Geospatial Analysis for the National Center of Frontier Communities: Food Pantry Expansion in the Four County Region of Southwest New Mexico

Rutgers, The State University of New Jersey's Edward J. Bloustein School of Planning and Public Policy

Spring, 2015 American Frontier Studio

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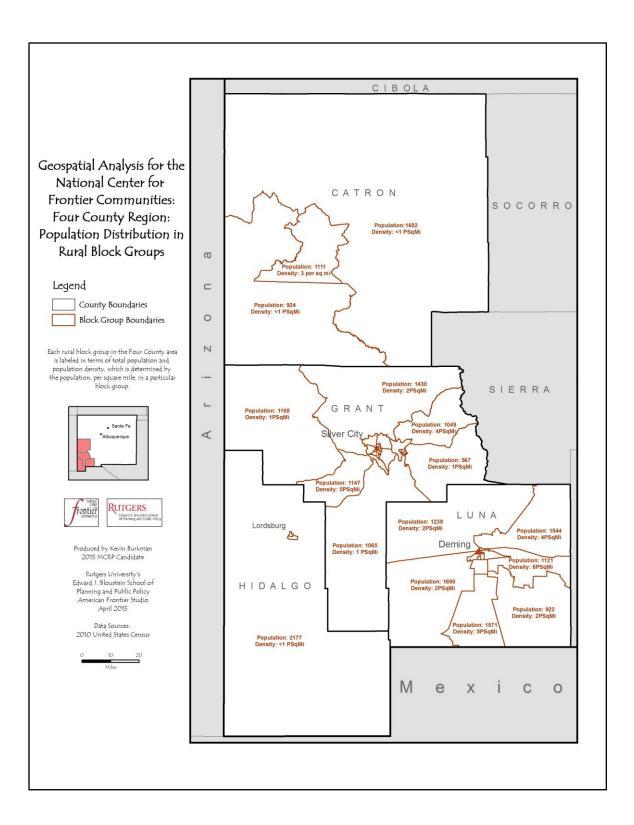
Introduction

The State of New Mexico's population of 2,059,192 sprawls across 121,298 square miles of the American Southwest. Making up 14.3% of its land surface is a region of four counties in the southwest corner of the state, comprised of Catron, Grant, Hidalgo, and Luna counties (heretofore referred to as the Four County region). This region represents little over 3% of the state's population. More importantly, it is one of the least densely populated places in the state; while New Mexico as a whole has 17 people per mi², the Four County region averages just 3.7 people per mi² (by comparison, the country's most populated state, New Jersey, is less than half the size of these counties combined, but has 1,196 people per mile². Its least densely populated county, Salem, contains 199 people per mile²).

This lack of density presents the Four County region with challenges in dispensing human services, including food distribution, particularly for those individuals who are in low income brackets, or do not have ready access to transportation. Some 400,000 New Mexicans each week seek food assistance, including children and senior citizens*. Emergency food programs meet some of the needs of these at risk individuals, including those in the Four County region, who are served by the Road Runner Food Bank of Albuquerque. However, the wide spatial distribution of the food pantries available through Road Runner makes it challenging to reach all of those in need.

This report, "Geospatial Analysis for the National Center of Frontier Communities: Food Pantry Expansion in the Four County Region of Southwest New Mexico" is the result of a collaborative effort between graduate students and faculty of Rutgers, the State University of New Jersey's Edward J. Bloustein School of Planning and Public Policy, as part of its Spring 2015 "American Frontier Studio", and the National Center for Frontier Communities, in Silver City, New Mexico. Using geographic information systems (GIS) technology, the studio focused not only on the spatial distribution of current food pantries, but also other potential sites, called human service assets in this studio, to possibly expand the food pantry distribution system in the near future.

* Hunger in New Mexico: And Executive Summery, 2010, New Mexico Association of Food Banks.



