

# BRIDGE AND PAVEMENT CONDITION MANAGEMENT SYSTEM (BPCMS)



**2013 – 2014 UPWP**

REPORT PREPARED BY:

**SYRACUSE METROPOLITAN TRANSPORTATION COUNCIL**

100 CLINTON SQUARE

126 N. SALINA STREET, SUITE 100

SYRACUSE, NY 13202

(315) 422-5716, FAX: (315) 422-7753



# **BRIDGE & PAVEMENT CONDITION MANAGEMENT SYSTEM**

*Syracuse Metropolitan Planning Area*

**July 2014**

## **2013-2014 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.

---

For further information contact:

*Elizabeth Hassett, Transportation Analyst, Project Manager*

*Syracuse Metropolitan Transportation Council*

*126 N. Salina St., 100 Clinton Square, Suite 100*

*Syracuse, NY 13202*

*PHONE: (315) 422-5716; FAX: (315) 422-7753*

*[www.smtcmpo.org](http://www.smtcmpo.org)*

# Project Introduction

## **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 local federal-aid eligible, County, and New York State roads included in this report have been rated on 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. (However, streets and roads that are not federal aid-eligible are routinely rated in both the City of Syracuse and Onondaga County.) These Local roads account for 1,986 centerline miles or 49% of the total MPA area. Only 3%, or 51 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.



## Table of Contents

1.	INTRODUCTION .....	1
2.	BRIDGES .....	3
3.	PAVEMENT .....	20
3.1	Federal-Aid Eligible and Non Federal-Aid Eligible .....	20
3.1.i	City of Syracuse Pavement Ratings .....	21
3.1.ii	Local Federal-Aid Eligible Pavement Ratings .....	22
3.1.iii	Onondaga County Pavement Ratings .....	22
3.1.iv	Oswego County Pavement .....	23
3.1.v	Madison County Pavement Ratings .....	23
3.1.vi	New York State Department of Transportation Pavement Ratings .....	24
3.1.vii	New York State Thruway Authority Pavement Ratings .....	24
3.2	Federal-Aid Eligible Pavement Ratings .....	31
4.	TRENDS .....	63
	Bridges .....	63
	Pavement .....	64

## List of EXHIBITS

Exhibit 1: Map: Bridges by Jurisdiction .....	7
Exhibit 2: Map: Non-Deficient Bridges in the MPA.....	8
Exhibit 3: Map: Non-Deficient Bridges in the City of Syracuse.....	9
Exhibit 4: Map: Critical and Deficient Bridges in the MPA .....	10
Exhibit 5: Map: Critical and Deficient Bridges in the City of Syracuse .....	11
Exhibit 6: Map: Bridge Sufficiency Ratings in the MPA.....	12
Exhibit 7: Map: Bridge Sufficiency Ratings in the City of Syracuse.....	13
Exhibit 8: Table: Bridge Jurisdiction and Ratings .....	14
Exhibit 9: Graph: Total Bridges Rated.....	15
Exhibit 10: Chart: Bridge Ratings by Jurisdiction (Part 1) .....	16
Exhibit 10: Charts: Bridge Ratings by Jurisdiction (Part 2) .....	17
Exhibit 11: Charts: Comparison of MPA, Region 2, Region 3 and NYS Bridges .....	18
Exhibit 12: Table: Bridge Sufficiency Ratings by Jurisdiction.....	19
Exhibit 13: Pavement Ratings for All Rated Roads in the SMTC MPA .....	25
Exhibit 14: Table: Pavement Ratings for All Rated Roads in the SMTC MPA.....	26
Exhibit 15: Chart: Average Pavement Ratings for All Rated Roads by Jurisdiction .....	27
Exhibit 15: Chart: Pavement Ratings for All Rated Roads by Jurisdiction, Part I .....	28
Exhibit 16: Chart: Pavement Ratings for All Rated Roads by Jurisdiction, Part II .....	29
Exhibit 17: Map: All Rated Roads in the MPA .....	30
Exhibit 18: Table: Pavement Ratings for all Federal-Aid Eligible Roads .....	34
Exhibit 19: Chart: Federal-Aid Eligible Pavement Condition Average Rating Scores by Jurisdiction.....	35
Exhibit 20: Chart: Federal-Aid Eligible Roads by Jurisdiction, I .....	36
Exhibit 20: Chart: Federal-Aid Eligible Roads by Jurisdiction, II .....	37
Exhibit 21: Table: Pavement Ratings by Functional Classification for the City of Syracuse .....	38
Exhibit 22: Chart: Pavement Ratings by Functional Classification for the City of Syracuse .....	39
Exhibit 23: Table: Pavement Ratings by Functional Classification for Local Federal-Aid Eligible Roads .....	40
Exhibit 24: Chart: Pavement Ratings by Functional Classification for Local Federal-Aid Eligible Roads .....	41
Exhibit 25: Table: Pavement Ratings by Functional Classification for Onondaga County DOT Roads .....	42
Exhibit 26: Chart: Pavement Ratings by Functional Classification for Onondaga County DOT Roads.....	43
Exhibit 27: Table: Pavement Ratings by Functional Classification for Oswego County Roads .....	44
Exhibit 28: Chart: Pavement Ratings by Functional Classification for Oswego County Roads .....	45
Exhibit 29: Table: Pavement Ratings by Functional Classification for Madison County Roads .....	46
Exhibit 30: Chart: Pavement Ratings by Functional Classification for Madison County Roads .....	47

Exhibit 31: Table: Pavement Ratings by Functional Classification for NYSDOT Roads ...	48
Exhibit 32: Chart: Pavement Ratings by Functional Classification for NYSDOT Roads...	49
Exhibit 33: Chart: Comparison of State Pavement Ratings .....	50
Exhibit 34: Table: Pavement Ratings for New York State Thruway Roads .....	51
Exhibit 35: Chart: Pavement Ratings by Functional Class: Thruway .....	52
Exhibit 36: Map: Federal-Aid Eligible Roads MPA.....	53
Exhibit 37: Map: Federal-Aid Eligible Roads in the City of Syracuse .....	54
Exhibit 38: Table: Functional Classification for Federal-Aid Eligible Roads .....	55
Exhibit 39: Chart: Functional Classification of Federal-Aid Eligible Roads by Jurisdiction, Part I .....	56
Exhibit 39: Chart: Functional Classification of Federal-Aid Eligible Roads by Jurisdiction, Part II .....	57
Exhibit 40: Chart: Pavement Ratings of Federal-Aid Eligible Roads by Functional Classification .....	58
Exhibit 41: Map: Functional Classification.....	59
Exhibit 42: Map: Jurisdiction .....	60
Exhibit 43: Photos: Sample Pavement Conditions.....	61

This page intentionally left blank.

# 1. INTRODUCTION

This project was completed by the Syracuse Metropolitan Transportation Council (SMTC) as part of the 2013-2014 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.

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

Table I: Pavement Condition Rating Chart		
<b>Rating</b>		<b>Condition Description</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.
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 *2010 Pavement Condition Assessment Manual* 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 1,986 centerline miles or 49% of the total MPA area. Only 3%, or 51 centerline miles of these roads are federal-aid eligible.

### *A Note on the Updated MPA*

This year’s report is the first that has been completed since the MPA has expanded to include all of the 2010 Urbanized Area, as defined by the Census, as well as the entire towns of Schroepel, Hastings, and West Monroe in Oswego County and Sullivan in Madison County. The expanded MPA has resulted in increased mileage of rated roads (from 1,777 miles to 1,952 miles) and more bridges (from 491 to 554).

## **2. BRIDGES**



181 NB over N Salina St, City of Syracuse

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 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. Bridges with critical needs 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 critical needs are used to describe the condition of these bridges, it should be emphasized that these bridges are considered safe to carry legal loads, and would be closed or restricted for loads if bridge inspectors found that to be necessary.

Table 2: New York State Bridge Condition Rating Chart		
<b>Rating</b>	<b>Category</b>	<b>Condition Description</b>
<3.0 for a “Critical Element”	Critical Needs	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



Pompey Hollow Rd over Limestone Creek,  
Town of Pompey

The charts, tables, and maps at the end of this section illustrate the above concept. Exhibit 1 is a map that represents all bridges in the MPA by jurisdiction; Exhibits 2 and 3 show all bridges in the MPA with Non-Deficient ratings; and Exhibits 4 and 5 show percentages of deficient and critical needs ratings in the MPA and City of Syracuse, respectively.

A total of 554 bridges have been rated with condition ratings; these ratings were from data provided by NYSDOT in April 2013 from the 2011-2012 rating cycle. The average condition rating for bridges in the MPA is 5.17. Exhibit 8 shows the total number of bridges by jurisdiction and type of rating within the study area. Exhibit 9 illustrates the total bridges rated in the MPA, and Exhibit 10 categorizes the 554 bridges by jurisdiction and type of rating. Additionally, Exhibit 11 represents the MPA, NYSDOT Region 2 area, NYSDOT Region 3 area, and New York State averages for all rated bridges by type of rating.

Statewide, there are 19,846 rated bridges; the average condition rating of these bridges is 5.35. There are 1,416 total Region 3 bridges, with an average condition rating of 5.19. The average rating for the 1,366 rated bridges in Region 2 is 5.36. Bridges in the SMTC MPA, Region 2, Region 3 and across the State all have similar percentages of critical needs bridges (SMTC MPA: 0.1%, Region 2: 0.3%, Region 3: 0.6% and statewide: 0.2%). Outside of the SMTC MPA, Region 3 has the highest percentage of deficient bridges



with 41% deficient, while Region 2, New York State and the SMTTC MPA have 36%, 33%, and 46% deficient bridges, respectively.



Plum St over Onondaga Creek, City of Syracuse

There is one bridge in the MPA with critical needs, which is located in the Village of Phoenix. The bridge is owned by NYSDOT, but controlled by NYS Thruway (Canals). This bascule (lift) bridge is stored in the upright position, thus making it closed for all intents and purposes. The bridge is a reliever of the Locust Street bridge over Lock O-I that connects to the large bridge over the Oswego River. Critical needs

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, Onondaga County, a town or village, or owned by Oswego County, Madison County or the NYSTA have critical needs.

A bridge categorized as deficient means it has a condition rating of less than 5, and is a candidate for rehabilitation, replacement, or perhaps closure. Across the MPA, 46% of bridges are deficient.

The jurisdiction that has the highest percentage of deficient bridges in the MPA is Villages, with 67% deficient bridges (four out of six total bridges).

Forty-eight bridges in the MPA are owned and maintained by the New York State Thruway. Of these, 31 bridges are deficient, giving the Thruway the second highest percentage of deficient bridges at 65%.

NYSDOT is the jurisdiction with the highest number of bridges (318, or 57% of the MPA's total bridges); 48% of bridges owned by NYSDOT are deficient.

Onondaga County, Madison County, and the City of Syracuse have the highest proportions of non-deficient ratings, at 69%, 60%, and 57%, respectively.

Besides condition ratings, there are several other measures in existence to rate bridges, including several federal ratings such as whether a bridge is "structurally deficient,"

“functionally obsolete,” or a bridge’s “sufficiency rating”. These ratings help the federal government decide whether bridges may be eligible for federal bridge replacement and/or rehabilitation funding.

For this report, SMTC chose to analyze the federal measure of sufficiency ratings. This rating is a numerical value that ranges from 0 to 100, and includes factors for structural condition, bridge geometry, and traffic considerations. A rating between 50 and 80 means a bridge is considered for federal bridge rehabilitation funding, and a bridge rated below 50 means it is considered for federal bridge replacement funding.

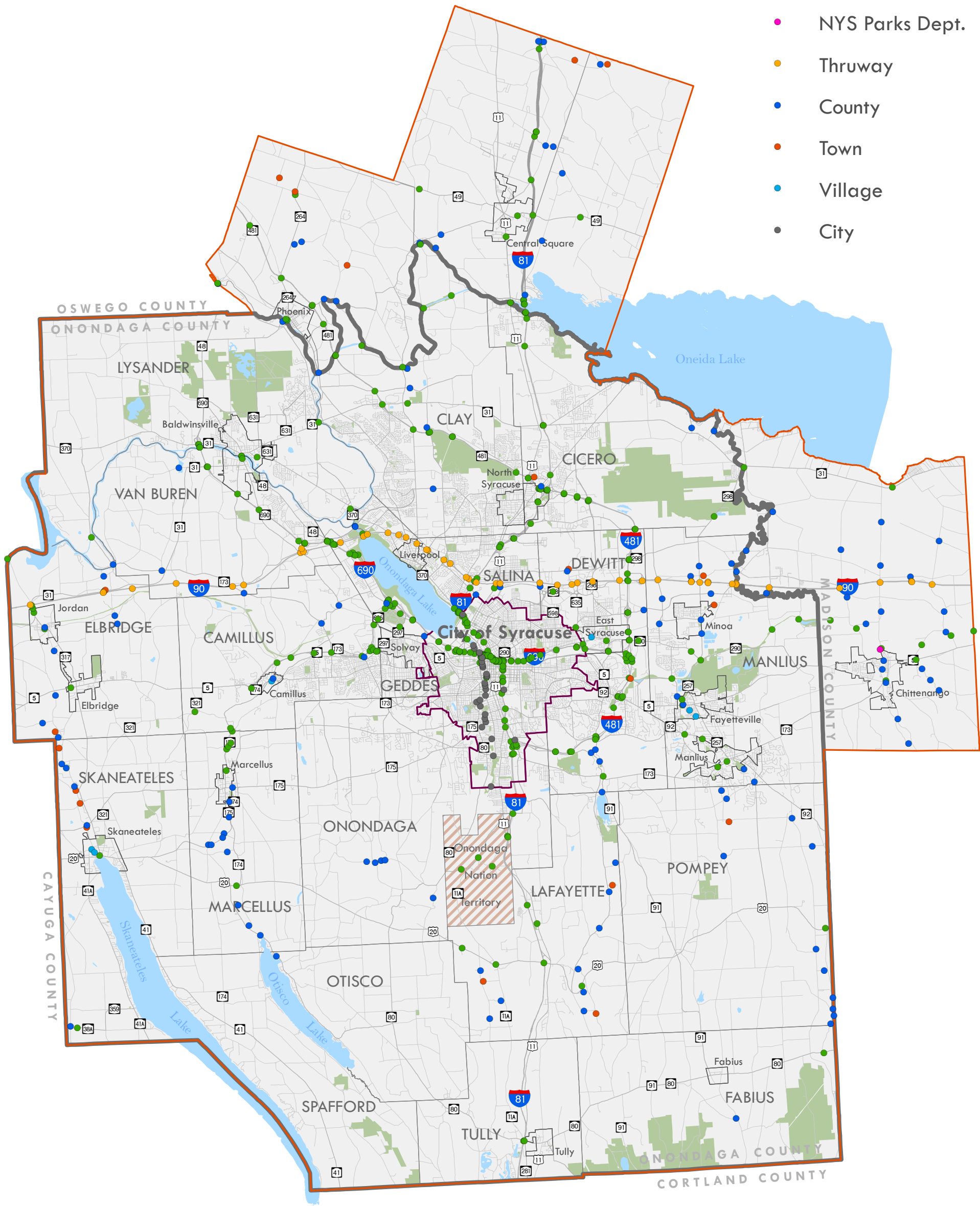
The table in Exhibit 12 shows sufficiency ratings by jurisdiction. Town and Village bridges have the highest proportion of ratings below 50 (25% and 17%, respectively). Six percent of bridges maintained by the Thruway have ratings below 50; seven percent of bridges maintained by the City of Syracuse have ratings below 50; Onondaga County and State bridges have 4% and 5%, respectively, rated below 50; and Oswego and Madison County have 6% and 15% bridges rated below 50, respectively. Statewide, 7.4% of bridges are rated below 50.

Note that sufficiency ratings below 50 are not coincidental with critical needs ratings; there is one critical needs bridge in the MPA while there are 35 bridges with sufficiency ratings below 50. However, all 35 bridges that have a sufficiency rating below 50 also have a critical needs or a deficient rating. Sufficiency ratings of below 50 can therefore be interpreted as a middle ground between critical needs ratings and deficient ratings.

Beginning this year, with the expansion of the MPA, SMTC will begin examining median condition rating as well as the average. This year, the median condition rating is 5.09.

Bridges in the MPA  
by Jurisdiction

- NYSDOT
- NYS Parks Dept.
- Thruway
- County
- Town
- Village
- City



100 Clinton Square  
126 North Salina St, Suite 100  
Syracuse, NY 13202  
(315) 422-5716  
Fax: (315) 422-7753  
www.smtcmpo.org



Data Sources: SOCPA, NYSDOT, 2011  
Prepared by SMTC, 01/2014

Bridges in the MPA by Jurisdiction  
Bridge & Pavement Condition Management System  
Exhibit 1

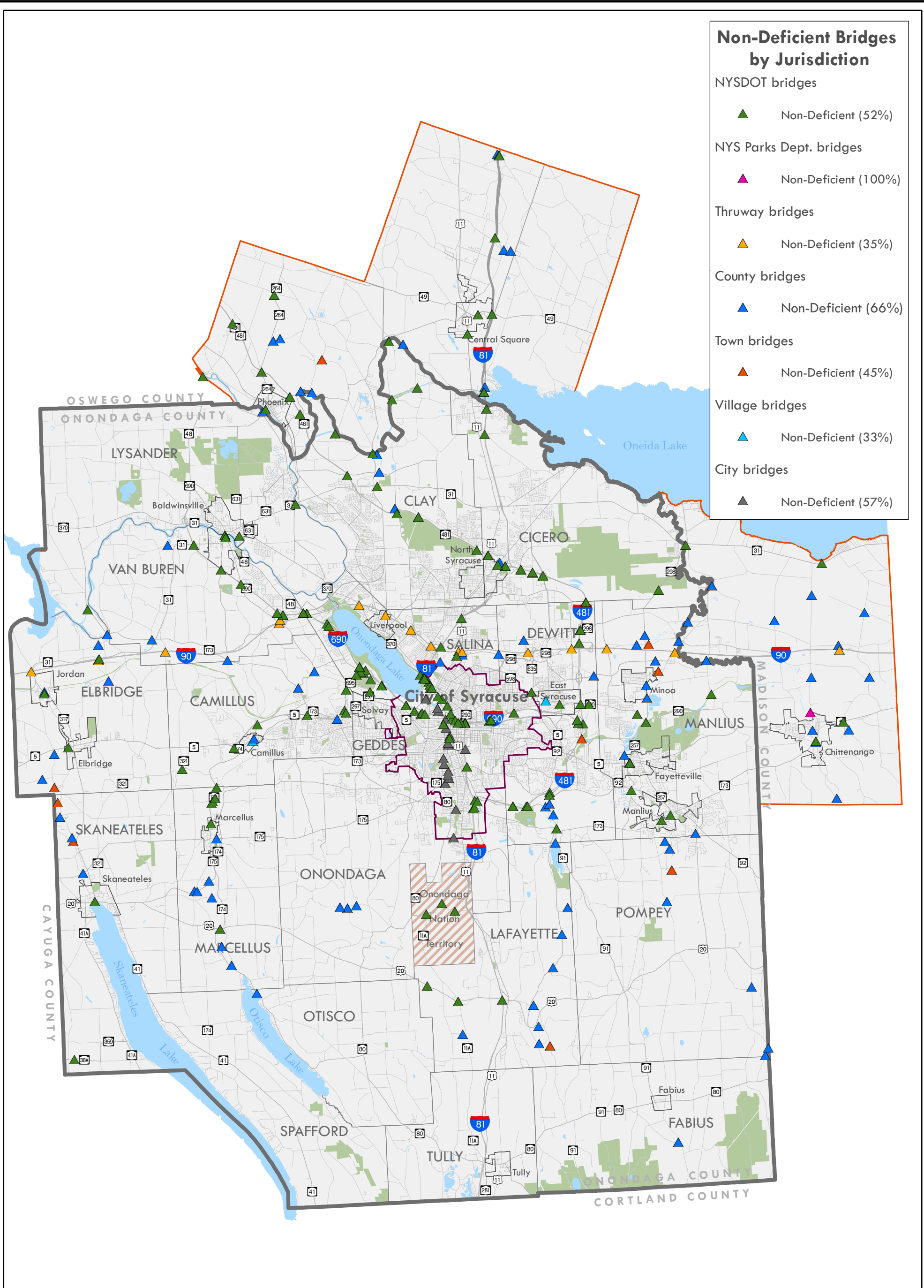
0 1 2 4  
Miles

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

Legend

- Interstates
- Major Roads
- Local Roads
- Parks
- Village
- City
- Town
- County Boundary
- Onondaga Nation Territory
- SMTC MPA





