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# RURAL FOOD SUPPLY CHAIN INFRASTRUCTURE

## The Case for First Mile/Last Mile Warehouses



John Kane

Warehouses4Good



this is the **MARKET** where the  
storekeeper buys the food and brings  
it to his store near your house

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***Warehouses tend to be one of the most ignored elements of infrastructure and logistics....***

.....but they are a fundamental part of the supply chain, critical for economic development and growth.

High-quality warehousing is not only needed for storage and distribution, but also for the packing, processing, assembling and light manufacturing of goods, the foundations of any economy.

**Geoffrey White, CEO, Agility Africa**

“The forgotten heroes of the economy: why better warehouses will be key to Africa's growth “

Chapter in World Economic Forum on Africa

Source: <https://www.weforum.org/agenda/2019/09/5-ways-better-warehouses-can-boost-african-trade/>

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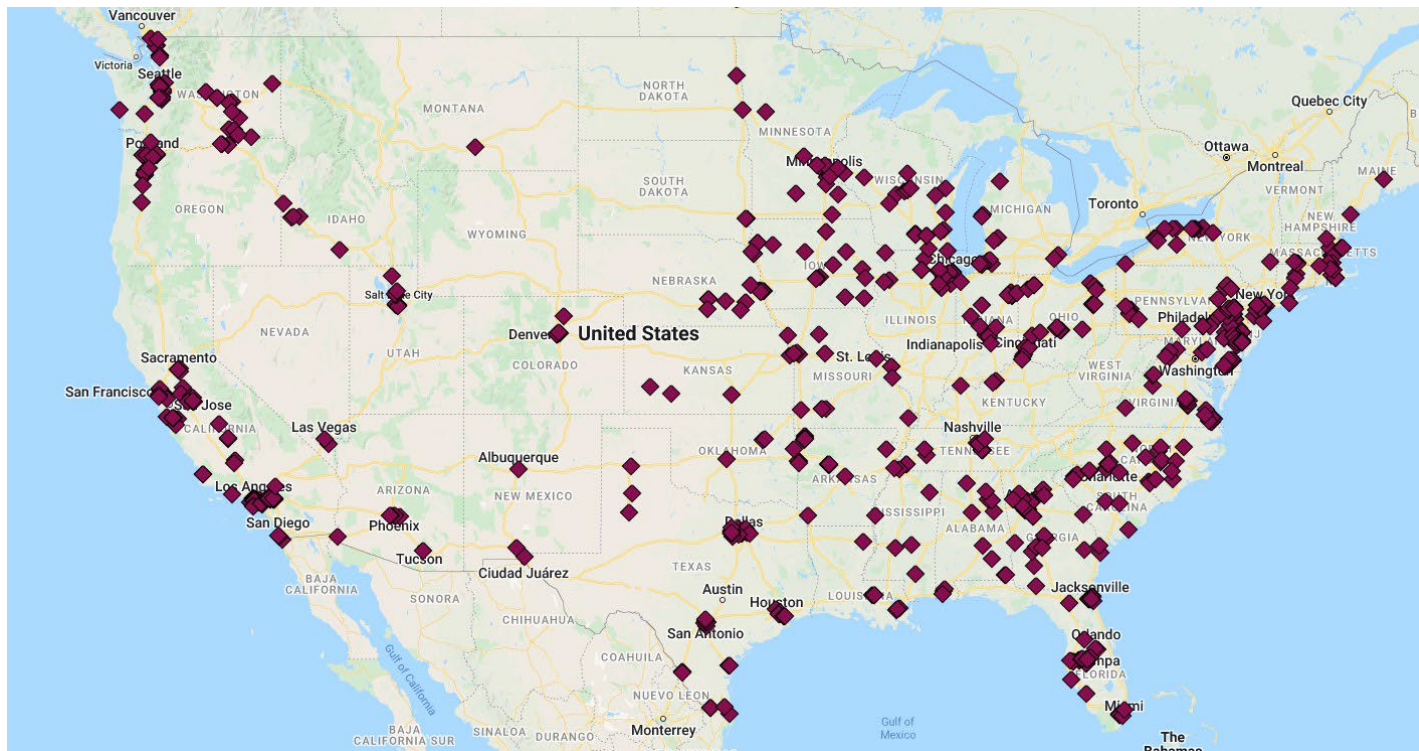
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# URBAN WAREHOUSE INFRASTRUCTURE



