Census Bureau’s Proposed Urban Area Delineation Changes and Potential Implications

Texas Demographic Conference
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Overview of the Census Urban Area boundary process
Summary of the proposed changes
Discussion of potential impacts and uncertainties
Summary and resources
Questions & answers

Source: U.S. Census Bureau. 2010 and 2020 Census Count
What is an Urban Area?

• Densely developed area including residential, commercial, and other non-residential urban land uses

• Does not regard other legal boundaries, e.g.:
  • States
  • Counties
  • Cities

• Made up of a collection of urban-qualified census blocks
What is a Census Block?

• Blocks are the smallest geography and analytical unit used by the Census Bureau

• Similar to a city or neighborhood block in size and delineation

• Visualization of the Census Geography
Census Geography 101

Sources: U.S. Census Bureau
Tarrant County in Texas

Sources: U.S. Census Bureau
A Census Tract within Tarrant County

Sources: U.S. Census Bureau
Census Tract

Sources: U.S. Census Bureau
A Census Block Group within a Census Tract

Sources: U.S. Census Bureau
A Census Block within a Census Block Group

Sources: U.S. Census Bureau
Sources: U.S. Census Bureau
A Census Block on the Map

• A Census block is similar to a city or neighborhood block

Sources: U.S. Census Bureau
Who Draws and Uses Urban Areas?

U.S. Census Bureau

- Delineates (draws the boundaries) of Urban Areas
- For statistical purposes ONLY
- Produces data sets for these areas (e.g., population, demographic, and socioeconomic characteristics)

Federal agencies (e.g., FTA)

- Use Urban Area boundaries and data sets for transportation planning and funding

States and local governments

- Use Urban Area boundaries and data sets for transportation planning and funding
Step 1: Identify urban-qualified tracts/blocks
  - If a tract/block meets a threshold (in terms of population/housing units) the block is urban-qualified

Step 2: Identify Urban Areas
  - Find “urban cores,” clusters of contiguous urban-qualified blocks
  - If the core meets a threshold (in terms population/housing units), the core becomes an Urban Area

Step 3: Hops and jumps
  - Add non-contiguous urban-qualified blocks to the Urban Area searching outward from the Urban Area “core”, allowing for
    - Hops (.5 mile or less) along a roadway (multiple hops allowed)
    - Jumps (more than .5 miles) along a roadway (one jump allowed)
  - Add enclaves

Step 4: Split or merge Urban Areas
Urban Area Delineation Steps Visualized*

Step 1: Urban-qualified blocks

Step 2: Urban Areas

Step 3a: Hops and jumps

Step 3b: Enclaves

Step 4: Split or merge

Tracts with 1,000+ PPSM (urban core)
Block with 500+ PPSM

Group of blocks with 2,500+ people

Use legacy method (prior Urban Area boundaries are main consideration)

Include enclaves

*The steps shown here are simplified and may not match exactly to those used by the Census Bureau
Proposed Changes
7 Proposed Changes

1. Qualify census blocks as urban if they have $\geq 385$ housing units per sq. mi.
2. Qualify Urban Areas if they have $\geq 4,000$ housing units OR $\geq 10,000$ persons.
3. Cease distinguishing between types of Urban Areas.
4. Reduce the maximum jump distance to 1.5 miles.
5. No longer include low-density hop or jump corridors in Urban Areas.
6. No longer include low-density indentations in Urban Areas.
7. Split large urban agglomerations using worker flow data.
**Change 1: Qualify Blocks as Urban Based on Housing Unit Density**

**Current**
- Urban cores qualify as urban with at least **1,000 persons per square mile (PPSM)**.
- Blocks qualify as urban with at least **500 PPSM**.