100 Clinton Square  
126 North Salina St, Suite 100  
Syracuse, NY 13202  
(315) 422-5716  
Fax: (315) 422-7753  
www.smtcmpo.org



Data Sources: SOCPA, NYSDOT, 2011  
Prepared by SMTC, 01/2014

## Non-Deficient Bridges in the MPA

### Bridge & Pavement Condition Management System

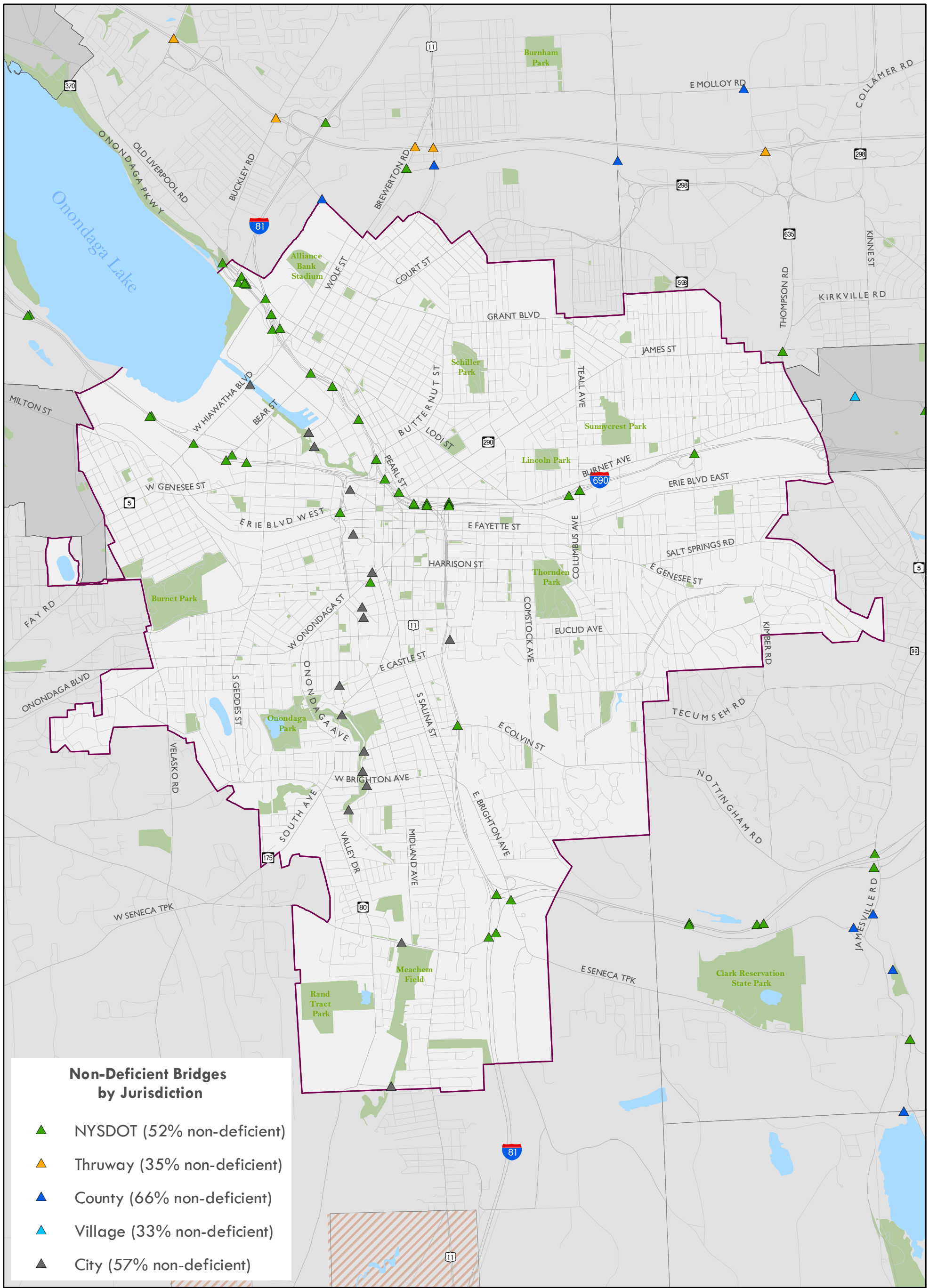
#### Exhibit 2

0 1 2 4 Miles

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

#### Legend

- Interstates
- Major Roads
- Local Roads
- Parks
- Village
- City
- Town
- County Boundary
- Onondaga Nation Territory
- SMTC MPA



100 Clinton Square  
126 North Salina St, Suite 100  
Syracuse, NY 13202  
(315) 422-5716  
Fax: (315) 422-7753  
www.smtcmpo.org



Data Sources: SOCPA, NYSDOT, 2011  
Prepared by SMTC, 01/2014

## Non-Deficient Bridges in the City of Syracuse

### Bridge & Pavement Condition Management System

#### Exhibit 3

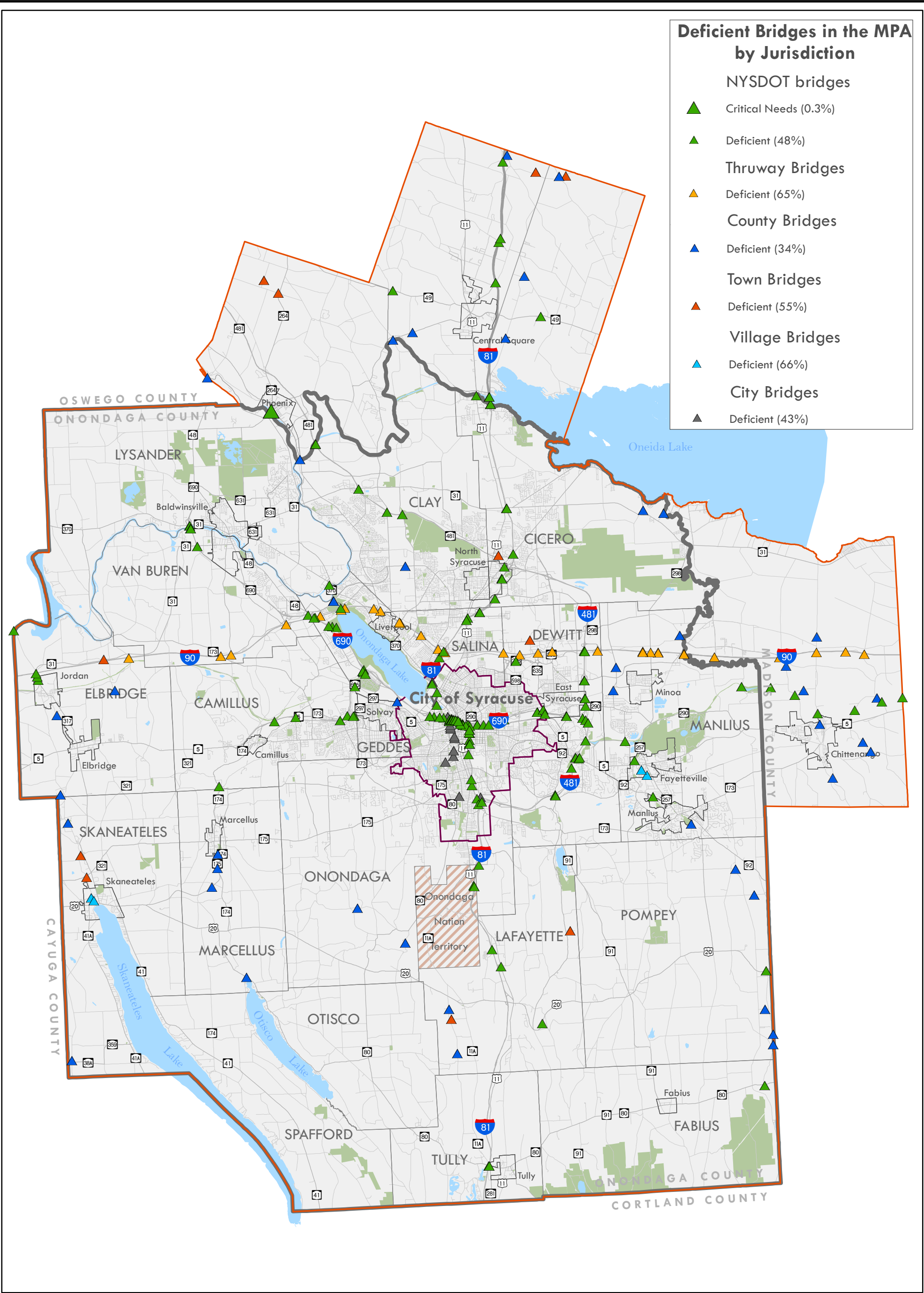
0 0.225 0.45 0.9  
Miles

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

#### Legend

- Interstates
- Major Roads
- Local Roads
- Parks
- Village
- City
- Town
- County Boundary
- Onondaga Nation Territory





**Deficient Bridges in the MPA by Jurisdiction**

**NYSDOT bridges**

- ▲ Critical Needs (0.3%)
- ▲ Deficient (48%)

**Thruway Bridges**

- ▲ Deficient (65%)

**County Bridges**

- ▲ Deficient (34%)

**Town Bridges**

- ▲ Deficient (55%)

**Village Bridges**

- ▲ Deficient (66%)

**City Bridges**

- ▲ Deficient (43%)



100 Clinton Square  
126 North Salina St, Suite 100  
Syracuse, NY 13202  
(315) 422-5716  
Fax: (315) 422-7753  
www.smtcmpo.org



Data Sources: SOCPA, NYSDOT, 2011  
Prepared by SMT, 01/2014

## Deficient Bridges in the MPA by Jurisdiction

### Bridge & Pavement Condition Management System

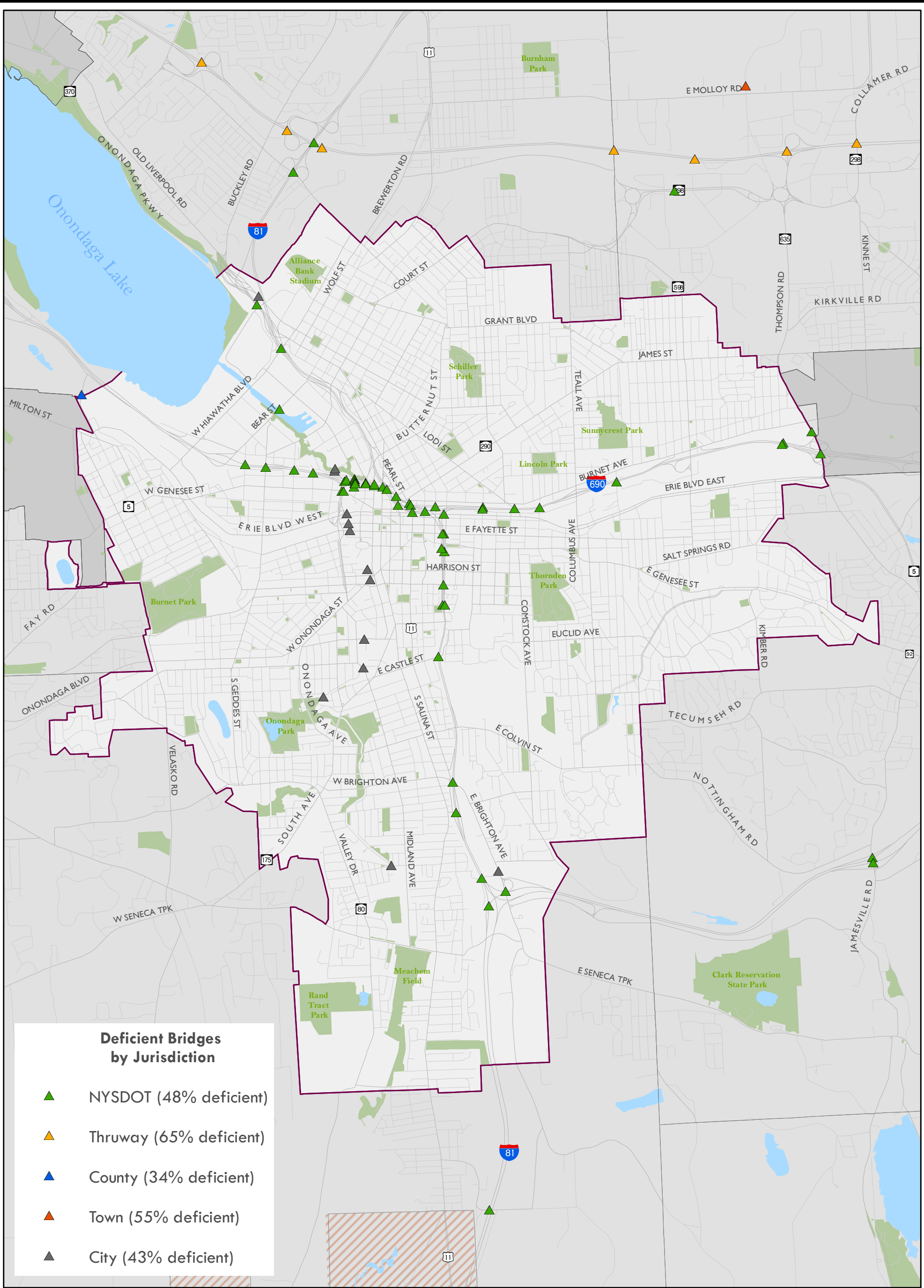
#### Exhibit 4

0 1 2 4 Miles

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

**Legend**

- Interstates
- Major Roads
- Local Roads
- Parks
- Village
- City
- Town
- County Boundary
- Onondaga Nation Territory
- SMT MPA



100 Clinton Square  
126 North Salina St, Suite 100  
Syracuse, NY 13202  
(315) 422-5716  
Fax: (315) 422-7753  
www.smtcmpo.org



Data Sources: SOCPA, NYSDOT, 2011  
Prepared by SMTC, 01/2014

## Deficient Bridges in the City of Syracuse

### Bridge & Pavement Condition Management System

#### Exhibit 5

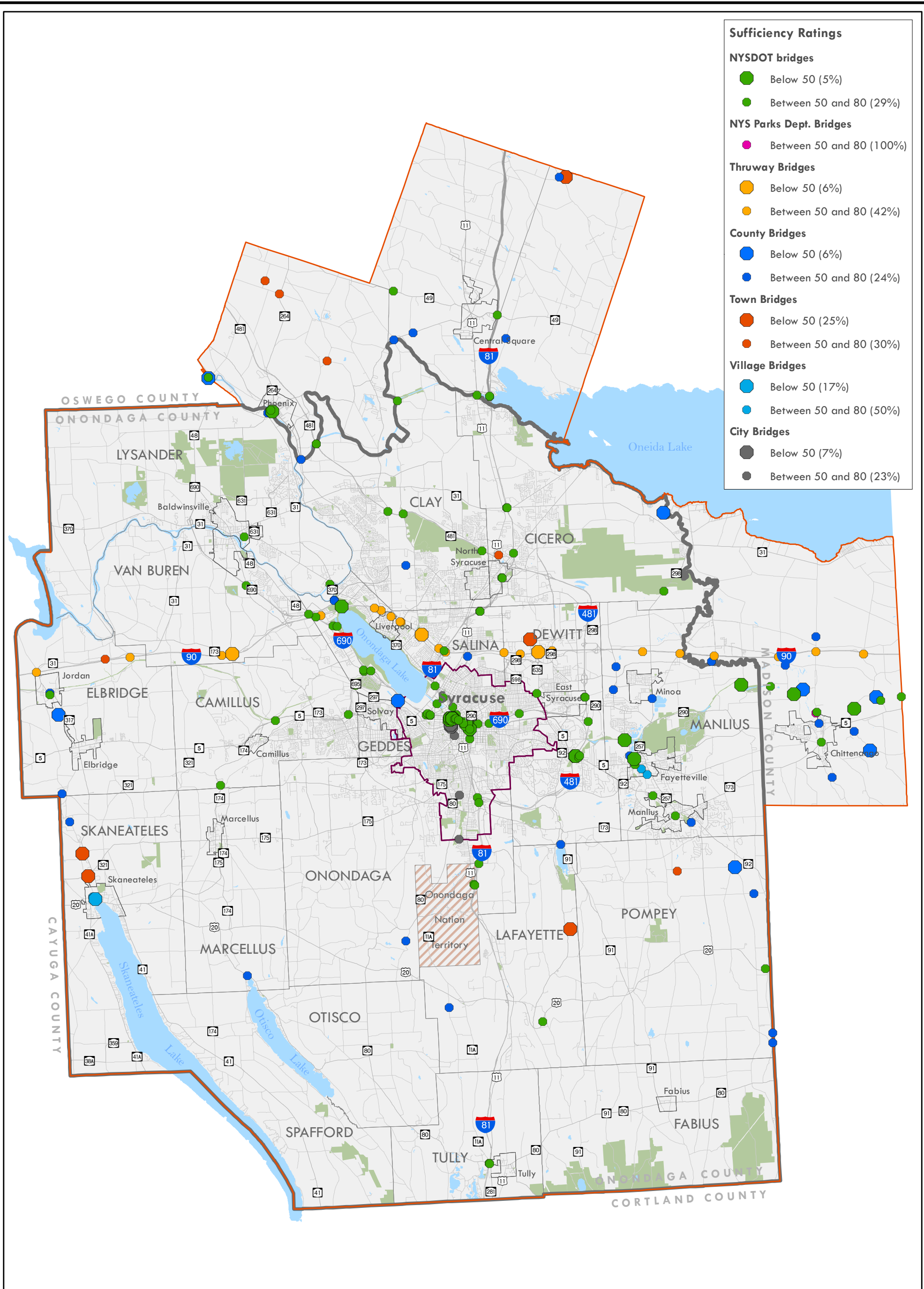
0 0.225 0.45 0.9  
Miles

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

#### Legend

- Interstates
- Major Roads
- Local Roads
- Parks
- Village
- City
- Town
- County Boundary
- Onondaga Nation Territory





100 Clinton Square  
126 North Salina St, Suite 100  
Syracuse, NY 13202  
(315) 422-5716  
Fax: (315) 422-7753  
www.smtcmpo.org