# MERCHANT COLD STORAGE

## RUCC 1-6 (METROPOLITAN AND ADJACENT COUNTIES)



>700 facilities

>3 billion cu ft storage capacity

	Rural Urban Continuum Code Description
1	Counties in metro areas of 1 million population or more
2	Counties in metro areas of 250,000 to 1 million population
3	Counties in metro areas of fewer than 250,000 population
4	Urban population of 20,000 or more, adjacent to a metro area
5	Urban population of 20,000 or more, not adjacent to a metro area
6	Urban population of 2,500 to 19,999, adjacent to a metro area

Source: <https://catalog.data.gov/dataset/public-refrigerated-warehouses>

# CAPTIVE DRY AND COLD STORAGE – FOOD DISTRIBUTORS

Company	Number of Warehouses
C&S Wholesalers	71
Gordon Food Service	12
KeHe	16
McLane	80
Performance Food Service	25
Reinhart Foodservice	9
Restaurant Depot	130
Shamrock Foods	2
Sysco	326
The Martin-Brower Co.	200
UNFI	55
US Foods	168

Average warehouse count of companies listed: ~90



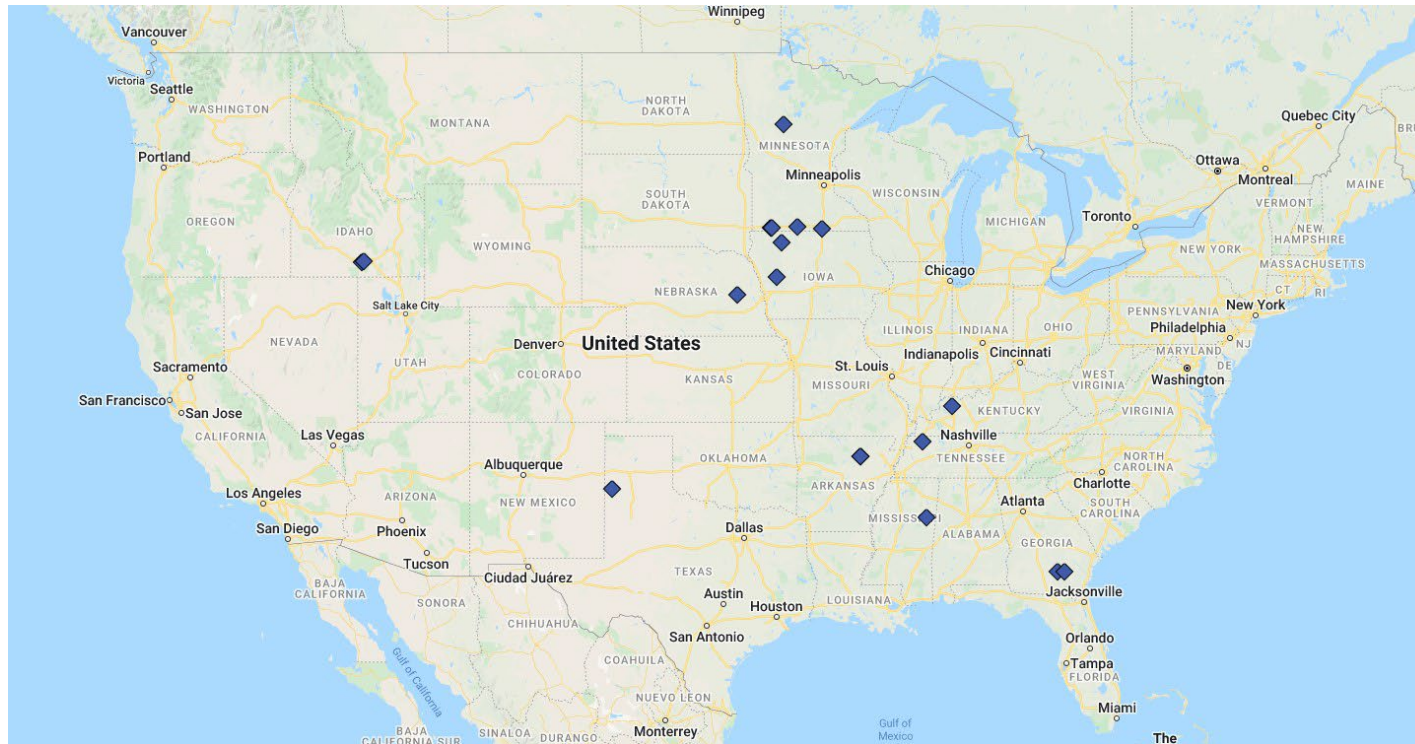
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# RURAL WAREHOUSE INFRASTRUCTURE



