Beyond Beauty
The Opportunities and Challenges of Cosmetically Imperfect Produce

Report No. 4 - Lessons from Minnesota’s Hunger Relief Community
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EXECUTIVE SUMMARY

This installment in the Beyond Beauty series explores how foodbanks in Minnesota have sourced locally grown fruits and vegetables, including cosmetically imperfects, and the lessons emerging from their experience. Highlights including the following:

• **Minnesota’s farmers have a long tradition of donating fresh produce to people in need.** For instance, earlier Beyond Beauty research with Minnesota fresh market growers found that 70% of responding farms donate some of their imperfect produce. However, growers who donate report that only 10 - 20% of their imperfects are donated on average. Depending on the growing season and market conditions, farmers may have surplus #1 product that could potentially be donated as well. This suggests that there is significant room for additional donation if the donation process is made more feasible and attractive for growers.

• **Foodbanks do not usually attempt to grade produce** upon receipt, making it difficult to discern what portion of existing produce donations from Minnesota growers would be considered cosmetically imperfect by today’s stringent commercial standards. Foodbanks have typically not been in conversation with farmers about imperfect produce as available produce surpluses typically exceed the hunger relief system’s capacity to absorb product. It is highly likely that foodbanks regularly receive “imperfects” (as Beyond Beauty defines them) without the product being documented as such.

• **Minnesota’s state-funded $2 million “Farm to Food Shelf” program** to reimburse Minnesota growers for the Pick-and-Pack-Out (“PPO”) costs of produce donation has been highly successful in expanding local produce donations. Instituted in 2014, it has spurred a near doubling of surplus produce donations from Minnesota farms into Minnesota’s Feeding America-affiliated foodbanks.

• The Farm to Food Shelf Program has also had the added benefit of enabling participating foodbanks to ramp up their produce recovery systems to a new level of sophistication and efficiency.

• **Per-pound Pick-and-Pack-Out rates** under the Farm to Food Shelf Program are modest (typically 5 – 20 cents per-pound for bulk-packed items), although not atypical of rates used in other states. While farms of all sizes have access to the program, participation to date has been concentrated mainly among Minnesota’s larger conventional growers.

• The average per-pound payment under Farm
to Food Shelf (12 cents) is roughly comparable to the expense foodbanks incur when having truck-loads of produce transported from California or Mexico. However, Farm to Food Shelf offers several distinct advantages:

1. Most of the locally sourced fruits and vegetables are already boxed and ready for distribution to food shelves;
2. This model does not require costly equipment and the additional labor needed for foodbanks to receive and re-pack bulk semi-truck-loads of produce;
3. Product is typically fresher and has a longer shelf life because it has not been shipped across the country;
4. It benefits Minnesota farms; and
5. It keeps state tax dollars circulating within Minnesota's economy.

• A key challenge for Minnesota's Farm to Food Shelf Program is the scale and duration of funding for Pick-and-Pack-Out costs. The existing state allocation is expected to be fully tapped by Fall 2016. Additional funds running into 2019 have been requested. Under the state funding, 4% is also allocated to Second Harvest Heartland for related transportation costs (along with 11% for administration). However, this funding only covers a portion of actual transportations costs, making it necessary for the foodbank to raise outside funds to cover the balance, along with funds for cooling equipment, warehouse staff to handle the product, pallet jacks to move it and so on.

• Additional challenges for produce donation in the state include our relatively short growing season, the geographic dispersion of farms, limited capacity to make large volumes of fresh produce shelf-stable (e.g. through freezing or value-added processing) and limited demand / capacity among food shelves to distribute fresh produce, particularly in rural parts of the state.

• Many food shelves have limited refrigerators, freezers, and equipment to unload and maneuver produce deliveries, and are highly reliant on volunteers. Funding to enable hiring of paid employees and increased training for food shelf volunteers on the nutritional benefits and proper handling of fresh produce are also needed.

• Foodbanks could benefit from new resources to test and scale up innovative distribution models and processing strategies to make donated fruits and vegetables less perishable. More resources are also needed to educate food shelf patrons about how to utilize fresh produce at home.

• Given the considerable untapped supply of imperfect fruits and vegetables on Minnesota farms, it appears that the goals of expanding donations and building commercial markets for Minnesota-grown imperfects would not conflict with one another. Efforts to develop markets that pay commercial rates (such as the collegiate foodservice markets explored by Beyond Beauty) and modest PPO reimbursements for donation can both benefit fruit and vegetable producers while helping to ensure that Minnesota's bounty does not go to waste.
In late 2014, the Real Food Challenge and JoAnne Berkenkamp at Tomorrow’s Table began a collaboration to explore the possibilities for expanding market opportunities for cosmetically imperfect fruits and vegetables. In particular, we are seeking to understand more about how fruit and vegetable growers view these products and to test the market for these products among collegiate foodservices.

This gave rise to the initiative **Beyond Beauty: Opportunities & Challenges for Cosmetically Imperfect Produce.** Funded by the USDA Specialty Crop Block Grant program, the initiative is focused on growers and collegiate markets in Minnesota. A fuller description of the initiative is provided in Appendix A.

