






Full Assessment of a

Central Food Processing Facility For Washington, DC

Impact On The Region, Operational Best Practices, and Facility Infrastructure
prepared for DC Office of Planning and the DC Food Policy Council

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About DC Office of Planning, Cureate, and Food Works Group

District of Columbia
Office of Planning



District of Columbia
Food Policy Council



DC Office of Planning is tasked with planning for the long-term growth of the District of Columbia, in which all District residents can thrive, regardless of income, race, age, or background. OP guides development in the District of Columbia's distinctive neighborhoods by engaging stakeholders and residents, performing research and analysis, and publishing various planning documents.

DC Food Policy Council is a coalition appointed by Mayor Muriel Bowser to drive policy towards a more equitable, healthy, and sustainable food system in the District. The FPC works with District agency and community partners to increase food security, and identify and alleviate food access barriers for residents and businesses, and promote the local food economy.



Cureate is a social enterprise, woman-owned business building an empowered food & beverage supply to meet a changing consumer demand. We exist to build an interconnected and diverse supply system by shifting dollars back into local small business through procurement, entrepreneurship education, and consulting. Our focus is on the food & beverage industry, which deeply touches all of our lives, and where there is an immediate need to change how we do business. We provide strategic counsel to help both big and small businesses navigate shifting consumer tastes and interests, as well as work with city government partners in understanding the economic impacts of fundamentally reimagining the supply chain.

Kim Bryden, *Founder and CEO*
Project Co-Lead



Food Works Group is a women-owned consulting practice that specializes in devising solutions and measuring progress across the food system. The group has implemented programs devoted to food business management, food hub networks, culinary operations, and food production, with a specific focus on regional supply chains and food security. With over two decades of experience in food systems management, Food Works Group designs studies to measure program feasibility and assess best practices, and helps clients find new opportunities to work collaboratively and efficiently. Clients of Food Works Group include non-profit, for-profit, and governmental entities, including city and county governments, agricultural food hubs and networks, shared-use kitchens, hunger-relief organizations, and commercial food accelerator programs.

Wendy Stuart, *Co-founder and Principal*
Project Co-Lead

Emily Paul, *Food Works Group's Senior Consultant* and **Dana Rocks**, *Cureate's Director of Strategy* added immeasurable value to this study.



Study Goals

This study evaluates the concept that the District would benefit from a Central Processing Facility (CPF) that provides and consolidates core functions such as aggregation, storage, processing, and co-manufacturing for K-12 public and public charter schools, District agencies, other institutions, private businesses, and regional distributors.

Before the FPC and Food Policy Director position were created, many different communities and agencies had been addressing issues of food access, urban agriculture, challenges for small businesses, and diet-related health disparities in the District of Columbia for many years. The FPC's goal is to bring these parties together in one place to collaborate on improving food access, sustainability, and the local food economy to better serve all District residents. This report provides analysis and recommendations meant primarily for District government officials and policymakers focused on food procurement, workforce, and economic development; DC's food non-profit organizations and businesses; and potential financial partners.

With such principles at its core, a CPF could enhance consistency of lightly-processed product for school and other institutional food; facilitate the purchase of regional product, year-round, by District businesses; provide space to store and preserve local food throughout the year; support producers in the region, including small, urban, emerging, and Black, Indigenous, and People of Color (BIPOC) farmers, by providing guaranteed access to storage, sales channels, and other functions of a CPF; support nutritional standards; provide equitable access to local food; and address key infrastructure gaps in the District's supply chain — all of which will

create opportunities to bolster food resiliency and foster economic development in the District and the surrounding region.

In order to characterize and prioritize the functionality of a CPF, the study team explored the following topics:

- **Management:** what entity should manage such a facility, and why
- **Operations:** how a CPF can fill gaps to support the regional supply chain, and bolster both the supply of and demand for regional food
- **Physical facility:** what physical infrastructure is required for a CPF to fulfill its core functionality
- **Partnerships:** how a CPF can interact with District agencies, nonprofit partners, and others

¹ Based on conversations with CPFs across the country, the research team concluded that the term, "Central Processing Facility" is a more appropriate descriptor than "Centralized Kitchen Facility," due to core functionality, size, and precedence.

Note: The short and longer-term impacts of the current COVID-19 public health emergency situation have been considered in this report. Section V: Food System Change illustrates how the CPF is a cornerstone to such change.

Key Terms

Key terms are defined below specifically as they relate to this study. Definitions from USDA National Agricultural Library, regional food-related studies, and other resources are utilized below when relevant. Italicized words embedded in the definitions below are also defined in this section.

Aggregation is the process of bringing together various food products from multiple producers and/or processors to one central location. (Source: [Mid-Atlantic Food Port Feasibility Study, p. 10](#))

Best-Value Contract refers to a contract in which the procurement process considers factors such as quality, performance-based criteria, and expertise, in addition to price, when selecting a vendor. A **Best-Price Contract** considers price as the only factor.

Blast Freezing refers to the process of rapidly freezing food by passing chilled air over the product using high-velocity blowers. This process forms smaller crystals than conventional freezing, preserving the quality of the food.

Broadliners or **broadline distributors** carry a wide assortment of food and non-food products for purchase by a variety of accounts, such as restaurants, institutions, and other venues where food is served. Logistics, transportation, warehousing, and other operations for broadliners are sophisticated and present challenges for interfacing with smaller, local or regional food system entities. (Source: [Mid-Atlantic Food Port Feasibility Study, p. 10](#))

Central Processing Facility (CPF), for the purpose of this study, refers to a food facility that conducts production and processing for *speed-scratch cooking*, as well as full meal production for stakeholders without finishing kitchens; aggregation, storage, and co-manufacturing are also core competencies of such a facility. The research team chose this phrase to characterize the facility that is the focus of this study, because the functionality exceeds that of a central kitchen. Central Processing Facility is an industry-standard phrase for such a facility.

Clean-label refers to the concept of a short list of easily-identifiable, *minimally-processed* ingredients that are used to create a food product such as tomato sauce or bread.

Co-manufacturing is contract production and packaging of bulk food items and *consumer packaged goods* (CPGs). This report is considering *co-packing* as a component of the co-manufacturing function.

Co-packing is contract production and packaging of food products, generally on a smaller scale than co-manufacturing.

Commodities, for the purposes of this study, refer to agricultural products that are grown in large quantities and are undifferentiated, such as chicken or carrots. USDA provides funding to DC public and public charter schools and other institutions and agencies to purchase commodity products.

Consumer Packaged Goods (CPGs) are consumable products that are intended to sell quickly and at a relatively low cost compared to durable goods, like appliances and vehicles. In this study, CPG refers to a specific type of packaged food or beverage, or to the broader category of packaged foods and beverages. (Source: [Mid-Atlantic Food Port Feasibility Study, p. 11](#))

Cook-chill refers to a food production method in which food is cooked and chilled, and later heated as required when ready to be finished and consumed. Benefits of the cook-chill method include extended shelf life, reduced labor costs, and increased consistency.

Cross-docking is a logistics procedure where there is a transfer of product or temporary storage of items in a facility. Typically, the liability and product responsibility is that of the cross-dock venue, but the ownership of the product is not assumed by the cross-docking agent.

Distributors are companies that move raw and processed food products through the supply chain. They aggregate food from multiple producers and often process and package it, as well. They generally do not produce raw ingredients. This broad term includes food hubs, co-ops, and *broadliners*, as well as regional distributors. (Source: [Mid-Atlantic Food Port Feasibility Study, p. 11](#))

Equity refers to the principle of being fair and impartial as an individual, group, or organization engages with others in a system, particularly for systems of grievance. It reflects processes and practices that acknowledge a world where individuals have been afforded different and/or unequal resources and treatment, while also working to remedy this status quo. (Source: [Brandeis University](#))

Food hubs are centrally-located facilities with a business management structure facilitating the aggregation, storage, processing, distribution, and/or marketing of regionally-produced food products. (Source: USDA)

The **Food Safety Modernization Act (FSMA)** was enacted by Congress in response to changes in the global food system and in the current understanding of foodborne illness and its consequences, including the realization that preventable foodborne illness is both a significant public health problem and a threat to the economic well-being of the food system. (Source: FDA)

Food service providers (FSPs) provide prepared food to customers. It is a broad term that includes, for example, restaurants, institutions that have their own chefs, and vendors that fully prepare food at a large establishment's onsite kitchen. Many institutions contract with an external FSP, e.g., Sodexo or Revolution Foods, for their food service operations, but some opt to do all of their food preparation independently. The latter are known as *self-ops*, defined below.

(Source: [Mid-Atlantic Food Port Feasibility Study, p.12](#))

Food system refers to a complex web of activities involving the production, processing, transport, and consumption of food products. Issues concerning the food system include the governance and economics of food production, its sustainability, the degree to which food is wasted, how food production affects the natural environment, and the impact of food on individual and population health. (Source: [Oxford Martin Programme on the Future of Food](#))

Good Agricultural Practices (GAP) is a voluntary audit that verifies that fruits and vegetables are produced, packed, handled, and stored as safely as possible to minimize risks of microbial food safety hazards. (Source: USDA)

Good Food Purchasing Program (GFPP) provides a metric based, flexible framework that encourages large institutions to direct their buying power toward five core values: local economies, environmental sustainability, valued workforce, animal welfare and nutrition. (Source: [Center for Good Food Purchasing](#))

Growth-stage business, for the purpose of this report, refers to a business growing in revenue to over \$1 million annually, and/or one with more than 10 employees.

Hazard Analysis and Critical Control Point (HACCP) is a management system in which food safety is addressed through the analysis and control of biological, chemical, and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product. (Source: [FDA](#))

Individually quick frozen (IQF) refers to a fast-freeze preservation technology used to minimize the size of the ice crystals that are formed in order to preserve the texture, flavor, and shape of the product. The IQF method can be used for produce and protein.

Institutions are established organizations or corporations, especially of a public character. Institutions may be for-profit, non-profit, or governmental entities, and include colleges and universities, senior living facilities, prisons,

hospitals and health care systems, and K-12 schools and school systems, among others.

Key Performance Indicators (KPIs) refer to the critical indicators of progress toward an intended result. (Source: [KPI.org](#))

Minimally-processed foods or **Lightly-processed foods** refer to raw agricultural products that have been altered without creating a substantial change in their nutritional properties, e.g., removal of inedible parts, chopping, parboiling, and/or freezing. The two are used interchangeably.

Processors are entities that convert raw foods into a variety of convenient, ready-to-use end products, including everything from chopped and pureed produce to CPGs. Processors may also package and ship processed items. (Source: [Mid-Atlantic Food Port Feasibility Study, p.13](#))

Producers are farmers, ranchers, *CPG* makers, and watermen. They produce crops, breed livestock or seafood, or make packaged goods. (Source: [Mid-Atlantic Food Port Feasibility Study, p.13](#))

Regional, for the purposes of this study, refers to food produced in and around the District. Because a regional perspective is more inclusive of stakeholders in the **Mid-Atlantic** food ecosystem, this term was chosen over local. This is not strictly defined, but can include the seven-state region, made up of Maryland, Virginia, West Virginia, Pennsylvania, Delaware, New Jersey, and North Carolina, as defined by the Healthy Schools Act of 2010.

Self-operations (self-ops) refers to an operational concept whereby institutions and businesses do all of their food preparation independently, without engaging a traditional FSP. Self-ops entities typically buy their food from distributors, and may include hospitals, universities, senior/rehab centers, and K-12 schools, among others. (Source: [Mid-Atlantic Food Port Feasibility Study, p.13](#))

Speed-scratch cooking refers to large-batch cooking that incorporates pre-prepared ingredients and *value-added products* into recipes to ensure consistency and reduce labor costs.

Supply chains are systems of companies, people, activities, information, and resources involved in moving food from producer to end-use customer. A **regional supply chain** operates entirely within a specific region, from producer to end user. (Source: [Mid-Atlantic Food Port Feasibility Study, p.14](#))

Upskilling, for the purposes of this study, refers to providing employees additional culinary skills training to support job advancement and career development.

Value-added products, for the purpose of this study, refers to food products that have been changed in physical state or form (such as milling wheat into flour or making strawberries into jam), resulting in an expanded customer base for the raw ingredients and a greater portion of revenue available to the producer. (Source: [Mid-Atlantic Food Port Feasibility Study, p.14](#))

Vendor refers to a person or business that sells products or services. For the purpose of this study, vendors sell produce, protein, other ingredients, and processed food. Related to vendor is **supplier**, which refers to a person or business that provides a product or service. A vendor is a supplier, but a supplier may not be a vendor.

Wholesale refers to the sale of food products in large quantities for resale by retailers, institutions, or restaurants, among others.

Workforce development refers to the process of improving worker skills to enable the long-term success of employees and businesses alike. It gives each employee the competencies they need to help the business achieve its goals, and to help the employee advance his/her career. (Source: [Penn Foster](#))

The **Special Supplemental Nutrition Program for Women, Infants, and Children**, or the **WIC Program**, refers to the program that provides nutritious foods to supplement diets of low-income pregnant, postpartum, and breastfeeding women, infants, and children up to age 5 who are at nutritional risk. (Source: [USDA](#))



Food Systems Change

The creation of the DC Food Policy Council (FPC) in 2014 cemented the District as a National leader committed to creating meaningful change within its food system for its residents and businesses.

The establishment of the FPC has led to increased stakeholder, non-profit, private, and District agency coordination along with the production of numerous reports, studies, and strategies to help implement food policy within the District. To that end, the District's food economy is rapidly changing. According to The Food Economy Study, over 71,000 workers, or 8% of all sectors, were directly employed by the DC food sector. The food economy (prior to the COVID-19 public health emergency) had grown by a staggering 72% in employment, as compared to an average 21% growth across all other sectors for the 15 year period between 2001 and 2016.

However, the public health emergency has altered the roles of food system stakeholders in the District and exacerbated existing inequities. Those once-robust food and hospitality businesses have been forced to revisit their functions and core business models in response to new needs, resulting in mass lay-offs, or staff members oftentimes having to make a difficult choice between unemployment or risking exposure to COVID-19 in the workplace. As stakeholders have been forced to hit pause and reassess operations, the District has the opportunity to shed light on and address the inequities the food system faces as detailed in the Food Economy

Study and the Make Food Work Strategy. Some of these, accentuated by the COVID-19 public health emergency, include historically disjointed institutional food service operations, operational and financial inefficiencies resulting from multiple FSPs in one jurisdiction, nonstrategic procurement practices with little emphasis on purchasing power opportunities or local supply chain integration, insufficient cross-training skills development, outdated (though slowly improving) school kitchen facilities, and the lack of centralized processing.



"I think you really have to embrace the central facility concept. So many people think, 'if I just do this or this differently, or change the equipment, the operations and output will drastically improve.' But really, you have to commit to a systems overhaul or it's not going to work."

— Pam Tsakalos, Nutrition Services Director, Davis (Utah) School District

Tackling this multifaceted set of challenges directly speaks to the establishment of a more aligned local food ecosystem, and will help move the needle toward supporting the future of food in the District and specifically the 2020 DC Food Policy Priorities. Further,



the recently amended DC Comprehensive Plan prepared by the DC Office of Planning emphasizes the importance of leveraging workforce development as a pathway to economic prosperity and promoting opportunities to build facilities to expand healthy food access, host job training, and incubate local food businesses. New infrastructure, along with a well-conceived implementation plan, would strengthen opportunities to do so. Executed properly, a CPF could help provide equitable access to healthy, regionally-produced food to all District residents, and provide a venue for programming and a strong support network for a variety of food businesses, ranging from farmers to food entrepreneurs. Specifically, such a facility could increase the quality and reduce the price of food served in District institutional settings; house programming for nutrition education and workforce development; provide physical infrastructure, such as cold storage, aggregation services, and other support for regional farmers, food producers, and federal nutrition programs; offer opportunities for small food businesses looking to expand their reach; and continue to bolster the District's food economy.

Food system change can be defined and evaluated based on the following KPIs: beneficial social, cultural, environmental, and health outcomes; positive economic impact on independent farmers, food businesses, and associated stakeholders; increased efficiency of regional food transportation, logistics, and distribution operations; creation of quality, living-wage jobs with advancement channels, as well as a supporting workforce; and additional opportunities to recirculate dollars within the District and Mid-Atlantic region, while anchored by the core values of equity, opportunity, sustainability, and resilience.

With such change as its primary purpose, a CPF is fundamental in inclusively engaging the stakeholders in the regional food ecosystem. Impact will be realized through the following efforts:

- **Identify** underserved and emerging farmers, BIPOC-owned farms and food businesses, regional distributors, underserved consumers, and others.
- **Address** inequities in the food system by building a pipeline of supply, with a focus on BIPOC farmers and food businesses.

- **Engage** District agencies, e.g., DC Public Schools (DCPS), and anchor institutions to procure regional food.
- **Reform** contracting processes to promote equitable access, transparency, and increased purchases of higher-quality regional food.
- **Uncover** additional potential purchasers, e.g., other District agencies, universities, and area K-12 school districts, private schools, and private-sector retail channels.
- **Overcome** the barriers to culturally-relevant food access by addressing the ongoing needs of underserved consumers and bolstering the food resiliency of the region through emergency preparedness.



“One important benefit of the CPF is to enhance community resilience by improving access to one of the essential FEMA lifelines during an emergency — food — as well avoiding some of the cost of food assistance during those events.”

— Mark Scott, Critical Infrastructure Specialist, Homeland Security and Emergency Management Agency (HSEMA)

The intention of this study is to provide context and recommendations for the core functionality of a CPF, and, ultimately, actionable steps to lay the groundwork for these efforts. This facility is intended to centralize and consolidate food operations; however, if executed thoughtfully, its impact could be far greater than the sum of its parts.

The following section, the **State of the District**, reflects on the current District food system landscape, and its strengths, weaknesses, opportunities, and potential threats.

The **Case Studies** provide a national view of best practices of food systems change happening across the country through CPFs.

The **Best Practices and Recommendations** are determined based on those assessments from a local and national perspective, underscoring the value of creating space to shape and enhance systemic change.



State of the District

The State of the District assesses the current food system landscape through its strengths in people and organizations; its weaknesses propagated through lack of access; its potential revenue and economic opportunities; and its threat to the District’s food resiliency and emergency preparedness.



Strengths

Geography and Stakeholder Engagement

The District is positioned both geographically and politically as a central hub for agriculture, policy, and commercial activity. It is a large purchaser of agricultural products from the surrounding rich agricultural land of Maryland and Virginia, and has political leadership supportive of investments in nutritious food for all residents.

