

BRIDGE & PAVEMENT CONDITION Management System

Final Report
April 2001



Report Prepared by:
Syracuse Metropolitan Transportation Council
126 N. Salina Street, Suite 100, Syracuse, N.Y. 13202, (315) 422-5716, Fax: (315) 422-7753

BRIDGE & PAVEMENT CONDITION MANAGEMENT SYSTEM

Onondaga County

Final Report

April 2001

Unified Planning Work Program Task 3L

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For further information contact:

*Jennifer Weldin, Associate Transportation Planner, Project Manager
Wayne Westervelt, Communications/Public Information Specialist
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*

Executive Summary

Bridge and Pavement Condition Management System

Introduction

A Pavement Management System (PMS) is a systematic method for tracking and addressing pavement conditions. Similarly, a Bridge Management System (BMS) is a method for tracking and addressing bridge conditions. A Bridge Management System exists for New York State, and individual Pavement Management Systems currently exist in the City of Syracuse, Onondaga 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 in to a GIS format, data can be mapped, analyzed, presented and accessed in a most useful manner. In future reports, the data will also be compared to past years, which will allow trends to be identified. This report is establishing a benchmark to base evaluation of future Bridge and Pavement Management Reports.

All maps included in this report were compiled utilizing the New York State Department of Transportation (NYSDOT) base map system. The NYSDOT digital Geographic Information Systems files are the basis of the calculations in this report. Through the process of putting all of the bridge and pavement condition rating data into GIS, a database has been built that is available to all SMTC member agencies. Previously, there was not a single report or database that included all bridge and pavement conditions for Onondaga County. Therefore, this report and the data files are significant because of the accessibility to condition rating data through GIS.

The pavement condition rating data reported on throughout this report is based on *linear centerline* miles of roads, not lane miles of roads.

Data Compilation

The data in this report is presented, but not analyzed, since there is no previous report for comparisons.

Pavement ratings in this report are represented in two groups. The first group includes all federal-aid eligible and all non federal-aid eligible roads that are owned by the City of Syracuse, Onondaga County or the New York State. The second group includes only federal-aid eligible roads for each jurisdiction within Onondaga County. Local jurisdiction roads within the county were not included in this report due to lack of available data. All City of Syracuse, Onondaga County, and New York State roads included in this report have been rated on or converted to the NYSDOT system. Additionally, state and local bridges in Onondaga County are rated by the NYSDOT on a scale.

Recommendations

As this is the first Bridge and Pavement Management Report, no comparisons were made to conditions from past years. In future reports, the benefit of comparing bridge and pavement conditions will be significant.

It is recommended that this report is included on the SMTC's UPWP each year. Upon completion of consecutive reports, the ability to analyze the collected data will be beneficial to the SMTC and its member agencies.

The NYSDOT has determined rating goals for roads and bridges under their jurisdiction. It is recommended that the county, city and local jurisdictions complete the same type of goal.

Since condition rating data is not available for local jurisdiction roads within Onondaga County, it is also recommended that condition ratings for local federal-aid eligible roads be collected for the next report.

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Introduction

A Pavement Management System (PMS) is a systematic method for tracking and addressing pavement conditions. Similarly, a Bridge Management System (BMS) is a method for tracking and addressing bridge 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, Onondaga 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 a most useful manner. In future reports, the data will also be compared to past years, which will allow trends to be identified. This report is establishing a benchmark to base evaluation of future Bridge and Pavement Management Reports.

All maps included in this report were compiled utilizing the New York State Department of Transportation (NYSDOT) base map system. The NYSDOT digital Geographic Information Systems files are the basis of the calculations in this report. Since this is the first Bridge and Pavement Condition Management System that has been completed by the Syracuse Metropolitan Transportation Council (SMTC), the 1999 data represented in this report cannot be compared with previous data to determine the improvement or degradation of the bridges and pavement conditions in the Metropolitan Planning Organization (MPO) study area. Thus, the data in this report is presented, but not analyzed. The data in this report will be used as a baseline for future comparisons.

The pavement condition rating data reported on throughout this report is based on ***linear centerline*** miles of roads, not lane miles of roads. A linear centerline mile of road illustrates a continuous line of pavement that is based on the data describing the center of the length of pavement. For example, an interstate road has approaches in two opposite directions, as well as multiple lanes in each direction. The number of miles based on the number of lanes for each approach is not calculated. Instead, the road centerline length, disregarding the number of lanes and direction is calculated. This calculation is a ***linear centerline*** mile of pavement.

NYSDOT calculates pavement ratings based on linear lane miles. Therefore, 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 report are represented in two groups. The first group includes all federal-aid eligible and all non federal-aid eligible roads that are owned by the City of Syracuse, Onondaga County or the New York State. The second group includes only federal-aid eligible roads for each jurisdiction within Onondaga County. Local

jurisdiction roads within the county were not included in this report due to lack of available data.

All City of Syracuse, Onondaga County, and New York State roads included in this report have been rated on or converted to the NYSDOT system. Example pictures of each of these ratings are included in Appendix A. The overall surface ratings are categorized by the following:

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. These sections are flagged by NYSDOT for further investigation and possible action. |
| 6 | Fair | Distress is clearly visible. |
| 7-8 | Good | Distress symptoms are beginning to show. |
| 9-10 | Excellent | No pavement distress. |

Source: New York State Department of Transportation

The New York State Department of Transportation 1999-2000 Highway Sufficiency Rating Manual for Region 3 and the NYSDOT Pavement Rating System contain further information on the pavement rating system used in New York State.

I. Bridges

State and local bridges in Onondaga County are rated by the NYSDOT on a scale of 1 to 7. The scale uses a weighted formula that accounts for several structural components of the bridge. Bridges with a condition rating less than 5 are deemed as being in a deficient state. They are candidates for rehabilitation work, replacement or even perhaps closure. Priority deficient bridges are those that have a condition rating of less than 3.0, or a condition rating between 3.0 and 4.0 with an AADT of over 4,000. Priority deficient bridges are given priority funding over deficient bridges. A deficient or a priority deficient rating does not mean a bridge is unsafe.

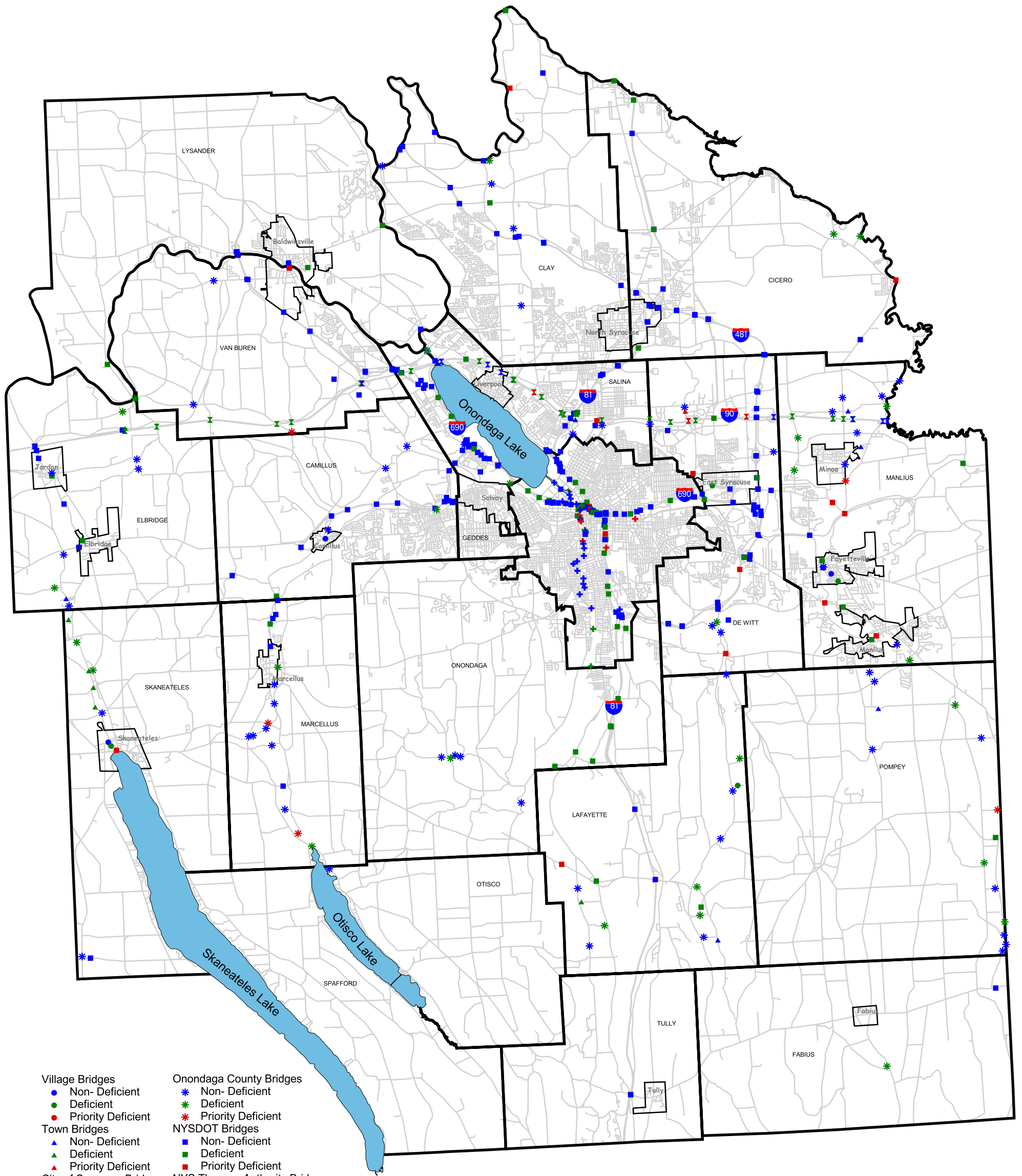
Appendix B lists all bridge ratings for the entire study area. Attachment 1 represents all bridge condition rating types in Onondaga County, and Attachment 2 represents all bridge condition rating types in the City of Syracuse. A total of 474 bridges have been rated with condition ratings. Attachment 3 shows the total number of bridges by type of rating within the study area. Attachment 4 categorizes the 474 bridges by jurisdiction and by type of rating, and Attachment 5 illustrates the information in Attachment 4.

Overall, the City of Syracuse has the highest percentage of priority deficient bridges (16%). All other jurisdictions have between 5% and 8% priority deficient bridges, except for bridges under village jurisdiction, which have no priority deficient bridges.

The New York State Thruway Authority bridges have the highest percentage of deficient bridges (66%), closely followed by village bridges (57%). The jurisdiction with the lowest percentage of deficient bridges is the City of Syracuse at 16%.

The New York State Thruway Authority also has the lowest percentage of sufficient bridges (26%). All other jurisdictions have between 43% and 72% sufficient bridges.

The NYSDOT goal is to have 84.2% of state bridges and 74.5% of local bridges non-deficient by the year 2015.



