



U.S. Department
of Transportation
**Federal Highway
Administration**

FHWA's Adjusted Urban Area Boundary Guidelines

Supin Yoder

FHWA Office of Planning
Systems Planning & Analysis Team



U.S. Department
of Transportation
**Federal Highway
Administration**

Urban Area - Urban/Rural Definition





U.S. Department
of Transportation
**Federal Highway
Administration**

2020 Census Urban Area Boundary Release Schedule



February 19, 2021

Proposed 2020 Urban Areas Criteria Published

<https://www.federalregister.gov/documents/2021/02/19/2021-03412/urban-areas-for-the-2020-census-proposed-criteria>



March 24, 2022

Final 2020 Urban Area Criteria Published

<https://www.federalregister.gov/documents/2022/03/24/2022-06180/urban-area-criteria-for-the-2020-census-final-criteria>



Summer 2021

Review Comments



Fall 2022

Publish 2020 Qualifying Urban Areas

United States[®]
**Census
2020**



U.S. Department
of Transportation
**Federal Highway
Administration**

Summaries of Final Criteria for Delineating 2020 Census Urban Areas

- Increase the **minimum population threshold** from 2,500 to 5,000
- Include additional housing unit (≥ 2000) parameter to qualify as an Urban Area:
- Use **housing unit** density instead of population density to define initial Urban Area Cores
- Use only **Census Block** instead of Census Tract & Block to define initial Urban Area Cores
- Reduce the maximum jump distance from 2.5 miles to 1.5 miles
- Exclude the low density Hop or Jump corridors
- Cease distinguishing between urbanized areas and urban clusters
- Use LEHD worker flow data to determine whether to merge or split between 2010 urban areas



U.S. Department
of Transportation
**Federal Highway
Administration**

2010 & 2020 Census Urban Area Thresholds

2010 Census Urban Area Definition

| Census Bureau Urban Area Definition | Population Range |
|-------------------------------------|------------------|
| Urban Areas | 2,500+ |
| -- Urban Clusters | 2,500-49,999 |
| -- Urbanized Areas | 50,000+ |

2020 Census Urban Area Definition

| Census Bureau Urban Area Definition | Population | Housing Units |
|-------------------------------------|---|---------------|
| Urban Areas | 5,000 | or 2,000 |
| -- Urban Clusters | No longer distinguishing between the two types of urban areas | |
| -- Urbanized Areas | | |



U.S. Department
of Transportation
**Federal Highway
Administration**

2010 and 2020 Initial Urban Area Cores/Low Density Fill

| Census Bureau Urban Areas | Population Density | Housing Units Density | Analysis Unit |
|-------------------------------|-----------------------|--------------------------|-------------------------|
| 2010 Initial Urban Area Cores | 1000/500 | | Census Tract & Block |
| 2020 Initial Urban Area Cores | ** | 1275*/425/200 | Census Block |

* **A high-density nucleus** is defined as a collection of blocks (**Eligible Block Aggregations**), with at least 500 housing units where each census block has density of at least 1,275 housing unit.

** Census Blocks that contain a **group quarter** and has a **population density of 500** adjacent to already qualified blocks will be included.



U.S. Department
of Transportation
**Federal Highway
Administration**

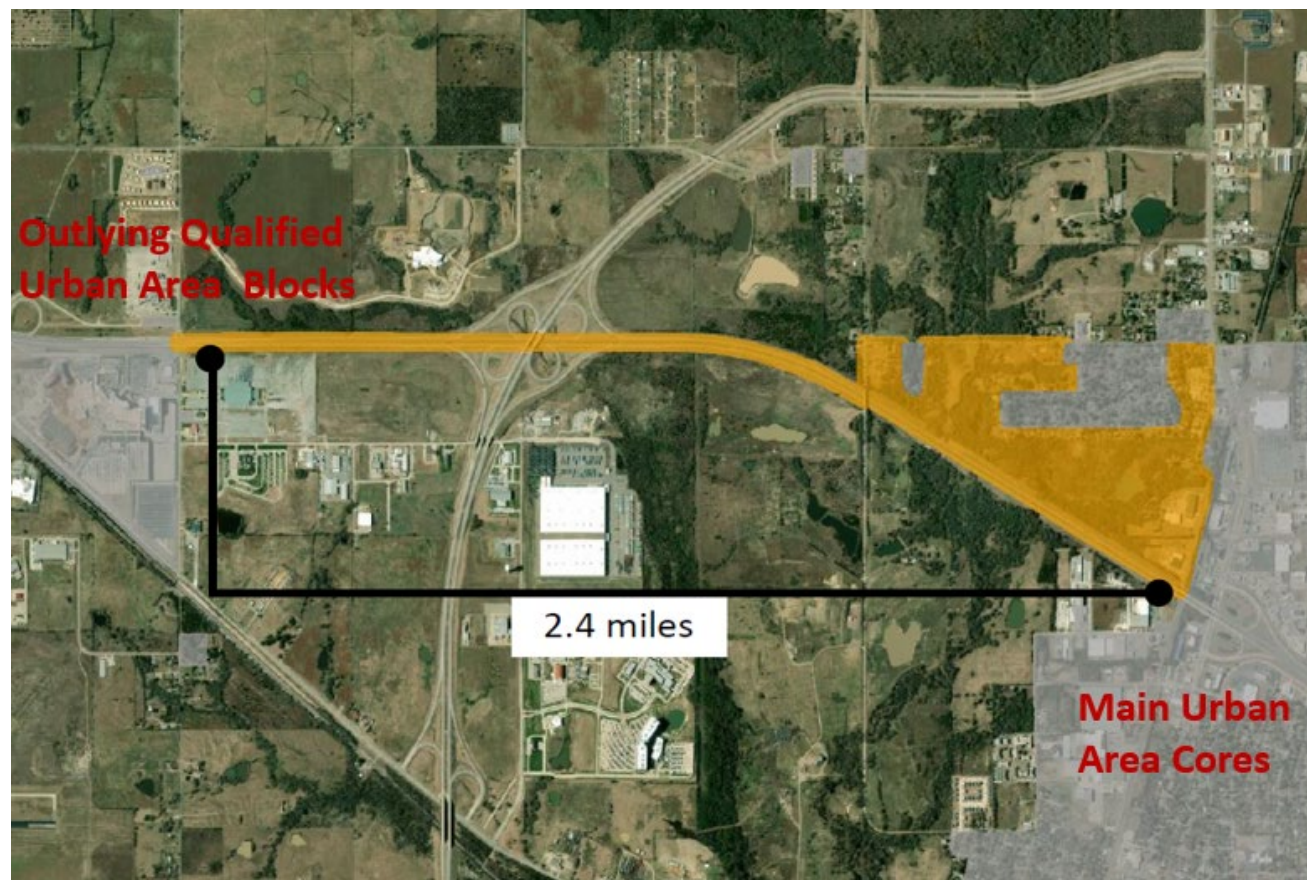
Potential Benefits of Using Housing Unit Density

- Better measurement of built environment. Housing Units include both occupied and vacant units, consistent with using impervious surfaces to define commercial and other non-residential urban land uses.
- Census Block level housing unit counts are invariant – the new 2020 Differential Privacy methodology applies only to population counts, not housing unit counts.
- Ability to update urban areas between censuses.



