

CHAPTER 4 – BICYCLE SUITABILITY MAP

A major component of the 2003 Bicycle and Pedestrian Plan has been the development of a map that portrays the suitability of the existing transportation network for bicycle utility in Onondaga County and the City of Syracuse. Utilizing Geographic Information Systems (GIS), the Syracuse Metropolitan Transportation Council (SMTC) prepared a countywide, city-inclusive suitability map of the bicycle transportation system, including streets, bikeways, designated paths, multi-use trails, recreational trails and any other bicycle and pedestrian related paths and/or trails.

4.1 Selection of Roads for Rating

The SMTC determined which roads to rate and include in the bicycle suitability map by starting with the Federal-Aid eligible road system in the City and County. Inappropriate and prohibited roads for bicycling were removed (i.e., interstate highways, expressways, and other roads where bicycling is prohibited by law). Roads and routes identified from previously completed bicycle studies were reviewed and included as appropriate. Other logical and/or relevant roads were added, such as connector roads, and primary through streets that provided access to major points in the Syracuse Metropolitan Area and Onondaga County. Local and residential roads and streets were not marked for rating. Every road identified through this process was then rated. As mentioned above, bicycling is allowed on any street that is not an interstate highway, expressway, or other road where bicycling is prohibited by law.

4.2 Road Attribute Rating Questions – Development of Rating Booklets

To assist in the process of obtaining suitability ratings for Onondaga County roads, the SMTC developed questions to include in a ratings sheet in an effort to obtain qualitative and quantitative data for each road segment to be rated. The questions covered road attributes such as posted speed limits, shoulder width, shoulder striping, terrain, pavement quality, and the existence of sewer grates. There was also a question relative to the bicyclists' perceived safety/comfort level on the segment of road being rated. Volunteer bicyclists were encouraged to add comments they felt were pertinent to riding on a particular stretch of road. All of this information was recorded on road rating sheets completed by volunteer bicyclists.

The suitability ratings information was collected in two parts: the City of Syracuse, and the remainder of Onondaga County. Ratings were first completed for the City of Syracuse. The City ratings went well, and utilizing feedback received from volunteer cyclists, the SMTC changed ratings questions slightly for obtaining bicycle suitability information in the remainder of the County. The SMTC felt that it would be beneficial to rate one section of the County first to be sure that the questions were appropriate and that the process worked well prior to completing ratings in all of the County. Figure 4.2-1 contains the questions asked in the City and County roads pamphlets.

CITY RATING QUESTIONS

Bicycle and Pedestrian Plan Map #: _____

Road Name: _____

From: _____

To: _____
(4 Block Maximum)

Posted Speed Limit: _____

**Circle ONE answer for the questions below
(Y = Yes; N= No)**

1. Is there a shoulder stripe on the road you are rating? Y or N or Partially Striped
2. Is there additional room, other than the vehicle travel path, for your bike on the street when a vehicle (parked or moving) is present?
Y or N

If you answered YES to Question 2:

- a) How wide is the available space?
0 to 2 feet 2 to 4 feet Greater than 4 feet
- b) How favorable is the available space for riding?
Good Fair Poor

If you answered NO to Question 2:

- a) What is causing the space limitation?
(i.e. on-street parking, narrow street, both, etc.)

3. Are sewer/drainage grates present? Y or N
If Yes, do they hinder your ability to ride safely?
Y or N
 4. What is the approximate number of driveways on the stretch of road you are rating?
0 1 to 4 5 to 8 Greater than 8

5. Describe your level of safety/comfort while riding on this road (circle one):

Use the rating scale 1-5, 5 being the most comfortable. 5 should remind you of a 'ride in the park'. 1 should be that you feel extremely uncomfortable and/or unsafe (See inside cover).

1 2 3 4 5

NOTES: _____

COUNTY RATING QUESTIONS

Bicycle and Pedestrian Plan Map #: _____

Road Name: _____

From: _____

To: _____

Posted Speed Limit: _____ **(only fill in if posted)**

**Circle ONE answer for the questions below
(Y = Yes; N= No)**

1. Is there a shoulder stripe on the road you are rating? Y or N or Partially Striped
2. Is there a shoulder (or particularly wide lane, other than the vehicle travel path) available for you to ride on? Y or N

If you answered YES to Question 2:

- a) Approximately how wide is the available space?
0 to 1.9 feet 2 to 4 feet Greater than 4 feet

If you answered NO to Question 2:

- b) What is causing the space limitation?
(i.e. on-street parking, narrow lane, bridge, etc.)

3. Is the road you are rating designated as a bike route with bike signs and/or markings? Y or N
4. How favorable is the pavement that you rode on?
Good Fair Poor
5. Are sewer/drainage grates present? Y or N
If Yes, do they hinder your ability to ride safely?
Y or N
6. Approximately how many intersections are on this stretch of road? _____

7. Circle all that apply to best describe the terrain:
Flat Somewhat Hilly Very Hilly

Not Steep Somewhat Steep Very Steep

8. Describe your level of safety/comfort while riding on this road (circle one):

Use the rating scale 1-5, 5 being the most comfortable. 5 should remind you of a 'ride in the park'. 1 should be that you feel extremely uncomfortable and/or unsafe (See inside cover).