Google

# MERCHANT COLD STORAGE RUCC 7-9 (NON-METROPOLITAN RURAL COUNTIES)



18 Facilities  
<60 million cu ft storage capacity  
(~2 % of USA merchant capacity)

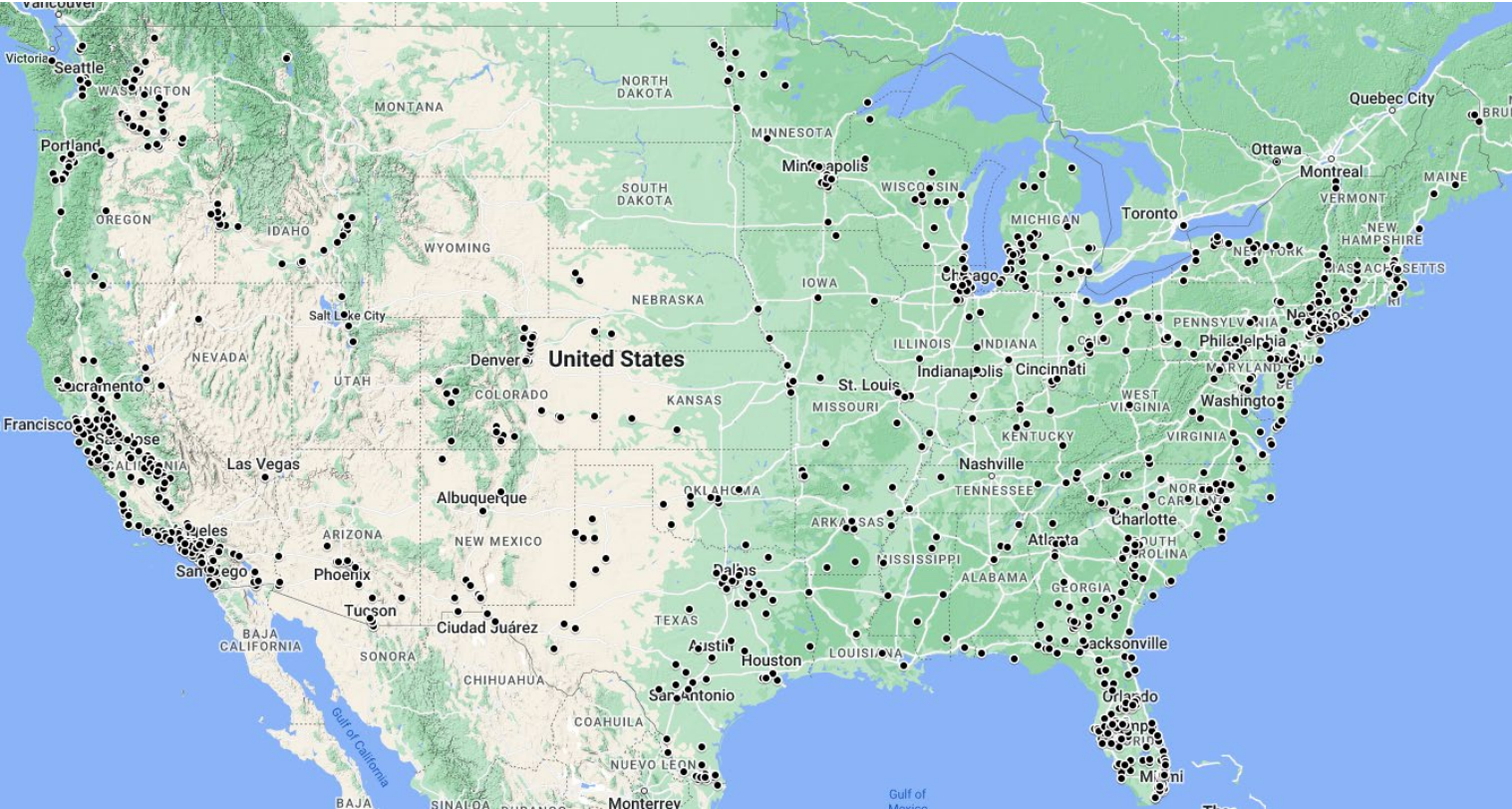
	Rural Urban Continuum Code Description
7	Urban population of 2,500 to 19,999, not adjacent to a metro area
8	Completely rural or less than 2,500 urban population, adjacent to a metro area
9	Completely rural or less than 2,500 urban population, not adjacent to a metro area