- | | |
|---------------------------------|--------------------------------------|
| Village Bridges | Onondaga County Bridges |
| ● Non- Deficient | * Non- Deficient |
| ● Deficient | * Deficient |
| ● Priority Deficient | * Priority Deficient |
| Town Bridges | NYSDOT Bridges |
| ▲ Non- Deficient | ■ Non- Deficient |
| ▲ Deficient | ■ Deficient |
| ▲ Priority Deficient | ■ Priority Deficient |
| City of Syracuse Bridges | NYS Thruway Authority Bridges |
| + Non- Deficient | X Non- Deficient |
| + Deficient | X Deficient |
| + Priority Deficient | X Priority Deficient |


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 126 North Salina Street, Suite 100
 Syracuse, New York 13202
 (315) 422-5716 Fax: (315) 422-7733

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Bridge Ratings in Onondaga County

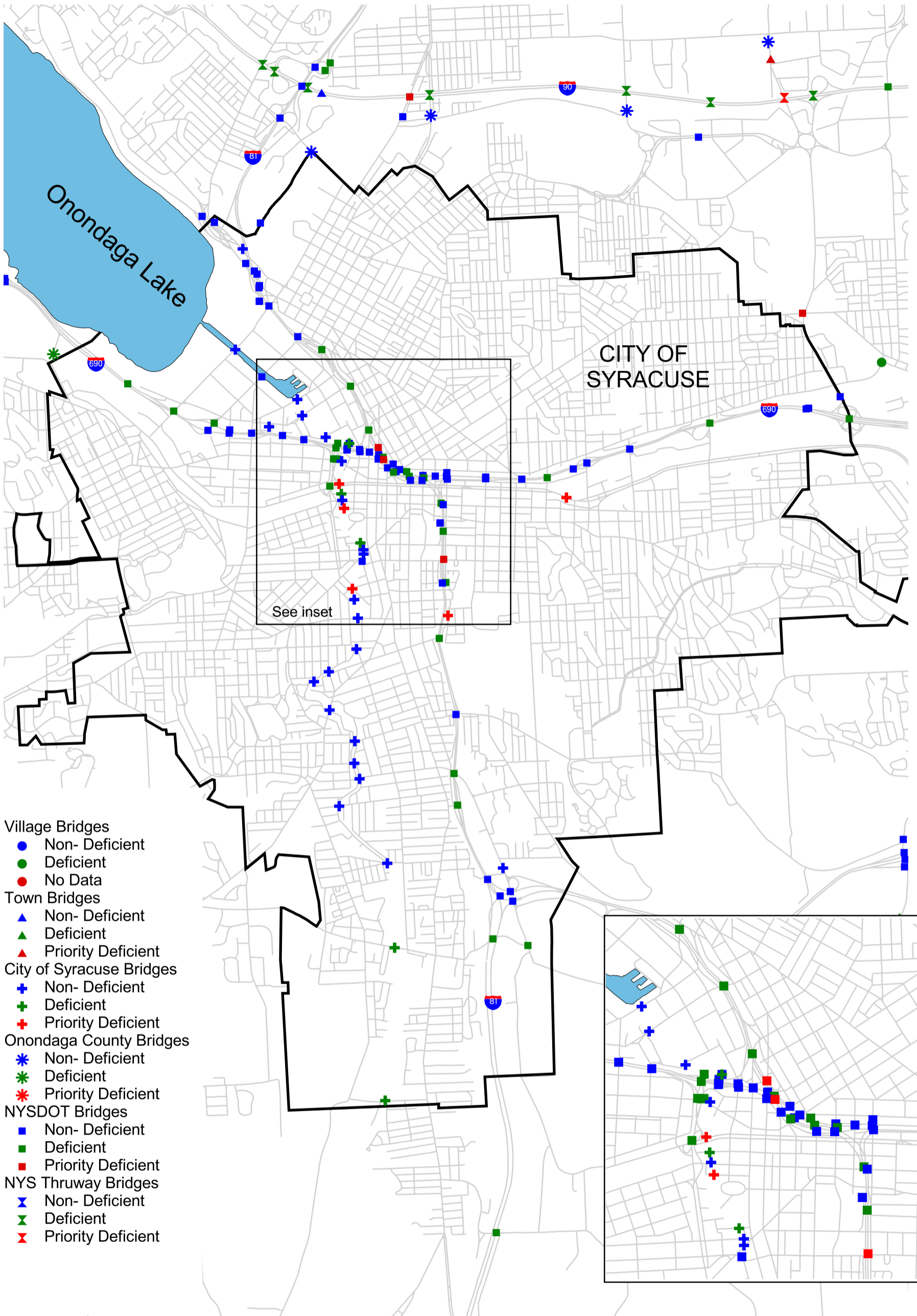
Bridge & Pavement Condition Management System

Attachment 1

0 2 4 6 Miles

Basemap Copyrighted by NYSDOT
 Data Source: NYSDOT, 2000
 Prepared by SMTC, Jennifer Weldin
 February 2001, UPWP Number: 4800

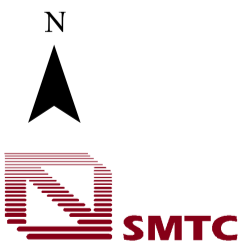
-  Lakes
-  Villages
-  Towns
-  Roads



Bridge Ratings in the City of Syracuse

Bridge & Pavement Condition Management System

Attachment 2



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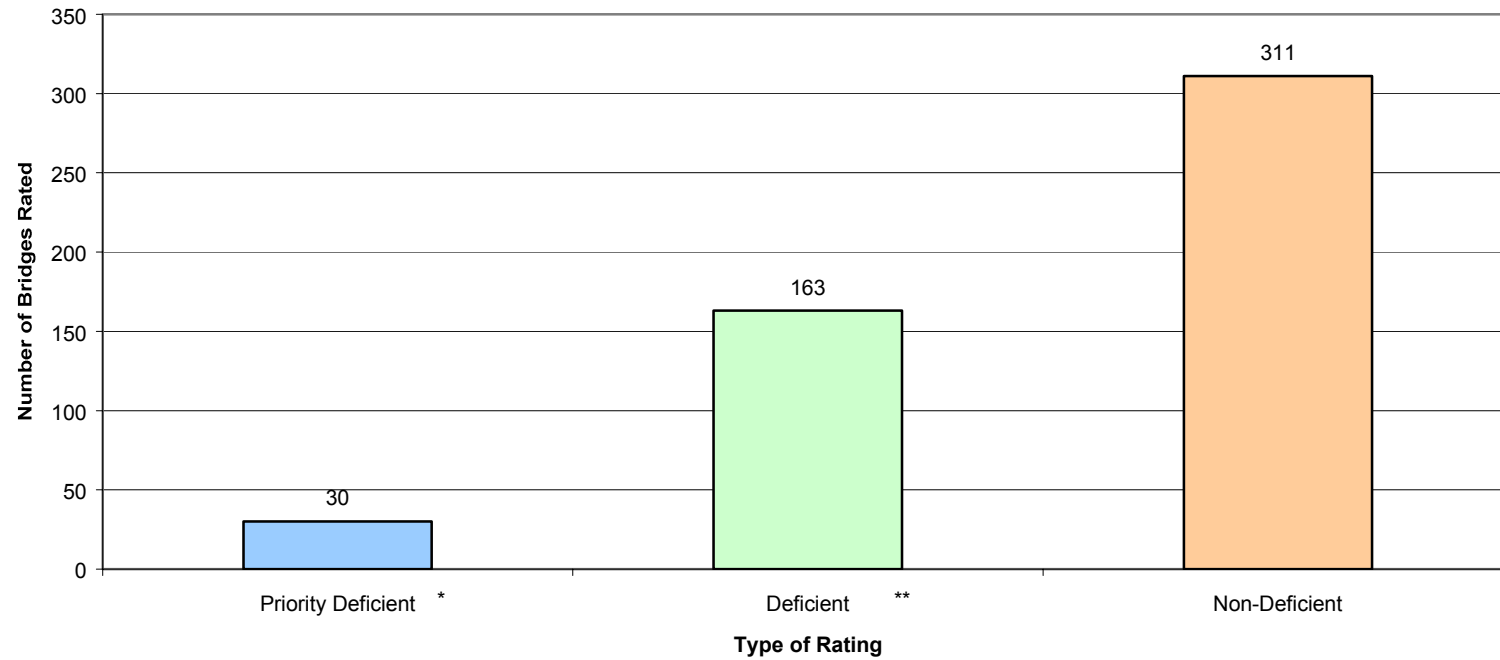
0 4000 8000 12000 Feet

Basemap Copyrighted by NYSDOT
Data Source: City of Syracuse, 2000
Prepared by SMTC, Jennifer Weldin
February 2001, UPWP Number: 4800

Lakes
City of Syracuse
Roads

Attachment 3

Total Bridges Rated



*The total number of priority deficient bridges are also counted in the deficient rating.

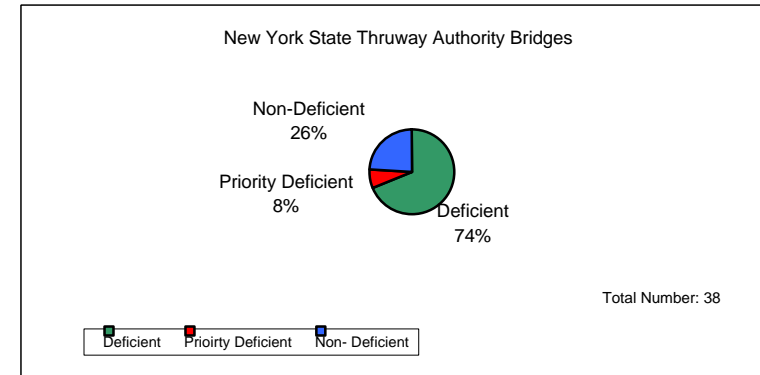
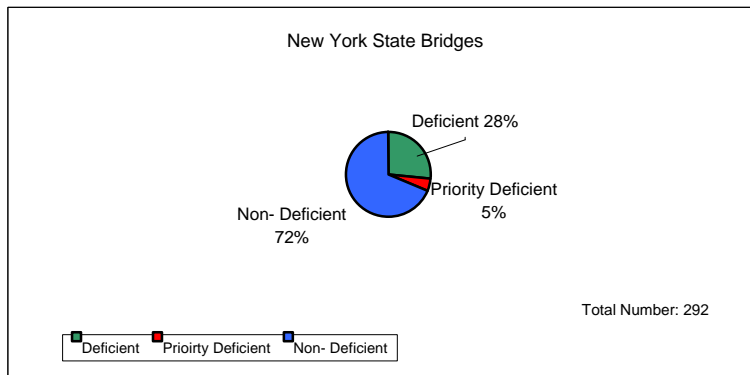
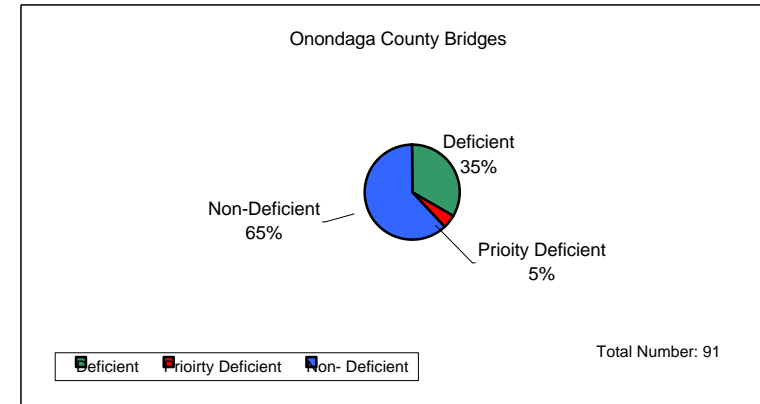
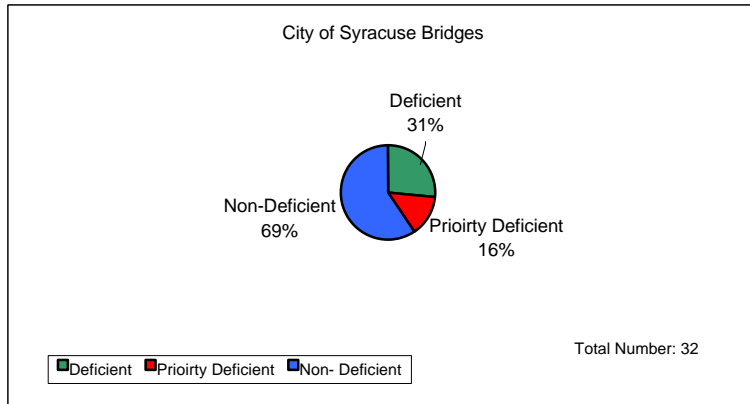
**A deficient rating includes all bridges rated as deficient as well as all priority deficient bridges.

