University of Utah Manufacturing Extension Partnership (MEP) Center

Additional information:

1. **Itemized budget**
2. **Budget justification**
3. **Deliverables and performance measures**
4. **Example success stories**
    a. Plastic Resources Inc (PRI), Logan, UT
    b. Kihomac, Layton, UT
    c. IC Group, Salt Lake City, UT
    d. Madyson Marshmallows, Heber, UT
    e. S&S Steel, Hurricane, UT
    f. Thrive Life, American Fork, UT
    g. Nammo Composite Solutions, Salt Lake City, UT
    h. Sir Walter Candy, South Salt Lake, UT
    i. Brooke & Bradford, Salt Lake City, UT

Project Contact Information:

Name: Bart Raeymaekers

Title: Associate Professor

Organization: University of Utah – Dept. of Mechanical Engineering

Phone: 801-585-7594 [office], 858-349-3876 [cell]

Email: bart.raeymaekers@utah.edu

1. **Itemized budget for funding request:**

Budget category	Amount
Personnel	$ 463,003
Fringe Benefits	$ 185,201
Travel	$ 20,578
Equipment	$ -
Supplies	$ 17,406
Contractual Costs	$ 308,668
Other Costs	$ 5,144
Total Direct Costs	$ 1,000,000
Indirect Costs (36.50%) - waived	$ -
Total Cost	$ 1,000,000

2. **Summary budget justification:**

Personnel: MEP full-time staff

Fringe benefits: Benefits for MEP full-time staff, computed at University rate

Travel: Cover in-state travel (mileage/hotel stays in rural Utah)

Supplies: Office operating costs

Contractual costs: Cost of using consultants/subject matter experts to engage with manufacturers on MEP projects.

Other costs: Memberships + MEP staff professional development.

Indirect costs: The U of U has waived indirect costs (overhead) normally applied to all sponsored projects.

3. **Deliverables/Performance measures:**

An independent contractor, engaged by the U.S. Dept. of Commerce, surveys each MEP Center client six months after a project has been completed (to allow for time to materialize project results). The following metrics are surveyed, specifically resulting from the MEP project only.

1) Increased revenue
2) Retained revenue (revenue that would have been lost without the MEP project)
3) Increased jobs
4) Retained jobs
5) Cost savings
6) Increased investment
7) One a scale from 1-10, would you recommend the Utah MEP (i.e. Net Promoter Score)
8) Number of projects with Utah manufacturers

The University of Utah MEP Center will report quarterly to GOED, and Ginger Chinn (GOED managing director) is on the Advisory Board of the MEP Center.

Based on past projects, MEP project return $7 to the Utah economy, for each state dollar invested.

4. **Example success stories**
    a. Plastic Resources Inc (PRI), Logan, UT
    b. Kihomac, Layton, UT
    c. IC Group, Salt Lake City, UT
    d. Madyson Marshmallows, Heber, UT
    e. S&S Steel, Hurricane, UT
    f. Thrive Life, American Fork, UT
    g. Nammo Composite Solutions, Salt Lake City, UT
    h. Sir Walter Candy, South Salt Lake, UT
    i. Brooke & Bradford, Salt Lake City, UT