According to Lindsay Smith, Regional Food Systems Value Chain Coordinator for the Metropolitan Washington Council of Governments (MWCOG), there are a number of food system support organizations and a wealth of engaged stakeholders around the region, including urban agriculture and school garden programs, soil conservation programs, and well-established Extension departments at land-grant universities that foster agriculture and food distribution in the region, especially the infrastructure in Howard County and Prince George’s County.

Furthermore, the District’s role as a center for policymaking raises the standards and expectations

for other jurisdictions around the country as they look to the capital to lead by example. Whether it be firmly establishing local food procurement policies in public institutions, or developing systems and facilities that make higher-quality food for all DC school children more attainable, a CPF could foster opportunities for individuals, businesses, and organizations to engage more equitably in pursuit of a better food system.

People and Organizations

A distinct asset in the District’s food system is the city’s committed residents and mission-driven organizations. Chris Bradshaw, Executive Director of Dreaming Out Loud (DOL), explains that the District and its surrounding community are strengthened by the city’s organizations and networks, and their roles in publicizing initiatives and rallying support around locally- and regionally-grown food. Examples include FRESHFARM’s pop-up food hub, which supports farmers and equitable access to local food through it’s novel, infrastructure-light model, and DC Greens’ Well at Oxon Run, a planned farm and



community wellness space in Ward 8, developed in partnership with the Green Scheme and Department of Parks and Recreation. Such organizations provide capacity and resources to strengthen the food landscape and its impact on the city's residents.

There are several organizations in the greater food ecosystem whose focus is more on education and advocacy for healthful choices, which positively affects how the District as a whole consumes local agriculture. Some of the pioneer organizations in the District's food space have built well-regarded programs (YMCA/ National Youth Baseball Academy partnership, Oasis Community Partners) doing the important work of providing nutrition education, health promotion and clinical integration programs that have centered on food as a social determinant of health (YMCA); and culinary workforce development (DC Central Kitchen). Additionally, organizations that traditionally don't operate in the food space, such as THEARC, now focus heavily on food needs of their communities. Identifying the existing capacities of these organizations has helped clarify what complementary operational infrastructure is needed, some of which could be housed at a CPF. This shows the ample opportunity to partner with leading organizations to serve District residents.

According to the Make Food Work: A Strategy to Strengthen the DC Food Workforce study, [one] of the biggest food [employment] sectors are restaurants and bars, which employed 53,813 individuals in 2016. The available labor force and pool of experienced culinary talent — a cadre of individuals that has increased in number due to the significant hit hospitality jobs have taken during the COVID-19 public health emergency — has potential employees at the ready with interests in local food as well as a baseline understanding of food processing, food safety, and food service operations.

Austin Bowen, Food Operations Manager at George Washington University's Hospital, points to the diversity, creativity, and sheer number of people in a city like the District as a significant benefit, offering opportunities for innovation and collaboration, as well as support for new operations and growth as opportunities arise. A CPF could be a significant job creator and sustained employer for a diverse and diversely-talented workforce.

In addition to the people and organizations at the helm of local food and agriculture in the region, the programs, services, and connectivity of organizations makes it possible for burgeoning entrepreneurs to thrive. Shared-use kitchen spaces within the District, such as Mess Hall, Union Kitchen, Tastemakers, and Eats Place are one way to network and support the capital-intensive costs of launching a food business. Mess Hall Founder & Owner Al Goldberg, notes that shared-use kitchens like his — in combination with economic development corporations, local banks, and community development financial institutions (CDFIs) such as Washington Area Community Investment Fund (Wacif) — now make it possible to launch a food enterprise with \$5,000 in start-up capital, whereas 7-10 years ago, it would cost upward of \$500,000.

Furthermore, within the District are several anchor institutional buyers, including universities, and local restaurant groups such as ThinkFoodGroup and CAVA, with significant purchasing power and potential to purchase locally-made food products to streamline production and enhance quality and consistency across all locations. Learning the specific needs of large purchasers will identify how a CPF can fill gaps and create niches that differentiate it from other food processors and distributors.



Weaknesses

Inequities

It is difficult to celebrate the strengths of the District's food ecosystem and intertwined food and farming communities without calling out the patent inequities

between those leading food businesses and those working for them, as well as inequalities in pipelines to leadership roles across local communities. The Sustainable DC 2.0 Plan begins to address these systemic inequities by "working with cities from across the country to learn



about best practices in inclusive community engagement, using sustainability as a method of decreasing inequity at the city level,” and incorporating community-level feedback in the planning process. It remains important to note that, stated in the Make Food Work report, systemic disparities are aggravated by the high cost of living near food service jobs, unreliable public transportation, a broken pipeline for education and training to bolster the success rates of BIPOC food entrepreneurs, and barriers to capital and financial resources. Small business food enterprises also struggle with high commercial rents and minimal tax incentives and reimbursements. Mess Hall’s Goldberg says that in just one year, the incubator’s property taxes increased by 82.3%, representing a \$13,000 increase, despite no changes to business or land improvement. These high costs are burdensome to both owners and tenants, as commercial leases almost always pass such property taxes through to lessees. Additionally, the minimum wage increased from \$9.50 when Goldberg hired his first employee in Spring 2015 to \$15 as of July 2020, which is a 58% jump in just five years. While this increase is critical to ensure food industry workers come closer to a living wage, both the timeline and amount present significant challenges to business owners.

The U.S. incentive system for commodity food products, systemic racism in financing, and barriers to accessing traditional retail and wholesale marketplaces create and exacerbate the inequities of emerging and BIPOC farmers by limiting their access to capital and stifling their growth opportunities. In addition to lacking equipment and physical infrastructure, many of these farmers lack information on how to access grant programs and loans, and the time and resource capacity to apply. Such financial programs, if attainable, would help emerging farmers prosper, according to DOL’s Bradshaw. A CPF must not only be accessible but also mindful of systemic inequities, and must address these challenges with process, procedure, programs, and policies. According to Michael Carter Jr., owner/operator of Carter Farms, the food system is designed in such a way that the farmer is expected to fit into the system, rather than participate in a collaborative process that supports both farmers and purchasers. Carter underscores that this is particularly true of African American farmers; the current food system is commoditized and values aesthetic beauty of produce over nutrition and health, benefitting large industrial farmers, but not smaller farmers, especially black farmers

like himself who, from his perspective, often grow crops to maximize nutrition or preserve a heritage breed.

Land Access

The high cost of land access and the scarcity of tenable land is cited by several interviewees, including Niraj Ray, founder of Cultivate the City. Ray was forced to close several of his growing sites due to the difficulties in obtaining basic inputs required to grow food, such as water, electricity, and compost services. Some of the food system’s greatest areas for improvement include infrastructure and the democratization of opportunity. Local farmers — particularly urban farmers like Ray who implement non-traditional agricultural practices (rooftop gardens, hydroponics) — have historically been barred from institutional and traditional sales channels, land and facility access, and have experienced other systemic obstacles to success, such as challenges navigating District regulatory agencies or the lack of processes for food and farming businesses, forcing them to innovate in order to simply operate. Inaugural Director of Urban Agriculture Kate Lee is looking critically at how the District supports farm businesses, including land permitting and tax abatements for upwards of \$20,000 per year as an incentive to land owners to lease land for farm purposes.

Infrastructure

Nearly every stakeholder the research team interviewed emphasizes the lack of cold storage in the District and the surrounding region as a prime area of opportunity for a CPF. Rob Jaber, Executive Director of DCPS Food and Nutrition Services, discusses how cold storage, storage for frozen commodity purchases, frozen local products during seasonal gluts, and other bulk ingredient production are nearly impossible to accommodate in a central location with the current infrastructure. Additionally, a centrally-located receiving and wash-pack-store area for local farmer aggregation is shouldered by farmers markets and the infrastructure of businesses outside the District, such as 4P Foods, which could greatly benefit from an urban warehouse location to increase the number and scale of institutional sales.

With multiple anchor purchasers and potential facility uses, a CPF must account for substantial storage and aggregation space within its facility grounds, including refrigeration, freezer, and shelf-stable, food-safe space



for use by multiple occupants and partners of the facility. Jaber of DCPS also notes that right now storage is very limited, and that there is a significant need for kitchen equipment storage; the ability to store backup units, refurbished pieces, and flexible pieces of equipment would be a long-term cost savings. Overflow space to enhance the ability to purchase, store, and process food

at scale when price is low and supply is high could also enable purchasers to recognize significant cost savings in the first year alone. Additional space requirements include the ability to separate allergens, genetically modified organisms (GMOs), and organic items for additional value-added benefits.



Opportunities

Efficiencies Through Co-Locating Operations

In a city with limited space and facilities, offering access to cold storage and transportation resources for community-based food access and farming nonprofits could exponentially increase their impact on sales, food recovery, and more. Cultivate the City's Ray cites access to cold storage and aggregation capabilities as just two of the benefits of a CPF. He also noted that with new market access and sales support, he could increase his production by at least 200% if he did not have to seek out markets for his products. Ray was forced to pare down his sites from 25 to four in 2018 because so much of his time was spent seeking storage and sales outlets; yet in 2019 he garnered \$100,000 in sales from one acre of land. With additional resources, he could increase his production substantially, creating more opportunities for his product to supply larger institutional and wholesale buyers.

Higher Quality Institutional Food

For DC public schools and public charter schools, and other institutional food service actors such as colleges, universities and suburban K-12 public school districts throughout the region, a CPF would enhance seasonal availability, allowing for purchase, storage, and utilization of minimally-processed regional crops. The ability to purchase minimally-processed bulk food products as ingredients not only drastically increases the amount of local food being served, it also streamlines production, increases efficiencies in labor, and enhances quality and consistency — with the latter two driving repeat sales and increased meal participation. Sodexo's District Manager Roland Rutjens cites that quality, consistency, and storage across 91 school sites could be improved by a CPF.

When discussing the quality of other institutional food programs, such as early childcare centers, Dalila Boclin, who runs the FRESHFARM's farm-to-childcare program, references the need for a central produce processing facility in order to integrate more local, sustainable, and small farm fresh fruit and vegetable consumption in District-run childcare facilities. Similarly, centers for incarceration and senior meals programs could be significant purchasers and consumers of contracted food products from a CPF.

Food quality often improves as a result of outspoken consumers demanding more transparency and accountability around where their food comes from, how it is grown, and how it makes its way to their plate. Individuals in the District and surrounding areas are increasingly vigilant about holding buyers accountable, and are likely to show strong preference and approval for institutions that purchase from a facility that reduces carbon emissions due to shorter food transportation distances from a central location, encourages suppliers to practice sustainable growing practices, and prioritizes how its workers are treated and paid.

Aggregation

Almost all interviewed individuals at food-related organizations in the District and surrounding region say they would benefit greatly from a centralized aggregation facility, both for their own food business needs and to feed into opportunities housed at a CPF, including FRESHFARM, DOL, and Cultivate the City. Additionally, regional businesses such as Arcadia, 4P Foods, and regional food hubs utilizing this aggregation function would increase the scale of available regional foods,



allowing the District to provide institutional food at a competitive price point.

Cold Storage

Short-term and long-term cold storage allows for local products to be harvested at peak and used throughout the year. Amy Bachman, Director of Procurement and Sustainability at DC Central Kitchen (DCCK), cites the need for minimally-processed produce and value-added products for greater utilization in DCCK school meals and other institutional food preparation, and noted blast-chilling and IQF freezing technology specifically as ways to utilize the most product over the longest period of time.

Processing and Co-Manufacturing

Processing can be segmented into produce, including wash/sort/pack functions and value-added produce processing; proteins, including USDA commodity purchases and institutional contract manufacturing; and other co-manufacturing area businesses, such as Prescription Chicken and Snacklins, that have taken their production needs outside of the District because the infrastructure needed to produce their products at scale is not available. The ability to perform contract manufacturing, as well as necessary Research and Development (R&D) for schools and other purchasers, would bolster both the local and regional food business sector, and create revenue generating opportunities to sustain a CPF itself. Excellent-quality, commercial-grade manufacturing equipment can be extremely costly, but interviewees around the country have told the research team that spending more for quality pieces on the front end will ensure facility efficiencies and fewer repairs as the equipment ages.

Distribution

Distribution and appropriate transportation services will be a critical component of a CPF and must take into consideration the logistical confines of the District. Additionally, the potential in outside sales to other institutions would require a reliable and flexible set of transportation solutions. Technology that addresses aggregation, processing, and distribution, to include functions such as inventory management, sales, labor and production tracking, and other data points that would provide critical, real-time feedback to supply and demand forecasting and sales projections, would strengthen distribution needs and associated functions. Also, creating

a distribution arm for small, local business products as a part of this facility would support early-stage food entrepreneurs.

Revenue and Economic Growth

This facility has the potential to not only cover its operating costs, but also to provide additional revenue back into the District. Pending the financing and management structure of a CPF, the research team sees the possibility of a revenue-sharing opportunity to funnel funds back into the District's surplus budget or into a fund to invest in other local food businesses.

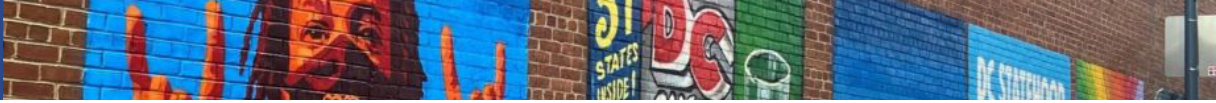
Regional Purchasing

Spending regional dollars on regional food by way of preferred regional procurement practices and institutionalized policies will undoubtedly create opportunities for new, minority, and other underrepresented food business stakeholders to access opportunities and thrive due to policies and regulations that remove barriers and incentivize sustained local purchasing across all institutional actors.

Traditional procurement preferences and contracts must be addressed when looking to positive change throughout the District's food system. For example, the principles behind best-value contracting could support the transition toward reprioritized values for procurement, and therefore warrants further due diligence research on other jurisdictions, such as Pennsylvania, New York, Oregon, Michigan, and Vermont, that have proven successful in restructuring procedure and policy.

Job Creation

Assessing labor and staffing models for cross-training, supporting existing workforce development programs such as those of DCCK and Carlos Rosario Culinary Arts Academy, and exploring how managed food service can interact with a CPF, are significant foci of this study. Transitioning to job creation as a means to economic vitality, with hourly jobs as well as career development (upskilling, reskilling) opportunities, will be an important topic given the predicted surplus of skilled food workers in the market after the COVID-19 public health emergency. Building the capacity of institutions to prepare and serve food, as well as creating professional channels for processing and managerial positions within a CPF, are important components of a resilient food system.



Threats

The Cost of Contract Operations

Although the District takes steps to try to contract with small businesses, most food procurement contracts in the District still rely on the national supply chain, broadline food distributors, and national contractors, thus spending millions of dollars on products and services from other regions rather than supporting local producers. Betti Wiggins, nutrition services director for Houston Public Schools, cites a \$6 million savings by transitioning her district's food service operations to self-operations and greater local food sourcing. A CPF has the power to create a supply chain of produce and people that is self-operated and regionally-supplied. Preferred contracts with national vendors can be dismantled when large institutions redirect their procurement toward locally-based suppliers. Redefining contract language to clarify goals (and minimum expectations) for local food procurement can have sizable financial implications at a local and regional level.

Emergency Response and Food Service Resilience

According to Mark Scott, Critical Infrastructure Specialist at the Homeland Security and Emergency Management Agency (HSEMA) for the District, a CPF could be part of a larger solution to manage interruptions in the food supply, as well as increases in demand for food assistance

if there are disruptions to congregate meal programs for students, seniors, and others that rely on such programs. He references FEMA pre-disaster mitigation funding as a possible avenue for joint-funding this facility.

This vulnerability has been realized during the recent COVID-19 public health emergency, with food insecurity rates increasing sharply, particularly among children, seniors, and other vulnerable groups. Lessons from this prolonged threat to the District's food system can be an opportunity to plan for pre-disaster mitigation so we are better prepared for the next emergency.

In addition to preventing supply chain and logistics issues, the COVID-19 public health emergency also presents significant public safety and human safety concerns. A CPF will have the ability to centralize Food Safety and Human Safety programs and practices. Small facilities often lack the capacity to address these concerns fully. For this reason, a CPF must have the reserved capacity to pivot in times of food scarcity or instability and keep fed those most vulnerable in the community. Human and food safety operations have seen a dramatic shift through reduced capacity tied to social distancing, the incorporation of personal protective equipment (PPE) in typical day-to-day activities, and the need to adapt to constantly changing circumstances in real time.

Case Studies

Twelve self-operated K-12 school districts were interviewed, based on their initiatives, successes, and focus on regional food procurement and processing.

The following four districts are particularly compelling based on their innovation and impact, and their respective interviews have been developed into case studies: Boulder Valley School District (Boulder, Colo.), Davis School District (Farmington, Utah), Minneapolis Public Schools (Minneapolis, Minn.), and Napa Valley Unified School District (Napa, Calif.). Additional takeaways from three other notable districts are included as Appendix D.

Recurring themes emerged throughout the research of these school districts, discussed below.

Theme 1: *Build the facility that makes the food you want to serve.*

When you design with the end user in mind, you are building a facility that supports quality output. Nutrition services directors, chefs, procurement specialists, and facility managers across school districts agree that, when planning a CPF, it is critical to let the menus and outcomes drive the design of the buildout. Leading CPFs use cook-chill production methods to make sauces, dressings, and entree bases; cook proteins; and minimally process in-season regional produce for use immediately and throughout the school year.

Theme 2: *Ample cold storage helps CPFs maximize the purchase and processing of local, seasonal food.*

CPF operators all say to plan for a ratio of 3:1 cold storage-to-production space. Additionally, they recommend ensuring that at least one-third of the freezer storage is allocated to local procurement and commodity buying for DCPS, as well as contract production for area institutions and districts. This benefits local growers as well as guarantees the availability of local food year-round for schools and other purchasers.

Theme 3: *Additional revenue can be generated for a CPF through contract manufacturing of commodity products and other value-added products, minimally-processed produce, ad hoc contract meals production, and cold and freezer storage rentals.*

Co-locating manufacturing services, ingredient processing, and centralized storage of items purchased in bulk in a CPF supports a number of additional revenue streams. Additionally, this functionality can support food security, hunger relief, and emergency assistance, creating a stockpile of minimally-processed produce and proteins, as well as batch-cooked meals to be deployed as needed. Further, prepared meals production could be beneficial when a school is refurbishing a kitchen, a charter school is in the process of building out its nutrition program, a newly-established early childcare center needs support launching its food operation, or an agency or social services partner recognizes an unmet need for quality food for the individuals or families it serves.