Source: <https://catalog.data.gov/dataset/public-refrigerated-warehouses>

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# USDA AMS SHIPPERS

## PROXY FOR AG PRODUCTION

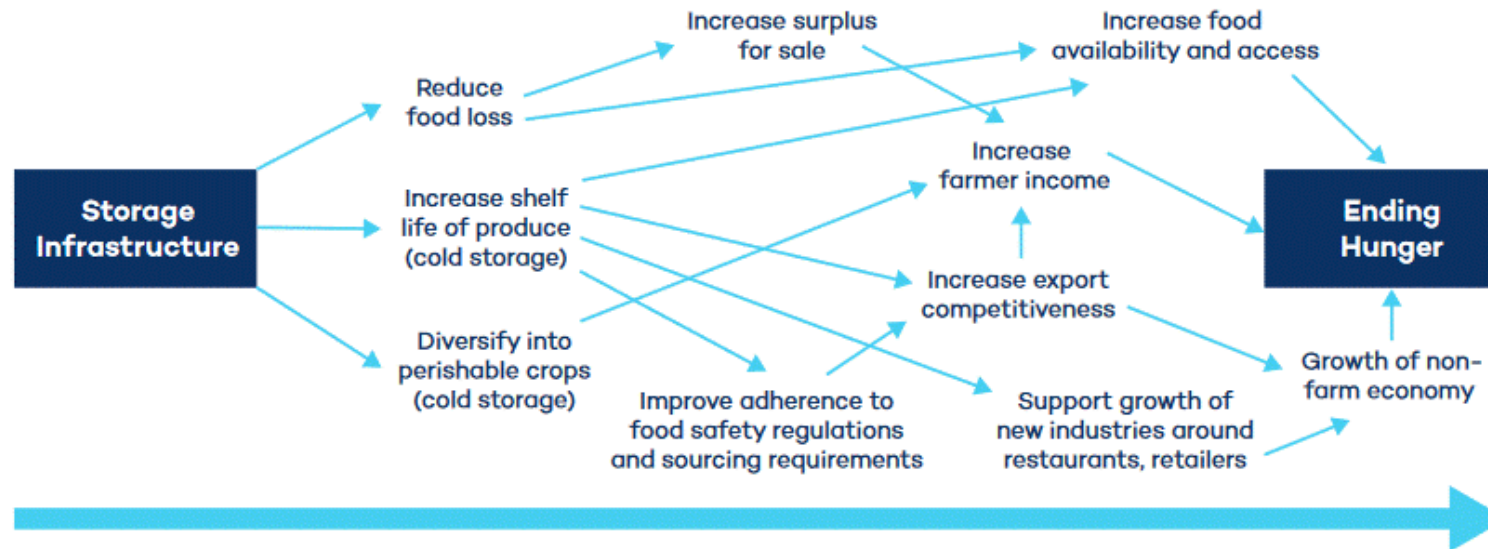




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# WAREHOUSES ARE A GOOD INVESTMENT FOR ENDING HUNGER, DEVELOPING THE RURAL ECONOMY

## 2.0 Investment Priority #1: Storage and Cold Storage Infrastructure



Source: Financing Rural Infrastructure: Priorities and pathways for ending hunger, December 2018, Laura Turley and David Uzsoi, published by the International Institute for Sustainable Development.

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# HISTORY LESSON: PUBLIC MARKETS

- For centuries, Public Markets were created by local governments to
  - Provide food and goods for their populations
  - Create rural-urban business, social, and cultural links
  - Achieve regional food sovereignty, access, security, safety, equity, and opportunity
- History of Public Markets is relevant to current conditions
  - Our first food deserts were created by moving to frontier areas
  - Started in villages as small as 750 people



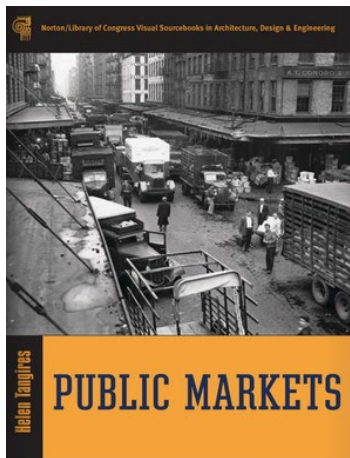
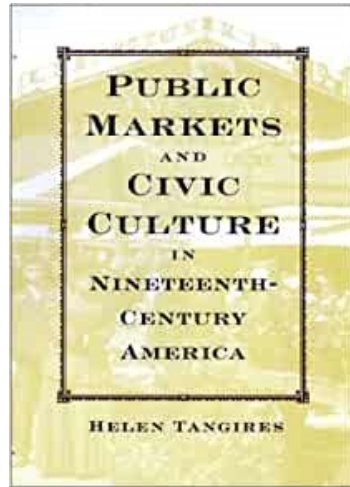
# CITY POPULATIONS FOR EARLY AMERICAN PUBLIC MARKETS