Attachment 4
Bridge Jurisdiction and Ratings

| Bridge Jurisdiction | Total Number of Bridges | Number of Deficient Bridges* | Percent of Deficient Bridges* | Number of Priority Deficient Bridges | Percent of Priority Deficient Bridges | Number of Non-Deficient Bridges | Percent of Non-Deficient Bridges |
|----------------------------------|-------------------------|------------------------------|-------------------------------|--------------------------------------|---------------------------------------|---------------------------------|----------------------------------|
| City of Syracuse | 32 | 10 | 31% | 5 | 16% | 22 | 69% |
| Onondaga County DOT | 91 | 32 | 35% | 5 | 5% | 59 | 65% |
| New York State DOT | 292 | 82 | 28% | 16 | 5% | 210 | 72% |
| New York State Thruway Authority | 38 | 28 | 74% | 3 | 8% | 10 | 26% |
| Towns in Onondaga County | 14 | 7 | 50% | 1 | 7% | 7 | 50% |
| Villages in Onondaga County | 7 | 4 | 57% | 0 | 0% | 3 | 43% |
| Total | 474 | 163 | 34% | 30 | 6% | 311 | 66% |

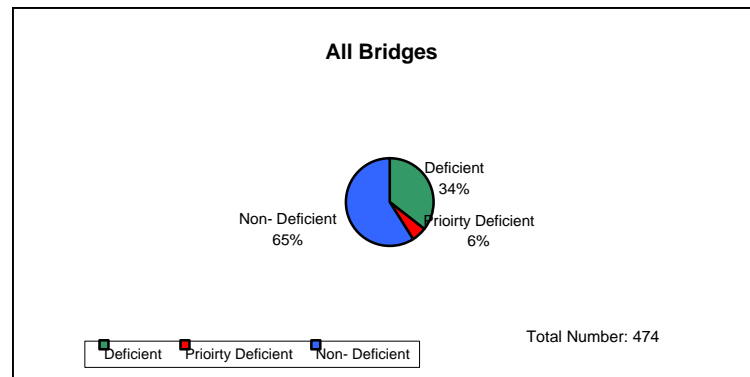
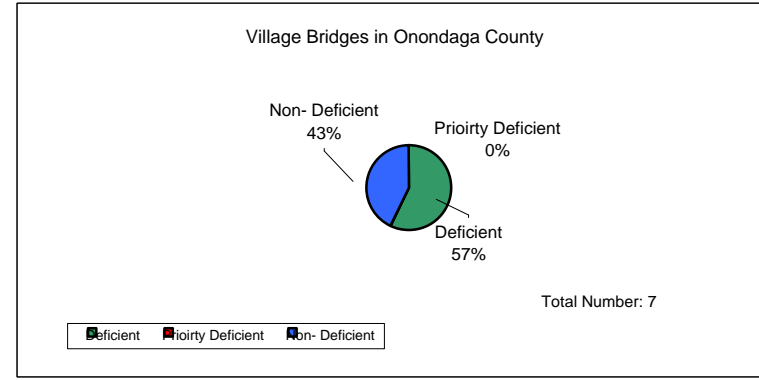
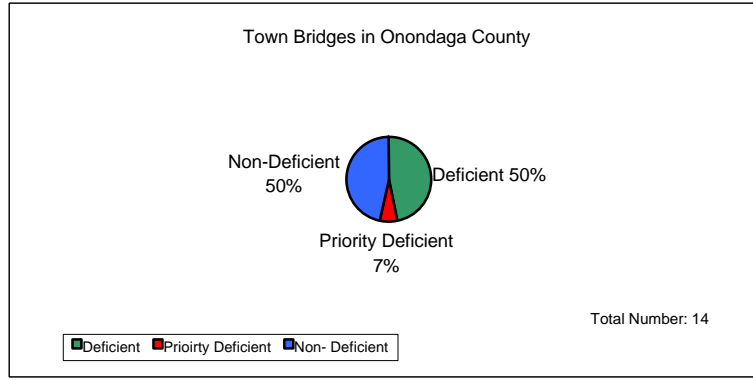
*A deficient rating includes all bridges rated as deficient as well as all priority deficient bridges.

Attachment 5 Bridge Ratings by Jurisdiction



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

Attachment 5 Bridge Ratings by Jurisdiction



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

II. Pavement

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

In this report, there are tables and charts that correspond with two groups of roads. The first group includes all roads, both federal-aid eligible and non federal-aid eligible, within the SMTC study area. This group does not include data for local non federal-aid eligible roads, as local jurisdictions do not have a pavement management system to rate these roads. This data is presented in the following pages under the sections of City of Syracuse Pavement Ratings, Onondaga County Pavement Ratings, and New York State Pavement Ratings.

The second group of roads that presents data through tables and charts are all federal-aid eligible roads under the jurisdictions of the City of Syracuse, Onondaga County, and New York State. This data is presented in the following pages under the section of Federal-Aid Eligible Pavement Ratings.

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

A. City of Syracuse Pavement Ratings

Approximately 4,000 blocks under the jurisdiction of the City of Syracuse are individually rated according to the NYSDOT overall pavement rating scale. The City uses the NYSDOT scale to rate all of their roads. The data is based on linear centerline miles of roads calculated by the SMTC using their GIS.

Attachments 6, 7, 8, 9, and 10 all represent information collected for all federal-aid eligible and non federal-aid eligible roads from the pavement management system for the City of Syracuse. Additionally, Appendix C is a listing of each of the individually rated blocks within the city.

Attachment 6 indicates the following:

- Approximately 397 centerline miles of road in the City are rated.
- 10% of the roads did not have a pavement rating.
- The highest percentages of roads in the City (38%) are considered good in condition.
- The average rating for the City roads is 7.

B. Onondaga County Pavement Ratings

The roads under the jurisdiction of Onondaga County DOT are rated using the PMSL scale, which is based on the county's Surface Condition Rating Manual. Various components of the roadway are calculated to produce a Surface Distress Index (SDI) score. Although the SDI is calculated in a different method than the NYSDOT based rating scale, the SDI results are also based on a 1 –10 score. The SDI is very similar to the NYSDOT pictures, descriptions and distress conditions. For purposes of this report, SDI and NYSDOT rating scale are interchangeable because of the strong correlation between the two scales. The data is based on linear centerline miles of roads.

Attachments 6, 7, 8, 9, and 10 all represent information collected for all federal-aid eligible and non federal-aid eligible roads from the pavement management system for Onondaga County. Additionally, Appendix D is a listing of all of the roads rated in and owned by Onondaga County.

Attachment 6 indicates the following:

- Approximately 780 centerline miles of Onondaga County roads are rated.
- All of the county roads were rated.
- The highest percentages of roads in the county (64%) are in excellent condition.
- The average rating for the county roads is 8.

C. New York State Pavement Ratings

All roads under New York State DOT jurisdiction including the New York State Thruway were rated on the NYSDOT scale, as described in the introduction. The data is based on linear centerline miles of roads.

Attachments 6, 7, 8, 9, and 10 all represent information collected for all federal-aid eligible and non federal-aid eligible roads from the pavement management system for New York State. Additionally, Appendix E is a listing of all of the roads rated in and owned by New York State DOT.

Attachment 6 shows the following:

- Approximately 462 centerline miles of New York State DOT roads are rated.
- 0.1% of the state roads were not rated, due to construction.
- The highest percentages of roads in the county (16%) are in excellent condition.
- The average rating for the county roads is 7.

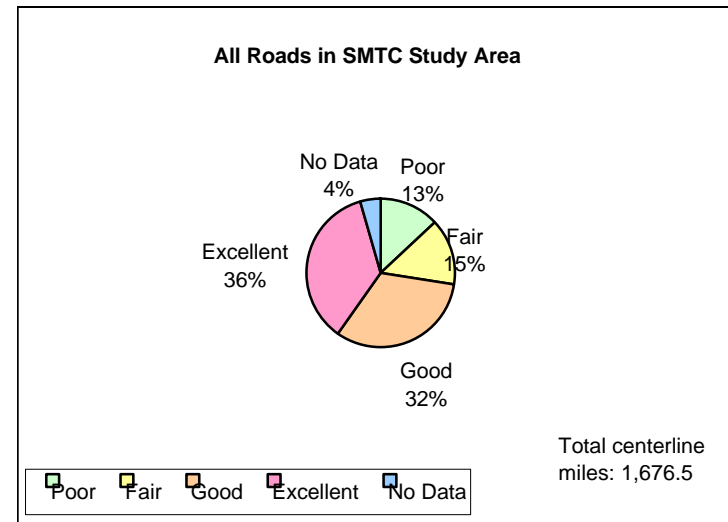
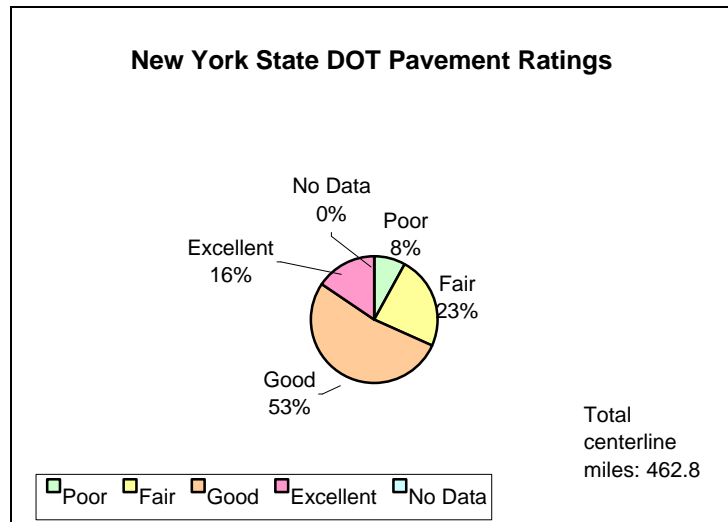
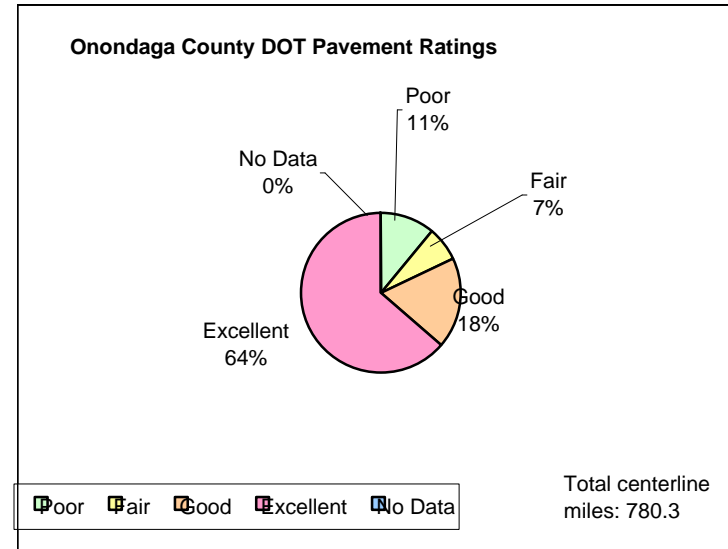
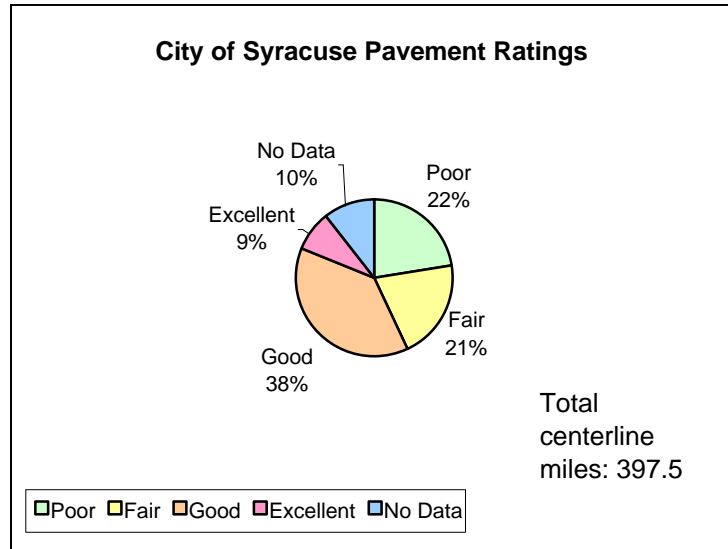
Attachment 6

Pavement Ratings for all roads in Onondaga County

| | Total Centerline Length in Feet | Total Centerline Length in Miles | Percent of Roads | Average rating |
|---|------------------------------------|-------------------------------------|---------------------|-------------------|
| CITY OF SYRACUSE | | | | 7 |
| Poor | 470,534 | 89.1 | 22% | |
| Fair | 434,665 | 82.3 | 21% | |
| Good | 795,279 | 150.6 | 38% | |
| Excellent | 178,901 | 33.9 | 9% | |
| No Data | 219,402 | 41.6 | 10% | |
| Total | 2,098,781 | 397.5 | 100% | |
| ONONDAGA COUNTY DOT | | | | 8 |
| Poor | 461,251 | 87.4 | 11% | |
| Fair | 285,737 | 54.1 | 7% | |
| Good | 752,912 | 142.6 | 18% | |
| Excellent | 2,619,924 | 496.2 | 64% | |
| No Data | 0 | 0.0 | 0% | |
| Total | 4,119,825 | 780.3 | 100% | |
| NY STATE DOT (including Thruway) | | | | 7 |
| Poor | 199,813 | 37.8 | 8% | |
| Fair | 573,814 | 108.7 | 23% | |
| Good | 1,289,195 | 244.2 | 53% | |
| Excellent | 379,634 | 71.9 | 16% | |
| No Data | 1,030 | 0.2 | 0% | |
| Total | 2,443,486 | 462.8 | 100% | |
| ALL ROADS | | | | 7.3 |
| Poor | 1,144,858 | 216.9 | 13% | |
| Fair | 1,299,861 | 246.1 | 15% | |
| Good | 2,841,468 | 538.1 | 32% | |
| Excellent | 3,183,538 | 603.0 | 36% | |
| No Data | 381,941 | 72.4 | 4% | |
| Total | 8,851,666 | 1,676.5 | 100% | |

