

MetroGIS

"I need to know the boundaries and characteristics of census areas (*ex: census blocks, block groups, tracts*)."

Census Boundaries Peer Review Workgroup

Final

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Turn-Around Document

Prepared by
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Peer Review Workgroup
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Metro County Government Center
St. Paul, Minnesota

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Peer Review Workgroup Participants:

MetroGIS				
Census Boundaries Peer Review Workgroup				
Date: May 26, 1999 Time: 1:30 p.m. - 3:30 p.m.				
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John Carpenter	Insight Mapping & Demographics	(612) 898-1563	jecarp@earthlink.net	JEC

Organization Team:

Name	Organization Name	Phone Number	E-mail Address	Role
Rick Gelbmann	Metropolitan Council	(651) 602-1371	rick.gelbmann@metc.state.mn.us	Facilitator/ Organization
Jim Maxwell	The Lawrence Group	(612) 341-9274	max@lawrencegroup.com	Facilitator/

				Organization
Ed Krum	Mn DOT	(651) 582-1729	ed.krum@dot.state.mn.us	Facilitator/ Organization
Tanya Mayer	Metropolitan Council	(651) 602-1604	tanya.mayer@metc.state.mn.us	Organization
Kathy Ehlenz-Matson	Metropolitan Council	(651) 602-1444	kathy.ehlenz@metc.state.mn.us	Organization/ GIS Graphics
Jason Wolf	The Lawrence Group	(612) 341-9274	jasonw@lawrencegroup.com	Organization
David Vessel	Metropolitan Council	(651) 602-1642	david.vessel@metc.state.mn.us	Recorder
Theresa Foster	MetroGIS Technical Coordinator	(651) 602-1572	theresa.foster@metc.state.mn.us	Recorder/ Organization

Opening Comments

At 1:35 p.m. Theresa Foster, MetroGIS Technical Coordinator, welcomed all the participants, on behalf of the MetroGIS stakeholders, and thanked them for agreeing to participate. Each participant introduced herself or himself and volunteered information on why they were interested in census boundary geography for their organization. Foster introduced Jim Maxwell from The Lawrence Group, and stated that he and Rick Gelbmann, Metropolitan Council, will be presenting the purpose and process, advantages and limitations of the 1990 Census Boundary Geography, and future enhancements of the 2000 Census Boundary Geography. For future reference, Jim Maxwell (JM) and Rick Gelbmann (RG) facilitated the process and their comments are recorded in this document in order to capture all the information obtained at the peer review workgroup.

Purpose and Process of the 1990 Census Boundaries

Jim Maxwell welcomed the participants and defined the project description. The Lawrence Group, with sponsorship from MetroGIS and the Metropolitan Council, is developing a new 1990 census block polygon data set for the 7-county Twin Cities Metro area. The result will be a "coverage" of census block polygons that are geographically aligned with TLG's street centerlines and will pave the way for usable year 2000 census geography.

Purpose

Maxwell (JM) briefed the participants about the purposes of creating a 1990 census block polygon coverage. He identified the following as important parameters to future work:

- Good census polygon data has been identified as a regional information need due to limitations in existing census boundaries.

- An improved relationship between address locations and census information.
- An improved relationship between county parcel data and census information.
- An improved relationship between census information and other local, regional or state demographic information.
- Efficient and timely positional updating.
- Improved map representations.

Development Overview

Maxwell explained the development overview of the 1990 census block polygon coverage. He identified the following points in his discussion:

- Proceed on a city-by-city basis and county-by-county basis. Order of county development largely based on pre-existing TLG centerline adjustments.
- Define the majority of block boundaries using TLG street centerlines and TLG geographic features; i.e., relational block id attributes will be developed and maintained for boundary features.
- Define remaining block boundaries with a new census block feature. Examples include: fence lines, power lines, parcel boundaries, section lines, etc.
- Generate and provide census block polygons derived from the TLG features.

