

A photograph of a grocery store's produce section. In the foreground, there are large wooden crates filled with red and yellow apples. A metal weighing scale hangs from the ceiling. In the background, there are shelves stocked with various packaged goods and more produce. A sign on the wall reads "We know our Michigan farmers". Another sign says "fresh from the fields ORGANIC". A small sign with a smiling orange character is visible on the left.

# HOW MIGHT A FOOD HUB OPERATING WITHIN A GROCERY STORE BENEFIT RURAL COMMUNITIES?

STUDY SUMMARY AND TOOLKIT  
FOR CONDUCTING A PRELIMINARY ASSESSMENT

AUGUST 2016

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# INTRODUCTION

New Venture Advisors, a consulting firm that specializes in local food system planning and sustainable food business development, hypothesized that embedding a food hub<sup>1</sup> into a rural<sup>2</sup> grocery store could generate significant value for the community by:

1. Creating a new revenue stream for the store, contributing to its financial sustainability.
2. Providing a new sales and distribution channel for local growers and food producers, without requiring the upfront investment associated with a standalone food hub.

The USDA Rural Development and Agricultural Marketing Service agencies provided grant funding – through a Rural Business Development grant awarded to the University of Northern Iowa and a Local Food Promotion Program grant awarded to New Venture Advisors – to support real-world analysis of this hypothesis with operating grocery stores across Kansas, Iowa and Michigan. Three visionary storeowners signed up to participate, offering up their collective four stores as case studies.

<sup>1</sup>This toolkit uses the USDA Agricultural Marketing Services definition of a food hub as an entity “that actively manages the aggregation, distribution, and/or marketing of source-identified food products from local and regional producers to strengthen their ability to satisfy wholesale, retail, and institutional demand.”

<sup>2</sup>This toolkit uses one of the USDA Rural Business Development definitions of rural as a population of less than 20,000 people.

The purpose of this toolkit is to:

- Summarize the research completed across these participating stores, with case studies highlighting the potential impact of each store-based food hub model.
- Discuss the conditions under which this innovative business model makes operational, economic and strategic sense for a store operator.
- Present a recommended approach and tools to help a reader evaluate whether or not a food hub has the potential to be financially viable in a grocery store in his or her community.



# CONCEPT OVERVIEW

## PROBLEM

This research and proposed solution is designed to address the following critical problems:

**It has been difficult to make food hubs financially viable in rural communities.**

The low overall population in these towns means that market demand for local food is relatively limited and that there are few if any reliable wholesale buyers that can serve as anchor customers for a hub. Agricultural production of the types of products moved by a typical food hub can also be limited. Rural communities are often too remote for cost effective delivery of small volumes to the larger buyers in metropolitan areas. The combined effect of these issues can make it challenging to warrant investment in food hubs located in rural communities.

**Rural grocery stores are going out of business.**

The Kansas State University Center for Engagement and Community Development (CECD) Rural Grocery Initiative seeks to create new models for rural business development and sustainability. CECD Director David Procter and his staff have done extensive research on rural grocery stores and the alarming rate at which they are shutting their doors. Their research has shown that in Iowa, over half of the state's full service grocery stores have closed in the last 20 years, and in Kansas, since 2007 over

40% of grocery stores have closed in communities with fewer than 2,500 people.<sup>3</sup> Potential impacts include:

- **Reduced access to healthy food:** 33% of rural Americans now live in what the USDA considers a "food desert," one potential factor behind growing health concerns in rural communities.<sup>4</sup> A 2012 Journal of Rural Health study found that rural Americans are almost 20% more likely to be obese and suffer from weight-related diseases than urban or suburban Americans.<sup>5</sup>
- **Loss of community centers:** Grocery stores have historically played an important role as a hub for community interaction and engagement. The decline of these stores further weakens the bonds and culture within rural towns.
- **Local economy impacts:** A KSU study found that rural grocery stores employ an average of 14 individuals per store, and account for over 2.5 million jobs nationally.<sup>6</sup> When these stores shut down, they are replaced by supercenters that are up to 40 miles away, so these jobs are not directly replaced. Additionally, rural residents must now spend their grocery dollars miles away from home, so their community no longer gains the economic benefits of local spending. Sales tax is one example. KSU research demonstrated that in Kansas, up to 20% of community sales tax receipts were coming from local grocery stores.<sup>7</sup>

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<sup>3</sup>(Bailey 2010)

<sup>4</sup>(Rural Health Information Hub n.d.)

<sup>5</sup>(Christie A. Befort Fall 2012)

<sup>6</sup>(Proctor n.d.)