City	Market Name	Opened	Population	Per Census Date
Buffalo, NY	Elk Street	1848	20,773	1845
Cincinnati, OH	Pearl Street	1800	750	1800
Cincinnati, OH	Sixth Street	1818	9,642	1820
Knoxville, TN	City	1850	18,807*	1850
Lexington, KY	City	1879	16,656	1880
Mobile, AL	Central	1850	20,515	1850
New Orleans, LA	French	1791	5,331	1788
Peoria, IL	Central City	1878	29,259	1880
Philadelphia, PA	Second Street	1745	12,000	1731
Pittsburgh, PA	Diamond	1841	21,115	1840
Richmond, VA	First	1800	5,737	1800
Savannah, GA	City	1872	18,312	1850
Springfield, OH	City	1888	31,895	1890
St. Louis, MO	Soulard	1833	5,852	1830
Winston-Salem, NC	City	1876	4,470	1880
Zanesville, OH	City	1862	7,929	1850
<b>Average population</b>			14,315	

\* Knox County

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# PUBLIC MARKETS



- “The public market was a widespread urban institution in the early republic, as it had been since antiquity throughout the Western world. In addition to building wharves, docks, bridges, and roads, **local government was expected to provide facilities for buying and selling food.**”
- “...the public market is a compelling demonstration of the **persistence of the moral economy...**”



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Source: Public Markets and Civic Culture in Nineteenth-Century America by Helen Tangires

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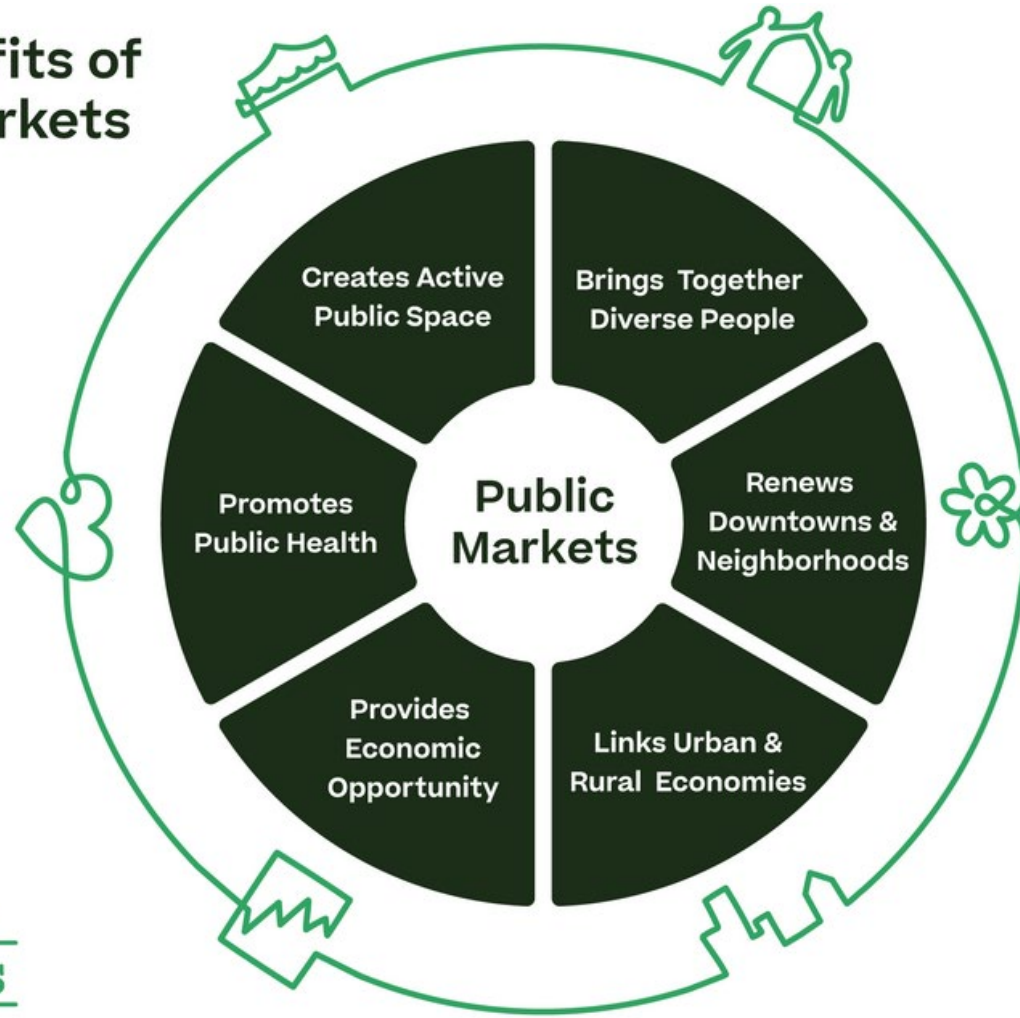
# FARMERS MARKET – PUBLIC MARKET