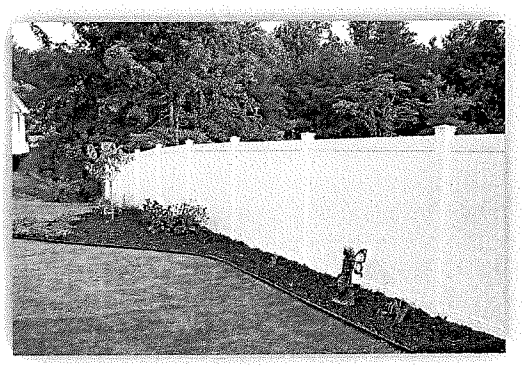
MEP CENTER
THE UNIVERSITY OF UTAH

Success Stories

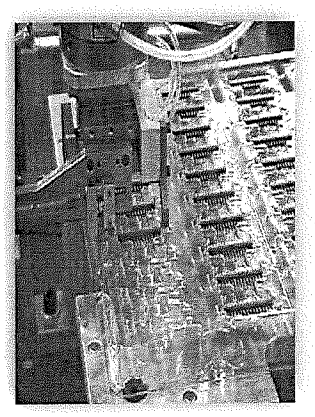
MEP.UTAH.EDU | INFO@MEP.UTAH.EDU | 801.587.0713 | @UofUMEP

Increasing productivity & reducing waste saved plastics company over $120,000 per year

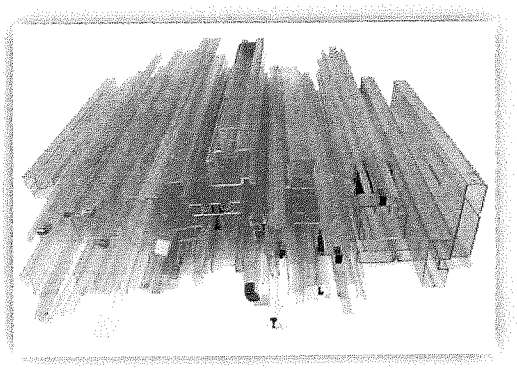
Founded in 1984 in Logan, Utah, Plastic Resources, Inc. (PRI) is a provider of manufactured solutions to companies all over the world. PRI specializes in plastic extrusion, plastic thermoforming, machine tooling and part fabrication, and can take a project from concept to final production, including post-production processes. With clients ranging from semiconductors to aerospace to landscaping, PRI's modern production methods and dedicated team set them apart from others in the industry.



Vinyl Fence



Thermoforming



Carrier Tubes

Project scope: PRI wanted to improve internal processes and reduce material waste in manufacturing, especially in the plastic extrusion area of the production.

Solution: With the help of the University of Utah Manufacturing Extension Partnership (MEP) Center, the PRI leadership team launched a continuous improvement program based on lean principles.

Results: PRI was able to train all of their 18 employees on the fundamentals of lean manufacturing. With additional expert coaching provided by the MEP Center, PRI was then able to make significant improvements by reducing waste and increasing machine output.

Impact: By applying lean concepts, the company was able to:

- Reduce waste by 17% per order on average, saving an estimated $80,000 per year
- Increase productivity on one production line (machine) by 20% per day, saving $44,000 per year in new capacity

Client testimonial:

"Our interactions with the MEP Center drastically improved our internal processes. Training courses provided an opportunity for open exchange between employees to find solutions to problems. The MEP Center also facilitated the cultural shift necessary for changes to stick."
—Trent Hagaman, Sales Manager