<sup>7</sup>Ibid

## HYPOTHESIZED SOLUTION

A food hub operating within a rural grocery store could simultaneously address both of these problems by leveraging the existing assets of the store to reduce the upfront and ongoing fixed costs of running a hub, and serving as a new line of revenue to support the financial sustainability of the store. Existing store assets that could set a strong foundation for a food hub include:

- **Infrastructure.** A grocery store already has dry and cold storage space with shelving, receiving areas, and delivery vehicles. Excess capacity of these assets can be reallocated to food hub operations without negatively impacting store sales. Even if improvements are necessary, the cost of upgrading cooling and storage at an existing rural grocery store would likely be significantly lower than building out a standalone food hub. Additionally, as this type of renovation supports farmers and agricultural production, it may be eligible for grants and low-interest loans that grocery store owners otherwise would not be able to access.
- **Experienced personnel.** Grocery store staff members are skilled at handling fresh fruits, vegetables, and other farm products. They already understand how to purchase fresh market goods, maintain the cold supply chain, and track and record temperatures for items in the store.
- **Equipped for deliveries.** A rural grocery store food hub is well positioned to serve local buyers. Grocery stores tend to be centrally located in their community and to have designated receiving areas, making inbound and outbound deliveries easy and efficient.
- **Broader market access via distributors.** Rural grocery stores may also be well positioned to access buyers in metropolitan areas that otherwise would be too far away for a standalone food hub to efficiently service. The grocery store's distributor already runs a delivery truck to and from the store, creating an opportunity to distribute goods from the food hub on the return trip, an arrangement called backhauling. The distributor could deliver these goods to another hub customer for a trucking fee, or buy the goods to resell to their own customers.

- **Built-in sales channel.** And of course, the grocery store is an obvious buyer of the local farm products that would be aggregated within its food hub. A store-based hub can help mitigate some of the risk associated with the launch of a standalone food hub, by being an anchor buyer of its own supply, purchasing at cost any products that are not sold to other hub customers.

There are a number of additional ways that incorporating a food hub into a rural grocery store can improve the profitability of the store's core retail business. The grocery store would get new access to local farm products, which can often be sold at a higher margin than nonlocal food and would give them a tremendous point of differentiation compared to supercenters. Local residents may once again begin to see the grocery store not just as a place to buy goods, but also as a cornerstone of the community that is taking steps such as supporting local growers and helping bring healthier products to local institutions like schools and hospitals. The store could build out initiatives around local produce even further, by running cooking demos of seasonal produce, featuring local growers through in-store merchandising, and even hosting a farmers market or serving as a pick up site for a CSA share.



# RESEARCH METHODOLOGY

## PROJECT APPROACH

The following approach was taken to validate key assumptions and evaluate the potential impact of a rural grocery store-based food hub model in four different communities.

STORE ANALYSIS	MARKET ANALYSIS	MODEL DEVELOPMENT
<ul style="list-style-type: none"><li>▪ Reviewed store data including financials, real estate and facility information</li><li>▪ Conducted site visits to each store location to evaluate infrastructure, capacity, assets and staff perspective</li></ul>	<ul style="list-style-type: none"><li>▪ Reviewed secondary data on local food supply &amp; demand within 50 and 100 miles of store</li><li>▪ Conducted interviews with regional producers, buyers, distributors of local agricultural products</li><li>▪ Evaluated gaps and opportunities in local food supply chain</li></ul>	<ul style="list-style-type: none"><li>▪ Leveraged data to build initial food hub model for each store</li><li>▪ Refined each model based on feedback from store leadership</li><li>▪ Developed final feasibility assessment for each store based on capacity, with estimate of maximum potential throughput</li></ul>

This approach differs from New Venture Advisors’ comprehensive feasibility study methodology in a few important ways.

1. The research was conducted with a narrow goal of understanding the economics of a store-based food hub assuming the operating model described below and using the store’s existing capacity. Typically, New Venture Advisors studies the food landscape to determine the nature of supply and demand and identify gaps that may present business opportunities. Based on these opportunities, a range of food hub operating models is developed, an optimal food hub model is selected, and quantitative analyses are performed to determine the capacity and financial viability of these models.
2. The market study was limited to high-level secondary research and a few interviews. Typically, New Venture Advisors will conduct in-depth primary research to develop the models and analyses noted in the first point above. This research includes surveys, interviews, focus groups and community meetings to gather as much input as possible from producers, buyers and others, often reaching hundreds of food system stakeholders. The findings provide the basis for recommendations on business opportunities, operating model, capacity and financial viability.

Given the more limited nature of this research, New Venture Advisors cannot assess the degree to which the operating model below addresses a market need, the size of the market, nor whether another operating model may stand a greater chance of success in the region. Crucial additional research and development that should be conducted before these or any store-based food hubs are launched are discussed throughout the following sections, and are summarized under Recommended Next Steps.

