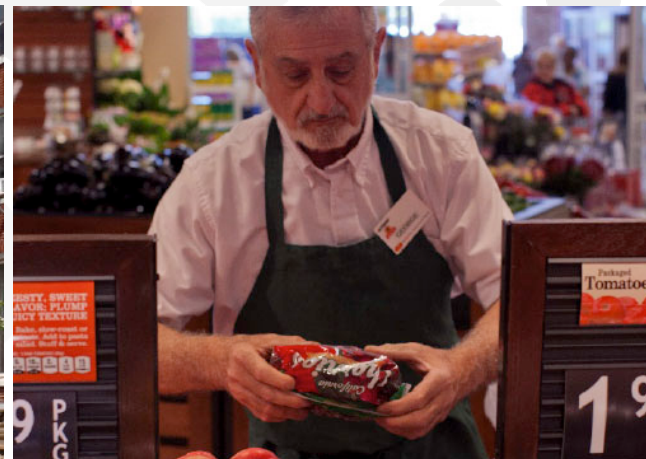
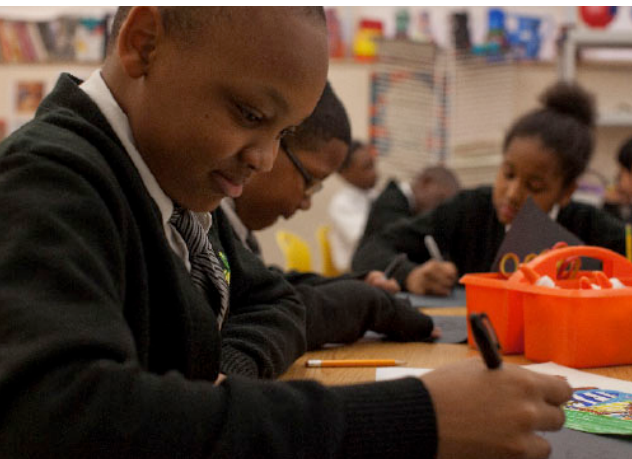




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2018 Limited Supermarket Access (LSA) Analysis Update

June, 2018

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Agenda

1. What is the LSA?
2. What goes into the LSA?
3. Results from the 2018 Analysis
4. Preview of Targeted Rural Analysis
5. Question & Discussion



What is the LSA?

- Reinvestment Fund's Limited Supermarket Access analysis identifies areas where:
 1. Residents have inequitable access to supermarkets; and
 2. Locally unmet demand is sufficient to support new or expanded supermarket operations.
- The LSA is one tool policymakers and investors can use to make targeted interventions to improve food access.
- The CDFI Fund and the USDA use the LSA as a validated metric of food access.
- LSA areas are located in urban, suburban, and rural communities across all 48 of the contiguous United States and Washington, DC.

Why Supermarkets?

- The Food Marketing Institute defines a supermarket as “a conventional grocery store [...] with annual sales of two million dollars or more per store.”
 - \$2MM/year = \$38,330/week
- Stores included under this definition are:
 1. Conventional supermarkets;
 2. Limited assortment stores (ALDI, Trader Joe’s);
 3. Natural/gourmet retailers (Whole Foods, independents);
 4. Warehouse groceries (Smart & Final, Cash & Carry); and
 5. Supercenters (Walmart, Super-Target)
- The median full-service store is 26,000 square feet with annual sales (ACV) of \$13,000,000.

Why Supermarkets?

- Supermarkets tend to offer the widest selection of fresh and healthy foods at the most affordable prices.
- Other retailers are critical components of the food system, providing access where otherwise residents would have none; however, *in general*, they offer fewer fresh and healthy foods at higher prices.
- Supermarket location data is comprehensive and high-quality; this is less true for other types of retailers.



Identifying LSA Areas

1. Identify full-service supermarket locations.
2. Measure the street network distance between each Census block group and its nearest supermarket.
3. Classify block groups based on their population density, car ownership, and distance to the nearest supermarket.
4. Establish a “Reference Distance” for each block group based on the distance residents in similar block groups at, or above, 120% AMI travel to the nearest store.
5. Calculate a “Low Access Score” for each block group by comparing its distance to its reference distance.
6. Identify “LSA Areas” by combining neighboring block groups with Low Access Scores of at least 0.45 and a combined population of at least 5,000 people.

