



# VERTICAL MALT

Business Plan 2020

## VERTICAL MALT

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# Vertical Malt

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## Executive Summary

Vertical Malt is a Craft Malthouse located in Northwest Minnesota and works with breweries and distilleries to deliver a field-to-table experience. This puts brewers, distillers, and their customers in close contact with the people who grow the barley and produce the malt.

More than ever, people want to know the origins of their food and this is one of the core strengths of Vertical Malt. Our grain is grown in the heart of the Red River Valley, largely by the owners of Vertical Malt. The Red River Valley is a growing region capable of producing some of the finest small grains in the world. Our grain is malted using state-of-the-art equipment which controls every aspect of the malting process providing customers malt with the quality and consistency needed for finely crafted products.

Demand for craft malt is driven by an expanding craft brewing industry and, more recently, a growing craft distilling industry in the United States. Minnesota and North Dakota have both seen large increases in the number of craft breweries opened in the past few years with many more in the startup and planning phases. Craft malt enables brewers to differentiate themselves in a market where novelty, sustainability, and innovation are key to survival.

In response to market demand, a new malt plant, complete with 25-ton malting system, is in development for calendar year 2022. This expansion will take the existing 175-ton annual capacity to a capacity of 1750 tons annually. Built for growth, the new plant accommodates two additional malthouses resulting in a theoretical maximum plant capacity of roughly 5000 tons annually. This expansion can be rapidly deployed in response to market forces and requires few infrastructure upgrades.

Vertical Malt's current operations include two malting drums capable of producing roughly 14 tons per month. Additionally, Vertical Malt operates a small pilot malting system, has milling and roasting capabilities and plans for a smokehouse which can be used for the further development of highly specialized or customized malt products for our customers. Vertical Malt also possesses a pilot brewing system, allowing complete closed-loop research and development.

Malting is capital equipment-intensive, and customers often demand significant volumes of malt. Attempting to enter the malt market at high volume involves high financial risks and runs counter to the idea of creating a craft malting company. Instead, Vertical Malt devised a strategy around organic growth and personal relationships with local and regional brewers and distillers, letting our partners dictate the speed of growth for Vertical Malt.

Short-term goals include streamlining existing operations, developing our regional market, and finalizing the funding plan for the new malting facility. Expanded capacity necessitates the hiring of additional staff to ensure a successful launch of the new malt plant. Long term goals include leveraging our success to build additional malting vessels that can serve the malting needs of the larger regional market.

## Our Mission

To become a critical component of the craft brewing industry by supplying unique and customizable malt products that enable a new generation of craft beers and spirits.

## Our Vision

Local farmers, small footprint, pedigreed products that are ethically and sustainably produced. You do not need to buy grain from half a world away to find world-class malt. As breweries and distilleries grow there is increasing demand for malt products that set their own products apart, not just in flavor but with their stories. We offer an excellent range of traditional malts and the ability to customize products or malt non-traditional grains for the unique requirements of emerging brews. As a result, Vertical Malt enables and empowers the next generation of craft beer and spirits.

## Our Values

Vertical Malt exists to serve specific industries, and is committed to providing the quality, innovation, integrity, and service they require. This service involves an unprecedented attention to detail with technology that pervades our operation and extends to our critical grain supplier partnerships. We carry this forward to an industry that wants to know where their food comes from and what, exactly, goes into it. We understand the need for producing malts that are cost-effective and recognize that we are asking customers to rely on Vertical Malt's products and technology. We therefore manage the company to optimize operations for the reliability and capability brewers and distillers require of their malt provider, giving our customers exactly what they need in a true partner.

## Our Strategy

Vertical Malt adopted a strategy to maximize capability while minimizing investment and risk. The approach is to focus on the true value we add to the craft brewing and distilling communities—i.e., locally grow, locally processed malt with a direct line to the maltster, the grower, the land, and the seed. For a time, we produced malt in low volume and craft brewers used it to produce seasonal drafts designed to highlight these characteristics. This malt was produced using our low volume but tightly controlled pilot system. The pilot system has continued to support the development of specialty malting processes.