Farmers Market	Public Market
Seasonal operation	Year-round operation
Shared space – multiple use categories (e.g.; community events, exhibitions)	Dedicated space – tenant users
Pop-up, open shed, or permanent structure	Permanent structure
Producer to consumer transactions, retail focus	Intermediary transactions, Wholesaler/distributor focus
Artisanal, rarely bulk	Bulk, some artisanal
Vendor location more important: Local, some regional	Vendor location less important: Local, regional, and global sources
Not likely to host intermediaries	Can and often do host retail

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## The Benefits of Public Markets



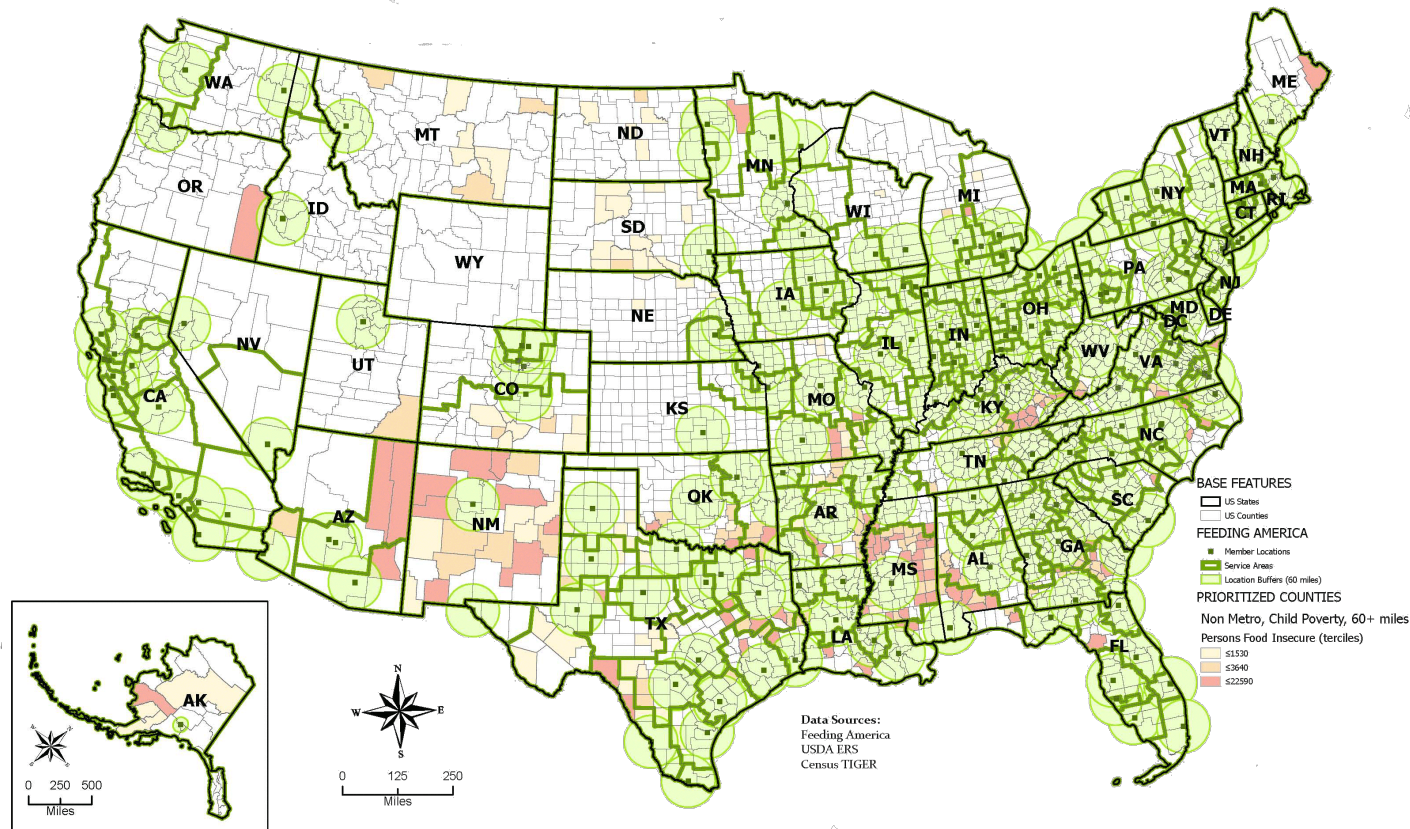
Project  
for Public  
Spaces

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# WAREHOUSES4GOOD SITE SELECTION

