



# STRENGTHENING THE REGIONAL VALUE-ADDED DAIRY DISTRIBUTION SYSTEM

April 2022



## PREPARED FOR

The Northeast Dairy Business Innovation Center

## BY

KarenKarp&Partners

P.O. Box 515  
Southold, NY 11971

T: 212.260.1070  
F: 917.591.5104

[kkandp.com](http://kkandp.com)

# Contents

## ***INTRODUCTION***

Executive Summary.....	4
Background.....	7
Methodology & Team .....	10
Glossary .....	12

## ***RESEARCH FINDINGS***

Key Findings.....	15
Supply Chain Case Studies .....	21

## ***PATHS FORWARD***

Strategic Directions .....	43
Recommended Interventions .....	46
Conclusion.....	61

## ***APPENDICES***

Appendix I: Phase 1 Interview Findings.....	63
Appendix II: Secondary Research Findings.....	75
Appendix III: Source List.....	81
Appendix IV: Acknowledgments .....	84

A photograph showing a large herd of white goats in a grassy field. In the background, a red barn with a dark wooden door is visible. The goats are looking towards the camera, with one prominent goat in the foreground looking directly at the viewer.

# Introduction

# Executive Summary

## **PURPOSE**

Fluid milk consumption in the United States has declined steadily for years, yet overall dairy consumption has actually grown and is projected to continue to grow, largely due to increased consumption of cheese, butter, and other value-added dairy products. Because of this, the regional value-added dairy sector represents a significant opportunity for New England's dairy industry, which is comprised primarily of small- and mid-size dairy farms.

To ready the region to realize that market opportunity, in 2021 the Northeast Dairy Business Innovation Center (NE-DBIC) retained the food system consultancy KK&P (Karen Karp & Partners) to identify opportunities to strengthen the region's value-added dairy distribution network and increase value-added dairy producers' ability to leverage it, in order to bring the region's unique and delicious products to stores, cafeterias, restaurants, and households throughout New England and the country.

## **KEY FINDINGS & STRATEGIC DIRECTIONS**

### FINDING

*The Northeast's value-added dairy supply chain works well for many buyers and producers, but it shows signs of brittleness.*



### STRATEGY

#### **BUILD RESILIENCY**

- Take a holistic view of distribution as a process that includes producer readiness, marketing and sales strategies, relationships and more.
- Apply a long-term view and broad goal of increasing resiliency and reducing brittleness in distribution networks to all industry investments and efforts.

### FINDING

*Challenges in attracting and retaining human capital are among the largest risks to the viability and vibrancy of distribution networks in the Northeast.*



### STRATEGY

#### **GROW THE WORKFORCE**

- Convene a cross-sector, collaborative, cross-industry, multi-state regional working group to build a comprehensive workforce development strategy.

- Build the pipeline of people into the industry and consider scaffolding career pathways and opportunities with Registered Apprenticeship programming.

#### FINDING

*Existing small-scale freight and distribution specialists present a pathway to building resiliency throughout the distribution sector and to reducing distribution friction for producers and buyers.*



#### STRATEGY

#### INVEST IN EXISTING DISTRIBUTORS

- Invest in emerging and existing distributors throughout New England in order to build resiliency and capacity and cultivate a "deeper bench."
- Focus investments on improvements and enhancements to the infrastructure assets of distributors who provide upstream, "first-mile" connections to producers.

#### FINDING

*Marketing and relationship-building are critical parts of the distribution process, and they need strengthening in New England.*



#### STRATEGY

#### MARKET AS A REGION

- Promote New England's identity as a leading region for value-added dairy products, and increase buyer and consumer access to the breadth of producers in the six states.
- Support producers in improving their individual business marketing-related assets and capacities.

#### FINDING

*Distribution readiness involves significant administrative and technical capabilities with which many producers struggle.*



#### STRATEGY

#### SUPPORT DISTRIBUTION READINESS

- Develop a regional-level service to build and maintain distribution readiness among value-added dairy producers in New England at all stages of the business lifecycle.
- Support producers to access available technical assistance services.

## **RECOMMENDED INTERVENTIONS**

Taken together, these initiatives work towards the goal of creating market access, increasing resiliency, and reducing brittleness in the value-added dairy product and distribution sectors.



### **New England Value-Added Dairy Center**

A brick-and-mortar training and technology center, providing high-level professional development, hosting networking opportunities and marketing events, and strengthening the industry's intellectual brain trust.



### **Food-Focused Workforce Development Program**

A multi-state, Registered Apprenticeship program with occupation-specific tracks for food manufacturing, supply chain logistics, and light/heavy trucking, paired with a robust marketing effort.



### **Investment Program for Distribution Infrastructure**

A loan and/or grant program that makes capital investments in individual distribution entities in order to positively impact the region's distribution sector and industry.



### **New England Value-Added Dairy Atlas**

A well-designed, user-friendly showcase for regional value-added dairy producers and products, with comprehensive information for wholesale buyers and active promotion in consumer-facing channels.



### **Finance and Administration Technical Assistance Service**

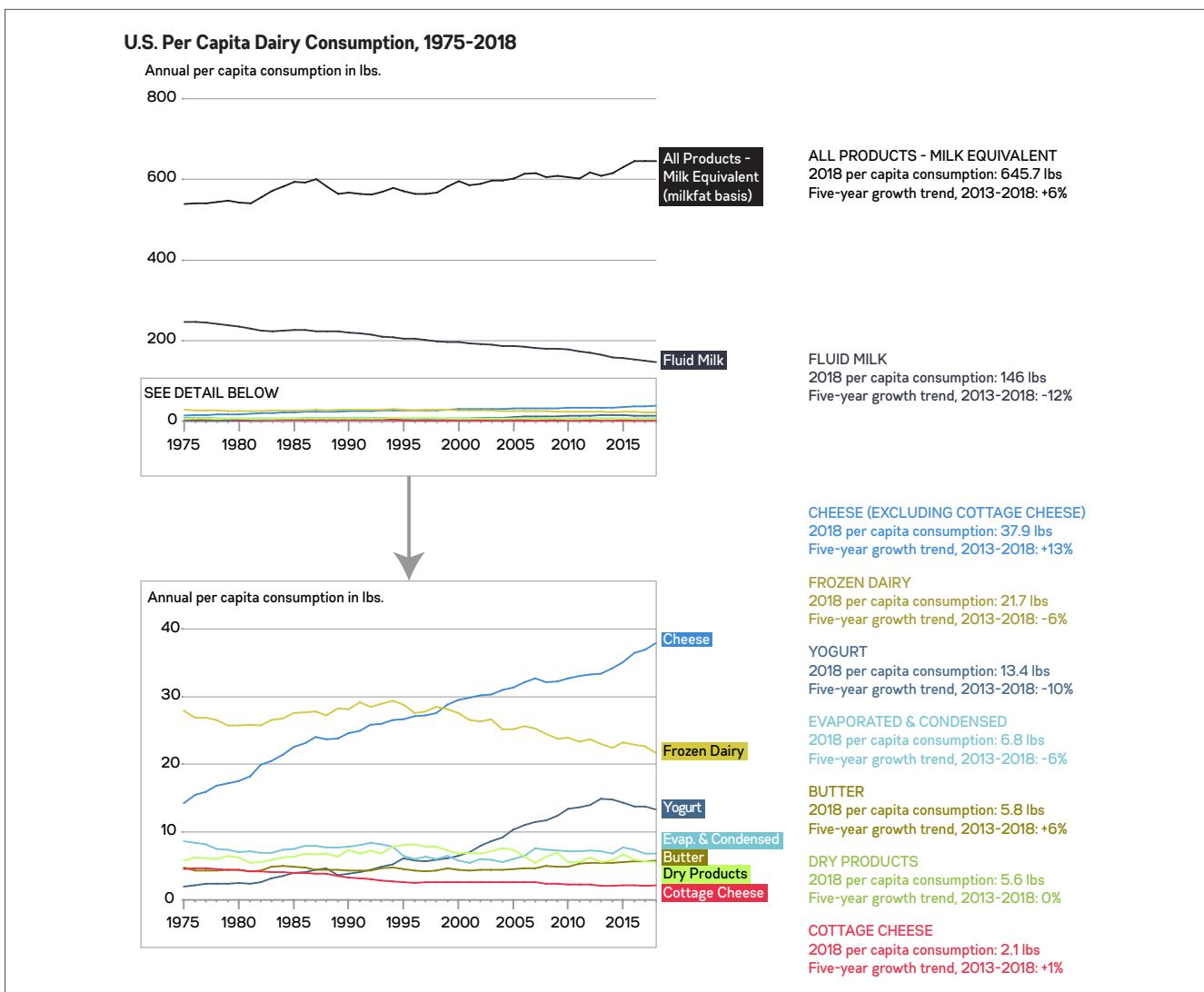
A "one-stop-shop" technical assistance service for value-added dairy producers, processors, and distributors, focused on administrative requirements and financial opportunities, with services provided in-house and through referrals.

# Background

The Northeast Dairy Business Innovation Center (NE-DBIC) was launched in February 2020 as one of three inaugural USDA Dairy Business Innovation Initiatives in the nation. It serves a ten-state region that includes all six New England states, as well as Delaware, Pennsylvania, New Jersey, and New York. The NE-DBIC's investments and projects promote "innovation and resiliency for regional production of dairy products."<sup>1</sup>

Three broad, well-documented trends loom over the dairy sector today and confirm the importance of the NE-DBIC's mission.

First, per capita fluid milk consumption in the United States has declined steadily for years, yet overall dairy consumption has actually grown. This is largely due to increased consumption of cheese and butter, which require many pounds of fluid milk to produce a single pound of finished product. Market research forecasts that U.S. cheese consumption



1 <https://agriculture.vermont.gov/dbic>

will grow by 14 percent from 2019 to 2024, with specialty cheeses alone forecasted to grow 8 percent per year from 2019 to 2024, significantly outpacing growth in the overall cheese market.<sup>2,3</sup>

Second, the federally defined base price for fluid milk has only exceeded the total cost of production in a single year over the past decade (2014); in all other years dairy farmers producing milk for the fluid market have essentially been operating at a net loss. Although some higher value alternatives such as the organic milk sector have sometimes provided relief for fluid milk producers, even the organic market is not insulated from price volatility, oversupply, and disruptions.<sup>4</sup> In the fall of 2021, two major processors—Danone (Horizon) and Maple Hill Creamery—announced the termination of their contracts with close to 130 regional organic dairy farms.

Third, these price dynamics and the wide availability of long-range cold-chain management have contributed to an environment where the economics of production favor ever larger dairy farms. Some analyses suggest that dairy farms selling into the fluid milk market need to have 1,000 milking cows or more in order to be competitive today. Looking at the state of Vermont as an example, the total number of dairy farms in operation has declined by almost half in the past 20 years, but the number of dairy cows in the state has dropped by only 15 percent and the total milk production has held steady.<sup>5</sup> The change is one of scale bifurcation: small farms stay small, mid-sized farms are increasingly rare, and the largest farms grow.<sup>6</sup>

These sector dynamics play out at the national level and are felt acutely in the Northeast and in New England in particular, where the dairy industry is comprised of primarily small farms and where a regional reputation is growing around value-added dairy products. In light of this, NE-DBIC is especially interested in maximizing opportunities for the region's dairy farmers in the value-added sector—cheese, yogurt, butter, ice cream, on-farm bottled milk, and many other delicious foods. Market opportunities for these products abound in the Northeast: the region includes approximately 56 million inhabitants, 20 metro areas each with more than 500,000 residents, and New York City, the largest metro region in the country with some 20 million inhabitants as well as a major hub for national and international food distribution. Furthermore, the majority of the region can be traversed by truck in a single day, an advantage as compared to less densely populated and larger regions in the country.

Yet despite the unparalleled market opportunities the Northeast presents to the region's value-added dairy products, small and mid-sized producers encounter some obstacles in the process of entering and consistently accessing high value markets. The Northeast's value-added dairy supply chain features challenges that span producer readiness to distributor capacity to buyer awareness. In addition, the region's value-added producers—

2 Sundale Research. *State of the Industry: Cheese in the U.S.*, January 2020.

3 KK&P. *Vermont Dairy Market Assessment*. February 2020.

[https://agriculture.vermont.gov/sites/agriculture/files/doc\\_library/KKP\\_VT%20Dairy%20Marketing%20Assessment0224.pdf](https://agriculture.vermont.gov/sites/agriculture/files/doc_library/KKP_VT%20Dairy%20Marketing%20Assessment0224.pdf)

4 <https://vtidigger.org/2017/08/27/organic-milk-prices-plummet/>

5 KK&P. *Vermont Dairy Market Assessment*. February 2020.

6 Vermont Agriculture and Food System Plan 2020.

[https://agriculture.vermont.gov/sites/agriculture/files/doc\\_library/Vermont%20Agriculture%20and%20Food%20System%20Plan%202020.pdf](https://agriculture.vermont.gov/sites/agriculture/files/doc_library/Vermont%20Agriculture%20and%20Food%20System%20Plan%202020.pdf)

even those with strong brands and high levels of market savvy—are sometimes at a price disadvantage relative to equivalent products made in other U.S. regions or Europe (for reasons that are multifactorial and separate from the core issues addressed in this project, but seem to relate broadly to relative levels of support in marketing and labor costs).

The NE-DBIC retained the food system consultancy Karen Karp & Partners (KK&P) in 2021 to conduct research into the Northeast's value-added dairy distribution network as relates to New England's small and mid-sized producers—capacities, strengths, inefficiencies, challenges, and gaps as product moves from farms to stores. This goal of this research was to better understand the overall functioning of this supply chain, identify potential tactics to strengthen distribution networks, and increase market opportunities for value-added dairy producers over the long-term, in order to bring more of the region's unique and delicious products to stores, cafeterias, restaurants, and households throughout New England and the country.

# Methodology & Team

The work plan for this project occurred in two phases. Phase 1 focused on discovery, interviews, and secondary research, while Phase 2 consisted of more targeted research, development of supply chain case studies, and development of recommendations.

The KK&P team for this project included Senior Consultants Shayna Cohen, Christophe Hille, and Ben Kerrick, and Associate Consultant Brian De Corte. Two experts in transportation, logistics, and supply chain development supported the KK&P team as well. Hakan Andersson, CEO of Establish, Inc. (a supply chain focused management consulting firm), advised on Phase 1 of the research. Joseph Dack, Transportation Logistics Project Manager at HDR (a design firm specializing in logistics, engineering, architecture, environmental and construction services), supported the KK&P team as an advisor in both Phase 1 and Phase 2.

## **Interviews**

The research team interviewed 22 individuals representing businesses and organizations along the entire value-added dairy supply chain. All interviews took place by phone or video conference. The interview subjects were deliberately selected to represent a diversity of scales and geographies, across the region's six states and representing a mix of urban and rural stakeholders. They were selected not to be comprehensively representative of the full landscape of players, but to represent a range that could highlight key regional themes. Interviewees were heavily representative of cheese products (as opposed to other value-added dairy products), regardless of their role in the supply chain. Interviewee placement in the dairy value chain broke down accordingly:

- Value-added producers: 8
- Distributors: 7
- Retailers: 3
- Sector experts: 4

Of the 8 value-added producers interviewed, 5 were cheesemakers. They ranged from micro-scale (2,000 lbs./year of production) to mid-scale (1,000,000 lbs./year). Three small- to mid-scale ice cream makers (10,000-800,000 lbs./year production) were also interviewed. Four interviewed producers were based in Vermont, while the others were divided between Maine, Massachusetts, and New Hampshire.

The 7 distributors interviewed ranged from relatively small food hubs to large national broadline distributors and included one frozen products distributor. The retailers included a small specialty cheese shop, a mid-size food co-op, and a large national retail brand. And the 4 sector experts included leaders of 2 regional state cheese guilds and 2 cheese marketing experts.

Detailed Phase 1 interview findings are presented in full in Appendix I.

## **Secondary Research**

As a complement to the interviews, the research team conducted a literature review which included a wide range of resource types: academic and industry reports, news articles, databases of funded projects from other USDA Dairy Business Innovation initiatives, state freight plans, presentation decks from project advisors, regional food system studies, and policy briefs. The team also reviewed data from the Bureau of Labor Statistics to understand current and projected patterns in truck driver employment. A summary of secondary research findings is presented in Appendix II, and a source list can be found in Appendix III.

## **Supply Chain Case Studies**

During Phase 2, KK&P conducted research to refine Phase 1 findings and created five supply chain case studies that illustrate how New England value-added dairy products move from producer to market today. The case studies feature actual Northeast supply chain players, relationships, and assets within the region and highlight opportunities to reinforce and strengthen the regional distribution system for the future. These case studies showcase supply chain mechanics but also describe other factors that enable or limit regional supply chain function, such as labor, relationships, network knowledge, and organizational capacity.

## **Workshop**

Near the conclusion of the project, the KK&P team led a workshop to present a summary of findings and recommended interventions, with a goal of field-testing the recommendations against an audience of stakeholders (from across the region and across sectors) who had prior experiences with analogous efforts, knew of similar existing programs, and who may play a future role in a given initiative as partners or advisors. The 12 people who participated represented a mix of public and private sectors (from state departments of commerce and labor to regional food systems non-profits and dairy industry leaders), food/dairy industry perspectives, and individual state and broader regional perspectives. Feedback from workshop participants informed the strategic directions and recommended interventions presented in this report.

# Glossary

A range of distribution-related terms are used throughout this report. While not all of the definitions that follow are necessarily industry-standard terms, the research team has found them useful and relevant for evaluating distribution networks for the region's value-added dairy products.

**Distribution:** Throughout this report, the word "distribution" is used in two major ways. In most cases, it refers to the overarching network of operators, infrastructure, and communication that moves products in various ways by different types of entities from producer to customer. In some cases, the term is used to specifically describe the typical distributor business model wherein an operator takes ownership of products once they leave the value-added producer's facility and re-sells units to customers through their sales channels, usually applying a mark-up of around 30 percent over the original price paid to producers. In this usage, "distribution" is distinguished from "freight," which is described below.

**Freight:** The term "freight" (or shipping) refers to a fee-for-service activity wherein products are moved from one point to another, without the shipper taking legal possession of the products nor being responsible for sales or customer management. Freight is typically performed on larger units or aggregations of products, e.g. full or partial pallets, and priced for the amount of space that product occupies and/or the distance travelled. Freight could involve Less Than Truckload (LTL) volumes, typically a pallet or multiple pallets where the volume doesn't justify paying for a full truck, or a Full Truckload (FTL) where a shipper pays for the entire truck's volume.

**Upstream:** Upstream refers to the portion of the distribution network that bridges the "first-mile" between producers (e.g. cheesemakers) and distributors or freight services. A given distributor or freight provider might perform services "upstream" (e.g. on-farm pickups) and "downstream" (e.g. deliveries to customers), or may specialize in one or another.

**Downstream:** Flipside to the definition above, the term "downstream" refers to the portion of the distribution network that is customer-facing—everything between warehouses and the end-point buyer (e.g. retail store, restaurant, or e-commerce consumer). As per above, some distribution and freight entities perform services "upstream" and "downstream," meaning that they may pick products up from producers and handle every part of the supply chain down to individual customer deliveries. Other distributors are specialized in the downstream portion only and these are typically the ones that supply customers in larger metropolitan regions.

**Cross-docking:** Cross-docking is a specific supply-chain practice of unloading goods from one producer (e.g. the original producer, performing their own delivery) or mode of transportation (e.g. a freight service) more-or-less directly to another customer (e.g. a distributor) or other mode of transportation (e.g. another intermediary freight provider), with little or no storage in between these stages. A critical element of cross-docking is that the

operator of the site where the exchange occurs should need to make only minimal efforts to move, refrigerate, or store the products. This keeps handling costs as low as possible.

**Order consolidation:** A service wherein a distributor or freight service disaggregates separately received products from multiple producers (e.g. several hundred units each from cheesemakers A, B, and C on different pallets) and re-consolidates orders comprised of smaller portions of products from multiple producers (e.g. a single pallet consisting of products from cheesemakers A, B, and C) for specific buyers.



# Research Findings

# Key Findings

In this section, research findings are synthesized into five thematic areas. Across more than twenty interviews conducted as well as numerous follow-up conversations and secondary research, several consistent themes emerged about the Northeast's distribution ecosystem—the challenges that producers encounter when sending their products off to market, the factors limiting distributors in their efforts to grow, the dynamics that buyers and retailers observe in their purchasing relationships with producers, and the general health of the value-added dairy product sector overall. These themes are organized and summarized below. The detailed project findings are provided in Appendix I (Phase 1 Interview Findings) and Appendix II (Secondary Research Findings).