Updates to the LSA Methodology in 2018

- *Updated timeframe for the longitudinal analyses.*
 - The historical frame for the analysis was updated to 2010 through 2016 from 2005 through 2013.
- *Revised and simplified population density and car ownership classes.*
 - Based on declines in car ownership, feedback from users of the LSA analysis, and variation in the American Community Survey (ACS) sample data that underlies the analysis, the number of classes was reduced for the 2018 update.
- *Updated decision rule to move block groups from one class to another over time.*
 - Permits year to year changes in a block group classes if:
 - The block group's population estimate in a subsequent year is significantly different from the population estimate in the prior year;
and
 - The population estimate (and car ownership estimate, if applicable) place that block group significantly in a new class.

Updated Density/Car Ownership Classes for 2018

| Class | Minimum Population Density | Maximum Population Density | Minimum % Households With No Car | Maximum % Households With No Car | Reference Distance (miles) | Block Groups in Class in 2016 |
|---------------------|----------------------------|----------------------------|----------------------------------|----------------------------------|----------------------------|-------------------------------|
| Density 1 | 0.0 | 10.4 | N/A | N/A | 12.9 | 2,670 |
| Density 2 | 10.4 | 64.2 | N/A | N/A | 7.6 | 21,065 |
| Density 3 | 64.2 | 296.9 | N/A | N/A | 4.7 | 26,327 |
| Density 4 | 296.9 | 1,236.1 | N/A | N/A | 2.6 | 28,464 |
| Density 5 | 1,236.1 | 3,741.8 | N/A | N/A | 1.6 | 48,664 |
| Density 6, High Car | 3,741.8 | 161,342.7 | 0.0% | 12.6% | 1.0 | 67,961 |
| Density 6, Low Car | 3,741.8 | 813,265.2 | 12.6% | 96.0% | 0.3 | 20,557 |

Residents in low-access block groups must travel almost twice as far to a supermarket as residents in well-served block groups with similar population density and car ownership.

Results: LSA Areas Declined Substantially Since 2010

| Year | LSA Areas | Total Population | Population in LSA Areas | Percent Population in LSA Areas |
|------|-----------|------------------|-------------------------|---------------------------------|
| 2010 | 1,629 | 306,675,006 | 20,703,322 | 6.8% |
| 2011 | 1,557 | 304,498,648 | 19,044,276 | 6.3% |
| 2012 | 1,485 | 306,974,780 | 17,713,302 | 5.8% |
| 2013 | 1,470 | 309,348,307 | 17,438,456 | 5.6% |
| 2014 | 1,443 | 311,887,280 | 17,307,889 | 5.5% |
| 2015 | 1,440 | 314,261,518 | 17,191,928 | 5.5% |
| 2016 | 1,461 | 316,292,890 | 17,618,385 | 5.6% |

