

BRIDGE AND PAVEMENT CONDITION MANAGEMENT SYSTEM (BPCMS)



2014 – 2015 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

June 2015

2014-2015 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

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 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	23
3.1.vii	New York State Thruway Authority Pavement Ratings	24
3.2	Federal-Aid Eligible Pavement Ratings	30
4.	TRENDS	59
	Bridges	59
	Pavement	60

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: Deficient and non-Deficient Bridges by Owner	16
Exhibit 11: Chart: Comparison of Bridge ratings.....	17
Exhibit 12: Table: Bridge Sufficiency Ratings by Jurisdiction.....	18
Exhibit 13: Comparison of AADT and Bridge Condition Ratings	19
Exhibit 14: Pavement Ratings for All Rated Roads in the SMTC MPA	26
Exhibit 15: Chart: Pavement Ratings for All Rated Roads by Owner and Mileage	27
Exhibit 16: Map: All Rated Roads in the MPA	28
Exhibit 17: Map: All Rated Roads in the City of Syracuse	29
Exhibit 18: Table: Pavement Ratings for all Federal-Aid Eligible Roads	33
Exhibit 19: Chart: Pavement Ratings for FAE Roads by Owner and Mileage.....	34
Exhibit 20: Table: Pavement Ratings by Functional Classification, City of Syracuse.....	35
Exhibit 21: Chart: Pavement Ratings by Functional Classification for the City of Syracuse	36
Exhibit 22: Table: Pavement Ratings by Functional Classification for Local FAE.....	37
Exhibit 23: Chart: Pavement Ratings by Functional Classification for Local FAE	38
Exhibit 24: Table: Pavement Ratings by Functional Classification for OCDOT Roads.....	39
Exhibit 25: Chart: Pavement Ratings by Functional Classification for OCDOT Roads ...	40
Exhibit 26: Table: Pavement Ratings by Functional Classification for Oswego County ...	41
Exhibit 27: Chart: Pavement Ratings by Functional Classification for Oswego County ...	42
Exhibit 28: Table: Pavement Ratings by Functional Classification for Madison County ...	43
Exhibit 29: Chart: Pavement Ratings by Functional Classification for Madison County ...	44
Exhibit 30: Table: Pavement Ratings by Functional Classification for Madison County ...	45
Exhibit 31: Chart: Pavement Ratings by Functional Classification for NYSDOT Roads ...	46
Exhibit 32: Chart: Comparison of State Pavement Ratings	47
Exhibit 33: Table: Pavement Ratings by Functional Classification of NYS Thruway	48
Exhibit 34: Table: Pavement Ratings for New York State Thruway Roads	49
Exhibit 35: Map: Federal Aid-Eligible Roads in the MPA	50
Exhibit 36: Map: Federal Aid-Eligible Roads in the City of Syracuse	51
Exhibit 37: Table: Functional Classification for Federal Aid-Eligible Roads	52
Exhibit 38: Chart: Functional Classification of Federal-Aid Eligible Roads.....	53
Exhibit 39: Chart: Pavement Ratings of FAE Roads by Functional Classification	54
Exhibit 40: Map: Functional Classification in the MPA.....	55
Exhibit 41: Map: Road Ownership	56

Exhibit 42: Chart: Rating Categories by Owner and Primary/Secondary for All Roads...	57
Exhibit 43: Chart: Rating Categories by Owner and Primary/Secondary FAE Roads	58

This page intentionally left blank.

1. INTRODUCTION

This project was completed by the Syracuse Metropolitan Transportation Council (SMTC) as part of the 2014-2015 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 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		
<u>Rating</u>		<u>Condition Description</u>
U	Under Construction/No Data	Not rated due to on-going work or no data was available.
1-5	Poor	Distress is frequent and may be severe.
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 *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.

2. BRIDGES

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



NY 5 over NY 297, Town of Camillus
abutments and supporting columns.

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

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		
Rating	Category	Condition Description
<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



N Main St over CSX Rail Yard, Village of Minoa

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 2014 from the 2012-2013 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.

As shown on Exhibit 11, statewide, there are 19,860 rated bridges; 32% of these bridges are deficient. Region 3 has 41% deficient bridges, while Region 2 and the SMTC MPA have 35% and 46% deficient bridges, respectively.

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. Last year, there was 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). Until the 2012 inspection report, the bridge had been stored in the upright position, thus making it closed for all intents and purposes; then, in 2012, bridge inspectors reported that the drawbridge was permanently in the up position and couldn't be lowered, so the bridge is now closed. As of the 2012-2013 rating cycle, there was one critical needs bridge in the MPA; the bridge is on Smith Road over the South Branch of Little Salmon River, in the Town of West Monroe (Oswego County). The bridge is owned by the Town of West Monroe.

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, 30 bridges are deficient, giving the Thruway the second highest percentage of deficient bridges at 62%.

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.

In addition to bridge condition ratings, SMTC analyzed 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 bridge rehabilitation, and a bridge rated below 50 means it is considered for bridge replacement.

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). Eight percent of bridges maintained by the Thruway have ratings below 50; three 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 0% and 10% bridges rated below 50, respectively. Statewide, 7.3% of bridges are rated below 50.

Beginning last year, with the expansion of the MPA, SMTc examined median condition rating as well as the average. Last year, the median condition rating was 5.09, and this year it is 5.08; these are both similar to the average condition rating, indicating a normal distribution (i.e. many low or high condition ratings are not skewing the average one way or another).

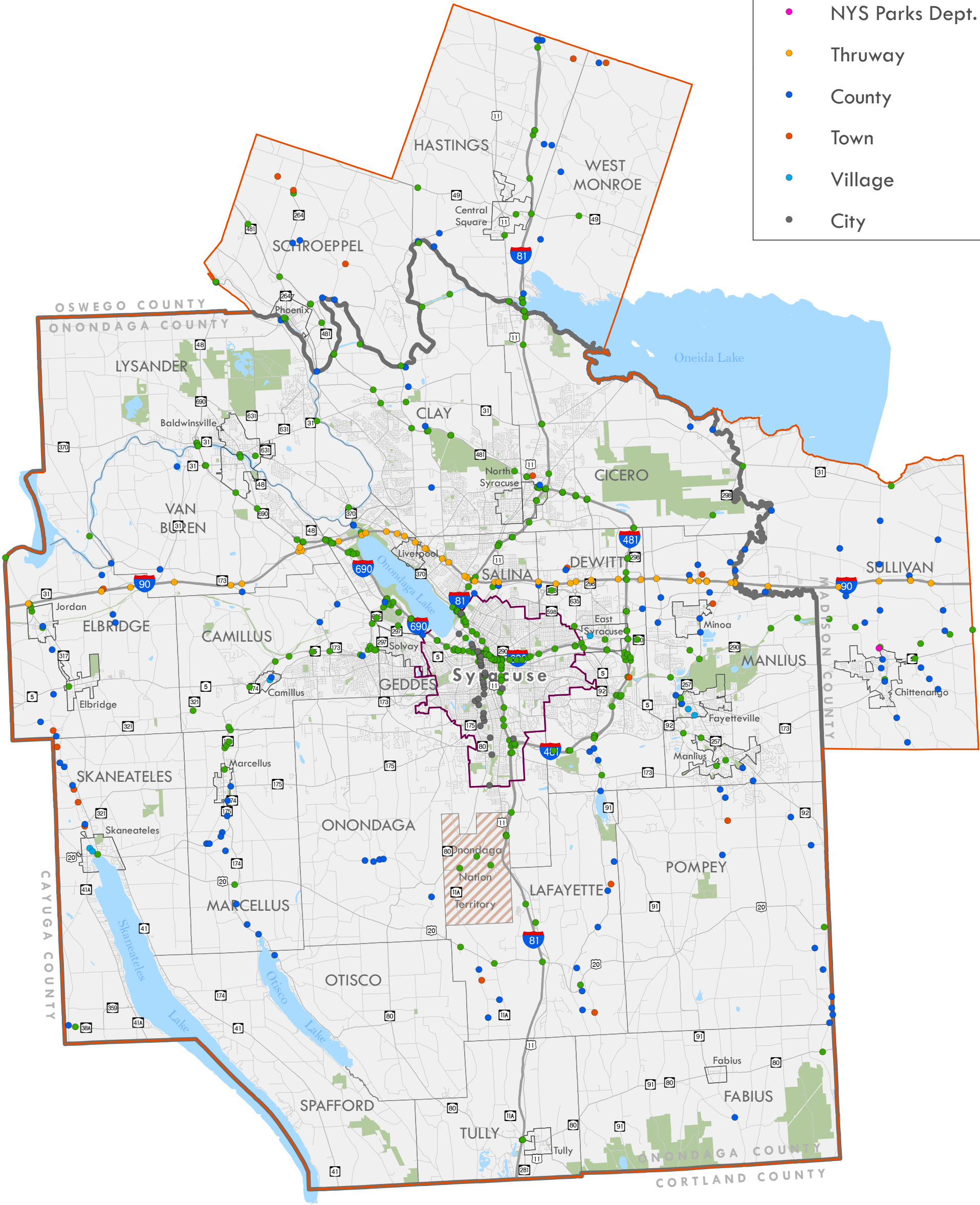
Beginning this year, two new analyses for bridge ratings will be added to the report. The first is a condition rating weighted by bridge deck area. This number, compared to average condition rating, sheds light on bridge conditions with bridge size taken into account. For the 2012-2013 rating cycle, condition rating weighted by deck area for the MPA was 4.89, compared to the average condition rating of 5.19. These ratings by owner are in the table, below:

Table 3: Condition Ratings Weighted by Bridge Deck Area	
Owner	Rating
NYS DOT	4.82
NYS Parks Dept.	5.16
Thruway	4.97
County	5.35
Town	5.41
Village	5.09
City	5.24

The second analysis that will be added to this year's report is a comparison of Annual Average Daily Traffic (AADT) and bridge condition rating. This is displayed in Exhibit 13, which is an X-Y plot of AADT and Condition Rating. As the chart shows, the R-squared value is only 3.4%, and the data points do not fit closely around the fitted regression line, indicating a weak correlation between AADT and a bridge's condition rating. Therefore, across the MPA, it cannot be concluded that bridges with a higher AADT generally have higher or lower condition ratings, or vice versa.

Bridges in the MPA
by Owner

- 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, 2013
Prepared by SMTC, 8/2014

Bridges in the MPA by Owner

Bridge & Pavement Condition Management System

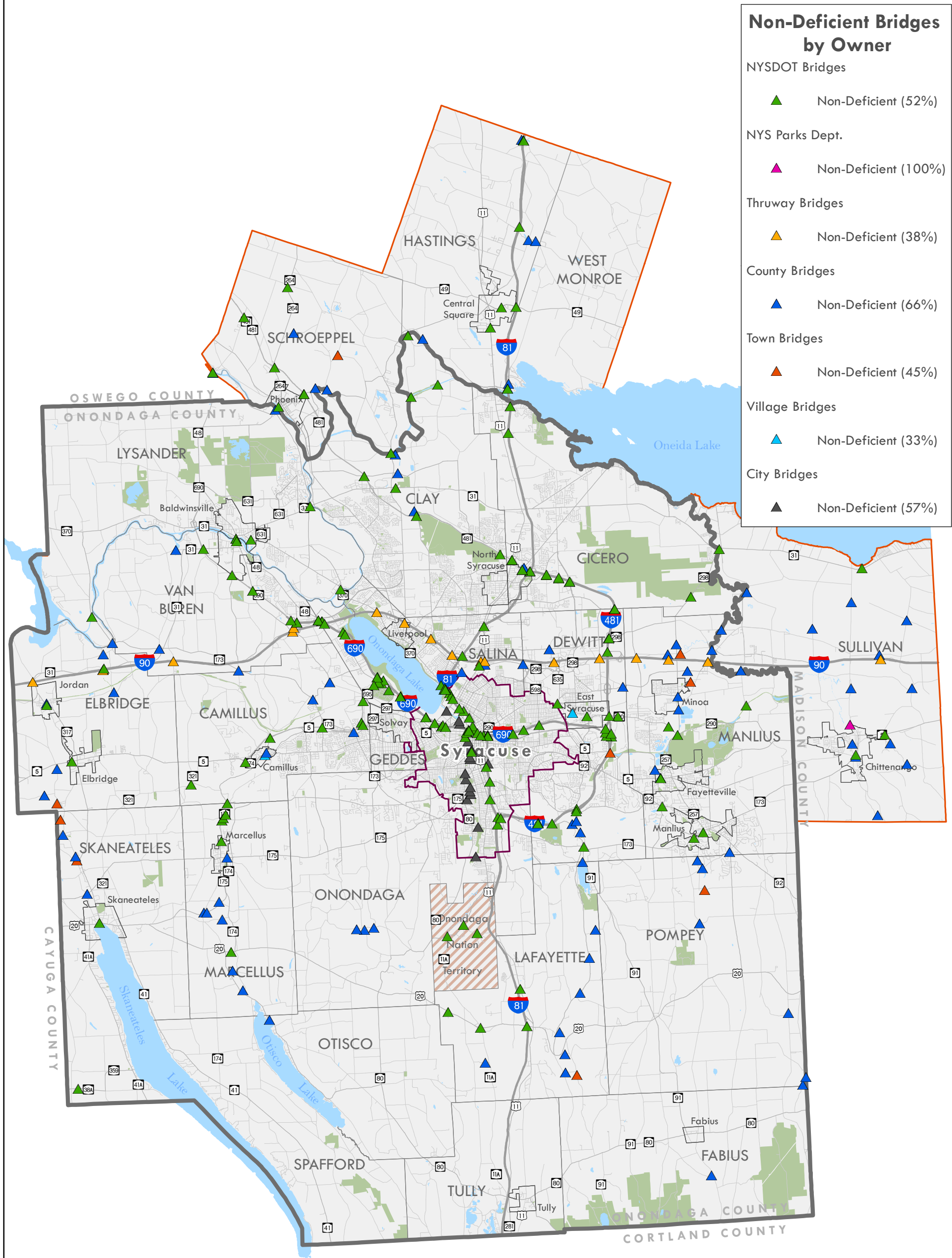
Exhibit 1

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, 2013
Prepared by SMTC, 08/2014

Non-Deficient Bridges in the MPA

Bridge & Pavement Condition Management System

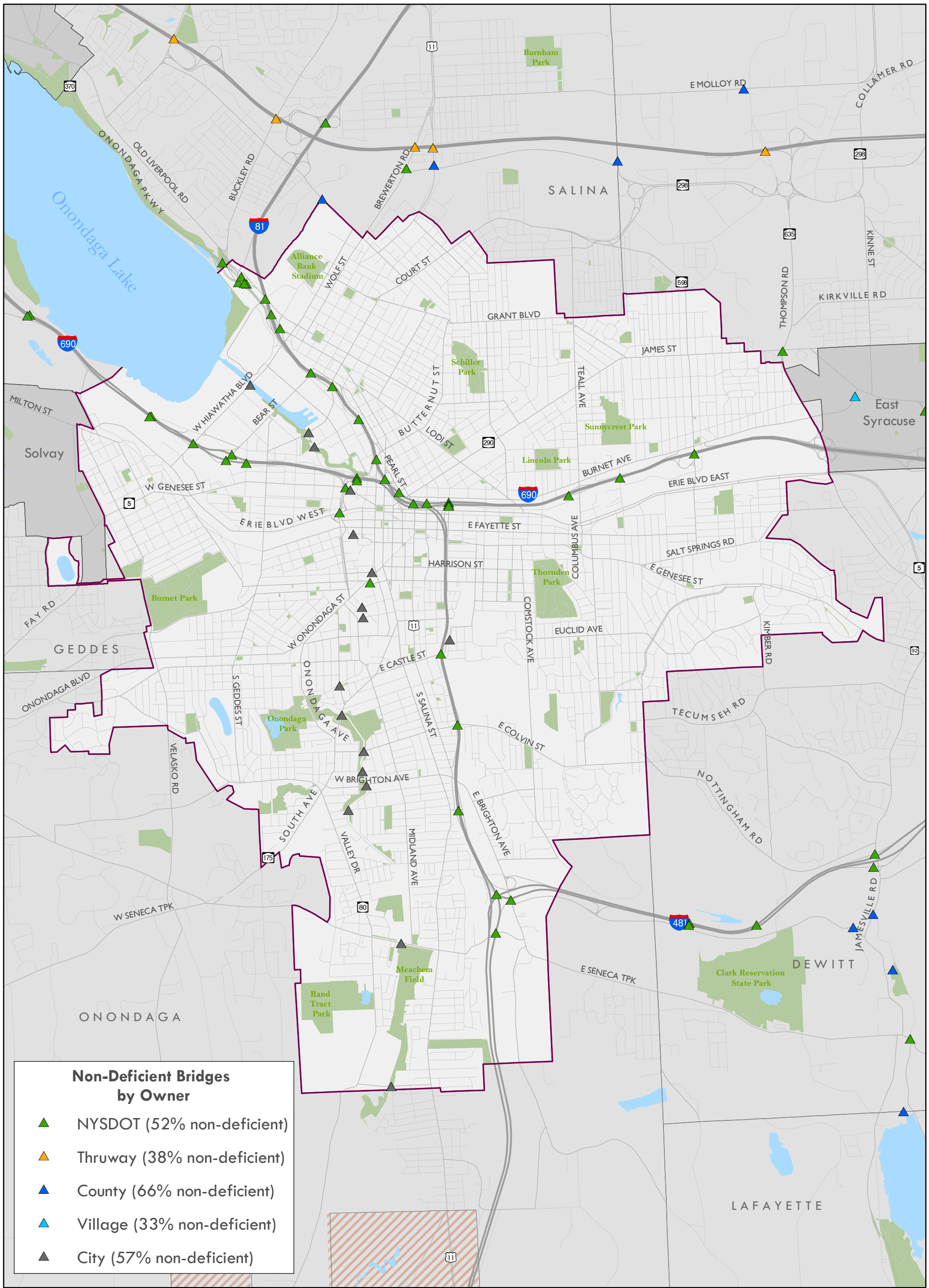
Exhibit 2

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, 2013
Prepared by SMTC, 08/2014