Our research and market development efforts include several components:

2. One-on-one interviews with Minnesota produce growers (Report No. 2, October 2015).
3. Explorations with produce distributors and fresh-cut processors in Minnesota that serve the foodservice market (Report No. 3, April 2016).
4. Lessons from leading members of Minnesota’s hunger relief community that have utilized cosmetically imperfect produce (provided here).
5. Lessons from our partnerships with foodservice management companies at several public universities and private colleges in the state (anticipated Summer 2016).

**A Word on Terminology**

For the purposes of our research, we have defined **cosmetically imperfect** (“CI”) products as “fruit and vegetables grown for the fresh market that are fresh, undamaged and suitable for human consumption, but too cosmetically imperfect to meet minimum industry-accepted standards for cosmetic appearance (e.g. too large, too small, misshapen, miscolored, superficial scarring, etc.).”

We refer to such products in the report as “imperfects.” Our research excluded product that isn’t fresh, is damaged or is otherwise unsuitable for sale.

We also make reference to “#1” **product.** In commercial markets, sales are often driven by product specifications determined by large national buyers. These may or may not correspond directly to USDA grading standards. Throughout the Beyond Beauty research, products meeting these prevailing industry standards are referred to as “#1” product.
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1. Produce donation is widespread among Minnesota’s diversified produce farmers

Production of fresh fruits and vegetables in Minnesota is typified by small and mid-size highly diversified farms that grow a wide variety of vegetables, as well as apples and a few smaller fruit crops. A “large” farm in Minnesota growing for the fresh produce market would be roughly 1000 acres, with the vast majority of fresh-market farms being under 200 acres. Minnesota is also a national leader in production of sweet corn, green beans, green peas and carrots for the freezing and canning industry.

Earlier Beyond Beauty research found that there is a strong tradition of local farmers donating surplus produce to area foodbanks and food shelves. In fact, more than 70% of Minnesota fresh-market farmers participating in the Beyond Beauty survey indicate that they donate some of their imperfect produce. Depending on the crop, growers report that up to 20% of their production would be considered cosmetically imperfect using the standards prevalent today in large commercial markets (such as produce distributors and fresh-cut processors that serve national grocers and foodservice companies). That said, Minnesota farmers typically donate less than 20% of their imperfect produce. The vast majority is left in the field or composted on the farm.

Similarly, growers reported that only 10 – 20% of their imperfect produce is typically sold, whether through wholesale markets or through direct-to-consumer channels. This suggests that there is significant room to expand both donation and sale of imperfect product, without one use competing with the other.

Farmers may also have excess #1 produce that can be, and sometimes is, donated. These surpluses commonly occur when farms over-produce to ensure that they can meet their obligations to key buyers, when growing conditions are highly favorable and yields exceed expectations, or if expected markets fall through.

Depending on a particular farm’s harvesting practices, growers may find it more efficient to donate #1 product that has already been harvested in the normal course of business than to donate imperfect product if imperfects would otherwise be left in the field.

2. A strong base of foodbanks

Minnesota has a strong and long-running foodbanking system featuring a network of six Feeding America-affiliated foodbanks as well as an independent foodbank, The Food Group. In Minnesota, one in ten people experience food insecurity, including one in six children. These foodbanks serve a population of food-insecure adults and children estimated at 573,000 people.
The biggest of these, **Second Harvest Heartland (SHH)**, is one of the nation’s largest foodbanks, distributing over 89 million pounds of food in 2015. SHH was founded in 2001 when the Second Harvest branches in Minneapolis and St. Paul joined forces. Second Harvest also serves as de facto leader of a formal network of five smaller Feeding America-affiliated foodbanks that collectively serve Minnesota, western Wisconsin and North Dakota.

SHH serves nearly 1000 food shelves, pantries and partner programs. Fresh produce coming from farms and retailers accounts for 23% of the pounds they distribute. By 2025, Second Harvest hopes to nearly triple their produce offering to 58.7 million pounds annually.

**The Food Group (TFG)** is an independent foodbank that is also based in the Twin Cities. Founded in 1976, it is not affiliated with Feeding America. TFG is known for highly innovative programming, creative collaboration with community groups, and a long-standing commitment to offering healthy foods, including fruits and vegetables sourced from smaller-scale and sustainably oriented farms in the area.

In 2015, TFG captured and distributed 4.7 million pounds of food and distributed it through 215 hunger relief partners mainly in the Twin Cities metro area. Of this, about 25% is fresh produce. TFG intends to continue increasing their fresh produce volumes by 10 – 15% annually.

> “It’s changing. People are reading so much more about chronic disease and their clients. There’s been a dramatic shift in thinking about what kind of foods to make available to your clients. We could save our state millions and millions of dollars in health care costs if we were providing healthier foods.”

- Lori Kratchmer, The Food Group

While Minnesota has a solid base of foodbanks, food shelves are typically less well-resourced and their capacity is quite variable across the state. Food shelves in Minnesota’s rural areas tend to be particularly challenged as they are less woven into the support systems that exist in the Minneapolis-St. Paul metro area and they may experience greater difficulty accessing training and outside funding. Many struggle to keep their doors open. This reality has prompted some initial conversation about the potential benefits of pooling resources or consolidating food distribution efforts within counties.