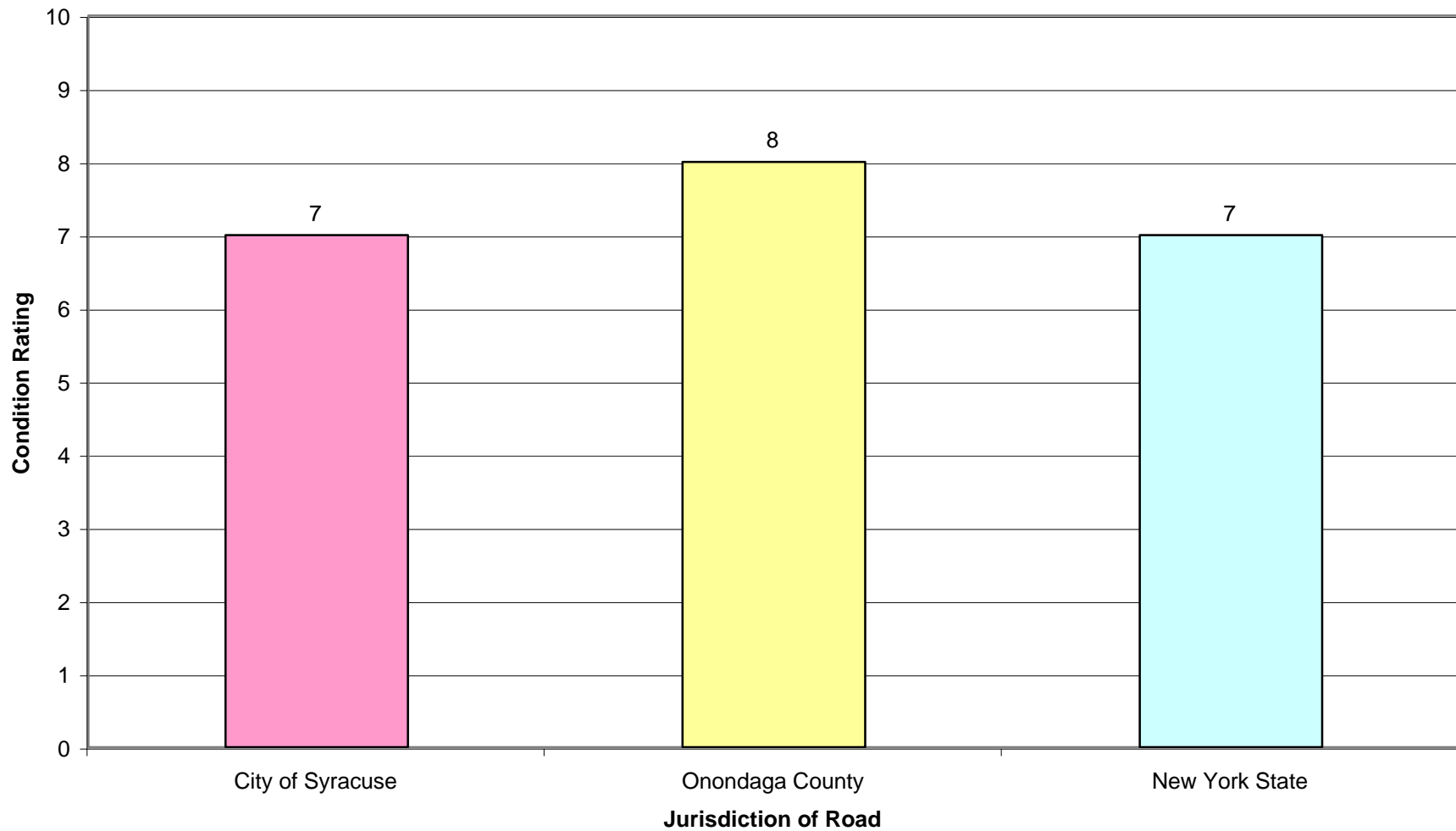
*All data for federal-aid eligible and non federal-aid eligible roads, excluding local roads, calculated by total centerline length

Pavement Ratings for All Roads by Jurisdiction*

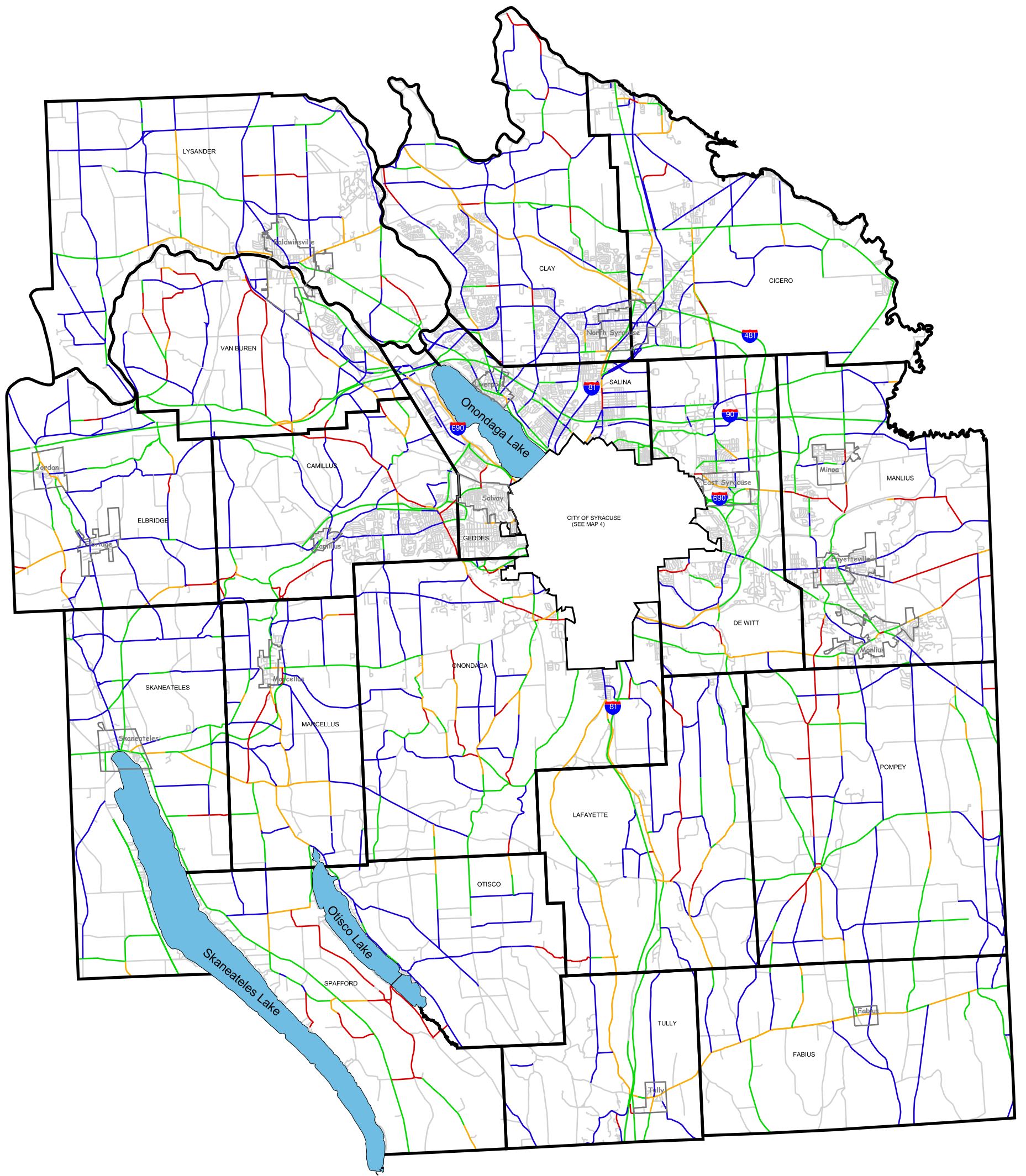


*All Federal-Aid Eligible and Non Federal-Aid Eligible Roads excluding local roads, calculated by total centerline length in miles of road

Pavement Condition Rating Average Scores*



*Calculations based on all Federal-Aid Eligible and Non Federal-Aid Eligible roads measured by total centerline length



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0 2 4 6 Miles



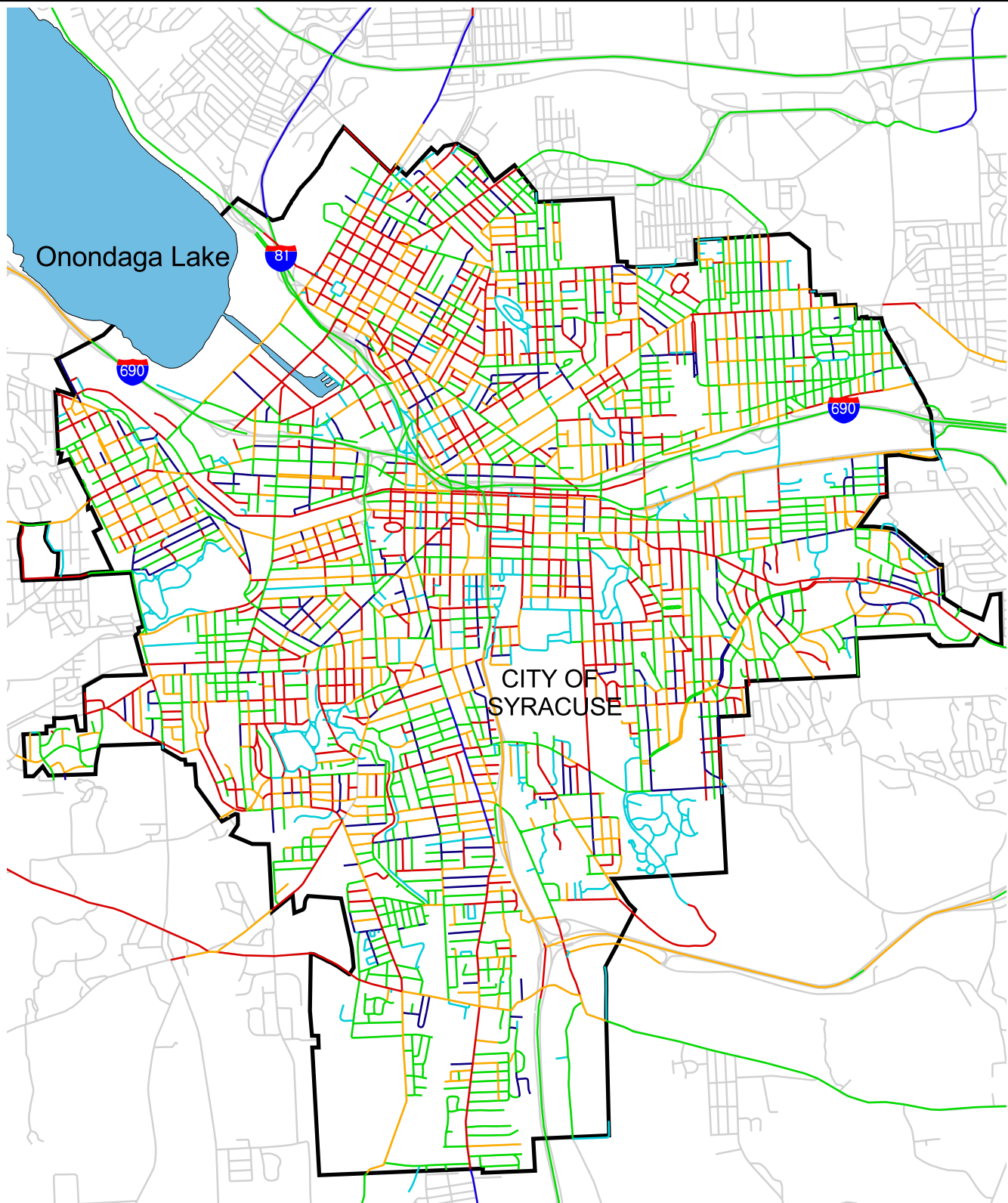
Onondaga County and New York State Pavement Ratings* Bridge & Pavement Condition Management System

Attachment 9

Basemap Copyrighted by NYSDOT
Data Source: NYSDOT & OCDOT, 1999
Prepared by SMTC, Jennifer Weldin
February 2001, UPWP Number: 4800

- County and State Roads
- Excellent
 - Good
 - Fair
 - Poor
 - No Data
 - Roads
 - Villages
 - Lakes
 - Towns

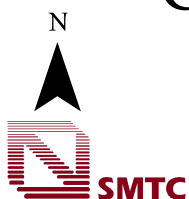
*Including all federal-aid eligible and non federal-aid eligible roads



City of Syracuse Pavement Ratings*

Bridge & Pavement Management System

Attachment 10



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0 4000 8000 Feet



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Data Source: City of Syracuse, 2000, NYSDOT, 1999
Prepared by SMTC, Jennifer Weldin
January 2001, UPWP Number: 4800

- Roads in the City of Syracuse
- Excellent
 - Good
 - Fair
 - Poor
 - No Data
 - Lakes
 - City of Syracuse Roads

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

D. Federal-Aid Eligible Pavement Ratings

Functional Classification codes are given to all federal-aid eligible roads. There are four functional classification codes used in the SMTC study area. They include Principal Arterial, Minor Arterial, Minor Collector and Collector. 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.¹ The minor collectors code applies to rural parts of the SMTC study area. Data for linear centerline length for all functional classification roads (the roads that are federal-aid eligible) under the jurisdiction of the City of Syracuse, Onondaga County, and New York State is included in Attachments 11-22.

