

“Connecting cyclists to
work”

Syracuse Metropolitan
Transportation Council

Bicycle Commuter Corridor Study



Overview

Prepared at request: NYS Department of Transportation
(NYSDOT)

Project Achievements

Target group

Purpose

Process

Recommendations

Project Achievements

Identified corridors that best support a high average cycling speed to encourage long-distance commutes.

Outlined a multi-jurisdictional bike commuter corridor network.

Prioritized corridors & identified cost-effective, “planning-level” improvements based on established guidelines and standards.

Target Group

“*Experienced-confident riders*” who are comfortable riding with vehicles on streets:

- at speeds up to 25 mph on level grades
- up to 45 mph on steep descents
- who may cycle distances of 5 or more miles.

- AASHTO 2012 Bike Guide

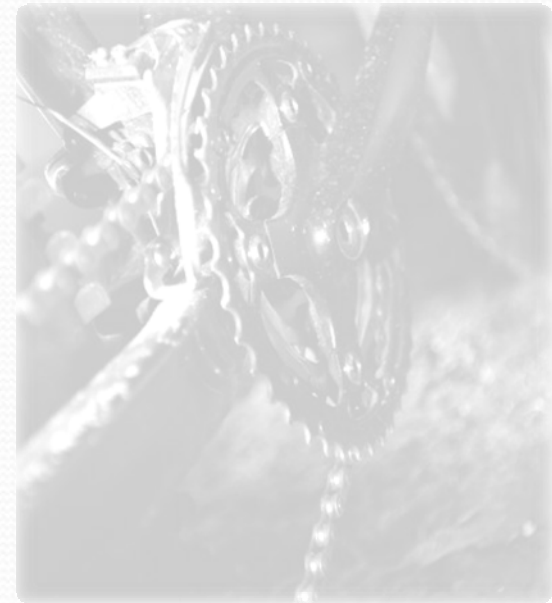
Key is to maintain high average cycling speeds



Purpose

Identify a seamless regional **bike
commuter corridor network** linking
major residential areas with major
employment centers.

Connect: Suburbs to
Downtown Syracuse.



The Process

So, what did
it include?



Reviewed Existing Plans + Travel Demand Model
+ SAC & Bike Commuter Feedback + Field
Observations + Existing Conditions + Existing
Guidelines & Standards for Best Practices =

Suggested Corridors



Reviewed Existing Plans & Initiatives

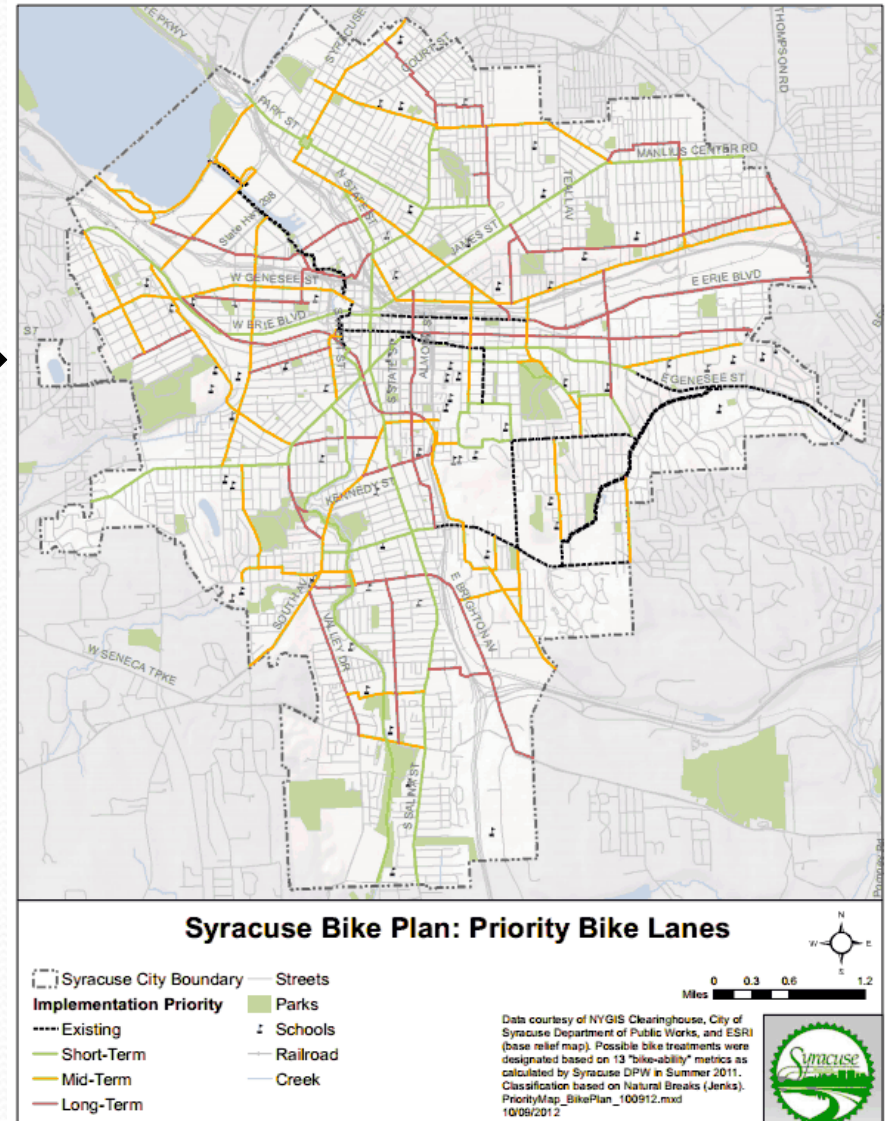
Examples:

City of Syracuse Bicycle Plan →

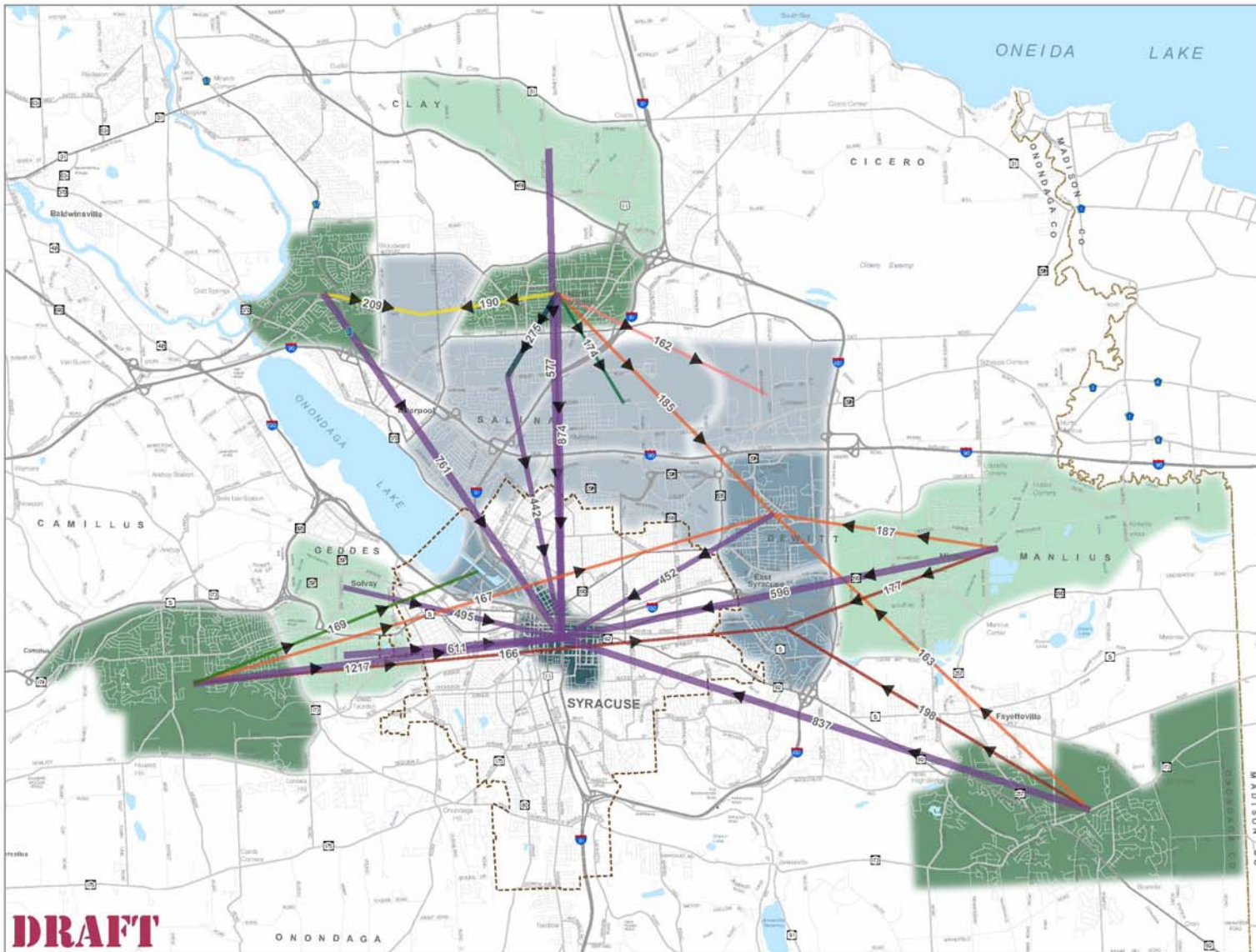
Erie Canal Trail Study

Connective Corridor

Comprehensive Plans



Travel Demand Model Assessment



Map 2:
Travel Demand
Model Assessment

Total Home-Based Work Trips/Day
by Destination

- 150 - 250*
- 251 - 500*
- 500 +*

* Line Color Represents Destination

Destinations (# of Work Trips Received)

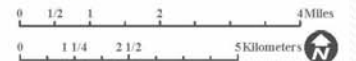
- 6,001+
- 4,001 - 6,000
- 2,000 - 4,000

Origins (# of Work Trips Produced)

