

Appendix E: Food Distribution Pilot Project in Northeastern North Dakota, October 2019

NDAREC would like to thank CoBank for their generous support of this study.



***Food Distribution Pilot Project in Northeastern North Dakota
Final Report
October 3, 2019***

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This pilot project represented an effort to use data to illustrate why collaboration in the purchase and distribution of wholesale food products to rural places is necessary and to use the data to encourage rural grocers to change the way they operate. We began the work in a five-county area in northeastern North Dakota and one reservation. Our target audience was all businesses and organizations that purchase wholesale foods products.

From previous research, we had learned the current distribution infrastructure was adding to the cost of food in rural places and contributing to our lack of variety of products. Grocery stores within North Dakota are served by a tiered distribution system where pricing is based on purchased volumes. The largest and most affordable distributors require products be purchased in whole cases in quantities too large to sell in a timely manner. There are six major distributors delivering wholesale food products to businesses and organizations within the pilot project area. The Upper Great Plains Transportation Institute conducted a basic optimization of the distributor routes (based on efficiency rather than volume) and found that there was a projected annual transportation savings that could be gained amounting to \$383,000. Based on the projected distribution savings amount, the question of whether the state could benefit from a different distribution model emerged.

North Dakota Pilot Project area: Communities with a population of 2,100 or less in the counties of Cavalier, Nelson, Pembina, Ramsey and Walsh and Spirit Lake Reservation. Excluded towns in the area due to population size: Grafton, (4,159 people) and Devils Lake (7,278 people).

Businesses included: Data was collected from grocery stores, schools, restaurants, hospitals, convenience stores and nursing homes.

Understanding our size and geography

As a starting point for this project, we wanted to understand how rural grocers in the study region compared to those in other states and if it could really be a one-size-fits-all solution across the nation. An initial review of research available on the Internet revealed that a host of rural states were addressing the loss of their rural grocery stores and a variety of solutions were emerging. Low interest financing, management tools, conversions to nonprofits, and energy efficiency upgrades were common across the board with a quiet recognition that distribution is a huge

problem. It's a complicated system, intertwined with policy, that is difficult to address without the help of governmental assistance.

A state like North Dakota will display the symptoms of a failing system earlier than others due to our small population base. Sixty-seven percent (67%) of our land mass has less than six (6) people per square mile. This is considered "frontier" or "remote" by the healthcare industry and is recognized by them as areas that require "special efforts to provide rural healthcare services." Additionally, 82% of our towns have less than 1,000 people. Retail operators in towns of this size quickly feel the negative consequences of market consolidations and outside competition. Also, the distances traveled between locations adds another layer of cost to our products.

The 2019 Fifth Biennial Report on Health Issues for the State of North Dakota stated that 50% of North Dakota's population is considered to reside in urban or metropolitan areas (populations greater than 10,000 individuals) and that 26% resides in rural areas. These percentages show a significant shift in population to urban areas over the past several decades where previously more than half of the state's population resided in rural areas. North Dakota ranks 49th out of all states in population density, and importantly, is tied for fourth place of all states in the percentage of its population that is 85 years and older. The shift of population from rural to urban areas in North Dakota, in combination with an aging rural population, places the burden of reduced sales for rural grocery stores in the pilot area.

Data Collected

(See attached survey template)

A contact list consisting of grocery stores, restaurants, nursing homes, convenience stores, schools and hospitals was created for the pilot project area. Our staff enlisted local development professionals to conduct surveys in person. The data collected focused on volume (dry goods, refrigerated and frozen), frequency of delivery, identification of distributors, challenges and willingness to collaborate. Businesses in towns with a population of 2,100 or less were included in the survey (this excluded Grafton and Devils Lake). In North Dakota, towns above 2,100 self-identify as a larger community.