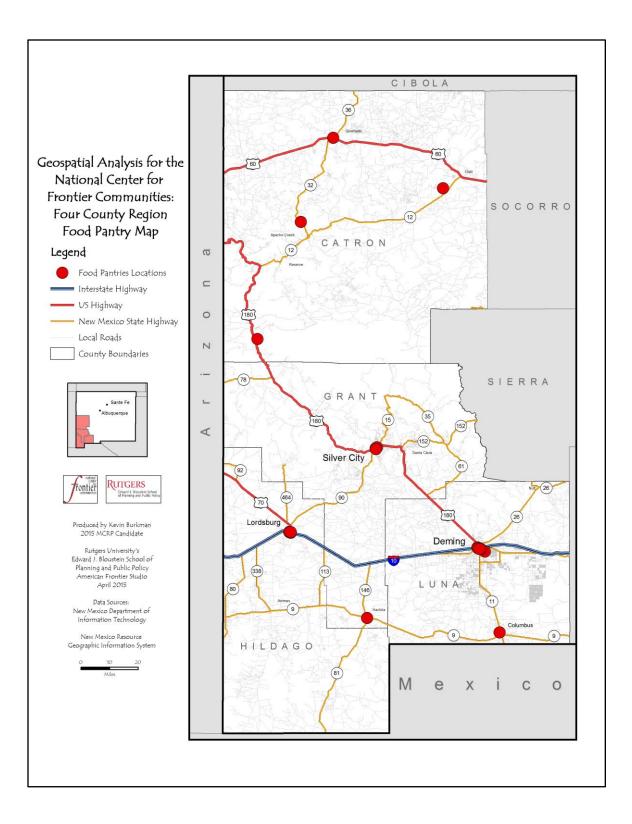
	New Mexico	Four County Region	Catron County*	Grant County	Hidalgo County	Luna County
Geographic Size	121,298 mi ²	17,308 mi ²	6,929 mi ²	3,968 mi ²	3,446 mi ²	2,965 mi ²
Population, total	2,059,192	63,574	3,687	29,684	4,953	25,250
Population density	17 per mi ²	3.7 per mi ²	.53 per mi ²	7.5 per mi ²	1.4 per mi ²	8.5 per mi ²
Non-urban population	-	30,284	n/a	14,024	2,177	10,396
Non-urban population density	-	1.5 per mi ²	n/a	1.7 per mi ²	.63 per mi ²	3.5 per mi ²
Median family income	\$44,927	\$35,272	\$39,826	\$37,899	\$34,080	\$29,282
Non-urban population median family income	-	\$37,019	n/a	\$43,430	\$33,410	\$31,410
Below poverty line	20.4%	23.5%	19.7%	20.2%	24.3%	29.7%
Education >HS Degree	83.6%	80.0%	88.1%	83.7%	78.0%	68.5%
Education >Bachelor's Degree	25.8%	17.7%	18.5%	24.2%	14.1%	13.8%

Four County Region Demographic Characterization

Note: All demographic data for this study were derived from the Unites States Census Five Year American Community Survey, 2011. Urban areas in this studio are defined as a community with a population grater than 2,500.

* Catron County does not have any urban area with a population greater than 2,500.

The most important demographic from this dataset is the number of people who live in non-urban areas. These 30,000 plus residents account for nearly half of the Four County region population, are located in regions of very low-density population, and are generally located substantial distances from any food pantry distribution sites.



Current Food Pantry Locations

The map on the left, *Food Pantry Map* illustrates the current location of food pantries, administered by Roadrunner Food Bank, in the Four County Region.

Catron County

Location/Agency	Street Address	Town/Region
Apache Creek Deaf Camp	Highway 32 at marker 6.2	Apache Creek
Datil Educators Club	170 Agua Fria Tr	Datil
Quemado Food Pantry	Quemado Community Center (Health Center)	Quemado
Santo Nino Catholic Church	HC 61 Box 430	Glenwood