Theme 4: *Transitioning school district food service staffing models to self-operations allows for ultimate control and flexibility in staffing, procurement, and culinary operations.*

Every school district the research team spoke with across the country points to the clear advantages of transitioning to self-ops. In doing so, facilities can cross-train personnel and create flexible job descriptions to minimize the financial burden of specialized positions that are mandated by FSPs. Specifically, owning and operating the purchasing function allows for the management of the vendor procurement process to be rooted in best-value product selection instead of lowest bid; and investing in cross-training staff creates efficiencies, and saves time and money, with the ability to move employees around in-house, as needed.

Additionally, self-ops allows for districts and CPF facilities to develop menu items that are responsive to seasonality and tailored to the specific needs of their end users. A self-ops model coupled with a CPF allows for menu items to be culturally-appropriate and relevant to the communities it serves. And self-ops districts maximize the utilization of

a CPF due to few, if any, exclusive vendor relationships and purchasing rebates to national broadline suppliers; self-ops could therefore generate significant revenue through contract manufacturing that would not be viable if staffed by a third-party company.



Case Study 1

BOULDER VALLEY SCHOOL DISTRICT (BVSD)
BOULDER, COLORADO

Ann Cooper, veteran chef, school food trailblazer, and founder of the Chef Ann Foundation, has been the Director of Food Services for Boulder Valley School District since 2009. Cooper spearheaded the vision and buildout of Boulder Valley School District's new 37,000 sq ft USDA-certified CPF (27,000 sq ft of dedicated kitchen space and 10,000 sq ft of cold storage) to service each of Boulder Valley's 54 schools, which was supported by a multi-county Boulder Valley School District bond. The total project cost was \$17 million, \$10 million of which was covered by the original bond and the remaining by additional district allocation, and the CPF opened in August 2020.

BVSD prioritizes local food procurement, and has set a goal of 40-50% of ingredients being sourced regionally. Currently, locally-sourced ingredients include produce, dairy, and meat, as well as value-added local products such as potstickers and tamales. BVSD plans to buy local food in-season, such as potatoes in the summer, to provide to its own district as well as other neighboring districts, and utilize blast chillers to preserve the produce for use throughout the school year.

This CPF model supports speed-scratch cooking, which ensures consistency and decreases labor costs. BVSD produces 14,000 meals daily using a cook-chill model, with at least 25% of the food produced from ingredients grown or produced regionally. They will be able to batch cook and bag 300-400 gallons of product per production run, 100-200 gallon batch sizes, pumped into 48 or 96 oz bags (a TUCs Food service Equipment system), as well as vacuum sealing fresh cut vegetables. Other production technologies and efficiencies will include immersion circulators, auto and manual packaging, the ability to cook 2,000 pounds of protein at a time, and a meat-only prep

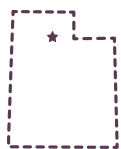
room. There is a produce-only room, and a produce prep room that feeds directly into cold or hot processing areas.

The exterior of the facility will have loading bays for semi-trailer trucks, as well as one loading bay built specifically for the specifications of local farmers' vans and trucks.

The CPF has multiple packing machines so Cooper can focus on scratch cooking techniques to rid the operation of mixes, bases, or packaged and heavily-processed foods. All produce comes to the facility whole, and all value-added processing is completed in-house including some contract processing for surrounding school districts.

KEY TAKEAWAYS:

- According to Cooper, her production efficiencies at scale can decrease operations and food costs in aggregate by 5-8%.
- Cooper stressed the importance of developing relationships with other communities and seeking opportunities to contract manufacture for them as a means of revenue generation.
- BVSD built a CPF that allows the district to source directly from farmers, and aggregate and process onsite, reducing costs associated with offsite processing itself, as well as transportation.
- BVSD's CPF took 10 years from concept to completion. Due to this lengthy timeline, the costs of construction increased significantly from the time the facility was conceptualized to its completion. BVSD says to consider cost increases such as material cost adjustments and increased labor costs when developing a budget for facility buildout.
- Create an organizational structure that allows for cross-trained positions and on-the-job training programs that transition high-potential staff at school sites into the CPF facility.
- For local food procurement (Farm to School), require farmers to have a food safety plan and substantial liability insurance, but do not require a GAP audit.



Case Study 2

DAVIS SCHOOL DISTRICT (DSD)

FARMINGTON, UTAH

Davis School District in Farmington, Utah, a suburb of Salt Lake City has a robust cook-chill CPF with a substantial baking program. Davis also has sizable sales to surrounding area school districts with cook-chill, value-added products sold at a 15-20% average margin on all items. In 2019, outside sales to districts accounted for \$213,000 in revenue; this revenue was reinvested into general operations for nutrition service. DSD is similar in size, students, and number of schools (92) to DCPS (115). Pam Tsakalos and Todd Blanscett lead nutrition services in DSD and note two important operational considerations: (1) having a dedicated maintenance specialist on staff is critical to the financial and operational success of the CPF; and (2) being a USDA-inspected facility in order to process proteins for DSD and surrounding districts is the best investment they made.

Surrounding area districts buy their commodities and have them sent directly to the DSD CPF for processing. Product from different districts is commingled by product type, and inventory is tracked per district when orders are placed for processing. Seventy-five percent of the finished food remains in the Davis School District, and 25% is sold to outside school districts. If other districts supply the commodity items, they charge for additional ingredients, labor, and processing, at a 15% markup. By strategically ordering commodity items, DSD and its surrounding districts can work together and streamline processes.

In the first year of production, the DSD CPF serviced 15 schools. Early on, they realized they could be more efficient if they added meal production for additional schools, so the next year they cooked for all 90 schools in their district. Today, 22 years later, they produce 38,000 meals per day and operate off-site catering and a small onsite cafe that generates income. Most of the 21 staff are full-time employees and receive benefits. A separate cleaning crew comes in at day's end so that the culinary staff can focus on preparing food. The facility has standard food processing kitchen equipment, including two 300 gallon kettles, one 200 gallon kettle, a pump filler, a tumble chiller, and ample cold storage, which is necessary for their baking and pastry program, as well as commodity storage for contract processing. The school district operates on a six-week-cycle menu, and processing of the cook-chill

menus is always two weeks ahead of the scheduled meal service date.

Some scratch-made food products they highlighted include apple hickory BBQ sauce, cilantro dressing, teriyaki sauce, and chili. They focus on consistency, quality, and safety of recipes. To prepare new recipes, they test one gallon, and if it passes muster, they scale up to 300 gallons. Their bakery program includes 2 oz and 4 oz muffins in five flavors, totalling 1.5 million muffins per year, as well as other items, such as Kaiser rolls and cinnamon rolls. They have a dedicated 5,000 sq ft freezer for baked items only, and their production process is designed to make, proof, bake, and freeze all bakery items the same day. Because geography and climate do not allow for sufficient supply of local produce, they do not prioritize local products or have a focused local procurement program. Their produce company tries to use Utah products when possible — apples, peaches, and tomatoes (only available one month of the year), but they do contract with a local turkey company for local turkey and “turkey ham.”

KEY TAKEAWAYS:

- DSD generates revenue by intaking commodity products, handling inventory and storage, and logging processing for “just in time” food manufacturing at a fixed margin for districts throughout the greater Salt Lake City area.
- While the COVID-19 public health emergency was unforeseen, DSD felt well-positioned to handle the transition to packaged meals because they have many existing processes, procedures, and equipment that they know how to use in different ways (especially on the bakery side).
- Being a licensed USDA processing facility (for intercounty/state meat transfer) allows for contract manufacturing for other districts. Finances are structured for revenue generation to reinvest back into nutrition services programs.
- The USDA inspector is in-house daily. He is considered part of the team, supports their efforts to succeed, and adds to the credibility and functionality of the partnership.
- DSD chose to invest in top-of-the-line equipment and it has served them well; some pieces are 22 years-old. Their maintenance staff is trained on each piece of equipment by the manufacturer.
- Hiring for the CPF is largely done by promoting employees from school sites.
- Cross-training is key to efficiently operating the facility.



Case Study 3

MINNEAPOLIS PUBLIC SCHOOLS (MPS)

MINNEAPOLIS, MINNESOTA

Minneapolis's Culinary Center (CC) is a 77,000 sq ft CPF that serves 70 schools (42 of which have fully-functioning kitchens for speed-scratch cooking), which collectively prepare more than 40,000 meals per day. Local food procurement efforts are led by Farm to School (F2S) Coordinator Kate Seybold, in partnership with Director of Culinary and Wellness Services (CWS) Bertrand Weber. Half of the CC is used for cooking/processing (cook-chill method), and half is used for assembly/packaging of individual meals.

MPS has a strong focus on working with small and mid-size farms to utilize local produce and protein products. Seybold directs the district's F2S procurement process to integrate seasonal produce into menus. Currently the district F2S program procures about 20% of its ingredients from Minnesota and Wisconsin sources. A key part of Seybold's menu planning is thinking about how food items are utilized in the CPF for meals that are finished at the CC, as well as those used for speed-scratch at schools that have full onsite kitchens. F2S is closely integrated into food service operations for all school meals, including during the summer, and Seybold focuses on how to creatively place local items on salad bars and other food options for students to enjoy.

Scratch-cooking is the largest improvement brought about by the CC. Items produced at the CC include sous vide cooked proteins, such as pork shoulder, brisket, and meatloaf; homemade jerk sauce for roasted chicken wings; and mashed sweet potatoes. The first Thursday of each month is "Minnesota Thursday," for which all ingredients are Minnesota grown and/or raised. The CC also produces pizza and marinara sauces, salsas, salad dressing, and other sauces, and utilizes a cupping machine to portion items as needed.

MPS recommends that the buildout of a CPF space take into account electrical capacity, drainage, sanitation and washing equipment, and overall facility workflow. While MPS does not break down any proteins in the CC (they are not USDA licensed, although this is not required since the finished product does not cross county lines), they do bring in whole cuts raw (like roast beef, for sous vide cooking).

Onsite school kitchens roast raw chicken drumsticks and wings. Because of this, food safety practices must be heightened, but doing this onsite reduces costs and raises the bar on quality.

MPS has a dedicated Culinary Trainer position that oversees quality and culinary workforce development. Employees can be upskilled for culinary-driven CPF jobs, while kitchens can be overseen by coordinators with less experience. By partnering with local food hub The Good Acre for vocational training, they create job pathways to positions with more regular full-time employee hours, benefits, and competitive pay.

Facility configuration and daily operations have changed significantly due to the COVID-19 public health emergency at the end of the 2019-2020 school year. The CC began assembling 4,000 food boxes a day, utilizing local F2S produce, which were made available for all families for pick-up into Summer 2020.

KEY TAKEAWAYS:

- MPS is regarded as a national leader in cook-chill production at the CPF, with 128 unique food items prepared at the CC per year. The CC functionality focuses on produce and protein processing to support F2S and local foods procurement goals.
- MPS has developed a robust F2S program and staff to manage a local farm/vendor RFP process each spring/summer for the coming school year's seasonal produce, protein, and dairy needs. In 2019-2020, MPS purchased 57 unique items from farmers and vendors within 250 miles of the Twin Cities.
- MPS buys their F2S produce from partner farms via the district's contracted produce company. MPS places orders with partner farms that then sell and deliver these orders to MPS's contracted produce companies. In turn, the produce company washes and processes the F2S produce and sells it to MPS as a finished F2S product.
- MPS is planning a buildout for a dedicated produce processing area in their CPF. The process of purchasing F2S produce via a produce company will change once this buildout is complete and they are able to do their own processing.
- By utilizing the CPF and building out kitchens in schools, MPS has doubled its workforce and created new jobs (they went from 150 employees to 300 as the facility scaled operations over the past year).



Case Study 4

NAPA VALLEY UNIFIED SCHOOL DISTRICT (NVUSD)
NAPA, CALIFORNIA

In April 2019, NVUSD's nutrition services operation, called Napa's Operative for School food Health (or NOSH), opened a new central kitchen and food services warehouse based on a hybrid model, with eight schools that cook in-house and 20 that are serviced from the CPF. NOSH co-locates production and Food Service (FS) leadership and administration under one roof, which has significantly enhanced food quality. The district is aggressively remodeling 16 elementary schools with new kitchens for cooking and finishing so they can benefit from the CPF (seven have been done in the last 18 months; four more are under construction as of June 2020). Food is prepared on day one, chilled on day two, and sent out on day three. Key equipment in the CPF includes tilt skillets, blast chillers, and walk-in refrigerators and freezers with thresholds to accommodate forklifts. All finishing kitchens have combination steam and convection (combi) ovens, fridges, freezers, and more.

FS Director Brandy Dreibelbis responded to a push from parents for the school district's transition to self-ops production upon the expiration of the existing foodservice contracts and 33 years of Sodexo operations. Bond money supported a central facility and finishing kitchens at school sites, with a retrofitted central kitchen put into motion at the district-owned former Napa Armory.

Dreibelbis brought in new, clean-label products from throughout California. Chicken is antibiotic-free, and burgers are organic. Only fresh fruits and vegetables are served. Salad bars are part of reimbursable meals, so students are required to utilize the salad bar for the school system to meet National School Lunch Program (NSLP) standards. Currently, all produce is sourced from California except two items from Mexico — bananas and jicama. Dreibelbis spends the majority of funds on produce, and has piloted an unprocessed produce program where her team shreds and slices items for the salad bar in-house. She purchases some minimally-processed commodities, such as potatoes, to combine with the potatoes she processes with her industrial food processor (the largest size processor Hobart makes).

Dreibelbis acknowledged the perceived affluence of Napa but was quick to correct that misconception by citing that 50% of her student body qualifies for free meals, and 60% of the student body is Latinx due to the migrant farm worker population that supports Napa Valley agriculture. Because of this, it is important for NOSH menu development to include the cultural and dietary preferences of this large diaspora population so that students most in need of nutritious school meals will consume and enjoy them.

KEY TAKEAWAYS:

- The district responded to parents' requests for higher-quality food and locally-driven menus, so they transitioned from Sodexo to self-ops and started building a CPF to support food processing and batch-cooking production.
- NVUSD currently operates a "hybrid" model, where schools operate with scratch cooking techniques. Some schools that have not been remodeled still rely on hot food shipped to their site daily, while others that have been remodeled are able to receive cold drops, finishing the food onsite.
- The NOSH "brand" is highly-regarded in the community, and includes catering operations and significant engagement with families and the local food community.
- Dreibelbis suggests that the facility accommodate contract meals production for seniors and others, as the CPF is low-use starting early afternoon. She recommends a production shift model, i.e., the staff prepares meal ingredients for speed-scratch cooking in K-12 schools from 6 a.m. - 2:30 p.m., and then the next shift can use the facility to provide services to Meals on Wheels or another outsourced feeding program.
- The facility lead and shift manager(s) should have strong culinary backgrounds.

Best Practices & Recommendations

The following sections on **Impact**, **Operations** and the **Physical Facility** provide information based on 62 interviews with food industry leaders from across the District and United States. This research has informed the following 45 best practices and 57 recommendations.

Impact

This section showcases outcomes that would be supported by a CPF to increase the strength of the District's food economy and create a more sustainable and equitable food system. Topics include equity, workforce development, revenue, and economic growth.

Equity

BEST PRACTICE

Written by Michael Carter, Jr., Carter Farms

1. A CPF should address the inequitable roots of the District's food system through the comprehensive learning of the history of our agriculture practices, and address the ways in which an equitable future can be co-created by building a pipeline of BIPOC farmers and entrepreneurs, design a facility with the farmer in mind, and create menu plans incorporating ingredients that are of and from our communities.



ANALYSIS

Written by Michael Carter, Jr., Carter Farms.

Carter Farms is a century farm in the Piedmont region of Virginia that specializes in growing ethnic, African tropical vegetables organically. Carter has taken over the family farm operation, converting it from a beef cattle, swine, and hay production operation to an ethnic vegetable afro-tourism teaching farm that shares its "Africulture" interdisciplinary platform.

RECOMMENDATIONS Written by Michael Carter, Jr.

- 1a. **Building a Pipeline of Supply.** Involving more African Americans with opportunities in agriculture at an elementary and teenage level is critical to involving them in the producer side of the food system. Black farmers are on the verge of extinction, mainly because there is not a portal to create new farmers. Rural communities have 4-H and Future Farmers of America (FFA) programs that serve as a pipeline for new farmers and ranchers. Land access is a limiting factor, but urban participants have something rural participants don't — access to high-value markets.
- 1b. **Designing with the Farmer Top-of-Mind.** Regional farmers should be utilized as a central component of a facility. The school and processing cycle needs to assist with the farm cycle to create a regionally-grown, vertically-integrated system and facility.
- 1c. **Training and Healthy Menu Planning.** Teaching about nutrition and food safety, along with training and certification, will provide tangible work skills in the food and



The perception of how African Americans see themselves in the historical lens of the food system accumulates into a lower value of self worth. The value gap or deficit is the biggest but least thought-about crisis in the food system, concerning African Americans.

Africulture is an African-centered and African American-led nonprofit that focuses on the African and African American contributions in agriculture for all ages and education levels. By learning about the historical roots of African Americans in the food system, participants in the Africulture curriculum see themselves as generational contributors, not just descendants of enslaved Africans who picked cotton and tobacco.

Once this historical foundation is set, Africulture studies then move into field production and awareness. The financial realities of agriculture are also taught and explained. The need to understand the value of land ownership is critical to increasing involvement and understanding of value in the food system, which stems well beyond the eater role.

BEST PRACTICE

2. A CPF that bolsters the impact of existing and new initiatives by the District government and nonprofits committed to food access and equity within the food system, better connects communities to their food supply.

ANALYSIS

District government-sponsored nutrition programs have the potential to substantially increase sales for women and BIPOC farmers and business owners. Food items procured for nutrition programs generally come from conventional food distributors or broadliners, which circulate money outside of the regional supply chain, and prevent new sales channels for equitable inclusion. There is a substantial market opportunity to offset conventional brands with the aggregation and processing of regional raw goods at a CPF into value-added products.

For example, Sara Beckwith, state director for the DC Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) at the DC Department of Health, describes how WIC brings almost \$12 million into the District to provide services that aim to improve perinatal health outcomes, as well as increase food access and security. WIC benefits are used to purchase a wide variety of food items at authorized food retailers. By leveraging the District's regional food system, a CPF could help bring regionally-produced raw goods to WIC-authorized retailers.

RECOMMENDATIONS *(continued)*

restaurant industry. Using culturally-relevant vegetables and recipes will assist in assuring healthier food options are not just prepared, but also consumed.

- 1d. ***Education and Empowerment of BIPOC Value-Added Entrepreneurs.*** Develop a hub of innovation for participants to learn from makers on how to establish, sustain, and run a food-based enterprise, as well as be an incubator and facility for entrepreneurs to develop, manufacture, and distribute their products.