Now in our fifth year, we produce malt in vessels capable of 2-ton batch sizes. The majority of this malt is consumed by six core customers. The remaining malt is used by a larger group of customers that understand the specialized nature of the malts we produce and use them in seasonal and specialty products. Due to our small size, several of these customers are far too large for us to satisfy their day-to-day grain requirements driving our need to expand. Any remaining malt is used for marketing and outreach to new prospects. At current capacity we are unable to add any additional large customers which is another factor prompting expansion planning.

To alleviate this capacity bottleneck, a major increase in production is required. This will come in the form of a new malt plant and 25-ton malting system to be built in 2022. This expansion will take the existing 175-ton annual capacity to a 1750 ton annual capacity. The new malthouse will be used to expand base malt production that our existing drums are producing now. Our existing equipment will

then be transitioned to specialty malt production and used to diversify our product lineup making it possible for a brewery or distillery to purchase a higher percentage of their grain from Vertical Malt.

The existing equipment will also be used for the research and development of new types of malts without disrupting base malt production. This research will provide a serious competitive advantage as we will be able to produce test malt on a small, but still usable, scale and then scale up these same recipes to 25-ton batches depending on market interest.

This new plant is also set up to accommodate two additional rounds of expansion. The ultimate result being a complete malt plant with an annual capacity of up to 5000. Each round of expansion will be market-driven and only requires the addition of new malthouses with few additional infrastructure upgrades. With each additional malthouse, the cost to produce each ton of malt drops.

Expansion beyond this 5000-ton cap is possible with the addition of additional steeping capacity which would allow for additional malthouses resulting in an additional 2200-tons of annual capacity for a total of 7200 tons.

It is important to note that the 25-ton batch size is our mission critical size and we have optimized our plans around this batch size. What this means practically is that we expect this system to overperform. Real world performance may result in as much as 10% - 20% greater capacity depending on optimization and seasonal environmental factors.

## Goals

### Short Term Goals

#### Operations:

- Streamline existing malting operations and implement process efficiency upgrades
- Establish a formal material certification process for all batches
- Develop standard operating procedures and supporting materials

#### Marketing and Sales:

- Secure Letters of Intent from new prospects to support an expansion project
- Network with Minnesota & North Dakota brewers as well as other craft maltsters
  - Craft Maltsters guild events
  - MN Craft Brewers Guild events
  - Brewers Association events
- Promote Vertical Malt to a wider region through more engagement with local beer and spirits events, homebrewers groups, beer festivals, and trade/industry events
- Continue to develop our social media presence through Facebook, Instagram, and YouTube

#### Strategic Planning:

- Procure funding for upcoming capital investment/equipment purchases
- Develop comprehensive expansion plan including:
  - Plant layout and product flow
  - Expanded base malt production

- Material handling systems
- Expanded malt/grain cleaning operations
- Upgraded automation for packaging

### Intermediate/Long Term Goals

- Exhibit at Craft Brewing trade shows
  - Brewers Association Conference
  - Great American Beer Festival
- Expand malthouse staff – Spring 2022
  - Sales/Account management
  - Maltster/Malthouse operator
- New plant commissioning – Winter 2022/2023
- Formalize barley breeding relationships with U of M and NDSU
- Establish byproduct (malt culms) animal feed program
- Install new roasting capabilities – post 2022
- Plan further base malt capacity – based on customer demand

### New Facility Build-Out/Timeline

- Finalize terms with shareholders – Q4 2021/Q1 2022
- Finalize terms with Primary Lender – Q4 2021/Q1 2022
- Groundbreaking on new facility – Q2 2022
- Install new malting equipment – Q3 2022
- Final equipment installation & new facility commissioning – Q4 2022
- Move existing operations – Q1 2023

## SWOT Analysis

### Strengths

- High market demand that is currently well beyond our capacity
- Despite a high equipment cost barrier to entry we have successfully built a capable malting facility that is financially sustainable
- Vertical Malt's integral farming operation, through the family farm and other relationships gives Vertical Malt the rigorous supply chain control needed for our grain specification and certification program
- Our primary farming operation resides in the Red River Valley of Minnesota, a geographical sweet spot for producing some of the finest barley and cereal grains in the world
- We have established relationships with several nearby universities. North Dakota State University houses the Institute of Barley and Malt Sciences. The University of Minnesota with a campus in Crookston has a robust grain and barley breeding program. These relationships are advantageous in supporting the development of unique customer-specified malts.

