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

Texas Demographic Conference
2021 Annual Data Users Conference
June 10, 2021

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Agenda

- 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

Census Urban Area Boundary Process

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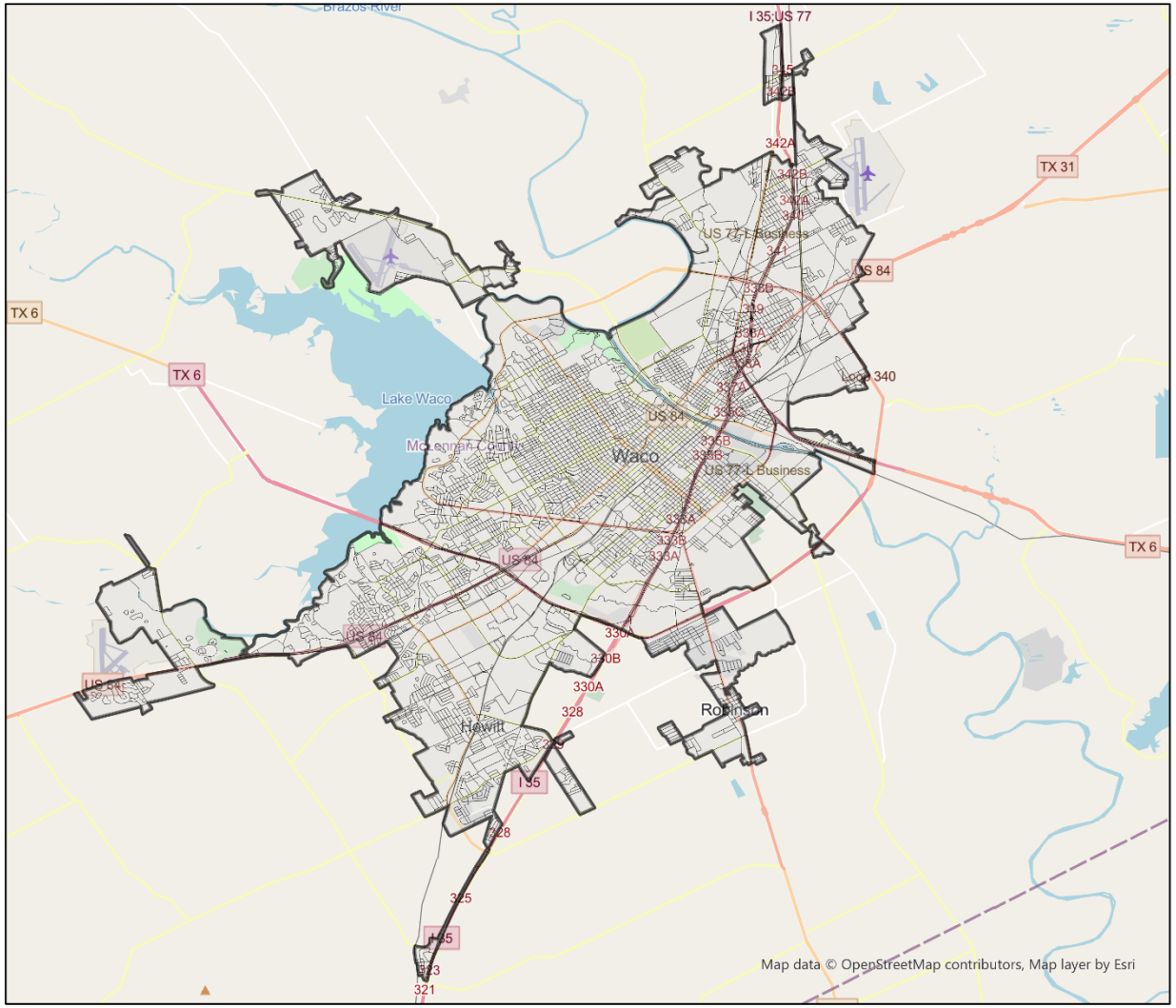
What is an Urban Area?

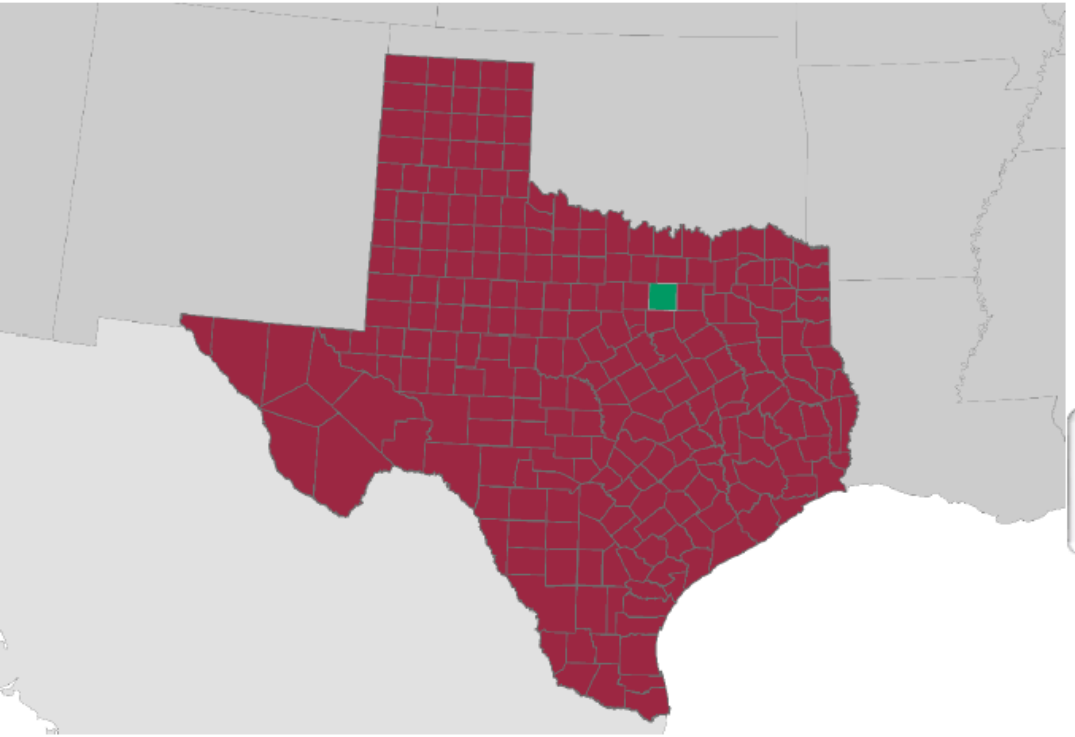


- Densely developed area including residential, commercial, and other non-residential <u>urban land uses</u>
- Does **not** regard other legal boundaries, e.g.:
  - States
  - Counties
  - Cities
- Made up of a collection of urban-qualified census blocks