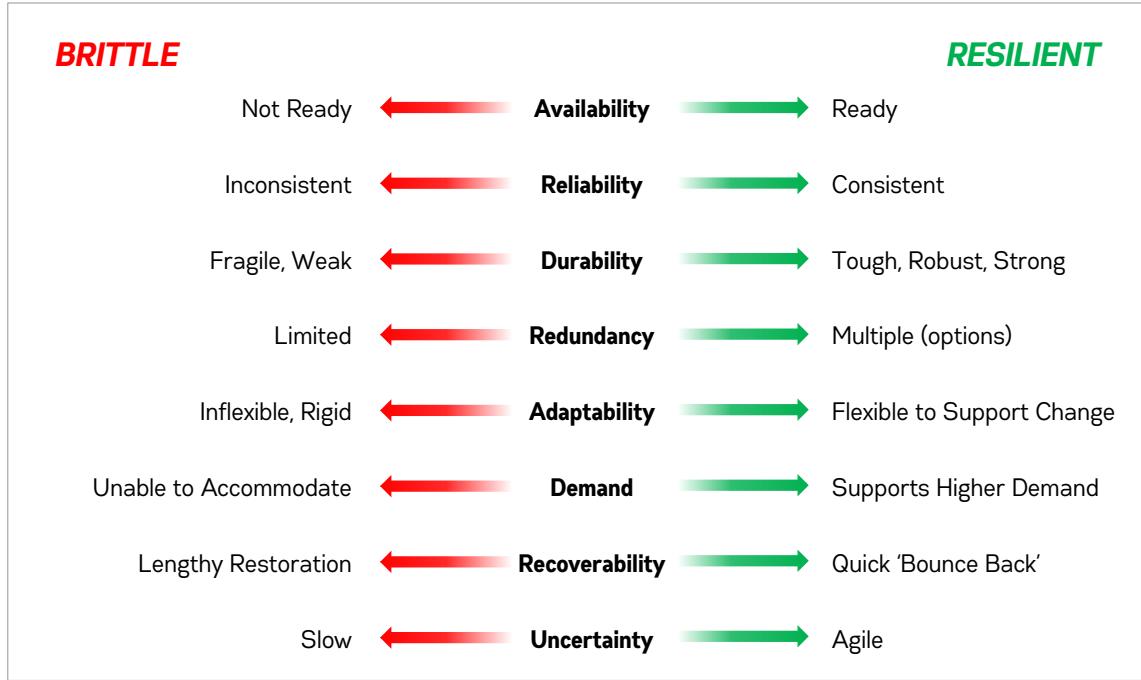
## **FINDING 1**

### ***The Northeast's value-added dairy supply chain works well for many buyers and producers, but it shows signs of brittleness.***

The Northeast's distribution network generally receives high marks from buyers, distributors, and producers for enabling value-added dairy products to reach their intended markets. Using existing supply chain structures and distribution mechanisms, most producers (particularly those who meet a baseline of required administrative, operating, and marketing capacities) are able to move their products to a range of markets. Furthermore, the Northeast's value-added dairy sector—cheese products in particular—has a strong regional and national reputation. The market for value-added dairy products has shifted, matured and grown, in part as a natural evolution of the mainstreaming of products like artisanal cheeses but also in response to supply chain convulsions like those caused by the COVID-19 pandemic, and most buyers and distributors are able to access most of the products and producers they want to access most of the time.

Despite this generally favorable perspective, the overall value-added dairy product supply chain in the Northeast can also be characterized as "brittle"—as opposed to resilient—in a number of regards. A brittle supply chain is one in which certain circumstances (e.g. public health crisis, climate change, key operator retirements) could break or significantly impact the regular and predictable flow of product to customers. Resiliency is not a binary phenomenon but a spectrum of potential vulnerability. The chart presented on the next page describes the spectrum from brittleness, or low resiliency (and high risk), to high resiliency (and low risk) across a range of supply chain characteristics. The research team did not conduct a quantitative analysis of regional supply chain resiliency so would not posit a brittleness "quotient." Rather, this chart serves as a framework for understanding and addressing relative levels of strength and weakness, vulnerability and readiness in the Northeast's regional distribution system.

The potential brittleness of the Northeast's value-added dairy supply chain is found in small ways throughout the sector among individual producers and distributors who operate with persistent constraints (to growth or operational stability), minimal redundancy,



and concentrated dependency on a few critical upstream players. This lack of adequate resiliency may be stifling sector growth, product innovation, and long-term capability to meet consumer demand. When the distribution process and supply chain manifest weaknesses, a significant share of the burden, risk, or lost opportunity will inevitably fall onto the region's producers.

Several people in the sector noted that market demand for value-added dairy products continues to grow, while the supply is failing to keep pace as producers retire, reduce production, or find themselves unable to expand. Some producers struggle to adapt and innovate to changing or growing markets, whether as a result of limitations on their technical capabilities, lack of bandwidth to drive operational changes, or lack of capital to invest in the required equipment. Some distributors noted that they've seen fewer entrants into the artisanal cheese sector in the past several years, relative to prior periods when exciting new producers launched regularly. One overarching gap influencing all of these barriers to growth and stability (for individual companies and for the industry as a whole) is the shortage of adequate labor pools, from production to driving, which contributes significantly to a resiliency gap. (This issue is addressed in greater detail later in this section).

Overall, there is an underlying sense that despite its extraordinary reputation for quality, the value-added dairy sector in the Northeast lacks institutional and professional supports at many levels, contributing to the potential frailty and failure of any single operator. In order to build distribution network resiliency, build capacity for innovation and adaptation, and cultivate the next generation of prepared and empowered value-added dairy producers, operators across the value-added dairy supply chain need a range of supports. They need an influx of human capital into the industry. They need financial assistance to invest in improved infrastructure, processes and more market-responsive products. They need robust professional networks within which to share best practices, build wholesale relationships, and share/access resources. And they need high-level technical training to manage, improve, stabilize, and grow their operations.

## **FINDING 2**

### ***Challenges in attracting and retaining human capital are among the largest risks to the viability and vibrancy of distribution networks in the Northeast.***

Throughout interviews with stakeholders in the value-added dairy sector, producers and distributors repeatedly identified labor pool shortages as the most persistent and clear-cut factor limiting their ability to achieve stability and pursue growth. On the individual business level, this shortage compromises a business's ability to operate with the suppliers and customers they have, take on new customers or suppliers, and plan for or invest in growth, as business leadership often find themselves taking on operations roles. This gap is experienced and expressed as an immediate or annualized need by each business—they need staff now, for the coming season, and for mid-term growth plans. However, at the level of the overall industry, an inadequate pipeline of interested and trained people entering food production and distribution sector jobs can have ripple effects for decades or generations and impede the industry's strength, growth, and advancement. In this way, availability of an adequate labor pool is of course closely tied to the broader issue of industry brittleness and need for greater resiliency.

Distributors—particularly those operating in the upstream part of the supply chain, closer to producers and farther from metro areas—are struggling to find the labor they need to maintain or grow their operations. By far the most common labor challenge these distributors experience is the lack of truck drivers (both CDL and non-CDL). Quantitative data from industry reports and Bureau of Labor Statistics supports the consistent anecdotal feedback heard in this project's interviews. Nationally, there is an estimated shortfall of 80,000 truckers, the majority of which are in the long-haul (e.g. tractor trailer) sector. The six New England states overall tend to have more light-duty trucking positions (e.g. box trucks, delivery trucks) and fewer heavy-duty (e.g. long-haul, tractor trailer) trucking positions than the national average, presumably because of the shorter distances and concentration of urban centers. Whichever category they fall into, 2021 workforce data from Vermont, for example, indicates a significant mismatch between the number of open trucking positions (almost 2,000) and the number of jobseekers potentially available and qualified to fill those positions (less than 200). This data reflects the degree to which companies are struggling to recruit drivers in a state that's an especially active link for the upstream portion of the value-added dairy distribution supply chain.

But the labor pool crisis also extends more broadly, if less consistently, to food production, warehouse workers, and other staff positions. The overall impact of this labor shortage, from production to drivers, may be choking overall capacity and growth potential in the value-added dairy sector. Producers and distributors need programs and policies that can cultivate a labor pool pipeline, create career pathways to attract people to food sector jobs, train workers in relevant skills, increase job retention, and enable the next generation of industry leadership development at the individual employer level, the industry level, and the regional level.

### **FINDING 3**

***Existing small-scale freight and distribution specialists present a pathway to building resiliency throughout the distribution sector and to reducing distribution friction for producers and buyers.***

From the perspective of many downstream distributors and customers, the Northeast is well-resourced in terms of distribution networks and market access. However, there are many ways in which distribution infrastructure, capacity, and activities could be improved within particular sub-regions and for targeted segments of the industry. In some sub-regions and states—upstate New York, Maine, and New Hampshire primarily, but also the more remote corners of Vermont—small-scale value-added dairy producers have more difficulty in bridging the first mile and putting their products into the hands of an upstream distributor, which limits their access to valuable downstream markets. Existing, mission-driven distributors and freight providers are well positioned to serve these under-resourced producers and provide their vital first-mile connection. They represent a diverse range of niche markets and track records. Some of these entities have been established and operating for several years at a small scale, while others have just started to emerge during the recent COVID-19 pandemic in response to market needs. Some operate as critical first-mile links to producers whereas others focus the entire distribution channel or mostly on the end-point-customer. Some specialize in freight (hauling product as for a fee) and others in a distributor model (representing, actively selling, and/or taking ownership of the product). Either way, the service they provide is critical: regardless of how many miles or hundreds of miles are travelled in between, the first and last mile of food distribution are where key challenges and greatest expense are concentrated.

However, the entities currently providing these services consistently describe firm limits on their physical infrastructure and a lack of ready capital to expand. Investments and improvements at this level of the distribution sector—cold storage, cross-docking, and trucking infrastructure among small and emerging distribution and freight services—would not only enhance the overall resiliency of the distribution network but may also reduce transactional friction getting into niche markets and contribute to the viability of very small value-added dairy producers. Because markets are ever evolving and producers, distributors, and buyers are constantly adapting, these recommended investments would be best made carefully and incrementally by the distribution and freight entities themselves (as individual entities or in collaboration with one another), in response to their perceived areas of need and opportunity.

### **FINDING 4**

***Marketing and relationship-building are critical parts of the distribution process, and they need strengthening in New England.***

Distribution of products to their markets occurs not only due to the existence of a well-functioning distribution network and cold-chain infrastructure. It's the direct result of consistent, persistent, and effective marketing, merchandising, and relationship building

efforts: when consumers and buyers know about and want a product, that signal travels up the supply chain and results in distributors transacting with producers. Many small-scale, value-added dairy producers need assistance with marketing outreach, marketing assets, up-to-date merchandising tools, and long-term supply chain relationship building. They need this assistance for a variety of reasons: owner/operators are often too swamped with production and operations to dedicate consistent time to these efforts; they may have gaps in their knowledge base and not be aware of some of the best practices; and their businesses may not be big enough to support internal sales and marketing staff.

In the middle of the supply chain, distributors experience this dynamic in a specific way that further illuminates this persistent lack of marketing and sales capacity, especially among small-scale producers. Some distributors note that small producers too often rely on them to act as their de facto sales arm, when this function should really be the producers' responsibility. Distributors need producers to be actively engaged with their teams as well as with the ultimate buyers who generate orders—chefs, cheesemongers, specialty grocers, and consumers—to tell the story of their farms, educate people about the products, and develop strong sales relationships.

At the far end of the supply chain, buyers themselves observed this gap in a broader way, noting the lack of consistent and unified regional marketing efforts around New England value-added dairy products. This stands in comparison to the tangible outreach and “courting” they sometimes experience with regions like Wisconsin. While some individual New England producers are excellent at marketing and relationship-building, the region as a whole does not effectively promote its value-added dairy strengths, product diversity, and accessibility. Doing so would not only help build a stronger and more cohesive New England identity, but would create more effective pathways for conveying up-to-date information about producers and products, all of which is critical to building knowledge, relationships, and market opportunities.

### **FINDING 5**

### ***Distribution readiness involves significant administrative and technical capabilities with which many producers struggle.***

Distribution is an activity that introduces many new administrative requirements of small-scale, value-added dairy producers. “Distribution readiness” is how some buyers and distributors described this area of need among producers: having proper sales sheets, understanding wholesale-to-retail pricing structures, having the right insurance policy, meeting insurance liability requirements, completing required food safety audits, and filling out vendor agreements. Distributors experience this lack of capacity on their end as an obstacle to easily on-boarding new producers. For small-scale producers who are new to the distribution arena (outside of selling at farmers’ markets, through e-commerce, or directly to retailers) these administrative requirements are not usually in their skill set. This dynamic adds points of friction to building distribution and sales relationships and to bringing small-scale producers into contact with new markets. At the level of individual producers, this friction is not absolute—people can and do find ways to navigate the challenges—but the hurdles are eminently solvable and could be reduced.

Over the long term, however, these hurdles have tended to grow rather than shrink: the heightened compliance requirements of the Food Safety and Modernization Act as well as associated documentation demanded by vendors may be generating a business environment where new producers enter the sector less frequently than in prior eras (as was noted by at least one large distributor) and where some producers may intentionally choose to limit their exposure by carefully controlling the extent of their sales (e.g. selling only at farmers' markets and through other direct-to-consumer channels). It seems to be the case that administrative and regulatory burdens are acting as a latent drag on the growth and responsiveness of the value-added dairy sector overall.

At a more technical level, retailers, distributors, and producers consistently noted the need for more sophisticated training, professional development, and process consulting for value-added dairy producers of all kinds. Food safety preparedness and compliance as well as risk management are major areas of concern for cheesemakers today. Some producers noted that they want to be better trained in these areas but need tangible and accessible institutional supports, such as geographically accessible brick-and-mortar training centers, in order to get there.

# Supply Chain Case Studies

The case studies that follow highlight the findings above in the context of existing operators in the value-added dairy distribution and freight sector. These examples illustrate some ways that value-added dairy products—mainly those from small- to mid-sized producers—are successfully reaching markets within and beyond the Northeast, in part thanks to the five organizations highlighted here. Each of these operators illustrates a separate market niche and a subtly different scope of services, and all are great examples in their own right of for-profit and non-profit distribution and freight models. Most of them intersect with many other entities in distribution and sales, including one another in a few cases.

The case studies featured are:

- Provisions International: The Artisan Cheese Conduit
- Maine Milk Mavens: Distributing Along Maine's Central Coast
- Wilcox Ice Cream: Collaborating to Create Products and Opportunities
- Food Connects: Leveraging Hub-to-Hub Partnerships
- Farm Connex: Local Foods Generalist & Regional Freight Specialist

These case studies reveal the extent to which a significant amount of market access depends on the viability of a small number of operators, especially those working in the upstream portion of the distribution process—the ones making the critical “first mile” link between producers and distributors. All of the distributors and freight services portrayed here are operating more or less at the limit of their current operational capacity, whether due to space constraints, lack of workforce, systems challenges, supply shortages, or a combination of all of these factors. The sector brittleness noted in this study’s findings suggests that the failure, retirement, or disruption of any of the operators represented here could provoke significant outward impacts.

*A significant amount of market access depends on the viability of a small number of operators, especially those working in the upstream portion of the distribution process—the ones making the critical “first mile” link.*

These case studies should be read as representative and illustrative, rather than comprehensive, in terms of the distribution detail that’s provided. Due to the large land areas and number of producer and customer relationships involved with each of the highlighted organizations, it’s not possible in the limited space here to show every detail about where products come from and where they go. Instead, we’ve decided in each case to illustrate the portion of the organization’s activities that is most relevant to the themes uncovered in this study.

## CASE STUDY

### **Provisions International**

White River Junction,  
Vermont

**FOUNDED**  
1986

**EMPLOYEES**  
27 (5 salespeople, 7  
drivers, 12 warehouse,  
3 clerical)

**VOLUME OF VALUE-ADDED  
DAIRY MOVED ANNUALLY**  
600,000 to 700,000  
lbs of regionally-made  
cheese

**MAJOR ASSETS**  
30,000-square-foot  
warehouse including  
13,000 square feet  
of cold storage; seven  
28' straight trucks  
and one 48' tractor  
trailer

**PRODUCER REGION**  
All of VT, portions of  
MA, NH, and eastern  
NY

**FARTHEST DELIVERY POINT**  
New York City

This case study is intended to illustrate the core relationships and activities that are involved in moving value-added dairy products to major markets, downstream distributors, and end-point customers. It is not intended to be a definitive or all-encompassing description of the highlighted stakeholder's business process.

## **PROVISIONS INTERNATIONAL: The Artisanal Cheese Conduit**

### **Why This Case Study is Relevant**

Provisions International Ltd. is how a majority of artisanal cheesemakers in Vermont and bordering New England regions get their products to market, most importantly through its role in consolidation and freight services to distribution nodes in New York City and Boston, from where those cheeses are able to access many more distributors and markets.

### **What Provisions Does**

Provisions is the principal freight and distribution conduit for around 50 artisanal cheese producers located in the Northeast—the vast majority of those in Vermont, as well as some in Massachusetts, New Hampshire, and eastern New York. Provisions manages product pick-ups, order consolidation, and account services, and covers anywhere from the first mile to the last mile of the distribution process, with most of its focus being on the beginning and middle of the supply chain. In short, Provisions is the critical service connecting a huge number of New England's artisanal cheesemakers with customers.

Through its distribution service, Provisions provides weekly deliveries to restaurants, food cooperatives, independent grocers, and specialty food stores within Vermont (around 60% of the cheese that it handles is distributed to customers in Vermont, putting it among the largest cheese distributors in the state) and from coastal Maine to eastern New York. Through its freight service and carefully orchestrated warehousing and cross-docking relationships in New York City and Boston, Provisions is also how many regional and national distributors and grocers outside of New England access Vermont's artisanal cheeses. This, as well as some out-of-state distribution, accounts for around 40% of the cheese that Provisions handles. Their consolidation service and cross-docking at Larkin Cold Storage in NYC provides New England cheesemakers unparalleled access to distribution channels—it's the first node in a chain of distribution that stretches as far as cheese counters in southern California. Overall, 75% of the cheeses that Provisions distributes and freights land with retailers who sell it to their customers, while 25% is sold through food service outlets.

Provisions works with cheesemakers ranging from some with a few dozen goats and a tiny product portfolio to nationally recognized producers selling over \$10MM in cheese annually. Its largest producers are well-known brands like The Cellars at Jasper Hill, Vermont Creamery, and Grafton Village Cheese. Some of its smallest producers, such as Twig Farm, milk as few as 35 goats. So long as a producer is distribution-ready, has available product, and is in their region, Provisions will pick up that producer's cheeses. On the flipside, Provisions sometimes represents up to 100% of a given cheesemaker's distribution channel.

In all its services, Provisions has a reputation for accessing the best artisanal products in the region, for careful product handling, and for its excellent cold-chain management. It's a process that requires a huge amount of coordination, collaboration, and skill to manage. By all accounts, it's a system that functions effectively—customers downstream of Provisions

## CASE STUDY

### Provisions International

White River Junction,  
Vermont

are satisfied by and grateful for the service they provide. However, it's also a system that doesn't have a significant amount of built-in operational resiliency due to the lack of workforce available to Provisions in its region.

### Services Offered

**Product Pick-Up:** Provisions picks up cheeses directly from producers all over Vermont, as well as from select producers in Massachusetts, New Hampshire, and eastern New York. Provisions picks product up for both freight and distribution purposes.

**Order Consolidation:** Provisions assembles smaller orders from individual producers into larger multi-producer orders (usually on pallets) for single customers. These represent orders placed by buyers directly with the producers, which Provisions will then deliver through its freight service.

**Freight:** Provisions ships full pallets to cross-dock points, warehouses, downstream distributors, and other end-point customers. These pallets are made up of orders placed by buyers directly with the producers, consolidated and freighted by Provisions as a fee-for-service.

**Distribution:** Provisions buys and sells cheeses to retailers as a classic distribution service in Vermont and regionally, meaning it takes possession of the product, applies a 30% mark-up, and makes individual less-than-pallet deliveries.

### Example Partners & Customers

**The Cellars at Jasper Hill, Greensboro VT:** Jasper Hill sends pallets of customer orders through Provisions freight to Larkin Cold Storage and onwards to other distributors and retailers.

**Spring Brook Farm Cheese, Reading VT:** Spring Brook sends pallets of customer orders placed through Provisions freight to Larkin Cold Storage, and from there the cheeses go to 13 regional and national distributors.

**Larkin Cold Storage, Long Island City NY:** Larkin provides cross-docking services in NYC to Provisions, which delivers pallets to Larkin each week for numerous customers through its consolidation and freight services. Larkin is also a major distribution node for European cheeses entering the US market.

**Murray's Cheese, national:** Murray's orders from VT producers and Provisions provides the freight service to deliver those orders as pallets to Larkin. Murray's then distributes those cheeses nationally through the Krogers network to over 2000 cheese departments in associated stores.

**Seacrest Foods, Lynn MA:** Seacrest is a major distributor of specialty foods in the Northeast. Provisions delivers pallets of cheese orders to Seacrest through its consolidation and freight services.

**Paul Marks Co., Boston MA:** Paul Marks is a specialty foods wholesaler with a strong

## CASE STUDY

### **Provisions International**

White River Junction,  
Vermont

artisanal cheese catalog. They distribute throughout eastern New England and receive cheeses through Provisions' consolidation and freight services.

**Saxelby Cheesemongers, Brooklyn NY:** Saxelby orders from VT producers each week and Provisions provides the consolidation and freight services to deliver those mixed orders as a full pallet to Larkin. Saxelby sells those cheeses through their retail store and through their NYC-area distribution service.

### **Distribution Pain Points**

**Driver Shortage:** The lack of CDL drivers is the central limitation on Provisions' ability to add new customers and move more cheese.

**Supply Shrink:** Provisions is seeing a net reduction in the available supply of Vermont artisanal cheeses while demand steadily increases, due to producers retiring, limiting production, or otherwise going out of business.

**Skilled Labor Shortage:** Provisions experiences the lack of skilled labor that's essential to providing the services and resiliency they need, whether warehouse staff, plumbers, welders, or truck repair people.