Map inputs:

- Feeding America member locations and service boundaries
- Radius around location – ~2 hours
- For counties outside radius, flag for USDA ERS Persistent Child Poverty
- Apply “Map the Meal Gap” estimates of food insecure population



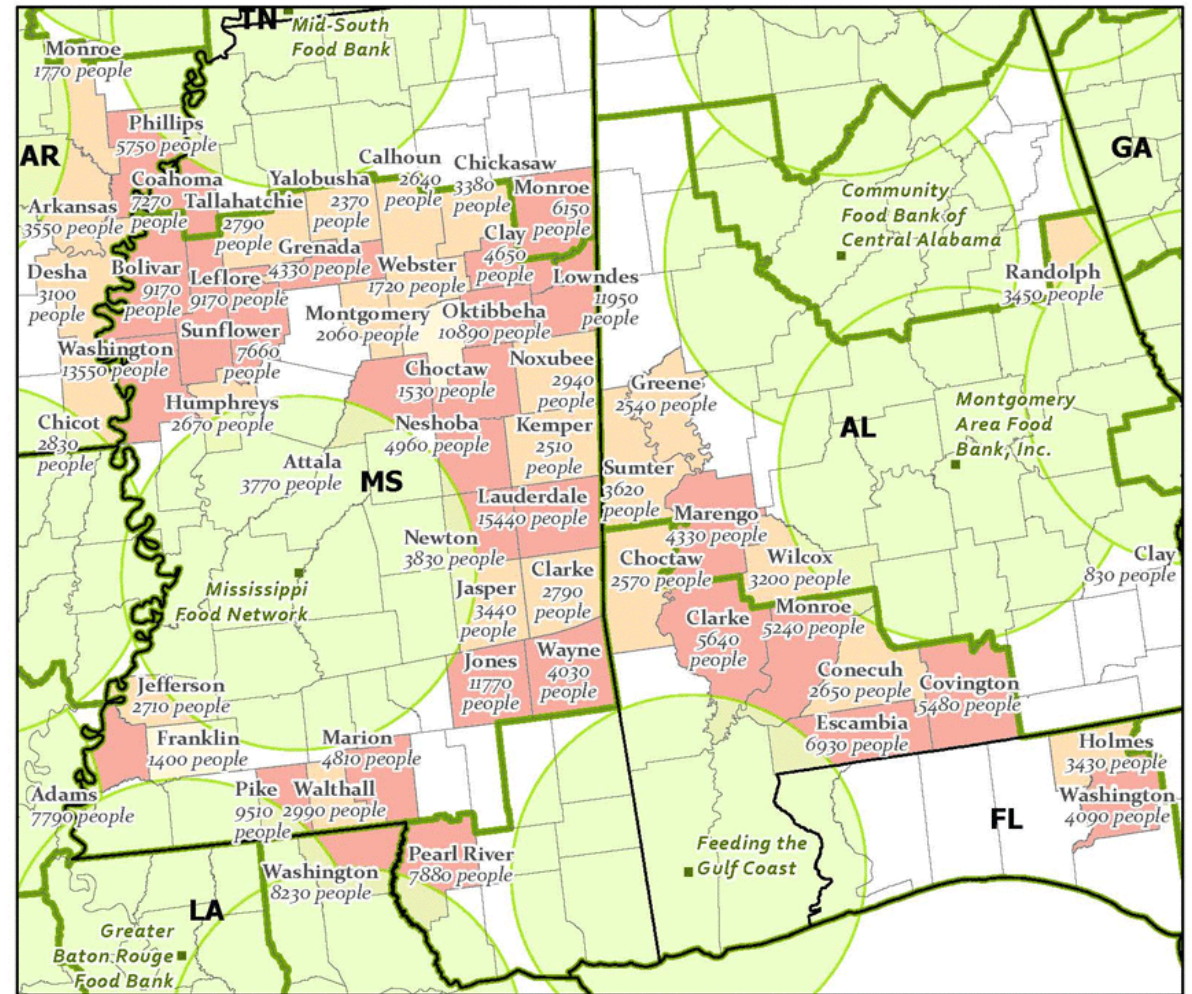
- ~1,450 counties are 60 miles or more from a Feeding America member (~46% of all USA counties)
- Of those, ~370 have persistent child poverty
- 100 warehouses is a start

Next steps: Integrate Food Atlas, county demographic and business patterns data, Opportunity Zones