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

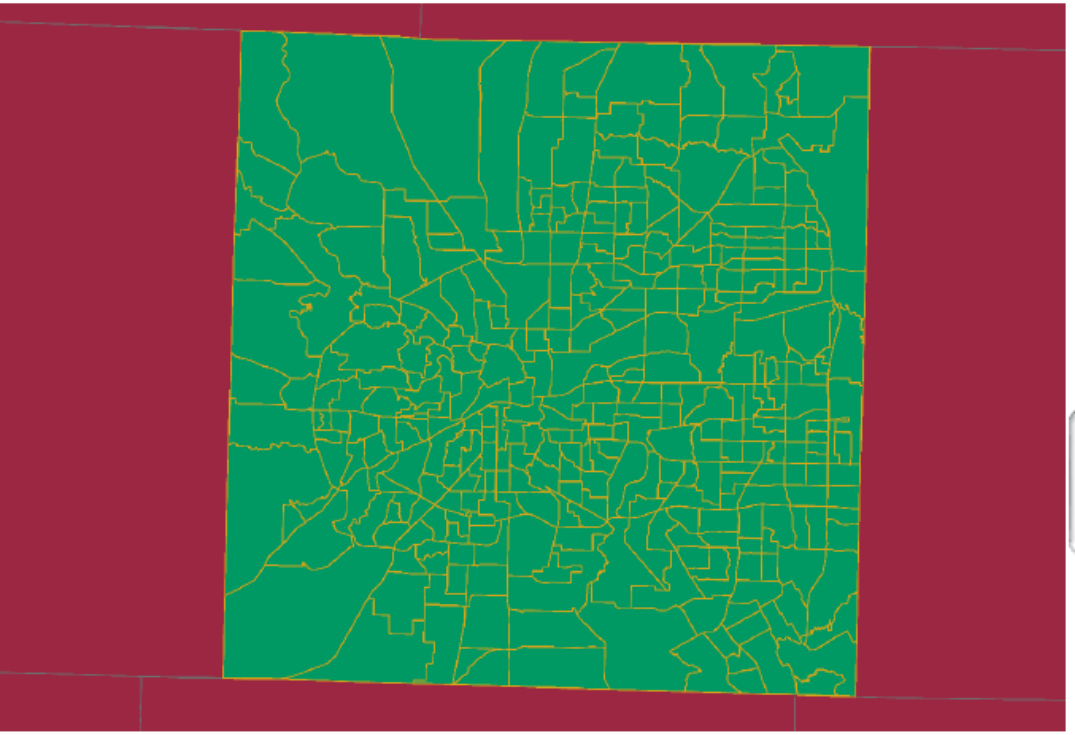
Census Geography 101



48				
State	County	Tract	Block Group	Block

Sources: U.S. Census Bureau

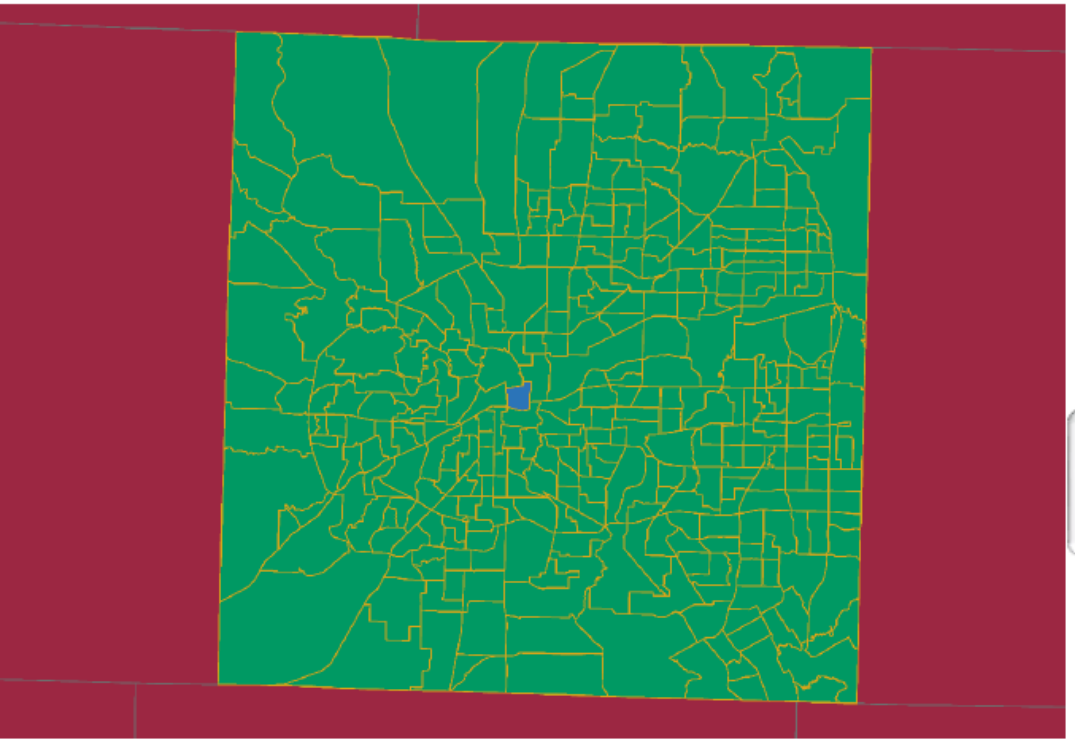
Tarrant County in Texas



48	439			
State	County	Tract	Block Group	Block

Sources: U.S. Census Bureau

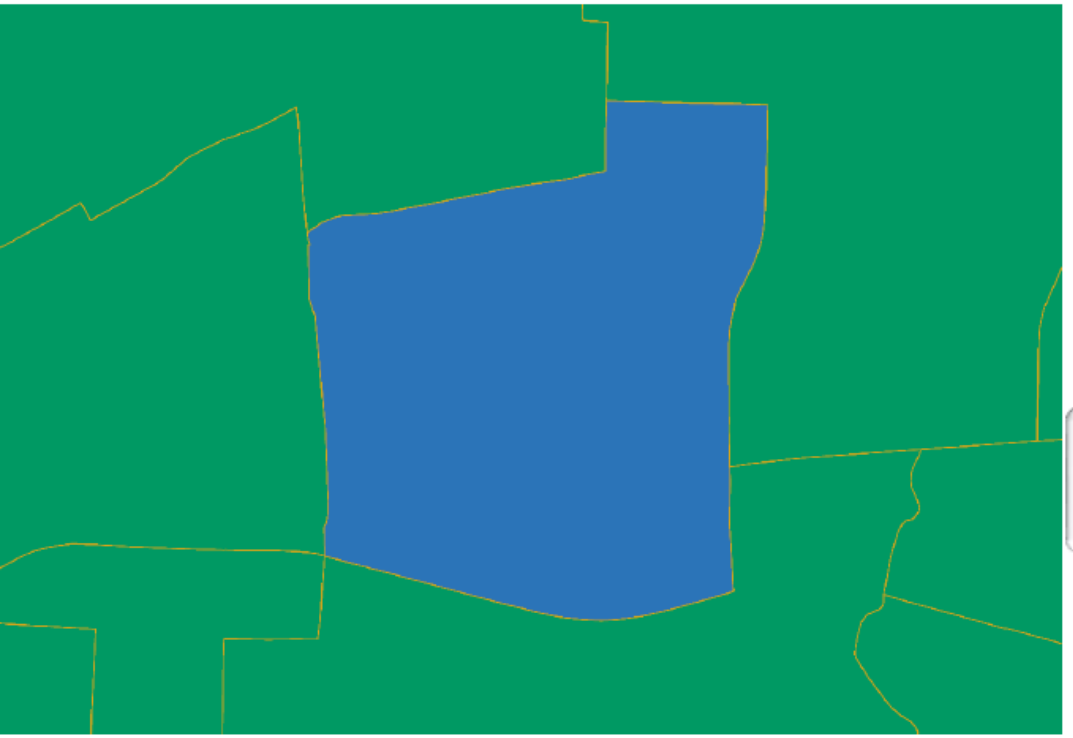
A Census Tract within Tarrant County



48	439			
State	County	Tract	Block Group	Block

Sources: U.S. Census Bureau

Census Tract



48	439	001017		
State	County	Tract	Block Group	Block

Sources: U.S. Census Bureau

A Census Block Group within a Census Tract

48	439	001017	2	
State	County	Tract	Block Group	Block

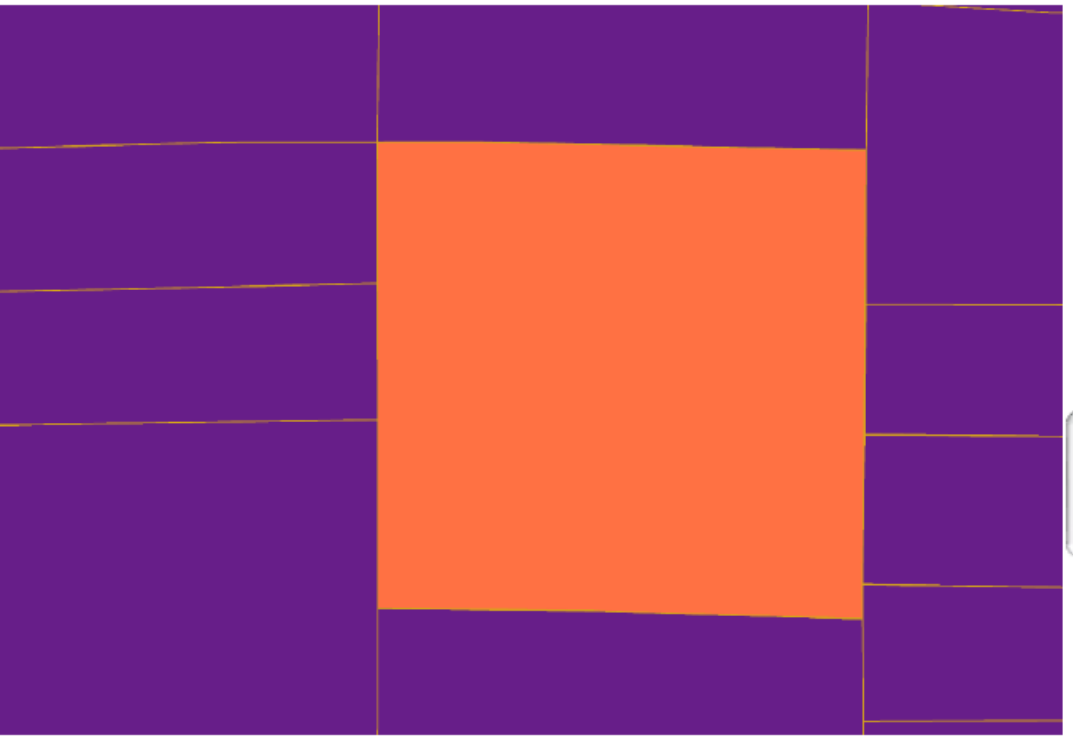
Sources: U.S. Census Bureau

A Census Block within a Census Block Group

48	439	001017	2	