### **Investments They Would Make**

Although it is not explicitly seeking to expand its operations, if provided the funding through a grant or loan, Provisions has said that it would invest in an additional delivery truck (perhaps for greater flexibility and/or operational resiliency). However, they feel strongly that this investment would be pointless unless the needed driver workforce were available.

## CASE STUDY

### Provisions International

White River Junction,  
Vermont

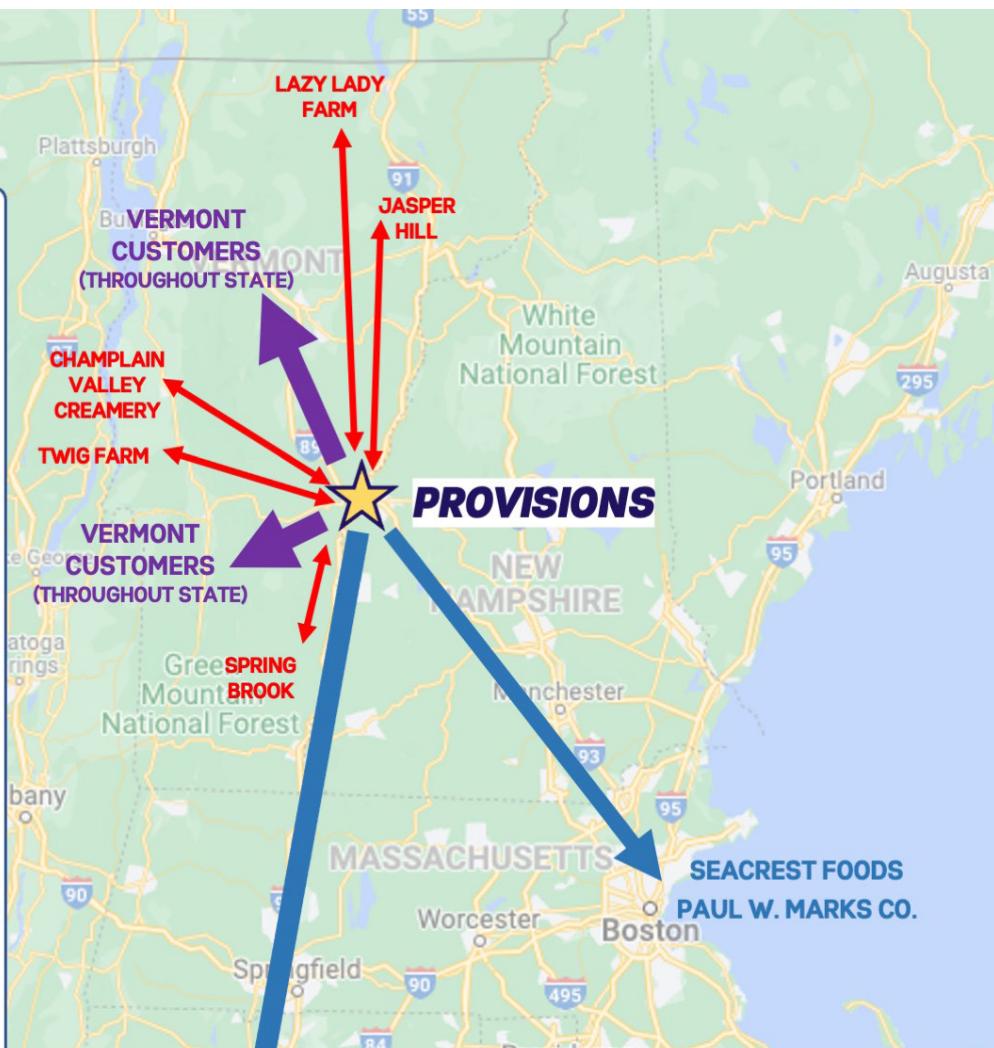
#### Distribution Visualization

This visualization of the supply chain and distribution activities performed by Provisions and the relationships they entail is meant to be illustrative rather than comprehensive.

The purpose of this graphic is to demonstrate a few critical ways in which Provisions enables the movement of cheeses from Vermont to out-of-state distributors, cross-docking locations, and retailers, as well as to its Vermont-based customers. Approximately 60% of the cheese that Provisions handles is distributed within Vermont and 40% is distributed or sent as freight around the rest of New England.

Provisions sends an average of 35 pallets weekly to Larkin Cold Storage in NYC. From Larkin, numerous "downstream" distributors and grocers bring products to customers in the NYC metro region and nationally to regions to the south and west. Provisions sends an average of 25 pallets weekly to Boston, primarily to two distributors there (there is no equivalent to Larkin in Boston).

At this scale, this graphic is not able to convey the sheer number of cheeses that Provisions picks up from producers (around 50 individual producers in total) ranging in size from Vermont Creamery and Jasper Hill, to tiny operators like Twig Farm.



#### Larkin Cold Storage Cross-Docking Examples

- Saxelby Cheesemongers (NYC retail and NYC metro area distribution)
- Murray's Cheese (NYC retail, e-commerce, national distribution to Krogers kiosks and associated stores)
- Chef's Warehouse (NYC metro and national distribution to restaurants)
- World's Best Cheese (Major national cheese distributor)
- Food Matters Again (Importer and east- and west-coast distributor of artisanal cheeses)
- Houston Dairy Maids (Texas-based cheese retailer and wholesaler)
- DiBruno Bros. (Philadelphia-based specialty retailer and importer with multiple locations)
- Gourmet Foods International (National wholesale distributor)
- Wegmans (Premium northeast and mid-Atlantic supermarket chain)

## CASE STUDY

### Maine Milk Mavens

Whitefield, Maine

**FOUNDED**

2019

**EMPLOYEES**

7

**VOLUME OF VALUE-ADDED DAIRY MOVED ANNUALLY**

Approximately 50,000 lbs of Maine-made cheeses

**MAJOR ASSETS**

Rented 1600 sq.ft. warehouse and cold storage facility, 2 refrigerated vans

**PRODUCER REGION**

Coastal and Western Maine

**FARTHEST DELIVERY POINT**

York, ME to Bar Harbor, ME

This case study is intended to illustrate the core relationships and activities that are involved in moving value-added dairy products to major markets, downstream distributors, and end-point customers. It is not intended to be a definitive or all-encompassing description of the highlighted stakeholder's business process.

## MAINE MILK MAVENS: Distributing Along Maine's Central Coast

### Why This Case Study is Relevant

Maine Milk Mavens is an emerging distributor in New England's cheese sector, representing a growing number of very small, artisanal cheesemakers in Maine, a region that has historically lacked distribution services equivalent to those offered by Provisions in Vermont.

### What Maine Milk Mavens Does

Maine Milk Mavens (MMM) is a new distribution company based in Whitefield, Maine, that started as a cooperative effort among a small group of creameries. Today, MMM is distributing cheeses from 14 different farms to around 50 accounts weekly—retail stores, food cooperatives, and restaurants along the entire coast of Maine—and has relationships with over 100 accounts in total. They represent a highly needed evolution of the distribution network for small-scale cheesemakers in Maine, who number around 80 overall throughout the state. These cheesemakers have lacked a distribution service equivalent to Provisions, Saxelby, or Sid Wainer for their region, and therefore encounter significant challenges operating their businesses, planning for growth, and managing customer accounts all at the same time.

Maine Milk Mavens has stepped into this void out of necessity (the founder also owns and operates a small creamery) and out of a collaborative spirit. As a result, they could be emerging as the "Provisions of Maine." They work with cheesemakers down to the smallest scale—if the producers have any product to move through wholesale channels, MMM will pick it up (no minimums to pick up from creameries). Their smallest producer milks five water buffalo and their largest artisanal producer milks a herd of around 100 Jersey and Guernsey cows. MMM is mission-focused on distributing cheeses that are made in Maine with Maine milk and that represent sustainable farming practice. MMM also now distributes a small amount of cheese from Pineland Farms, which at around 1 million pounds annually is Maine's largest cheese producer.

Currently, MMM only provides traditional distribution services—they buy cheeses from producers, they apply a 30% markup to cover the costs of distribution, and they sell it to their customers. They do not have a minimum order size for customers unless they get an order that's significantly off their regular route (in which case they have a \$500 minimum order). MMM does not provide freight services, nor do the cheesemakers they work with have the product volumes to make this a necessity. MMM collects availability information from their cheesemakers weekly, takes orders from customers, picks up cheeses from the creameries, and makes the needed weekly deliveries. In the process, they take possession of the cheeses and manage the accounts—cheesemakers get paid by MMM and don't have to spend their time processing individual orders, making deliveries, and chasing customers for payment.

Maine Milk Mavens has ambitions to expand their distribution to the Boston and New

## CASE STUDY

### Maine Milk Mavens

Whitefield, Maine

York City metro areas over the next couple of years. This would require selecting the cheesemakers that have the volume capacity to start distributing out of state, and who also meet the regulatory requirements of neighboring states. Currently, Maine has cheesemaking regulations that are very favorable to start-up cheesemakers—allowable pasteurization methods are more relaxed than they are in the rest of New England. However, this means that some cheeses can't be distributed outside of Maine. Notwithstanding this challenge, MMM feels that the supply is there to expand distribution with careful growth.

### *Services Offered*

**Order Management:** Maine Milk Mavens distributes an availability list to its customers each week, takes orders, and manages all account payments.

**Product Pick-Up:** Maine Milk Mavens picks up cheeses directly from their producers according to each farm's weekly availability and MMM's customer orders.

**Distribution:** Maine Milk Mavens distributes orders directly to customers as far south as York, up the coast to Bar Harbor, and inland as well. It takes possession of the product, applies a 30% mark-up, and makes individual deliveries.

### *Example Partners & Customers*

**Fuzzy Udder Creamery, Whitefield ME:** Fuzzy Udder's founder Jessie Dowling is the founder of Maine Milk Mavens and they are one of the participating creameries. MMM's operations are co-housed with Fuzzy Udder.

**Springdale Farm, Waldo ME:** Springdale is MMM's largest artisanal creamery, producing a small range of cow's milk cheeses including cream cream and a queso fresco variety.

**Lakin's Gorges Cheese, Waldoboro ME:** Lakin's produces a range of award-winning cow's milk cheeses.

**Cosmic Goat Farm & Creamery, Litchfield ME:** Cosmic Goat Farm produces certified organic goat's milk cheeses, yogurt, and raw fluid milk.

**Kennebec Cheesery, Sidney ME:** Kennebec produces aged and fresh goat's and cow's milk cheeses, as well as yogurt.

**Crooked Face Creamery, Skowhegan ME:** Crooked Face is known for their smoked and flavored ricottas and operates a retail store in Skowhegan.

**Beech Hill Farm, Mt. Desert ME:** Beech Hill Farm is a 73-acre organic farm owned and operated by the College of the Atlantic. Their farm store carries many of the cheeses distributed by MMM.

**Maine Beer Shed, Kingfield ME:** Maine Beer Shed may have the widest selections of Maine-made craft beers in the state. They also showcase locally-made foods including many of MMM's cheeses.

## CASE STUDY

### Maine Milk Mavens

Whitefield, Maine

**Rising Tide Co-op, Damariscotta ME:** Rising Tide is a successful and growing food co-operative on Maine's central coast.

**Nibblesford, Biddeford ME:** Nibblesford is one of Maine's few specialty cheese shops, located close to the southern end of MMM's current distribution range.

### *Distribution Pain Points*

**Capital Investment:** Maine cheese producers need funding sources such as grants or low-interest loans in order to upgrade to pasteurizers that allow for out-of-state distribution as well as to invest in other process improvements. MMM themselves needs access to capital sources as they are rapidly outgrowing their current warehouse and distribution facility.

**Technical Assistance:** MMM is finding that demand is exceeding the available supply from their current producers, so they're on-boarding cheesemakers as fast as they can and encouraging producers to try to increase production. However, producers need higher-level technical training to elevate their cheesemaking, grow their businesses, and properly manage risk as they do so.

**Skilled Labor Shortage:** Maine Milk Mavens will need skilled staff as they themselves seek to expand, including staff for marketing, driving, and warehouse work. The skilled labor shortage in Maine generally is partly connected to a significant state-wide housing shortage, so the solutions to this issue are potentially complex.

### *Investments They Would Make*

Maine Milk Mavens will need to move into a larger warehouse and cold-storage facility than they currently have in order to accommodate the growth they feel is possible. This new facility would need to include a proper HVAC system in the warehouse to ensure quality control during their receiving, packaging, and delivery processes.

## CASE STUDY

### Maine Milk Mavens

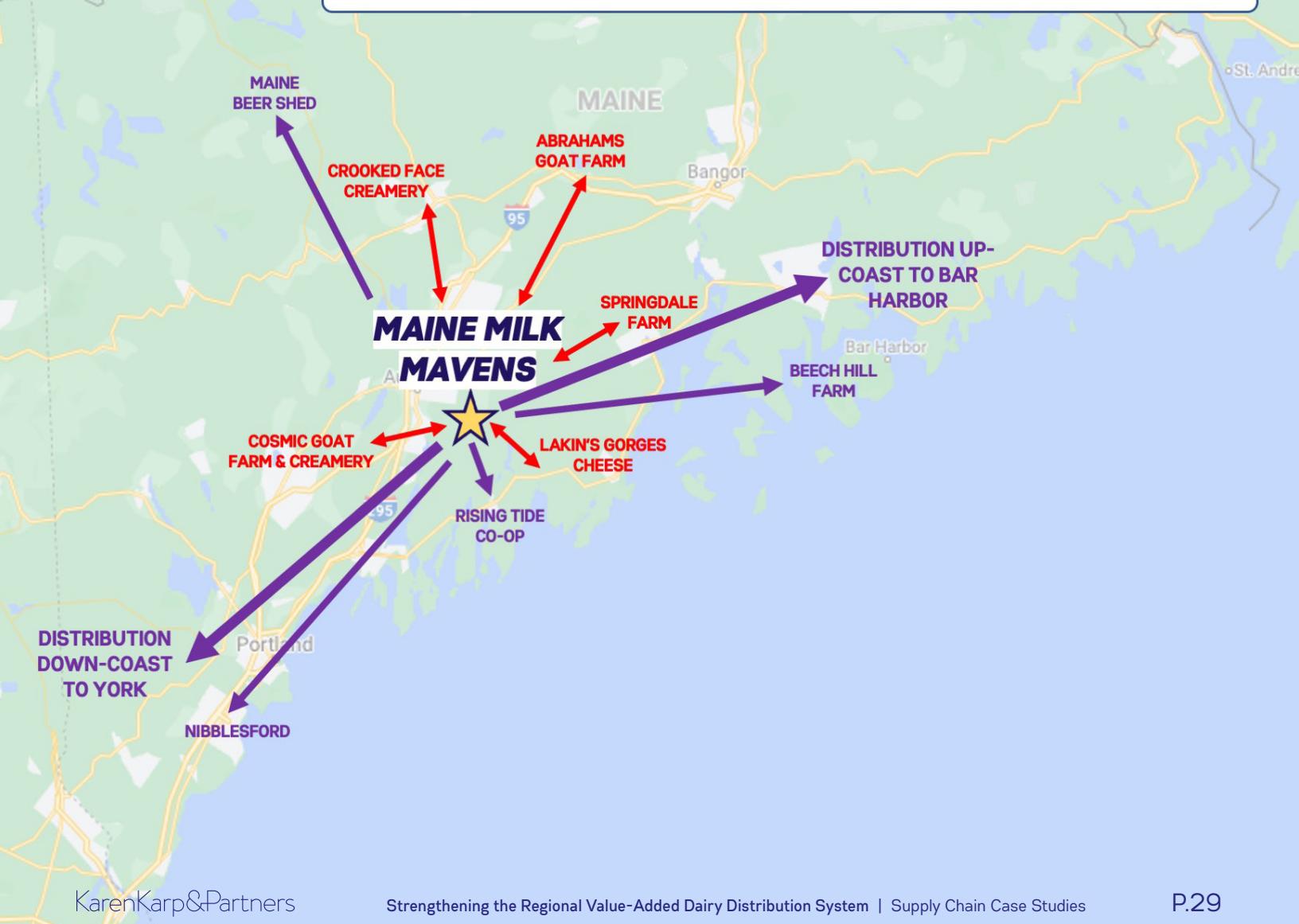
Whitefield, Maine

#### Distribution Visualization

This visualization of the supply chain and distribution activities performed by Maine Milk Mavens (MMM) is meant to be illustrative rather than comprehensive. Because most of its producers are located relatively close to MMM's distribution center, they cannot all be represented on this map.

The purpose of this graphic is to demonstrate how even within a contained region—the total end-to-end driving time for MMM's distribution range is around 3.5 hours—the services provided by a dedicated distributor are vital to small-scale producers. More than the on-farm product pick-up, the critical function that MMM provides to these producers is the sales access to up to 100 customer accounts and delivery to around 50 customers each week. These customers are mostly located along a lengthy coastline that's time-consuming to drive, and any one of them may be placing only a small order overall. This is the work that allows cheese producers to focus on managing and growing their own operations.

MMM ambition is to extend their distribution to Boston and eventually New York City, although it's not yet clear whether they would interface with established distributors in each of those cities or build their own customer list and distribute directly.



## CASE STUDY

### **Wilcox Ice Cream**

Arlington, Vermont

#### **FOUNDED**

1892 as value-added dairy farm, 1928 as an ice cream brand, 2000 as focused ice cream manufacturer and distributor

#### **EMPLOYEES**

10

#### **VOLUME OF VALUE-ADDED DAIRY MOVED ANNUALLY**

Approximately 465,000 lbs of ice cream base purchased and processed, and around \$1 M in total ice cream revenue

#### **MAJOR ASSETS**

13,500 sq.ft. facility including 500 sq.ft. cold storage, and 4000 sq.ft. freezer; 3 freezer box trucks

#### **PRODUCER REGION**

Mostly Vermont

#### **FARTHEST DELIVERY POINT**

150-mile radius from Arlington, VT

This case study is intended to illustrate the core relationships and activities that are involved in moving value-added dairy products to major markets, downstream distributors, and end-point customers. It is not intended to be a definitive or all-encompassing description of the highlighted stakeholder's business process.

## **WILCOX ICE CREAM: Collaborating To Create Products & Opportunities**

### **Why This Case Study is Relevant**

Wilcox Ice Cream demonstrates the importance and potential of adaptation, innovation, and collaboration in the value-added dairy sector, having transitioned from a largely fluid-milk dairy business to one that's not only a significant local ice cream manufacturer and frozen products distributor, but also a successful developer of new products and partnerships with other entities in Vermont's dairy sector.

### **What Wilcox Does**

Wilcox Ice Cream is an ice cream manufacturer and frozen foods distributor based in Arlington, Vermont. The original value-added farm business dates from 1892. The farm sold its fluid dairy business in 1999 and starting in 2000, focused its energies on their ice cream brand, which had been in existence since 1928. In 2013, they acquired a baked goods company and expanded further into the distribution of frozen specialty foods.

Wilcox has adapted to evolving conditions in the dairy sector and to unexpected events numerous times—they left the fluid milk business when it became apparent that it was not a viable future for them, and then recovered from a fire that destroyed their facilities in 2001. Since 2001 they've made a series of investments in capacity, infrastructure, and relationships to strengthen their ice cream distribution business. Today Wilcox is a significant manufacturer of ice cream in the Vermont regional market and consider themselves the "frozen UPS" of Vermont due to the range of frozen products they distribute (around 1200 SKUs in total). They distribute to customers within a 150-mile radius of their headquarters in Arlington, Vermont, and integrate product pick-ups as needed within those routes.

Wilcox is a strong advocate of adaptation, innovation, and collaboration as a pathway to viability for businesses in the dairy sector. An example of this approach to innovation and collaboration is provided by Wilcox's emerging partnership with Kingdom Creamery and University of Vermont's CREAM program. UVM's Miller Farm was left without a processor for its daily fluid dairy production when the St. Albans Cooperative Creamery stopped producing ice cream bases. In response, Wilcox came together with Kingdom Creamery to build a processing and distribution relationship and turn this obstacle into an opportunity. UVM's milk is now transported by Vaillancourt Transportation—separate from any other producers' supply—to Kingdom Creamery in East Hardwick, where it is again kept isolated from other milk and processed into an ice cream base. Wilcox picks this base up along with their weekly orders and processes it in their Arlington facility into ice cream units that get sold to Sodexo and delivered back to the UVM campus in Burlington. Their original products were standard 3-gallon ice cream parlor containers and retail pints. In response to the COVID-19 pandemic, however, Wilcox also developed an 8-ounce, single serving cup, a product which is now unique to the UVM campus.

## CASE STUDY

### **Wilcox Ice Cream**

Arlington, Vermont

### **Services Offered**

**Product Pick-Up:** Wilcox picks up inventory from some producers as they drive around their distribution region.

**Distribution:** Wilcox manages sales and distribution to customers in a 150-mile radius from their headquarters in southwestern Vermont.

**Freight:** Wilcox performs shipping for other producers without inventorying the product or being responsible for the sale of the product.

### **Example Partners & Customers**

**Kingdom Creamery, East Hardwick VT:** Kingdom Creamery supplies all the ice cream base for Wilcox's ice cream line, which Wilcox mixes and freezes at their Arlington facility, including the base made with milk from UVM's dairy farm. Wilcox also distributes large volumes of Kingdom Creamery's soft serve mix and Kingdom Creamery's own line of ice cream pints.