RECOMMENDATION

2. A CPF should engage in sales opportunities with existing programs geared toward improved food access and equity. Additionally, government programs like WIC should issue RFPs mandating a certain percentage of spend to be on regionally-sourced products, and create a preferred vendor pipeline for current nutrition and food access programming to include products that are regionally-sourced, aggregated, and processed at a CPF.



BEST PRACTICE

3. A CPF should be built with a primary end user in mind — the K-12 student — to incorporate customer feedback into the food supply system.

ANALYSIS

Putting students front-and-center in recipe development and other programming at a CPF can improve end consumer (student) satisfaction, encourage healthier eating habits, and generate culinary and culinary-adjacent career paths among students.

Jasmine Illa, former Chief of Staff for The Workforce Investment Council (WIC) and Operations Manager for DCPS Food and Nutrition Services, mentions the success DCPS has had “when students have a say in the food that’s put in front of them.” She discusses how a CPF would provide an opportunity for students in a DCPS [career and technical education] program to see the process. In such a program, students would take the information and recipes they learned back to their schools and champion them. Illa also underscores that students are “the customers at the schools,” a fresh perspective in considering how a CPF could engage with its DCPS clients.

RECOMMENDATIONS

- 3a. Work with DC Public Schools (DCPS) and other local education agencies as anchor purchasers and create ways for students to provide input. For example, a CPF is an ideal venue to enable students to experience the farm-to-plate process firsthand, and learn the business and career implications of this process at a large scale.
- 3b. Work with partners to ensure the availability of culturally-appropriate ingredients that are accessible in students’ local environments, and act as a gateway to healthy lifestyles through nutrition education.

Revenue and Economic Development

BEST PRACTICE

1. A CPF should generate surplus revenue for the District, including via private sector sales channels.

ANALYSIS

With the centralization of processing and manufacturing under one roof, economies of scale will enable a CPF to produce quantities that extend beyond the District’s K-12 school food demand, enabling it to capture greater sales opportunities. Additionally, CPF storage, distribution operations, and catering opportunities could present a multimillion dollar revenue opportunity.

Outside of government procurement, anchor institutions could purchase products from a CPF by contracting with the facility to prepare large amounts of special-requirement foods, e.g., salt-free pesto and roasted garlic puree.

In addition to pursuing wholesale opportunities, a CPF would also be positioned to access private-sector retail sales channels, as well as retail-ready products for business-to-business (B2B) and business-to-government (B2G) procurement. DCPS’s Jaber puts it eloquently: “Why not create a retail utility for this? The District loves District branding. [We could have a] District brand of items that are being produced, [...] folks will buy it and then those profits could be put back into the facility for further expansion and development.”

RECOMMENDATIONS

- 1a. Create additional revenue opportunities from area school districts, as well as other District government agencies and anchor institutions (universities, hospitals, and other enduring organizations that play a vital role in their local communities and economies).
- 1b. Build a CPF-made District-brand that supports wholesale and retail sales through private-sector channels such as regional grocers/retailers and corner stores.



BEST PRACTICE

2. A CPF should bolster the initiatives of DC's Food Policy Council and its working groups by creating a pipeline of supply, and holding institutional purchasers accountable for sourcing regionally.

ANALYSIS

Currently, the District's Department of Small and Local Business Development (DSLBD) oversees the Certified Business Enterprise (CBE) program that ensures a percentage of spend is allocated to District-based businesses in larger contractual spends. Often, these opportunities are not food-based, and those that are food-related are often unattainable for small business owners grossing under \$5 million per year. Once a business becomes a CBE, the owner then has to register with the Office of Contracting and Procurement and the District Supply Schedule in order to access RFPs. A CPF has the potential to mitigate the process by being the primary contract holder, enabling a consistent, aggregated supply of raw ingredients sourced from regional producers, as well as co-manufactured products from local small businesses that meet a scale these businesses would otherwise be unable to achieve alone.

Mess Hall's Goldberg asserts, "The District has a CBE program, where if the city needs to build something, they're supposed to give preference to a small locally-owned business. The school lunch program should be a District-based business, for example. It should be run by the equivalent of a CBE. If there's going to be vending machines, there should be vending machines offering locally-made products. If the District is actually putting on an event, attracting new retailers into the District, and/or holding its agencies and their administrative departments accountable, and it is [fundamentally] the District's project, there should have to be a certain percentage of food or food experiences [that] come from District-made products."

BEST PRACTICE

3. A CPF spurs food & beverage entrepreneurship and economic growth by keeping growth-stage business operations located in the District.

ANALYSIS

The breadth of opportunities for District entrepreneurs provided by a CPF spans farmers, producers of manufactured goods, and value-added products, as well as individuals with expertise in logistics, delivery, and other non-food production areas. Emerging food businesses can scale their production with the support of a CPF by utilizing co-manufacturing services below common minimum-unit thresholds of production, and without needing to take on additional staff, equipment, or other expenses internally.

RECOMMENDATION

2. Standardize KPIs that are currently fragmented within the food supply chain. With this centralization, institutions can be held accountable for shifting their dollars back into the local economy by purchasing products — raw goods or co-manufactured products from area entrepreneurs — out of the CPF.



RECOMMENDATIONS

- 3a. Provide access to a CPF's co-manufacturing capabilities to create affordable pathways for entrepreneurs to scale their businesses within the District, so that they will not need to look for less expensive options elsewhere. As a consequence, related jobs, revenue, and tax dollars will also remain in the District.
- 3b. Non-food-specific District-based startups, such as those in technology and logistics, should be tapped by a CPF to further amplify local economic impact.



Tom McDougall, Founder and CEO of 4P Foods, talks about the ability of a CPF to generate “food and economic sovereignty” in the District community by “creating spaces in places where people can build businesses and have economic opportunity because they now don’t need to spend \$50,000 on a mixer, but they’ve got a really solid ability to run their business, which is that next scale.”

Finally, non-food processing-specific needs such as logistics, technology, and delivery provide significant new CPF-related contracting opportunities for entrepreneurs in these fields. George Washington University Hospital’s Bowen discusses the need for fleet management of refrigeration vehicles, including GPS tracking for mapping out and coordinating routes, as a strong outsourcing need for any large facility.



Workforce Development

BEST PRACTICE

1. A CPF should create workforce development and programming opportunities for cross-training, upskilling, and implementing entrepreneurial education curricula. Workforce development as a program of a CPF should be seen as a career pathway more than a clearinghouse for temporary positions.

ANALYSIS

A CPF is well-positioned to be an accredited site for a workforce development program, preferably in partnership with existing programs that develop culinary and food processing skills. Upskilling and reskilling a food service workforce for CPF jobs (as well as cross-functional roles in private manufacturing functions) would have great benefit.

By providing access to co-manufacturing, a CPF can help growing food enterprises scale their operations and increase output. Offering these co-manufacturing services in the District will have multiple impacts: retaining food business revenue, creating sustained career pathways, and preventing each growing food business from needing to carry the labor required to staff their own operation or brick and mortar facility.

RECOMMENDATION

1. Develop a flexible workforce that encourages upskilling current employees, reskilling District area restaurant and hospitality workers for food manufacturing, and cross-training positions with a focus on career-oriented advancement. The career opportunities provided by this program/facility should be creative and responsive to economic variables when facility operations commence. To maximize community impact for the most underserved workforce populations, CPF hiring should integrate opportunities for marginalized groups such as returning citizens.



BEST PRACTICE

2. A CPF should request bids and award contracts to small businesses or microenterprises (a business with fewer than 10 employees) to create contractual areas of opportunity for smaller organizations to take advantage of this multi million dollar operation.

ANALYSIS

As further referenced in the Operations section below, there are a variety of options available for the management structure of a CPF. While it is necessary to have a single operator in charge of core food-related functionalities to uphold the highest quality standards of food safety, there are also other CPF functions that can be bid out separately as contracts to small businesses or microenterprises. Pam Hess, Executive Director of Arcadia Center for Sustainable Food & Agriculture, provides one example: “the small organization could become the expert distributor. So you have an umbrella [operator and these smaller organizations] with discrete tasks, and the umbrella [operator] is the aggregation of it.” These functions could include distribution, inbound/outbound sales, account management, and marketing and merchandising.

RECOMMENDATION

2. Assess all areas of a CPF operation and delineate where there are contractual opportunities for small businesses and/or microenterprises in a continued effort to promote equity, democratization of access, and local economic development, and to provide both technical skills training and entrepreneurial opportunities.

Operations

This section evaluates and synthesizes information collected on the broad topics of management, core CPF functionality, equipment, contracts, labor, and food safety. Synergy among these best practices illustrates efficiencies that could be recognized in the CPF.

Management

BEST PRACTICE

1. The most effective models for a CPF around the country include varied functions. Assessing the range of possible functions, based on the needs of the District, ensures that the desired outcomes align with the functionality of the facility that is built.

RECOMMENDATIONS

1. District CPF should include the following core functions:
 - Distribution services for K-12 schools, District institutions, and others
 - Aggregation services, accessible to all regional producers
 - Cold and dry storage, accessible to all businesses and organizations requiring such space
 - Cook-chill processing for speed-scratch cooking in DC public schools
 - Co-manufacturing for area schools, institutions, and private businesses

Additionally, partnerships should be explored to support a workforce development program, the sales/marketing functions of the facility, and entrepreneurial support and technical assistance for food businesses seeking co-manufacturing to increase scale.



BEST PRACTICES

2. A CPF could operate through a public-private partnership in one of the following four ways:
 - Directly by DCPS
 - By a values-driven FSP
 - By a non-traditional operator, e.g., nonprofit organization, social enterprise, food manufacturer; or by a cooperative or coalition of such organizations
 - By a District agency or a new department housed within DGS, DCPS, or another agency.

ANALYSIS

Each operational structure can meet and respond to different needs in different capacities, as illustrated in the table to the right.

The chart above indicates that District government management of a CPF would allow emphasis to be placed on economic development of the food and farming industries, and prioritize regional food procurement, processing, and co-manufacturing. Each of these categories are examined and evaluated throughout the best practices and recommendations. Additionally, a CPF management structure relies on the operations of its primary purchaser, so, to this end, CPFs are best-positioned to service self-operated school districts and other institutions.

Moreover, a multi-function space with common oversight would reduce the misuse or margin of error that would come with various operators. And the liability for damage, depreciation, and the responsibility for equipment repair would be built into the operations and pricing models.



“Get a set of Guiding Principles in place. The more people that are involved, the more diluted it can get. But if you can put up those guardrails in the beginning, and have people sign off on them, it makes everyone’s job easier. Because that way, [a food product] is either in or it’s out.”

— Chef Ann Cooper, Director of Food Services, Boulder Valley School District

RECOMMENDATIONS

- 2a. A CPF could be operated by the District government or through a public-private partnership. Such management teams would support the unique needs of different customers, allow for flexible purchasing, take best advantage of a self-operating business model of schools and institutions, and be able to catalyze change to address systemic issues within the District’s food system.
- 2b. A CPF should be a multi-stakeholder collaboration, identifying funding opportunities to build the facility and create a management team that is led by an experienced operator with business acumen and food production expertise to manage operations.
- 2c. Craft values-driven guiding principles that will act as guardrails to protect the integrity of a CPF vision. Create baseline requirements, milestones and a schedule of audits to measure impact, maintain accountability, guarantee transparency, and ensure equitable access to the functions provided by the facility.

OPERATING ENTITY	DCPS	Values-Driven FSP	Non-Traditional Operator	District Government Management
Self-Operations	✓	✗	✗	✓
High Quality Food	✓	✓	✓	✓
Lean Operations	✓	✗	✗	✓
Facility Management	✗	✓	✓	✓
Regional Produce Aggregation and Food Manufacturing	✗	✗	✓	✓
Distribution and Logistics Services	✗	✓	✓	✓
Career Development and Job Opportunities	✓	✗	✓	✓
Values-Driven	✓	✓	✓	✓
Revenue Generation & Reinvestment	✓	✗	✗	✓
Transparency & Accountability	✓	✗	✗	✓



BEST PRACTICE

3. Self-operated institutions are better positioned to track, mitigate, and reallocate both financial and tactical resources to operations. Additionally, expenses can be reduced by transitioning to self-operations.

ANALYSIS

According to BVSD Director of Food Services Ann Cooper, DCCK Founder Robert Egger, Genuine Foods Founder and CEO Jeff Mills, and other food industry leaders, a majority of CPFs around the country manage their own operations. Although self-ops models tend to preclude downstream credits and rebates to the city government and agency operators who manage the contracts with the FSPs, one interviewee notes, “There’s \$20 million being utilized for our food service management company contract. The economies of scale indicate that it is not sustainable.”

FSPs servicing District agencies have varying degrees of accountability and transparency, and these agencies could benefit from more emphasis being placed on improved procurement practices and improving the quality in food items acquired for their consumers. For example, the Department of Aging and Community Living and the Department of Corrections could be better served by eliminating best price, opaque contracts in favor of best-value opportunities provided by a CPF. Additionally, if a CPF provides such meals, the dollars would be reinvested within the District.

FSPs, especially those servicing at-risk populations, should be held accountable for the quality of meals provided to such communities. However, oftentimes in contracting, some District agencies engage with an FSP contractor who, in-turn, works with his/her preferred vendors that source all ingredients for prepared meals — blocking out any additional revenue opportunities for other vendors who may be providing better quality products at comparable price points.

The reason this current system exists is that the agencies have a mean fixed price that they can spend per meal, and are invoiced based on headcount. One agency director says, “it is not how it got done, it is that it got done.” This process does not provide any look into the ingredient source or quality in meals served, nor does it allow regional producers to engage with the contractor. Additionally, funds spent on such contracts do not recirculate within the District.

With a track record of two successful district transitions to self-operations, Houston Independent School District (HISD) Officer of Nutrition Services Betti Wiggins stresses the importance of running a CPF “like a business,” with a detailed Profit and Loss (P&L) statement and clear and measurable KPIs, and with the goal of operating a completely self-sufficient operation without reliance on the District’s general fund.

RECOMMENDATION

3. Transition to self-operated models for District agencies to lower costs and provide fresh, higher-quality, nutritional food using regional products to replace lower-quality meals currently served by foodservice providers. For schools, better food should help increase student participation rates (meals consumed at schools), which means higher USDA reimbursement dollars going back into the program.





Aggregation

BEST PRACTICE

1. A CPF can consolidate and streamline aggregation, storage, processing, and distribution functions in one place.

ANALYSIS

4P Foods' Tom McDougall emphasizes that removing steps in the flow-of-food process by co-locating multiple functions of food sourcing, production, and storage — functions that are typically found at multiple locations or facilities — would result in tremendous efficiencies and cost reductions. Each service provider adds its own margin and fees, so removing the number of service providers and housing multiple operations (aggregation, processing, and wholesale) under one roof will maintain a robust marketplace for the vendor and reduce the overall cost of goods sold (COGS) to the end consumer.

RECOMMENDATION

1. Create a standard operating procedure that streamlines purchasing for individuals and organizations traditionally barred from such resources, and communicate with small to midsize vendors about the opportunities to sell their products into a CPF for co-manufacturing. Additionally, utilize a CPF contractually for cold storage, and/or allow vendors to conduct business with the facility similar to a traditional produce sales and distribution channel.



A New District Partnership. According to Dalila Boclin, Director of Programs, FRESHFARM, “A CPF could serve as a unique partner to new and emergent farming endeavors in the region. For example, FRESHFARM, Green America (a national nonprofit organization), and Seylou (a local District small business), are in the early stages of launching a new partnership dedicated to fostering a productive regional grain economy for the District and Mid-Atlantic region. A CPF could support the project by creating a baseline demand for regional grains and products produced from regional grains.” One practical application of regenerative whole grains’ use at a CPF would be the production of baked goods for DCPS. At Davis School District in Utah, Nutrition Services Director Pam Tsakalos and her team make 2 oz and 4 oz muffins in five flavors, totaling 1.5 million muffins per year, as well as other items, such as Kaiser rolls and cinnamon rolls. They have a dedicated 5,000 sq ft freezer for baked items only, and their production process is designed to make, proof, bake, and freeze all bakery items the same day. Revenue-generating opportunities like this would warrant a CPF to seriously consider proper storage of regional grains and a partnership to support the creation of a local mill, as this will significantly and positively impact the project’s speed, scalability, investment for farmers, and cost to consumers.

BEST PRACTICE

2. A CPF allows for maximum procurement of regionally-grown and -raised produce and proteins, supplemented by nationally-sourced, conventional, or commodity products as necessary. Additionally, the aggregation function provides an efficient channel for larger institutions to purchase regional produce without contracting with numerous small-scale producers.

ANALYSIS

Interviewees express concerns about smaller purveyors’ inability to meet the demanded quantities of co-manufacturing customers, food service companies, and large institutions such as K-12 school

RECOMMENDATION

2. The District should clearly define its purchasing priorities and develop a clear, transparent, and accessible RFP process which includes language translation and no-cost technical assistance for regional farmers and suppliers to equitably bid on contracts. Moreover, a CPF should analyze where conventional and commodity purchases can fill gaps in supply, and where regional farms can increase production to meet demand. Through these efforts, a CPF becomes a clearinghouse of supply and demand data, and regional farms have more of what people want, mitigating waste.



districts. Jen Faigel, Executive Director of the Boston-based nonprofit CommonWealth Kitchen, turns this problem into an opportunity.

By exhausting regional suppliers' production or harvest of a certain crop or ingredient, and then supplementing with commodity or conventional purchases to fill the gaps, Faigel reverses the order of procurement preferences by utilizing regional ingredients before USDA commodity products. The economic impact derived by shifting the purchasing power of large institutions to buy as much as possible from the smaller suppliers before going to the larger channels could significantly bolster the local food ecosystem. MPS does exactly this with its Farm to School program, as well. MPS has developed an RFP process that identifies the crops and products available regionally, clearly defines the quantities per item that their district would need for meals operations, and accepts applications from farmers and suppliers that pledge a harvest yield and timeline to meet the need. If demand exceeds regional supply, only then are conventional suppliers introduced.

Additionally, a facility that supports aggregation also reduces barriers and creates new market opportunities for small, urban, and emerging farmers. Tim Kilcoyne, Director of Chef Operations at World Central Kitchen, suggests diversifying marketplace sales outlets by creating a channel for products from farmers and other suppliers who would otherwise till or dump products when demand underperforms supply.



Processing and Manufacturing

BEST PRACTICE

1. The cook-chill production method is an operational best practice to support speed-scratch cooking in K-12 public schools, hospitals, universities, and other facilities that service large populations.

