

# BRIDGE & PAVEMENT CONDITION MANAGEMENT SYSTEM



Syracuse Metropolitan Planning Area  
Working Document  
2008 - 2009



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# **BRIDGE & PAVEMENT CONDITION MANAGEMENT SYSTEM**

*Syracuse Metropolitan Planning Area*

**Working Document**

**September 2009**

**2008-2009 Unified Planning Work Program**

This document was prepared with financial assistance from the Federal Highway Administration and the Federal Transit Administration of the U.S. Department of Transportation through the New York State Department of Transportation. The Syracuse Metropolitan Transportation Council is solely responsible for its contents.

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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 effectively 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/details 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. Overall, the majority of 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 1,636 centerline miles or 46% of the total MPA. Only 3%, or 54.4 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 2008-2009 Unified Planning Work Program (UPWP). This analysis is the latest installment of the bridge and pavement analyses created 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. This measurement is due to the digital GIS files that are used for calculations. A linear centerline mile of road illustrates a continuous line of pavement that is based on the data describing the center of the length of pavement. For example, an interstate road has approaches in two opposite directions, as well as multiple lanes in each direction. The number of miles based on the number of lanes 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.

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/details 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. In addition, section two further categorizes the federal-aid eligible pavement condition ratings by functional classification per jurisdiction and condition rating category.

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 roads under their ownership each year, these ratings only portray a sample of data for the entire MPA area. Overall, the majority of roads in the MPA are under Town/Village jurisdiction otherwise referred to as “Local” ownership, which are not rated unless federal-aid eligible. These “Local” owned roads account for 1,636 centerline miles or 46% of the total MPA area. Only 3%, or 54.4 centerline miles of these roads are federal-aid eligible.

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 I - Pavement Condition Rating Chart		
<b>Rating</b>		<b><u>Condition Description</u></b>
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*.

## 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. The scale uses a weighted formula that accounts for several structural components of a bridge. Bridges with a condition rating less than 5.0 are deemed as being in a deficient state. They are candidates for rehabilitation work, replacement or perhaps closure. Priority deficient bridges are those that have a condition rating of less than 3.0, or a condition rating between 3.0 and 3.999 with an Annual Average Daily Traffic (AADT) over 4,000. Priority deficient bridges are given priority funding over deficient bridges.

Within the deficient rating category, certain bridges are categorized as priority deficient.



Route 5 Bridge at Newport Rd



Route 173 Bridge over Onondaga Creek

Therefore, a priority deficient bridge is also considered to be a deficient bridge. A deficient rating does not mean a bridge is unsafe.

Table 2 - New York State Bridge Condition Rating Chart		
Rating		Condition Description
1.0-2.999	Priority Deficient	Bridge is given a priority for funding for rehabilitation, replacement or perhaps closure.
3.0-3.999 with over 4,000 AADT	Priority Deficient	Bridge is given a priority for funding for rehabilitation or replacement.
3.0-3.999 with under 4,000 AADT	Deficient	Bridge is a candidate for rehabilitation, replacement or perhaps closure.
4.0-4.999	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 priority 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.

There are 17,742 total State bridges with a rating, and the average condition rating of these bridges is 5.37. There are 1,300 total Region 3 bridges, with an average condition rating of 5.22 while Region 2 rated bridges have an average condition rating of 5.44. 1,321 bridges were rated in Region 2. These calculations were completed by the SMTC using data provided by the NYSDOT. In comparison, the bridges in the SMTC MPA, in Region 2, Region 3 and across the State all have similar percentages of priority deficient bridges (SMTC area: 3%, Region 2: 1%, Region 3: 2% and statewide: 2%). Region 3 has the highest percentage of deficient bridges at 40%, while Region 2 and New York State each contain 33%, and the SMTC MPA at 34% respectively.

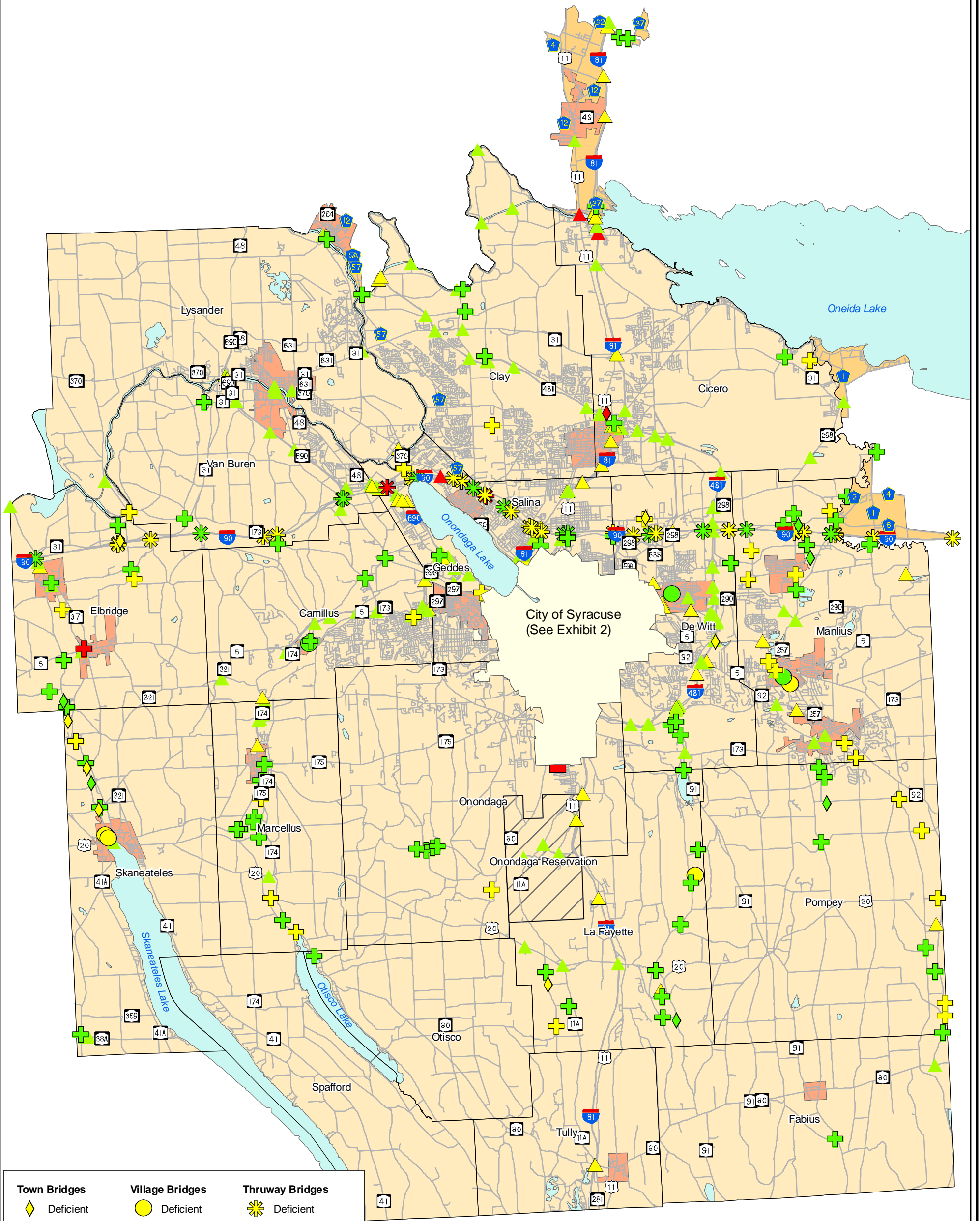
Overall, the City of Syracuse has the highest percentage of priority deficient bridges (13%). All other jurisdictions have between 1% and 7% priority deficient bridges, with the exception of bridges under Oswego County, Madison County, or village jurisdiction, which have no priority deficient bridges. Please note: for this report percentages have been calculated individually for each of the three counties found in the MPA: Onondaga,

Oswego and Madison. Also, Oswego and Madison County owned bridges portray a very small sample of bridges throughout 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, which accounts for the absence of deficient/priority deficient bridges.

The New York State Thruway bridges in the MPA have the highest percentage of deficient bridges (63%). The jurisdictions with the lowest percentage of deficient bridges are Oswego and Madison Counties (0%) for the reason explained above.

The Oswego and Madison County bridges in the MPA have the highest percentage of non-deficient ratings (100%), with the NYSDOT following at 71%. As noted above, Oswego and Madison County have a small number of bridges under their ownership. All other jurisdictions have between 69% and 32% non-deficient bridges. Appendix B lists all bridge ratings for the entire study area.

The NYSDOT goal is to have 70 - 75% of State bridges and local bridges non-deficient by the year 2015. According to the bridge condition ratings calculated by the SMTc, the State bridges were 71% non-deficient, and the local bridges were 56% non-deficient in 2008.



<b>Town Bridges</b>	<b>Village Bridges</b>	<b>Thruway Bridges</b>
Yellow Diamond: Deficient	Yellow Circle: Deficient	Yellow Star: Deficient
Green Diamond: Non Deficient	Green Circle: Non Deficient	Green Star: Non Deficient
Red Diamond: Priority Deficient		Red Star: Priority Deficient
<b>County Bridges</b>	<b>City Bridges</b>	<b>State Bridges</b>
Yellow Plus: Deficient	Yellow Square: Deficient	Yellow Triangle: Deficient
Green Plus: Non Deficient	Green Square: Non Deficient	Green Triangle: Non Deficient
Red Plus: Priority Deficient	Red Square: Priority Deficient	Red Triangle: Priority Deficient

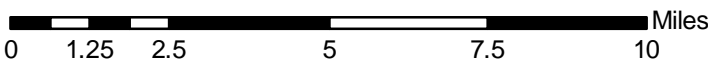


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## Bridge Ratings in the MPA

Bridge & Pavement Condition Management System

Exhibit 1

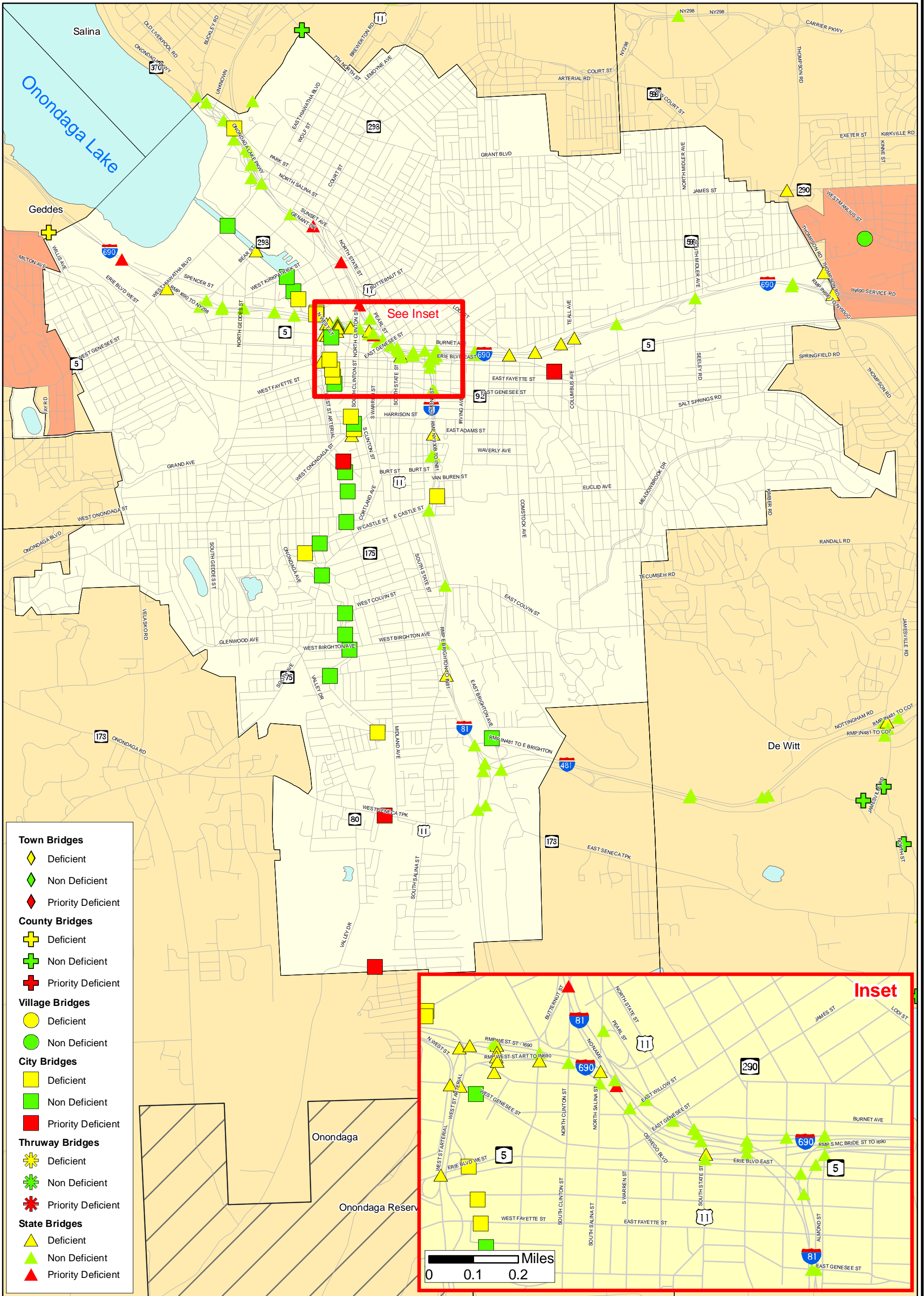


This map is for presentation purposes only. The SMTC does not guarantee the accuracy or completeness of this map.



- Roads
- Water
- City of Syracuse
- Villages
- Onondaga Reservation
- Towns
- MPA

Basemap Copyrighted by NYSDOT.  
Data Sources: SMTC, NYSDOT 2007  
Prepared by SMTC, 6/2009



# Bridge Ratings in the City of Syracuse

Bridge & Pavement Condition Management System

Exhibit 2

**SMTC**  
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0 0.25 0.5 1 1.5 2 Miles

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- Roads
- City of Syracuse
- Villages
- Onondaga Reservation
- Towns
- Water

Basemap Copyrighted by NYSDOT.  
Data Sources: SMTC, NYSDOT 2007  
Prepared by SMTC, 6/2009

## Exhibit 3

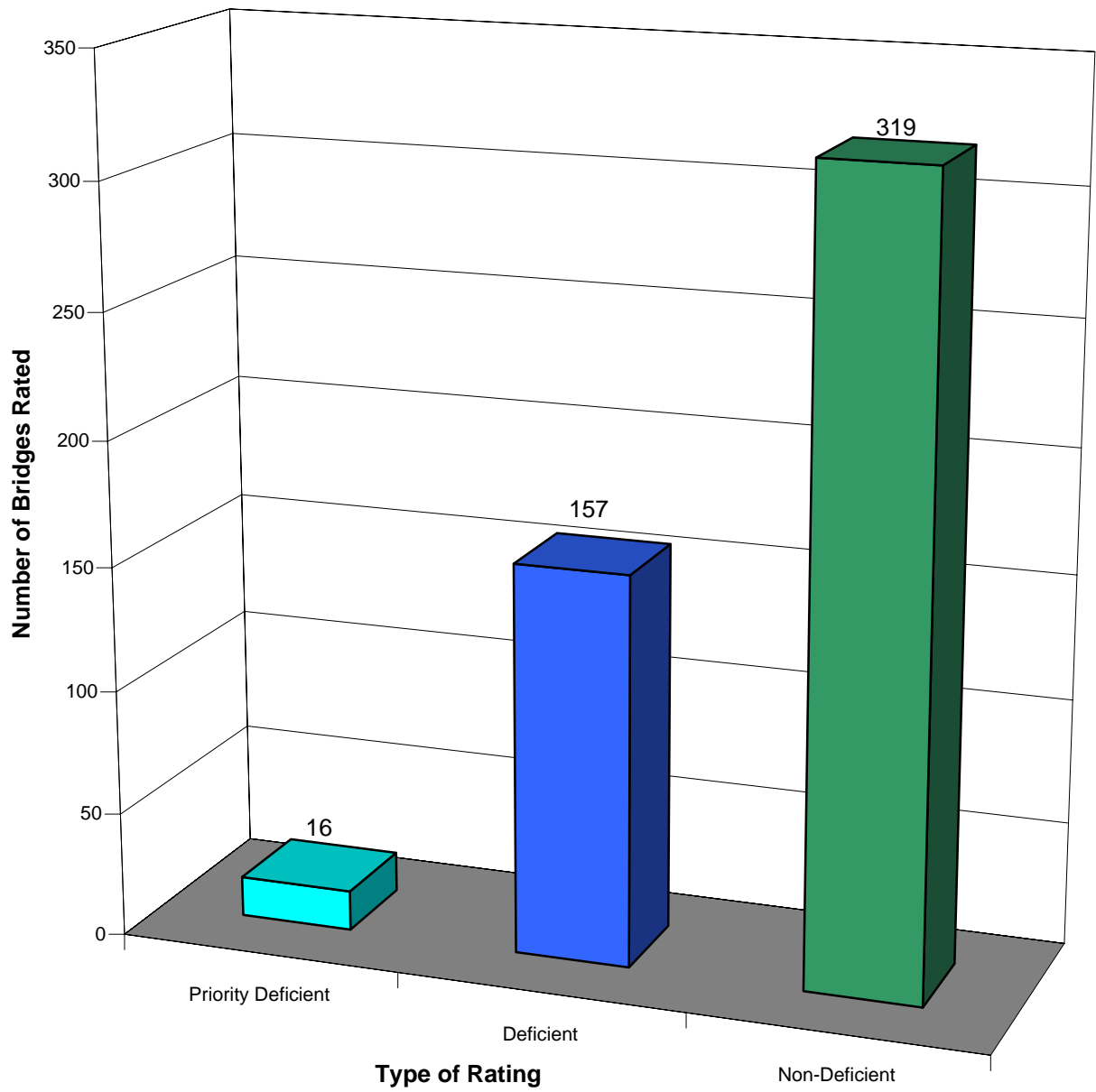
### Bridge Jurisdiction and Ratings

Bridge Jurisdiction	Total Number of Bridges	Non-Deficient		Priority Deficient Bridges		Deficient Bridges (non-priority deficient)		Deficient Bridges (both deficient and priority deficient)	
		Amount	Percentage	Amount	Percentage	Amount	Percentage	Amount	Percentage
City of Syracuse	32	16	50%	4	13%	12	38%	16	50%
Onondaga County DOT	96	66	69%	1	1%	29	30%	30	31%
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	298	211	71%	8	3%	79	27%	87	29%
New York State Thruway Authority	41	13	32%	2	5%	26	63%	28	68%
Towns in the MPA	14	6	43%	1	7%	7	50%	8	57%
Villages in the MPA	7	3	43%	0	0%	4	57%	4	57%
<b>Total</b>	<b>492</b>	<b>319</b>	<b>65%</b>	<b>16</b>	<b>3%</b>	<b>157</b>	<b>32%</b>	<b>173</b>	<b>35%</b>

\*A deficient rating includes all bridges rated as deficient as well as all priority deficient bridges.