U.S. Department
of Transportation
**Federal Highway
Administration**

Reducing Maximum Distance of Jumps from 2.5 to 1.5 miles

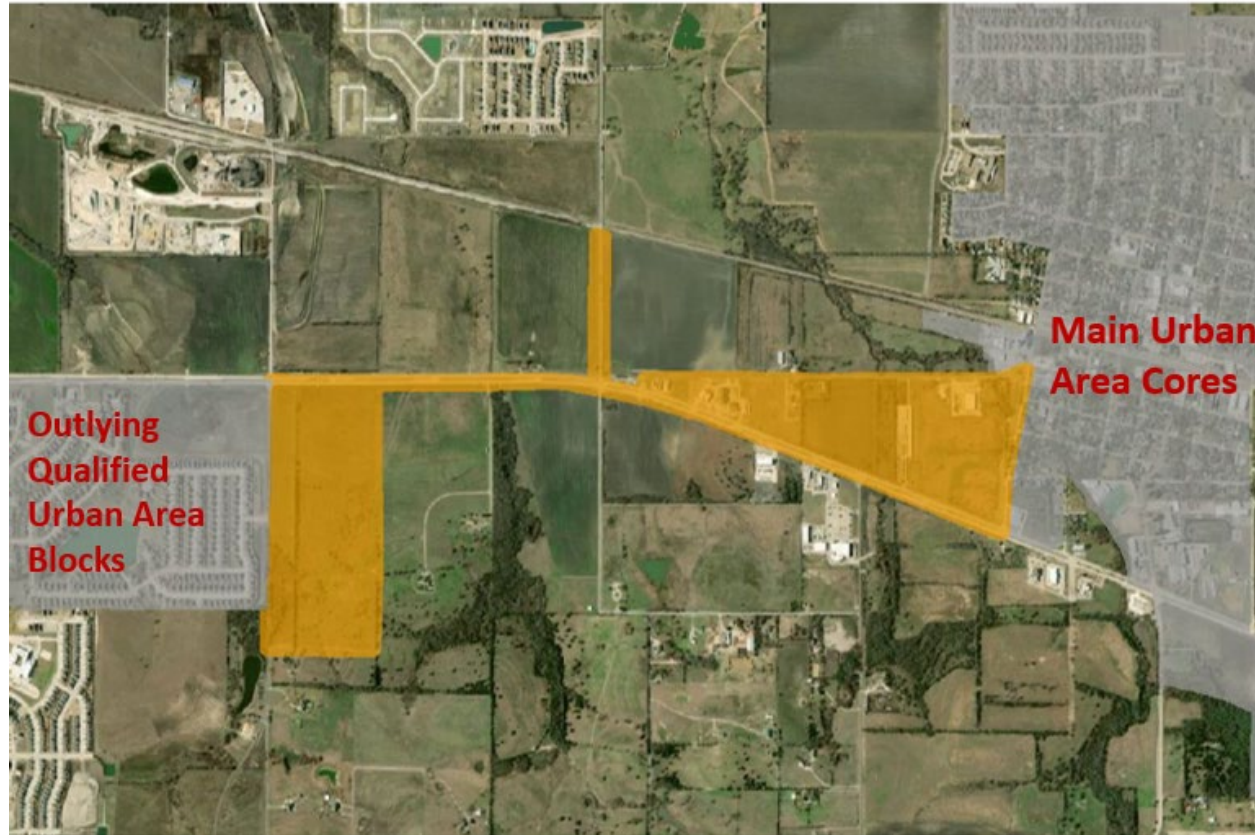




United States[®]
**Census
2020**



U.S. Department
of Transportation
**Federal Highway
Administration**

No Longer Include the Low Density Hop and Jump “Corridors” in Urban Areas



-  2010 Jump Blocks
-  2010 Qualified Urban Blocks



U.S. Department
of Transportation
**Federal Highway
Administration**

Census & FHWA 2020 Urban Area Definition

| Census Bureau Urban Area Definition | Population or Housing Unit |
|-------------------------------------|-------------------------------|
| Population Threshold | 5,000 |
| Housing Unit Threshold | 2,000 |
| FHWA Urban Area Definition | Population |
| Urban Areas | 5,000+ |
| -- Small Urban Areas | 5,000-49,999 |
| -- Urbanized Areas | 50,000+ |



U.S. Department
of Transportation
**Federal Highway
Administration**

Authority for Adjusting UABs

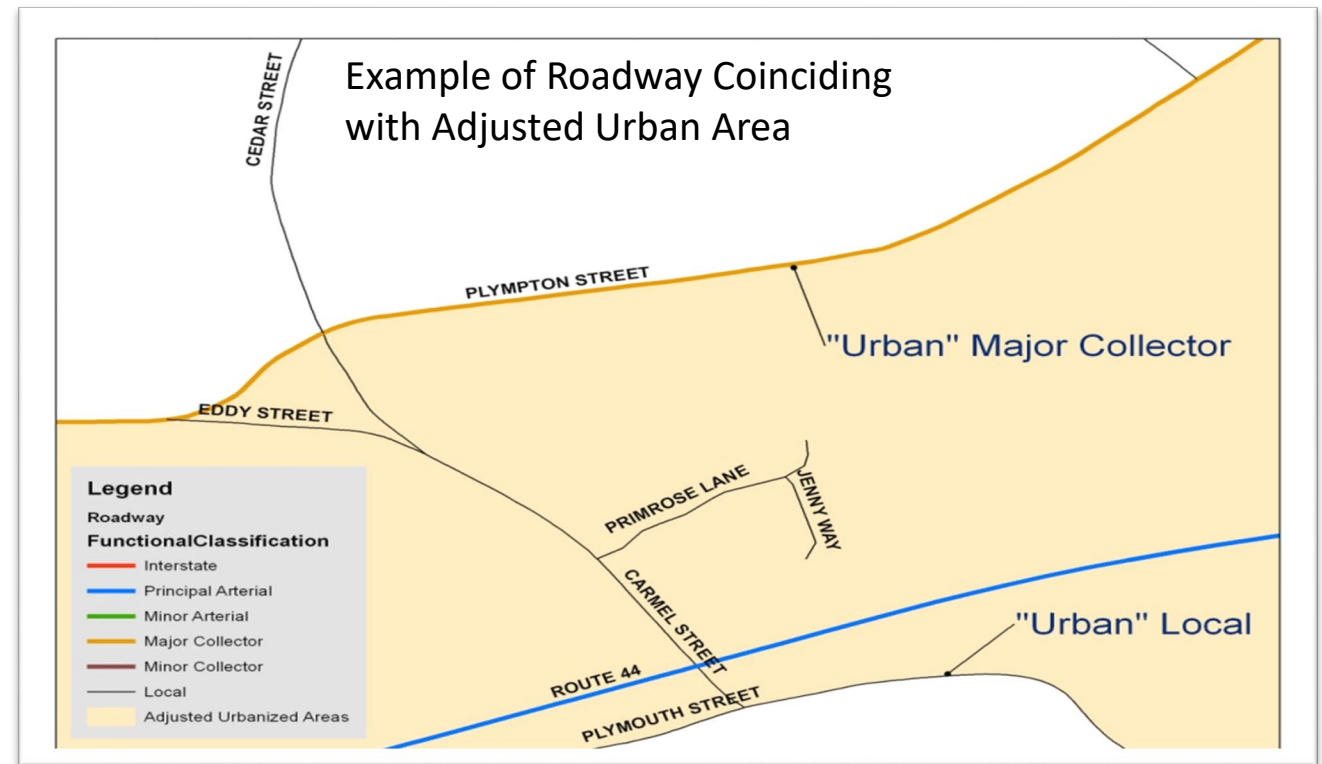
- State and local officials authorized to cooperatively adjust Urban Area boundaries by [23 U.S.C. 101\(a\)\(35\)](#)
 - Primary responsibility lies with the States
 - If an urban area is located outside of an MPO's MPA, the local officials coordinate urban area adjustments with their State DOT
 - If an urban area is within an MPO's MPA, local officials coordinate with their MPO and State DOT
 - [FHWA Order M1100.1A](#) delegates the authority to approve adjusted UABs to FHWA Division Administrators



