Oat Storage Economic Feasibility Study



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Executive Summary

This feasibility study, prepared by Greene Economics and Highland Economics for The Nature Conservancy, examines grain storage options and their potential to strengthen the oat farming economy in the Driftless Area of Southeast Minnesota. Oats were once foundational to Minnesota agriculture, but decades of federal commodity policy favoring corn and soybeans have dismantled both the acreage and the infrastructure which supported small grain production. Today, approximately 90% of oats consumed in the United States are imported from Canada. What is happening in the Driftless Area is a promising but fragile revival: a growing community of farmers who understand that integrating oats into the corn-soybean rotation improves soil health, reduces nitrate contamination into a karst-sensitive watershed, and lowers input costs through nitrogen credit from companion-seeded clover. What farmers need to make oat production sustainable is a reliable path to market, and that is where storage becomes indispensable. Without it, farmers must sell at harvest into a thin market at whatever price is offered, cannot blend low-test-weight grain to meet food-grade specifications, and cannot make the forward delivery commitments that premium buyers require. Storage is not a logistical convenience in this value chain; it is the mechanism that converts a sound agronomic decision into a commercially viable enterprise.

This study potentially serves two audiences. The first is the community of farmers already connected to Green Acres Milling, for whom the study provides a financial and organizational framework to support storage infrastructure decisions. The second is farmers producing oats outside the Green Acres supply chain known as the Oat Mafia, for whom the study offers a broader assessment of market options, storage configurations, and organizational models that can make oat production commercially viable regardless of buyer or market channel.

Stakeholder outreach, including virtual interviews with ten growers and industry experts, two in-person focus groups, and a site visit, consistently identified a lack of infrastructure as the primary barrier to industry growth. The domestic oat market is expanding at roughly 8% annually, and locally grown oats carry a meaningful traceability advantage over Canadian imports, which often arrive with higher glyphosate residues and cannot offer the farm-level transparency that premium food brands demand. At commodity prices of $3.25 to $3.50 per bushel, production is marginally feasible for most Driftless Area growers. At food-grade prices of $5.00 to $7.00 per bushel, the economics shift fundamentally.

Green Acres Milling, a farmer-owned mill under construction in Albert Lea designed to process approximately four million bushels per year, represents the most significant near-term market anchor for Driftless Area producers once binding contracts are in place. Many members of the Oat Mafia , an informal network of farmers growing approximately 6,000 combined acres of food-grade oats, are already invested in and aligned with the Green Acres model. The mill's planned price of approximately $6.00 per bushel, made possible by restructuring the value chain to eliminate intermediary margins, is the threshold growers identified as making oat production viable. Critically, the mill's delivery window model, under which farmers receive scheduled delivery slots rather than delivering on demand, creates a specific upstream storage requirement: producers must hold grain between harvest and their assigned window. While this study was developed in part to provide the analytical foundation for meeting that need, the study also focuses on addressing broader aggregation and storage needs across the larger regional market. The Fall 2025 experience, when the Oat Mafia's primary buyer ran out of storage

capacity and roughly 600,000 bushels remained unsold through year's end, illustrates the fragility that shared storage infrastructure is designed to buffer.

The legal and regulatory analysis examined eight ownership structures against Minnesota Department of Agriculture Grain Licensing requirements and multi-state tax considerations. The analysis points toward a multi-member LLC or agricultural cooperative formed under Minnesota Chapter 308A or 308B as the most suitable structures, offering strong liability protection, pass-through taxation, and access to USDA and state financing programs. The choice between them turns on whether the founding group values one-member-one-vote cooperative governance or prefers the flexibility of an LLC, and whether outside equity capital will be needed. More consequential than entity form, however, is organizational culture: interviewees consistently communicated that shared facilities succeed when built on genuine collective commitment and fail when individual interests override it.

The financial analysis initially evaluated four storage scenarios for analysis. These results were shared with farmers in a virtual focus group. Following the virtual engagement, a fifth scenario was identified. Five storage scenarios were evaluated with capital cost estimates, operating cost projections, five-year pro forma financials, breakeven analysis, and sensitivity analyses.