Changes in LSA Populations Varied Across the Nation

| State | 2010 | 2012 | 2014 | 2016 | % Chg 2010- 2012 | % Chg 2012- 2014 | % Chg 2014- 2016 | % Chg 2010- 2016 |
|------------------|-------------------|-------------------|-------------------|-------------------|------------------------|------------------------|------------------------|------------------------|
| North Dakota | 92,427 | 58,662 | 53,384 | 54,737 | -37% | -9% | 3% | -41% |
| Idaho | 98,590 | 84,866 | 81,793 | 58,446 | -14% | -4% | -29% | -41% |
| Iowa | 75,480 | 44,989 | 43,861 | 45,456 | -40% | -3% | 4% | -40% |
| Rhode Island | 112,148 | 86,903 | 78,737 | 69,057 | -23% | -9% | -12% | -38% |
| Wisconsin | 284,963 | 187,496 | 183,052 | 181,682 | -34% | -2% | -1% | -36% |
| Alabama | 187,176 | 129,289 | 115,198 | 121,184 | -31% | -11% | 5% | -35% |
| Kansas | 111,879 | 68,504 | 68,569 | 73,251 | -39% | 0% | 7% | -35% |
| New York | 1,409,599 | 1,004,982 | 976,207 | 935,381 | -29% | -3% | -4% | -34% |
| Arkansas | 183,470 | 140,858 | 128,515 | 123,857 | -23% | -9% | -4% | -32% |
| Indiana | 424,729 | 245,553 | 263,767 | 290,024 | -42% | 7% | 10% | -32% |
| Nation | 20,703,322 | 17,713,302 | 17,307,889 | 17,618,385 | -14% | -2% | +2% | -15% |
| Florida | 1,135,678 | 953,501 | 969,252 | 1,061,469 | -16% | 2% | 10% | -7% |
| Montana | 81,697 | 72,062 | 78,077 | 78,708 | -12% | 8% | 1% | -4% |
| Wyoming | 30,002 | 22,778 | 28,999 | 29,880 | -24% | 27% | 3% | 0% |
| Arizona | 706,328 | 645,897 | 663,820 | 711,611 | -9% | 3% | 7% | 1% |
| Michigan | 377,220 | 378,027 | 366,463 | 384,679 | 0% | -3% | 5% | 2% |
| Washington, D.C. | 173,325 | 168,265 | 151,894 | 176,837 | -3% | -10% | 16% | 2% |
| Virginia | 401,229 | 420,705 | 408,253 | 418,883 | 5% | -3% | 3% | 4% |
| New Hampshire | 75,998 | 80,915 | 79,920 | 79,455 | 6% | -1% | -1% | 5% |
| Nevada | 251,318 | 248,813 | 268,132 | 317,050 | -1% | 8% | 18% | 26% |
| Maine | 34,546 | 30,558 | 31,310 | 43,767 | -12% | 2% | 40% | 27% |

Changes in LSA Populations Varied Across the Nation

| | 2010 | 2012 | 2014 | 2016 | % Chg 2010- 2012 | % Chg 2012- 2014 | % Chg 2014- 2016 | % Chg 2010- 2016 |
|--|----------------|----------------|----------------|----------------|------------------------|------------------------|------------------------|------------------------|
| <i>Metropolitan Area</i> | | | | | | | | |
| Charlotte-Concord-Gastonia, NC-SC | 44,430 | 23,032 | 25,284 | 9,570 | -48% | 10% | -62% | -78% |
| Buffalo-Cheektowaga-Niagara Falls, NY | 287,448 | 112,043 | 109,666 | 118,882 | -61% | -2% | 8% | -59% |
| Nashville-Davidson--Murfreesboro--Franklin, TN | 75,147 | 46,834 | 38,454 | 31,202 | -38% | -18% | -19% | -58% |
| Grand Rapids-Wyoming, MI | 28,938 | 27,426 | 22,251 | 16,576 | -5% | -19% | -26% | -43% |
| Indianapolis-Carmel-Anderson, IN | 163,379 | 87,547 | 95,178 | 96,788 | -46% | 9% | 2% | -41% |
| Hartford-West Hartford-East Hartford, CT | 96,677 | 74,357 | 59,633 | 58,637 | -23% | -20% | -2% | -39% |
| Salt Lake City, UT | 33,924 | 18,464 | 15,087 | 21,159 | -46% | -18% | 40% | -38% |
| Rochester, NY | 149,556 | 99,641 | 94,039 | 95,339 | -33% | -6% | 1% | -36% |
| Birmingham-Hoover, AL | 84,290 | 63,275 | 57,085 | 56,128 | -25% | -10% | -2% | -33% |
| Kansas City, MO-KS | 76,908 | 43,739 | 37,222 | 53,118 | -43% | -15% | 43% | -31% |
| Major Metropolitan Area Average | 245,691 | 212,332 | 206,469 | 211,510 | -15% | -3% | 2% | -16% |
| Los Angeles-Long Beach-Anaheim, CA | 353,743 | 318,006 | 318,571 | 359,565 | -10% | 0% | 13% | 2% |
| Philadelphia-Camden-Wilmington, PA-NJ-DE-MD | 701,731 | 657,672 | 612,332 | 713,847 | -6% | -7% | 17% | 2% |
| Phoenix-Mesa-Scottsdale, AZ | 326,028 | 292,637 | 313,992 | 338,492 | -10% | 7% | 8% | 4% |
| Detroit-Warren-Dearborn, MI | 242,419 | 240,495 | 235,809 | 253,786 | -1% | -2% | 8% | 5% |
| Richmond, VA | 79,534 | 83,258 | 82,917 | 84,235 | 5% | 0% | 2% | 6% |
| Columbus, OH | 110,669 | 108,914 | 106,451 | 118,380 | -2% | -2% | 11% | 7% |
| Raleigh, NC | 28,675 | 29,335 | 35,582 | 31,578 | 2% | 21% | -11% | 10% |
| Jacksonville, FL | 84,895 | 85,495 | 91,251 | 99,512 | 1% | 7% | 9% | 17% |
| Virginia Beach-Norfolk-Newport News, VA-NC | 77,270 | 95,206 | 83,040 | 90,623 | 23% | -13% | 9% | 17% |
| Las Vegas-Henderson-Paradise, NV | 157,036 | 148,187 | 173,476 | 211,055 | -6% | 17% | 22% | 34% |