# STORE-BASED FOOD HUB OPERATING MODEL

For the purposes of this study, the team developed a standard food hub financial model for all four participating stores. Variations in inputs and outputs for the financial models were based on certain unique characteristics of the four stores, such as their existing storage capacity and the length of the harvest season in their region.

## DESIGN

The financial model is designed to estimate the maximum profit contribution that could be generated by a food hub embedded within a grocery store, using the store's existing storage and distribution assets, and assuming that no additional infrastructure investments would need to be made.

The potential profit contribution is calculated based on the maximum potential number of cases that could be received, stored and sold by the food hub, which is based on:

- The store's maximum available dry and cold storage capacity
- Baseline trends with respect to seasonal availability of produce in the region
- Storage capacity utilization and throughput is assumed to be highest during the weeks of peak harvest season in each region (8 weeks on average), with decreasing levels of anticipated utilization and throughput in the weeks comprising the tails of harvest season (6 weeks on average), and at lowest levels during the remaining weeks of off-season (38 weeks on average).

It is important to note that this estimated profit contribution is driven by a store's capacity and not from identified levels of supply and demand. If the potential capacity-based profit contribution is found to be promising, the next step would be to pursue a more in-depth market assessment to quantify interest among growers and buyers, and evaluate product volume and pricing levels against the outputs of this model.

## SERVICES AND OPERATIONS

The financial model assumes that the store-based food hub's primary service is to purchase agricultural products from growers and sell them to buyers, confirming sales in advance to minimize the risk of being left with unsellable goods.

In addition, the store-based food hub may also offer the following ancillary services:

- **Wash/pack service:** Washing and packing produce for wholesale purchase. This should be offered only if demand exists from growers who do not have the capability to wash/pack produce on their farm, and if the store has a food preparation area with capacity. The hub will typically charge a fee per case for this service.
- **Inbound and/or outbound distribution service:** Picking up product from growers and dropping off orders to customers. This should only be offered only if demand from growers and buyers exists, and the store has one or more delivery vehicles with capacity. The hub will typically charge a fee per case for this service.

It is assumed that a store-based food hub operates in such a way that the store's core retail operations are not disturbed. This is accomplished through strategies such as:

- Purchasing inventory only up to maximum levels of excess storage capacity in the store
- Receiving deliveries on days when major store inventory shipments are not received
- Utilizing the store's delivery capacity for distribution only when these vehicles are not being utilized by the store itself
- Utilizing the store's food preparation area for wash/pack services at times of day that do not interfere with peak times for foodservice, deli and other retail uses

It is also assumed in these models that the hub will buy and sell only **raw, whole produce**. The team identified the most commonly grown and/or requested fruits and vegetables in secondary and primary research to develop the product lists used in these models.

Overall, the store-based hub is anticipated to have low fixed costs by leveraging the existing assets of the store. However, several incremental costs that the store would incur to run the hub include staffing, marketing, and insurance.

## FINANCIAL MODEL STRUCTURE

The following graphic describes each of the sections of the financial model that assesses the maximum profit contribution of the hub for each store, along with the methodology by which assumptions are established throughout the model.

MAXIMUM POTENTIAL PROFIT MODEL	
MAXIMUM POTENTIAL REVENUE	<p><b>Product Sales:</b> Maximum # of cases that can be moved by the store's hub × average price per case of local produce (weighted average based on anticipated breakdown of sales per channel and associated gross margins)</p> <p><b>Distribution Revenue:</b> Maximum # cases that can be distributed by store's vehicles × industry standard price per case for low efficiency distribution</p>
MINUS COST OF GOODS SOLD	<p><b>Product Costs:</b> Maximum # of cases × amount paid to farmer (case price minus applied nationwide average case margin for food hubs)</p> <p><b>Product Handling Costs:</b> Nationwide average handling cost as a % of sales</p> <p><b>Distribution Costs:</b> Anticipated distribution mileage × IRS reimbursement rate per mile as proxy for maintenance and fuel costs</p>
MINUS SALES, GENERAL & ADMINISTRATIVE EXPENSES	<p><b>Staff Overhead:</b> Labor costs for food hub manager (part-time, seasonal)</p> <p><b>Marketing:</b> Nationwide average as % of sales</p> <p><b>Liability:</b> Nationwide average for insurance, licenses, food safety certification</p>
EQUALS POTENTIAL PROFIT CONTRIBUTION	



# STORE SELECTION CRITERIA

The following basic selection criteria was used to identify eligible stores:

- Location in a rural town with a population size of 20,000 or less, and
- Location within a region that produces crops for human consumption.

Once this basic criteria was met, the team sought out rural grocery storeowners who were willing and able to provide operating data for their store, host a site visit from the team, provide feedback on a preliminary model, and who were genuinely open to the idea of launching a food hub within their store.