Non-Deficient Bridges in the City of Syracuse

Bridge & Pavement Condition Management System

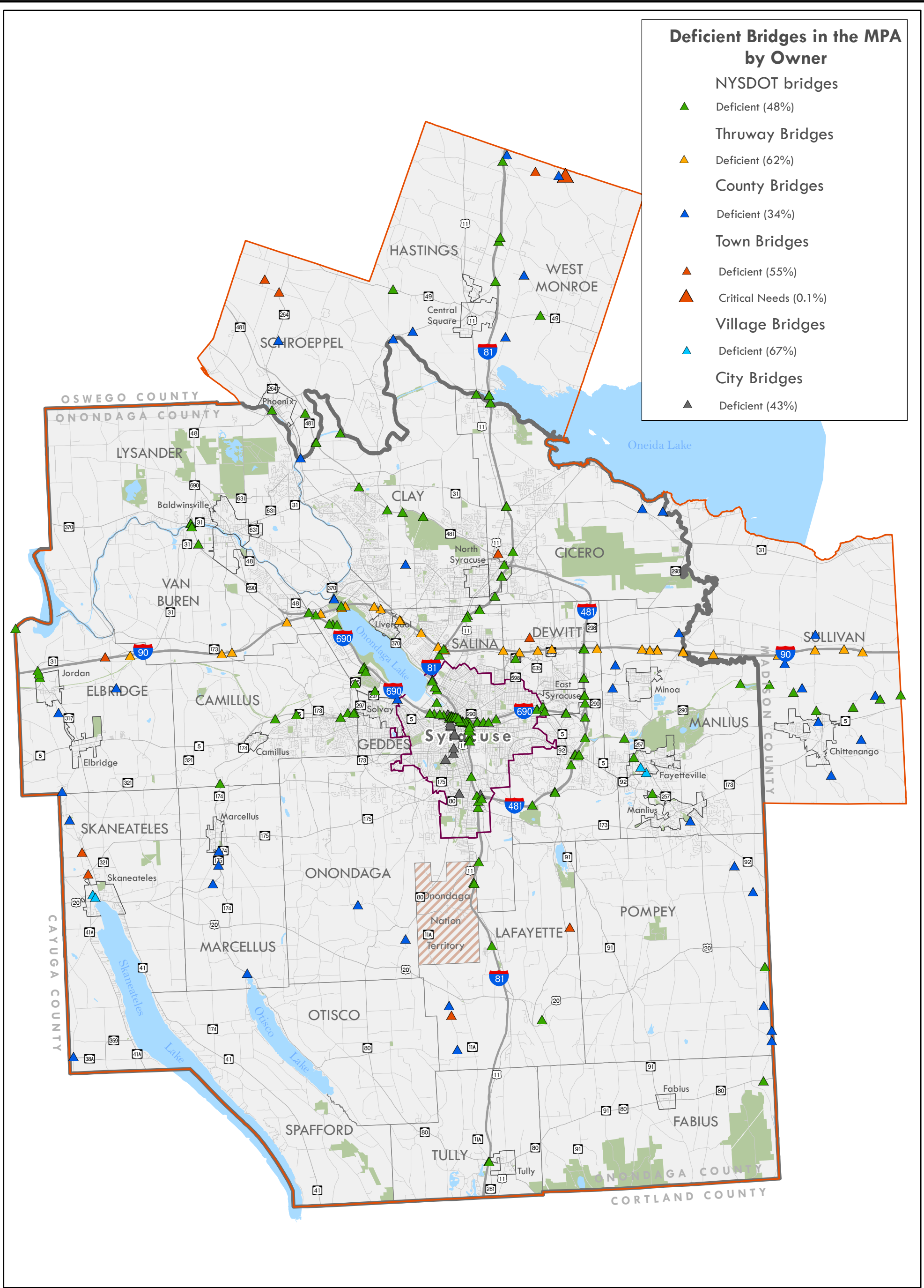
Exhibit 3

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
- 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, 2013
Prepared by SMTC, 08/2014

Deficient Bridges in the MPA by Owner

Bridge & Pavement Condition Management System

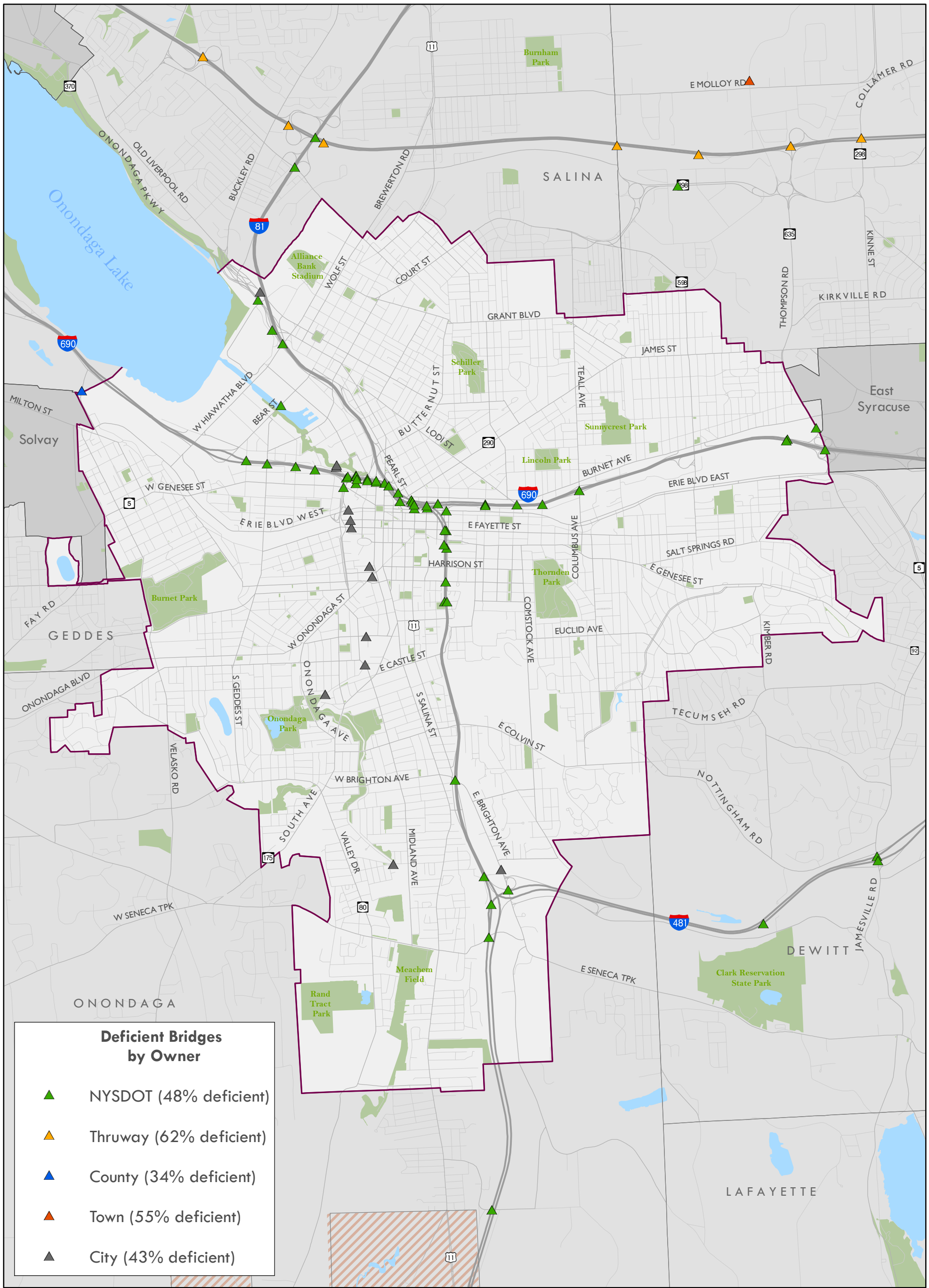
Exhibit 4

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.smtcmmpo.org



Data Sources: SOCPA, NYSDOT, 2013
Prepared by SMTC, 08/2014

Deficient Bridges in the City of Syracuse

Bridge & Pavement Condition Management System

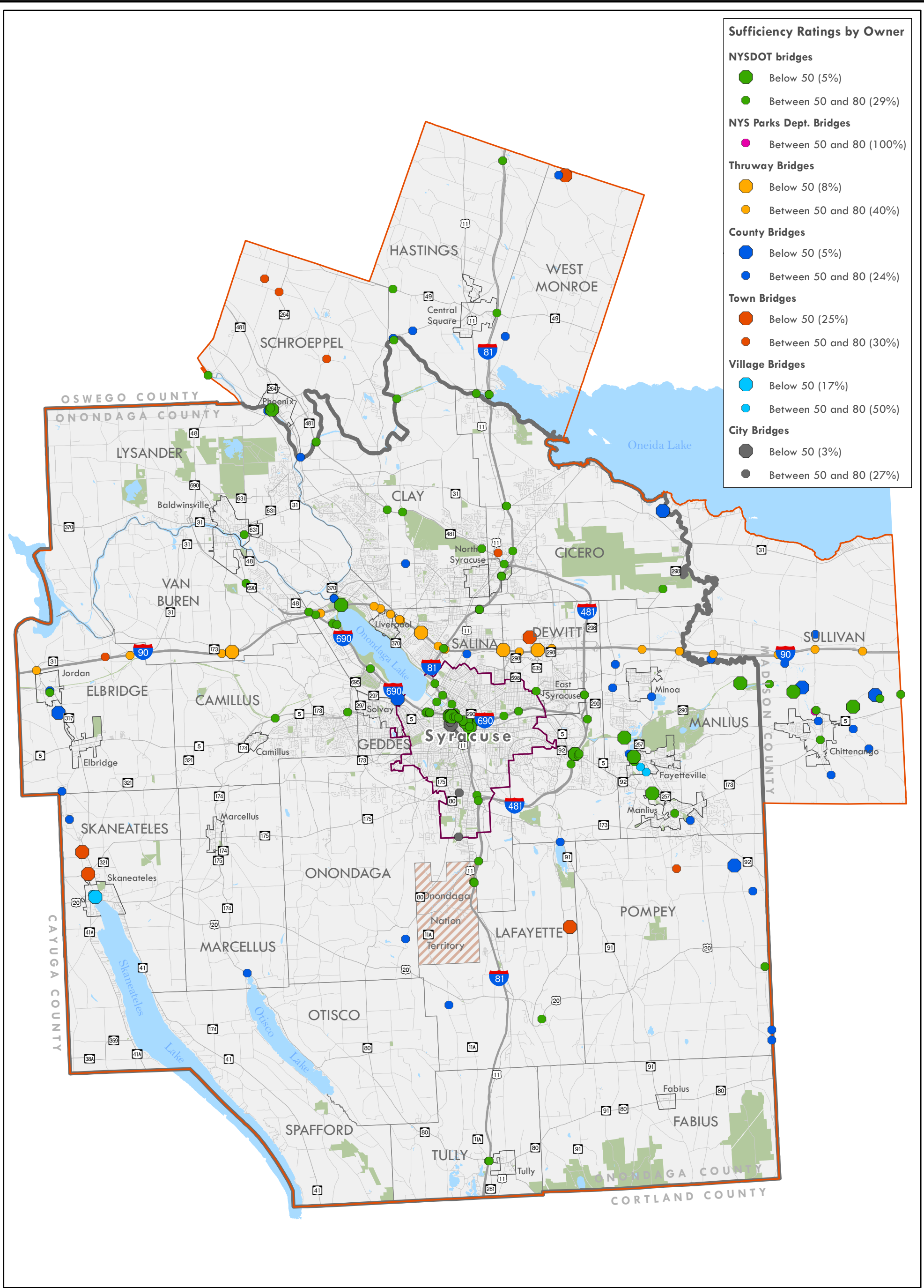
Exhibit 5

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



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, 2013
Prepared by SMTC, 08/2014

Sufficiency Ratings in the MPA by Owner

Bridge & Pavement Condition Management System

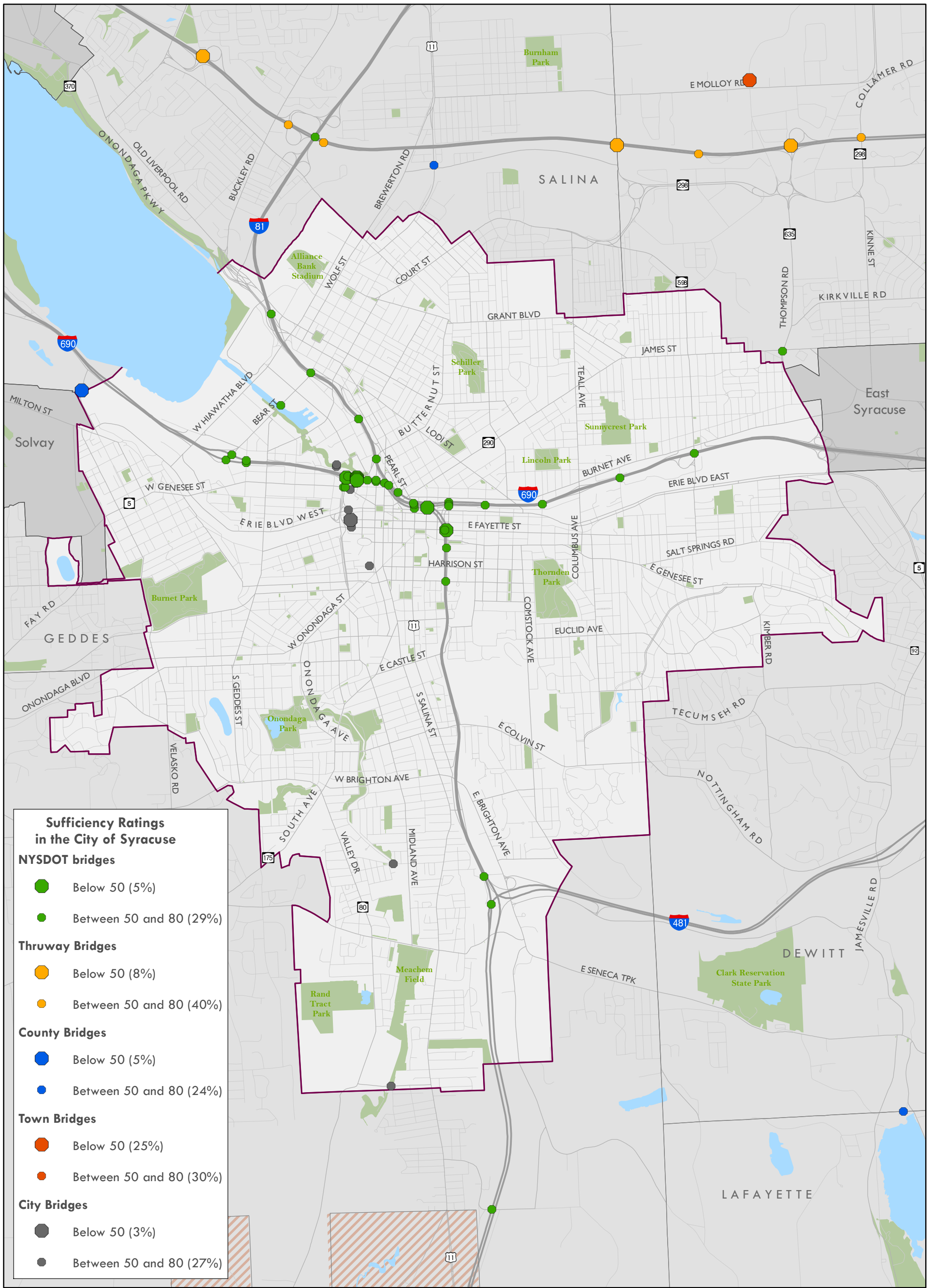
Exhibit 6

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

- Major Roads
- Local Roads
- Parks
- Village
- Interstates
- 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, 2013
Prepared by SMTC, 08/2014

Sufficiency Ratings in the City of Syracuse

Bridge & Pavement Condition Management System

Exhibit 7

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 8: Bridge Owners and Ratings

Bridge Owner	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%	0	0
NYS Thruway	48		18	38%	30	62%	30	65%	0	0
Towns in the MPA	20		9	45%	11	55%	10	55%	1	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 Owner in the MPA