**University of Vermont, Burlington VT:** UVM's CREAM program at Miller Farm produces milk that Wilcox turns into three different SKUs for UVM's food service program. UVM overall is a major wholesale customer for Wilcox through Sodexo, which operates UVM's dining services.

**Leonardo's Italian Gelato & Sorbet, Barre VT:** Wilcox acquired Leonardo's, a Vermont gelato brand started in Barre, and now produces and distributes that line out of their Arlington facility.

**Strafford Organic Creamery, Strafford VT:** Wilcox is a major distributor of Strafford Organic Creamery's ice cream line to stores throughout Vermont. Strafford's is one of the most widely distributed and recognized organic ice cream brands in Vermont.

**Larson Farm & Creamery A2/A2 Gelato, Wells VT:** Larson is a 100% grass-fed and certified organic creamery that milks A2/A2 Jersey cows and produces several fluid and value-added products. Wilcox is the primary distributor of Larson's gelato.

**Brattleboro Food Co-Op, Brattleboro VT:** Brattleboro's co-op is one of Wilcox's major buyers of retail ice cream pints.

**Creemee Stand, Wilmington VT:** The Creemee Stand is an award-winning ice cream store offering soft serve made with Kingdom Creamery's base and Wilcox's hard scoop ice cream, both of which are purchased through Wilcox.

**Shaws, throughout VT:** Shaws stores across Vermont add up to one of Wilcox's largest customers for retail ice cream pints.

### **Distribution Pain Points**

**Skilled Labor Shortage:** Wilcox could produce and sell more ice cream if there was an adequate labor force available to them for their production and warehouse operations.

## CASE STUDY

### **Wilcox Ice Cream**

Arlington, Vermont

They need people with relevant training and willingness to work in a manufacturing and distribution business.

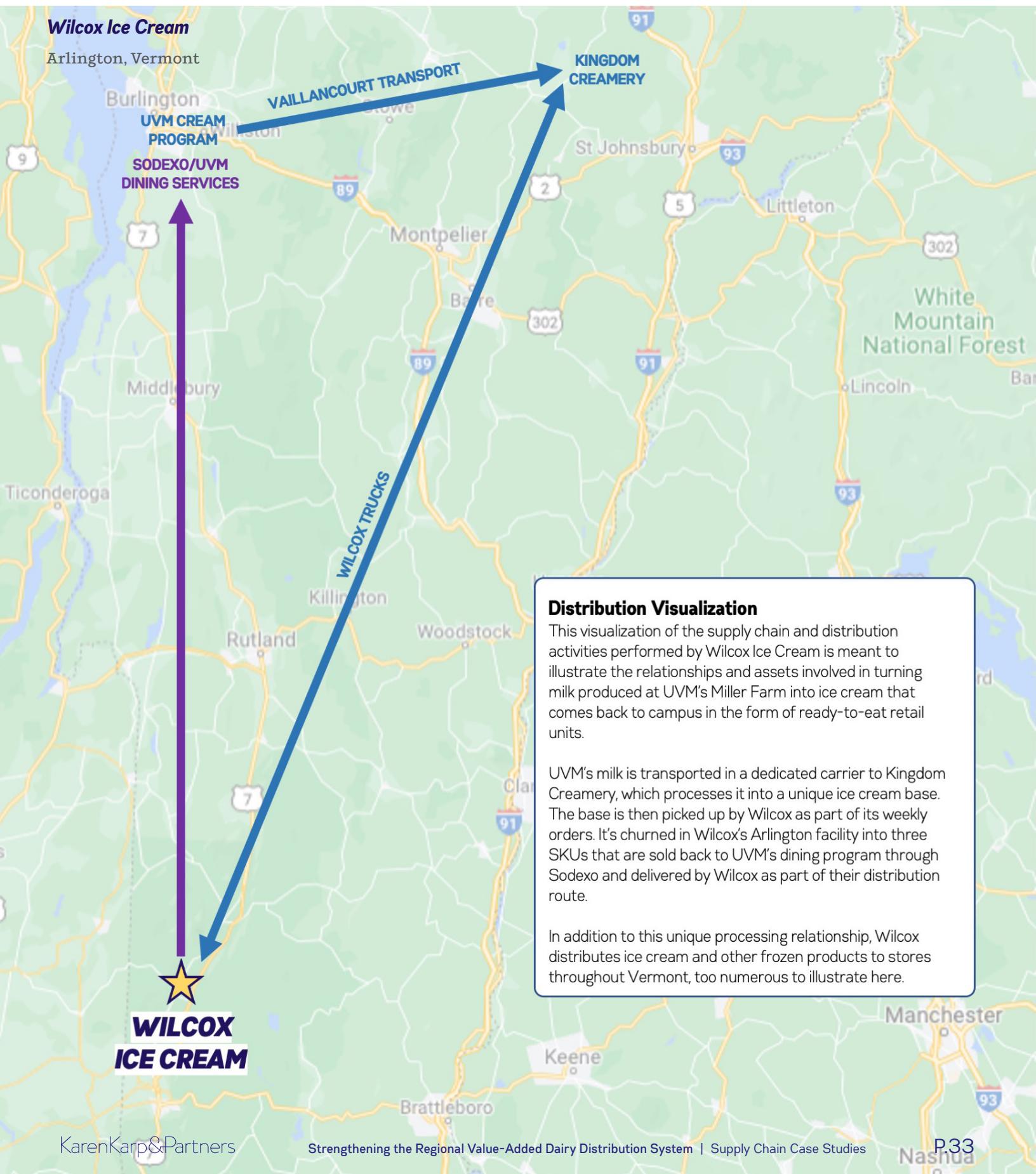
**Innovation & Collaboration:** In response to a variety of distribution pain points in the region, people in the dairy business need to focus on innovation and collaboration with existing businesses and resources in the region. More companies need to constantly look at how to meet unmet needs, develop new products, and collaborate on the moving parts needed to reach a particular goal.

**Investing in Operations:** Wilcox sees a need for companies to invest in systems, packaging, and equipment that streamline operations and better utilize the available labor pool. They recently did so by making large purchases of pre-printed pint containers for all of their flavors. This requires significant up-front capital and operational bandwidth to execute. Wilcox believes that companies need funding and technical assistance to make these kinds of upgrades and investments.

### ***Investments They Would Make***

Wilcox has proven itself capable of making the necessary infrastructural investments to meet the changing food landscape and their own goals over the past decade. The primary investment they seem interested in is workforce development in production, warehouse, and driving positions. This would allow them to steadily acquire more delivery vehicles and routes as business volume dictates and distribute more product to farther destinations.

## CASE STUDY



## CASE STUDY

### Food Connects

Brattleboro, Vermont

#### FOUNDED

2013

#### EMPLOYEES

15 in food hub business, 22 in organization overall

#### VOLUME OF VALUE-ADDED DAIRY MOVED ANNUALLY

~100K lbs for all value-added dairy products including 44K lbs of cheese sold

#### MAJOR ASSETS

2 cold storage units, 1 frozen storage unit, 2 refrigerated delivery trucks, 3 refrigerated/frozen combination delivery trucks

#### PRODUCER REGION

Primarily VT products with additional sourcing from the rest of New England and occasionally beyond

#### FARTHEST DELIVERY POINT

Burlington, VT (FC trucks); farther points accessed through partner food hubs

This case study is intended to illustrate the core relationships and activities that are involved in moving value-added dairy products to major markets, downstream distributors, and end-point customers. It is not intended to be a definitive or all-encompassing description of the highlighted stakeholder's business process.

## FOOD CONNECTS: Leveraging Hub-To-Hub Partnerships & D2C Commerce

### Why This Case Study is Relevant

Food Connects has been a leading participant in the VT Food Hub Network, the New England Food Hub Network, and the Eastern Food Hub Collaborative. All these initiatives seek to spur collaboration and increase inter-hub trade. This case study demonstrates how the COVID-19 pandemic and the resulting explosion of direct-to-consumer activity accelerated new cheese distribution opportunities for Food Connects, in collaboration with its partner food hubs.

### What Food Connects Does

Food Connects is a food hub based in Brattleboro, Vermont, that works to increase wholesale access to locally produced foods. They aggregate products from over 65 mission-aligned producers throughout New England and the Hudson Valley, as well as from outside those regions through their food hub network. Food Connects delivers twice weekly to over 100 loyal customers in Vermont and New Hampshire, including food cooperatives, grocery stores, institutional food programs, and restaurants. In addition, Food Connects has broader programming that supports Vermont's Farm-to-School efforts.

Since 2018, Food Connects has been a leading stakeholder in an initiative to increase collaboration and inter-hub transactions among New England food hubs. In February 2020, the New England Food Hub Network was invited to join the newly formed Eastern Food Hub Collaborative (EFHC), which connects food hubs from South Carolina to Maine. When the COVID-19 pandemic hit the United States in March 2020 and upended the food sector, one of the unexpected outcomes was the massive expansion of direct-to-consumer (D2C) e-commerce sales. Many food hubs in the EFHC network pursued this opportunity as a replacement for lost business elsewhere.

For its part, Food Connects recognized an emerging opportunity to leverage their location, relationships, and capacities to create a cheese program in their wholesale distribution portfolio. Their focus would be on acting as an aggregator and upstream distributor, moving artisanal cheeses to the partner food hubs engaged in D2C food sales. Food Connects curated a small selection of cheeses as a special-order catalog (rather than as standard inventory items). They selected these cheeses by focusing on a few important criteria: a diversity of options across the limited selection, producers able to handle their order volumes without product shorts, and producers who offered cheeses priced by the case or unit rather than by weight.

Historically, Food Connects had not engaged much with artisanal cheese distribution due to established players in the sector such as Provisions and Black River Produce. As a result of the EFHC collaboration, however, they're emerging as a valuable upstream distributor to food hubs operating niche D2C markets, all of which would struggle to access these

## CASE STUDY

### Food Connects

Brattleboro, Vermont

cheeses due to geography or inability to meet order minimums from larger distributors. The major customers that have emerged so far for Food Connects are Three River Farmers Alliance (coastal New Hampshire), 4P Foods (Virginia), and Farm Fresh Rhode Island. Food Connects leverages LTL relationships for cheeses headed to 4P Foods, and trucks within the "family" of New England food hubs for Three River Farmer Alliance and Farm Fresh Rhode Island.

### Services Offered

**Product Aggregation & Consolidation:** Food Connects brings products into its chain of custody through a blend of on-site pick-ups, distributor partners, and food hub partners. It aggregates its cheese orders and consolidates products into mixed pallets for delivery or outbound freight.

**Distribution:** For products outside of its special-order cheese program, Food Connects acts as a distributor by inventorying, marking up, and distributing products in its catalog to customers. Cheeses in their program are also distributed but Food Connects does not inventory the product in the same way due to the small scale of the program.

**Freight & Delivery Logistics Management:** Food Connects coordinates freight for orders in its cheese program as needed (generally for customers outside of New England) and collaborates with its food hub partners to arrange deliveries within the New England region.

### Example Partners & Customers

**Farm Connex, Hardwick VT:** Farm Connex is the distribution arm of The Center for an Agricultural Economy and provides point-to-point service across much of Vermont. Farm Connex is a critical partner for Food Connects in accessing several of the cheeses in this special-order program.

**Three River Farmers Alliance (3RFA), Freemont NH:** 3RFA was founded in 2014 as a farmer-owned food hub in the coastal NH region. They are one of Food Connects' major customers for its cheese distribution program, and the two hubs also collaborate in numerous other ways.

**Farm Fresh Rhode Island (FFRI), Providence RI:** FFRI's distribution hub, Market Mobile, was established in 2009 as part of the non-profit's broader food systems work. FFRI is emerging as a new customer in Food Connects' cheese program and is a frequent collaborator in efforts to move products around New England.

**4P Foods, Warrenton VA:** 4P Foods is a mid-Atlantic region food hub founded in 2014 with an adapted CSA "shopping bag" model. 4P was also a leading convener of the EFHC project. They've provided a key test case for EFHC's collaboration initiatives.

**Sunrise Logistics:** Sunrise is Food Connects' primary LTL partner for freighting pallets to 4P Foods in Virginia. To date, Food Connects has shipped 1-2 pallets per delivery (at three pallets per delivery, the per-pallet rate will decrease by 50%). Sunrise's pricing structure provided an opportunity to Food Connects and reflects the complexity of freight supply

## CASE STUDY

### Food Connects

Brattleboro, Vermont

and demand: Food Connects' cost for product freight from the south is twice what it costs them to freight cheese to the south, because Sunrise delivers throughout New England but backhauls almost empty.

#### Distribution Pain Points

**Freight Industry Instability:** Food Connects' ability to execute portions of its special-order cheese program relies on the availability, predictability, and pricing of LTL freight for orders going outside of the New England region. Current instability in the freight sector creates the risk that Food Connects' efforts to ship cheese longer distances could break down.

**Product Formats:** Food Connects' special-order cheese program relies on cheese formats that are billable and sellable as single units (cut-and-labelled or individually wrapped cheeses rather than larger whole wheels). This limits their selections in the cheese producer sector and leaves many excellent cheesemakers out of their program.

**Driver Labor Pool:** Like many distributors, Food Connects struggles to find skilled, available drivers to cover their increasing distribution range. They've had to turn away some new customers because of their inability to cover needed driving shifts.

**D2C Market Shift:** More an area of uncertainty than a pain point, the food hubs associated with Food Connects' cheese program have banked on the market's shift to increasing D2C transactions. If the market were to revert to pre-pandemic dynamics, Food Connects' cheese program might not be able to compete with traditional, larger cheese distributors.

## CASE STUDY

### Food Connects

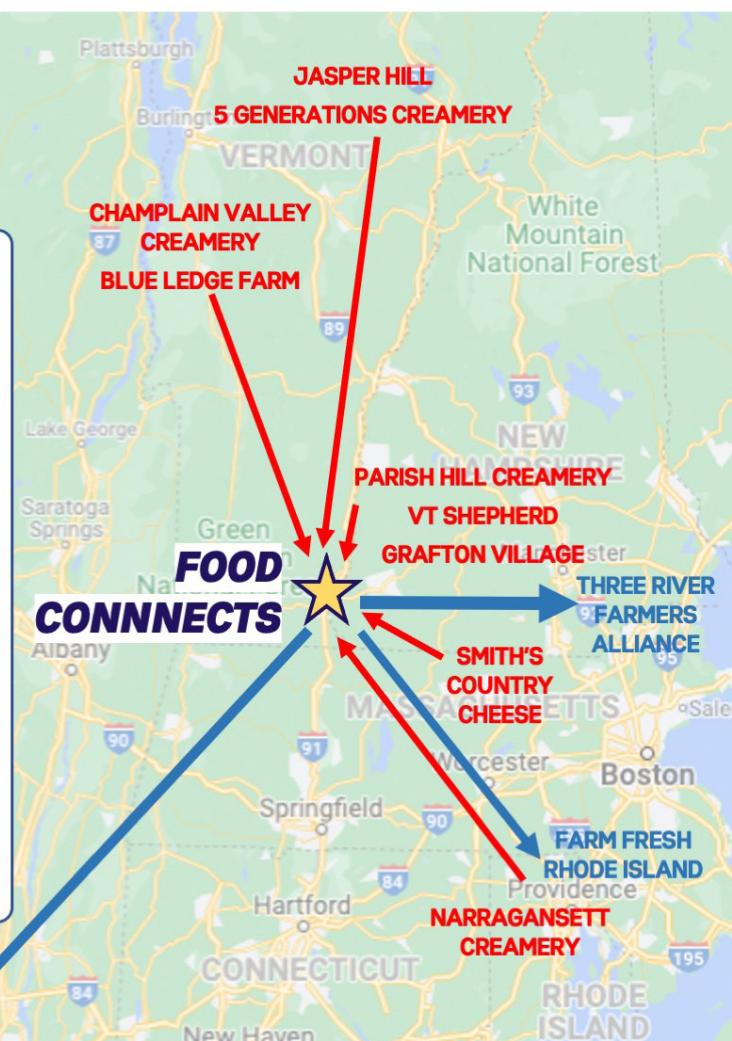
Brattleboro, Vermont

### Distribution Visualization

This visualization of the supply chain and distribution activities performed by Food Connects (FC) is meant to be illustrative rather than comprehensive. In particular, this map intends to show how cheeses move to FC and are then distributed or freighted to partner food hubs. Not pictured here are the large number of food co-operatives, retail stores, and institutional customers who also purchase value-added dairy products from FC, including cheeses in this program.

The cheeses in this program come to FC by one of several means, depending on the origin point and weekly needs: local pick-up by FC, delivery by Farm Connex or Black River Produce, or delivery by a partner food hub such as Three River Farmers Alliance (3RFA) or Farm Fresh Rhode Island (FFRI).

Deliveries to these three food hub customers are then accomplished by three different pathways. Orders to 4P Foods in Warrenton VA go via LTL freight with Sunrise Logistics. Orders are delivered to 3RFA by FC on their truck, on a now weekly route between the two hubs. Orders to FFRI are delivered either by FC, FFRI, or other partner food hub vehicles depending on availability and routes on that delivery date.



## CASE STUDY

### Farm Connex

Hardwick, Vermont

**FOUNDED**

2009

**EMPLOYEES**

11

**VOLUME OF VALUE-ADDED**

**DAIRY MOVED ANNUALLY**

1 M lbs or more  
transported annually

**MAJOR ASSETS**

4 box trucks with  
variable cold/frozen  
capacity, 1 refrigerated  
cargo van, 1100 sq. ft.  
of cold storage, 400  
sq. ft. of dry storage,  
50sq. ft. of frozen  
storage. Yellow Barn  
project will provide  
additional 3,000 sq.  
ft. of cold storage  
space

**PRODUCER REGION**

12 of 14 counties in  
VT plus portions of  
western NH

**FARTHEST DELIVERY POINT**

12 of 14 counties in  
VT plus portions of  
western NH

This case study is intended to illustrate the core relationships and activities that are involved in moving value-added dairy products to major markets, downstream distributors, and end-point customers. It is not intended to be a definitive or all-encompassing description of the highlighted stakeholder's business process.

## FARM CONNEX: Local Foods Generalist & Regional Freight Specialist

### Why This Case Study is Relevant

Farm Connex is a growing delivery service in northern Vermont that has developed into a critical first-mile/last-mile link for small- to mid-scale food producers throughout much of Vermont. By working with a wide range of food products (including value-added dairy) and focusing on freight-related services rather than distribution services, Farm Connex serves as an example of how a supply chain specialist can aggregate a region's shipping needs into a viable model and contribute to the growth of individual food sectors.

### What Farm Connex Does

Farm Connex (FC) is a non-profit delivery service operated by The Center for an Agricultural Economy in Hardwick, Vermont, with a specific commitment to growing the local food economy and helping small food producers be viable. They work with around 80 producers, from tiny single-case producers like Lazy Lady Farm to Butterworks Farm and the Cellars at Jasper Hill, for whom they move dozens of pallets weekly. FC works with all kinds of foods that require cold-chain management or unrefrigerated freight—produce, meat, beverages, fluid milk, and value-added dairy products.

FC uses a fee-for-service freight model rather than a distributor's margin-over-wholesale model. They do not take possession of products and do not act as a distributor through their aggregation, consolidation, and delivery services. This allows producers and buyers to transact with minimal delivery expenses and keep cost margins manageable as product moves along the supply chain. This organizational model also means that FC is not competing for customers with its own producers but is instead acting as a facilitator and accelerant for those relationships.

FC's services are customizable, depending on producer and customer needs. They offer pick-up at farms, creameries, and meat processing facilities, providing critical first-mile, mid-chain, and last-mile services to producers of various sizes. Some producers deliver directly to FC's warehouse. At its warehouse, FC aggregates products, consolidates customer orders, and provides short-term storage to producers as orders are sent out. The facility is also used for regular cross-docking by UNFI, a large national distributor, which picks up weekly orders from Butterworks on-site. Most of FC's delivery activity is to end-point users/retailers such as cooperatives, country stores, restaurants, and farm stands—very much like a distributor but without a distributor's mark-up. A minority of their delivery activity is in the middle of the supply chain, such as product delivery to distributors with their own end-point user/retailer customers, moving products from producer facilities to off-site cold storage, and picking up orders from meat processors to bring them wherever required.

By being highly flexible as to the type of foods they move and by having an accessible fee structure, FC has aggregated a significant amount of cold-chain logistics demand for Vermont. In 2021, they moved \$8MM worth of products, a majority of which were value-

## CASE STUDY

### Farm Connex

Hardwick, Vermont

added dairy products (including on-farm-bottled milk). They work with producers and customers throughout their service region, are constantly on the move and moving product, and always work in service of the local food economy. However, this also means that they run into the same challenges as others in the distribution sector: maxed-out warehouse and loading dock space, not enough drivers, and the need to upgrade systems and processes as they grow.

### Services Offered

**Product Pick-Up:** Farm Connex provides product pick-up services for everything from single cases to multiple pallets, and they specialize in picking up from locations where other distributors are reluctant to go, whether due to distance or insufficient volumes.

**Aggregation & Consolidation:** Farm Connex aggregates products in its warehouse and consolidates multi-producer/product orders for the destination customers. The orders themselves are coordinated between producers and the end users/retailers.

**Cross-Docking:** Farm Connex provides its loading dock for short-term cross-docking purposes between specific producers and downstream distributors.

**Merchandising:** For certain products and delivery points (primarily Hannaford), Farm Connex offers merchandising services by rotating current product stocks or returning old product stocks.