- 3,001+
- 2,000 - 3,000

City of Syracuse

County Line



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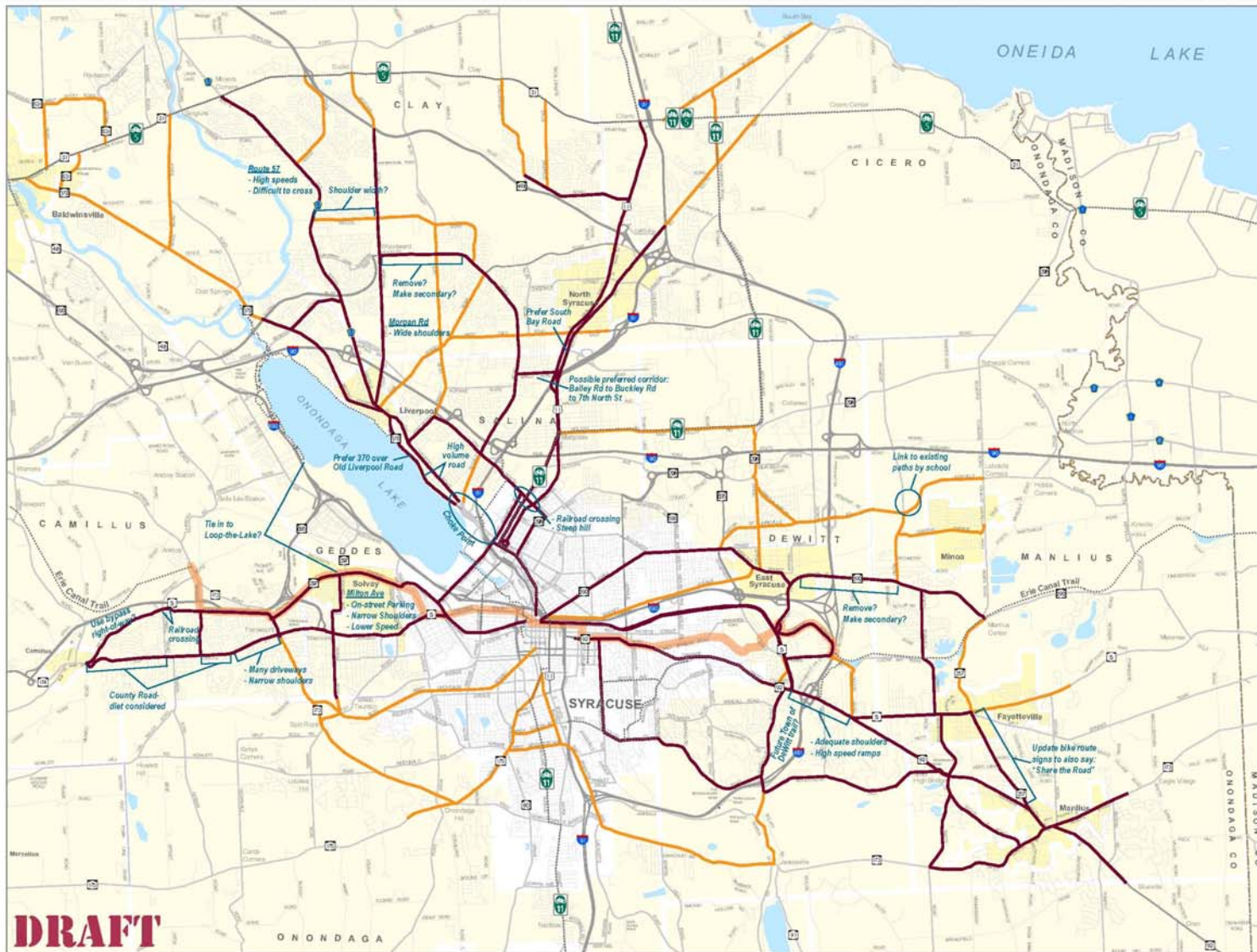
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126 North Salina St., Suite 100
Syracuse, NY 13202
(315) 422-5716
Fax: (315) 422-7753
www.smtcnpo.org

Data Source: CTRC, 05/04
Prepared by: SMTC, 05/04

Study Advisory Committee Feedback



Map 3:
Issues, Opportunities, and Corridors Identified by the Study Advisory Committee (SAC)

Bike Corridor for Consideration
 ■ Initial Corridor Suggested by SMTC Staff Based on Travel Demand Model Assessment
 ■ Additional Corridors Suggested by SAC Members

..... Existing Trails, Shared-Use Paths, Bike Lanes/Sharrows, and NYSDOT Bike routes 5 & 11
 ■ Current unsigned on-road sections of the Erie Canal Trail route.

□ City of Syracuse
 □ Town
 □ Village



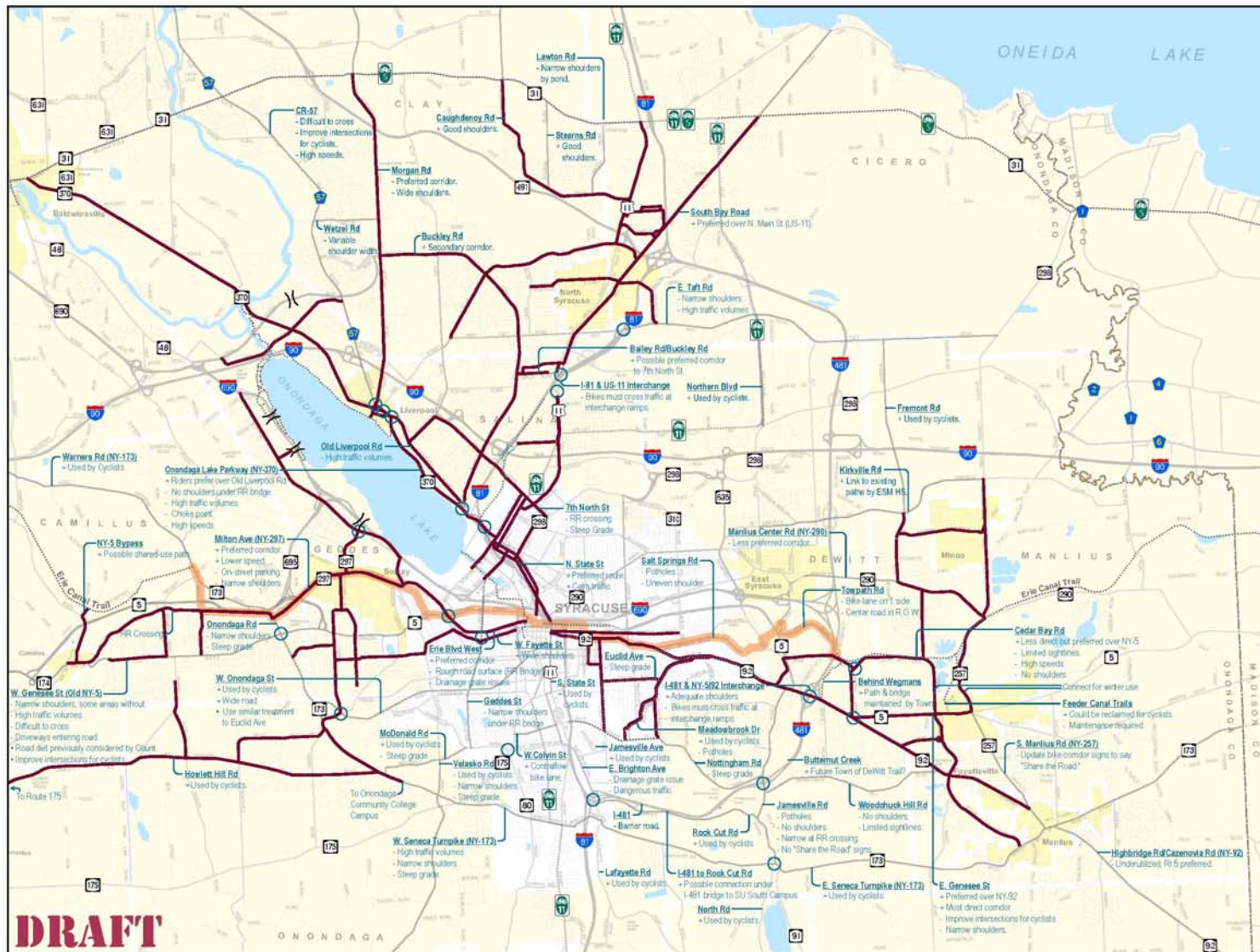
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 100 Clinton Square
 126 North Salina St., Suite 100
 Syracuse, NY 13202
 (315) 422-5716
 Fax: (315) 422-7753
 www.smtcny.org

Data Source: 12/11, 2012
 Prepared by SMTC, 1/2013

Bike Commuter Feedback



Map 4:
Issues, Opportunities, and
Corridors Identified by
Working Group Participants



8 mph avg. cycling speed =
6 miles in 45 min

15 mph avg. cycling speed
= 11.25 miles in 45 minutes

Willing to take up to a 10
minute detour if improved
safety.

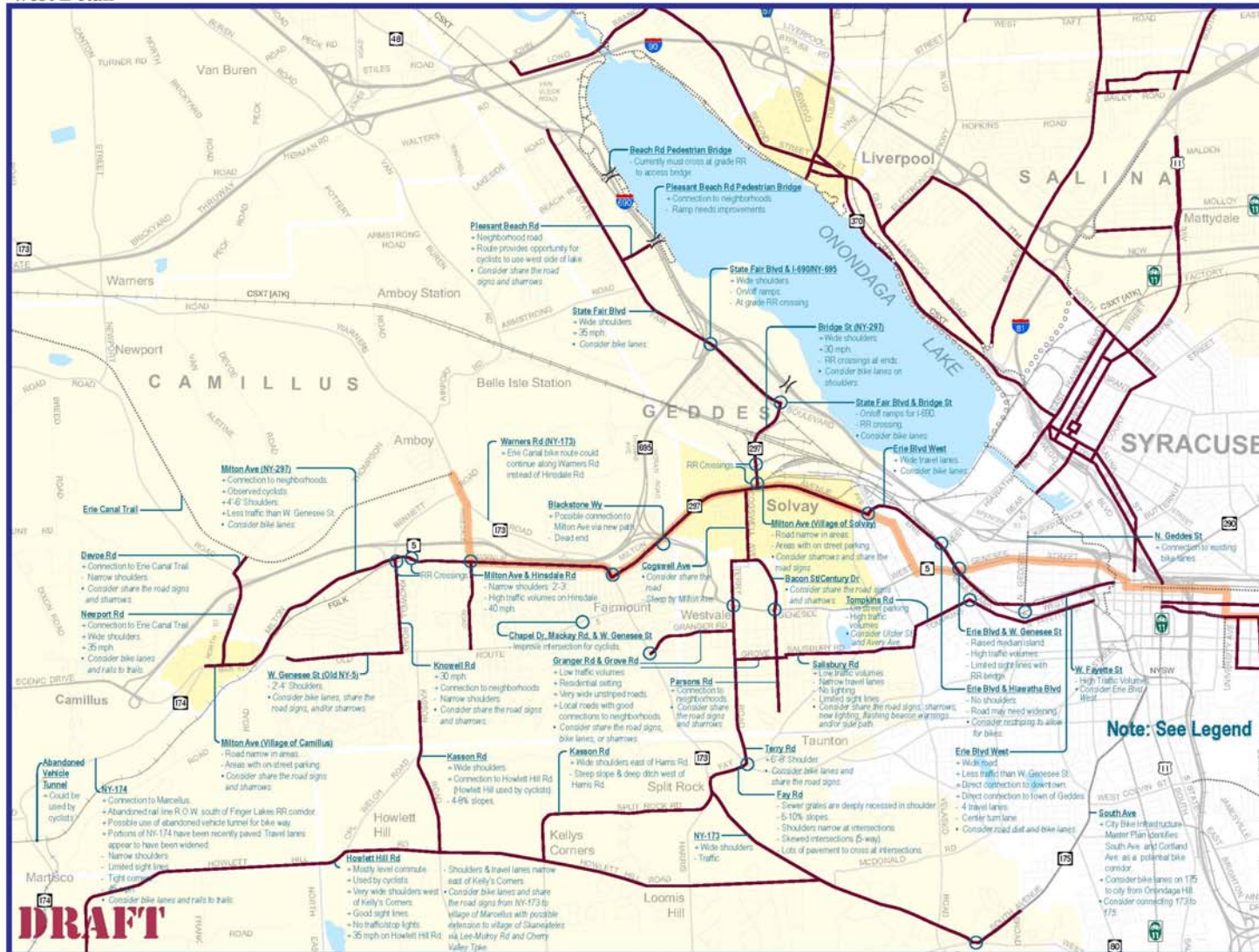
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100 Clinton Square
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Syracuse, NY 13202
(315) 422-5716
Fax: (315) 422-7753
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Data Source: SMTC, 8/2006
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Staff Corridor Visits (west, northwest, north, east)