Data Sources: SOCPA, NYSDOT, 2011  
Prepared by SMTC, 01/2014

## Sufficiency Ratings in the MPA by Jurisdiction

### Bridge & Pavement Condition Management System

#### Exhibit 6

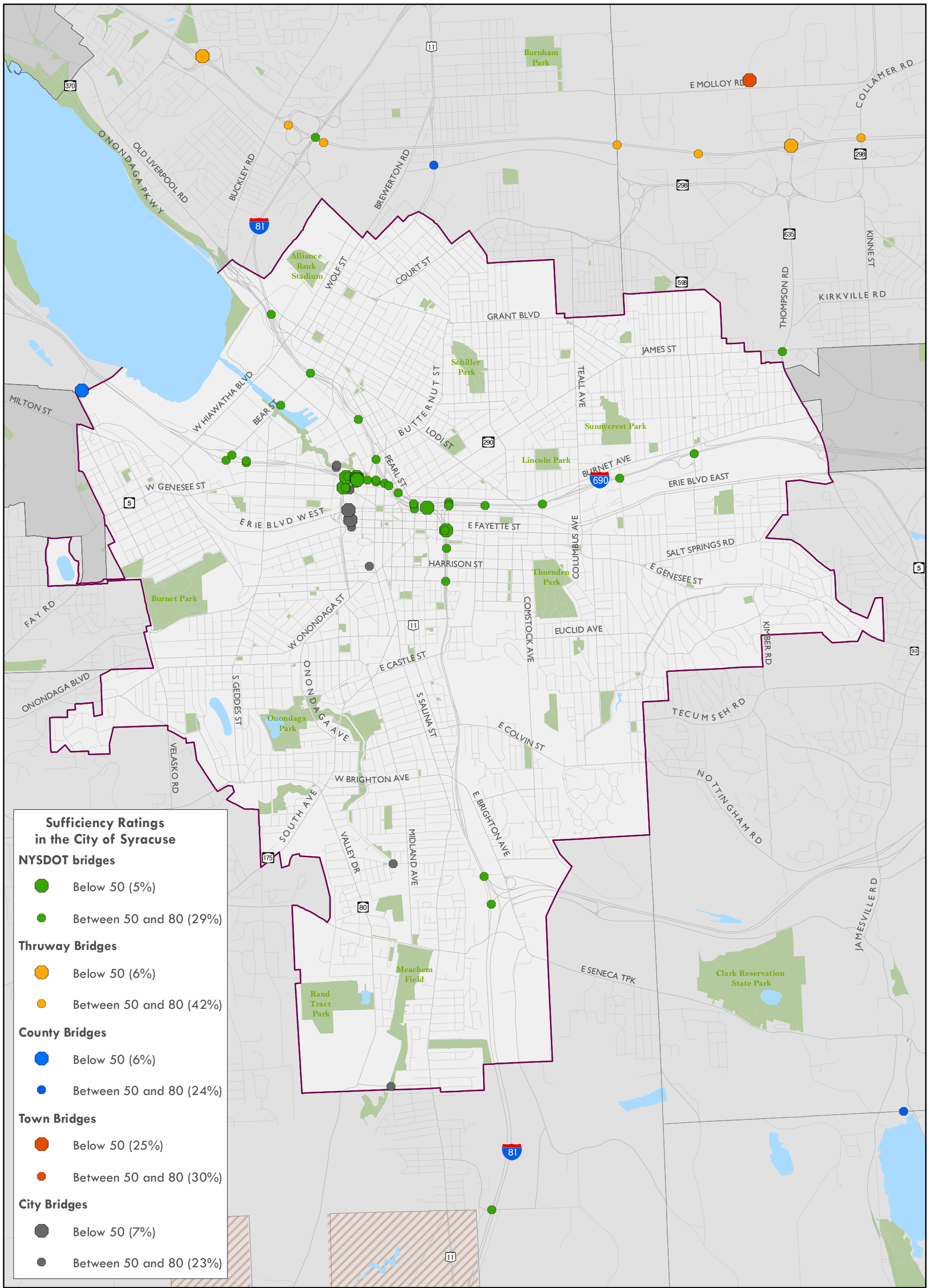
0 1 2 4  
Miles

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

#### Legend

- Interstates
- Major Roads
- Local Roads
- Parks
- Village
- City
- Town
- County Boundary
- Onondaga Nation Territory
- SMTC MPA





100 Clinton Square  
126 North Salina St, Suite 100  
Syracuse, NY 13202  
(315) 422-5716  
Fax: (315) 422-7753  
www.smtcmpo.org



Data Sources: SOCPA, NYSDOT, 2011  
Prepared by SMTC, 01/2014

## Sufficiency Ratings in the City of Syracuse

### Bridge & Pavement Condition Management System

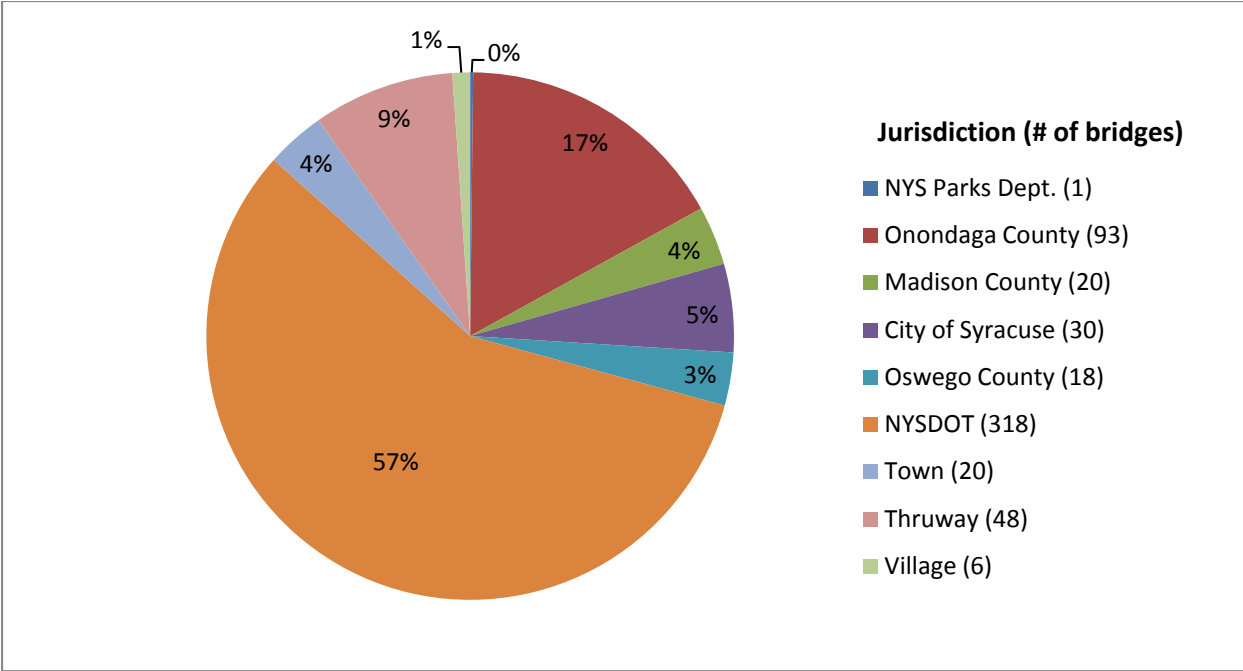
#### Exhibit 7

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

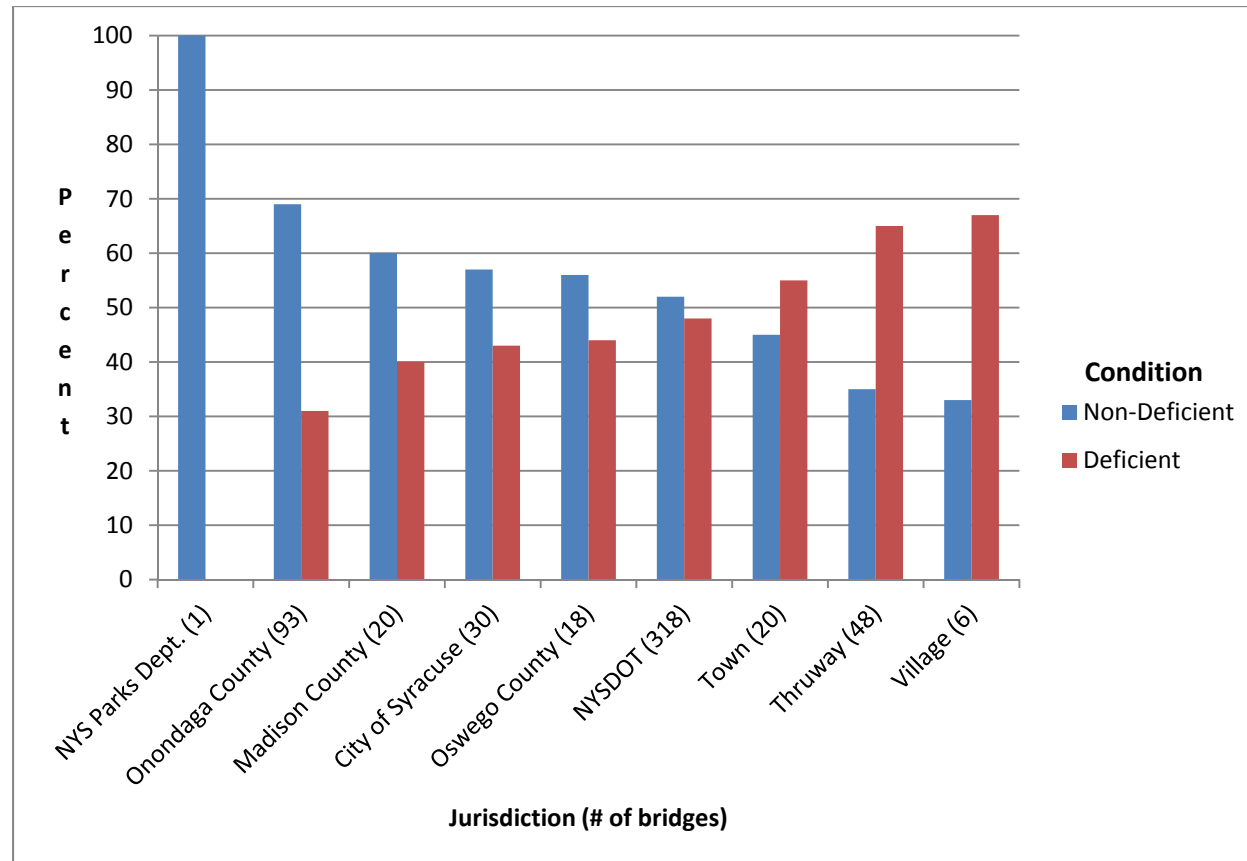
## Exhibit 8: Bridge Jurisdiction and Ratings

Bridge Jurisdiction	Total Number of Bridges		Non-Deficient		Deficient Bridges		Deficient Bridges by Type			
					(Both "Deficient" and "Critically Deficient")		Deficient Bridges		Critically Deficient Bridges	
			Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
City of Syracuse	30		17	57%	13	43%	13	43%	0	0
Onondaga County DOT	93		64	69%	29	31%	29	31%	0	0
Oswego County	18		10	56%	8	44%	8	44%	0	0
Madison County	20		12	60%	8	40%	8	40%	0	0
NYSDOT	318		165	52%	153	48%	153	48%	1	0.3%
NYS Thruway	48		17	35%	31	65%	31	65%	0	0
Towns in the MPA	20		9	45%	11	55%	11	55%	0	0
NYS Parks Dept.	1		1	100%	0	0	0	0	0	0
Villages in the MPA	6		2	33%	4	67%	4	67%	0	0
Total	554		299	54%	255	46%	254	46%	1	0.1%

**Exhibit 9: Bridges by Jurisdiction in the MPA**

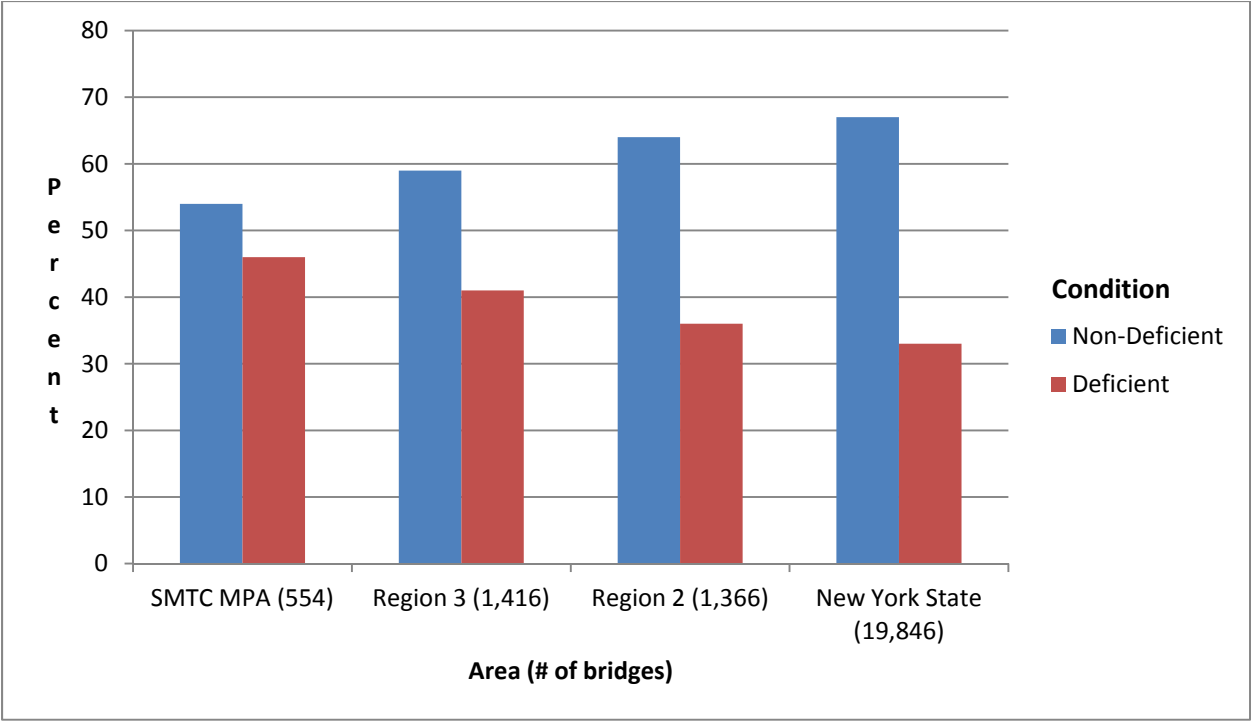


**Exhibit 10: Bridge Ratings by Jurisdiction in the MPA**



Note: The one bridge in the MPA with critical needs, owned by NYSDOT, was left off this chart; the percent of NYSDOT bridges with critical needs is 0.3%.

**Exhibit 11: Comparison of Bridge Ratings (MPA, Regions 2 & 3, and New York State)**



Note: Critical Needs bridges were left off this chart due to very small percentages (SMTC, 0.1%; Region 3, 0.6%; Region 2, 0.3%, and New York State, 0.2%).

**Exhibit 12: Bridge Sufficiency Ratings by Jurisdiction**

	Total Number of Bridges		Sufficiency Rating Above 80		Sufficiency Rating Between 50 and 80		Sufficiency Rating Below 50	
Bridge Jurisdiction								
			Number	Percentage	Number	Percentage	Number	Percentage
City of Syracuse	30		21	70%	7	23%	2	7%
Onondaga County DOT	93		69	74%	20	22%	4	4%
Oswego County	18		11	61%	6	33%	1	6%
Madison County	20		12	60%	5	25%	3	15%
New York State DOT	318		210	66%	92	29%	16	5%
New York State Thruway Authority	48		25	52%	20	42%	3	6%
Towns in the MPA	20		9	45%	6	30%	5	25%
Villages in the MPA	6		2	33%	3	50%	1	17%
NYS Parks Dept.	1		0	0	1	100%	0	0
Total	554		359	65%	160	29%	35	6%

## 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 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, as well as in the towns of Schroepfel, Hastings, and West Monroe in Oswego County; and the town of Sullivan in Madison County. These roads were rated 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 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 conditions for the traveling public in the MPA. A local road rating inventory (and traffic volume information) may allow for a cost/benefit comparison of local and state federal-aid projects during the project selection process.

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. The data are based on linear centerline miles of roads calculated by the SMTC using GIS.

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 roads account for 1,986 centerline miles or 49% of the total MPA area. Only 3%, or 51 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 420.7 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.

Exhibits 13, 14, 15, 16, and 17 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 13 indicates the following:

- Approximately 398.3 centerline miles of road in the City of Syracuse were rated.
- 22.4 centerline miles of the 420.7 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, and poor), the highest percentage of rated roads, 41%, were classified as poor.
- The average rating for the City roads is 5.9 (poor 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 towns in Oswego and Madison County that are within the MPA (Schroepel, Hastings, West Monroe, and Sullivan) were rated by the NYSDOT on the NYSDOT scale, as described in the introduction. See Exhibit 39 for a map of the functional classifications of each local road.

Exhibits 13, 14, 15, 16, and 17 include information collected for all Local roads for which there were pavement ratings provided.

Exhibit 13 indicates the following:

- Approximately 56.2 centerline miles of Local roads are rated.
- Of the various pavement rating categories (excellent, good, fair, and poor), most (61%) were rated as either “fair” or “good”.
- The average rating for the local roads is 6.7 (fair condition).

### 3.1.iii Onondaga County Pavement Ratings

For the data provided for this report, the OCDOT contracted with a consultant that rated approximately 25% of their roads. In last year’s report, the OCDOT provided an adjusted rating for roads that were rated in previous years but not rated during that year; this year the OCDOT has provided the same Surface Distress Index (SDI) rating for these roads to account for system deterioration. The ratings in this report include the 2013 ratings.

Exhibits 13, 14, 15, 16, and 17 all represent information collected for all federal-aid eligible and non federal-aid eligible roads from the pavement management system for Onondaga County.

Exhibit 13 indicates the following:

- Approximately 791.4 centerline miles of Onondaga County roads are rated.

- Of the various pavement rating categories (excellent, good, fair, and poor), the highest percentage of rated roads, 36%, were classified as “good”, and 28% were classified as “fair”.
- The average rating for the county roads is 6.6 (fair condition).

#### 3.1.iv Oswego County Pavement

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 13, 14, 15, 16, and 17 represent information collected for all rated roads in Oswego County.

Exhibit 13 indicates the following:

- Approximately 83.9 centerline miles were rated.
- Of the various rating categories, the highest percentage of rated roads, 45% were classified as “fair”.
- The average rating for Oswego County roads is 6.9 (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 13, 14, 15, 16, and 17 represent the information collected for those rated roads in Madison County.

Exhibit 13 indicates the following:

- Approximately 38.8 centerline miles were rated.
- Of the various rating categories, the highest percentage of rated roads, 71%, were classified as “good”.
- The average rating for Madison County roads is 7.4 (good 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.

Exhibits 13, 14, 15, 16, and 17 represent information collected for all federal-aid and non federal-aid eligible roads from the pavement management system for New York State.

Exhibit 13 shows the following:

- Approximately 548.6 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, 32%, were classified as “fair” and 31% were classified as “good”.
- The average rating for the state roads is 6.7 (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.

Exhibit 33 is a comparison between the NYSDOT jurisdiction roads in the MPA, NYSDOT Region 2, and Region 3 and on all New York State DOT roads. The following was determined (note that all calculations are in lane miles except the MPA):

- NYSDOT Region 2 has 56% good roads, 24% fair, and 8% poor roads.
- NYSDOT Region 3 has 26% good roads, 39% fair, and 22% poor roads.
- New York State has 45% good roads, 30% fair, and 10% poor roads.
- The MPA has 31% good roads, 32% fair and 21% poor roads.

### 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.

Exhibits 13, 14, 15, 16, and 17 all represent information collected for all federal-aid eligible roads from the pavement management system for New York State Thruway Authority.

Exhibit 13 shows the following:

- Approximately 36.1 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, 75%, were classified as “excellent”.
- The average rating for the New York State Thruway pavement is 8.9 (good condition).