The scenarios range from distributed on-farm storage (Scenario 1) through consolidated on-farm (Scenario 2, 100,000 bushels, $617,000), condominium-style (Scenario 3, 284,000 bushels, $1.98 million), blended-plus-condominium (Scenario 4, 284,000 bushels, $2.07 million), and the purchase and retrofit of an existing facility (Scenario 5, 520,000 bushels, approximately $862,000). In all shared scenarios, achieving a debt service coverage ratio above the standard lender threshold of 1.2 requires occupancy above 50%.

ES Table 1. Scenario Selection Guide

Scenario	Capacity	Capital Cost	Storage Fee	DSCR[1] ≥1.2	Best Fit When
1: On-Farm	284,000 BU	$2.00 M	$0.18/bu/mo	N/A	Producer has land available on-farm and the ability to handle storage and hauling needs; or other storage needs to utilize storage when oats are not in the bin. Fees represent total annual costs spread across an estimated 6 months of storage.
2: Consolidated On-Farm	100,000 BU	$617K	$0.19/bu/mo	>50% occ.	Near-term needs are modest and host farmland is available
3: Condominium	284,000 BU	$1.98M	$0.20/bu/mo	>50% occ.	Identity preservation is paramount and capital is available
4: Blended & Condo	284,000 BU	$2.07M	$0.20/bu/mo	>50% occ.	Volume exceeds 370K BU or blended share exceeds 64%

[1] This column indicates the occupancy level at which the Debt Service Coverage Ratio (DSCR) reaches 1.2, the standard benchmark lenders use to confirm a borrower can service its debt from operating income.

Scenario	Capacity	Capital Cost	Storage Fee	DSCR[1] ≥1.2	Best Fit When
5: Facility Purchase & Retrofit	520,000 BU	$862K	$0.07/bu/mo	~50% occ.	Capacity needs approach 520K BU and a suitable acquisition candidate is identified

Scenario 5 is the most financially compelling option by a substantial margin. At $1.66 per bushel of capital cost, less than one-quarter that of the new-build scenarios, and a required storage fee of only $0.07 per bushel per month, it approaches commercial cooperative economics at one-sixth the volume typically required. For groups with near-term needs and limited capital, Scenario 2 offers the lowest capital risk and the fastest path to financial self-sufficiency. Scenarios 3 and 4 are viable at sufficient occupancy but require beginning capital of $600,000 to $660,000. If capacity needs exceed the 520,000-bushel ceiling of Scenario 5, Scenario 4's hybrid design positions the facility to grow in capacity over time.

Shared oat grain storage in the Driftless Area is potentially viable. The financial models demonstrate positive net income and growing equity across all modeled scenarios at plausible occupancy levels. The market relationship with Green Acres Milling is established, the Oat Mafia coalition represents credible farmer interest and commitment and provides a potential organizational foundation, and the financing landscape is navigable. The principal risks arise from the interaction of capital access, clarity around market demand and buyer's needs regarding traceability and governance quality rather than from any single insurmountable barrier.

Success depends on five critical factors: committed market access tied to storage design; right-sizing capacity to actual production rather than aspirational projections; securing adequate beginning capital before committing to a facility; investing in governance infrastructure before operations begin; and building identity preservation and traceability capability into the facility from the start. The study offers the following recommendations, in the sequence in which they should be addressed:

Convene the founding group. Resolve who the facility serves, what governance model the group prefers, and how much equity each member will commit. These answers determine which scenario is appropriate and what financing is needed. Engage legal counsel and a CPA before entity formation.

Develop a grant-independent financing plan. Model beginning capital requirements under both grant and no-grant scenarios. Member equity and conventional agricultural debt must be able to carry the baseline; grant funding from USDA, nonprofits, and state programs should supplement, not anchor, the plan.

Align facility design with market relationships. For Green Acres-aligned producers, design must support bin-level traceability and delivery scheduling calibrated to the mill's window model. For producers outside that supply chain, priority shifts to blending capability and market optionality. Resolve design requirements and define new build vs retrofit before site selection.

Launch a structured search for acquisition candidates. Once governance structure, committed capital, and target capacity are established, conduct an active search for existing grain storage facilities or new

build sites in the Northern Iowa and Southern Minnesota corridor. Multiple candidates should be evaluated concurrently before any purchase commitment is made.