West Detail



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(315) 422-5716
Fax: (315) 422-7755
www.smtpc.org

Date Shown: 08/11/2014
Prepared by: SMTC: 08/11/14



Reviewed “Existing Conditions”

Which included:

Environmental Justice Target Areas

Commercial Corridors

Transit Service

Bike Suitability Ratings

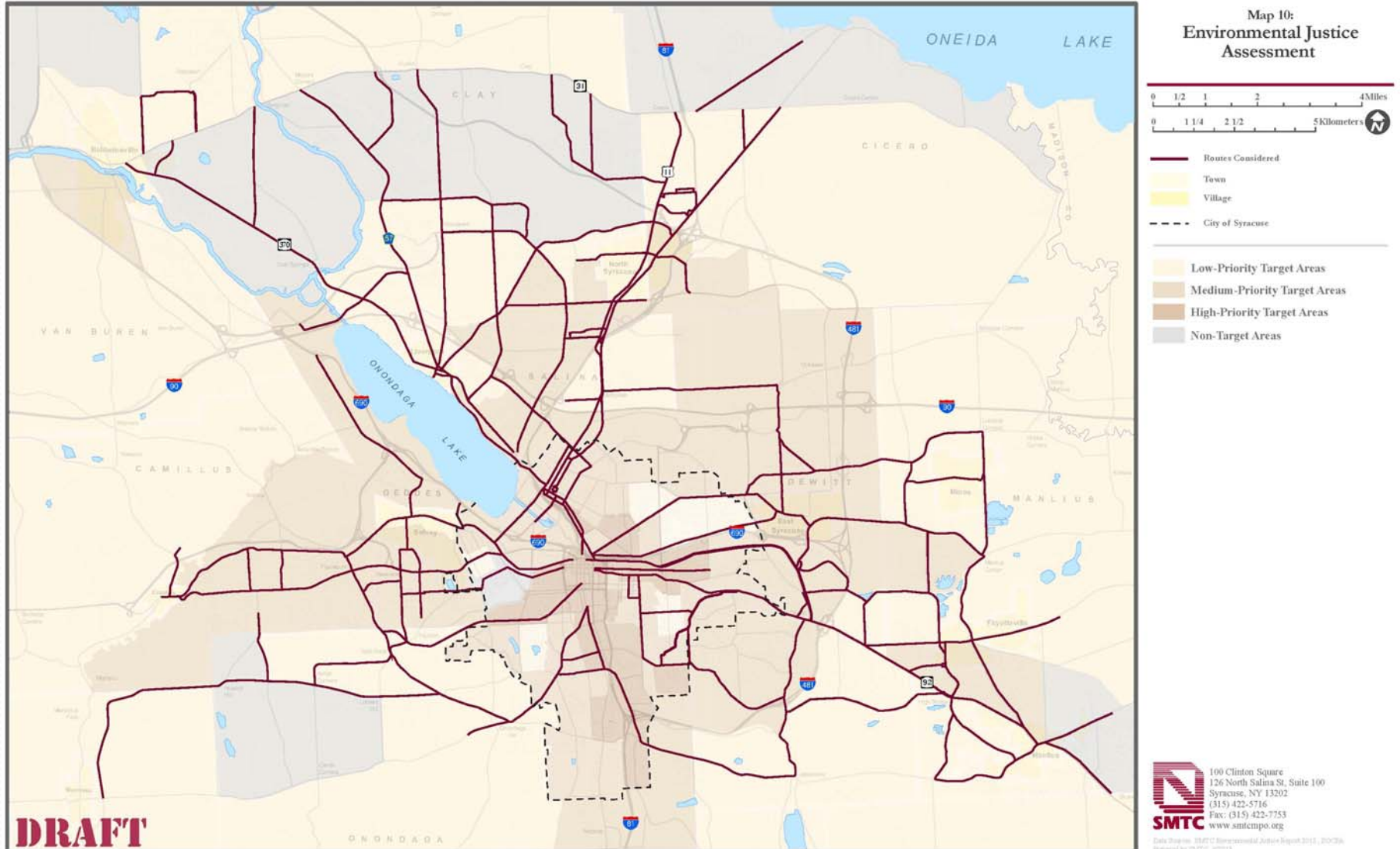
Speed & Annual Average Daily Traffic

Pavement Condition Ratings

Slope

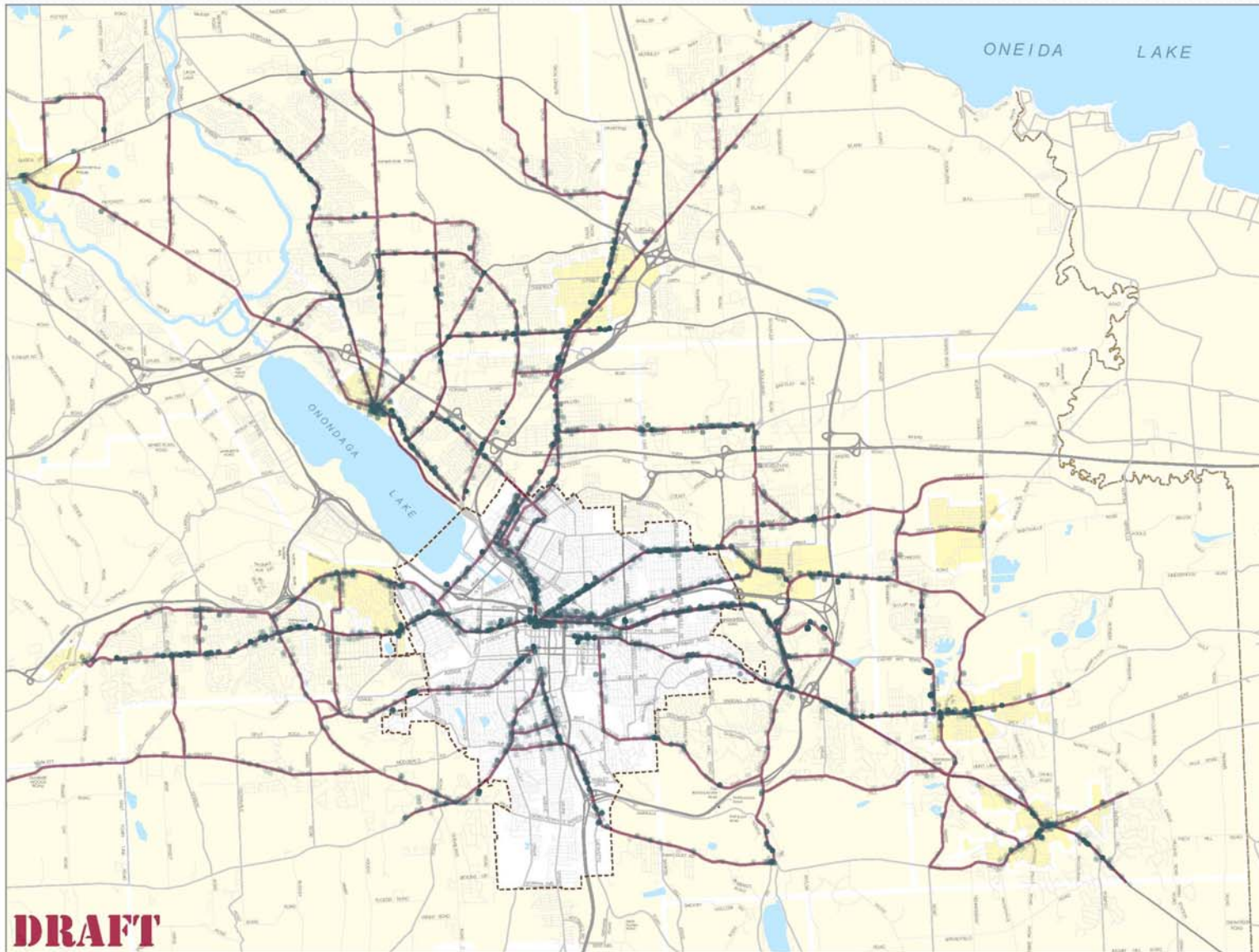
Environmental Justice Target Areas

(Based on an existing SMTC Report.)