1 2 3 4 5

NOTES: _____

Figure 4.2-1

4.3 Recruitment of Volunteers

SMTC staff solicited volunteer bicyclists to assist in the rating of roads for the bicycle suitability map. Letters and flyers were sent to local bike shops and two local bicycle groups. Flyers were posted at Syracuse University (SU) and the State University of New York College of Environmental Science and Forestry (SUNY ESF) campuses asking for volunteers to join in the rating process. In addition, two press releases were sent to local newspapers in an effort to recruit a broad population of volunteers. In all, approximately 25 volunteers participated.

Three volunteer meetings were held, two in July 2001 and one in October 2001, to explain the Bicycle and Pedestrian Plan project and the bicycle suitability map rating process to the volunteer bicyclists. Rating materials were distributed at these meetings including safety information, maps and rating sheets (which contained the pre-set rating questions noted above). Groups of 20-30 rating sheets were packaged together, and the inside covers of the booklets were used for explaining how to answer the questions. Staff sent volunteers out to rate City roads between July and August 2001, and County roads August 2001 through October 2001 (missed City areas were also rated August through October 2001 by volunteers). Once the volunteer rating process was complete, the SMTC staff filled in gaps by rating remaining roads in late fall 2001 and spring 2002. Every road identified for rating (see Section 4.1) received a bicycle suitability rating.

4.4 Methodology for Developing Overall Suitability Rating

While volunteer cyclists were collecting road segment data, the SMTC staff developed a Microsoft Access database to compile information. As completed rating sheets came into the SMTC office, staff entered the data collected by volunteer bicyclists into the database. Data entry work began in winter 2001-2002 and was completed in spring 2002. Staff entered the answers to all ratings questions as well as any comments noted by the volunteer bicyclists.

Weighting

Each question was then weighted. As discussed above, the City and County were evaluated with slightly different questions or criteria. The following illustrates the percentage weighting of each question, to equal 100%

Road Attribute Questions: City of Syracuse

In addition to Road Name and the Posted Speed Limit, Questions 1-4 were the Road Attribute Questions for the City (see Figure 4.2-1 for City questions). Each question was given a value out of 100 points, as all questions added together came out of a total of 100 points.

Road Attribute Questions: Remainder of Onondaga County

In addition to Road Name and the Posted Speed Limit, Questions 1-7 were the Road Attribute Questions for the County (see Figure 4.2-1 for County questions). Each question was given a

value out of 120 points, as all questions added together came out of a total of 120 points. After completing the city portion of the ratings, the SMTC altered the county questions slightly to accommodate for terrain and bike route signage, thus creating more questions.

The approximate percentage value that each question held in the overall rating score is listed in the following table:

ROAD ATTRIBUTE QUESTIONS		
Question	County	City
Value of posted speed limit	8.3%	10%
Existence of shoulder stripe on road	8.3%	10%
Existence of additional room on road/shoulder to ride on	37.5%	45%
How favorable the pavement is for riding	12.5%	15%
Existence of sewer grates & effect on ability to ride safely	8.3%	10%
Existence of driveways/intersections on road	4.2%	10%
Existence of designated bike route (County road segment question only)	4.2%	-----
Terrain (County road segment question only)	16.7%	-----
Total	100%	100%

Percentage values varied slightly between the city and county ratings due to the number of questions asked via the rating sheets. The weighted scores were added together for each segment of road, and for the City given a value out of 100 points, and for the County, a value out of 120 points. The County scores were then adjusted so that both the City and County scores were given a value out of 100 percent.

Level of Safety/Comfort Question

The final question in both the City and the County rating pamphlet asked volunteers to describe their level of safety/comfort while riding on a given stretch of road. Using the rating scale 1-5, 5 being the most comfortable, respondents were asked to circle their choice. Examples of what the SMTC felt a ‘5’, ‘3’ and ‘1’ were, were included on the inside covers of the rating pamphlets.

Once the scores were entered into the database, the SMTC gave this question a value of 100 points (for both City and County locations). The SMTC assigned percentage scores out of 100 to each level of safety/comfort option, shown in the following table:

Level of Safety/Comfort	Percentage
1 (extremely uncomfortable)	55%
2	65%
3	75%
4	85%
5 (most comfortable)	95%

Notes

Volunteers were asked to note observations at the bottom of each rating sheet. In this section, volunteer cyclists were asked to record anything that they felt was significant for a cyclist to know while traveling on the stretch of road being rated. Volunteers were encouraged to record information such as if broken glass or debris was present, if they 'felt' unsafe (personal safety) in the general area they were riding in, the condition of the pavement, the road's scenic quality, etc. Each note was recorded in the Access database.

Final Roads Ratings

To develop a final rating for each road segment, staff compared the road attribute scores with the level of safety/comfort scores on each stretch of road. If the sum of the road attribute questions was within ± 9 points of the level of safety/comfort rating, the level of safety/comfort rating was kept as the final score for that stretch of road. Where the scores did not come within 9 points of each other, the SMTC staff reviewed each road segment, their associated scores, and the notes and comments associated with each segment. Based on this information, staff determined what the final rating for these segments would be.

The database was then linked to the SMTC's GIS, resulting in a map that portrayed the suitability ratings associated with each rated road segment.

