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## Searching for Markets: The Geography of Supermarket Access in the United States

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*The Reinvestment Fund*

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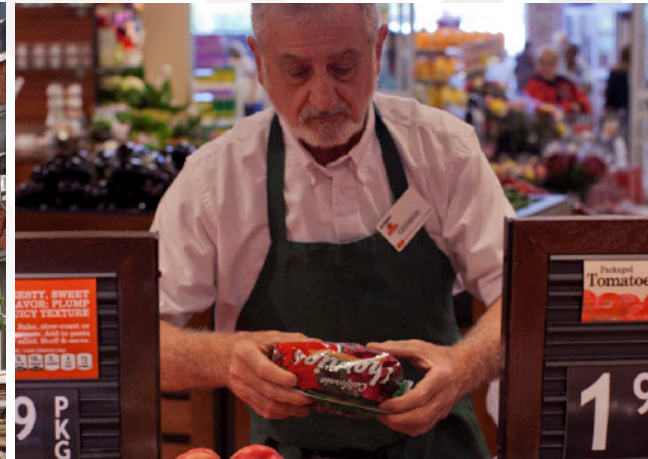
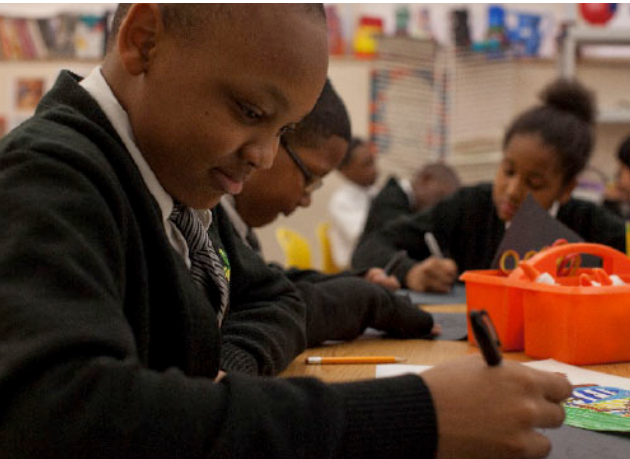
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# 2018 Limited Supermarket Access (LSA) Analysis Update

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June, 2018

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# Agenda

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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?

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- 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?

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- 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?

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- 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

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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

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- *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

<b>Year</b>	<b>LSA Areas</b>	<b>Total Population</b>	<b>Population in LSA Areas</b>	<b>Percent Population in LSA Areas</b>
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%
<b>Nation</b>	<b>20,703,322</b>	<b>17,713,302</b>	<b>17,307,889</b>	<b>17,618,385</b>	<b>-14%</b>	<b>-2%</b>	<b>+2%</b>	<b>-15%</b>
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

<i>Metropolitan Area</i>	<i>2010</i>	<i>2012</i>	<i>2014</i>	<i>2016</i>	<i>% Chg 2010- 2012</i>	<i>% Chg 2012- 2014</i>	<i>% Chg 2014- 2016</i>	<i>% Chg 2010- 2016</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%
<b>Major Metropolitan Area Average</b>	<b>245,691</b>	<b>212,332</b>	<b>206,469</b>	<b>211,510</b>	<b>-15%</b>	<b>-3%</b>	<b>2%</b>	<b>-16%</b>
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

State	Total Population	% Population in Low-Income Areas	LSA Population	% LSA Population in Low-Income Areas	Low-Income Area Ratio
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
<b>Lower 48 States</b>	<b>316,292,890</b>	<b>26%</b>	<b>17,618,385</b>	<b>44%</b>	<b>1.7</b>

Metropolitan Area	Total Population	% Population in Low-Income Areas	LSA Population	% LSA Population in Low-Income Areas	Low-Income Area Ratio
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
<b>Major Metropolitan Area Average</b>	<b>3,398,778</b>	<b>28%</b>	<b>211,510</b>	<b>49%</b>	<b>1.7</b>

# 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
<b>Lower 48 States</b>	<b>316,292,890</b>	<b>37%</b>	<b>17,618,385</b>	<b>46%</b>	<b>1.3</b>