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Commercial Corridors



**Map 11:
Business Locations**
2009 Business Location Analysis Tool (BLAT)

- Possible Bike Corridor
- One Business
- Fewer Businesses
- Greater Businesses

0 1/2 1 2 4 Miles
0 1 1/4 2 1/2 5 Kilometers

- City of Syracuse
- County Line
- Town
- Village

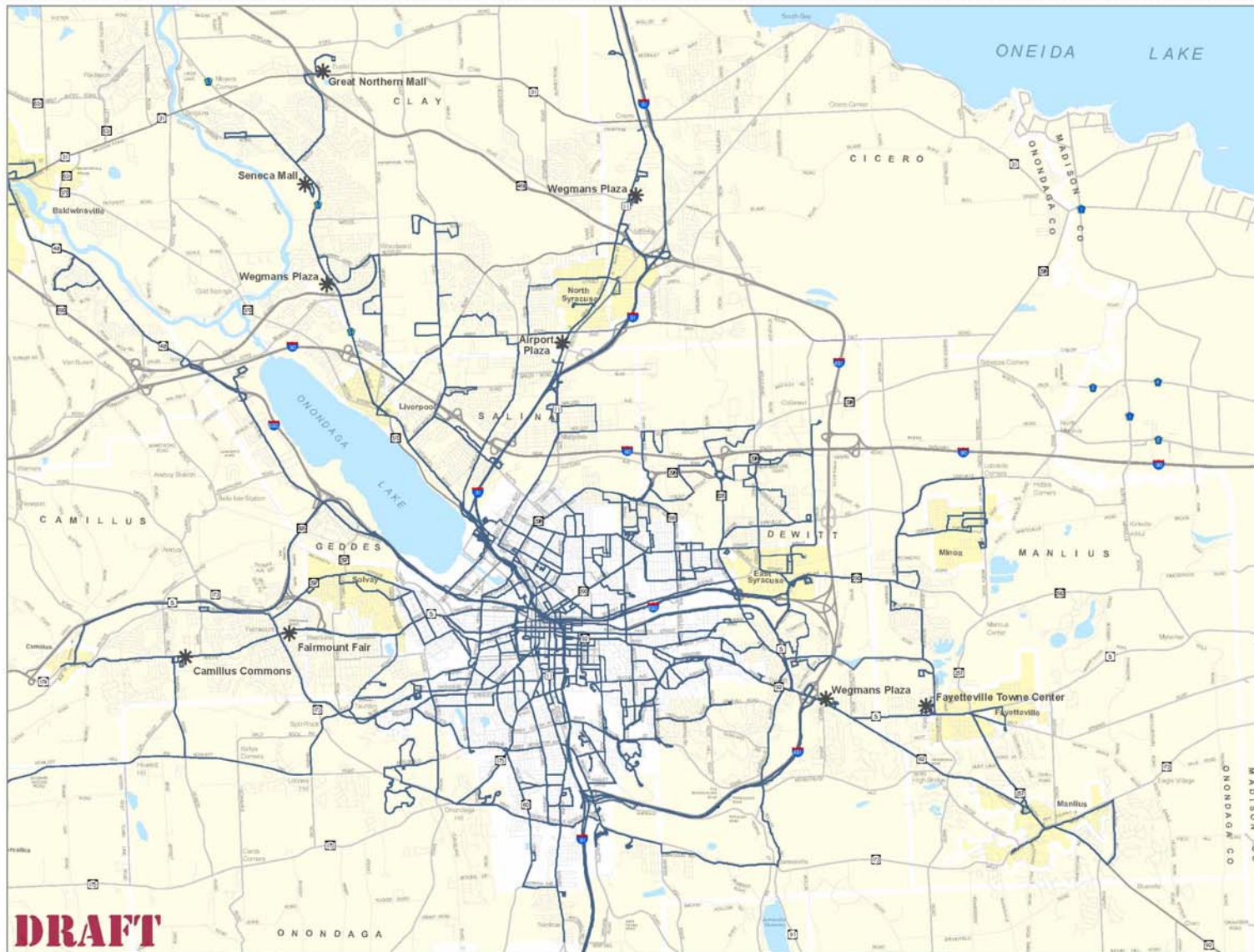
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100 Clinton Square
126 North Salina St, Suite 100
Syracuse, NY 13202
(315) 422-5716
Fax: (315) 422-7753
www.smtempo.org

Data Source: 2000, 2002
Prepared by SMTC, 3/2010

Transit Service (including Park-n-Ride)



Map 12:
Transit Service

- CENTRO Route
- Park-n-Ride
- City of Syracuse
- Town
- Village

0 1/2 1 2 4 Miles
0 1 1/4 2 1/2 5 Kilometers

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

Data Source: SMTC, 2012
Request by SMTC, 01/2013

SMTC Bike Suitability Ratings

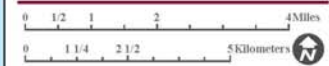
(Based on an existing SMTC initiative.)



Number of Accidents on Alternative Commuting Routes

Routes	Accidents		
West Milton Ave. vs Old Route 5/NE Genesee St. Village of Camillus to Milton Ave./W Genesee St. intersection.	Milton Ave. 5	NY-5 6	Howlett Hill 0
North west NY-370 vs CR-57 vs Morgan Rd. NY-31 to Second St./Onwego St. intersection.	NY-370 5	CR-57 11	Morgan Rd. 4
North US-11 vs South Bay Rd. NY-51 to US-11/South Bay Rd. intersection.	NY-11 15	South Bay Rd. 12	
East NY-92 vs NY-5 Pompey Town Line (NY-92) and NY-5/NY-257 intersection (NY-5) to City of Syracuse.	NY-92 3	NY-5 4	

Map 13:
Bike Suitability Ratings
and Accident Locations
January 2007- December 2011



- Excellent: Highly recommended.**
Slow moving, low volume traffic and some separation from vehicles.
- Good: Recommended.**
Slightly more vehicular traffic than "Excellent" roads with little to no separation from vehicles.* Vehicles typically moving faster than on "Excellent" rated roads.
- Average: Acceptable.**
Moderately traveled with some separation from vehicles* traveling at slower speeds, or roads with lower volumes of traffic and no separation from vehicles.*
- Fair: Marginally Suitable.**
Heavily traveled with little to no separation from vehicles* moving at speeds faster than on roads rated "Average". Terrain may be rough and/or pavement may be poor.
- Poor: Not Suitable.**
Heavily traveled by fast moving traffic, little to no separation from vehicles,* and/or rough cycling conditions.
- Considered corridor was not rated**
- City of Syracuse**
- Town**
- Village**
- Bike/Vehicle Accident Location**

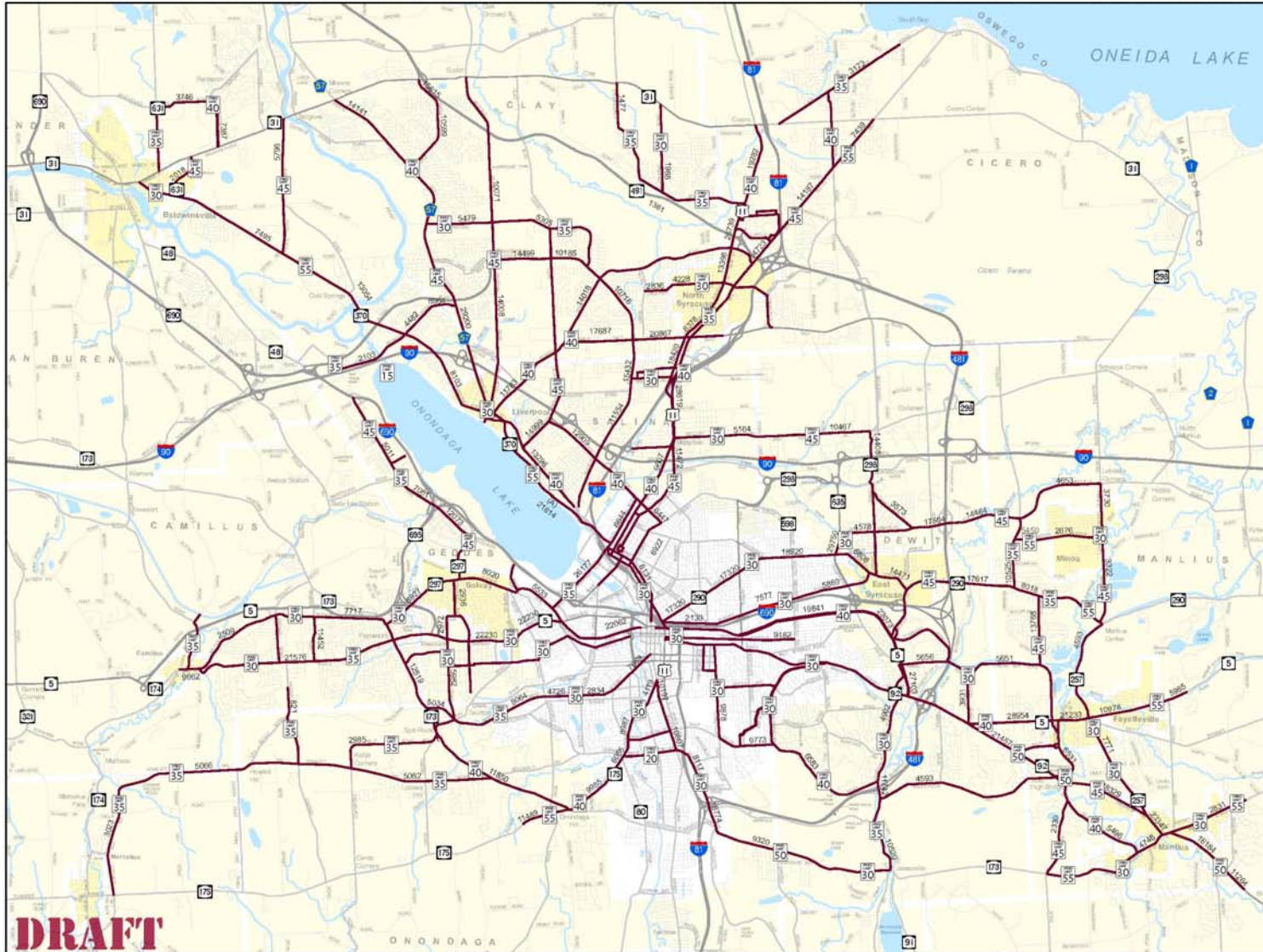
*Separation from vehicles is defined as a shoulder, a shoulder stripe, designated bike lane, wide travel lane, and/or similar type of buffered area.

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100 Clinton Square
126 North Salina St., Suite 100
Syracuse, NY 13202
(315) 422-5716
Fax: (315) 422-7753
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Data Source: SMTC, 10/2011
Prepared by: SMTC, 10/2011

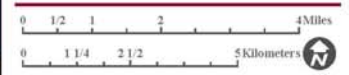
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Speed & Annual Average Daily Traffic



Map 14:
Speed Limit and Annual
Average Daily Traffic (2010)



- Routes Considered
- City of Syracuse
- Town
- Village
- 5194 Annual Average Daily Traffic (AADT)*
- 30 Speed Limit

*AADT: Estimated average daily traffic volume on a road segment at a particular count station location. Actual daily volumes encountered on highways may vary from the AADT. Considerably higher or lower values often result in areas of seasonal activities and when comparing weekend versus weekday traffic. Federal Highway Administration (FHWA) guidelines published in the Traffic Monitoring Guide indicate that the expansion of 'short' counts to AADT with properly designed adjustment factors will enable the user to be 95% confident that the estimated AADT is within +/-10% of the actual value.