4.5 Suitability Ratings Review

Once the suitability ratings were mapped for each stretch of road, the SMTC staff reviewed the county and city maps in-house, and then sent them to interested SAC members, including: the New York State Department of Transportation (NYSDOT), City of Syracuse Department of Public Works (DPW), City of Syracuse Community Development, Onondaga County Department of Transportation (OCDOT), Onondaga County Parks, Syracuse-Onondaga County Planning Agency (SOCPA), Central New York Regional Transportation Authority (CNYRTA), Syracuse Onondaga Cycling Coalition (SOCC), and the Onondaga Cycling Club (OCC). Via the SOCC and OCC, the volunteers were able to review the draft results of their work. The SMTC held a meeting in August 2002 where SAC members could bring their comments to the table for discussion. In addition, SAC members could mail-in, phone-in, email, or drop off their comments. All comments made by the SAC were reviewed by the SMTC and changes were made to ratings where appropriate. The SMTC met separately with a few SAC members (OCDOT, NYSDOT, Onondaga County Parks, to name a few) to further clarify the rating process as well as some rating scores. Maps were re-printed once the changes were made and reviewed again in-house.

4.6 Map Layout

Throughout the process of developing the SMTC Bicycle Suitability Map, the SMTC followed the work of the Genesee Transportation Council (GTC), a sister Metropolitan Planning Organization (MPO), out of Rochester, New York. The GTC developed and produced a well-

received bicycle map for the Greater Rochester Area in 1998. There are very few maps left from the 1998 printing and GTC is in the process of updating the map. The bike map was practical and useful, containing maps of the multi-county area that the GTC MPO covers, as well as the City of Rochester. Safety panels on sharing the road and trail, and bus bike rack information were included on the map. The GTC utilized volunteers to rate roads in the GTC MPO area, but did not utilize a formal rating sheet or process for recording information noted by volunteers. The GTC contracted with Map Works, Inc., a map publication company out of Rochester, NY, to produce their final bike map.

The SMTC MPO followed the work and concepts utilized in the GTC bike map. The most major differences between the SMTC and GTC bicycle maps are process and methods utilized to gather road rating information, and the color and tone of the colors utilized for the suitability ratings.

Map Publication Company

In spring 2002 the SMTC contacted a number of map publication companies in order to received quotes to produce the SMTC bicycle suitability map. The SMTC hired MapWorks, Inc., a firm out of Rochester, NY, to produce the final map product and a contract was signed in late July 2002.

The SMTC met with Map Works, Inc. in August 2002 to clarify the information that both Map Works and the SMTC would be responsible for. Map Works provided the SMTC with their digital database so that the SMTC staff could enter the bicycle suitability ratings into the database for the 'City' side of the map. Mylar sheets were also provided by Map Works so that the SMTC could manually draw the ratings in on the 'County' side of the map. After numerous rounds of review between staff and the Plan's SAC on both sets of maps, all suitability scores were transmitted to MapWorks Inc. in late October 2002. In addition, after much SAC review, the map layout, which includes the safety panel information, map disclaimer and suitability ratings definitions, was transmitted to Map Works in early December 2002.

With input and collaboration with the SMTC, Map Works, Inc. produced draft map proof for the SMTC staff, the study's SAC and the SMTC Planning Committee's review. The final map was printed and delivered to the SMTC in early April 2003.

4.7 Resulting Map

The final bicycle suitability map rates chosen streets on the existing road network as being 'excellent', 'good', 'average', 'fair', and/or 'poor' for bicycling (and primarily for bicycle commuters). The map does not designate particular bike routes but enables the general public to determine which roads are currently the most suitable for bicycle travel. Multi-use trails are also shown on the map. In addition to the road ratings and trails, the map includes various safety panels that highlight the various rules and regulations associated with bicycle travel.

The following section outlines the specific portions of the bicycle suitability map. Please refer to the attached Greater Syracuse Area Bike Map for further details.

Bicycle Suitability Ratings Definitions

The methodology for developing the bicycle suitability ratings is found in Section 4.4 above. The SMTC staff and the Plan's SAC developed the definitions below for inclusion on the map. A general map disclaimer preceded the suitability definitions:

Commuter bicycle ratings for major roads in the City of Syracuse and Onondaga County are based on a variety of existing (2001/2002) road conditions and features such as posted speed limits, shoulder width, shoulder striping, terrain, pavement quality, safety/comfort level, and the existence of sewer grates, as recorded through road surveys completed by volunteer bicyclists. The definitions below outline the typical conditions for each suitability definition at the time of rating. Please refer to the disclaimer on the other side of this map prior to utilizing the suitability definitions below. Also, please keep in mind that the suitability ratings are subjective and that actual conditions may vary.

Excellent: Highly recommended for bicycle commuting. Low vehicular traffic and little interaction between bicyclists and other vehicles. Slow moving traffic and some separation from vehicles.*

Good: Recommended for bicycle commuting. Slightly more vehicular traffic and slightly higher level of interaction between bicyclists and other vehicles than roads rated "Excellent." Some separation from vehicles,* with vehicles typically moving faster than on "Excellent" rated roads.

