

The image is a screenshot of a software application titled "TAZ Partnership Software". The main window displays a map with various colored regions (pink, yellow, green, blue) representing Traffic Analysis Zones (TAZ) or Traffic Analysis Districts (TAD). The map is overlaid with a grid of dashed lines. On the right side, there are two dialog boxes. The top one is titled "TAZ" and has fields for "Target Area" (set to "West District"), "Source Area" (set to "All"), "Selection Layer" (set to "Census Block"), "Population" (0), and "Workers" (0). The bottom dialog box is titled "Restart Settings" and contains several checkboxes: " I will be building Traffic Analysis Zones", " I will be building Traffic Analysis Districts", "TAZ Restart Options:" (a section header), " Start with 2000 Traffic Analysis Zones", " Create default TAZ layer from 2010 Block Groups", " Create default TAZ layer from 2010 Tracts", " Create empty TAZ layer", " Import a Block Equivalency File", and " Filter inactive TAZ definitions". At the bottom of the "Restart Settings" dialog are "OK" and "Cancel" buttons.

# Census TAZ/TAD Delineation Workshop

Preparing for the Work Ahead

Sponsored by the Traffic Forecasting and Analysis Section,  
Office of Transportation Data and Analysis, MNDOT

February 7, 2011

Arden Hills Training Center

# Our Responsibility

## **TAZ Delineation: Agency Responsibility Spreadsheet Due January 8, 2010**

*Liang Long, Cambridge Systematics, [liang.long@dot.gov](mailto:liang.long@dot.gov)*

We are now working with the U.S. Census Bureau (CB) Geography Division on TAZ delineation for incorporation into the TIGER file. The incorporation of TAZs into TIGER will permit the next Census Transportation Planning Products (CTPP) to use these TAZs for tabulation and for mapping. The first small area CTPP is expected to use data from the American Community Survey for 2006 through 2010.

# The 'Planned' Schedule for the Release of CTPP Special Tabulation Data

- December 2010 – Points of Contact determined for CENSUS TAZ Delineation
- January 2011 - Census Software ('Master Address File TIGER Partnership Software' – **MTPS**) demonstration at TRB
- February 2011 – MTPS TAZ Module Training – 2/25 or 2/28

For a recording go to:

<http://wwwcf.fhwa.dot.gov/exit.cfm?link=http://ctpp.transportation.org/Pages/webinardirectory.aspx>

- March through early April 2011 – Posting of MTPS TAZ Module, 2010 Census Data and geographic shape files on a secure web site for us, but on a rolling basis
- June through early July 2011 – All files must be returned to Census Bureau, **three months after receipt of your state's posting**
- **Fall 2012 - Five-Year CTPP 2006-2010 Released**



# Who Has Been Recruited?

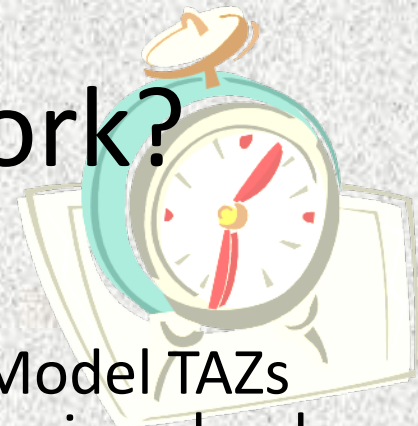


- Staff from Minnesota MPOs and related DOTs (Wisconsin, Minnesota and North Dakota)
- Now that you know who you are, offer tips to each other, share notes, etc.

Lead Agency Name	Staff Contact: Name	Staff Contact: Title	Contact Phone	Contact e-mail
St. Cloud Area Planning Organization	Michelle Musser, Dave Then	Planner/GIS Specialist (Planning Tech.)	320-252-7568	<a href="mailto:musser@stcloudapo.org">musser@stcloudapo.org</a> ( <a href="mailto:then@stcloudapo.org">then@stcloudapo.org</a> )
Rochester-Olmsted COG	Dave Pesch (Jeff Ellerbusch)	Principal Planner (Senior Planner)	507-281-8764, (507-328-7132)	<a href="mailto:pesch.dave@co.olmsted.mn.us">pesch.dave@co.olmsted.mn.us</a> ( <a href="mailto:ellerbusch.jeff@co.olmsted.mn.us">ellerbusch.jeff@co.olmsted.mn.us</a> )
Metropolitan Council	Robert J. Paddock	Sr. Transportation Planner	651-602-1340	<a href="mailto:Rob.paddock@metc.state.mn.us">Rob.paddock@metc.state.mn.us</a>
Arrowhead Regional Development Corporation	Robert Herling (Kody Turnau)	MIC Planner (GIS Specialist)	218-529-7572, (218-529-7515)	<a href="mailto:rherling@ardc.org">rherling@ardc.org</a> ( <a href="mailto:kturnau@ardc.org">kturnau@ardc.org</a> )
Fargo-Morehead Metropolitan COG	Wade Kline (Joe Nigg)	Executive Director, (Transportation Analyst)	701-232-3242	<a href="mailto:kline@fmmetrocog.org">kline@fmmetrocog.org</a> ( <a href="mailto:nigg@fmmetrocog.org">nigg@fmmetrocog.org</a> )
GF/EGF MPO	Earl Haugen	Executive Director	701-746-2660	<a href="mailto:earl.haugen@theforksmmpo.org">earl.haugen@theforksmmpo.org</a>
MNDOT	Mark Flinner	Planning Program Coordinator	651-366-3849	<a href="mailto:Mark.Flinner@state.mn.us">Mark.Flinner@state.mn.us</a>
La Crosse Area Planning Committee	Tom Faella	Executive Director	608-785-5977	<a href="mailto:Faella.Tom@co.la-crosse.wi.us">Faella.Tom@co.la-crosse.wi.us</a>
WIDOT	Joleen K. Nelson		608-266-2571	<a href="mailto:joleen.nelson@dot.wi.gov">joleen.nelson@dot.wi.gov</a>
MNDOT Metro District	Jim Henricksen	Planning Program Coordinator	651-234-7782	<a href="mailto:jim.henricksen@state.mn.us">jim.henricksen@state.mn.us</a>