State	County	Tract	Block Group	Block

Sources: U.S. Census Bureau

This is a Census Block



48	439	001017	2	2036
State	County	Tract	Block Group	Block

Sources: U.S. Census Bureau

A Census Block on the Map

48	439	001017	2	2036
State	County	Tract	Block Group	Block

- 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

Urban Area Boundary Delineation Process *Oversimplified*

- 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*

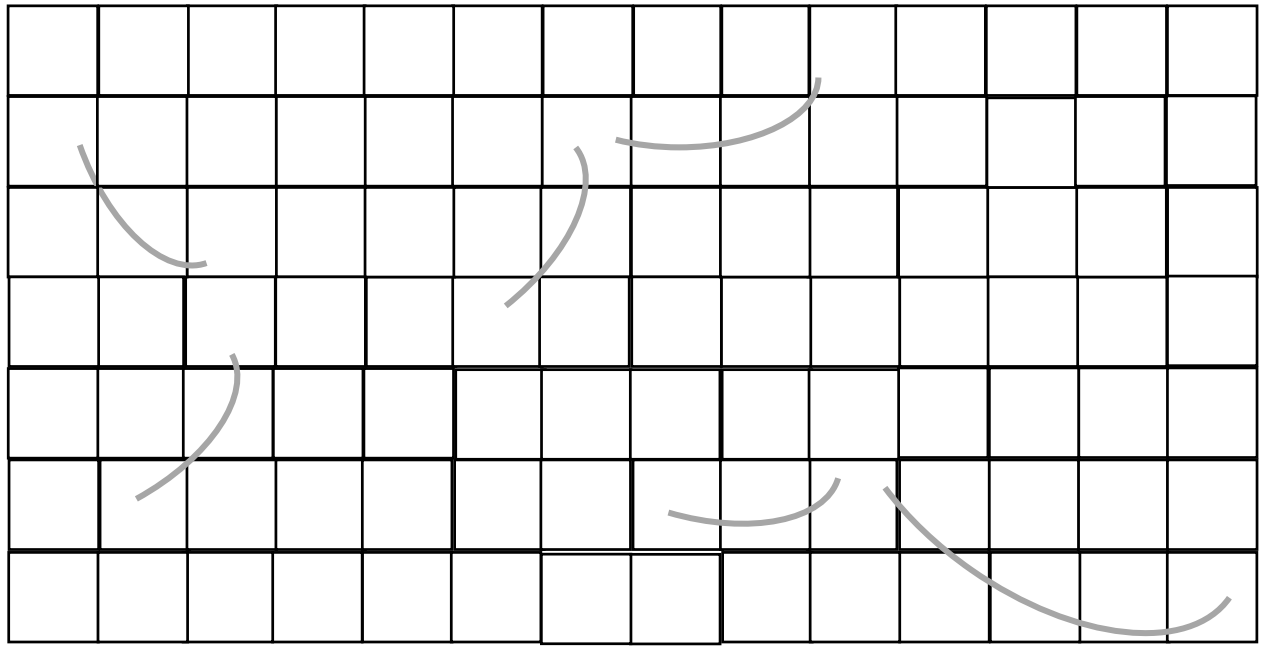
Step 1: Urban-qualified blocks

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

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7 Proposed Changes

1. Qualify census blocks as urban if they have ≥385 housing units per sq. mi.
2. Qualify Urban Areas if they have ≥4,000 housing units OR ≥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