Average: Acceptable for bicycle commuting. Moderately traveled with some possible interaction between bicyclists and other vehicles. Higher volumes of traffic with some separation from vehicles* traveling at slower speeds, or roads with lower volumes of traffic and no separation from vehicles.*

Fair: Only marginally suitable for bicycle commuting. Heavily traveled with some interaction between bicyclists and other vehicles. Little to no separation from vehicles* moving at faster speeds than roads rated "Average." "Fair" rated roads may have some pavement in poor condition and/or rough terrain.

Poor: Not suitable for bicycle commuting. Interaction between bicyclists and other vehicles occurs. Heavily traveled with fast moving traffic, little to no separation from vehicles,* and/or rough riding conditions for commuters (i.e. steep slopes, poor pavement condition, high vehicular volumes, etc.).

Multi-Use Trails: Off-road paths for walking, bicycling, and/or in-line skating, etc.

*Separation from Vehicles, for the purpose of this map, is defined as a shoulder, shoulder stripe, a similar type of buffer area, a designated bike lane, or an unusually wide travel lane.

Note: Traffic volumes may vary by time of day and/or depending on locally scheduled events (i.e. festivals, concerts, etc.).

Legal Requirements

The following legal requirements are further detailed on the Bicycle Suitability Map with the use of graphics (see the enclosed Bike Map for graphics):

Ride to the Right: Ride as close to the right side of the road as you safely can. Use the shoulder or a bike lane rather than the road whenever it is safe to do so. It's the law.

Use Hand Signals: Signal all turns and stops ahead of time. Look over your shoulder for any traffic, then make your intended move only when it is safe to do so.

Never Ride Against Traffic: Motorists are not looking for bicyclists riding on the wrong side of the street. Ride with traffic to avoid accidents.

Use Lights at Night: Always use a strong light colored headlight and a red taillight at night or when visibility is poor. Use bike reflectors and reflective clothing. See and be seen!

Earphones are Dangerous: It is illegal to use more than one earphone attached to a radio, tape player or other audio device while biking riding a scooter, skateboard or in-line skating on a public right-of-way (street or sidewalk). If you use an earphone, keep the volume sufficiently low to hear other road and pathway users.

One Person Per Bicycle: Riding double is only permitted when carrying a child, age one or older, in an approved carrier or when riding on a bicycle that is designed and equipped to carry more than one person (i.e. tandem bicycle).

Always Wear a Properly Fitted Helmet: In Onondaga County when riding bicycles, scooters, skateboards, or in-line skates, children **under the age of 18 are required by law to wear an approved bicycle helmet**. Any parent or guardian whose child violates this law is subject to a fine of up to \$50.

Every bicyclist, skateboarder, scooter operator or in-line skater, regardless of age or ability, should wear a properly fitted helmet that meets the standards of the United States Consumer Products Safety Commission (CPSC). The United States CPSC's bike helmet standard is law now for every helmet make after 1999. Helmets significantly reduce the risk of sustaining a serious head injury in the event of a crash.

A helmet should fit squarely on top of the head in a level position and cover the top of the forehead extending down to about one inch above the eyebrows. The helmet should not be able to slide back and forth or rock from side to side.

The Onondaga County Bicycle Safety Coalition sponsors a low cost helmet program throughout the county. For more information on this program and bicycle safety in general, please contact the Onondaga County Health Department at 315-435-3280.

Note: In-line skaters are subject to the same rules, regulations, and legal requirements as bicyclists.

For More Information on Legal Requirements, refer to Article 34 of the New York State Vehicle and Traffic Law, and local and municipal laws

Safety Panels

In addition to legal requirements, on-street bicycling and multi-use trails safety panels are included on the map. Each section outlines a series of safety guidelines for sharing the road when bicycling on roads and trails, and includes graphics for each guideline (graphics can be found on the enclosed bike map):

On-Street Bicycling – Share the Road

Ride in a Straight Line: Avoid dodging between parked cars. Ride in a straight line at least three feet away from parked cars. Watch for a car pulling out of a parking space.

Make Eye Contact: Confirm that you are seen. Establish eye contact with motorists to insure that they know you are on the roadway.

Be Careful at Intersections: The majority of accidents happen at intersections. Proceed with care. Vehicles making turns are particularly dangerous.

Scan the Road Behind: Look over your shoulder regularly or use a mirror to monitor traffic. Although bicycles have equal right to the road, be prepared to maneuver for safety.

Use Appropriate Lane: Avoid being in a right turn-only lane if you want to go straight through an intersection. Move into the through lane early. In narrow lanes or slow traffic, it may be safer to take the whole lane.

Lock Your Bike: Buy the best lock system you can afford: none is as expensive as a new bike. Lock the frame and rear wheel to a fixed object. If you have a quick release, lock the front wheel also.

Turning Left – 2 Options

1. AS A VEHICLE: Signal your intentions in advance. Move to the left turning lane, and complete the turn when it is safe.
2. AS A PEDESTRIAN: Ride to the far crosswalk, dismount and walk across.

Beware of Car Doors: Be wary of parked cars. Motorists can unexpectedly open doors. Be particularly careful if you see a motorist in the car. Ride a car's door width away.

