

Monitoring the Evolving Kansas Cooperative Landscape: Mapping Grain Locations in Kansas

ACCC Fact Sheet Series – Paper #9

September 14, 2016

Brian Briggeman, Ph.D.
Professor and Arthur Capper Cooperative Center (ACCC), Director
Department of Agricultural Economics
Kansas State University

Kellie Jackson
ACCC Program Assistant
Department of Agricultural Economics
Kansas State University

Lindy Bilberry
ACCC Student Assistant
Department of Agricultural Economics
Kansas State University

The Kansas grain marketing and farm supply cooperative landscape has changed dramatically. Much of this change is attributable to consolidation, which has led to fewer cooperatives in Kansas. According to USDA data, there were approximately 350 grain marketing and farm supply cooperatives or farmer co-ops in 1950. By September 2016, consolidation in the industry had driven that number down to 77.

A number of widespread agricultural phenomena have led to consolidation among farmer co-ops. The need for additional infrastructure to keep up with technological advancements is one example. Another is that there are fewer farmers, and the remaining farmers are growing in size and complexity. Financial stressors and retiring managers have also been the impetus for cooperatives to consider consolidation. Indicators like the current strain on the economic environment and the current competitive environment suggest that consolidation may continue into the future.

The purpose of this ACCC Fact Sheet is to discuss a new tool which will help evaluate the evolving Kansas grain marketing and farm supply cooperative landscape. An interactive map of Kansas co-op grain locations has been created in Google Maps. Publicly available data were used to create this map. To access it, please go to the following website:

<http://acc.k-state.edu/map.html>

A “starburst” map of all grain marketing and farm supply cooperatives that have locations in Kansas is shown on the website. Each co-op’s headquarters is represented by a red dot, and each red line coming from the headquarters represents that co-op’s grain location(s). When you click on a red dot, the co-op information is displayed in a pop-up menu. When you click on a red line, the branch location information, including storage capacity is displayed in the pop-up menu. Additionally, the ‘Satellite’ view in Google Maps can be used to zoom in on the map and see the landscape from a satellite image.

Other maps are also available. One shows all Kansas grain locations as red dots on a map. Non-cooperative grain locations are represented by blue dots on the map. The dots are interactive and provide the same publicly available data for cooperative and non-cooperative businesses.

Together, these maps show the strong presence of Kansas grain marketing and farm supply cooperatives and how expansive the cooperative elevator system is in Kansas. There are over 550 cooperative grain locations, which is more than double the number of Kansas non-cooperative grain locations. In addition, over 40% of the total grain storage in Kansas is tied to cooperatives. As you can see from the breadth of coverage, co-ops provide a huge amount of value to the Kansas agricultural and rural economy.

Future additions to this map will continue to highlight the value of cooperatives to Kansas. For example, Kansas grain marketing and farm supply cooperatives are often the largest employer in their local area. As a result, the wages and salaries paid to these employees are significant economic drivers in rural Kansas. Additional research will be needed to provide this information.

The following appendix provides more information on the how the maps were created and their use. If you or your cooperative is interested in discussing this map in more detail or would like to have the material presented during a strategic planning meeting, please contact Dr. Brian Briggeman at bbrigg@ksu.edu or 785-532-2573.

Appendix: Details on Constructing the Kansas Grain Marketing and Farm Supply Maps

To determine the cooperative headquarters and grain locations in Kansas, a list of all Kansas-based cooperatives was compiled using the Arthur Capper Cooperative Center (ACCC) database. This list was filtered to contain only grain marketing and farm supply cooperatives. After compiling this list, the branch locations were determined using the Kansas Feed and Grain Association (KFGA) membership directory. Each grain location, along with its cooperative and headquarter location, was entered into a spreadsheet.

Once the overall spreadsheet was created, the branch location addresses needed to be filled in. This was accomplished by (1) using addresses found in the KFGA membership directory, (2) checking each company's website and (3) using Google Maps to search for the grain location. Because the scope of this project only included locations with grain, storage capacity was verified through (1) Kansas Department of Agriculture (KDA) 'Grain Elevator Licenses' report and (2) United States Department of Agriculture (USDA) 'United States Warehouse Act Licensed Warehouses' report. Locations without grain capacity were filtered out from the spreadsheet.

