

Using GIS to Update Federal Education Geographic Indicators: Integrating the 2010 Urban Delineation

Doug Geverdt

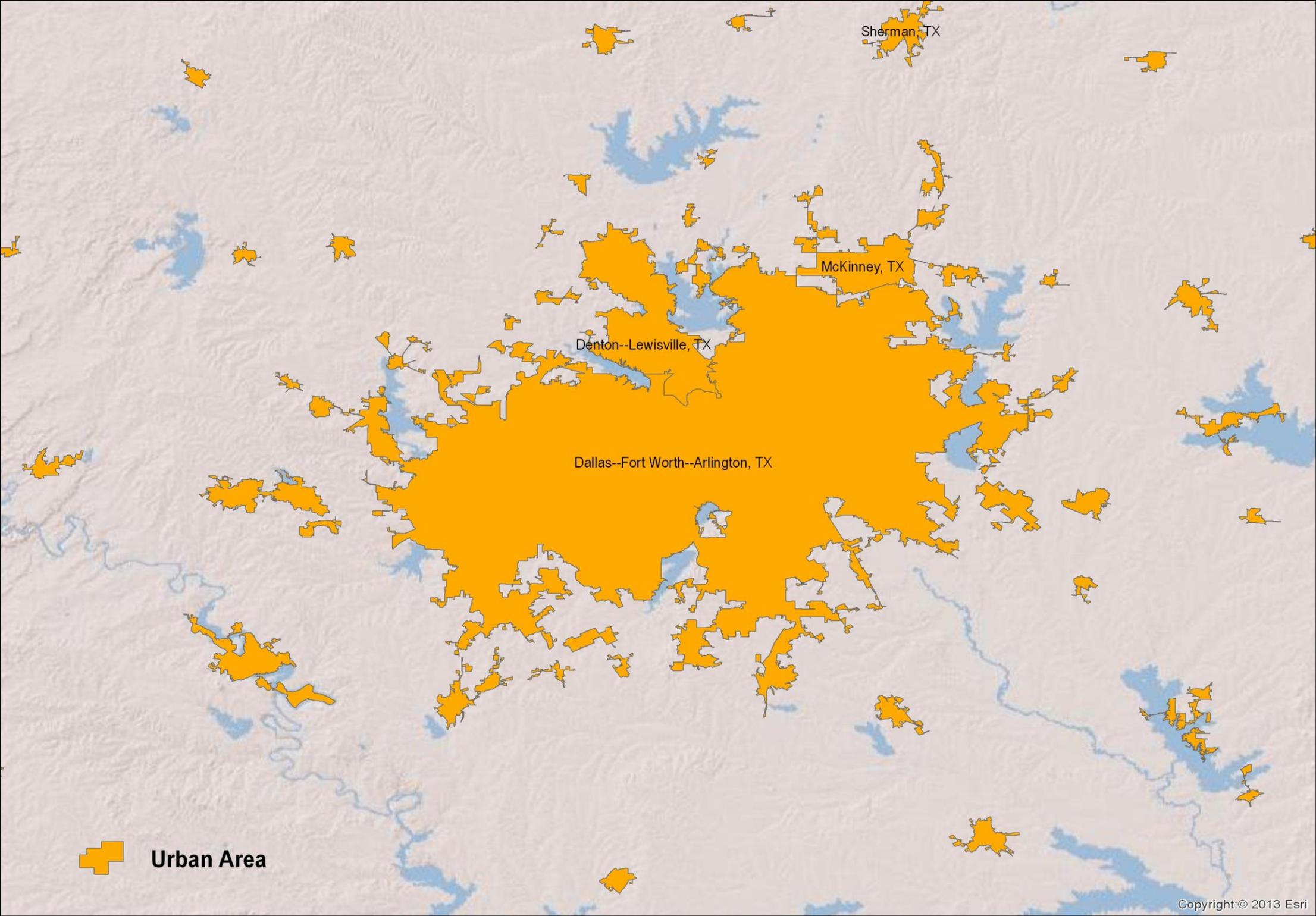
U.S. Census Bureau, Governments Division
Education Demographic and Geographic Estimates Project

2013 ESRI Education User Conference
San Diego, CA July 7, 2013

Urban Area Definitions

- Represent densely developed territory, encompassing residential, commercial, and other non-residential urban land uses in which frequent social and economic interactions occur
- Represent the “Urban Footprint”
- Explicitly defined through measures based primarily on population counts and residential population density
- Account for non-residential land uses that are functionally part of the urban landscape