New York State Department of Transportation, Traffic Data Viewer Definition 1/16/2012
<https://www.dot.ny.gov/divisions/engineering/traffic-data-viewer/tb-0404-003>

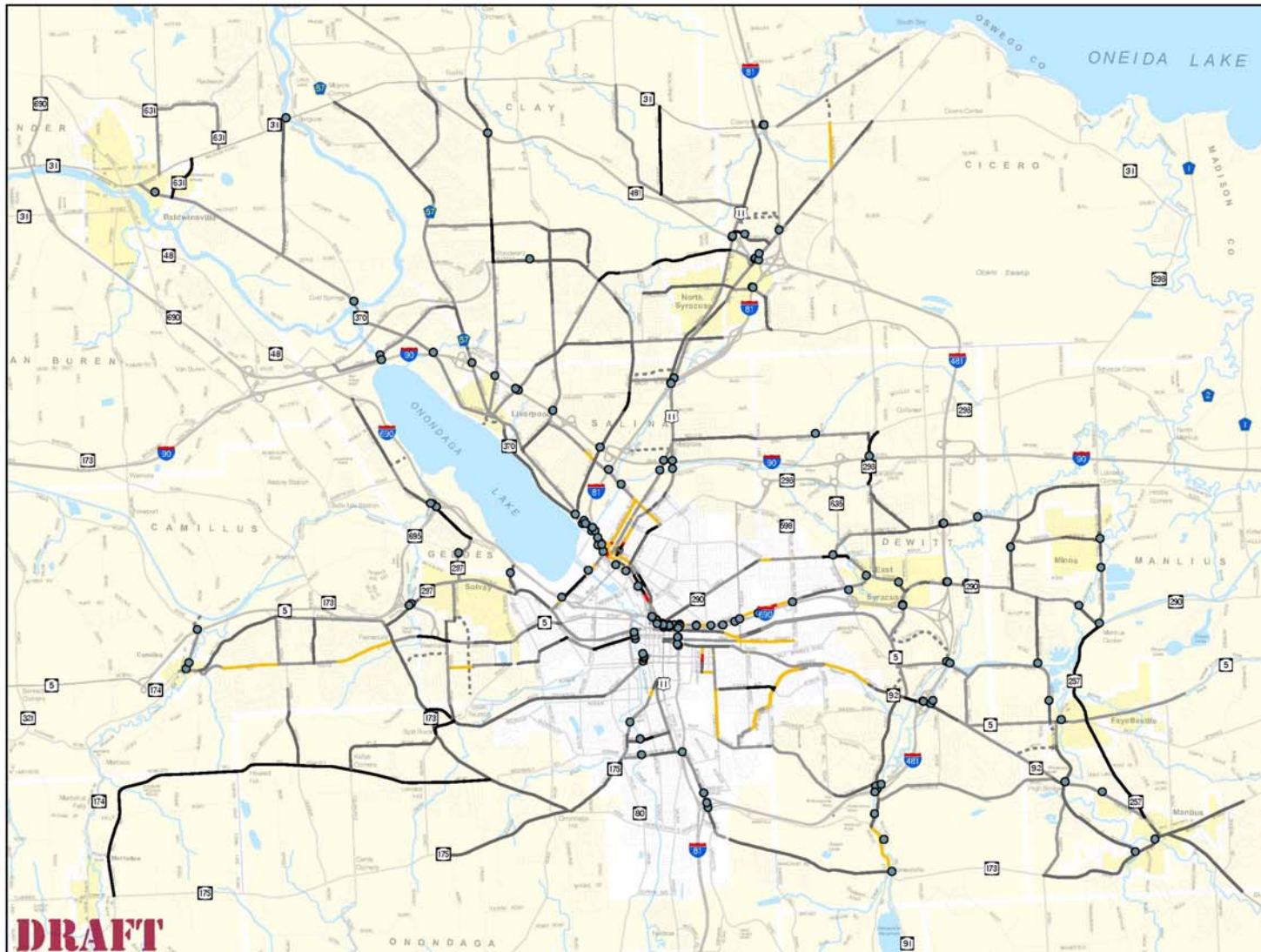
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 100 Clinton Square
 126 North Salina St., Suite 100
 Syracuse, NY 13202
 (315) 422-5716
 Fax: (315) 422-7753
www.smtcmpo.org
Data Source: DECIS, 8/2014
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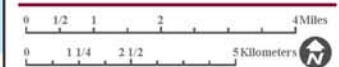
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Pavement Condition Ratings

(Based on an existing SMTC Report.)



Map 15:
Pavement Condition
Ratings and Bridges



- Excellent Pavement Rating**
Pavement is not distressed. A single crack or defect per .1 mile is allowed. May have recently reconstructed or rehabilitated. Dark black or gray with no visible cracks.
- Good Pavement Rating**
Pavement is infrequently distressed to minimal severity. Cracks are tight, widely spaced, unconnected. Cracking is noticeable but minor.
- Average Pavement Rating**
Occasional to frequent distress of moderate severity. Cracks are wide and interconnected. Pieces of surface may be missing.
- Fair Pavement Rating**
Pavement distress is frequent and severe. Wide, interconnected cracks with potholes and/or patches. Surface is mostly cracked.
- Poor Pavement Rating**
Distress is severe and continuous. Potholes and layers of patches inhibit vehicle speed. Travel is impaired by pavement condition.
- Non-Federal Aid Eligible Roads (Possible Bike Corridor)**
- Bridge**
- City of Syracuse**
- Town**
- Village**

Date of City of Syracuse and Onondaga County ratings: 2011
Date of Town/Village Road and NYSDOT ratings: 2010

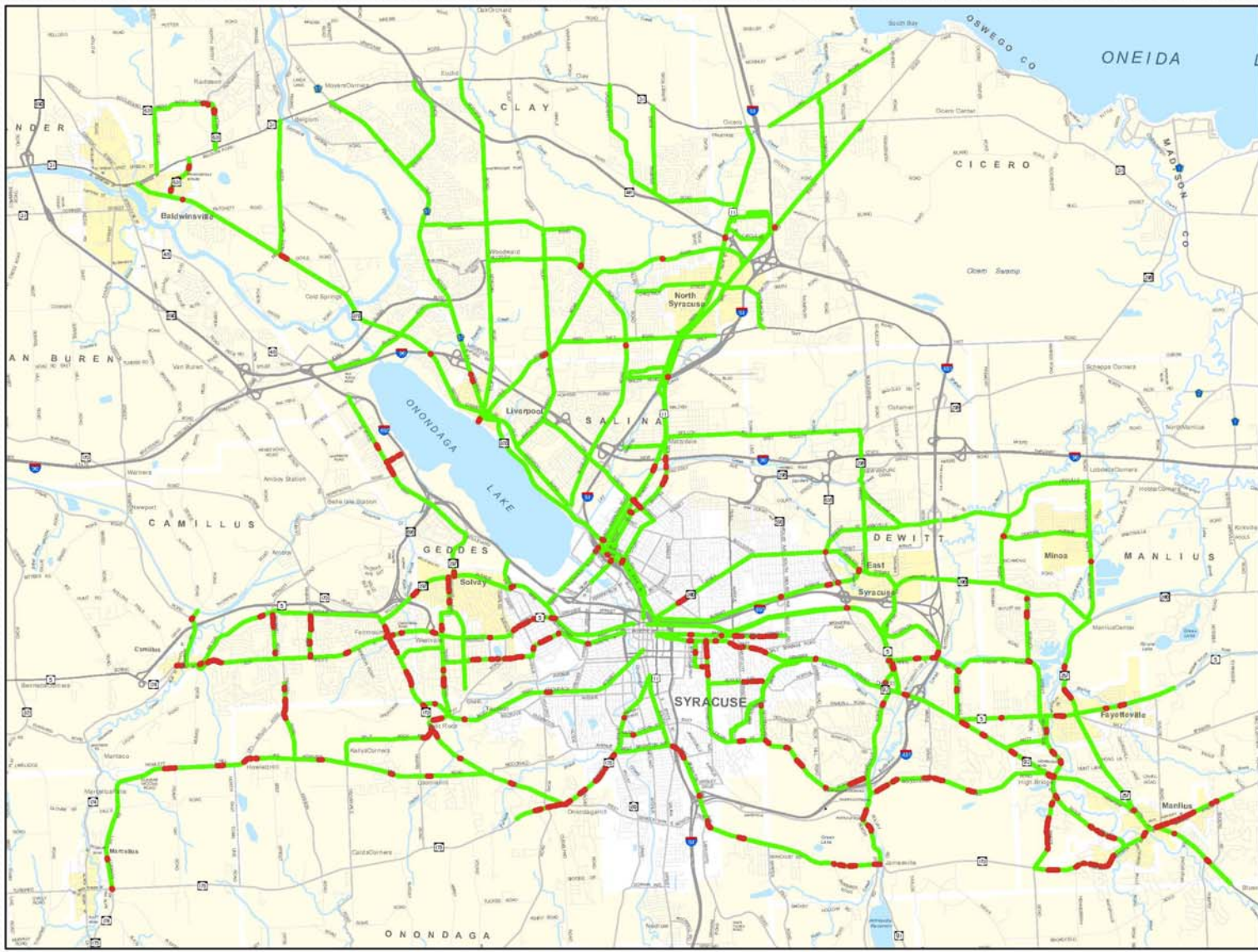
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Syracuse, NY 13202
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Data Source: SMTC, 2010
Prepared by: SMTC, 10/11