# Exhibit 13

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

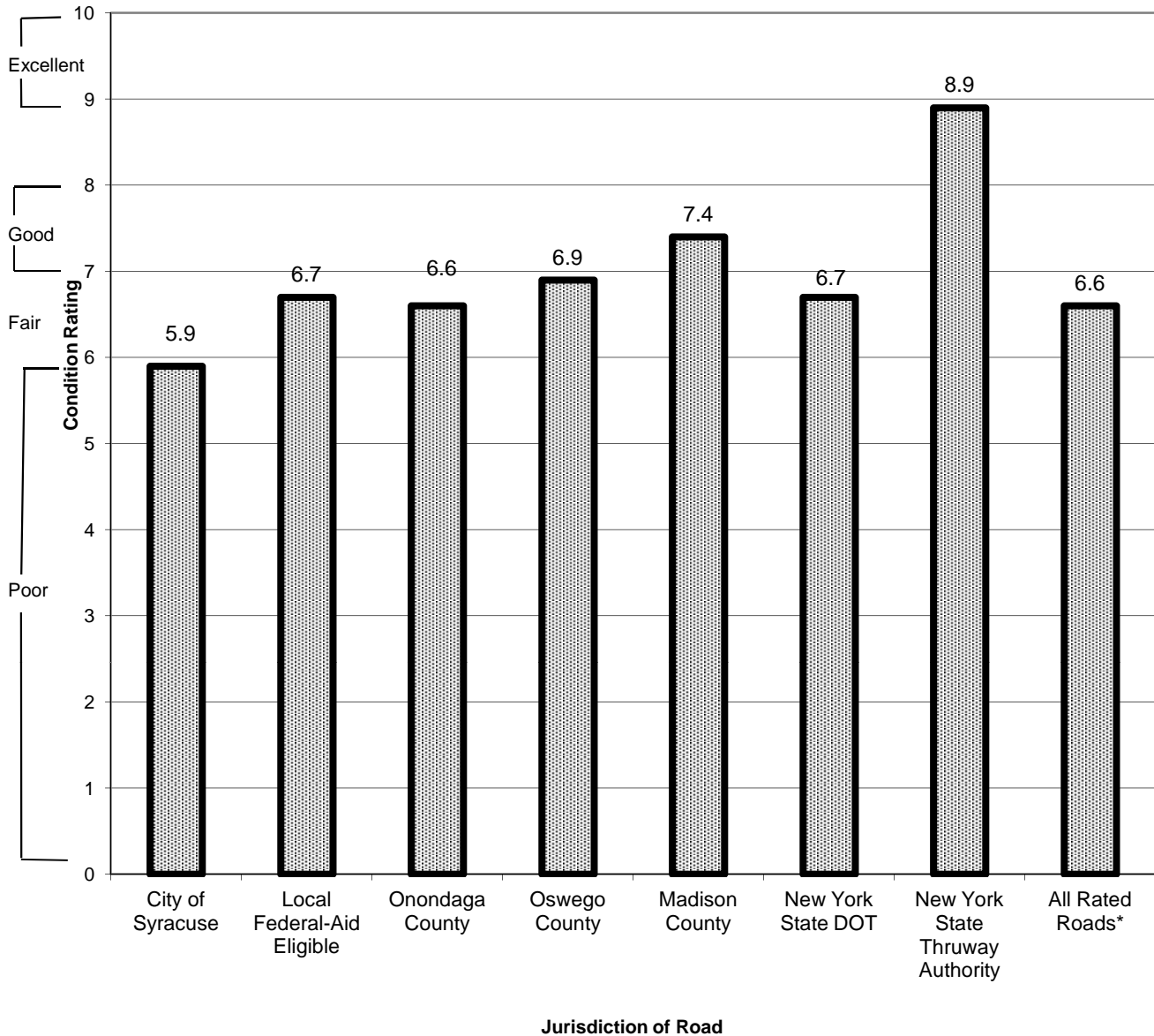
	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads by Jurisdiction	Average Rating
<b>City of Syracuse</b>				5.9 (Poor)
Excellent	81,732	15.5	4%	
Good	661,414	125.3	31%	
Fair	502,746	95.2	24%	
Poor	857,159	162.3	41%	
<b>Total</b>	<b>2,103,051</b>	<b>398.3</b>	<b>100%</b>	
<b>Local Federal-Aid Eligible</b>				6.7 (Fair)
Excellent	46,310	8.8	16%	
Good	88,479	16.8	30%	
Fair	92,890	17.6	31%	
Poor	69,022	13.1	23%	
<b>Total</b>	<b>296,701</b>	<b>56.2</b>	<b>100%</b>	
<b>Madison County</b>				7.4 (Good)
Excellent	26,118	4.9	13%	
Good	144,946	27.5	71%	
Fair	0	0.0	0%	
Poor	33,641	6.4	16%	
<b>Total</b>	<b>204,705</b>	<b>38.8</b>	<b>100%</b>	
<b>Onondaga County</b>				6.6 (Fair)
Excellent	612,285	116.0	15%	
Good	1,505,860	285.2	36%	
Fair	1,176,880	222.9	28%	
Poor	883,390	167.3	21%	
<b>Total</b>	<b>4,178,415</b>	<b>791.4</b>	<b>100%</b>	
<b>Oswego County</b>				6.9 (Fair)
Excellent	72,330	13.7	16%	
Good	139,487	26.4	32%	
Fair	199,312	37.7	45%	
Poor	31,635	6.0	7%	
<b>Total</b>	<b>442,764</b>	<b>83.9</b>	<b>100%</b>	
<b>New York State</b>				6.7 (Fair)
Excellent	460,608	41.5	16%	
Good	912,155	226.62	31%	
Fair	923,566	137.8	32%	
Poor	600,465	59.8	21%	
<b>Total</b>	<b>2,896,794</b>	<b>548.6</b>	<b>100%</b>	
<b>New York State Thruway</b>				8.9 (Good)
Excellent	143,410	27.2	75%	
Good	46,967	8.9	25%	
Fair	0	0.0	0%	
Poor	0	0.0	0%	
<b>Total</b>	<b>190,377</b>	<b>36.1</b>	<b>100%</b>	
<b>All Rated Roads*</b>				
Excellent	1,442,793	273.3	14%	6.6 (Fair)
Good	3,499,308	662.7	34%	
Fair	2,895,394	548.4	28%	
Poor	2,475,312	468.8	24%	
<b>Total</b>	<b>10,312,807</b>	<b>1,953.2</b>	<b>100%</b>	

\*includes roads under City of Syracuse, County, New York State and select Town/Village 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 14

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

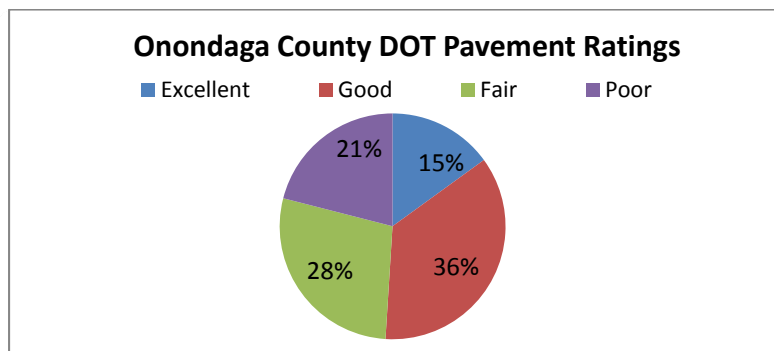
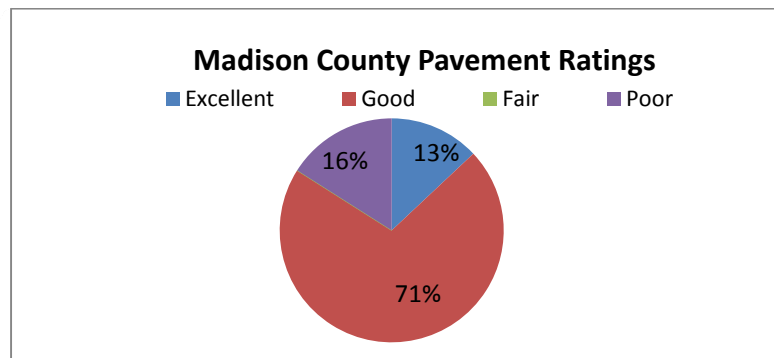
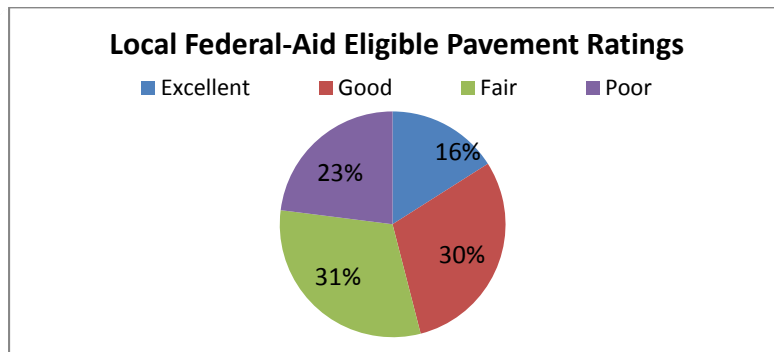
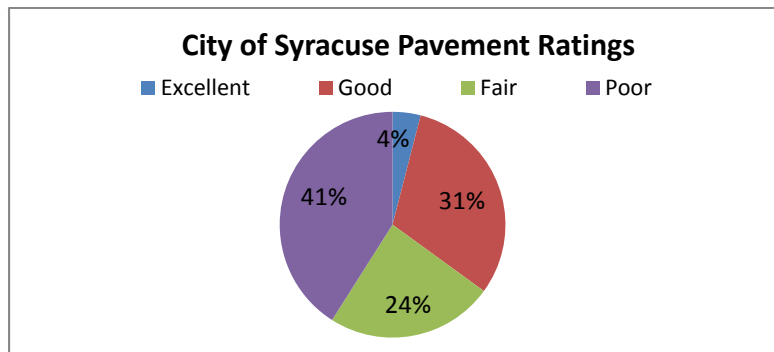


#### Notes:

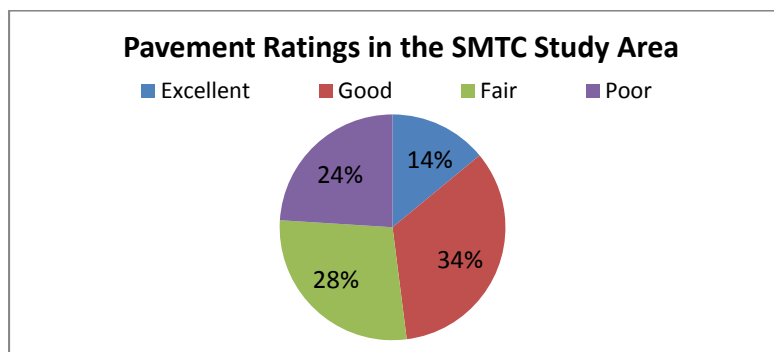
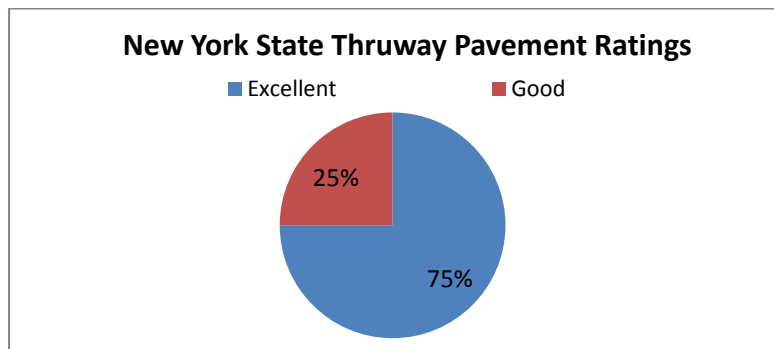
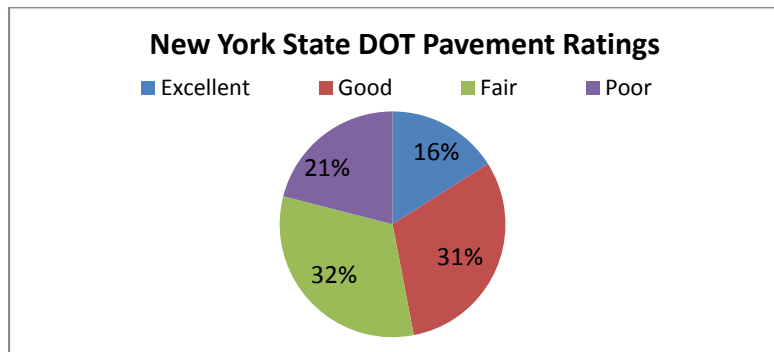
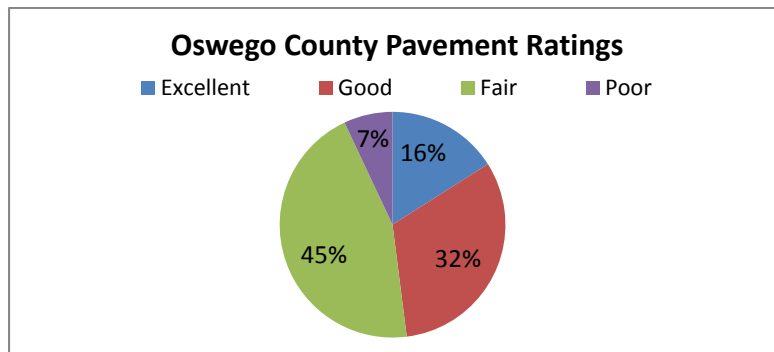
1. Scale of Condition Rating (1-5: Poor) (6: Fair) (7-8: Good) (9-10: Excellent).
2. Calculations based on Federal-Aid Eligible and Non Federal-Aid Eligible roads measured by total centerline length.

\*Includes roads under City of Syracuse, County, New York State and select Town/Village ownership.

## Exhibit 15: Pavement Ratings for All Rated Roads by Jurisdiction (Part 1)



## Exhibit 15: Pavement Ratings for All Rated Roads by Jurisdiction (Part 2)





Pavement Rating

- Poor
- Fair
- Good
- Excellent



100 Clinton Square  
126 North Salina St, Suite 100  
Syracuse, NY 13202  
(315) 422-5716  
Fax: (315) 422-7753  
www.smtcmpo.org



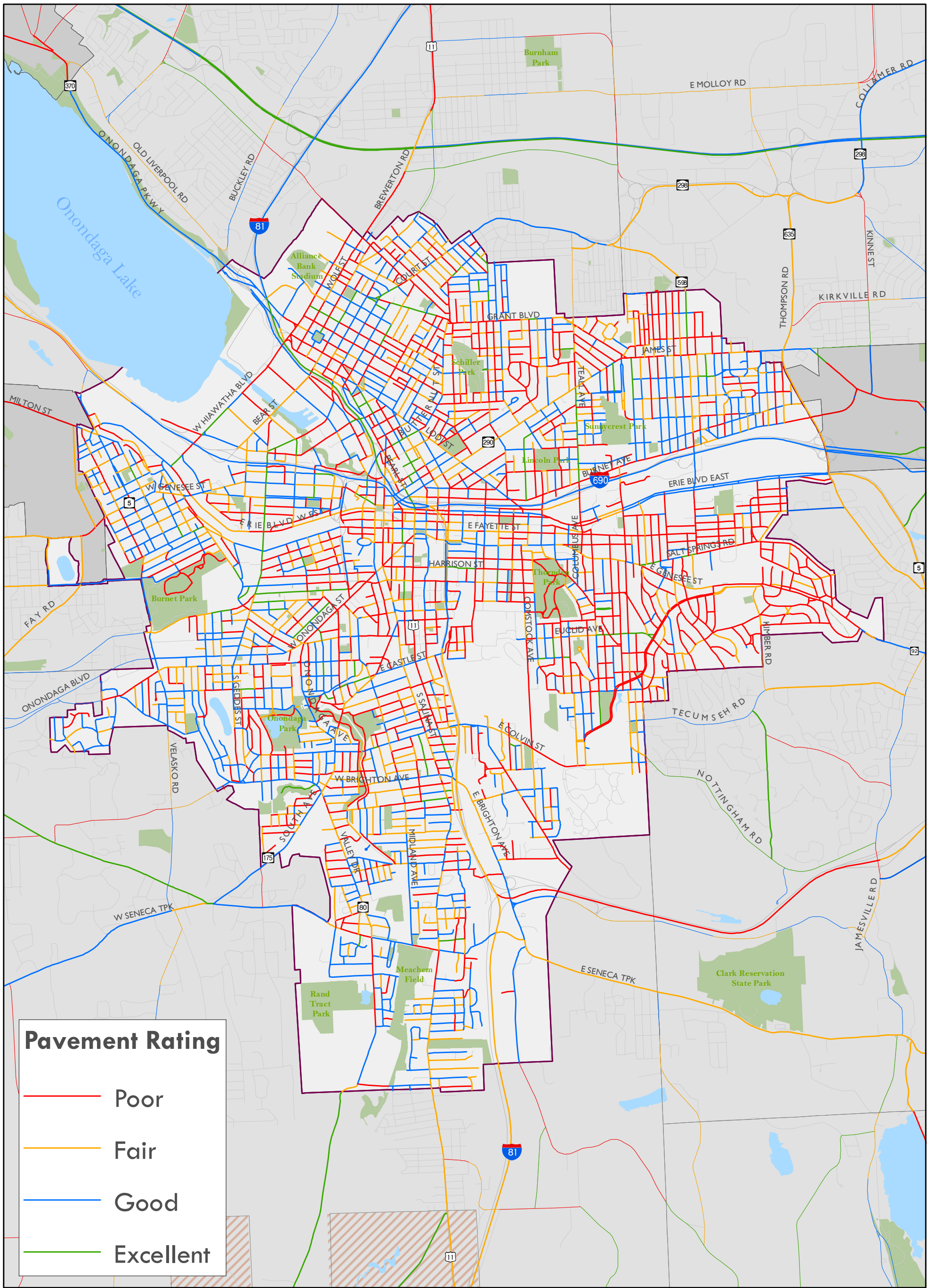
Data Sources: SOCPA, NYSDOT, 2011  
Prepared by SMTC, 03/2014

All Rated Roads in the MPA  
Bridge & Pavement Condition Management System  
Exhibit 16

0 1 2 4  
Miles

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

- Legend
- Major Roads
  - Local Roads
  - Parks
  - Village
  - Town
  - City
  - County Boundary
  - Onondaga Nation Territory
  - SMTC MPA



100 Clinton Square  
126 North Salina St, Suite 100  
Syracuse, NY 13202  
(315) 422-5716  
Fax: (315) 422-7753  
www.smtcmpo.org



Data Sources: SOCPA, NYSDOT, 2011  
Prepared by SMTC, 01/2014

## All Rated Roads in the City of Syracuse

### Bridge & Pavement Condition Management System

### Exhibit 17

0 0.25 0.5 1 Miles

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

#### Legend

- Interstates
- Major Roads
- Local Roads
- Parks
- Village
- City
- Town
- County Boundary
- Onondaga Nation Territory



### 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>

<b>Urban Classifications</b>	<b>Rural Classifications</b>
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.<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.

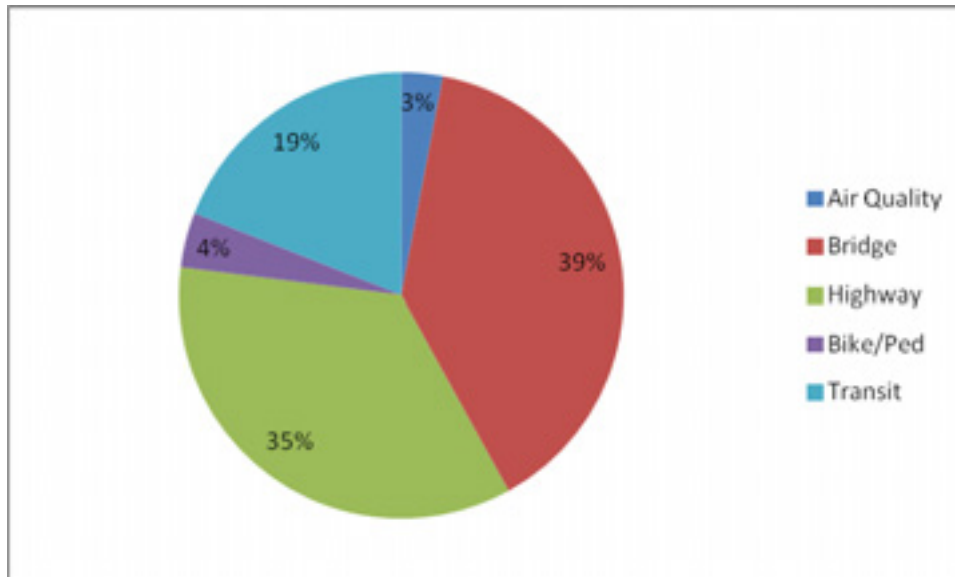
Regarding the most recent TIP, total funding equates to approximately \$315,144,993. Consistent with previous multi-year capital programs, 74% of funds have been programmed to bridge (39%) and highway (35%) projects (see Chart 1). The TIP identifies the timing and funding of all transportation projects 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

<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.