Grant County

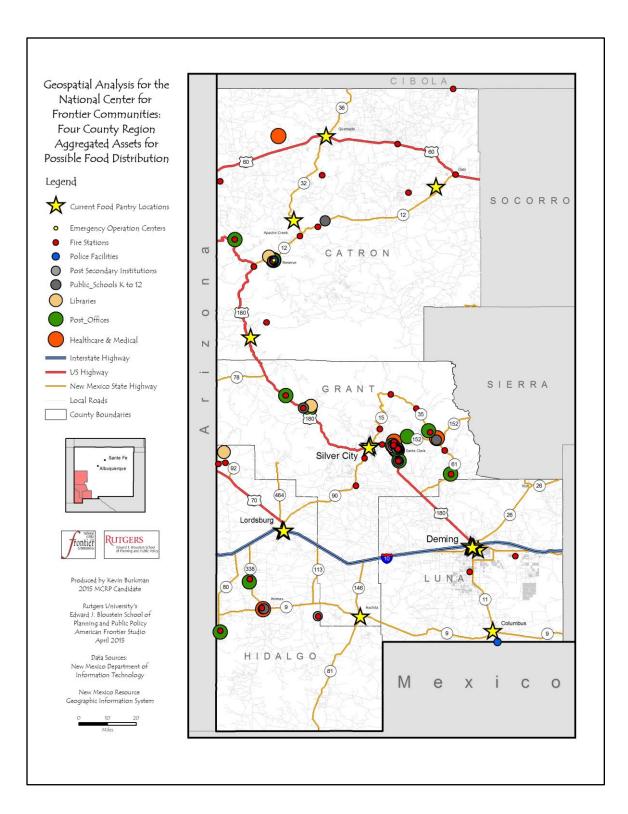
Location/Agency	Street Address	Town/Region
Hachita Food Pantry -	#2 Avenue B	Hachita
Walmart		
Grant County Community	501 E 13th St	Silver City
Food Pantry- Walmart		
Silver City Gospel Mission	114 S Texas St	Silver City
Silver City Gospel Rescue	405 6th St	Silver City
Mission - Sixth Street		

Hidalgo County

Location/Agency	Street Address	Town/Region
Hidalgo Medical Services	502 W 2nd St	Lordsburg
Lordsburg School District	501 West 4th St	Lordsburg
Spirit of Hidalgo - Coordinated	502 W 2nd St	Lordsburg
Home Health Care		_
Spirit of Hidalgo CHHC &	208 E Motel Dr	Lordsburg
Hidalgo Food Coop		_

Luna County

Location/Agency	Street Address	Town/Region
Columbus Elementary	7450 Altura Ave	Columbus
Antioch Missionary Baptist	513 W 1 st ST	Deming
Church		
First Baptist Church	206 W Pine St	Deming
New Life Apostolic Church	606 S Grand Ave	Deming
Deming Helping Hand, Inc.	3801 Raymond Reed Blvd	Deming



Human Services Assets

For the purposes of this studio, human service assets are defined as entities that provide services to both individuals and communities as a whole, and can be private or public. During the course of this studio, six different types of human services assets were identified and spatially located. In addition to the their intended uses, these assets can also provide locations for an expanded food pantry distribution system. These assets include:

- Educational institutions
 - Public schools (K to 12th grade)
 - Post secondary schools (college & vocational)
- Libraries
- Medical & healthcare facilities
 - 0 Hospitals
 - o Clinics
 - Nursing homes
- Post offices
- Public safety facilities
 - Emergency operations systems
 - o Law enforcement
 - Fire stations

The map on the left, *Aggregated Assets for Possible Food Distribution*, illustrates the dozens of human service assets in the Four County region. As expected, these assets tend to cluster in urban areas with pre-existing food pantries, including Silver City, Deming, Columbus and Lordsburg. However, the map also shows clearly where assets exist, in clusters or singly, outside of urban areas, which currently do not participate in the food pantry system. Some of these assets are located in:

Catron County:

- Several locations along the US Hwy 60 corridor.
- Several locations NM State Hwy 12, including a large cluster in Reserve.
- Several locations along US Hwy 180, in the southwest corner of the county.