1. The total wholesale volume of all businesses that purchase wholesale food products in the pilot project areas was \$172,900 weekly (it is estimated we missed about 25% of the businesses and we have not adjusted for those missed). The average U.S. grocery store has an average weekly wholesale volume of ~\$120,000.
2. Up to four major distributors stop for deliveries in each community. While it might be considered an asset to have access to a variety of distributors, there is a negative side to this consideration. Product is up-charged in various ways for delivering low product volumes and distances traveled by each distributor.
3. The total primary distributor volume for all businesses in the pilot project area was extremely low - \$45,475 with 35 stops.
4. There are about 50 direct store distributors (DSD) that service this area, carrying products including milk, frozen pizza, soda and chips. Rural stores are paying a premium for small

- volumes. Surveys revealed that some DSDs are ceasing their service to some remote, low volume rural stores. This cessation further decreases the variety of products offered in small stores.
5. Volume breakdown – approximately 80% dry products and 20% combined refrigerated and frozen delivered products. This information was needed to understand the infrastructure needed to hub and transport food.
 6. Overall, roughly 77% of those surveyed indicated they understood why collaboration was needed.

The data showed that the volume of the entire 5 county area and Spirit Lake was similar to that of 1.5 average grocery stores in the U.S. Rather than the pilot area receiving 1-2 routes per week by one distributor, this volume is split among six major distributors and requires six or more routes per week with much lower product volumes for each weekly route.

The Distributors

We engaged in conversations with three distributors to test our theories and to test their willingness to engage in new concepts. We also collected information on other ways food is distributed in North Dakota.

Major distributor: They recognized the difficulties of continued delivery to smaller stores and confirmed it was not cost effective for them to deliver in smaller volumes and less than full cases per product. They remained committed to their business model of delivering whole cases to stores that can meet certain volume requirements. They were open to discussions of how to fulfill a collective order from several stores delivered to a hub in whole cases to be sorted by the hub. Logistics would need to be addressed by the stores or hub operators. A host of issues emerge when considering collaborative purchasing, for example, will the stores continue to receive management and marketing tools from the distributor, such as assistance with shelf tags, marketing and pricing product; who would cover the cost of spoiled/damaged products; who would be responsible for collating individual store orders; and how would last-mile delivery take place.

Mid-tier distributor: This distributor is willing to break cases to accommodate smaller orders/stores to the point where a store can order a single item. The lower the volume the higher the cost per item. The company is interested in expanding further in North Dakota, in a more concentrated manner, into rural areas. The company is building its business model around this strategy. They are in need of places to park their trucks and trailers for driver rest periods due to the length of routes from their warehouse. They stated they had tried operating redistribution hubs but it did not prove economically feasible for them.

Small distributor: This level distributor lacked the capital to improve its system to better serve rural stores. They are unable to offer online ordering to its customers and therefore

struggle with having items available at the time needed for resupply. Many of their stops are for very small sales amounts. They supply the products customers are unable to secure through primary or direct store delivery distributors.

Direct Store Distributors (DSD): We did not visit directly with DSDs. During the pilot project period, one major DSD began dropping low volume customers in the state because the delivery did not cover their margins. Rural stores can purchase that DSD's products online at a much higher cost. We suspect this will continue to happen. At the same time, on a national level, a lawsuit is coming together against a major distributor for predatory pricing in rural areas. There are more than 50 DSDs in North Dakota, all which carry a single product or specific product line, such as milk, bread, frozen pizza or soda. With each truck comes an additional transportation charge for the small retailer. Through previous efforts, we have learned that DSDs prefer to control and restock their inventory rather than hub it.

Milk distribution: The North Dakota Milk Board assures milk delivery to every community/business across North Dakota, however, often the price is so high the store is left searching for other milk supply options. Sometimes, this involves driving to other towns to purchase their supply at a retail price because it is more affordable in other towns.

We had an opportunity to sit in on an open ND Milk Board meeting that addressed rural distribution. The room was filled with food service, milk, small and major distributors. The issue at hand was the right for all distributors to deliver milk under the current law. The objective is access to milk delivery in all communities. The concern is that some businesses/communities would lose their milk supply without a mandate because their orders are so small.

Local foods: Local foods producers lack effective transportation systems and those producers could benefit by partnering in a redistribution hub with conventional foods to distribute their product. Pricing at the wholesale level may be a concern.

North Dakota has three large wholesale food distribution warehouses, one in Bismarck and two in Fargo. Several areas in North Dakota are more than a day's truck delivery distance to reach stores. Distributors must comply with regulations regulating driver time before a rest is required. (see attached diagram). The large distribution warehouse in Minot (north central North Dakota) recently closed.