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.

**Chart 1: 2014-2018 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 19-34.

Exhibit 18 displays total rated centerline miles of Federal Aid Eligible roads by rating category in the SMTC MPA. Among all rated roads, approximately 116.2 miles of centerline miles of road under the jurisdiction of the City of Syracuse, 56.2 miles under local jurisdiction, 16.9 miles under the jurisdiction of Madison County, 26.2 miles under the jurisdiction of Oswego County, 278.5 miles under the jurisdiction of Onondaga County, 511.2 miles under the jurisdiction of New York State, and 36.1 under the jurisdiction of New York State Thruway Authority are federal-aid eligible. Note that for this study, ramps are not included in the Federal Aid-Eligible network of roads.

Exhibits 38, 39 and 40 show the functional classification code for roads in the MPA (excluding rural minor collectors and rural/urban local functional classifications), and Exhibit 41 is a map of the functional classification system in the MPA. Exhibit 42 displays the ownership of each road in the MPA.

Exhibits 21, 23, 25, 27, 29, 31, 34 and the corresponding charts illustrate the condition of each of the types of functional classifications for each jurisdiction. Exhibits 36 and 37 are maps of all the federal-aid eligible pavement condition ratings.

Exhibit 20 presents data for all federal-aid eligible roads in the MPA:

- The highest percentage of rated roads in the “excellent” rating category fall under New York State Thruway’s jurisdiction at 75%.
- Of the various pavement rating categories (excellent, good, fair, poor and no data), the highest percentage of rated roads in the “poor” category are City of Syracuse roads (37%).

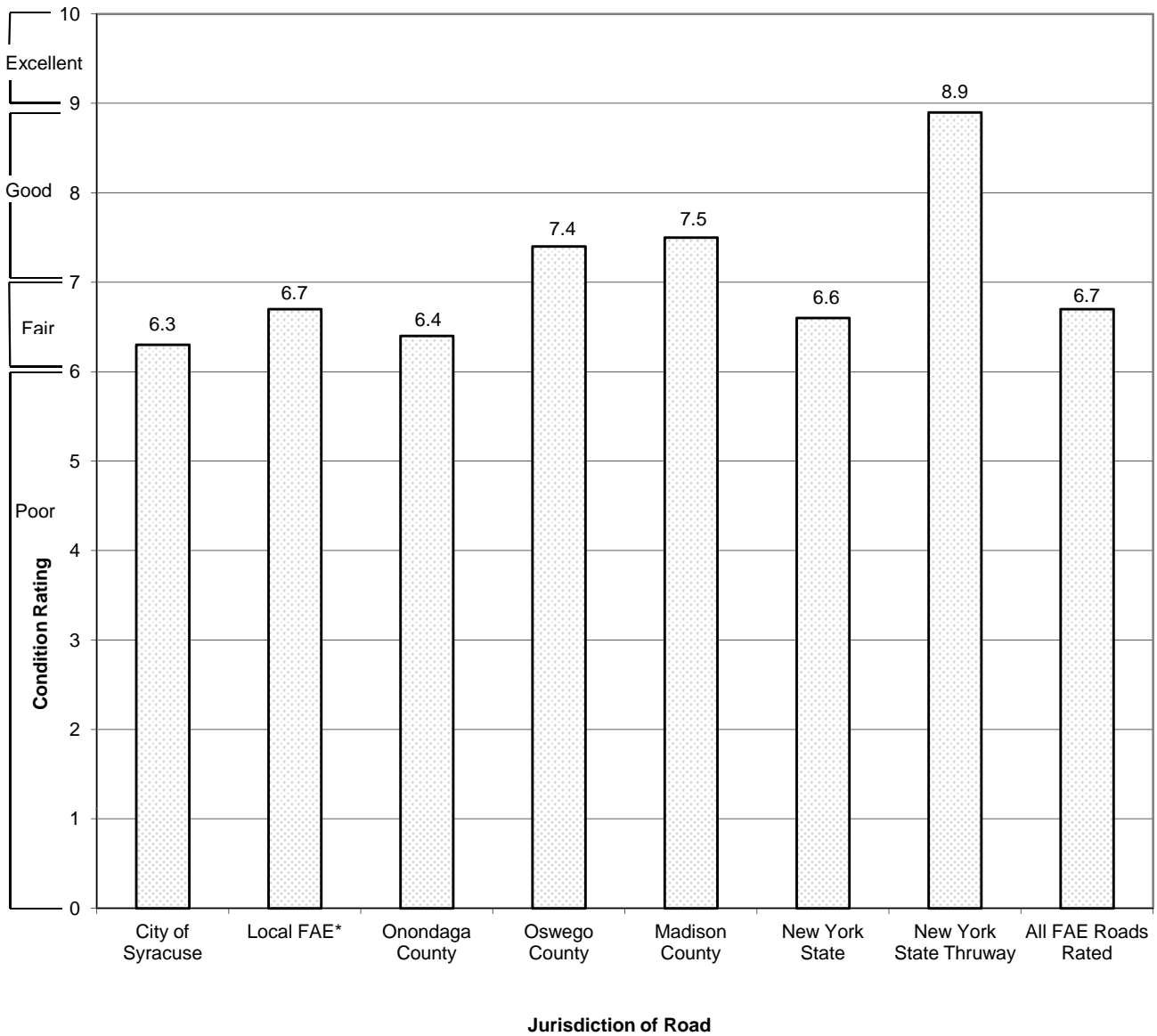
## Exhibit 18

### Pavement Ratings for Federal-Aid Eligible Roads

	Total Centerline Length in Feet	Total Centerline Length in	Percent of Roads	Average Rating
<b>City of Syracuse</b>				6.3 (Fair)
Excellent	39,000	7.4	6%	
Good	195,747	37.1	32%	
Fair	153,168	29.0	25%	
Poor	225,573	42.7	37%	
<b>Total</b>	<b>613,488</b>	<b>116.2</b>	<b>100%</b>	
<b>Local Federal-Aid Eligible</b>				6.7 (Fair)
Excellent	46,310	8.8	16%	
Good	88,479	16.8	30%	
Fair	92,890	21.3	31%	
Poor	69,023	13.1	23%	
<b>Total</b>	<b>296,703</b>	<b>56.2</b>	<b>100%</b>	
<b>Madison County</b>				7.5 (Good)
Excellent	6,774	1.3	8%	
Good	70,746	13.4	79%	
Fair	0	0.0	0%	
Poor	11,513	2.2	13%	
<b>Total</b>	<b>89,033</b>	<b>16.9</b>	<b>100%</b>	
<b>Onondaga County</b>				6.4 (Fair)
Excellent	194,975	36.9	13%	
Good	481,448	91.2	33%	
Fair	449,832	85.2	31%	
Poor	344,203	65.2	23%	
<b>Total</b>	<b>1,470,458</b>	<b>278.5</b>	<b>100%</b>	
<b>Oswego County</b>				7.4 (Good)
Excellent	49,263	9.3	36%	
Good	39,990	7.6	29%	
Fair	35,637	6.7	26%	
Poor	13,666	2.6	10%	
<b>Total</b>	<b>138,555</b>	<b>26.2</b>	<b>100%</b>	
<b>New York State DOT</b>				6.6 (Fair)
Excellent	414,874	78.6	15%	
Good	863,612	163.6	32%	
Fair	919,519	174.2	34%	
Poor	506,861	96.0	19%	
<b>Total</b>	<b>2,704,866</b>	<b>512.3</b>	<b>100%</b>	
<b>New York State Thruway</b>				8.9 (Good)
Excellent	143,410	27.2	75%	
Good	46,967	8.9	25%	
Fair	0	0.0	0%	
Poor	0	0.0	0%	
<b>Total</b>	<b>190,377</b>	<b>36.1</b>	<b>100%</b>	
<b>All Federal-Aid Eligible</b>				6.7 (Fair)
Excellent	894,605	169.4	16%	
Good	1,786,988	338.4	32%	
Fair	1,651,046	312.7	30%	
Poor	1,170,839	221.7	21%	
<b>Total</b>	<b>5,503,479</b>	<b>1,042.3</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 19** **Federal-Aid Eligible (FAE) Pavement Condition Average (Mean)** **Rating Scores by Jurisdiction**

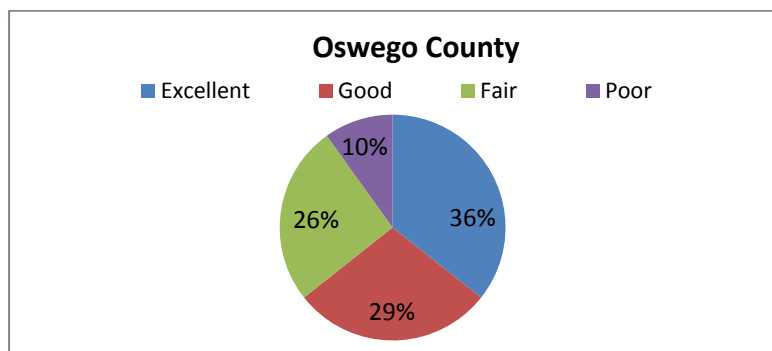
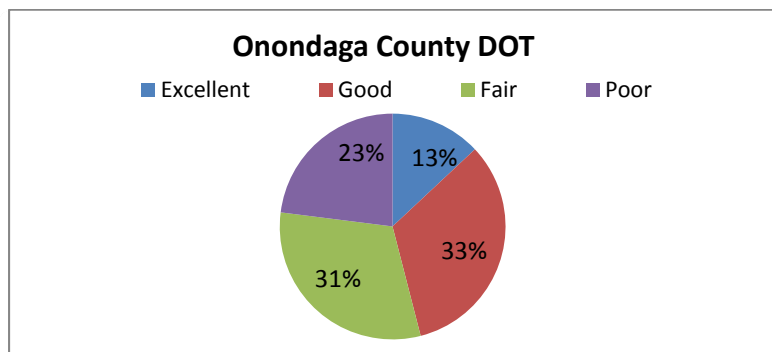
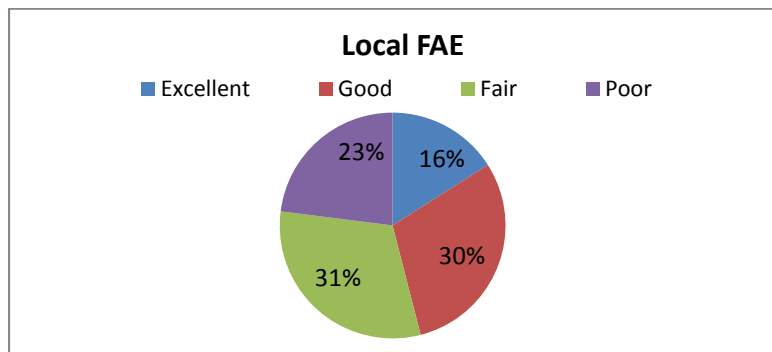
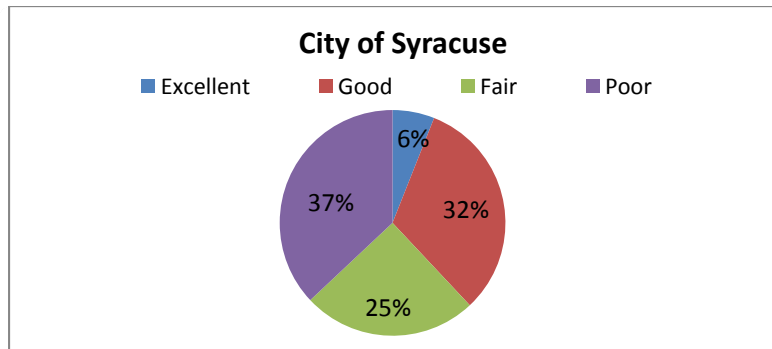


**Notes:**

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.

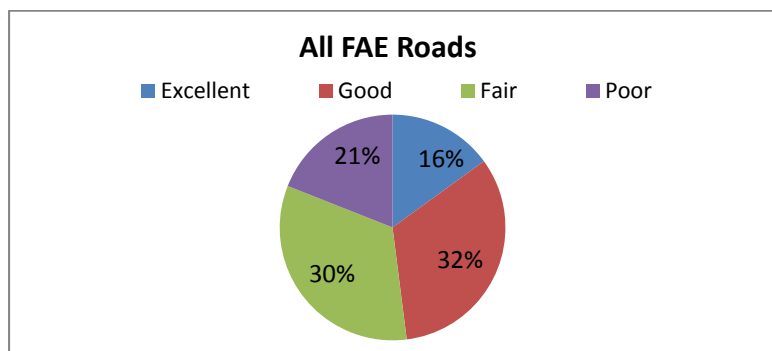
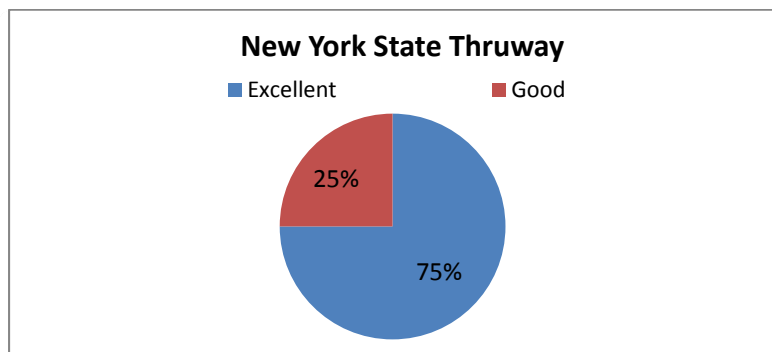
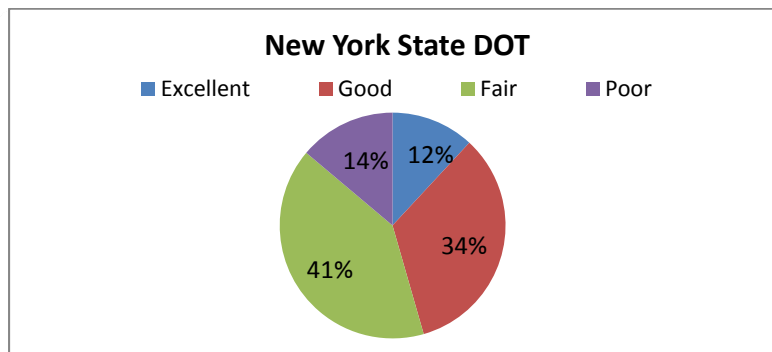
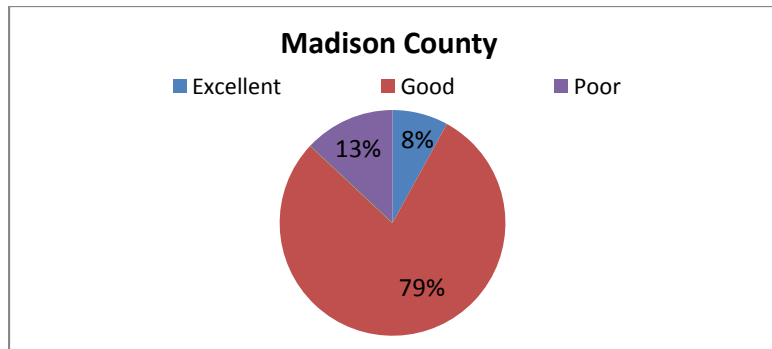
\*Town & Village federal-aid eligible roads.

## Exhibit 20: Federal-Aid Eligible Rated Roads by Jurisdiction (Part 1)





## Exhibit 20: Federal-Aid Eligible Rated Roads by Jurisdiction (Part 2)

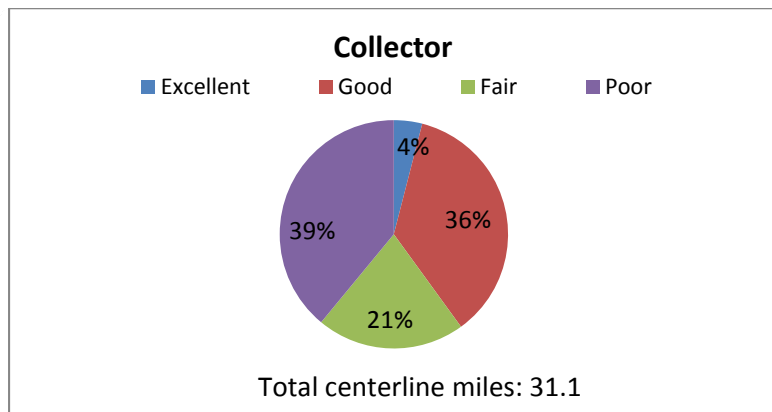
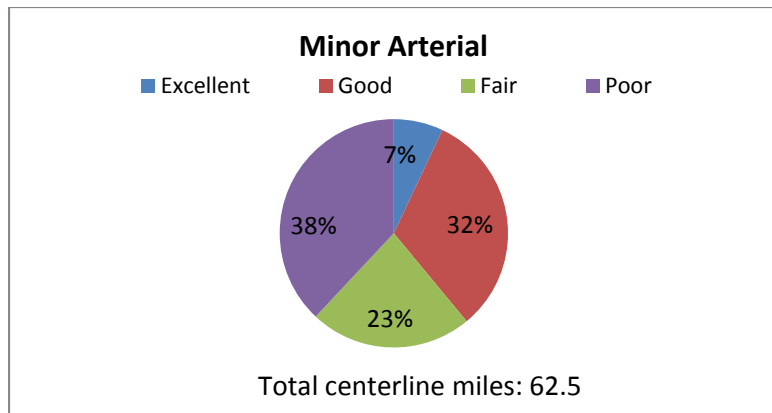
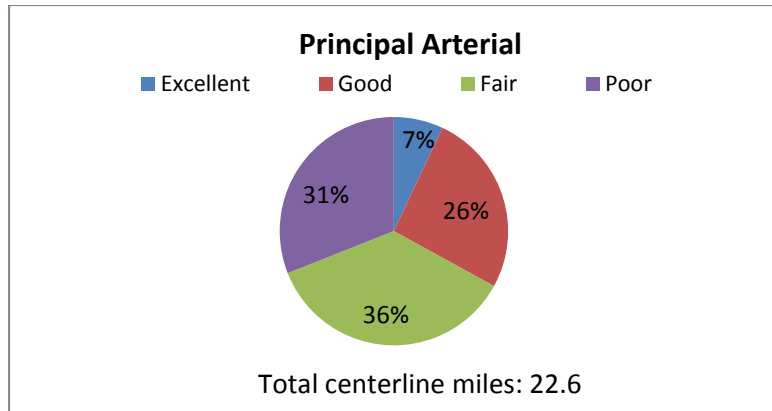


**Exhibit 21**  
**Pavement Ratings by Functional Classification**  
**City of Syracuse**

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
<b>City of Syracuse</b>			
<b>Principal Arterial</b>			
Excellent	7,891	1.5	7%
Good	30,683	5.8	26%
Fair	43,322	8.2	36%
Poor	37,171	7.0	31%
<b>Total</b>	<b>119,067</b>	<b>22.6</b>	<b>100%</b>
<b>Minor Arterial</b>			
Excellent	23,946	4.5	7%
Good	106,233	20.1	32%
Fair	75,323	14.3	23%
Poor	124,653	23.6	38%
<b>Total</b>	<b>330,155</b>	<b>62.5</b>	<b>100%</b>
<b>Collector</b>			
Excellent	7,162	1.4	4%
Good	58,831	11.1	36%
Fair	34,523	6.5	21%
Poor	63,749	12.1	39%
<b>Total</b>	<b>164,265</b>	<b>31.1</b>	<b>100%</b>
<b>All Federal-Aid City Roads</b>			
Excellent	39,000	7.4	6%
Good	195,747	37.1	32%
Fair	153,168	29.0	25%
Poor	225,573	42.7	37%
<b>Total</b>	<b>613,488</b>	<b>116.2</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 of City of Syracuse Roads**



Notes: 1. Percentages determined by total centerline length in miles of road.  
2. See Exhibit 19 for all rated FAE roads graph.