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Slope



Map 16:
Slope

Percent Slope
0-5%
>5%



AASHTO

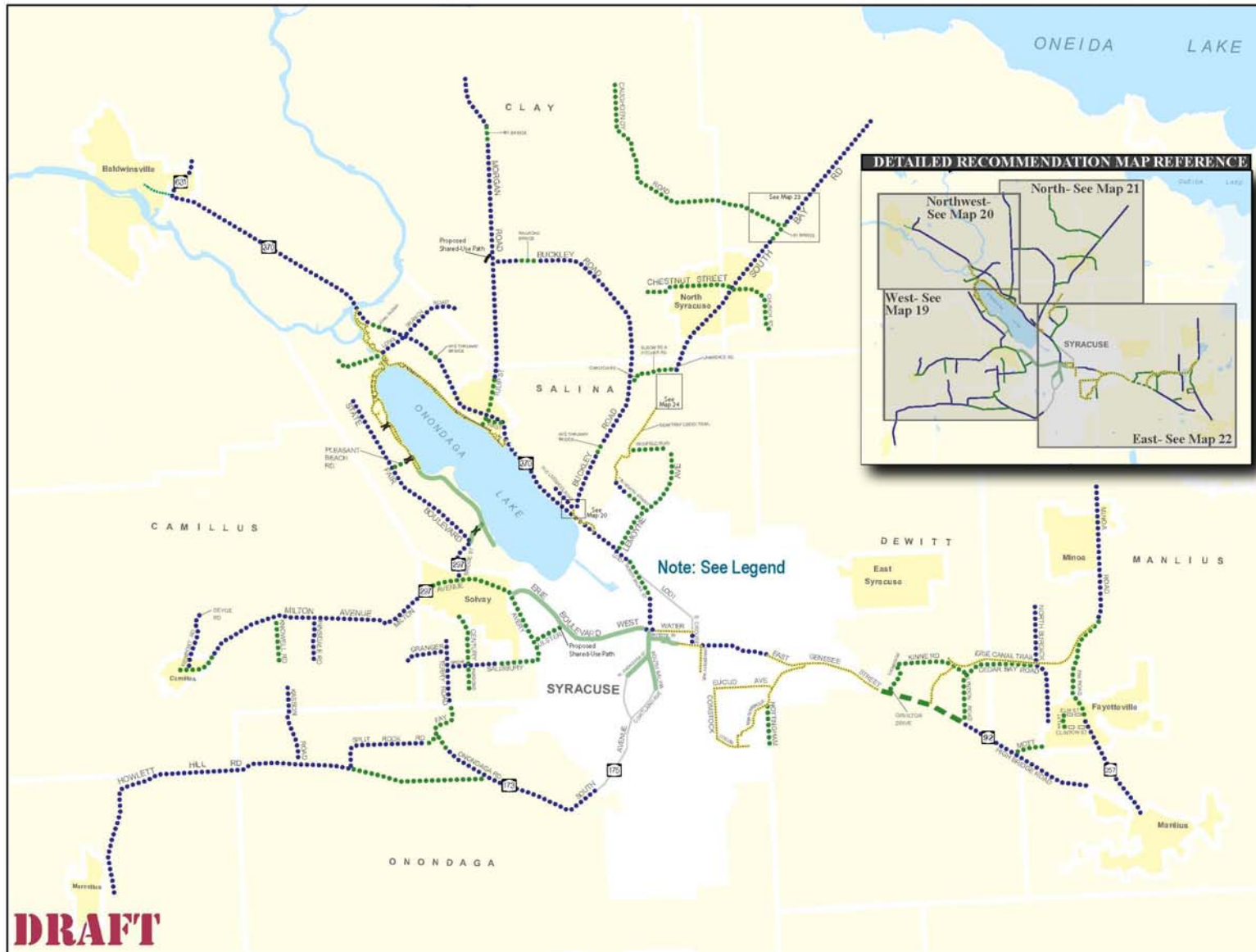
What results came from the planning process?

Review of Existing Plans + Travel Demand Model +
SAC & Bike Commuter Feedback + Field
Observations + Existing Conditions =

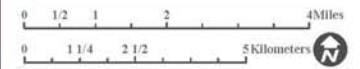
Suggested Corridors



Summary Map of Suggested Bike Commuter Corridors



Map 25:
General Bike Commuter
Corridor Recommendations



- DETAILED RECOMMENDATION MAP REFERENCE**
- Suggested Bike Lane Accompanied by "Bike Lane" Signs
 - Shared Lane Markings (Sharrows) Accompanied by "Share the Road" Signs
 - ■ ■ ■ ■ Bike Boulevard
 - ■ ■ ■ ■ Cycle Track
 - Bike Corridor to be Constructed/Currently Under Construction 2013
 - Use Existing Trails/Bikeway
 - City of Syracuse
 - Town
 - Village
 - Water Features

- Note:
- The City of Syracuse Bike Infrastructure Master Plan identifies potential corridors throughout the city. Please refer to this plan for additional corridor recommendations.
 - See Section 5.2 in this report for suggested treatment options.
 - Please reference table 5 for a description of bike facility treatments and typical applications.
 - Please reference table 6 for possible mitigation measures for intersections, bridge & railroad crossings.

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

Data Source: SMTC, 8/2016
Prepared by SMTC, 1/2011

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Map Reference Tables

Define treatments & outline guidelines for applying treatments

American Association of State and Highway Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities 4th Ed.*

NYSDOT Highway Design Manual, Chapter 17 *Design of Bicycle Facilities*

Selecting Roadway Treatments to Accommodate Bicycles, FHWA, 1994, Publication No. FHWA-RD-920073

Federal Manual of Uniform Traffic Control Devices (MUTCD)

National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide*



Primary Treatments

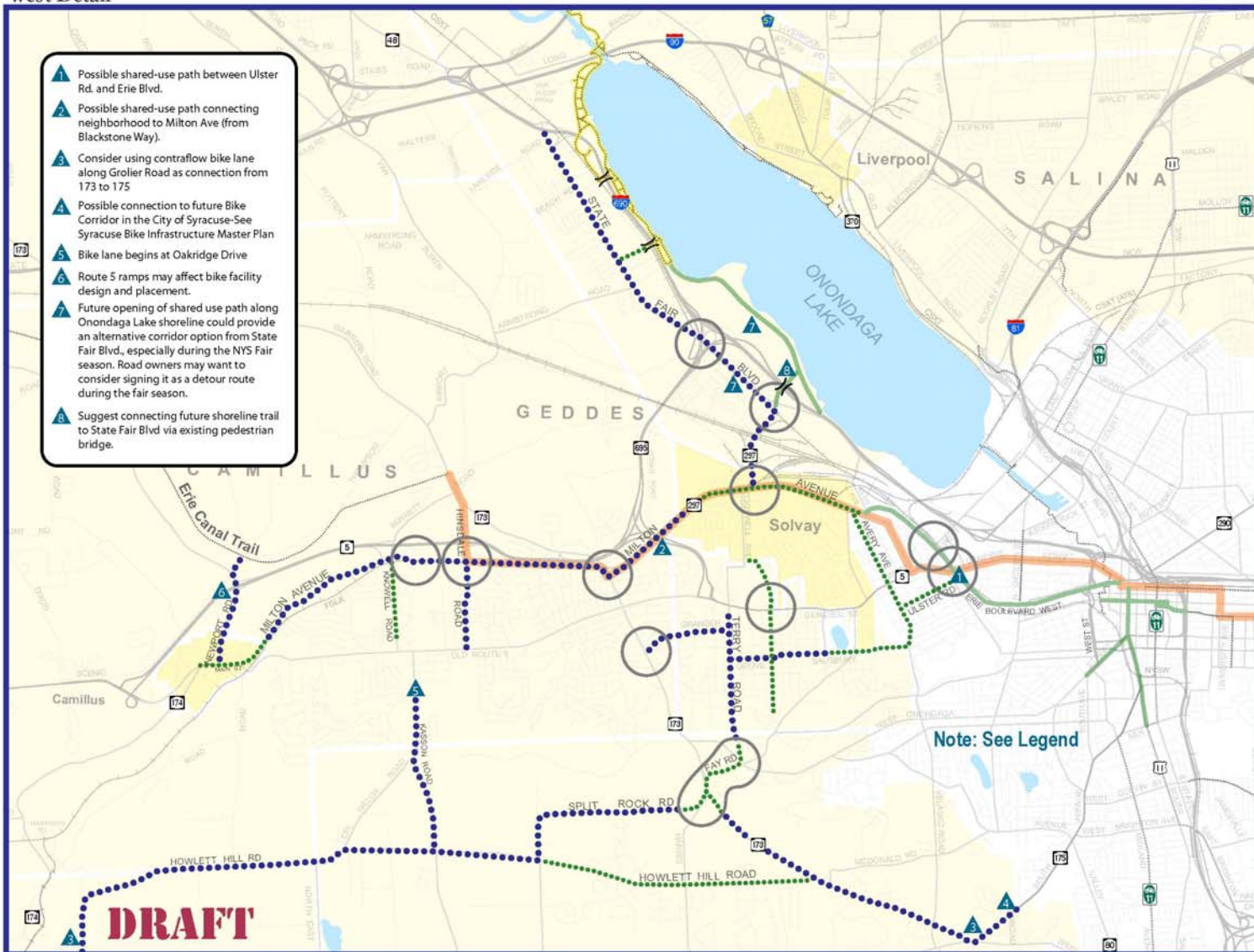
Bike Lanes: A portion of a roadway designated for use for bicyclists delineated by pavement markings and signs.

Shared Lane Markings (i.e., Sharrows): A pavement marking symbol that indicates an appropriate bicycle positioning in a shared lane where both bicycle and motor vehicles travel.

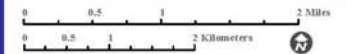
Shared-Use Paths: A 10-to-14-foot-wide paved path separated from motor vehicle traffic used by cyclists, pedestrians, skaters, wheelchair users, joggers, etc.

Detailed Recommendations - West

West Detail



Map 19:
Suggested Corridor
Improvements:
West Detail



- Suggested Bike Lane Accompanied by "Bike Lane" Signs
- Shared Lane Markings (Sharrows) Accompanied by "Share the Road" Signs
- Existing Trails, Shared-Use Paths, Bike Lanes/Sharrows, and NYS DOT Bike routes 5 & 11
- Use Existing Trails/Bikeway
- Bike Corridor to be Constructed/Currently Under Construction 2013
- Current unsigned on-road sections of the Erie Canal Trail route.
- Railroad
- ⌋ Existing Pedestrian/Bike Bridge
- Challenging Intersection/Bridge (over- or underpass)/Railroad Track Crossing*
- City of Syracuse
- Town
- Village
- Water Features

*See Section 5.2.2 in this report for suggested treatment options.

Note:
The City of Syracuse Bike Infrastructure Master Plan identifies potential corridors throughout the city. Please refer to this plan for additional corridor recommendations.