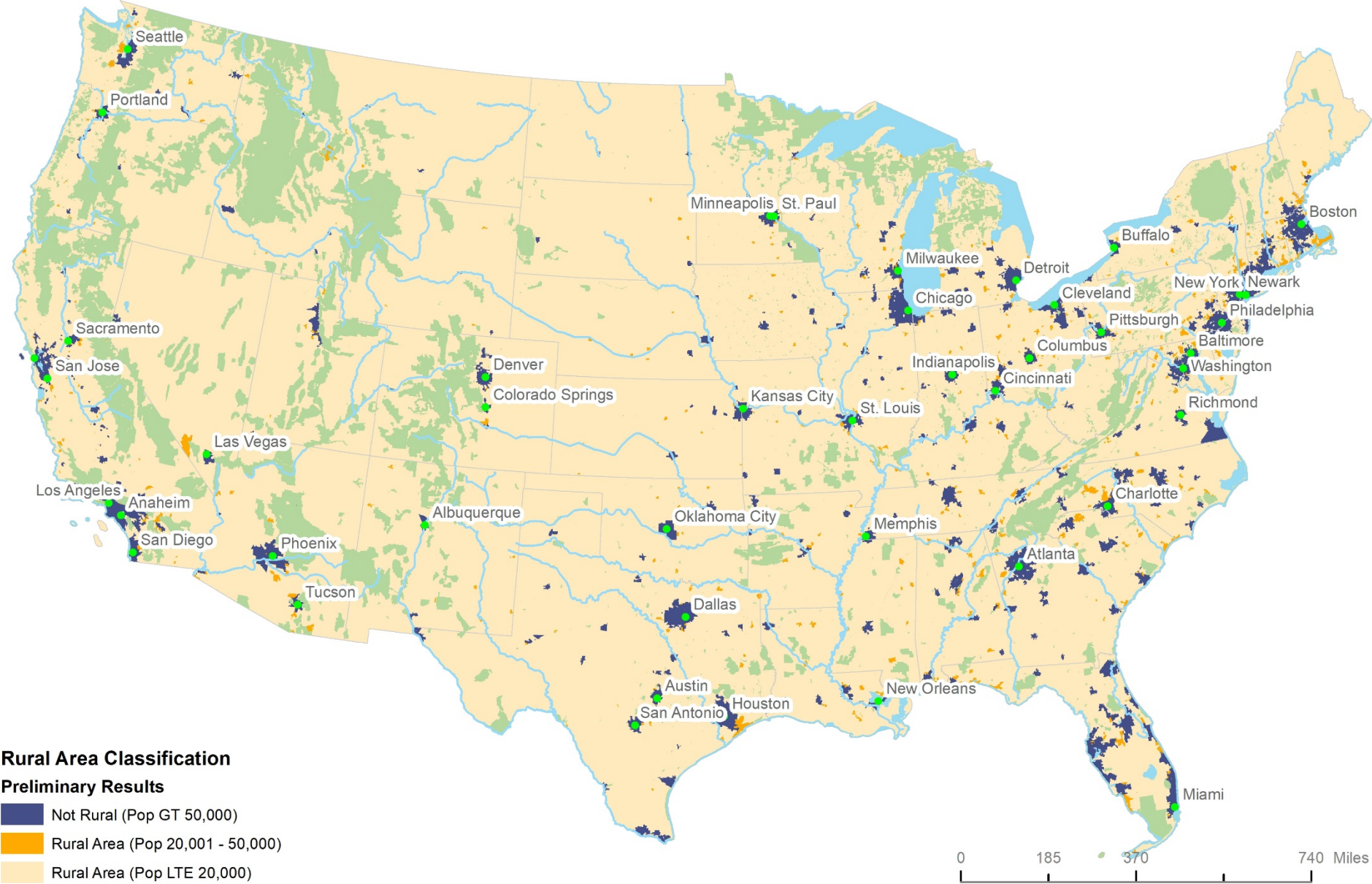
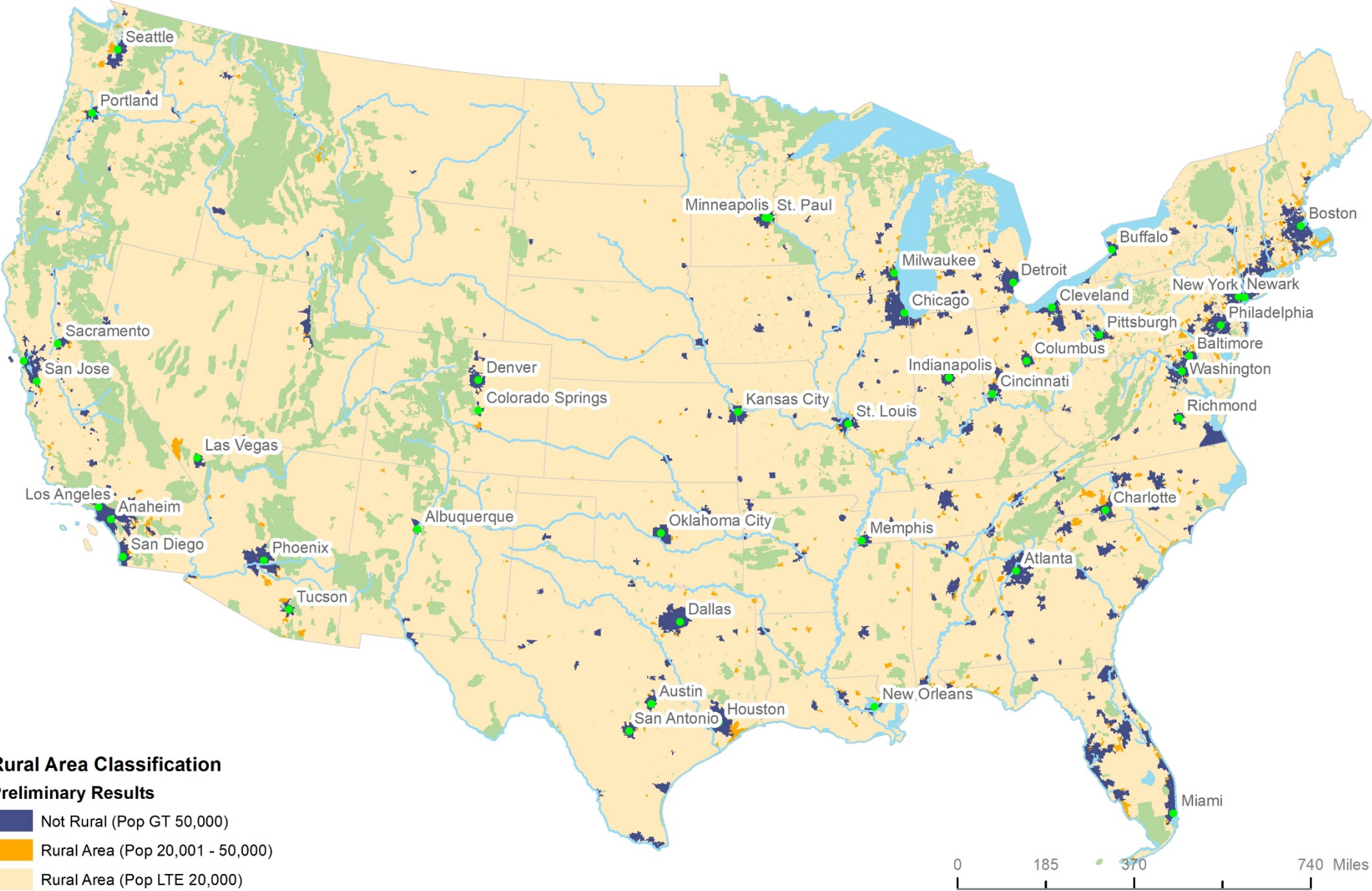
<i>Metropolitan Area</i>	<i>Total Population</i>	<i>% Population Minority</i>	<i>LSA Population</i>	<i>% LSA Population Minority</i>	<i>Minority Ratio</i>
Buffalo-Cheektowaga-Niagara Falls, NY	1,135,503	21%	118,882	58%	2.8
Rochester, NY	1,082,226	23%	95,339	59%	2.6
Pittsburgh, PA	2,354,926	14%	246,285	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
<b>Major Metropolitan Area Average</b>	<b>3,398,778</b>	<b>38%</b>	<b>211,510</b>	<b>47%</b>	<b>1.3</b>