### 3. A collaborative spirit

Minnesota’s hunger relief system has benefited from long-running efforts to collaborate. The Minnesota Hunger Initiative, for instance, brings together 20 different hunger relief agencies on a monthly basis around the goal of increasing the effectiveness of Minnesota’s hunger relief system. Similarly, Second Harvest Heartland and The Food Group are regularly in touch to coordinate efforts, ensuring that services in the Twin Cities are not duplicated, and sometimes sharing best practices and resources. The six Feeding America foodbanks in Minnesota coordinate closely, with SHH typically in the lead. The Hunger Free Minnesota collaborative brought together industry, foodbanks and funders to develop the agricultural surplus pilot effort that led to creation of the Farm to Food Shelf Program.
Further, most grocery stores in the Metro area now either donate to a foodbank or are linked directly to a food shelf in their neighborhood. Efforts to rescue prepared foods are more nascent, although organizations like Campus Kitchens and the Food Recovery Network are expanding, and various gleaning activities are in place. Food rescue capacity in the state has also been bolstered by funding from the United Way, Hunger Solutions\textsuperscript{12} and others. Much of this funding has been aimed primarily at expanding community access to healthy food.

Further, although foodbanks inspect product for attributes such as cleanliness and signs of decay upon receipt at their warehouses, they do not have reason to assess the products’ grade relative to the USDA or commercial grading standards. As a result, there is little documentation showing what portion of existing produce would actually be considered cosmetically imperfect under today’s stringent commercial standards. Commercial standards are, in fact, so high that many types of “imperfection” would be challenging for receiving organizations to discern and immaterial to the products’ suitability for human consumption.

In our interviews, hunger relief organizations frequently attested to the high quality of local produce donations they receive, typically saying that the quality and freshness of farm-direct donations exceed those of other sources. Indeed, the larger Minnesota farms that currently participate in the Farm to Food Shelf Program are likely to harvest the product within 24 – 48 hours of donation and to hold it at temperatures that maintain the products’ shelf life.

We found that the these foodbanks’ produce sourcing efforts typically do not make explicit reference to cosmetically imperfect product or particular grading standards, rather focusing on qualities like product freshness and cleanliness. However, earlier Beyond Beauty research found that Minnesota growers commonly donate both surplus “#1” product and imperfects\textsuperscript{13}. 

4. Imperfects are donated but not specifically tracked

Photo via Wikimedia Commons

Courtesy of Cornercopia Farm

Beyond Beauty
B. Strategies for accessing fresh fruits and vegetables

Second Harvest Heartland and The Food Group have developed a range of approaches for expanding access to fresh fruits and vegetables, including those grown within Minnesota. These include:

1. Minnesota’s “Farm to Food Shelf” Program
2. Buying farm product through “Harvest for the Hungry”
3. Truck-load shipments from major growing regions
4. High-volume acquisition through the Produce Capture Institute

Below we explore these four main programs that now connect Minnesota’s foodbanks with sources of fresh produce.

1. Minnesota’s “Farm to Food Shelf” pick-and-pack-out reimbursement program

In 2013, Second Harvest Heartland successfully lobbied the State of Minnesota to allocate funds enabling SHH and its member foodbanks to compensate Minnesota growers for the Pick-and-Pack-Out (PPO) costs of donated produce. This “Farm to Food Shelf” program has since become SHH’s primary source of Minnesota-grown produce.

By way of the Minnesota Department of Agriculture, this $2 million state appropriation functions as a pass-through grant that SHH foodbanks use to reimburse farmers for costs associated with picking, washing, sorting, packing and packaging fresh produce donations (also known as “Pick-and-Pack-Out” or “PPO” reimbursement). These state funds can be used for product grown either for the fresh or processing markets, but the produce must be both grown and distributed within the state. A total of two million dollars have been made available for three years starting July 2014.

“The game changer was when the Minnesota Department of Agriculture allocated $2 million for the Feeding America foodbanks that serve Minnesota to access Minnesota-grown fruits and vegetables. That changed everything.”

-Mary Beth Dickey, formerly North Country Food Bank

Participating foodbanks receive an 11% administrative fee and an additional 4% for transportation costs. The balance of the funding is disbursed to participating farmers. With two years of the three year period now under its belt, SHH is projecting to fully utilizing the state allocation and hopes to secure additional funding to continue the program beyond 2016. SHH administers the state PPO funding and largely coordinates connections between other Feeding America-affiliated foodbanks in rural Minnesota and local farmers.
Product Diversity: Farm to Food Shelf has enabled participating foodbanks to tap into a much more diverse array of high quality produce. For instance, potatoes and apples had previously made up most of SHH’s locally sourced produce. Today, while potatoes still predominate by weight, the state funding allocation has enabled SHH to access significant quantities of Minnesota-grown sweet corn, cabbage, carrots, onions and watermelons, among others. The use of the state funding allocation in 2015 across the full range of crops is highlighted in Appendix B.

PPO Rates: In setting up the program, SHH established a set of fixed, crop-specific PPO reimbursement rates that are available to participating Minnesota farmers. The average across all crop types is 12 cents per pound (in bulk, without packaging). Potatoes receive 5 cents per pound, while rates range up to 20 cents per pound for items like green beans, peppers and zucchini. Per-pound rates are provided in Appendix C.

The selection of these rates was informed by data from Feeding America, similar state programs in California and Ohio, and input from several Minnesota growers. SHH opted to establish fixed PPO reimbursement rates to avoid the need for repeated negotiations with individual farmers and to maximize transparency.