After all the addresses were collected, the geo-coding process began. Through Google Maps, each address for the cooperative grain locations was entered individually in the satellite view. Then a pin was dropped, getting the latitude and longitude points, directly over each elevator. Geo-codes that did not land a pin directly on an elevator were manually adjusted for accuracy.

To ensure the accuracy of the map, packets were sent to individual cooperative headquarters to confirm the exact location of the upright grain storage facilities in their cooperative's territory. These packets consisted of screen shots of the cooperative's headquarters and grain locations, the cooperative's individual starburst map, and an aerial view of the pins dropped on each individual location, along with the location's grain capacity and address. The cooperative was asked to review the packet for accuracy, make necessary revisions, and return to the ACCC. As each packet was returned, the spreadsheet was updated with the information.

A map was then created in Google Maps with the information collected. Figure 1 (pictured below) represents all cooperatives headquartered in Kansas with their respective grain locations, as well as all grain locations in Kansas associated with a cooperative headquartered in another state. Each cooperative is shown with a starburst, which shows the red lines (locations) shooting out of the red dot (headquarters).

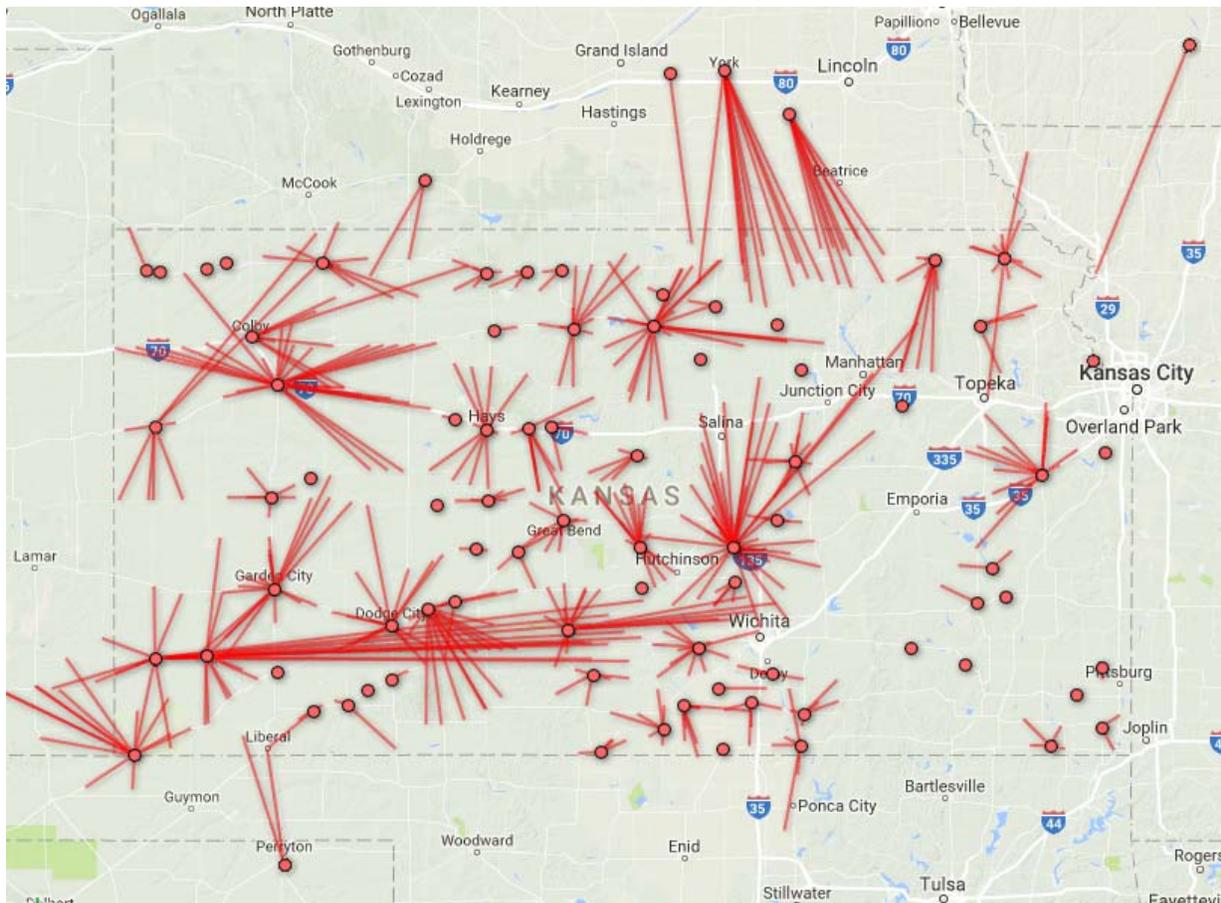


Figure 1. Starburst Map of All Cooperative Grain Locations in Kansas

The live version of the map has more functionality than just showing the locations for each cooperative. To use the map, go to <http://acc.k-state.edu/map.html>. If you click on the round dot for the headquarter location, a pop-up text box shows information such as the branch name, cooperative, address, city, state, zip, county, district, number of grain locations and grain capacity. If you click on the line extending out from the red dot, or headquarter, you can see information such as the branch name, cooperative, where the headquarter is located, address, city, state, zip, county, district, and grain capacity. Through the interactive aspect, one can zoom in and out and also switch to ‘Satellite View’ in the upper left hand corner. This will allow to see the actual grain location or headquarter facility, from above, and its surroundings.

The next map focuses on just plotting the cooperative grain locations. Figure 2 below represents all cooperative grain locations in the state of Kansas with a single red dot. The functionality is the same in this live version of the map as with the starburst map. You can click on each red dot to get information regarding that specific grain location.