Transportation Opportunities

As this work progressed, we developed the tagline "Purchase like Dollar General and distribute like Amazon" to help people more easily understand what we were trying to demonstrate. In other words, Dollar General purchases for all their stores collectively allowing them to achieve a large purchase volume and deliver a lower cost to rural places. Amazon has partnered with

existing distribution companies, those that are already driving the same roads, to keep their costs down. Should we be able to be successful in having products delivered to a redistribution hub, and consequently, who are the logical partners to drive the last leg of distribution?

Small, niche distributor: There are small companies that currently distribute products that are difficult to secure from a primary distributor. These companies may benefit by coupling their deliveries with routes from a redistribution hub to rural grocers who are members of a collaborative group.

North Dakota Department of Health operates the division of emergency preparedness. They currently conduct drills to keep their equipment in good operating condition. The equipment consists of a sophisticated online purchasing system, a climate-controlled warehouse and semis, trucks and climate-controlled trailers. With their concern for the health of the people in the state, the Department of Health and a collaborating group of rural grocers both may benefit by partnering in the operation of this system.

United States Postal Service delivers mail to all locations in North Dakota daily and is concerned about its continued viability in low volume areas.

Delivery services: Several companies operate delivery services, such as delivering auto parts or farm equipment parts to area dealers, and others who run supplies between towns and cities.

Cities: Cities that are concerned about keeping their rural grocery store open may consider using underutilized facilities to develop and operate a rural grocery hub.

Continued Decline

The attached excel spreadsheet displays our tracking of full-service rural grocery stores over the past 6 years. We began this work by tracking stores in communities with a population of 2,500 or less and we identified 137 stores in operation. After the first survey, in 2014, the baseline was decreased to a community population of 2,100 or less. Retailers living in communities larger than that did not identify themselves as small. With this adjustment, 9 grocery stores were removed from the original list.

Today (October 3, 2019) there are 98 remaining full-service grocery stores in North Dakota in communities with less than 2,100 people. They are broken out in the baseline list of 128 stores as follows:

- 57 independent grocery operators
- 25 multi-store ownerships
- 30 closed or no longer full service
- 16 nonprofits (community owned, cooperative or 501c3)

The Competition

The primary assumption is that small stores are struggling because of the fact that rural population in North Dakota is declining and also that people are choosing to shop out of their hometown. However, the survey data indicates people are shopping for price, variety and convenience. Demographics indicate rural people typically have lower incomes than urban people, suggesting price may matter more to them than to their urban counterparts.

Other factors at play are retail consolidation and market dilution. Retailers continue to consolidate, aiming for larger volumes and lower wholesale prices. Individually, small rural grocery stores cannot compete with larger grocery retailers.

Obstacles to Implementing a Large-scale Purchasing Cooperative/redistribution Hub

Competition: Rural grocers view each other as competitors, even at distances of up to 45 miles from each other. There is a lack of understanding that North Dakota citizens need healthy communities and appealing delivery routes to continue to attract distributors to an area. Transportation costs and therefore food will cost more the further distributors are required to drive between stops on their routes.

Transportation infrastructure: The food industry deals with a high volume of perishable foods. To dovetail with exiting transportation companies, such as the United States Postal Service, an investment in climate-controlled devices, such as climate-controlled trailers or igloos, will need to be made in order to assure high quality and safe perishable food deliveries.

Lack of Capital: The rural grocery sector does not have the financial or human capital resources needed to invest in new ways that products are purchased and delivered.

Online system: Grocers do not have the resources to provide the capacity to implement online shopping. They are lacking software, capital and people needed to implement online shopping.

Fear of Change: It is a major, time-consuming process to change distributors with no guarantees that the end result of the change will be better. Grocers tend to have a good working relationship with their distributor. Some stores only have one distributor option remaining and worry they may lose their distributor if they work on a project that advocates switching distributors.

Results

1. Legislative study

(See attached testimony and copy of the bill)

The data collected through this project was used to introduce a study resolution to the North Dakota state legislature to determine what role the state should play in the distribution and transportation of food to rural places. The bill passed and was selected

for study during the 2019-2021 interim. This data has been crucial for demonstrating not only the decline in the rural grocery sector, but the decline of the state's rural condition overall. It has helped move some policymakers from the common belief that people prefer to drive to shop for their food to an understanding that rural places cannot compete under the current tiered purchasing system.