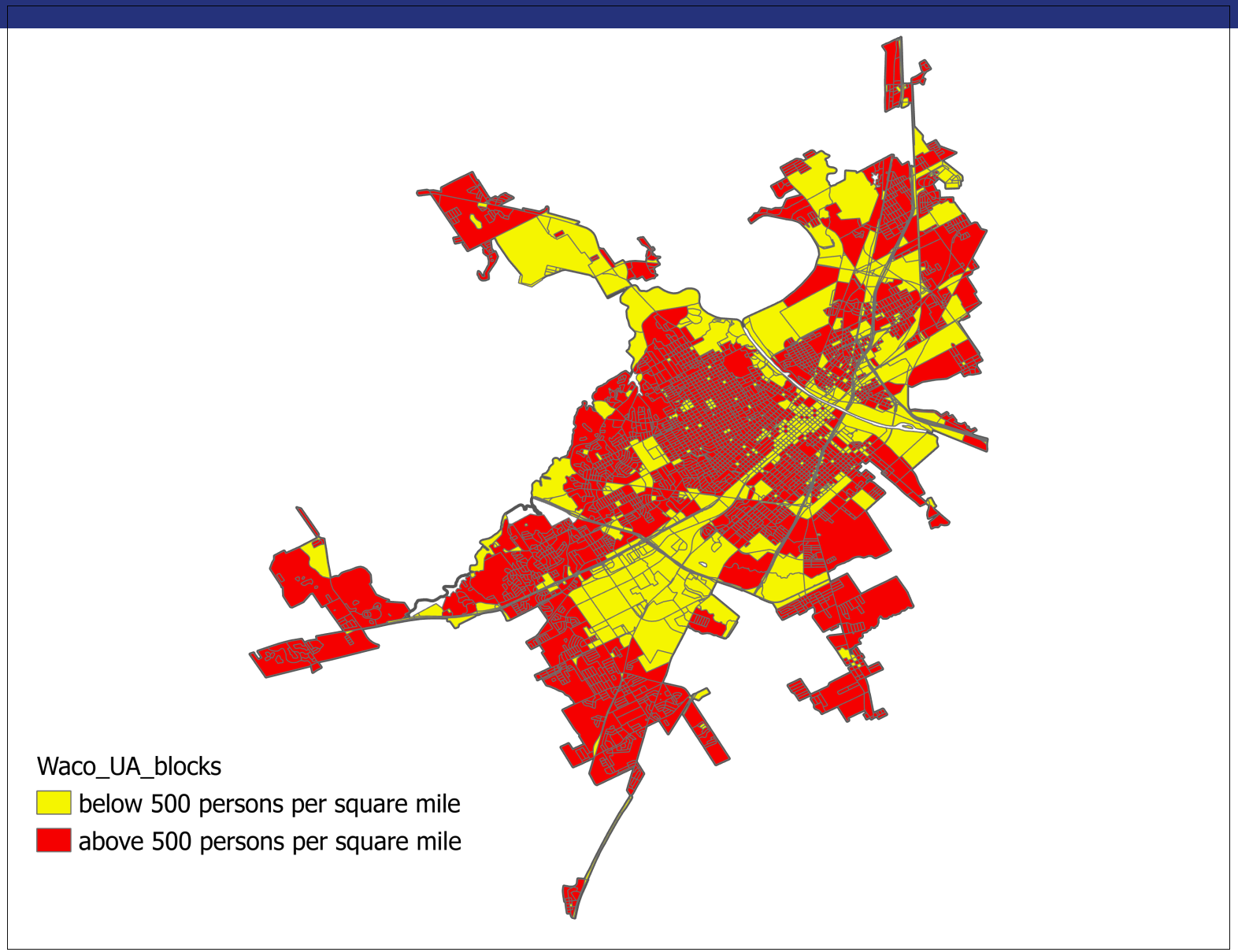
- Urban cores qualify as urban with at least **1,000 persons per square mile (PPSM)**.
- Blocks qualify as urban with at least **500 PPSM**.

Proposed

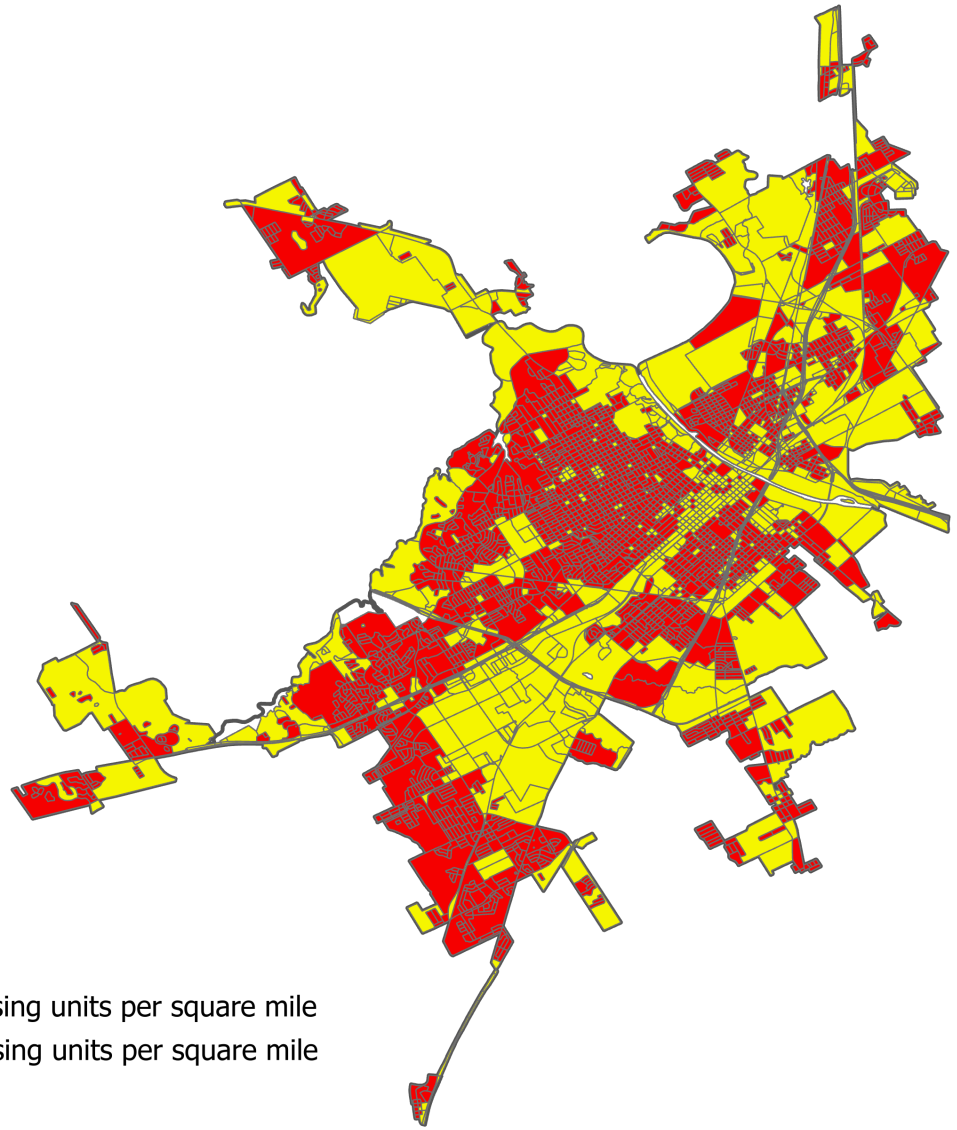
- Blocks qualify as urban with at least **385 housing units per square mile (HUPSM).**

