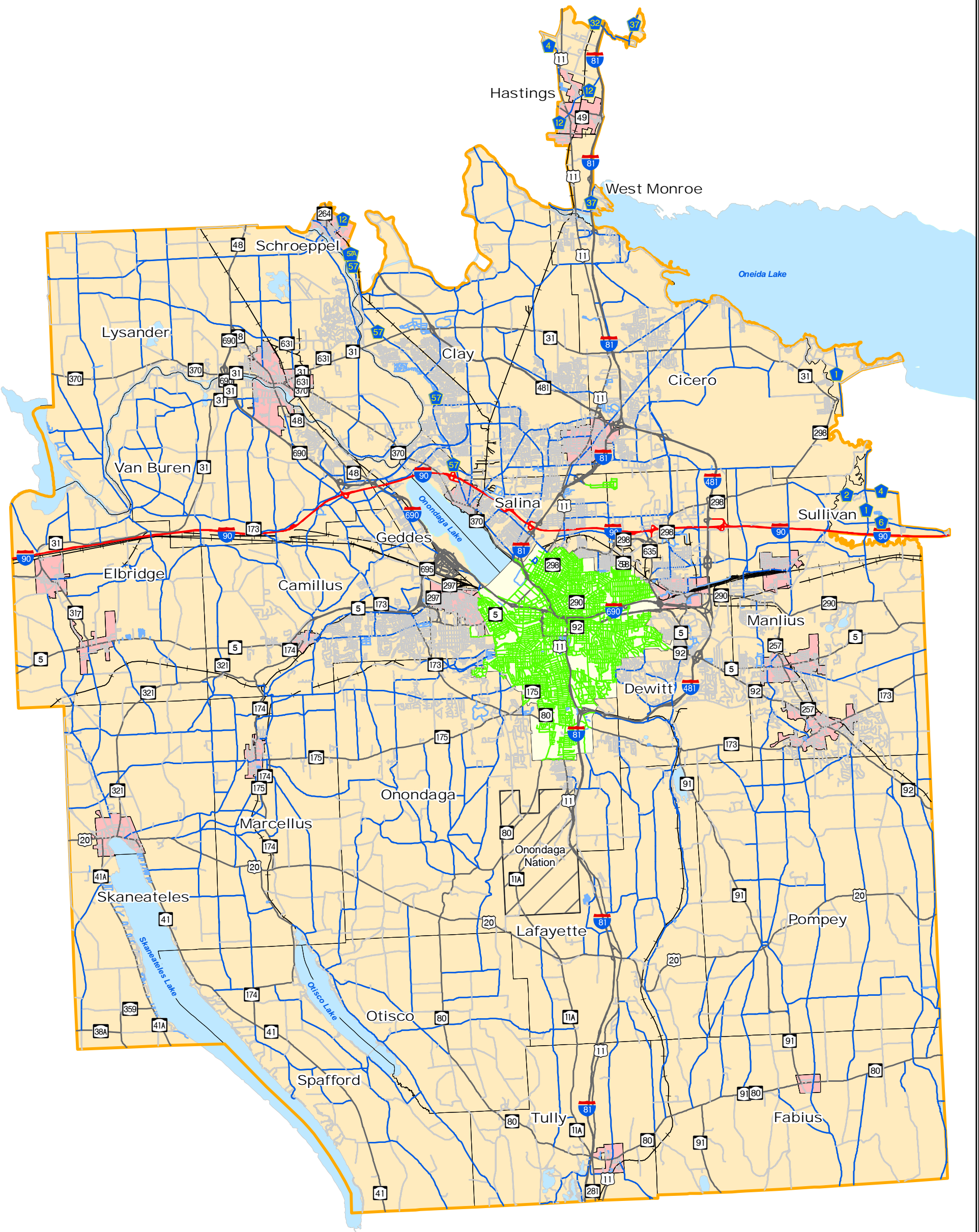


This map is for presentation purposes only. The SMTC does not guarantee the accuracy or completeness of this map.