ANALYSIS

Ingredients that are minimally processed in large batches at a CPF, e.g., tomato sauce, butternut squash puree, and beef brisket, and then sent to an onsite finishing kitchen, can significantly reduce labor and enhance product quality and consistency. A CPF can purchase, store, and process large quantities of raw materials, especially those that require more culinary expertise to prepare, such as proteins. These minimally-processed ingredients can then be sent to school kitchens for final cooking, assembly, and finishing also known as speed-scratch cooking, which allows for the onsite "sizzle," that is, the sound and smell of the product being finished. According to Fred Espinosa, San Diego Unified School District's Manager of Production and Acquisition, it is critical to finish meals onsite because "It's the sizzle that sells."

From a food safety perspective, procuring and safely handling raw meat products at a central location with a standardized process reduces the risk of foodborne illness due to mishandling or improper cooking techniques.

RECOMMENDATIONS

- 1a. Process cook-chill products in a CPF that customers can use in speed-scratch cooking and finished product assembly onsite to boost quality, interest and participation by students and others, enhance product consistency, and elevate food safety.
- 1b. Leverage a CPF's ample frozen and dry storage to allow for maximum purchases of fresh produce; whole, raw protein; and pantry staples. Utilizing such products will enrich the quality and taste of the food while decreasing unit cost over time.



BEST PRACTICE

2. The District and Mid-Atlantic region are under-resourced in co-manufacturing services and require the creation of a District based co-manufacturing facility.

ANALYSIS

According to the [Mid-Atlantic Food Port Feasibility Study](#), co-manufacturing is an underserved function of the regional food ecosystem. With co-manufacturing as a core function of a CPF, small businesses could graduate from shared-use kitchens or smaller facilities and scale up operations locally — keeping dollars within the District and providing an easy channel to utilize produce grown regionally. Institutions could purchase these products for speed-scratch cooking or to supplement their meal offerings.

Mess Hall's Goldberg cites the greatest value to his community of food entrepreneurs is the ability for regional food businesses to access co-manufacturing in response to new sales opportunities. If a District-area business is offered a slot in national grocery distribution, but must fulfill an order five times their typical production run, the District lacks a manufacturing solution to meet market demand, drawing opportunity and dollars away from the region. Similarly, Commonwealth Kitchen's Faigel creates value-added products, such as salsas and fruit butters, for independent farms to resell with a 40% margin. Commonwealth Kitchen co-manufactures the products at an agreed-upon fee, using their farms' products at no cost.

Denver Public Health and Environment's Cidlowski explains that the District could support the next regional food economy on par with the New York metro area, warranting a large-scale co-manufacturing facility that aggregates a multi-state region. Such a facility would create a substantial amount of jobs, including new career channels for displaced hospitality industry workers, food manufacturing specialists, sales specialists, and others, galvanizing a resource in the community that provides quality food to end users in affordable ways.

BEST PRACTICE

3. CPFs are able to take advantage of economies of scale by utilizing their facilities for multiple food service programs.

ANALYSIS

By housing CPF core functions together, the flow of ingredients from processing, to chilling, to storage or outbound distribution is retained in one facility. MPS's Seybold cites this as critical for optimizing freshness, reducing transportation costs, and expediting the process from farm to fork. Creating production efficiencies, reducing labor costs, and offering scheduled and on-demand

RECOMMENDATION

2. The co-manufacturing function of a CPF should support local food businesses as well as institutions, and could utilize much of the same equipment used to produce school meals. With co-manufacturing contracts, the facility could be operational 24 hours per day, which enhances operational efficiencies and revenue potential.



Davis School District Nutrition Services Director Pam Tsakalos says, "the thing about having a central kitchen is that we can turn on a dime. With 24 hours notice, we had to figure out that we needed to do a grab-and-go lunch program for thousands for students. And with the facility, the advantages that we have is when other people are scrambling to try to find co-manufacturers to plug in, we just pivoted our own operations and didn't skip a beat"

RECOMMENDATION

3. A CPF would directly receive purchased commodities to process and/or store for area school districts and other agencies with food service programs, in addition to DCPS and public charter schools.

production capabilities for other institutions' food service programs is an essential service to the regional food system. A CPF could reserve the fees typically paid to a private processor if these functions were handled in-house, and capture the production fees for these services/functions if performed for other food service programs to generate revenue.



BEST PRACTICE

4. A CPF centralizes storage of commodity and large-quantity purchases for scheduled cook-chill production over a longer period of time. This increases the purchasing power of DCPS and other public school districts and public charter schools, decreases the unit production cost, and creates an earned revenue stream with the co-manufacturing function.

ANALYSIS

Colorado's Greeley-Evans School District (GESD) orders commodities and other bulk purchases, which are then sent directly to a CPF. GESD Executive Chef Matt Poling explains that the customers' ordering process with their primary CPF user is straightforward, and this same process can be used for other area schools and customers utilizing the co-manufacturing function, creating additional revenue for a CPF. According to Davis School District's Tsakalos, their CPF processes for other schools and customers, at Davis' cost plus an additional 15% fee. In 2019, revenue from outside sales for contracted food processing was \$213,920 for baked goods sold to area school districts and charter schools. While the CPF is not dependent on the outside business to sustain operations, they are positioning themselves as the regional answer to districts that require this production service. And co-manufacturing for area schools can be a steady and substantial revenue source that also increases purchasing power and supports economies of scale.

RECOMMENDATION

4. Schedule cook-chill and other co-manufacturing services within the production calendar to solidify facility cash flow projections and identify gaps in the production schedule that would accommodate additional co-manufacturing customers.



BEST PRACTICE

5. CPFs are associated with the production of more healthful, less processed, wholesome meals for K-12 schools, early childhood programs, and programs for higher-risk consumers.

ANALYSIS

New London, Denver, and Napa Valley have all used CPFs to increase the quality of school meals. They use the cook-chill method to create speed-scratch ingredients, and do fresh produce processing for USDA's Fresh Fruit and Vegetable Program (FFVP) and salad bar contents. For speed-scratch, Ryan Kennedy, Regional Chef for Brigaid's operations for New London Public Schools, notes that a CPF cook-chill model supports a self-ops food service program, as they tend to be more concerned with clean-label ingredients and creating efficiencies and consistency for items that are labor-intensive (which tend to be regional whole food ingredients rather than processed and packaged meal components).

RECOMMENDATION

5. A CPF should include cook-chill functionality for speed scratch ingredients as well as produce processing capabilities in an effort to minimize heavily-processed food products.



BEST PRACTICE

6. A CPF that allows for dedicated, cordoned-off spaces can meet the highest level of food safety standards.

ANALYSIS

Both Denver and New London reference the importance of allergen controls as well as mitigation of cross-contamination points in receiving, hallways, cold storage, and processing areas. According to Cathy Davies, CEO and food safety consultant for the Food Industry Employment Program, LLC (FIEP), FSMA compliance will eventually be required and Global Food Safety Initiative (GFSI) food safety certifications (SQF) should be obtained. Additionally, a CPF must have a staff member (and inventory system) that tracks incoming and outgoing products, to ensure food safety/handling practices are in compliance with FSMA and other regulations.

RECOMMENDATION

6. Process flow within a CPF will be developed with FSMA food safety compliance in mind and should include produce safety as well as preventive controls for human foods. The food safety plan should include prerequisite programs such as Good Manufacturing Practices (GMPs), specialized process line food safety plans including HACCP, supply chain control plan, allergen control plans, a recall plan, and a food defense plan.

Equipment

BEST PRACTICE

1. A CPF increases the use of regional products year-round through freezing and storage capabilities.

ANALYSIS

Freezing produce at its peak for year-round utilization allows K-12 public schools and others to enjoy regional produce that is harvested in the summer months and reduces food waste that oftentimes occurs with harvest surplus. Freezing produce ensures nutrition and taste are retained, and is one of the best preservation methods. Both BVSD's Cooper and GESD's Poling note that blast freezing is an acceptable, food-safe, and efficient way to cool and preserve raw and minimally-processed food items for future use. As an alternative, IQF processing creates a superior product, but requires more expensive equipment. Further assessing the demand for IQF in the region is important to determine if the need justifies the investment. The USDA Farm to School grants can be applied to the purchase of equipment that helps process produce from regional farmers.

RECOMMENDATION

1. Explore the latest technologies at the time of CPF equipment purchase, recognizing that, while freezing and preservation solutions are a medium- to high-cost capital investment, it does substantially increase the amount of regional produce that can be purchased and used for District and other institutional meals.



BEST PRACTICE

- Investing in high-quality equipment is money well spent, and equipment that serves multiple purposes provides the most value to a CPF's bottom line.

ANALYSIS

Longevity, minimal maintenance, and reduced time offline mean savings and smooth workflow, long-term. Davis School District's (DSD) Tsakalos reports utilizing top-end 22 year-old equipment that continues to function well. Further, Commonwealth Kitchen's Faigel insists that any new equipment she purchases must be a "multi-tasker," i.e., the equipment must be able to be used in the production of several products in order for her to make the investment. For example, her dough baller functions to make both bread and vegan meatballs; and her dough sheeter can be used to make empanadas, egg rolls, and mini pies.

Both DSD (Utah) and Houston school district CPFs employ a dedicated technician that is trained by the vendor representative on the use, cleaning, and maintenance of each piece of equipment. Having this dedicated staff person saves money on emergency maintenance service fees. Both conclude this is a critical hire for smooth operations.

The primary use of CPF equipment would be to service DCPS and other school food needs; the secondary use would be co-manufacturing for private food businesses and other institutional food service purposes; and the tertiary use would be to support CPG production and other specialized packaging services, such as bottling and vacuum-sealing.

RECOMMENDATION

- Invest in high-quality equipment, and ensure that resources are spent on a dedicated maintenance staff person (or upskilled janitorial or facilities staff person), trained by the vendor representatives. Additionally, equipment that can be cross-utilized or applied to several processing functions will support lean operations, lessen equipment footprint, and reduce maintenance needs.



I think the most ideal combination would be creating a speed-scratch processing facility for schools, and then at night, that same equipment could be used to make a commercially viable product of a similar nature."

— Jim Costello, Founder and President, FoodOps

Procurement and Contracts

BEST PRACTICE

- Collectively, one or two anchor institutions, plus smaller purchasers in aggregate, that draw from a CPF facility for cook-chill product, processed produce, or storage services, have a positive economic impact on the region that a CPF serves.

ANALYSIS

Meals production for DCPS, one or two additional institutional buyers such as Arlington County Schools or George Washington University dining services, and District child care programs, shelter meals programs, and senior meals programs, could account for several million dollars' worth of food procurement in the District and the surrounding region. For example, with one of their primary missions being to provide equitable, healthy meals throughout the District in all eight Wards, DC Parks and Recreation serves in total at least 1,500 summer meals per day, with 175-200 sites under management by the Department. The positive financial impact of integrating CPF food items into this recurring and increasing meals program is a sale and strategic partnership opportunity as much as it is an opportunity for greater contracting transparency in a District agency.

RECOMMENDATION

- A CPF should direct wholesale and aggregation functions for the region by creating channels to new markets for growers and suppliers, thereby acting as the conduit between farm and institution or other large purchaser. Additionally, institutional anchors, through a CPF, could provide BIPOC farmers not only contracts for their food, but also pre-payments to them, which can be leveraged by those farmers for needed infrastructure, labor, and land investments.



BEST PRACTICE

2. A CPF that is built to handle the storage, processing, and transfer of product that is regionally grown and sold through direct purchases, can help fill the gaps in a regional supply chain.

ANALYSIS

Both Denver Public Health and Environment’s Cidlowski, and Metropolitan MWCOG’s Smith, note that the Mid-Atlantic region benefits from long growing seasons and opportunities to procure produce much of the year. As a result, the region is well-positioned to supply in-season and out-of-season products that have been processed and preserved. Contracts can be written to take into account in-season purchases for processing and storage, and growing agreements can be structured to allow farmers and institutions to plan for longer-term supply and demand.

BEST PRACTICE

3. CPF operators around the country play an active role in thinking strategically and sustainably about how regional food is purchased, processed, preserved, and presented in institutional food service — especially on school menus.

ANALYSIS

MPS’s Seybold directs an RFP process for small, specialty crop farmers to submit pricing and availability proposals each winter for the coming school year. This application process aims to create market access opportunities for BIPOC and women farmers who are often omitted from traditional wholesale channels. MPS then builds menu offerings and creates menu cycles based on the availability of the items in the RFP. DCCK’s Bachman reiterates the regional economic impact of menuing regional food at schools and the nutritional value of whole, fresh produce processed in a regional CPF, rather than trucking in produce grown and processed in a different region of the country.

BEST PRACTICE

4. In cities or districts that have passed a formal Good Food Purchasing Program (GFPP), institutions are able to refer to that policy in their procurement bids and RFPs.

ANALYSIS

The intention of GFPP could translate to the operations of procurement. Laura Edwards-Orr, Director of Institutional Impact at the Center for Good Food Purchasing, suggests that “purchasing contracts be structured with best-value terms, where the bidders’ response is evaluated on

RECOMMENDATION

2. Build a CPF to minimally process and store the breadth of products available and the volume of product that the District and its stakeholders could potentially consume.

RECOMMENDATION

3. Facility operations for a CPF should be focused on maximizing the utilization of regional ingredients for the production of regionally-sourced, value-added food products.

RECOMMENDATION

4. Use a CPF to create viable marketplaces with guaranteed customers that burgeoning producers need before scaling operations to meet growing demand. Additionally, a CPF can provide real-time data and reporting to evaluate success against GFPP goals for DCPS and other institutions.

deeper levels than just price and availability, with additional qualitative, technical expertise, social, and sustainable aspects of the vendor’s submission.” Additionally, DOL’s Bradshaw notes that, “A processing facility that is open 12 months a year could incentivize farmers to be producing longer into the season or earlier in the season because they would know that there’s a market for their products.”



Labor, Workforce, and Personnel

BEST PRACTICE

1. Cross-trained, cross-utilized, and flexible produce processing and food manufacturing CPF staff can efficiently support the various processing functions.

ANALYSIS

Creating a workforce that is cross-trained in several manufacturing capabilities, as well as knowledgeable about the equipment and standard cook-chill recipes and processes, would reduce the need for specialized positions, and consequently reduce the liability for equipment damage or misuse. And, if a CPF management structure is one that oversees all food production (cook-chill for DCPS, other schools, and private business co-manufacturing), there would be little concern with food production for various customers because the CPF would be operated by one entity.

RECOMMENDATION

1. Craft a staffing plan with well-trained generalists, and a few staff with specialized skills, along with ServSafe- and Good Manufacturing Practices (GMP)-certified staff, to ensure smooth, safe, and lean operations at a CPF.

BEST PRACTICE

2. Centralize the cook-chill production of certain food items to avoid production at individual school sites to lower overhead, labor, and operating costs.

ANALYSIS

BVSD's Cooper expects to decrease payroll by 30% and decrease overall COGS by 3-5% when their CPF operation is fully-functioning.

Brigaid's Kennedy and Regional Chef for Bronx, N.Y. April Kindt both note the importance in tracking "meals per labor hour" as a KPI in efficient speed-scratch cooking. The meals per labor hour range is typically 16-20 in a self-operated kitchen without a CPF, whereas a school that leverages a CPF for bulk food production will generate at least 40.

RECOMMENDATION

2. Track meals per labor hour as a KPI to ensure optimal efficiency.

Individual Self-Op Kitchens

48,000 student meals

18 meals per labor hour = **2,667** labor hours

CPF Bulk Food Production

48,000 student meals

40 meals per labor hour = **1,200** labor hours




BEST PRACTICE

3. A CPF will thrive with an experienced general manager, exceptional management team — including a quality assurance manager, regulators, and certifiers — and a human resources manager to oversee partnerships with workforce development and other programs that are critical to the sustainability of a CPF as an equitable resource for the District food system.

ANALYSIS

A CPF has the ability to support careers in the regional food processing and manufacturing space, as well as career pathways outside of food manufacturing, such as onsite food safety and lab testing (providing microbial swabbing for surfaces and machinery, pH measurement, and water analysis), waste management jobs onsite at the CPF as well as offsite at the commercial composting facility, and the transportation jobs to move product in between the two.

FIEP’s Davies explains, “you have a quality assurance manager overseeing food safety for the whole facility. And, make sure that they’re second-in-command after the director of the facility. It’s hard because it is a constant battle between production and quality assurance. But the only way is to give that person sufficient authority to ensure that people will follow the regulations.”

 Segmenting staff into clusters or small teams to mitigate and quickly respond to confirmed cases of COVID-19 within a department or division is becoming a best practice nationwide. Additionally, the flexibility that comes with self-operations and controlling staffing structures and swing positions offers some resilience in the face of drastic changes/ shifts in the workforce due to illness.

 “One of the things we’re working on now is in the culinary center, how do we keep the same streams separate? So we’re going to have two shifts a day that will never overlap? Two sous chefs never overlap, all the drivers will never overlap?”

— Chef Ann Cooper, Director of Food Services, Boulder Valley School District

RECOMMENDATION

3. Collaborate with the DC Workforce Investment Council (WIC), Department of Employment Services (DOES), and other stakeholders to create a workforce development plan to create career pathways, job opportunities, and pipelines for growth for CPF workers.



“Larger distribution centers today are not the kinds of places where you can just sort of plug and play, you know, new workers in. They’re more sophisticated operations that require a certain amount of training. So, if you have 30% of your staff that suddenly can’t work because they’re sick, or they’re afraid of getting sick, or they have family concerns, you can’t necessarily easily go out and replace the 30% with temporary workers, because that’s a skill level that you have to have.”

— Mark Scott, Critical Infrastructure Specialist, Homeland Security and Emergency Management Agency (HSEMA)





Distribution, Logistics, and Transportation

BEST PRACTICE

1. As an operational component of a CPF, distribution requirements should be considered when developing logistics around food delivery for District public schools and other purchasers of CPF products — specifically when selecting a facility location and capitalizing vehicle expenses.

ANALYSIS

NVUSD's Drebelbis underscores the importance of a centrally-located CPF site in proximity to the most frequent and largest purchasers. MPS's Seybold emphasizes the need for a distribution plan to include all school sites. And HISD's Wiggin's stresses the benefits of leasing vehicles, and the need to make sure service contracts are included in the arrangement.

The primary fleet function would be to get food to schools, with a secondary function of product delivery to other institutions, and a tertiary function to provide ad hoc support to other regional food system stakeholders requiring refrigerated transportation. These three distribution functions can be subcontracted to independent small businesses, including BIPOC- and women-owned enterprises. Adequate margin can be applied to each function of the business to offset administrative and staffing costs.

BEST PRACTICE

2. CPFs can provide cross-docking functionality for aggregation or temporary food-safe storage before it is transported to the end user.