Customized feasibility assessments were conducted for four stores across three states: two in Iowa, one in Michigan, and one in Kansas.

The following characteristics varied across the four stores, providing an opportunity for comparison:

- **Company structure:** The Kansas store is a single store operation; the other three stores are part of small, independent chains. All are family owned and operated.
- **Location:** Town populations for the Iowa and Kansas store locations are in the 1,500 - 2,000 residents range. These three stores are located in towns that are less than 30 miles from larger cities, which tend to serve as the primary grocery shopping destinations for their residents. In contrast, the Michigan store is a town of approximately 9,000 residents with higher population density than neighboring towns, and a primary grocery destination for its residents and others in the region.

- **Store size:** The Kansas and Iowa stores range in size from 6,000 to 9,000 total square feet, while the Michigan store is 5-8x larger at over 50,000 total square feet in size.
- **Facility structure:** Two of the four stores were recently built from the ground up, while the other two are retrofits of previous grocery stores. Three of the four buildings are leased (with one leased from the owners), and one is owned by the store.
- **Competition:** The Kansas and Iowa stores are the only grocery stores in their towns, with their primary competition coming from stores in nearby larger towns. In contrast, the Michigan store faces in-town competition from both Walmart and Meijer.
- **Community relationships:** All four stores have strong community ties, with a range of local giving and engagement programs in place. In two of the four towns, residents remember what it was like to go without a grocery store prior to the store's opening.
- **Local product sales:** The Michigan store sells over 3,000 local Michigan products in its stores – by far the strongest local product procurement and promotion strategy of the four stores. The other three stores sell just a few local products today, primarily seasonal produce and finished goods. All were interested in increasing local sourcing.

While these store characteristics supported a qualitative analysis of the feasibility of operating a food hub within each store, a quantitative analysis was based on the varying amount of cold and dry storage identified in each store during the team's site visits.

# FINDINGS

## MAXIMUM POTENTIAL PROFIT CONTRIBUTION FOR EACH STORE

High-level data for each store is summarized below, culminating in estimates of maximum potential profit contribution.

FEASIBILITY ASSESSMENT HIGHLIGHTS	IOWA STORE #1	KANSAS STORE	IOWA STORE #2	MICHIGAN STORE
<b>Maximum Capacity</b>				
Cold Storage (ft2)	150	200	300	1,200
Dry Storage (ft2)	150	300	150	1,000
<b>Maximum Throughput</b>				
Total Weekly Cases	413	750	675	3,300
Total Annual Cases	4,849	8,730	8,235	45,480
Total Annual Acreage	10	18	16	89
Total Grower Income	\$80,694	\$143,018	\$137,048	\$795,269
<b>Maximum Financial Contribution</b>				
Annual Revenue	\$112,920	\$187,281	\$187,757	\$1,058,784
Annual Costs of Goods Sold	\$99,553	\$167,333	\$165,535	\$935,178
Annual SG&A Expenses	\$9,477	\$9,762	\$10,752	\$21,527
Annual Operating Profit (EBITDA)	\$3,890	\$10,185	\$11,470	\$102,079

As described above, weekly and annual case estimates are driven by each store's storage capacity and seasonal availability trends in the region. Acreage estimates are driven by case volume, and are based on average pounds per case and average pounds per acre data gathered through previous studies.

# AGGREGATE ANALYSIS OF CASE STUDIES

## OPPORTUNITIES

Goals for a store-based food hub may include generating additional revenue and profit to support the store's financial sustainability, helping local growers and food producers find markets for their products, reducing the miles traveled and environmental footprint of products sold in the store, and providing store customers with a differentiated, unique local product offering that may drive greater customer loyalty and longer term revenue sustainability and growth.

To make a decision on the path forward, each store leadership team will want to weigh the potential value generated by the store-based food hub against the potential costs associated with operating the hub. The costs considered should include both direct costs and opportunity costs, contrasting the hub with other opportunities the store might otherwise pursue.

In most cases, the hub will need to generate a level of financial profit that the operator views as greater than the profit that could be generated by other opportunities in order to be worth considering further. At minimum, the store would likely want to ensure that an embedded food hub would break even financially. A breakeven model should only be considered if the operator places significant weight on the longer-term upside potential of the hub itself, the positive impact the hub could have on its core business by bringing in more customers who are seeking local, and/or the community benefit that the hub will generate outside of direct financial profit.

Ultimately, the store leadership teams will want to weigh the potential financial and community benefits against the direct and opportunity costs of operating a store-based food hub at varying levels of capacity utilization and hub throughput volume. And they will want to take into account data from supply analysis to evaluate the feasibility of securing the acreage or supply volumes needed, mapped against demand analysis to ensure that there is market for food products that can be moved by the hub.

