



EMPIRE STATE BRANDS

FEASIBILITY STUDY FOR THE GROW CHAUTAUQUA PROJECT

Executive Summary - August 2019





EXECUTIVE SUMMARY

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INTRODUCTION

A Team Effort

The Empire State Brands (ESB) story begins with a call to the County of Chautauqua Industrial Development Agency (CCIDA) in June 2018. The concept was to explore opportunities to launch a profitable business venture that could contribute to new manufacturing and agricultural growth.

What ensued was thousands of hours of collaboration, research and investigation with about 10 groups of local and regional experts, operators, and stakeholders. In all, 25 cross-functional work sessions, and eight formal presentations were conducted over a 14-month period.

Participants contributed from the County Executive's office, the CCIDA, Cornell University's Cooperative Extension, Cornell's New York Center for Excellence for Food and Agriculture, Southern Tier West Regional Planning and Development Board, Invest Buffalo Niagara, Fredonia State's Technology Incubator, brewery/distillery operators, local farmers, and three third-party professional firms.

The result: Empire State Brands (ESB). A grower, processor, and packaging enterprise that will enable farmers to be more competitive, build local processing capability, create new jobs, and repurpose vacant industrial space. In all, the effort is estimated to create over 400 jobs and more than \$91 million in economic impact.

ESB would like to thank all of those who contributed so passionately to this effort!

About First Key Consulting

First Key Consulting, a consulting firm that specializes in brewery, distillery, hops, and malting operations, was engaged by Chris LaCorata and Chautauqua County in March of 2019 to conduct an extensive feasibility study on the Grow Chautauqua project model (now called Empire State Brands or ESB). Financial contributions to the study included Chris LaCorta, Chautauqua County, the CCIDA, and local foundations (Chautauqua Region Community Foundation, the Gebbie Foundation, and the Northern Chautauqua Community Foundation). The study is intended to comprehensively assess and analyze the region's overall market, technical capabilities, financial support, and conceptual plan to determine the viability of locating a hops, barley, and wheat processing plant in Chautauqua County.

Below are the backgrounds of the lead consultants involved with the study:

Steve Rockhold, B.Sc. (Agriculture/Science)

Technical Services, Hops & Malt

Steve has 20+ years' experience in the brewing industry specializing in Procurement and Supply Chain Management. He has held various management positions from Logistics and Strategic Sourcing of brewing and packaging materials to more recently the Procurement Director at Miller Coors. At Miller Coors, Steve led a 47-member team sourcing all ingredients for the brewing process. Steve built the Colorado hop growing industry from a niche endeavor to a fully functional supply chain to support Colorado Native beer made from local ingredients. With First Key, Steve provides strategic procurement, logistics and operations consulting.



Dave Thomas, M.Sc.*Technical Services, Malting*

Dave Thomas spent 32 years working for Coors Brewing Company in Golden, Colorado; Edinburgh, Scotland; Chungwon, South Korea; Memphis, Tennessee; Burton-on-Trent, England; and the Shenandoah Valley, Virginia. During his time at Coors, he was Director of Malting, Brewing & New Product R&D, traveling brewmaster, and led new malthouse and brewery plant commissioning teams. Dave earned a B.Sc. degree in molecular biology from CU Boulder and M.Sc. in malting and brewing biochemistry from Heriott-Watt University in Edinburgh, Scotland. Dave has malting experience with 90+ start up craft maltsters in North America. At First Key Dave specializes in supporting new craft maltsters on plant design and operations.

Joel Hueston, M.B.A.*Beer Market Analysis Support*

Joel has 30+ years of experience in the brewing industry. Prior to joining First Key, Joel spent 20+ years with Molson Coors, where he held various marketing and sales leadership roles, including Director of Marketing for Coors Canada. With First Key, his recent brewery projects include over fifty craft start-ups with a focus on market assessment and analysis, volume projections and development of comprehensive marketing, sales and organizational strategies. At First Key Joel helps breweries with branding, execution strategy, corporate strategy, on-site planning, sales management, distribution strategy, training and customer/account development, human resources planning and launch planning.