The PPO rate schedule includes rates for products provided in bulk as well as separate, higher rates for product received in packaged form (e.g. 25 pound boxes). While items like potatoes and melons are often shipped commercially in 2000 pound totes, boxes protect more delicate items in transit and prevent foodbanks from needing to re-pack items into more manageable quantities for shipment to food shelves. As boxes typically cost growers $2.50 per 25 pound box (or 10 cents per pound) it is essential for a PPO program to have distinct PPO rates for packaged and unpackaged produce.

Participating Farms: While 59 farms participated in the program last year, the majority of produce donated through Farm to Food Shelf has come from about 20 larger diversified farms and large potato suppliers\(^{15}\). Concentrating produce sourcing among a
smaller number of larger, frequently donating farms eases administration and enables efficient transpor-
tation from farm to foodbank. In the program’s initial two years, these larger growers have also shown that they have more than enough supply to fully meet the program’s funding capacity.

However, despite some earlier outreach efforts, smaller scale farms, particularly direct market and Community Supported Agriculture (CSA) operations, have participated at far lower rates. The program does not have an explicit goal of engaging farms of different sizes and foodbanks are dis-incentivized by the higher cost of working with numerous small scale operations. While the program is effective in maximizing the poundage of produce that can be sourced with existing dollars, it has yet to engage a significant number of Minnesota’s smaller farms. Low reimbursement rates may be a contributing factor.

Logistics with larger farms: SHH picks up donated food from the larger farms that participate regularly in Farm to Food Shelf. Typically, SHH and its largest farm suppliers will coordinate closely about the produce types, quantity and timing of donations so that farms can synch harvest activities with SHH’s truck-
ing routes. This maximizes product freshness and enables SHH to remove product from growers’ ware-
houses quickly. Quick, reliable pick-ups can be key for growers as their warehouse and cooling space may be limited during peak harvest.

The larger diversified produce growers typically will not harvest the product unless SHH has confirmed that SHH can pick it up, suggesting that the Farm to Foodbank program is tapping into produce that would be plowed under if not donated. During the peak harvest season, SHH will send multiple trucks per week to pick up donations from each farm that is a large, frequent donor. Most donations from larger farms are transported by SHH to its Twin Cities ware-
house and then distributed back out to rural foodbanks and to partner agencies that handle distribu-
tion to people in need.

Logistics with small and mid-size farms: During its regular trucking runs, SHH can sometimes backhaul product from small and mid-size farms when en route back to the Twin Cities. Having a scheduled time in advance allows smaller farms to plan ahead and en-
ables SHH to pick up smaller donations from farms near larger highways without adding significantly to its trucking costs. Alternatively, some farms will deliver directly to rural foodbanks or food shelves in their communities.

Payments under the Program: Farms making a food donation will include an invoice along with the produce when it is picked up at their farm, indicating the poundage of product being donated and the re-
imbursement requested based on the program’s PPO rates. SHH then reimburses the farmer. On a monthly basis, SHH issues a statement to the State Depart-
ment of Agriculture identifying the payments made to farmers that month. MDA then reimburses SHH.

Storage and inventory management at Second Harvest: The state allocation has also catalyzed and enabled SHH to ramp up the scale and efficiency of their produce capture and distribution system. For instance, SHH has an employee dedicated to moni-
toring the overall produce inventory on hand each
morning at SHH, at other FA foodbanks in the state, and among member food shelves. When produce supplies exceed what SHH can refrigerate, SHH will divert the surplus to other foodbanks in the region or ask farmers to either delay harvest or hold harvested product at the farm until refrigerated space opens up.

It is noteworthy that although 23% of SHH’s annual product volume is fresh produce, only 6% of its storage space is refrigerated. While refrigerated product tends to be held for shorter periods than shelf-stable items (meaning more product can be moved through a given space in a given amount of time), these figures illustrate common infrastructure constraints foodbanks face when seeking to significantly expand the amount of perishable product they handle.

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**Lessons from Minnesota’s Farm to Food Shelf Program**

- Funding for PPO has been enormously helpful in ramping up donations of MN-grown produce.

- Product quality and shelf life is often better for produce received direct from the larger, regularly donating farms than from retailers and distributors as local farm product is typically received within 24 – 48 hours of harvest. This enhances quality for food shelf patrons and makes produce donated through the PPO program an exceedingly good deal for foodbanks.

- The program has also been successful in enabling Second Harvest Heartland to take the sophistication and efficiency of their produce recovery system to a whole new level.

- Modest PPO rates (averaging 12 cents per pound) and operational factors tend to steer the Farm to Foodbank program toward larger conventional farms. This has a number of clear logistical benefits for the program, but can pose barriers to participation for many smaller farms.

- Foodbanks benefit from receiving more delicate product in boxes (rather than in larger bulk totes). As a result, it is important to have PPO rates that fully reflect the costs farmers incur to provide donated produce in boxes.

- Close coordination between foodbanks and farms is critical for enabling farms to synch harvest schedules with foodbanks’ ability to transport and refrigerate the product.

- Produce supply is not currently a constraint on potential donations of local fruits and vegetables; even a relatively small number of the state’s larger farms are able to fully utilize the current PPO allocation from the state. The available produce supply is more than sufficient to accommodate potential expansion of Minnesota’s Farm to Food Shelf Program.
2. **Purchasing local produce from small and sustainably oriented farms through “Harvest for the Hungry”**

In contrast to the State-funded Farm to Food Shelf Program which engages Minnesota's Feeding America affiliated foodbanks and mainly larger farms, The Food Group (TFG) prioritizes collaboration with smaller-scale, diversified farmers. TFG focuses on farms using more sustainable farming practices through a combination of donations and produce purchases at closer-to-market prices.