LSA Areas Are Unevenly Distributed Within States & Metro-Regions

| <i>State</i> | <i>Total Population</i> | <i>% Population in Low-Income Areas</i> | <i>LSA Population</i> | <i>% LSA Population in Low-Income Areas</i> | <i>Low-Income Area Ratio</i> |
|------------------------|-------------------------|---|-----------------------|---|------------------------------|
| Rhode Island | 1,054,491 | 29% | 69,057 | 91% | 3.2 |
| Pennsylvania | 12,783,977 | 25% | 1,088,457 | 73% | 2.9 |
| Wisconsin | 5,754,798 | 21% | 181,682 | 62% | 2.9 |
| Massachusetts | 6,742,143 | 26% | 619,747 | 65% | 2.5 |
| Delaware | 934,695 | 20% | 66,431 | 49% | 2.4 |
| Maine | 1,329,923 | 18% | 43,767 | 43% | 2.4 |
| Connecticut | 3,588,570 | 29% | 200,897 | 67% | 2.3 |
| Illinois | 12,851,684 | 28% | 812,572 | 62% | 2.2 |
| Michigan | 9,909,600 | 26% | 384,679 | 56% | 2.2 |
| Kentucky | 4,411,989 | 23% | 183,208 | 50% | 2.2 |
| Lower 48 States | 316,292,890 | 26% | 17,618,385 | 44% | 1.7 |

| <i>Metropolitan Area</i> | <i>Total Population</i> | <i>% Population in Low-Income Areas</i> | <i>LSA Population</i> | <i>% LSA Population in Low-Income Areas</i> | <i>Low-Income Area Ratio</i> |
|---|-------------------------|---|-----------------------|---|------------------------------|
| Rochester, NY | 1,082,226 | 22% | 95,339 | 71% | 3.3 |
| Pittsburgh, PA | 2,354,926 | 24% | 246,285 | 78% | 3.2 |
| Buffalo-Cheektowaga-Niagara Falls, NY | 1,135,503 | 26% | 118,882 | 83% | 3.2 |
| Milwaukee-Waukesha-West Allis, WI | 1,571,730 | 30% | 90,450 | 92% | 3.1 |
| Cleveland-Elyria, OH | 2,061,630 | 28% | 138,020 | 77% | 2.7 |
| Providence-Warwick, RI-MA | 1,609,359 | 28% | 118,752 | 77% | 2.7 |
| Virginia Beach-Norfolk-Newport News, VA-NC | 1,714,428 | 29% | 90,623 | 74% | 2.6 |
| Philadelphia-Camden-Wilmington, PA-NJ-DE-MD | 6,047,721 | 30% | 713,847 | 74% | 2.5 |
| Jacksonville, FL | 1,424,097 | 23% | 99,512 | 55% | 2.4 |
| Boston-Cambridge-Newton, MA-NH | 4,728,844 | 26% | 479,393 | 62% | 2.4 |
| Major Metropolitan Area Average | 3,398,778 | 28% | 211,510 | 49% | 1.7 |