Development Issues

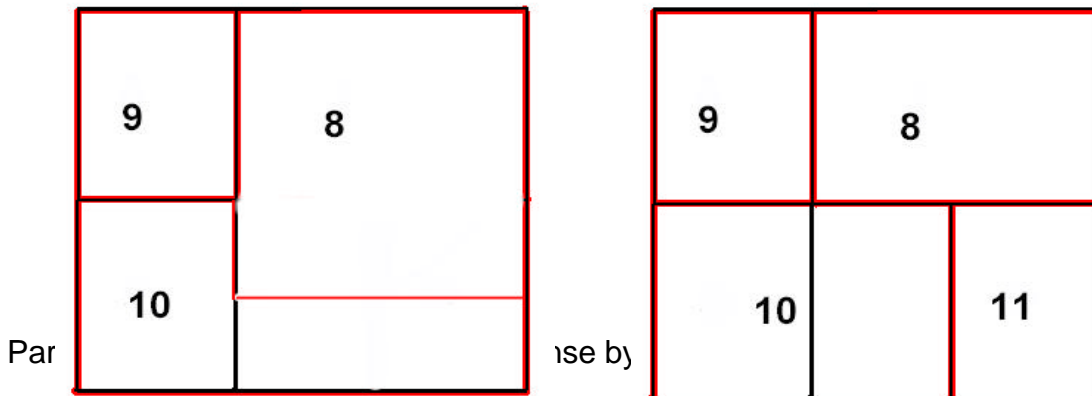
Maxwell (JM) explained the development issues of the 1990 census block polygon coverage. He identified the following points in his discussion:

- Maintaining one-to-one correspondence with existing census block designations.
- Determining the originally intended census block boundary features.
- Census block spatial adjustments and maintenance.
- Block boundaries that split street segments.

- Census block boundaries that vary from traditional street blocks.
Non-Traditional Examples included:

Mid-Street Block Boundary Boundary

Multiple Block



JPV: Nervous about TLG defining census block boundaries using promulgated census boundary information.

MEV: Local units of government had to make narratives of block/tract boundaries.

JPV: Would feel comfortable if you check with local units while you are determining block boundaries.

RG: It is built into the process for you to develop and review block boundaries.

MEV: In 1990 some features might have changed that you won't be able to fix.

JM: 1990 we will be able to compare.

JEC: Block boundaries are arbitrary - bottom line is to pick up the population; like the idea of using parcel populations.

JPV: Represent by property boundaries.

LM: Census bureau will not use parcel boundaries only physical features which are identifiable.

RQF: Question of scale how do you conflate the 1:100,000 Census to TLG scale?

MEV: Huge problems when you match to more accurate city databases.

RG: Creating block designations works well with local communities to match what the census describes.

RQF: Are you trying to create a new coverage?

RG/

JM: Yes, to align with information readily and real to county and local governments and other GIS data sets.

MEV: Census boundary information is not accurate relative to real world data sets.

RQF: Especially lakes, ponds, etc.

LL: Minute levels of accuracy make a difference at scales we use.

JM: Census boundary anomalies should be a problem but we will try to adjust those features relative to the TLG data sets and Parcel framework.

MM: Will we need annexation information? Will we need to maintain annexation information?

JW: What will be the availability?

JM: That will be answered in the next slide.

When discussing the previous non-traditional examples above the following?

LM: Couldn't you dissolve the line left of the street to get accurate address information?

JM: A point will get generated to split the arc, we will run a process that will rid census boundaries of adjacent block boundaries.

Data Access Issues

Maxwell (JM) explained the data access issues of the 1990 census block polygon coverage. He identified the following points on who will have to access the 1990 and 2000 census his discussion:

- Existing licensed users of TLG GBF
- Other MetroGIS participants
- Census Bureau
- TLG and Metropolitan Council will have co-ownership of the data set

Participant questions with some response by Facilitators:

JEC: Will there be standard out there for local people to use on census geography?

RG: Not expecting to have this as an official census boundary dataset for the Census Bureau.

JW: Have you contacted the Census Bureau?

RG: Limited access - local and regional participation only. We will need a national vocation to the census geography so that the Census Bureau will have a greater commitment to spatial accuracy.

JW: Work will be needed to do that?

RG: Some work has already been done by the Census Bureau in using more accurate photography.

JAD: Are you doing anything with the US Census? How much work will it take to get our data into the census?

MEV: Isn't part of the problem that TIGER covers the entire US and they will not change only a part of the counties.

RG: Met Council has adjusted the Census Bureau TIGER using participant information from those entities that need to be accurate to the county boundary.

Other Issues

Maxwell (JM) explained the other issues relating to the 1990 census block polygon coverage and specific data uses. He identified the following points:

Other Issues

- Availability of Other Reference Sources
- Metadata
- Ownership of block polygons
- Development and completion timeframe.
- Year 2000 Census Geography Update
- Likelihood of adoption or integration by U.S. Census Bureau.
- Perfection vs. enormous improvement.