## STORE DISCUSSION

The maximum potential profit contribution shown for each of our four participating stores on the previous page served as the starting point for a discussion on feasibility.

For our Iowa storeowner, the maximum annual operating profit allowed for a comparison between his two stores. Because Iowa Store #2 has double the cold storage capacity, it can hold almost twice as many cases of produce, supporting the distribution of approximately 6 additional acres of crops, and generating approximately 70% more income for local growers. Taking into account the limited capacity and profit potential of Iowa Store #1, as well as the slightly more favorable agricultural production and demand within counties adjacent to Iowa Store #2, it was recommended that Iowa Store #2 should be prioritized over Store #1 for additional feasibility analysis. Another consideration discussed was the route of a local food distributor that is currently picking up from farmers throughout the state. Because the distributor currently passes near both stores, a purchase or backhaul arrangement could be explored for either store, with higher volume potential making Store #2 more attractive to the distributor.

While the Kansas store has comparable storage capacity, throughput and profit potential to Iowa Store #2, very limited fruit and vegetable production in the region led to strong concerns with the prospective hub's ability to secure sufficient supply to achieve even a small percentage of the maximum potential acres needed. As a result, the storeowner hopes to support the growth of a more nascent local agricultural production movement before pursuing additional hub feasibility analysis.

Finally, the Michigan store exhibited the greatest maximum profit potential of all four stores analyzed in this study. This store is a much larger format store than the others, with approximately five times the storage capacity of Iowa Store #2. The potential income benefit to regional growers is approximately \$800,000 generated from 90 acres of local production. Regional agricultural production levels are not currently able to support these maximum throughput levels, but a small set of innovative growers interviewed for this study, in partnership with technical assistance and capacity building efforts by local agricultural and economic leaders, could help build a solid path to growth.

## RISKS & MITIGATION STRATEGIES

Launching a new line of business in the same facility as an existing operation comes with risk. It requires store owners to deliver on two value propositions, manage two supplier and customer sets, and coordinate the logistics for shared assets and labor across two different operations. The following are key risks to be understood by any storeowner considering operating a food hub:

- **Insufficient supply and demand:** The maximum profit contribution models described above assume that the store has access to the required number of crop acres to generate the estimated throughput. If that supply cannot be identified as part of the next phase of analysis, the food hub will not be able to function as modeled. If sufficient supply is identified, the next step will be to confirm that there are buyers for the target sales volume to be met. At this stage in the food hub model analysis, these are the biggest risks. While 100% of the anticipated throughput volume does not have to be confirmed in writing upfront, the operator will want strong indications of interest from at least a few anchor growers and buyers who are committed to supplying or buying a significant percentage of anticipated throughput volume – with several other prospective suppliers or buyers in the wings.
- **Sales commitments and just-in-time purchasing from growers:** This model estimates 24-hour food hub inventory turnover with 5% shrinkage. To ensure that this is achievable, the hub should strive to confirm wholesale product sales prior to purchasing product from growers. The hub may want to consider proposing upfront contracts to customers, and facilitate pre-season planning to ensure that growers are planning for customer needs. Should the hub end up holding inventory longer than anticipated and/or experience higher shrinkage, downstream financial and operations impacts will occur. On the contrary, excellence in forward contracting and quality management may allow the hub to reduce shrinkage below 5%, improving revenue potential.
- **In-store sales volume:** Each of these models assumes that a percentage of food hub products will be sold to the store's retail shoppers. Because these local products may cost more than non-local products, the store may need to effectively market these products to defend the price premium. Most of these stores have historically sold a limited number and volume of local products, which means that they will likely require marketing and

promotion support from food hub management. The hub manager may want to work with local growers to create signage, in-store product demos and tastings, and promotional meet and greets with customers. If done well, a prospective benefit of promoting and selling more local products in-store is a potential positive impact on customer loyalty and sales in response to the store's increased effort to support regional growers who are part of the shopping community.

- **Margins:** Pricing in this model includes several assumptions about the gross margin that can be earned in each sales channel. This will ultimately vary based on product, volume, quality, and other factors. These margins also assume that growers receive an average price per case that is 85% of terminal market pricing for that product. The team recommends that additional demand and supply analysis with prospective anchor buyers and suppliers be conducted, to further refine estimated price points and margins. Further exploration of higher priced and higher margin finished goods such as jams, salsas, and honeys may provide significant opportunity for margin improvement, as well.
- **Store operation impacts:** There are many reasons that the food hub may not operate as planned, such as: early or late grower deliveries, early or late customer order pick-ups, product handling delays or issues, sales cancellations, etc. Any of these scenarios could cause disruption to store operations, with food hub inventory in the way of store deliveries, store staff held up in food hub operations, and more. The team recommends that the hub build in as much buffer as possible between store and food hub delivery periods, especially in early phases of food hub operations. The hub should also consider running one or more food hub operational pilots to refine assumptions around capacity, turnaround, timing, and logistics.
- **Food safety:** With a significant volume of food hub products moving in and out of the store's food preparation area and storage space, the operator will need to address cross contamination and food safety concerns. The hub will want to design separate HACCP product handling and storage processes with designated spaces for hub versus store inventory, and ensure all hub and store staff are trained on these processes to prevent cross contamination and risk. Additional liability insurance is also included as a necessary cost in the hub's financial projections.