PART OF THE MEP National Network™

Governor's Office of Economic Development
BUSINESS • TOURISM • FILM

THE UNIVERSITY OF UTAH®

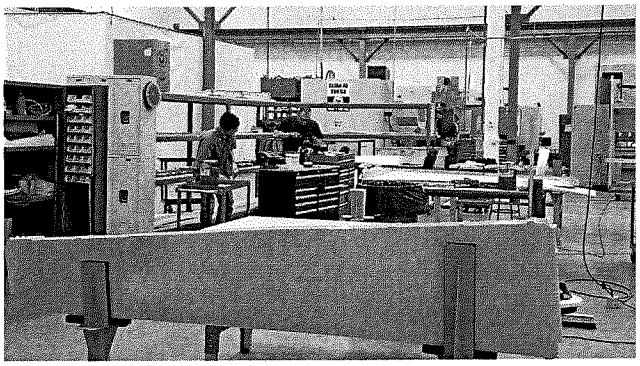
MEP CENTER
THE UNIVERSITY OF UTAH

Success Stories

MEP.UTAH.EDU | INFO@MEP.UTAH.EDU | 801.587.0713 | @UofUMEP

KIHOMAC

KIHOMAC is a veteran-owned and AS9100C certified company with a proven track record in delivering complex parts and assemblies for customers such as the Department of Defense, Homeland Security, and the Intelligence Community. Located in Layton, they work with the United States Air Force, to keep our nation's aircraft flying, through their broad capability in fabricating sheet metal and aluminum honeycomb parts, composite bonded honeycomb or laminate fiberglass, and carbon and Kevlar parts. Since their founding in 2003, KIHOMAC has provided rapid design and delivery capabilities spanning small production quantities and supporting unique fleets, as well as larger runs where several complex assemblies per week are produced.



Project scope: As part of their ongoing Continuous Process Improvement (CPI), KIHOMAC identified the receiving line in the Center for Advanced Manufacturing, a hub of activity in their new 130,000 square foot facility, as the next opportunity for streamlining. They knew from previous experience that improving their incoming receiving processes would have immediate and significant impact on product throughput.

Solution: The vice president of KIHOMAC's aerospace engineering group, Matt Majewski, requested that the University of Utah Manufacturing Extension Partnership (UUMEP) Center staff lead a Value Stream Mapping event. UUMEP Center staff engineer Nick Wilkes and center director Theresa Drulard, worked with KIHOMAC staff to document the receiving department's current state and identify improvements.

Results:

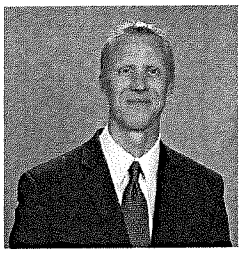
- Reduced process steps from 14 to 10 steps
- Reduced opportunity for manual errors by 79%
- Improved availability of data and reduced data "pushes" from 12 to 2

Impact:

- Cost avoidance: Staff is trained to lead future Value Stream Mapping events, saving up to $10,000 (assuming three events per year).
- Improved receiving cycle time by 7 minutes, with annual labor cost savings of $18,200
- Reduced distance and walking time for employees
- Ability to meet increased demand for upcoming large contracts

Client testimonial

"In partnership with the UUMEP Center, KIHOMAC is very happy to report that a new receiving process has been implemented and is already reaping measurable improvements. With the help of the UUMEP Center, future Value Stream Mapping events are being planned and we are continuing to increase our capabilities to utilize internal resources to facilitate these events as our managers and CPI teams gain experience and see their efforts bear fruit. We have no doubt that this joint effort with the UUMEP Center has been a huge success."



Matt Majewski
V.P., Aerospace Engineering Group

KIHOMAC

3800 N. Fairfield Road

Layton, UT 84041

801.593.5440

kihomac.com

MEP CENTER
THE UNIVERSITY OF UTAH

Success Stories

MEP.UTAH.EDU | INFO@MEP.UTAH.EDU | 801.587.0713 | @UofUMEP

IC GROUP®
Forward Thinking **Marketing Solutions**

IC Group retained $1.9 million in sales by implementing lean concepts

Founded in 1982, IC Group has grown to become one of the largest and most dynamic privately-owned providers of marketing solutions in the intermountain west, currently employing 150 team members at their 55,000 square foot facility in Salt Lake City.

Project scope: IC Group wanted to improve their overall quality, delivery and costs by utilizing Lean concepts.

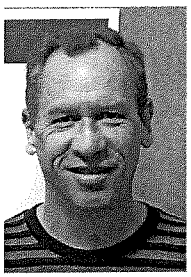
Solution: With the assistance of the University of Utah Manufacturing Extension Partnership (UUMEP) Center, lean coaching was implemented to address these issues.

Results: Through lean coaching on root cause analysis tools, IC Group was able to address a quality issue related to their press maintenance. This included improvements to their press maintenance procedures, standard operating procedures, quality inspection and visual instructions, thereby eliminating the causes of inferior print quality.