# When Do We Start This Work?

## Maybe Now



- Consider what it will take to adjust your current Model TAZs to the new 2010 blocks, natural and manmade barriers, land uses, and the modeled road network (current and anticipated). See guidelines: e.g. [http://www.fsutmsonline.net/images/uploads/reports/FR1\\_FDOT\\_Taz\\_White\\_Paper\\_Final.pdf](http://www.fsutmsonline.net/images/uploads/reports/FR1_FDOT_Taz_White_Paper_Final.pdf)
- Once your Model TAZs are good for 2010 consider how they may be aggregated to Census TAZs that compliment good modeling practice. (Recommended population + employment minimums of 1200. 600 is 'ok')
- The Census TAZ delineation business rules are posted at the FHWA webpage: <http://www.fhwa.dot.gov/ctpp/tazddbrules.htm>

# For the most part, our Model TAZs Have Low Populations

## Wisconsin

	<1200 Pop	<480 HH	TAZs
<b>Eau Claire/CH Falls</b>	<b>91%</b>	<b>91%</b>	<b>214</b>
<b>Fox Cities</b>	<b>89%</b>	<b>89%</b>	<b>630</b>
<b>Green Bay</b>	<b>72%</b>	<b>74%</b>	<b>278</b>
<b>La Crosse</b>	<b>97%</b>	<b>97%</b>	<b>327</b>
<b>Madison/Dane CO</b>	<b>89%</b>	<b>88%</b>	<b>1032</b>
<b>Rock County</b>	<b>94%</b>	<b>95%</b>	<b>398</b>
<b>Sheboygan</b>	<b>99%</b>	<b>99%</b>	<b>470</b>
<b>Stevens Point</b>	<b>96%</b>	<b>97%</b>	<b>195</b>
<b>Wausau</b>	<b>NA</b>	<b>99%</b>	<b>430</b>
<b>Urban Model Total</b>	<b>81%</b>	<b>92%</b>	<b>3974</b>
<b>Statewide Model</b>	<b>45%</b>	<b>47%</b>	<b>1817</b>

## Minnesota

	<1200 Pop	<800 Pop	TAZs
<b>Twin Cities</b>	<b>36%</b>	<b>26%</b>	<b>1201</b>
<b>Collar Co Area</b>	<b>74%</b>	<b>54%</b>	<b>463</b>
<b>Fargo/Moorhead</b>	<b>92%</b>	<b>86%</b>	<b>545</b>
<b>Duluth/Superior</b>	<b>99%</b>	<b>97%</b>	<b>639</b>
<b>Grand Forks/EGF</b>	<b>100%</b>	<b>100%</b>	<b>545</b>

# Questions To Ask

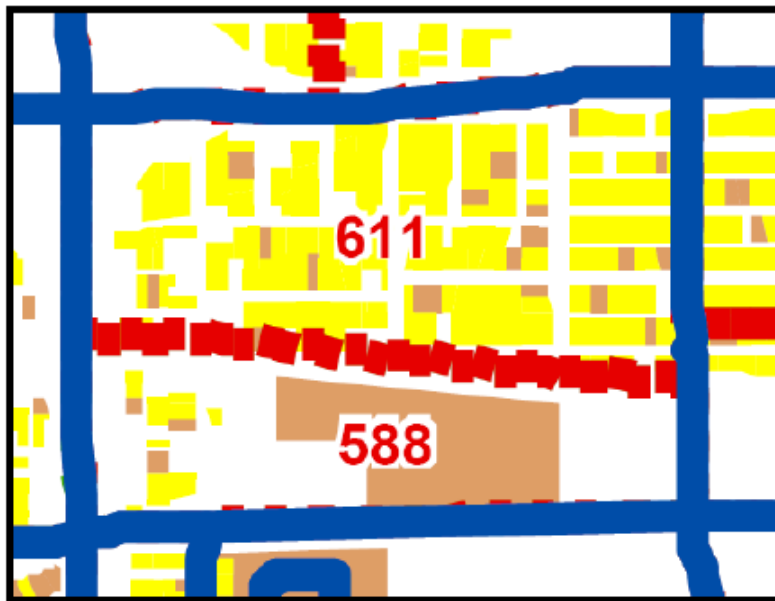
- What role might the Census TAZs/TADs play in the future?
- Do I have enough information about how similar TAZs are with respect to land use, commuter travel and orientation to modeled highways?
- Who else might I need to work with to obtain up-to-date information for land use, boundaries, model network, etc. before beginning delineation?
- Other thoughts from the group?