ANALYSIS

The service of cross-docking is highly sought-after for many regional supply chain stakeholders. The seller or buyer (farmers or wholesaler) would likely retain responsibility for the product during the short stay at the facility, and temporary cross-docking storage areas would be cordoned off separately from other products used in processing, finished goods, or long-term contractual storage.

RECOMMENDATION

1. In lieu of fleet ownership, a CPF should consider leasing a transport fleet, or work with a third-party logistics provider; additionally, ensure that the lease agreement includes vehicle service terms.



RECOMMENDATION

2. Offer cross-docking services as a revenue stream for a CPF.



A CPF would be the location where emergency response food bags are aggregated, sorted, packed, and stored for distribution to those in need.



Wholesale

BEST PRACTICE

1. A CPF should aggregate regional whole produce for resale with a slight margin; aggregate produce for minimal processing, e.g., slicing, dicing, for resale with a higher margin; or play a broker role between producers and customers with a nominal handling fee. A CPF can also act as a price regulator on behalf of the farmer, ensuring that specialty crop growers in the region can secure fair market and living wage pricing for their crops.

ANALYSIS

CommonWealth's Faigel recommends drafting a purchase agreement, forward contract, or memorandum of understanding (MOU) so that institutional buyers and a CPF have managed expectations of what products will be purchased throughout the year. The idea of a District brand as a developed product line from a CPF could be similar to what NVUSD's Drebelbis established in Napa with the NOSH brand. She created NOSH as a community-facing brand that gave legitimacy to the food produced and served in her school district, and created the opportunity for a high-quality, local institutional food product line. Drebelbis says, "NOSH is a really strong brand. We built trust, so now participation and engagement are better, and there's something kind of cool to get behind."



"I think that once we 'slay the beast' of increasing the product variety and quantity of regional food, and create affordable and sustainable ways to have it processed for wholesale, that's when you start looking at the opportunities to increase the number of outlets in which it's sold—and that's when farmers/vendors realize economies of scale."

— Pam Hess, Executive Director, Arcadia Center for Sustainable Food & Agriculture

BEST PRACTICE

2. Some producers may require training and technical assistance on product standardization, product grading, pricing, food safety, licensing, and insurance to take advantage of potential sales opportunities generated by the CPF.

ANALYSIS

Consistency in packing is a challenge. FRESHFARM's Dalila Boclin comments on receiving 300 boxes of kale, each with 17-21 bunches: "That's a problem 300 times over. And it's the same issue with grading." Another challenge, especially with institutional sales, is

RECOMMENDATION

1. A CPF should explore the development of a wholesale division, and subsequent sales roles, managed by the facility operator. Three best practices models for the wholesale function are as follows:
 - Identify preferred distributors in the Mid-Atlantic region and be a clearinghouse of a CPF's aggregated produce (supplier of product that a CPF purchases);
 - Find a broker to sell a CPF's whole and minimally processed produce to institutional buyers (supplier of product a CPF processes);
 - Purchase produce and provide inside and outside sales functions similar to regional produce wholesalers and distributors (wholesaler of all CPF food products, e.g., fresh produce and co-manufactured food items).

Additionally, a wholesale product line geared toward institutions as well as retail outposts, would benchmark the quality of institutional food.

RECOMMENDATIONS

- 2a. Create equitable access to training and technical assistance for producers and others as a key to success, and is a potential partnership opportunity.
- 2b. Educate wholesale customers on varietal differences and other variations as an important component of building out a regional produce wholesale marketplace.



consistency in variety. Small farmers might be growing multiple varieties of a vegetable, for example, eggplant. That farmer can offer 5,000 pounds of eggplant, but it could include several varieties and different amounts of each. Wholesale customers may not be nimble enough to utilize such varied product.

Additionally, the development of a branded District product line would require product standardization and packaging, licensing, liability insurance, sales support, and more. However, the channel for new institutional buyers and the support to service these customers could have a sizable economic impact on regional vendors. For example, Cultivate the City's Ray, can conceivably grow 350,000 pounds of strawberries in one acre in one year. If the marketing and sales functions were managed by a CPF, he would have the time to tend to that one acre, allowing him to scale and sell into a wholesale market.

Quality Control and Food Safety

BEST PRACTICE

1. A CPF helps to develop and maintain quality standards and nutrition consistency for various types of school food programs.

ANALYSIS

From new charter schools to emergency-response meal production, DCCK's Bachman and Director of Nutrition Programs for the District Office of the State Superintendent of Education (OSSE) Lindsey Palmer cite varied services for a CPF to support, including quality control, nutrition standards, and consistency, as well as finished meals production. Sodexo's Rutjens, also cites inconsistency in product across DCPS school sites as a primary reason for implementing CPF speed-scratch operations.

Considering the challenges that major metropolitan school districts have faced in recent months tied to the COVID-19 public health emergency, a CPF with equipment capable of packaging fully-cooked meals is a measure of food resiliency and emergency response. Additionally, the ability to package prepared meals for emergency response and as a stop-gap measure for new school operations, or school sites that are updating their finishing kitchens, is a capability that should exist in reserve at the CPF site.

Jennifer LeBarre, executive director of Student Nutrition Services at San Francisco Unified School District, says, "You probably want to make sure you do have packaging. Because with [COVID-19], my California colleagues who moved away from packaging are now scrambling for packaging solutions for home delivery meal programs. Also, when I was planning in Oakland, I always knew that we were going to have some locations where we would have to send packaged foods because the schools only have 15 kids, and I'm not going to be sending bulk service where we don't have sufficient employees."



The sale of regional foods to institutional food service and restaurants is significantly reduced due to the COVID-19 public health emergency; a CPF's role in local food processing for DCPS and other public institutions is crucial to the vibrancy of the regional food ecosystem.

RECOMMENDATION

1. A CPF should be considered a resource for producing finished meals in response to institutional food service requests for quality and consistency, e.g., new charter schools, government agencies, DCPS summer meals program needs, other publicly-funded institutions and agencies, and in emergency response.



"A CPF should take responsibility for all COVID-19-public health emergency-related food and human safety measures and for revising processes and procedures as the environment changes over time, e.g., temperature checks, PPE, social-distanced working."

— Jim Costello, Founder and President, FoodOps



BEST PRACTICE

2. A CPF can account for production inputs from farm to table, as well as source-identify ingredients for full transparency and traceability.

ANALYSIS

4P Foods' Tom McDougall suggested a technology solution that tracks and quantifies incoming products for easy data analysis and communication to stakeholders. There could be a farmer application to track incoming produce, a food business application for co-manufacturing customers to follow the production of their products, a customer-facing portal for ordering, or an application that allows parents one-touch access to nutrition information for all the K-12 food items made in the facility.

RECOMMENDATIONS

- 2a. A CPF can determine its food safety requirements for suppliers, but Good Agricultural Practices (GAP) certification is not necessarily required in all instances.
- 2b. CPF inventory and logistics technology should be used to track regional food procurement.



"The whole thing with the Food Safety Modernization Act is to think about that before you start doing any manufacturing. You think about where your employees are coming in from, where your food is coming from and where your food is going out. And you plan for that before you even start building."

— Cathy Davies, CEO & Food Safety Consultant, Food Industry Employment Program, LLC

Physical Facility

The layout of this facility, rooted in smart design, as well as thoughtfully-planned and well-executed space, supports primary purchasers (K-12 public schools) and the larger regional food ecosystem. The sections below explore building attributes that address location, capacity, flexible buildout, storage needs and benefits, food recovery, and waste management. This information demonstrates how a strategically planned space can advance the larger mission and vision of an overall CPF.

Location and Amenities

SELECTING A LOCATION

Optimizing location is critical for the success of distribution services; allows for equitable employee access and reasonable commutes, increasing the available talent pool; and ensures reliability once online, which is critical, as it will become essential infrastructure. Key criteria include:



Walkability, proximity to metro, major bus arteries, and parking to ensure easy commutes and equitable employee access.



Location near highway hubs with easy hop-on/hop-off access to facilitate distribution.



Good flow for vehicles and individuals accessing and leaving the building.



Limited impact on the local community with traffic, noise, or other potential disruptions, to ensure the facility is an asset to the community where it is located.



Redundancies in energy supply. One possibility is to locate a CPF in an area being considered for a microgrid (a local energy grid that can disconnect from the traditional grid and operate autonomously) to ensure it is protected in times of crisis. Another alternative is a location with redundancies in the electrical grid.



Location away from high hazard areas to minimize disruptions to facility operations and avoid unnecessary operations and maintenance costs. (Note: The District has good hazard information that could help guide the location to avoid those areas.)



BEST PRACTICE

1. A CPF standardizes process and consistency of product for institutional food service, while also providing flexible space and reserved capacity to meet changing consumer and food system demands over time.

ANALYSIS

Multiple school districts interviewed cited quality and consistency of production as a primary benefit and reason to advocate for a CPF. Brigaid's Kennedy, cites consistency of product taste and nutritional content, as well as cost control of labor and ingredients, as key reasons to consider a central facility. By producing recipes at scale and then distributing to schools, Kennedy envisions a CPF reducing production variables and mitigating human error. Bulk value-add food products such as sauces, par-cooked grains, and cooked proteins, enhance a food operation's ability to speed scratch and prepare higher-quality food at a lower cost. By building a facility that is anchored by one or two large production customers, it also allows a facility to run 24 hours a day, with the first shift reserved for the anchor customers, and second and/or third shifts reserved for functions such as co-manufacturing, contracted produce processing, and emergency meals production, as needed. It also builds in the capacity to increase production and develop new product lines for CPF anchors and new users over time.

RECOMMENDATION

1. Create separate production spaces dedicated for raw and fresh processing, cooking and chilling that can adapt to CPF needs to aid in regulatory compliance and licensing requirements (USDA and others), as well as reduce risks for cross-contamination and increase consistency.



Davis School District

BEST PRACTICE

2. A CPF that maintains an organic facility certification can properly handle and maintain certification of organic products, as well as store and process conventional products creating additional revenue opportunities.

ANALYSIS

A certified organic building requires waste management, facility cleaning, and storage procedures that can be verified as organic. An organic-certified facility does not require all products that come in and out of the facility to be certified organic, but allows for those products (produce and co-manufactured food products) to maintain certification throughout their tenure or production in the facility.

RECOMMENDATION

2. Work with a third-party organic certifier to secure organic certification early in the CPF planning process.



Layout



NOTEWORTHY FACILITY COMPONENTS

Receiving and outbound loading docks:

Differentiated points where products enter and exit the facility, as well as wash/sort/pack intake points

Ratio of refrigerated storage to the rest of the facility:

30% of a CPF facility should be cold storage, based on the recommendation of industry leaders

Dedicated production spaces:

Allows for sanctioned production areas, while also recognizing that the configuration could change (but the food-grade percentage and general floor plan sections and production flow will not).

BEST PRACTICE

1. Green building strategies, such as those recommended by the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system, to reduce electrical, water, and other utility usage can balance an energy intensive CPF.

ANALYSIS

Urban CPFs may have additional challenges due to limitations of space and surrounding community issues, e.g. zoning challenges. However, with appropriate planning and expertise, it is possible to implement high-efficiency standards and establish a facility that is built to serve the larger community.

RECOMMENDATION

1. Create a CPF that preserves natural resources, reduces pollution and waste, and lowers long-term costs through green-building practices. Take advantage of new technologies, especially those developed by District businesses, that can provide energy-efficient, earth-friendly solutions.



BEST PRACTICE

2. A CPF entails both dedicated spaces, such as wash/pack, storage, co-manufacturing, and produce processing, as well as flexible spaces that can be configured to adapt to new functions or needs over time.

ANALYSIS

MPS's Seybold suggests a new build to allow for optimal process flow and preferred ratios of storage-to-production space (3:1). Conversely, a retrofitted or reconfigured space means that the facility is not adequately structured for the food it would ideally process.

BVSD's Cooper notes the benefit of flexible spaces and the need to over-build the footprint and under-develop the spaces within. This allows for the ability to dictate how the facility can respond to regional food system opportunities and challenges.

BEST PRACTICE

3. It is important to separate non-production space from food production operations. Spaces may include backup equipment storage, office space, and utility functions, e.g., dish and equipment washing room, classrooms, breakrooms, locker rooms, nursing rooms, laundry facilities, and more.

ANALYSIS

DCPS's Jaber comments on the need for at least 5,000 sq ft of space for backup equipment storage for the school district. Other agencies would likely use non food-related storage space, as well, if available.

BVSD's Cooper emphasizes that a dish room with a cart washing line expedites how equipment is turned and repurposed for different projects throughout the day, and makes daily breakdown and closeout safer and more efficient.

RECOMMENDATION

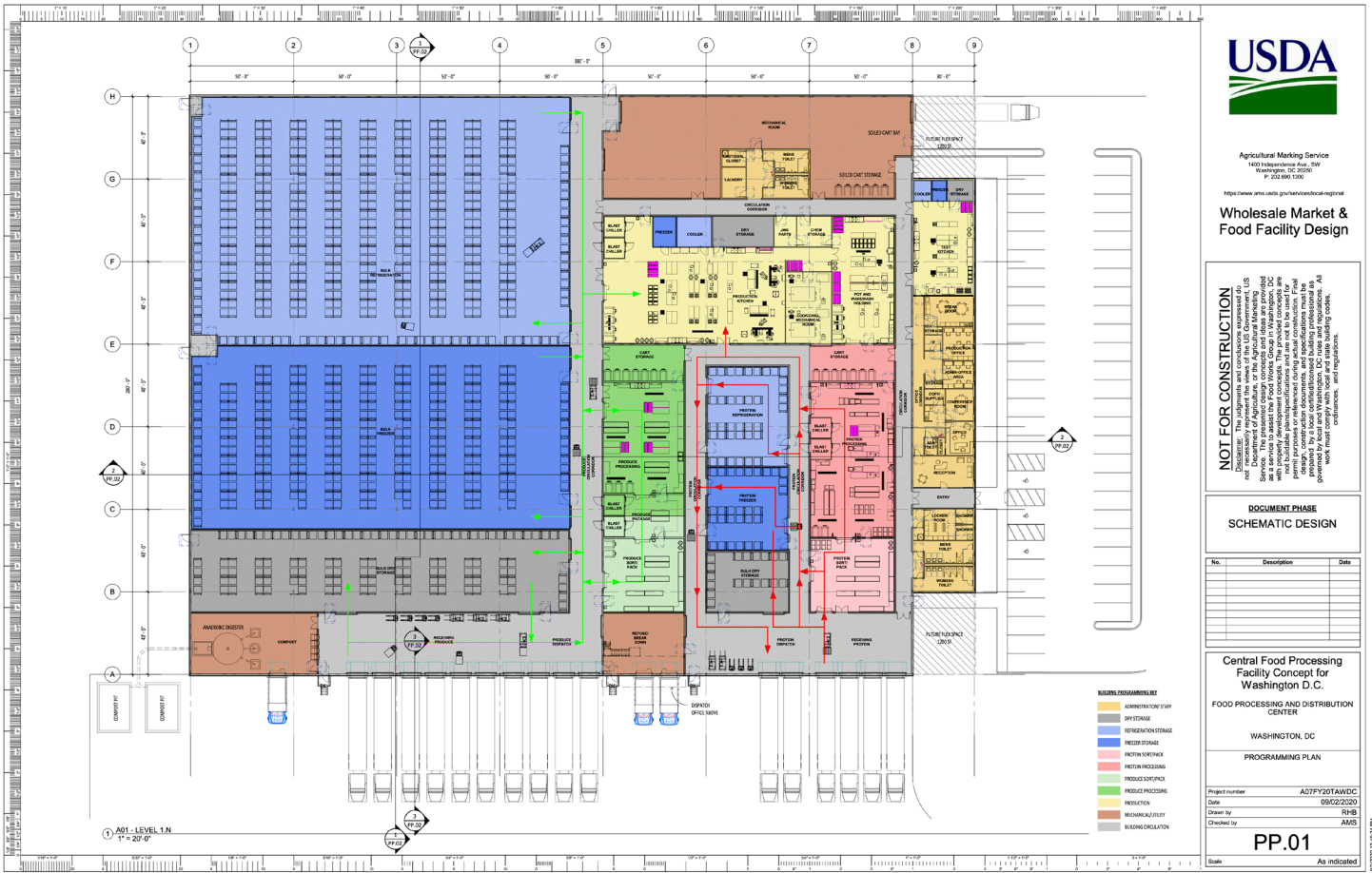
2. Dedicated spaces should be thoughtfully designed and equipped to include extra floor drains, electric, water, and gas hook-ups, a central compressed air system, and other features to future-proof the facility.

RECOMMENDATION

3. Locate facility leadership offices, meeting spaces, and classrooms near food production areas to enhance communication and understanding of daily operational functions. In addition, provide offices for District agency staff that utilize the CPF as well as for contracted co-manufacturing customers. Build in space for equipment storage, offices, and staff services in the original design.



Process and Workflow



Agricultural Marketing Service
 160 Independence Ave., SW
 Washington, DC 20250
 P: 202.858.1300

https://www.ams.usda.gov/wholesale-market
Wholesale Market & Food Facility Design

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DOCUMENT PHASE
SCHEMATIC DESIGN

No.	Description	Date

Central Food Processing Facility Concept for Washington D.C.
 FOOD PROCESSING AND DISTRIBUTION CENTER
 WASHINGTON, DC

PROGRAMMING PLAN

Project number: A27F20TAWDC
 Date: 09/02/2020
 Drawn by: RHB
 Checked by: AMX

PP.01
 Scale: As indicated

BEST PRACTICE

- Standardized production processes, workflow diagrams, and designated production areas create efficient and safe CPF operations.

ANALYSIS

MPS's Seybold, BVSD's Cooper, and Brigaid's Kennedy mention how environmental controls (temperature, air circulation) are part of the facility plan and process flows to control allergens, strong flavors, etc. Also, the flow of the physical materials (ingredients, supplies) in and out of the building not only affects buildout, but also creates operational efficiencies (or recognizes inefficiencies). FoodOps' Costello says, "The ideal situation is to have raw product coming in one end of a room and leaving out the other."

RECOMMENDATIONS

- Dedicated entry points and storage of product inputs should be separate from finished goods and other product outputs to optimize process flow and enhance food safety.
- Reinforce food safety by building in temperature control capabilities at facility entrances and receiving points, internal transfer points, and outbound distribution points.



Cold and Dry Storage



BEST PRACTICE

1. Storage space, especially cold storage, is both scarce and cyclical in the Mid-Atlantic region, and is often the primary bottleneck for food businesses which should be alleviated by a CPF.

ANALYSIS

Nearly every interviewed stakeholder confirms that cold storage has been a problem at some point during the current year, and having enough storage space would be a game changer for many businesses.