Sherman, TX

McKinney, TX

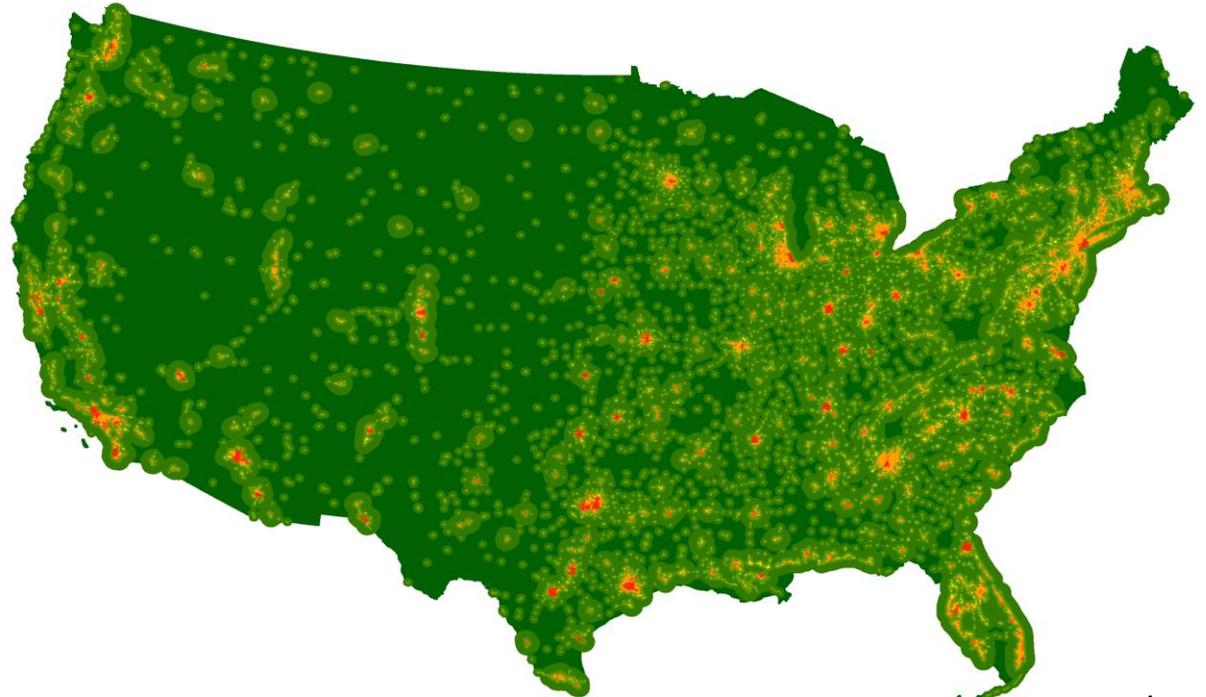
Denton--Lewisville, TX

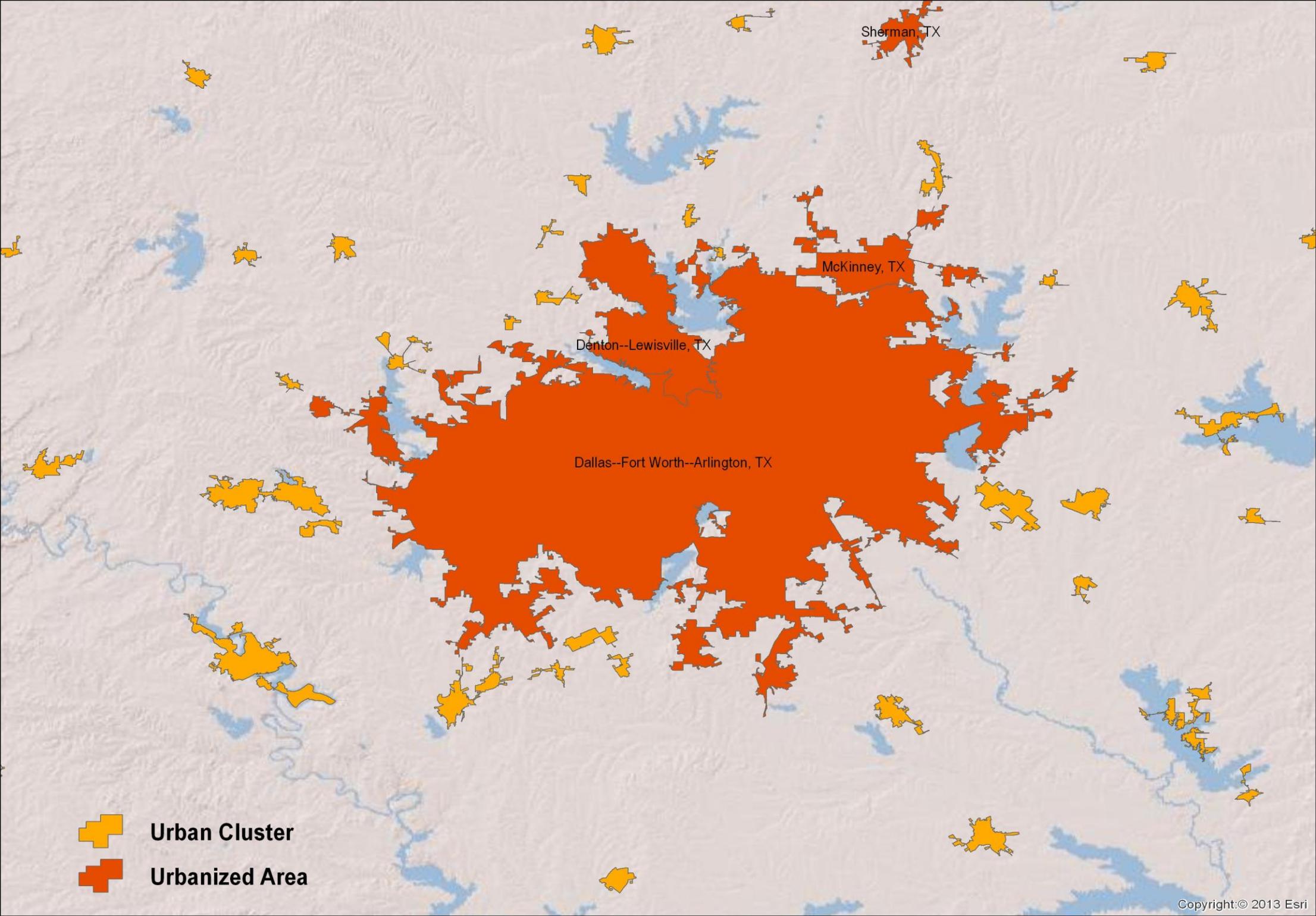
Dallas--Fort Worth--Arlington, TX

 Urban Area

Urban and Rural Classification

- Census Bureau identifies and classifies urban and rural areas after each decennial census
- Urban areas of at least 2,500 people have been identified since 1906
- Urbanized areas of 50,000 or more people were first defined for the 1950 Census. Urban places of at least 2,500 people were identified outside urbanized areas. Urban clusters of 2,500 - 49,999 were first defined after Census 2000.
- Rural = non-urban residual
- Identified solely for the purpose of tabulating and presenting statistical data.
- Updated once every 10 years





Sherman, TX

McKinney, TX

Denton--Lewisville, TX

Dallas--Fort Worth--Arlington, TX

-  Urban Cluster
-  Urbanized Area

NCES Locale Geography

- U.S. Department of Education, National Center for Education Statistics (NCES)
- NCES Locale code = general geographic indicator
- Assigned since mid-1980s, though methods and criteria have changed
- Assigned relative to other types of geographic areas (e.g., urban areas, metros)
- Provided for schools, school districts, libraries, post-secondary institutions
- Used for research; reporting; sampling (as stratifier); program eligibility, etc.
- Twelve classifications (4 basic types that have 3 subtypes)
 - City – Large, Midsize, Small
 - Suburban – Large, Midsize, Small
 - Town – Fringe, Distant, Remote
 - Rural – Fringe, Distant, Remote

NCES Locale Geography

City-Large (11): In UA, Principal city with population > 250,000

City-Midsize (12): In UA, Principal city with population between 100,000 - 250,000

City-Small (13): In UA, Principal city with population < 100,000

Suburb-Large (21): In UA with population > 250,000

Suburb-Midsize (22): In UA with population between 100,000 – 250,000

Suburb-Small (23): In UA with population < 100,000

Town-Fringe (31): UC less than 10 miles from a UA

Town-Distant (32): UC between 10 – 35 miles of UA

Town-Remote (33): UC more than 35 miles from UA

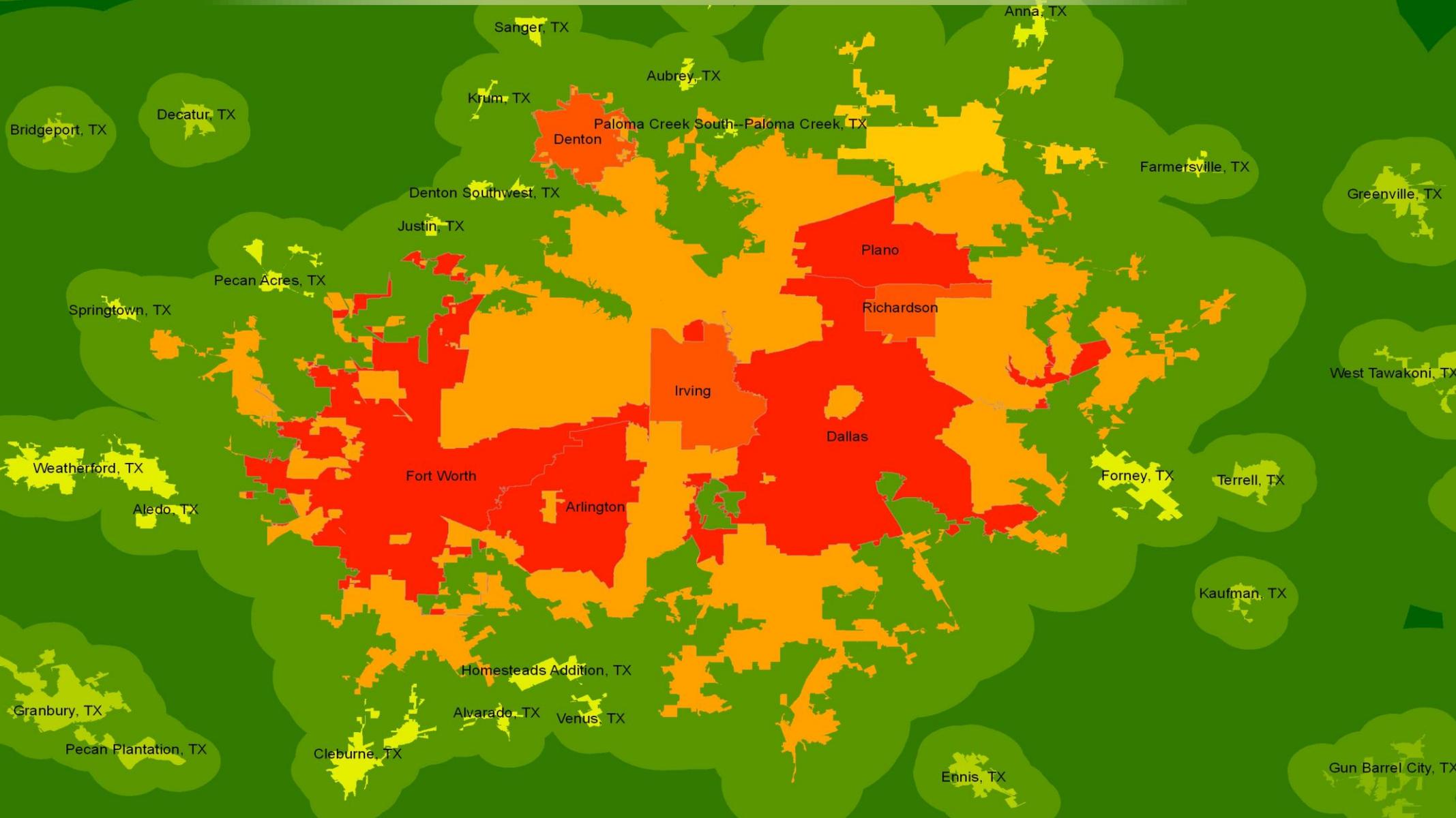
Rural-Fringe (41): Rural area < 2.5 miles from UC and < 5 miles from UA