# Rural Supplement: Defining Rural Areas

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- 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

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- 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.

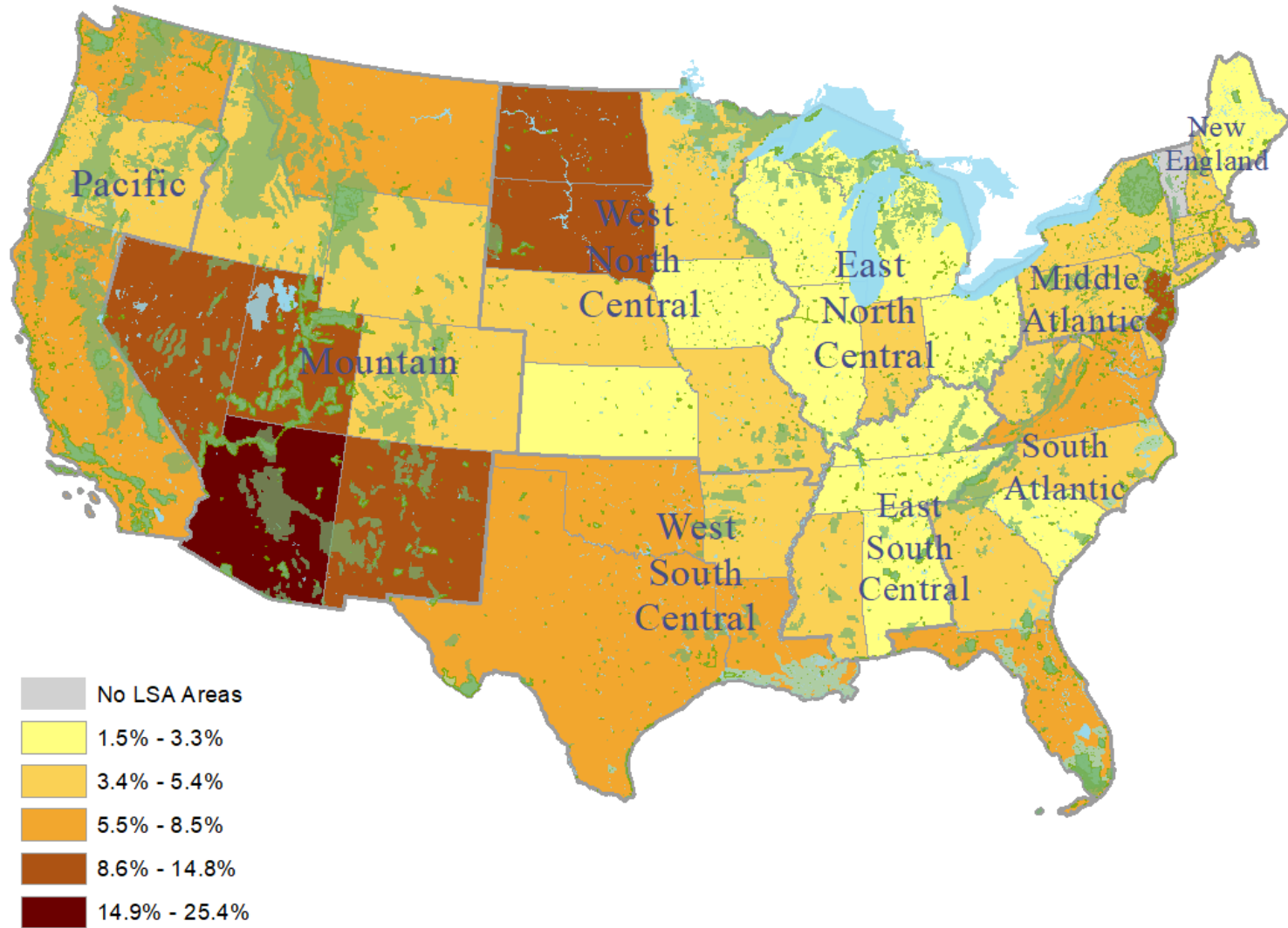
PRELIMINARY FINDINGS



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# Rural Supplement:

## Rural Population Living in LSA Areas (Percent)



PRELIMINARY FINDINGS

# 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

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- 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