RECOMMENDATION

1. Build refrigeration and freezer space at a CPF with ample, multi-zone capacity to accommodate raw and minimally-processed regional produce for institutional buyers and other stakeholders to utilize throughout the year. Multi-zone cold storage should include a freezer zone (-10oF), produce (38oF), warming produce, e.g., tomatoes (55oF), as well as controlled ambient temperature zones.



Consider a central storage and processing facility for local food products.

In 2016, only 2% of the warehouse and storage services demanded by local food businesses were supplied within the District, and only 1% of the truck transportation services used for distribution were supplied by District businesses.

— DC Food Economy Study



BEST PRACTICE

2. Storage rental that is contracted to other food purchasers, e.g., area K-12 school districts, restaurant groups, and hunger-relief agencies, is a revenue generating function for a CPF.

ANALYSIS

CommonWealth Kitchen's Faigel stresses the importance of organized, segregated storage areas for co-manufacturing clients. Additionally, the need to monitor inventory of USDA commodities is important for the overall facility, as well as for each specific client. Faigel cites Boston Public Schools and hummus-making as an example, where the district was sitting on pallets of commodity-purchased chickpeas, but no one was registered or licensed to process them into hummus. CommonWealth Kitchen has since become a USDA processor, and can now contractually process ingredients like chickpeas into hummus. For a CPF, having these processes in place at the facility's inception would be beneficial.

BEST PRACTICE

3. A CPF should uniquely respond to the storage, processing, and logistics needs of the hunger relief community, affording established organizations such as Bread for the City, DCCK, and Capital Area Food Bank, the ability to flex into space if/when food insecurity surges.

ANALYSIS

According to Bread for the City (BFTC) CEO George Jones, families utilizing the food pantry would prefer food choice. With BFTC's pantry model, people get to choose what food items they want. This is not only designed to allow people to control their own diet, but also to reduce waste. Due to the COVID-19 public health emergency, BFTC has had to return to its old model of pre-packed bags that are now being delivered. As a consequence, waste has increased and customer satisfaction has decreased. With additional space, BFTC would have the ability to pack pre-ordered bags that are personalized, based on clients' personal choices and dietary preferences, increasing satisfaction and reducing waste. **In this way, the system is responding to the needs of the community, rather than the other way around.**

RECOMMENDATION

2. Storage areas within a CPF must be segmented physically and/or digitally so products by purchasers are tracked, and orders can be placed and pulled for distribution without disrupting process flow in order to create seamless revenue generation into normal operations.

RECOMMENDATION

3. Provide low- or no-cost ad hoc facility use for hunger relief organizations in the event of an emergency or supply chain disruption; and establish transparency about this resource to ensure equitable access.



A CPF facility readies our community for regional food resiliency by providing short-term cold storage for immediate meals production, medium-term storage to secure the region's food supply, and longer-term storage to circumvent food shortages. HSEMA's Critical Infrastructure Specialist Mark Scott says, "it is very important to understand what we can do upfront to build more resiliency into our communities so that, on the back end, we as an agency and District government don't have to come in and deploy resources for various kinds of food support like we had to do in response to the COVID-19 public health emergency."



Waste, Reuse, and Recovery

BEST PRACTICE

1. A CPF can provide a food-safe space to sort, process, and store food recovery items for hunger-relief organizations and others.

ANALYSIS

The Bill Emerson Good Samaritan Food Donation Act covers liability of reuse as long as the recovered product does not get sold. Recovered food that comes into a CPF could be processed and distributed for a nominal fee that covers facility, administrative, and labor costs.

DCCK's Bachman explains that the kitchen has historically done a lot of food recovery in the District and is one of the larger organizations that is able to pick up food from wholesalers, farmers markets, and restaurants. She says, "I can't tell you how many times I've gone to a distributor and they have 10 pallets of something and I know my team and my space can only handle two pallets. I'll work with Capital Area Food Bank, and others are fantastic resources, to try and get all of this food processed that otherwise would be thrown out. It should have been taken somewhere, but there's a limited capacity in the District." Bachman also notes that in other cities, recovered food is processed into value-added meals specifically for low-income communities.

BEST PRACTICE

2. Waste mitigation and minimization infrastructure should be accounted for and planned for in the implementation and buildout design of a CPF.

ANALYSIS

Annie White, Office of Waste Diversion manager at the DC Department of Public Works, and Jeffrey Neal, Loop Closing founder, presented the following organic waste management solutions:

- Composting offsite (\$45/ton), with processing and pre-treatment to extract water, lower weight, haul less material, and reduce costs. The onsite refinement allows for collection of energy from processing procedures, which can service some of the energy needs of the facility.
- Anaerobic digestion utilizing a bio-digester for partial composting onsite (\$15,000-20,000 investment) with a drum composter approximately 24-32 ft long, is capable of handling 250 tons/year of organic waste. However, the anaerobic digested food needs offsite finishing before it becomes compost, which includes a hauling fee.

RECOMMENDATION

1. Assess hunger relief organizations' capacity for sorting, storage, packing, and processing to inform refinements to flexible space and financial projections for a modest revenue stream from facility utilization and storage. As an additional function, a CPF could be used to sort, process, pack, or redistribute during national crises, disasters, or public health emergencies.

RECOMMENDATION

2. The CPF has two primary organic matter waste processing options: offsite composting services or an onsite anaerobic digester. The facility location will help determine the best solution, as it will take into account distance to processing facility, proximity to other residential and commercial properties, and other logistics factors.



"It's probably easy to sit back and you know, whoever is managing this to think we have this great new shiny kitchen. Now everyone try to beg for your time to come in here. A bit of a hyperbolic version, but to make it the other way, who do we have the honor of helping?"

— Justin Smith, Technological Collaborator, Sole Proprietor



Conclusion

A CPF can be a powerful and well-positioned asset and key catalyst to underpin food systems change in the District.

With the appropriate commitment and capital resources, a CPF will drive positive economic impact, bolster the region's producers and food businesses, and effect real change on the region. As a national leader in food systems, the District is strongly-positioned to utilize the learnings provided by fellow industry leaders, stakeholders, and the prevailing literature to improve upon the existing CPF model for the benefit of its residents and their future.

Specifically, the best practices and recommendations from this research indicate that the District is primed to maximize the benefits of a CPF facility and its core functions. And perhaps most importantly, a CPF gives the District the chance to start fresh and rethink its food system:

- to revamp how procurement policies are written;
- to create new facilities and processes for better food for more people;
- to ensure food contracts are written so that food can be sourced and served equitably in the District;
- to allow District government leadership the physical space to reprioritize food quality and accessibility as a regional security and safety issue as much as a supply chain issue; and
- to create the physical facility with the health, and prosperity of District residents, businesses, and institutions as top priority.

Nevertheless, more work must be done to translate best practices into operations, including a thoughtfully-crafted business plan for each operational component of a CPF. While this study benchmarks the programs and services of other institutions, customizing a facility that serves the District in the form of job creation, access to healthy regional food, and economic development, would require additional phases of work. To continue the process of creating a CPF the research team suggest the District Government address the following action items:

- **Create a comprehensive business plan for the development and operation of a CPF**, including capital funding, core competencies, financial model, management structure, and anchor tenants
- **Conduct an analysis of the scale of demand** for the District and its current food businesses – factoring in growth potential within

the District's food system

- **Assess physical facilities, land use, and zoning requirements** to develop a CPF necessary to meet the scale of demand for the District
- **Conduct transportation and environmental impact studies** to finalize location
- **Form an agency** early on to ensure project continuity
- **Identify potential mission-aligned partners, anchor purchasers, and allies** within District government as soon as possible
- **Further examine technological requirements and challenges** for inventory management, distribution, and other needs, and their associated costs
- **Make the economic case to support regional food as the first source of purchased food** for District procurement
- **Determine policy supports and incentives, and work toward their implementation.** The need to balance a CPF vision laid out in this study with the economic realities of low margins of school food will require a balancing act around the dollars and the mission impact.

The action items above are critical to bring a CPF to fruition. A CPF concept requires both visionary champions and substantial resource commitment. With these in place, the above next steps can enable this infrastructure to create a positive, fundamental shift in the regional food system.



“A facility like this, if properly designed, will be at the forefront of conversation and purpose around racial injustice and economic opportunity as well, that has been perpetuated for 400 years.”

Tom McDougall, Founder and CEO, 4P Foods

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Appendices

Appendix A: Acknowledgements

The research team would like to thank the 62 interviewees who took the time to speak with them and respond to follow-up emails during the early days of the COVID-19 public health emergency. These interviews were the underpinning of the team's best practices and recommendations. Please refer to Appendix C for the complete list of interviewees.

The research team is grateful to the advisory team for sharing their expertise and support for this study:

Amy Bachman, Director of Procurement and Sustainability, DC Central Kitchen

Dalila Boclin, Director of Programs, FRESHFARM

Ashley Colpaart, Founder and CEO, The Food Corridor

Jim Costello, Founder and President, FoodOps

Cathy Davies, CEO & Food Safety Consultant, Food Industry Employment Program, LLC

Al Goldberg, Founder, Mess Hall

Ryan Kennedy, Regional Chef (New London, Conn.), Brigaid

Tom McDougall, Founder and CEO, 4P Foods

Niraj Ray, Founder and CEO, Cultivate the City

Jean Ronnei, Senior Consultant, ProTeam Foodservice Advisors

Mark Scott, Critical Infrastructure Specialist, Homeland Security and Emergency Management Agency

Kate Seybold, Farm to School Coordinator, Minneapolis Public Schools

Lindsay Smith, Regional Food Systems Value Chain Coordinator, Metropolitan Washington Council of Governments

The following design service organizations also advanced this research by graciously sharing their talents to visually communicate the Central Processing Facility project vision.



ATK Design Studios



USDA's AMS Architectural Design Services

The following individuals also advanced this research by graciously sharing their subject matter expertise and contacts:

Andrea Alma, USDA Farm to School Regional Lead, Mountain Plains Region

Michael Carter Jr, Owner/Operator, Carter Farms

Rob Jaber, Executive Director, Food and Nutrition Services, DC Public Schools

Kristy McCarron, Association Director of Community Health, YMCA of Metropolitan Washington

Lindsey Palmer, Director of Nutrition Programs, District Office of the State Superintendent of Education

Daniel Stone, Author and Editorial Consultant

Bertrand Weber, Director, Culinary and Wellness Services, Minneapolis Public Schools

Rhys Williams, Executive Director, The Good Acre

Thank you to the District of Columbia's Office of Planning for their partnership in and financial support of this study.

Appendix B: Methodology

Based on the timing of this study, the research team acknowledges that the COVID-19 public health emergency has altered the methodology and lens through which research was conducted; it also serves as a poignant reminder that resiliency and risk mitigation are critical to ensuring food security, which a robust regional food system, including a CPF, is poised to address.

The research team used the following methodology:

1. **Formation of an advisory team:** The research team recruited 13 District and national food industry leaders, convened to ensure the scope of research was wide and deep. The advisory team engaged in the following tasks:
 - a. Identified individuals to interview;
 - b. Provided subject matter expertise;
 - c. Reviewed questions for interviews; and
 - d. Reviewed sections of the report.

Members of the advisory team are listed in Appendix A: Acknowledgements.
2. **Review of existing reports, legislation, and assessments:** Reports, DC legislation, and other documents were reviewed to determine the current food landscape in the District of Columbia. Such reports included the Healthy Schools Act of 2010 (DC Code Title 38, Chapter 8A), Healthy Students Amendment Act of 2018, DC Food Workforce Development Strategy, Sustainable DC 2.0, and many others. Learnings from this literature review provided the groundwork for Section VI : State of the District.
3. **Case studies:** The research team conducted phone interviews with representatives from 12 school districts across the United States in order to learn about the core competencies of their CPFs, and to apply recommended practices to the District CPF. Recurring themes, descriptions and core functionality of four facilities, and key takeaways from each are included in Section VII: Case Studies.
4. **Selection of interviewees:** The research team compiled a list of participant categories determined to be essential in evaluating best practices for a CPF. Example participant categories included supply chain, food safety, K-12 nutrition services, aggregation, food ecosystems, and partnerships. These categories were populated with 102 potential interviewees based on Cureate's and Food Works Group's networks, the DC Office of Planning, the advisory team's networks and additional recommendations, and the support of other colleagues. This list was culled to 73 potential interviewees. Eleven could not be reached or declined to be interviewed.
5. **Interviews:** The research team developed two sets of questions: one for District agency representatives, and one for all other interviewees; additionally, unique questions were crafted for each interviewee, depending on their role in the food system. Sixty-two

phone interviews were conducted, including with the 13 members of the advisory team. Each interview lasted approximately one hour. (Sample interview questions are included in Appendix E.)

6. **Stakeholder interview follow-up:** In many cases, follow-up questions or clarifications were required which was conducted via phone or email, for a total of up to three hours of interview time with some interviewees.
7. **Additional engagements:** The research team engaged with architects and food facility design specialists to visually communicate the potential core competencies, layout, and workflow of the CPF. These visual tools are embedded in the Facility portion of Section VIII: Findings and Recommendations. Additionally, the research team participated in a virtual meeting with 11 members of the Eastern Food Hub Collaborative, a formalized network of food hubs that aggregate and distribute from South Carolina to Maine, to understand how large and small aggregators could interact with such a facility. Additional informal meetings with stakeholders around the country also informed this work.
8. **Analysis:** Utilizing a list of 40 codes — e.g, procurement, storage, and labor — interview transcripts were coded and analyzed. Recurring themes were clustered by Operations, Facility, and Impact. These themes provided the basis for the findings and recommendations in this report.

Limitations:

- This study was launched in April, 2020. Due to the COVID-19 public health emergency, the research team was not able to visit facilities in the region or meet with stakeholders in person. Research included the literature review and 62 phone interviews.
- Connecting with some stakeholders was challenging due to the need for entities to pivot to emergency response scenarios.
- An accelerated timeline for this study due to the onset of the COVID-19 public health emergency limited the depth to which we could synthesize some data.
- Budget considerations, a transportation study, and an environmental impact study are outside the scope of this study; however, they are recommended action items.

Assumptions:

- Regional food becomes the first source of purchased food for K-12 public schools and other consumers; commodity purchases remain available and consistent, but are reframed as a secondary source to backfill gaps and supply other products not grown in the region.
- The vision for change put forth in this study assumes the CPF is operational. The transition to fully-operational status could take 5-10 years, or more; research and recommendations on best practices for operations during this transition period is outside the scope of this study.

Appendix C: List of Interviewees

Bridgette Acklin, Supervisory Vocational Development Specialist, DC Department of Human Services

Amy Bachman, Director of Procurement and Sustainability, DC Central Kitchen

Ona Balkus, Food Policy Director, Washington, DC Office of Planning

Christian Barrera, Chief Operating Officer, Department of Aging and Community Living

Sara Beckwith, State Director, DC Special Supplemental Nutrition Program for Women, Infants, and Children, DC Health

Lauren Biel, Executive Director, DC Greens

Lola Bloom, Director of Food and Wellness, DC Bilingual Public Charter School

Dalila Boclin, Director of Programs, FRESHFARM

Austin Bowen, Food Operations Manager, George Washington University Hospital

Christopher Bradshaw, Executive Director, Dreaming Out Loud, Inc.

Michael Carter, Jr., Owner/Operator, Carter Farms and Small Farm Resource Center Coordinator, Virginia State University

Laine Cidlowski, Food System Administrator, Denver Public Health and Environment

Ashley Colpaart, Founder and CEO, The Food Corridor

Ann Cooper, Director of Food Services, Boulder Valley School District

Jim Costello, Founder and President, FoodOps

Cathy Davies, CEO & Food Safety Consultant, Food Industry Employment Program, LLC

Brandy Drebelbis, Food Service Director, Napa Valley Unified School District

Laura Edwards-Orr, Director of Institutional Impact, Center for Good Food Purchasing

Robert Egger, Food Security Advisor to the Mayor, Santa Fe, New Mexico

Fred Espinosa, Manager of Production and Acquisition, San Diego Unified School District

Jen Faigel, Executive Director, CommonWealth Kitchen

Al Goldberg, Founder, Mess Hall

Pam Hess, Executive Director, Arcadia Center for Sustainable Food & Agriculture

Sara Hoverter, Senior Fellow and Adjunct Professor at Harrison Institute for Public Law, Georgetown University Law Center

Lea Howe, Director of School Food Initiatives, DC Greens

Jasmine Illa, former Chief of Staff, DC Workforce Investment Council

Rob Jaber, Executive Director, Food and Nutrition Services, DC Public Schools

George Jones, CEO, Bread for the City

Chapin Kaynor, Chief Operating Officer, The Hatchery

Ryan Kennedy, Regional Chef (New London, Conn.), Brigaid

Tim Kilcoyne, Director of Chef Operations, World Central Kitchen

April Kindt, Regional Chef (Bronx, N.Y.), Brigaid

Nick Kushner, Community Planner, DC Department of Parks and Recreation

Jennifer LeBarre, Executive Director, Student Nutrition Services, San Francisco Unified School District

Kate Lee, Director of Urban Agriculture, Department of Energy and Environment

Jenn Mampara, Director of Education, FRESHFARM Markets

Tom McDougall, Founder and CEO, 4P Foods

Kate Mereand, Program Manager, Innovation & Equitable Development, Department of Small & Local Business Development

Chris Miller, Produce Director, Grocery Coordinator, Meat & Seafood, MOMs Organic Market

Jeff Mills, Founder and CEO, Genuine Foods

Jose Morales, Business Development Manager-DC and Northern Virginia, Keany Produce & Gourmet

Jeffrey Neal, Founder, Loop Closing

Lindsey Palmer, Director of Nutrition Programs, District Office of the State Superintendent of Education

Sara Polan, Founder, Soupergirl

Matt Poling, Executive Chef, Greeley-Evans, Weld County School District 6

Niraj Ray, Founder and CEO, Cultivate the City

Jean Ronnei, Senior Consultant, ProTeam Foodservice Advisors

Virginia-Marie Roure, Program Coordinator, Innovation & Equitable Development Office, Department of Small & Local Business Development

Roland Rutjens, District Manager, Sodexo

Philip Sambol, Executive Director, Oasis Community Partners

Mark Scott, Critical Infrastructure Specialist, District of Columbia Homeland Security and Emergency Management Agency

Kate Seybold, Farm to School Coordinator, Minneapolis Public Schools

Josh Singer, Community Garden Specialist, DC Department of Parks and Recreation

Lindsay Smith, Regional Food Systems Value Chain Coordinator, Metropolitan Washington Council of Governments

Justin Smith, Technological Collaborator, Sole Proprietor

Pam Tsakalos, Nutrition Services Director, Davis (Utah) School District

Angela Tucker, Program Analyst, Office of Nutrition Services, DC Department of Parks and Recreation

Bertrand Weber, Director, Culinary and Wellness Services, Minneapolis Public Schools

Kelsey Weisgerber, Field Specialist: Food and Nutrition Operations, DC Public Schools

Annie White, Manager, Office of Waste Diversion, DC Department of Public Works

Betti Wiggins, Officer of Nutrition Services, Houston Independent School District

Samantha Wilson, Food Service Director, New London Public Schools

Appendix D: Additional Key Takeaways from Other School Districts Around the Country

Section VII: Case Studies showcases four school districts: Boulder Valley School District (Boulder, Colo.), Davis School District (Farmington, Utah), Minneapolis Public Schools (Minneapolis, Minn.), and Napa Valley Unified School District (Napa, Calif.). Three additional districts provided insights worth noting in this study, based on their innovation and successes.