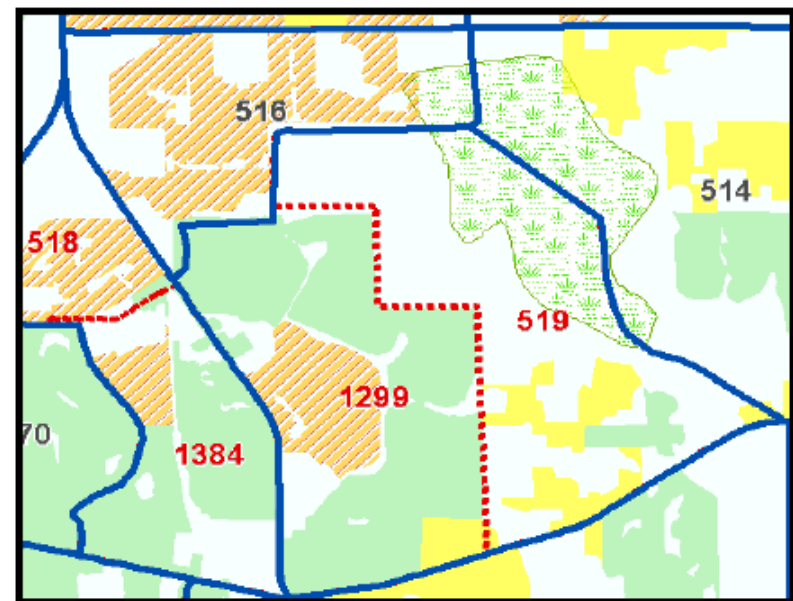
# Creating Census TAZs and Census TADs is similar to Creating Model TAZs

## One Example

## Delineating TAZs Based on Clusters of Similar Land Uses



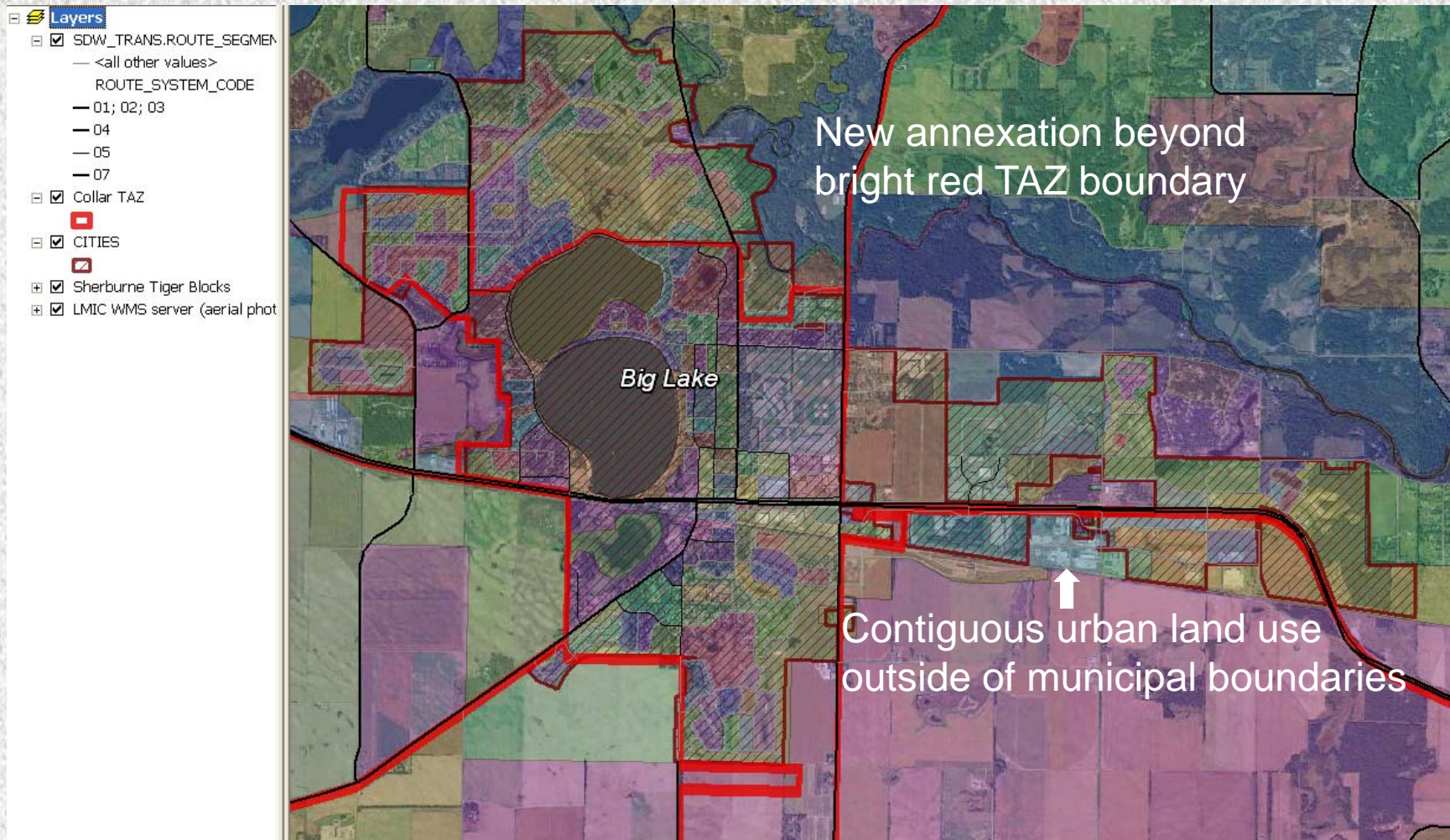
*Figure 3.10a indicates the grouping of commercial activity into the zone 588 and predominant residential activity into zone 611.*