Grant County:

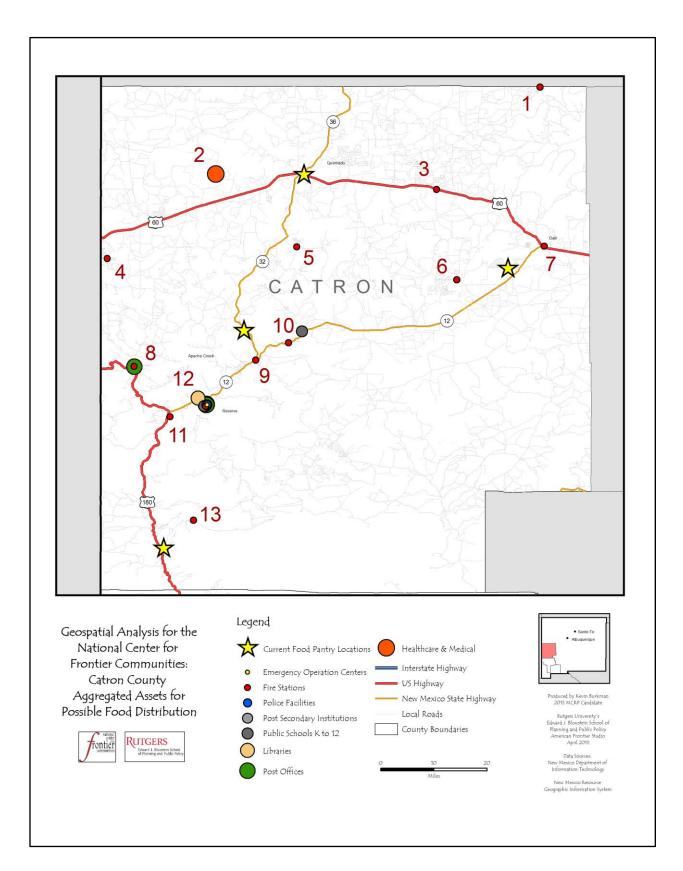
- A large cluster of assets on the US Hwy 180 corridor, east of Silver City, in the towns of Bayard & Hurley.
- A large cluster of assets near the intersection of NM Hwys 152 & 61, near San Lorenzo.
- Several locations along the US Hwy 180 corridor, in the Cliff/Gila area.
- Several isolated locations along NH Hwys 15, 35 & 61 in the eastern part of the county.

Hidalgo County:

- Several locations along NM Hwy 92, in the northwest part of the county
- A small cluster in Animas
- Several small clusters located in the central part of the county

Luna County:

• Isolated sites in the central part of the county, and one on the border with Mexico



Catron County: Possible Food Pantry Distribution Sites

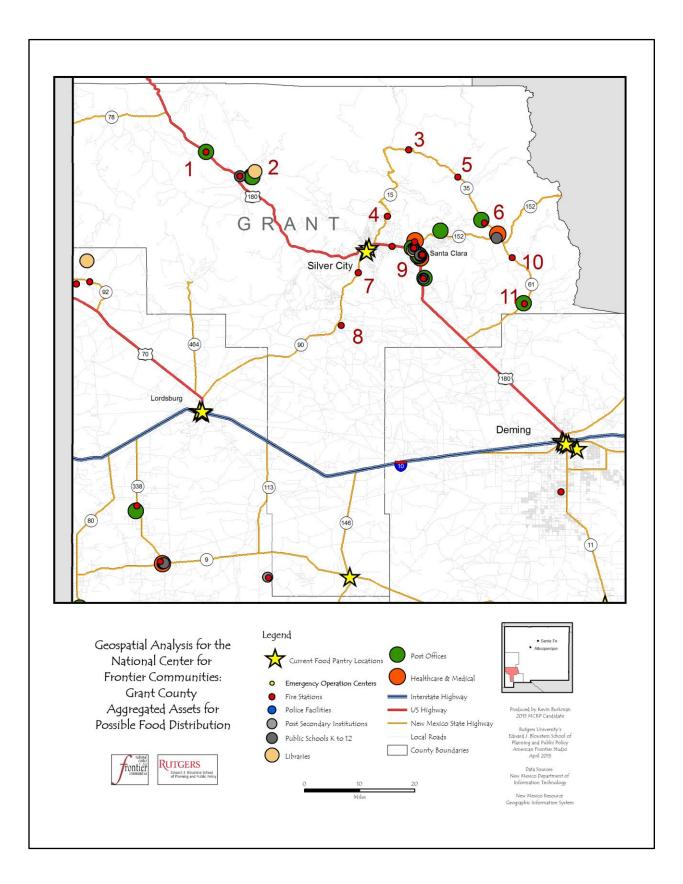
The map on the left, *Catron County Aggregated Assets for Possible Food Distribution*, shows in detail the 23 sites that are available for a possible expansion of the food pantry distribution system. These sites include:

Map Key #	Institution Name	Street Address	Town	Zip Code	Phone
1	Wild Horse Volunteer FD	911 Round-Up Road	Datil	87821	505-772-2610
2	Quemado School-Based Health Center	8 Old Town Loop	Quemado	87829	575-773-4610
3	Pie Town Volunteer FD	US Hwy 60	Pie Town	87827	505-533-6222
4	Coyote Creek Volunteer FD	Sandy*	Quemado	87829	575-533-6222
5	Quemado Lake FD	NM Highway 103	Quemado	87829	575-533-6222
6	Horse Mountain FD	1 Old Thomas Ranch Road	Datil	87821	575-772-5918
7	Datil FD	Old US Highway 60	Datil	87821	505-533-6222
8	Luna FD	10 Adair Avenue	Luna	87824	575-547-2444
8	Luna USPS Office	747 US Hwy 180	Luna	87824	575-547-2044
9	Cruzville-Apache Creek FD	NM Hwy 12	Aragon	87820	505-533-6222
10	Datil Elementary School	NM Hwy 12	Datil	87821	575-772-5574
11	Rancho Grande FD	16 Meadow Dr	Reserve	87830	575-533-6698
12	Catron County EOC	100 Main Street	Reserve	87830	575-533-6222
12	Reserve Volunteer Fire Department	15 Jake Scott Ave	Reserve	87830	575-533-6276
12	Catron County Sheriffs Office	100 Main Street	Reserve	87830	575-533-6222
12	New Mexico State University Southern District Extension	100 Main Street	Reserve	87830	575-533-6430
12	Reserve Elementary School	P.O. Box 350*	Reserve	87830	575-533-6243
12	Reserve High School	P.O. Box 350*	Reserve	87830	575-533-6242
12	Reserve Independent Schools	101 School Street	Reserve	87830	575-533-6251
12	Reserve Public Library	15 Jake Scott Ave	Reserve	87830	575-533-6276
12	Reserve USPS Office	10 Balke St	Reserve	87830	575-533-6333
12	Presbyterian Med. Services	1 Foster Ln	Reserve	87830	575-533-6456
13	Mogollon Volunteer FD	Fanny Rd	Glenwood	88039	575-533-6222

*Address information incomplete or unknown

Catron County Summary

Unlike Grant, Hidalgo and Luna counties, Catron County has the advantage of most of its possible pantry expansion sites located a significant distance from current food pantry locations, thus greatly expanding the geographic reach of the food distribution system. US Highways 60 & 180 offer 8 new possible sites, and NM Highway 12 can offer 4 new sites in central Catron County. Reserve, the county seat also located on NM Highway 12, is of special interest, since it is the only area in Catron County that has a relatively large cluster of possible sites, without a pre-existing food pantry site. Establishing new sites in this county is essential; while Catron County has the highest median family income and highest education rates for both high school and bachelor's degree in the Four County region, it is also the least densely populated county in the region.