U.S. Department
of Transportation
**Federal Highway
Administration**

Census Urban Area Boundaries – Reasons to Expand

- Aligning with existing planning boundaries
- Incorporating local knowledge of urban landscape
- Addressing irregularities in boundary shapes
- Maintaining consistency with highway functional classifications





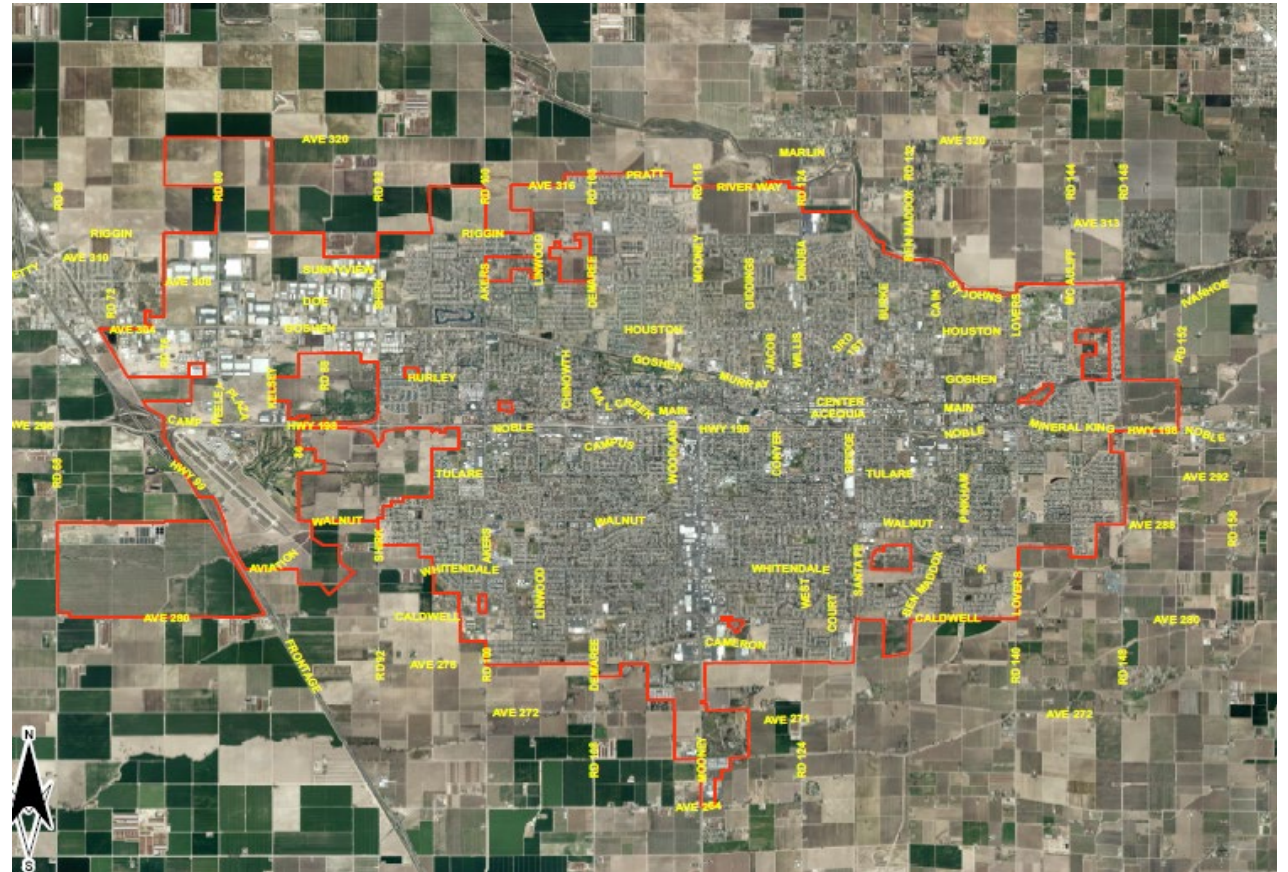
U.S. Department
of Transportation
**Federal Highway
Administration**

Census Urban Area Boundaries – Adjustment Considerations

Include entire municipality

Include areas with urban
characteristics

Include large/significant traffic
generators, e.g., airports,
industrial areas, transportation
terminals, transit routes





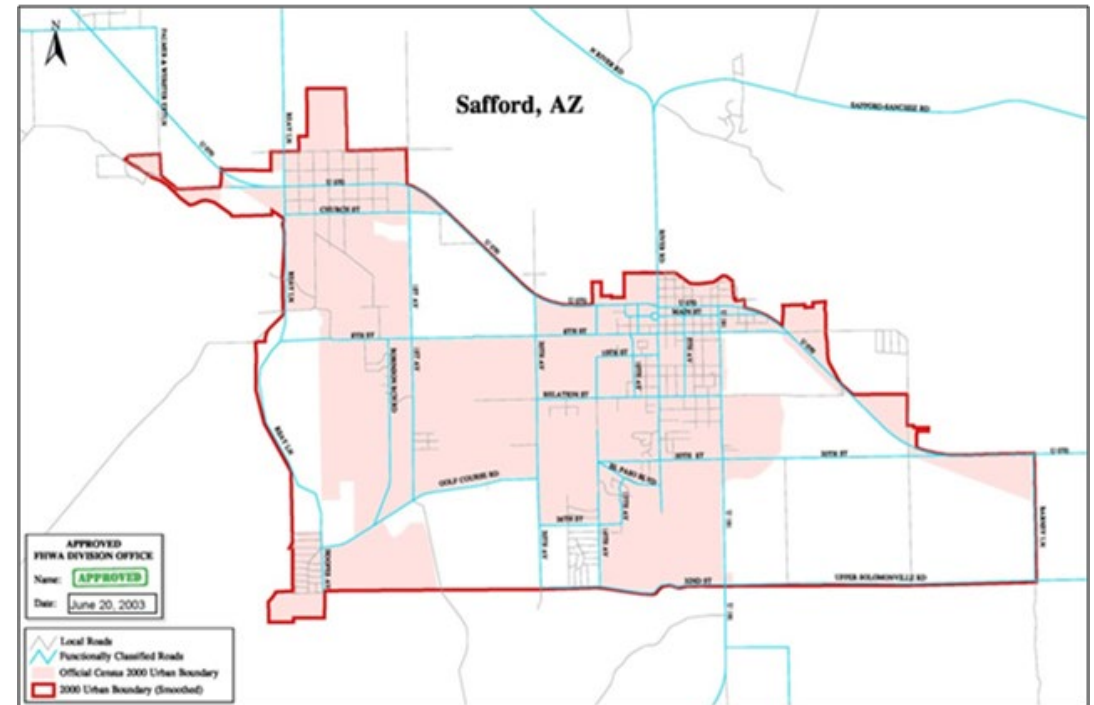
U.S. Department
of Transportation
**Federal Highway
Administration**