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

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**

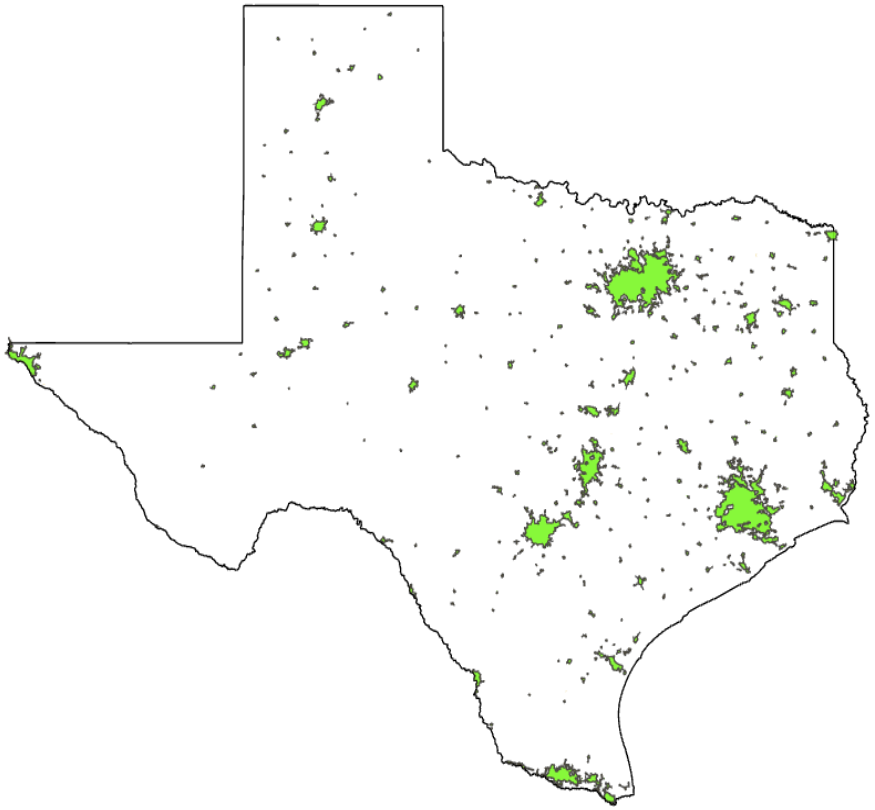
Proposed

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

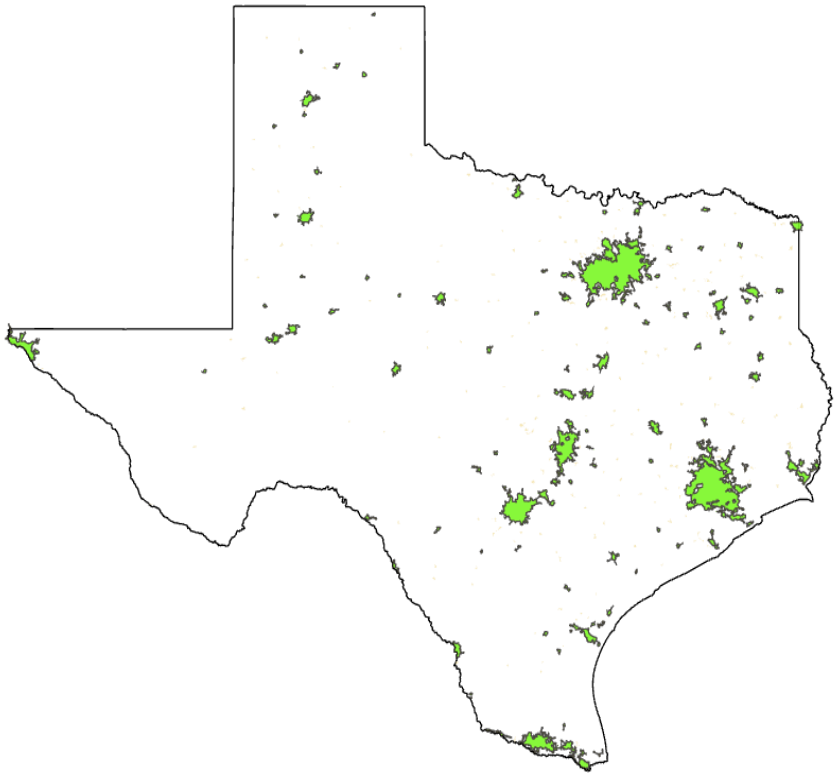
Discussion

- 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 **2.5 miles** once

Proposed

- Jumps along roadways over low-density areas to near-by urban-qualified blocks are allowed up to **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