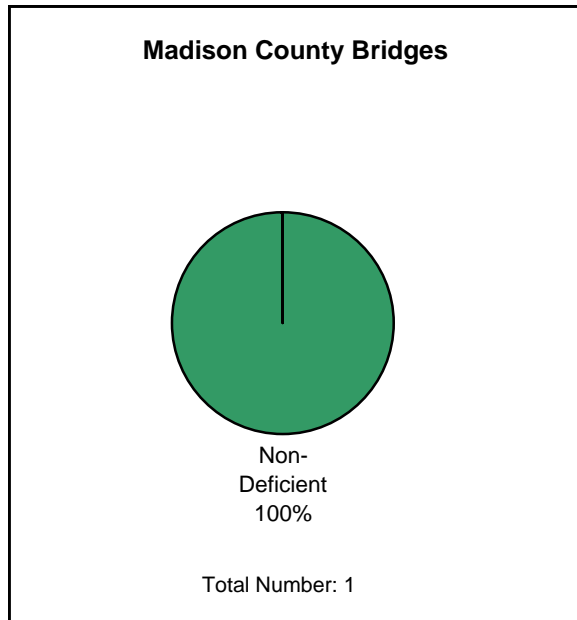
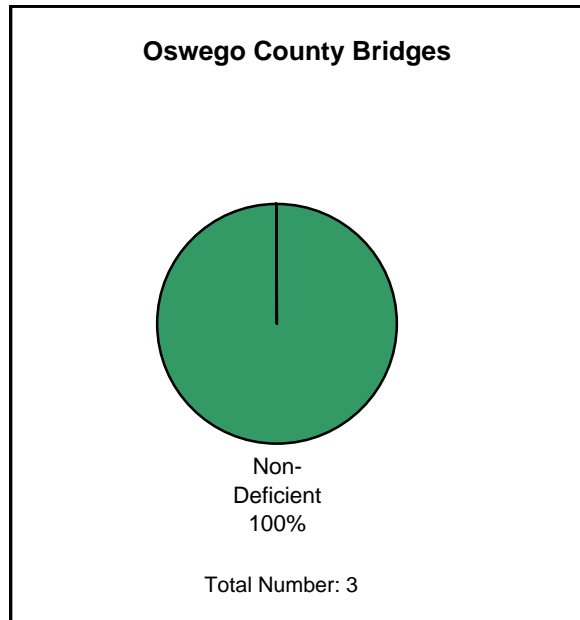
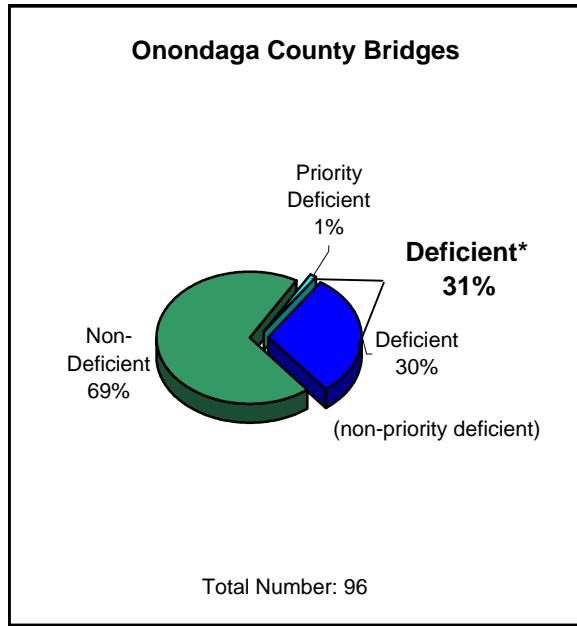
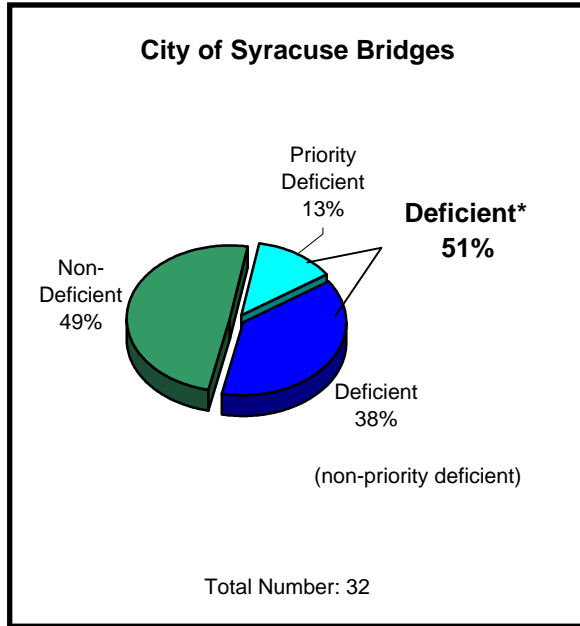
## Exhibit 4

### Total Bridges Rated



**Exhibit 5  
Part I**

**Bridge Ratings by Jurisdiction**



Deficient

■ Deficient (non-priority deficient)

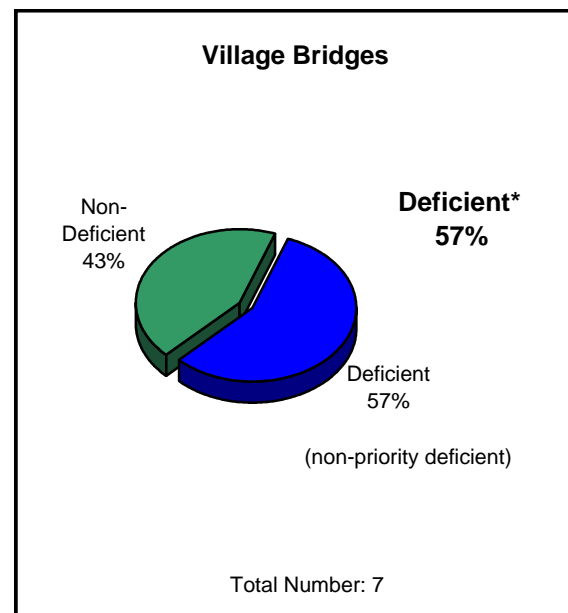
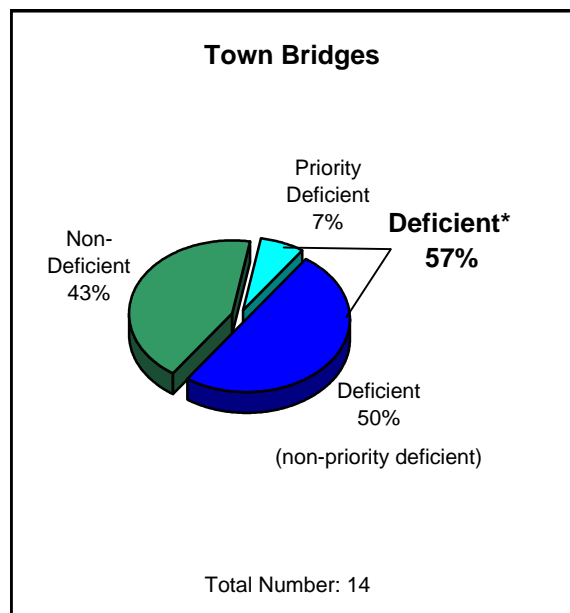
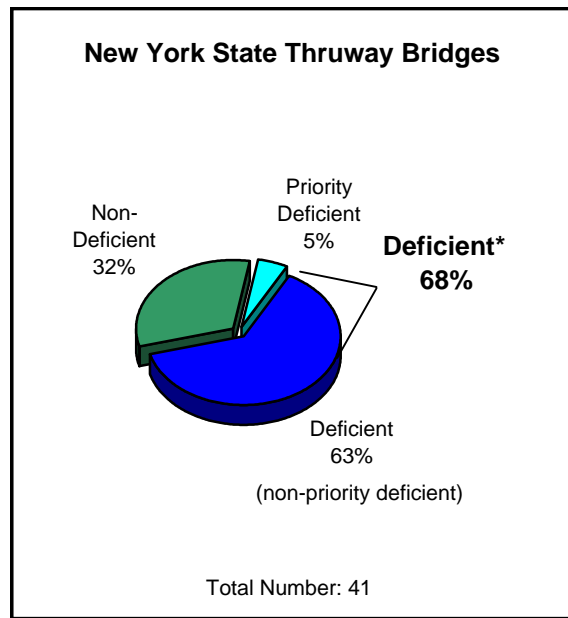
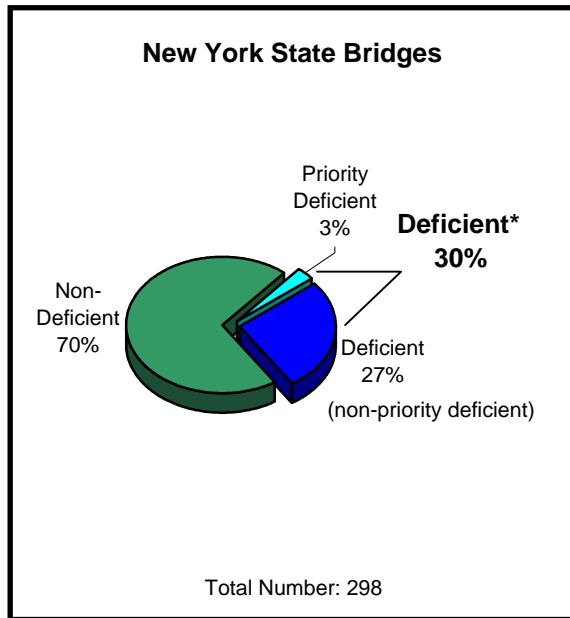
■ Priority Deficient

■ Non-Deficient

\*A deficient rating includes all bridges rated as deficient as well as all priority deficient bridges.

## Exhibit 5 Part II

### Bridge Ratings by Jurisdiction



Deficient

■ Deficient (non-priority deficient)

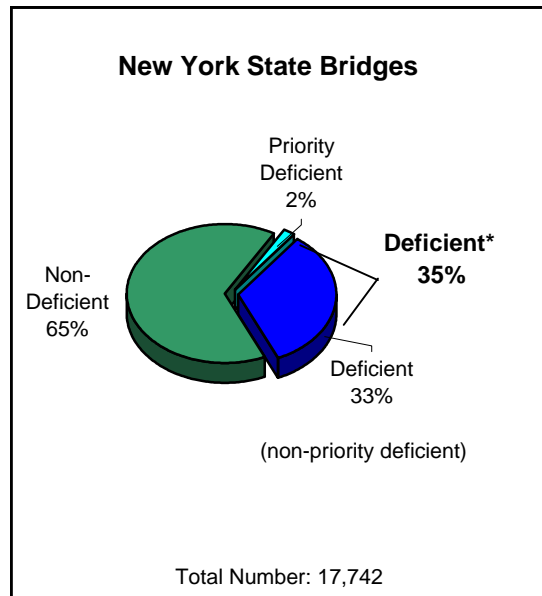
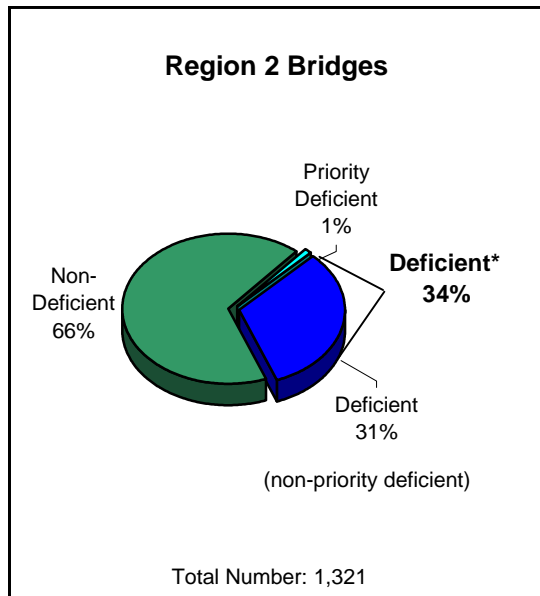
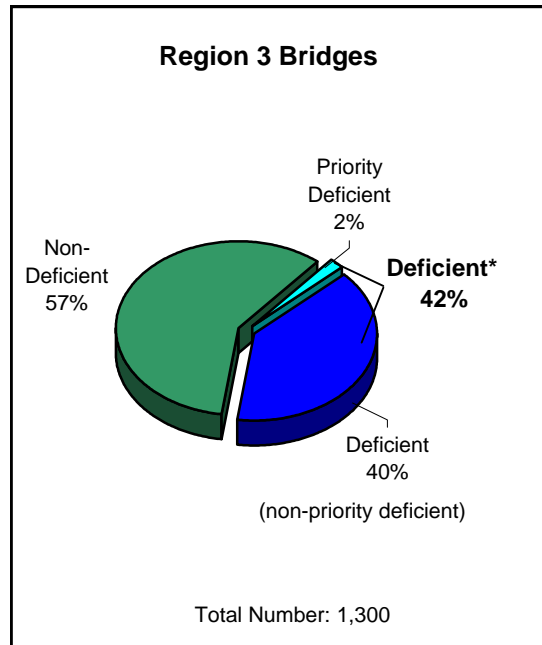
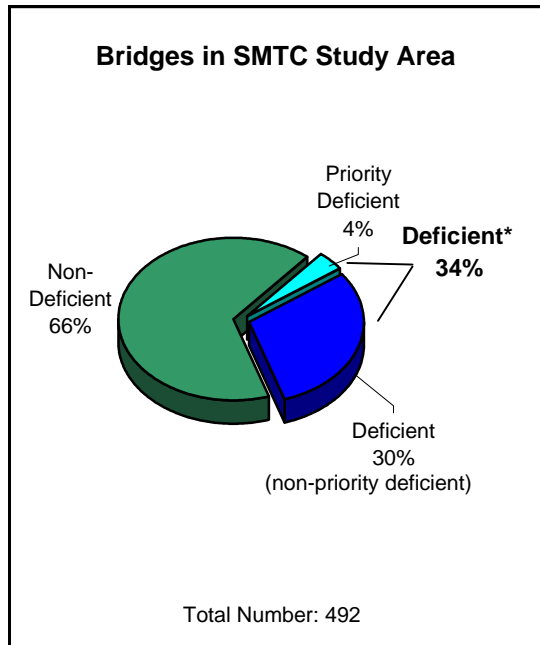
■ Non-Deficient

■ Priority Deficient

\*A deficient rating includes all bridges rated as deficient as well as all priority deficient bridges.