Use Caution if Bicycling on Sidewalks: Bicycling on the sidewalk is a significant contributing factor in bicycle/motor vehicle collisions. **Remember** – motorists and pedestrians do *not* anticipate bicyclists traveling on the sidewalk. Therefore if you bicycle on the sidewalk, you **must yield to pedestrians and all vehicular traffic** (including at driveways). **Note: It may be illegal to ride on the sidewalk in some city, town and village locations (children are typically an exception).** Always check the local rules of the road before bicycling.

Multi-Use Trails – Share the Trail

Keep to the Right: All trail users should keep to the right except when passing or turning left. Move off the trail to the right when stopping. Never block a trail.

Signal to Others: Cyclists: when approaching others, sound your bell or call out a warning, then pass safely on the left. Pedestrians: move to the right when someone is overtaking.

Be Alert: Watch for hazardous conditions, such as poor pavement, fallen tree branches and other debris. Beware of slippery conditions caused by water, ice, loose gravel or sand.

Skaters Use Caution: In-line skaters; know how to use your equipment safely. Follow travel, passing, and speed rules as per bicyclists. Do not perform trick skating maneuvers on trails.

Be Careful at Crossings: Look both ways. Cyclists: yield to through traffic at intersections; pedestrians have the right of way. Pedestrians: exercise caution. Be aware of stopping limitations of bicyclists and skaters.

Stay on the Trail: Keep on designated trails to protect parks, natural areas and yourself. Riding off the trail is dangerous.

Dismount as Posted: Dismount and walk across roadways or other posted locations. When choosing a 'pedestrian style' crossing across the flow of traffic, cross only when it is safe to do so.

Be Visible: Ensure your visibility at night by wearing light-colored clothing with reflective material. Outfit your bicycle with lights as you would for riding on the roads.

Map Disclaimer

The map disclaimer was developed in concert with the SMTC staff and the Bicycle and Pedestrian Plan SAC. The disclaimer was then reviewed by an Onondaga County attorney. The disclaimer reads as follows:

Bicycling on Interstate Highways and Expressways is prohibited by law. Authorities with jurisdiction over other controlled-access highways may prohibit bicycles.

Commuter bicycle ratings for major roads in the City of Syracuse and Onondaga County are based on existing (2001/2002) road conditions and features such as posted speed limits, shoulder width, shoulder striping, terrain, pavement quality, safety/comfort level, and the existence of sewer grates, as recorded through road surveys completed by volunteer bicyclists. Please keep in mind that the suitability ratings are subjective.

The objective was to rate primary through streets that provide access to major points in the Syracuse Metropolitan Area and Onondaga County. Except for interstate highways, expressways, and other roads where bicycling is prohibited by law, bicycling is allowed on every street. Please note that bicyclists must share all roads rated on this map with other vehicles.

The ratings on this map may be used as a guide for selecting which roads to travel between different points. The streets have been color-coded to represent how suitable the conditions for bicycling are on a particular stretch of roadway for a typical commuter bicyclist. **Please remember that road conditions may change:** bicyclists must always be prepared for heavy volumes of traffic, traffic conflicts, potholes, loose debris, open car doors, other vehicles, pedestrians, and other road hazards. Bicyclists should also be aware that traffic volumes may vary by time of day and/or depending on locally scheduled events (i.e. festivals, concerts, etc.). Bicyclists must assess their own riding skills to determine if they possess sufficient ability to adapt to changing traffic patterns and road conditions.

Bicyclists must adhere to New York State and local bicycle laws (see reverse side of map), and assume responsibility for their own safety when using the road ratings on these maps. The Syracuse Metropolitan Transportation Council, its member agencies, staff and the project volunteers do not guarantee the safety of the rated road segments indicated on this map for use by bicyclists, and accept no responsibility for personal injuries or property damage resulting from the use of this map.

Other Information

In addition to the items noted above, the bicycle suitability maps includes a panel on how to use the bicycle racks that are provided on most Centro buses. Figure 4.7-1 is a replica of the bus bike rack panel included on the bike map.

Figure 4.7-1

Bike Racks on Buses - It's Real Easy



1

Hold your bike with one hand and lower the rack with the other.



2

Lift the bike onto one of the rack's wheel wells.



3

Pull the rack's support arm out and up over the front tire of your bike.



4

Your bike is now firmly secured. The only contact between the rack and your bike is the tire, thus protecting your bike from damage.

Bike racks are available on selected bus routes. Call CENTRO at (315) 442-3400 for more information.

4.8 Explanation of Map Results: What Does the Map Tell Us?

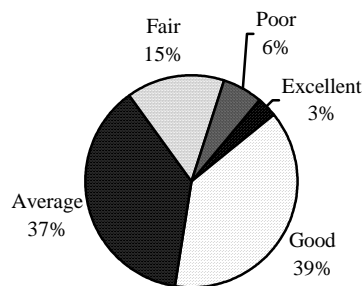
The SMTC and volunteer cyclists rated 37% percent of the roads in the SMTC MPO area for inclusion in the Bicycle Suitability Map. Nearly 80% of these rated roads are considered suitable for bicycling (this percentage includes roads that were rated as excellent, good and average). It should be noted that seventy-five percent (75%) of the roads in the federal aid eligible system are bikeable, and that 98% of them were rated. Interstate highways, expressways, and other roads where bicycling is prohibited by law (i.e., I-81, I-690, I-481, etc.) were removed from this exercise. The sections below describe the overall bicycle suitability scores for the MPO area, including a breakdown by jurisdiction of road owners, as well as for the roads located within the City and the remainder of the County.