Rural-Distant (42): Rural area 2.5–10 miles from UC and 5-25 miles from UA

Rural-Remote (43): Rural territory > 10 miles from UC and > 25 miles from UA

UA = Urbanized Area UC = Urban Cluster

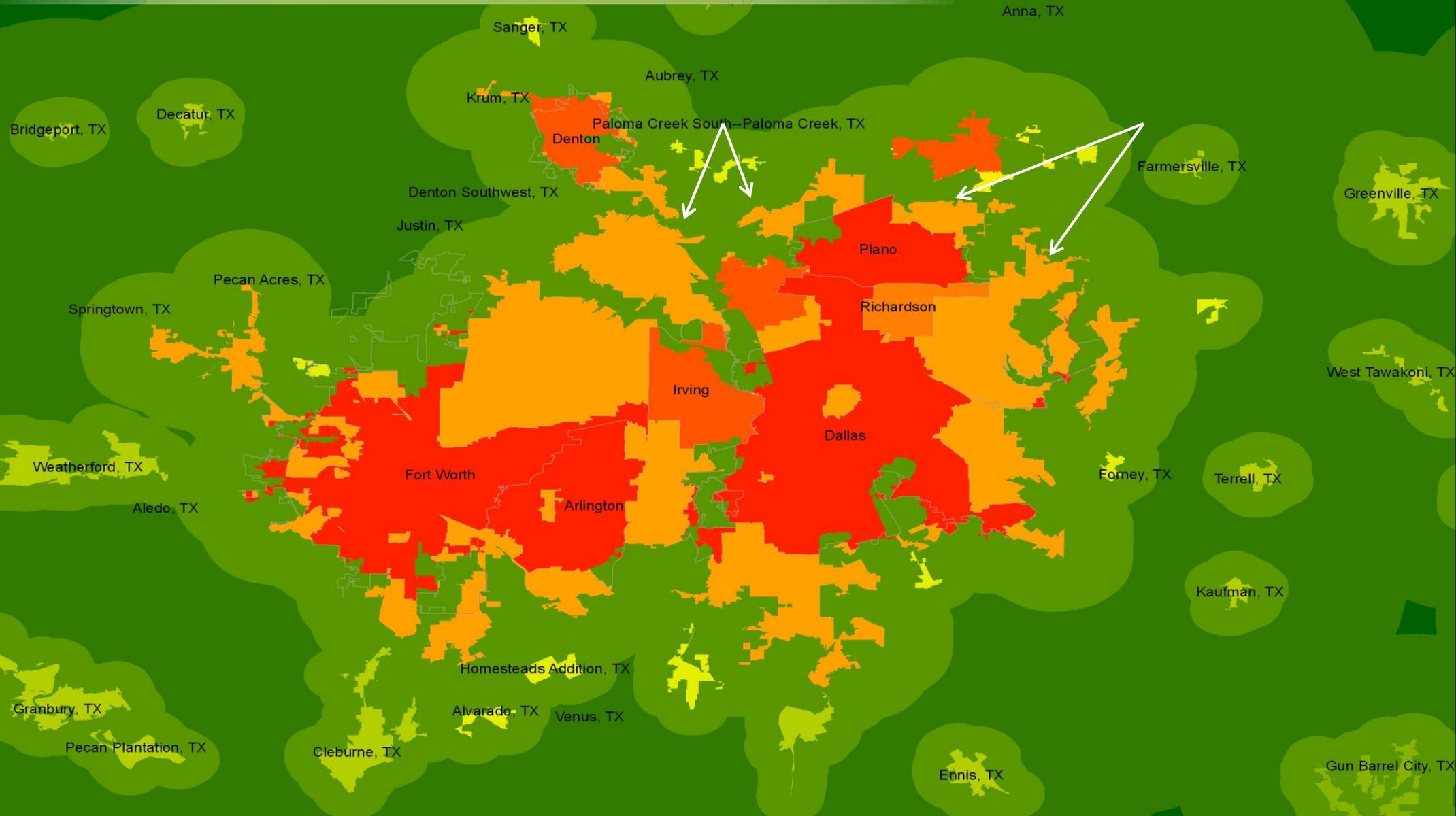
NCES Locale Geography



Locale

- | | | | |
|---|---|---|---|
| ■ City-Large | ■ Suburban-Large | ■ Town-Fringe | ■ Rural-Fringe |
| ■ City-Midsize | ■ Suburban-Midsize | ■ Town-Distant | ■ Rural-Distant |
| ■ City-Small | ■ Suburban-Small | ■ Town-Remote | ■ Rural-Remote |

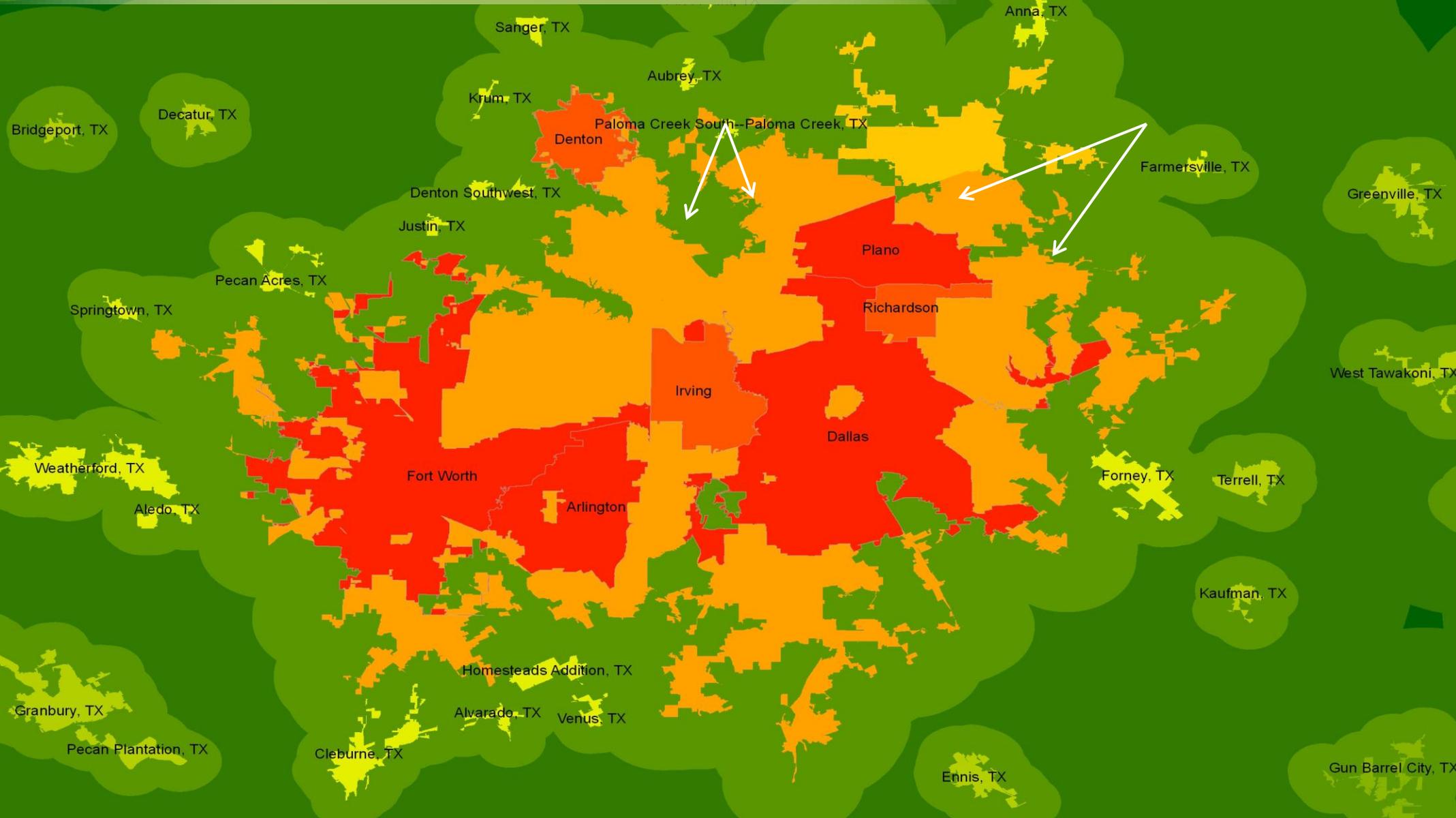
Urban Change #1: General growth (2000)



Locale



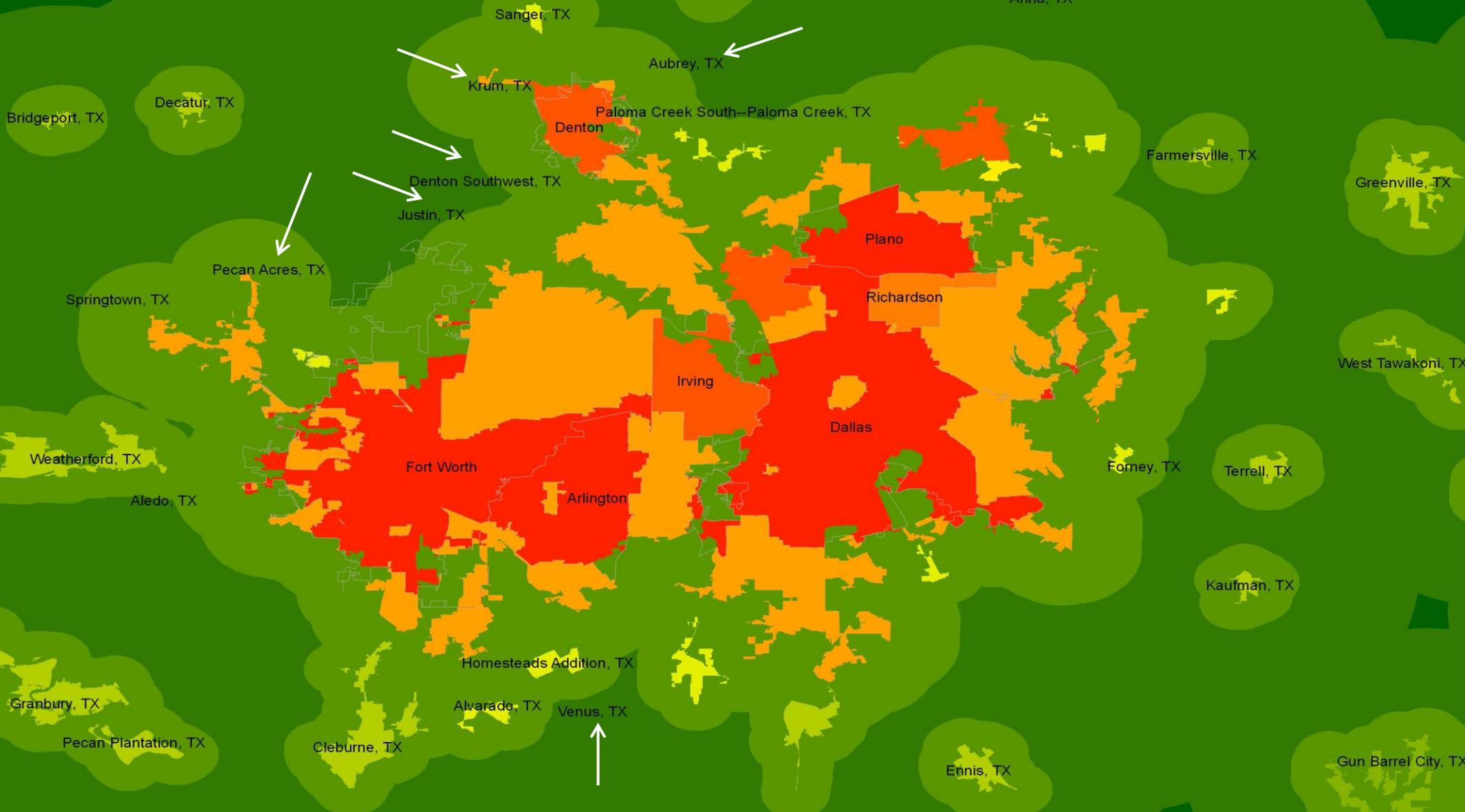
Urban Change #1: General growth (2010)