**Proposed**
- Blocks qualify as urban with at least **385 housing units per square mile (HUPSM)**.

**Discussion**
- 385-housing-unit-density is similar to the “urban core” with at least 1,000 PPSM (based on national average 2.6 people per household)
- Rationales behind this proposed change:
  1. Reduces impacts from the new disclosure avoidance system (DAS) at the block-level data
  2. Allows for more frequent updating of urban areas, if needed
  3. Directly measures development of landscape
Source: 2017 Local Update of Census Address (LUCA) data
Source: 2017 Local Update of Census Address (LUCA) data

Waco_UA_blocks
- Yellow: below 385 housing units per square mile
- Red: above 385 housing units per square mile
Change 2: Qualify Urban Areas Based on 4,000 Housing Units or 10,000 People

Current

• Group of blocks qualifies as an Urban Area with at least 2,500 people

Proposed

• Group of blocks qualify as an Urban Area with at least 4,000 housing units OR 10,000 people

Discussion

• Rationales behind this proposed change:
  1. The urban population threshold of 10,000 is currently used by the Office of Management and Budget (2018 OMB criterion)
  2. Reduces impacts from the new disclosure avoidance system (DAS) at the block-level data
  3. Allows for more frequent updating of Urban Areas, if needed
Change 3: Cease Distinguishing between Different Types of Urban Areas

Current

• Census Bureau labels Urban Areas between 2,500 and 49,999 people as urban clusters
• Census Bureau labels Urban Areas with at least 50,000 people as urbanized areas

Proposed

• All urban areas with at least 4,000 housing units or 10,000 people would be labeled as Urban Area

Discussion

• Rationales behind this proposed change:
  1. No statistical differences between urban clusters and urbanized areas with close to 50,000 people.
• All urban areas would be simply “Urban Areas”
• Other federal agencies could classify Urban Areas as needed (e.g., FTA labeling - small urban, large urban, etc. can be continued)
2020 Texas Urban Areas (302) Current Delineations

2020 Texas Urban Areas (110) Current Delineations without Areas with Less Than 10,000 People

Source: Texas Demographic Center Population Projections & 2010 Census
Change 4: Reduce Maximum Jump Distance to 1.5 Miles

Current

• Jumps along roadways over low-density areas to near-by urban-qualified blocks are allowed up to \textbf{2.5 miles} once

Proposed

• Jumps along roadways over low-density areas to near-by urban-qualified blocks are allowed up to \textbf{1.5 miles} once

Discussion

• 1.5-mile jump distance used from 1950s to 1990 Census
• Would reduce the possibility of “overextending” Urban Area boundaries
Jump Distance Reduction

Step 1: Urban-qualified blocks
Step 2: Urban Areas
Step 3: Hops and jumps
Step 4: Split or merge

> 1.5 miles
Change 5: No Longer Include Low-Density Jump Corridor as Part of the Urban Area

Current

- Low-density blocks (<500 PPSM) that are in the hop or jump corridor are included in the Urban Area

Proposed

- Low-density blocks (<385 HPSM) that are in the hop or jump corridor will not be included in the Urban Area

Discussion

- All the blocks in an Urban Area would pass the housing unit density check
- Would create non-contiguous Urban Areas
Eliminating the Hop and Jump Corridor as Part of the Urban Area

Step 1: Urban-qualified blocks
Step 2: Urban Areas
Step 3: Hops and jumps
Step 4: Split or merge
Change 6: No Longer Include Low-Density Enclaves

Current

• Low-density blocks (<500 PPSM) that are surrounded on three sides by urban territory are included in the Urban Area

Proposed

• Low-density blocks (<385 HPSM) that are surrounded on three sides by urban territory will not be included in the Urban Area

Discussion

• Previously included these blocks to help “smooth” Urban Area boundaries and make mapping easier
• No longer needed this approach because advanced GIS software and “zoomable” maps
No Longer Including Enclaves as Part of the Urban Area

Step 1: Urban-qualified blocks
Step 2: Urban Areas
Step 3: Hops and jumps
Step 4: Split or merge
Change 7: Split/Merge Agglomerations using Worker Flow Data

Current

• A large agglomeration includes multiple Urban Areas. Currently, the decision of where to split a large agglomeration is based on the “legacy” approach

Proposed

• Use worker flow data (i.e., commuting flows) from the Longitudinal Employer-Household Dynamics (LEHD) data to draw boundaries between different Urban Areas

Discussion

• Two-step approach:
  1. Analyze worker flows (based on 2010 Urban Area delineations) to determine whether to merge or split Urban Areas
  2. Based on the LEHD empirical commuting patterns to draw the Urban Area boundaries
• Urban Area boundaries become more dynamic and will keep changing over time
Split/Merge Agglomerations using Worker Flow Data

Where do Washington Residents work?

