

2010 Census TAZ Analysis and Revisions UPWP Task #4186

Executive Summary

The Transportation Analysis Zones (TAZ) Analysis and Revisions process was an opportunity offered by the Census Bureau to MPOs in order to review TAZ delineations and make improvements to them where possible. TAZ's are essentially geographic areas used to determine origin and destination travel counts. Socio-economic data is also summarized by the Census Bureau by TAZ to be used for planning purposes.

TAZ geographies were split, combined and adjusted in order to improve Census data that will be summarized for each TAZ and to improve how TAZs work within the GTC Transportation Model. Upon completion of the TAZ revisions, Transportation Analysis Districts (TADs) were created. TADs are larger areas created from multiple TAZs and were based on major transportation corridors in the TMA. The Census Bureau will also be releasing data based on TAD geographies, which could be helpful for transportation corridor planning purposes. The last phase of the project was to determine how future TAZs might be delineated if the TMA were to expand.

TAZ Revisions

The TAZ project was started in March of 2008 with the intent of completion in 2009 to adhere to the Census Bureau's deadline. During the initial phase of work, data relating to population, housing, and special generators was gathered, mapped and analyzed.

In late 2008, the Census Bureau released information stating that the TAZ process should be delayed until after 2010 Census data was released so that this data could be incorporated into any revisions. The data collection and analysis that we believed would still be relevant to have ready for the 2010 start date continued to be developed gradually throughout 2009. The project was put on hold for 2010. In February of 2011 the Census Bureau conducted a TAZ training webinar to illustrate how to use their TAZ delineation software and also released a guidebook related to the process. Both the training and guidebook explained new information about the process which partially changed the proposed methodology by putting even more emphasis on some variables we initially thought should have an influence on TAZ changes (such as population and employment) and less emphasis on others (such as households and vehicles per household).

On March 28, 2011 the Census Bureau released the TAZ delineation software and associated data for the TMA. Three months were given to complete and return the TAZ revision and TAD creation.

Before TAZ revisions could be made a new issue had to be resolved in order to bring the data contained within the Census software up to date. The Census Bureau listed many of the Census blocks in the TMA as undefined and did not assign them to the TAZs they were previously within. This occurred because the existing block boundaries did not line up with the 2010 block boundaries, both because of physical changes to block boundaries in 2010 as well as slight digital adjustments to block boundaries (with no physical change). Each of these undefined areas were reassigned to their correct TAZ. In addition to this, the Census Bureau's software was loaded with the year 2000 TAZs so these needed to be updated to incorporate the TAZ changes made by GTC in 2006-2007.

After the data in the Census software was redefined and up-to-date, TAZ revisions were started based on a number of variables that helped to determine whether a change was needed and how these changes would occur. These variables helped to determine if a TAZ should be split into multiple TAZs, combined with other TAZs, or if portions of a TAZ should be moved to an adjacent TAZ. Additional variables were also used at this point to aid in determining the exact boundaries of the revised TAZs.

Variables:

The following variables were analyzed as a group by TAZ to determine if a TAZ could benefit from a revision:

- Population – If a TAZ did not have a population or worker count of at least 600 the TAZ needed to be revised, with some exceptions relating mostly to isolating special generators. The TAZ with the largest populations (top 2.5% or a population of over 4,000) were looked at in further depth in combination with other variables to determine if a change was needed.
- Worker Count – If a TAZ did not have a worker count or population of at least 600 the TAZ needed to be revised, with some exceptions relating mostly to isolating special generators. The TAZ with the largest worker counts (top 2.5% or a worker count of over 4,000) were looked at in further depth in combination with other variables to determine if a change was needed.
- Special Generators – Special Generators are locations that create a large amount of traffic on their own, usually more than average properties in the same use category. For example a mall would generate much more traffic than the average commercial property. Ideally TAZs with large special generators, or many smaller special generators would be split to separate these uses from each other and from the rest of the uses in the TAZ. This could improve data for these TAZs as opposed to having a TAZ with multiple special generators influencing the data. Isolating special generators was done to the extent possible considering all the other variables, and taking into account the general size of the special generator in terms of the amount of traffic it would create. Below are examples of special generators.
 - Airport
 - Major government buildings
 - Schools (K-12 and colleges)
 - Employment centers
 - Large super markets
 - Parking garages
 - Large apartments (100+ units)
 - Medium apartments (50-99 units)
 - Large parks
 - Commercial centers (malls, large strip malls)
- Land Use – Ideally TAZs would be revised to have relatively homogeneous land uses but this was not often possible considering all of the variables. Land use was not often a deciding factor as to whether or not to change a TAZ but instead was considered among all the other variables, and often contributed later to how the TAZ would be specifically changed.
- Physical Size – Some TAZs were very large in size and could benefit from a split, but this was usually not a deciding factor as to whether or not to change a TAZ but instead was considered among all the other variables.

- Census Geography – When possible TAZs should adhere to Census Geography. Whether or not a TAZ adhered to Census block group boundaries or Census tract boundaries was considered among all the other variables in determining if a change was needed and how the change should be made.

After it was decided that a TAZ should be revised, the following variables were used in addition to those above to determine what the specific TAZ boundaries should be:

- Political boundaries
- Physical geography (rivers, etc.)
- Major roads
- Transportation model roads
- Model loading points

The ideal TAZ would have a small population or worker count (but still more than 600), strong borders (Census/political/physical/major road), have a relatively homogeneous mix of land use, and not contain a large amount of special generators. In reality these ideals could not all be met so each TAZ revision was done on an individual basis by looking at each of the variables in detail and considering which were more important in the context of each specific area.

Upon completion of the revisions the number of TAZs in the TMA increased from 530 to 564. There were actually more than the net 34 new TAZs created because 13 existing TAZs were reassigned to a new area after their original TAZ was combined with a neighboring TAZ. A majority of the other TAZs stayed the same although over 100 experienced some sort of change. This included minor changes like moving a small census block from one TAZ to another, as well as major changes such as moving a full residential neighborhood, or commercial district from one TAZ to another.

TAD Creation

After the TAZ revisions were complete, TADs were created by grouping TAZs based on transportation corridors. The Census Bureau had a minimum population threshold of 20,000 people per TAD with no exception based on worker counts. Thirty TADs were created and include transportation corridors such as Jefferson Road, Ridge Road/Rte. 104, Rte. 5&20, East/West Henrietta Roads, East Avenue/Rte. 31F, and Monroe Ave/Rte. 31.

TMA Expansion TAZs

The final step in the project was to consider how TAZs might be delineated in the future if the TMA were to expand. The 18 towns and 10 villages that border the TMA were included in this TMA expansion area. Town boundaries were set as the initial default TAZs and were then split when necessary based on the same analysis criteria used in the TAZ revisions portion of this process. The process resulted in 35 potential expansion TAZs.

Submission

All TAZ revision and TAD creation data was submitted to the Census Bureau on June 24, 2011. GIS shapefiles have been submitted to GTC for the TAZ revisions, TADs and TMA Expansion TAZs.