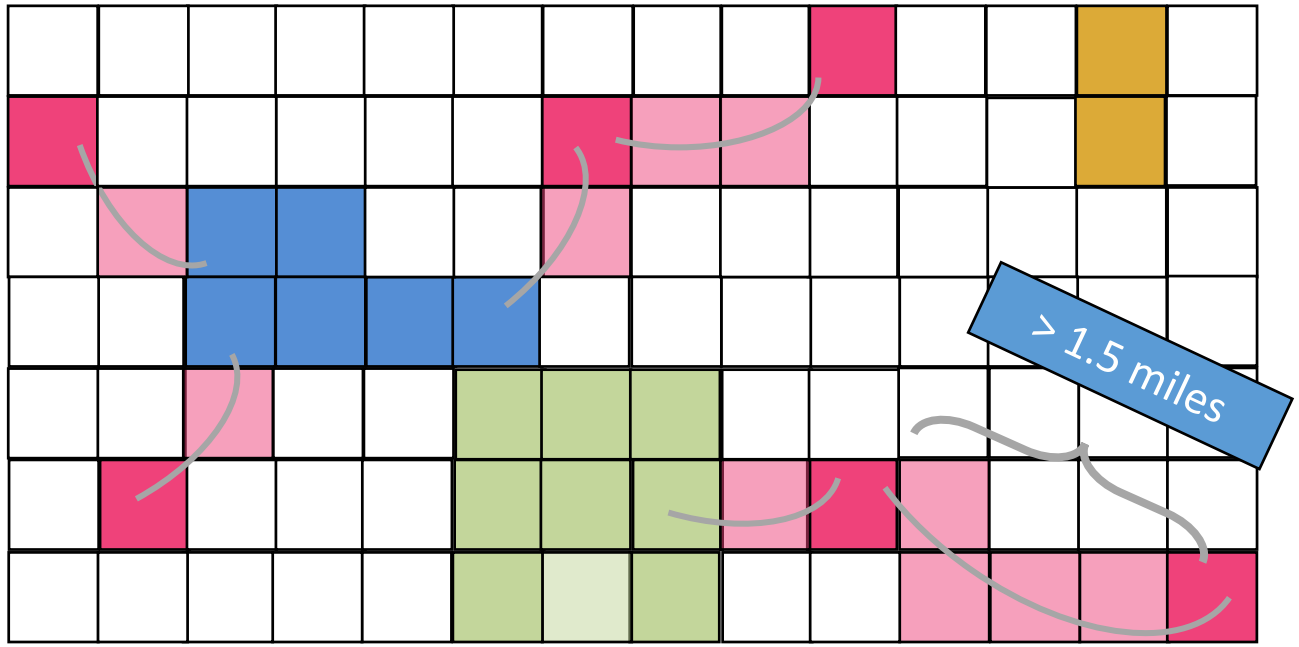
Jump Distance Reduction

Step 1: Urban-qualified blocks

Step 2: Urban Areas

Step 3: Hops and jumps

Step 4: Split or merge



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

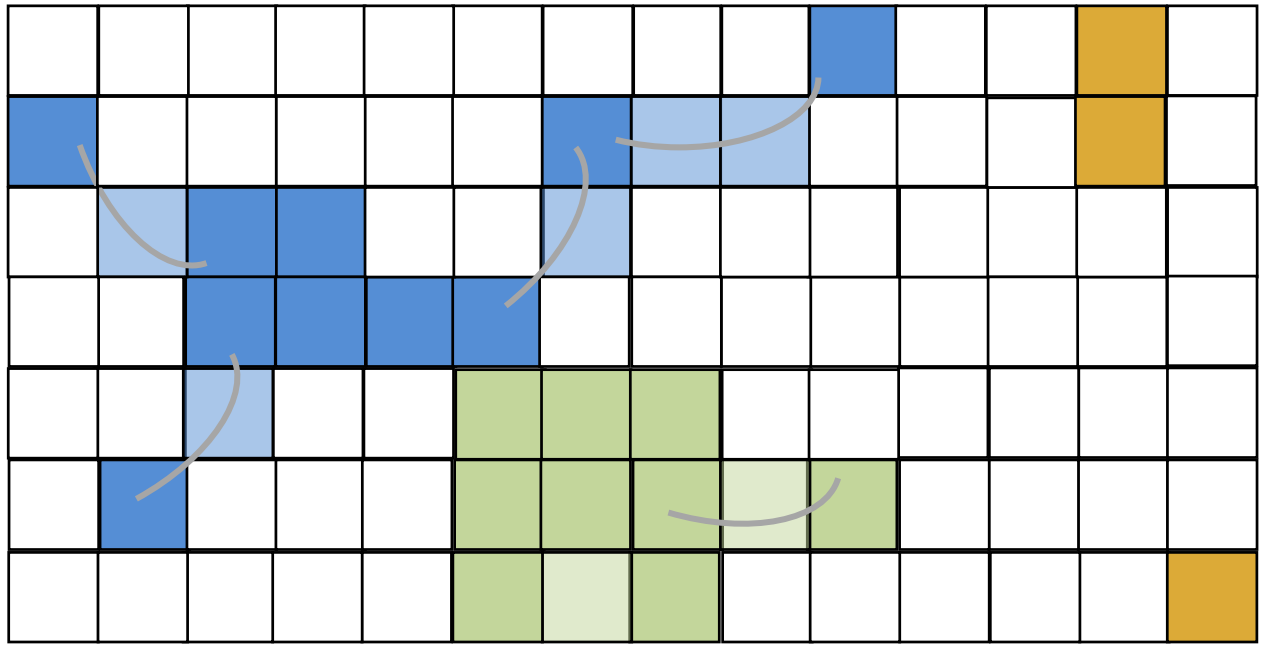
Eliminating the Hop and Jump Corridor as Part of the Urban Area

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

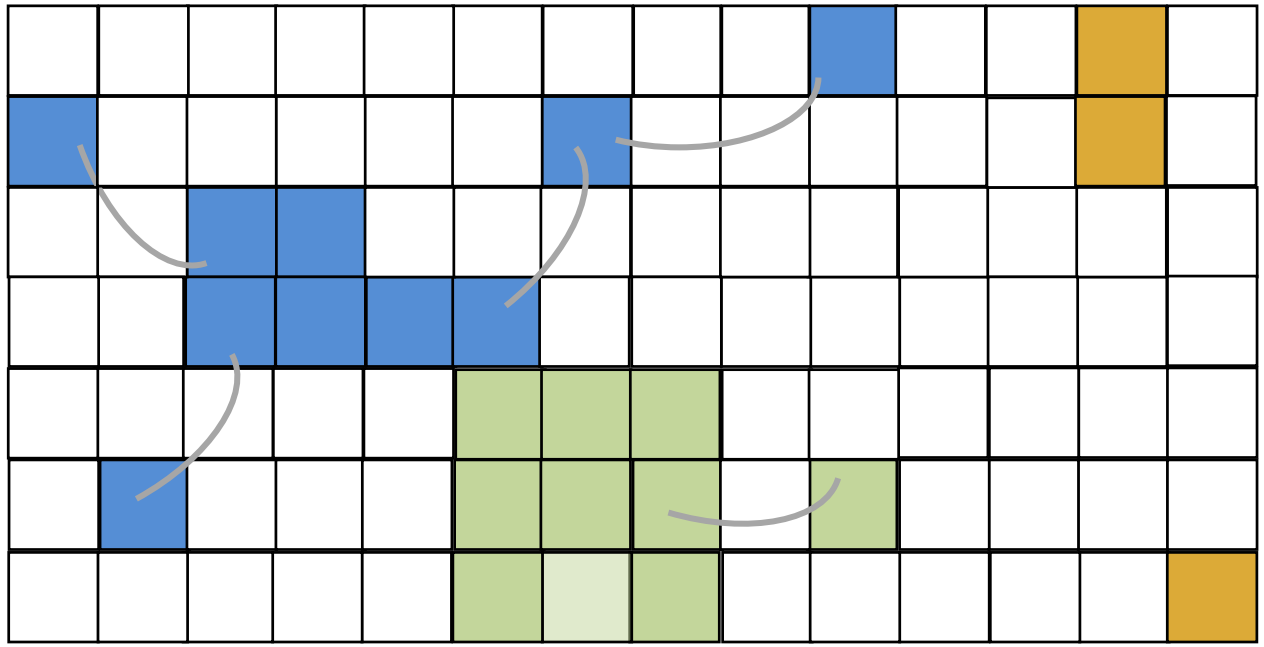
No Longer Including Enclaves as Part of the Urban Area

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

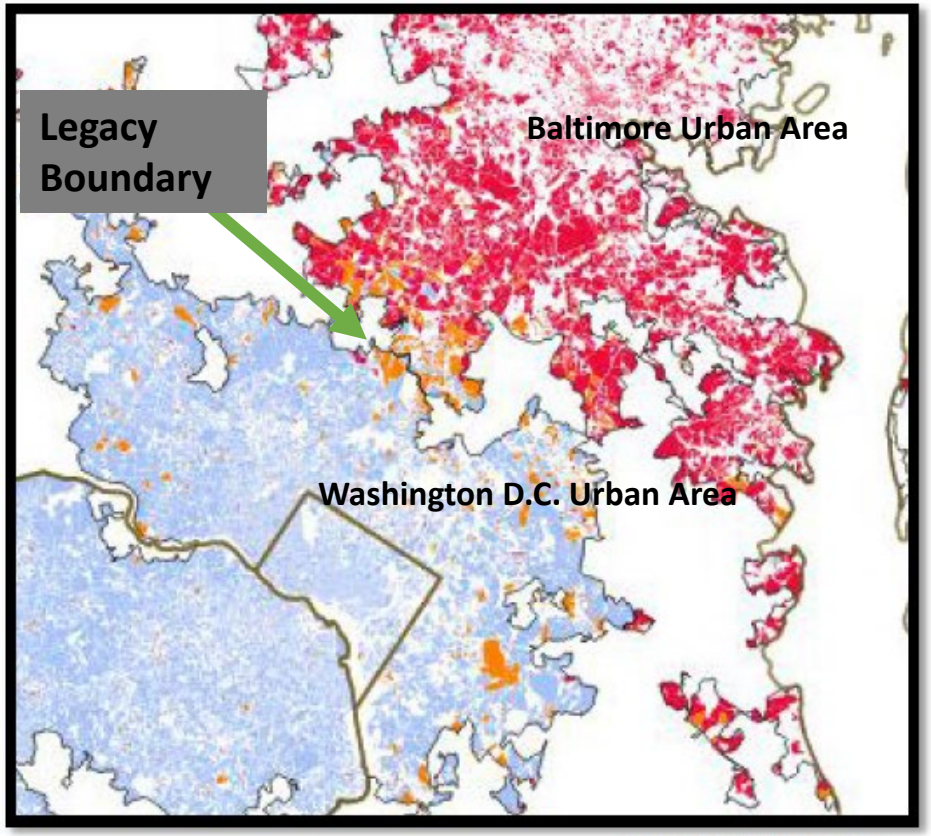
- Use worker flow data (i.e., commuting flows) from the Longitudinal Employer-Household Dynamics (LEHD) data to draw boundaries between different Urban Areas