Basemap Copyrighted by NYSDOT.
Data Sources: SMTC, NYSDOT 2007
Prepared by SMTC, 10/2010

- Roads
- Water
- City of Syracuse
- Villages
- Towns
- Onondaga Nation
- MPA Boundary



JURISDICTION

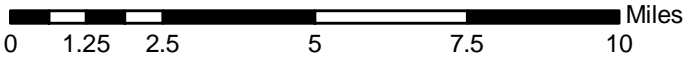
- Private
- Local (Town or Village)
- City of Syracuse
- County (Onondaga, Oswego, or Madison)
- NYSTA
- NYSDOT



100 Clinton Square
126 N Salina St, Suite 100
Syracuse, NY 13202
(315) 422-5716
Fax: (315) 422-7753

Road Jurisdiction

Bridge & Pavement Condition Management System
Exhibit 35



This map is for presentation purposes only. The SMTC does not guarantee the accuracy or completeness of this map.



- Roads
- Water
- City of Syracuse
- Villages
- Towns
- Onondaga Nation
- MPA Boundary

Basemap Copyrighted by NYSDOT.
Data Sources: SMTC, NYSDOT 2007
Prepared by SMTC, 10/2010

Exhibit 36: Photos: Sample Pavement Conditions



City of Syracuse, Green Street and Howard Street (Looking East) – Fair Condition



City of Syracuse, Green Street and Howard Street (Looking North) - Poor Condition



City of Syracuse, Green Street and Howard Street (Looking South) – Excellent Condition



City of Syracuse, Green Street and Howard Street (Looking West) – Good Condition

4. TRENDS

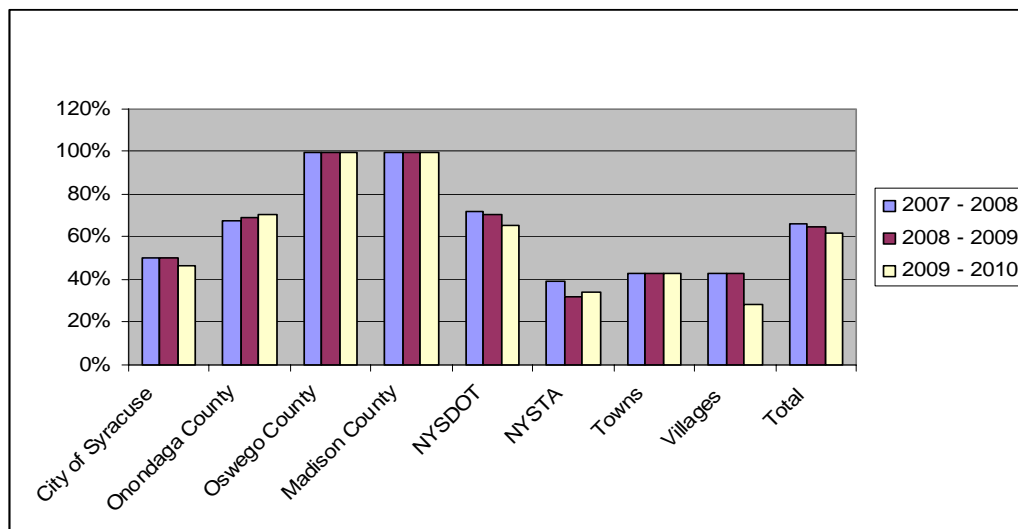
Utilizing data from the previous two Bridge and Pavement Condition Management System (2007 – 2008 and 2008 – 2009), it is possible to examine trends in bridge and pavement condition by jurisdiction. Overall, bridge ratings in the MPA (measured as the proportion of non-deficient bridges) have declined slightly over the past three years. Pavement scores for all roads in the MPA have also declined slightly.

Bridges

Exhibit 37 shows the trend in the proportion of non-deficient bridges by jurisdiction using data from the 2007 – 2008, 2008 – 2009 and 2009 – 2010 BPCMS reports. As this chart shows, within jurisdictions, the proportion of non-deficient bridges generally has not fluctuated dramatically from one year to another. For example, in the City of Syracuse, about half of all bridges were non-deficient in all three years. While the *proportion* of non-deficient bridges maintained by villages fell dramatically in 2009-2010, in reality this represents an increase of one deficient bridge, owing to the small sample size in question.