Data Use - Address and demographic linkages to Census Data

- TLG centerline-based address matching coupled with point in polygon analysis.
- Parcel-based address matching coupled with point in polygon analysis.
- Custom or locally based demographic attributes merged with United States Census Bureau Data.

Participant questions with some response by Facilitators:

LM: Will there be parcels nested in block?

RG: Yes, that is our goal.

LM: Will you have precinct and school attributes.

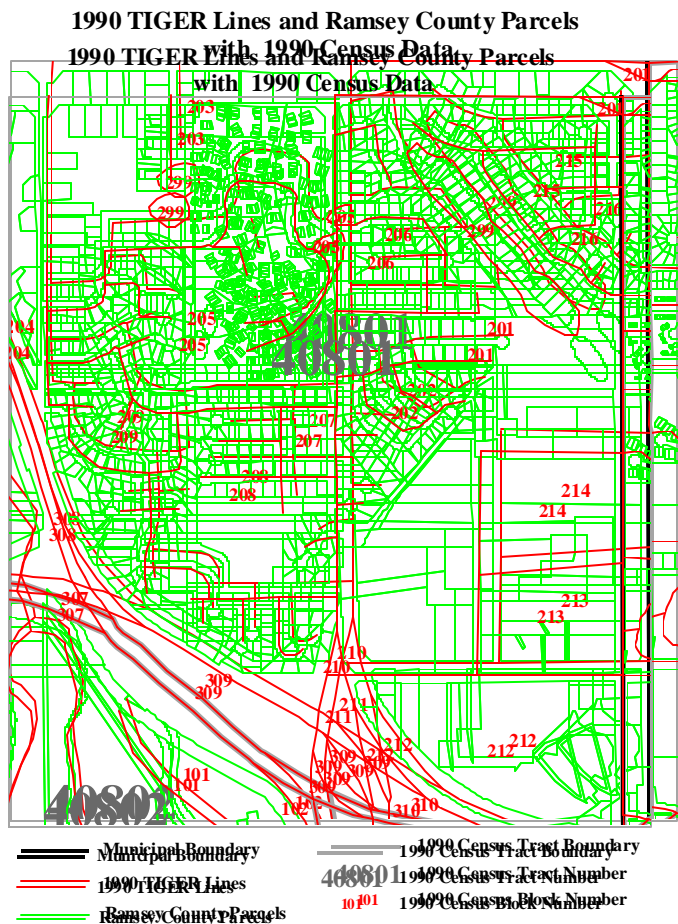
JM: No. Attributes with this coverage include unique id's to relate to Census Bureau information in the TIGER data set.

Discussion of Advantages and Limitations

Rick Gelbmann (RG) demonstrated to the participants about the advantages and limitations of using TLG and county parcel data to align the 1990 census block polygon coverage. The following graphics are illustrations of the use of TLG Roads, Parcel boundaries vs. TIGER Lines to create the 1990 census block polygon coverage.

1990 TIGER Lines and Ramsey County Parcels with 1990 Census Data vs. TLG Roads and Ramsey County Parcels with 1990 Census Data

- TLG Roads and Ramsey County Parcels with 1990 Census Data will eliminate mis-alignment of census block geography.



MEV: Census Bureau allows the City of St. Paul to check census information with

Ramsey county parcel information. Would have been valuable to use fixed boundaries to check that data.

JEC: The example above with the mobile home boundaries illustrates that point, by drawing the census boundaries based upon the parcel layout of the mobile home.

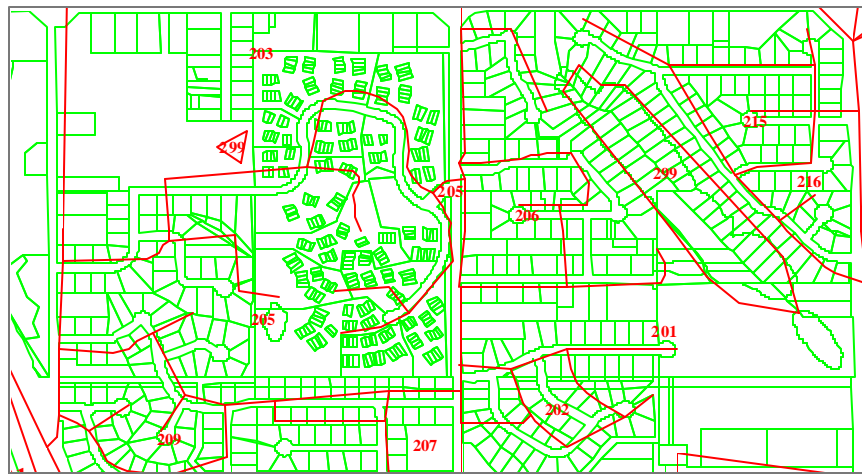
JEC: Existing information that doesn't align now in the census boundary information, will that align with TLG?