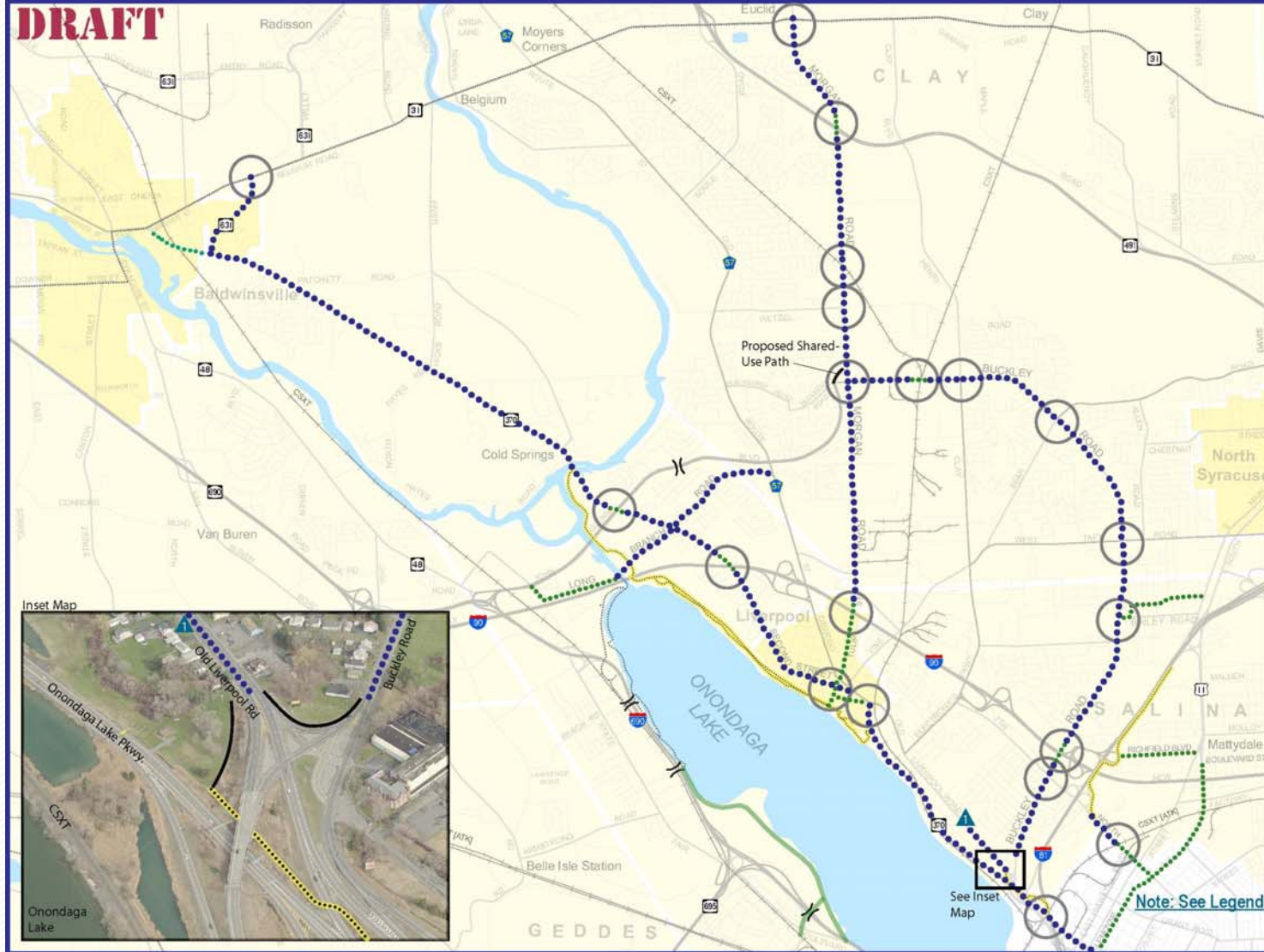
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(315) 422-5716
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Map Sources: 2012 C, 2012/13
Prepared by: 04/27/13, 04/03/13

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Detailed Recommendations - Northwest

Northwest Detail



Map 20:
Suggested Corridor
Improvements:
Northwest Detail

- 0 0.5 1 2 Miles
0 0.5 1 2 Kilometers
- Suggested Bike Lane Accompanied by "Bike Lane" Signs
 - - - - - Shared Lane Markings (Sharrows) Accompanied by "Share the Road" Signs
 - Shared-Use Path
 - - - - - Existing Trails, Shared-Use Paths, Bike Lanes/Sharrows, and NYSDOT Bike routes 5 & 11
 - - - - - Use Existing Trails/Bikeway
 - Bike Corridor to be Constructed/Currently Under Construction 2013
 - Railroad
 - Existing Pedestrian/Bike Bridge
 - Challenging Intersection/Bridge (over- or underpass)/Railroad Track Crossing*
 - City of Syracuse
 - Town
 - Village
 - Water Features
 - Continue bike lane to School Road intersection (cross at School Road intersection)
- *See Section 5.2.2 in this report for suggested treatment options.

Note:
The City of Syracuse Bike Infrastructure Master Plan identifies potential corridors throughout the city. Please refer to this plan for additional corridor recommendations.

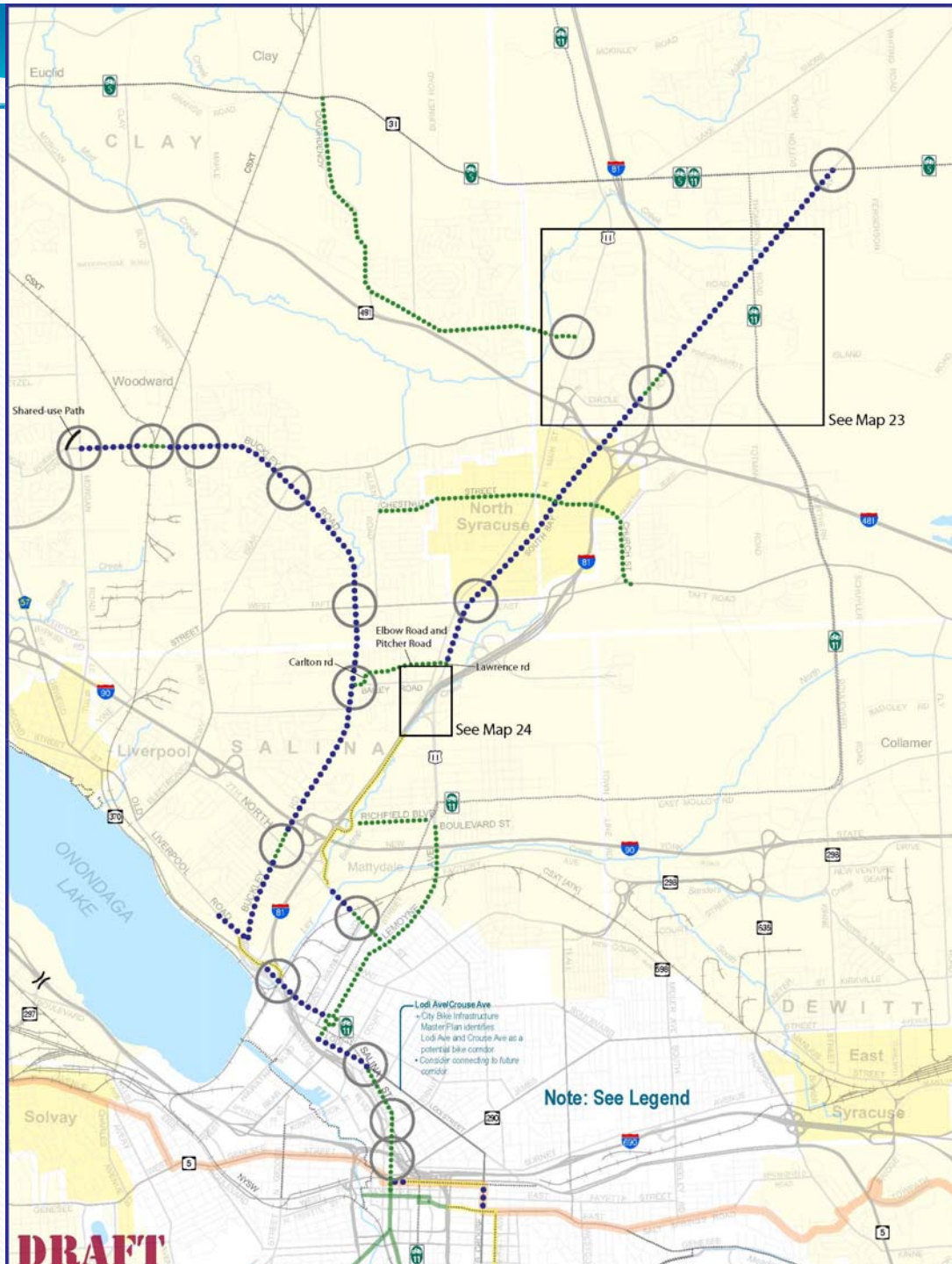


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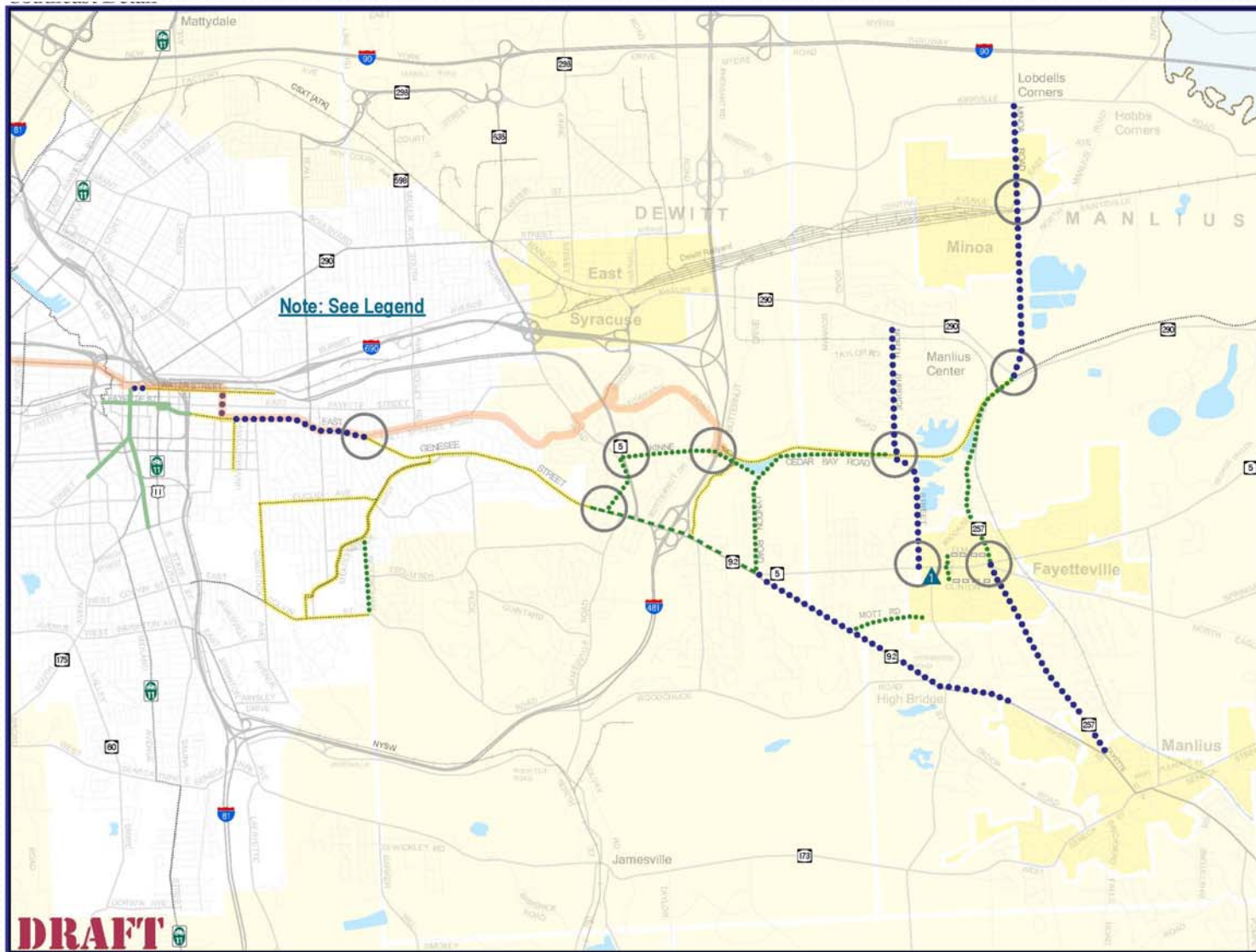
Map prepared by SMTC, 8/2014
Revised by SMTC, 9/2015