2. *Wider public awareness of the issue*

Data that documented the decline of our rural grocery sector as well as the factors that were leading to the decline attracted media attention and public reaction. Lawmakers have expressed surprise at the number of phone calls they have received from their constituents.

- a. “Lawmakers want to study rural grocery issues,”
<https://www.kxnet.com/news/bismarck-news/lawmakers-want-to-study-rural-grocery-issues/1850243073>
- b. “Senate Ag committee unanimously passes study on food insecurity to Senate floor”
<https://www.kfyrtv.com/content/news/Senate-Ag-committee-unanimously-passes-study-on-food-insecurity-to-Senate-floor-505845201.html>
- c. Articles have also been carried by the Bismarck Tribune, “Small North Dakota towns struggle amid food deserts,”
https://bismarcktribune.com/news/local/small-north-dakota-towns-struggle-amid-food-deserts/article_8699145c-d74e-5cc8-9a3a-cebff0a0846e.html
- d. Minot Daily News, “Even in an ag state rural citizens struggle for access to fresh food,”
<http://www.minotdailynews.com/news/local-news/2019/03/even-in-an-ag-state-rural-citizens-struggle-for-access-to-fresh-food/>
<https://apnews.com/41bb73db51d042b1b514be80fbab3df1> (this article was picked up by the Associated Press and published nationally.)
- e. and the Wahpeton Daily News, “Struggle for fresh food in grocery desert.”
https://www.wahpetondailynews.com/news_monitor/struggle-for-fresh-food-in-grocery-desert/article_f37f4ef4-4fcd-11e9-b10e-f7afafbf69d8.html
- f. NDxPlains: <https://ndxplains.com/> and KFGO [Afternoons Live with Tyler Axness](#):
- g. *Are Small Town Grocery Stores Savable?*
<https://kfgo.com/podcasts/afternoons-live-with-tyler/12687/are-small-town-grocery-stores-savable/>
- h. *Interim study to look at rural grocery stores, food distribution in North Dakota*

Forum Communications and AgWeek:

<https://www.grandforksherald.com/news/government-and-politics/2711015-Interim-study-to-look-at-rural-grocery-stores-food-distribution-in-North-Dakota>
<https://www.agweek.com/business/agriculture/4625647-interim-study-look-rural-grocery-stores-food-distribution>

- i. *The Forgotten Ones* in the Fargo area publication, “High Plains Reader”:
<https://hpr1.com/index.php/feature/news/the-forgotten-ones/>
- j. Prairie Public News: <https://news.prairiepublic.org/post/hunger-free-nd-rural-grocery-access>
- k. KFGO News and Views with Joel Heitkamp: <https://kfgo.com/podcasts/news-views-with-joel-heitkamp/117905/lori-capouch-on-the-importance-of-rural-grocery-stores-they-are-pillars-to-our-small-towns/>
- l. PEW Charitable Trust Stateline: <https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2019/10/02/as-rural-groceries-fade-away-lawmakers-wonder-whether-to-act>

3. *Distribution model analysis*

Three stores within the pilot project area agreed to enter the planning process together to analyze the redistribution model:

- Hub Store (pop. 1,373)
- Small Store 1 (pop. 233)
- Small Store 2 (pop. 189)

Additionally, a community without a grocery store was included for discussion purposes:

- Small City, ND (pop. 204)

The largest store, Hub Store, offered to be considered a redistribution hub. Small Stores 1 and 2 were considered delivery points of groceries from the Hub Store. Monthly sales volumes to the two delivery points were analyzed along with a cost comparison between a large grocery distributor and a regional convenience store distributor (C-Store distributor). Small rural stores do not have the sales volume to attract lower pricing for groceries from large grocery distributors and, therefore, must accept higher pricing from C-store distributors, who have lower minimum purchase requirements. The analysis looked at the potential of a small-scale distribution system for rural grocery stores.

The report was presented in a PowerPoint format with notes so we can easily share information with those interested. A copy of the report is attached.