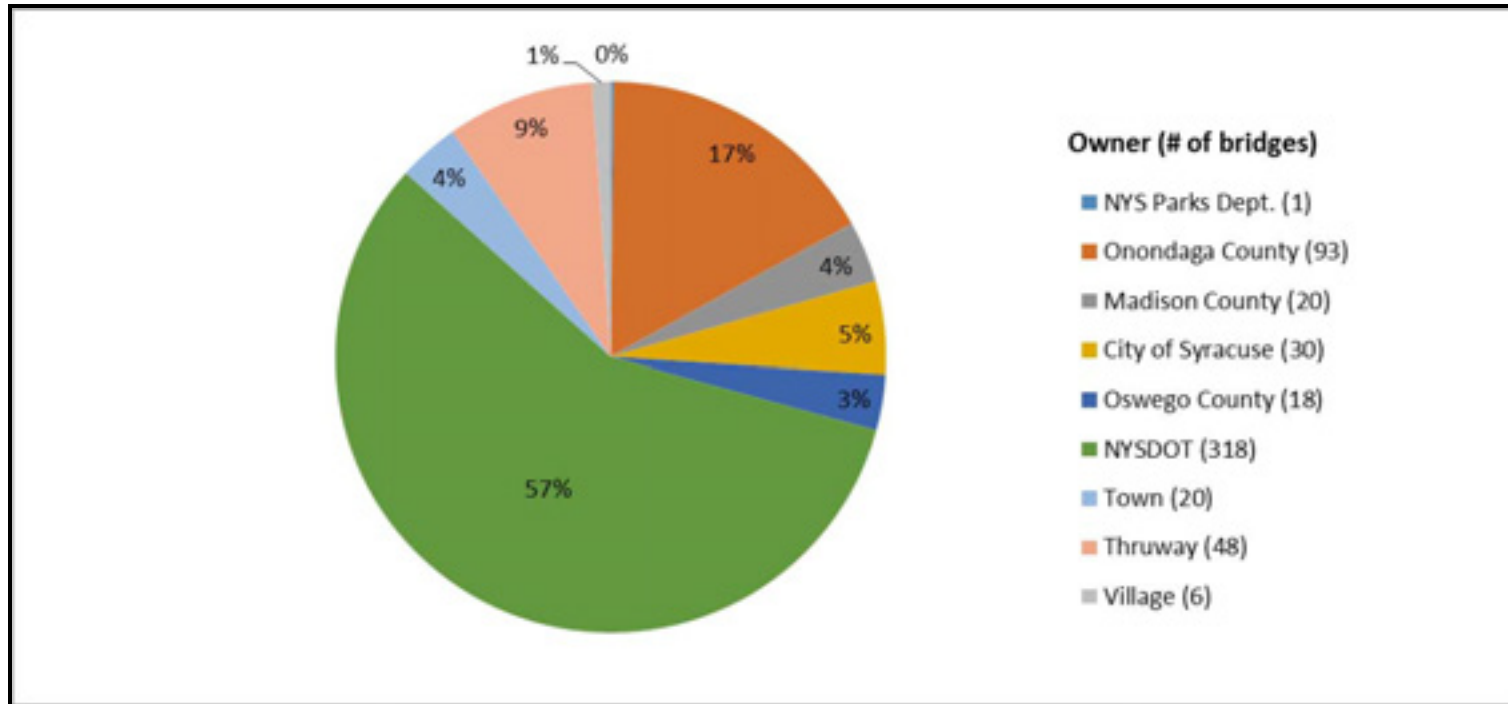


Exhibit 10: Deficient and Non-Deficient Bridges by Owner in the MPA

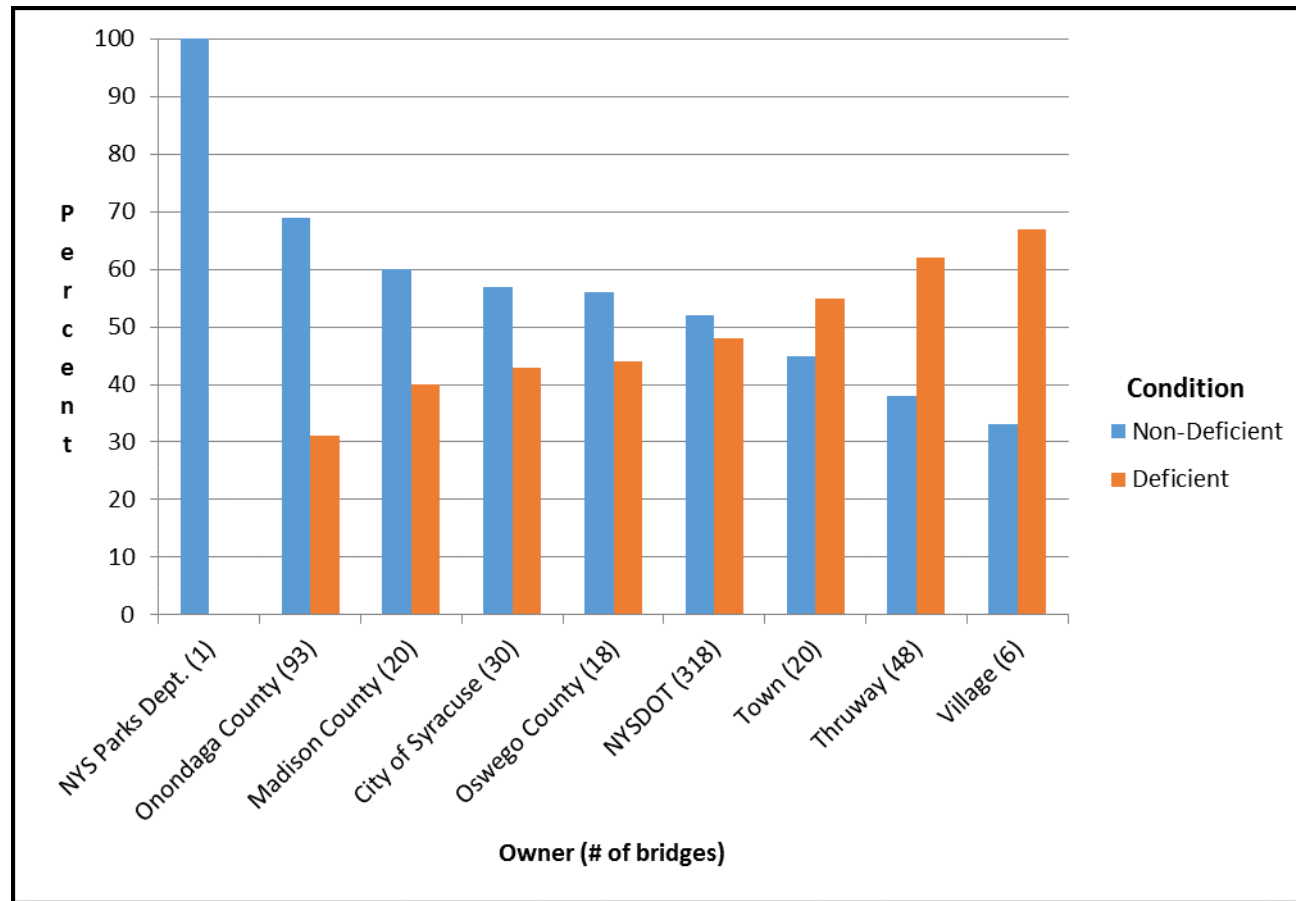


Exhibit 11: Comparison of Bridge Ratings (SMTC, Region 3, Region 2, and New York State)

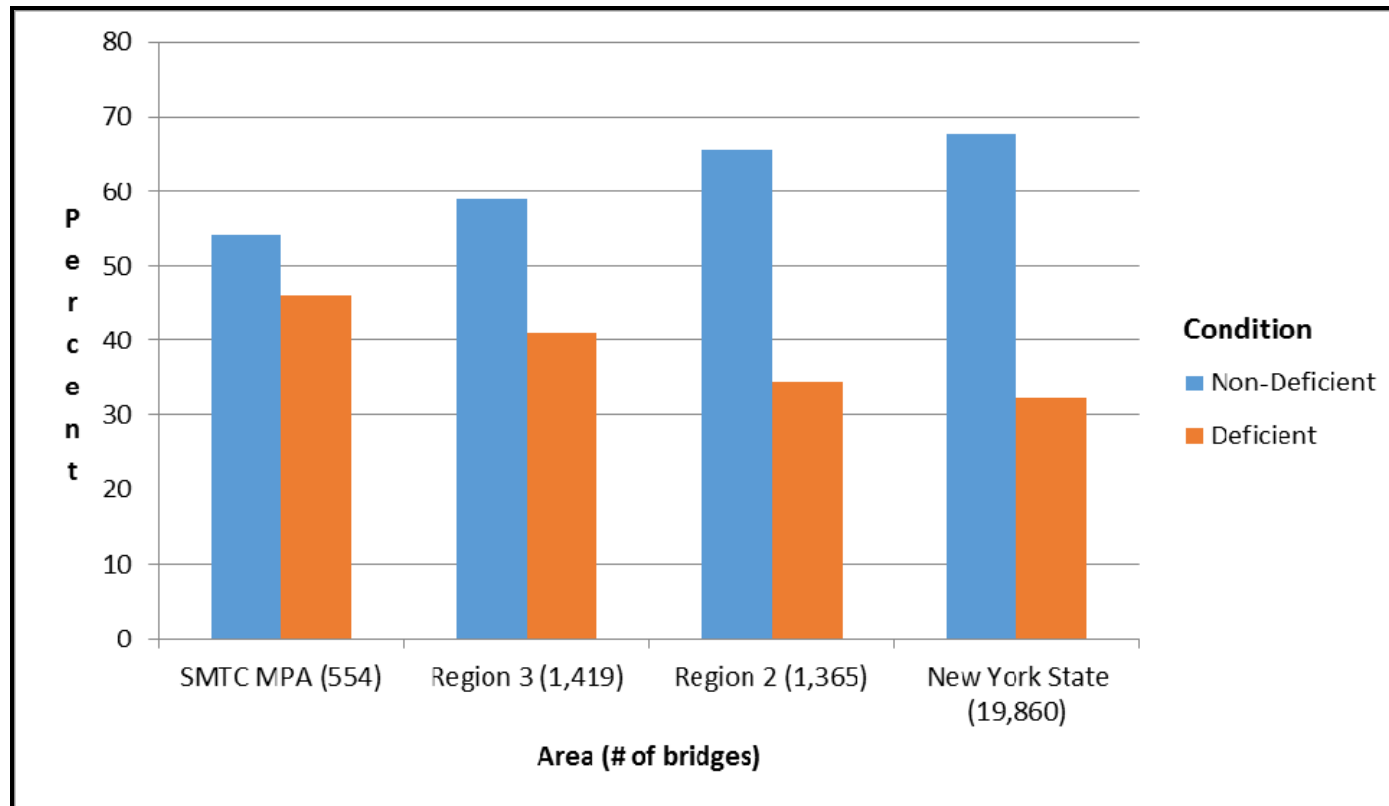
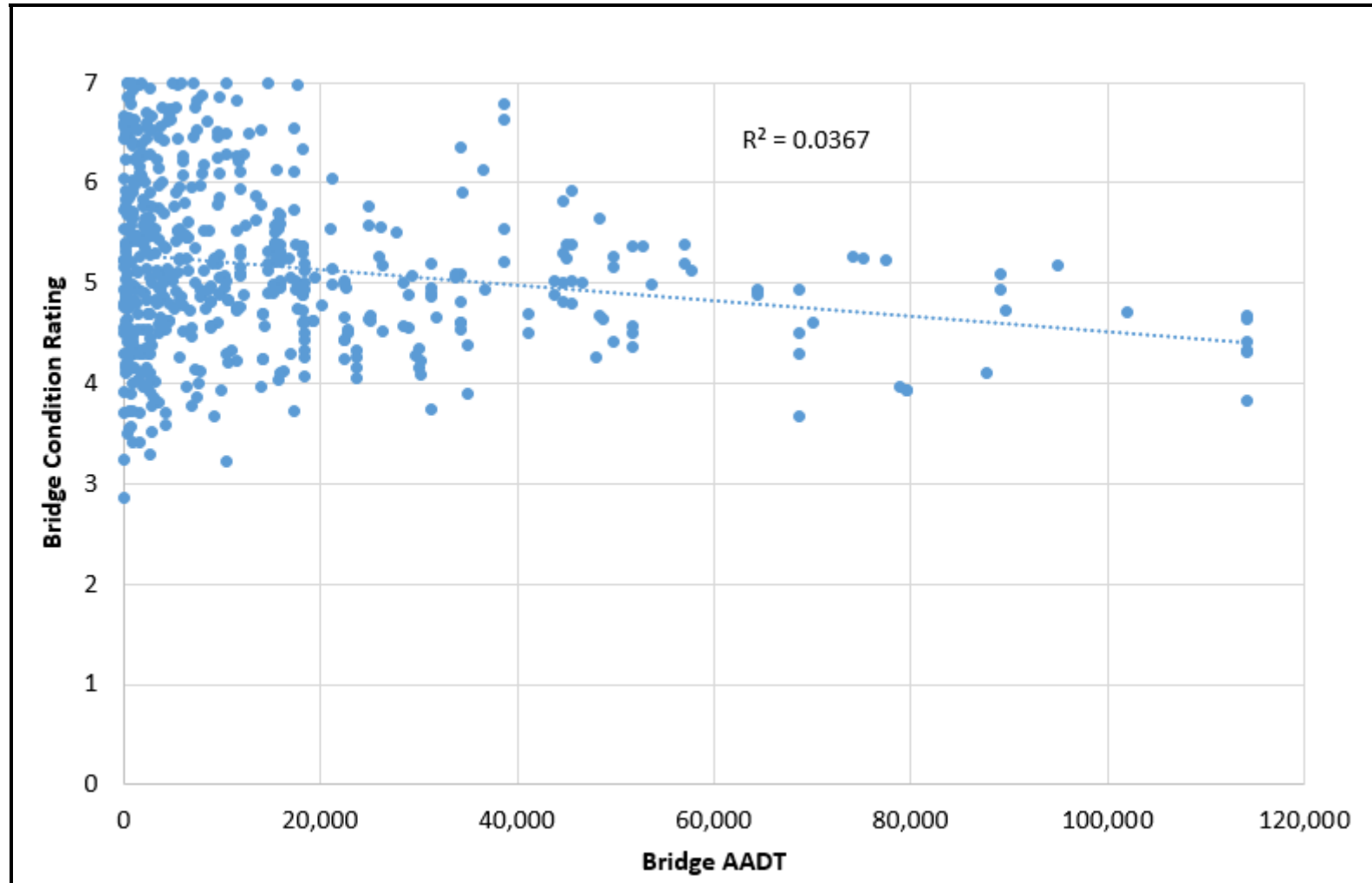


Exhibit 12: Bridge Sufficiency Ratings by Jurisdiction

	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%	8	27%	1	3%
Onondaga County DOT	93		69	74%	20	22%	4	4%
Oswego County	18		12	67%	6	33%	0	0%
Madison County	20		12	60%	6	30%	2	10%
New York State DOT	318		209	66%	93	29%	16	5%
New York State Thruway Authority	48		25	52%	19	40%	4	8%
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%	162	29%	33	6%

Exhibit 13: Comparison of AADT and Bridge Condition Ratings



Note: AADT values are from NYSDOT's WinBOLTS bridge database; the most recent AADT is displayed but numbers may not all be current.

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 (major and minor), 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.

Exhibits 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 14 indicates the following:

- Approximately 394.5 centerline miles of road in the City of Syracuse were rated.
- 26.2 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, 40%, 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 (Schroepfel, 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 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 51.7 centerline miles of Local roads are rated.
- Of the various pavement rating categories (excellent, good, fair, and poor), most (59%) were rated as either “good” or “excellent”.
- The average rating for the local roads is 7.3 (good 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 2014 ratings.

Exhibits 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 14 indicates the following:

- Approximately 794 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, 35%, were classified as “good” and “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 14, 15, 16, and 17 represent information collected for all rated roads in Oswego County.

Exhibit 14 indicates the following:

- Approximately 83.8 centerline miles were rated.
- Of the various rating categories, the highest percentage of rated roads, 37% were classified as “fair”.
- The average rating for Oswego County roads is 7.3 (good 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 14, 15, 16, and 17, represent the information collected for those rated roads in Madison County.

Exhibit 14 indicates the following:

- Approximately 38.8 centerline miles were rated.
- Of the various rating categories, the highest percentage of rated roads, 67%, were classified as “good”.
- The average rating for Madison County roads is 7.3 (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 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 14 shows the following:

- Approximately 496.3 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, 35%, were classified as “good” and 31% were classified as “fair”.
- The average rating for the state roads is 6.3 (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 32 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 61% good roads, 25% fair, and 9% poor roads.
- NYSDOT Region 3 has 31% good roads, 32% fair, and 26% poor roads.
- New York State has 47% good roads, 29% fair, and 9% poor roads.
- The MPA has 35% good roads, 31% fair and 27% 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 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 14 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, 87%, were classified as “excellent”.
- The average rating for the New York State Thruway pavement is 8.6 (good condition).

Exhibit 14

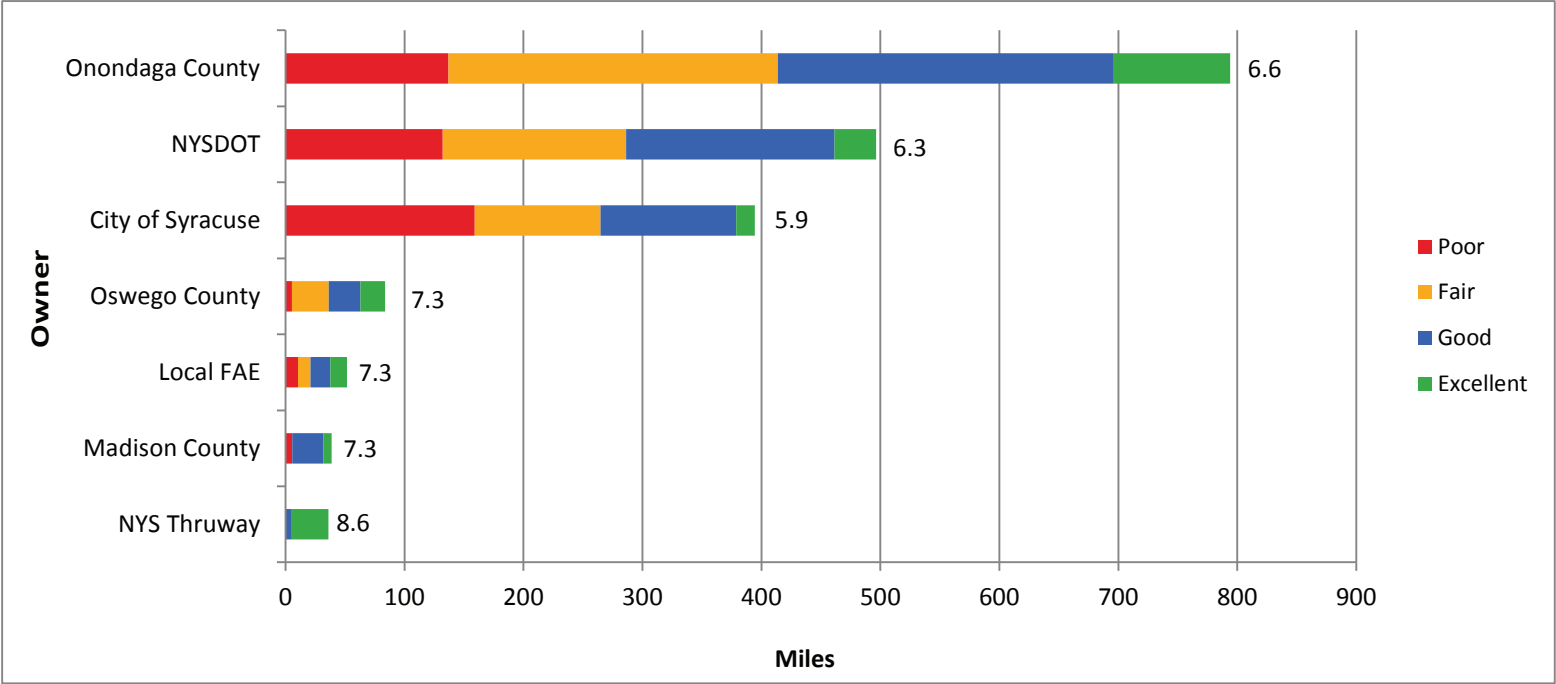
Pavement Ratings for *All Rated Roads* in the SMTC Metropolitan Planning Area

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads by Jurisdiction	Average Rating
City of Syracuse				5.9 (Poor)
Excellent	82,946	15.7	4%	
Good	601,237	113.9	29%	
Fair	559,709	106.0	27%	
Poor	838,912	158.9	40%	
Total	2,082,804	394.5	100%	
Local Federal-Aid Eligible				7.3 (Good)
Excellent	73,634	13.9	27%	
Good	88,753	16.8	32%	
Fair	55,916	10.6	20%	
Poor	54,825	10.4	20%	
Total	273,129	51.7	100%	
Madison County				7.3 (Good)
Excellent	37,072	7.0	18%	
Good	136,849	25.9	67%	
Fair	0	0.0	0%	
Poor	30,784	5.8	15%	
Total	204,706	38.8	100%	
Onondaga County				6.6 (Fair)
Excellent	519,816	98.5	12%	
Good	1,487,693	281.8	35%	
Fair	1,461,926	276.9	35%	
Poor	722,674	136.9	17%	
Total	4,192,109	794.0	100%	
Oswego County				7.3 (Good)
Excellent	109,254	20.7	25%	
Good	141,126	26.7	32%	
Fair	163,317	30.9	37%	
Poor	28,683	5.4	6%	
Total	442,380	83.8	100%	
New York State				6.3 (Fair)
Excellent	184,233	34.9	7%	
Good	924,970	175.2	35%	
Fair	814,667	154.3	31%	
Poor	696,785	132.0	27%	
Total	2,620,655	496.3	100%	
New York State Thruway				8.6 (Good)
Excellent	166,522	31.5	87%	
Good	23,855	4.5	13%	
Fair	0	0.0	0%	
Poor	0	0.0	0%	
Total	190,377	36.1	100%	
All Rated Roads*				6.5 (Fair)
Excellent	1,173,478	222.2	12%	
Good	3,404,482	644.8	34%	
Fair	3,055,536	578.7	31%	
Poor	2,372,663	449.4	24%	
Total	10,006,159	1,895.1	100%	

*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.