Impact: Ensuring their training, procedures and instructions were up-to-date and standardized will save IC Group $46,646 in future cost-avoidance related to this specific quality issue.

Client testimonial:

"We were looking to implement a culture change within the company and needed a leader to help drive that change through lean. For the past five months, I have been working with the UUMEP Center, and through their mentorship, we have seen a dramatic change within the company. We have opened up space and implemented Kaizen events that reduced waste and inventory. We have also happily noted changes in our company culture; improved employee attitudes and a complete buy-in with the changes that have been put in place."



Mike Neutboom,
Lean Director,
IC Group

MEP CENTER
THE UNIVERSITY OF UTAH

Success Stories

MEP.UTAH.EDU | INFO@MEP.UTAH.EDU | 801.587.0713 | @UofUMEP

Madyson's Marshmallows obtained GMP certification and increased annual sales by $50,000

Madyson's Marshmallows began when four-year old Madyson asked her dad how to make a marshmallow. They started mixing different marshmallow recipes together in their kitchen, and it turned out they were delicious! Not long after, their business grew into a gourmet marshmallow company, making stuffed marshmallows, marshmallow beverage toppers, donuts, pops, and more. Their marshmallows are produced using natural, kosher ingredients without preservatives. Based in Heber, Utah, their marshmallows can be found in both national retail locations and smaller specialty markets and boutiques.

Project scope: Madyson's Marshmallows wanted to become certified in Good Manufacturing Practices (GMP) standards, to ensure retention of current clients and obtain new clients that require this certification.

Solution: The University of Utah Manufacturing Extension Partnership (UUMEP) Center staff worked with company owner Breeze Wetzel, to support their preparation for the GMP audit.

Results: Madyson's Marshmallows successfully obtained their GMP certification.

Impact: By obtaining their GMP certification, Madyson's Marshmallows is now able to expand into national markets, which allows them to retain $100,000 in sales and increase sales annually by $50,000.

Client testimonial:

"Madyson's Marshmallows is a small company with an exponential rate of growth each year. Partnering with the UUMEP Center has been a terrific experience for us and has helped us take large steps in moving forward with being able to manufacture our confections for major retailers. Quality and food safety are of the utmost importance to us and to our customers. The UUMEP Center helped us obtain our GMP (Good Manufacturing Practices) Certification so that we can partner with new retailers and bring our marshmallows to more customers nationwide. Our next step in the journey of food safety is to become SQF Level 2 certified and to make this happen, we will continue to partner with the UUMEP Center to conduct a gap analysis, implement changes, and more towards SQF certification." *Breeze Wetzel, Owner*