Legend:
- Legacy Boundary
- Baltimore Urban Area
- Washington D.C. Urban Area

Percent of jobs filled by residents of Washington

Legend:
- 0.00 - 0.30
- 0.30 - 0.50
- 0.50 - 1.00

Where do Washington Workers live?

Legend:
- New Boundary

Percent of residents working in Washington

Legend:
- 0.00 - 0.30
- 0.30 - 0.50
- 0.50 - 1.00

Source: U.S. Census Bureau
Potential Impacts
“Higher Bar” Impacts

• Qualifying census blocks as urban
  • 385 housing units per square mile based on prior urban CORE criteria of 1,000 persons per square mile
  • Sets a higher bar for urban block qualification
• Average household size in Texas (2.8) differs from the U.S. average (2.6)
• Average household size varies by county in Texas
• Variation exits within counties for smaller Census geographies (blocks), too
**Example of Differential Impacts of Switching to Housing Units**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Block 1</th>
<th>Block 2</th>
<th>Block 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently qualified as urban core</td>
<td>✔️</td>
<td>✔️</td>
<td>✗</td>
</tr>
<tr>
<td>Population density (people per sq. mi.)</td>
<td>1,000</td>
<td>1,000</td>
<td>750</td>
</tr>
<tr>
<td>People per housing unit (average)</td>
<td>2.60</td>
<td>3.00</td>
<td>1.95</td>
</tr>
<tr>
<td>Housing unit density (units per sq. mi.)</td>
<td>385</td>
<td>333</td>
<td>385</td>
</tr>
<tr>
<td>Qualifies as urban in the future?</td>
<td>✔️</td>
<td>✗</td>
<td>✔️</td>
</tr>
</tbody>
</table>

- Areas with larger household size may see reduced urbanization
  -> Fewer housing units per square mile even if heavily populated
- Areas with lower household size may see increased urbanization
  -> More housing units per square mile even if less populated
If we only increased the Urban Area population threshold from 2,500 to 10,000 (held the other criteria constant):

1. 192 current urban clusters (with 2,500 - 10,000 population) will become non-urban areas
2. Texas 2020 urban population: 25 million -> 24 million
3. Texas 2020 rural population: 4 million -> 5 million

Source: Texas Demographic Center Population Projections & 2010 Census
Conservative Urban Area Growth and Some Potential Minor Reductions

• Several proposed changes may slow Urban Area growth
  • Smaller jump distance (now 1.5 miles)
  • No longer including low-distance “hop and jump” corridors
  • No long including enclaves

• Main impact areas
  • Along established Urban Area “edges”
  • In newly developing Urban Areas

• Urban Areas may not be contiguous
  • Not including “hop and jump” corridors means that urban blocks may not all touch
  • Not including enclaves may create many indentations in boundaries
  • Potential confusion about Urban Area service vs. rural service
• Using LEHD worker flow data provides *empirical* basis for splitting agglomerations of Urban Areas, BUT

• Potential impacts of uncertain
  1. Adjacent Urban Areas could be **merged** if they function as a single region / community
  2. Urban agglomerations could be **split** in different places than current, depending on worker flow data

 -> **New Urban Areas may not be comparable with previously delineated Urban Areas**
### Impacts of New Urban Area Boundaries on Other Delineations

**Urban Area delineation vs. Core-Based Statistical Area (CBSA) delineation**

Comparison of the delineation between Urban Area and Core-Based Statistical Area (CBSA)