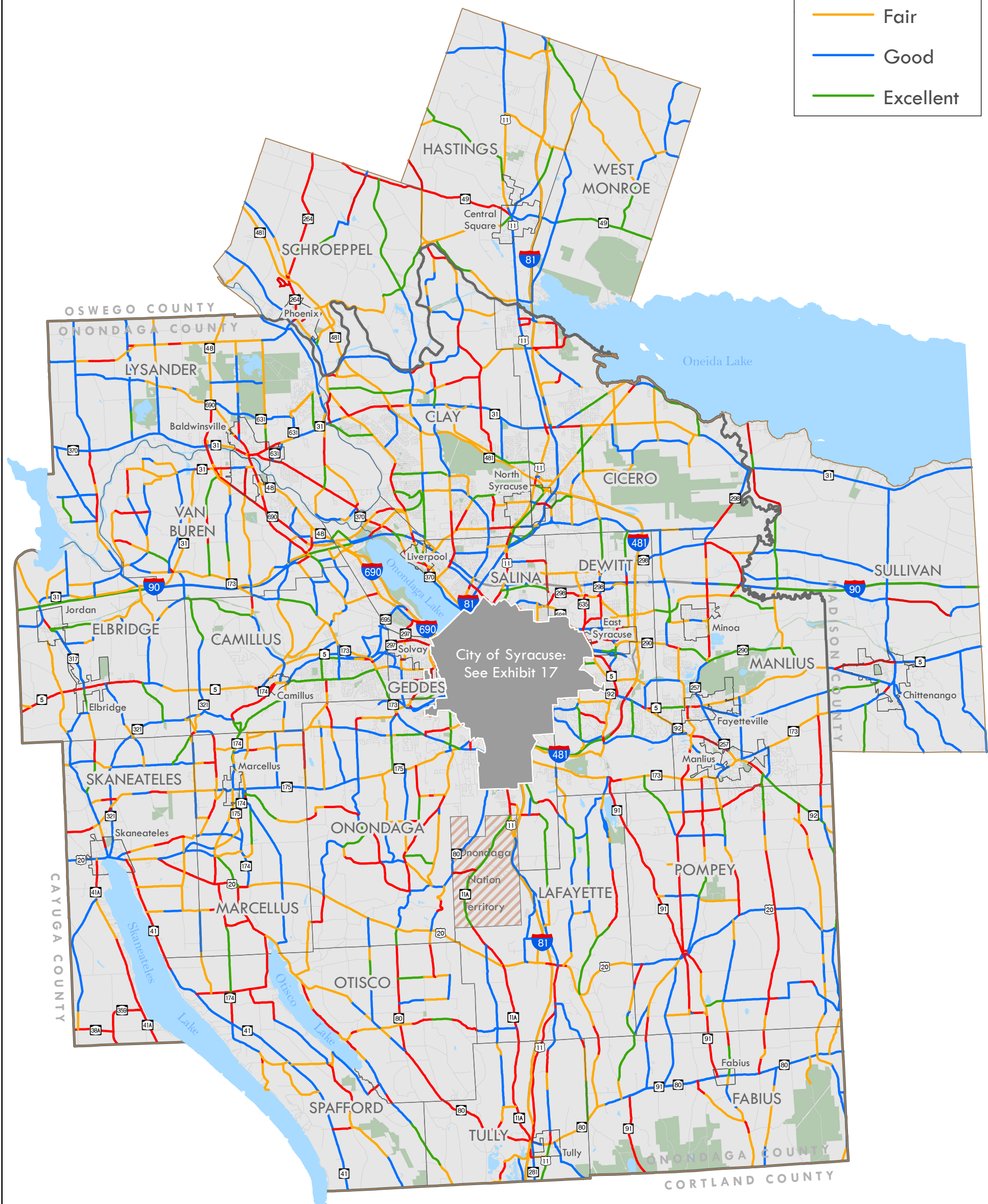
Exhibit 15
Pavement Ratings for All Rated Roads by Owner and Mileage



Note:
Numbers at right indicate average ratings for each owner.

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



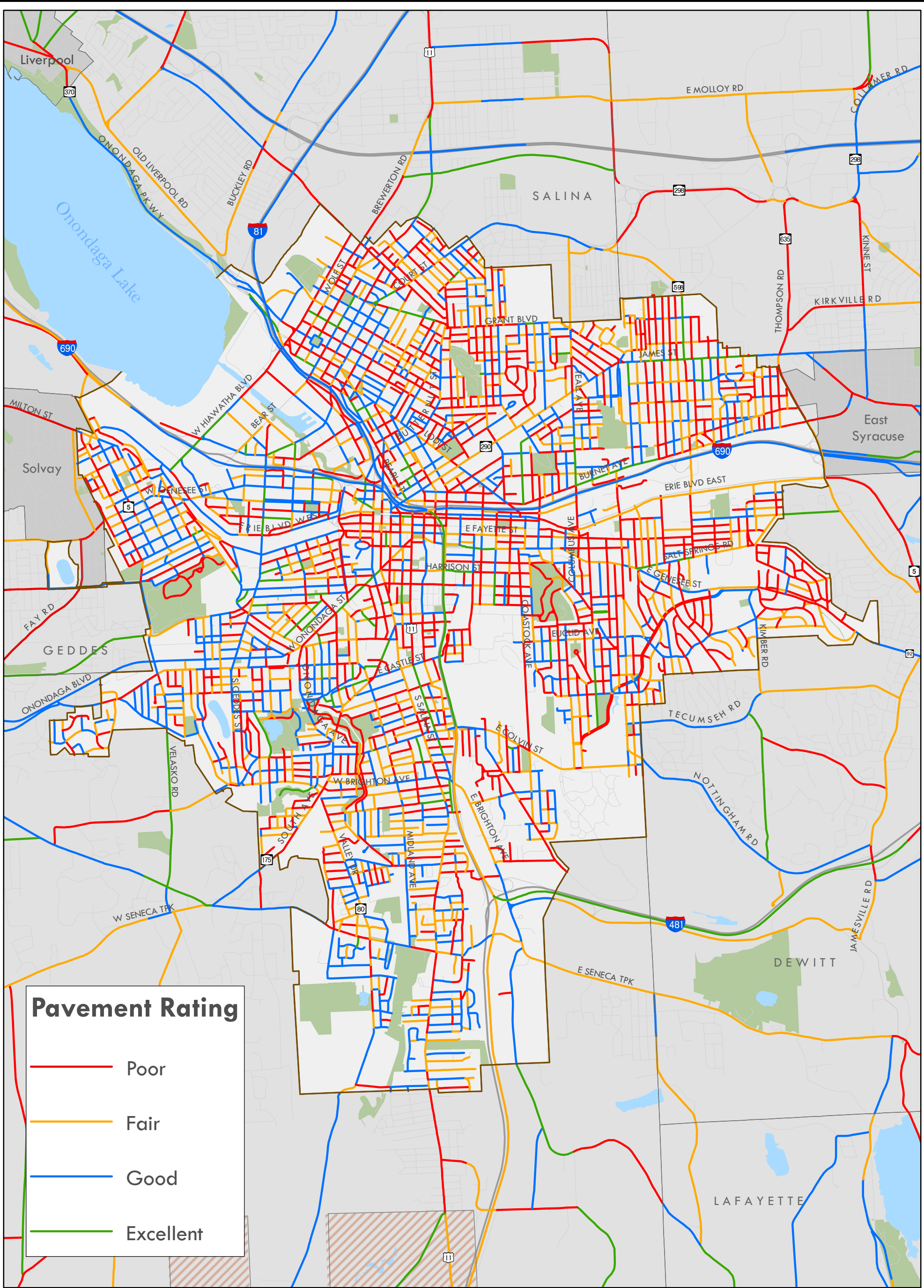
Data Sources: SOCPA, NYSDOT, 2013
Prepared by SMTC, 08/2014

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**
- Interstates
 - Major Roads
 - Local Roads
 - Parks
 - Village
 - City
 - Town
 - County
 - 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.smtcmmpo.org



Data Sources: SOCPA, NYSDOT, 2013
Prepared by SMTC, 08/2014

All Rated Roads in the City of Syracuse

Bridge & Pavement Condition Management System

Exhibit 17

0 0.5 1 2 Miles

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

3.2 Federal-Aid Eligible Pavement Ratings

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

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

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

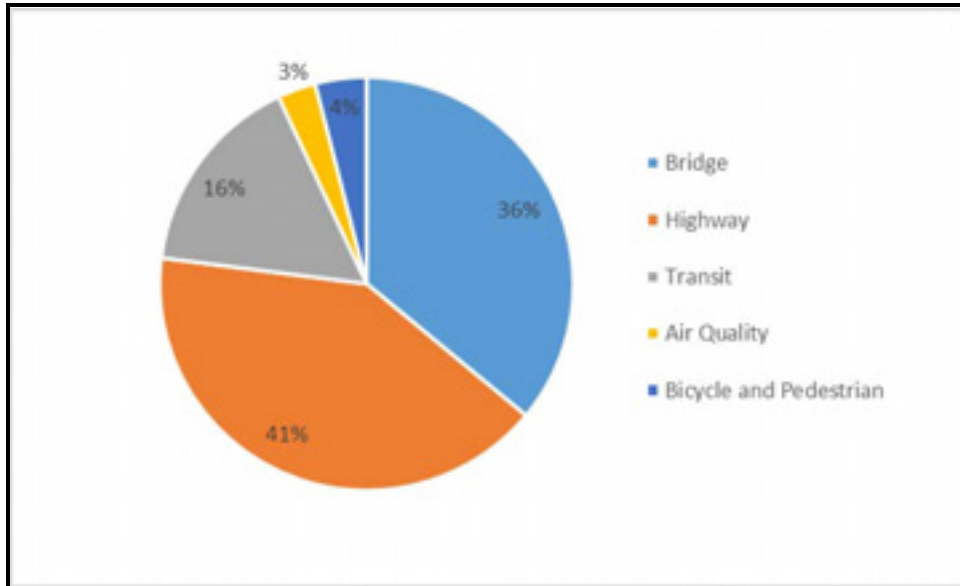
Regarding the most recent TIP, total funding equates to approximately \$315,426,323. Consistent with previous multi-year capital programs, 77% of funds have been programmed to bridge (36%) and highway (41%) projects (see Chart 1). The TIP identifies the timing and funding of all transportation projects 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 condition rating for medium and high volume roads, increasing the number of non-

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

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

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

Chart 1: 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 20-35.

Exhibit 18 displays total rated centerline miles of Federal Aid Eligible roads by rating category in the SMTC MPA. Among all rated roads, approximately 113.6 miles of centerline miles of road under the jurisdiction of the City of Syracuse, 51.7 miles under local jurisdiction, 16.9 miles under the jurisdiction of Madison County, 26.2 miles under the jurisdiction of Oswego County, 283.1 miles under the jurisdiction of Onondaga County, 460.8 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 37, 38 and 39 show the functional classification code for roads in the MPA (excluding rural minor collectors and rural/urban local functional classifications), and Exhibit 40 is a map of the functional classification system in the MPA. Exhibit 41 displays the ownership of each road in the MPA. Exhibit 42 shows rating categories by owner and primary/secondary terminology for all roads, and Exhibit 43 shows rating categories by owner and primary/secondary terminology for FAE roads; primary roads are defined

as all principal arterials, and secondary roads are defined as all other roads. (Several owners are not included in these charts because either all roads are primary, or all roads are secondary.)

Exhibits 20, 22, 24, 26, 28, 30, 33 and the corresponding charts illustrate the condition of each of the types of functional classifications for each jurisdiction. Exhibits 35 and 36 are maps of all the federal-aid eligible pavement condition ratings.

Exhibit 18 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 87%.
- 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 (35%).

Exhibit 18

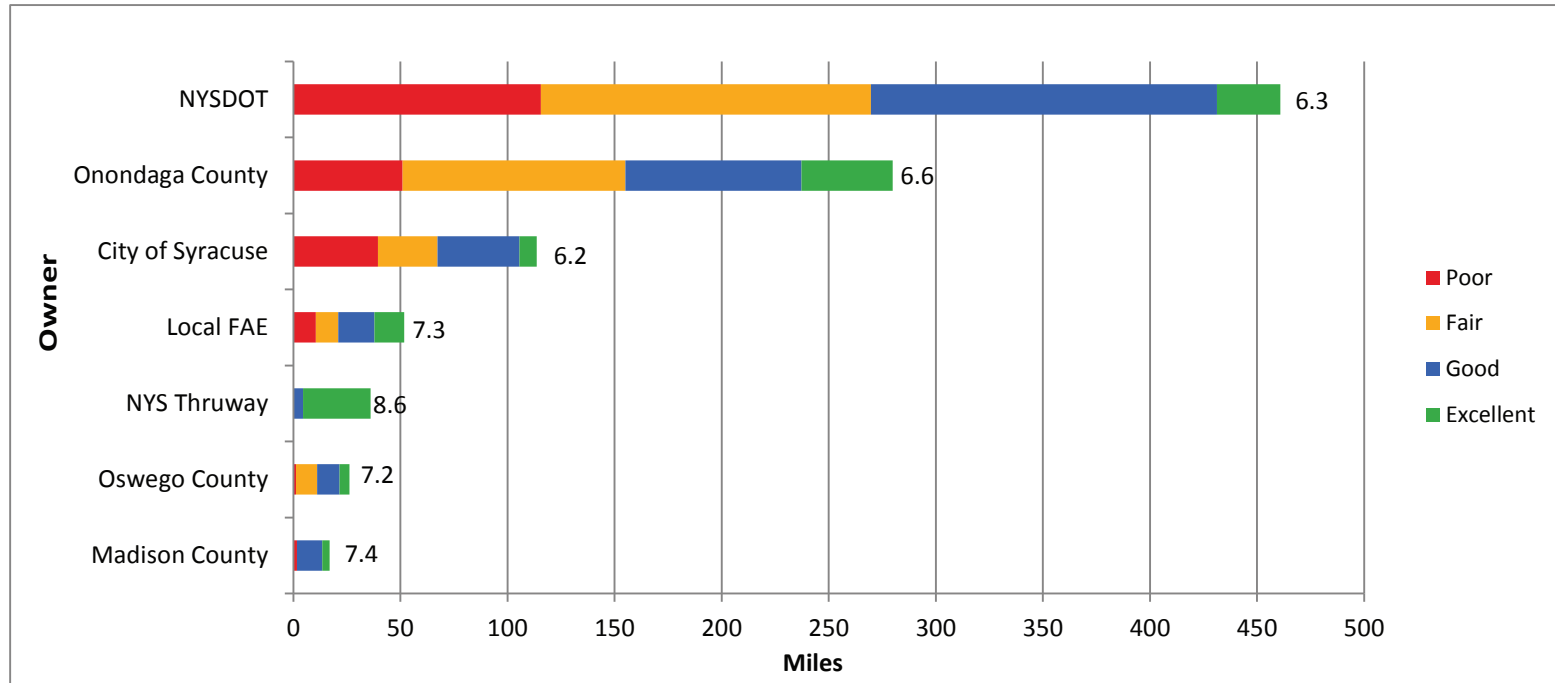
Pavement Ratings for Federal-Aid Eligible Roads

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads	Average Rating
City of Syracuse				6.2 (Fair)
Excellent	42,432	8.0	7%	
Good	202,736	38.4	34%	
Fair	146,851	27.8	24%	
Poor	208,030	39.4	35%	
Total	600,048	113.6	100%	
Local Federal-Aid Eligible				7.3 (Good)
Excellent	73,634	13.9	27%	
Good	88,753	16.8	32%	
Fair	55,916	10.6	20%	
Poor	54,825	10.4	20%	
Total	273,129	51.7	100%	
Madison County				7.4 (Good)
Excellent	17,727	3.4	20%	
Good	62,650	11.9	70%	
Fair	0	0.0	0%	
Poor	8,656	1.6	10%	
Total	89,033	16.9	100%	
Onondaga County				6.6 (Fair)
Excellent	229,574	43.5	15%	
Good	435,494	82.5	29%	
Fair	553,080	104.8	37%	
Poor	276,514	52.4	19%	
Total	1,494,662	283.1	100%	
Oswego County				7.2 (Good)
Excellent	24,352	4.6	18%	
Good	56,089	10.6	40%	
Fair	51,752	9.8	37%	
Poor	6,363	1.2	5%	
Total	138,556	26.2	100%	
New York State DOT				6.3 (Fair)
Excellent	155,804	29.5	6%	
Good	853,050	161.6	35%	
Fair	813,736	154.1	33%	
Poor	610,440	115.6	25%	
Total	2,433,029	460.8	100%	
New York State Thruway				8.6 (Good)
Excellent	166,522	31.5	87%	
Good	23,855	4.5	13%	
Fair	0	0.0	0%	
Poor	0	0.0	0%	
Total	190,377	36.1	100%	
All Federal-Aid Eligible				6.6 (Fair)
Excellent	710,045	134.5	14%	
Good	1,722,627	326.3	33%	
Fair	1,621,334	307.1	31%	
Poor	1,164,828	220.6	22%	
Total	5,218,835	988.4	100%	