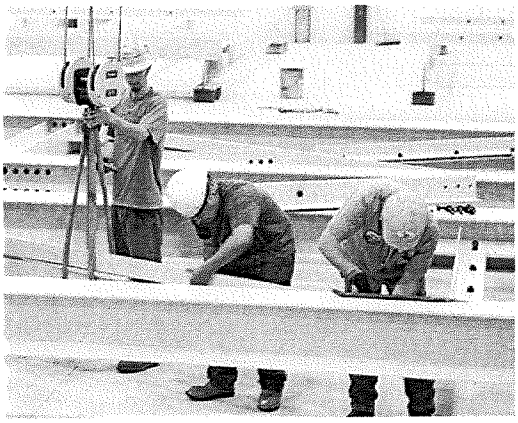
MEP CENTER
THE UNIVERSITY OF UTAH

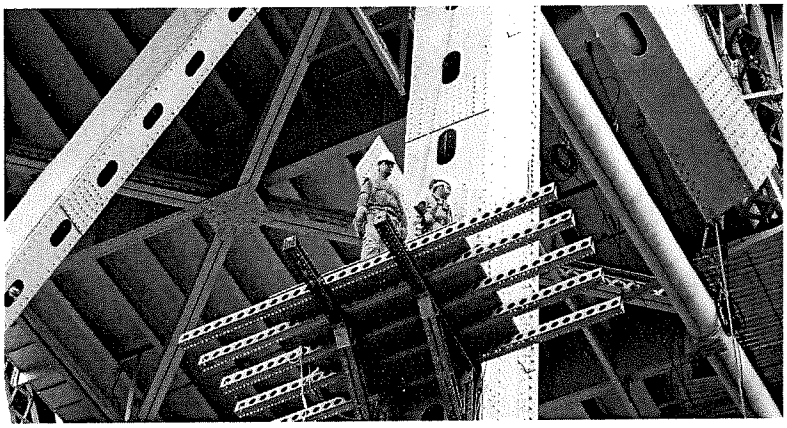
Success Stories

MEP.UTAH.EDU | INFO@MEP.UTAH.EDU | 801.587.0713 | @UofUMEP

Process standardization improved S&S Steel's efficiency

Seated just outside of Zion National Park, S&S Steel Fabrication has over 35 years of experience in preparing structural steel for commercial applications. They provide the skeleton for new construction in oil and gas, mining, and minerals, power transmission, and government applications.





Project scope: S&S Steel wanted to standardize their project management process.

Solution: Staff engineers at the University of Utah Manufacturing Extension Partnership (MEP) Center used process mapping to identify key areas of waste and highlight areas for improvement.

Results:
- Developed a standardized project management delivery process.
- Generated a process map; key decisions points highlighted.

Impact:
- Increased productivity for 3 project managers by 10%.
- Cost avoidance: No more redundancy or delays in process, saving $26,000 per year.
- Bid details are no longer missed, not as many errors to address, saving $50,000 per year.

Client testimonial:

"Our experience with the MEP Center was very positive. They were respectful of our time, made the best use of it, and helped guide us through the process to achieve our desired result. They brought insights and experience from outside our industry and applied them appropriately. Our estimating and project management teams are more efficient and our exposure to risk is less due to their involvement." —*Jeff Staples, Sales Manager*

MEP CENTER
THE UNIVERSITY OF UTAH

Success Stories

MEP.UTAH.EDU | INFO@MEP.UTAH.EDU | 801.587.0713 | @UofUMEP

Thrive Life gained $700,000 in new contracts by obtaining SQF certification

Thrive Life, LLC is a premier source for healthy, convenient, and cost efficient freeze dried food. There are over 40 steps in their proprietary freeze dry process to make sure the taste, quality and nutrition are exactly how people describe it: amazing!

Project scope: Thrive Life wanted to obtain their Safe Quality Food (SQF) certification in order to attract new clients and increase sales.

Solution: The University of Utah Manufacturing Extension Partnership Center staff worked with Jenny Swingle, Director of Strategy, to support their preparation for their SQF audit.

Results: Thrive Life successfully obtained their SQF certification.

Impact: By obtaining their SQF certification, Thrive Life was able to secure $700,000 in manufacturing contracts within the first two months of certification, and will save over $10,000 in annual insurance expenses moving forward.

Client testimonial:

Jenny Swingle
Director of Strategy

"Working with the Manufacturing Extension Partnership (MEP) Center at the University of Utah has taken away a lot of the financial and administrative stress from pursuing growth initiatives. They truly feel like a business partner interested and invested in our success. Their staff took the time to personally evaluate our business needs and opportunities to see how their experience and resources could improve our operations. They also provided extensive administrative support required for contract negotiation, project savings, and payment processing. The MEP Center is organized, responsive, and has a great team of experienced staff."

MEP CENTER
THE UNIVERSITY OF UTAH

Success Stories

MEP.UTAH.EDU | INFO@MEP.UTAH.EDU | 801.587.0713 | @UofUMEP

NAMMO

Implementing lean principles increased NAMMO's annual sales by $3,640,000

NAMMO is an AS9100-certified engineering and composite manufacturing company with more than 20 years of experience. They specialize in producing canisters and military-grade rocket launchers for the Department of Defense (DoD). They also have a diverse range of advanced composite experience with clients in aero-space, oil, industrial, commercial, and recreational markets.