"The Food Group had some money to buy #2 produce from farmers and we sold 10-15 pallets of #2 cukes to them for above our break-even price. We could pay our crew to harvest, wash and pack them. That was great."

-Farmer, Beyond Beauty interview

TFG's **“Harvest for the Hungry”** program purchases fresh produce grown in Minnesota and Wisconsin and then provides it free of charge to TFG's partner network. The program prioritizes produce grown without pesticides. TFG purchases the produce from over 30 smaller farms, most of which run CSA (Community Supported Agriculture) programs. TFG pays an average of 76 cents per pound, although farms typically need to provide their own transportation (unlike the Farm to Food Shelf Program which provides funding for the foodbank to provide transportation).

TFG generally has about $100,000 per year in grant funding for such purchases. Until this year, TFG has not explicitly communicated their interest in cosmetically imperfect products to participating farmers, but 4 – 5 farmers have occasionally offered such produce. TFG believes that imperfects constitute roughly 5% of their local produce sourcing. The foodbank typically pays $0.45–$0.50 per pound. Finnegans Brewery and other area businesses have partnered with TFG to raise both funds and awareness for the program.

**Key highlights**

- “Harvest for the Hungry” is greatly valued by Minnesota farmers given the closer-to-market rates that TFG is able to pay, as reflected in earlier Beyond Beauty interviews. It essentially provides a **secondary market for local produce** (in contrast to the state PPO program which is designed to compensate only for the harvest and packing costs associated with donation, not the value of the product itself).

- Through its produce purchasing efforts, TFG can source a diversity of fruits and vegetables, largely grown without pesticides. Being able to purchase product gives TFG **significant control over the array of products received**.

- TFG has found that their purchasing program does not deter farms from donating. In fact, they find that farms **often increase their donations when TFG also purchases product from them**.

- A key constraint is the ability to distribute local produce fast enough during Minnesota’s brief harvest season (a challenge 2HH also faces). TFG now has grant dollars to research possibilities for **flash freezing**.

- **Funding** remains a significant constraint on expanding purchases from local farms.
3. Shipping Produce from Mexico and major US growing regions

Another mechanism for bringing fresh-produce (albeit non-local) into Minnesota's hunger relief system is by paying for truck-loads of produce to be shipped from the U.S. border with Mexico or from major growing regions like California and Florida. Such product is often available if it is rejected at the border, for instance, and another paying market cannot be identified. In these situations, unclaimed product would typically be landfilled by the truckload.

The Food Group obtains up to six truckloads each year between December and May via a wholesaler that arranges shipment to a variety of foodbanks around the U.S. The foodbank in Nogales, Texas (Borderlands Food Bank) also arranges these types of shipments to fellow foodbanks.

TFG typically pays 2 cents per pound plus $3,500 to $5,500 per truckload for transportation. That equates to roughly 12 cents per-pound on a 40,000-pound shipment. In addition to shipments coming from Mexico, TFG has obtained truckloads of apples from Idaho, watermelon from Texas and cantaloupe from South Carolina through a wholesale packing and distribution company. The average cost with that approach is 28 cents per pound, which covers both purchasing and transporting the product.

TFG reports that product quality is typically excellent and that they are able to access highly desirable products like vine-on tomatoes and personal-size watermelons through this type of purchase mechanism. They are able to fund these shipments through grant dollars and generally find such shipments to be their most cost-effective means of acquiring fresh produce. These types of purchases work well for TFG and are mainly constrained by shortages in available product supply nationally.

4. Produce Capture Institute

Minnesota is also home to the Produce Capture Institute (PCI). PCI identifies itself as “the first peer learning initiative within the Feeding America network specifically focused on locally sourcing unutilized agricultural products.” Housed at Second Harvest Heartland, PCI works with ten Feeding America foodbanks to develop innovative, business-oriented methods for rescuing agricultural surpluses at the multiple semi-load scale. CPI works with a combination of surplus “#1”, “#2” and “#3” grade product. Product is typically shipped to foodbanks in bulk by the 40,000 pound semi-truck load.

PCI’s work was kicked off in 2013 when PCI helped orchestrate the rescue of 600,000 pounds of sweet corn grown in Minnesota to be processed into Green Giant Niblets. The transaction involved Seneca Foods (a processor for Green Giant), a cluster of farms that contract with farms to grow sweet corn, Supervalu (which provided logistical expertise, transportation from participating farms and a driver) and Cargill (which provided volunteers, grant dollars, and facilities). The product was trucked from area farms to Second Harvest Heartland’s warehouse and then distributed unshucked within Minnesota and shipped to foodbanks in 15 other states.
In the years since, PCI has helped lay the foundation for other rescue efforts such as:

- Donated green beans grown in Tennessee that are being frozen by the Second Harvest Foodbank of Middle Tennessee
- Broccoli and asparagus grown in Oregon
- Apples grown in New York State and western Michigan

Overall, PCI has helped rescue 8 million pounds of produce to date.