Locale



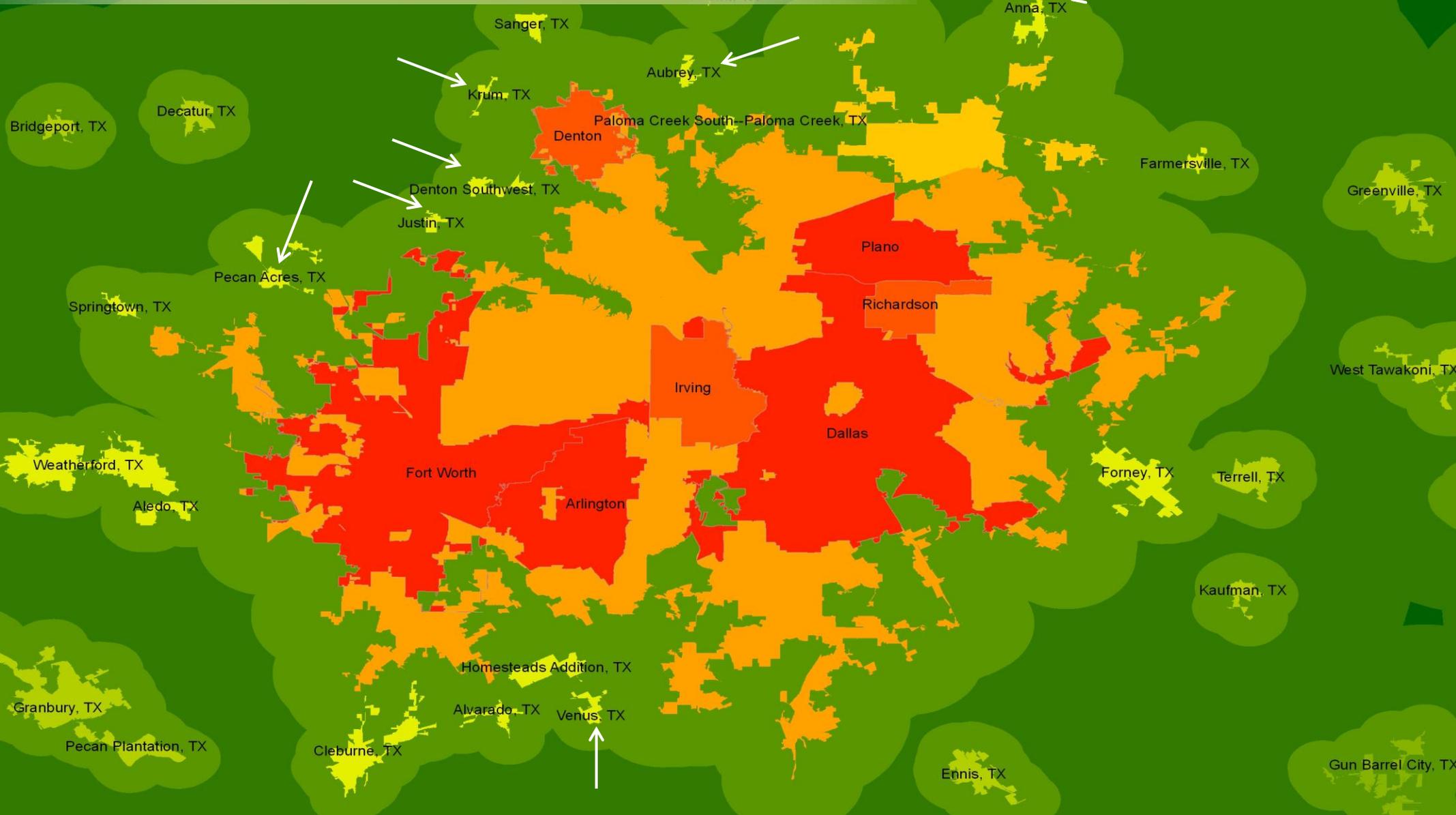
Urban Change #2: New UC (2000)



Locale

- | | | | |
|--|---|--|--|
| ■ City-Large | ■ Suburban-Large | ■ Town-Fringe | ■ Rural-Fringe |
| ■ City-Midsize | ■ Suburban-Midsize | ■ Town-Distant | ■ Rural-Distant |
| ■ City-Small | ■ Suburban-Small | ■ Town-Remote | ■ Rural-Remote |

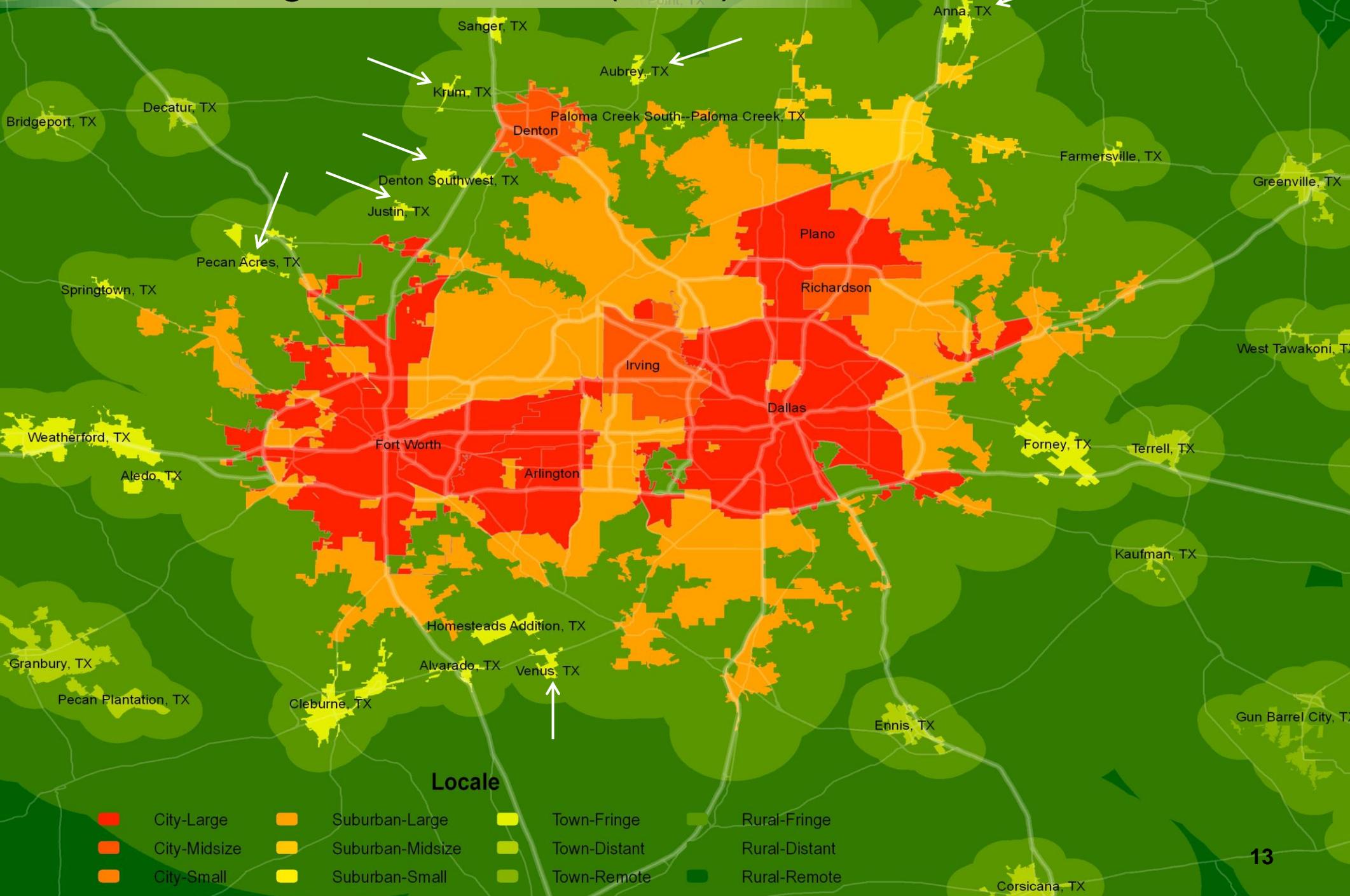
Urban Change #2: New UC (2010)