Paul Woodhouse, CPA, CA, CBV*Financial Services*

Paul Woodhouse has led the Financial Services at First Key for over 15 years providing valuations and fairness opinions, international investment opportunity evaluations, turnaround studies, litigation support services and financial due diligence for a wide variety of investment firms, banks, and brewery clients. Prior to First Key, Paul worked with PricewaterhouseCoopers where he earned a Chartered Accounting and a Chartered Business Valuators designation. He was formerly the President of the B.C. Chapter of the Canadian Institute of Chartered Business Valuators, and has written articles and organized conferences and educational seminars on the subject of business valuation.

Wayne Wood, CPA, CMA*Financial Services*

With over 25 years of experience in brewery finance, from a brewery controller to a senior financial leader, Wayne is pro-active, results oriented financial professional with extensive experience in all aspects of accounting, finance, operations and administration. He is a strong contributor who demonstrates sound cost effectiveness, strives for maximum team performance and effectively establishes task priorities. At First Key Wayne provides sound financial modeling and analysis for breweries at all stages and scales, enabling our clients to make sound strategic decisions.



Heather Pilkington, Ph.D., P.Eng.*Executive Director, Engagement Manager*

Heather is a licensed Professional Engineer and received her Ph.D. in biochemical engineering from Western University in Canada. Prior to joining First Key she held positions at a major global brewer, managing brewing process development and brewery support departments both at the national and international level. Since joining First Key, Heather has helped brewery clients develop feasibility studies and business plans for new facilities, optimize existing brewery operations, and design and implement brewing process and technology improvements. As First Key's Executive Director, she oversees all aspects of the company's strategy, team and operations to deliver the best client results in the brewing and malting industries.

Special Thanks

This project would have not been possible if it were not for the support of key leaders. Although the list of contributors has been many over the 14 months and many hours of this project, there are key leaders that, without their contribution, this project would have not come to life.

ESB would like to recognize and express its sincerest thanks to the following people for their leadership support, and substantial efforts to the success of the Grow Chautauqua / Empire State Brands project.

- Chautauqua County Executive - George Borrello
- Chautauqua County Deputy County Executive for Economic Development, CCIDA CEO - Mark Geise
- Executive Director, Cornell NYS Center of Excellence for Food & Agriculture - Catharine Young
- Chautauqua County Legislature
- Executive Director, Cornell University Cooperative Extension - Emily Reynolds
- CCIDA Business Development Manager - Kristine Morabito

CONCEPT DESCRIPTION

ESB is based on an integrated business model that includes the following key elements:

- Farmer partners on the grow/supply side (hops/barley/wheat/rye).
- Marketing, sales, processing, and demand fulfillment.
- Integrated facility design capable of hop pelletizing, barley to malt processing, and wheat and rye processing to either flour or malt.
- Market focus will target craft breweries, distilleries, bakeries, locally and regionally.
- Branded product lines of hops, malt, and flour.
- E-Commerce capabilities.
- A phased approach to production and marketing, including future evaluation of health products based on hops, barley, malt, and flours.





This project concept looks to address several important agricultural and business challenges:

- Provide new cash crops and increased profitability for local farmers, alternatives to current dairy and vineyard operations.
- Provide significant cost reduction of farming operators by providing harvesting assets and deferring the cost on-site drying, baling, storing and costs associated with off-site pelletizing
- A branded product line that has the potential to create balanced volumes for full season production.
- Introduces new industries for the region's economic growth.
- Improves local processing capability for agricultural products.
- Establishes a critical eastern supply chain infrastructure for hop, barley/malt, wheat and rye products.
- Cost efficiency gains from a multi-functional integrated processing operation that combines hops, malt, and flour production at one facility.
- Supply chain advantages due to an integrated approach with farmers, freight advantages due to closer proximity to local brewers (e.g. in contrast to ingredient supplies from the Midwest and Northwest).
- Helps to address the supply shortage to meet New York State's Farm brewery requirement of 90% in-state ingredients by 2024.

METHODOLOGY

To successfully launch the feasibility study work, the developer - working in coordination with key leaders of the CCIDA, Cornell Cooperative Extension, and Cornell New York Center of Excellence for Food and Agriculture - conducted a series of meetings to orient the study team to Chautauqua County. The team received feedback from local farmers, brewery/distillery operators, agricultural experts and other stakeholders to help pinpoint an accurate starting point.

The following is a high level summary that endeavors to capture the methodology used.