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

Exhibit 19

Pavement Ratings for FAE Roads by Owner and Mileage



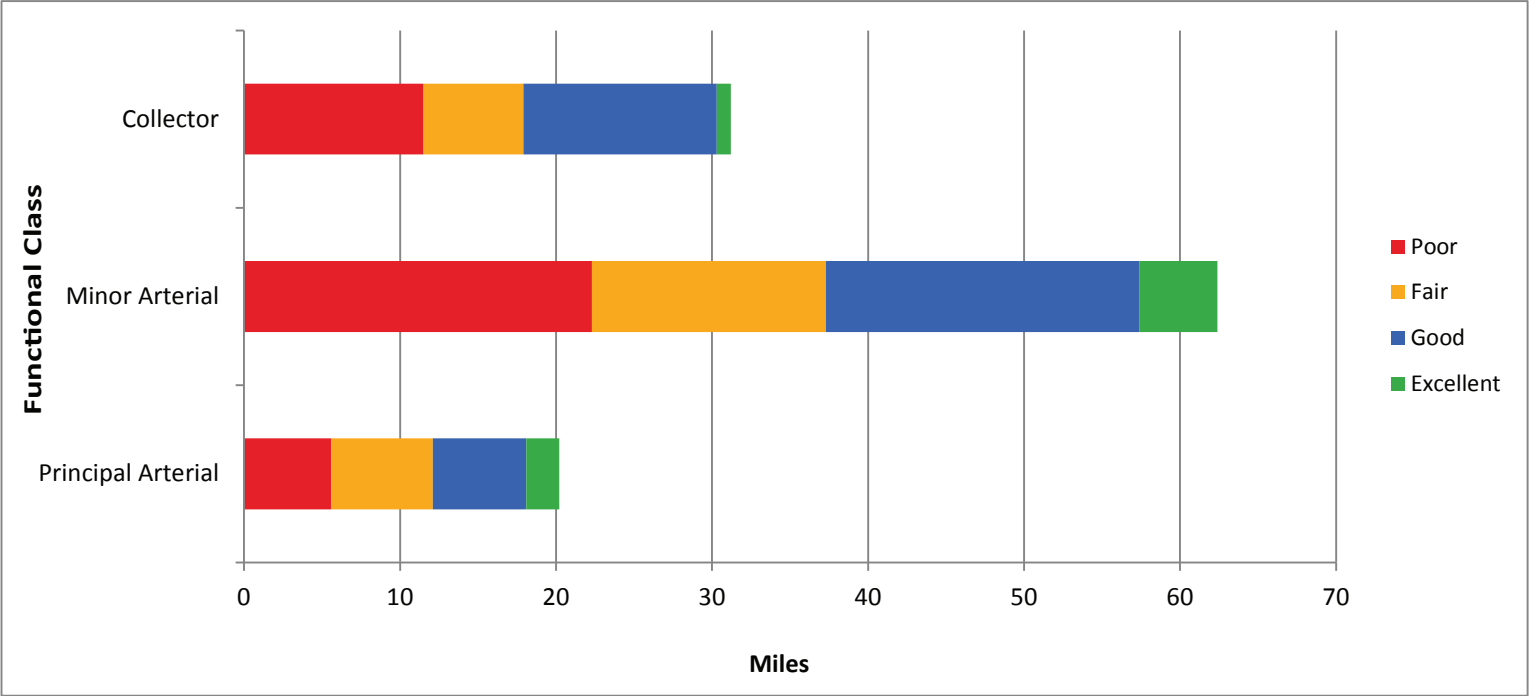
Note:
Numbers at right indicate average ratings for each owner.

Exhibit 20
Pavement Ratings by Functional Classification
City of Syracuse

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
City of Syracuse			
Principal Arterial			
Excellent	11,322	2.1	11%
Good	31,425	6.0	29%
Fair	34,103	6.5	32%
Poor	29,691	5.6	28%
Total	106,541	20.2	100%
Minor Arterial			
Excellent	26,396	5.0	8%
Good	105,996	20.1	32%
Fair	79,051	15.0	24%
Poor	117,800	22.3	36%
Total	329,244	62.4	100%
Collector			
Excellent	4,714	0.9	3%
Good	65,315	12.4	40%
Fair	33,696	6.4	21%
Poor	60,539	11.5	37%
Total	164,264	31.1	100%
All Federal-Aid City Roads			
Excellent	42,432	8.0	7%
Good	202,736	38.4	34%
Fair	146,851	27.8	24%
Poor	208,030	39.4	35%
Total	600,048	113.6	100%

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

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



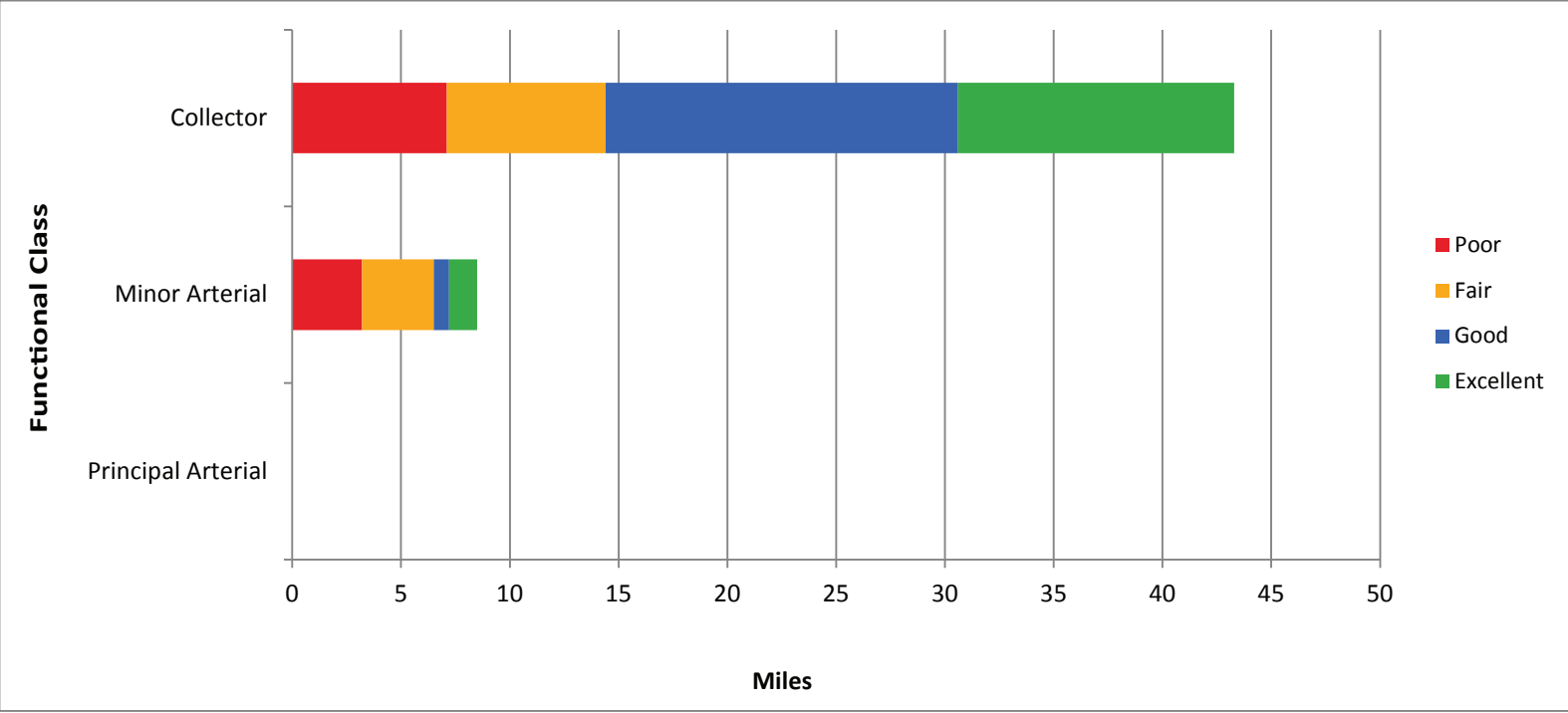
Note: Calculations based on total centerline length of road.

Exhibit 22
Pavement Ratings by Functional Classification
Local Federal-Aid Eligible Roads

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
Local Federal-Aid Eligible			
Principal Arterial			
Excellent	0	0.0	0%
Good	0	0.0	0%
Fair	0	0.0	0%
Poor	0	0.0	0%
Total	0	0.0	0%
Minor Arterial			
Excellent	6,695	1.3	15%
Good	3,476	0.7	8%
Fair	17,242	3.3	39%
Poor	17,114	3.2	38%
Total	44,527	8.4	100%
Collector			
Excellent	66,939	12.7	29%
Good	85,277	16.2	37%
Fair	38,674	7.3	17%
Poor	37,711	7.1	16%
Total	228,602	43.3	100%
All Federal-Aid Roads			
Excellent	73,634	13.9	27%
Good	88,753	16.8	32%
Fair	55,916	10.6	20%
Poor	54,825	10.4	20%
Total	273,129	51.7	100%

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

Exhibit 23
Pavement Ratings by Functional Classification of Local FAE Roads



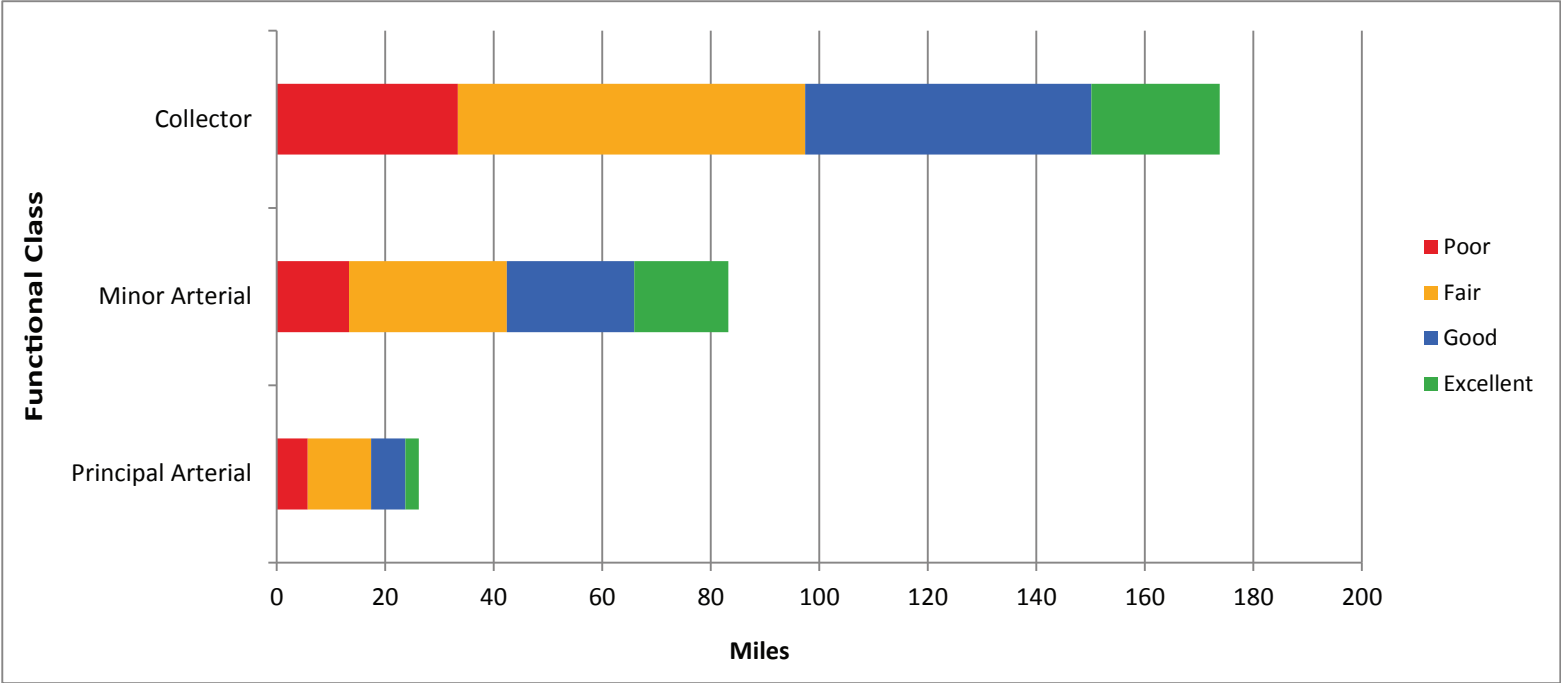
Note: Calculations based on total centerline length of road.

Exhibit 24
Pavement Ratings by Functional Classification
Onondaga County DOT Roads

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
Onondaga County			
Principal Arterial			
Excellent	13,042	2.5	9%
Good	33,158	6.3	24%
Fair	61,934	11.7	45%
Poor	30,149	5.7	22%
Total	138,283	26.2	100%
Minor Arterial			
Excellent	91,344	17.3	21%
Good	124,027	23.5	28%
Fair	153,384	29.1	35%
Poor	70,118	13.3	16%
Total	438,874	83.1	100%
Collector			
Excellent	125,189	23.7	14%
Good	278,309	52.7	30%
Fair	337,762	64.0	37%
Poor	176,246	33.4	19%
Total	917,506	173.8	100%
All County Federal-Aid Roads			
Excellent	229,575	43.5	15%
Good	435,495	82.5	29%
Fair	553,080	104.8	37%
Poor	276,513	52.4	19%
Total	1,494,663	283.1	100%

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

Exhibit 25
Pavement Ratings by Functional Classification of Onondaga County DOT Roads



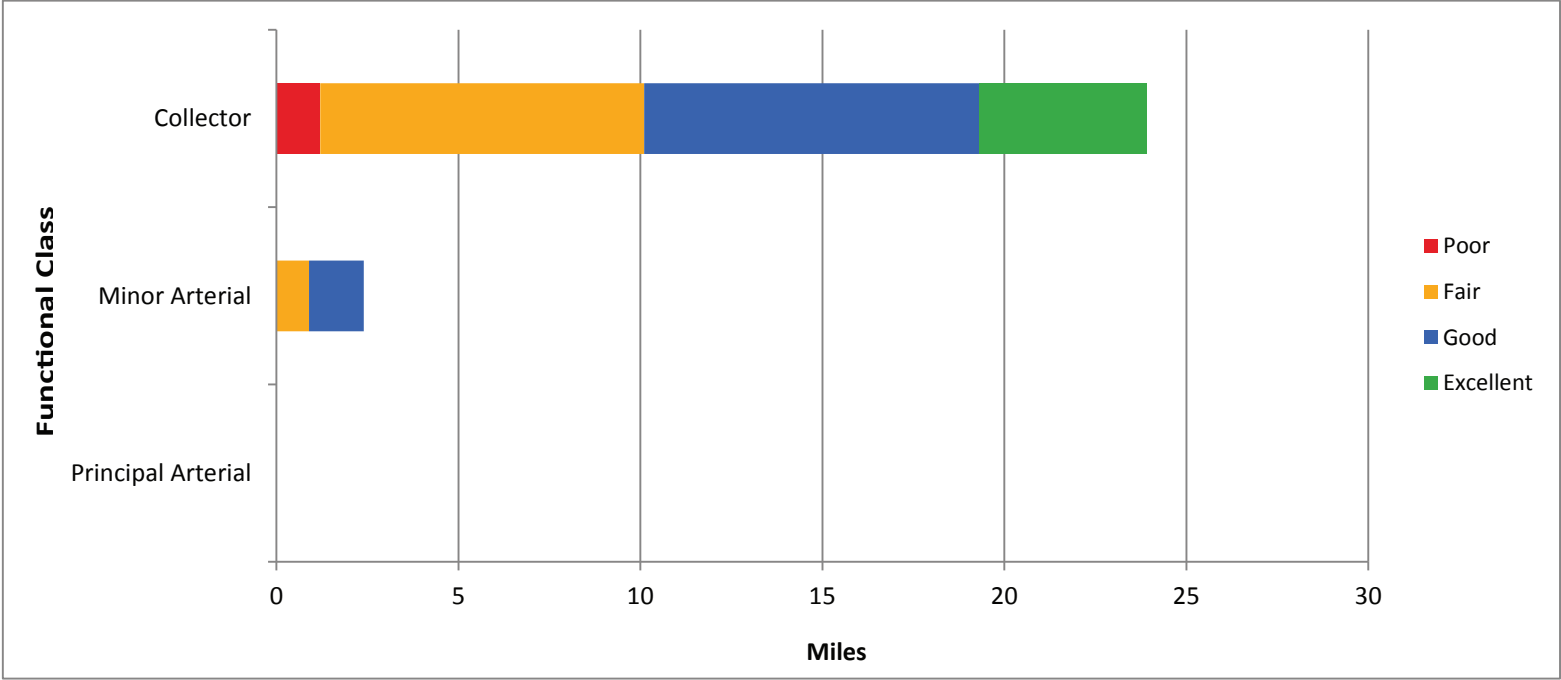
Note: Calculations based on total centerline length of road.