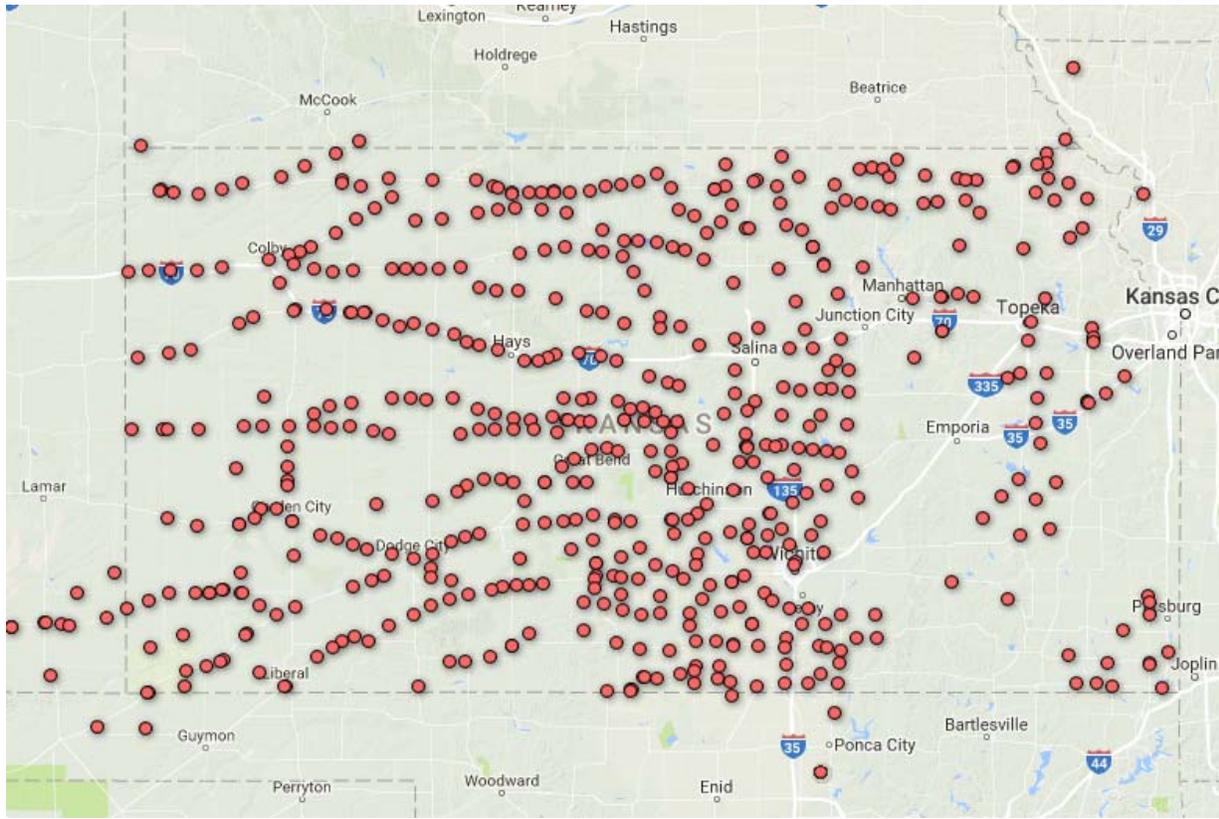


Figure 2. Map of All Cooperative Grain Locations in Kansas

To determine the non-cooperative grain locations, reports published by the Kansas Department of Agriculture (KDA) and the United States Department of Agriculture (USDA) were analyzed. The KDA publishes a ‘Grain Elevator Licenses’ report. From this report, a spreadsheet was created of the non-cooperative grain locations including the following: location, company, and capacity (bushels). This list was then compared to the USDA ‘United States Warehouse Act Licensed Warehouses’ report. The non-cooperative locations were cross-checked, adding any missing, as well as the capacity information.

Once the spreadsheet was created from these two data sources, addresses needed to be found for each cooperative. This was completed by (1) checking each company’s website and (2) using Google Maps to search for the non-cooperative grain location. After all the addresses were collected, the geo-coding process began. Through Google Maps, each address for the non-cooperative