Chautauqua Orientation

- Extensive on-site orientation in the county April 9-11th
- CCIDA coordinated local farmer, brewery/distillery operator feedback sessions
- Tours of local potential sites for operational consideration

Cornell/Local Growing Strategy

- Cornell Hops & Grains Summit May 30th
- Panel of agricultural experts
- Understanding unique growing dynamics to the region

Strategy for Key Crops Lines

- Hops, malted barley, wheat, rye, potential for oats
- Chautauqua as a centralized hub for growing & processing
- 3-4 hour transit radius from Chautauqua County determined to be viable
- Reviewed soil maps
- Other counties would have to be considered beyond Chautauqua

Base Assumptions Built into the Plan

- Base volume assumptions based on feedback from the Cornell Summit
- Volumes and market assessment tested with other third party industry experts for validity of acreage, local yields, pounds processed and revenue assumptions

As mentioned previously, the work spanned a series of work session and thousands of hours of work with 10 different groups.

MARKET, VIABILITY, AND GROWTH POTENTIAL

Analysis of the feasibility study reveals a successful business model that delivers on the original goals of the project. Detailed marketing/branding research delivered a new name for the project: “Empire State Brands”.

An overview on the business model of the company includes the following:

- Vertically integrated grower, processing and packaging enterprise that endeavors to provide new competitive opportunities to local farmers in Chautauqua County, Western NY, Finger Lakes and ultimately 10 upstate NY counties, connecting them to new food processing capabilities for products that can supply the growing craft brewing, distilling and food markets in the region, state, and ultimately the east coast. Supply chain advantages due to an integrated approach with farmers, freight advantages due to closer proximity to local brewers than ingredient supplies from the Midwest and Northwest.
- Processed ingredients to serve craft brewing, distilling, and bakery markets in key markets such as Buffalo; Erie, PA; Pittsburgh, PA; Cleveland, OH; New York State and ultimately the east coast.



- Estimated impact of an initial 2,200 acres of agricultural growing capacity will be needed and expand to over 4,200 acres by year five. It is estimated that this will require 150-250 farmers or more based on reasonable acreage commitments. The model would utilize direct farmer growing contracts with the company and direct agronomic support to the farmers to ensure supply and quality.

The vertically integrated operation is planned using Chautauqua County as a centralized base of processing and logistics. Chautauqua County, as a central processing location, provides access to a number of significant urban markets. Buffalo, Pittsburgh, and Cleveland are all within a three-hour drive and represent more than \$320 billion dollars as a combined market. New York City is reachable within seven hours and represents a \$1.2 trillion dollar GMP market.

The model is designed to reduce supply chain complexity and costs, thereby increasing margins. The operation is capable of processing hops into pellets, barley into malt, wheat into malt and flour, rye into malt and flour, and includes packaging of the products for market. The production equipment in the facility is of a modular design, allowing additional equipment to be added if market demand and agricultural acreage increases beyond the forecasted volumes.

New York State ranks #2 in the nation for craft distillers, and #4 for total breweries. Erie County was ranked #2 behind Suffolk County as the second densest county for brewery operations with more than 21 breweries. The Finger Lakes has the highest total number of craft beverage manufacturers statewide at 178. Western NY led the state in craft distillery growth with the addition of 43 new operations since 2012. In total New York State now boasts more than 1,000 craft beverage manufacturers and represents a significant supply opportunity within the state's borders.

U.S. Trade Numbers report that full year 2018 hop export market reached \$190.94 million. Canada was the top trading partner at \$18.93 million followed by Germany at \$18.46 million. The Canadian provinces of Quebec and Ontario were reported as the top locations with an average distance of a six-hour drive from Chautauqua County.

The U.S. Brewers Association reports that 12.6 million barrels of beer are produced in the eastern portion of the United States with nearly the same amount produced in the west portions of the U.S. In the current supply structure, 95% of the key ingredients travel an average of 2,700 miles, crossing the country to service the eastern U.S. territories. Chautauqua County is strategically located to meet significant east coast demand.

Supply Risk

According to the Brewer Association, a full 95% of all hops and more than 70% malted barley ingredients for the \$114 billion dollar brewery industry come from Pacific Northwest states. Washington State accounts for over 70% of the output. The Beer Institute reports that the total economic impact of the beer industry in the U.S. is more than \$328 billion, effecting more than 1.2 million jobs. Ingredients travel on average more than 2,700 miles to east coast operators. This single source structure highlights a significant supply risk. If a man-made or natural event were to occur, an entire industry across the United States could be impacted.