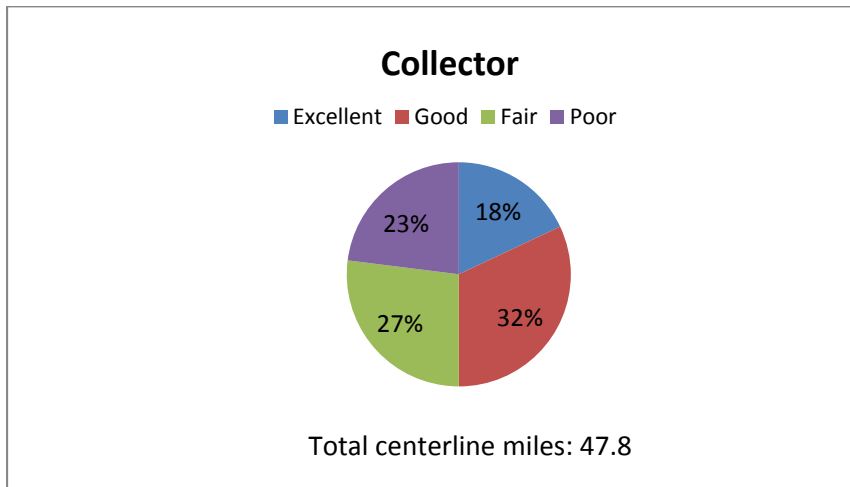
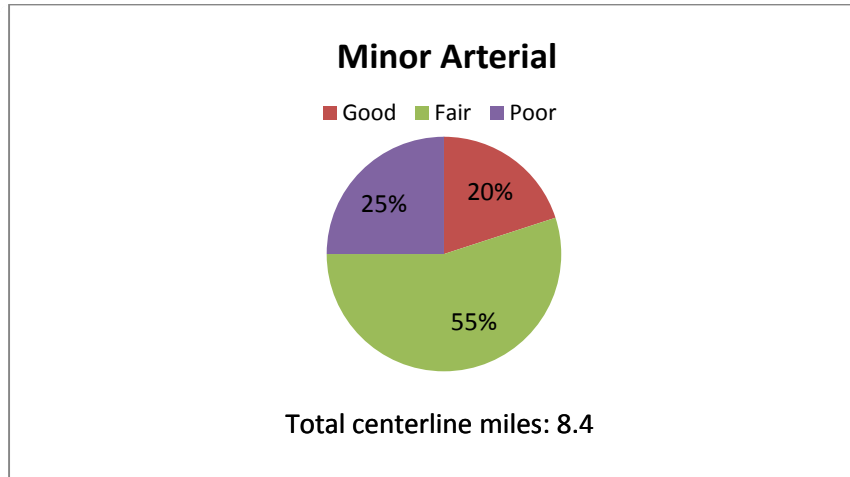
## Exhibit 23

### 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	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	8,786	1.7	20%
Fair	24,410	4.6	55%
Poor	11,332	2.1	25%
<b>Total</b>	<b>44,527</b>	<b>8.4</b>	<b>100%</b>
<b>Collector</b>			
Excellent	46,310	8.8	18%
Good	79,694	15.1	32%
Fair	68,480	13.0	27%
Poor	57,691	10.9	23%
<b>Total</b>	<b>252,175</b>	<b>47.8</b>	<b>100%</b>
<b>All Federal-Aid Roads</b>			
Excellent	46,310	8.8	16%
Good	88,479	16.8	30%
Fair	92,890	17.6	31%
Poor	69,023	13.1	23%
<b>Total</b>	<b>296,703</b>	<b>56.2</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 of Local Federal-Aid Eligible Roads**



Notes: 1. Percentages determined by total centerline length in miles of road.  
2. See Exhibit 19 for all rated FAE roads graph.

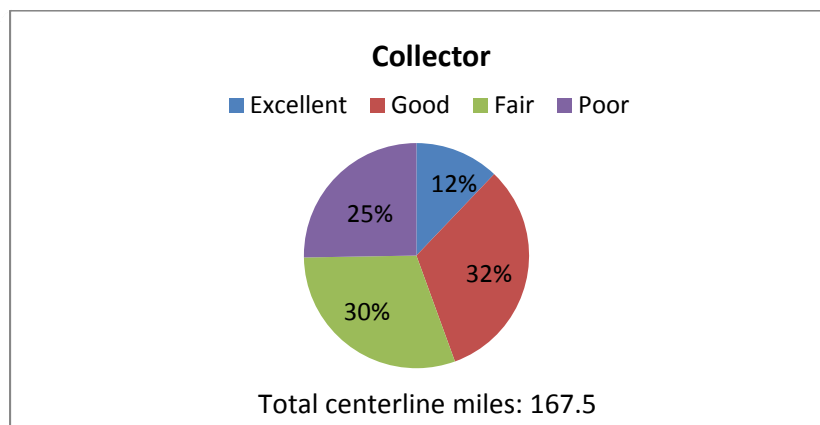
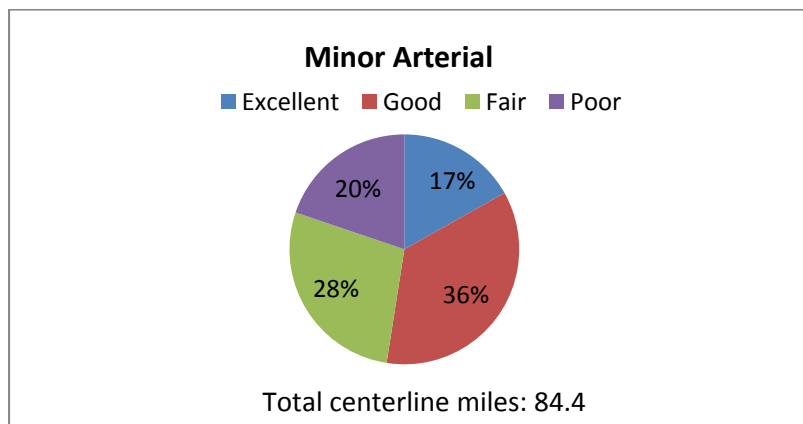
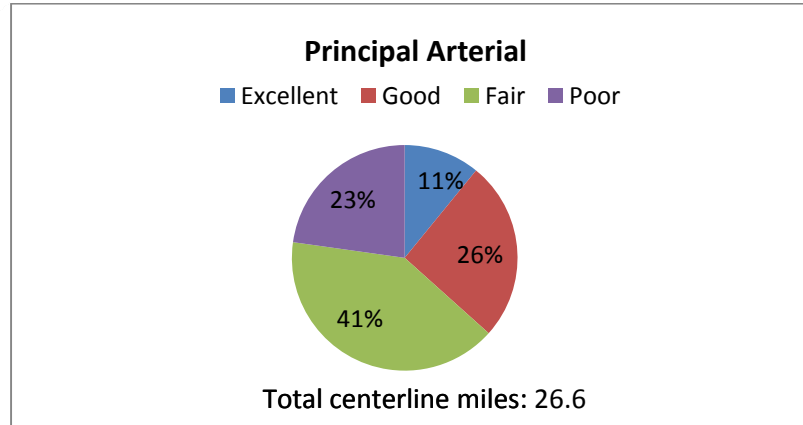
## Exhibit 25

### 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	14,922	2.8	11%
Good	36,214	6.9	26%
Fair	57,506	10.9	41%
Poor	31,971	6.1	23%
<b>Total</b>	<b>140,614</b>	<b>26.6</b>	<b>100%</b>
<b>Minor Arterial</b>			
Excellent	75,232	14.2	17%
Good	158,700	30.1	36%
Fair	123,941	23.5	28%
Poor	87,805	16.6	20%
<b>Total</b>	<b>445,678</b>	<b>84.4</b>	<b>100%</b>
<b>Collector</b>			
Excellent	104,820	19.9	12%
Good	286,534	54.3	32%
Fair	268,384	50.8	30%
Poor	224,427	42.5	25%
<b>Total</b>	<b>884,165</b>	<b>167.5</b>	<b>100%</b>
<b>All County Federal-Aid Roads</b>			
Excellent	194,975	36.9	13%
Good	481,448	91.2	33%
Fair	449,832	85.2	31%
Poor	344,203	65.2	23%
<b>Total</b>	<b>1,470,458</b>	<b>278.5</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 of Onondaga County DOT Roads**



Notes: 1. Percentages determined by total centerline length in miles of road.  
2. See Exhibit 19 for all rated FAE roads graph.

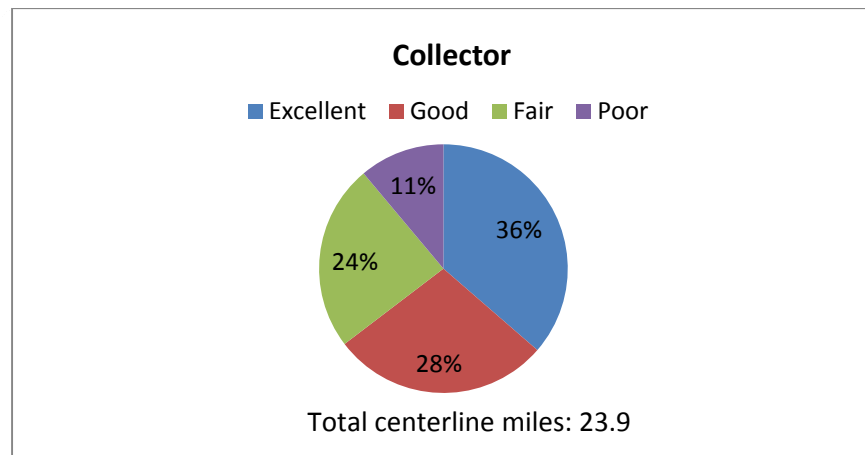
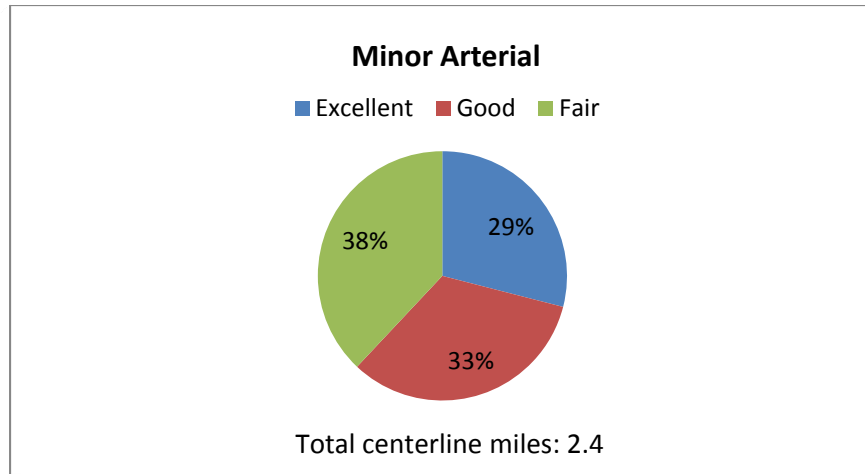
**Exhibit 27**  
**Pavement Ratings by Functional Classification**  
**Oswego County**

	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	3,594	0.7	29%
Good	4,140	0.8	33%
Fair	4,771	0.9	38%
Poor	0	0.0	0%
<b>Total</b>	<b>12,505</b>	<b>2.4</b>	<b>100%</b>
<b>Collector</b>			
Excellent	45,668	8.6	36%
Good	35,849	6.8	28%
Fair	30,867	5.8	24%
Poor	13,666	2.6	11%
<b>Total</b>	<b>126,050</b>	<b>23.9</b>	<b>100%</b>
<b>All County Federal-Aid Roads</b>			
Excellent	49,263	9.3	36%
Good	39,990	7.6	29%
Fair	35,637	6.7	26%
Poor	13,666	2.6	10%
<b>Total</b>	<b>138,555</b>	<b>26.2</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 28:**  
**Pavement Ratings by Functional Classification of Oswego County Roads**



Notes: 1. Percentages determined by total centerline length in miles of road.  
2. See Exhibit 19 for all rated FAE roads graph.

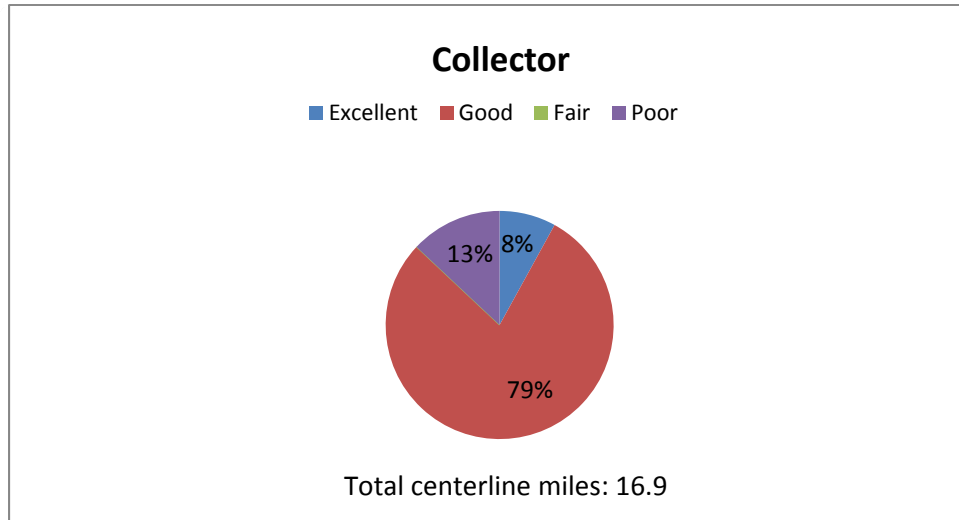
## Exhibit 29

### 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	6,774	1.3	8%
Good	70,746	13.4	79%
Fair	0	0.0	0%
Poor	11,513	2.2	13%
<b>Total</b>	<b>89,033</b>	<b>16.9</b>	<b>100%</b>
<b>All County Federal-Aid Roads</b>			
Excellent	6,774	1.3	8%
Good	70,746	13.4	79%
Fair	0	0.0	0%
Poor	11,513	2.2	13%
<b>Total</b>	<b>89,033</b>	<b>16.9</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 30:**  
**Pavement Ratings by Functional Classification of Madison County Roads**



Notes: 1. Percentages determined by total centerline length in miles of road.  
2. See Exhibit 19 for all rated FAE roads graph.

## Exhibit 31

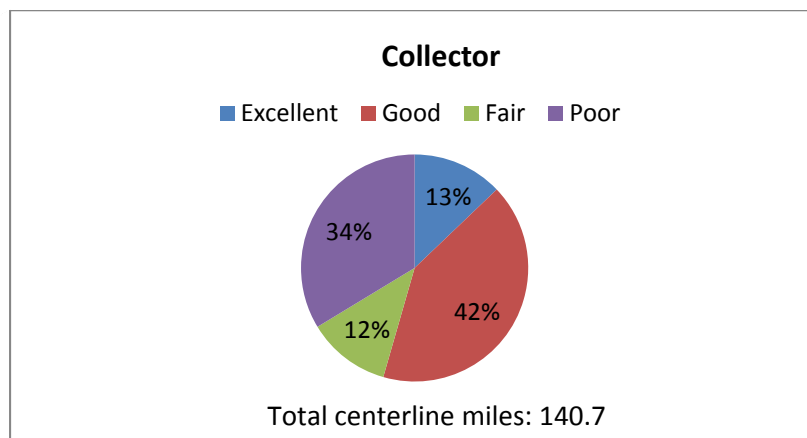
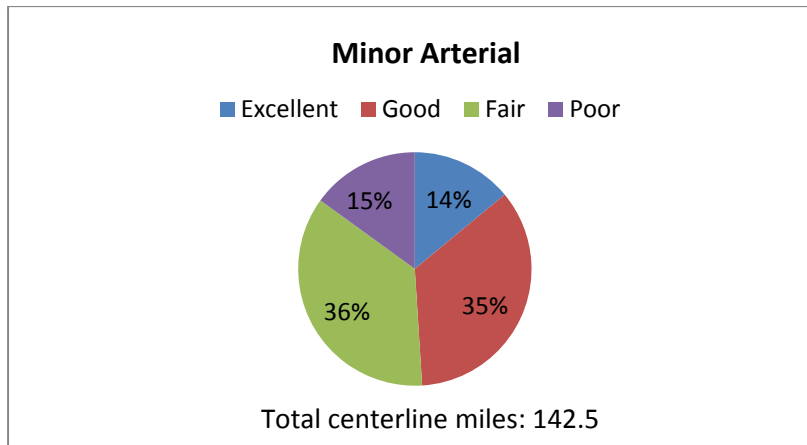
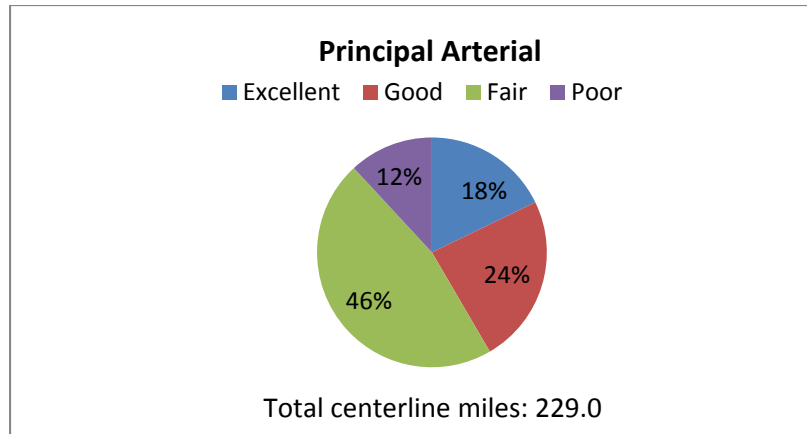
### Pavement Ratings by Functional Classification New York State DOT Roads

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
<b>New York State</b>			
<b>Principal Arterial</b>			
Excellent	213,109	40.4	18%
Good	290,777	55.1	24%
Fair	559,871	106.0	46%
Poor	145,527	27.6	12%
<b>Total</b>	<b>1,209,283</b>	<b>229.0</b>	<b>100%</b>
<b>Minor Arterial</b>			
Excellent	106,805	20.2	14%
Good	264,206	50.0	35%
Fair	270,656	51.3	36%
Poor	110,825	21.0	15%
<b>Total</b>	<b>752,492</b>	<b>142.5</b>	<b>100%</b>
<b>Collector</b>			
Excellent	94,960	18.0	13%
Good	308,629	58.5	42%
Fair	88,993	16.9	12%
Poor	250,509	47.4	34%
<b>Total</b>	<b>743,091</b>	<b>140.7</b>	<b>100%</b>
<b>All State Federal-Aid Roads</b>			
Excellent	414,875	78.6	15%
Good	863,612	163.6	32%
Fair	919,519	174.2	34%
Poor	506,861	96.0	19%
<b>Total</b>	<b>2,704,866</b>	<b>512.3</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.