Project scope: NAMMO wanted to increase their output in order to support the increasing needs of their DoD customer.

Solution: NAMMO recognized they needed to identify and eliminate waste in their manufacturing process. With the help of the University of Utah Manufacturing Extension Partnership (UUMEP) Center, a Value Stream Mapping Event was implemented to help address these issues.

UUMEP Center staff worked with their TOW Missile Cell's cross-functional team to establish SMART goals, document current state, identify improvement ideas to support SMART goals, design a future state, and prioritize improvement ideas based on impact and complexity. UUMEP Center staff also trained and coached their teams on lean principles and waste identification.

Results:

- Increased throughput capability to support customer requirements by 40%
- Increased visual management of inventory from 6 process steps to 10 steps, with dedicated inventory staging.
- Reduced part travel by 30% by co-locating process steps

Impact:

- Increased annual sales by $3,640,000
- Cost avoidance: Staff is trained to lead future VSM events, saving up to $10,000 (assuming three events per year)

Client testimonial:

"The UUMEP Center helped us understand that we didn't need major facility changes to increase flow. We simply needed a systematic approach to eliminate the waste and to fully implement some basic process flow rules. They respected that we had a facility to run and were flexible when hot issues came up. It was clear they were interested in training us to meet our needs rather than ensuring we follow their exact process."