Exhibit 26
Pavement Ratings by Functional Classification
Oswego County

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
Oswego County			
Principal Arterial			
Excellent	0	0.0	0%
Good	0	0.0	0%
Fair	0	0.0	0%
Poor	0	0.0	0%
Total	0	0.0	0%
Minor Arterial			
Excellent	0	0.0	0%
Good	7,734	1.5	62%
Fair	4,771	0.9	38%
Poor	0	0.0	0%
Total	12,505	2.4	100%
Collector			
Excellent	24,352	4.6	19%
Good	48,355	9.2	38%
Fair	46,981	8.9	37%
Poor	6,363	1.2	5%
Total	126,050	23.9	100%
All County Federal-Aid Roads			
Excellent	24,352	4.6	18%
Good	56,089	10.6	40%
Fair	51,752	9.8	37%
Poor	6,363	1.2	5%
Total	138,555	26.2	100%

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

Exhibit 27
Pavement Ratings by Functional Classification of Oswego County Roads



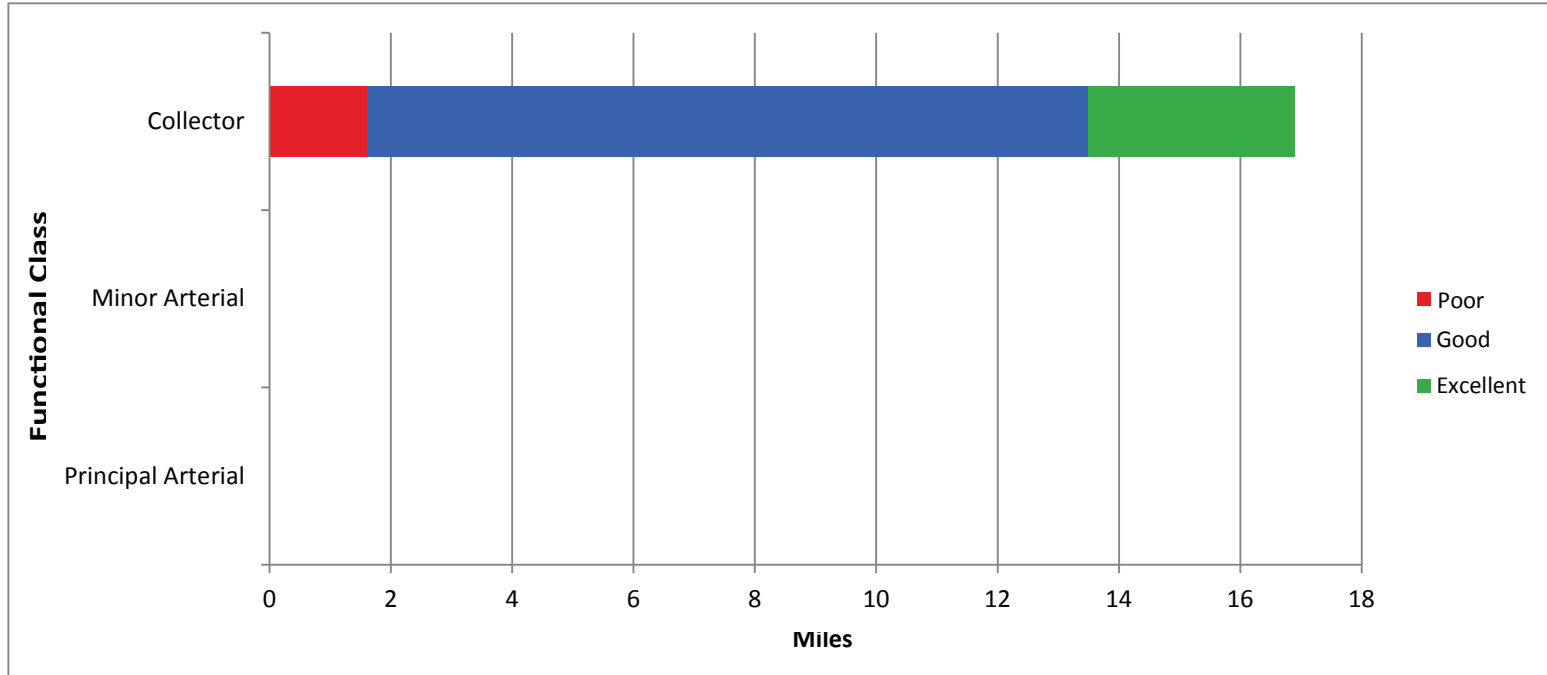
Note: Calculations based on total centerline length of road.

Exhibit 28
Pavement Ratings by Functional Classification
Madison County

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
Madison County			
Principal Arterial			
Excellent	0	0.0	0%
Good	0	0.0	0%
Fair	0	0.0	0%
Poor	0	0.0	0%
Total	0	0.0	0%
Minor Arterial			
Excellent	0	0.0	0%
Good	0	0.0	0%
Fair	0	0.0	0%
Poor	0	0.0	0%
Total	0	0.0	0%
Collector			
Excellent	17,727	3.4	20%
Good	62,650	11.9	70%
Fair	0	0.0	0%
Poor	8,656	1.6	10%
Total	89,033	16.9	100%
All County Federal-Aid Roads			
Excellent	17,727	3.4	20%
Good	62,650	11.9	70%
Fair	0	0.0	0%
Poor	8,656	1.6	10%
Total	89,033	16.9	100%

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

Exhibit 29
Pavement Ratings by Functional Classification of Madison County Roads



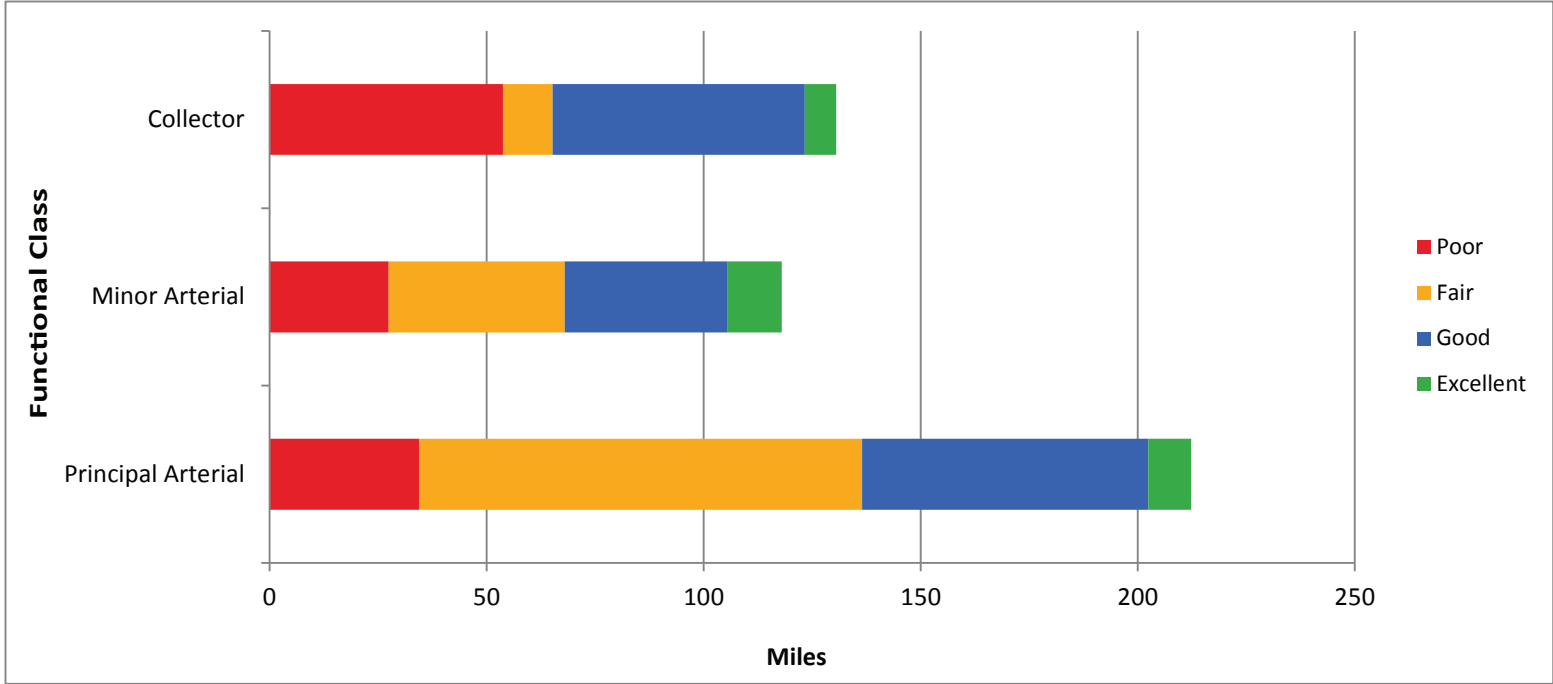
Note: Calculations based on total centerline length of road.

Exhibit 30
Pavement Ratings by Functional Classification
New York State DOT Roads

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
New York State			
Principal Arterial			
Excellent	52,148	9.9	5%
Good	348,116	65.9	31%
Fair	538,501	102.0	48%
Poor	181,926	34.5	16%
Total	1,120,691	212.3	100%
Minor Arterial			
Excellent	65,766	12.5	11%
Good	198,159	37.5	32%
Fair	214,298	40.6	34%
Poor	144,732	27.4	23%
Total	622,955	118.0	100%
Collector			
Excellent	37,891	7.2	5%
Good	306,775	58.1	44%
Fair	60,937	11.5	9%
Poor	283,782	53.7	41%
Total	689,384	130.6	100%
All State Federal-Aid Roads			
Excellent	155,804	29.5	6%
Good	853,050	161.6	35%
Fair	813,736	154.1	33%
Poor	610,440	115.6	25%
Total	2,433,029	460.8	100%

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

Exhibit 31
Pavement Ratings by Functional Classification of NYSDOT Roads



Note: Calculations based on total centerline length of road.

Exhibit 32
Comparison of State Pavement Ratings

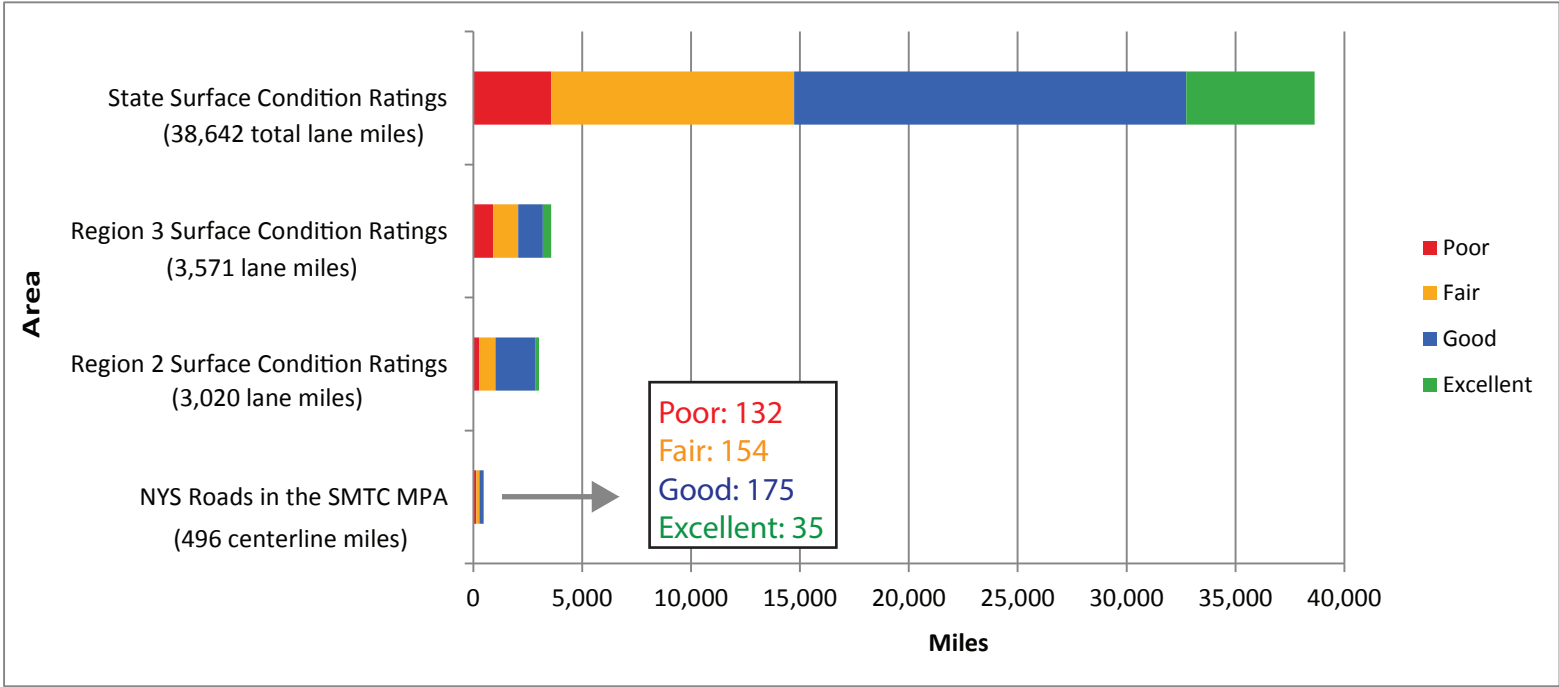
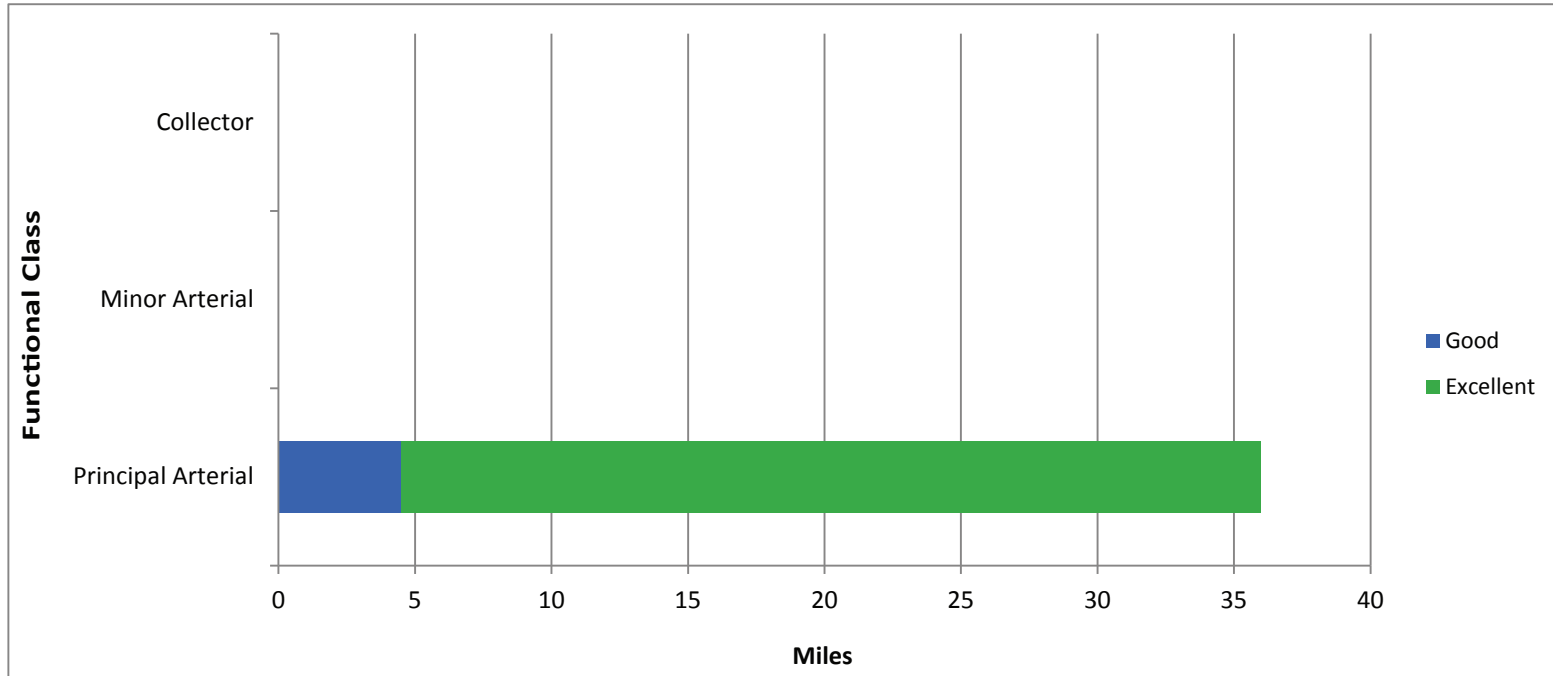


Exhibit 33
Pavement Ratings by Functional Classification
New York State Thruway Roads

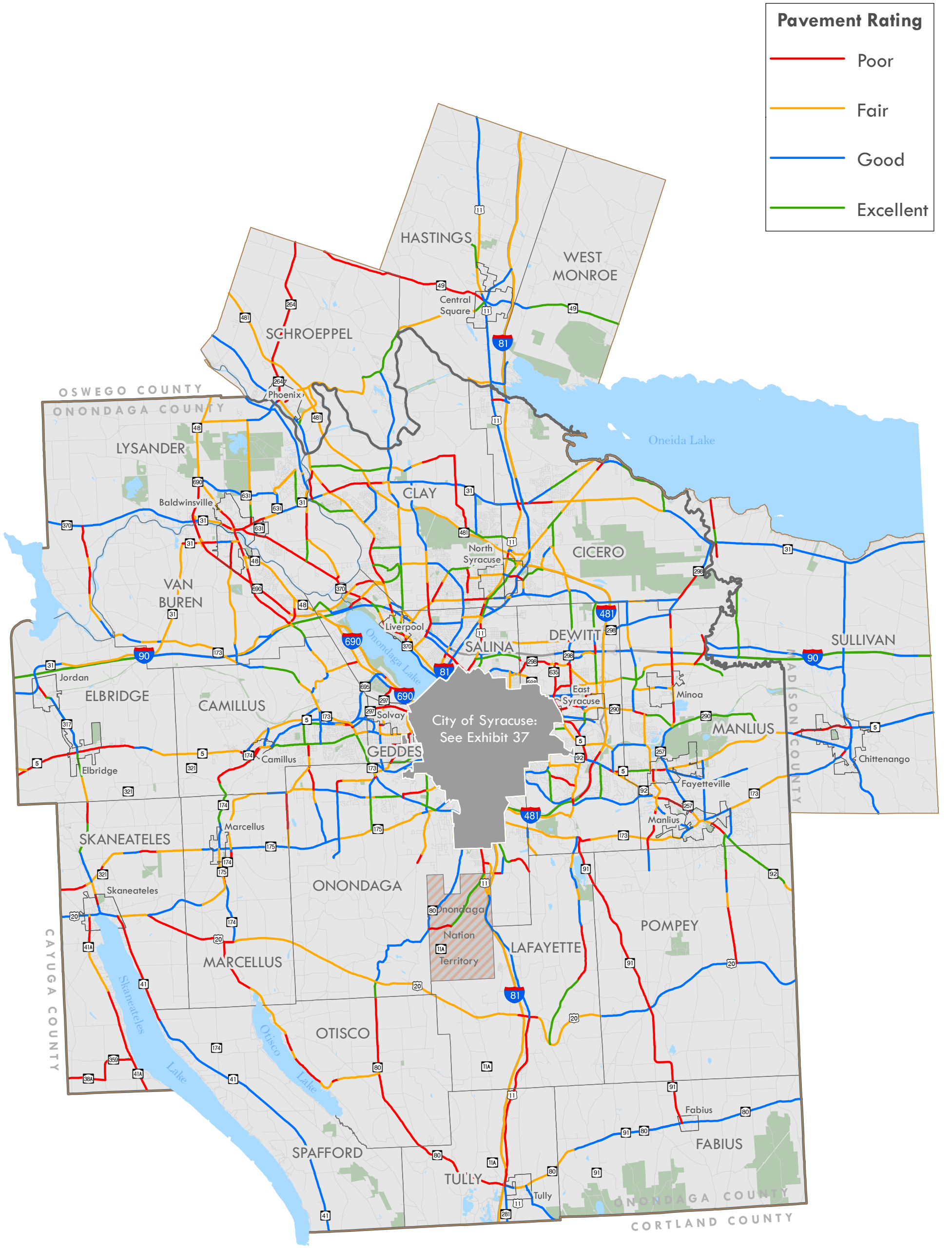
	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
Thruway			
Principal Arterial			
Excellent	166,522	31.5	87%
Good	23,855	4.5	13%
Fair	0	0.0	0%
Poor	0	0.0	0%
Total	190,377	36.1	100%
Minor Arterial			
Excellent	0	0.0	0%
Good	0	0.0	0%
Fair	0	0.0	0%
Poor	0	0.0	0%
Total	0	0.0	0%
Collector			
Excellent	0	0.0	0%
Good	0	0.0	0%
Fair	0	0.0	0%
Poor	0	0.0	0%
Total	0	0.0	0%
All Thruway Federal-Aid Roads			
Excellent	166,522	31.5	87%
Good	23,855	4.5	13%
Fair	0	0.0	0%
Poor	0	0.0	0%
Total	190,377	36.1	100%

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

Exhibit 34
Pavement Ratings by Functional Classification of Thruway roads



Note: Calculations based on total centerline length of road.