- Our region shows strong interest in expanding uses of agricultural (value-added) products like Vertical Malt
- Our region is familiar with many of the key process elements for operating a malt plant and can supply an excellent workforce as well as equipment maintenance and support

### Weaknesses

- We are capacity limited
- We have been self-funded and financed to this point and expanding operations will require investors and/or bank loans to achieve full-scale production
- Malting is capital equipment-intensive and requires large expenditures to expand operations
- We have a short business history making traditional methods of utilizing credit more difficult
- Current operations do not enjoy the same economies of scale as large operations
- Our current facility is not suitable for additional expansion

### Opportunities

- By capitalizing on the interest and demand from the existing market Vertical Malt can realize up to a 10x increase in revenue
- Our region is experiencing steady growth in craft brewers, resulting in increased malt demand
- National trends indicate the craft brewing and distilling industries are creating an increase in demand for malt from coast to coast
- Brewers are innovators and have a high level of interest in malting products that have not been previously available. Vertical Malt can provide those products
- Craft distilling is on the rise and Vertical Malt is well positioned to partner with new and emerging distillers looking to differentiate their products by using local and specialty ingredients
- Demand for non-traditional malting grains like corn, oats, and rye as well as traditional wood and peat fired kilned malts is growing and Minnesota is special as it can provide both hardwood and peat for this process and Vertical Malt is ready to serve that market
- “Malting as a service” enables brewers across the United States to partner with local ag producers and contract malting services with Vertical Malt
- New malt products made from ancient grains, heritage and heirloom grains, and emerging grains like triticale and kernza hold lots of market potential
- The presence and growth of craft brewer supply groups provide additional outlets to sell Vertical Malt to a wider regional, national, and even international market
- Minnesota Grown advocacy network is available for increased marketing muscle
- Malt culms (root material) is a high protein byproduct of the malting process and may be used to produce an excellent feed product for local livestock producers
- “Chit” malt products and sprouted grains are gaining much attention in the flour and baking industries due to their apparent nutrient benefits. As a mid-sized malthouse we are positioned to produce these sprouted grains to artisan mills with the added advantage that these grains take less time and energy to produce than standard malt products

### Threats

- Capacity limitations will prevent Vertical Malt from sustainable success at current levels
- Money supply is limited as we seek funding for expansion
- Large competitors may move into the craft malting space

- Extra-regional competitors may put pressure on our local market
- Loss of momentum should our market demand grow before we are able to expand our capacity
- Pressure on the hospitality industry by government intervention and lock-downs can put downward pressure on the customers of Vertical Malt resulting in decreased consumption of malt
- The overall beer industry has contracted over the past five years and an extended period of contraction may begin to effect small brewers causing malt usage to drop

## Industry Characteristics & Trends

### Industry Trends

The largest trend in the malting business is the push from six-row barley (grown mainly for large scale brewers) to two-row varieties which are favored by the craft beer industry. There has been a drive among barley breeders to produce more resilient varieties of two-row barley as well as breeding for flavor in addition to agronomic specifications.

Another major industry trend is the “Buy Local” movement which has affected many small producers in positive ways. This has ramifications that go beyond simply processing the grain locally. Where was the grain malted, where is the grain grown, and how are the grains grown all become important questions regarding the carbon footprint and long-term sustainability of local products.