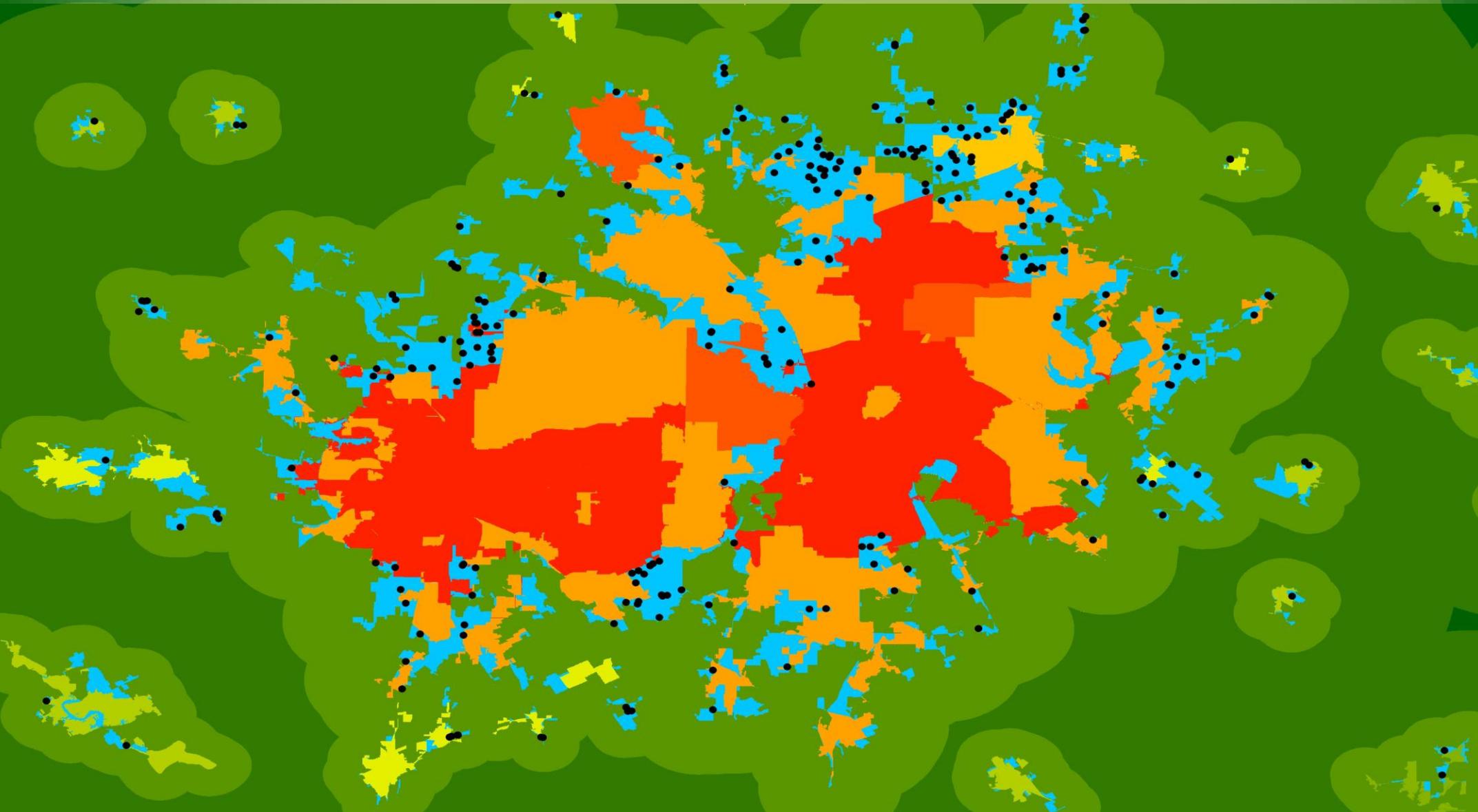
Locale

- | | | | |
|---|---|---|---|
| ■ City-Large | ■ Suburban-Large | ■ Town-Fringe | ■ Rural-Fringe |
| ■ City-Midsize | ■ Suburban-Midsize | ■ Town-Distant | ■ Rural-Distant |
| ■ City-Small | ■ Suburban-Small | ■ Town-Remote | ■ Rural-Remote |

Urban Change #2: New UC (2010)

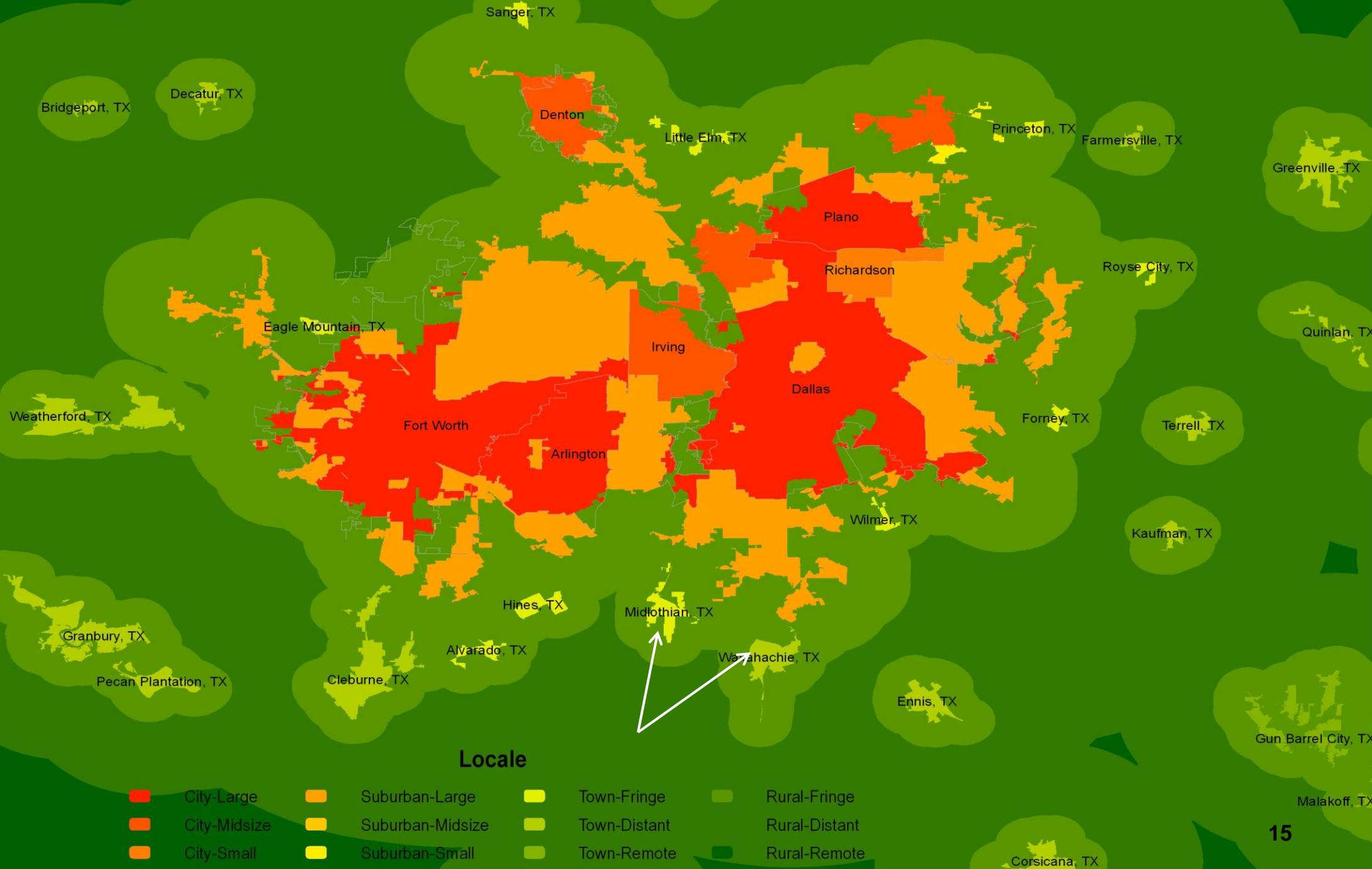


Urban Change: Rural to Non-Rural Schools (2000-2010)

