

## Increasing the Capacity of a Local Food Hub to Service School District Nutrition Programs

### Overview

By partnering with a food hub, a school district can significantly increase its local food purchases. Food hubs can partner with school district nutrition programs on identifying, procuring, and even processing local foods that meet schools' needs for a consistent supply throughout the school year.

Communities interested in strengthening their local food system will be able to use the information in this publication to support conversations around food hub development and local food procurement in schools.

### School purchases of local foods are on the rise nationwide

According to results from the US Department of Agriculture (USDA) Farm to School Census released in 2015, schools across the country purchased \$789 million in local foods in school year 2013–14. That represents a 105 percent increase over the 2011–12 school year when the first census was conducted. This signifies the deepening commitment of schools nationwide to bring local food into their cafeterias and strengthen their local economies.



The food hub's cooler is full of product awaiting delivery to schools.

Schools report that farm to school programs can increase the number of students purchasing school breakfast and lunch, improve consumption of healthier foods at school, and reduce plate waste. The programs are often also heavily focused on nutrition education, helping teach children where their food comes from and exposing them to lessons about healthy eating. The census data show that school gardens, which can be both teaching tools and sources of fresh produce, have nearly tripled in number over the past two years.

The census also showed that 29 percent of Iowa's school districts surveyed said they participate in farm to school activities. That's 98 districts, incorporating 438 schools, serving 174,145 students. Seventy-five percent of Iowa's 449 districts completed the census. Iowa school districts reported spending \$3.8 million on local foods in school year 2013–14, an average of 2 percent of their budgets. Districts reported spending local food dollars on fruits (72 percent), vegetables (75 percent), milk (16 percent), and meat or poultry (16 percent). Fifty-two percent of the districts responding to the survey say they plan to increase their purchases of local foods in the future.

See the [Iowa highlights](https://farmtoschoolcensus.fns.usda.gov/find-your-school-district/iowa) at <https://farmtoschoolcensus.fns.usda.gov/find-your-school-district/iowa>.

### Partnering to grow farm to school in northeast Iowa

The Northeast Iowa Food and Fitness Initiative (FFI) has a long history of supporting rural school districts with its farm to school efforts. Research has identified challenges for growers selling local foods to school nutrition programs, including limited nutrition program budgets, reliability of supply, and lack of skills and/or equipment to process fresh produce in cafeterias.

A research project conducted in 2014–15 tested the benefits of a partnership between area school districts and the Initiative's Iowa Food Hub — a non-profit food



One item offered to schools was a box of fresh vegetables that could be quickly prepped for use on school salad bars.

aggregator and distributor based in West Union, Iowa, and one of four food hubs operating in the state at the time.

Grant funds were used to hire staff to provide assistance to participating schools to procure local products, create weekly delivery routes and evaluate delivery costs, and investigate costs for minimally processed food items for schools. Four school districts were selected as pilots for this grant; however, the services and products developed were offered to any school district that chose to participate.

The pilot project results indicated that in order to truly grow farm to school, districts need an intermediary market such as a food hub to facilitate between the farmers and the schools. Schools are a low-margin, high-volume market, and food hubs need to have multiple producers available to meet their demand. Food hubs also need to have enough capacity to conduct weekly phone calls to schools to collect orders. (Several schools indicated that the phone was their preferred form of communication.)

At the start of this project, local food purchases by schools in the pilot were small – under \$500 a year for most of the districts. The 2012–13 school year served as the baseline; during that year, 14 school districts in northeast Iowa purchased \$20,240 of food from local farmers.

In the project’s two years, Iowa Food Hub made more than 220 deliveries to schools. The four pilot schools increased their purchases from \$10,451 to \$52,401. Data suggest that access to the services of a food hub contributed to this increase. A similar result was observed with non-pilot schools. Local food purchases by schools in the six counties increased from \$20,236 to \$71,761.

The school market is important to the portfolio for the food hub. Iowa Food Hub doubled its sales between 2014 and 2015, its third year of operation. K-12 school districts accounted for 11 percent of those sales.

## Design of the project

The Iowa Food Hub coordinator worked with school food service staff, AmeriCorps members assigned to participating schools, Iowa State University Extension and Outreach, Luther College, local farms and businesses, and members of the community to address the following project objectives:

- Create distribution models that include schools, are logical, and leverage existing resources;
- Increase local food purchases by schools;
- Determine the needs and costs for light processing of local foods for schools.