## RECOMMENDED NEXT STEPS

Upon review of the preliminary feasibility assessments provided for each store, the team recommends that the store leadership teams consider the following next steps:

- **Make go/no-go decision on additional analysis for a store-based food hub.** Consider financial and other prospective value that could be generated by the store-based food hub model. Contrast it with direct and opportunity costs. Decide whether or not to pursue additional analysis on the feasibility of each model.
- **Conduct additional supply analysis.** Conduct additional outreach to growers located within 50 miles of the store. Partner with regional academic and agricultural organizations or associations to facilitate introductions to growers. Additionally, conduct outreach to finished goods producers and food artisans in the region. Dig deeper into the products and volume that these entities can supply, evaluate their wash/pack and/or distribution service needs, and get feedback on proposed pricing levels. Identify a feasible target steady-state throughput volume, considering varying capacity utilization levels and associated financial output and acreage input.
- **Further validate demand analysis.** Engage with recommended interested buyers who might purchase from the prospective food hub. Dig deeper into the products they want to buy, sourcing requirements, distribution needs, and get feedback on proposed pricing levels. Identify additional buyers for engagement in early or later phases of food hub development, and compare demand volume with the target steady-state throughput volume identified.
- **Conduct a pilot of food hub operations.** Work with an interested buyer and supplier to structure an initial pilot sale to test the model and operations, ideally over multiple days or weeks. Evaluate what works and what needs to be adjusted, and update assumptions accordingly.
- **Confirm food hub management staffing.** Evaluate the capacity and interest of store management and other staff members who could play a role in management of food hub operations within the store. The manager should leverage pilot results to develop a plan to ramp up the food hub operations to targeted throughput and sales levels. The plan should include detailed food safety, operations, and staffing plans.

- **Manage food hub growth and improve operations over time.** The food hub manager will oversee the growth of operations against the hub's plan. The manager will also work with his or her team and the store's leadership team to improve hub operations and ensure alignment to the store's goals over time.



# HOW TO CONDUCT YOUR OWN ANALYSIS

## STORE-BASED FOOD HUB PRELIMINARY ASSESSMENT WIDGET

New Venture Advisors has developed a widget to help storeowners gain a baseline understanding of the profit contribution potential that an embedded food hub could bring to their store.

The widget can be accessed online here:

[www.newventureadvisors.net/our-work/groceryhubwidget/](http://www.newventureadvisors.net/our-work/groceryhubwidget/)

The widget combines:

- Inputs provided by the user on their store's infrastructure and proposed sales outlets, with
- Regional agricultural production data, and
- Assumptions on pricing and costs derived through New Venture Advisors' previously conducted food hub studies

The widget intends to give users a directional understanding of the potential impact a store-based food hub could have on their overall profitability, and should not be viewed as a financial forecast.

## WIDGET INPUTS

This section walks through the inputs that widget users will need to provide to generate a preliminary assessment.

The screenshot displays the 'Food Hub Feasibility Tool for Rural Grocery Stores' interface. It features a 'WIDGET OUTPUTS' header and a 'Calculate' button. The tool is divided into several sections with numbered callouts (1-6) explaining the inputs:

- 1. Location:** A dropdown menu to select a state.
- 2. Storage Capacity:** A section for inputting storage capacity, including a table for 'Dry Storage' and 'Cold Storage' with columns for 'Capacity' and 'Cost per unit'.
- 3. Sales Volume:** A section for inputting sales volume, including a table for 'Sales Volume' and 'Sales Price'.
- 4. Sales Price:** A section for inputting sales price, including a table for 'Sales Price' and 'Sales Volume'.
- 5. Sales Volume:** A section for inputting sales volume, including a table for 'Sales Volume' and 'Sales Price'.
- 6. Sales Price:** A section for inputting sales price, including a table for 'Sales Price' and 'Sales Volume'.

The interface also includes a 'Calculate' button and a 'Reset' button. The output section on the right shows a 'Summary' table with columns for 'Category', 'Value', and 'Unit'.