Build producer enrollment before opening. Occupancy above 50% is essential for financial viability. Committed storage agreements should be in place before operations begin, grounded in concrete enrollment cases for each producer audience.

The most prudent path to establishing shared oat storage infrastructure in the Driftless Area depends on storage needs. On the low end of estimated capacity (100,000 BU), Scenario 2 is the most cost-effective scenario due to low overall capital costs and beginning cash requirements, representing the lowest capital risk and the shortest path to financial self-sufficiency. If capacity needs approach 520,000 bushels, the acquisition of an existing facility in Scenario 5 becomes the lowest cost option – both total and on a per bushel basis. If needs exceed the facility capacity of Scenario 5 (>520,000 bushels), Scenario 4 becomes the most viable option given the information available at this time, and positions the regional oat industry to grow in capacity over time.

1. Introduction and Overview

Oats were once a common crop across Minnesota's agricultural landscape. Today, they represent something rarer and more valuable: a solution. The growing Southeast Minnesota oats industry has the potential to assist the region's farmers while providing the surrounding environment with various regenerative benefits. Integrating oats into the region's dominant corn-soybean rotation is one of the most effective tools available to Southeast Minnesota farmers for rebuilding soil health, reducing nitrate runoff into streams and leaching into groundwater, and reducing input costs that have climbed steadily alongside decades of continuous two-crop farming. These benefits accrue to the land, to the watershed, and to the long-term productivity of farm operations, regardless of what the oat market is doing on any given day.[2] Without a reliable path to market, most farmers cannot justify the transition, however compelling the environmental case.

This feasibility study solely examines grain storage scenarios and their potential to strengthen the oat farming economy in the Driftless Area of Southeast Minnesota. It is not a financial analysis of the viability of premium oat markets or milling scenarios. The Nature Conservancy contracted with Greene Economics and Highland Economics to lead this work, with a focus on evaluating the range of storage configurations that could better serve small grain farmers in the region, from on-farm arrangements to shared or aggregation-based models. Storage, as this report argues, is not merely a logistical convenience, it is a linchpin connecting environmental stewardship with commercial viability. Farmers producing between 5,000 and 10,000 bushels annually, a scale that represents meaningful commercial intent but typically falls below the threshold of existing regional infrastructure, are most in need of additional options.

Beyond simply housing grain, access to storage could function as a de-risking mechanism for oat farmers across the region. Depending on the configuration, it could provide a location to clean, blend, and hold oats in the event of low test weights or contamination; create an aggregation point that simplifies delivery logistics; and allow multiple producers to pool production to meet buyer specifications that no single farm could satisfy alone. The result would be a storage system that could make the decision to grow oats financially defensible, turning an agronomically desirable practice into a commercially viable one. This report draws on a thorough literature review, interviews with growers and industry stakeholders, site visits, and focus groups to assess how that system might best be structured, governed, and financed. Following that is a detail-oriented discussion of potential ownership and management structures, with a focus placed on the modern regulatory environment. Then five suggested storage scenarios are introduced and assessed based on their respective costs and financial viability. The report concludes with a series of recommendations regarding next steps for the practical implementation of this information.

1.1. Methodology and Approach

This report opens with a literature review that situates the Southeast Minnesota oats industry within its broader historical, agronomic, and market context, examining not only the challenges facing the industry today, but the structural forces that created those challenges over time. This background

[2] The Nature Conservancy. September 2025. Diversifying Midwest Farms. Available here.

section gives particular attention to three themes central to the project's rationale: the history of oat production in Minnesota, the role of oats in improving soil health and water quality through crop rotation, and the critical function of storage infrastructure in enabling farmers to access premium markets.

The literature review is followed by findings from outreach efforts conducted on behalf of the project, including virtual interviews with growers and industry experts, a site visit to evaluate existing storage options, and two in-person focus groups. These findings ground the analysis in the lived experiences of Driftless Area farmers and provide qualitative texture that values and figures alone cannot convey. Subsequent sections examine potential ownership and management models for a new storage facility, assess five specific storage scenarios based on cost and financial viability, and close with actionable recommendations for next steps.

1.2. A History of Oats Production in Minnesota

The Driftless Area (Figure 1) is one of the most productive agricultural regions in the United States. It produces billions of dollars' worth of crops annually, primarily from the production of corn and soybeans, which make up about 90 percent of the region's row crop acres.[3]

[3] The Nature Conservancy. 2025. Upper Mississippi River Foodscape. Available here.