LSA Areas Are Unevenly Distributed Within States & Metro-Regions

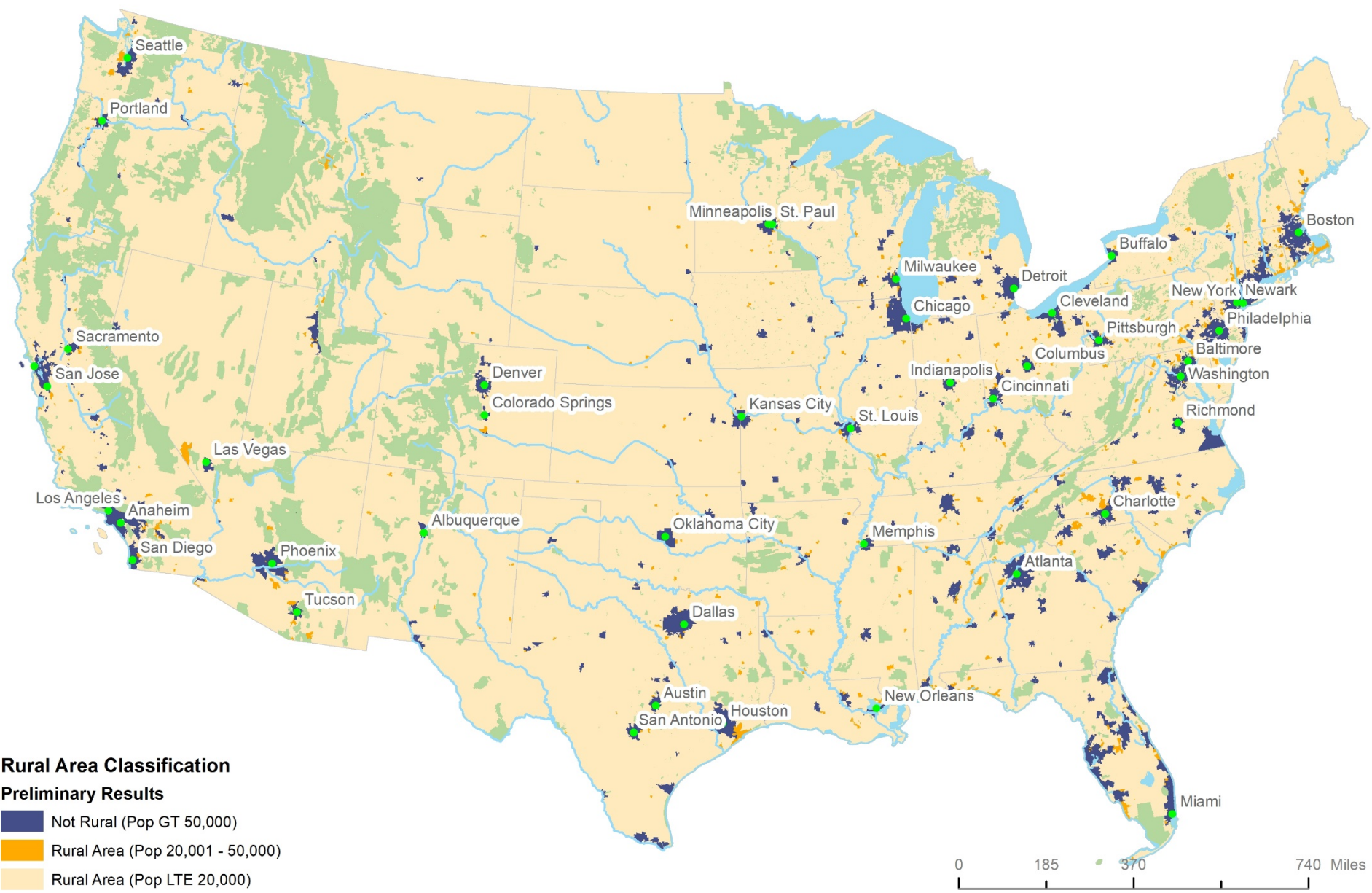
| <i>State</i> | <i>Total Population</i> | <i>% Population Minority</i> | <i>LSA Population</i> | <i>% LSA Population Minority</i> | <i>Minority Ratio</i> |
|------------------------|-------------------------|------------------------------|-----------------------|----------------------------------|-----------------------|
| Rhode Island | 1,054,491 | 26% | 69,057 | 60% | 2.3 |
| Wisconsin | 5,754,798 | 18% | 181,682 | 41% | 2.3 |
| Pennsylvania | 12,783,977 | 21% | 1,088,457 | 47% | 2.2 |
| Kentucky | 4,411,989 | 14% | 183,208 | 31% | 2.1 |
| Ohio | 11,586,941 | 19% | 566,224 | 37% | 1.9 |
| Massachusetts | 6,742,143 | 26% | 619,747 | 48% | 1.9 |
| Missouri | 6,059,651 | 19% | 323,225 | 35% | 1.8 |
| Connecticut | 3,588,570 | 31% | 200,897 | 56% | 1.8 |
| South Dakota | 836,795 | 17% | 64,020 | 30% | 1.7 |
| Maine | 1,329,923 | 6% | 43,767 | 11% | 1.7 |
| Lower 48 States | 316,292,890 | 37% | 17,618,385 | 46% | 1.3 |