**Packing Material Returns:** Farm Connex will transport valuable, re-usable packing materials (e.g. combi bins and large volume liquid containers) back to certain producers as requested.

### Example Partners & Customers

**The Cellars at Jasper Hill, Greensboro VT:** Farm Connex moves 30,000 lbs of cheese per week for Jasper Hill, whether to customers in New Hampshire, or to a cut-wrap service in central Vermont, or to and from other dairy and storage partners.

**Strafford Organic Creamery, Strafford VT:** Farm Connex is responsible for shipping nearly all of the ice cream and milk that Strafford produces to retail stores and downstream distributors.

**Butterworks Farm, Westfield VT:** Butterworks is a mid-sized producer of organic, grass-fed yogurts found at food co-ops around the Northeast. Farm Connex picks up 2-4 pallets weekly from Butterworks and cross-docks the product for pick-up by UNFI at their Hardwick facility.

**Wilcox Ice Cream, Arlington VT:** Farm Connex performs some last-mile ice cream deliveries for Wilcox's customers in the Northeast Kingdom.

**Sweet Rowen Farmstead, West Glover VT:** Farm Connex is responsible for shipping around 80% of Sweet Rowen's production to customers around Vermont.

**Food Connects, Brattleboro VT:** Farm Connex is a shipping partner with Food Connects

## CASE STUDY

### Farm Connex

Hardwick, Vermont

in the execution of the latter's hub-to-hub cheese distribution initiative described in a prior case study.

#### **Distribution Pain Points**

**Driver Labor Pool:** The lack of truck drivers (and possibly vehicles as well) is the most significant limitation on Farm Connex's capacity. They estimate that there are at least 30 more producers who want to use their services that Farm Connex can't add due to driver and truck limitations. None of their current trucks require CDL-level drivers, but they plan on adding CDL-sized truck to their fleet in the future.

**Operational Systems/Platforms:** Farm Connex identified the lack of systems and software to better manage their pick-up/delivery routes and order fulfillment processes as a major pain point outside of the driver labor pool challenge. As Farm Connex expands and food producers increasingly depend on their services, it's ever harder for Farm Connex to optimize routes manually and improve their product handling efficiency, all of which is a very hands-on, high-touch process.

**Warehouse/Distribution Space:** Farm Connex is very limited in its current warehouse and cross-docking space. However, they will gain 3,000 square feet of cold storage capacity when the Yellow Barn project is completed in approximately 15 years. With that in mind, space limitations are a current concern, but there is a path under way to relieve the pressure.

#### **Investments They Would Make**

**Operational Systems/Platforms:** Farm Connex stated that the most valuable investment they could make in their operation at this point would be systems and software upgrades to manage and optimize routes and orders. They estimate that even within their existing operating space, systems and software upgrades would allow them to significantly increase product throughput because of better efficiency and accelerated processing.

## CASE STUDY

### Farm Connex

Hardwick, Vermont

GRAND ISLE CO.  
RELATIONSHIPS

FRANKLIN CO.  
RELATIONSHIPS

BURLINGTON  
RELATIONSHIPS

ADDISON CO.  
RELATIONSHIPS

RT 100 CORRIDOR &  
MAD RIVER VALLEY  
RELATIONSHIPS

NORTHEAST KINGDOM  
RELATIONSHIPS

**FARM  
CONNEX**

MONTPELIER  
RELATIONSHIPS

UPPER VALLEY  
RELATIONSHIPS

NORTHEAST  
KINGDOM  
RELATIONSHIPS

WESTERN NH  
RELATIONSHIPS

SOUTHEAST VT  
RELATIONSHIPS

### Mid-Supply Chain Relationships

- United Natural Foods (UNFI): Cross-docks at FC for pick-up of Butterworks products.
- VT Commercial Warehouse: FC moves Jasper Hill cheeses to/from this Williston cold storage facility.
- Provisions: FC acts as a freight service and pick-up location for products destined for Provisions (mostly Jasper Hill cheeses).
- VT Farmstead Cheese: FC freights Jasper Hill cheeses for cut-and-wrap services in Woodstock.
- Food Connects: FC freights cheeses and other products to the Food Connects food hub in Brattleboro.
- Black River Produce: FC distributes its Just Cut vegetable products to institutions through BRP.

### Distribution Visualization

This visualization of Farm Connex's freight and delivery activities is meant to be illustrative rather than comprehensive. Because Farm Connex (FC) works with around 80 producers and delivers to customers throughout the same region, product pick-up routes and delivery locations often overlap, have numerous permutations, and could not be represented at a granular level at this scale.

Instead, this map aims to portray how FC radiates out of its home base in Hardwick, and circulates back roads, state routes, and interstate corridors to cover the majority of Vermont (12 of 14 counties) as well as portions of western New Hampshire. Most of FC's freight activities are outbound—pick ups from their producers and deliveries to those producers' customers. Some of its activities are mid-supply-chain, meaning the destination can be another service provider, storage unit, and/or distributor. FC also acts in some specific cases as a cross-docking location for downstream distributors.

This constant freight circulation with minimal current storage resources requires elaborate and time-consuming planning. FC feels that with more advanced logistics capabilities, they could serve more producers and customers and move even more product around the state, even without any additional infrastructural investments.

A photograph showing a person from behind, wearing a brown hoodie and blue jeans, herding a group of cows along a dirt path through a grassy field. The cows are various colors, including brown, black, and white. The background shows a fence and a line of trees under a blue sky with some clouds.

# Paths Forward

# Strategic Directions

In response to the findings synthesized and summarized in the Key Findings section, general strategic recommendations are offered here. These recommendations provide guidance for interpreting and responding to findings in order to deliver positive improvements to the distribution of value-added dairy product within and beyond New England. They are presented separately from the more specific and actionable interventions that follow because they are not necessarily the **only** interventions that stakeholders could make to address the associated challenges and opportunities. For various reasons—funding, bandwidth, sequencing, and regional buy-in among them—a specific intervention proposed in this report may not prove possible to implement. Nonetheless, the project team is confident that the underlying strategic directions (below) would continue to be valid, evidence-based, and actionable.

## FINDING

*The Northeast's value-added dairy supply chain works well for many buyers and producers, but it shows signs of brittleness.*



## STRATEGY

### BUILD RESILIENCY

The NE-DBIC and strategic partners should address the challenges and opportunities presented herein from the perspective of **reducing brittleness in distribution networks**. This means taking a long-term view to everything, from the health of the producer sector, to the capacity of the distribution sector, to the expectations of the buying sector. This also means taking a holistic view of value-added dairy product distribution as a process that includes producer distribution-readiness, marketing content, sales strategies, administrative obligations, distributor relationships, product handling, and buyer merchandising choices. Positive impacts are more likely to accrue as a result of incremental improvements throughout this range of activities rather than through any particular “silver bullet” approach directed only at producer capacity, marketing, or distribution infrastructure.

## FINDING

*Challenges in attracting and retaining human capital are among the largest risks to the viability and vibrancy of distribution networks in the Northeast.*



## STRATEGY

### GROW THE WORKFORCE

The NE-DBIC should convene a collaborative working group including relevant agencies, industry leaders, and professional organizations in all New England states to build a comprehensive employer-driven workforce development strategy based on federally Registered Apprenticeships and associated pipeline development initiatives. Because of the relatively small size and proximity of individual states in New England, any given worker associated with the value-added dairy product supply chain may directly interact with businesses in multiple states on a regular basis and may also work in several of the region's states over the course of a career. Therefore, this workforce development strategy will benefit from taking a multi-state, regional approach focused on occupations ranging from product manufacturing to warehouse management to truck driving.

#### **FINDING**

*Existing small-scale freight and distribution specialists present a pathway to building resiliency throughout the distribution sector and to reducing distribution friction for producers and buyers.*



#### **STRATEGY**

#### **INVEST IN EXISTING DISTRIBUTORS**

The NE-DBIC and strategic partners should seek to promote investment in the emerging and existing parts of the distribution sector throughout New England, with a program that focuses on existing distributors' infrastructural assets (inclusive of facilities, cold storage, vehicles, automation equipment, and IT systems) and that focuses on upstream "first-mile" connections to producers. Much as other recommendations herein (and within the NE-DBIC's purview) aim to develop technical and operational capabilities and resiliency in the producer sector, this investment program should aim to build a deeper bench in the distribution sector, effectively reducing potential brittleness, adding to overall sector capacity, and providing more ways for products to get to market.

#### **FINDING**

*Marketing and relationship-building are critical parts of the distribution process, and they need strengthening in New England.*



#### **STRATEGY**

#### **MARKET AS A REGION**

The NE-DBIC should advocate for—and, as appropriate, develop, spearhead, invest in, and/or collaborate on—marketing-related initiatives that represent New England's value-added dairy products as a united regional front and that provide concrete supports to individual producers and distributors. These initiatives should be founded in the proposition that New England can and must market itself in a cohesive way to compete with larger states

such as California and Wisconsin that actively market their cheeses and other dairy products. Specific initiatives should promote New England's identity as a leading region for value-added dairy products, whether through in-person experiences or digital and printed marketing assets, and increase buyer and consumer access to the breadth of producers in the six states. Other initiatives should support producers in improving their marketing-related assets and capacities—e.g. websites, product photos, social media presence, sales trips, merchandising materials, and more—as part of the broader effort of increasing their readiness to participate and compete in the marketplace.

#### **FINDING**

*Distribution readiness involves significant administrative and technical capabilities with which many producers struggle.*



#### **STRATEGY**

#### **SUPPORT DISTRIBUTION READINESS**

The NE-DBIC should take a leadership role in catalyzing and developing a regional-level service to build and maintain distribution readiness among value-added dairy producers in New England. Most administrative and technical hurdles that create distribution friction are early-stage business challenges for producers and are likely to be relatively easy to resolve through technical assistance that vests knowledge and confidence in the operator. The service would also act as an ongoing support resource for producers dealing with more complex situations that typically arise later in the business lifecycle. With this administrative technical assistance as an underpinning, the regional-level service could add further layers of technical assistance support, for instance by linking producers and distributors to relevant financial programs for infrastructural development and to third-party technical assistance programming and consultant services for process and production advisement.

# Recommended Interventions

---

The following specific, actionable recommendations are designed to tackle challenges in the sector from many sides because, with one notable exception (growing the workforce), individual producers and distributors are likely to have distinct needs with no single point of struggle. These recommendations also treat producers and distributors as equally important in realizing the ultimate goal of bringing more value-added dairy products to market—the distribution process is moot absent the success of one or the other.

The five recommended interventions are:

- New England Value-Added Dairy Center
- Food-Focused Workforce Development Program
- Investment Program for Distribution Infrastructure
- New England Value-Added Dairy Atlas
- Finance and Administration Technical Assistance Service

Taken together, these initiatives work towards the goal of creating market access, increasing resiliency, and reducing brittleness in the value-added dairy product and distribution sectors.

## BUILD RESILIENCY



# NEW ENGLAND VALUE-ADDED DAIRY CENTER

Based on qualitative research in this project, the research team believes that one of the most ambitious initiatives the NE-DBIC and associated stakeholders could undertake in the effort to grow resiliency in the value-added dairy sector would be to establish a brick-and-mortar value-added dairy training and technology center serving the entire value-added dairy industry of New England. There is a frequently cited desire and need—heard explicitly and implicitly from producers and distributors—for a high-level professional development center for value-added dairy products. This facility would serve three broad functions: first, it would be a center for technical training and consultation; second, it would serve as a “home base” for regional marketing and networking efforts; and third, it would help rebuild an intellectual brain trust for the region’s industry.

This facility would include elements such as a full-time professional staff, a research and development lab, a hands-on teaching center, on-site and off-site consulting and advisory services, and a business incubation program. In addition, this center would serve as a home-base for marketing events, regional showcases, professional conferences, sector networking, and related certification courses. If feasible, this facility could also serve as the locus for other Recommended Initiatives featured in this report (e.g. Workforce Development Program and the Finance & Administration Technical Assistance Service), although it may be preferable to not overly complicate the center’s mission.

Based on preliminary research into existing models, the **New England Value-Added Dairy Center** could be designed in such a way as to be supported financially principally by services provided, with additional support from large industry partners and state or federal funding. This center should also partner with existing regional facilities at land-grant universities and/or existing dairy processing programs that can provide localized meeting places, teaching facilities, and access to processing equipment.

The potential partners, supporters, and funders for a **New England Value-Added Dairy Center** are numerous and could include (but are certainly not limited to) the following:

Potential Partners	Relevant Roles
United States Department of Agriculture	Potential major funding resource
New England state-level agricultural agencies	Lower-level funding, mission development and alignment, ongoing support and member/client referrals
Land-grant universities and/or existing dairy product training programs	Localized meeting places and teaching locations, access to additional R&D and training equipment
Industry trade groups such as New England Dairy	Institutional and trade group funding, consulting and membership referrals
Large regional producers such as Stonyfield, Ben & Jerry's, and Cabot	Source of industry funding and mission support
Regional cheese councils	Mission development and alignment, consulting and membership referrals, networking/promotional leadership
Regional food systems non-profits such as Farm-to-Institution New England, VT Farm to Plate, and the Hardwick Yellow Barn Business Accelerator	Mission development and alignment, consulting and membership referrals, networking/promotional leadership

The primary reference model for this initiative is the ***Cheese Expertise Center (CEC)*** in Saint-Hyacinthe, Quebec (<https://www.cheeseeexpertisecenter.com/>). The CEC was founded in 2010 following a major listeria crisis in Quebec. At that time, the Canadian Agriculture Ministry and the cheese industry came together to create the organization as a way to support artisanal cheese producers in Quebec. Since 2018, the CEC has served all of Canada. The CEC today is an independent organization mainly financed by different stakeholders in the industry, including cheese producing members, milk producers, and the Quebec milk board.

Some of the key features of the CEC that would create meaningful, long-lasting positive impacts in the Northeast's value-added dairy sector include:

- Brick-and-mortar headquarters
- Functional research-and-development lab
- Dedicated professional advisors
- Phone and video consulting capability
- Off-site consulting capacity
- Business incubation program
- Event/meeting/networking space
- Primarily funded by membership fees and member/non-member services rendered

In addition, a ***New England Value-Added Dairy Center*** would benefit from and could see broadened impact through the following considerations:

- Strong marketing campaign to generate membership and user engagement
- Connections and collaboration with existing, relevant academic institutions and departments
- Long-range metrics tracking for services rendered, businesses formed, and other sector impacts

## **FOOD-FOCUSED WORKFORCE DEVELOPMENT PROGRAM**

**GROW THE WORKFORCE**



A critical factor in the brittleness of the region's value-added dairy distribution network is the shortfall of workers in manufacturing and distribution roles, including production, packing, warehousing, and light and heavy trucking roles. Of all of findings during the course of research, this was by far the most universally felt issue, although individual producers and distributors describe distinct strategies for accommodating the issue and differing workforce needs.

To counter this trend, NE-DBIC should partner with aligned industry leaders, agencies and organizations across New England to develop an ambitious workforce development initiative with two major components. The first part of this initiative would be to develop a multi-state, federally Registered Apprenticeship program with occupation-specific tracks for food manufacturing, supply chain logistics, and light/heavy trucking. The second part of this initiative would be to build a workforce pipeline by means of a robust marketing effort that attracts candidates into the industry and also attracts employers to participate in the overall initiative.

Registered Apprenticeship is an earn-while-you-learn model that combines mentored on-the-job learning with job-related instruction, both tied to the attainment of defined skills standards. The model also involves progressive increases in an apprentice's wages as skills progress. Registered Apprenticeship is geared towards building long-term employer-employee relationships and has been demonstrated to contribute to employee retention. Although the current project focuses on value-added dairy distribution, this intervention could apply to and be inclusive of the equivalent and sometimes more extreme trucking challenges found in fluid milk distribution.

Individual employers from all relevant industry sectors are foundational, critical partners for Registered Apprenticeship programs to succeed. Their buy-in and participation must be a starting point for successful implementation of this recommended intervention. Additional potential partners, supporters, and funders for this combined **Workforce Development Program** could include:

Potential Partners	Relevant Roles
New England state departments of labor	Major funding resource, mission and standards development, administrative support
Existing industry-relevant workforce development organizations and programs	Standards development, adult education/ workforce expertise, support for building the pipeline
Industry trade groups and associations in food production and food distribution sectors	Industry-wide advocacy and buy-in, employer participation in development and ongoing programs
Higher education institutions with industry relevant courses and programming	Job-related instruction resources, teaching facilities, and certification programs
Career and technical education high schools and other industry-relevant youth programs	Pipeline development for potential future workforce and ongoing organizational partnerships
State and regional food system planning entities	Mission development and alignment, advisory roles, pipeline and career opportunities marketing

The best reference model for a cohesive and successful workforce development program in the New England region is **Growing Futures RI** (<https://growingfuturesri.org/>), an initiative developed by the Rhode Island Nursery & Landscape Association (RINLA) in partnership with several existing Rhode Island agencies, programs, and organizations. RINLA a 100+ year old trade association that represents more than 500 businesses in plant- and land-based industries, including fruit/vegetable growers, nurseries, landscape contractors, arborists, green engineers, masons, garden centers, landscape architects, landscape designers, and compost/mulch manufacturers, suppliers and allied businesses.

RINLA identified the lack of skilled workers coming into these allied industries as the number one issue facing member companies, a problem compounded by a lack of awareness among the general workforce of the meaningful, living-wage jobs member companies have to offer. In 2017, RINLA launched Growing Futures to attract, train, and retain the next generation of landscape and green-industry professionals. With active participation and buy-in from 15 diverse employers, RINLA first designed and launched the Registered Apprenticeship program, a structure through which employers can invest in incumbent workers' professional growth (and evaluate that growth) as a way of increasing employee retention. Once that program was in place and growing with incumbent workers as its focal point, Growing Futures' programming expanded to include a compelling, high-quality marketing campaign and an engaging, experiential, entry-level pre-apprenticeship training program to recruit new workers into the industry, vet them, and match them with jobs.

The essential programmatic components of Growing Futures that have contributed to its success—and which could provide a template for workforce development programs related to New England's value-added dairy sector—lie in its suite of interconnected, employer-driven programs:

- Engaging and rigorous pre-apprenticeship programming (entry-level training intensives)
- Facilitated job fairs for successful pre-apprenticeship program graduates (employee/employer matching)
- Registered Apprenticeship programming (employer-driven, occupation-based, retention-focused)
- Higher education pathways (new Associate degree programs for industry professionals)
- Professional certifications (additional portable credentials)

Access to Growing Futures' programs and pipeline is currently available free to RINLA members who pay \$250 in annual dues. RINLA expects to be able to offer several of these programs and services for a fee, once the proof-of-concept initial years of implementation are complete.

Some key features of the Growing Futures model that could be adapted to deliver long-term positive impacts on the Northeast's value-added production and distribution workforce include:

- Multi-employer and multi-state apprenticeship model
- Employer engagement defining the development process and implementation

- Responsive industry organization with strong ties to employers to guide the process and hold the Registered Apprenticeship standards
- Strong connections between industry pipeline promotional efforts and employers housing Registered Apprenticeship programs
- Employer buy-in for placing incumbent workers into Registered Apprenticeship and hiring new entrants to the industry from entry-level training programs
- Comprehensive on-the-job competencies developed in collaboration with employers
- Best-in-class related instruction curriculum (as a complement to on-the-job learning), leveraging existing resources whenever possible
- Defined and job-appropriate Registered Apprenticeship timeframes (e.g. one-year programs for generalist and entry-level positions, 3-4-year programs for specialist and/or advanced skills)
- Funding support for employers implementing Registered Apprenticeship
- Strong outbound marketing campaign to raise awareness and attract participants

## **INVEST IN EXISTING DISTRIBUTORS**



### **INVESTMENT PROGRAM FOR DISTRIBUTION INFRASTRUCTURE**

As described in the Key Findings, the part of the distribution network that has the greatest potential for brittleness is the upstream “first mile” portion connecting producers with distribution and freight services that may be only the first link in the supply chain for them or may bring their products all the way to market. In either case, this upstream portion is where products are at their most dispersed (literally the pre-aggregation stage, requiring pick-ups from innumerable producers), where margins are the most sensitive (the costs of distribution or freight at this stage are typically passed upstream to the producer), and where the operators are usually the smallest relative to downstream distributors (especially as products make their way to metro regions with large, restaurant/retail-facing wholesalers). Fortunately, this is also the sector of the network where research found a number of capable, innovative, mission-driven distribution and freight providers, many of which are small but growing. These operators confer direct benefits to the small- and mid-scale producers they serve and their long-term viability provides an excellent counterbalance to potential sector brittleness.

The research team recommends that NE-DBIC develop a loan and/or grant program that leverages existing funding entities (including public and private organizations at the federal, regional, and state levels) for investment in physical infrastructure, vehicles, and systems related to value-added dairy distribution in the Northeast, with a particular focus on the types of distributors and freight entities being described here. These would be capital investments made at the level of individual companies and organizations (or deliberate collaborations between companies/organizations) in order to positively impact the distribution sector at the regional level.