Greeley-Evans School District (GESD), Greeley, Colo.

- Revamped about 10 years ago, the GESD CPF currently has an excess of storage space, so the district rents space to other local area school districts that don't have enough. This partnership creates a revenue stream for GESD and defers or mitigates the need to create new infrastructure. Distribution to other local area school districts is handled by the GESD CPF.
- GESD hires entry-level personnel for their school kitchens, and hires chefs with hotel, campus dining, or other institutional foodservice experience to staff a CPF.
- GESD's Poling, advised that a facility be built out with 2-3 times the electrical need for initial functionality, so that when equipment or functionality is added, the infrastructure is already in place. Additionally, design ample cooling facilities for a cook-chill model, along with the electricity needed to support it, as water baths and tumble chillers are energy-intensive.

Houston Independent School District (HISD), Houston, Texas

- Prior to becoming Nutrition Services Director, HISD's Wiggins was the Food Services Director for Detroit Public Schools. She successfully transitioned both Detroit and Houston from third-party food service management company operations to self-operated facilities. Betti stressed the value of transitioning away from foodservice management companies, in favor of self-operations, as a long-term cost saving measure (upwards of \$6 million for Houston). This transition provides procurement freedom, recipe and menu accommodation, and a flexible staffing structure.
- These cost savings come with some reallocation to support new staff positions, as well as costs associated with labor relations, i.e., union negotiations (she has five collective bargaining agreements in Houston).
- The HISD budget includes funding for a dedicated maintenance person, who is onsite daily, and sizable operational repairs. Additionally, the district chooses to lease transportation vehicles rather than own them.

- The HISD uses uniform menu offerings across schools. Also, fewer menu options create production, planning, and ordering efficiencies; lower labor costs; mitigate waste; and allow for more spending on quality ingredients. Further, more menu choices do not translate to greater school meal participation.
- There is substantial opportunity for HISD to engage in contract warehousing/commodity storage, contract food manufacturing, and selling to surrounding counties' school districts to provide additional revenue streams for HISD.
- Wiggins suggests that a CPF could be constructed with public funds, managed by a private entity, and evaluated by a nonprofit organization.

New London Public Schools (Brigaid Operation), New London, Conn.

- Brigaid's Kennedy, sees potential in developing a workforce pipeline, transitioning former restaurant chefs to working in school kitchens; however, he expresses some reservations about onboarding to the culture of low budgets, regulatory hoop-jumping, and strict nutrition guidelines.
- Design around a menu and operations plan, especially one that can be scaled to service additional needs in the community, such as contract meal preparation for senior meals and emergency meals.
- Meal creation efficiencies that can be recognized in a CPF include the following:
 - turnkey flavor profile enhancements, e.g., spice blends, marinades, sofrito
 - sous vide protein cooking, utilizing raw commodities and clean-label ingredients
 - dry mixes for baking (quickbreads, muffins)

Appendix E: Sample Interview Questions

Interviews with stakeholders, including the advisory team, District agency representatives, representatives from school districts around the country, and others, consisted of 15-20 questions. The research team developed customized questions, based on the interviewee's expertise. Each interview lasted about one hour.

Listed below are sample questions for advisors and other stakeholders.

1. How do you envision a CPF having the greatest impact on a regional food system? What would you include in the space?
2. Are there facilities and operational models that you know of in other jurisdictions that successfully integrate cross-functional food needs in one space? If so:
 - a. What are the core competencies of the facility (value-added processing, shared use kitchen, co-manufacturing)?
 - b. Please cite any specific characteristics of the facility (storage, loading, processing).
 - c. Who operates and manages the facility?
3. What efficiencies could be gained from co-locating [co-manufacturing, ingredient/product processing, meals production, and distribution] functions?
 - a. What are the key metrics you would look at to evaluate the success of the facility?
 - b. What, if any, user/operational concerns would you have for co-locating food production services?
 - c. What role should the government play in the operation of this CPF vs. privately-held management?
 - d. Could such a facility fulfill other foodservice needs in the community (ex. child development centers, senior centers, food entrepreneurial businesses)?

4. How has the COVID-19 public health emergency pointed out blindspots in our food system (e.g., national wholesale supply chain, production challenges, summer meals enrollment/adult meals subsidies, workforce, food safety practices, emergency response preparedness)?
5. We will be examining exceptional workforce development and reskilling programs for best practices. Are there any that come to mind, food related or not?

Sample questions for District agency stakeholders:

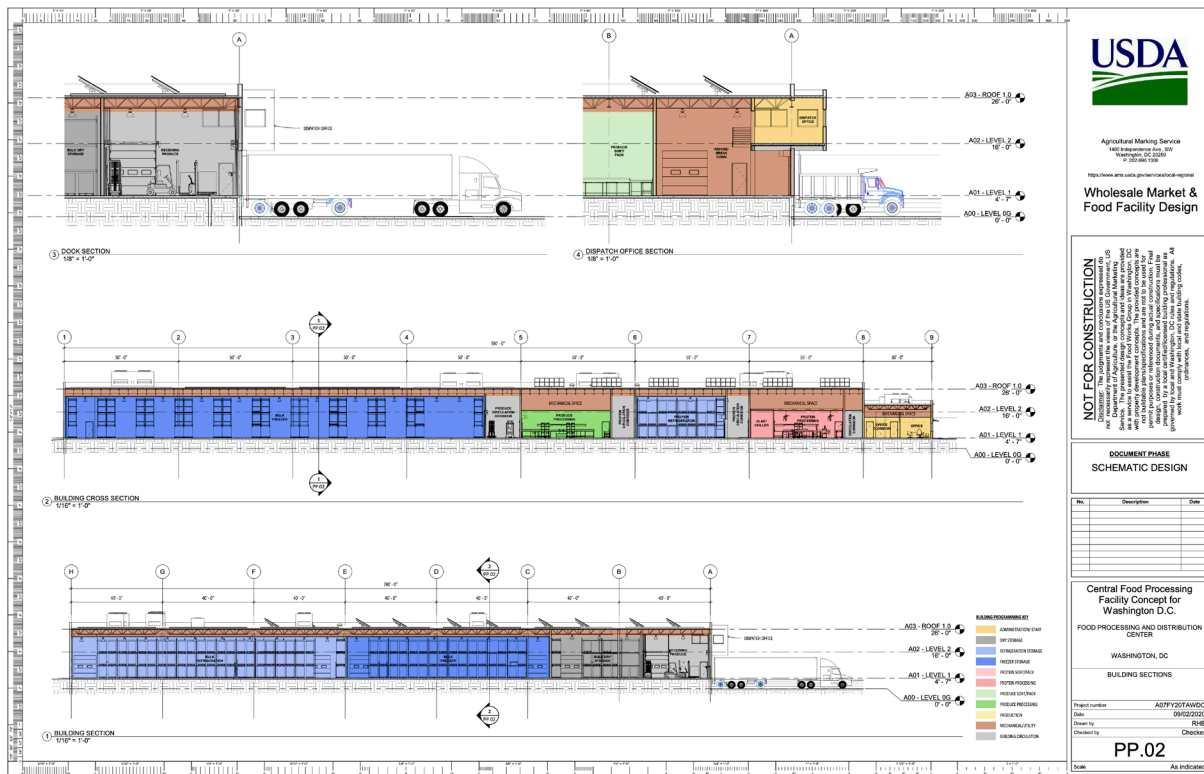
6. Tell us about how your agency's mission, programs, and services support the local food ecosystem (ex. public health, food access, urban agriculture, waste reduction, workforce development).
7. Do you see ways in which your agency's focus and priorities might interact with the functions or services of a CPF?
8. Does your agency support any of the following areas:
 - a. workforce development or economic development opportunities (business startup, technical assistance);
 - b. food access or public health as it relates to food/nutrition; or
 - c. environment or waste management?
9. What are the opportunities you see for public-private partnerships in this space?

Appendix F: CPF Facility Design Renderings

This appendix is a design suite from the food facility architects and advisors. These images are intended to portray the proposed functionality and translate the finding and recommendations in the body of the report into a visual representation of a facility at scale.



This image shows the proposed CPF exterior view at scale.



Building bisection.



This image shows the receiving and distribution areas.



This image shows a section of the CPF cold storage (refrigerated) storage area.

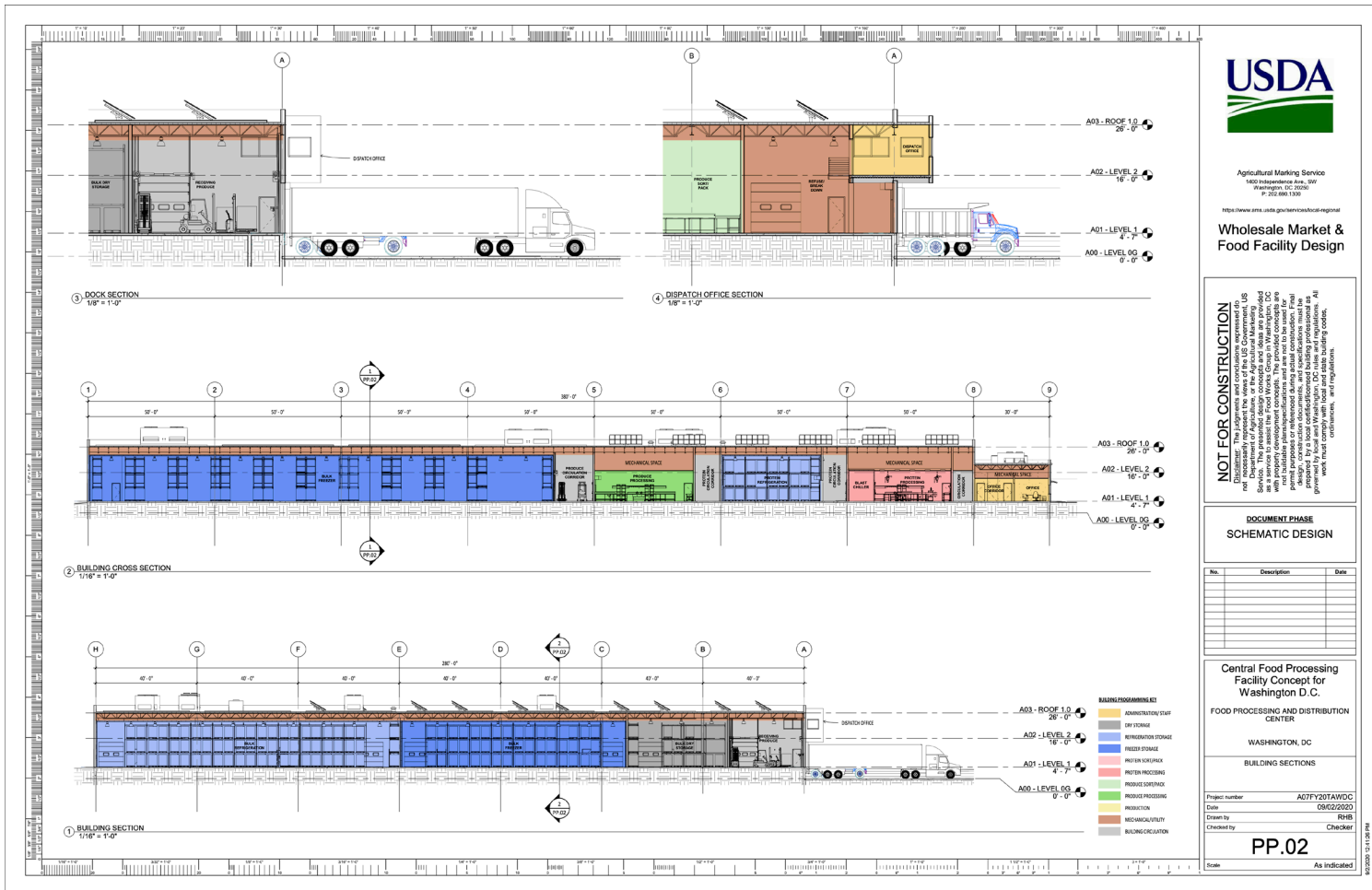


These images show the cook-chill and co-manufacturing food production area, with sample cook-chill bulk food production equipment placeholders to show the scale and scope of this portion of the facility; and the test kitchen space.





This image shows what a protein processing area would look like. A similar space is designed for produce processing as well.



Agricultural Marketing Service
1800 Independence Ave., SW
Washington, DC 20256
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<https://www.ams.usda.gov/services/central-region>

Wholesale Market & Food Facility Design

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DOCUMENT PHASE
SCHEMATIC DESIGN

No.	Description	Date

Central Food Processing Facility Concept for Washington D.C.

FOOD PROCESSING AND DISTRIBUTION CENTER

WASHINGTON, DC

BUILDING SECTIONS

Project Number: ACFY20TAWDC
Date: 08/20/2023
Drawn by: RHB
Checked by: Checker
PP.02
Scale: As indicated

This image shows the process flow and floor plan.

Appendix G: Other Resources

This appendix is the compilation of several important documents, resources, and recommendations from stakeholders, interviewees, and collaborators versed in food production best practices, menu cycles, and potential food tech solutions.



CYCLE MENU

SY 2019/2020

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	Chicken Alfredo Steamed Broccoli Garlic Roll	Beef Enchiladas w/ Red Sauce Yellow Rice Stewed Pinto Beans	Sloppy Joe on a Ciabatta Roll Roasted Potato Wedges	BBQ Chicken Honey Thyme Carrots Cornbread	CheesePizza or Pepperoni Pizza Kale Caesar Salad
Week 2	Rotini Bolognese Steamed Broccoli Garlic Roll	Grilled Cheese Sandwich Tomato Soup Kale Chips	Beef Nachos w/ Queso Layered Bean Dip	Peruvian Chicken Solterito Fried Rice	Cheesburger or Hamburger Roasted Potato Wedges Burger Sauce
Week 3	Meatloaf Mashed Sweet Potatoes Kale Chips Dinner Roll	Chicken Teriyaki Vegetable Fried Rice Roasted Broccoli	Beef Tacos on Soft Corn Tortillas Stewed Black Beans	Jerk Chicken Rice and Beans Roasted Plantains	Spaghetti & Meatballs w/ Marinara Kale Caesar Salad Garlic Roll
Fruit/ Veg	Sliced Oranges Fresh Apples Baby Carrots	Sliced Pineapple Fresh Apples Baby Carrots	Sliced Watermelon Fresh Apples Baby Carrots	Sliced Canteloupe Fresh Apples Baby Carrots	Sliced Honeydew Fresh Apples Baby Carrots

Sandwiches and Salads Available Daily: Turkey and Cheese on Ciabatta, Ham and Cheese on a Baguette, Sun Butter and Jelly Sandwich, and Chicken Caesar Salad

July BREAKFAST DPR

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1 Yogurt & Granola w/ Fresh Fruit	2 Blueberry Bagel & Cream Cheese & Fruit	3 Holiday	4 Holiday
		Pear	Apple Sauce		
6 Corn Chex w/ Fresh Fruit	7 Plain Bagel & Cream Cheese w/ Fresh Fruit	8 Cinnamon Crumble w/ Fresh Fruit	9 Blueberry Muffin w/ Fruit	10 Yogurt & Granola w/ Fresh Fruit	11 Banana Muffin w/ Fresh Fruit
Apples	Oranges	Pear	Apple Sauce	Pear	
13 Multigrain Cheerios & Giant Cinnamon Grahams w/ Fresh Fruit	14 Berry Apple Zee Zees Bar w/ Fresh Fruit	15 Banana Muffin w/ Fresh Fruit	16 Waffle & Syrup w/ Fruit	17 Blueberry Burst Bagel & Cream Cheese w/ Fresh Fruit	18 Cinnamon Crisp Zee Zees Bar w/ Fresh Fruit
Apples	Oranges	Pear	Apple Sauce	Pear	
20 Cinnamon Chex & Educational Snacks w/ Fresh Fruit	21 Blueberry Burst Bagel & Cream Cheese w/ Fresh Fruit	22 Waffle & Syrup w/ Fresh Fruit	23 Banana Muffin w/ Fruit	24 Plain Bagel & Cream Cheese w/ Fresh Fruit	25 Blueberry Muffin w/ Fresh Fruit
Apples	Oranges	Pear	Apple Sauce	Pear	
27 Multigrain Cheerios & Giant Cinnamon Grahams w/ Fresh Fruit	28 Plain Bagel & Cream Cheese w/ Fresh Fruit	29 Yogurt & Granola w/ Fresh Fruit	30 Blueberry Muffin w/ Fruit	31 Corn Chex w/ Fresh Fruit	
Apples	Oranges	Pear	Apple Sauce	Pear	

Did you know? We only serve milk that is rBST-free. That means it is from cows not treated with any hormones, ensuring your milk is only made of the good stuff like calcium, vitamin D and protein! Don't forget to grab a carton of low-fat or non-fat milk with breakfast!

revolution foods.
This initiative is an equal opportunity provider. All grants offered are whole grain only.

Choice of 1% or fat-free milk; fresh fruit available daily except when fruit juice is served.

Dairy-Free (DF)
Vegetarian (V)

Student Favorite ★

FARM FARE'S NEW PLATFORM HAS ARRIVED

EFFICIENCY MATTERS: FARM FARE

where food systems and technology expertise finally meet.

A PLATFORM DESIGNED FOR MANY USES

INTRODUCING THE FARM FARE APPROACH

Creating Economies of Collaboration

We grew up learning produce distribution in the food hub world. We learned ... a lot ... the hard way. But, it also helped us understand what we needed in a technology tool to make our work more efficient. Then, we joined forces with a team that understood technology. This teamwork allowed us to translate our food systems insights into a technology that supports aggregators, central processing facilities, & small- and medium sized growers and food producers. We like to say, we're equipping economies of collaboration to compete with economies of scale.

Thank You.

A CPF is the next step in working towards a more sustainable, equitable, and resilient DC.