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, 2013
Prepared by SMTC, 08/2014

Federal Aid-Eligible Roads in the MPA

Bridge & Pavement Condition Management System

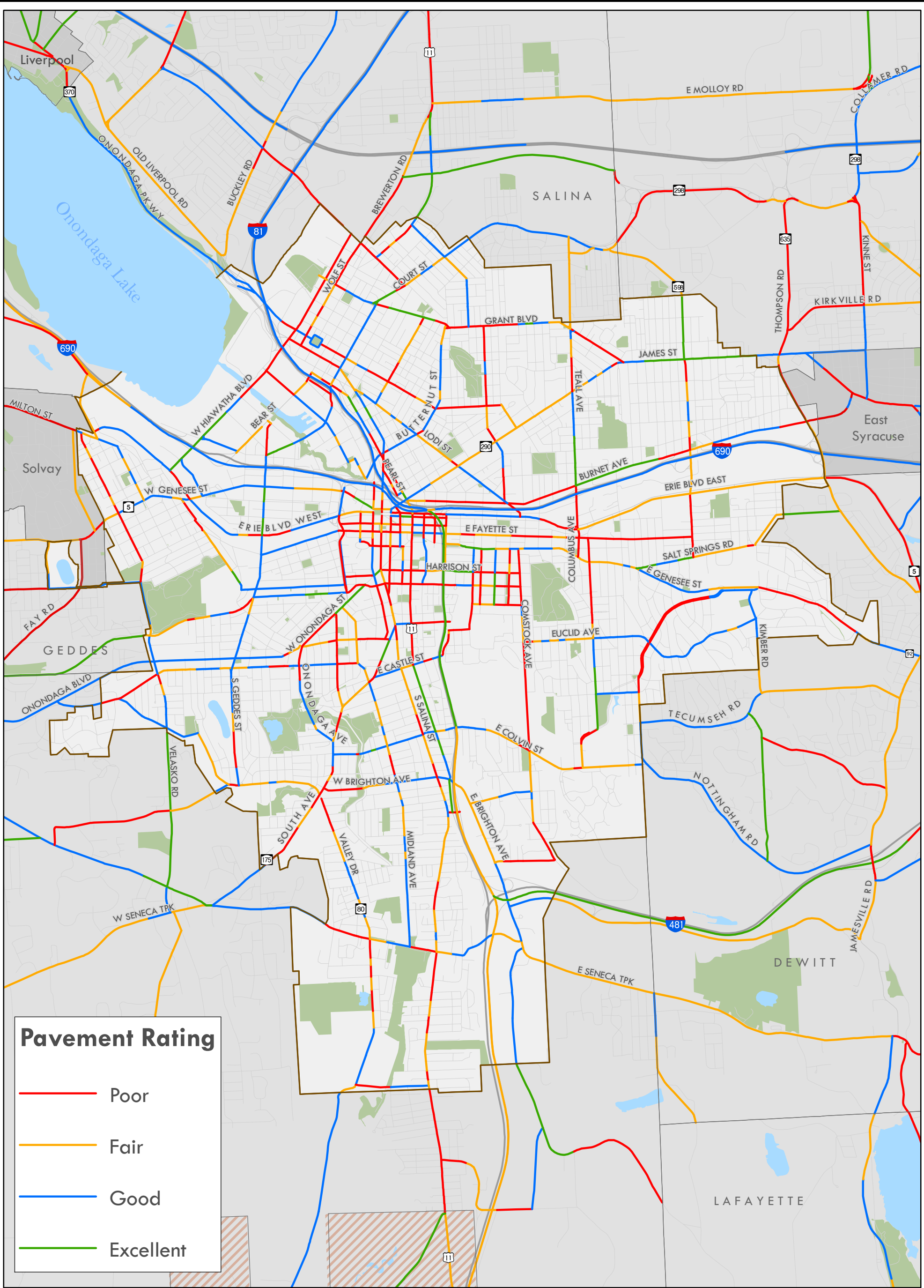
Exhibit 35

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
- County
- 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

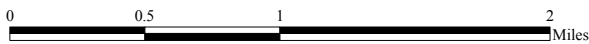


Data Sources: SOCPA, NYSDOT, 2013
Prepared by SMTC, 08/2014

FAE Roads in the City of Syracuse

Bridge & Pavement Condition Management System

Exhibit 36



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

Legend

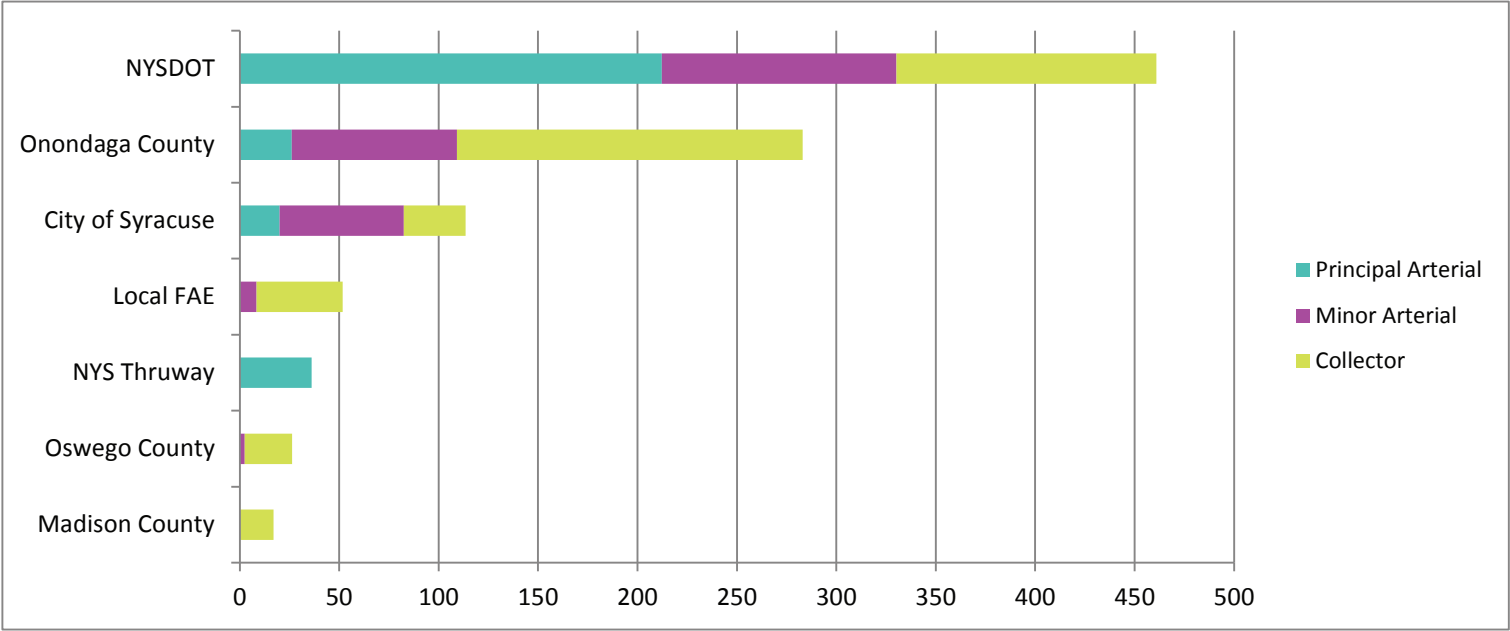
- Interstates
- Major Roads
- Local Roads
- Parks
- Village
- City
- Town
- Onondaga Nation Territory

Exhibit 37
Functional Classification for Federal-Aid Eligible Roads

	Total Centerline Length in Feet	Total Centerline Length in Miles	Percent of Roads
City of Syracuse			
Principal Arterial	105,541	20.0	18%
Minor Arterial	329,244	62.4	55%
Collector	164,264	31.1	27%
Total	599,049	113.5	100%
Local Federal-Aid Eligible			
Principal Arterial	0	0.0	0%
Minor Arterial	44,527	8.4	16%
Collector	228,602	43.3	84%
Total	273,129	51.7	100%
Madison County			
Principal Arterial	0	0.0	0%
Minor Arterial	0	0.0	0%
Collector	89,033	16.9	100%
Total	89,033	16.9	100%
Onondaga County			
Principal Arterial	138,283	26.2	9%
Minor Arterial	438,874	83.1	29%
Collector	917,506	173.8	61%
Total	1,494,663	283.1	100%
Oswego County			
Principal Arterial	0	0.0	0%
Minor Arterial	12,505	2.4	9%
Collector	126,050	23.9	91%
Total	138,555	26.2	100%
New York State			
Principal Arterial	1,120,691	212.3	46%
Minor Arterial	622,955	118.0	26%
Collector	689,384	130.6	28%
Total	2,433,030	460.8	100%
New York State Thruway Authority			
Principal Arterial	190,377	36.1	100%
Minor Arterial	0	0.0	0%
Collector	0	0.0	0%
Total	190,377	36.1	100%
All Rated Federal-Aid Eligible Roads			
Principal Arterial	1,554,892	294.5	30%
Minor Arterial	1,448,105	274.3	28%
Collector	2,214,839	419.5	42%
Total	5,217,836	988.2	100%

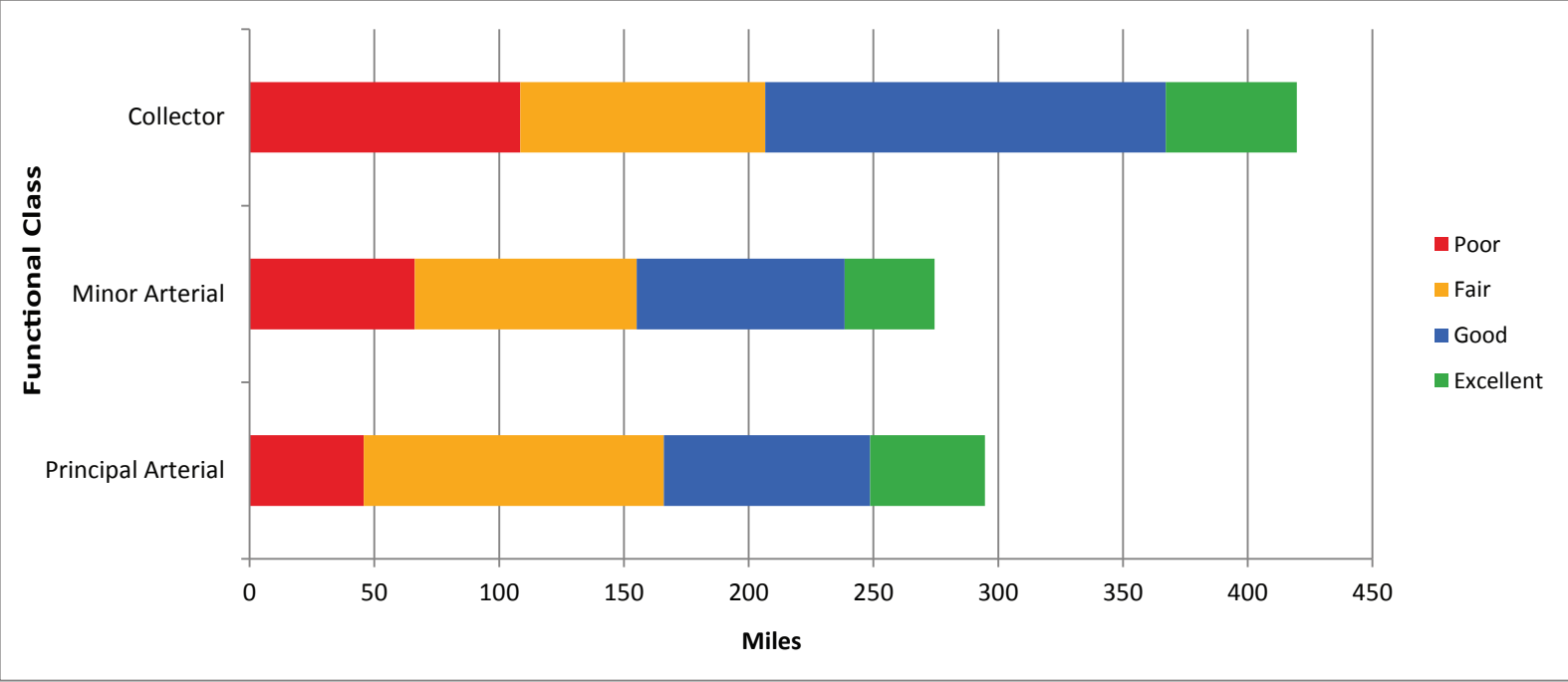
Notes: 1. Calculations based on total centerline length of road.
2. Total percentages may not add to 100% due to rounding.

Exhibit 38
Functional Classification of FAE Roads by Owner



Note: Calculations based on total centerline length of road.

Exhibit 39
Pavement Ratings of FAE Roads by Functional Classification



Note: Calculations based on total centerline length of road.

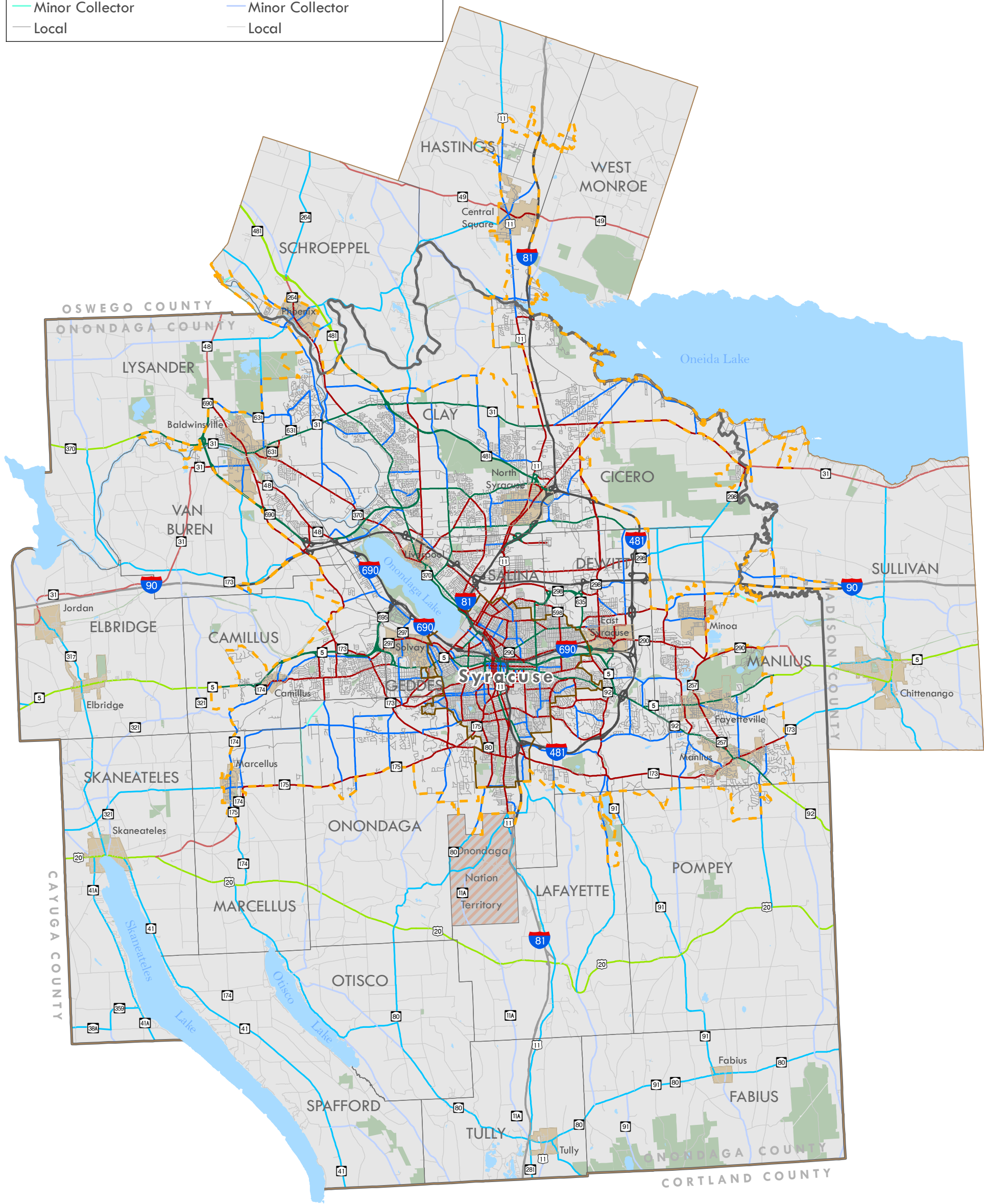
Functional Classification

Urban

- Principal Arterial - Interstate
- Principal Arterial - Other
- Minor Arterial
- Major Collector
- Minor Collector
- Local