Some key statements include:

- "Western United States is more likely to experience lengthy and chronic hydrological drought conditions by the end of this century" - USDA Climate Hub
- "Below-normal snowfall has increased the chances of drought throughout much of Washington State" - K5 News, April 2, 2019



- “Climate change is impacting the key elements of beer” - Climate Central, There’s Trouble Brewing for Beer in a Warming World, March 14, 2018 report

This overall situation warrants the industry to develop a substantial back up supply base to reduce cost and minimize industry risk. New York State was once the center of the hops universe and has growing capacity for barley to be used for malting. These conditions point to an opportunity to become a major industry supplier based in Chautauqua County, supported with farmers across Western New York.

Local Processing Capacity

Economic reports suggest that the lack of local food processing and milling operations are constraining the growth and capacity of agriculture in Chautauqua County and Western NY. Local economic reports such as “The Growing Food Connection” (2015) and “Cultivating Prosperity in Chautauqua County” (2018) define the food system in just Chautauqua County as a “significant economic asset” with untapped potential. The Cultivating Prosperity Report states, “Diversification of farm products may bolster the success of agriculture in Chautauqua County, as long as such diversification ensures that the county’s aggregation, processing, and distribution sectors support value-added transformation of new agricultural products”. Empire State Brands' business model fills this void from farm to market along with creating new manufacturing jobs lost from exits of large processors such as Conagra and Carriage House.

Farm Brewery Law

New York Governor Andrew Cuomo’s Farm Brewery law enacted in 2014 requires operators with a Farm Brewery license to include 90% or more of in-state ingredients in their products by 2024. Although the lower threshold requirements are believed to be met; the supply levels at the 90% range are estimated to be a significant shortfall.

Cornell’s 2017 Brewery Supply Chain Analysis estimates that 28,000 new acres of barley alone must be grown in the state to meet the 90% and above levels.

The Market

Empire State Brands looks to participate in a large combined craft market segment that is estimated to be \$180 billion in size in the U.S. The American Home Brewers Association estimates 1.1 million home brewers purchase on average \$840 of supplies annually, representing a large E-Commerce potential.

Supply Analysis

Hops and barley for malt production in New York State are significantly below market demand due to lack of clear direction and contact with farmers directly by processors and brewers. Many farmers report that they have crops to sell, but due to no clear market and processing from their perspective, it has been challenging to grow acreage. Logistics and costs due to location of farms in relation to processing facilities has been a challenge for growers, too. Quality concerns are also a risk for the grower, due to environmental factors such as weather, efficient processing facilities at harvest time, and storage for their crops. Empire State Brands' integrated supply chain model will reduce many of those risks, building direct farmer relations to assure a market and give clear direction on quality matters. ESB will also assist directly with transportation/logistics with the growers, reducing risk for the farmer as well.



ESB plans to offer additional help to the local Chautauqua County hop growers by providing mobile hop harvesting equipment and the ability to deliver their hops to the ESB production facility for drying and baling. This creates a tremendous incentive to the local hop farmers to get into or increase their hop acreage without the additional cost of harvesting equipment. Harvesting equipment capital is one of the biggest reasons that farmers are not able to invest in hops (see <https://www.usahops.org/cabinet/data/10-Acre-Hop-Enterprise-Budget.xlsx> and <https://www.usahops.org/cabinet/data/20-Acre-Hop-Enterprise-Budget.xlsx> for 10- and 20-acre examples, respectively). In both cases the cost of harvesting, transportation, drying, baling, pelletizing and storing of hops on-site eats up the potential profitability. For example, in the 20-acre model the costs of harvesting, drying, baling and storing the costs are estimated at \$123,000. If ESB provides 80% absorption of that cost due to the ESB model of doing all that on the production facility site, it suggests the farmer could possibly have a net income of \$101,000 vs. \$13,000 with the 20-acre example. It is believed that this integrated model will greatly incentivize local growers to grow hops and/or increase acreage for delivery to ESB.

EMPIRE STATE BRAND STRATEGY

The developer, with the help of CCIDA members, conducted a series of information and collaboration steps with local stakeholders with the objective to target a unique strategy for Empire State Brands.

The company design and market focus endeavored to tap into the strengths of Chautauqua along with the region's agricultural capabilities, connecting directly to processing and ultimately straight to ingredient customers for maximum control and supply chain efficiency.