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Detailed Recommendations - North



Detailed Recommendations - East



**Map 22:
Suggested Corridor
Improvements:
East Detail**

0 0.5 1 2 Kilometers
0 0.5 1 2 Miles

- Suggested Bike Lane Accompanied by "Bike Lane" Signs
- Shared Lane Markings (Sharrows) Accompanied by "Share the Road" Signs
- Bike Boulevard
- ■ ■ ■ Cycle Track
- ⋯ Existing Trails, Shared-Use Paths, Bike Lanes/Sharrows, and NYSDOT
- Bike routes 5 & 11
- Bike Corridor to be Constructed/Currently Under Construction 2013
- Use Existing Trails/Bikeway
- Current unsigned on-road sections of the Erie Canal Trail route.
- Railroad
- Challenging Intersection/Bridge (over- or underpass)/Railroad Track Crossing*
- City of Syracuse
- Town
- Village
- Water Features
- ▲ Cyclists should dismount and walk their bikes along sidewalk following Limestone Plaza and Genesee Street

*See Section 5.2.2 in this report for suggested treatment options.

Note:
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100 Clinton Square
126 North Salina St., Suite 100
Syracuse, NY 13202
(315) 422-5716
Fax: (315) 422-7753
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Data Source: 2011 Census
Prepared by: SMTC, 3/12/13

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Roadway Summary Index

Roadway Index

(For quick reference purposes only. Please refer to the Bike Commuter Corridor Study for detailed information about corridors, conditions, suggested treatment options, and additional caveats.)

Roadway Name (P) = Primary; (C) = Connector; (F) = Feeder	Road Owner (See Map 18)	Map #	Summary	Suggested Treatments (An engineering assessment may be required. See Table 5 and Table 6 in report for additional information.)
Avery Avenue (C)	City	19	Urban Residential Neighborhood with wide travel lanes, on-street parking.	Share Lane Markings (i.e., Sharrow) and "Share the Road" Signs.
Bailey Road (P)	Town of Salina	24	30 mph, limited turning movement (can not turn left onto Route 11). Challenging intersection with Buckley Road. Narrow shoulders. Moderate traffic volumes.	Share Lane Markings (i.e., Sharrow) and "Share the Road" Signs from Buckley Road to Maple Lane.
Baldwinsville Bypass (F)	NYS DOT	20	Wide travel lanes and shoulders, low traffic volumes, truck traffic, 45mph.	Bike lanes w/Bike Pavement Markings and Bike Lane Signs.
Bridge Street (C)	NYS DOT	19	Wide shoulders and travel lanes, 45mph, railroad crossings at each end.	Bike lanes w/Bike Pavement Markings and Bike Lane Signs. See Table 6 in report for potential additional mitigation measures.
Brooklea Drive (P)	Village of Fayetteville	22	Local village roadway in a commercial and residential setting. 30 mph, on-street parking.	Bike lanes w/Bike Pavement Markings and Bike Lane Signs where roadway permits. Otherwise, install Share Lane Markings (i.e., Sharrow) and "Share the Road" Signs.
Buckley Road (P)	OCDOT	20	Wide shoulders and travel lanes, shoulders disappear at intersections and over R/R bridge. Moderate traffic volumes. Important connection into City of Syracuse via a shared use path to Old Liverpool Road. Important connection to North Syracuse via Bailey Road.	Bike lanes w/Bike Pavement Markings and Bike Lane Signs. Share Lane Markings (i.e., Sharrow) and "Share the Road" Signs over R/R bridge. See Table 6 for additional mitigation measures. Connect Buckley Road to Old Liverpool Road via a shared Use path on the north side of Buckley in the grass median. See Map 20 for reference. Include bike crossing on Buckley (perhaps across from the shared use path using the center median by the ramps). See Table 5 and 6 for more suggestions.
Caughdenoy Road (F)	OCDOT	21	35 mph, low traffic volumes, varying shoulder and roadway width. Challenging intersection with Route 31 and also with Route 11.	Share Lane Markings (i.e., Sharrow) and "Share the Road" Signs. See Table 6 for additional intersection mitigation measures. Refer to Map 23 for the following additional recommendations: continue Sharrow into Wegmans and Home Depot shopping plaza entrance. Once in the entrance, turn right and continue sharrow in front of Home Depot to end of parking lot by fence. Remove section of fence and construct a shared use trail to West Pine Grove Drive.
Cedar Bay Road (P)	Town of DeWitt	22	30 mph, low to moderate traffic volumes, narrow travel lanes and no shoulders, sharp bend in roadway by canal.	Share Lane Markings (i.e., Sharrow) and "Share the Road" Signs. See Table 5 for additional mitigation measures.
Cherry Road (C)	Geddes	19	Wide roadway in a suburban neighborhood.	Bike lanes w/Bike Pavement Markings and Bike Lane Signs.
Chestnut Street (F)	OCDOT/ Village of North Syracuse	21	Residential setting, low traffic volumes, but less capacity. Narrow to moderate travel lanes/shoulders.	Share Lane Markings (i.e., Sharrow) and "Share the Road" Signs.

Fun Facts: 77 Roadways; 20 Road Owners

Road owners may incorporate the suggested improvements as part of future roadway resurfacing, restoration, and reconstruction activities.

-Thank You -

For more information:

Michael D. Alexander, AICP
malexander@smtcmpo.org
315-422-5716
www.smtcmpo.org



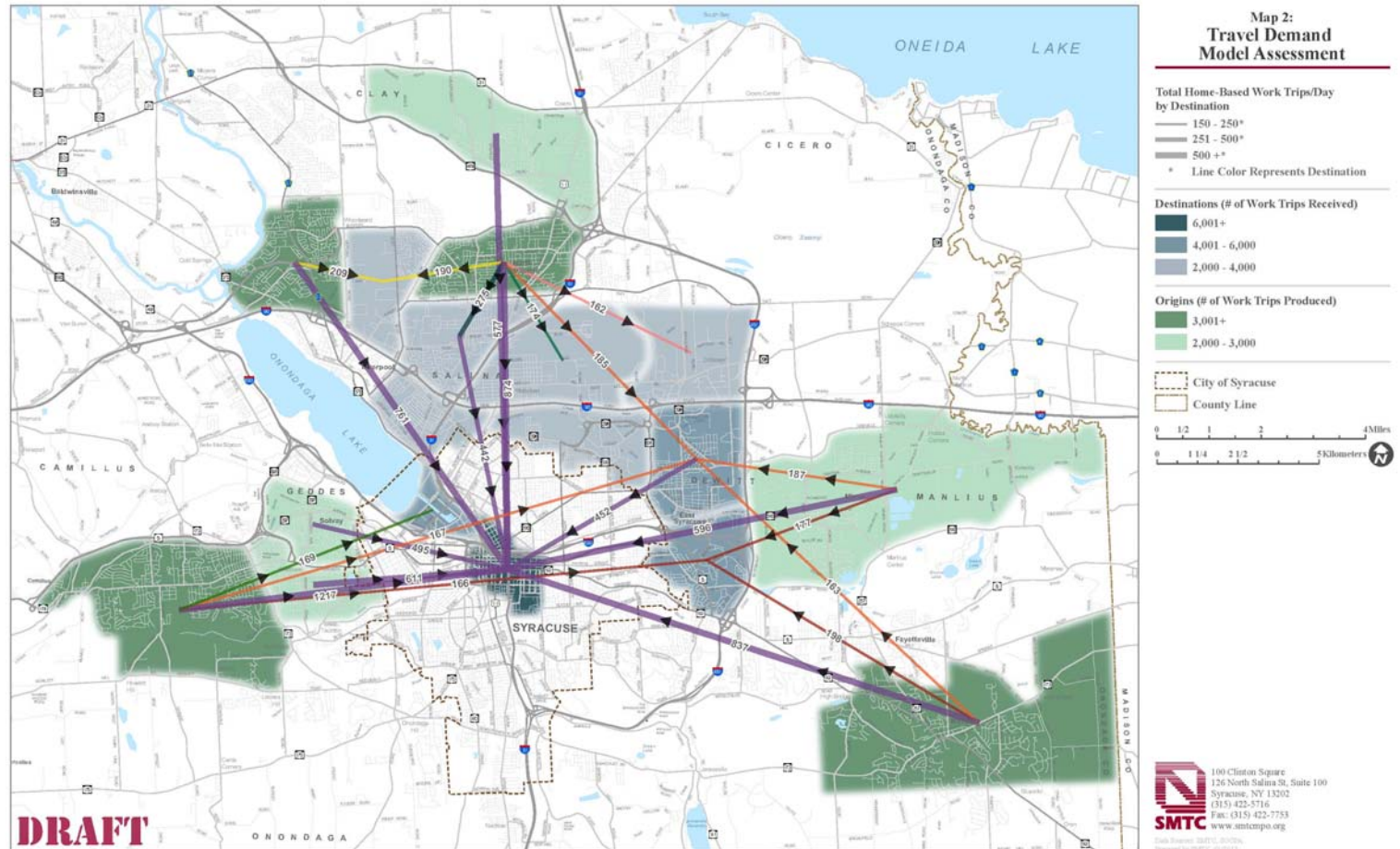
Photo Credits: www.pedbikeimages.org / Carl

Travel Demand Model Assessment

“Clustered” TAZs* based on shared access to collector roadways.

Identified “top” origins & destination pairs.

Identified corridors between pairs.



DRAFT

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

*TAZ = Transportation Analysis Zones