JM: **Confident that those might align.**

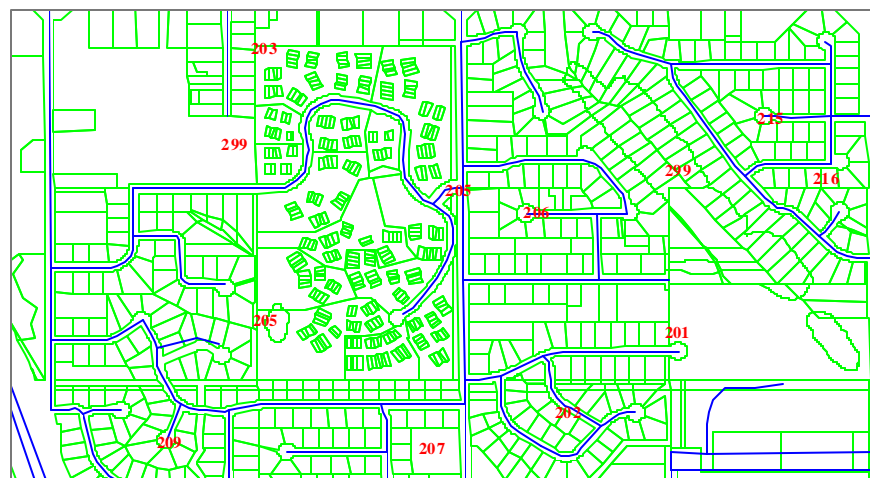
RG: **Need to enhance the data in those areas.**