Census Urban Area Boundaries – Adjustment Considerations

Boundaries should be simple,
without irregularities

Boundaries should not split
roadways or ramps

Boundaries should be one
contiguous area



Example Boundary Adjusted to Align with Major East-West
Roadway to the South



U.S. Department
of Transportation
Federal Highway
Administration

Summary of Common Errors in Adjusting 2010 Census Urban Boundaries

- Boundaries do not encompass an entire Census Bureau urban area
- One adjusted urban area is not associated with one census urban area
- States do not coordinate in adjusting multi-state urban areas
- Adjustment of those Census urban areas that are not defined as FHWA urban areas
- Adjustment of Census urban areas that are defined by earlier decennial census urban areas



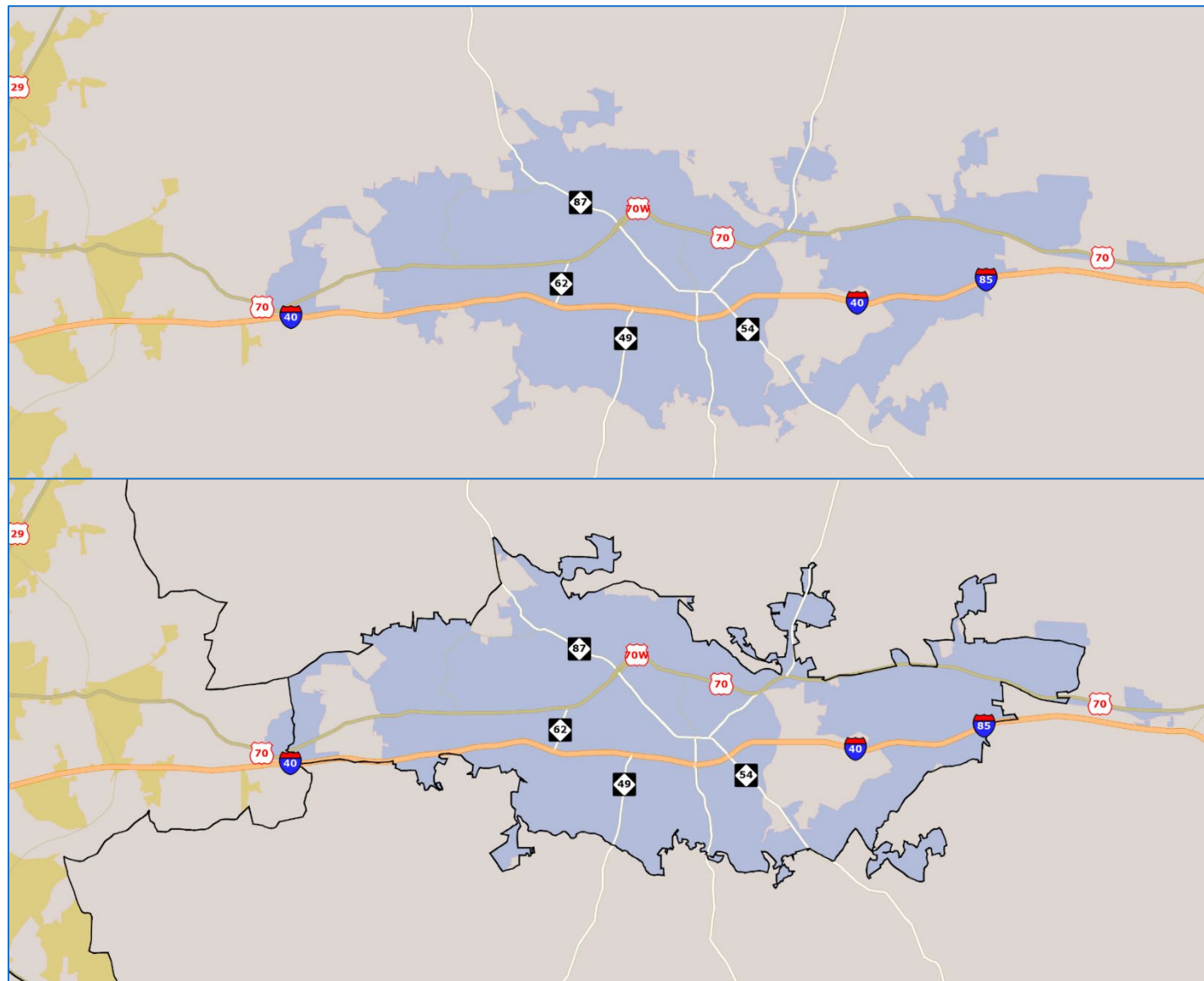
U.S. Department
of Transportation
**Federal Highway
Administration**

Common Errors Found

in Adjusting 2010
Census Urban Areas

Error:

- Missing portions of Census Urban areas



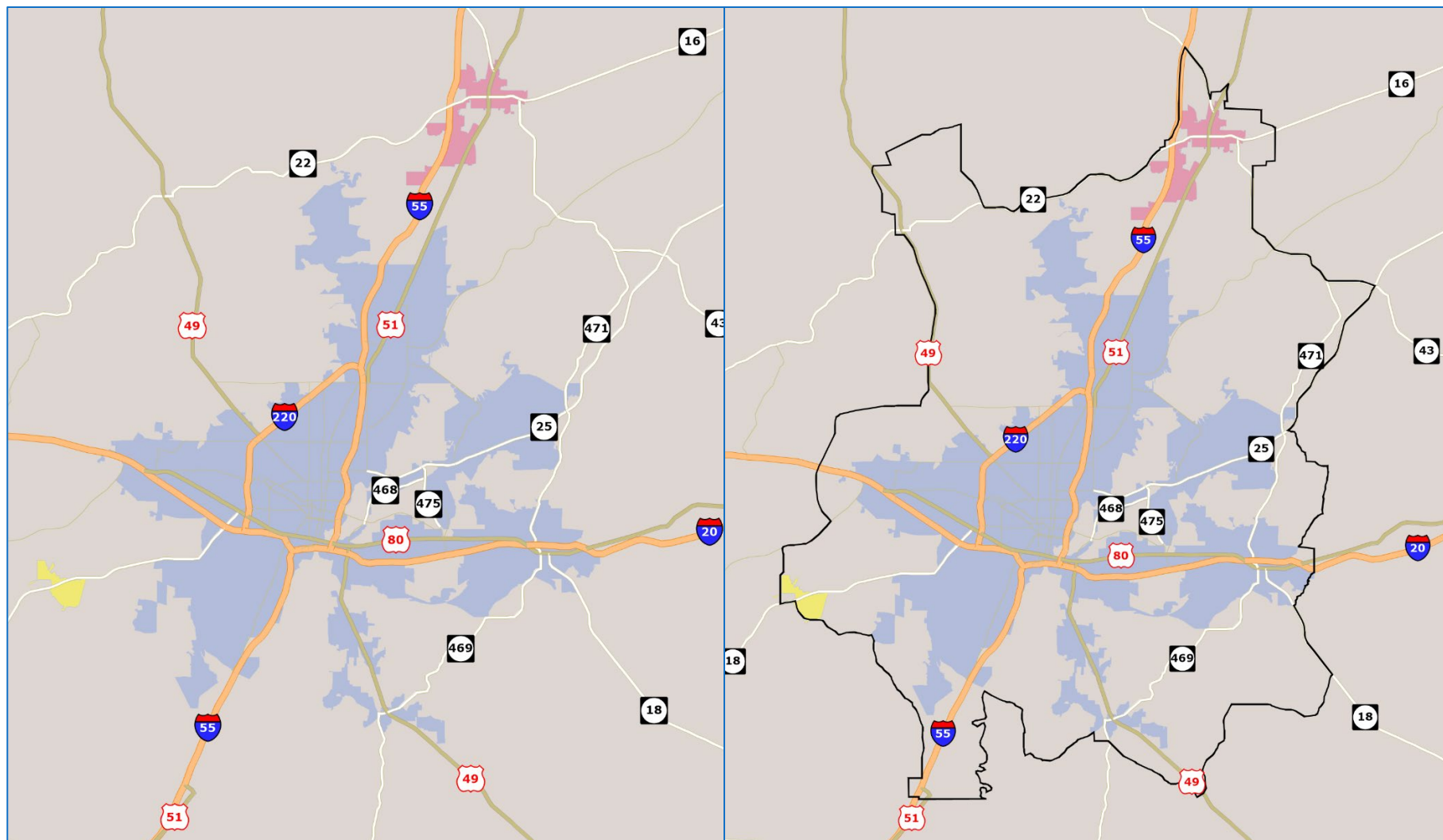


U.S. Department
of Transportation
**Federal Highway
Administration**

Common Errors Found

Errors:

One-to-One relationship:
multiple Census Urban
Areas in one Adjusted
Urban Area, should be 3
Adjusted Urban Areas

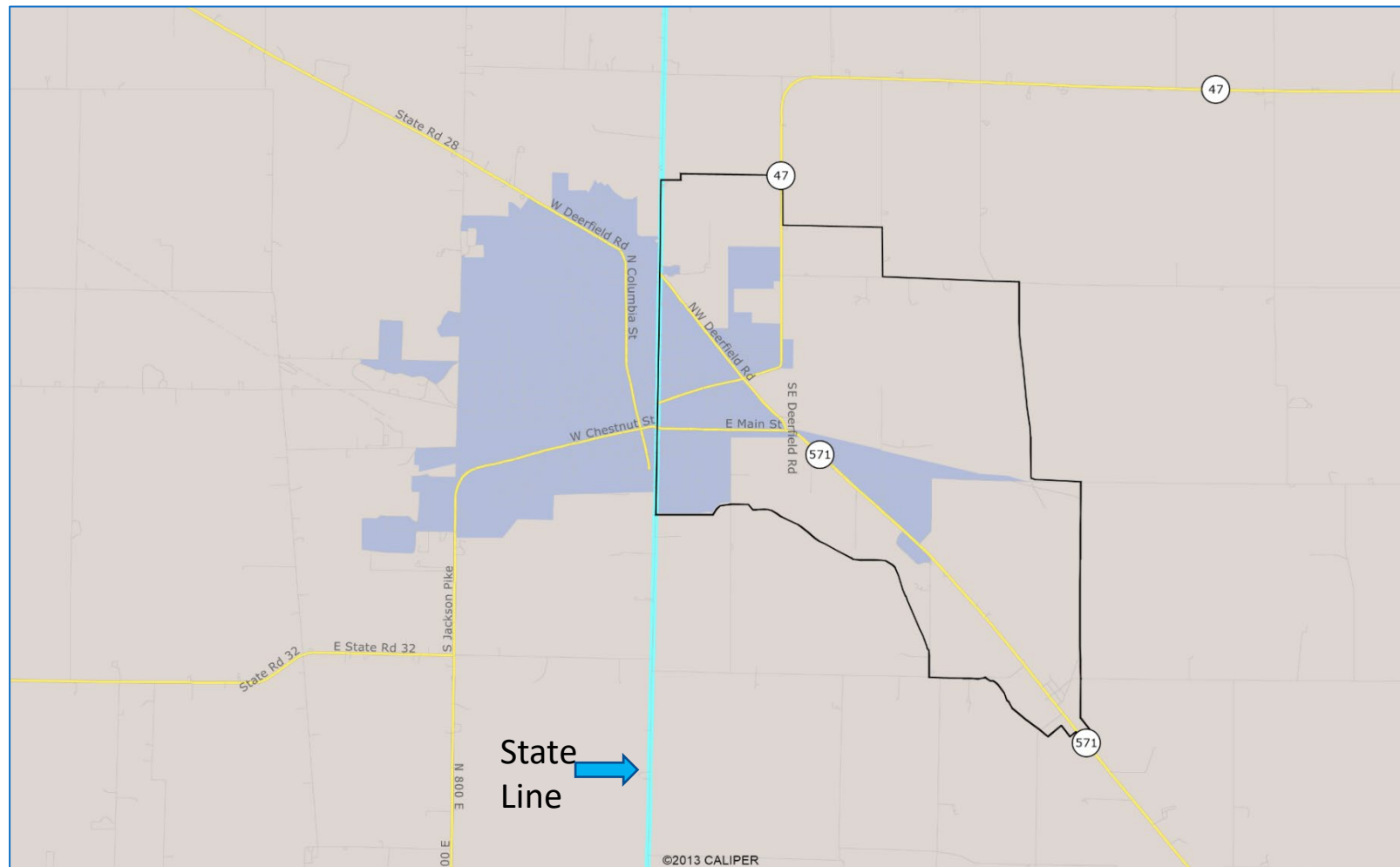




U.S. Department
of Transportation
**Federal Highway
Administration**

Multi-State Urban Areas:
Each state adjusts only their
own state portion without
working with other states