As noted in the *Bicycle Suitability Ratings Definitions* section, roads that were rated in the MPO area were rated as being Excellent, Good, Average, Fair or Poor. High traffic, vehicle dominated corridors with little to no shoulder or separation from vehicles for bicyclists, and rough riding conditions for bicycle commuters (i.e. steep slopes, poor pavement condition, etc.) received the lower suitability ratings of Fair or Poor. Roads with low vehicular traffic, slow moving traffic and some separation from vehicles typically received Excellent and Good ratings.

All Roads Rated for Bicycle Commuting Suitability in MPO Area

As noted previously, 37% of the roads in the MPO area were rated for bicycle commuting suitability. The following pie chart depicts the breakdown of the roads that were rated by suitability scores in the SMTC MPO Area.

Rated Roads Within the SMTC MPO Area



Of the roads rated in the MPO area, the majority (76%) were rated as being Average or Good for bicycle travel. Few roads in the MPO area received Poor (6%), or Excellent (3%) ratings. Through examination of the road ratings data, it is apparent that the overall road network in the MPO area is suitable for bicycle commuting.

Suitability by Jurisdiction

The SMTC also reviewed the suitability scores by ownership of roads within the MPO area. The following table summarizes suitability percentages by jurisdiction.

City of Syracuse			Onondaga County	
Excellent	2%		Excellent	3%
Good	12%		Good	37%
Average	17%		Average	24%
Fair	7%		Fair	8%
Poor	4%		Poor	3%
<i>Total City Roads Rated</i>	42%		<i>Total County Roads Rated</i>	75%
No Data	57%		No Data	25%
Total	100%		Total	100%
New York State			Other/Local/Private	
Excellent	1%		Excellent	0%
Good	13%		Good	3%
Average	25%		Average	3%
Fair	8%		Fair	2%
Poor	5%		Poor	0%
<i>Total State Roads Rated</i>	52%		<i>Total Other Roads Rated</i>	8%
No Data	48%		No Data	92%
Total	100%		Total	100%

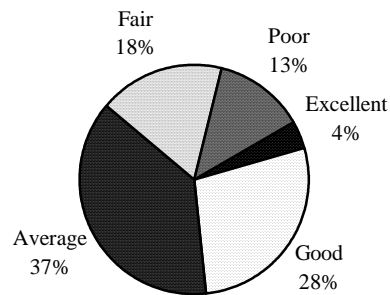
ALL ROADS	
Excellent	1%
Good	14%
Average	14%
Fair	6%
Poor	2%
<i>Total MPO Roads Rated</i>	37%
No Data	63%
Total	100%

Onondaga County was the jurisdiction with the most roads rated at 75%, followed by New York State owned roads at 52% and City of Syracuse owned roads at 43%. Within each jurisdiction, the majority of rated roads received an Average or Good rating. Onondaga County owned roadways were primarily rated as being Good. Very few local and private roads were rated because, for the most part, the SMTC did not rate roads down to the neighborhood and local level – this resulted in the large “No Data” category seen in the tables.

Roads Within the City of Syracuse

The following pie chart depicts the breakdown of the roads that were rated by suitability score in the City of Syracuse, regardless of road ownership.

Rated Roads Within the City of Syracuse



Through examination of the road ratings data, it is apparent that the overall road network in the City of Syracuse is suitable for bicycle commuting.

The majority (65%) of roads within the City of Syracuse limits were rated as being Average or Good for bicycle travel. Thirty-one percent (31%) of roads located within the City of Syracuse were rated as being Fair or Poor, a higher percentage of Fair and Poor roads than both the suburbs alone (19%) and the entire MPO area (21%). There is no one area in the City that contains all poor and/or all fair rated roads. However, there are many fair and poor rated roads contained by West St., Lodi St., Green St., Townsend St., and Fayette St.

The following sections identify major areas where roads were rated as being primarily poor, or primarily fair and poor, for bicycle travel. These areas are discussed by corridor and destination.

Major Corridors

Multiple corridors within the City of Syracuse serve as links between major City destinations, as well as travel arteries that run through the City, connecting it to outside municipalities.

The portion of W. Genesee St. from Clinton Square to the west City line and beyond received fair and poor ratings. As a major east-west access road between the outlying western municipalities and the City, volunteers rated this road poorly due to heavy traffic, minimal shoulder width and the changing terrain as one travels east into the City. There is not another major east-west running corridor on the west side of the City that has been rated.

N. Geddes St. between W. Fayette St. and Van Rensselaer St. was rated as being poor and fair due to the lack of an adequate shoulder available for bicyclists on a four-lane road and poor road condition. Geddes St. serves as a major north-south corridor on the west side of the City of Syracuse, providing a connection to I-690 and the Carousel Mall. There is not another major

north-south running corridor on the west side of the City that has been rated. However, as part of the redevelopment of the Lakefront, N. Geddes St. and several other Lakefront area roadways are slated for improvements including repaving and the potential addition of bicycle and pedestrian facilities, as the area is transformed from industrial uses to a mixed-use environment.