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**Key Learnings**

- **Maximizing cost effectiveness:** As foodbanks may have difficulty paying even 8 – 12 cents per pound to obtain fresh produce, PCI aims to maximize product volumes while working regionally (within a 500 mile radius) to minimize transportation distances and related costs.

- **Challenges removing field heat:** When produce grown for the processing market is harvested, it is typically canned/frozen by the processor almost immediately. Foodbanks typically lack the facilities to rapidly remove field heat, particularly from semi-load size deliveries.

- **Handling and re-packing:** Similarly, foodbanks are often challenged to receive semi-load shipments of (unboxed) bulk fresh produce, which would be typically unloaded en-masse onto a loading dock. Re-packing such large volumes into boxes that can be distributed quickly to partner agencies requires significant labor and large numbers of produce-grade boxes. Foodbanks typically need to rely on large numbers of volunteers and donated boxes to handle bulk shipments.

- **Challenges obtaining a year-round supply:** While foodbanks strive to provide their clients with a varied supply of produce year-round, capturing and distributing produce year-round isn’t easy. This is particularly challenging given growing limitations on a regional basis. At a regional level, competition for product can sometimes be intense.

- **Need for processing capacity:** The perishability of fruits and vegetables presents unique challenges, particularly when foodbanks receive very large shipments. Efforts to rescue semi-load produce shipments could be greatly aided by ramping up infrastructure at foodbanks (or their partners) to freeze, can or otherwise make produce more shelf-stable. This will reduce spoilage and allow distribution to people in need over a longer period of time.

- **Potential for massive volumes:** Despite these challenges, such shipments of surplus produce (whether grown for the fresh market or for freezing or canning) offer some very innovative opportunities for tapping into large supplies of fruits and vegetables. Given the complexity of these transactions, the timeline and costs associated with putting these deals together can be considerable. As a result, PCI is rigorous about weighing the potential costs and benefits for each transaction.
C. A Critical Constraint: Bottlenecks at the partner agency level

As reflected in our interviews with participating foodbanks and earlier Beyond Beauty dialogue with Minnesota produce growers who regularly donate, operational challenges among front-line partner agencies like food shelves are common. While private funding for refrigeration and the like has increased in recent years, Minnesota’s rural food shelves appear to be particularly constrained in their ability to handle fresh produce.

**Challenges on the Front Line**

- Most partner agencies have **limited cold storage**.

- Food shelves rely heavily on **volunteers**. Many volunteers are older, retired individuals, and their physical abilities vary widely.

- Given **limited equipment for moving product**, it can be difficult for volunteers to transport 25 pound cases from trucks into the food shelf, particularly if hand trucks or pallet-jacks are unavailable. Refrigerator and freezer space is often limited.

- Some rural food shelves have **very limited hours** (e.g. once or twice per month) and so can only receive a few days’ supply of perishable produce items. (This contrasts with Twin Cities where more active food shelves are open 5-7 days per week.)

- Some food shelves **restrict how much produce** a family can take and limit the number of times per month a family can visit. Foodbanks have identified the need to encourage and enable their food shelf partners to allow families to obtain more produce more often, particularly given the increasing availability of supply through the state Farm to Food Shelf program.

- Given the realities of chronic poverty, many foodbanks have begun prioritizing healthier options like fresh produce. This orientation has not necessarily filtered down to all food shelves and to the volunteers who run distribution operations at the community level.

In response to these challenges, Minnesota foodbanks have continued efforts to train food shelf staff and offer helpful resources. For instance, The Food Group offers guidance and materials to its partners on marketing and merchandising produce and Second Harvest has provided an extensive toolkit for its agencies as well. Foodbanks’ increased focus on fresh produce is also spurring them to experiment with innovative distribution models that more directly connect produce with populations in need, as highlighted in the example below.
**Pop-up Produce Distribution**

Second Harvest Heartland has begun experimenting with new models of food distribution. In their “pop-up” market model, foodbank staff distribute produce directly from delivery trucks to community members in a church parking lot or community center. One example is the Northpoint Health and Wellness Center in Minneapolis, where clients may pick up produce each Friday from early August through October, get their blood pressure assessed by a clinician, or speak with someone about registering for SNAP. Some agencies that host a pop-up produce market partner with community gardens, where excess produce can be composted if not distributed.

Second Harvest distributed roughly 8 – 12 pallets of produce each week during the summer to each of these markets. This approach moves large volumes of produce quickly while it is at its freshest, with a minimum of infrastructure. This strategy also has promise in more disparate rural communities where population density is lower and food shelves are fewer and farther between.

Expanded investments at the food shelf level will be critical for enabling more produce – whether #1 or imperfects – to flow smoothly to people in need. Cold storage and merchandising support are particularly important. Funding to expand hiring of paid employees and increased training for volunteers is also needed. The philanthropic community and government funders will need to be creative in their approach given the very real challenges of building operational capacity and human capital in large numbers of small, highly dispersed front-line organizations.
Endnotes