To make the broadest possible impact in this sector, this program should be focused in the following ways. First, eligible organizations should be directly involved in value-added dairy distribution and/or freight activities (rather than production activities) in the Northeast region, whether they are for-profit or non-profit in structure. Their product focus need not be limited to value-added dairy products, as long as positive impact on the value-added dairy sector can be demonstrated. Second, eligible organizations should be “upstream” providers, meaning they offer first-mile services to producers they work with in the Northeast (either direct product pick-ups or the coordination of delivery to distribution facilities). They can also provide last-mile (e.g. customer delivery) services as well, but the first-mile should be a core service and priority. Third, eligible investments should cover all physical and systems infrastructure that facilitates throughput of products in the supply chain and producer access to markets, including provision of new facilities/resources and upgrades to existing facilities/resources (e.g. warehouses, cold storage, delivery vehicles including zero emission trucks, pick/pack equipment, logistics/ordering software systems, etc.). This particular investment program would not include investments at the producer level (which are needed but can be addressed with other programs) or in workforce development (addressed in a separate recommendation).

Potential partners, funding sources, and supporters for the Investment Program for Distribution Infrastructure include:

Potential Partners	Relevant Roles
Community Development Finance Institutions such as the VT Community Loan Fund, the NH Community Loan Fund, and Coast Enterprises Inc.	Potential sources of state-level funding and administrative and technical resources for private-sector entities
United States Department of Agriculture	Potential major funding source
New England state-level departments of agriculture	Overall leadership, advocacy, and lower-level funding source
Council of Development Finance Agencies	Advisory services for creation and governance, network resource for additional CDFI connections
Other regional funding organizations such as the Northern Border Regional Commission	Additional funding resource, in particular for non-profit entities and targeted investment requests (e.g. investments that match an organization's specific mission)

Though no reference model that corresponds exactly to the proposed program was identified, many existing programs come close but have critical exceptions and differences—they might address producers rather than distributors, or non-profit organizations rather than for-profit companies, or fund at the state level rather than the regional level, or allow funding for some elements of cold-chain infrastructure but not everything described here. That said, **Coastal Enterprises Inc's** (CEI) Business Financing program (<https://www.ceimaine.org/financing/business-financing/>) comprises relevant structures and characteristics that come close to the type of initiative being proposed here.

Some of the key aspects of CEI's program that could help this investment initiative meet its goals include:

- Menu of funding programs to meet a variety of needs
- Accelerated lending program for non-real estate capital needs up to \$30,000
- Mid-range standardized lending program for non-real estate loans higher than \$50,000
- Ambitious capital fund investment portfolio for larger projects ranging from \$250,000 to \$1,000,000
- Strong focus on assets, food businesses, job creation, and sustainable practices

Using the CEI's Business Finance program as a source of inspiration, below are the core elements that would guide funding decisions:

- Focused on the distribution and freight service sector
- Focused on distribution and freight providers who prioritize "first-mile" pick-up services or coordination of same
- Focused on providers located in and serving the Northeast as a primary market
- High visibility/awareness for small-scale and emerging distribution entities in particular

- Probable loan or investment range of \$5,000-\$500,000
- Broad definition of eligible assets within the targeted range of eligible entities, inclusive of vehicles, cold chain infrastructure, IT systems, warehouse infrastructure, and other processing and packing equipment

## NEW ENGLAND VALUE-ADDED DAIRY ATLAS

### MARKET AS A REGION



The qualitative research in this project revealed another common theme described in different ways by producers, distributors, and buyers: the need for better marketing efforts throughout the New England region, and the challenge of doing so in an organized, consistent way. This theme is less tangible and quantifiable than the workforce gap, but it is observable in and heard from producers who note their struggles in committing staff resources to sales and marketing efforts, distributors who wish that producers would handle more of their own marketing and be prepared for in-person outreach to buyers, and buyers who comment that they rarely feel deliberate “courting” from New England cheesemakers. In summary, this problem is both one of individual resources (time, cash-flow, and workforce availability) and collective action (the New England region marketing itself more intentionally as a collective). The potential interventions in response to this dynamic are numerous—better websites for producers, sales training, social media training, etc.—and several of those efforts could be woven into the other initiatives described herein.

As a way to address the marketing gap while also prototyping ways to navigate the unique challenge of working at a multi-state level and representing the entire region, NE-DBIC should catalyze support for, invest in, and/or convene strategic partners to develop a **New England Value-Added Dairy Atlas**. This Atlas—in both digital and hardcopy formats—would show all regional value-added dairy producers in the New England region with comprehensive and concise contact, technical, and brand-related information. The Atlas should be “B2B grade” in that it has a level of sophistication that makes it an invaluable resource to any distributor or buyer of New England cheeses and other value-added dairy products nationally. The consistency of updates and accuracy of the information would be a core part of what makes the Atlas the reference of choice for wholesale buyers. However, the Atlas should also be designed with a “B2C grade” user experience in mind, meaning that it should be well-branded, user-friendly, easily accessible, and actively promoted in consumer-facing channels (e.g. social media). The vibrancy of the user experience would be a core part of what makes the Atlas a resource for culinary/agricultural tourism, farm visits (where applicable), cheese trails, and other consumer experiences.

Potential developers, partners, funders, and supporters of a **New England Value-Added Dairy Atlas** include:

Potential Partners	Relevant Roles
Northeast Dairy Business Innovation Center	Project guidance, start-up funding, and hand-off
Existing New England cheese guilds	Mission development, sector expertise, producer relationships, content resource
Existing New England Cheese Guilds	Mission development, sector expertise, content resource
New England state-level agricultural agencies	Outreach to producers, potential leveraging of existing state-level databases
Major regional specialty retailers and grocery stores such as Wegmans, Murrays, Whole Foods	Advertising revenue, ongoing partnership and marketing

Potential Partners	Relevant Roles
Industry trade groups and associations such as New England Dairy	Sponsorship revenue, ongoing partnership and marketing
New England tourism agencies	Sponsorship revenue, ongoing partnership and marketing

Though focused more on consumer information and experience than B2B relationships, the best current reference model for this initiative is found in the **California Cheese Trail (CCT)** (<https://cheesetrail.org/>) based in Marin County, California. The CCT was created in 2010 by Vivien Straus, partner in the Straus Family Creamery, as a project to help the cheesemakers of Marin County. As the project found early success, it grew to include cheesemakers throughout California and today showcases almost 80 producers on its online map and phone app, from tiny artisanal farmstead cheese operations to more conventional, mid-sized producers. The hardcopy version of the CCT map showcases only the 50 or so producers who open their doors to public visits, because private consumers use the map as a resource for driving tours and trip planning.

Participation in the CCT's online and hardcopy maps does not cost the producers anything—they merely need to respond to the invitation or request to be included and then provide the required details. The CCT is entirely funded through three main categories: advertising by entities such as larger cheesemakers, Whole Foods, and specialty retailers; sponsorship from dairy industry groups such as Real California Milk & Cheese; and funding from agriculture and tourism-oriented non-profits such as the Sonoma Land Trust or Marin Convention & Visitors Bureau). As a result of the COVID pandemic, the CCT added a direct-to-consumer e-commerce store featuring selections of California cheeses, both as a strategy to boost revenue for cheesemakers, many of whom saw sales plummet in the spring of 2020, and as an effort to build an earned revenue stream that would move the CCT towards self-sufficiency.

Since the early days of the CCT, cheesemakers' response to CCT's efforts has been very positive. Many participants ascribe 20-80 percent of their business's overall revenue to their inclusion on the cheese trail map (online, printed, and app-based) and the resulting direct-to-consumer sales. Further, prior to the existence of the CCT, only three or four cheesemakers in California were open to the public. Today, more than 50 cheesemakers offer public tours, have farm stores, and/or provide other consumer experiences.

Some of the key features that seem responsible for the California Cheese Trail's success and its difference from similar but less successful analogues include:

- Bright, contemporary, user-friendly design in website, phone app, and hardcopy versions
- Website, app, and hardcopy each separately designed to be optimized for the given format, audience, and experience
- Particular emphasis on the website and app formats for searchability and exploration
- CCT brand is a stand-alone entity that does not share its identity with other efforts or enterprises

- The online producer atlas brand correlates directly with the user-facing URL (i.e. the CCT brand and experience are not nested within a broader website)
- The online producer atlas is situated as close to the landing page as possible and is extremely easy to access
- Inclusion of comprehensive and consistently updated detail (or guidance towards additional detail or websites) relating to product catalog, product characteristics, contact information, and owners/farmers
- Database searchable by region, dairy type, product type, and other relevant data points
- Paired with deliberate, sustained social media campaign and producer outreach
- Digital atlas experience is effectively reproduced in the hardcopy format
- Hardcopy atlas is freely shared at relevant regional stores and tourism centers, as well as mailed on request to individuals

The following features would improve upon the above model in the New England context:

- Focused attention to wholesale buyers as a user (as the Atlas is designed) and key audience (as it is marketed and updated)
- Brand narrative that unifies the region, while also highlighting subregional differentiation/terroir

## **SUPPORT DISTRIBUTION READINESS**



### **FINANCE & ADMINISTRATION TECHNICAL ASSISTANCE SERVICE**

During the course of research in this project, the concept of "distribution readiness" emerged, voiced especially by distributors and buyers who are the producers' conduit to markets. Distribution readiness includes numerous closely connected areas of knowledge and capacity that generally fall under the realm of administration, regulation, compliance, and documentation. Distributors and buyers of various sizes noted that a common point of friction they encounter are small-scale producers who wish to enter the marketplace but struggle to address the pro forma paperwork that is invariably required and helps accelerate all parties to the desired outcome, which is to sell product.

This type of distribution readiness includes proper liability insurance, completed vendor agreements, credit checks, third party food safety audits, freight agreements, and more. Many of these needs are "entry-level" in that once established and resolved, they tend not to require much ongoing maintenance other than annual check-ins (e.g. renewing insurance policies, confirming sales sheet pricing, renewing audits). Additionally, this service would also act as an ongoing support resource for producers dealing with more complex situations that typically arise later in the business lifecycle. Some of the needs may require value-added dairy specific knowledge and expertise, while others could be addressed by a food business generalist assistance provider.

NE-DBIC should spearhead and develop an umbrella "one-stop-shop" technical assistance service that can advise and assist value-added dairy producers, processors, and distributors in matters relating to administrative requirements, as well as navigate users towards appropriate financial opportunities and other referral needs. In practice, this program is imagined as a three interacting layers of in-house, matchmaking, and referred service.

- First, this service provides direct, in-house technical assistance to operators—in person, by phone, or through video link—for needs such as insurance requirements, food safety audits, vendor agreements, sales sheet development, and more.
- Second, this service acts as a navigator connecting operators to existing loan and grant opportunities for capital needs relating to expansion, equipment, new processes, and vehicles. Note that relevant loan and grant opportunities would include the aforementioned ***Investment Program for Distribution Infrastructure*** as well as funding pathways for producers and processors).
- Third, this service would act as a centralized knowledge base and navigator to approved third-party technical assistance providers for needs outside of its purview (e.g. technical cheese production training, food safety training and consultants, marketing support, etc.). It would also then connect users to any potential financial supports for those third-party technical assistance providers,

where loan or grant opportunities might exist, such as a grant to cover the cost of a HACCP certification program.

Potential Partners	Relevant Roles
New England state-level agricultural agencies	Lower-level funding opportunities, mission development and alignment, ongoing support and user referrals
United States Department of Agriculture	Potential major funding source
Community Development Finance Institutions such as the VT Community Loan Fund, the NH Community Loan Fund, and Coastal Enterprises Inc.	Partnership for funding and technical assistance referrals, connection to existing technical assistance services
Agricultural lenders such as Farm Credit East	Potential loan program resource for service users, connection to existing technical assistance services
Food and agriculture grant-making organizations such as Northern Border Regional Commission	Potential funding resource for service users, connection to existing technical assistance services
Existing technical assistance providers in the region such as The Carrot Project and the Vermont Farm Viability Program	Third-party technical assistance referrals for out-of-scope inquiries
New England Value-Added Dairy Center	Program co-location for administrative and infrastructural efficiencies

Potential partners, funders, and supporters of a ***Finance & Administration Technical Assistance Service*** include:

The primary reference program that was identified as a potential model for this initiative is Quebec's **Réseau Agriconseils** (<http://www.agriconseils.qc.ca/en/#>). The Réseaux Agriconseils (RA) are a group of agricultural advisory networks within Quebec, each of which serves a specific sub-region of the larger province. The RA has as its mandate the development of a one-stop-shop of advisory services for agricultural businesses and food manufacturers, as well as cultivating professional service networks that support the agri-food businesses of the region. The RA network is supported by a variety of Canadian federal and provincial agencies and authorities.

The services that the Réseau Agriconseils offers spans feasibility analysis, business planning, financial analysis, financial advisement, human resources advisement, and more. In some cases these are subsidized services and in other cases, they appear to be paid for by the business making the inquiry. In many cases, the RA seems to play the role of defining the need, developing a menu of relevant services, and providing the agri-food business with a referral to a third-party advisor or consultant. Because this agency is located in Quebec and is not available to U.S. citizens, much information about the precise structure of its services remains opaque. However, the critical concept for purposes of this project is the idea of a "one-stop-shop" that provides expert advisement on matters relating to finances and administration.

- Some of the key features evident in the RA example that may contribute to positive outcomes in a similar service in New England include:

- Focus on technical assistance services in administrative/compliance areas for producers
- Focus on financial advising and matchmaking with existing opportunities
- Strong referral relationships to technical assistance providers for out-of-scope requests
- Live advisors accessible through scheduling and reachable by phone
- Structured approach to financial advising and technical assistance (specific goals, set time frame, and a clear diagnosis/recommendations/follow-up sequence)

In addition, there are other features that could improve on the example provided by Quebec's RA service, were a similar service to be launched in New England:

- High-visibility, mobile-optimized website with excellent user interface and clear service menus
- Robust B2B marketing and outreach campaign to insure awareness of the service to producers and distributors
- Maximizing streamlined, in-house expertise in and capacity for technical assistance

# Conclusion

The recommended initiatives described in this report seek address the overarching issue of brittleness in value-added dairy product distribution by conferring a mix of broad, incremental, long-term, and tangible benefits to as many actors in the sector as possible. These initiatives also aim to avoid complex approaches that rely on perceived "silver bullet" remedies or others that may have questionable impacts over the long-term. This does not mean that any given initiative here is imagined to be "easy" to implement nor free of complexity. On the contrary, almost any intervention targeted at value-added dairy product distribution on the regional level—whether the entire Northeast or just New England—has an inherent challenge due to the need for stakeholders in multiple states, organizations and agencies to work together to benefit an entire region. In all of the recommended interventions featured, this multi-state approach will be a core part of the implementation challenge, and it will be critical to success.

The recommended interventions could take somewhat different forms depending on which of them are advanced, in what combination, or in what order they're implemented. They have intentionally been presented as separate initiatives and programs that are not mutually dependent, that could be spearheaded by different entities, and that don't require a single coordinated effort that's at risk of collapsing under its own weight. That said, it's easy to imagine how an initiative such as the New England Value-Added Dairy Center could be the locus for several of the other proposed initiatives. Correspondingly, it may be determined that implementing a New England Value-Added Dairy Center would be best facilitated by combining it with initiatives such as the Finance & Administration Technical Assistance Service or the Workforce Development Program. These determinations will be an important part of subsequent stages of the broader effort to improve the resiliency of value-added dairy product supply chains and the viability of the associated businesses.

The study has indicated that there is no single standout infrastructural node, logistics asset, or mechanical solution to the distribution challenges that value-added dairy producers face. Distribution challenges (and the flipside of that coin: distribution opportunities) are comprised of a nuanced and entangled web of factors including advanced technical excellence in production, product uniqueness, careful matching of right product to right market, strong partnership with supply chain partners and buyers, access to capital and labor, and creativity. Solutions must follow suit—focused on infrastructure and programs in an integrated way—in order to gird up an accessible distribution system that contributes to a resilient regional value-added dairy industry.



# Appendices

# Appendix I: Phase 1 Interview Findings

Across more than 20 interviews conducted, consistent themes emerged about New England's distribution ecosystem and producers' relative ease and challenges faced when bringing their products to their desired markets. These themes are distilled and detailed below.

Interviews sought to first identify and understand issues that relate specifically to distribution and freight/shipping in the Northeast in the sense of infrastructure, assets, routes, and the actual movement of products from farm to retailer. The intent of this approach was to separate experiences with distribution from adjacent, intertwined issues, such as producer wholesale readiness, marketing, sales capacity, and relationship-building. The Regional Distribution Capacity Findings section highlights themes focused on the mechanics of distribution from people across the value chain, from cheesemakers to the specialty cheese stores that sell their products. The Distribution Adjacent Issues section describes findings that are focused on the aforementioned intertwined issues.

## **REGIONAL DISTRIBUTION CAPACITY FINDINGS**

*Operators across value-added dairy product supply chains are generally satisfied with regional distribution and freight networks.*

Cheesemakers interviewed in large part spoke favorably of their experiences with distribution and of their access to Northeast markets, both in terms of getting products into the supply chain and getting them to market. They highly value their relationships with specific distributors who they feel represent them well and provide critical services, including conventional distributor services or a freight services. Within the region, the cost of distribution and/or freight represents an acceptable cost for cheesemakers' businesses, whether that cost is incurred in the form of taking a lower wholesale price or in the form of a direct freight expense.

Distributors (including those who specialize in cheese and food distribution generalists) give the value-added dairy producers they represent excellent access to customers in the Northeast. Many of these distributors interact among themselves in ways that facilitate the movement of products to different sub-regional markets (e.g. Boston or New York City) or regional markets (e.g. beyond the Northeast). For example, one distributor provides freight service from Vermont cheesemakers' facilities to a Massachusetts-based specialty food distributor for distribution out to the latter's customers.

The distributors and retailers interviewed reported minimal friction in the mechanics of the Northeast's distribution channels. They're able to access the producers they want to work

with and who are "distribution-ready." They find that when these producers are ready to engage with the distribution process on technical, administrative, and soft skills levels and those producers are offering a unique and/or high-quality product, there are few obstacles to getting products to Northeast markets. Several suggested that if a product is great and there's adequate supply, they would make significant efforts to get that product into the supply stream.

Some distributors noted that the Northeast is a comparatively abundant region for distribution resources and routes. End-to-end, the entire region is reachable within a day's drive and includes two major metropolitan markets, which gives it many advantages over other much more rural and sparsely populated regions.

***Producers use a blend of distribution modes, but most small-scale producers access end-point markets through relatively direct channels.***

The producers interviewed use a range of methods to get their products to market. Most use multiple modes depending on the customer they're working with, the volume they're selling, and the required destination. The majority of small-scale cheesemakers primarily work with cheese or specialty food distributors, who take possession of the cheese, assume responsibility for account management and deliveries, and also play a role in the sales process.

In some cases where the order volumes are large enough, an "upstream" distributor operates in a freight capacity in order to bring a producer's cheeses to a "downstream" distributor, providing product transport on a fee-for-service basis (with fees paid either by the producer or downstream distributor). However, for the most part, interviewed cheesemakers make consistent and effective use of this relatively direct linkage of farm to distributor/freight to retailer or other point-of-sale. Some specialized cheese distributors reported being able to work with even very small cheesemakers in this way, provided the region itself is served by an "upstream" distributor.

Smaller-scale producers, those who are more geographically isolated, and/or those whose products are highly sensitive (like ice cream) employ distribution strategies that are more specialized, improvised, or limited. (Ice cream specifically is addressed in a separate section below.) For micro-scale cheesemakers (i.e. those producing a few thousand pounds of cheese per year) who meet these criteria, however, there is increasing use of methods such as local self-delivery (e.g. the farm truck and a local route), use of direct shipping with package companies (e.g. UPS or FedEx), and more ad hoc relationships (e.g. extra freight space in another producer's delivery vehicle). The use of these methods should not be viewed as a shortcoming of distribution networks. Some regions may not have enough cheesemakers to support a specialized cheese distributor. Some cheesemakers choose to stay at a very small scale and prefer to ship or deliver their products directly to food hubs and retailers themselves. Some distributors and retailers (such as Murray's) are able to provide excellent shipping rates and packaging guidance for producers shipping through FedEx. And finally, some cheesemakers may not be wholesale "distribution-ready" in a

variety of technical and administrative ways that make these alternate shipping methods best fit.

*Small-scale producers' use of methods like self-delivery, direct shipping or tacking on a case or pallet to another producer's vehicle should not be viewed as a shortcoming of distribution networks.*

Those producers who are at the larger end of the small- to mid-sized scale increasingly use freight, cross-docking, third-party logistics (3PL, or a freight service provider) and less-than-truckload logistics (LTL) services in combination with distributors. These relationships take on added layers of complexity as volumes of production increase and as the retail buyers are more directly involved in the negotiations over pricing and delivery terms. However, the producers at this scale have much more capacity to manage these relationships and seem to feel that the assets they need to reach their desired markets are available to them in the Northeast. The challenges for them are more about the nuanced process of developing purchasing and distribution relationships (i.e. getting a distributor to call them back) navigating complex price negotiations, and fitting their products into the value matrix of a grocery store's cheese program.

***There are a small number of absolutely critical distribution sector actors in New England who are involved in the majority of supply chain transactions for small-scale value-added dairy producers.***

In interviews, the same names were repeatedly mentioned as playing vital roles in cheese distribution in the Northeast. Primary among these was Provisions, which seems to be involved in the majority of transactions in the Northeast's artisanal cheese sector (and centered in Vermont). They do this in a variety of capacities, including as a consolidator (the critical link to getting cheeses off-farm and into the supply chain), as a distributor (to specialty retailers), or as a freight service provider (to specialty "downstream" distributors in New York or Boston).