| <i>Metropolitan Area</i> | <i>Total Population</i> | <i>% Population Minority</i> | <i>LSA Population</i> | <i>% LSA Population Minority</i> | <i>Minority Ratio</i> |
|--|-------------------------|------------------------------|-----------------------|----------------------------------|-----------------------|
| Buffalo-Cheektowaga-Niagara Falls, NY | 1,135,503 | 21% | 118,882 | 58% | 2.8 |
| Rochester, NY | 1,082,226 | 23% | 95,339 | 59% | 2.6 |
| Pittsburgh, PA | 2,354,926 | 14% | 246,285 | 35% | 2.6 |
| Cincinnati, OH-KY-IN | 2,146,410 | 20% | 186,132 | 42% | 2.1 |
| Nashville-Davidson--Murfreesboro--Franklin, TN | 1,794,570 | 27% | 31,202 | 55% | 2.1 |
| Providence-Warwick, RI-MA | 1,609,359 | 22% | 118,752 | 46% | 2.0 |
| Milwaukee-Waukesha-West Allis, WI | 1,571,730 | 32% | 90,450 | 60% | 1.9 |
| Cleveland-Elyria, OH | 2,061,630 | 27% | 138,020 | 50% | 1.9 |
| St. Louis, MO-IL | 2,803,449 | 24% | 215,015 | 42% | 1.8 |
| Philadelphia-Camden-Wilmington, PA-NJ-DE-MD | 6,047,721 | 34% | 713,847 | 60% | 1.7 |
| Major Metropolitan Area Average | 3,398,778 | 38% | 211,510 | 47% | 1.3 |

Rural Supplement: Defining Rural Areas

- The USDA Rural Business Services (RBS) Eligibility Criteria
- Non Rural Area
 - A city or town with a **population of greater than 50,000 inhabitants** and the urbanized area of that city or town
- Rural Area
 - Any area other than a city or town with a population of greater than 50,000 inhabitants and the urbanized area of that city or town (Any area not in the “non-rural” area)
 - Mid-Rural: rural areas that are city or town **with a population of at least 20,000 but less than or equal to 50,000 inhabitants**

Rural Supplement: Defining Rural Areas



Rural Supplement: Rural Areas and Limited Supermarket Access

- More than 110 million people currently live in Rural Areas in the United States, accounting for about one-third of the total population.
- About 5 percent of the rural population live in LSA Areas.
 - Slightly less than the Nation overall (5.6%)
- Within rural areas, LSA Areas are significantly less densely populated than well-served areas.