Attachment 11 shows that approximately 90 miles of centerline miles of road under the jurisdiction of the City of Syracuse, 342 miles under the jurisdiction of Onondaga County, and 498 under the jurisdiction of New York State are federal-aid eligible. Map 5 shows the functional classification code for roads in the MPO study area, and Map 6 shows the condition rating of all city, county and state roads that are federal-aid eligible. Local federal-aid eligible roads were not rated, and therefore are not included in the data calculations for condition ratings.

Attachments 13, 15, 17 and the corresponding charts (Attachments 14, 16, and 18) illustrate the condition of each of the types of functional classifications for each jurisdiction. Attachment 18 illustrates that of all federal-aid eligible roads:

- Onondaga County has the highest percentage of excellent roads (61%).
- City of Syracuse has the highest percentage of poor roads (27%).

¹ Definitions taken from the Federal Highway Administration's Conditions and Performance Report, Chapter 2

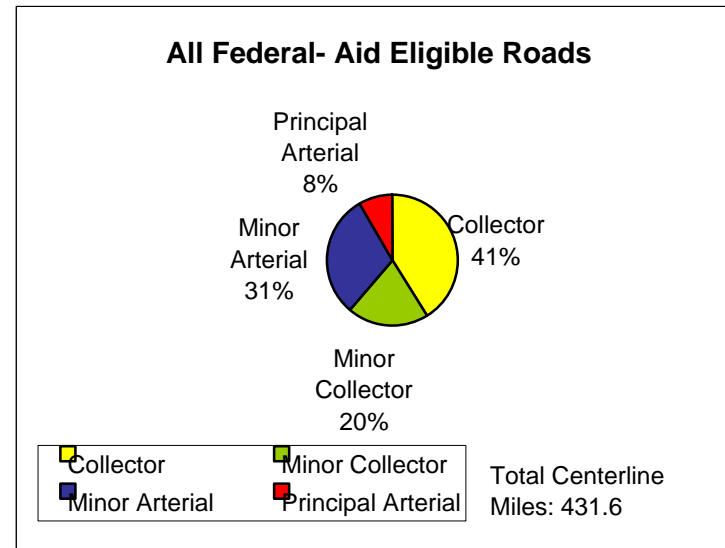
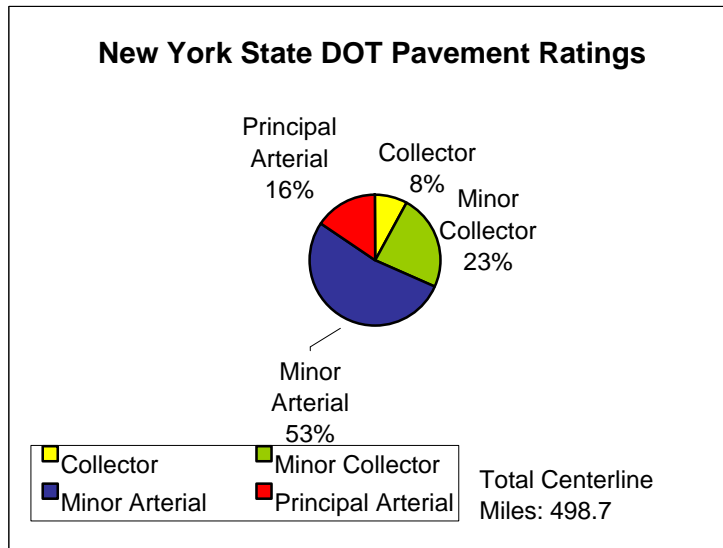
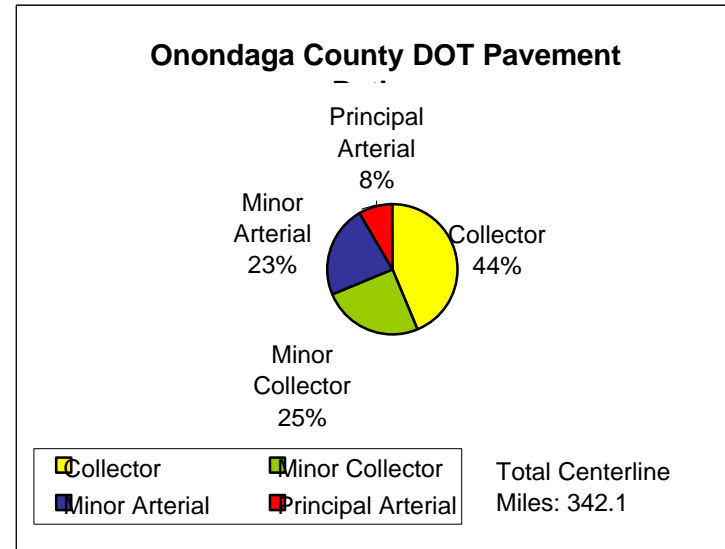
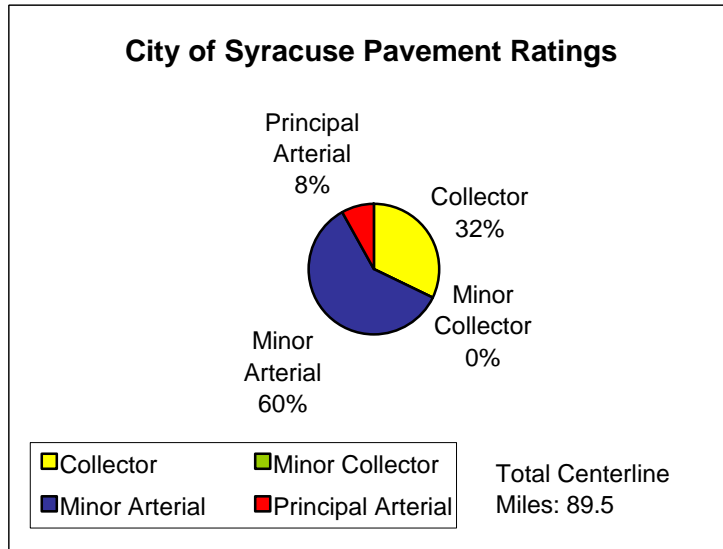
Attachment 11

Pavement Ratings by Functional Classification for Federal-Aid Eligible Roads

| | Total Centerline Length in Feet | Total Centerline Length in Miles | Percent of Roads | Average rating |
|---|------------------------------------|-------------------------------------|---------------------|-------------------|
| LOCAL ROADS | | | | N/A |
| Collector | 0 | 0 | 0 | |
| Minor Collector | 0 | 0 | 0 | |
| Minor Arterial | 0 | 0 | 0 | |
| Principal Arterial | 0 | 0 | 0 | |
| Total | 0 | 0 | 0 | |
| CITY OF SYRACUSE | | | | 6 |
| Collector | 151,762 | 28.7 | 32% | |
| Minor Collector | 0 | 0.0 | 0% | |
| Minor Arterial | 281,932 | 53.4 | 60% | |
| Principal Arterial | 38,700 | 7.3 | 8% | |
| Total | 472,394 | 89.5 | 100% | |
| ONONDAGA COUNTY DOT | | | | 8 |
| Collector | 786,695 | 149.0 | 44% | |
| Minor Collector | 455,037 | 86.2 | 25% | |
| Minor Arterial | 413,418 | 78.3 | 23% | |
| Principal Arterial | 151,253 | 28.6 | 8% | |
| Total | 1,806,403 | 342.1 | 100% | |
| NY STATE DOT (including Thruway) | | | | 7 |
| Collector | 199,813 | 37.8 | 8% | |
| Minor Collector | 573,814 | 108.7 | 23% | |
| Minor Arterial | 1,289,195 | 244.2 | 53% | |
| Principal Arterial | 379,634 | 71.9 | 16% | |
| Total | 2,443,486 | 462.8 | 100% | |
| ALL ROADS | | | | 7 |
| Collector | 938,457 | 177.7 | 41% | |
| Minor Collector | 455,037 | 86.2 | 20% | |
| Minor Arterial | 695,351 | 131.7 | 31% | |
| Principal Arterial | 189,953 | 35.9 | 8% | |
| Total | 2,278,797 | 431.6 | 100% | |

*Calculations based on total centerline length of road

Functional Classification for Federal-Aid Eligible Roads*



*Percentages determined by total centerline length in miles of road

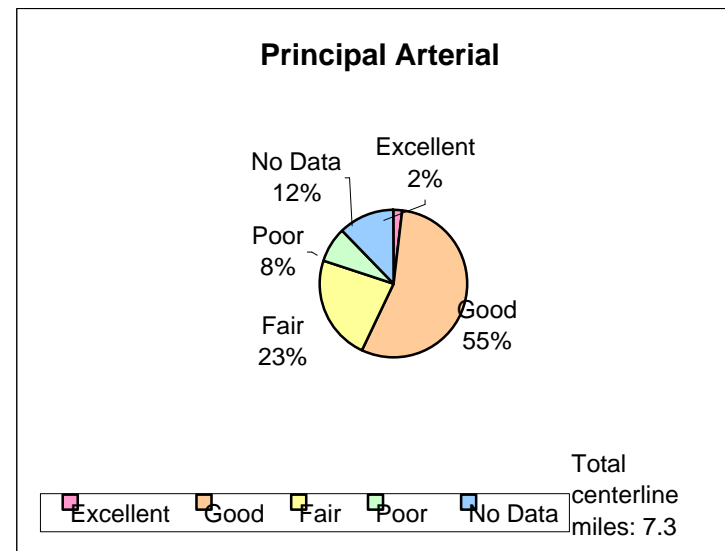
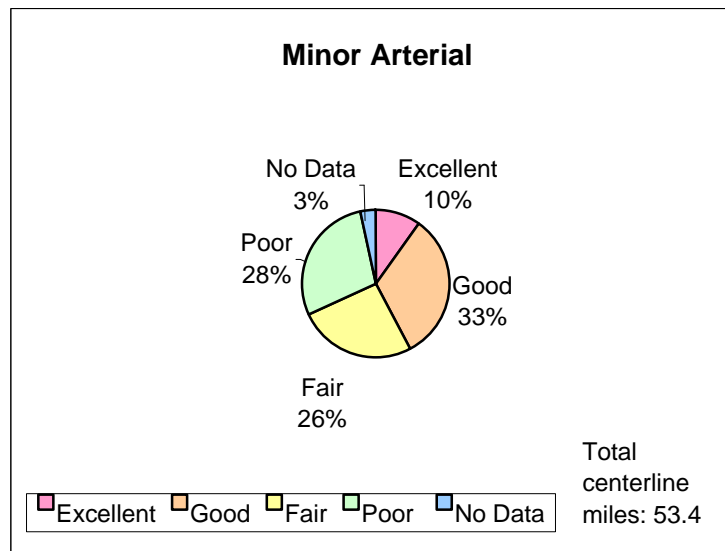
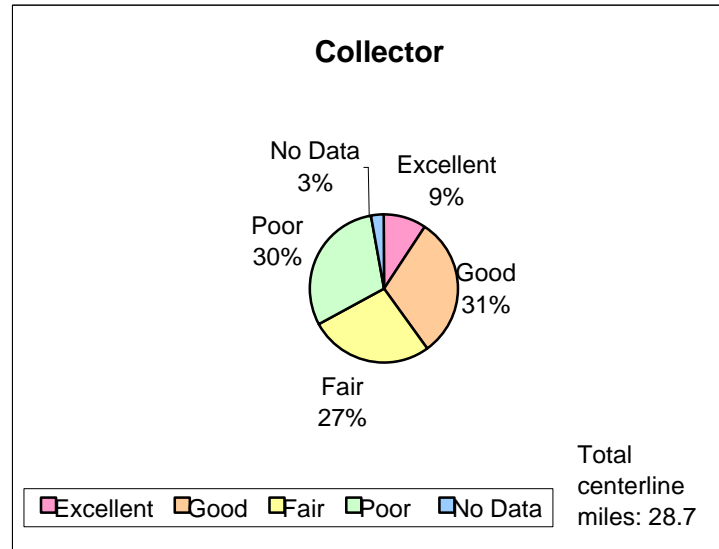
Attachment 13