*Figure 3.10b indicates grouping of predominant activity into zone 1299.*

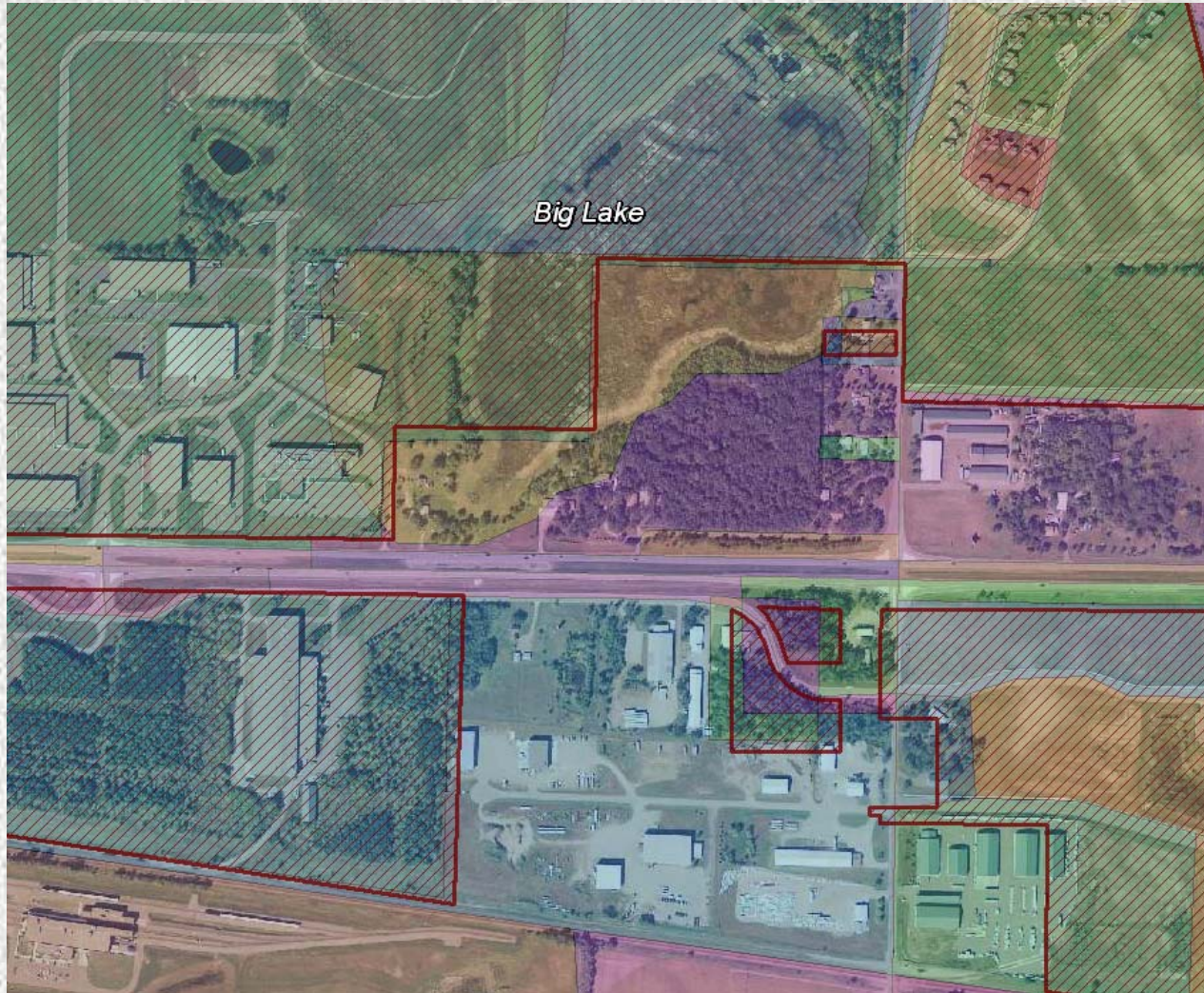


# Illustration of Model TAZ Changes that are Needed





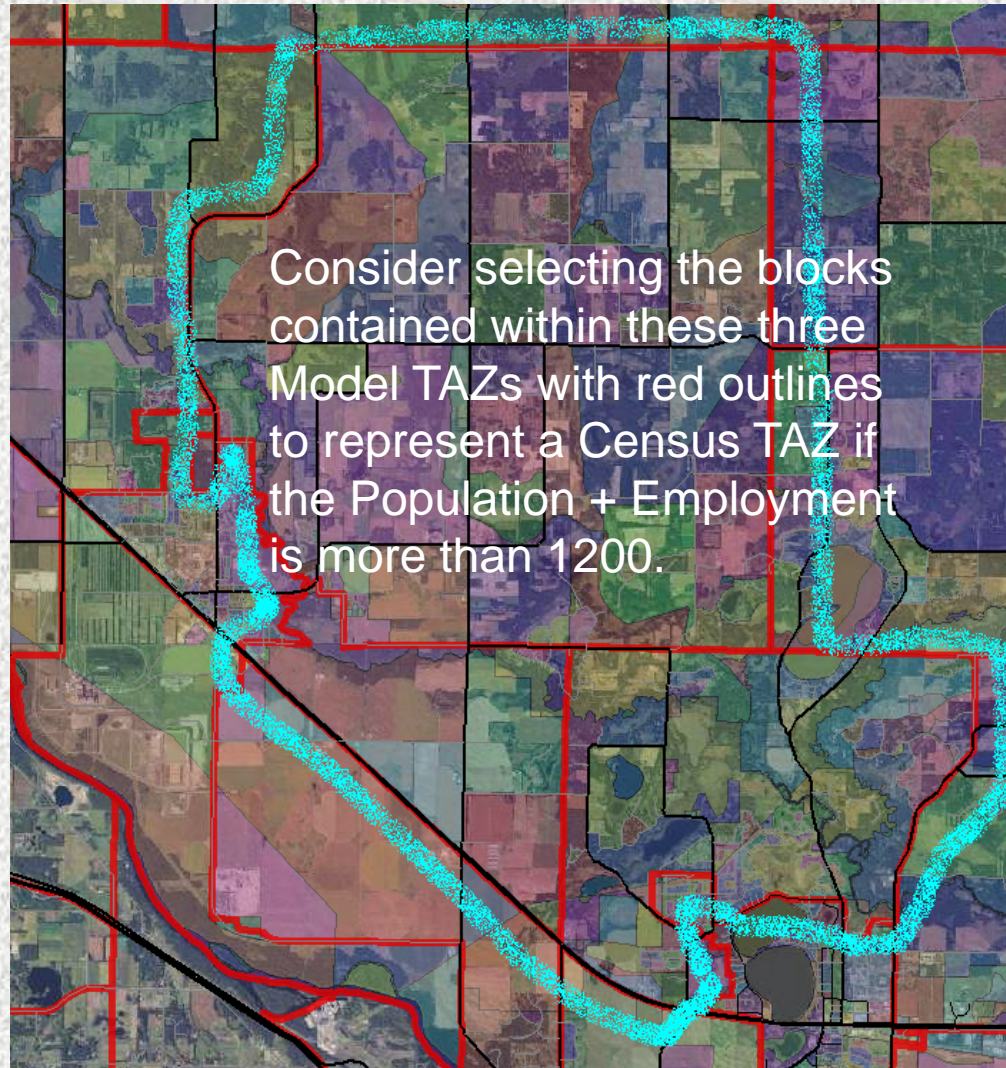