## Exhibit 6

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



Deficient

■ Deficient (non-priority deficient)

■ Priority Deficient

■ Non-Deficient

\*A deficient rating includes all bridges rated as deficient as well as all priority 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 town and village local federal-aid eligible roads 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. Through including town and village local federal-aid eligible road ratings, more municipalities may be aware that they have the opportunity to apply for federal transportation funding to assist with their capital projects that may improve the pavement conditions for the traveling public in the MPA.



Newport Road, Camillus



East Genesee Street, Syracuse

In this document, pavement ratings are represented in two sections. Section one presents/details data for all rated roads, both federal-aid eligible and non federal-aid eligible, within the SMTCC MPA.

For this section, pavement data is presented in the following pages under the heading of City of Syracuse, Local Federal-aid Eligible, Onondaga County, Madison County, Oswego County, New York State and New York State Thruway Pavement Ratings.

The second section presents data through charts and tables for all federal-aid eligible roads under the jurisdictions of the City of Syracuse, Local Federal-aid Eligible, Onondaga, Madison or Oswego County, New York State and the New York State Thruway Authority. Data are presented in the following pages under the section of Federal-Aid Eligible 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). Although each jurisdiction rates a percentage of roads under their ownership each year, these ratings portray only a sample of data for the entire MPA. Overall, the majority of roads in the MPA are under Town/Village jurisdiction otherwise referred to as “Local” ownership, which are not rated unless federal-aid eligible. These “Local” owned roads account for 1,636 centerline miles or 46% of the total MPA area. Only 4%, or 54.4 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 427 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 402.3 centerline miles of road in the City of Syracuse were rated.
- Twenty-five (25) centerline miles of the 427 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, 38%, 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 54.4 centerline miles of local federal-aid eligible roads are rated.
- Of the various pavement rating categories (excellent, good, fair, poor and no data), the highest percentage of rated roads, 60%, were classified as “fair”.
- The average rating for the local roads is 6.5 (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 NYSDOT rating scales are deemed as 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. Due to this rating cycle, there are roads that have not been rated in several years. To account for plausible system deterioration, this year, 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 802.2 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, 57%, were classified as “good”.
- The average rating for the county roads is 7.0 (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 SMTM 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 12.1 centerline miles were rated.
- Of the various rating categories, the highest percentage of rated roads, 56% were classified as “good”.
- The average rating for Oswego County roads is 7.2 (good condition).

### **3.1.v Madison County Pavement Ratings**

Like Oswego County, Madison County does not have an established pavement management system. Therefore, NYSDOT rated all Madison County owned roads, both FAE and non-FAE in the SMTM 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 10.9 centerline miles were rated.
- Of the various rating categories, the highest percentage of rated roads, 73%, were classified as “good”.
- The average rating for Madison County roads is 7.2 (good condition).

### **3.1.vi New York State 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 459.1 centerline miles of the New York State DOT roads are rated.
- Of the various pavement rating categories (excellent, good, fair, poor and under construction), the highest percentage of rated roads, 43%, were classified as “good” and 34% were classified as “fair”.
- The average rating for the state roads is 7.2 (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:

- The MPA has 12% excellent roads, while NYSDOT Region 2 has 6%, Region 3 has 14% and the state has 10% excellent roads.
- Additionally, NYSDOT Region 2 has 66% good roads, 25% fair, and 3% poor roads.
- NYSDOT Region 3 has 52% good roads, 32% fair, and 1% poor roads.
- New York State has 52% good roads, 33% fair, and 5% poor roads.
- The MPA has 49% good roads, 23% fair and 17% poor roads.
- Overall, the MPA, NYSDOT Region 3 and New York State have relatively similar pavement condition ratings – between 10-14% Excellent, between 49-52% Good, between 23-33% Fair and between 1-17% 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 29.6 centerline miles of New York State Thruway Authority roads are rated.
- Approximately 2.9 miles were not given a rating due to the ongoing construction on the Thruway.
- Of the various pavement rating categories (excellent, good, fair, poor and no data), the highest percentage of rated roads, 98%, were classified as “good”.
- The average rating for the New York State Thruway pavement is 7.2 (good condition).

# Exhibit 7

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

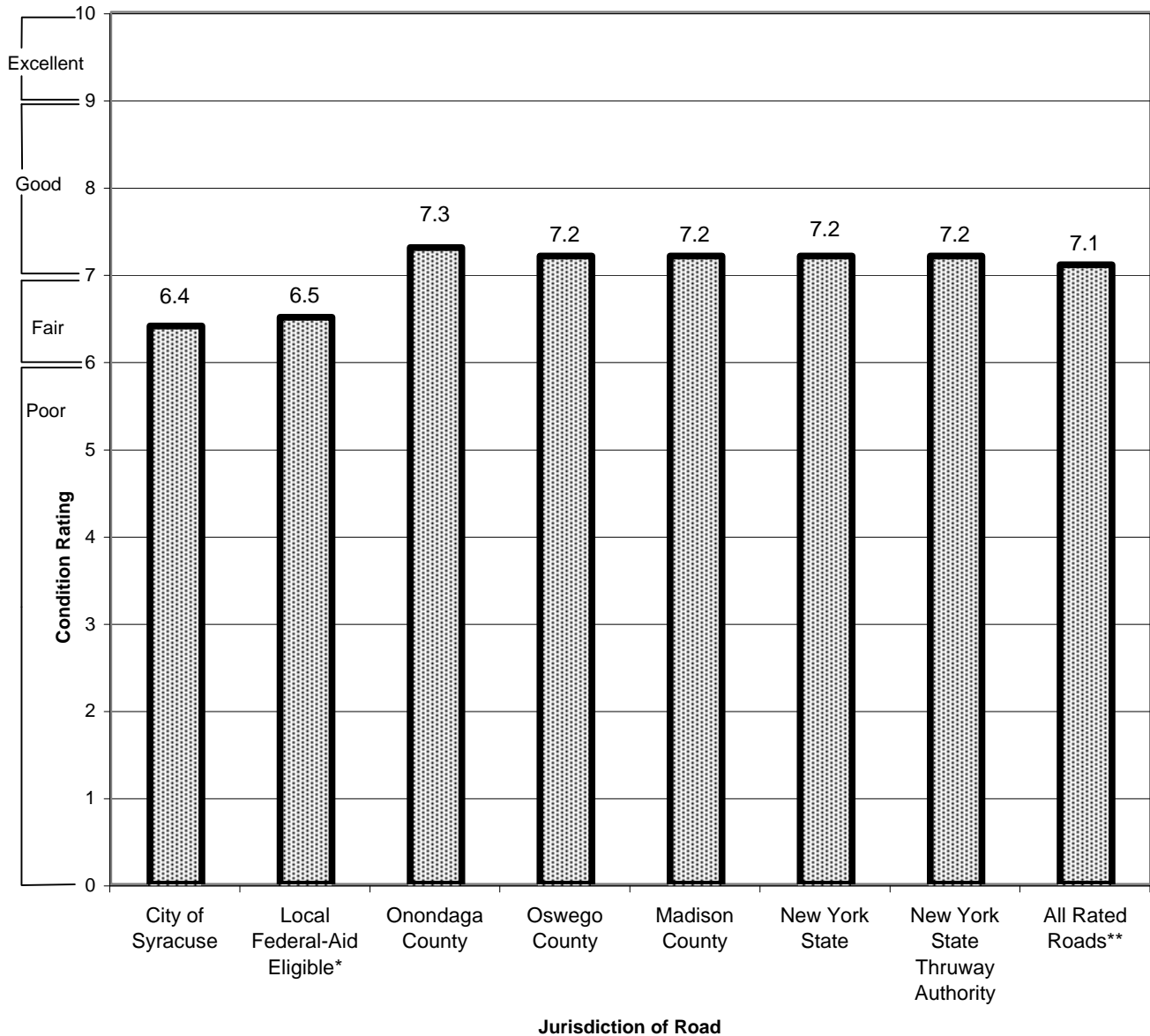
	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads by Jurisdiction	Average Rating
<b>City of Syracuse</b>				6.4 (Fair)
Excellent	184,026	34.9	9%	
Good	814,180	154.2	38%	
Fair	520,213	98.5	24%	
Poor	605,725	114.7	29%	
<b>Total</b>	<b>2,124,144</b>	<b>402.3</b>	<b>100%</b>	
<b>Local Federal-Aid Eligible</b>				6.5 (Fair)
Excellent	35,767	6.8	12%	
Good	48,596	9.2	17%	
Fair	171,097	32.4	60%	
Poor	31,881	6.0	11%	
<b>Total</b>	<b>287,341</b>	<b>54.4</b>	<b>100%</b>	
<b>Madison County</b>				7.2 (Good)
Excellent	0	0.0	0%	
Good	41,701	7.9	73%	
Fair	15,786	3.0	27%	
Poor	0	0.0	0%	
<b>Total</b>	<b>57,487</b>	<b>10.9</b>	<b>100%</b>	
<b>Onondaga County</b>				7.3 (Good)
Excellent	330,008	62.5	8%	
Good	2,417,860	457.9	57%	
Fair	932,670	176.6	22%	
Poor	554,929	105.1	13%	
<b>Total</b>	<b>4,235,467</b>	<b>802.2</b>	<b>100%</b>	
<b>Oswego County</b>				7.2 (Good)
Excellent	11,834	2.2	19%	
Good	35,593	6.7	56%	
Fair	16,396	3.1	26%	
Poor	0	0.0	0%	
<b>Total</b>	<b>63,823</b>	<b>12.1</b>	<b>100%</b>	
<b>New York State</b>				7.2 (Good)
Excellent	535,171	101.4	22%	
Good	1,030,571	195.2	43%	
Fair	824,891	156.2	34%	
Poor	33,157	6.3	1%	
<b>Total</b>	<b>2,423,790</b>	<b>459.1</b>	<b>100%</b>	
<b>New York State Thruway</b>				7.2 (Good)
Excellent	0	0.0	0%	
Good	153,595	29.1	98%	
Fair	2,482	0.5	2%	
Poor	0	0.0	0%	
<b>Total</b>	<b>156,077</b>	<b>29.6</b>	<b>100%</b>	
<b>All Rated Roads*</b>				7.1 (Good)
Excellent	1,096,805	207.7	12%	
Good	4,542,097	860.2	49%	
Fair	2,483,535	470.4	27%	
Poor	1,225,692	232.1	13%	
<b>Total</b>	<b>9,348,129</b>	<b>1770.5</b>	<b>100%</b>	

\*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.

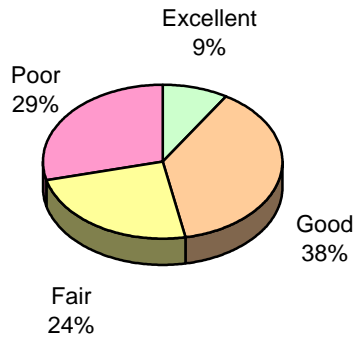
\*Town & Village federal-aid eligible roads.

\*\*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**



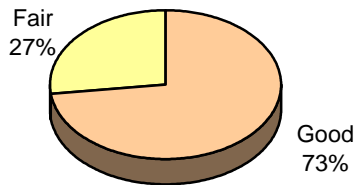
Total centerline miles: 402.3

**Local Federal-Aid Eligible Pavement Ratings**



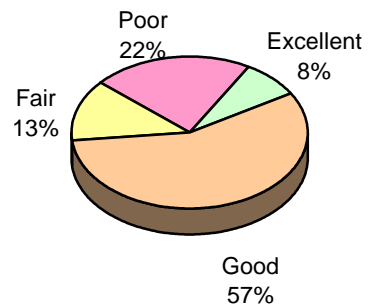
Total centerline miles: 54.4

**Madison County Pavement Ratings**



Total centerline miles: 10.9

**Onondaga County DOT Pavement Ratings**



Total centerline miles: 802.2

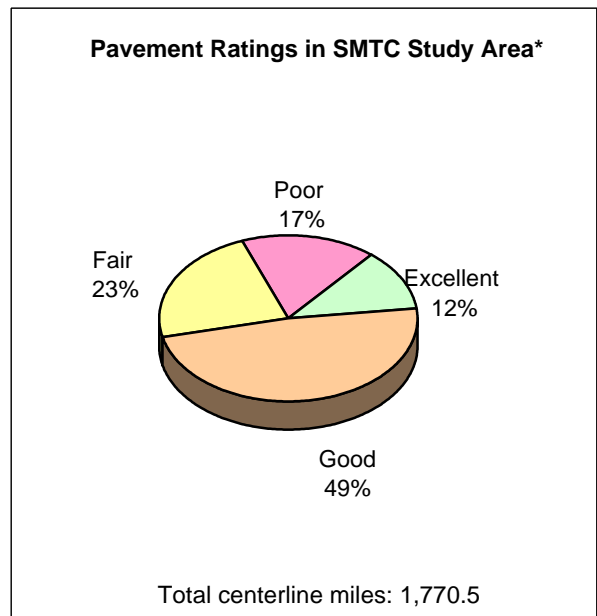
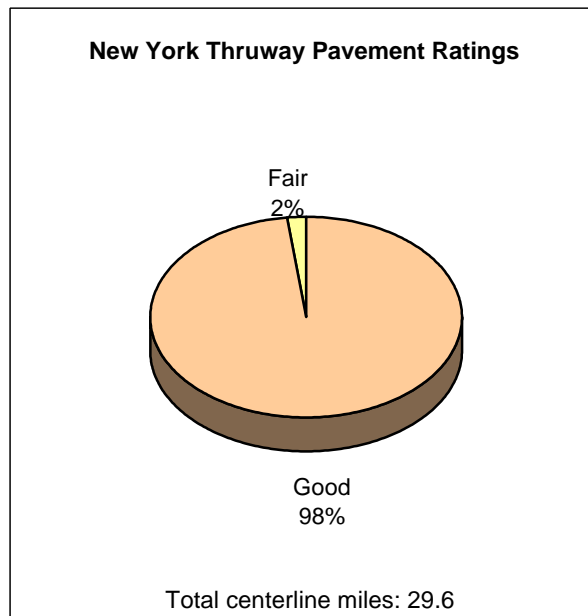
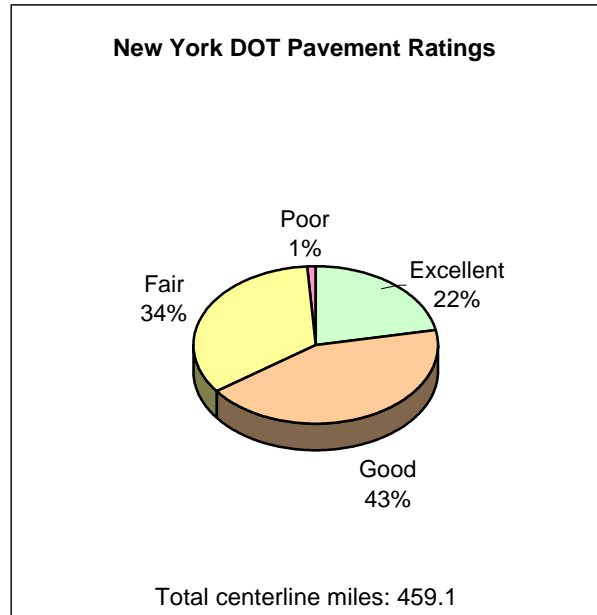
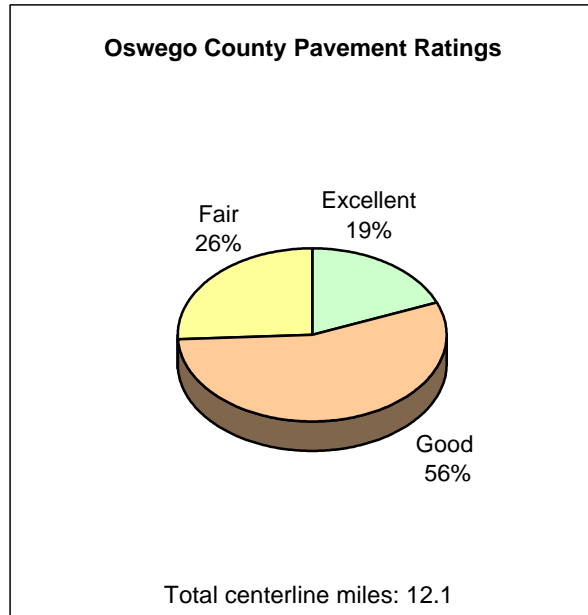
Excellent Good Fair Poor