Using three-year data, it is interesting to note that New York State and Onondaga County consistently have the highest proportions of non-deficient bridges. The NYSTA and the MPA's towns and villages consistently have the lowest proportions of non-deficient bridges.

Chart 2 - Three-Year Trends: Proportion of Non-Deficient Bridges

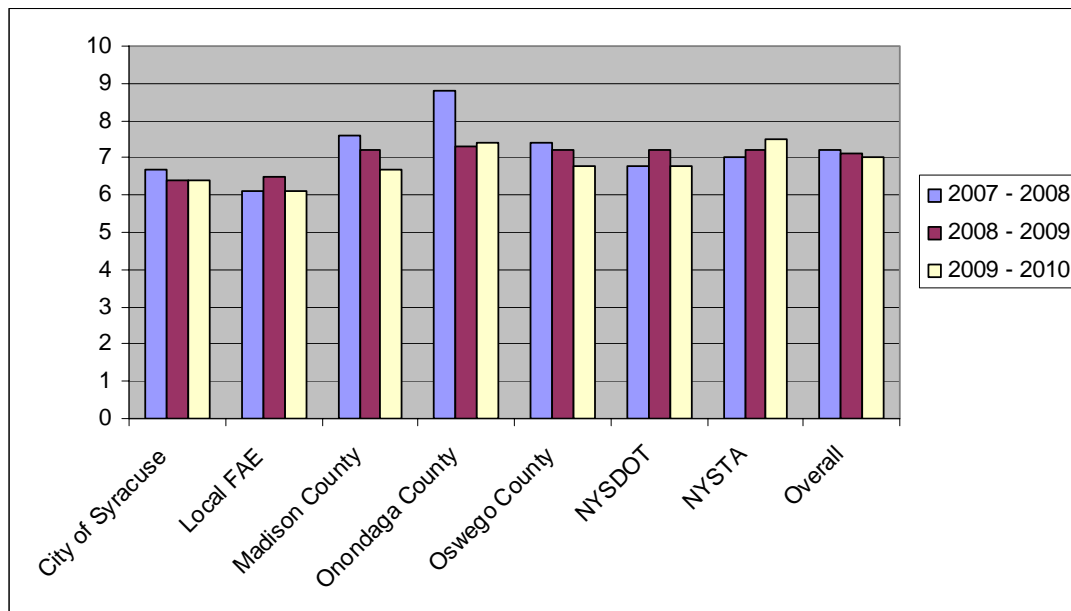


Pavement

When looking at three-year trends in pavement ratings, it is important to note that, after the 2007-2008 BPCMS report, Onondaga County modified its pavement scoring system to reflect the cyclical nature of its pavement rating system. As noted in Section 3.1.iii, only a quarter of the OCDOT's annual pavement ratings included in the 2008 – 2009 and 2009 – 2010 reports are based on new pavement inspections: 75% of the ratings are adjusted to reflect normal deterioration since the last inspection. In the 2007 – 2008 report, this adjustment was not made; bridge ratings did not include a factor for normal deterioration.

Excluding the non-adjusted data from Onondaga County, pavement scores within each jurisdiction varied by less than a point over the three years being considered. Overall pavement scores showed even less variability, ranging from 7.2 to 7.1.

Chart 3 – Three Year Trend: Overall Rating of All Rated Roads



There is much more variability in the proportion of FAE roads rated “good” or excellent”, as shown in Chart 4. Over the past three years, only the NYSTA and Oswego County have consistently maintained their pavement in the MPA at “good” or “excellent” levels. Local FAE roads consistently have the lowest proportion of high-rated pavements, with a three-year average of 20% of roads rated “good” or “excellent”.

CLOSING

By tracking these bridge and pavement conditions, the SMTTC hopes to underscore the need for ongoing support of maintenance efforts. As this report has demonstrated over the years, deterioration of bridges and pavement is constant, demanding an ongoing program of monitoring and maintenance to keep the region's transportation infrastructure in good repair. As the chart in Section 3.2 shows, more than 70% of the 2011-2015 TIP is dedicated to federal-aid eligible highways and to bridge projects. Bridge and pavement maintenance should continue to be a regional priority.

Chart 4 – Three-Year Trend: FAE Roads Rated “Good” or “Excellent”