# Big Lake Urban Uses Outside of City Boundary





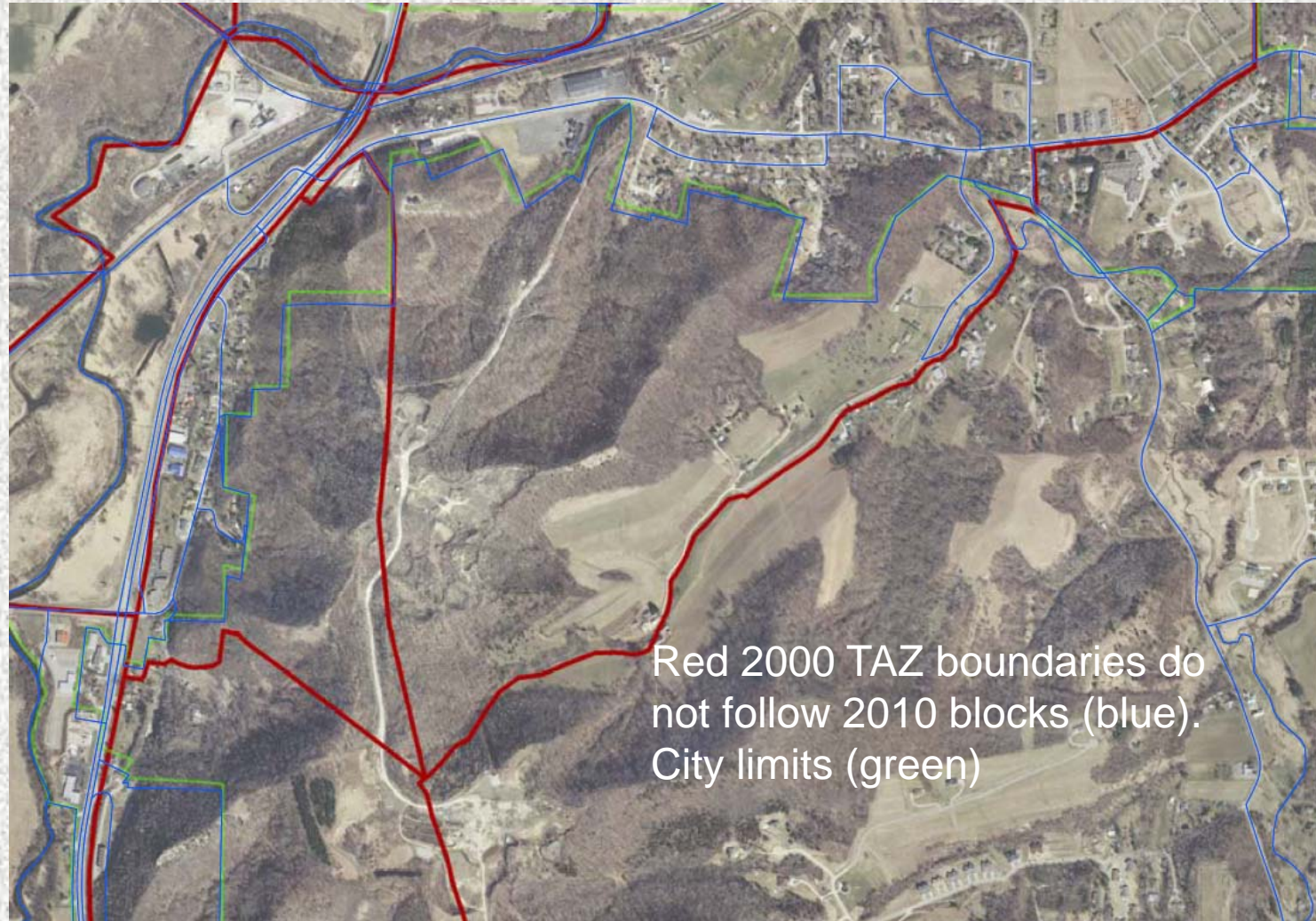
# Model TAZ, Census TAZ, Census TAD

## Nesting





# Second Illustration of Model TAZ Changes



Red 2000 TAZ boundaries do not follow 2010 blocks (blue).  
City limits (green)