Comparison of Matching Census Boundaries to Local Parcel Information

Matching Census Boundaries to Local Parcel Information City of Arden Hills



Comparison of TIGER to parcel data

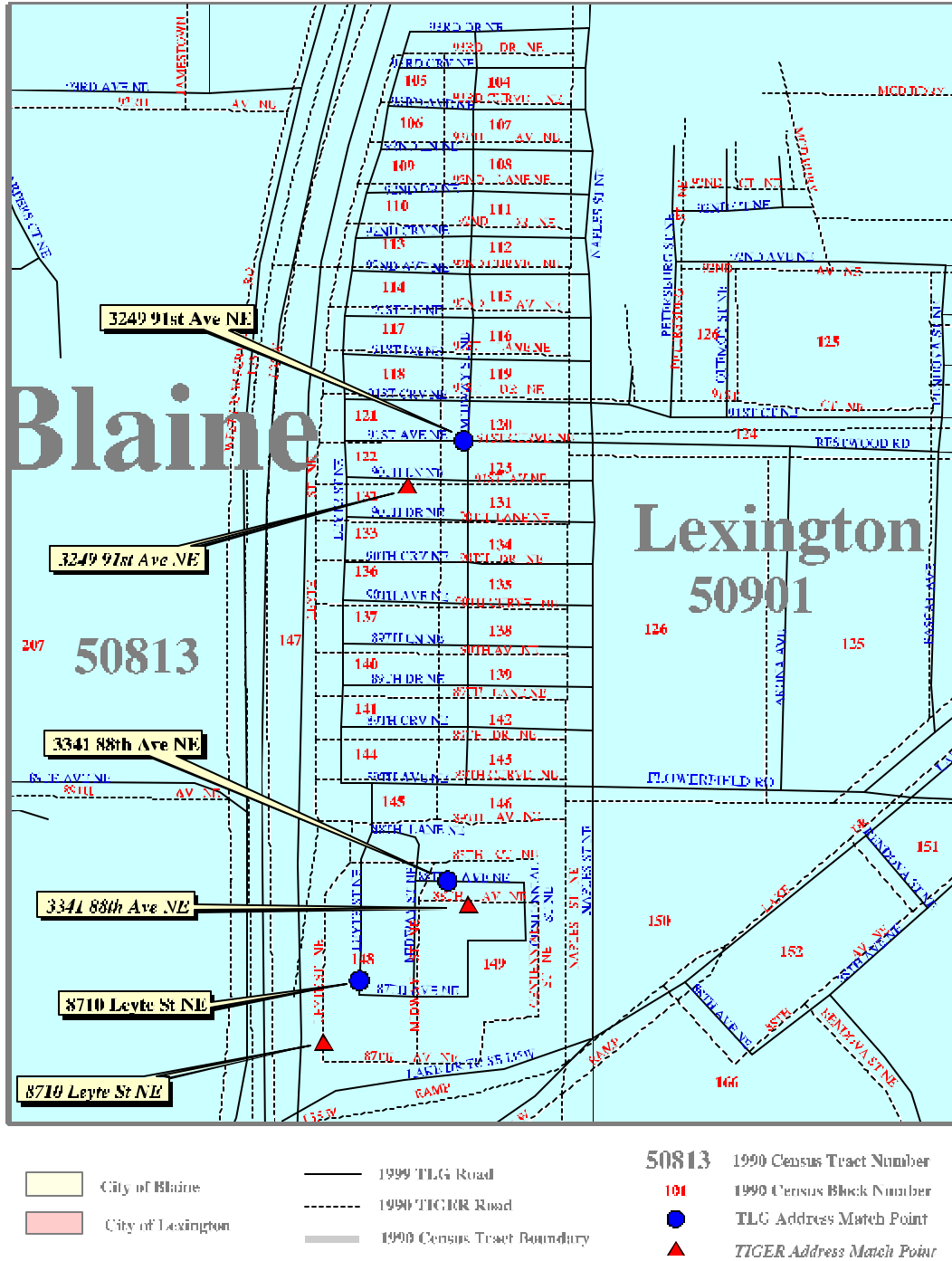


Comparison of The Lawrence Group roads to parcel data

— 1998 Ramsey County Parcels
— 1999 Lawrence Group Roads
— 1990 U.S. Census TIGER
101 1990 Census Block Number

Example - City of Blaine and Lexington - Address Match Points

- TLG includes actual address ranges
- Census Bureau builds in fuzzy address ranges



JPV: Accuracy is a good thing, but why do we need to be more accurate now?

RG: The information now can lead to historical differences, provide error correction, locally valuable (i.e. precision accuracy for school districts to correct address ranges).

JPV: Comparing 1990 to 2000 TLG address ranges can be done now and differences between the census bureau TIGER could be done now. Why do we need this level of accuracy?

RG: Accuracy right now is different for cities, it is not comparable to any other regional data sets or county data sets, geographic comparison cannot be done with the data available at this time.

LL: Correct address ranges for cumulative statistics at minute levels of accuracy make a difference for block level groups. Describe the difference between Scott county lines vs. fuzzy demographics for census block boundaries?

RG: Extincts the usability if address ranges are not correct; estimates will be off in accuracy. We will be testing statistical accuracy and sampling with the census block geography.

JPV: If there is more accuracy in the year 2005 than now will we change development standards then?

RG: Yes. Adjust as precision accuracy gets better.

MEV: Alignment with base map information to be relative due to analysis. If the block levels and neighbor seem inaccurate you can't do anything with the data.

JPV: Are you not moving people or county populations because of geography?

MEV: Yes. But now we don't have any ability to track census by geography.

Questions and Answers

JPV: Where are the school district boundaries and how many make up census block information?

RG: Washington county is dealing with the problems with school district boundaries (as they pertain to MUSA, acreage counts etc.). They are building upon their parcel boundary data set.

RG: The contract for the census block polygon coverage is being funded by the Metropolitan Council, GIS and HRA departments, and MetroGIS. The 1990 census block boundary coverage should take 4 to 6 months to complete.

EK: Can you clarify the geographic limits?

RG: The geographic boundary is the 7-county metropolitan area.

JEC: Where are you starting your work?

JM: Progress on the data set will start with Ramsey, Washington and Dakota county data then move on to the remaining 4 counties.

LM: Parcels that are nestled in census blocks, are you going to generate your own demographics based upon geographic changes.

RG: We will depend on users for updates and access to county parcels.