Common Errors Found



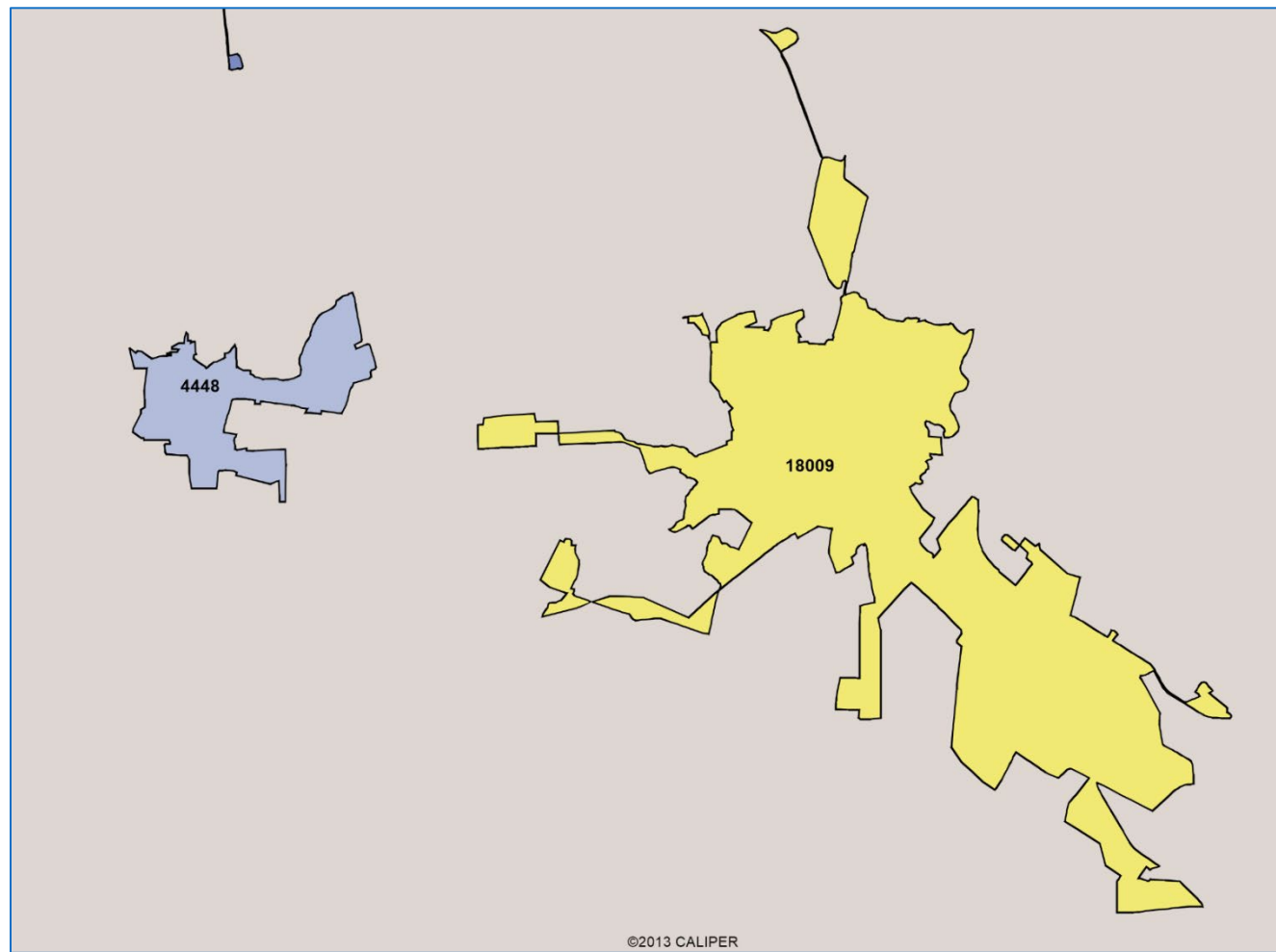


U.S. Department
of Transportation
**Federal Highway
Administration**

FHWA Urban Area Definition:

Decennial Census Population of 5000 or more, the one in blue should not be included as an FHWA urban area (population =4448)

Common Errors Found





U.S. Department
of Transportation
**Federal Highway
Administration**

Common Errors Found

in Adjusting 2010 Census Urban Areas

Did not use the latest Census Urban Area as basis for Adjustment

- Previous decennial Census Urban Areas are irrelevant
- Start with the latest decennial Census urban areas



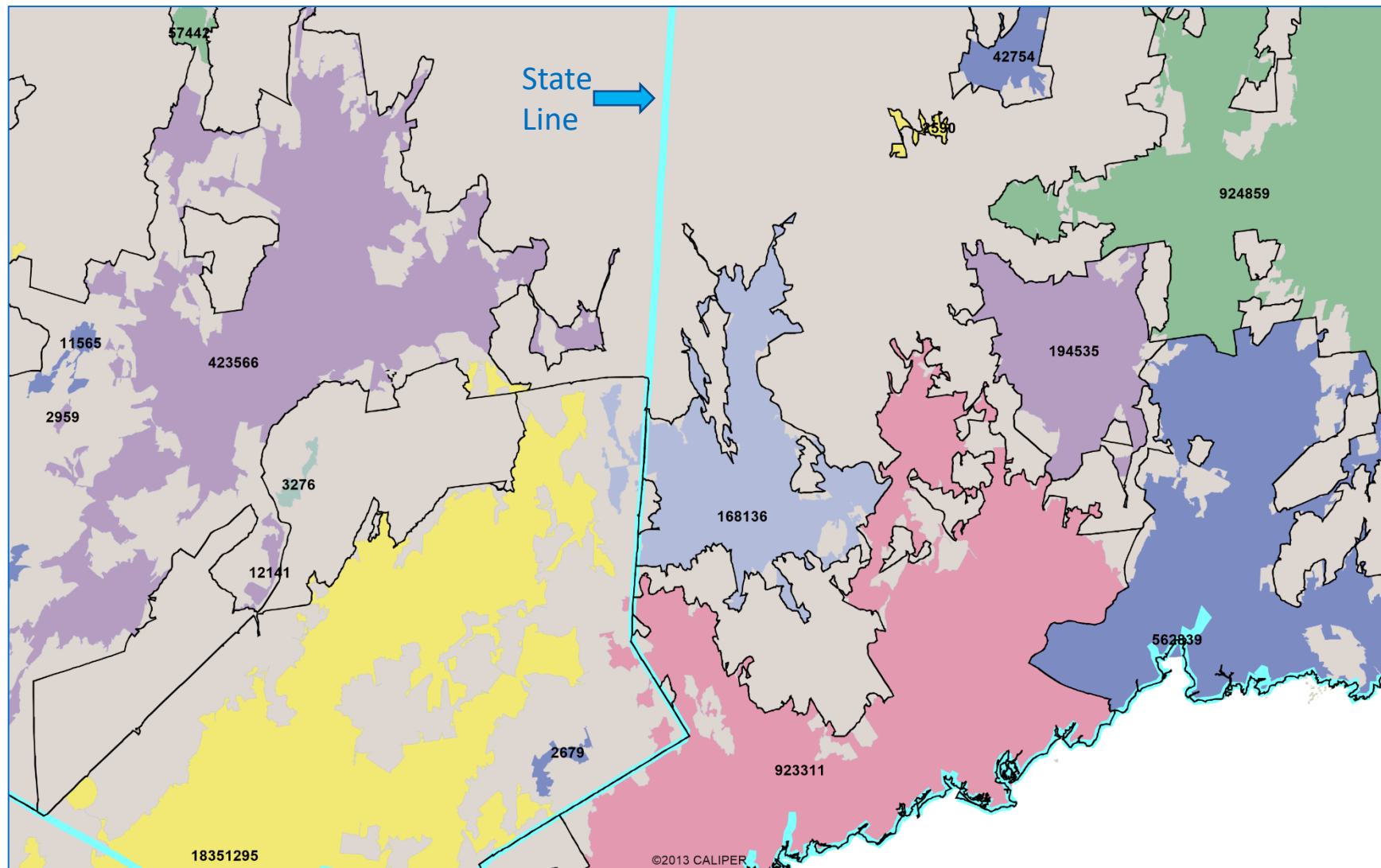
U.S. Department
of Transportation
**Federal Highway
Administration**

Common Errors Found

Summary

(figures shown are 2010
Census Population):

How many errors can you
find?