grain locations was entered individually in the satellite view. Then a pin was dropped, getting the latitude and longitude points, directly over each elevator.

For locations that either (1) didn’t have an address or (2) the address did not take the user directly to an elevator involved some investigating. Regional managers at CoBank were contacted to help identify those locations, as well as phone calls to the individual companies. Since these locations are non-cooperative, the grain capacities were not verified by the company.

When you put all the non-cooperative grain locations in Kansas on a map, in Figure 3 (pictured below), you can see where these locations are in Kansas.

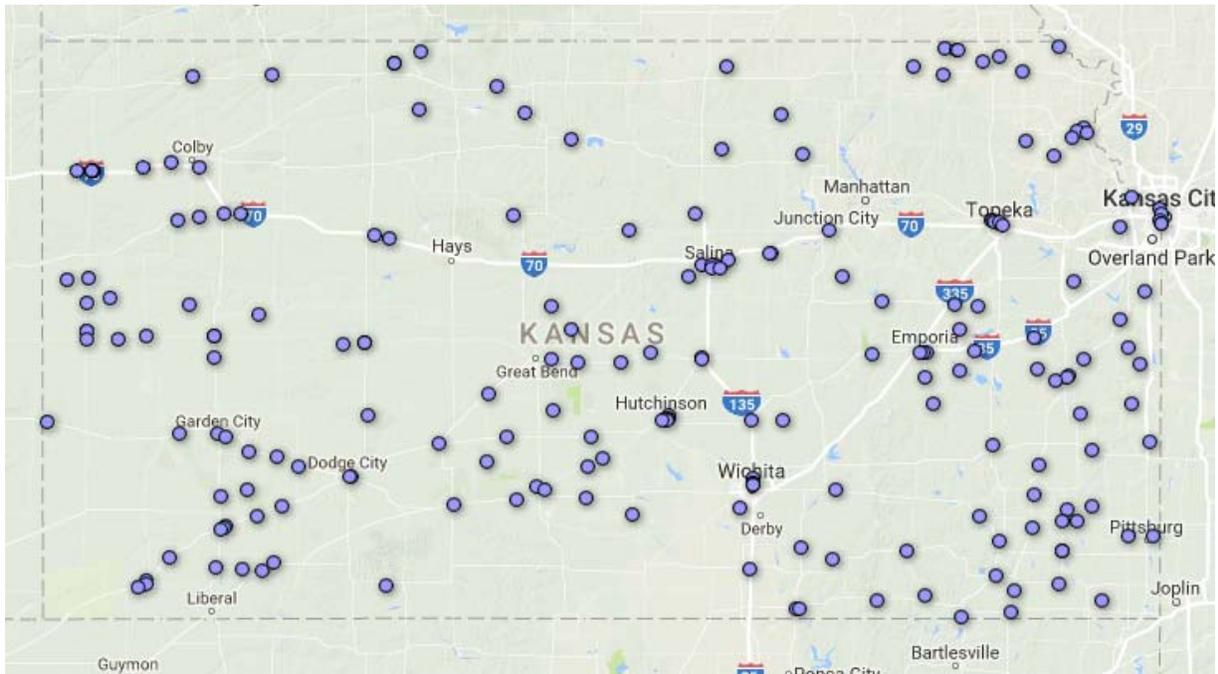


Figure 3. Map of All Non-Cooperative Grain Locations in Kansas

Overlaying these non-cooperative grain locations in Figure 3 with the map in Figure 1 produces a map showing red starbursts of grain marketing and farm supply cooperatives in Kansas along with blue dots for the non-cooperative grain locations. Figure 4 below shows this map.