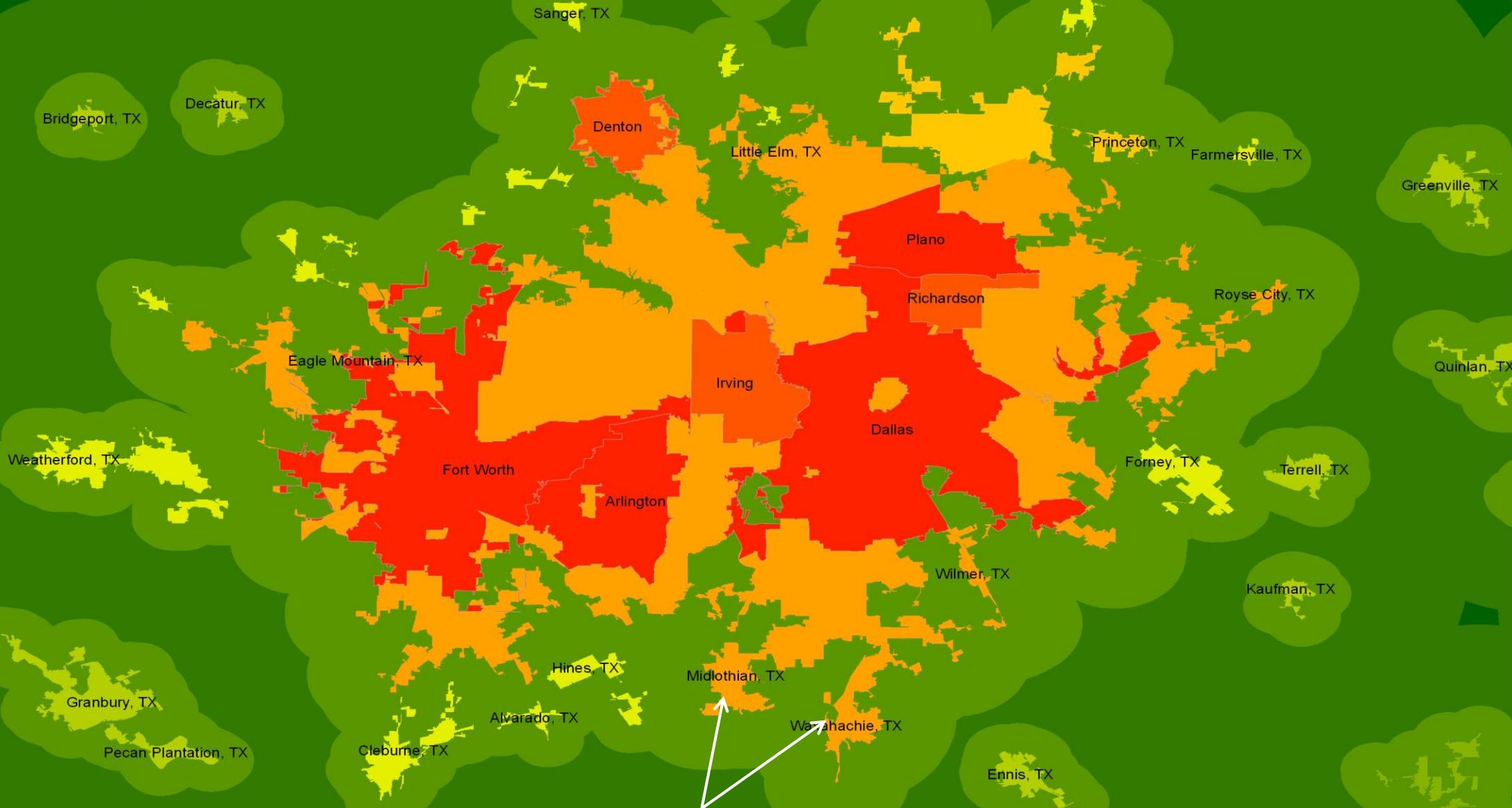


Locale			
■	City-Large	■	2000 Rural reclassified as 2010 non-Rural
■	City-Midsize	■	Suburban-Large
■	City-Small	■	Suburban-Midsize
■	Suburban-Small	■	Town-Fringe
		■	Town-Distant
		■	Town-Remote
		■	Rural-Fringe
			Rural-Distant
			Rural-Remote

Urban Change #3: UA absorbs UC (2000)



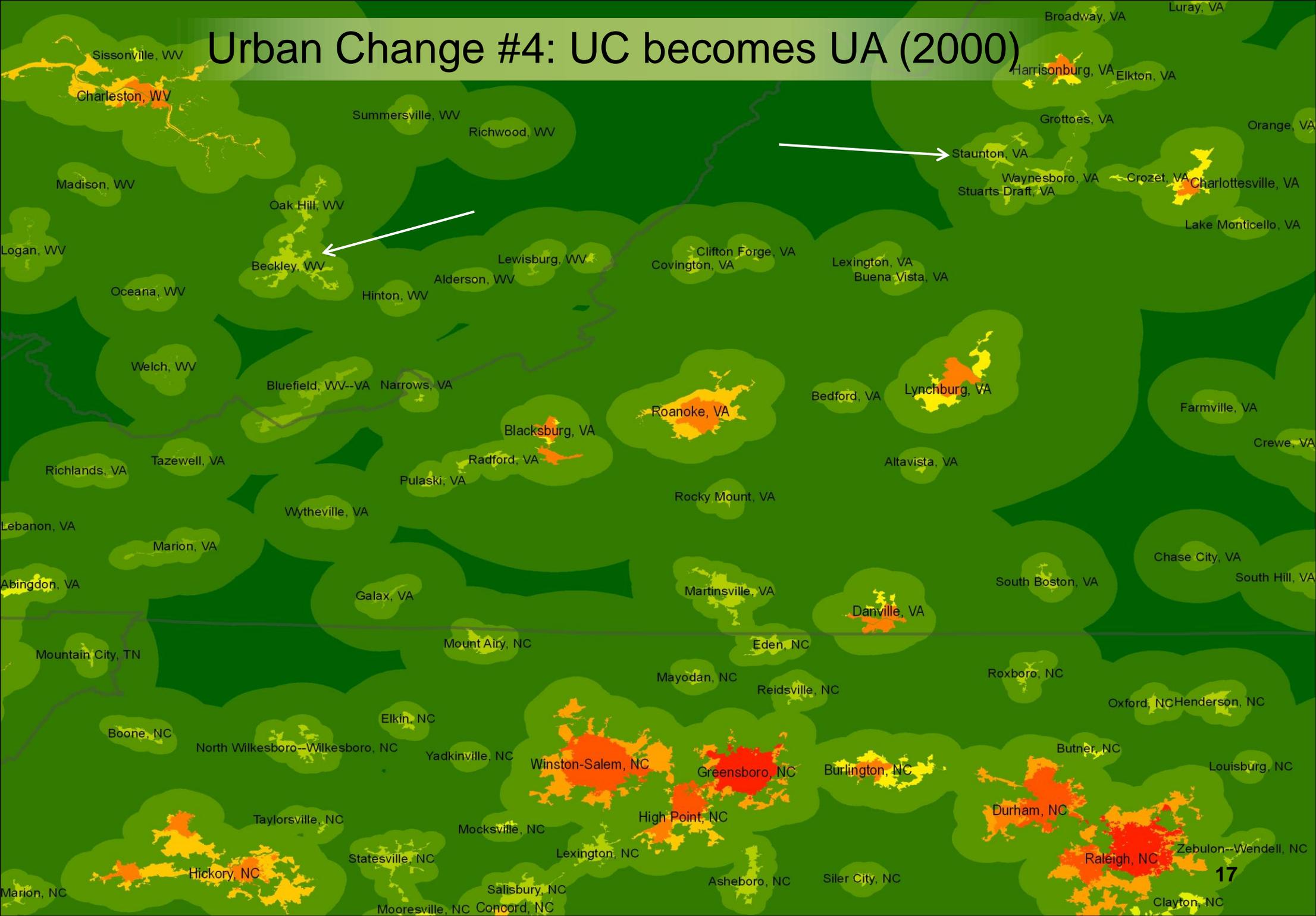
Urban Change #3: UA absorbs UC (2010)



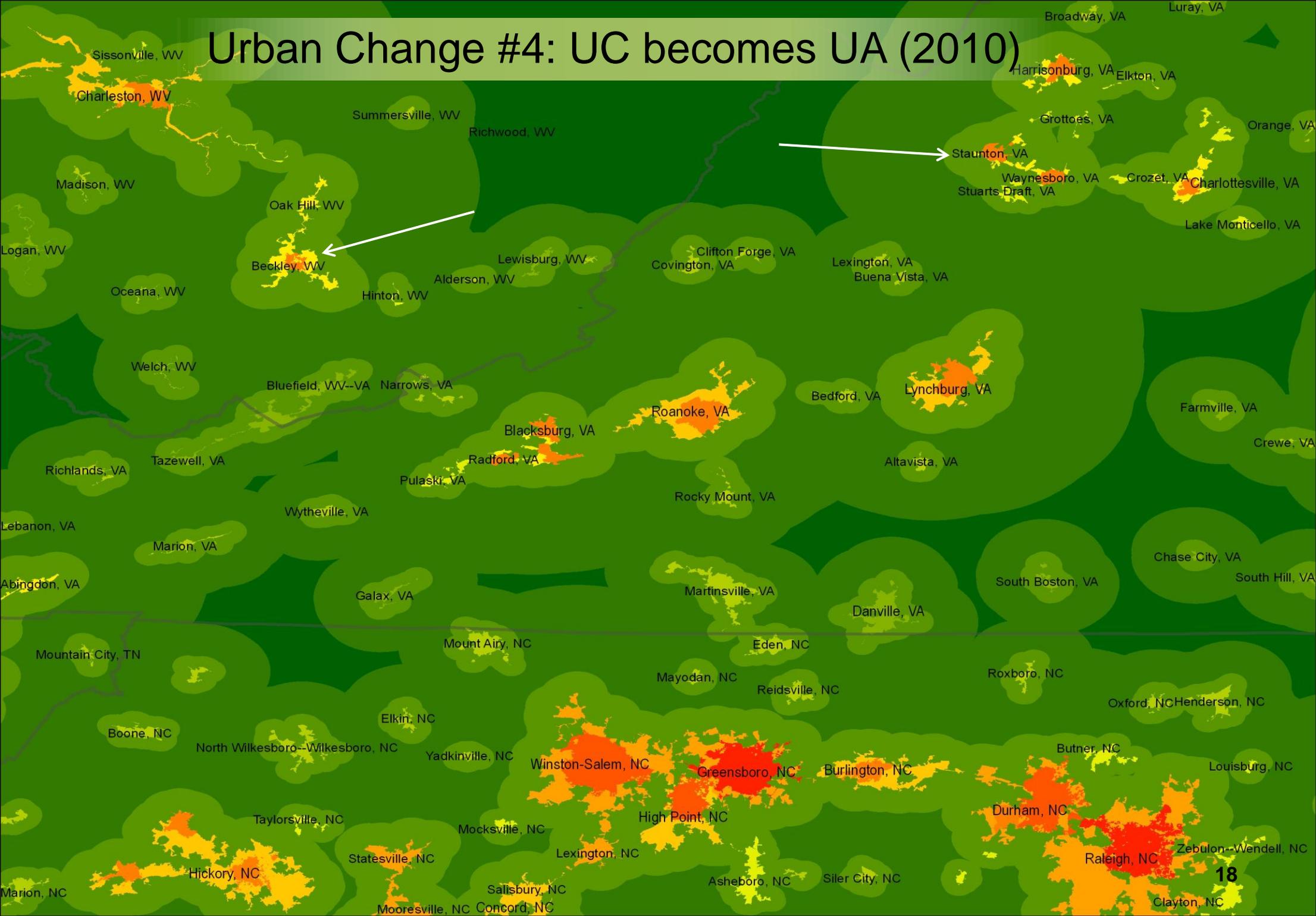
Locale

- | | | | |
|--|--|---|---|
| ■ City-Large | ■ Suburban-Large | ■ Town-Fringe | ■ Rural-Fringe |
| ■ City-Midsize | ■ Suburban-Midsize | ■ Town-Distant | ■ Rural-Distant |
| ■ City-Small | ■ Suburban-Small | ■ Town-Remote | ■ Rural-Remote |