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2Personal communications, Tony Mans and Lori Kratchmer, various 2016.
5http://ngfn.org/resources/ngfn-database/Beyond%20Beauty%20-%20Distribution%20Report%203%20FINAL%204-1-16.pdf
6Beyond Beauty: The Opportunities and Challenges of Cosmetically Imperfect Produce. (See Report No. 1: Survey Results from Minnesota Produce Growers)
7To learn more about food justice and food rescue efforts in Minnesota, see the Food Justice documentary from Twin Cities Public Television available at http://www.tpt.org/food-justice/#/episode/food-justice
9http://www.harvesttoendhungermn.org/
11http://mnhungerinitiative.org/
12http://www.hungersolutions.org/about/our-impact/
13http://ngfn.org/resources/ngfn-cluster-calls/beyond-beauty
14http://www.harvesttoendhungermn.org/share_fresh_mn.html
15Communication with Ashley Bress, Grants Specialist, Minnesota Dept. of Agriculture, January 15, 2016. The highest level of participation to date in a single month was November 2015, when 25 farmers were reimbursed. Reimbursements to 10 – 20 farmers per month is more typical.
17Personal Communications, Mary Beth Dickey and Tony Mans, various 2016.
18http://thefoodgroupmn.org/harvest/
19Lori Kratchmer, The Food Group, personal communications, various 2016.
20http://www.borderlandsfoodbank.org/
21Personal communications, Bob Branham, various 2016.
22http://www.2harvest.org/who--how-we-help/services-and-programs/services/produce-capture-institute.html
23http://hungerfreemn.org/the-great-corn-rescue/
24Personal Communications, Mary Beth Dickey, various 2016.
25http://thefoodgroupmn.org/promote-fresh-produce-toolkit/
26http://agencies.2harvest.org/resources/produceandnutrition/
27http://www.northpointhealth.org/
APPENDIX A: INITIATIVE DESCRIPTION

Beyond Beauty: Opportunities & Challenges for Cosmetically Imperfect Produce

In the U.S., a stunning 50% of all the fruits and vegetables go to waste. Many of these losses occur on the farm in the form of produce that is rejected by buyers or is never harvested.

A leading contributor to these losses is the product specifications that drive the produce industry. Large industry players set an extremely high bar for cosmetic attributes, leading to the huge strawberries, glossy apples and zucchini of identical length that grace today’s grocery shelves. Produce that is entirely wholesome but is too large, small or misshapen to meet these standards is generally rejected, never making it into the stream of commerce and resulting in significant market inefficiencies.

What’s more, enormous amounts of water, agriculture chemicals and labor are used to grow produce that is never eaten. Growing water scarcity in major growing regions and shifting weather patterns will make it unlikely that, as a society, we will be able to sustain this level of waste in the decades ahead. If landfilled, fruits and vegetables also release potent greenhouse gases, adding to climate change concerns.

Farmers typically bear the financial burden of produce that can’t be sold because it is cosmetically imperfect (CI). At the same time, foodservice buyers typically pay for “#1” product even though they are likely to cut it before serving it and do not need whole produce that looks beautiful on the grocery store shelf.

Wrapped within that irony is an opportunity – the prospect of increasing financial returns to farmers while also containing costs for foodservice buyers through market development for wholesome, cosmetically imperfect produce. Led by Tomorrow’s Table and the Real Food Challenge, the “Beyond Beauty” initiative is researching and testing this concept. Key components include:

- Conducting research with produce growers in Minnesota to clarify the nature and scale of CI product supply in the state, explore economic considerations in bringing this product to market, identify grower concerns, and determine the most feasible crops given farming conditions in the region.

- Engaging selected distributors and fresh-cut- processors on issues such as market potential for imperfect product, equipment and facility issues, product specifications and marketing.

- Collaborating with Real Food Challenge college and university partners and their foodservice management companies to test this concept and identify success factors and challenges with imperfect produce in college foodservice contexts.

- Garnering lessons learned from organizations in Minnesota’s food recovery system about their use of imperfect produce.