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

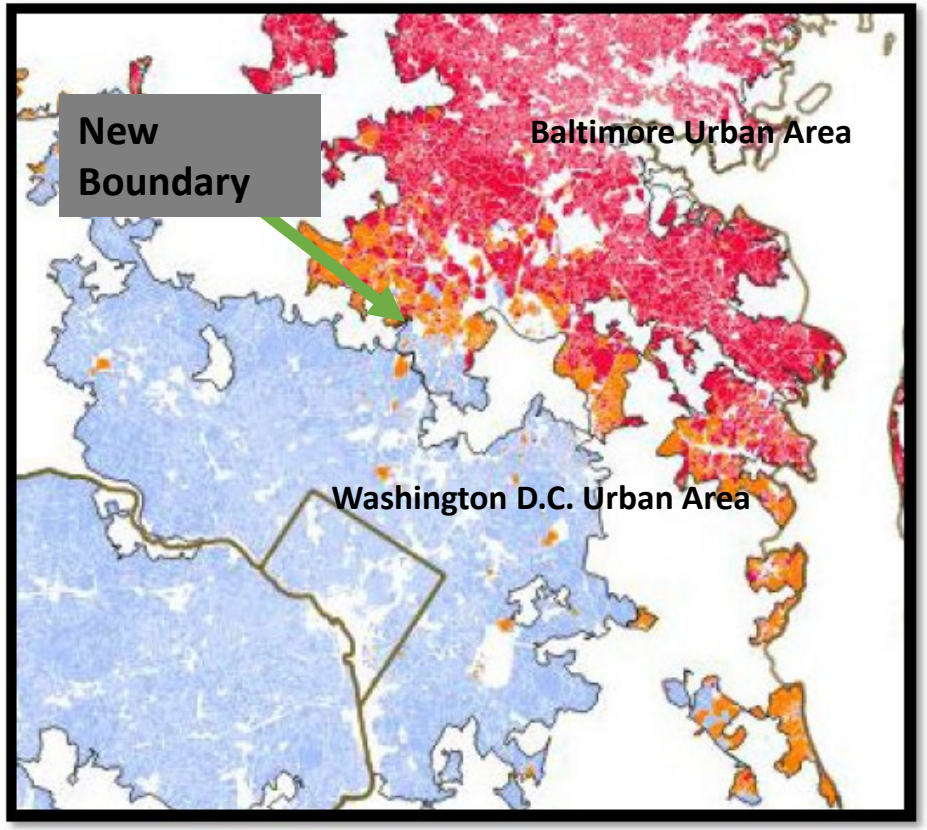
Where do Washington Residents work?



Percent of jobs filled by residents of Washington

- 0.00 - 0.30
- 0.30 - 0.50
- 0.50 - 1.00

Where do Washington Workers live?



Percent of residents working in Washington

- 0.00 - 0.30
- 0.30 - 0.50
- 0.50 - 1.00

Source: U.S. Census Bureau

Potential Impacts

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“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

Differential Impacts of Housing Unit Density Threshold for Urban Area 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

County	Rank	ACS (5-Year) 2019 Average Household Size	Housing Unit Density Equivalent to 1,000 ppsm
Starr County	1	3.92	255
Reeves County	2	3.87	258
Culberson County	3	3.76	266
Glasscock County	4	3.75	267
Hudspeth County	5	3.71	270
Webb County	6	3.61	277
Maverick County	7	3.56	281
Hidalgo County	8	3.55	282
Gaines County	9	3.54	282
Willacy County	10	3.52	284
Donley County	245	2.27	441
Jones County	246	2.24	446
Brewster County	247	2.23	448
Kent County	248	2.20	455
Terrell County	249	2.14	467
Throckmorton County	250	2.14	467
Marion County	251	2.10	476
Jeff Davis County	252	2.07	483
Menard County	253	2.05	488
Coke County	254	1.95	513
State of Texas	**N/A**	**2.82***	**355**
United of States	**N/A**	**2.61***	**385**

Note: * Used values from the 2019 1-Year ACS Data.

Source: 2019 1-Year ACS Data & 2019 5-Year ACS Data

Example of Differential Impacts of Switching to Housing Units

Characteristic	Block 1	Block 2	Block 3
Currently qualified as urban core	☑	☑	☒
Population density (people per sq. mi.)	1,000	1,000	750
People per housing unit (average)	2.60	3.00	1.95
Housing unit density (units per sq. mi.)	385	333	385
Qualifies as urban in the future?	☑	☒	☑

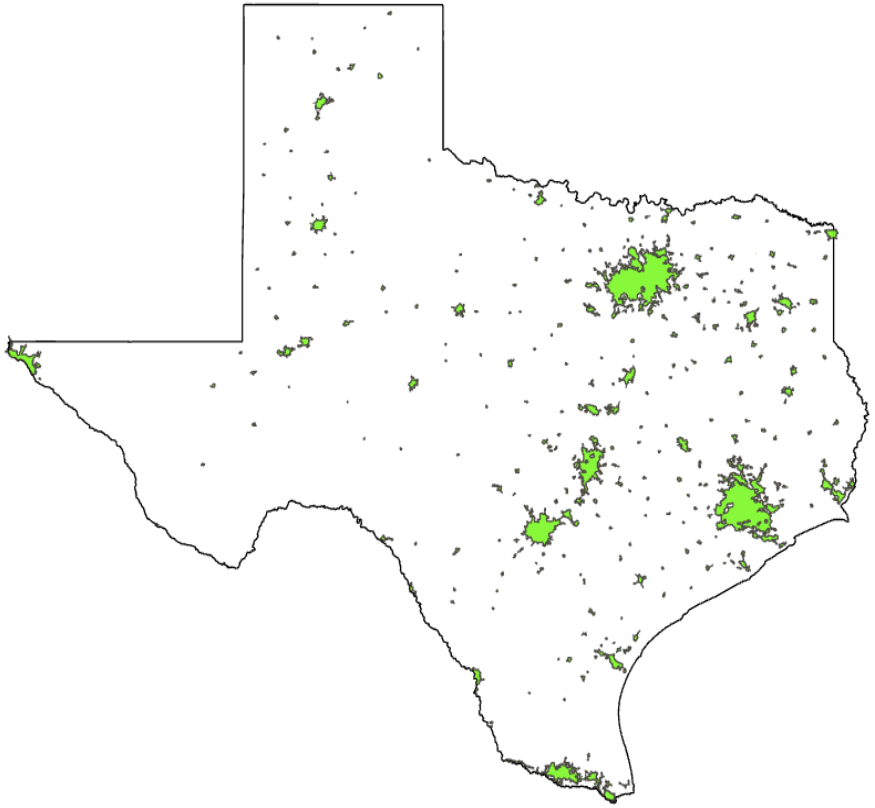
- Areas with larger household size may see reduced urbanization
  -> Fewer housing units per square mile even if heavily populated
- Areas with lower household size may see increased urbanization
  -> More housing units per square mile even if less populated