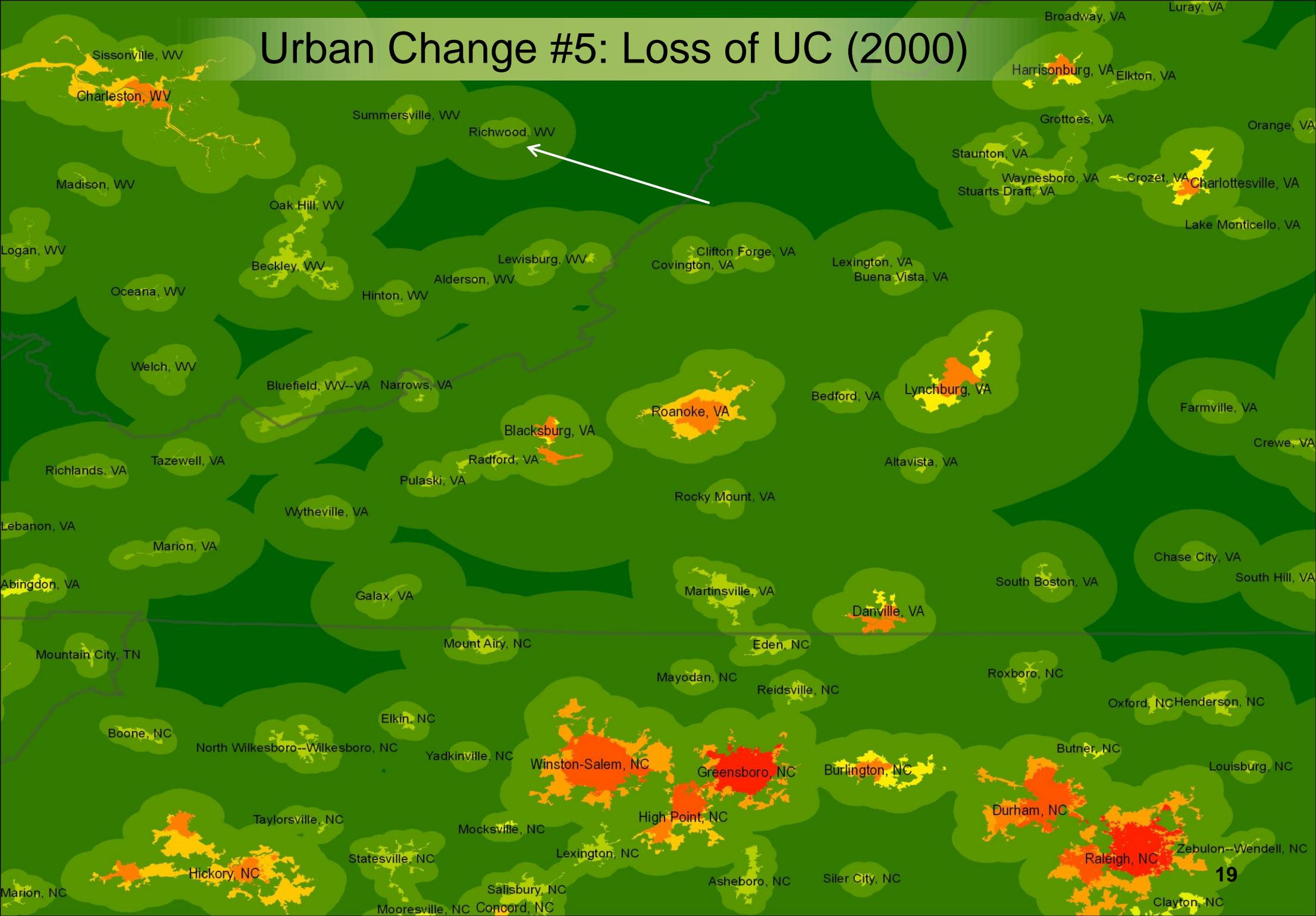
Urban Change #4: UC becomes UA (2000)



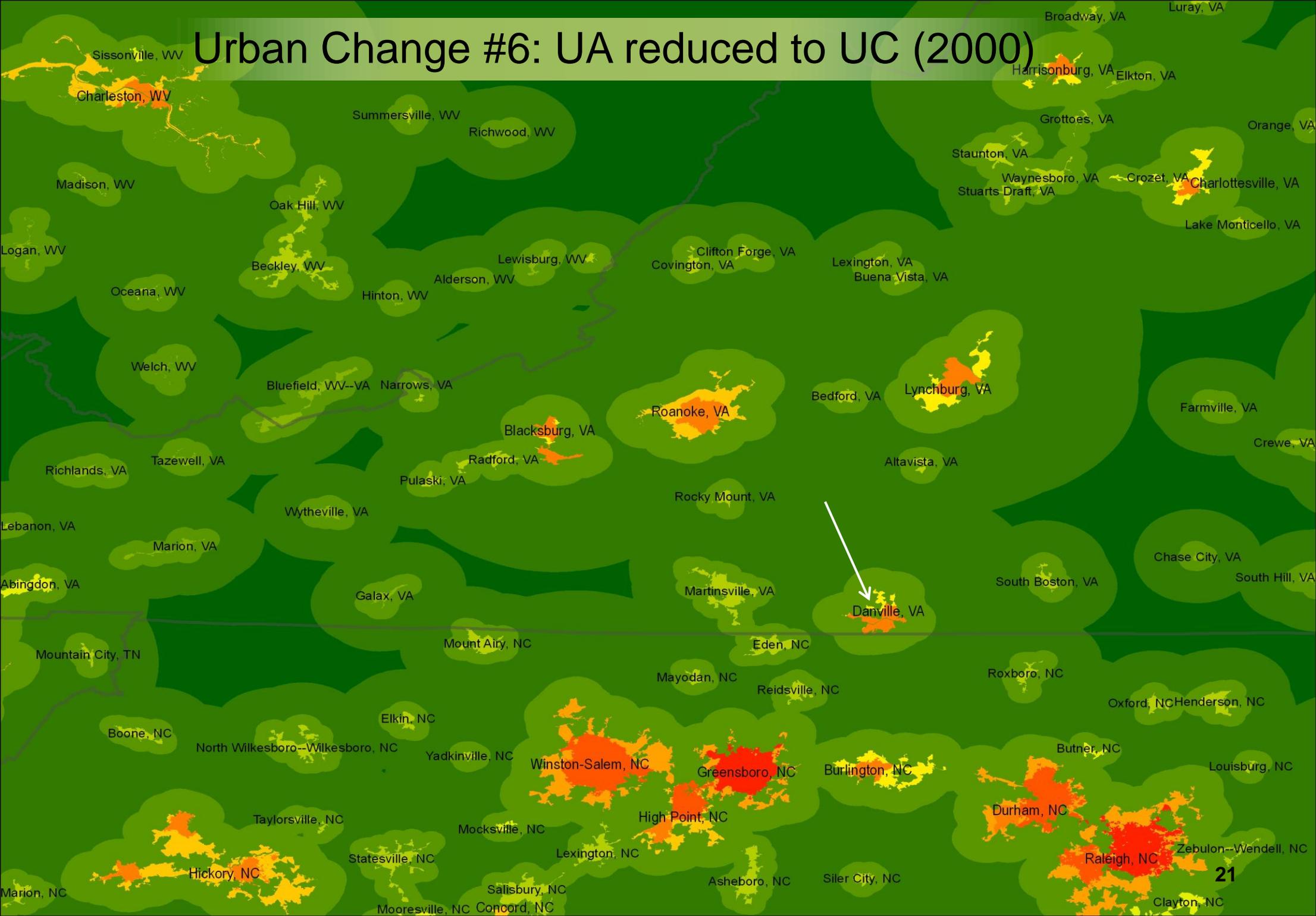
Urban Change #4: UC becomes UA (2010)