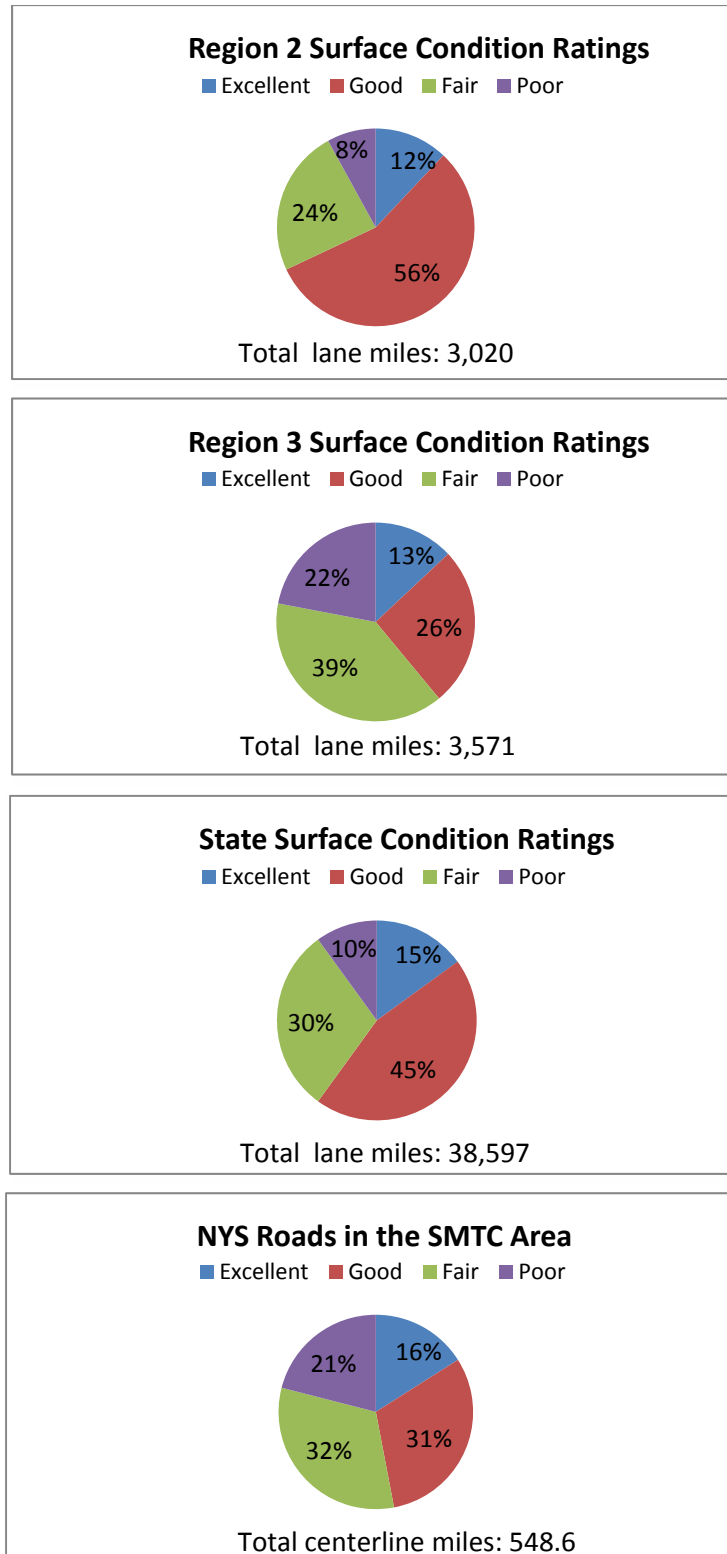
## Exhibit 32:

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



Notes: 1. Percentages determined by total centerline length in miles of road.  
2. See Exhibit 19 for all rated FAE roads graph.

### Exhibit 33: Comparison of State Pavement Ratings



Note: Percentages for Regions 2 and 3 and for the State pie charts are determined by using total lane miles of road.

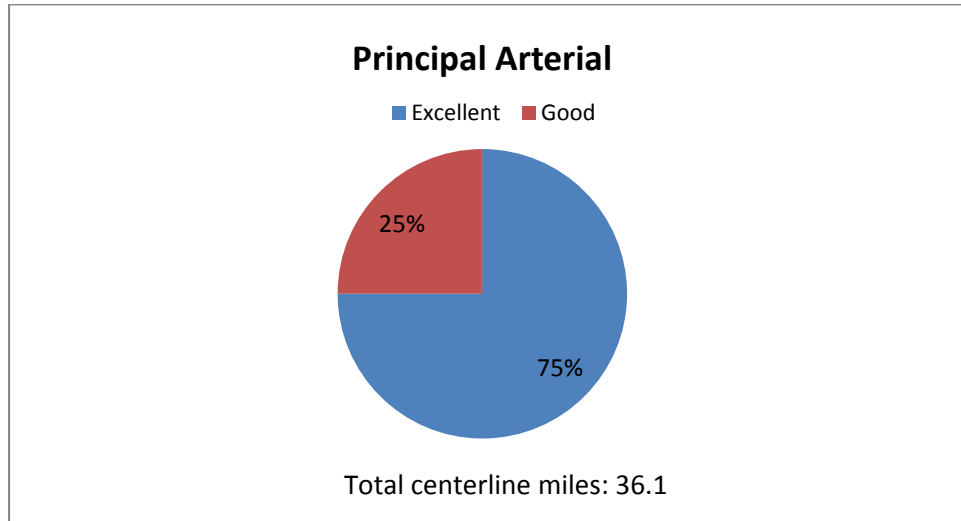
## Exhibit 34

### 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	143,410	27.2	75%
Good	46,967	8.9	25%
Fair	0	0.0	0%
Poor	0	0.0	0%
<b>Total</b>	<b>190,377</b>	<b>36.1</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	143,410	27.2	75%
Good	46,967	8.9	25%
Fair	0	0.0	0%
Poor	0	0.0	0%
<b>Total</b>	<b>190,377</b>	<b>36.1</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 35:**  
**Pavement Ratings by Functional Classification of New York State Thruway**  
**Roads**



Note: 1. Percentages determined by total centerline length of road.  
2. See Exhibit 19 for all rated FAE roads graph.



Pavement Rating

- Poor
- Fair
- Good
- Excellent



City of Syracuse:  
See Exhibit 37



100 Clinton Square  
126 North Salina St, Suite 100  
Syracuse, NY 13202  
(315) 422-5716  
Fax: (315) 422-7753  
www.smtcmpo.org



Data Sources: SOCPA, NYSDOT, 2011  
Prepared by SMTC, 03/2014

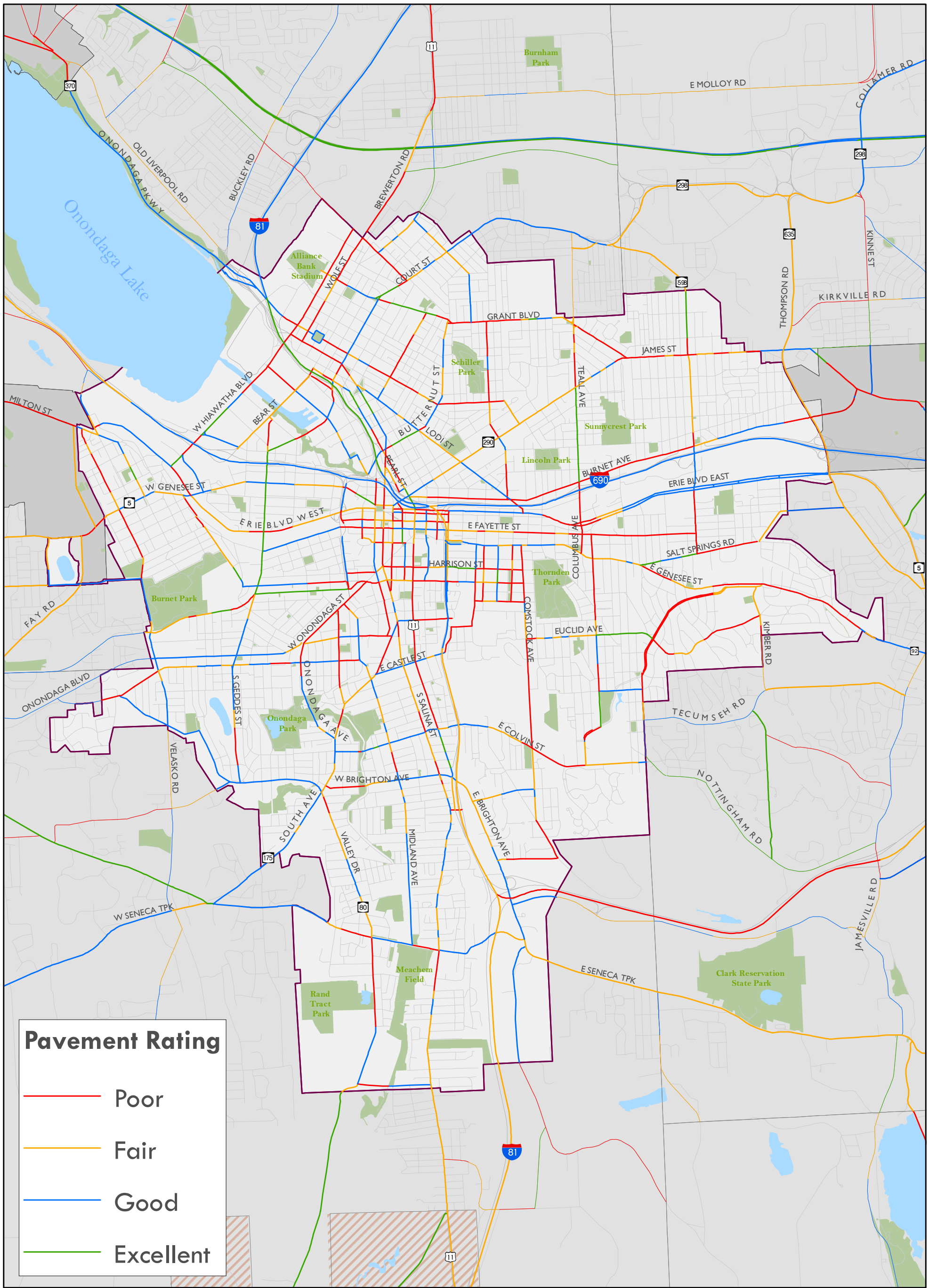
Federal Aid-Eligible Roads in the MPA  
Bridge & Pavement Condition Management System

Exhibit 36

0 1 2 4  
Miles

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

- Legend
- Major Roads
  - Local Roads
  - Parks
  - Village
  - Town
  - City
  - County Boundary
  - Onondaga Nation Territory
  - SMTC MPA



100 Clinton Square  
126 North Salina St, Suite 100  
Syracuse, NY 13202  
(315) 422-5716  
Fax: (315) 422-7753  
www.smtcmpo.org



Data Sources: SOCPA, NYSDOT, 2011  
Prepared by SMTC, 01/2014

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

### Bridge & Pavement Condition Management System

#### Exhibit 37

0 0.25 0.5 1 Miles

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

#### Legend

- Interstates
- Major Roads
- Local Roads
- Parks
- Village
- City
- Town
- County Boundary
- Onondaga Nation Territory

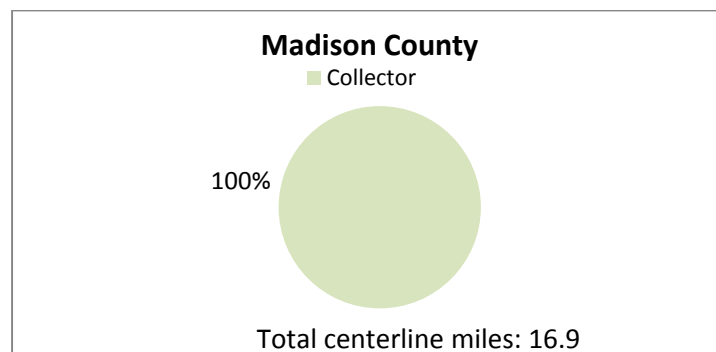
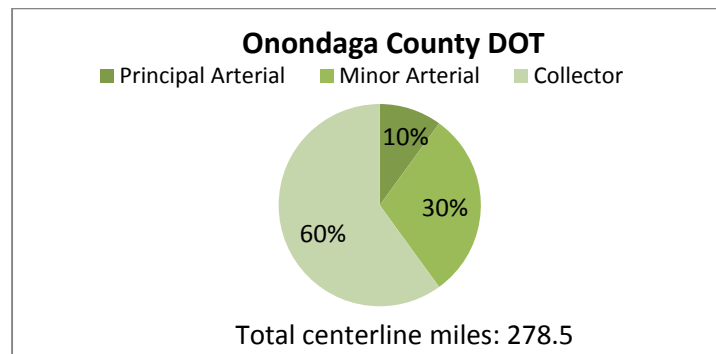
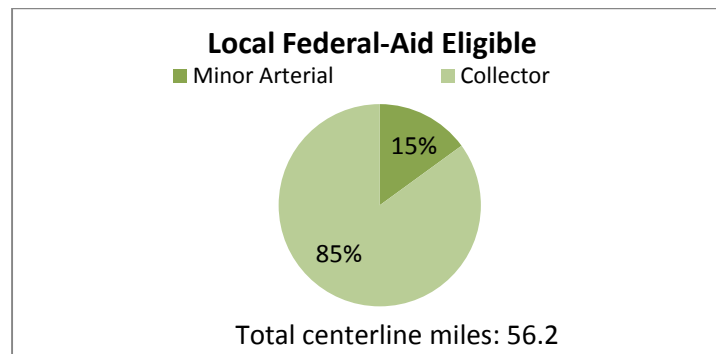
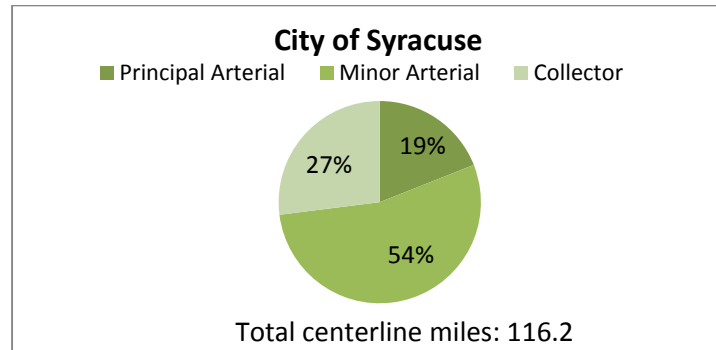
## Exhibit 38

### 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	119,067	22.6	19%
Minor Arterial	330,155	62.5	54%
Collector	164,265	31.1	27%
<b>Total</b>	<b>613,487</b>	<b>116.2</b>	<b>100%</b>
<b>Local Federal-Aid Eligible</b>			
Principal Arterial	0	0.0	0%
Minor Arterial	44,527	8.4	15%
Collector	252,175	47.8	85%
<b>Total</b>	<b>296,702</b>	<b>56.2</b>	<b>100%</b>
<b>Madison County</b>			
Principal Arterial	0	0.0	0%
Minor Arterial	0	0.0	0%
Collector	89,033	16.9	100%
<b>Total</b>	<b>89,033</b>	<b>16.9</b>	<b>100%</b>
<b>Onondaga County</b>			
Principal Arterial	140,614	26.6	10%
Minor Arterial	445,678	84.4	30%
Collector	884,165	167.5	60%
<b>Total</b>	<b>1,470,457</b>	<b>278.5</b>	<b>100%</b>
<b>Oswego County</b>			
Principal Arterial	0	0.0	0%
Minor Arterial	12,505	2.4	9%
Collector	126,050	23.9	91%
<b>Total</b>	<b>138,555</b>	<b>26.2</b>	<b>100%</b>
<b>New York State</b>			
Principal Arterial	1,209,284	229.0	45%
Minor Arterial	752,492	142.5	28%
Collector	743,091	140.7	27%
<b>Total</b>	<b>2,704,867</b>	<b>512.3</b>	<b>100%</b>
<b>New York State Thruway Authority</b>			
Principal Arterial	190,377	36.1	100%
Minor Arterial	0	0.0	0%
Collector	0	0.0	0%
<b>Total</b>	<b>190,377</b>	<b>36.1</b>	<b>100%</b>
<b>All Rated Federal-Aid Eligible Roads</b>			
Principal Arterial	1,659,342	314.3	30%
Minor Arterial	1,585,357	300.3	29%
Collector	2,258,779	427.8	41%
<b>Total</b>	<b>5,503,478</b>	<b>1,042.3</b>	<b>100%</b>

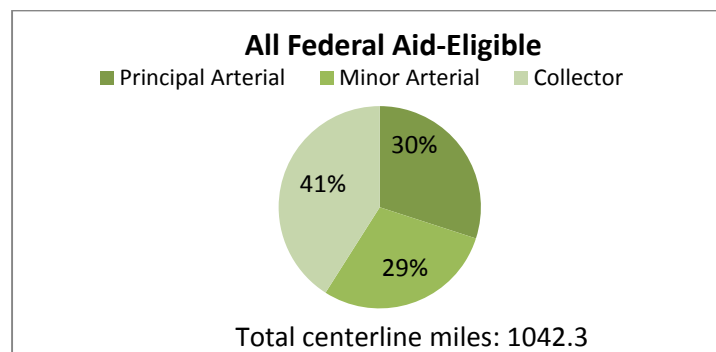
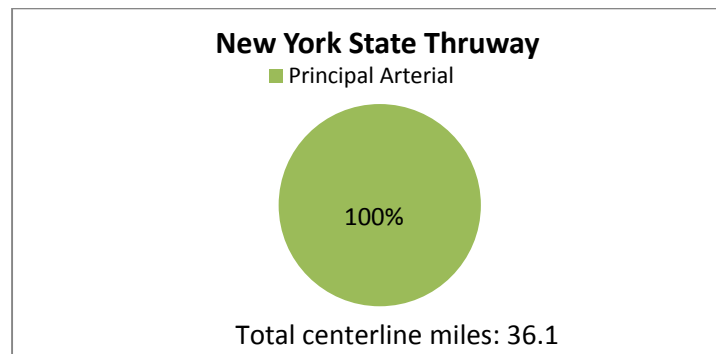
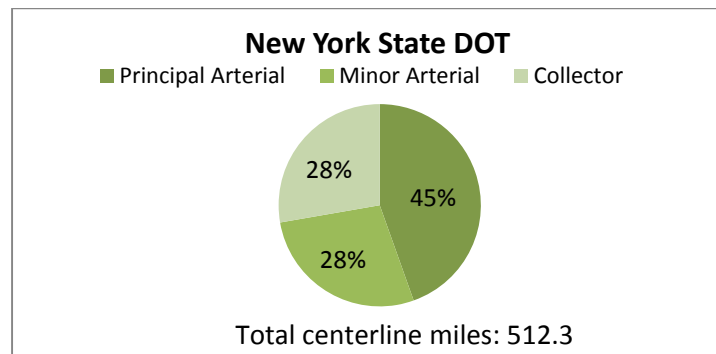
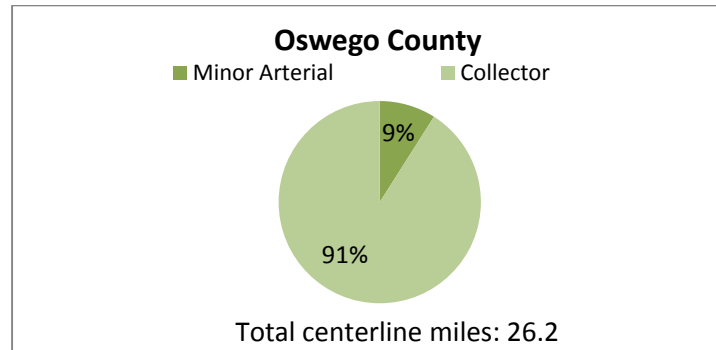
Notes: 1. Calculations based on total centerline length of road.  
2. Total percentages may not add to 100% due to rounding.