In redistribution cost projections, the consultant was generous with cost estimates and conservative on projecting savings. Despite that, the analysis projected an estimated weekly savings of \$200 per store/\$10,400 annually. Given that the average annual net profit margin for a rural grocery store in North Dakota is approximately \$10,800, this is a substantial savings per store. This does not consider other factors, such as improved variety or increased sales a store may experience with lower prices.

A freestanding grocery locker system was included to demonstrate how a small town without a grocery store could gain access to food in their community, while at the same time improving the volume and price at a nearby small-town grocery-hub store. Under this model, the redistribution hub site would purchase a climate-controlled locker system, online purchasing software and a climate-controlled delivery vehicle. The lockers would be able to store dry, refrigerated and frozen foods.

Residents of Small City, ND would have the locker system located in their community and would be able to place orders online, through the Hub Store, and pay by credit card. The Hub Store would receive the orders and deliver them to the locker system in Small City, ND. Once delivered, the Small City customer would receive an email or text notice that the groceries are available for pickup along with a code to open the locker doors. Once the items are picked up, the Hub Store would receive a notice that the transaction is complete.

We continue to plan with the three grocery stores in the pilot study area; however, progress is slow in light of the state distribution study timeline and the pending potential for assistance through the state. The Small City location has opted to work with an emerging restaurant to provide a small area for the retail sale of groceries rather than a grocery locker.

We are presenting this as a final report with an obligation to report progress to CoBank should this work result in changing the way food is purchased and delivered in rural areas in any manner.

We sincerely thank you for your support of this work. Because of your funding, North Dakota was the first state in the nation to be able to document the declining trend and relating factors to rural grocery store closures. The data brings strength and credibility to the growing concern about rural food access and is attracting national media attention. Without this information we would not have been able to engage the state legislature in the issue. While we don't expect there will be a solution emerging from the state at this time, they are now aware of the problem and can be a part of the solution.

Business:

Date

Email address:

Hours of operation

of employees (#FT/#PT)

Primary Supplier

Primary Supplier Volume (weekly) in dollars

Delivery frequency

Weekly Sales (in dollars)

Breakout estimated weekly sales that are perishable (in dollars)

Direct Suppliers (include frequency)

Total Store Volume

% Conventional Foods

% Food Service

% Institutional

% Other

Do you retail any local foods/list types

What items do you have trouble securing?

Challenges

Do you feel you lose business due to pricing?

Does your supplier assist you with pricing?

Are you satisfied with the quality/variety/pricing of your produce?

Are there certain products that you need to secure from big box stores due to pricing or lack of access? (explain)

Do you make home deliveries?

If there were an online ordering system and delivery mechanism available, would you be interested in providing this service?

Do you have any current collaborations for purchasing/marketing/other?

Are there any entities in your region that you would like to collaborate with?

What do you feel is working well in your store/in the rural grocery industry?

As rural populations decline, it becomes more expensive to distribute lower volumes of food over the same number of miles to these areas. Do you feel there are opportunities to improve the way we work together to achieve more affordability and better variety?

Do you do any marketing on Facebook?

What other types of marketing do you do?

What would it take for you to consider participating in a collaboration? (i.e. less time, more variety, better quality, lower wholesale cost, better servicing...)

Would you be willing to consider a collaborative arrangement even if your current supplier wasn't selected? (Assumption is that it would be lower

wholesale prices, better variety and not more work)

Are there any federal or state regulations that govern how you purchase that would affect how you could collaborate?

Do you currently receive any incentives or discounts that you feel would be jeopardized with a change in the way you purchase? (i.e. volume discounts - assuming collaborative purchasing)

Do you have excess capacity in warehouse space, trucking, other?

How long does it take to unload the primary supplier truck at your store?

Do you happen to know how many other stops your supplier makes on the same day (where - if known)

One of the components of this pilot project is to determine whether the cash flow from the small grocery stores generates an adequate income for the operators and enough margins to adequately maintain the building/business. To help us document this in an aggregate manner would you be willing to share:

Avg net operating margin (percentage):

Do you feel you earn a comfortable salary?

Are you comfortable with your debt to equity ratio?

Do you have building needs you are unable to address?

Is your equipment up-to-date/energy efficient?

Are you considering closing or selling your business within the next 5 years?

Do you feel your business generates enough revenue to attract a buyer in the future?

What type of accounting system do you use?

Anything else you would like to share?