Pavement Ratings by Functional Classification for City of Syracuse Roads

| | Total Centerline Length in Feet | Total Centerline Length in Miles | Percent of Roads | Average rating |
|-----------------------------------|------------------------------------|-------------------------------------|---------------------|----------------|
| CITY OF SYRACUSE | | | | |
| Collector | | | | 6.3 |
| Excellent | 14,231 | 2.7 | 9% | |
| Good | 46,486 | 8.8 | 31% | |
| Fair | 41,043 | 7.8 | 27% | |
| Poor | 45,625 | 8.6 | 30% | |
| No Data | 4,378 | 0.8 | 3% | |
| Total | 151,762 | 28.7 | 100% | |
| Minor Arterial | | | | 6.4 |
| Excellent | 28,172 | 5.3 | 10% | |
| Good | 90,500 | 17.1 | 33% | |
| Fair | 73,589 | 13.9 | 26% | |
| Poor | 80,041 | 15.2 | 28% | |
| No Data | 9,631 | 1.8 | 3% | |
| Total | 281,932 | 53.4 | 100% | |
| Principal Arterial | | | | 6.7 |
| Excellent | 717 | 0.1 | 2% | |
| Good | 21,365 | 4.0 | 55% | |
| Fair | 8,854 | 1.7 | 23% | |
| Poor | 3,015 | 0.6 | 8% | |
| No Data | 4,749 | 0.9 | 12% | |
| Total | 38,700 | 7.3 | 100% | |
| Minor Collector | | | | N/A |
| Excellent | 0 | 0 | 0 | |
| Good | 0 | 0 | 0 | |
| Fair | 0 | 0 | 0 | |
| Poor | 0 | 0 | 0 | |
| No Data | 0 | 0 | 0 | |
| Total | 0 | 0 | 0 | |
| All Federal-Aid City Roads | | | | 6.4 |
| Excellent | 43,120 | 8.2 | 9% | |
| Good | 158,350 | 30.0 | 34% | |
| Fair | 123,486 | 23.4 | 26% | |
| Poor | 128,681 | 24.4 | 27% | |
| No Data | 18,758 | 3.6 | 4% | |
| Total | 472,394 | 89.5 | 100% | |

*Calculations based on total centerline length of road

Pavement Ratings by Functional Classification for City of Syracuse Roads*



* Percentages determined by total centerline length in miles of road

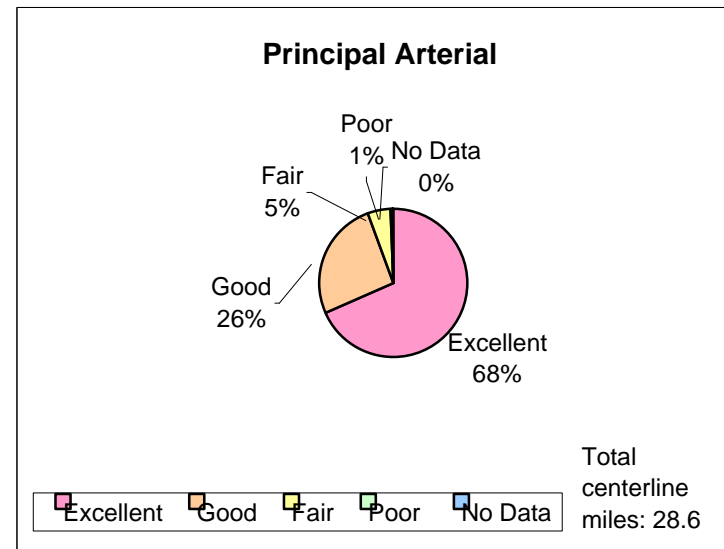
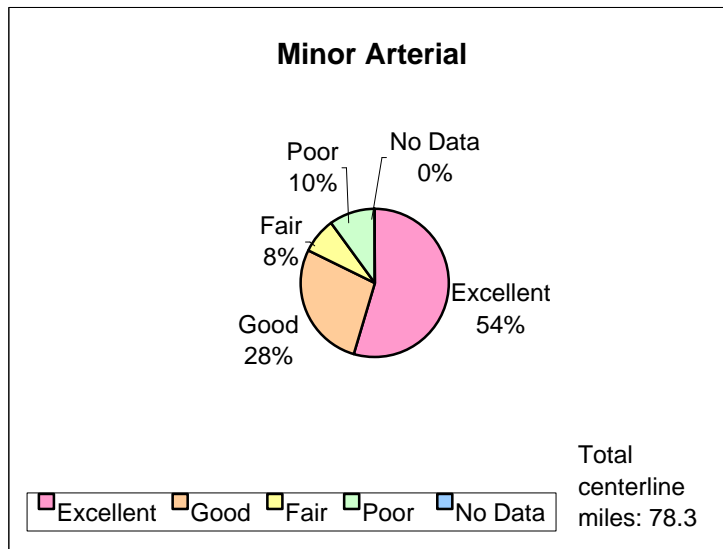
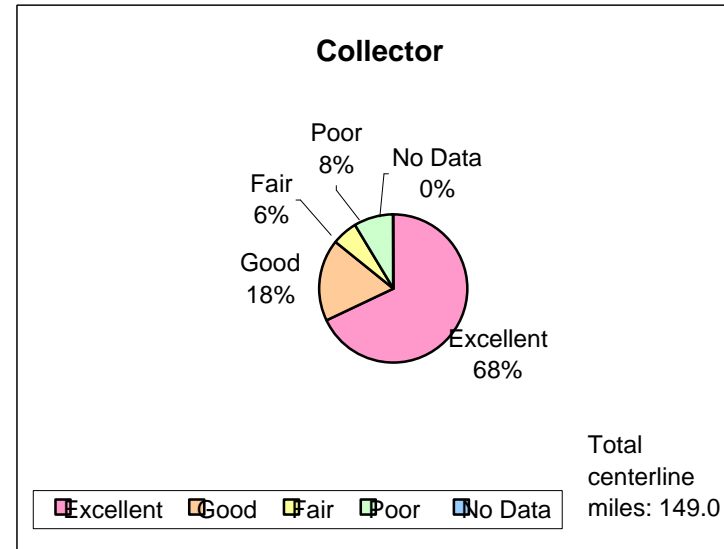
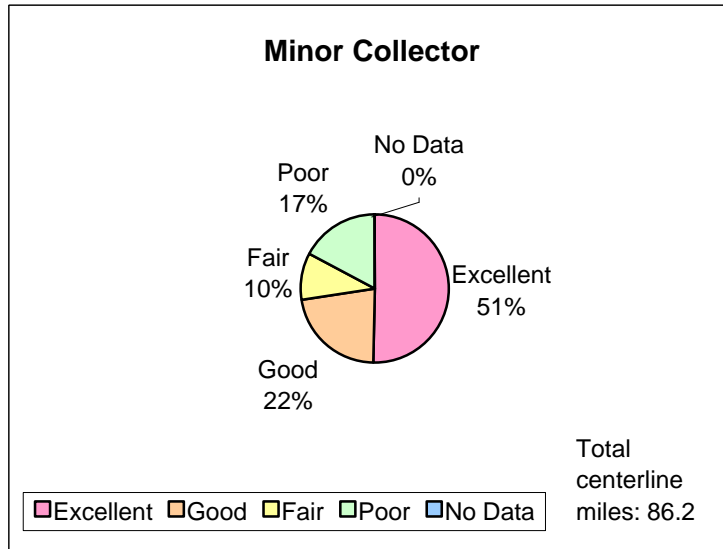
Attachment 15

Pavement Ratings by Functional Classification for Onondaga County DOT Roads

| | Total Centerline Length in Feet | Total Centerline Length in Miles | Percent of Roads | Average rating |
|-------------------------------------|---------------------------------|----------------------------------|------------------|----------------|
| ONONDAGA COUNTY | | | | |
| Minor Collector | | | | 7.9 |
| Excellent | 229,277 | 43.4 | 51% | |
| Good | 100,903 | 19.1 | 22% | |
| Fair | 46,302 | 8.8 | 10% | |
| Poor | 78,555 | 14.9 | 17% | |
| No Data | 0 | 0.0 | 0% | |
| Total | 455,037 | 86.2 | 100% | |
| Collector | | | | 8.6 |
| Excellent | 534,210 | 101.2 | 68% | |
| Good | 141,225 | 26.7 | 18% | |
| Fair | 44,547 | 8.4 | 6% | |
| Poor | 66,714 | 12.6 | 8% | |
| No Data | 0 | 0.0 | 0% | |
| Total | 786,695 | 149.0 | 100% | |
| Minor Arterial | | | | 8.2 |
| Excellent | 225,135 | 42.6 | 54% | |
| Good | 114,597 | 21.7 | 28% | |
| Fair | 32,651 | 6.2 | 8% | |
| Poor | 41,035 | 7.8 | 10% | |
| No Data | 0 | 0.0 | 0% | |
| Total | 413,418 | 78.3 | 100% | |
| Principal Arterial | | | | 8.7 |
| Excellent | 103,152 | 19.5 | 68% | |
| Good | 39,497 | 7.5 | 26% | |
| Fair | 7,791 | 1.5 | 5% | |
| Poor | 813 | 0.2 | 1% | |
| No Data | 0 | 0.0 | 0% | |
| Total | 151,253 | 28.6 | 100% | |
| All Federal-Aid County Roads | | | | 8.3 |
| Excellent | 1,091,773 | 206.8 | 61% | |
| Good | 396,222 | 75.0 | 22% | |
| Fair | 131,290 | 24.9 | 7% | |
| Poor | 187,118 | 35.4 | 10% | |
| No Data | 0 | 0.0 | 0% | |
| Total | 1,806,403 | 342.1 | 101% | |