# What Tools to Use?

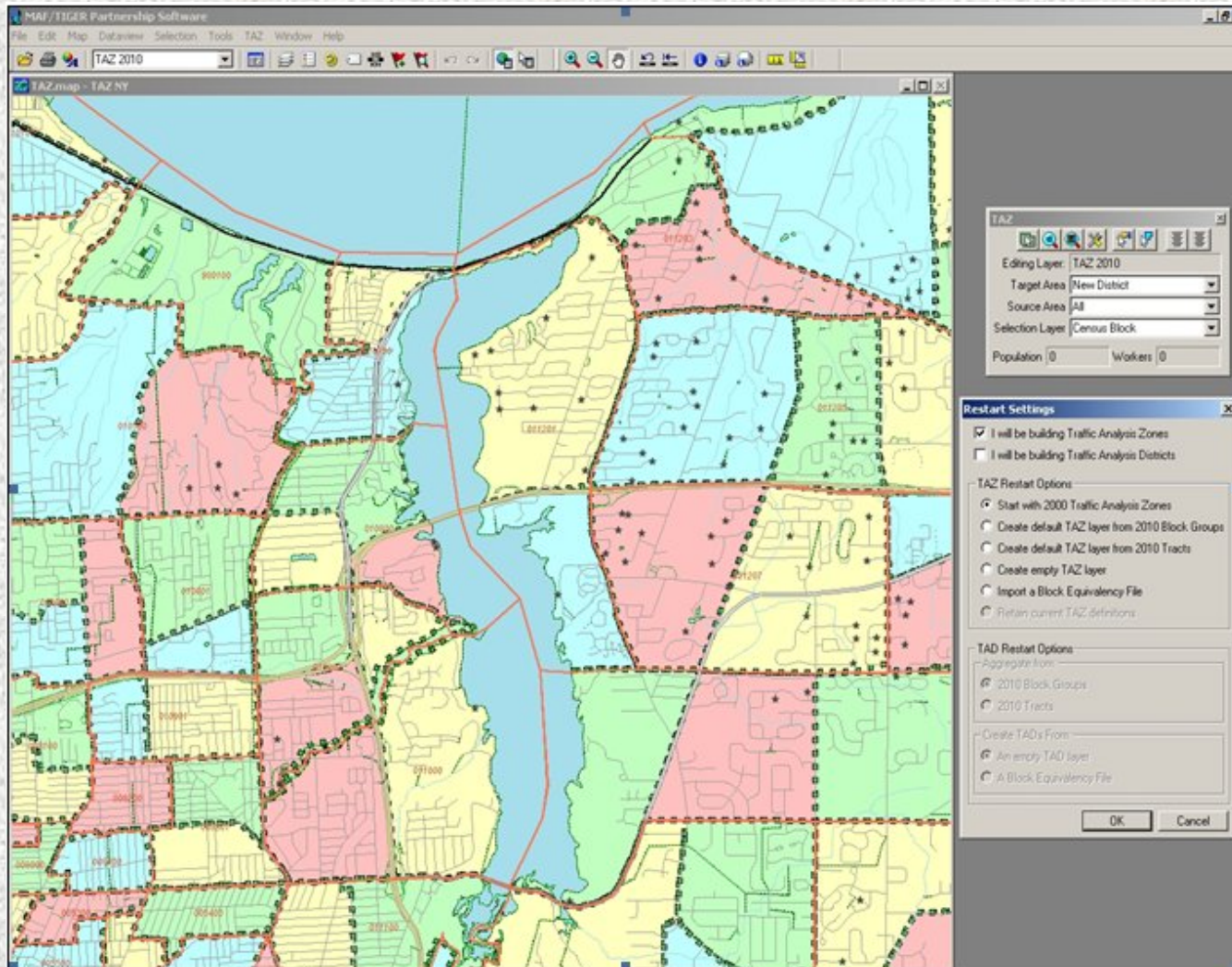
Options and strategies



1. Create Model TAZ boundaries in your agency's GIS system to use as a backdrop while using the Census Software to create Census TAZs, and/or
2. Create a block equivalency file for Census TAZs to import into the Census Software environment for checking. (See the guide from the Census Bureau on our web site – [TAZBlockEquivalency.pdf](#))
3. Work from 'rough' copy, or start with 2000 model TAZs as recorded at the Census Bureau and use the Census Software only.
4. The Census Software uses 2010 TIGER geography.
5. Other strategies that you can think of?



# An Example Image from MTPS TAZ Module – From January’s CTPP Status Report





# MTPS TAZ Module Checks and Outputs

- Nesting within County and MPO boundaries
- Overlaps and Voids
- Unique IDs – Alphanumeric, 8 Characters Maximum
- Compactness measures – warning only
- Population/Employment minimum thresholds – warning only
- Transportation Analysis District (TAD) boundaries may cross County lines
- Once the MPO or State DOT has completed their work, the module will create a ZIP output file, including new shapefiles and block equivalency files, to return to the Census Bureau's Geography Division.