Rural

- Principal Arterial - Interstate
- Principal Arterial - Other
- Minor Arterial
- Major Collector
- Minor Collector
- Local

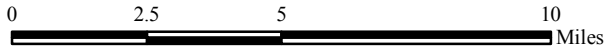


100 Clinton Square
126 North Salina St, Suite 100
Syracuse, NY 13202
(315) 422-5716
Fax: (315) 422-7753
www.smtcmpo.org



Data Sources: SOCPA, NYSDOT, 2013
Prepared by SMTC, 08/2014

Functional Classification
Bridge & Pavement Condition Management System
Exhibit 40



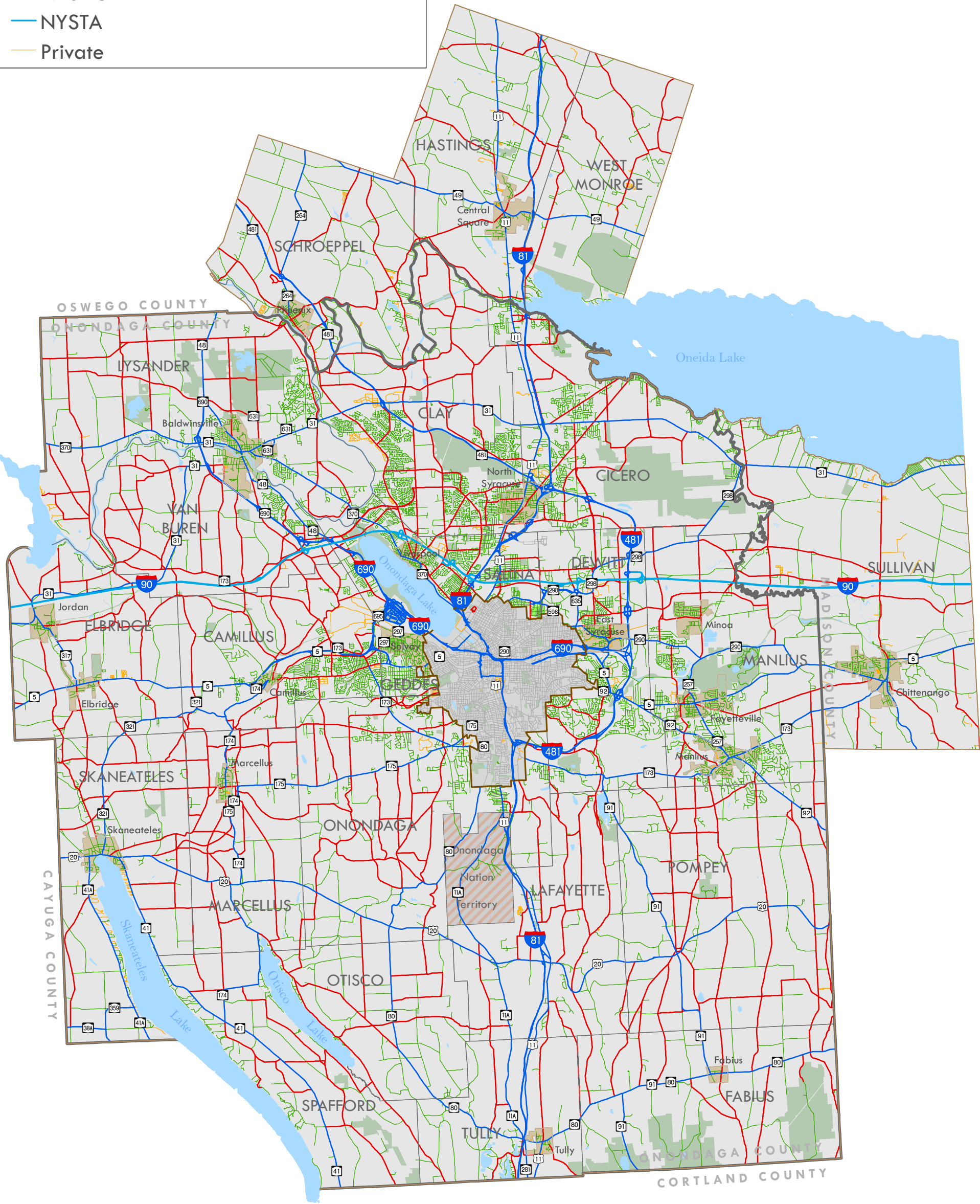
This map is for presentation purposes only.
The SMTC does not guarantee the accuracy or completeness of this map.

Legend

- Urban Area 2010
- Parks
- Village
- City
- County
- Onondaga Nation Territory
- SMTC MPA

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.smtcempa.org



Data Sources: SOCPA, NYSDOT, 2013
Prepared by SMTC, 08/2014

0 2.5 5 10 Miles

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

Road Ownership

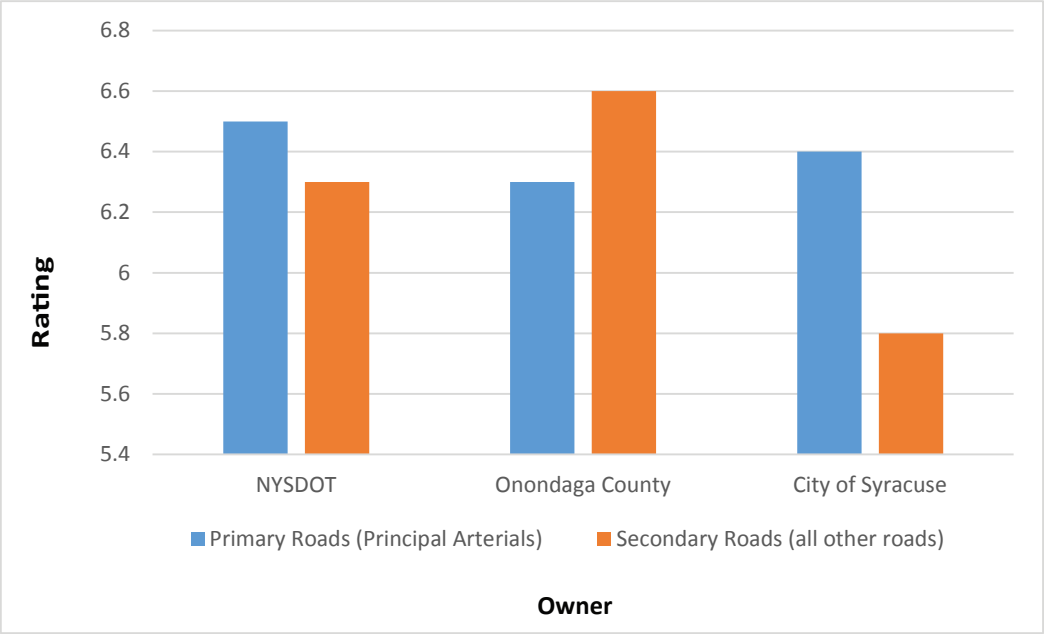
Bridge & Pavement Condition Management System

Exhibit 41

Legend

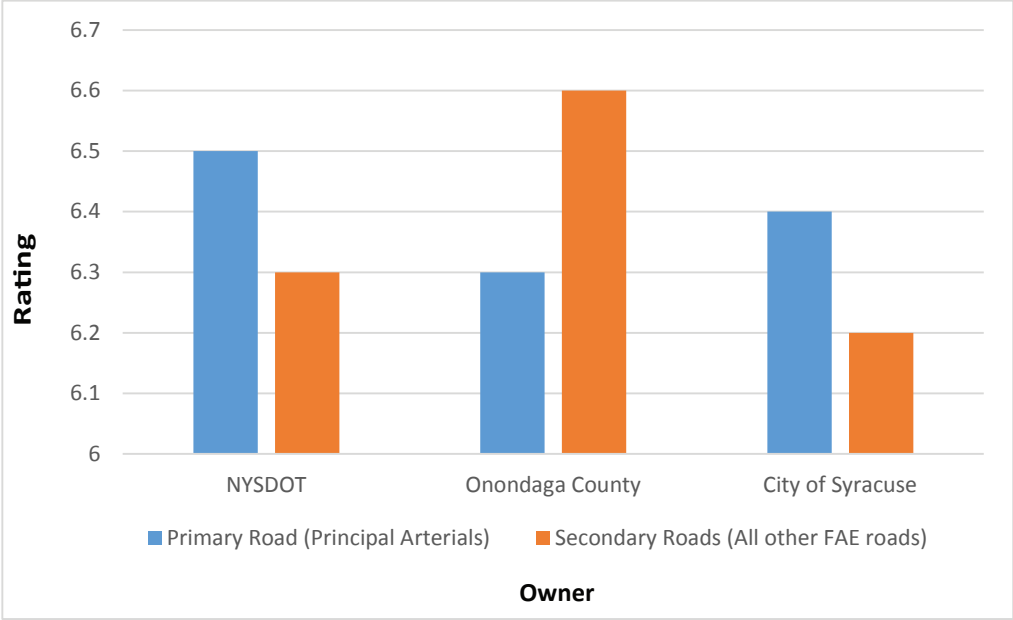
- Parks
- Village
- City
- County
- Onondaga Nation Territory
- SMTC MPA

Exhibit 42
Rating Categories by Owner and Primary/Secondary Terminology for All Roads



Note: Calculations based on total centerline length of road.

Exhibit 43
Rating Categories by Owner and Primary/Secondary Terminology for FAE Roads



Note: Calculations based on total centerline length of road.

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 last 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 stayed the same since last year's rating cycle. Pavement scores have declined in the last rating cycle after a year of slight overall improvement.

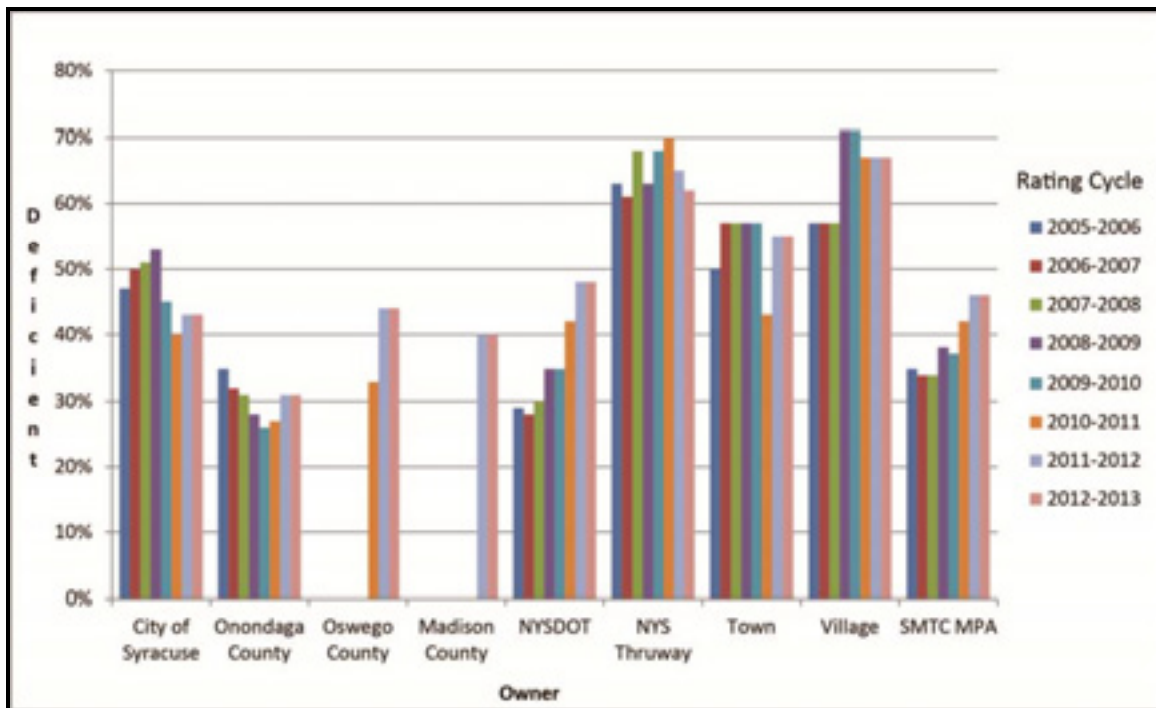
Bridges

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 28% in 2006-2007 to 48% this year - as have the 554 bridges in the MPA from all jurisdictions, which went from 34% in 2006-2007 to 46% this year.

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 2009-2010 to 5% in 2010-11, to 6% last year and this year.

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



Pavement

Chart 3 shows the six-year trend in pavement scores. Overall, pavement scores have declined since last year, from an overall average of 6.6 to 6.5.

After reaching a low average rating of 5.8 two years ago, the City of Syracuse has slightly improved to 5.9 both last year and this year. NYSDOT has decreased in the last year – from 6.7 to 6.3.

The Thruway average rating, after several years of improvement to an average rating of 9.0 or “excellent” two years ago, has dipped back down to 8.6 this year.

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

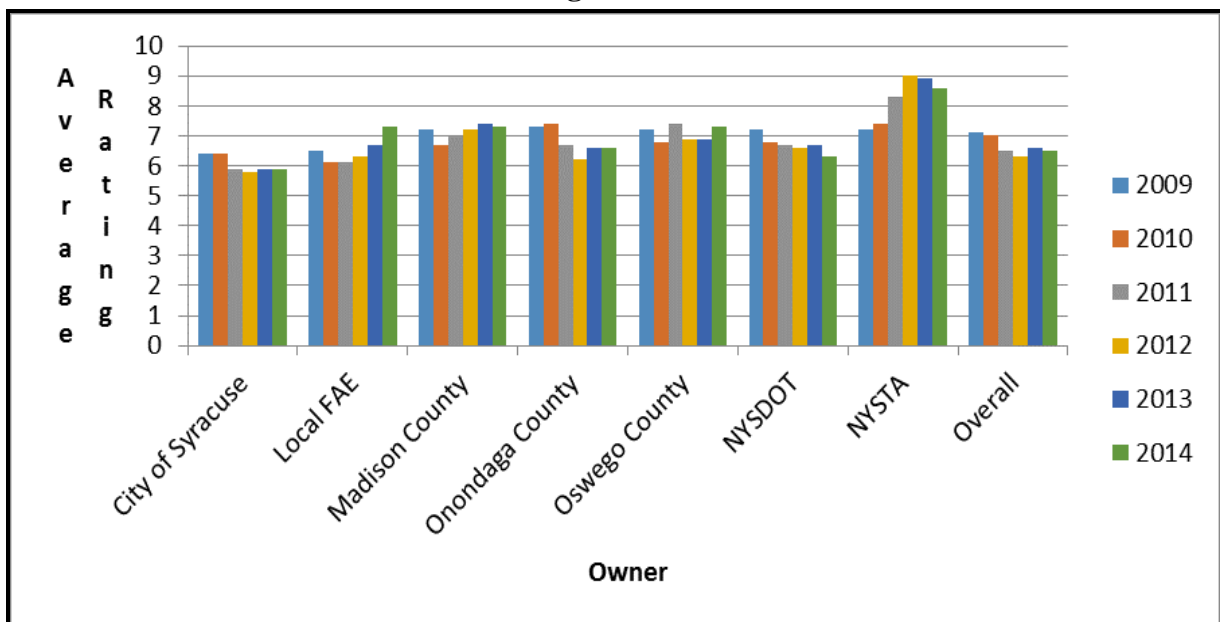
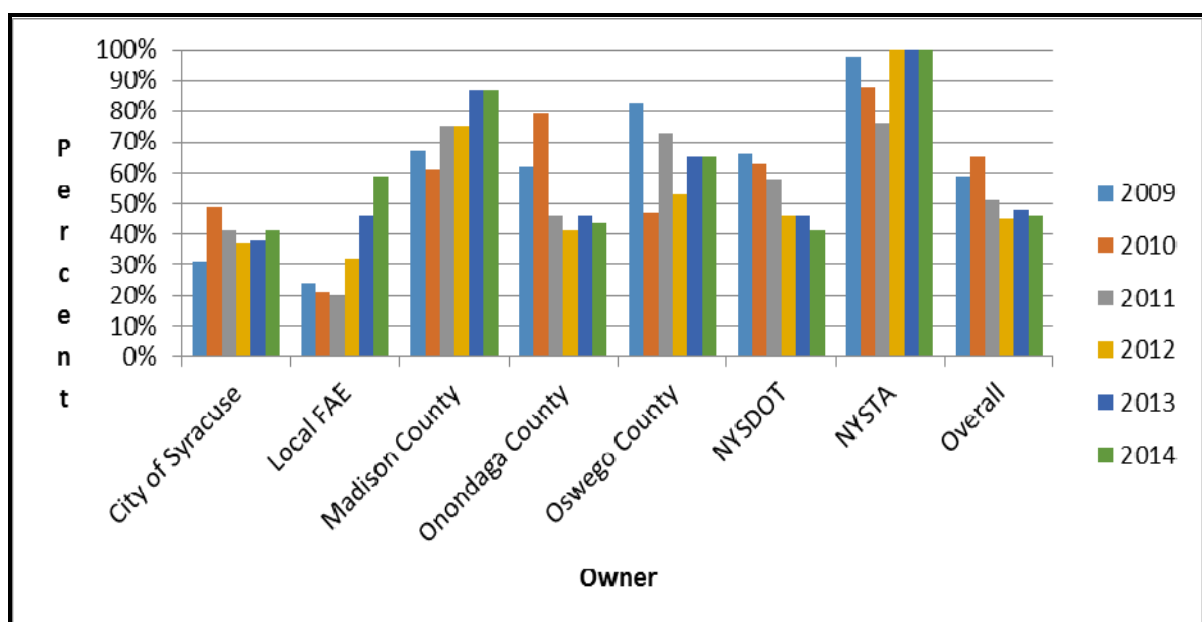


Chart 4 shows the percentage of FAE roads rated “good” or “excellent” over the last six rating cycles. All jurisdictions either improved or stayed the same since last year. Overall, the proportion went from 45% to 48%.

Chart 4: Six-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, 77% 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.