*Calculations based on total centerline length of road

Pavement Ratings by Functional Classification for Onondaga County DOT Roads*



*Percentages determined by total centerline length in miles of road

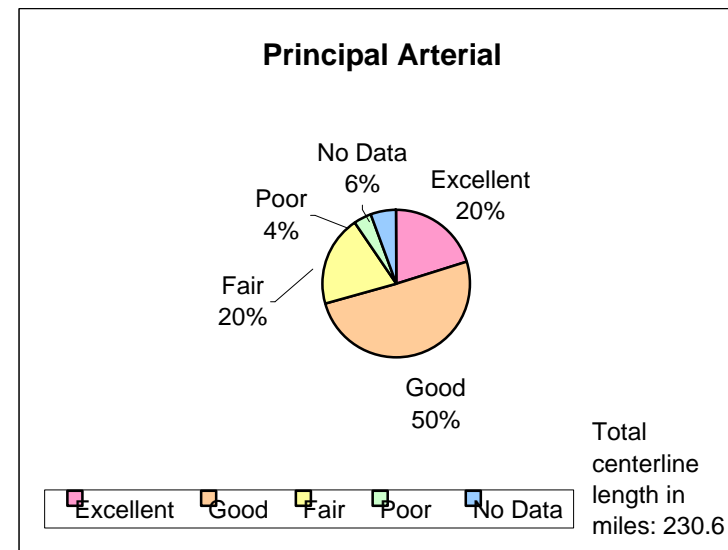
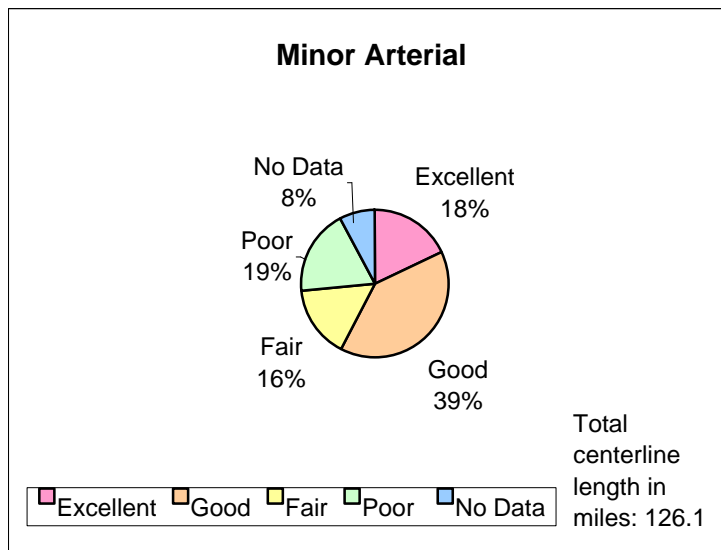
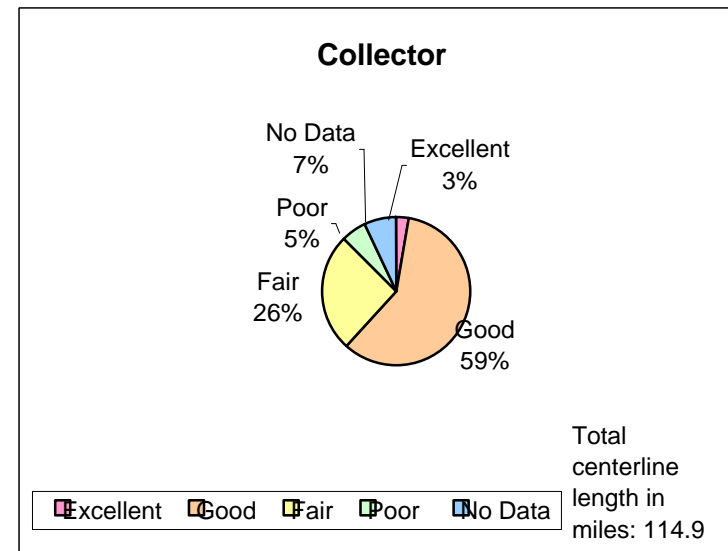
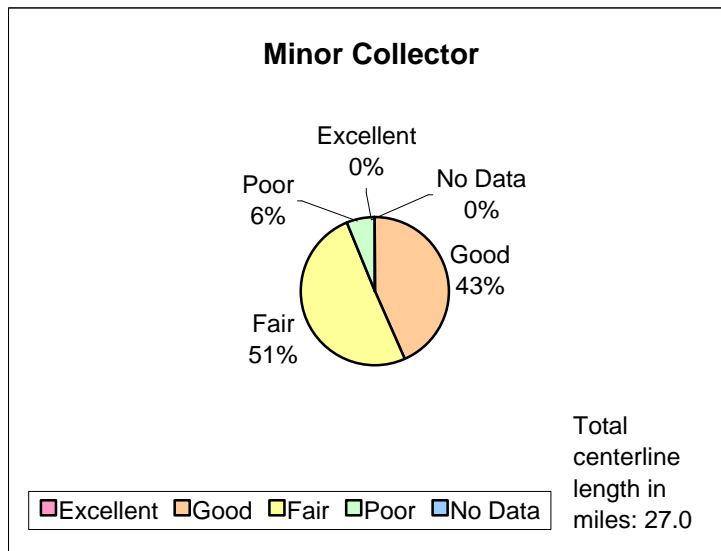
Attachment 17

Pavement Ratings by Functional Classification for New York State DOT Roads

| | Total Centerline Length in Feet | Total Centerline Length in Miles | Percent of Roads | Average rating |
|------------------------------------|------------------------------------|-------------------------------------|---------------------|----------------|
| NEW YORK STATE | | | | |
| Minor Collector | | | | 6.6 |
| Excellent | 0 | 0.0 | 0% | |
| Good | 61,881 | 11.7 | 43% | |
| Fair | 71,995 | 13.6 | 51% | |
| Poor | 8,801 | 1.7 | 6% | |
| No Data | 0 | 0.0 | 0% | |
| Total | 142,677 | 27.0 | 100% | |
| Collector | | | | 6.7 |
| Excellent | 16,523 | 3.1 | 3% | |
| Good | 357,075 | 67.6 | 59% | |
| Fair | 158,253 | 30.0 | 26% | |
| Poor | 32,395 | 6.1 | 5% | |
| No Data | 42,676 | 8.1 | 7% | |
| Total | 606,922 | 114.9 | 100% | |
| Minor Arterial | | | | 6.8 |
| Excellent | 120,068 | 22.7 | 18% | |
| Good | 263,198 | 49.8 | 39% | |
| Fair | 104,597 | 19.8 | 16% | |
| Poor | 127,032 | 24.1 | 19% | |
| No Data | 50,925 | 9.6 | 8% | |
| Total | 665,820 | 126.1 | 100% | |
| Principal Arterial | | | | 7.4 |
| Excellent | 248,122 | 47.0 | 20% | |
| Good | 611,124 | 115.7 | 50% | |
| Fair | 244,614 | 46.3 | 20% | |
| Poor | 44,843 | 8.5 | 4% | |
| No Data | 68,939 | 13.1 | 6% | |
| Total | 1,217,642 | 230.6 | 100% | |
| All Federal-Aid State Roads | | | | 6.9 |
| Excellent | 199,813 | 37.8 | 8% | |
| Good | 573,814 | 108.7 | 23% | |
| Fair | 1,289,195 | 244.2 | 53% | |
| Poor | 379,634 | 71.9 | 16% | |
| No Data | 1,030 | 0.2 | 0% | |
| Total | 2,443,486 | 462.8 | 100% | |

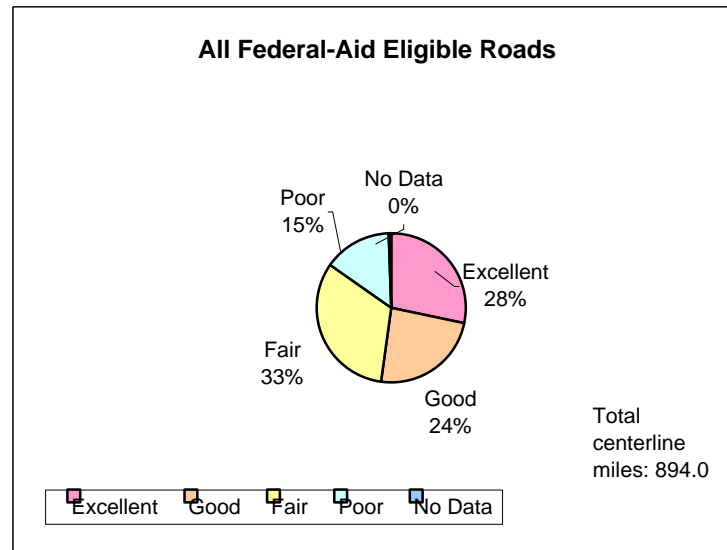
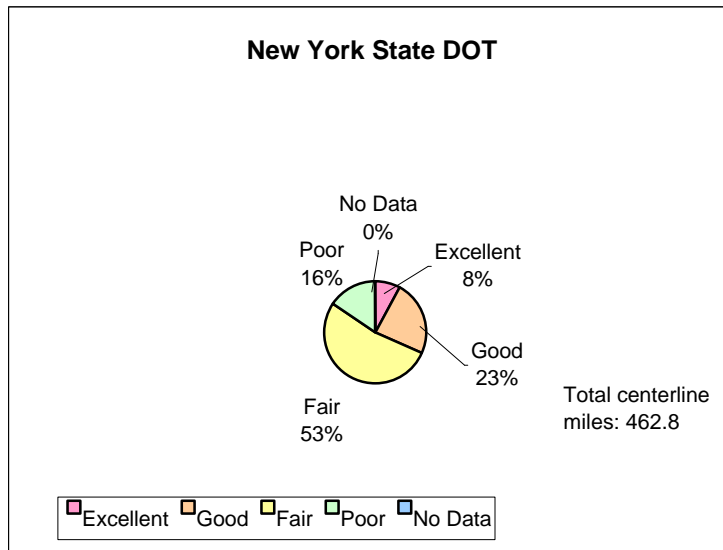
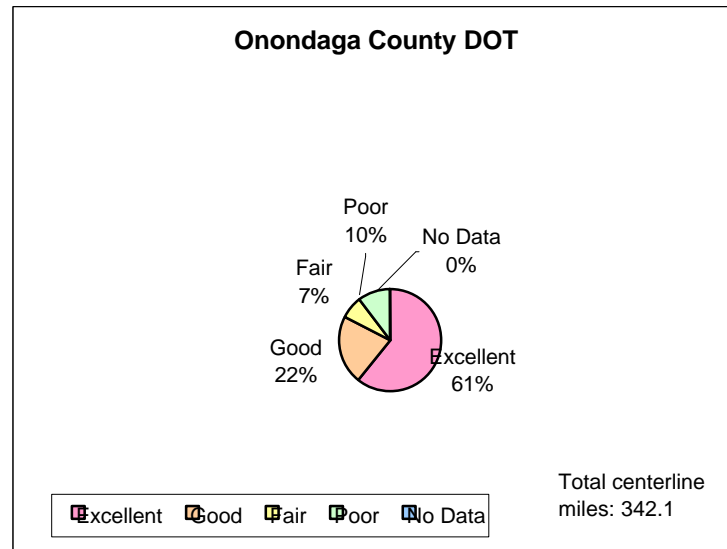
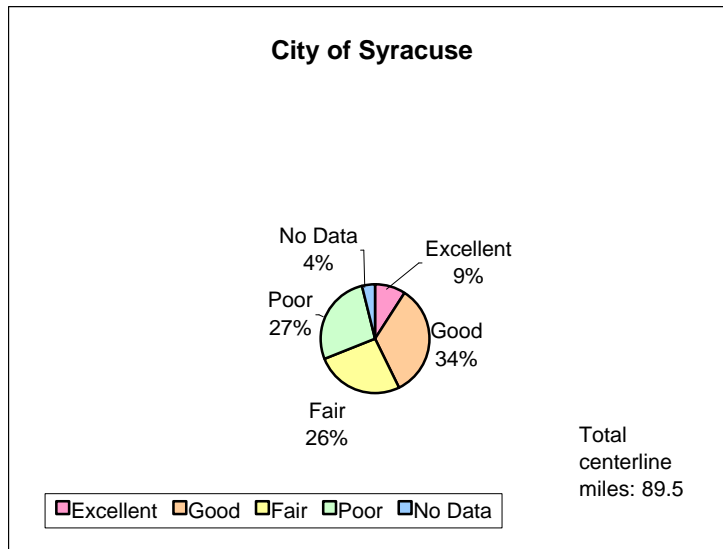
*Calculations based on total centerline length of road

Pavement Rating by Functional Classification for New York State DOT Roads*



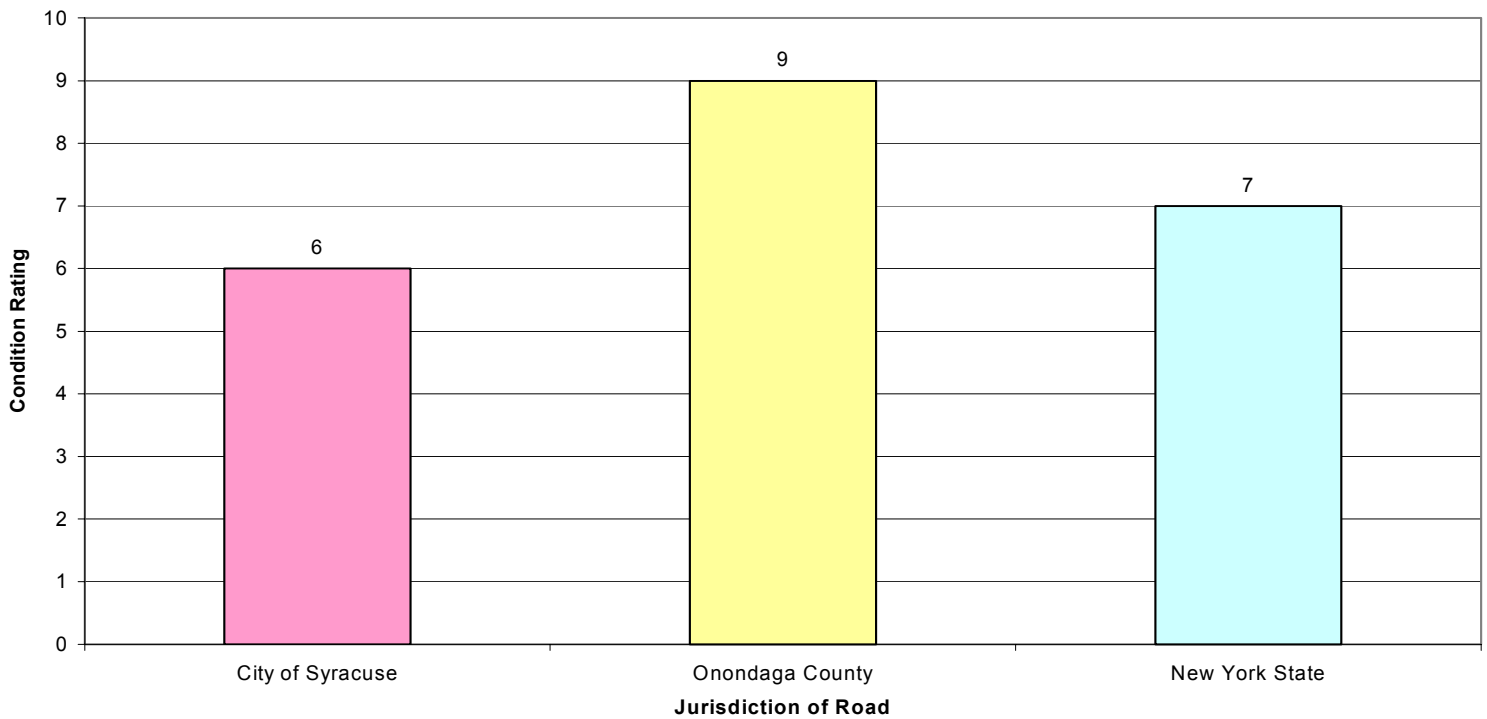
*Percentages determined by total centerline length in miles of road