The facility is designed to create a low-cost processing model by combining what are today separate industries, steps, and processing worlds into one streamlined supply chain from seed to market.

There are three core components of the model:

- a. **Farmer Partnerships:** ESB will look to recruit a network of up to 250 farmers to grow and harvest hops, malted barley, wheat, and rye for processing and selling ingredients into the craft brewery, distillery, and bakery markets. Growing contracts will be negotiated with farmers to ensure supply and provide the farmer with stability to manage their operations. ESB will support farm partners throughout the growing cycle to ensure they are in business for themselves but never by themselves. Key quality, handling, and logistics specifications will be agreed upon by both parties as part of the agreement. ESB will provide all logistics resources to transport crops from the farmer's field to the processing facility. A full-time experienced Farm Relations Leader and resources will be recruited to build farmer relations and facilitate help on growing challenges as needed.

A key relationship with Cornell University's Agricultural Extension is being developed to ensure technical support during the growing season.

- b. **Marketing & Sales:** ESB has engaged Brightly Creative, a craft industry branding and marketing firm, to develop a multi-phased approach to marketing efforts. This aggressive plan encompasses a pre-launch, launch, and on-going marketing strategy that not only markets and brands ESB, but also the growing communities supporting the ESB business. Direct sales contact comes from a sales force assigned to geographic markets.



- c. **Chautauqua a Central Point of Operations:** the ESB business model establishes Chautauqua County as central point of processing and logistics. To contain costs, the strategy would look to capitalize on as much growing capacity locally within the county and expand out as needed to reach the planned volumes for the company. A uniquely designed facility provides a distinct value to the industry and growing partners. ESB is planning to use a local vacant commercial space that can be renovated, repurposed and transformed to an efficiently engineered and low cost operation believed to be the first of its kind in the U.S. These three core components provide the base for a substantial growth model that can advance supply infrastructure in the region, and ultimately the east coast.

FINAL COMMENTS

The overall findings captured in this extensive study support the Empire State Brands project as a viable business model that captures the strength of Chautauqua County and the region's growing community while effectively connecting to dynamic craft market sectors.

Key Summary Points:

- Based upon expert opinion derived from this process, growing capacity for hops, barley and other grains were deemed achievable in the county and surrounding regions with appropriate transit times to a central processing location in Chautauqua County.
- Products lines and craft market focus seem to align with the region, in state and east coast dynamics.
- Empire State Brands seems an appropriate branding and marketing strategy to extend the reach of the company while promoting the local market and region as a significant farming community.
- The vertical integration facility design was deemed achievable from an engineering viewpoint and creates a low cost operating model.
- Agricultural competitiveness seems likely to be achieved in this model through creating additional crop diversification, grower contracts and reducing farmer operating costs through processing steps at a central location vs. the farm.
- Significant upside revenue potential is assumed with development of an E-Commerce platform of New York grown products and extends the reach both nationally and internationally.
- Chautauqua County was deemed an appropriate fit as a centralized hub for growing and processing. The county's geographic location to a substantial growing base, along with its proximity to key markets of Canada, Buffalo, Erie, Pittsburgh, Cleveland and all of New York State, make it a strategic choice for the enterprise modeled in this study.
- The project aligns with Western New York economic development initiatives.



CLOSING THOUGHTS

This extensive study concludes the Empire State Brand concept as a viable model. The exercise amply demonstrates an opportunity for an important economic growth project for Chautauqua County along with new agricultural advancement for local and regional farmers.

Local support at the municipal, government, university, and community college level is an important support framework as challenges with growing, new processing technology and availability of skilled local talent are likely, especially in the early stages.

The creation of next generation processing capability using the county as a centralized hub fills the void of missing capacity and is likely to position the county as an industry innovator poised to take full advantage of untapped agricultural potential for new food products.

Although not covered in any detail in this report, it stands to reason that this model could afford new levels of product quality and food safety due to the simplified supply chain and close control over processing activity.

The addition of bakery ingredients seems especially synergistic to the model and captures a large market segment while continuing to influence growing opportunities in the region.

THANK YOU FROM FIRST KEY

We would like to thank Chautauqua County and all those that contributed to the many hours of collaboration on this project. We truly enjoyed the experience and wish the people of Chautauqua all the best on their journey.