# What does the CTPP Provide?

- Characteristics about where people live and work
- Their journey to work commuting patterns
- The modes they use for getting to work
- Workers' age, sex, industry and occupation
- Household size, number of workers, vehicle availability and income
- These characteristics combined with the journey-to-work characteristics (travel mode, departure time, travel time, and work destination) make the CTPP a valuable data product.
- Three year tabulations for TADs, Five year tabulations for Census TAZs and TADs

# It's Being Talked About Right Now By Modelers – (This from a larger MPO)

“CTPP for model estimation - in general, the sample size is too low to give statistically valid flows at the needed level of detail, plus in a trip based model we are only talking about 15% to 20% of the trips being HBW. Metro's response (at least until 2004, when I retired from there) was to use the HH survey exclusively for 100% of the person-based travel. The CTPP can (possibly) be useful in calibration, after sufficient aggregation to appropriate districts.”

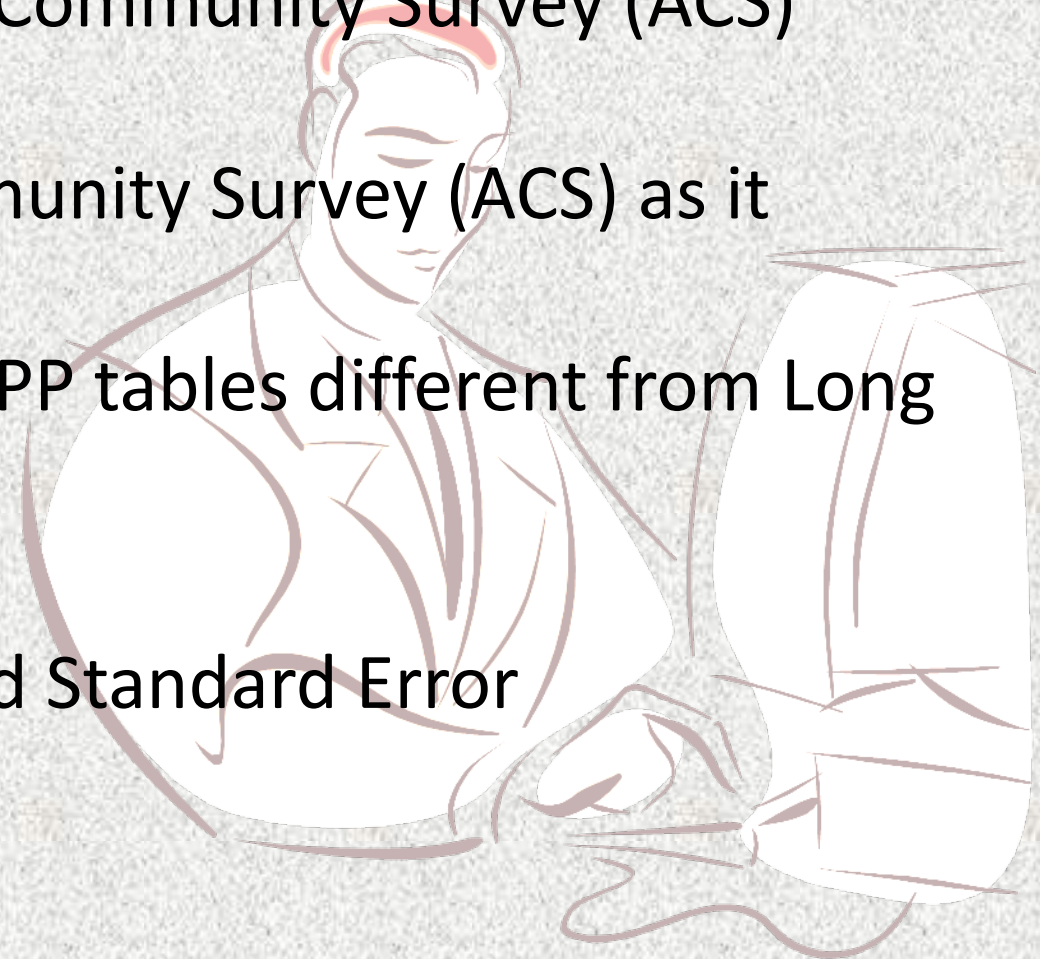
(List available for exchange of information relevant to TMIP. [TMIP-L@LISTSERV.TAMU.EDU]  
Extracted from a thread labeled 'Modeling Question' 2/2/2011)