Additional Questions and Comments Received from Participants

JM: This will be a valuable data set. Other potential proposed census block geography include the following:

- Traffic Forecasting - TAZ Development - comparison of land use generated information vs. socio-economic census
- Ability to better estimate changes in census numbers between census years.
- Will make future census updates easier. A benefit for the U.S. Census Bureau and units of governments responsible for census updating.

RLC: Do most counties share their parcel information with TLG in order to update the TLG centerline information? By parcel information I mean digitally; coverages or shape files?

JEC: What constitutes an "error" in the census block alignment? Is it correspondence with the census line work or correspondence to the underlying property base?

JEC: How about doing BETA evaluation after completion of the first county and in time to adjust process if issues arise?

Next Steps

Ed Krum explained what were the next steps for the peer review participants and the work on the 1990 census block boundary coverage. He asked for volunteers to be BETA testers, for all participants to provide feedback, and comment on error checking mechanisms during the time of BETA testing. All volunteers were asked to email or phone the following organization team member to submit their intent Jim Maxwell (max@lawrencegroup.com or 612-341-9274), Tanya Mayer (tanya.mayer@metc.state.mn.us or 651-602-1604) or Ed Krum (ed.krum@dot.state.mn.us or 651-582-1729).

A turnaround document for the peer review workgroup will be mailed the week of June 9th; feedback from participants about their comments will be taken until the 25th of June. Participants will be mailed the final document and the document will be posted on the MetroGIS Web page when comments and final documentation is finished.

Timeline for the project was stated. Four months from the date of signing the contract between Metropolitan Council and TLG a BETA version of the census block polygon coverage will be available for testing. Six months from the date of signing the contract between Metropolitan Council and TLG a final release of the census block polygon coverage will be available. Distribution of the census block polygon data set will be the same as other TLG data sets. Enhancements for 2000 census block polygon data set will be explored following 1999 release.

Process Questionnaire

Foster explained that the goal of this activity is to collect feedback from participants and to make adjustments for future peer review workgroup sessions. Each peer review workgroup participant was asked to complete the evaluation form before they departed the workgroup meeting.

	Question:	Contact and Information	Desired Outcomes	Question 1. Process of the 1990 Census Boundaries clearly communicated?	Question 2. Process for enhancements of the 2000 Census Boundaries clearly communicated?	Question 3. Advantages and limitations clearly communicated?	Question 4. Discussion and question session useful to meet you need of Census Boundaries?	Question 5. Did the organization team provide you the necessary next steps?	Encourage Diverse Viewpoint	Obtain Consensus	Manage Time	Address Your Goals and Needs	Adequacy of Facilities	Usefulness of Peer Review Workgroup Session	
Participant															
1		4	3	2	2	2	4	*	3	3	3	3	4	3	3.00
2		4	2	2	1	3	2	*	3	*	2	3	4	3	2.64
3		3	3	3	3	3	3	3	3	3	4	3	4	3	3.15
4		3	3	3	3	3	3	3	3	3	4	4	4	4	3.31
5		3	3	3	3	3	4	4	3	*	4	4	4	4	3.50
6		3	3	1	2	3	3	3	2	2	3	3	3	3	2.62
7		3	3	3	3	2	3	4	3	3	3	3	3	3	3.00
8		3	3	3	2	3	3	3	2	2	3	3	4	4	2.92
9		3	2	2	2	2	2	2	2	1	2	1	3	2	2.00
10		3	1	1	2	2	2	2	3	3	3	3	3	3	2.38
11		3	2	2	3	1	2	1	3	2	3	2	4	2	2.31
12		2	1	3	2	4	2	2	2	2	2	2	4	2	2.31
Average		3.1	2.4	2.333	2.33333	2.583	2.75	2.7	3	2	3	3	3.7	3	2.75

* No Rating Submitted by Participant
 Not All 15 Participant filled out a questionnaire.

MetroGIS Census Boundary Peer Review Comments

1. Good start at identifying issue and proposed solutions. What is next meeting?
2. It seemed that some people didn't initially understand the census process very well, and why the TIGER-based boundaries create problems. 10-15 minutes of background information on this would have helped.

Adjournment

At 3:00 p.m., Foster thanked the participants for coming and putting in a solid hour and a half worth of work, she encouraged participants to feel free to send comments or suggestions about the process or suggestions on the data specifications to peer review organization members if anything else should come to mind. Meeting adjourned.