<table>
<thead>
<tr>
<th>Delineation</th>
<th>Urban Area</th>
<th>Metro-/Micro- Statistical Area (Core-Based Statistical Area)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current Criteria</td>
<td>Proposed Criteria</td>
</tr>
<tr>
<td>Population threshold for urban area</td>
<td>2,500</td>
<td>10,000</td>
</tr>
</tbody>
</table>
| Cut-off urban population threshold for different types of area | <2,500: non-urban  
2,500-49,999: urban cluster  
50,000+: urbanized area | <10,000: non-urban  
10,000+: urban area | <10,000: non-CBSA  
10,000-49,999: micropolitan area  
50,000+: metropolitan area | <10,000: non-CBSA  
10,000-99,999: micropolitan area  
100,000+: metropolitan area |
| Delineation base year          | 2010                        | 2020                         | 2018                          | 2023                         |
| Base geography (cannot be split) | Census block                      | County                       |                               |                               |
| Delineation agency          | U.S. Census Bureau                | The Office of Management and Budget (OMB) |                               |                               |
Impacts of New Urban Area Boundaries on Other Delineations

- 71 CBSAs
  - 27 metropolitan
  - 44 micropolitan
(2018 OMB delineation)

- 71 CBSAs
  - 21 metropolitan
  - 50 micropolitan
(Proposed new OMB delineation)

Source: Institute for Demographic and Socioeconomic Research (IDSER)
## Impacts of New Urban Area Boundaries on Other Delineations

Selected Texas CBSAs based on 2010, 2015-2019, and 2020 Urban Area (UA) population

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Rio Grande City-Roma Micropolitan Area</td>
<td>46,344</td>
<td>48,099</td>
<td>50,246</td>
</tr>
<tr>
<td>Eagle Pass Micropolitan Area</td>
<td>49,236</td>
<td>52,752</td>
<td>54,903</td>
</tr>
<tr>
<td>Sherman-Denison Metropolitan Area</td>
<td>61,900</td>
<td>66,038</td>
<td>68,612</td>
</tr>
<tr>
<td>Victoria Metropolitan Area</td>
<td>63,683</td>
<td>67,172</td>
<td>69,733</td>
</tr>
<tr>
<td>Texarkana Metropolitan Area</td>
<td>78,162</td>
<td>79,327</td>
<td>80,797</td>
</tr>
<tr>
<td>Wichita Falls Metropolitan Area</td>
<td>99,437</td>
<td>98,327</td>
<td>93,925</td>
</tr>
<tr>
<td>Longview Metropolitan Area</td>
<td>98,884</td>
<td>100,534</td>
<td>104,740</td>
</tr>
<tr>
<td>San Angelo Metropolitan Area</td>
<td>92,984</td>
<td>99,269</td>
<td>105,445</td>
</tr>
</tbody>
</table>

Source: 2010 Census, 2019 5-Year ACS Data, & Institute for Demographic and Socioeconomic Research (IDSER)

- However, the information of this table will change once the new UA delineation is implemented!
• Urbanization becoming more about the built environment than population
• Potentially slower Urban Area (UA) growth than previous Census
• Well-established Urban Areas (Urbanized Areas with 50,000+ population) receiving FTA funding likely not significantly impacted EXCEPT
  • Potential for merges or splits
  • Potential for only small gains (or even losses) on the edges of development
• Urban Areas may not be contiguous
• Newly delineated UAs may not be comparable to previous UAs
• Newly delineated UAs will impact delineations by other agencies (e.g., metropolitan & micropolitan statistical areas by the OMB)
Resources

• Federal Register announcement - Urban Areas for the 2020 Census-Proposed Criteria
  - Comments due May 20, 2021
• TDC Evaluation of the Proposed 2020 Urban Area Criteria
• Federal Register announcement - Changes to the 2010 Standards for Delineating Metropolitan and Micropolitan Statistical Areas
  - Comments due March 20, 2021
• TDC Evaluation of the Proposed 2020 Metropolitan Statistical Areas Criteria
• Local Update of Census Addresses Program (LUCA) - Housing unit data
• LEHD data
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