We will take advantage of this trend by providing a “pedigree” to our product that few other maltsters offer. Though this preservation in identity, our customers will know exactly where our product comes from which can help them market their own products made from our malt. Know the provenance, taste the difference!

Research projects from breweries and university programs are ongoing and may drive aspects of the brewing and distilling industries. Barley breeding programs from the U of M and NDSU are in our own backyard and are in constant dialog with brewers and distillers to ensure that new varieties meet the needs of the end users. Vertical Malt has partnered with the U of M and brewers together for Minnesota and Red River Valley specific research projects which catch the attention of brewers on the lookout for innovative new products.

Large scale malthouses continue to focus on “macro” products that are used by large scale commercial brewers and distillers. While they provide high-quality and highly homogenous malt, they are not product innovators due to their large batch size. This leaves the door open to small malthouses that have the agility to innovate in the marketplace with new barley varieties and grain types. These innovations have led to high-margin specialty products available from select malthouses and represent a major area of opportunity for Vertical Malt.

## Customer

### Customer Demographics

On a macro level, our customers are brewers, distillers and food processors who require specialty malt as a main ingredient for their product. We partition this market into the following segments:

- Craft Brewers/Microbreweries/Mid-sized Craft Brewers/Regional Breweries



- Craft distillers
- Flour mills/Artisan bakers

Our marketing research has identified craft brewers on three levels: our immediate local market seeking to utilize local ingredients and promote the local economy, mid-sized craft brewers (e.g., Fair State, Lupulin) who look for quality ingredients produced in Minnesota to market throughout the state, and large-scale regional brewers (e.g. Summit, Schell's, Surly) who regularly introduce specialty brews for competitive purposes or seasonal consumption. Our operations are optimized in capacity, technology, and capability to serve these customers.

We have also identified segments for the emerging craft distillers and artisan bakers who use specialty malts in their production. Distillers offer a great opportunity as Vertical Malt is positioning itself to provide a range of smoked malts which are highly sought after in the distilling industry. Artisan bakers have identified the nutritional benefit of using flour made from non-diastatic malt and "chit" malt which we can produce for artisan flour mills. While Vertical Malt is primarily focused on the craft brewing segment these segments are rapidly gaining attention and represent a major opportunity in the not-too-distant future. We are closely following their requirements and have several contacts already within these industries.

### Psychographics

Much like ourselves, our target market consists of "beer nerds." End users—the beer consumers—are highly interested in the subtle nuances present in flavor and texture. Our customers—the beer producers—are keenly interested in the technology and raw materials needed to produce those nuances. Together these interests have made craft brewing part art and part science. Vertical Malt's core strategy is to first give our customers the basic raw materials to produce an interesting array of craft beer, and then to work with our brewery customers to develop malts that expand that array in ways that have been too expensive or simply not possible in the past.

Many brewers and distillers consider themselves craftsman and artisans. They value products that are made by human hands as opposed to homogenized and processed products that are sold from large-scale producers. To them, brewing and distilling is a way of life, not strictly business. This plays well into our strategy, as our processes and raw material sourcing give brewers a traceable "field to froth," "bales to ales," or "augers to lagers" pedigree.

As a result, we are sensitive to expanding our capacity too much too soon to avoid being viewed as another large-scale malting operation. Our expansion project targeted at a batch size of 25-tons which hits the sweet-spot of economy of scale while maintaining a batch size that allows for flexibility and innovation. Put in perspective, Briess Malting in Wisconsin is one of North America's smaller large-scale malthouses and their smallest batch size is roughly 60 tons. A batch size of 25-tons also allows for great scaling as we can add up to 2 additional 25-ton malthouses without the need for other major infrastructure upgrades. This allows us to quickly expand in response to the market.

### Distribution

Distribution to craft brewers and distillers will be accomplished by using various local freight carriers. The majority of our malt will be shipped on 2000 lb. pallets in 50 lb. sacks. We expect a percentage of malt produced to be sold bulk to our larger craft brewing partners and have anticipated the need to

deliver bulk malt. Another benefit of our region as our local logistics and trucking companies are intimately familiar with shipping grain and are well suited to distribute this bulk malt.