## Selection of pilot schools

Based on their levels of interest and engagement in ongoing farm to school work, four school districts were selected to be pilot sites based on their demonstrated capacity; readiness and commitment to implement a regional farm to school cycle menu; and willingness to double their local food purchases (Table 1). The four partner districts created school wellness action plans which included farm to school goals and activities.

<b>Table 1. Characteristics of Four Pilot Districts (2012–13)</b>		
School	Enrollment #	Free/reduced lunch rate %
School A	1155	51%
School B	1800	26%
School C	589	75%
School D	400	20%
<b>TOTAL</b>	<b>3,944</b>	

Northeast Iowa Food and Fitness Initiative partners hosted regular networking meetings with school food service directors to discuss challenges and successes related to local food implementation. Food service directors and school wellness teams had regular contact with their school resource contacts (AmeriCorps members), email communication with project staff, communication with food hub staff, and monthly school nutrition association meetings.

## Implementation

### Development of delivery routes

At the beginning of this project, Iowa Food Hub was still determining the best way to service the 16 school districts in their region. The school deliveries were incorporated into existing routes to the metro centers,

which were over 60 miles away from West Union. One day a week was dedicated to school deliveries only. Alternate configurations were tested with the routes to find the best timing for drivers and schools. Below is an outline of the routes:

- Monday: Deliver to 1–5 school districts. Up to 80 miles round trip. Average of 3.5 hours.
- Tuesday: Deliver to three school districts en route to a metro center. Included one community food box site.
- Wednesday: Deliver to five school districts en route to a metro center.
- Thursday: Deliver to five school districts en route to the meat processor and organic vegetable farms.

Based on feedback from current customers and schools, the schools were added into the existing delivery routes as efficiently as possible. The routes were adjusted several times, including after the food hub moved from Decorah to West Union in January 2015.

Operational trucking costs were calculated at \$0.60 per mile (gas, insurance, truck payment, maintenance). With labor added, trucking costs were \$1.30 per mile.

### Product development

An important part of the research project was investigating how to incorporate lightly processed foods into school meals. Schools often cite the lack of kitchen equipment and shortage of skilled labor as barriers to the use of local foods in meals. Fresh produce is only available for a short period during the school year in Iowa, so project partners focused their efforts on light processing (washing, trimming, chopping) and freezing foods to extend availability during the winter months. They investigated processing procedures, costs, and logistical challenges of using existing processing facilities in northeast Iowa. We also wanted to investigate the use of local meats as an option for schools throughout the school year. See *Iowa Food Hub Meat to School Series*, [LF 16A-C](https://store.extension.iastate.edu/product/15097) (https://store.extension.iastate.edu/product/15097.)

Some items, like sweet corn and shredded cabbage, received minimal processing and were served fresh. Other items, such as strawberries, sweet potatoes, winter squash, tomatoes, beef, and pork, were processed and frozen with the intent to have inventory available throughout the winter months.

Two licensed processing kitchens were used for the produce processing. One kitchen was 10 miles from the food hub and located on a farm. The other kitchen was a larger food service kitchen, located 45 miles from the food hub.

Offering a fresh-cut product as part of the food hub’s inventory for sale to schools presents logistical challenges. To manage inventory costs, the food hub operates on an all-in/all-out system (in other words, no food is stored at the hub’s facility unless it has already been sold).

Therefore, the hub requires at least three weeks notice to offer a fresh-cut product. This allows time to source the product, process it, and deliver it (Table 2).

<i>1st Monday</i>	<i>2nd Monday</i>	<i>3rd Monday</i>
Hub receives the order from the school and contacts farmers to find the quantity needed.	Product is picked up from the farm and delivered to the processor. Product was processed on Friday or Saturday.	Product is picked up from the processor and delivered to school.

In the pilot tests, frozen product was more expensive than fresh-cut because of the extra steps required to blanch or parboil the vegetables. The hub also assumed that the kitchens would have boxes or containers to receive the finished product, and that was not always the case. The kitchens also don’t always have the right equipment for preparing the food. In the case of both kitchens, the hub assisted them with the purchase of dicing blades for their food processors in order to cut the product into the desired shape.