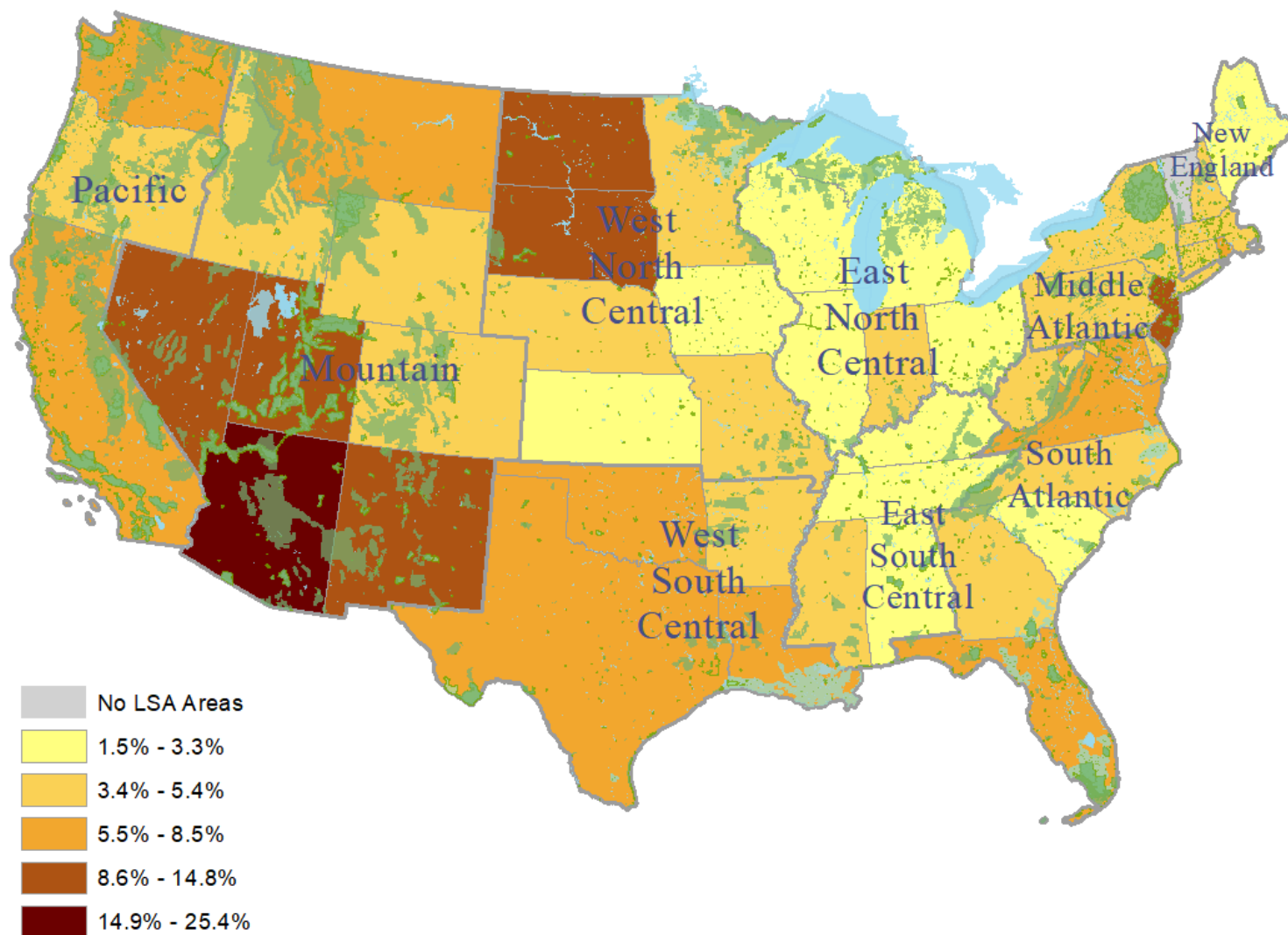
PRELIMINARY FINDINGS



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Rural Supplement:

Rural Population Living in LSA Areas (Percent)



PRELIMINARY FINDINGS



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Rural Supplement:

Low-Access Rural Block Groups v. Well-Served Rural Block Groups

| | Low Access Rural Areas | Well-Served Rural Areas |
|------------------------------|------------------------|-------------------------|
| Total Population | 5,561,000 | 104,682,000 |
| Population per Square Mile | 9.3 | 46.6 |
| % White (Non-Hispanic) | 72.4% | 78.6% |
| % Black | 7.7% | 7.8% |
| % Hispanic | 12.4% | 9.3% |
| Number of Families | 1,385,000 | 26,997,000 |
| % Families in Poverty | 11.6% | 10.8% |
| Average LSA Score | 0.58 | -0.90 |
| Average Distance Traveled | 14.1 | 4.2 |
| Total Grocery Stores | 509 | 18,207 |
| % Full Service | 18.8% | 79.3% |
| Average Store Square Footage | 6,000 | 21,000 |
| Average Food Sales | \$2,303,000 | \$8,275,000 |

PRELIMINARY FINDINGS

Rural Analysis Discussion Questions

- The results of this analysis should inform the creation of interventions to improve access to fresh food in rural areas.
- What else should we know about these rural areas that would facilitate the creation of impactful, sustainable interventions?
 - Data sources
 - Analytic approaches
 - Overlays