**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.



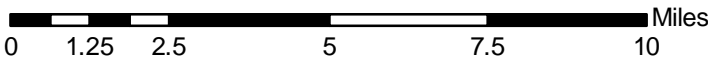
**Road Rating**

- Excellent (9-10)
- Good (7-8)
- Fair (6)
- Poor (1-5)
- No Data/Unrated Road



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

**All Rated Roads\* in SMT C MPA**  
Bridge & Pavement Condition Management System  
Exhibit 10

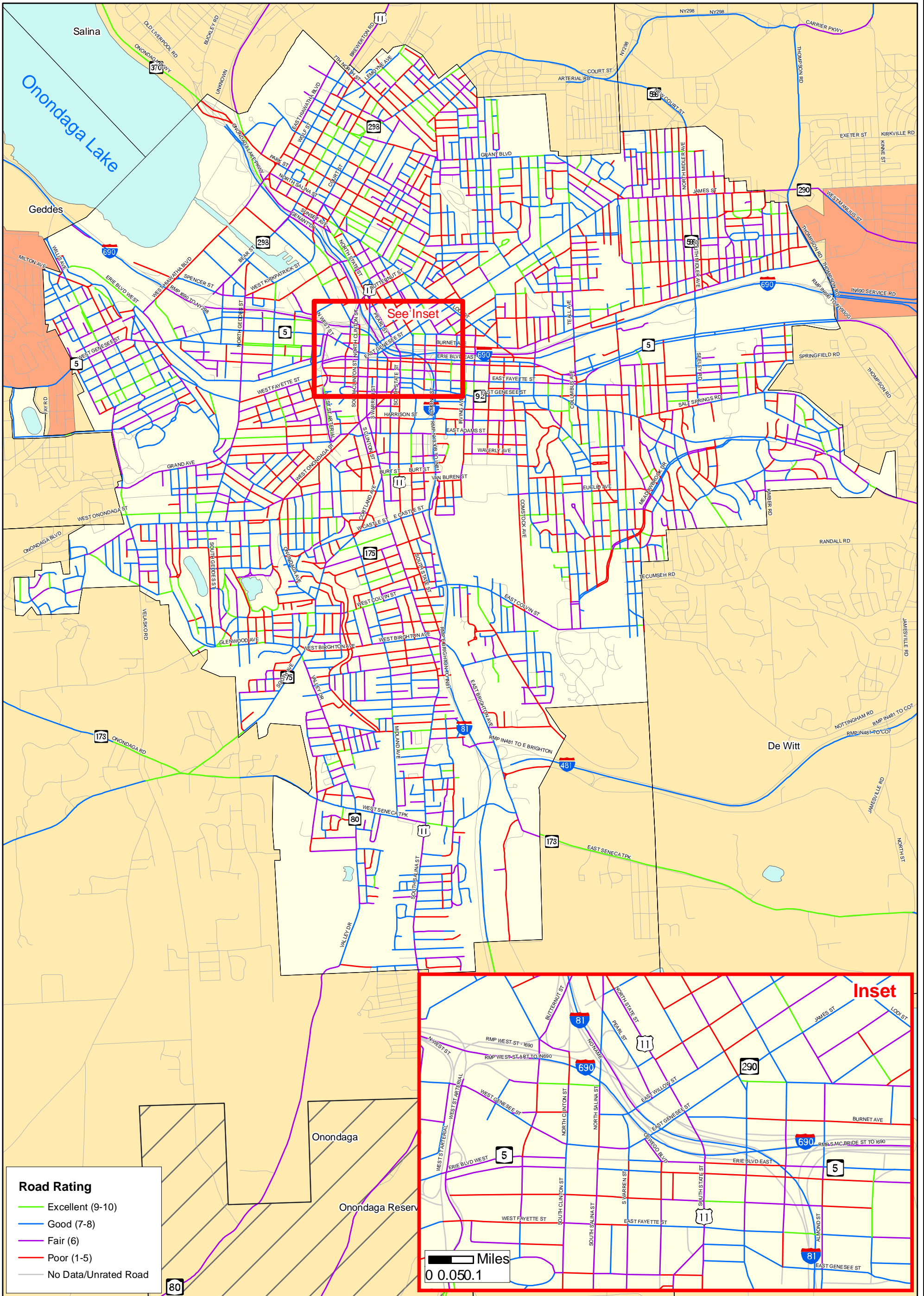


- MPA
- City of Syracuse
- Water
- Villages
- Onondaga Reservation
- Towns

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

Basemap Copyrighted by NYSDOT.  
Data Sources: SMT C, NYSDOT 2007  
Prepared by SMT C, 6/2009

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



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

## 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.



\*Includes all federal aid-eligible and non federal aid-eligible roads.

Basemap Copyrighted by NYSDOT.  
Data Sources: SMTC, NYSDOT 2007  
Prepared by SMTC, 6/2009

- Roads
- Water
- Villages
- City of Syracuse
- Onondaga Reservation
- Towns

### 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.<sup>i</sup>

#### **Urban Classifications**

Urban Principal Arterial (interstate, other freeways and expressways)

Urban Minor Arterial

Urban Collector

Urban Local

#### **Rural Classifications**

Rural Principal Arterial (interstate and other)

Rural Minor Arterial

Rural Major Collector

Rural Minor Collector

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.<sup>ii</sup> 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.

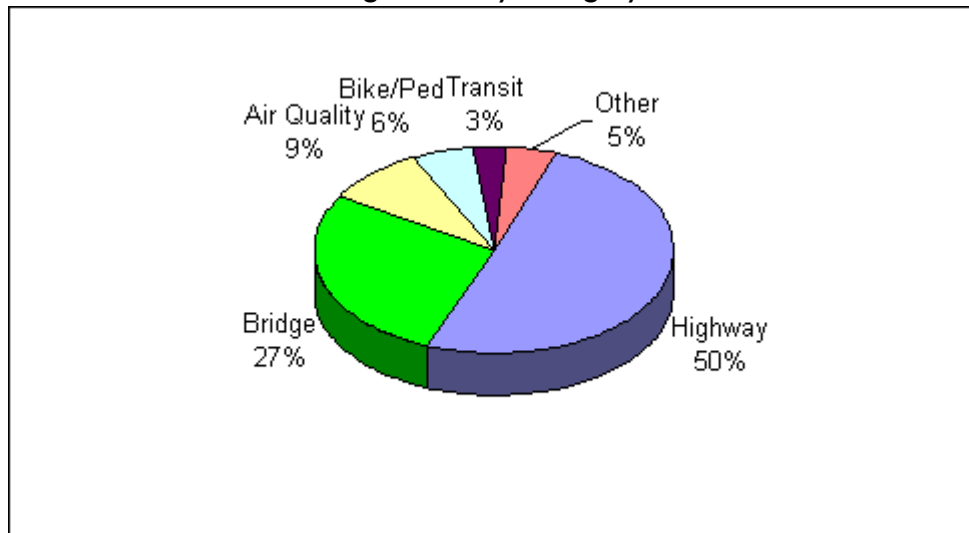
Based on Table 3 below, the 2007-2012 Transportation Improvement Program (TIP) dedicates 50% of the total 2007-12 TIP funding to highway projects (those that are federal-aid eligible). Additionally, 27% of the overall funding is being distributed to bridge specific projects in the SMTC MPA. Total funding programmed over this multi-year period is approximately \$304.763 Million. 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, of which include improving the average pavement condition rating for medium and high volume roads, increasing the number of non-deficient bridges and improving the accessibility, mobility and safety of the existing transportation network in the SMTC MPA.

---

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

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

Table 3 – 2007-2012 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 119.6 miles of centerline miles of road under the jurisdiction of the City of Syracuse, 54.4 miles under local jurisdiction, 9 miles under the jurisdiction of Madison County, 9.6 miles under the jurisdiction of Oswego County, 288 miles under the jurisdiction of Onondaga County, 421.5 under the jurisdiction of New York State, and 32.5 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 illustrates that of all federal-aid eligible roads:

- Of the various pavement rating categories (excellent, good, fair, poor and no data), the highest percentage of rated roads in the excellent category fall under New York State's jurisdiction, 23 %.
- Of the various pavement rating categories (excellent, good, fair, poor and no data), the highest percentage of rated roads in the poor category fall under the City's jurisdiction, 24%.

# Exhibit 12

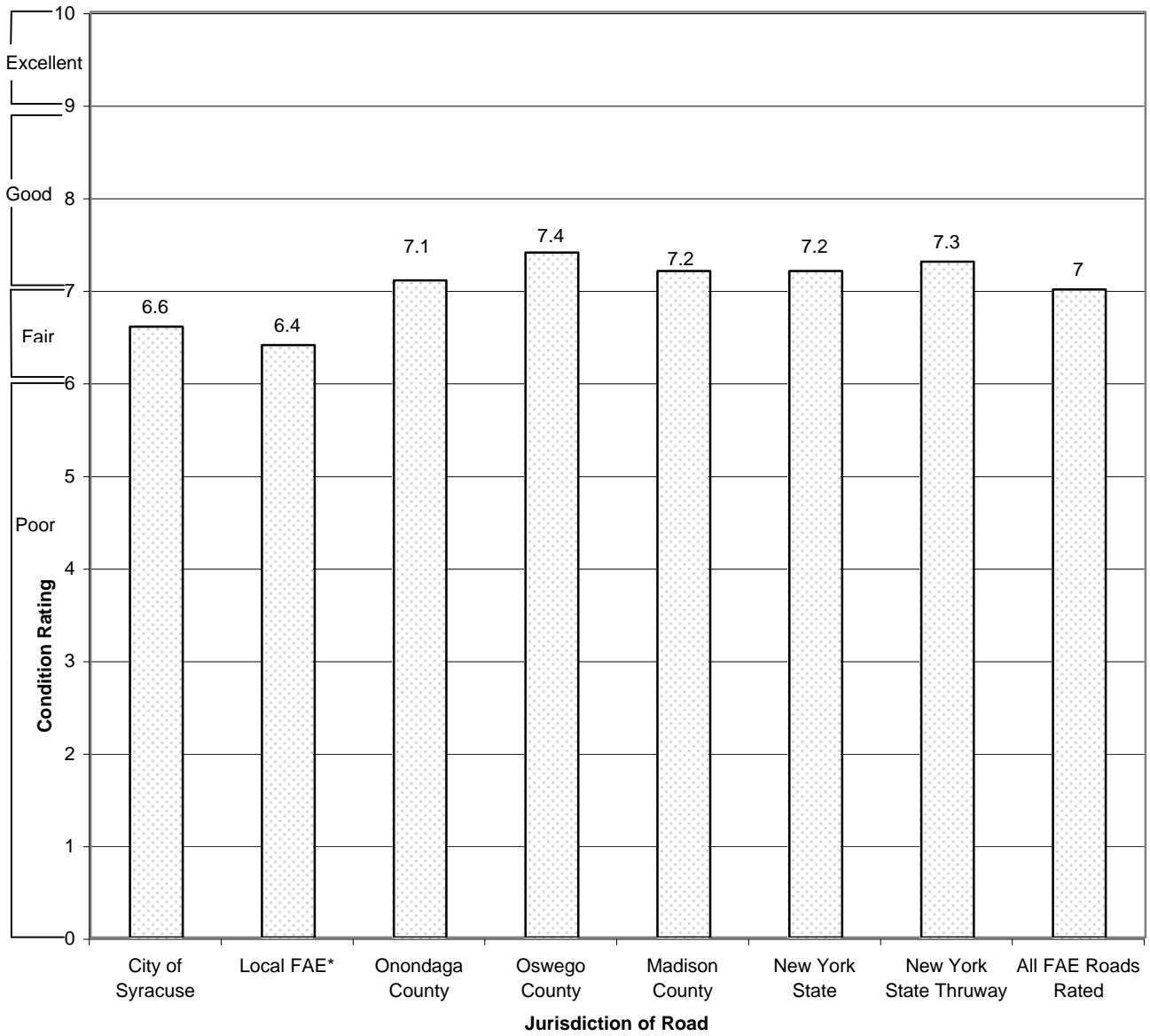
## Pavement Ratings for Federal-Aid Eligible Roads

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads	Average Rating
<b>City of Syracuse</b>				
				6.6 (Good)
Excellent	41618.438	7.9	7%	
Good	151271.492	28.6	24%	
Fair	288777.351	54.7	46%	
Poor	149651.2	28.3	24%	
<b>Total</b>	<b>631,318</b>	<b>119.6</b>	<b>100%</b>	
<b>Local Federal-Aid Eligible</b>				
				6.4 (Fair)
Excellent	30,318	5.7	11%	
Good	36,273	6.9	13%	
Fair	171,097	32.4	63%	
Poor	31,881	6.0	12%	
<b>Total</b>	<b>269,568</b>	<b>51.1</b>	<b>100%</b>	
<b>Madison County</b>				
				7.2 (Good)
Excellent	0	0.0	0%	
Good	31,731	6.0	67%	
Fair	15,786	3.0	33%	
Poor	0	0.0	0%	
<b>Total</b>	<b>47,517</b>	<b>9.0</b>	<b>100%</b>	
<b>Onondaga County</b>				
				7.2 (Good)
Excellent	180,620	34.2	12%	
Good	763,711	144.6	50%	
Fair	312,731	59.2	21%	
Poor	263,841	50.0	17%	
<b>Total</b>	<b>1,520,903</b>	<b>288.0</b>	<b>100%</b>	
<b>Oswego County</b>				
				7.4 (Good)
Excellent	11,787	2.2	23%	
Good	30,181	5.7	60%	
Fair	8,636	1.6	17%	
Poor	0	0.0	0%	
<b>Total</b>	<b>50,604</b>	<b>9.6</b>	<b>100%</b>	
<b>New York State</b>				
				7.2 (Good)
Excellent	514,672	97.5	23%	
Good	977,216	185.1	43%	
Fair	743,033	140.7	33%	
Poor	22,345	4.2	1%	
<b>Total</b>	<b>2,257,266</b>	<b>427.5</b>	<b>100%</b>	
<b>New York State Thruway</b>				
				7.3 (Good)
Excellent	0	0.0	0%	
Good	153,595	29.1	98%	
Fair	2,482	0.5	2%	
Poor	0	0.0	0%	
<b>Total</b>	<b>156,077</b>	<b>29.6</b>	<b>100%</b>	
<b>All Federal-Aid Eligible</b>				
				7.0 (Good)
Excellent	779,015	147.5	16%	
Good	2,143,978	406.1	43%	
Fair	1,542,542	292.1	31%	
Poor	467,719	88.6	9%	
<b>Total</b>	<b>4,933,254</b>	<b>934.3</b>	<b>100%</b>	

- 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



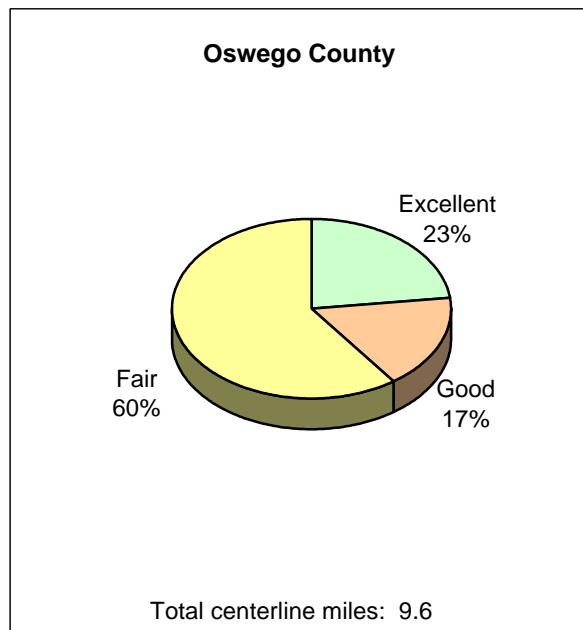
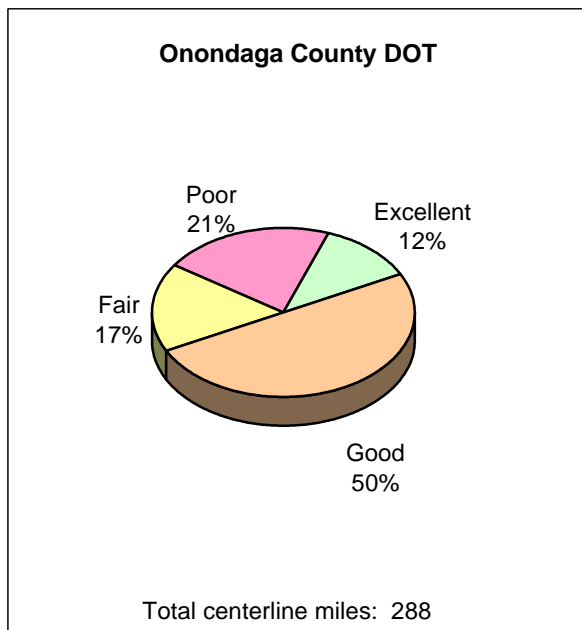
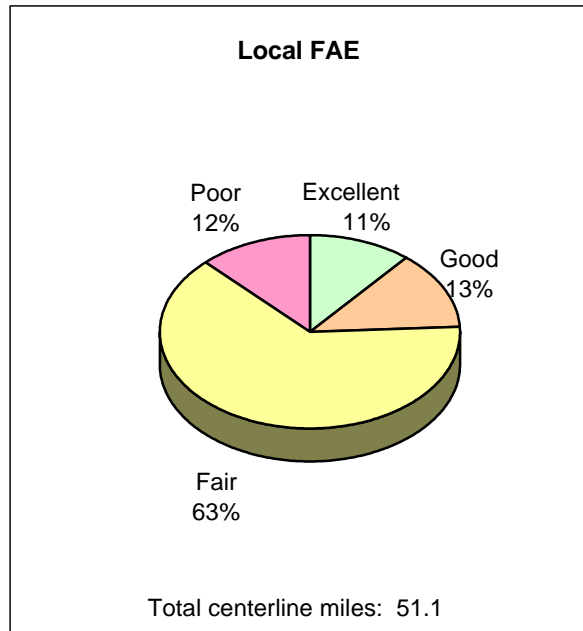
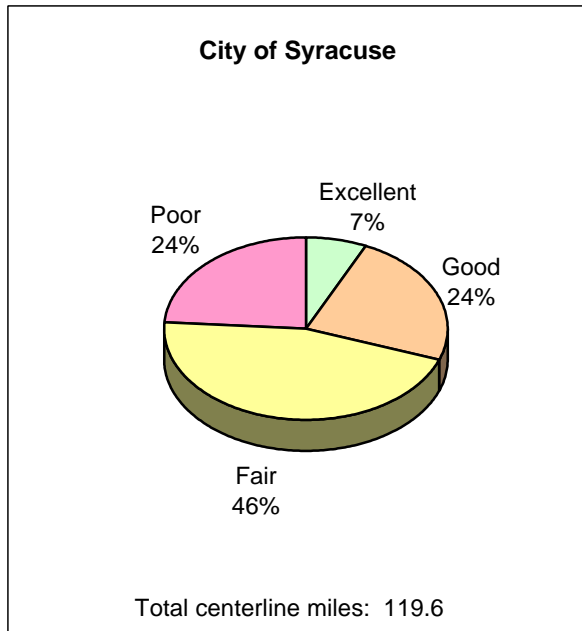
#### Notes:

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**

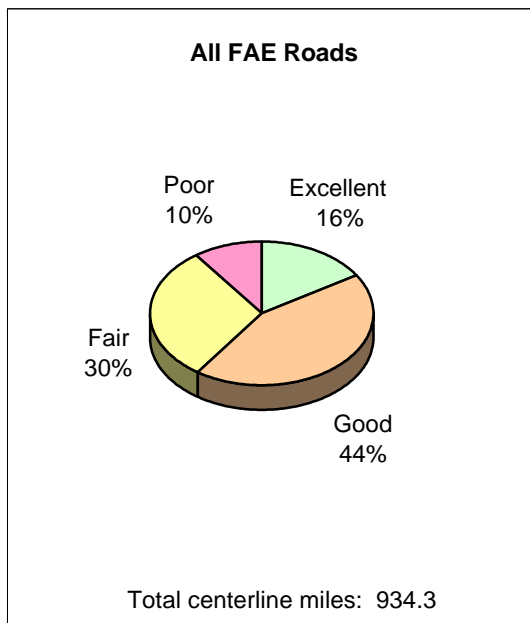
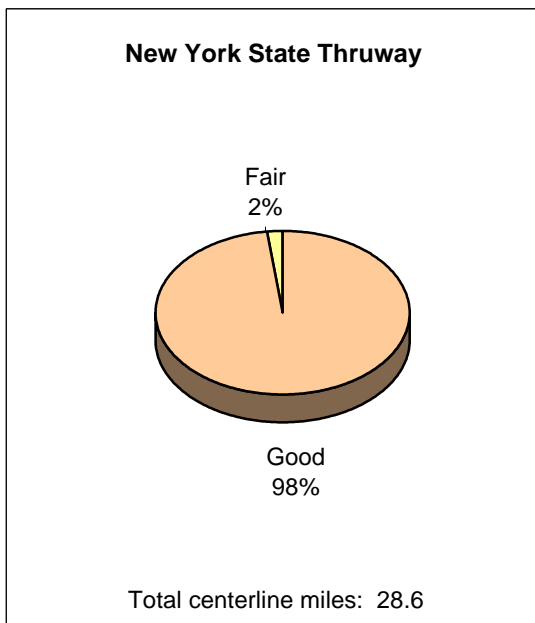
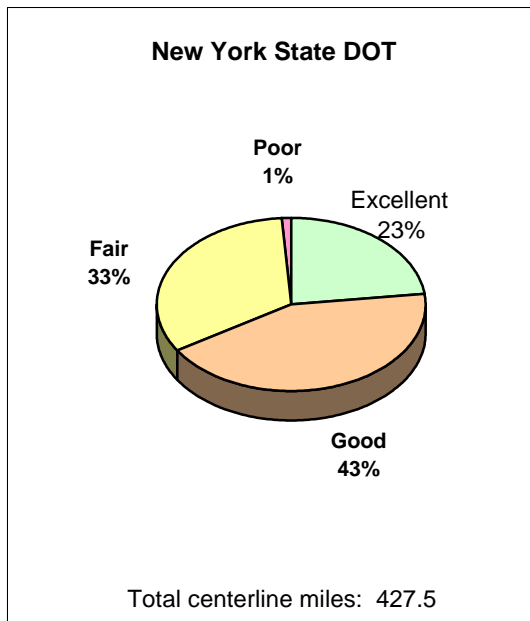
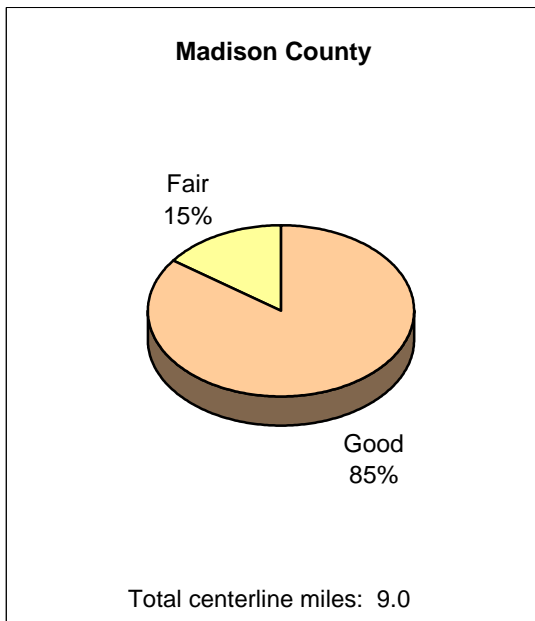


Excellent Good Fair Poor

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.

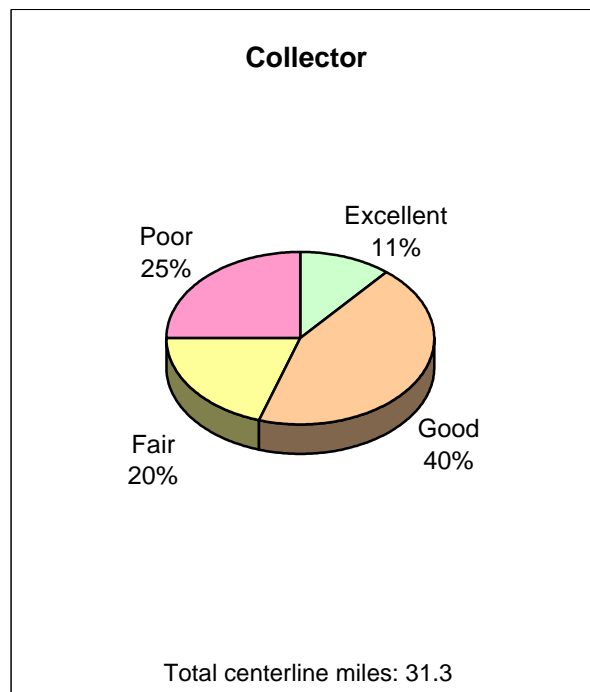
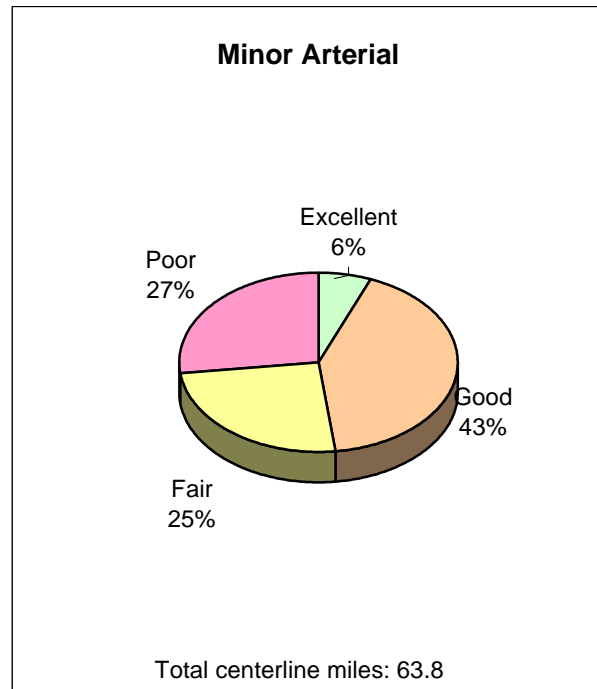
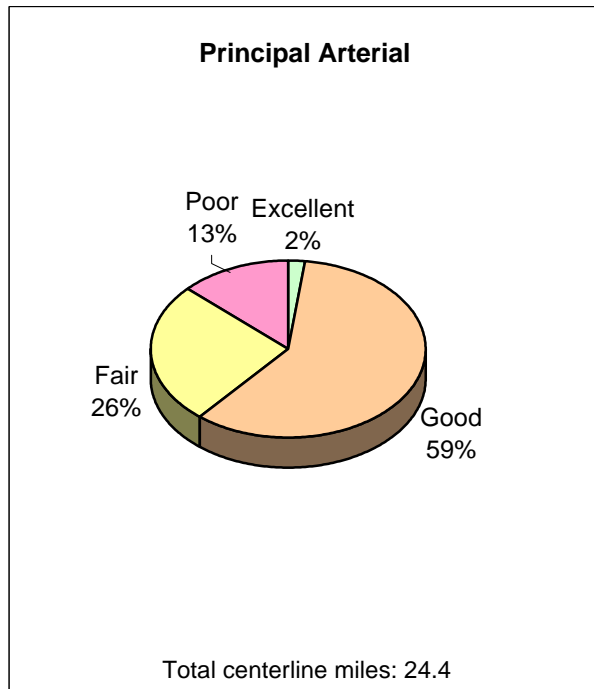
**Exhibit 15**  
**Pavement Ratings by Functional Classification**  
**City of Syracuse**

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
<b>City of Syracuse</b>			
<b>Principal Arterial</b>			
Excellent	2671.314	0.5	2%
Good	75762.098	14.3	59%
Fair	34090.721	6.5	26%
Poor	16247.034	3.1	13%
<b>Total</b>	<b>128,771</b>	<b>24.4</b>	<b>100%</b>
<b>Minor Arterial</b>			
Excellent	20563.416	3.9	6%
Good	140337.794	26.6	42%
Fair	83728.064	15.9	25%
Poor	92474.071	17.5	27%
<b>Total</b>	<b>337,103</b>	<b>63.8</b>	<b>100%</b>
<b>Collector</b>			
Excellent	18383.708	3.5	11%
Good	72677.459	13.8	44%
Fair	33452.707	6.3	20%
Poor	40930.095	7.8	25%
<b>Total</b>	<b>165,444</b>	<b>31.3</b>	<b>100%</b>
<b>All Federal-Aid City Roads</b>			
Excellent	41,618	7.9	7%
Good	288,777	54.7	46%
Fair	151,271	28.6	24%
Poor	149,651	28.3	24%
<b>Total</b>	<b>631,318</b>	<b>119.6</b>	<b>100%</b>

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.

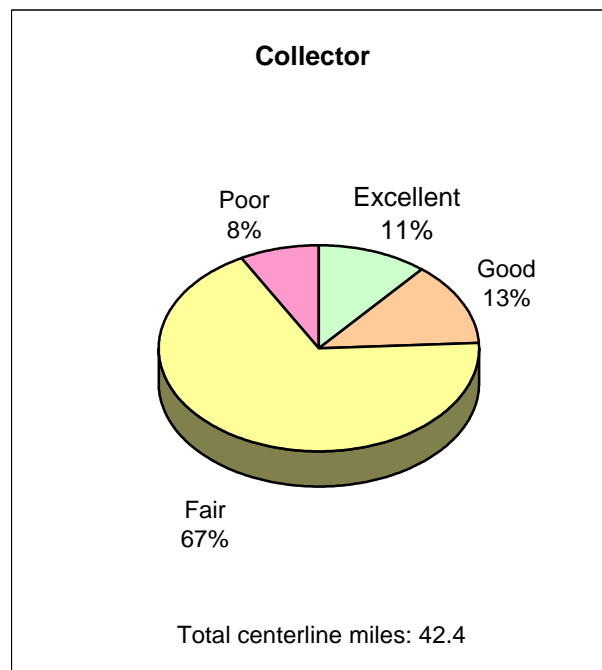
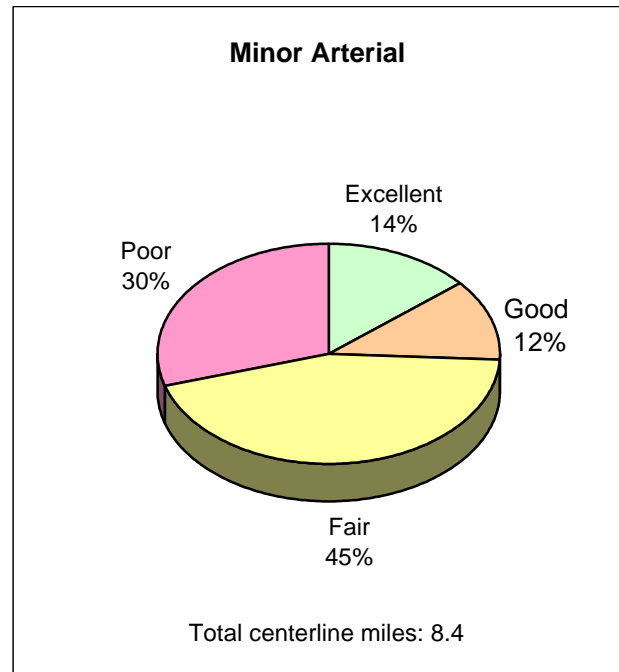
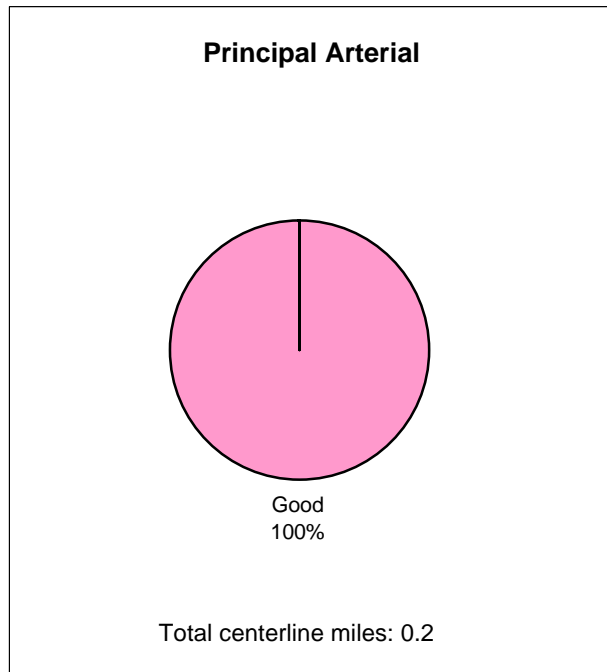
**Exhibit 17**  
**Pavement Ratings by Functional Classification**  
**Local Federal-Aid Eligible Roads**

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
<b>Local Federal-Aid Eligible</b>			
<b>Principal Arterial</b>			
Excellent	0	0.0	0%
Good	871	0.2	100%
Fair	0	0.0	0%
Poor	0	0.0	0%
<b>Total</b>	<b>871</b>	<b>0.2</b>	<b>100%</b>
<b>Minor Arterial</b>			
Excellent	6,153	1.2	14%
Good	5,160	1.0	12%
Fair	20,082	3.8	45%
Poor	13,215	2.5	30%
<b>Total</b>	<b>44,609</b>	<b>8.4</b>	<b>100%</b>
<b>Collector</b>			
Excellent	24,164	4.6	11%
Good	30,242	5.7	13%
Fair	151,015	28.6	67%
Poor	18,667	3.5	8%
<b>Total</b>	<b>224,088</b>	<b>42.4</b>	<b>100%</b>
<b>All Federal-Aid Roads</b>			
Excellent	30,317	5.7	11%
Good	36,272	6.9	13%
Fair	171,097	32.4	63%
Poor	31,881	6.0	12%
<b>Total</b>	<b>269,567</b>	<b>51.1</b>	<b>100%</b>

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.