On the positive side, the hub’s method to receive food orders from schools worked well. In general, these schools finalize their monthly menus at least two weeks in advance. If a school is using the Northeast Iowa Food and Fitness Initiative’s farm to school cycle menu, they have several opportunities to serve local products already built into the menu. (See the [menu](http://www.iowafoodandfitness.org/site/cyclemenu.html) at www.iowafoodandfitness.org/site/cyclemenu.html.)

Once the menus are determined, the food service director figures the quantity needed and can proceed through the procurement process. The pilot schools used the informal procurement process with options for multiple deliveries.

See companion publication [LF 18B](https://store.extension.iastate.edu/product/15097), “Summary of the Northeast Iowa Farm to School Processing Pilot, 2014-2015” (https://store.extension.iastate.edu/product/15097) for results of the processing component of the pilot project.

### Increase in local food purchases by pilot schools

Working with a food hub increased local food purchases (Table 3). The total local food purchases by the four pilot schools increased from \$10,451 to \$52,401 in two years (A). Table 3 also shows the dollars and percentage of those

<b>Table 3. Increase in Local Food Purchases by Pilot Districts</b>			
	2012-13 (Baseline)	2013-14	2014-15
A. Total local food purchases by 4 pilot schools	\$10,451	\$22,897	\$52,401
B. Increase from baseline		\$12,446	\$41,950
C. Total purchase by 4 schools from food hub	\$0	\$10,334	\$38,521
D. Percent of purchases from food hub	\$0	45%	74%

food purchases from the food hub (C, D). The increase in purchases each year (B) is similar to the amount of food purchased from the food hub (C). These data suggest that the increase in purchases is largely due to the availability of product and services from the food hub.

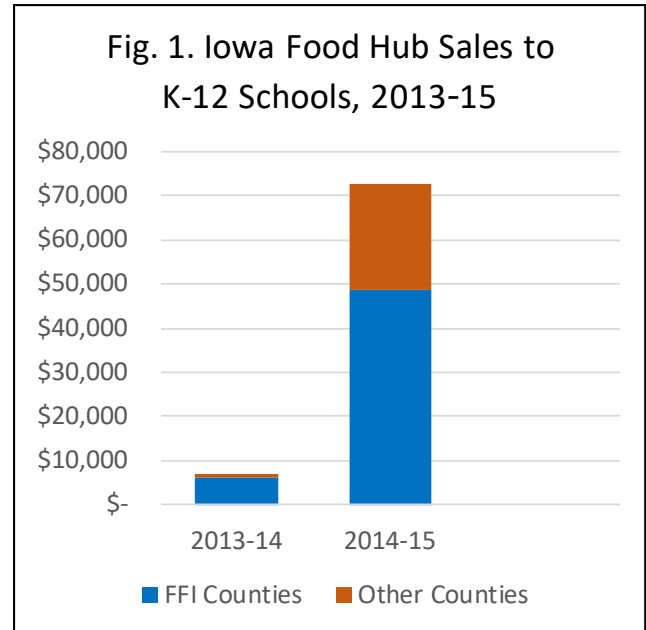
**Increase in local food purchases by non-pilot schools**

The Northeast Iowa Food and Fitness Initiative is focused on a six-county area in northeast Iowa and works with 14 school districts. While the focus of this project was on the four pilot sites, all school districts had the opportunity to purchase from the food hub.

Table 4 shows the increase in local food purchases by the other districts in the six-county region who contributed to the Initiative’s annual data collection survey (A, B). The table also shows the dollars and percentage of those food purchases from the food hub (D, F). The increase in purchases each year (C) is similar to the amount of food purchased from the food hub (D). Similar to the pilot results, these data suggest that the increase in purchases is largely due to the availability of product and services from the food hub.

<b>Table 4. Increase in Local Food Purchases by Regional K-12 Districts</b>			
	2012-13 (Baseline)	2013-14	2014-15
A. Total local food purchases by regional districts	\$20,236	\$33,792	\$71,761
B. Number of school districts	16	14	14
C. Increase from baseline		\$13,556	\$51,525
D. Total purchase by regional districts from food hub	\$0	\$11,046	\$48,411
E. Number of school districts		7	14
F. Percent of purchases from food hub		33%	67%

Schools outside the six-county region also started using the food hub. Figure 1 shows the annual local food sales to K-12 school districts through the food hub. In the first year, the sales were largely to schools in the six-county region (\$6,381 total). In the second year, more sales were made to schools outside the region (\$72,609 total). The food hub’s service area is a 150-mile radius from West Union. Its service area matches the “local food” definition for many schools.