Besides Provisions, some of the essential actors in moving value-added dairy products around the region are Seacrest, Sid Wainer, Saxelby, World's Best Cheese, Chefs Warehouse, and Baldor Foods. Each of these has a distinct customer type, region of operation, catalog approach, and product focus. But collectively they comprise a matrix that covers the Northeast effectively in terms of delivering products to buyers. They also have varying capacities for moving cheeses outside of the Northeast region, capacities that depend on logistical capacity but also available supply, pricing, marketing, and other factors addressed below.

Another vital node in the movement of artisanal cheeses in the Northeast is Larkin Cold Storage, in New York City. Larkin is the major node in the Northeast for cross-docking and a critical asset for producers like Jasper Hill, distributors like Provisions, and retailer/

distributors like Murray's and Saxelby. Though other businesses that offer comparable services (cold storage, logistics, coordination, cross-docking, e.g.) exist around the region, Larkin has a central role and strong reputation as a specialty food and cheese specialist (for domestic and imported product).

***The major gaps in the Northeast's value-added dairy distribution ecosystem mostly correlate with places with a lower density of producers, which have not previously presented a viable business opportunity for distributors.***

Distributors and retailers consistently pointed to one of the obvious gaps in the Northeast's distribution networks, which is that in sub-regions such as Maine lack an equivalent to Provisions. Insofar as distribution businesses tend to emerge or expand to where the economics of a region's food businesses make it viable, it may be that there simply hasn't been sufficient density of cheese producers in Maine to support the same distribution model. Maine has three notable hurdles that support this argument: first, the vast majority of cheesemakers there are very small; second, many of them are located at some distance from one another; and third, many of these producers use a pasteurization system that doesn't allow for sales across state lines. Still, a new distribution company focused on cheese is emerging in Maine now.

A non-profit distributor in Vermont plays a similar role, serving off-the-beaten-path agricultural producers across most of the state. They provide first-mile distribution services to producers who are too far afield in terms of scale or geography to fit into other distribution opportunities, and they also work with some of the most established producers in the sector.

Both of these examples are highlighted in this report's Supply Chain Case Studies section.

## **DISTRIBUTION-ADJACENT ISSUES**

With extraordinary consistency, interviews gave rise to "distribution-adjacent" themes: issues less about the assets and logistics associated with distribution, and more about the soft skills, hard skills, and business resources that make distribution needed, possible, and effective.

Whether speaking with cheese producers, distributors, retailers, or sector experts, the research team heard that distribution is fundamentally about ongoing relationship-building, trust-building, and maintenance as much as it is about figuring out the movement of products from point A to point B. Therefore, efforts that are geared towards relationship-building indirectly facilitate the distribution of products. Along the same lines, efforts to increase buyer demand for high quality and unique products tend to make the mechanics of distribution fall into place. Some of those issues have already been suggested above. This section addresses those themes in greater detail.

***Regions beyond the Northeast are seen by many producers as a primary market growth opportunity, but distributors note that many producers are not fully prepared for this expanded market reach.***

Producers consistently noted a limit they experience in existing distribution networks as they try to increase sales of New England cheeses outside of the Northeast region. Many noted that it is very hard to get on the radar of new distributors to make this possible. Still, some producers view sales beyond the Northeast as a “low-hanging fruit” opportunity.

These producers are eager to increase their distribution south and west of New York City, especially to specialty cheese stores and high-quality grocery stores in metropolitan areas in the mid-Atlantic. From their perspective, breaking into new distributors is challenging and requires outreach and business development efforts that they don’t have time for. What these producers seem to need most of all is a staff-person dedicated full-time to this kind of relationship-building.

Several distributors and sector experts offered counterpoint perspectives. They noted that some cheesemakers lack adequate understanding of important distribution issues and, as a consequence, are not fully prepared for expanding their distribution beyond the Northeast. Some producers lack understanding of what distributors actually do and may assume that producer responsibility for engaging strongly with sales ends when they are picked up by a distributor, when in fact a successful distribution relationship requires frequent communication, active participation in sales activities, and a shift in the producers’ sales audience (e.g. in addition to seeking attention from end consumers, the producers now have to win over the distributors’ sales people to ensure strong representation). Some producers don’t have the bandwidth to do the additional sales work that new distribution relationships demand. Some have a poor understanding of how retail pricing works, especially in the context of cheeses that are traveling farther and farther (at greater and greater cost) to get to market. Some may not have the production volumes to get far beyond the immediate region, or may not be able to manage the food safety protocols required to comply with larger distributors and grocers. All of this points to the need, from the perspective of many distributors and retailers, to better equip producers and the regional value-added dairy sector to participate in the distribution process.

Distributors, retailers, and sector experts noted that not all producers are ready for—or will be well served by—the significant expansion they want. For example, one cheesemaker expanded in partnership with a major national retailer several years ago, only to find that due to lower margins, they were producing far more cheese and straining their operations, but providing no additional benefit to the business’s bottom line.

***Value-added dairy producers need expert support with marketing and new market development, both as individual businesses and as a regional industry.***

A key overarching message that emerged in interviews with buyers, producers, distributors,

and sector experts alike is that cheesemakers in the Northeast need increased supports—as individual businesses and as an industry—to engage in marketing and sales. The comparison to Wisconsin came up repeatedly. Wisconsin is one of few U.S. regions that is competitive with the Northeast and New England in artisanal cheese production, and it is known for dedicating enormous resources to marketing its producers (e.g. actively courting cheese buyers from across the country, flying them to Wisconsin to experience the breadth of the industry and meet a range of producers). Retailers noted that in decades of cheese-buying experience, they'd never heard a unified regional New England cheese marketing message, experienced the kind of business development outreach they'd experienced from Wisconsin, or heard organizations speaking as one voice about New England dairy products.

The buyers and sector experts making these observations noted, of course, that there are significant complexities around how this kind of coordinated marketing could be done in a region like New England. Who would be the coordinating entity? Who would pay for it? How would it be determined what products would be promoted? How would benefits accrue to truly small-scale producers and not just to larger producers with the capacity export outside of the region? How would the identity value of specific places within the region (e.g. Vermont) be leveraged and aligned with the region's broader identity?

*Retailers with decades of cheese-buying experience noted they had never heard organizations speaking as one voice about New England dairy products, and never experienced the kind of business development outreach they'd experienced from Wisconsin.*

Many distributors noted that New England cheesemakers (as individual businesses) are often weak marketers of their own products. There's a sense that some cheesemakers do not understand the need to be actively engaged with distributors and especially with the ultimate buyers—chefs, cheesemongers, specialty grocers—to develop strong sales relationships, tell their "story", understand the buyers' needs and limits, and educate them about their products. The need for better storytelling was highlighted by an idea echoed among several distributors and sector experts, which is to develop an annually update "atlas" of New England value-added dairy producers. This would be a highly visual and well-maintained product that displays the geography and people of New England cheesemaking, contains detailed product and pack specifications, and serves as an up-to-date resource for distributors and their customers.

The elements of producer story-telling and unified promotion of the region's industry combined in another frequent suggestion, which was to significantly ramp up the regularity with which distributors, retailers, chefs, and other buyers are brought to visit producers and cheesemaking regions. The proximity and face-time between producers and buyers is critical to relationship-building and education, and is the precedent to increased purchasing and distribution activity. These visits would benefit from being organized, overseen, and managed by people other than the producers themselves— one retailer noted that on prior farm visits to cheesemakers in New England, they had felt almost like an unwelcome

interloper, which suggests that some producers may be so burdened by operational demands that they are not always the best sales representatives of their own work.

***Small-scale producers need technical assistance with administrative hurdles to distribution, including third-party audits, insurance requirements, vendor agreements, and sales sheets.***

Distributors consistently described the administrative challenges that producers can face in on-boarding with new buyers (including both distributors and retailers), and in general with the heightened compliance expectations of the Food Safety and Modernization Act and regulatory agencies. One highly experienced distributor observed that he sees fewer new producers entering the artisan cheese space today than he was seeing a decade ago, and he believes that this is partly due to the higher administrative and compliance burdens now required of cheesemakers.

Another distributor noted the need for producers to complete third-party food safety audits and noted that the majority of cheesemakers do so because nearly all distributors and retailers now require it. However, this "majority" may be a self-selecting sample— the cheesemakers that aren't able to clear that hurdle either don't participate in distribution networks or don't survive. Whatever the larger scale dynamics are, there is a sense that to be "distribution-ready," value-added dairy producers need assistance with managing vendor agreements, insurance requirements, and other forms of administrative paperwork.

*Many New England producers lack the well-considered materials that help wholesale buyers and their customers move more quickly to "yes."*

At the intersection of administration and merchandising are supporting documents like sales sheets and pricing rationales— materials that are very important to distribution readiness and that help wholesale buyers and their customers move more quickly to "yes." More than one distributor noted that in their experience, some producers lack adequate, well-considered versions of these materials (if they have them at all). This point relates to that made previously that some producers lack a sophisticated understanding of how distributors and retailers work, what information they need, and how to structure pricing in a way that encourages sales. Improving producer understanding of these considerations and helping them prepare effective materials is seen as a critically important pre-cursor to actively connecting producers with the distributors with whom they want to work or buyers they want to reach.

***Advanced professional development and technical assistance will help small-scale producers elevate their capabilities in quality control, food safety, product***

## ***development, business strategy, product differentiation, and overall cheesemaking skill.***

Retailers, distributors, and producers uniformly brought up the need for more sophisticated training, professional development, and technical assistance for value-added dairy producers of all kinds. As noted previously, food safety preparedness and compliance as well as risk management are major areas of concern for cheesemakers today. Some producers noted that they want to be better prepared in these areas but need supports, such as geographically accessible brick-and-mortar training centers, in order to get there. A cheesemaker who had experienced a food safety crisis reported that the process had increased their comfort with “speaking the language” of the Food and Drug Administration (FDA) and taught them to not be afraid of their inspectors, who generally took a collaborative, improvement-oriented approach to the situation. In contrast, they felt that the state level inspectors they dealt with, though extremely supportive over the years, might have been too hands-off and intervention-averse in their inspection processes.

Distributors, in particular, suggested that cheesemakers would benefit from serious, high-level training in cheesemaking techniques (definitively not introductory programs) to improve the quality and diversity of their offerings. Of course, New England is home to extraordinary cheesemakers, but several distributors noted that they encounter too many cheeses that are similar to others, that fail to take advantage of gaps in the region’s overall cheese “portfolio”, and that lack any particular distinction that makes them worth championing. These distributors suggested that cheesemakers need better training to understand the full breadth of cheese styles, the competitive marketplace, and the range of production methods at their disposal to create products that truly stand out and earn higher price points. From a retailer perspective, the research team heard that retail cheese programs have slots/space for just a set number of each kind of cheese and that it’s rare for any of these slots to be unfilled. For a new producer to replace a cheesemaker that is established within a slot/relationship, the product must be excellent, distinct, and appropriately priced.

*New England is home to extraordinary cheesemakers, and there is an opportunity to fill gaps in the regional cheese “portfolio.”*

Finally, interviewees across the supply chain noted the need for cheesemakers to consider expanding to new product formats that are more market-friendly: smaller cheeses, faster-aging cheeses, cut-and-packaged cheeses with better shelf-life, custom blends, and more. Meeting this demand in the marketplace would be accelerated with dedicated, professional-development level training programs and technical assistance for producers in the value-added dairy sector in combination with funding assistance for equipment or infrastructure (addressed below).

## ***Increased capital to invest in the business will help small-scale producers access more and better markets through existing distribution channels.***

Producers and a few distributors also raised an area of constant struggle familiar to everyone in the small-scale food sector, which is access to the capital needed to invest in growth and improved operations. Specifically, they noted that cheesemakers need increased access to capital to invest in the facilities, equipment, and staff that will enable production volume increases, development of new product formats, new customers development, and increased compliance with food safety regulations. Rather than being separate from distribution, this need for capital access is viewed as being a critical precursor to being distribution-ready, adequately scaled, responsive to the market, and equipped to manage risks.

As mentioned above, many cheesemakers would like to invest in equipment that allows them to develop new product formats, such as precisely cut, vacuum-sealed, and professionally labeled cheese units that wholesale buyers are seeking. Other producers, such as those in Maine using the simple vat pasteurization method allowed in the state, would like to invest in the pasteurization equipment that would open up interstate sales. Another producer discussed needing to build an entirely new creamery to scale up from their current production volumes in order to accept the expansion opportunities that they know are available (both in terms of ready milk supply and customer demand). However, these investments are very expensive, anywhere from tens of thousands of dollars for cutting equipment to millions of dollars for a new creamery.

On the staffing side of producer operations, some producers noted the need for dedicated marketing and sales positions. One producer estimated that for their operation—a dairy farm producing around 36,000 pounds of artisan cheese per year—they need one full-time person. They estimated that that role's impact would really start to pay off after a year or more of work but were concerned that without an infusion of outside capital, such a position would be potentially too expensive to carry for that first year. Furthermore, because it's not possible for small and mid-scale producers to pay salary levels that tend to retain people for the long-term, producers face the constant worry that people will leave these sales/marketing positions just when they're starting to deliver positive results. Funding to support these functions at the company level and/or for building marketing capacity to promote the industry at the regional level would be valuable throughout the sector.

## ***Availability of a skilled and willing workforce is limiting growth for entities along the value chain.***

Related to the point above about the challenges of paying for and retaining sales, marketing, and business development staff, one major cheese distributor and one producer/distributor each noted that their capacity to grow in volume and breadth of distribution is almost entirely determined by the availability of a relatively skilled labor pool. This gap is experienced in production, warehouse, and administrative roles, but is mostly manifest at the level of drivers. Interviewees reported that both CDL and non-CDL drivers are

extremely hard to hire and/or retain, despite what distributors feel are generous wages and relatively family-friendly trucking schedules. Because trucking capacity mostly scales up in large units— for example, investing in a second box truck isn’t an incremental increase in capacity but rather a doubling of capacity— these businesses need to be sure that their driver capacity increases in parallel. If they can’t find drivers, they don’t invest in the trucks; if they don’t invest in the trucks, they can’t expand their operations; and if they can’t expand their operations, distribution constraints are experienced upstream by producers.

It’s worth noting that some supply chain experts have stated that the perceived national CDL driver shortage is more complex than a simple lack of drivers. Beyond drivers, the lack of adequate available labor impacts distribution businesses in various ways. One interviewee stated that not only are they unable to find reliable non-CDL drivers, but they also struggle to find production, warehouse, and administrative staff. This gap impacts their decisions on whether to increase production volumes at any given time, for instance by adding a second production shift.

*If they can't find drivers, they don't invest in the trucks; if they don't invest in the trucks, they can't expand; and if they can't expand, distribution constraints are experienced upstream by producers.*

While the interviews for this study and discussions about workforce-related challenges focused on distribution dynamics, these challenges are also related to issues that were raised regarding challenges with sales and marketing, succession planning, and a potentially growing supply gap in regional cheeses.

## **SPECIAL AREAS OF NOTE**

The interview process revealed a few specific themes and ideas that do not fit neatly into the categories above. Those topics are addressed in this final section.

***Makers of frozen value-added dairy products experience distribution as an especially complex challenge and significant barrier to growth.***

Frozen product distribution requires storage, trucking, and logistical capacity that is different from and more limited than that used for refrigerated products. As a result, for ice cream makers, distribution is experienced as a larger barrier to growth than it is for equivalently sized cheesemakers.

Small-scale ice cream producers encounter unique distribution challenges and are one product/production category that does not seem to benefit equally from otherwise well-developed New England distribution networks for value-added dairy products.

Whereas cheeses can be transported in conventional refrigerated trucks, which are ubiquitous in the distribution sector, ice creams require highly consistent and reliable frozen

transportation. These kinds of vehicles are less common, more expensive to own and operate, and are associated with higher distribution costs. Where conventional distributors with freezer capacity do exist, they tend to be geared more towards larger scale producers (e.g. UNFI, Chef's Warehouse, etc.). In addition, the season when ice cream is in highest demand—summertime—introduces another layer of cold chain management risk, as trucks and equipment are more likely to break down then and those breakdowns can have disastrous consequences for a small-scale producer's inventory.

Finally, because there are fewer artisanal-scale ice cream producers in the region relative to cheesemakers, the economic viability of the frozen distribution business is more challenging. As a result, the distribution solutions and methods that producers employ include hyper-local sales and deliveries (e.g. scoop shops, keeping wholesale relationships within a constrained geography); direct-to-consumer shipping on dry ice; and intensive collaboration with other businesses in the sector to drive increased local demand for local frozen value-added dairy products.

***Some distributors and producers imagined an additional cross-docking and consolidation node in southern or central New England, to help small-scale producers access distribution networks.***

In a small number of interviews with distributors and producers, the idea of investing in a cross-docking and consolidation facility in southern New England was proposed as an idea that could potentially help distributors operate with increased efficiency and help a lot of producers reach new markets.

It's important to note that while some found the idea very appealing, others felt that this idea would be duplicative to existing services, unnecessary in a region that a truck can traverse in one day and would therefore not be economically viable. Additionally, while such a facility could serve the region's food system (including, but not limited to, value-added dairy producers), a new facility could also prove to be challenging to staff, fund, scale appropriately to serve producers at a mix of scales of production and to operate in a way that complements rather than threatens existing businesses and long-standing distribution relationships.

Those who did support the idea imagined it as a strategically located facility (e.g. crossroads of I-91 and I-90, or of I-90 and I-495) where producers and small-scale distributors from several regions could deliver full pallets, partial pallets, and/or smaller volumes, which would then be aggregated for pick-up by larger distributors heading to major metropolitan regions and destinations outside of the Northeast. By locating such a facility between major cheesemaking areas and major metro markets, any given value-added dairy producer could theoretically reach and return from it within a day. One distributor who favored this concept is one that doesn't currently have the capacity to do the kind of first mile distribution or aggregation work that Provisions does in Vermont, for instance, but would like to have equivalent access to the region's cheesemakers and perhaps in a more direct relationship than could currently exist by using a freight service to access these producers.

Another distributor noted that several cheese producers and local food distributors in Vermont struggle with adequate cold storage in their own facilities. At least one cold storage facility that serves the industry is not accepting new customers because it's operating at capacity. As a result, pallets of cheese are being moved from production facilities to cold storage and back again for shipping, creating additional distribution costs for the producers involved. Additional work is needed to discern the extent to which this is a systemic infrastructural gap or a cold storage capacity challenge faced by just a few businesses.

Interviews also revealed that several nonprofit organizations around that state of Vermont are working on feasibility, planning, initial operations, and/or proof of concept for micro-aggregation hubs to increase remote producers' access to existing distribution networks. The Vermont Farmers Food Center in Rutland and the Champlain Valley Food Hub (a project of the Addison County Relocalization Network) are two examples of such efforts.

Ultimately, it's clear that the concept of developing any new cross-docking, consolidation, and logistics node in the New England distribution system—whether built as a standalone new facility or built as a new program focus or new infrastructural investment within an existing distributor or cold storage operator's facility/business—would require extensive research and development to assess viability based on sector demand, geographic location, size, and other factors.

# **Appendix II:**

## **Secondary Research Findings**

As a complement to the interview findings, the secondary research describes the landscape of distribution in the Northeast U.S. as it relates to the value-added dairy sector. The resources reviewed here include a wide range of resource types: academic and industry reports, news articles, databases of funded projects from other dairy business innovation initiatives, state freight plans, regional food system studies, and policy briefs. The most relevant findings are summarized below. These findings paint a picture of the current landscape of distribution, transportation, and economic trends as they relate to regional value-added dairy distribution in the Northeast. A full source list is included as Appendix III.

### **LOCAL AND REGIONAL VALUE CHAINS**

Consolidation in retail, distribution, and processing over the past 25 years has disconnected small to medium sized producers from many wholesale markets.<sup>7</sup> Retail consolidation in particular has led to the decline of supply chain infrastructure that served regional markets over this period.<sup>8</sup> In recent years, a renewed interest in regional foods has led to a reemergence of high-volume regional food distribution and trade (broadline distributors, large vertically integrated grocery chains, food banks, etc.) in regions across the U.S.<sup>9</sup>

**Many barriers exist for small scale value-added dairy producers to “break in” to distributors’ catalogues.** This includes specific requirements related to product quality, case labeling and traceability; food safety certifications (GAP/CAPS for farm products, HACCP and SQF for value-added products, etc.); and liability insurance minimums.<sup>10</sup>

**Commercial food buyers across sectors experience a range of barriers to purchasing local/craft products.** For institutional and restaurant buyers, these barriers include on-site storage capacity, price points that don’t match with constrained food budgets, a need for services like frequent deliveries (difficult for some local producers to provide), and their primary distributors’ requirements for minimum orders (resulting in more concentrated orders with suppliers who don’t specialize in local products). Grocery stores often want consistent deliveries of a large range of products and therefore work with broadline distribution companies which effectively store grocery chains’ products at distributor’s warehouses. By buying large quantities of products, stores can receive volume-based discounts, further incentive to purchase from one consolidated seller rather than a range of smaller producers.<sup>11</sup>

7 Vermont Farm to Plate. *Connecting the Dots*, May 2013.

8 Center for Integrated Agricultural Systems, University of Wisconsin Madison. *Networking Across the Supply Chain: Transportation Innovations in Local and Regional Food Systems*, June 2014.