Federal-Aid Eligible Roads by Jurisdiction*

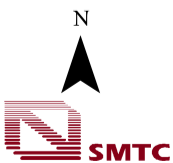
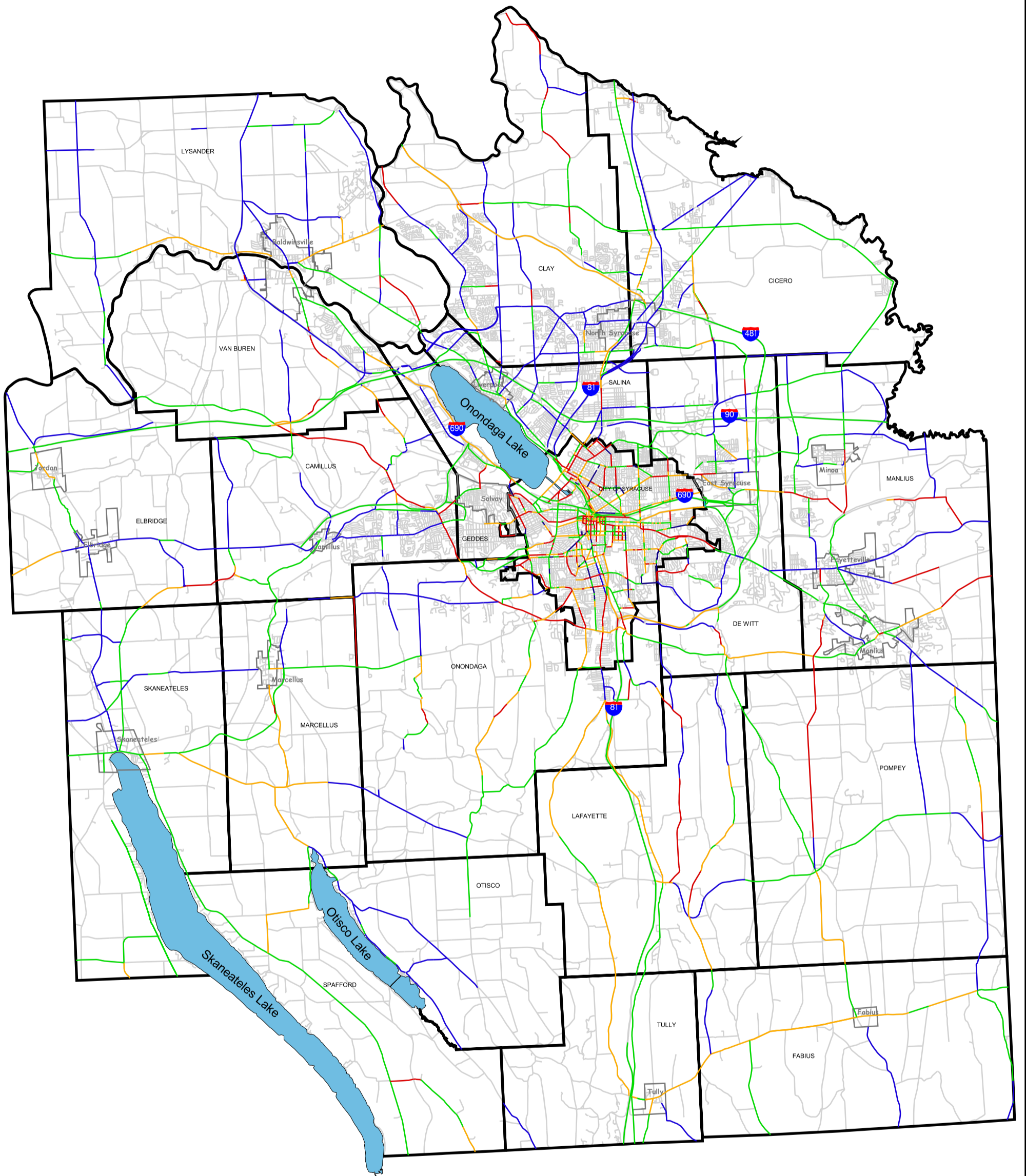


*Percentages determined by total centerline length in miles of road

Federal-Aid Eligible Pavement Condition Average Rating Scores by Jurisdiction*



*Calculations based on measurements of total centerline length in miles



100 Clinton Square
126 North Salina Street, Suite 100
Syracuse, New York 13202
(315) 422-5716 Fax: (315) 422-7733

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

Functional Classification

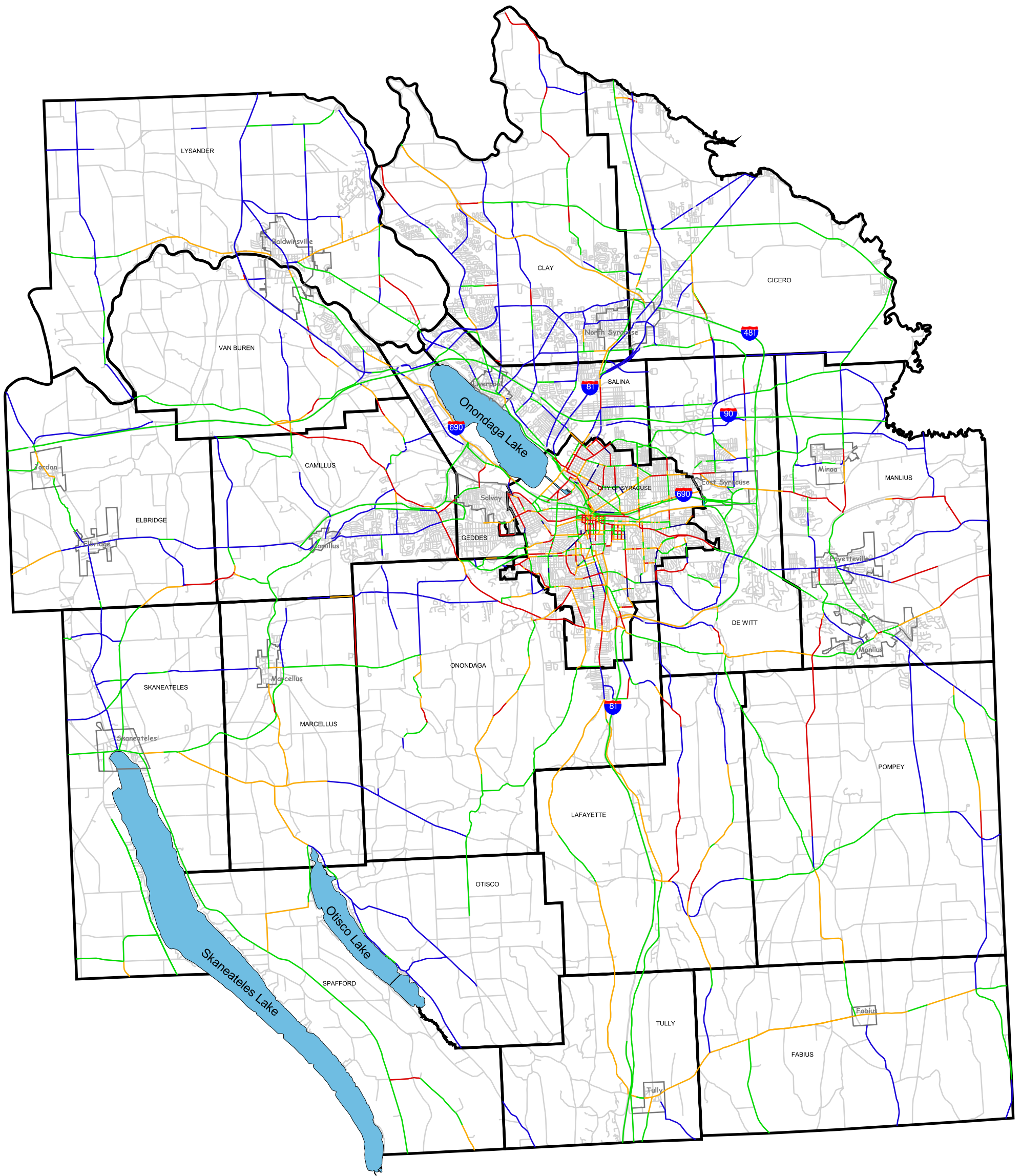
Bridge & Pavement Condition Management System

Attachment 21

0 2 4 6 Miles

Basemap Copyrighted by NYSDOT
Data Source: NYSDOT, 2001
Prepared by SMTC, Jennifer Weldin
February 2001, UPWP Number: 4800

- Roads
 - Excellent
 - Good
 - Fair
 - Poor
 - No Data
- Villages
- Lakes
- Towns
- Roads



100 Clinton Square
126 North Salina Street, Suite 100
Syracuse, New York 13202
(315) 422-5716 Fax: (315) 422-7733

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

Federal-Aid Eligible Roads* Bridge & Pavement Condition Management System

Attachment 22

0 2 4 6 Miles

Basemap Copyrighted by NYSDOT
Data Source: NYSDOT, 2001
Prepared by SMTC, Jennifer Weldin
February 2001, UPWP Number: 4800

- | | |
|-----------|----------|
| Excellent | Villages |
| Good | Lakes |
| Fair | Towns |
| Poor | Roads |
| No Data | |

*Including all federal-aid eligible roads that were rated and under the jurisdiction of the City of Syracuse, Onondaga County or New York State

III. Recommendations

As this is the first Bridge and Pavement Management Report, no comparisons were made to conditions from past years. In future reports, the benefit of comparing bridge and pavement conditions will be significant. The data collected and analyzed can be used in other SMTC planning activities and decision-making tasks. Program projects such as the Long Range Transportation Plan, Transportation Improvement Program (TIP), and the Unified Planning Work Program (UPWP), will benefit from this report. This information will be helpful for the SMTC to understand the condition of the roads and bridges in the MPO study area, which in turn will aid many tasks the STMC undertakes.

It is recommended that this report is included on the SMTC's UPWP every year. Upon completion of consecutive reports, the ability to analyze the collected data will be beneficial to the SMTC and its member agencies. Once multiple reports are completed, comparisons and trend analysis in the condition of bridges and pavement can be determined.

The NYSDOT has determined rating goals for roads and bridges under their jurisdiction. It is recommended that the county, city and local jurisdictions complete the same type of goal. This will give a better direction for the municipalities to achieve when determining bridge and pavement condition projects.

Since data is not available for local jurisdiction roads within Onondaga County, it is also recommended that federal-aid eligible ratings for local jurisdiction pavement be collected for the next report. This can be accomplished through the SMTC staff participating in a pavement-rating course to become qualified to accurately use the NYSDOT pavement rating scale. After becoming qualified, the staff will work in the field to rate the federal-aid eligible roads that are not currently part of the pavement management system for the City of Syracuse, Onondaga County, or New York State. Once this task is completed, all federal-aid eligible roads in the SMTC study area will have a pavement rating. This will allow for more accurate comparisons of the condition of roads in Onondaga County for future years.

Through the process of putting all of the bridge and pavement condition rating data into GIS, a database has been built that is available to all SMTC member agencies. Previously, there was not a single report or database that included all bridge and pavement conditions for Onondaga County. Therefore, this report and the data files are significant because of the accessibility to condition rating data through GIS in a format directly compatible with city, state and county systems.