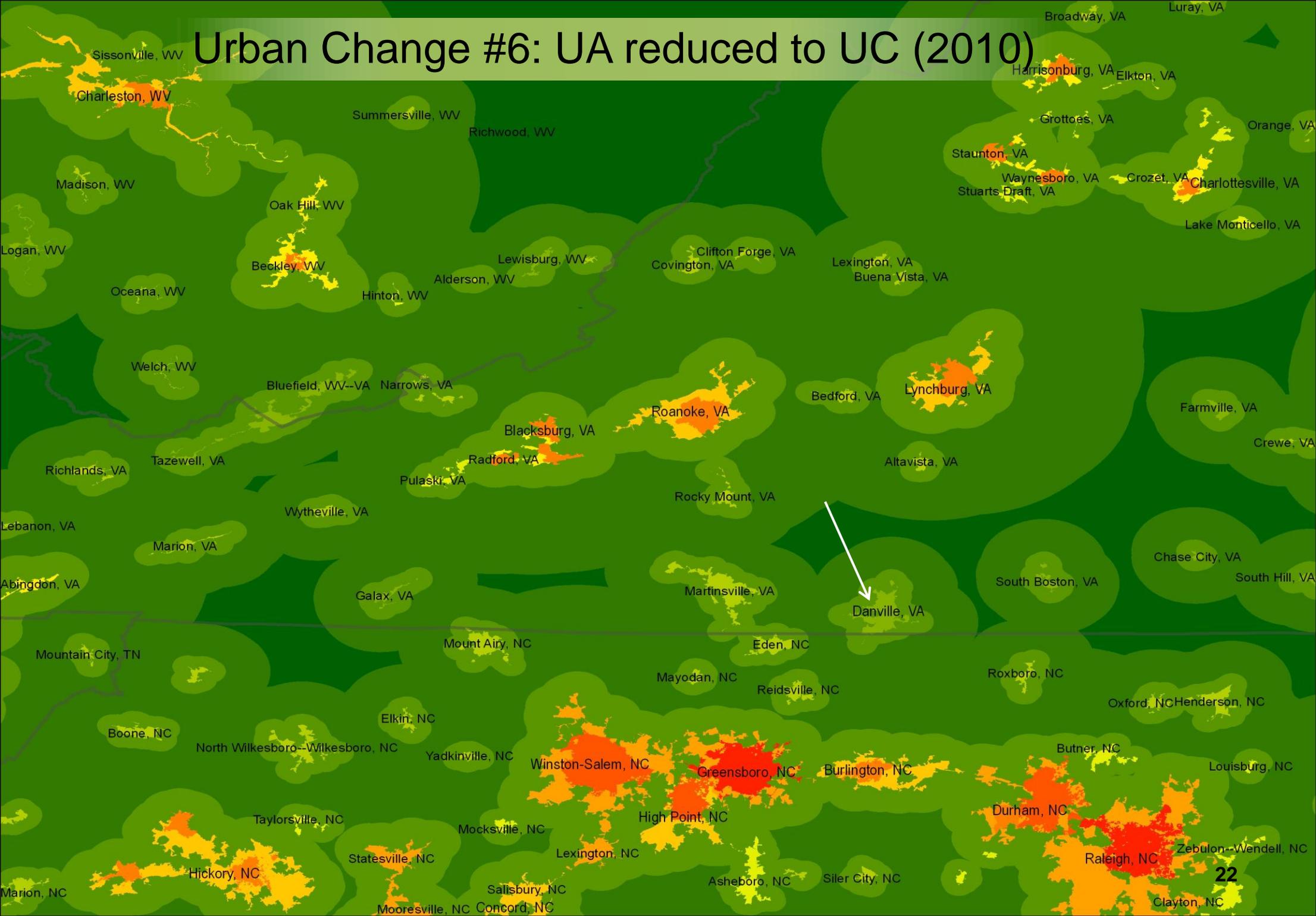
Urban Change #5: Loss of UC (2000)



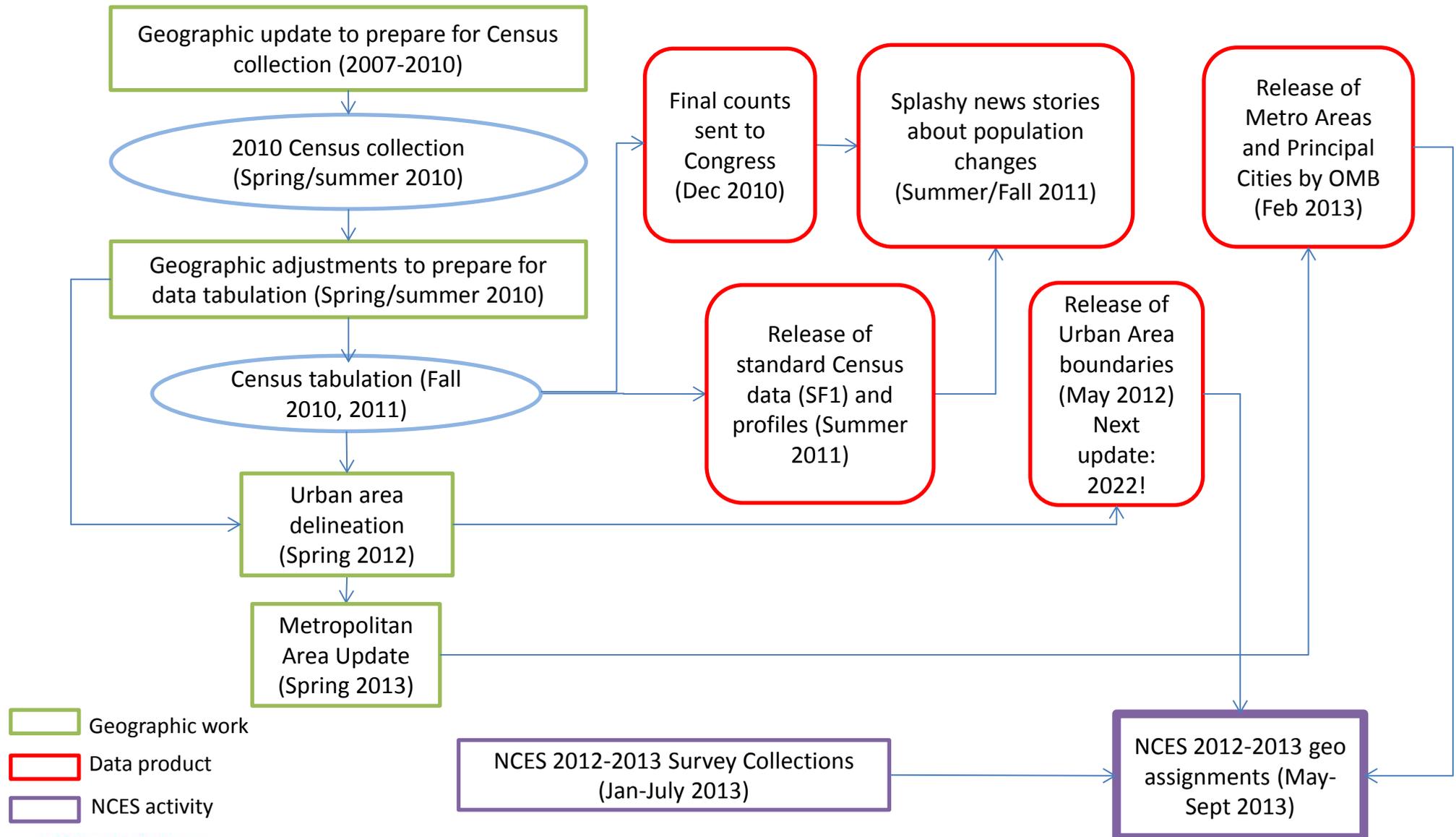
Urban Change #6: UA reduced to UC (2000)



Urban Change #6: UA reduced to UC (2010)



Path to Urban Area Delineation and NCES Locale Indicators



Overall Impact?

- TBD!
- NCES 2012-2013 surveys processed this summer/fall
- Integrated Post-Secondary Education Data System (IPEDS) – Summer 2013
- Common Core of Data (CCD) – Summer/Fall 2013
- Rural Education Achievement Program (REAP) – Winter 2013
 - Different locale framework.
 - More reliance on metropolitan area boundaries
 - Rural and Town status have significant impact
- Private School Survey (PSS) – Summer 2014

Questions and Contact

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Resources

- U.S. Census Bureau: <http://www.census.gov>
 - Demographic data: (American Factfinder: <http://factfinder.census.gov>)
 - Census 2000: SF1, SF3
 - American Community Survey
 - 2010 Census
 - Small Area Income and Poverty Estimates: <http://www.census.gov/did/www/saipe>
 - Geographic data:
 - TIGER/Line: <http://www.census.gov/geo/www/tiger/>
 - Cartographic Products: http://www.census.gov/geo/www/maps/CP_MapProducts.htm
- National Center for Education Statistics
 - School District Demographics: <http://nces.ed.gov/surveys/sdds/>
 - Common Core of Data: <http://nces.ed.gov/ccd/>

Criteria Changes from 2000 to 2010

Criteria	2000	2010
Building Blocks	Block groups and blocks	Tracts and blocks
Impervious	N/A	Used NLCD impervious land cover
Exempted Territory	Water, national parks, national monuments	Water
Hops and Jumps	Hop (0.5 miles), jump (2.5 miles), hop (0.5 miles)	Hop (0.5 miles), jump (2.5 miles)
Split/Merge	Splits guided by metro areas	Splits guided by 2000 urbanized areas (utilized places). Merge to maintain status
Airports	10,000 min enplanement	2,500 min enplanement
Non-Institutional GQ	N/A	At least 1,500 outside
Military	Adjusted density of high count military blocks	No density adjustment

New Urbanized Areas: 2010