# Food Hub Feasibility Tool for Rural Grocery Stores



Beta Version 1.0

By New Venture Advisors

This tool is designed to provide a preliminary assessment of the feasibility of a food hub operating out of a rural grocery store. Users will be asked to provide basic data on their store's existing storage capacity, distribution capabilities and anticipated sales channels. The tool will combine the store data inputs with regional agricultural production data and assumptions from New Venture Advisors' previous rural grocery store-based food hub analysis and modeling to provide the user with a rough estimate of the potential throughput, sales and profit contribution of a food hub operating out of their store.

1

Store location will drive the assumed seasonality, or the average number of weeks of peak harvest and the number of weeks for the tails of harvest in your state.

## Location

In which state is your store located? ⓘ

New Jersey

## Storage Capacity

What is the total square footage of your existing storage space? ⓘ

Please enter 0 if you do not have dry or cold storage. ⓘ

What percent of your storage space is dedicated to stock versus aisles? ⓘ

Please estimate the excess capacity in your dry and cold storage. What is the maximum percent of storage space that could be made available for food hub use at any point in the week? ⓘ

Please enter 0 if you have no excess capacity in your dry or cold storage. ⓘ

How many levels or tiers of racking do you have in your storage space? ⓘ

Please note that the floor level should be considered the first level. ⓘ

How many cases can you stack on top of each other on a single rack? ⓘ

How many days per week do you receive major store deliveries? ⓘ

How many days on average does it take your staff to move delivered inventory from back of house storage to front of house retail space? ⓘ

### Dry Storage

200

50

%

40

%

5

2

2

2

### Cold Storage

250

45

50

3

3

2

1.5

2

First, the user assesses the total square footage of their dry and cold storage areas. Then, the user assesses the percentage of those storage areas that can be used for floor stock versus the square footage that is used as aisle space. This is typically 60-80% of the storage area, depending on the layout designed.

3

Then the user assesses the maximum percentage of their dry and cold storage space that is available during the week. For example, if a store receives a shipment Monday morning, their storage space is likely to be at capacity that day. If this inventory is moved onto the floor by Monday evening, this may free up 50% of the storage area by Tuesday.

5

These two questions assess how many days per week the potential maximum case volume could be moved, based on the store's existing receiving schedule with its distributors. For example, if the store receives shipments on Mondays and Thursdays, and takes an average of one day to move inventory to the front of house, then it may be free to run food hub operations on Wednesday and Saturday.

4

These two questions assess how many cases, assuming an average case size, can be stacked on a single square foot of floor space. Recognizing that all cases differ in size, it may be helpful to use a case of summer squash as a reference point for this question.

6

## Distribution Capabilities

How many store vehicles do you have access to that could  
Please enter 0 if you do not have access to any delivery vehicles

2

The first distribution question assesses how many vehicles you have that could be utilized for pickup of farm products (inbound distribution) or delivery of products (outbound distribution). These do not have to be refrigerated vehicles and can be sprinter vans, covered pickup trucks or even passenger vans. If you have one or more vehicles, responses to the next set of questions assess how many cases each of the vehicles can feasibly move in a given week. The widget only allows a user to input information for three or fewer vehicles.

	Vehicle 1	Vehicle 2	Vehicle 3
In an average week, approximately how many hours would this vehicle be available for food hub product pick up and delivery service? ⓘ	<input type="text" value="20"/>	<input type="text" value="15"/>	<input type="text" value="0"/>
Approximately how many cases of produce can each of your vehicles hold at any given time? ⓘ	<input type="text" value="15"/>	<input type="text" value="15"/>	<input type="text" value="0"/>

## Anticipated Sales Breakdown

What percentage of product sales from your prospective store-based food hub do you anticipate coming from each of the following sales channels? ⓘ

Institutions in your region  
*Hospitals, schools, universities*

 %

Restaurants in your region

 %

Food Distributors  
*Consider your store distributors*

 %

Other Grocery Stores  
*Stores in your chain or network*

 %

In-Store Sales  
*Retail sales to your customers*

 %

Other Direct-to-Consumer Sales  
*CSA or other consumer models*

 %

 %

7

This set of questions asks a storeowner to assess which sales channels the store's hub might serve. While this is an important input for the widget, it is a difficult question to assess accurately in the absence of a full feasibility study. Users can provide initial estimates by assessing their likelihood of selling within their store, to the distributors they work with, or to local institutions or restaurants, with which they may have some established relationship.



# WIDGET OUTPUTS

Once inputs are provided, the user will receive a preliminary assessment of the maximum profit contribution potential of a food hub operating within the store that was assessed, as shown below.

Maximum Food Hub Throughput	Dry Storage	Cold Storage
Cases moved per week	100	253
Cases Moved Annually	1480	5012
Acreage Requirements	2.2	7.5

1

The first section of output displays the number of cases of produce a food hub in the store could move on a weekly and annual basis, and how many acres of production need to be identified in order to supply that volume of product. If the next step of a feasibility study is undertaken, an important component would be to identify this volume of production among growers in the store's region.

