National Center for Frontier Communities webinar, January 27, 2015 Frontier and Remote (FAR) Area Codes: A Preliminary View of Upcoming Changes John Cromartie Economic Research Service, USDA





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Goals of this presentation:

- Describe the methodology used to define FAR area codes
- Highlight what is being done to improve the upcoming version:
 - Updating urban definitions and population data
 - Improving roads network and travel-time data
 - Using smaller grid cells
 - Providing access to grid-level maps

Timeline for the development of FAR codes:

- October 2008: Interagency agreement between HRSA and ERS "to support the development of a formal definition of frontier"
- March-June, 2009: Four regional stakeholder meetings
- October 2009: Summary of stakeholder input distributed
- May 2012: Frontier and Remote (FAR) area codes published
- November 2012: Public Register Notice seeking comments
- April 2014: Public Register Notice responding to comments

Why does ERS define frontier and remote areas?

- Remoteness bestows highly-cherished benefits, but also persistent economic and social challenges.
- There is a need to better understand the effects of remoteness on job creation, population retention, and service provision.
- Frontier and remote area classifications have the potential to contribute to ERS research on several policy-relevant issues :
 - Demographic trends
 - Food deserts
 - Health care accessibility
 - Farm program impacts

Frontier and Remote (FAR): territory characterized by some combination of low population density and high geographic remoteness.

- Most frontier definitions are based strictly on population density, usually at the county level.
- FAR code methodology is based more on distance measures (travel time by car) and urban-area population size.
- This allows for much greater geographic detail compared with county-based measures

- FAR codes include 4 levels:
 - Level 1--FAR areas consist of rural areas and urban areas up to 50,000 people that are 60 minutes or more from an urban area of 50,000 or more people.
 - Level 2 EAR areas consist of rural areas and urban areas up to 25,000 people that are: 45 minutes or more from an urban area of 25,000-49,999 people, and 60 minutes or more from an urban area of 50,000 or more people.
 - Level 3--FAR areas consist of rural areas and urban areas up to 10,000 people that are: 30 minutes or more from an urban area of 10,000-24,999; 45 minutes or more from an urban area of 25,000-49,999 people; and 60 minutes or more from an urban area of 50,000 or more people.
 - Level 4--FAR areas consist of rural areas that are: 15 minutes or more from an urban area of 2,500-9,999 people; 30 minutes or more from an urban area of 10,000-24,999 people; 45 minutes or more from an urban area of 25,000-49,999 people; and 60 minutes or more from an urban area of 50,000 or more people.
- This presentation focuses on FAR level 1

- Defining FAR areas involves answering two qualifying questions:
 - 1. What is the maximum population size for an urban entity to qualify as FAR? *50,000*
 - What are the qualifying distance bands around larger (nonqualifying) urban entities, beyond which areas qualify as FAR?
 60 minutes travel time by car
- All rural definitions may be reduced to versions of these two questions (Cromartie and Bucholtz 2008)



Cromartie, John, and Shawn Bucholtz. 2008. "Defining the "Rural" in Rural America." Amber Waves 6(3):7.

Defining FAR areas requires choosing geographic building blocks:

- Using urban entities that are consistent across the country and based strictly on population density criteria: *Census Urban Areas*
- Measuring distance to these urban entities, and delineating FAR areas, for the smallest possible geographic unit: ½x½ kilometer grid cells
- 3. Aggregating FAR populations into larger geographic units, ones that are commonly known and used for research and policy making: *ZIP code areas*

Census Urban Areas (UA's)

- The most recent set of Census-defined UA's (from the 2010 Census) are used to represent urban entities around which FAR areas are identified.
- Nationally-consistent: Based strictly on population density and not on municipal boundaries.
- Two types based on size:
 - Urbanized Areas: 50,000 or more people
 - Urban Clusters: 2,500-49,999 people
- FAR Level 1 areas are defined in relation to the time it takes to travel by car to the edges of nearby Urbanized Areas
- FAR Levels 2-4 take into account distance to smaller Urban Clusters





1/2 x 1/2 kilometer grid cells

- Current FAR codes use 1x1 kilometer grid cells
- For each of the ~25 million grid cells covering the entire U.S., the following information was added:
 - Urbanized Areas
 - Complete roads network
 - 2010 population, downcast to the grid network from census blocks using areal interpolation; used for aggregation to ZIP codes
- Distance measures were calculated based on the roads network: travel time by car to the edge of the nearest Urbanized Area



Improved roads network

- Current FAR codes are based on a relatively limited roads data base that does not include:
 - Local roads (below 35 mph)
 - Speed limits above 55 mph
 - Ferry service
 - Alaska or Hawaii
- A newer NAVTEQ roads data base, that removes these limitations, is being used for this update.



FAR Level 1 (areas outside pink and red shades):



Access to interactive, grid-level maps will be a new feature of the updated data product

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FAR Level 1 (pink shaded areas):



Access to interactive, grid-level maps will be a new feature of the updated data product

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Final step: Aggregating grid results to larger geographic units

- Any larger geographic unit may be classified as FAR or not by examining the grid-cell populations that fall in that unit.
- ERS currently classifies ZIP code areas, but similar maps can be developed for census tracts, counties, or other geographic units.
- If 50 percent or more of a ZIP code area's population is located in grid cells designated as FAR, then the ZIP code area is classified as FAR.



Frontier and Remote (FAR) Areas, Level 1



Frontier and Remote (FAR) Areas, Level 1



Next steps:

- 1. Complete FAR levels 2-4
- 2. Complete the data checking process, including results for Alaska, Hawaii, and islands
- 3. Add descriptive statistics
- 4. Publish the updated ERS data product

Current ERS data product: <u>http://www.ers.usda.gov/data-</u> products/frontier-and-remote-area-codes.aspx



Temporary link to FAR, level 1, grid map:

http://bit.ly/1BjKoae

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