Impacts of Increasing the Urban Area Population Threshold

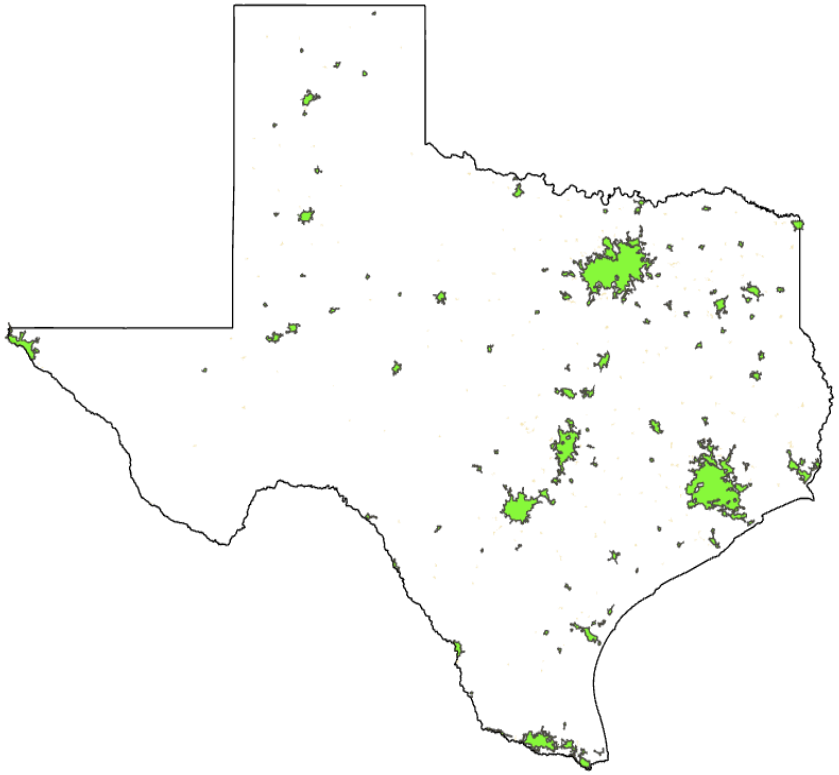
- If we only increased the Urban Area population threshold from 2,500 to 10,000 (held the other criteria constant):

  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

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

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

Splits Uncertain

- 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

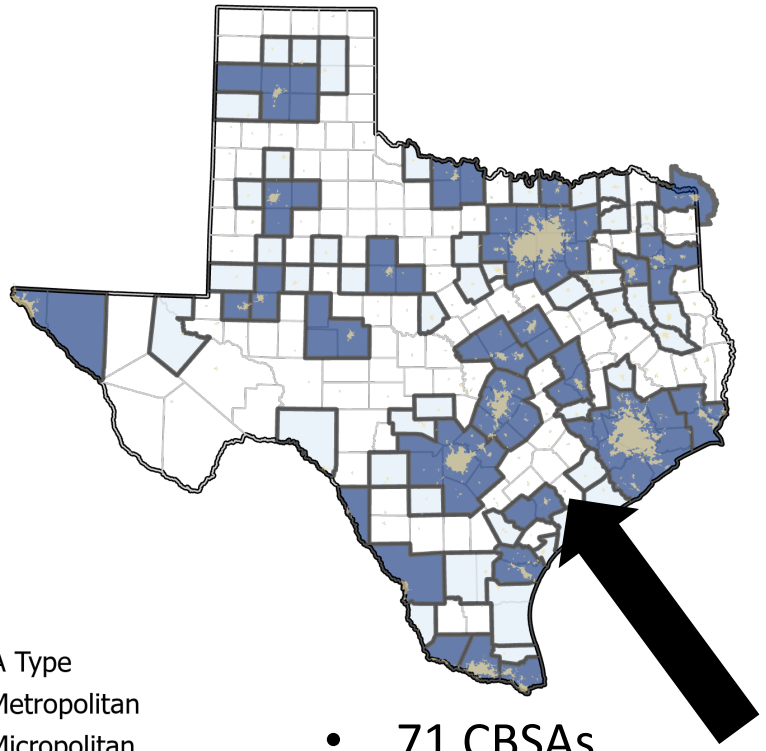
- Urban Area delineation vs. Core-Based Statistical Area delineation

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

Delineation	Urban Area		Metro-/Micro- Statistical Area (Core-Based Statistical Area)	
	Current Criteria	Proposed Criteria	Current Criteria	Proposed Criteria
Population threshold for urban area	2,500	10,000	10,000	10,000
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

Type of 2020 Texas CBSA with the Current Urban Population Threshold of 50,000

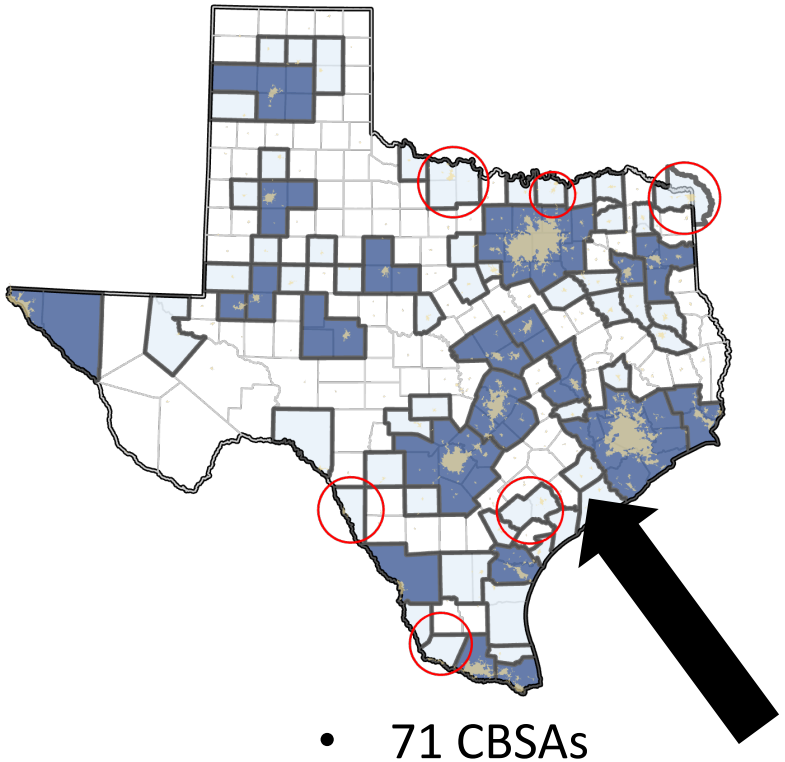


CBSA Type
- Metropolitan
- Micropolitan
- County
- Urban Area_2010 Delineation

- 71 CBSAs
  - 27 metropolitan
  - 44 micropolitan

(2018 OMB delineation)

Type of 2020 Texas CBSA with the Proposed Urban Population Threshold of 100,000



- 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

Core-Based Statistical Area	2010 Census Urban Area Population	ACS (5-Year) 2019 Urban Area Population	TDC Projected 2020 Urban Area Population
Rio Grande City-Roma Micropolitan Area	46,344	48,099	50,246
Eagle Pass Micropolitan Area	49,236	52,752	54,903
Sherman-Denison Metropolitan Area	61,900	66,038	68,612
Victoria Metropolitan Area	63,683	67,172	69,733
Texarkana Metropolitan Area	78,162	79,327	80,797
Wichita Falls Metropolitan Area	99,437	98,327	93,925
Longview Metropolitan Area	98,884	100,534	104,740
San Angelo Metropolitan Area	92,984	99,269	105,445

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!

Summary and Resources

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Key Takeaways

- 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

Questions & Answers

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