Since the completion of this project, schools have continued to purchase locally grown products from the food hub. Figure 2 shows local food purchasing of northeast Iowa schools since 2008. The sharp increase in purchases after 2013 is largely due to this project and the convenience of ordering through the hub.

**Summary of pilot project findings**

1. Partnering with a food hub is an effective way for schools to increase money spent on local foods.
2. The logistics of offering fresh-cut produce with existing infrastructure are challenging. Because the food hub operates on an all-in/all-out system, it requires at least three weeks notice to offer and deliver a fresh-cut product. In-house processing could be a solution, but requires facilities and capital investment that many young food hubs do not have.
3. Frozen products give the hub more time to make the sales, but frozen tends to be more expensive than fresh-cut because of extra steps needed to blanch or parboil the produce for freezing.
4. Additional challenges came with packaging of the final processed product. Commercial kitchens

or meat lockers may not have the correct materials for packaging or the correct equipment for preparing the processed product for serving.

5. More research is needed in Iowa to further explore small-scale processed products for schools.
6. A regular, weekly delivery schedule — early in the week — works well for schools.
7. Schools should plan for the need for additional time to place and receive orders, due to the developing distribution capacity of food hubs.

## Conclusion

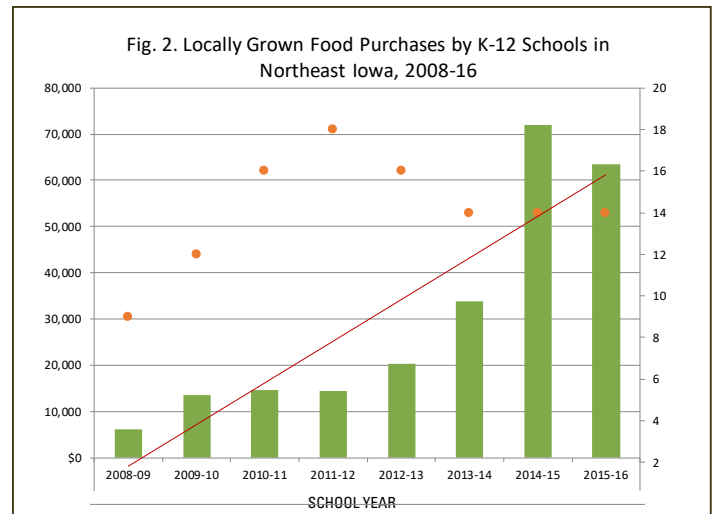
School nutrition programs can provide a significant market for local foods. Farmers interested in those markets will need to refine their wholesale production practices and scale up production to satisfy those markets.

School nutrition programs also can be a significant market for food hubs — especially those focused on wholesale institutional markets. Iowa Food Hub's increase in sales resulted in the addition of staff. They expanded the hours of a sales associate, added a second truck driver, and contracted with a bookkeeping service.

The food hub also moved into a new facility in December 2015. As a result, they now can keep a larger inventory, including frozen items for schools. In 2015, Iowa Food Hub worked with more than 50 farms and food businesses and returned over \$508,000 to farmers.

## More resources

For more information about this Iowa Food Hub project, please see ISU Extension and Outreach publication [LF 0018B](#), *Northeast Iowa Farm to School Processing Pilot, 2014–15*, available at the ISU Extension Store: <https://store.extension.iastate.edu>.



Additional food hub-related resources can be found on the ISU Extension and Outreach Local Foods Program [website](http://www.extension.iastate.edu/localfoods/our-publications) at [www.extension.iastate.edu/localfoods/our-publications](http://www.extension.iastate.edu/localfoods/our-publications).

Also see these USDA resources:

[www.fns.usda.gov/sites/default/files/f2s/F2S\\_Procuring\\_Local\\_Foods\\_Child\\_Nutrition\\_Prog\\_Guide.pdf](http://www.fns.usda.gov/sites/default/files/f2s/F2S_Procuring_Local_Foods_Child_Nutrition_Prog_Guide.pdf).

<https://farmtoschoolcensus.fns.usda.gov>.

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Photos by Teresa Wiemerslage.

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