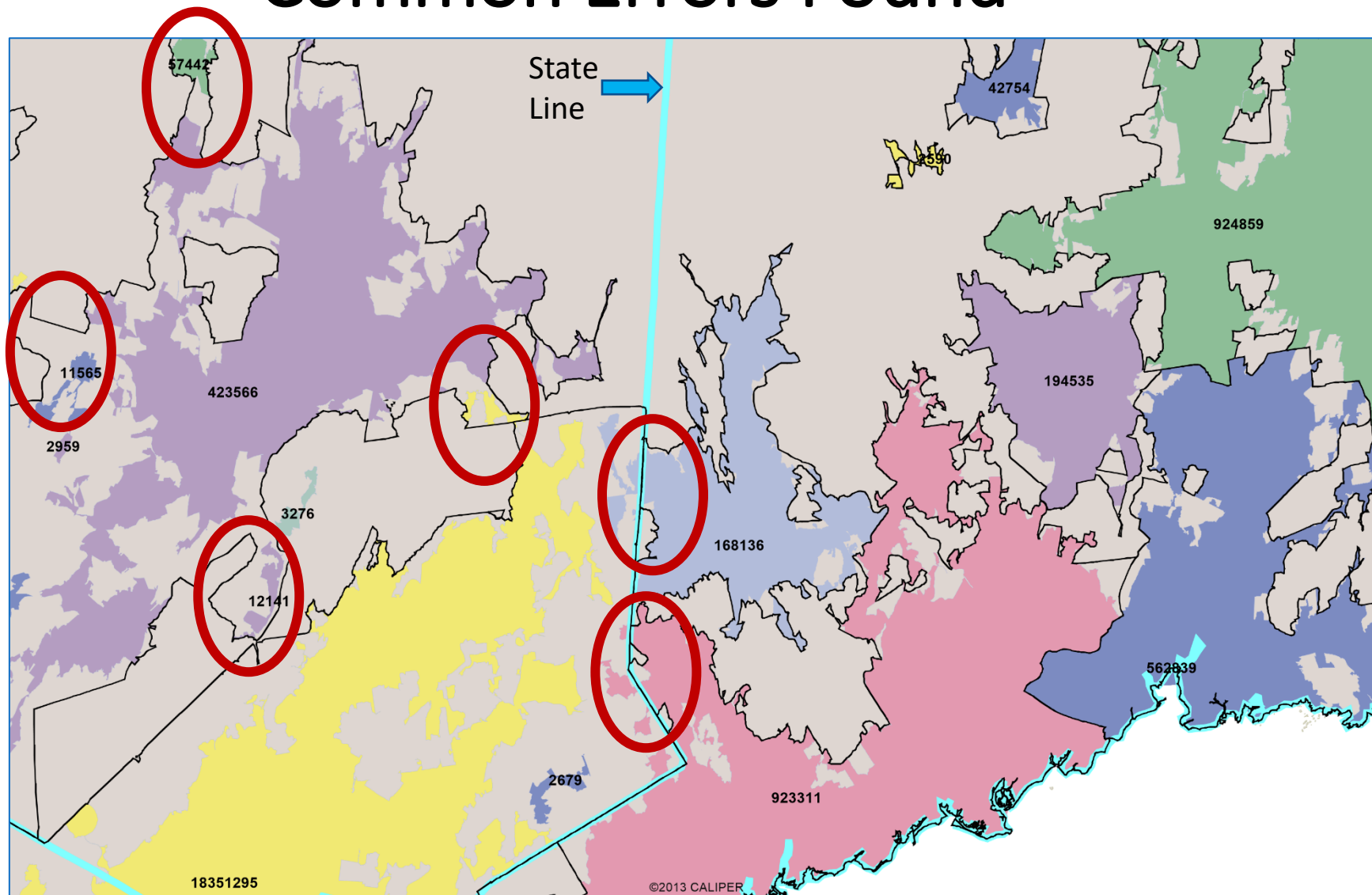
U.S. Department
of Transportation
**Federal Highway
Administration**

Common Errors Found

Summary

(figures shown are 2010
Census Population):

How many errors can you
find?





U.S. Department
of Transportation
Federal Highway
Administration

Adjusted Urban Area Boundaries Guideline Summaries

- Boundaries should encompass the entire Census Bureau urban area
- Boundaries should encompass one contiguous area
- Boundaries should be simple, without irregularities
- Boundaries should follow municipal boundaries or other physical features
- Boundaries should include areas with urban characteristics, such as airports, industrial areas, transportation terminals, major activity centers, etc.
- Reference:
https://www.fhwa.dot.gov/planning/processes/statewide/related/highway_functional_classifications/fcauab.pdf

Note: States and MPOs may choose not to adjust the Census urban boundaries



U.S. Department
of Transportation
**Federal Highway
Administration**

Relationship between Functional Class & Adjusted Urban Area Boundaries

Federal-Aid Highway System Impact

| Functional Class System | Urban | Rural |
|---|------------|-----------|
| 1 - Interstate | Yes | Yes |
| 2 - Principal Arterial - Other Freeways and Expressways | Yes | Yes |
| 3 - Principal Arterial - Other | Yes | Yes |
| 4 - Minor Arterial | Yes | Yes |
| 5 - Major Collector | Yes | Yes |
| 6 - Minor Collector | Yes | No |
| 7 - Local | No | No |



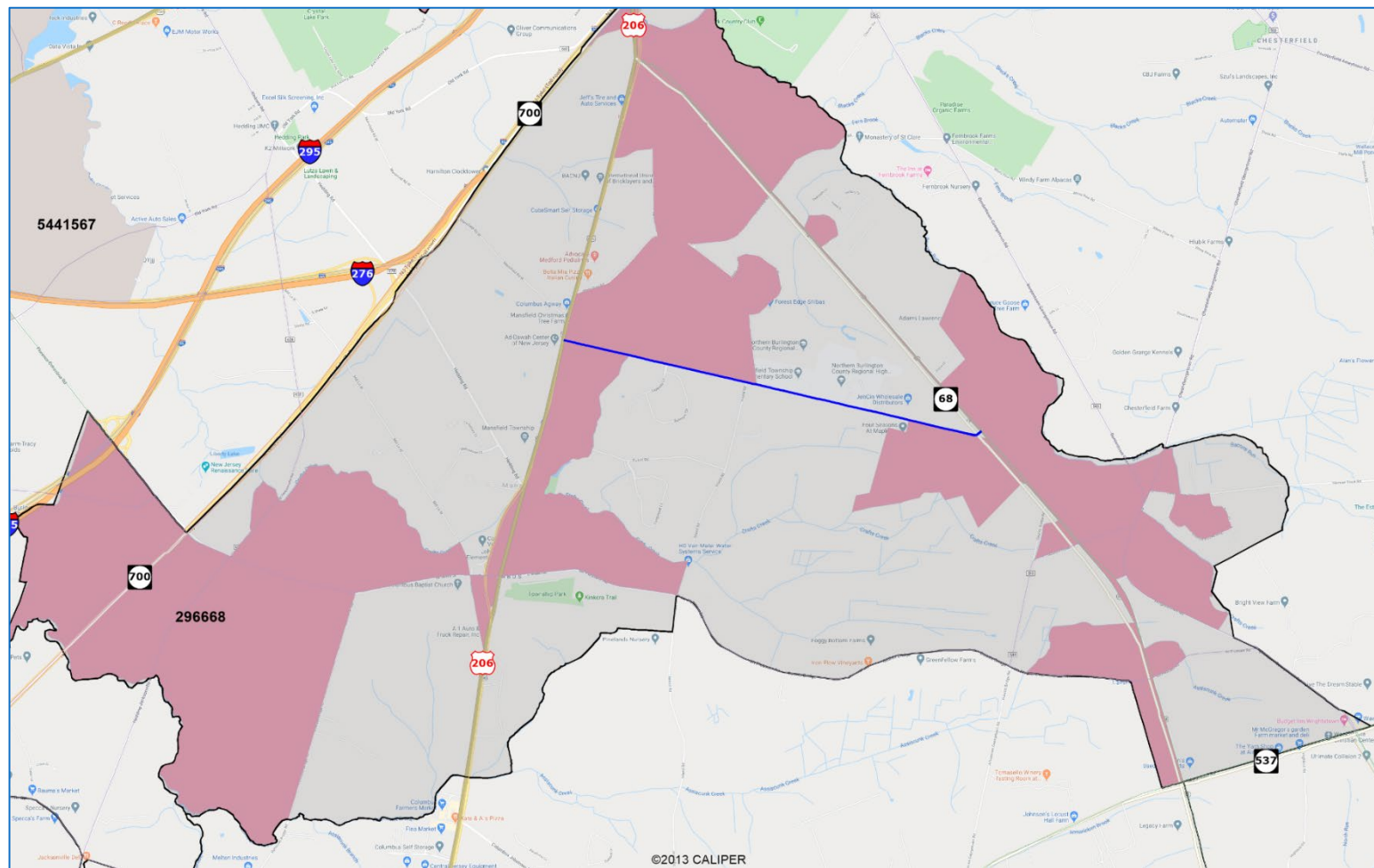
U.S. Department
of Transportation
**Federal Highway
Administration**