East Brighton Ave. between Midland Ave. and NYS Route 173 (E. Seneca Tnpk.) is rated as primarily fair and poor due to narrow lanes and heavy traffic. South Salina St. and N. State St. received only fair ratings in the southern part of the City, not providing the best alternative north-south route options for cyclists. However, a better alternate route for cyclists is Midland Ave., which received Average and Good ratings along its length between E. Brighton Ave. and NYS Route 173.

E. Genesee St. between State St. in Downtown Syracuse and the east City line, and beyond, is rated as being fair and poor along its entire length. E. Genesee St. is a major access route to outlying communities in the east. At peak hour times (i.e. the morning and evening commute hours), both travel lanes are traffic filled making it difficult for commuting bicyclists because of the lack of extra room available on the road's shoulders. As one travels farther east on E. Genesee St., the width of the travel lanes decreases. Other major corridors that travel east from the City's center include Erie Blvd. E. and Burnet Ave. Burnet Ave. is rated as being Average and Fair through the City. Burnet Ave. provides an alternate parallel route to E. Genesee St., but it is located on the opposite side of I-690. Erie Blvd. E. is not a good alternate route to E. Genesee St., as the entire eastern portion of the Erie Blvd. corridor is rated Poor. This is primarily due to the corridor's six travel lanes, heavy traffic, high speeds, large intersections, and little to no separation from motor vehicles for bicyclists, making bicycle commuting difficult along this corridor. However, within the City, Water St. provides an Excellent rated alternate to Erie Blvd.

The James St. corridor received primarily poor and fair ratings due to narrow multiple travel lanes, heavy traffic and high speeds. In the eastern central portion of the City, Meadowbrook Drive was rated as Good for bicycle commuting. Meadowbrook Drive is located in a residential area, with low to moderate traffic and available space for both motor vehicles and bicycles.

All of the corridors and road segments discussed above provide a connection between City destinations or between the City and neighboring municipalities. Bicyclists run into similar scenarios within each corridor, such as narrow lanes and heavy traffic. A bicyclist can typically expect heavy traffic on these roads, as they are utilized for commuting purposes into the City by many motorists.

Newer areas in and around the City typically received higher suitability ratings due to shoulder striping and better pavement conditions. The older city network scored well, although in some cases street widths, slopes and lack of shoulders brought ratings down. The older city network is primarily comprised of short blocks and provides many links, especially within City neighborhoods, where many alternative street options are available for bicyclists to choose from. In addition, as long as it is enforced, the odd/even parking that is found throughout the City could be seen as beneficial to bicyclists by keeping parked vehicles on one side of the street at all

times which opens up the remaining portion of the street for bicycle and motor vehicle travel. In all, roads located within the City of Syracuse received primarily Average and Good ratings.

Major City Destinations

Road conditions around major destinations throughout the City are generally in average condition for bicycle commuting. One major destination where roads received a Poor rating is the Carousel Center. This is particularly noteworthy given the proposed development of the DestiNY USA project. Hiawatha Blvd. is the primary access road leading traffic into and out of the Carousel Center mall, aside from Park St., which is also congested and rated as Poor. With four driving lanes available the tendency for motorists to drive above the speed limit on Hiawatha Blvd. is evident. Heavy traffic in each lane makes it difficult for bicyclists to navigate, as does the poor pavement condition along the western segment of the boulevard. West Hiawatha Blvd. is slated for road improvements and bicycle and pedestrian upgrades in the SMTc TIP for \$1.75 million. From the City, Solar St. and Van Rensselaer St. provide good alternative routes towards the Carousel Center, but Hiawatha Blvd. still must be crossed in order to reach the mall parking lot. In addition, Solar St. is to be reconstructed as part of the redevelopment of the Lakefront, and Van Rensselaer St. has recently been reconstructed. However, for bicyclists traveling from the suburbs, there is not an Average, Good or Excellent rated direct road into the Carousel Mall.

The University Hill area is comprised primarily of Good and Average bicycle suitability ratings. The surrounding neighborhood makes these roads very accessible for bicycle travel. Euclid Ave. is used as one of the primary choices for Syracuse University and SUNY ESF bicycle commuters, and Comstock Ave. between Stratford St. and E. Colvin St. is marked and signed as a bicycle lane. One major concern noted by the volunteer cyclists is the availability of additional room on many University Hill area roads. When cars are parked on both sides of the street, many times illegally, it is difficult for bicyclists to avoid the parked cars while continuing to move with traffic. Volunteer cyclists also noted that the hilly topography within the University area can be difficult to navigate, and impacts the connection between the University Hill and Downtown areas.

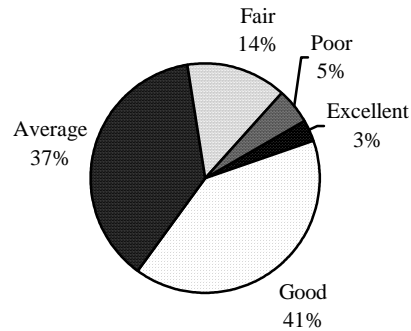
LeMoyne College is nestled in between Route 5 and E. Genesee St., corridors that received primarily poor and fair ratings. Although not as direct as Route 5 and/or E. Genesee St., other nearby roads such as Salt Springs Rd. and E. Fayette St. can provide bicyclists with an alternative for reaching the City from LeMoyne College.