Grant County: Possible Food Pantry Distribution Sites

The map on the left, *Grant County Aggregated Assets for Possible Food Distribution*, shows in detail the 38 sites that are available for a possible expansion of the food pantry distribution system. These sites include:

Map Key #	Institution Name	Street Address	Town	Zip Code	Phone
1	Gila Volunteer FD	7721 US Hwy 180	Buckhorn	88025	575-535-2728
1	Buckhorn USPS Office	7658 US Hwy 180	Buckhorn	88025	575-535-4171
2	Hidalgo Medical Services - Cliff/Gila Community Health Center	415 Highway 211	Gila	88038	575-535-4384
2	Gila Valley Volunteer FD	621 NM Hwy 211	Cliff	88028	505-535-2715
2	Cliff Elementary	PO Box 9*	Cliff	88028	575-535-2050
2	Gila Valley Library	400 NM Hwy 211	Gila	88038	575-535-4120
2	Gila USPS Office	407 NM Hwy 211	Gila	88038	575-535-2951
3	Sapillo Creek Volunteer FD	860 NM Hwy 35 N	Silver City	88061	505-536-3100
4	Pinos Altos Volunteer FD	4761 NM Hwy 15	Silver City	88061	575-538-9305
5	Camp Thunderbird FD	3941 NM Hwy 35	Sherman	88041	575-536-9661
6	Upper Mimbres Volunteer FD	3072 NM Hwy 35	Mimbres	88049	575-536-3680
6	San Lorenzo Elementary	2655 NM Hwy 35 N	San Lorenzo	88057	575-536-9348
6	Mimbres USPS Office	3084 NM Hwy 35 N	Mimbres	88049	575-536-9810
6	Hidalgo Medical Services - Mimbres Valley Clinic	2743 B NM Hwy 35 N	Mimbres	88049	575-536-3990
7	Tyrone Volunteer FD	101 Malachite Ave	Silver City	88061	575-388-8733
8	Tyrone Volunteer FD	62 Cullum Dr	Silver City	88061	575-388-8840
9	Hanover USPS Office	70 Fiero Rd	Hanover	88041	575-537-5696
9	Hurley Fire Department	201 Carrasco Ave	Hurley	88043	505-537-2958
9	Hurley Police Department	101 Cortez Ave	Hurley	88043	575-537-3220
9	Hurley Elementary	300 Carasco Ave	Hurley	88043	575-537-4060
9	Hurley USPS Office	16 Cortez Ave	Hurley	88043	575-537-2146
9	Fort Bayard Volunteer FD	102 Calle De Las Palomas	Fort Bayard	88036	575-388-8840
9	Bayard Police	801 Central Ave	Bayard	88023	575-537-3312
9	Snell Middle School	501 Tom Foy Blvd	Bayard	88023	575-537-4030
9	Cobre High School	P.O. Box 749*	Bayard	88023	575-537-4020
9	Bayard Elementary	100 Park St	Bayard	88023	575-537-4040
9	Cobre Consolidated Schools	207 N. Central Ave	Bayard	88023	575-537-4010
9	Bayard Public Library	525 Central Ave	Bayard	88023	575-537-6244
9	Bayard USPS Office	810 Central Ave	Bayard	88023	575-537-5168
9	Fort Bayard Medical Center	100 Calle El Centro	Fort Bayard	88036	575-537-8600
9	Cobre Wellness Center	1107 Tom Foy Blvd	Bayard	88023	575-547-5069
9	Hidalgo Medical Services - Bayard Community Health Center	805 Tom Foy Blvd	Bayard	88023	505-537-5068

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Grant County: Possible Food Pantry Distribution Sites, Continued