Example of Benefit

Maintaining consistency with highway functional classifications

Benefits of Adjusted Urban Area

Example: With the adjusted urban area boundaries, the Minor Connector shown in blue connecting two arterials can be uniformly designated as an Urban Minor Collector. Without adjusting the urban boundaries, the connector would be divided into three roadway segments: urban, rural and then again urban minor connectors, making the roadway planning, programming and maintenance difficult



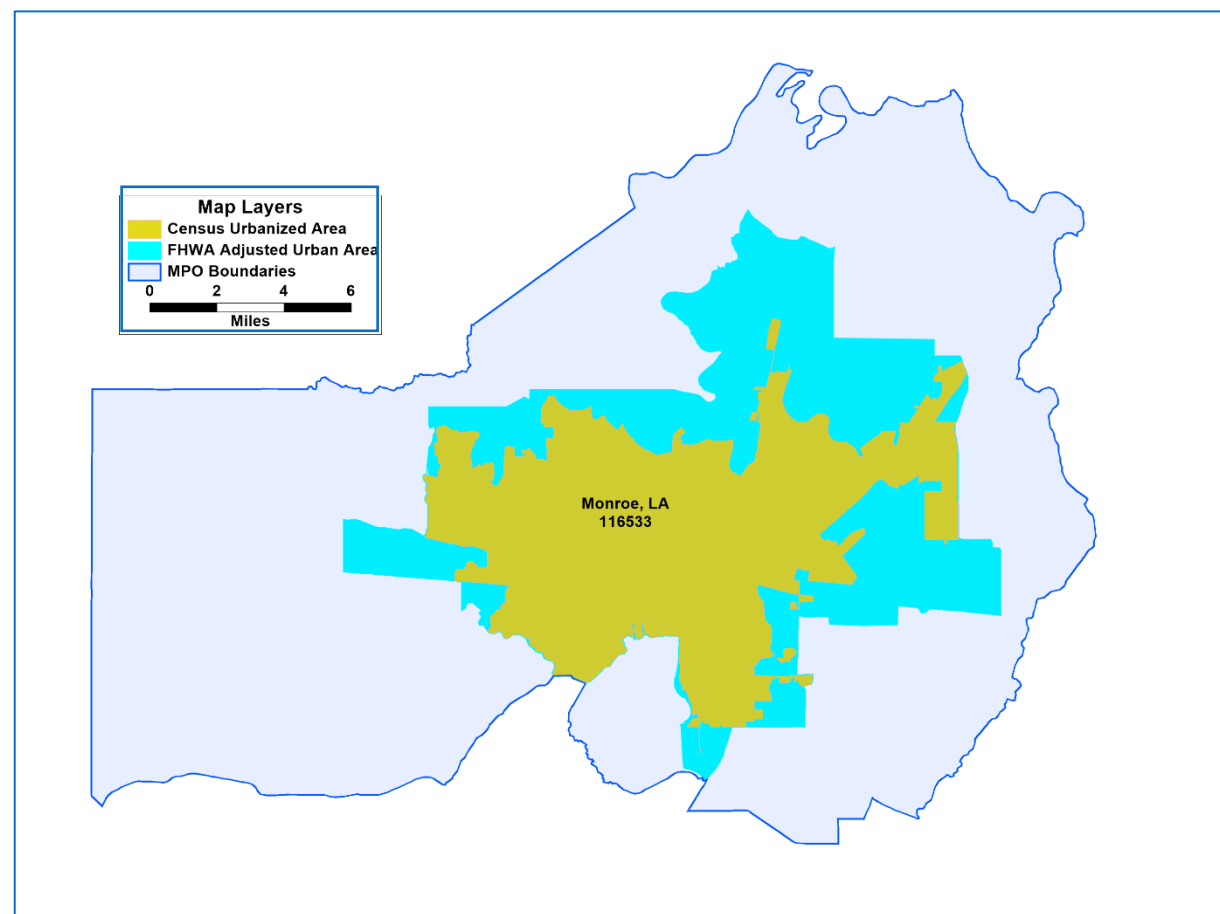


U.S. Department
of Transportation
**Federal Highway
Administration**

Boundary Development Sequency

Census Urban Area → Adjusted Urban Area → MPO Boundaries

- MPO boundaries can include multiple urbanized areas
- A MPO can also cover portions of urbanized areas inasmuch as the remaining portions of the UZA are covered by other MPOs
- Requirement: an Urbanized Area must be covered entirely by one or more MPO boundaries



Urban Area Boundary Adjustment Good Practice Steps/Schedule



U.S. Department
of Transportation
**Federal Highway
Administration**

Recommended 12 month schedule following Census release of Urban Area Boundaries.

At a minimum – confirm Census boundaries are adequate, also...

Build/share understanding of game plan

Generate maps and share electronically
– use GIS if at all possible

Encourage/work towards timely
delivery of UAB revisions

| Event | Months Following Release of 2020 Census Urban Area boundaries |
|--|---|
| FHWA issues transmittal letter | Month 1 |
| Begin adjusted urban area boundary update process | Month 1 |
| DOT works with planning partners to define adjusted urban area boundaries | Month 3-9 |
| Provide draft final data and/or maps to FHWA Division Office for review | Month 10 |
| DOT incorporates Review Comments | Month 11 |
| DOT submits adjusted urban area boundaries to FHWA Office of Planning | Month 12 |

Questions?



U.S. Department
of Transportation
**Federal Highway
Administration**

Ms. Supin L. Yoder

Travel Demand Forecasting & GIS Specialist

FHWA Office of Planning

Supin.Yoder@dot.gov, Phone: 312-257-6356

FHWA HEPGIS Maps