There is some demand for Minnesota craft malt at a national scale. In the short-term we will partner with LTL carriers to deliver malt nationwide. As this market matures, we will identify ways to improve efficiency to better serve the national market.

While it is fun to consider an export market for Minnesota craft malt, this is not high priority. It bears mentioning that there is a possibility for a thriving export market and this should not be ignored.

## Competition

### Competitors

Our major competitors include a variety of large scale malthouses including:

- Rahr Malting
- Breiss
- Weyermann
- Malteurope
- Great Western
- Canada Malting

### Competitor Analysis

These malthouses produce thousands of tons of malt on a weekly basis to feed into the larger beer industry. They also produce several malts for craft and homebrewers. Their single batch sizes rival the total quantity of malt we produced in our first two years' operating Vertical Malt.

More direct competition is provided by smaller craft malt houses including:

- Two Track Malting
- Maltwerks
- Blue Ox Malthouse
- California Malting
- Root Shoot Malting
- Mammoth Malt
- Valley Malt
- Colorado Malting
- Admiral Malting
- Montana Craft Malt

There are a growing number of Craft Maltsters in the United States who are making an effort to provide local flavors to distillers, brewers, and bakers. Many of them are employing similar strategies to ours and are selling direct to their own regions. Examples of these include Colorado Malting Company and Montana Craft malt who have seen great success as they have the advantage of local grain producers to feed their malthouse, thriving local craft brewing scenes, and a large beer drinking population in their respective states.

Our larger competitors have the obvious advantage of industrial scale, established, operations that have good rapport and a great product. They produce large amounts of high-quality malt with incredible levels of consistency and precision. They have in-house labs and equipment for quality control. They tout a standardized homogenous product. Large brewers rely on their ingredients to make a consistent product. For instance, a Bud Light always needs to taste like a Bud Light.

These establishments rely on such a large volume that it makes it difficult for them to react to trends in the marketplace. This is where smaller malthouses like Vertical Malt gain major competitive advantages.

Due to our comparatively small batch size, small malthouses can offer more agility when responding to customer needs. With only a few thousand pounds of grain wrapped up in a single batch, it is considerably less risky to customize a batch of malt for internal purposes or for customer requests. Large maltsters have hundreds of tons in single batches and may not be able to find buyers for products that are too specialized.

Furthermore, many of our small malthouse competitors are in geographically unfavorable growing climates giving us an advantage over many of the smaller malthouses who have a more difficult time vertically integrating their product. Our close relationship with our family farming operation and community of ag producers gives us the kind of vertical integration we need to be a major player in this market.

## Sales Projections and Supporting Data

### Core Customer Base/Potential Customer Base

The core customer base of Vertical Malt is our most local breweries and distilleries. This base includes breweries like Bemidji Brewing, Junkyard Brewing, Rhombus Guys Brewing, Half Brother's Brewing, and Far North Spirits, just to name a few.

Beyond the most local players there are over two hundred forty craft brewers in Minnesota and North Dakota, each of which is looking for new ways to distinguish themselves. Every single one of these breweries is a potential customer. Of the potential customers with whom we have spoken, all have shown great enthusiasm for the malts we are producing. This market is more than capable of consuming the expanded capacity proposed in round one of this project and with an expanded production capability, it becomes feasible to deliver high-quality, locally grown and malted, craft malt to these brewers and distillers.

Our region includes Wisconsin, Montana, South Dakota, and Iowa which include an additional four hundred sixty-four breweries for a total of over 700 breweries in our region. Fifty-one of these breweries opened in 2020 with more brewers expected to come online again in 2021. Each one of these breweries will work hard to increase their own market share and represents excellent partner opportunities for Vertical Malt. Working with new breweries doesn't require the stealing market share from other malthouses. By treating new brewers right in their early days, we can cultivate long-lasting relationships with the potential to grow substantially over time.