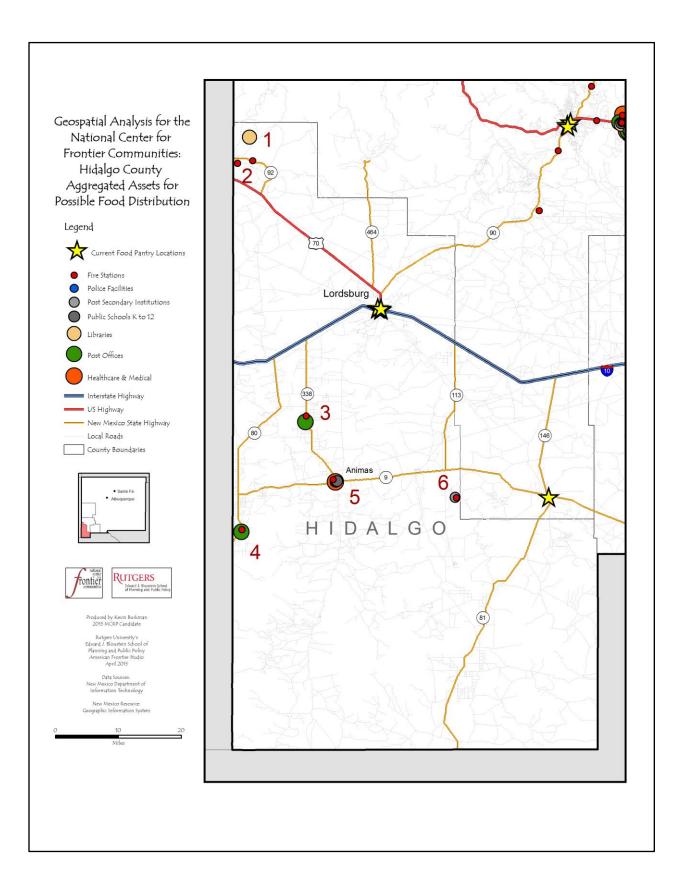
Map Key #	Institution Name	Street Address	Town	Zip Code	Phone
9	Santa Clara Volunteer FD	103 North Bayard St	Santa Clara	88026	575-537-3780
9	Santa Clara Police Department	105 North Bayard Street	Santa Clara	88026	575-537-5464
9	Central Elementary School	211 Cedar St	Santa Clara	88026	575-537-4050
9	Santa Clara USPS Office	310 Bayard St	Santa Clara	88026	575-537-3888
10	Lower Mimbres Volunteer FD	2168 NM Hwy 61	Hanover	88041	575-536-9661
11	Lower Mimbres Volunteer FD	1139 NM Hwy 61	Faywood	88034	575-536-9661
11	Faywood USPS Office	1123 NM Hwy 61	Faywood	88034	575-536-2880

* Address information incomplete or unknown

Grant County Summary

The only pre-existing food pantry sites in Grant County are located in Silver City, and in the far south in remote Hachita. The Bayard/Santa Clara corridor offers many opportunities for expansion of the food distribution system. Since it is located just 10 miles to the east of Silver City, it unfortunately does not provide much of an opportunity to expand the system geographically. However, numerous sites in the US Hwy 180 communities of Buckhorn/Gila/Cliff region provide opportunities in the northwest corner of the county. The eastern region of the county can be serviced by 10 sites along the New Mexico Highway 35/61 corridor, including the communities of Mimbres, and Faywood as well as more remote locations in the New Mexico Highway 15/35 corridor.

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Hidalgo County: Possible Food Pantry Distribution Sites

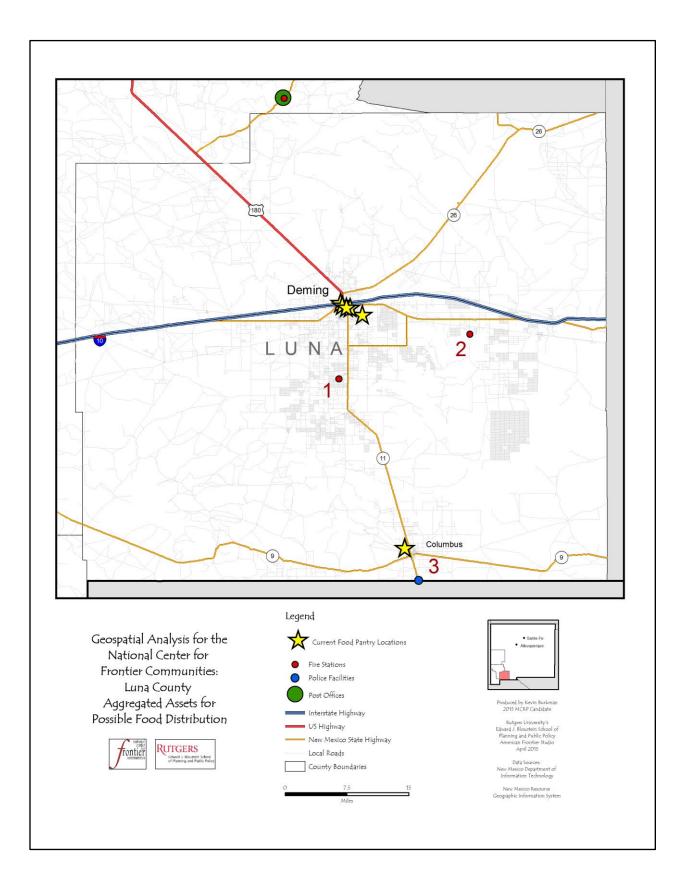
The map on the left, *Hidalgo County Aggregated Assets for Possible Food Distribution*, shows in detail the 12 sites that are available for a possible expansion of the food pantry distribution system. These sites include:

Map Key #	Institution Name	Street Address	Town	Zip Code	Phone
1	Virden Public Library	209 Church St	Virden	88045	575-358-2544
2	Virden Volunteer FD	110 Richmond Ave	Virden	88045	575-542-8828
2	Gila-Neblett Fire District	62 Franklin Rd	Lordsburg	88045	505-358-1081
3	Cotton City Volunteer FD	36 Hog Farm Rd	Animas	88020	575-548-2335
3	Animas USPS Office	2415 NM Hwy 338	Animas	88020	575-548-2240
4	Rodeo USPS Office	16 Custie Ave	Rodeo	88056	575-557-2328
4	Rodeo Volunteer FD	21 Somoza Street	Rodeo	88056	575-557-2430
5	Animas Volunteer FD	13 Maverick Road	Animas	88020	575-548-2323
5	Animas Public Schools	1 Panther Dr	Animas	88020	575-548-2299
5	Hidalgo Medical Services	1 Panther Blvd	Animas	88020	575-548-2742
6	Playas Training and Research Center	1 Plaza	Playas	88009	575-436-0500
6	Playas Volunteer FD	Nuggett Pl	Playas	88009	575-436-2230

Hidalgo County Summary

The only food pre-existing food pantries in Hidalgo County are located in Lordsburg, in the northeast section of the county. The town of Animas in central Hidalgo County offers a small cluster of possible distribution sites, as does the remote community of Rodeo, located near the county's western border with Arizona, and Playas, 20 miles east of Animas. The northwest corner of the county offers distribution sites in Virden, along US Highway 70.

Hidalgo County has the 2nd lowest population density in the non-urban areas for the entire Four County region. The county also has the 2nd lowest median family income in both urban and non-urban areas, and the 2nd highest rate of persons below the poverty line. These factors make Hidalgo County an important region for expanding the food pantry system.



Luna County: Possible Food Pantry Distribution Sites

The map on the left, *Luna County Aggregated Assets for Possible Food Distribution*, shows in detail the 3 sites that are available for a possible expansion of the food pantry distribution system. These sites include:

Map Key #	Institution Name	Street Address	Town	Zip Code	Phone
1	Sunshine Volunteer FD	965 Sunshine Rd SW	Deming	88030	575-544-7455
2	Florida Mountains Volunteer FD	3205 Josefita Rd SE	Deming	88030	575-544-7456
3	USCBP	NM Hwy 11	Columbus	88029	575-531-2686

Luna County Summary

While centrally located Deming offers numerous food pantries, and Columbus in the south offers one, the rest of Luna County offers the fewest possibilities for potential pantry sites in the entire Four County region. A fire department 10 miles south of Deming, and another 20 miles to the east are the only opportunities in central Luna County. A border control station on New Mexico Highway 11 offers another possibility, but is so close to a current pantry in Columbus that it does not expand the geographic spread of the food pantry system.

Luna is the county with the greatest need for food pantry distribution in the Four County region. It ranks the lowest in median family income in both urban and non-urban areas, has the highest percentage of persons below the poverty line, and the lowest education levels, in terms of high school degrees and bachelors degrees.

Supplemental Maps