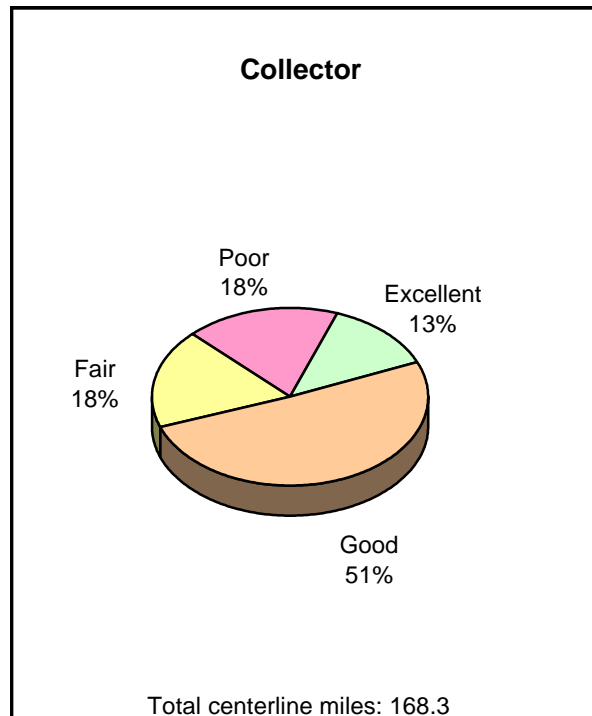
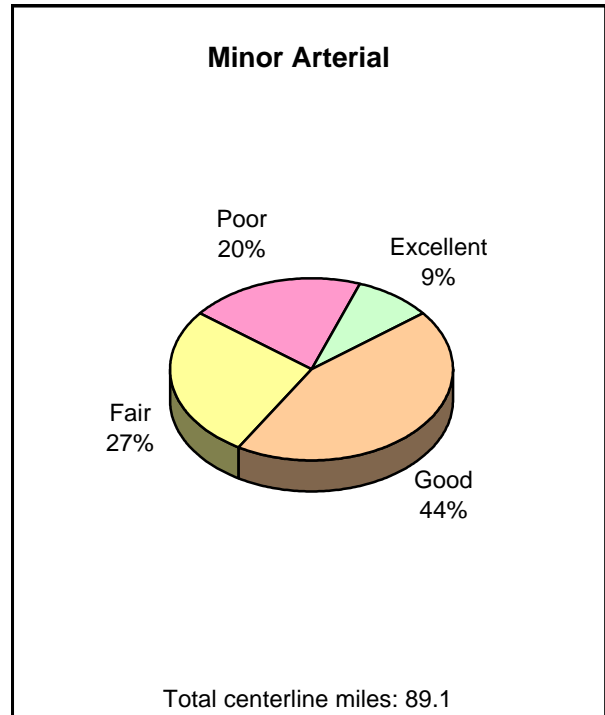
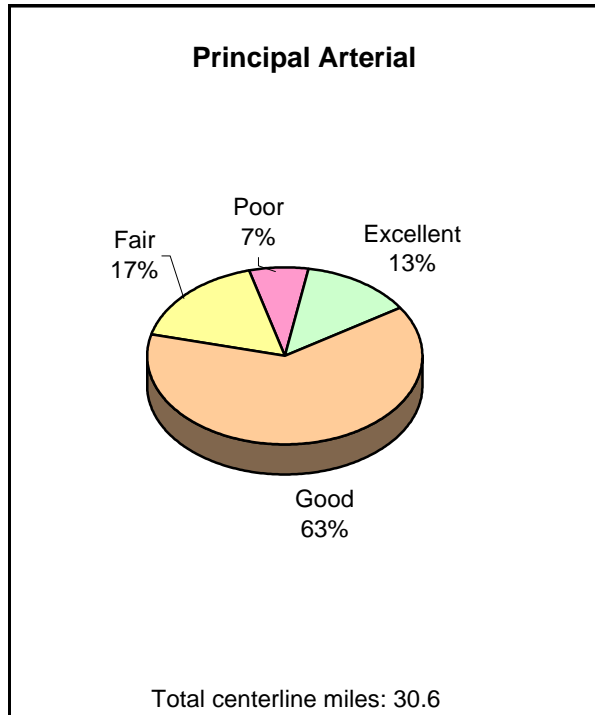
**Exhibit 19**  
**Pavement Ratings by Functional Classification**  
**Onondaga County DOT Roads**

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
<b>Onondaga County</b>			
<b>Principal Arterial</b>			
Excellent	21,378	4.0	13%
Good	101,777	19.3	63%
Fair	27,015	5.1	17%
Poor	11,316	2.1	7%
<b>Total</b>	<b>161,485</b>	<b>30.6</b>	<b>100%</b>
<b>Minor Arterial</b>			
Excellent	40,635	7.7	9%
Good	206,489	39.1	44%
Fair	128,722	24.4	27%
Poor	94,866	18.0	20%
<b>Total</b>	<b>470,712</b>	<b>89.1</b>	<b>100%</b>
<b>Collector</b>			
Excellent	118,607	22.5	13%
Good	455,445	86.3	51%
Fair	156,994	29.7	18%
Poor	157,659	29.9	18%
<b>Total</b>	<b>888,706</b>	<b>168.3</b>	<b>100%</b>
<b>All County Federal-Aid Roads</b>			
Excellent	180,620	34.2	12%
Good	763,711	144.6	50%
Fair	312,731	59.2	21%
Poor	263,841	50.0	17%
<b>Total</b>	<b>1,520,903</b>	<b>288.0</b>	<b>100%</b>

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.

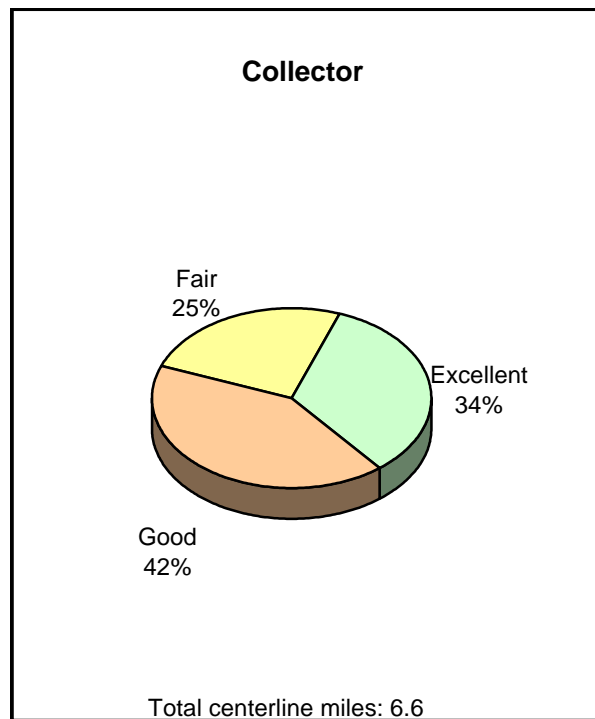
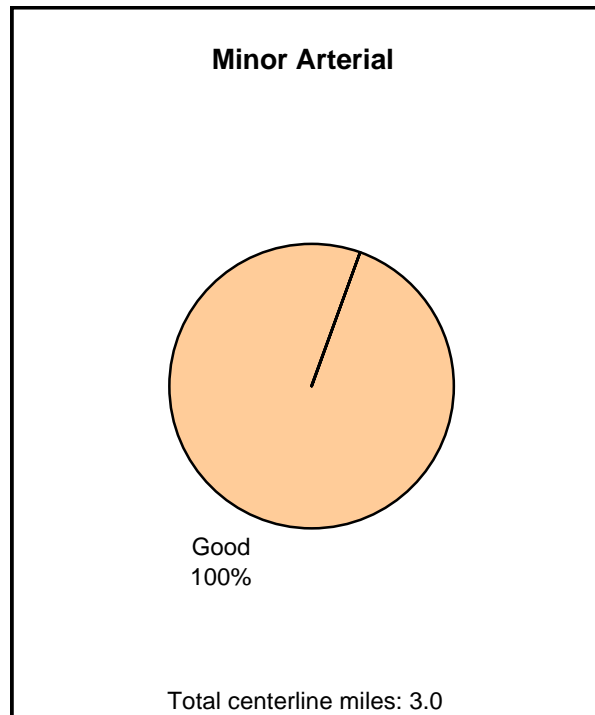
**Exhibit 21**  
**Pavement Ratings by Functional Classification**  
**Oswego County**

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
<b>Oswego County</b>			
<b>Principal Arterial</b>			
Excellent	0	0.0	0%
Good	0	0.0	0%
Fair	0	0.0	0%
Poor	0	0.0	0%
<b>Total</b>	<b>0</b>	<b>0.0</b>	<b>0%</b>
<b>Minor Arterial</b>			
Excellent	0	0.0	0%
Good	15,606	3.0	100%
Fair	0	0.0	0%
Poor	0	0.0	0%
<b>Total</b>	<b>15,606</b>	<b>3.0</b>	<b>100%</b>
<b>Collector</b>			
Excellent	11,787	2.0	34%
Good	14,574	2.0	42%
Fair	8,636	2.6	25%
Poor	0	0.0	0%
<b>Total</b>	<b>34,997</b>	<b>6.6</b>	<b>100%</b>
<b>All County Federal-Aid Roads</b>			
Excellent	11,787	2.2	23%
Good	30,181	5.7	60%
Fair	8,636	1.6	17%
Poor	0	0.0	0%
<b>Total</b>	<b>50,604</b>	<b>9.6</b>	<b>100%</b>

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.

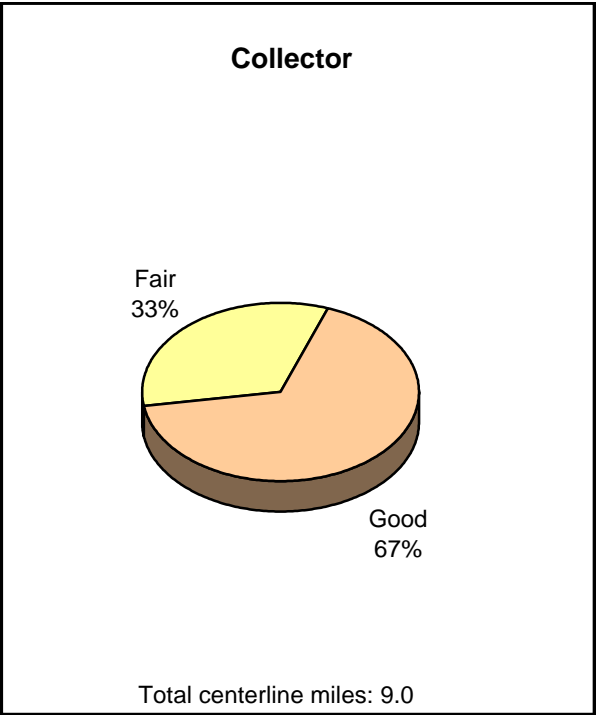
**Exhibit 23**  
**Pavement Ratings by Functional Classification**  
**Madison County**

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
<b>Madison County</b>			
<b>Principal Arterial</b>			
Excellent	0	0.0	0%
Good	0	0.0	0%
Fair	0	0.0	0%
Poor	0	0.0	0%
<b>Total</b>	<b>0</b>	<b>0.0</b>	<b>0%</b>
<b>Minor Arterial</b>			
Excellent	0	0.0	0%
Good	0	0.0	0%
Fair	0	0.0	0%
Poor	0	0.0	0%
<b>Total</b>	<b>0</b>	<b>0.0</b>	<b>0%</b>
<b>Collector</b>			
Excellent	0	0.0	0%
Good	31,731	6.0	67%
Fair	15,786	3.0	33%
Poor	0	0.0	0%
<b>Total</b>	<b>47,517</b>	<b>9.0</b>	<b>100%</b>
<b>All County Federal-Aid Roads</b>			
Excellent	0	0.0	0%
Good	31,731	6.0	67%
Fair	15,786	3.0	33%
Poor	0	0.0	0%
<b>Total</b>	<b>47,517</b>	<b>9.0</b>	<b>100%</b>

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

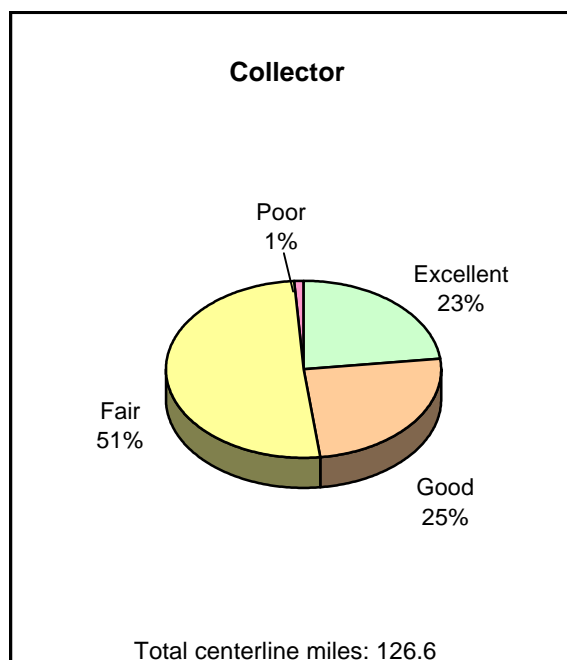
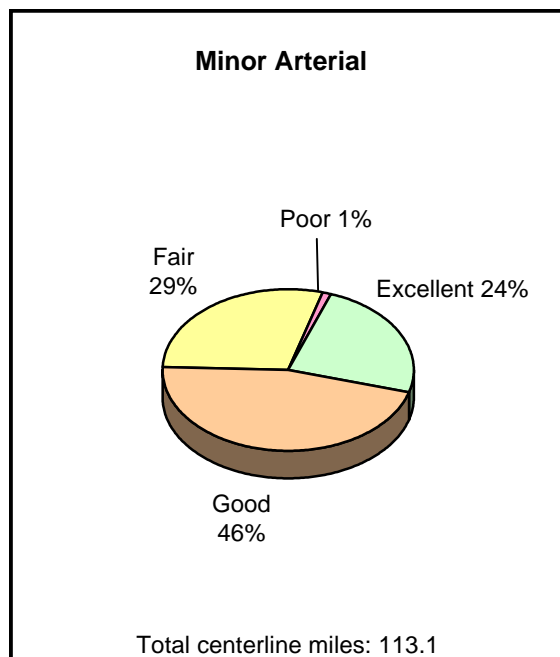
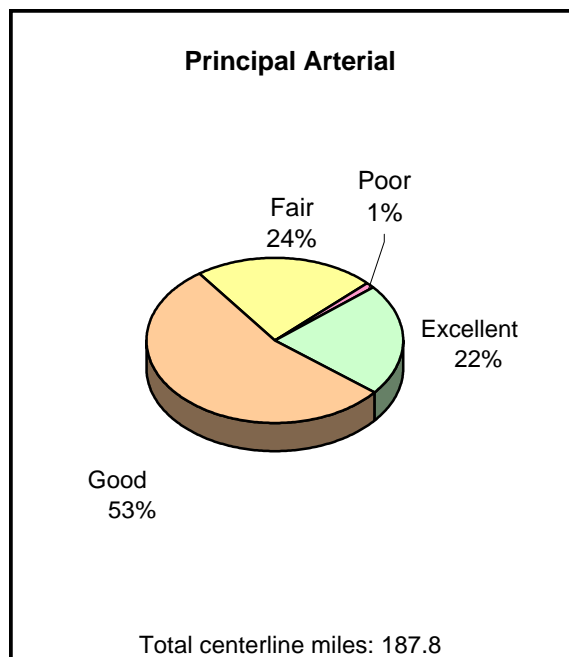
### Pavement Ratings by Functional Classification New York State DOT Roads

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
<b>New York State</b>			
<b>Principal Arterial</b>			
Excellent	216,738	41.0	22%
Good	538,323	102.0	54%
Fair	227,725	43.1	23%
Poor	8,937	1.7	1%
<b>Total</b>	<b>991,724</b>	<b>187.8</b>	<b>100%</b>
<b>Minor Arterial</b>			
Excellent	142,141	26.9	24%
Good	274,722	52.0	46%
Fair	175,752	33.3	29%
Poor	4,388	0.8	1%
<b>Total</b>	<b>597,003</b>	<b>113.1</b>	<b>100%</b>
<b>Collector</b>			
Excellent	155,793	29.5	23%
Good	164,170	31.1	25%
Fair	339,557	64.3	51%
Poor	9,020	1.7	1%
<b>Total</b>	<b>668,539</b>	<b>126.6</b>	<b>100%</b>
<b>All State Federal-Aid Roads</b>			
Excellent	514,672	97.5	23%
Good	977,215	185.1	43%
Fair	743,033	140.7	33%
Poor	22,345	4.2	1%
<b>Total</b>	<b>2,257,266</b>	<b>427.5</b>	<b>100%</b>