Small-scale millers and artisan bakers are not to be ignored in this plan. The market for sprouted grains and "chit" malt is rapidly growing and we are watching this expansion closely.

### National Trends

Until recently, malting has been limited to a small group of very large maltsters, much like the brewing industry of thirty years ago when a few brewers accounted for almost all beer produced in the United States. Craft malting is beginning a renaissance and small brewers are embracing the movement. Even with a few craft maltsters beginning to expand their capacity, the craft malting industry has not been able to meet the insatiable demand from brewers looking for new ways to differentiate their products.

According to Brewers Association data, in 2000 craft brewers likely used less than 9% of the malt consumed by U.S. brewers. Thirteen years later in early 2014 craft beer volume accounted for roughly

7.8% of total beer volume in the US but craft brewers consumed over 25% of the malt used by all US brewers, a factor of roughly 3.4 times that of domestic brands. An analysis of the industry at that time made the following statement:

**“Based on current production ratios, if and when craft volume share reaches 10%, craft brewers will consume 31.1% of all malt used by U.S. brewers, and the total malting capacity needed to fulfill that consumption will have to increase 5.1% over current levels. These staggering figures continue if craft reaches 20% volume share. At that share, if attained, craft brewers would consume an estimated 51.0% of all malt used by U.S. brewers, and the malting capacity needed to fulfill that consumption will have to increase by an estimated 28.3% over current levels.”**

– Brewers Association

By 2018, this number grew again to the point where we saw US craft brewers, at 13.2% share of the overall beer market, consume nearly 40% of the total malt consumed by US brewers prompting another statement from the Brewers Association:

**“The brewing industry is evolving rapidly: as of January 2018, U.S. craft brewers consumed nearly 40% of the total malt consumed by U.S. brewers, and that proportion continues to grow. The North American barley malt supply chain must likewise evolve rapidly to meet the very different needs of all-malt beer brewers.”**

– Brewers Association

While it’s impossible to predict the future, craft beer volume growth will most likely continue and push the malting industry to keep up with the demand.

### Competitive Advantage

Our competitive advantage stems from integral captive farming operation. This synergy has allowed us to broker a deal for short-term availability to drop ship grain inventory directly to the malthouse. This also facilitates our material certification requirement, one of the cornerstones of our business. Through this certification system, Vertical Malt can offer a full pedigree for its malt products adding to their customer’s arsenal for marketing local flavors, varieties, and specific vintages for their products.

The just-in-time delivery approach also helps reduce new infrastructure costs for the new malting plant. By leveraging on-farm storage and our growers close proximity to the malthouse we reduce the raw barley storage requirement at the malt plant resulting in a lower startup cost.

As we transition from an annual capacity of 175 tons to 1750 tons, we require more barley to be grown to satisfy the needs of the malthouse. The agricultural impact will be similarly large as existing operations can be satisfied by a single 120 acre field of barley. The new malt plant requires approximately 1300 acres of barley at 70 bushel/acre yields. This drives demand for small grains in our local region and diversifies the products that growers can consider. Further expansion will show an even greater impact on the local ag economy and will require additional growers capable of delivering the same high-quality barley to Vertical Malt. This barley will be monitored and managed by Vertical Malt for quality. Growers are already lining up in anticipation as barley is an excellent rotation crop for our area.

## Market Size

Vertical Malt is estimating the local MN and ND market for malt at 15,800 tons per year and the wider region (WI, SD, IA, MT, NE) at an additional 30,900 tons. Current capacity (175 ton annual) satisfies less than 1% of the MN/ND demand or one-third of one percent of the wider regional market. Intermediate expansion of base malt production allows us to satisfy up to 11% of the local market (3.7% regional) and long-term plans allow for us to satisfy up to 30% of the current malt need for MN/ND or 10% of the wider region.

According to the brewer's association, Minnesota brewers produced 367,681 barrels of beer in 2013. In 2020 Minnesota saw that number nearly grow to 547,818 barrels. While it is unlikely to maintain that level of growth over the next 5-years we anticipate steady growth in the market. The same can be said for North and South Dakota. All things considered, the forecast for malt demand in the future appears to be growing.