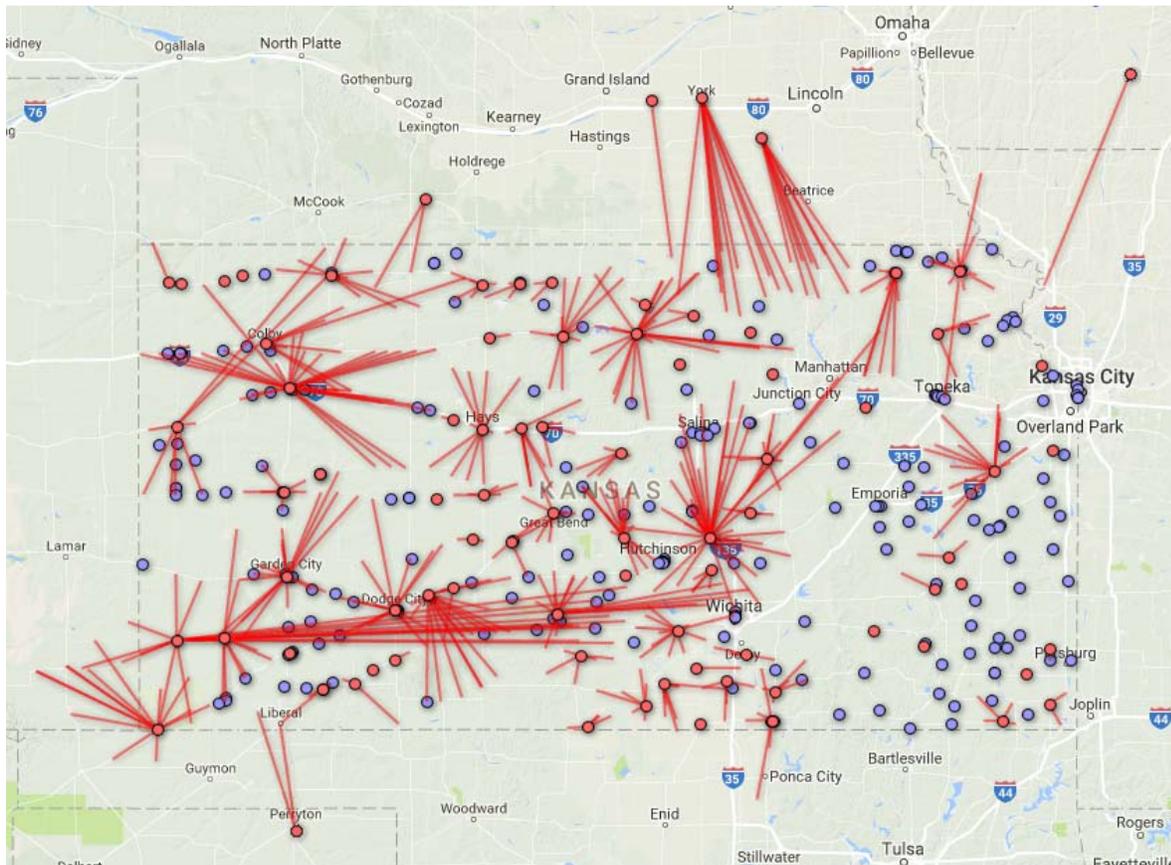


Figure 4. Starburst Map of All Cooperative Grain Locations in Kansas (red) and Non-Cooperative Grain Locations in Kansas (blue)

The functionality is the same in this live version of the map compared to the starburst map. You can click on each red dot or line for the headquarter and branch location for each cooperative. You can also click on each blue dot to get the non-cooperative grain location information.

Since the grain location landscape is ever changing, the maps will be continually updated. To ensure up-to-date accuracy, the ACCC will work with the cooperatives and other contacts to make sure we have the most up-to-date information possible. For the latest maps, always check the published or updated data on the interactive webpage: <http://acc.k-state.edu/map.html>. Please feel free to contact the ACCC with further questions and/or comments on this project.