## Exhibit 39: Functional Classification of Federal-Aid Eligible Roads by Jurisdiction (Part 1)



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

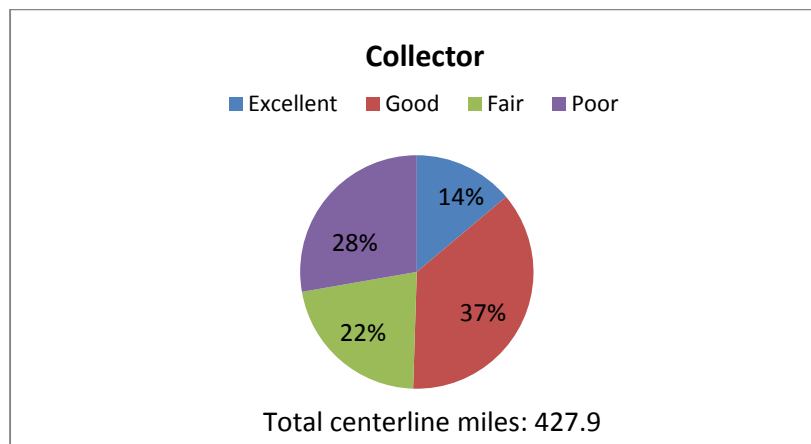
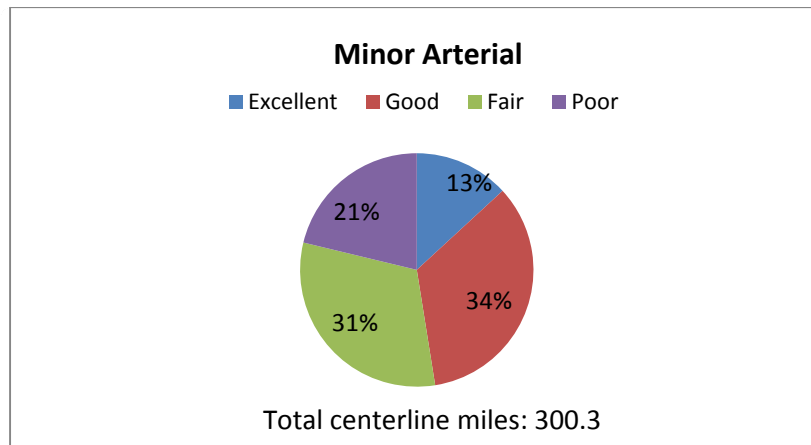
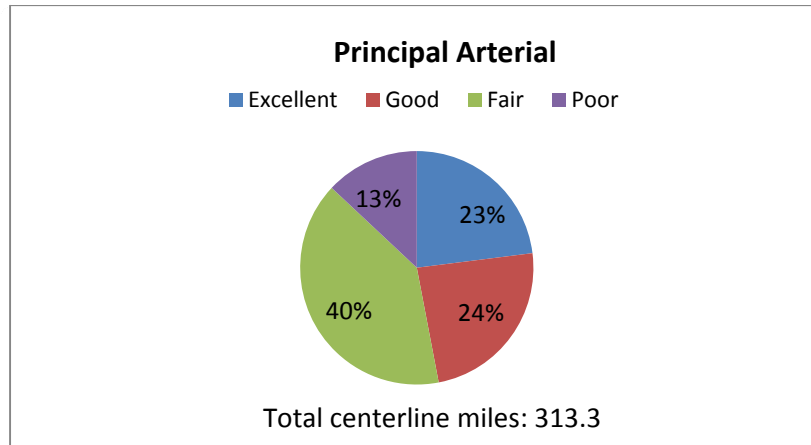
## Exhibit 39: Functional Classification of Federal-Aid Eligible Roads by Jurisdiction (Part 2)



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



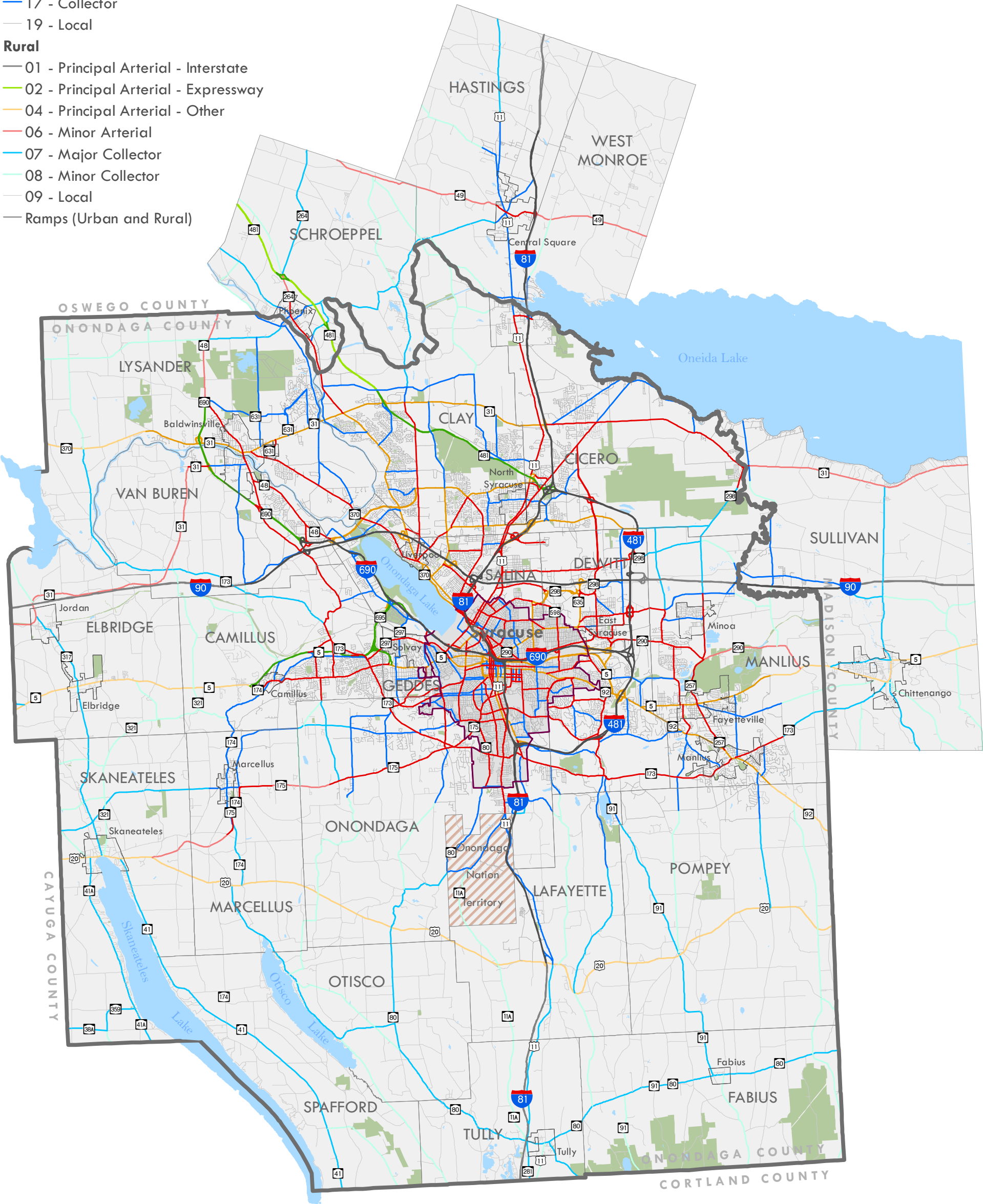
**Exhibit 40:**  
**Pavement Ratings of Federal-Aid Eligible Roads by Functional Classification**



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

Functional Classification

- Urban**
- 11 - Principal Arterial - Interstate
  - 12 - Principal Arterial - Non Interstate Expressway
  - 14 - Principal Arterial - Other
  - 16 - Minor Arterial
  - 17 - Collector
  - 19 - Local
- Rural**
- 01 - Principal Arterial - Interstate
  - 02 - Principal Arterial - Expressway
  - 04 - Principal Arterial - Other
  - 06 - Minor Arterial
  - 07 - Major Collector
  - 08 - Minor Collector
  - 09 - Local
  - Ramps (Urban and Rural)

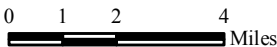


100 Clinton Square  
126 North Salina St, Suite 100  
Syracuse, NY 13202  
(315) 422-5716  
Fax: (315) 422-7753  
www.smtcmpo.org



Data Sources: SOCPA, NYSDOT, 2011  
Prepared by SMTC, 03/2014

Functional Classification  
Bridge & Pavement Condition Management System  
Exhibit 41



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

- Legend**
- Parks
  - Village
  - Town
  - City
  - County Boundary
  - Onondaga Nation Territory



Road Ownership

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



100 Clinton Square  
126 North Salina St, Suite 100  
Syracuse, NY 13202  
(315) 422-5716  
Fax: (315) 422-7753  
www.smtcmpo.org

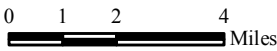


Data Sources: SOCPA, NYSDOT, 2011  
Prepared by SMTC, 03/2014

Road Ownership

Bridge & Pavement Condition Management System

Exhibit 42



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

Legend

- Parks
- Village
- Town
- City
- County Boundary
- Onondaga Nation Territory



### **Exhibit 43: Photos: Sample Pavement Conditions**



City of Syracuse, Green Street and Howard Street intersection (Looking East on Green St):  
Fair Condition



City of Syracuse, Green Street and Howard Street intersection (Looking North on Howard St):  
Poor Condition



City of Syracuse, Green Street and Howard Street intersection (Looking South on Howard St):  
Excellent Condition



City of Syracuse, Green Street and Howard Street intersection (Looking West on Green St):  
Good Condition

## 4. TRENDS

Utilizing data from previous Bridge and Pavement Condition Management System reports, it is possible to examine trends in bridge and pavement condition by jurisdiction. However, because of the MPA expansion this year, the comparison between current ratings and previous years will not be exact.

Overall, bridge ratings in the MPA (measured as the proportion deficient bridges) have increased since last year's rating cycle, as well as over the last several years. Pavement scores have improved in the last rating cycle after three rating cycles of decline.

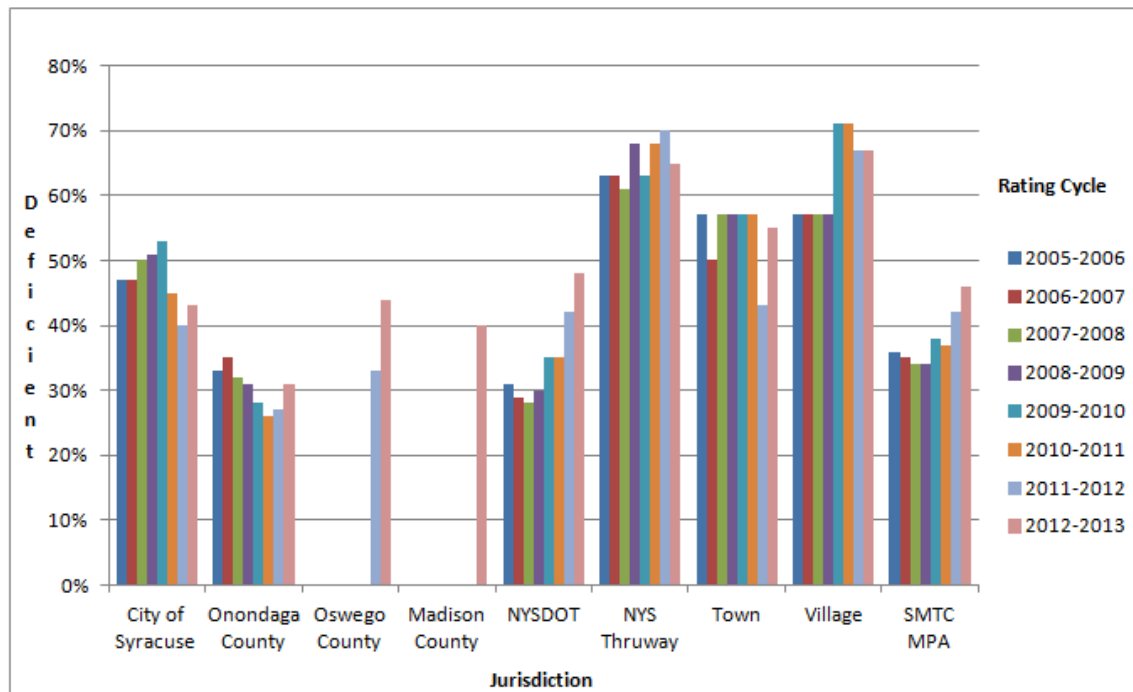
### Bridges

Chart 2 shows percent deficient bridges by jurisdiction for the last eight rating cycles. It is important to keep the total number of bridges in mind for each jurisdiction. NYSDOT's 318 bridges (57% of all SMTc MPA bridges) have generally trended towards more deficient bridges - from 31% in 2005-2006 to 48% this year - as have the 554 bridges in the MPA from all jurisdictions, which went from 36% in 2005-2006 to 46% this year. The 2011-2012 rating cycle (last year) showed City of Syracuse bridges to be at their lowest percentage deficiency of all its observed rating cycles, at 40% deficient, but increased this year to 43% deficient. Onondaga County had been showing overall improvement as well, going from 33% deficient in 2005-2006 to 27% deficient in 2011-2012, but increased to 31% deficient this rating cycle.

Note that the seeming absence of data for Madison and Oswego Counties prior to 2011-2012 is because there were fewer bridges in those counties, and all of them had ratings of non-deficient, resulting in 0% deficient bridges.

Sufficiency ratings have been analyzed by SMTc for this report and the previous two years' reports. There have not been any remarkable trends except a slight increase in sufficiency ratings below 50 for the entire MPA: from 3% in 2010-2011 to 5% in 2011-12, to 6% this year.

**Chart 2: Eight-Year Trend - Proportion of Deficient Bridges**



## Pavement

Chart 3 shows the five-year trend in pavement scores. Overall, pavement scores have improved since last year – from 6.3 to 6.6 - after four consistent years of decline.

After reaching a low average rating of 5.8 last year, the City of Syracuse has slightly improved to 5.9. NYSDOT also increased its average rating after last year after several years of decline – from 6.6 to 6.7.

The Thruway average rating, after several years of improvement to an average rating of 9.0 or “excellent,” dipped back down to 8.9 this year.

**Chart 3: Five-Year Trend - Overall Rating of All Rated Roads**

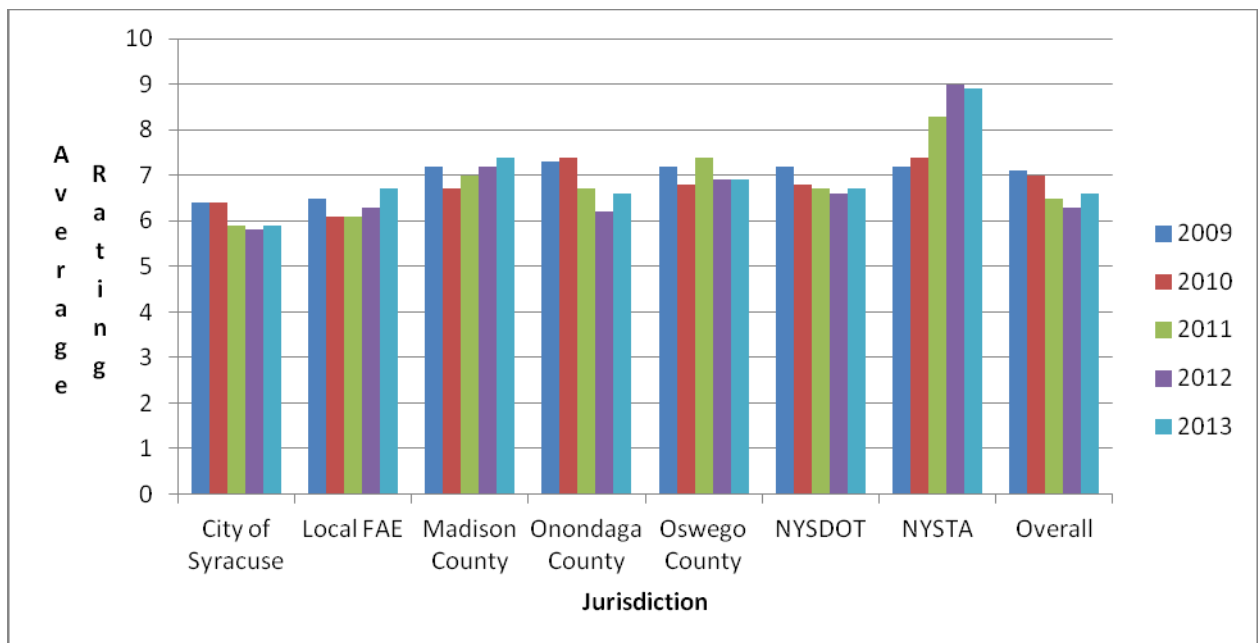
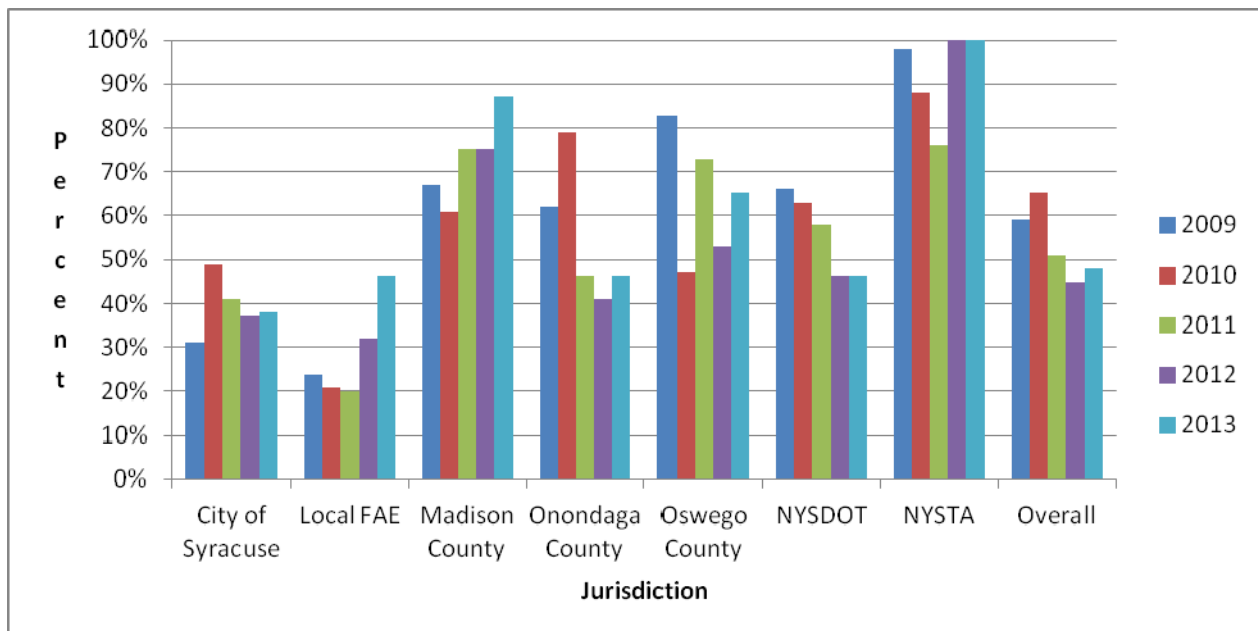


Chart 4 shows the percentage of FAE roads rated “good” or “excellent” over the last five rating cycles. All jurisdictions either improved or stayed the same since last year. Overall, the proportion went from 45% to 48%.

**Chart 4: Four-Year Trend - FAE Roads Rated “Good” or “Excellent”**



## **CLOSING**

By tracking bridge and pavement conditions, the SMTC 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 Chart I shows, 74% of the 2014-2018 TIP is dedicated to federal-aid eligible highways and to bridge projects. Bridge and pavement maintenance should continue to be a regional priority as funding available for capital improvements has been reduced.