## Start-Up Market Plan

### How will we reach and communicate with our target customers

For Vertical Malt to be successful we need to achieve \$1.4 million in revenue by the end of our 2<sup>nd</sup> year of operation. With an average sale price of \$0.58/lb. this requires 1250 tons of malt sold. With MN & ND malt consumption utilizing approximately 16k-tons this represents about 7.8% market penetration. Realistically, we are aiming for 4% market penetration (700-tons) in MN/ND and seek another 2% (550-tons) by distributing throughout the upper Midwest.

We have developed a number of social media and marketing tools Vertical Malt to assist in outreach to new brewers and support existing brewers. These tools tell a great story and appeal to the emotional side of brewers and consumers by connecting them with the people and places that produce the ingredients. It's important to demonstrate that we are a real company with a proven track record of delivering quality malt.

These tools increase the likelihood for uninitiated brewers to chance upon us. They also make easy conversation starters when reaching out to new prospects and establish legitimacy through images and storytelling. This is targeted to make customers care about the life cycle of our product before they even purchase any for themselves. This marketing strategy extends beyond our brewery and distillery customers as social media marketing also connects directly to the end-user/consumer. Whether its beer or spirits, consumers are becoming more and more conscious of the supply chain and where the ingredients in their favorite beverages are produced.

Supporting these efforts with direct sales Vertical Malt has adopted an "old-school" approach. This involves visiting local breweries in-person and establishing rapport with new prospects. By gaining insight into their operations and what is important to the individual brewer, we can offer a tailored experience to new and existing customers. We are also leveraging our core customer base to provide testimonials and promote Vertical Malt to their industry peers allows us to acquire new prospects through referrals.

This direct sales campaign is being handled by Adam Wagner who, as owner and operator of Vertical Malt, cares deeply about the product, its pedigree, and its reputation. This will be augmented with a full-time sales/account manager once the right candidate can be found. Supporting the product is top of mind and is an area of opportunity for Vertical Malt as large malthouses don't cater to the needs of small brewers. By having "boots in the brewery" we will maintain strong relationships with customers and earn the right to ask for referrals and build a community around Vertical Malt.

Customer education is another method we use to interface and support the people using our malt. Through partnerships with our local universities and organizations like the Agricultural Utilization Research Institute (AURI) we can offer seminars to brewers and distillers complete with malt plant, farm, and test plot tours. Events, like our planned "Vertical Malt Beer Invitational," will be used to market direct to brewery and beer consumers alike with the added benefit of engaging our local community.

Inviting brewery prospects to come brew with us on our in-house pilot brewing system is another approach to attracting new users. Future plans involve a small in-house taproom where we feature beer and spirits produced using Vertical Malt. This is another way to engage our immediate community while marketing directly for our customers.

We are members of the Craft Maltsters Guild which provides a small level of exposure as well as industry data and tools. We are also members of the Minnesota Craft Brewers Guild as an allied trade member and regularly attend guild events. The MN craft brewer's guild has opportunities for presentations and sponsorships that connect directly with brewers and brewery owners. Additionally, we are members of the Brewers Association which provides us with a great deal of insight in the form of industry data as well as contact information for breweries across the United States.

The Vertical Malt brand we have built is a high-quality premium product opposed to a mass-market commodity product and we are utilizing branding toward that end. We are not willing to put our name on marketing materials that are sub-standard and go to great lengths to provide customers and prospects with materials and branded items which are of the highest quality.

## Support Professionals

Vertical Malt's core team consists of Adam Wagner (Maltster,) Seth Wagner (Malthouse Operations,) and Tim Wagner (Farming Operations.) They are supported by Robert Barnes (Executive Director – Crookston Housing and Economic Development Authority,) Brad Brekken (Bremer Bank,) and Lori Keller (Phil Thompson & Associates – CPA.)