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

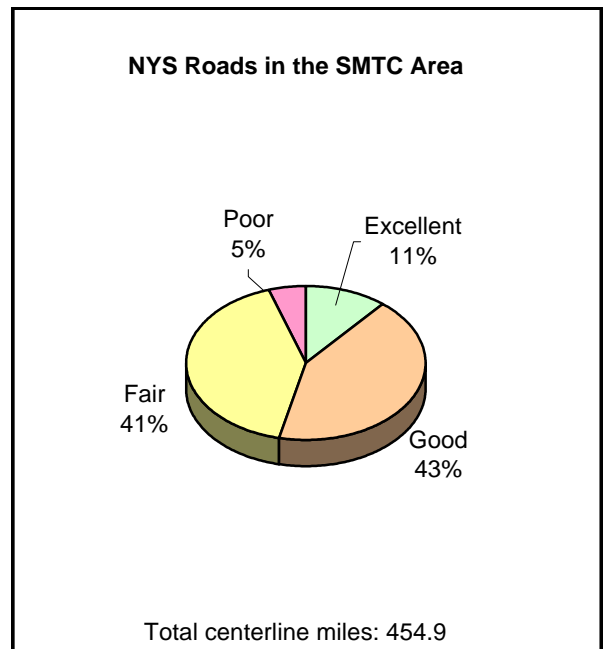
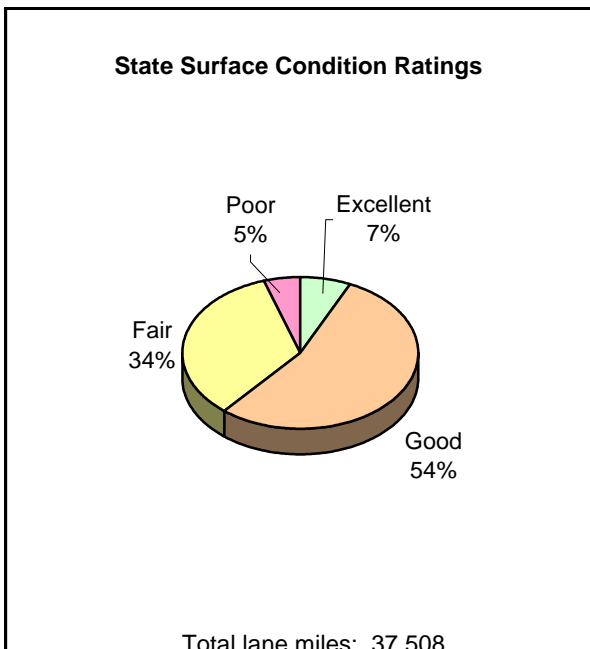
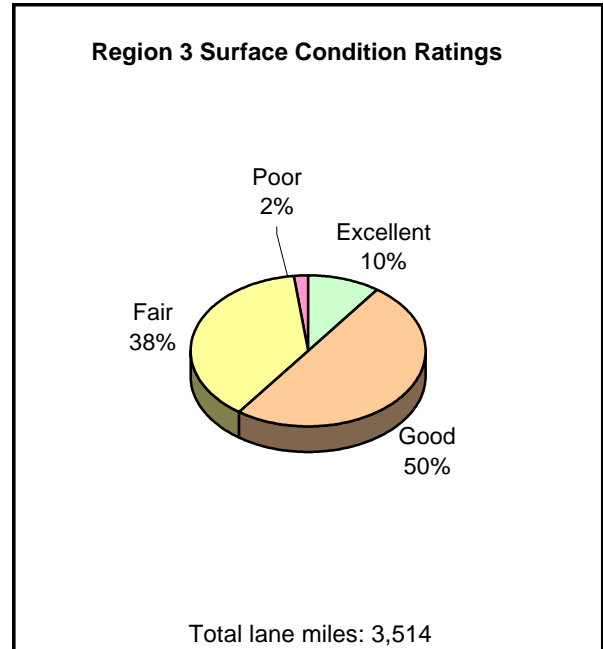
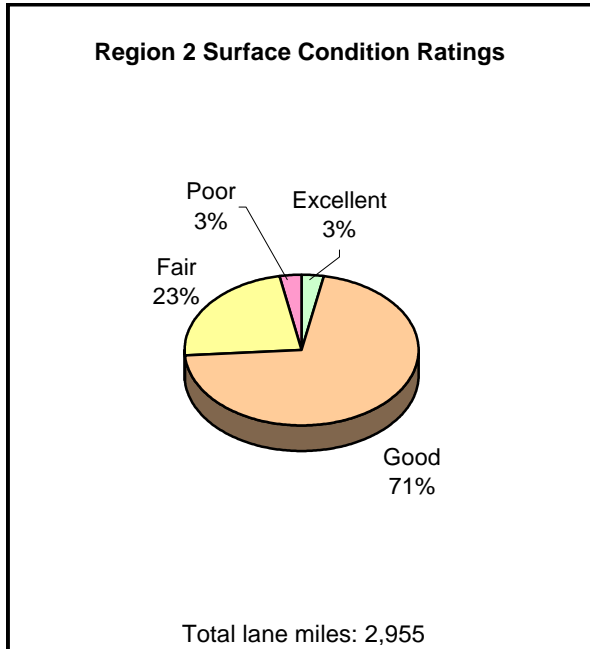


Excellent Good Fair Poor

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
<b>Thruway</b>			
<b>Principal Arterial</b>			
Excellent	0	0.0	0%
Good	153,595	29.1	98%
Fair	2,482	0.5	2%
Poor	0	0.0	0%
<b>Total</b>	<b>156,077</b>	<b>29.6</b>	<b>100%</b>
<b>Minor Arterial</b>			
Excellent	0	0.0	0%
Good	0	0.0	0%
Fair	0	0.0	0%
Poor	0	0.0	0%
<b>Total</b>	<b>0</b>	<b>0.0</b>	<b>0%</b>
<b>Collector</b>			
Excellent	0	0.0	0%
Good	0	0.0	0%
Fair	0	0.0	0%
Poor	0	0.0	0%
<b>Total</b>	<b>0</b>	<b>0.0</b>	<b>0%</b>
<b>All Thruway Federal-Aid Roads</b>			
Excellent	0	0.0	0%
Good	153,595	29.1	98%
Fair	2,482	0.5	2%
Poor	0	0.0	0%
<b>Total</b>	<b>156,077</b>	<b>29.6</b>	<b>100%</b>

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.



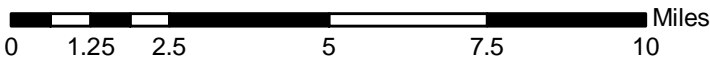
**Road Rating**

- Excellent (9-10)
- Good (7-8)
- Fair (6)
- Poor (1-5)
- No Data/Unrated Road



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

**Federal Aid Eligible Roads**  
Bridge & Pavement Condition Management System  
Exhibit 29

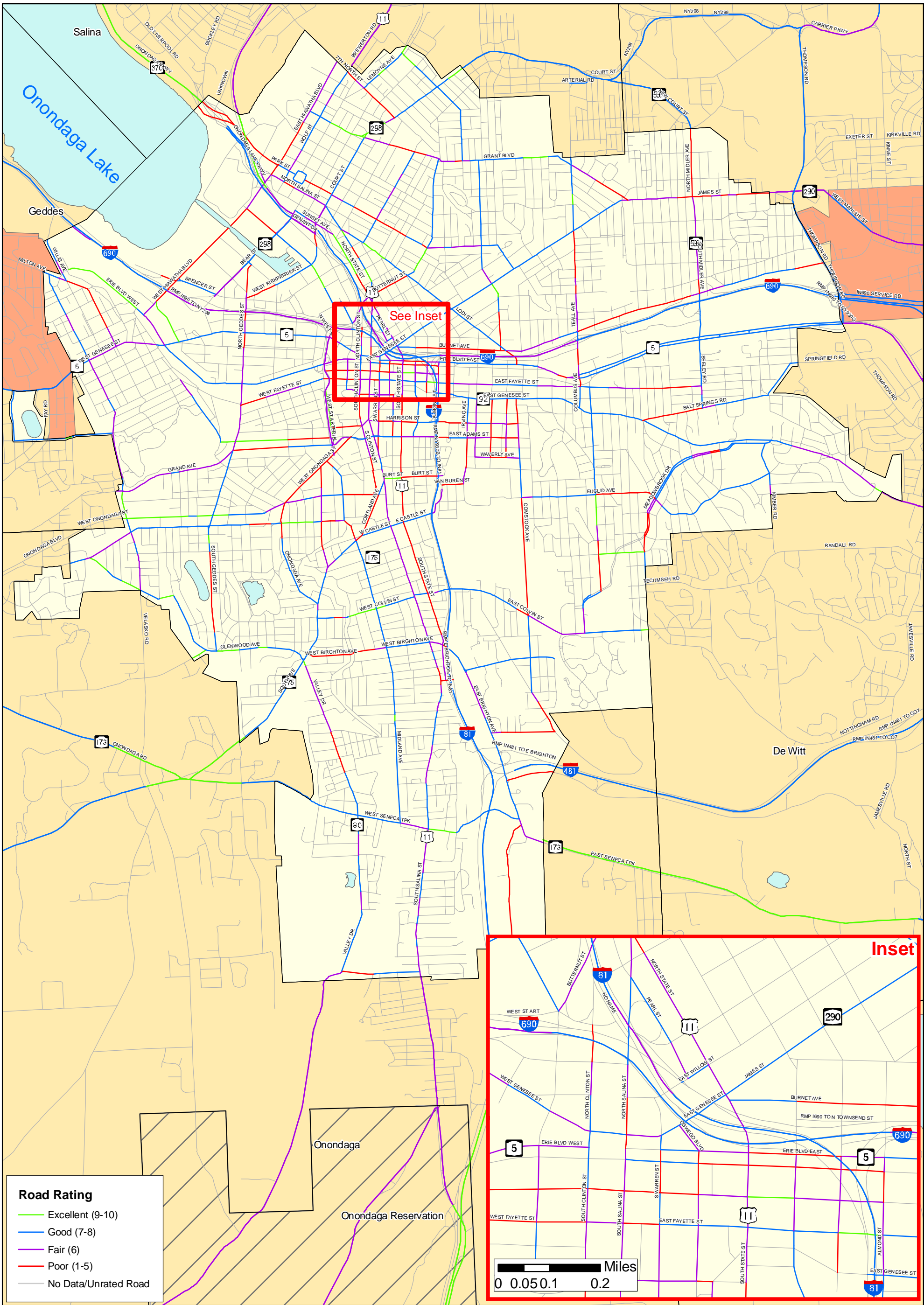


This map is for presentation purposes only. The SMTC does not guarantee the accuracy or completeness of this map.



- Roads
- City of Syracuse
- Villages
- Onondaga Reservation
- MPA
- Water

Basemap Copyrighted by NYSDOT.  
Data Sources: SMTC, NYSDOT 2007  
Prepared by SMTC, 6/2009



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

## Federal Aid-Eligible Roads in the City of Syracuse

Bridge & Pavement Condition Management System

Exhibit 30

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.



- Roads
- City of Syracuse
- Villages
- Onondaga Reservation
- Towns
- Water

Basemap Copyrighted by NYSDOT.  
Data Sources: SMTC, NYSDOT 2007  
Prepared by SMTC, 6/2009

# Exhibit 31

## Functional Classification for *Federal-Aid Eligible Roads*

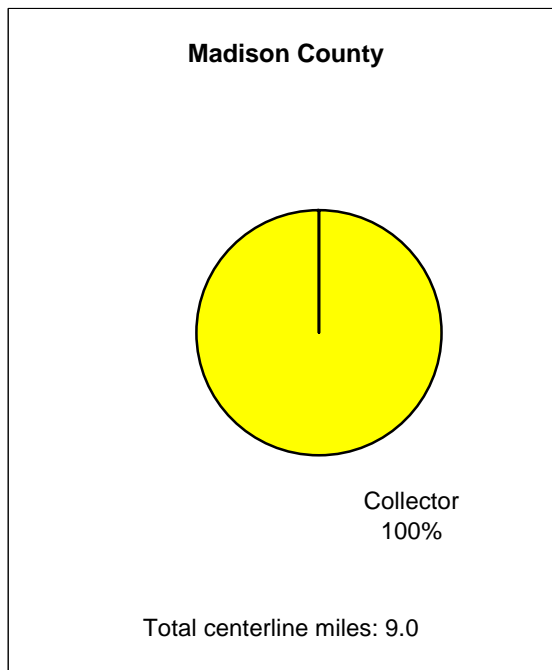
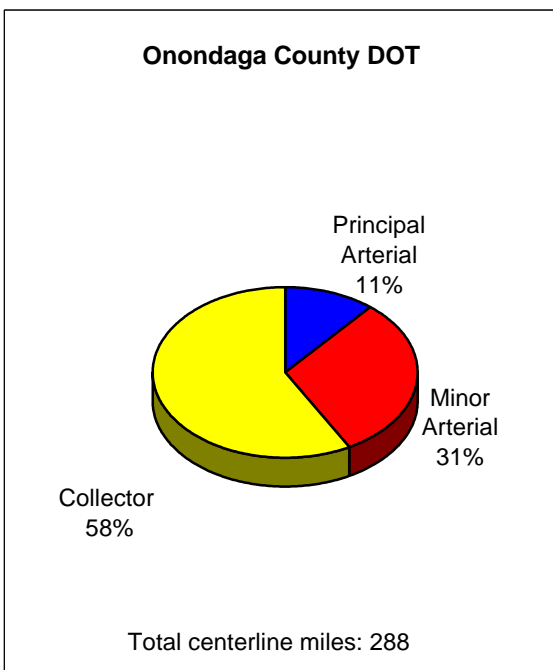
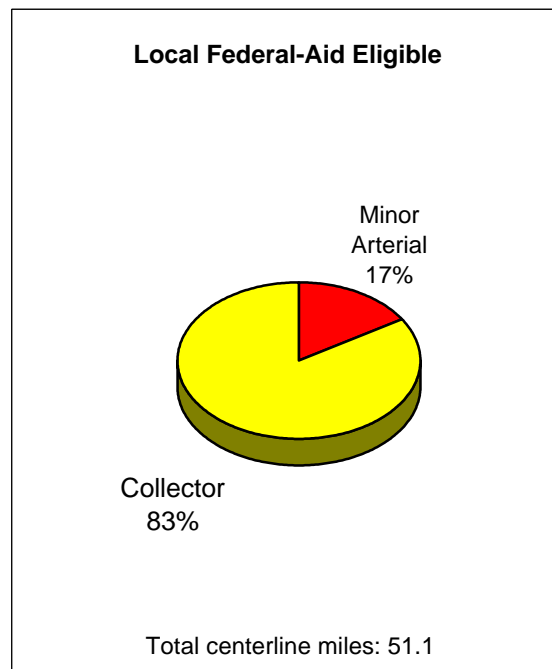
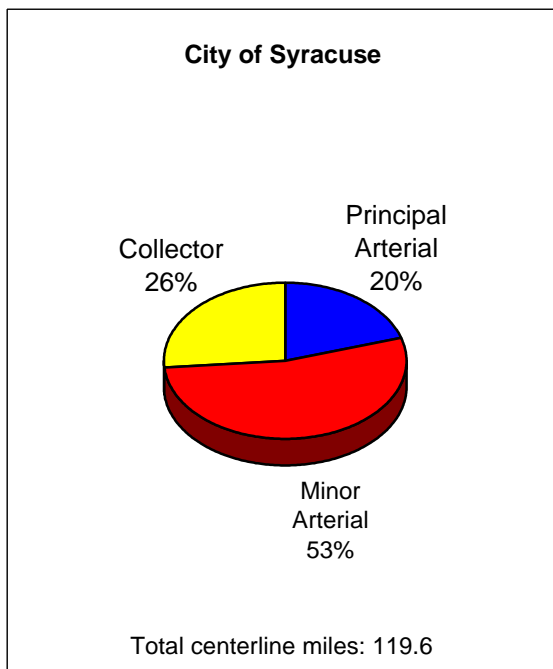
	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
<b>City of Syracuse</b>			
Principal Arterial	128,771	24.4	20%
Minor Arterial	337,103	63.8	53%
Collector	165,444	31.3	26%
<b>Total</b>	<b>631,318</b>	<b>119.6</b>	<b>100%</b>
<b>Local Federal-Aid Eligible</b>			
Principal Arterial	871	0.2	0%
Minor Arterial	44,609	8.4	17%
Collector	224,088	42.4	83%
<b>Total</b>	<b>269,568</b>	<b>51.1</b>	<b>100%</b>
<b>Madison County</b>			
Principal Arterial	0	0.0	0%
Minor Arterial	0	0.0	0%
Collector	47,517	9.0	100%
<b>Total</b>	<b>47,517</b>	<b>9.0</b>	<b>100%</b>
<b>Onondaga County</b>			
Principal Arterial	161,485	30.6	11%
Minor Arterial	470,712	89.2	31%
Collector	888,706	168.3	58%
<b>Total</b>	<b>1,520,903</b>	<b>288.0</b>	<b>100%</b>
<b>Oswego County</b>			
Principal Arterial	0	0.0	0%
Minor Arterial	15,606	3.0	31%
Collector	34,997	6.6	69%
<b>Total</b>	<b>50,603</b>	<b>9.6</b>	<b>100%</b>
<b>New York State</b>			
Principal Arterial	991,724	187.8	44%
Minor Arterial	597,003	113.1	26%
Collector	668,539	126.6	30%
<b>Total</b>	<b>2,257,266</b>	<b>427.5</b>	<b>100%</b>
<b>New York State Thruway Authority</b>			
Principal Arterial	156,077	29.6	100%
Minor Arterial	0	0.0	0%
Collector	0	0.0	0%
<b>Total</b>	<b>156,077</b>	<b>29.6</b>	<b>100%</b>
<b>All Rated Federal-Aid Eligible Roads</b>			
Principal Arterial	1,438,928	272.5	29%
Minor Arterial	1,465,033	277.5	30%
Collector	2,029,291	384.3	41%
<b>Total</b>	<b>4,933,252</b>	<b>934.3</b>	<b>100%</b>