# CTPP Electronic Training Topics

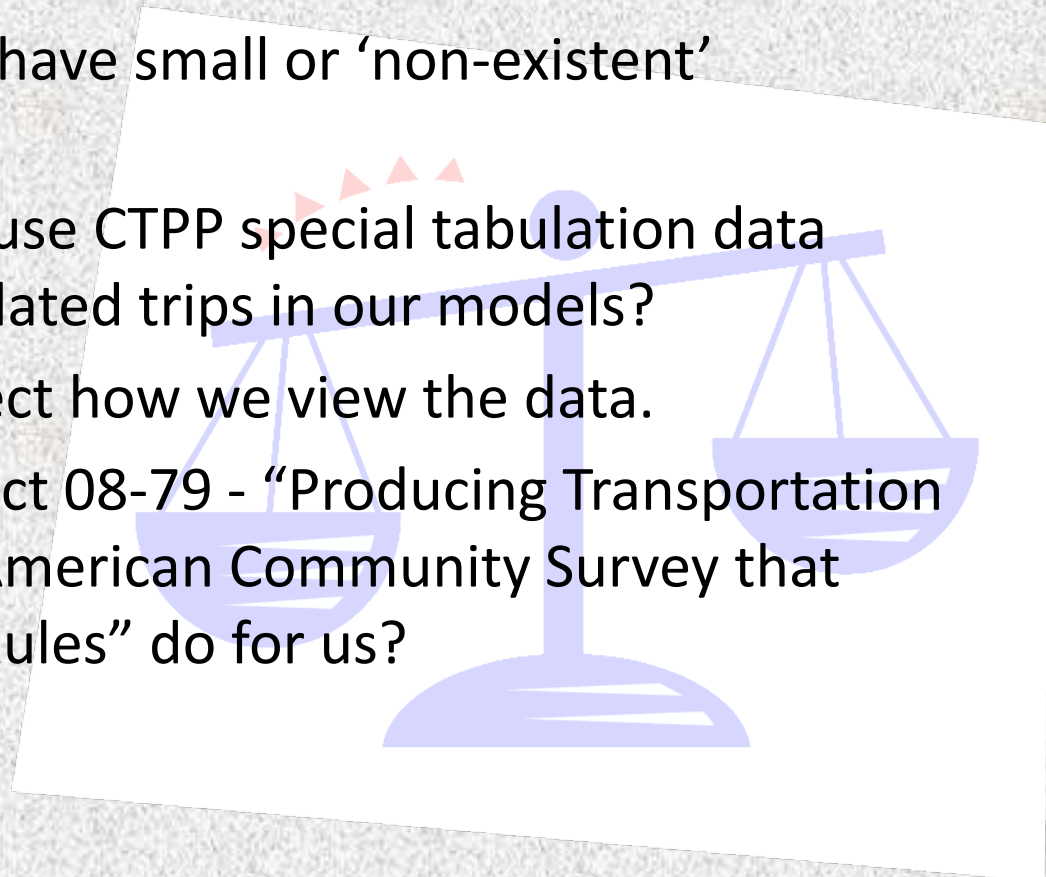
<http://ctpp.transportation.org/Pages/elearningmodules.aspx>

- Census Transportation Planning Products (CTPP) Based on American Community Survey (ACS) Data
- The American Community Survey (ACS) as it relates to CTPP
- What makes ACS CTPP tables different from Long Form CTPP tables
- Geography
- Margins Of Error and Standard Error



# Issues We May Wish To Discuss

- How have other MPOs coordinated their Model TAZs with Census geographies and TAZs?
- Numbering standards (County FIP, Census TAZ #)
- Many of our Model TAZs have small or 'non-existent' populations.
- How might we or others use CTPP special tabulation data when evaluating work-related trips in our models?
- Disclosure Rules may affect how we view the data.
- What might NCHRP Project 08-79 - "Producing Transportation Data Products from the American Community Survey that Comply with Disclosure Rules" do for us?





# What is NCHRP Project 08-79 ?

- The objective of this research is to develop, evaluate, and test credible techniques to produce specially tabulated data products using 5-year ACS data. The resulting data products must satisfy U.S. Census Bureau disclosure rules and support transportation planning at small area geography (TAZ).
- For Project Overview and status notices:  
<http://144.171.11.40/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=2708>

# An Example of a Collapsing Scheme for CTPP data

More categories in a cross-tabulation create more cells in a table that might be suppressed.

## Collapsing Schema for Means of Transportation To Work

March 12, 2009

10 Categories	6 Categories	5 Categories	3 Categories
Drove Alone	Drove Alone	Drove Alone	Drove Alone
Carpool 2	Carpool 2 +	Carpool 2	Carpool 2+
Carpool 3 +		Carpool 3+	
Bus	Public Transportation	Public Transportation, Bike, Walk, Taxi, Motorcycle and Other Method	Public Transportation, Bike, Walk, Taxi, Motorcycle, Other Method and Worked At Home
Streetcar, Subway Elevated			
Railroad, Ferry			
Bicycle			
Walk	Bike and Walk		
Taxi, Motorcycle, Other Method	Taxi, Motorcycle Other Method		
Worked at Home	Worked at Home	Worked at Home	

Note:



# Next Steps



**Register for Census TAZ/TAD Delineation Software Training  
Limited Number of Spaces – Register for only one session**

**Friday, 2/25/2011, from 9 – 11 a.m. Central:**

**Registration**

**URL: [https://www.nhi.fhwa.dot.gov/resources/webconference/web\\_conf\\_learner\\_reg.aspx?webconfid=22433](https://www.nhi.fhwa.dot.gov/resources/webconference/web_conf_learner_reg.aspx?webconfid=22433)**

**Or,**

**Monday, 2/28/2011, from 1 - 3 p.m. Central:**

**Registration**

**URL: [https://www.nhi.fhwa.dot.gov/resources/webconference/web\\_conf\\_learner\\_reg.aspx?webconfid=21975](https://www.nhi.fhwa.dot.gov/resources/webconference/web_conf_learner_reg.aspx?webconfid=21975)**

# Questions ?

For now, contact me: Mark Flinner,  
[mark.flinner@state.mn.us](mailto:mark.flinner@state.mn.us), 651-366-3849

When you get into it: [geo.taz.list@census.gov](mailto:geo.taz.list@census.gov)  
and share what you have learned with the rest  
of us, if possible.

This presentation and other Census sponsored documents related to this activity may  
be found at <http://www.dot.state.mn.us/traffic/data/html/mtdmcc.html> under  
“Presentations”