Andrew Christensen,
NAMMO Program Manager

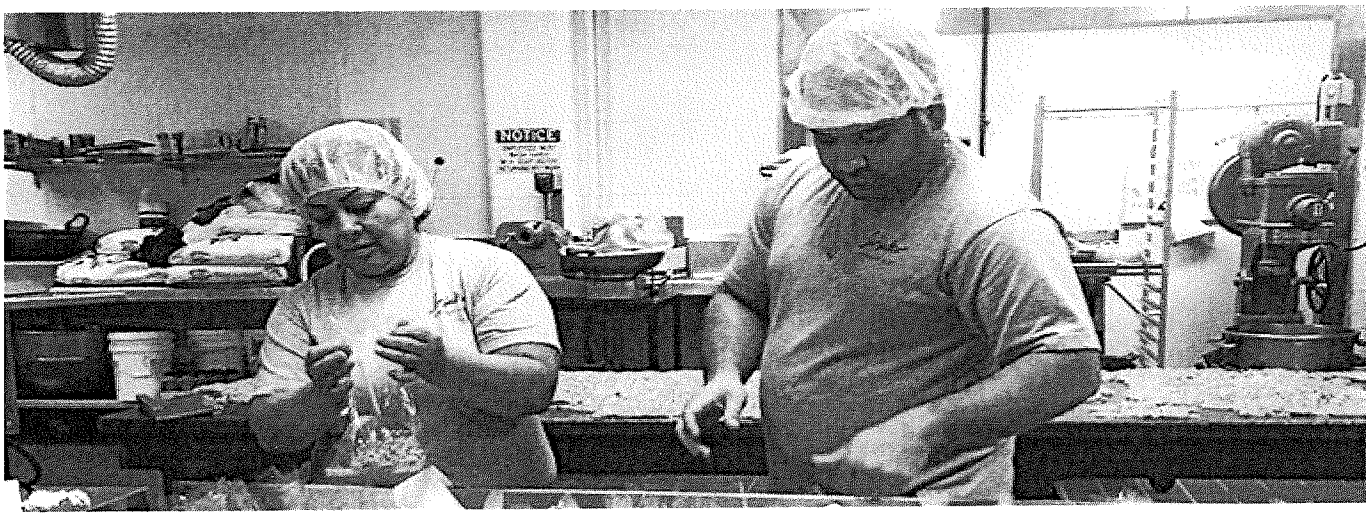
MANUFACTURING EXTENSION PARTNERSHIP CENTER
THE UNIVERSITY OF UTAH

Success Stories

MEP.UTAH.EDU | INFO@MEP.UTAH.EDU | 801.587.0713 | @UofUMEP

Removing time wasting steps helps sweeten deal for this candy manufacturer

In December of 1997, Alfonso and his with Alejandra started **Sir Walter Candy Co**. They built a custom trailer, where they started making confections and sold at local farmers markets. On September 15, 2000, Sir Walter Candy celebrated the grand opening of its first store located in Monrovia, California. They developed products and corporate gifts that were delicious and unique. In December 2007, Sir Walter closed the California store to move to a large facility in Utah. Today they are committed to keeping the art of candy making alive.



Project scope: Sir Walter Candy Co., wanted to increase their candy production throughput. They knew process standardization was going to be key and wanted to complete it before their busy season.

Solution: The University of Utah Manufacturing Extension Partnership (UUMEP) Center performed a four-day value stream mapping event to identify areas for improvement. They started by understanding what their customers are willing to pay for and developed an ideal state for their process. During the activity, the team explored opportunities for lean implementation and additional areas for improvement.

Results:

- Identified time wasting steps and brainstormed efficient solutions.
- Prioritized improvement ideas to reach ideal state.

Impact:

- Increase production capacity by 20%; room for additional sales of $240,000.
- 20% reduction in labor costs for eight staff members, saving $88,544.

Client testimonial:

"We've been very happy and impressed with the results accomplished by our with the UUMEP Center. They were very thorough, involved, and focused with the process and on the results we needed to accomplish. It was a great experience working with the UUMEP Center, and look forward to working with them in the future." —Alfonso Parras, President

MANUFACTURING EXTENSION PARTNERSHIP CENTER
THE UNIVERSITY OF UTAH

Success Stories

MEP.UTAH.EDU | INFO@MEP.UTAH.EDU | 801.587.0713 | @UofUMEP

Brooke & Bradford grows their business by obtaining SQF Certification

Brooke & Bradford was founded in Salt Lake City, UT in 2015 with four employees, to fill a need in the marketplace for gluten-free soups. After being diagnosed with celiac disease, founder and owner Brooke was devastated to roam the grocery store aisles only to find gluten in soups where there didn't need to be any. This experience motivated Brooke to create soups, skillet meals, spices and bulk ingredients that are all gluten-free, dairy-free, nut free, shellfish-free, soy-free, all-natural and preservative-free.

Project scope: Brooke & Bradford wanted to become SQF (Safe Quality Food) certified in order to compete in the national and international grocery markets with their products. In addition, they worked with a recipe developer that was recommended by the University of Utah Manufacturing Extension Partnership (UUMEP) Center to develop new soup recipes.

Solution: The UUMEP Center facilitated the SQF certification and connected them to a recipe developer, who has since been involved with other projects that were unrelated to recipe development.

Results:
Brooke & Bradford became SQF certified in April 2018. They are in the final soup recipe development process, and are also working with a national brand to develop and manufacture their private label food product, as well as negotiating the final details for getting their branded products into grocery stores across the country.

Impacts—Product Formulation

- Increased sales by $40,000 per year by expanding sales of their freeze-dried soups and stews
- Spent $20,000 in capital output to purchase new equipment from a local company, which helped to launch their new product.

Impacts—SQF Certification

- Expected sales for the first year is $200,000.
- Anticipated opportunities at national grocery chains to exceed $1 million.
- Increase new, local jobs by 20.

Client testimonial:

""The University of Utah MEP Center has been incredibly beneficial to our business. They helped us become SQF certified which has opened doors to us that otherwise would have been closed. After we passed our SQF audit, a large grocery chain reached out to us-- and we will sell our products in their stores nationwide. ." — Brianna Seymour, President