2

The second section first displays the assumed price point that growers will receive for their product, derived from New Venture Advisors' previous studies. Then, the price per case to buyers is displayed, based on the margin associated with the sales channels the store's hub anticipates selling to. Finally, the assumed price per case for distribution is displayed, based on New Venture Advisors' previous studies.

Estimated Food Hub Product Pricing	
Average price per case paid to growers	\$20.00
Average price per case paid by buyers	\$23.90
Average additional distribution fee received per case	\$1.50

3

Finally, the third section displays the potential profit contribution for the store's hub. These financials should be interpreted as directional, and should be compared to the store's overall profit and loss statement to enable you to evaluate the hub's level of respective value potential. If the store is currently generating \$50,000 in cash and a food hub can bring in an additional \$10,000 with minimal investment, the strategy may be worth pursuing. If, however, the store is generating \$200,000 and a hub will bring in a maximum of \$2,000, it may not be worth pursuing.

Potential Profit Contribution of Food Hub	Annual
<b>Total Revenue</b>	<b>\$160,000.00</b>
Product sales	\$147,000.00
Distribution ( <i>pick-up from farm &amp; delivery to buyer fees</i> )	\$13,000.00
<b>Cost of Goods</b>	<b>\$143,000.00</b>
Product sales	\$130,000.00
Distribution service	\$13,000.00
<b>Sales, General &amp; Administrative (SG&amp;A) Expenses</b>	<b>\$13,000.00</b>
Staffing	\$8,000.00
Other	\$5,000.00
<b>Operating Profit (EBITDA)</b>	<b>\$4,000.00</b>

## USING THE WIDGET OUTPUT

If the output from the widget is favorable, and the storeowner believes a food hub could be viable operationally, the next step would be to pursue a more detailed feasibility study and a pilot.

- A detailed feasibility study would enable the store owners to solidify the product set to focus on, assess and quantify production volumes among interested growers, estimate sales potential from interested wholesale buyers,

determine which services to offer, finalize pricing strategy, and develop a detailed financial forecast.

- A pilot would help assess key operational concerns, such as the staff's ability and willingness to support a food hub and the basic receiving, handling and storage of produce cases in the store's existing infrastructure.

Widget users should also reference the case study aggregate analysis provided above, including the outlined opportunities, risks, and next steps.



# CLOSING & ADDITIONAL RESOURCES

## CONCLUSIONS

This study has provided positive support for the potential of a food hub embedded in a grocery store to create significant value for the community by:

1. Creating a new revenue stream for the store, contributing to its financial sustainability, and
2. Providing a new sales and distribution channel for local growers and food producers, without requiring the upfront investment associated with a standalone food hub.

The four store-based food hub case studies presented in this report indicate varying levels of profit potential based on storage capacity and regional crop supply. The insights drawn from these case studies allowed for the development of a preliminary self-assessment widget.

By making this widget widely available, New Venture Advisors hopes that additional rural grocery store operators nationwide are able to begin exploring the possibility of operating a food hub within their store and to identify a path to implementation, should the preliminary assessment prove promising.

## ADDITIONAL RESOURCES

The following resources may also be of value to rural grocery store owners and prospective food hub operators, as they consider a store-based food hub model:

- Kansas State University's Rural Grocery Initiative  
<http://www.ruralgrocery.org/index.html>
- USDA Local Food Research & Development  
<https://www.ams.usda.gov/services/local-regional>
- USDA Rural Business-Cooperative Service  
<http://www.rd.usda.gov/about-rd/agencies/rural-business-cooperative-service>

# THANK YOU

## The project team is grateful for the generous support of:

- The University of Northern Iowa, USDA Agricultural Marketing Service and USDA Rural Development that funded this study.
- The three participating grocery store leadership and management teams for sharing their time, data, insights, and perspectives.
- The following rural food systems leaders who served as expert advisors, facilitated introductions to grocery store owners and local stakeholders, provided access to regional agricultural and economic data, and who are assisting with the publication and dissemination of public findings to communities of research and practice:
  - **Dr. James Barham, *Agricultural Economist***, USDA Rural Development
  - **Dr. David Procter, *Director, Center for Engagement and Community Development***, Kansas State University
  - **Kamyar Enshayan, *Director, Center for Energy and Environmental Education***, University of Northern Iowa
  - **Shane Tiernan, *Director of Lending***, GNB Bank
  - **Rich Pirog, *Senior Associate Director***, Center for Regional Food Systems Michigan State University
  - **Dave Glenn, *Consultant***, Northeast Michigan Council of Governments

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