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**

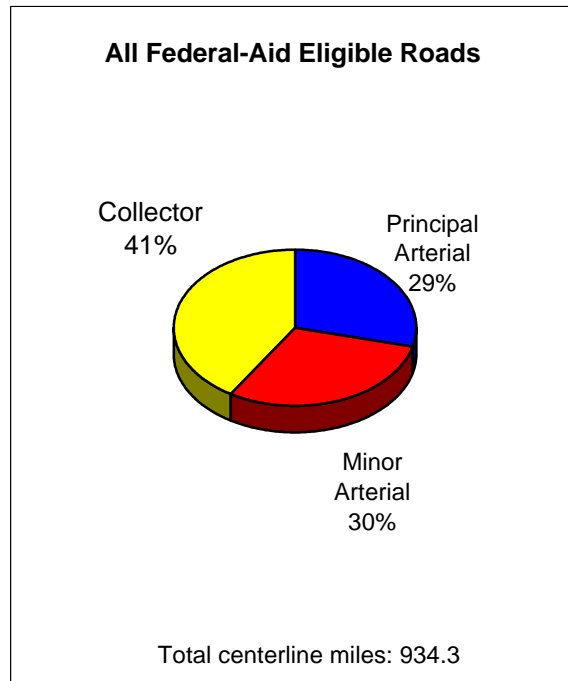
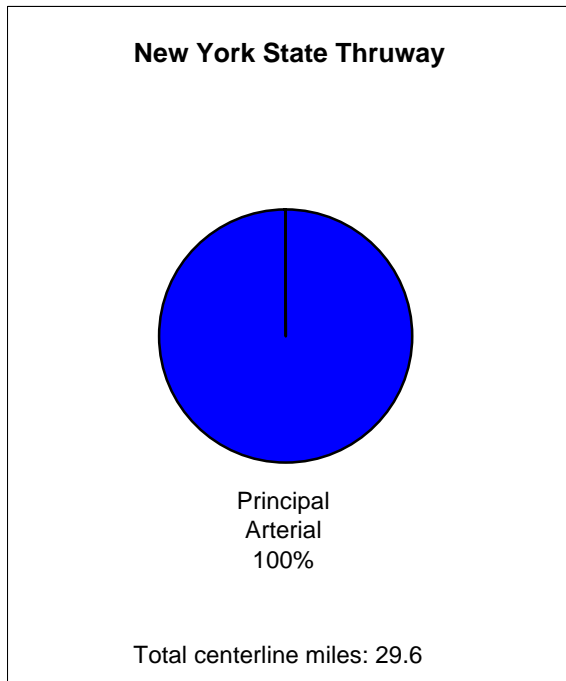
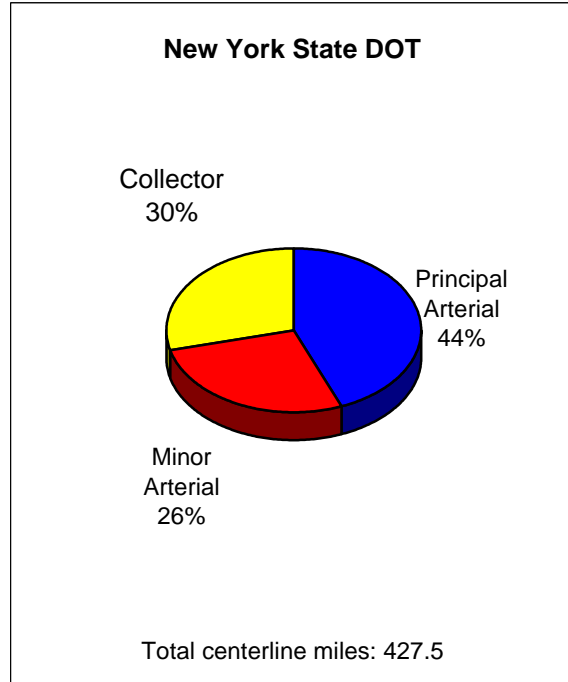
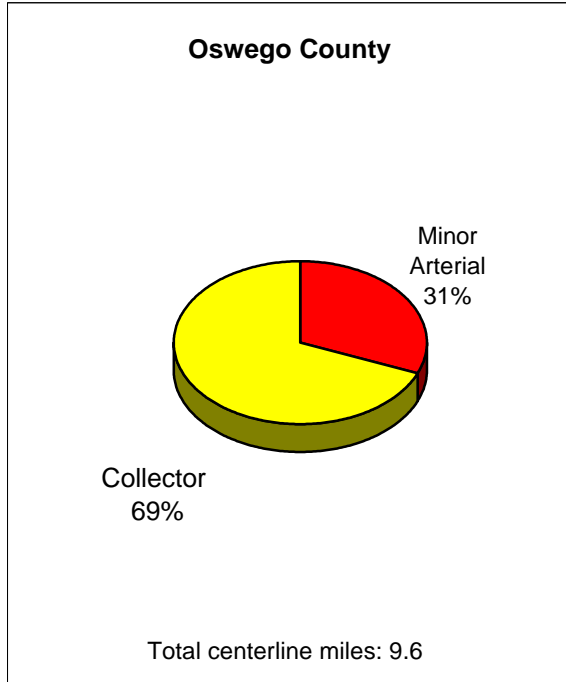


 Principal Arterial    Minor Arterial    Collector

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

**Exhibit 32**  
**Part II**

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

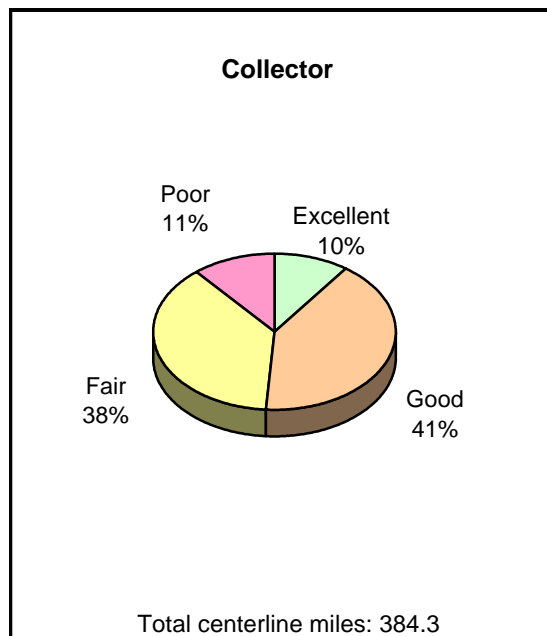
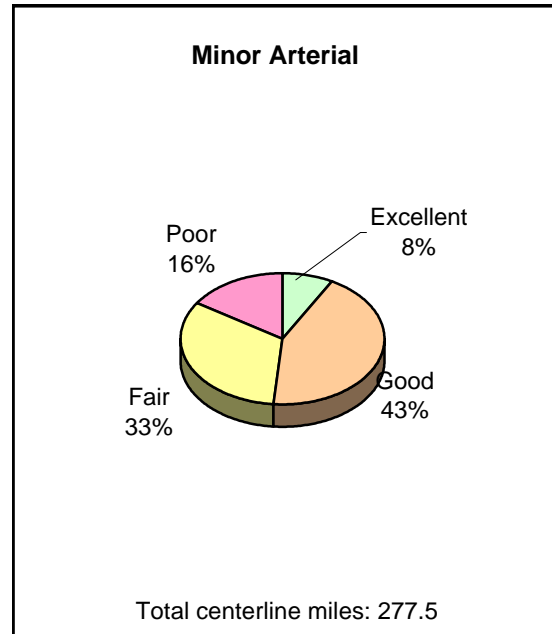
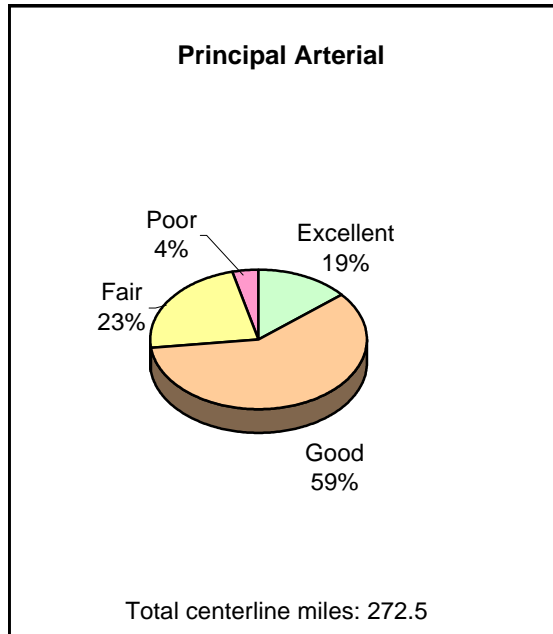


Principal Arterial Minor Arterial Collector

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

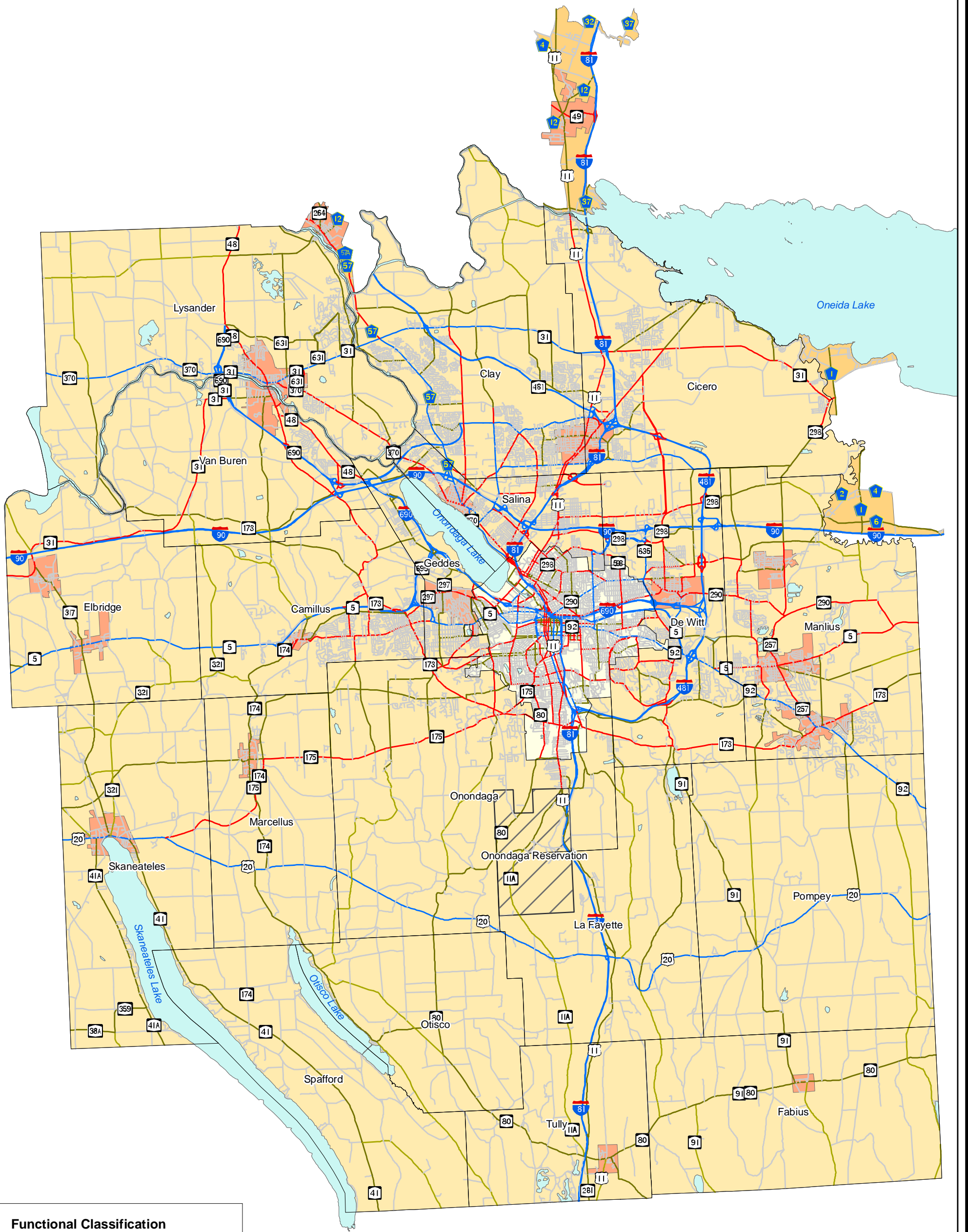
## Exhibit 33

### 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

Rural	Urban
<span style="color: blue;">—</span> Principal Arterial	<span style="color: blue;">—</span> Principal Arterial
<span style="color: red;">—</span> Minor Arterial	<span style="color: red;">—</span> Minor Arterial
<span style="color: green;">—</span> Collector	<span style="color: green;">—</span> Collector
<span style="color: yellowgreen;">—</span> Minor Collector	<span style="color: grey;">—</span> Local
<span style="color: grey;">—</span> Local	

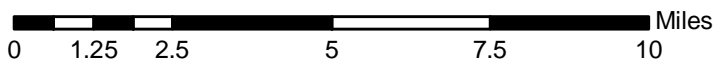


100 Clinton Square  
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Fax: (315) 422-7753

## Functional Classification

Bridge & Pavement Condition Management System

Exhibit 34



<span style="background-color: #ffffcc; border: 1px solid black; display: inline-block; width: 20px; height: 10px;"></span> City of Syracuse
<span style="background-color: #ffcc99; border: 1px solid black; display: inline-block; width: 20px; height: 10px;"></span> Villages
<span style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px); border: 1px solid black; display: inline-block; width: 20px; height: 10px;"></span> Onondaga Reservation
<span style="background-color: #fff2cc; border: 1px solid black; display: inline-block; width: 20px; height: 10px;"></span> Towns
<span style="background-color: #ffcc99; border: 1px solid black; display: inline-block; width: 20px; height: 10px;"></span> MPA
<span style="background-color: #cceeff; border: 1px solid black; display: inline-block; width: 20px; height: 10px;"></span> Water

Basemap Copyrighted by NYSDOT.  
Data Sources: SMTC, NYSDOT 2007  
Prepared by SMTC, 6/2009

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



#### Jurisdiction

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



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Syracuse, NY 13202  
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## Road Jurisdiction

Bridge & Pavement Condition Management System  
Exhibit 35

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
- Villages
- Towns
- MPA
- Water

Basemap Copyrighted by NYSDOT.  
Data Sources: SMTC, NYSDOT 2007  
Prepared by SMTC, 6/2009

## 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

## Exhibit 36

Photos: Sample Pavement Conditions



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 CLOSING

Upon completion of consecutive reports, the ability to analyze the collected data will be beneficial to the SMTC and its member agencies. The presentation of data in this report continues to provide accurate and current bridge/pavement information to the SMTC and its member agencies. Through the process of putting all of the bridge and pavement condition rating data into GIS, an established database has been built that is available to all SMTC member agencies.

As the SMTC and its member agencies are generally distributing funding to maintain and improve the aging infrastructure via the TIP and various agency capital programs, this document should provide a useful tool to the member agencies to determine where specifically to allocate capital funds (federal or local) to those road segments or bridges that are in need of rehabilitation or maintenance to improve the operational efficiency and safety of the existing transportation network. Therefore, this report and the data files are significant because of the potential programming assistance the document can provide along with the accessibility to condition rating data through GIS in a format that is directly compatible with City, State and County systems.