9 Ibid.

10 Vermont Farm to Plate. *Connecting the Dots*, May 2013.

11 U.S. Department of Transportation Federal Highway Administration. *From Farm to Table*, 2019.

# TRANSPORTATION

**Transportation and logistics thrive on consistency and volume. In distribution, volume dictates cost.** Small-scale distribution enterprises and distribution of small volumes of product (e.g. case vs. pallet vs. truckload) are expensive. On average, the share of transport costs for food product prices is about 13 percent nationally.<sup>12</sup> Expressed as a percentage of the product cost, the following findings emerged from the documents reviewed:

- Freight typically accounts for about 5 percent of costs of goods sold, or roughly 3 percent of final sale price on average for food manufacturing companies.<sup>13</sup>
- Distribution as a percent of product cost for large, mid-sized, and small-scale distribution can be up to 30 percent for small scale distribution, compared to ~10 percent for large scale distribution.<sup>14</sup>
- Cases delivered for each mile travelled: <0.5 a case for small scale distribution, ~5 cases for large scale distribution
- Cost to distribute per case: \$7 per case for small scale, \$1.7 per case for large scale, ~\$2.5 per case for mid-sized distribution.

**There is a shortage of truckers nationally, including in the Northeast, and specifically there is a shortage of drivers for refrigerated fleets.** Notably, drivers for refrigerated fleets often have additional responsibilities, skills, and experience beyond driving, including monitoring temperatures.<sup>15</sup> The shortage appears to be most significant for long-haul trucking.<sup>16</sup> Licensed drivers are exiting the industry, attracting new drivers is a challenge (in part because truck driving is seen a lifestyle in addition to a job and typically includes nontraditional working hours), and commercial driver licenses are taking longer to get due to the pandemic and because training requirements and norms are shifting.

**As COVID restrictions were lifted and economies reopened, the cost of refrigerated truck transport has increased.**<sup>17</sup> High demand for specialized refrigerated truck trailers coupled with disrupted or changing delivery patters have increased costs by 20 percent, reaching record highs of \$3.09 per mile in early May 2021.<sup>18</sup>

**First and last mile of the supply chain typically command 50 percent of the total cost of transportation.** Regardless of how many miles or hundreds of miles are travelled between the first and last mile, the key challenges and most expensive parts of the food journey are found in the movement of product from farm gate to distributor and then from warehouse to final buyer.<sup>19</sup> Specific last mile issues leading to this increased cost include urban congestion from freight deliveries.<sup>20</sup>

## In addition to the shortage of drivers, there is a national and regional shortage of

12 The Geography of Transport Systems. Share of Transport Costs in Product Prices and Average Domestic Haul Length, 2020.

13 Reuters. Moving Freight To Get More Expensive For Food Companies This Year, 2018.

14 Advisor input

15 Smart Trucking. Why Reefer Trucking Jobs Can Be A Good Career Choice, 2021.

16 NPR Planet Money. Is There Really a Truck Driver Shortage?, May 2021, and Food Logistics. Overcome Food Transport Challenges, 2019.

17 Wall Street Journal. Food Supply Chains are Stretched as Americans Head Back to Restaurants, 2021.

18 Ibid.

19 Iowa State University, UT Arlington. *Logistics Best Practices for Regional Food Systems: A Review*, January 2018.

20 Center for Integrated Agricultural Systems, University of Wisconsin Madison. *Networking Across the Supply Chain: Transportation Innovations in Local and Regional Food Systems*, June 2014.

**refrigerated warehouse space.**<sup>21</sup> Money is beginning to flow toward some parts of this problem. Investment companies like Black Rock are investing in warehouse facilities and are seeking industry expert advice about where those should be located.

**The impacts of COVID matured the U.S. e-commerce sector in 90 days, an amount that would otherwise have been expected to take a decade,** found a recent McKinsey analysis.<sup>22</sup> A separate McKinsey study of the dairy industry<sup>23</sup> found that customized packaging and the trend toward meal-kits (or “kitting”) have enabled more effective distribution in the dairy sector; similarly, the 3PL State of the Industry Report indicated that offering kitting and personalized experiences was a top opportunity for growth in 2021.<sup>24</sup> Further research is needed to understand how the value-added dairy sector is or could be better innovating with new packaging technologies or modalities.

**Past studies and reports have resulted in several value-added dairy distribution solutions previously proposed in New England,** including:<sup>25</sup> establishing regional aggregation facilities and incubators; cultivating regional food centers or hubs; supporting mission-driven independent retailing; adapting European models of subscription services; multi-farm distribution initiatives; and supporting partnerships that strengthen supply chain access and efficacy.

## WORKFORCE

Truck drivers are critical in today’s supply chains. In the U.S. there are just under two million heavy truck drivers and one million light truck drivers, yet there is an estimated shortfall of 80,000 truckers.<sup>26</sup> The majority of vacant driver positions are in the long-haul trucking sector.

Data from the Bureau of Labor Statistics relating to the time period of May 2020 identifies relative strengths and weaknesses across states in the region in driver employment. Connecticut, Maine and Vermont show relatively strong light truck driver employment, with between 7 and 8.5 of every 1,000 jobs (in the economy as a whole) held by light truck drivers. In Massachusetts and Rhode Island, on the hand, between 5 and 6.5 of every 1,000 jobs is held by light truck drivers.

Vermont and Maine both have a lower annual mean wage for light truck drivers when compared with the national mean wage (\$19.74/hour), while the other New England states offer hourly mean wages above the national mean. And all states within the study area, except for Maine, have mean annual wages for heavy truck drivers that are above the national mean wage (\$23.42/hour).

21 Correspondence with logistics experts at Establish, Inc.

22 3PL Central. *State of the 3PL Industry Report*, 2021.

23 McKinsey. *A Winning Formula For Dairy*, March 2019.

24 3PL Central. *State of the 3PL Industry Report*, 2021.

25 Vermont Farm to Plate. *Connecting the Dots*, May 2013.

26 American Trucking Associations, Inc. *Driver Shortage Update 2021*. October 2021.

### Light Truck drivers

Area Name	Employment	Hourly mean wage	Annual mean wage	Employment per 1,000 jobs	Location Quotient*
Connecticut	12,870	19.53	40,620	8.349	1.25
Maine	4,300	18.31	38,080	7.483	1.12
Massachusetts	21,790	21.55	44,820	6.504	0.97
New Hampshire	3,620	18.46	38,390	5.838	0.87
Rhode Island	2,800	20.98	43,630	6.314	0.94
Vermont	2,230	18.90	39,310	7.922	1.19
National	929,470	19.74	41,050	-	-

\* A Location Quotient of more than 1 indicates a state's relative strength in comparison with other states or the nation as a whole, whereas <1 indicates a relative weakness.

### Heavy and Tractor-Trailer Truck drivers

Area Name	Employment	Hourly mean wage	Annual mean wage	Employment per 1,000 jobs	Location Quotient*
Connecticut	12,800	25.00	51,990	8.306	0.64
Maine	9,320	21.01	43,690	16.210	1.25
Massachusetts	25,900	25.36	52,750	7.733	0.60
New Hampshire	6,890	23.80	49,500	11.121	0.86
Rhode Island	3,590	23.51	48,910	8.115	0.63
Vermont	2,910	23.53	48,950	10.367	0.80
National	1,797,710	23.42	48,710	-	-

\* A Location Quotient of more than 1 indicates a state's relative strength in comparison with other states or the nation as a whole, whereas <1 indicates a relative weakness.

Another interesting data point comes from the Vermont Department of Labor's Labor Exchange, which indicated a mismatch between the number of open heavy and light trucking positions (almost 2,000) and the number of jobseekers potentially available and qualified to fill those positions (less than 10 percent), for the 12 month period that ended November 2021. (VDOL bases jobseeker availability estimates on the number of jobseekers served by VDOL staff.)

This and other anecdotal information suggest that companies are struggling to recruit drivers in Vermont (which has the greatest density of fluid milk production and cheese production in the New England region). Failure to recruit drivers results in companies struggling to accommodate additional volume or sales opportunities. Companies in this situation may have to prioritize certain loads and possibly delay others resulting in unreliable deliveries; and they may have less slack to cope with unplanned driver absences.

Employment projections from the New England states' departments of labor for truck

drivers highlight some significant differences between states and between the region (as a whole) and the nation. Nationally, both the number of light and heavy truck drivers employed is expected to increase between 2018 to 2028, with a very significant increase in light truck drivers. Connecticut, Massachusetts, and Rhode Island are projected to experience expansions in light truck driver employment (between 3 percent and 7.5 percent growth). Conversely light truck driver positions are expected to contract in the same time period in both Maine and Vermont. Heavy truck driver employment, on the other hand, is projected to grow in all New England states within the same time period.

According to the 2021 Vermont Freight Plan, in 2018, approximately 46.7 million tons of freight moved into, out from, across/through, or within Vermont. Trucks carried about 84 percent of that freight. Intrastate travel comprised the largest proportion of freight tonnage at 37 percent, followed by inbound freight (32 percent). By 2045, the volume of freight (when measured by weight) is expected to increase 68 percent to 78.7 million tons.

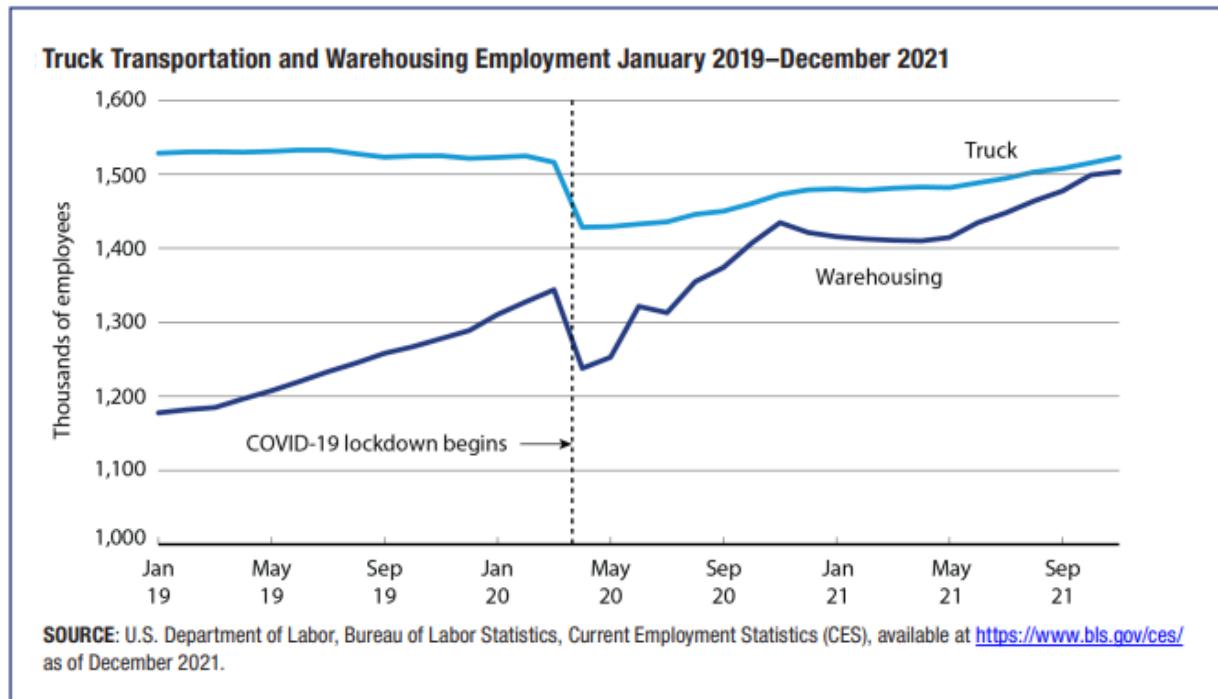
HEAVY AND TRACTOR TRAILER TRUCK DRIVERS				LIGHT TRUCK OR DELIVERY SERVICES DRIVERS			
Area Name	2018 Employment	2028 Employment	% change	Area Name	2018 Employment	2028 Employment	% change
Connecticut	14,201	15,114	6.4%	Connecticut	13,243	14,224	7.4%
Maine	9,764	9,492	-2.8%	Maine	4,808	4,661	-3.1%
Massachusetts	30,550	31,483	3.1%	Massachusetts	24,404	25,004	2.5%
New Hampshire	7,333	7,790	6.2%	New Hampshire	4,307	4,563	5.9%
Rhode Island	3,506	3,702	5.6%	Rhode Island	4,416	4,4674	5.8%
Vermont	3,942	3,878	-1.6%	Vermont	2,533	2,528	-0.20%
Regional	69,296	71,459	3.1%	Regional	53,711	55,564	3.6%
National	1,951,600 <sup>1</sup>	2,073,600 <sup>2</sup>	5.9%	National	1,035,800 <sup>1</sup>	1,136,800 <sup>2</sup>	8.8%

1,2 Sources: BLS, State Dept of Labor websites. <sup>1</sup>2028, <sup>2</sup>2030

How Vermont will accommodate this projected growth in tonnage against a background of a flat or declining truck driver population is not known. It is expected that technology in the form of autonomous and driverless trucks will play a role and could reduce the overall demand, but uptake of this technology in more challenging highway environments such as rural, weather-affected highways is likely to be a very long-term solution. Provisions in the recent Infrastructure Bill and announcements from the White House to bolster the number of truck drivers have included Registered Apprenticeships, lowering the interstate commercial driver license from 21 to 18, and promoting the industry to military veterans.

Despite these new provisions, it should be noted that different industry sectors will be competing for the limited driver and warehousing staff pool. Using Vermont as an example: As shown in the graph on the next page, warehousing employment has also grown significantly in the last two years, largely due to increases in e-commerce (including grocery shopping). Even highly automated warehouses still need significant numbers of warehouse workers. The continued growth in demand for truck driver and warehousing labor pools will increase wages for drivers and other logistics-related staff, leading to higher distribution

and transportation costs. Some sectors will have more ability to absorb these costs than others. Companies may also struggle to fill labor vacancies in their supply chain and this could significantly impact their ability to send goods to market or expand capacity to meet market demand.



While some truck trips could be facilitated by resources from outside Vermont and Maine (the states within which the driver pool is expected to contract the most), states will need access to a locally based driver pool for deliveries and the collections – the critical first and last mile. The lack of truck drivers does, and will continue to, represent a significant and structural fissure in the brittleness of the added value dairy supply chain.

# Appendix III: Source List

The literature and data review for this study included the following resources:

3PL Central. *State of the 3PL Industry Report*, 2021.

American Transportation Research Institute. *Driver Concerns, Insurance Top ATRI's Annual List of Top Trucking Industry Issues*, 2020.

American Trucking Associations, Inc. *Driver Shortage Update 2021*. October 2021.

Boston Globe. *NE Cheese Is Point of Pride: Can It Survive the Pandemic?*, June 2020.

Boston Magazine. *How New England Cheese is Taking Over the World*, May 2019.

Cambridge Systematics, Inc. *Maine Integrated Freight Strategy*, 2017.

Cambridge Systematics, Inc. *Vermont Freight Plan*, June 2017.

Cambridge Systematics, Inc. *Massachusetts Freight Plan*, April 2018.

CDM Smith. *Connecticut Statewide Freight Plan*, 2017.

Center for Environmental Farming Systems, North Carolina State University. *Food Hub Logistics Model User Guide*, 2017.

Center for Dairy Research (CDR) and the Wisconsin Cheese Makers Association (WCMA) Dairy Business Innovation Alliance. *Grant Recipients*, 2020.

Center for Food and Justice, Community Food Security Coalition. *Transportation and Food: The Importance of Access*, 2012.

Crown Commercial Service. *Future Food Framework Logistic Processor Webinar*, 2019.

Eastern Food Hub Collaborative. *The Big Cheese Deal*, 2021.

European Parliament. *Short food supply chains and local food systems in the EU*, 2016.

Farm to Institution New England (FINE). *Getting It There*, August 2016.

Food Logistics. *Overcome Food Transport Challenges*, 2019.

Inbound Logistics. *10 Trends in Cold Chain Logistics*, July 2015.

Inbound Logistics. *The Dairy Supply Chain: From Farm to Fridge*, December 2015.

Iowa State University, UT Arlington. *Logistics Best Practices for Regional Food Systems: A Review*, January 2018.

- Karen Karp & Partners. *Vermont Dairy Marketing Assessment*, February 2020.
- McKinsey. *A Winning Formula For Dairy*, March 2019.
- Massachusetts Institute of Technology. *Improving Systems of Distribution and Logistics for Regional Food Hubs*, 2014.
- My Champlain Valley. *Sharing Seasonal Drivers Could Help Mitigate Truck Driver Shortage*, 2018.
- NPR Planet Money. *Is There Really a Truck Driver Shortage?*, May 2021.
- Penn State University. *Get More from Your Milk: Increasing Profit through Value-Added Dairy Food Products*, 2017.
- Refrigerated Transporter. *Refrigerated LTL Trucking Guide*, 2021.
- Reuters. *Moving Freight To Get More Expensive For Food Companies This Year*, 2018.
- RI Statewide Planning. *State Transportation Improvement Plan*, 2018.
- Rose Wilson Consulting, VT Farm to Plate. *Distribution Options Financial Decision Making Tool*.
- Rose Wilson Consulting, NOFA-VT, VT Farm to Plate. *Local Food Wholesale Market Assessment*, 2019.
- Smart Trucking. *Why Reefer Trucking Jobs Can Be A Good Career Choice*, 2021.
- South West Food Hub, UK. *SWFH Logistics Presentation*, 2021.
- Sundale Research. State of the Industry: Cheese in the U.S. – Data Tables, January 2020.
- The Geography of Transport Systems. *Share of Transport Costs in Product Prices and Average Domestic Haul Length*, 2020.
- University of Massachusetts Amherst Extension. *Exploring the Feasibility of a Massachusetts Shared-use Dairy Processing Facility*, 2019.
- UN Industrial Development Organization. *Short Food Supply Chains for Promoting Local Food on Local Markets*, 2020.
- USDA Agricultural Marketing Service. *The Importance of Highways to U.S. Agriculture*, 2020.
- USDA Agricultural Marketing Service. *Transportation Updates and Regulatory News (TURN)*, December 2020.
- USDA Agricultural Marketing Service Agricultural Refrigerated Truck Quarterly
- U.S. Department of Transportation Federal Highway Administration. *From Farm to Table*, 2019.
- University of Vermont. *Farmers in Vermont's Artisanal Cheese Industry*, 2014.

Center for Integrated Agricultural Systems, University of Wisconsin Madison. *Networking Across the Supply Chain: Transportation Innovations in Local and Regional Food Systems*, June 2014.

VT Agency of Transportation. *Vermont Long Range Transportation Business Plan*, 2009.

Vermont Farm to Plate. *Connecting the Dots*, May 2013.

Vermont Housing & Conservation Board. *VT Farmstead Cheese Marketing Study*, March 2006.

Whitman, Requardt & Associates, LLP. *New Hampshire Statewide Freight Plan*, January 2019.

Wall Street Journal. *Food Supply Chains are Stretched as Americans Head Back to Restaurants*, 2021.

Data Sources:

U.S. Department of Labor, Bureau of Labor Statistics.

Labor Market Information from each New England state's Department of Labor

# Appendix IV: Acknowledgments

The research team thanks the following people whose perspective and insights contributed to this report (listed in alphabetical order by last name).

Peter Allison, Farm to Institution New England

Olivia Barber, Maine Milk Mavens

Lindsey Berk, ACORN

Julie-Marie Bickford, Maine Milk Commission

Betsy Bullard, Brigeen Farm

Sarah Buxton, Vermont Department of Labor

Anna Hayward Cantelmo, Bell & Goose

Becky Castle, Sisters of Anarchy

Allie Catlin, Massachusetts Cheese Guild & Smith's Country Cheese

Jake Claro, Vermont Farm to Plate

Rebecca Davidson, Massachusetts Department of Agriculture

Kathryn Donovan, Northeast Dairy Business Innovation Center

Rebecca Eddy, Connecticut Department of Agriculture

Laura Ginsburg, Northeast Dairy Business Innovation Center

Wendy Hallgren, Provisions International

Calley Hastings, Vermont Farm and Forest Viability

Mike Heath, Farm Connex

Ellen Kahler, Vermont Sustainable Jobs Fund & New England Feeding New England

Britt Lundgren, Stonyfield Farm

Angela Miller, Consider Bardwell Farm

Nancy McBrady, Maine Bureau of Agriculture, Food and Rural Resources

Alex McCullough, Food Connects Food Hub

Marty Mundy, VT Cheese Council

Emily Murphy, Baldor Foods  
Bonita Oehlke, Massachusetts Department of Agriculture  
Jon Ramsay, Center for an Agricultural Economy  
Annie Rowell, Sodexo/Vermont First Coordinator  
Topher Sabot, Cricket Creek Farm  
Anne Saxelby, Saxelby Cheese  
Bill Sloane, Price Sloane Specialty Marketing  
Jeremy Stephenson, Springbrook Farm and Creamery  
Jennifer Sussman, Chef's Warehouse  
Randall Szott, Vermont Agency of Commerce and Community Development  
Liz Thorpe, The People's Cheese  
Tim Tierney, Vermont Agency of Commerce  
Nick Tranchina, Murray's Cheese  
Adam Warthesen, Organic Valley  
Yuri Weber, Park Slope Food Coop  
Mark Whitney, Pineland Farms  
Christina Wilcox, Wilcox Ice Cream