## APPENDIX B:
Use of 2015 State Farm to Food Shelf Pick-and-Pack-Out funding by Crop

<table>
<thead>
<tr>
<th>CY 2015</th>
<th>Reimbursed Pounds</th>
<th>Reimbursement Claimed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potatoes</td>
<td>2,034,420</td>
<td>$114,933.04</td>
</tr>
<tr>
<td>Apples</td>
<td>768,701</td>
<td>$162,377.47</td>
</tr>
<tr>
<td>Cabbage</td>
<td>727,894</td>
<td>$100,707.12</td>
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<tr>
<td>Carrots</td>
<td>687,334</td>
<td>$68,818.70</td>
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<tr>
<td>Sweet Corn</td>
<td>553,669</td>
<td>$81,376.43</td>
</tr>
<tr>
<td>Watermelon</td>
<td>432,135</td>
<td>$51,856.20</td>
</tr>
<tr>
<td>Squash/Pie Pumpkins</td>
<td>403,394</td>
<td>$38,658.40</td>
</tr>
<tr>
<td>Cucumbers</td>
<td>273,646</td>
<td>$43,605.54</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>168,935</td>
<td>$25,340.27</td>
</tr>
<tr>
<td>Cantaloupe</td>
<td>166,266</td>
<td>$29,969.51</td>
</tr>
<tr>
<td>Potatoes</td>
<td>144,400</td>
<td>$11,552.00</td>
</tr>
<tr>
<td>Zucchini</td>
<td>138,183</td>
<td>$35,048.06</td>
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<tr>
<td>Peppers (all)</td>
<td>100,582</td>
<td>$25,998.22</td>
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<tr>
<td>Green Beans</td>
<td>27,310</td>
<td>$9,012.25</td>
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<tr>
<td>Onions</td>
<td>15,547</td>
<td>$1,886.95</td>
</tr>
<tr>
<td>Yellow Squash</td>
<td>14,655</td>
<td>$3,724.20</td>
</tr>
<tr>
<td>Peas</td>
<td>11,964</td>
<td>$4,562.55</td>
</tr>
<tr>
<td>Kohlrabi</td>
<td>11,517</td>
<td>$2,403.04</td>
</tr>
<tr>
<td>Eggplant</td>
<td>10,340</td>
<td>$2,584.93</td>
</tr>
<tr>
<td>Mixed Produce</td>
<td>5,992</td>
<td>$1,260.12</td>
</tr>
<tr>
<td>Eggs</td>
<td>4,356</td>
<td>$2,032.90</td>
</tr>
<tr>
<td>Greens/Lettuce</td>
<td>4,344</td>
<td>$3,258.30</td>
</tr>
<tr>
<td>Beets</td>
<td>1,708</td>
<td>$389.76</td>
</tr>
<tr>
<td>Broccoli</td>
<td>1,380</td>
<td>$342.27</td>
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<tr>
<td>Cauliflower</td>
<td>986</td>
<td>$246.50</td>
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<tr>
<td>Grapes</td>
<td>640</td>
<td>$211.20</td>
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<tr>
<td>Berries</td>
<td>277</td>
<td>$207.75</td>
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<tr>
<td>Brussels Sprouts</td>
<td>59</td>
<td>$12.84</td>
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<tr>
<td>Radishes</td>
<td>30</td>
<td>$7.49</td>
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<tr>
<td>Turnips</td>
<td>4</td>
<td>$0.72</td>
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<tr>
<td>Asparagus</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Green Onions</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Herbs</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Parsnips</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

| Totals      | 6,710,669         | $822,384.81             |

Source: Second Harvest Heartland
## APPENDIX C:
**Farm to Food Shelf per-pound reimbursement rates by crop**

<table>
<thead>
<tr>
<th>Type</th>
<th>Bulk Lbs Rate</th>
<th>Packaged Lbs Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potatoes</td>
<td>$0.05</td>
<td>20 &amp; 50 lbs @ .07, 5 &amp; 10 lbs @ .08</td>
</tr>
<tr>
<td>Winter Squash, Pie Pumpkins</td>
<td>$0.10</td>
<td>$0.15</td>
</tr>
<tr>
<td>Carrots</td>
<td>$0.10</td>
<td>$0.15</td>
</tr>
<tr>
<td>Onions</td>
<td>$0.10</td>
<td>$0.15</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>N/A</td>
<td>$0.15</td>
</tr>
<tr>
<td>Watermelon</td>
<td>$0.12</td>
<td>$0.17</td>
</tr>
<tr>
<td>Sweet Corn</td>
<td>$0.13</td>
<td>$0.17</td>
</tr>
<tr>
<td>Carriage - Red/Green</td>
<td>$0.13</td>
<td>$0.17</td>
</tr>
<tr>
<td>Cucumbers</td>
<td>$0.13</td>
<td>$0.17</td>
</tr>
<tr>
<td>Apples</td>
<td>$0.18</td>
<td>$0.25</td>
</tr>
<tr>
<td>Asparagus</td>
<td>$0.18</td>
<td>$0.25</td>
</tr>
<tr>
<td>Radishes, Beets, Turnips, Kohlrabi, Parnips</td>
<td>$0.18</td>
<td>$0.25</td>
</tr>
<tr>
<td>Broccoli</td>
<td>$0.18</td>
<td>$0.25</td>
</tr>
<tr>
<td>Brussels Sprouts</td>
<td>$0.18</td>
<td>$0.25</td>
</tr>
<tr>
<td>Cantaloupe</td>
<td>$0.18</td>
<td>$0.25</td>
</tr>
<tr>
<td>Cauliflower</td>
<td>$0.18</td>
<td>$0.25</td>
</tr>
<tr>
<td>Eggplant</td>
<td>$0.18</td>
<td>$0.25</td>
</tr>
<tr>
<td>Green Onions</td>
<td>$0.18</td>
<td>$0.25</td>
</tr>
<tr>
<td>Mixed Produce</td>
<td>$0.18</td>
<td>$0.25</td>
</tr>
<tr>
<td>Green Beans</td>
<td>$0.20</td>
<td>$0.33</td>
</tr>
<tr>
<td>Peppers (all varieties)</td>
<td>$0.20</td>
<td>$0.33</td>
</tr>
<tr>
<td>Zucchini and Yellow Squash</td>
<td>$0.20</td>
<td>$0.33</td>
</tr>
<tr>
<td>Berries</td>
<td>N/A</td>
<td>$0.75</td>
</tr>
<tr>
<td>Herbs</td>
<td>N/A</td>
<td>$0.75</td>
</tr>
<tr>
<td>Greens/Lettuce</td>
<td>N/A</td>
<td>$0.75</td>
</tr>
</tbody>
</table>

*Source: Second Harvest Heartland*

All cost reimbursements are by the pound and subject to change November 1, 2015.

Reimbursements are applied to costs of harvesting and packaging for donated produce that would otherwise go unharvested or be discarded.

Pallet costs are included.

Farm to Foodshelf is funded by the State of Minnesota.