Another major destination in Syracuse is the Downtown area (Salina St., Armory Square, etc.). Roads were rated as being Average and Fair through Syracuse's downtown, primarily due to narrow traffic lanes. The Rosamond Gifford Zoo, another major destination within the City limits, is surrounded by roads that received an Average suitability rating.

Roads Within the Remainder of Onondaga County

The following pie chart depicts the breakdown of the roads that were rated by suitability score in the remainder of Onondaga County, regardless of road ownership

Rated Roads Within the Remainder of Onondaga County



Excluding interstates, all major roads throughout Onondaga County were rated. There are very few Excellent rated roads in the remainder of Onondaga County, with no Excellent ratings noted in the southern half of the MPO. However, there were numerous roads rated as being Good or Average.

Major Corridors

NYS Route 31, (also marked as Bike Route 5) between River Rd. and Henry Clay Blvd., and along the area around Great Northern Mall is rated as being fair and poor. Multiple lanes, heavy traffic, high speeds, turning vehicles and little separation from motor vehicles, make bicycling here difficult. There is not another direct east-west linkage across the northern part of Onondaga County available to bicyclists.

US Route 11 between Bailey Rd. and NYS Route 31 received primarily fair and poor ratings along its length. This stretch of Route 11 is heavily traveled with fast moving vehicles and small road shoulders, again making commuting by bicycle more difficult. However, South Bay Rd. between Bailey Rd. and NYS Route 31 is primarily rated as being Average, offering an alternative to bicycle commuting on Route 11.

Both E. Genesee St. and NYS Route 5 from the eastern Syracuse city line to Lyndon Corners where the roads meet to form Route 5 are primarily rated as poor. The poor rating continues along Route 5 into the Village of Fayetteville. As major connector roads to the eastern suburbs, these corridors were rated poorly due to large traffic volumes, connection with Interstate 481 ramps, and turning vehicles maneuvering into and out of commercial sites. As these are the major corridors between the City and eastern suburbs, there is not another direct alternative route into the City that received a better rating.

Onondaga Lake Parkway (Route 370), from the Syracuse city line to Oswego Street in the Village of Liverpool received a Poor rating primarily because of its four lanes of traffic, which is heavy at peak hour times, and high speeds. Although there are two to four feet of shoulder space available for bicycling on the Parkway, the comfort level of cyclists on this road is low due to excessive vehicular speeds. Located nearby are two additional major roads that provide a Liverpool to Syracuse connection, Old Liverpool Road and Electronics Parkway, by way of 7th North St. Both roads have been rated Fair due to limited shoulder space and separation from vehicles for bicyclists, as well as fast moving vehicles on roads that become congested during peak travel times. Onondaga Lake Parkway and Old Liverpool Road both provide access into nearby Onondaga Lake Park. Because of the perceived dangers associated with bicycling on these roads, many park users drive their vehicles to the park with their bicycles in-tow.

In the Town of VanBuren, Canton St. between Warners Rd. and Connors Rd. is rated as Poor due to the existence of a narrow travel lane and lack of extra shoulder space, as well as the road's steep grade. A direct parallel route to Canton St. does not exist, however, there are some alternate options available for cyclists wanting to reach Camillus from the Village of Baldwinsville and/or Town of VanBuren.

All major access points into the City from the north received fair or poor ratings. In addition, connections across interstates tended to score poorly across the County.

Major County Destinations

The major shopping malls within the County are located in high traffic areas on roads that were rated poor for bicycle suitability.

As noted within the *Roads Within the City of Syracuse* section, Hiawatha Blvd. and Park St., the primary access roads leading traffic into and out of the Carousel Center, received a poor rating. For bicyclists living in the suburbs, there is not a direct route that provides an Average, Good or Excellent rated road into the Carousel Mall.

Route 31 along the entrance to the Great Northern Mall is also rated as being Poor. County residents living in nearby residential developments along Morgan Rd., Route 57, and Soule Rd. could bicycle to the Great Northern Mall using Morgan Rd., which received an Average rating by the volunteer bicyclists. However, to reach the mall's parking lot, Route 31 will have to be crossed, making the connection to the mall, and along Route 31 in general, from these residential neighborhoods difficult.

Shoppingtown Mall in DeWitt and Towne Center at Fayetteville are also surrounded by primarily poor and fair roads. Residents living nearby may be able to utilize residential streets for accessing these shopping areas, but crossing major corridors to reach their parking lots continues to be challenging.

In addition to shopping centers, some major industrial areas were also rated as being poor. The roads and land use surrounding Carrier and GM circles are industrial in nature and serve many

heavy vehicles, as well as turning vehicles, poor shoulder pavement conditions and lack of separation from motor vehicles for bicyclists, all making bicycle travel difficult in these areas.

In all, the majority of roads in the MPO area were rated as being Average or Good for bicycle travel. Few roads in the MPO area received Poor or Excellent ratings. Through examination of the road ratings data, although there are some obvious gaps, it is apparent that the overall road network in the MPO area is suitable for bicycle commuting.