Manufacturing and design team includes Dave Young and Justin Reule (Young Manufacturing) and Dan Bass (Mec-Pro.) Consulting and analysis team includes Aaron Macleod (Hartwick College,) Paul Schwarz (NDSU,) and Rob Liedl (Applied Malting & Brewing Solutions.) Crop and seed support comes from Steve Ross (AgriMax,) Kevin Smith (U of M,) Rich Horsley (NDSU.)

# Financial Projections Summary and Assumptions

## Assumptions

- Current facility Snapshot
  - Current debt is \$450k at 6% over 10 years ending in 2027
  - Currently holding \$287k in capital equipment
- New Facility Assumptions
  - Financial projections assume a weighted average of \$0.58/lb. for all malt produced
  - Cost of goods at 39.3%
  - Shipping is provided at cost
  - New malthouse operation baseline capacity is 1750 tons annually
  - Expansion assumed to cost \$6 million
  - Total debt of \$5 million
    - 25-year term
  - Annual Sales Goal of \$2 million starting in 2024
    - \$1.45 million – break even
  - Plant build-out is 8-months
  - Sales ramp of 12-months after plant completion

## Projection – Based on \$2 million sales goal for first full year (2024)

<i>Date Range:</i>	<b>Revenue</b>	<b>Burn Rate</b>	<b>Net Income</b>
<i>Current Production (monthly)</i>	\$14k	\$12k	\$2k
<i>2024 First Full Year (monthly)</i>	\$166k	\$139.4k	\$26.6k
<i>2024 First Full Year (annually)</i>	\$2 million	\$1.68 million	\$320k

Based on this information we anticipate Vertical Malt being self-sustaining within 2-years of groundbreaking. For more details about company health and feasibility please see the included 3-year projection of the completed malt plant. Feasibility study done by the SBDC.

## Overperformance and Growth

These assumptions illustrate the heaviest burden we expect Vertical Malt to bear and there are several places we’re aiming to improve these numbers.

Starting with the overall price tag of the facility the last 18-months have illustrated significant volatility in the cost to build. This forced us to make the \$6 million assumption as a “safe” number. We have already identified areas of potential savings and hope to reduce the cost to build by ten percent and possibly more resulting in a positive effect on cashflow.

As mentioned earlier in this document, our mission critical batch size is 25-tons per batch. In reality, we expect the malt plant to overperform the 1750-ton annual capacity. Some of our models have indicated

that actual production may exceed 2000-tons per year in practice. As we operate the malting facility, we will begin the optimization process around the batch-size that produces the best quality product.

Another significant boost to cashflow may come in the form of a larger equity injection up front. Our minimum requirement is about 16.6% of the total project in equity or one million dollars. Every dollar raised beyond the one-million-dollar threshold has a positive impact on cashflow.

Improvements to efficiency in our process have an opportunity to lower the cost of goods having another positive impact on cashflow. Coupled with our pricing strategy and specialty nature of the products we produce, we have assembled models where our cost of goods drops to as low as 31% and is a major area to improve real-world plant performance.

Growth in the form of additional malthouses also provide a pathway to increased capacity and efficiency for malt production. As envisioned, the simple addition of a 2<sup>nd</sup> malting vessel and added bulk malt and barley storage may carry a price tag of \$1.1 million dollars but effectively increase the operating capacity Vertical Malt by fifty percent. This represents a major increase of efficiency and can be duplicated again with a 3<sup>rd</sup> malthouse and additional bulk storage. It is possible to add a 4<sup>th</sup> and 5<sup>th</sup> malthouse by expanding steeping capacity at some point in the future.

## Conclusion

Based on our projections and the level of safety built into our plan, Vertical Malt represents a great opportunity to its shareholders. As presented, the plan is profitable and realistic with room to further improve its outlook through several different measures.

Reinvestment of company dollars through retained earnings will further increase shareholder value and at the point where the business matures Vertical Malt has an opportunity to evaluate company retained earnings and provide greater returns to investors in the future.