# SITE SELECTION

## REGIONAL DETAIL

- MS Delta, MS-AL Black Belt, FL Panhandle
- Site selected in Sunflower County
  - >40,000 food insecure people in Sunflower and surrounding counties
  - Plans to serve:
    - Small, disadvantaged farmers
    - Entrepreneurial food processors
    - Wholesalers, distributors
    - Small grocer buying co-ops
    - Farm to school, CSA's
    - Regional, institutional markets
- This region could use 8-10 total warehouses





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# CONTEMPORARY PUBLIC MARKET FUNCTIONS

## First Mile

- Aggregation, field heat removal, controlled temperature storage
- Light processing (washing, coating, treating, grading, packing)
- Branding
- Wholesaling
- CSA food box assembly
- Gleaning and loss reduction



## Last Mile

- Distribution to retail, institutions, food service (local/regional food system access)
- Small grocer buying co-ops (reduce food deserts)
- Other food access initiatives (farmers markets, farm to school, prescription foods)
- Food insecurity agencies (pantries, churches)

Multiple functions are essential to sustainability, economic impact.

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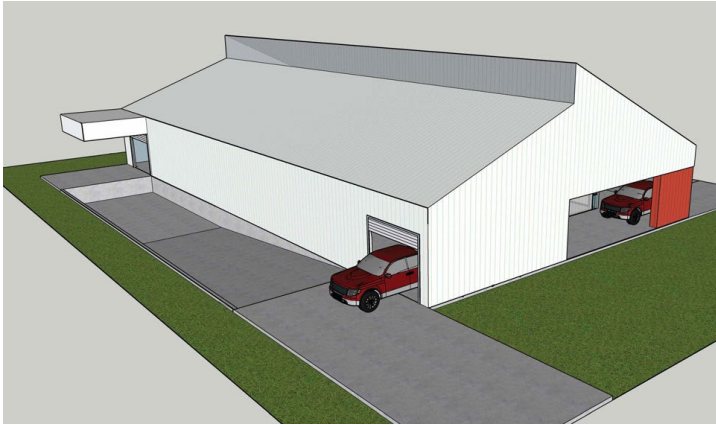
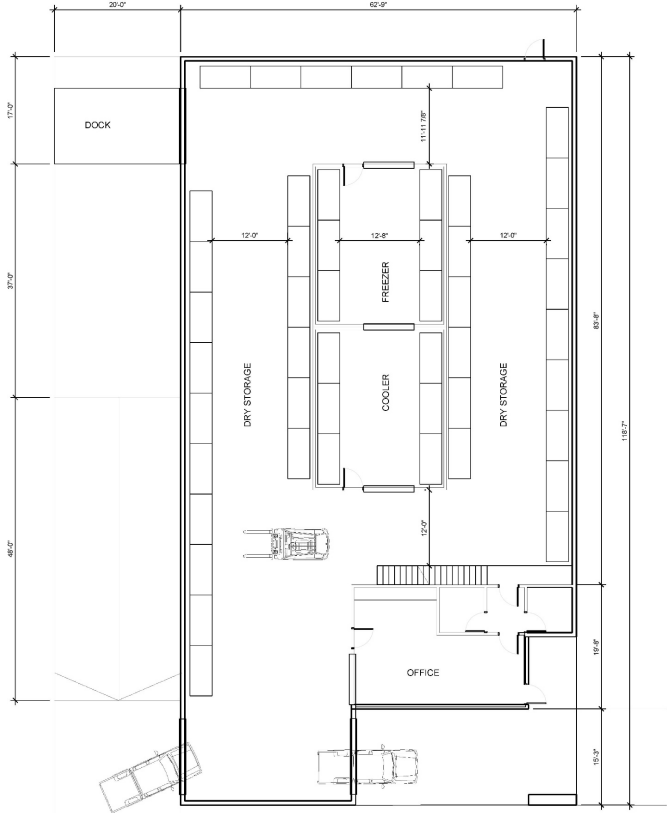
# BARRIERS TO LOCAL ACTION

- Critical mass of single organizations
- Lack of collaboration, especially cross-sector
- Access to funds
  - Federal funds untapped as due diligence required for government grants, guarantees and loans is a high barrier
- Warehouse design, operations best practices
- Planning and construction expertise
- Long-term O&M, increasing facility value to community





# WAREHOUSE TEMPLATE



4200 Montrose Blvd.  
Suite 400  
Houston, TX 77008  
713.584.6858  
bravaarchitecture.com



WAREHOUSES 4 GOOD  
SCHEMATIC DESIGN CONCEPT  
SCALE: 3/8"=1'-0"  
DATE: 9/2/2020

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# CONTACT

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