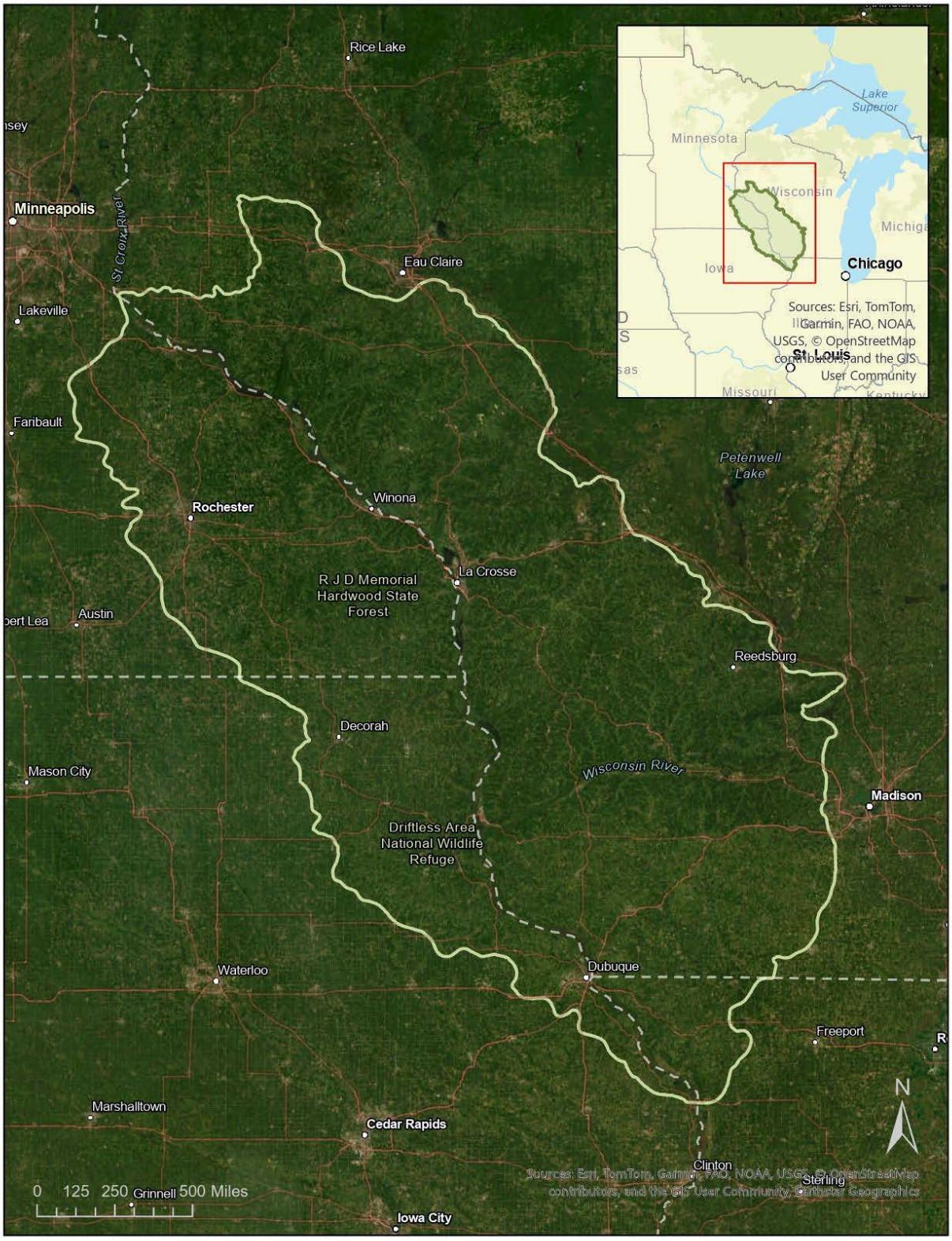


Figure 1. Driftless Area Map

Minnesota was once among the leading oat-producing states in the nation.[4] For much of the late nineteenth and early twentieth centuries, oats were woven into the fabric of the state's agricultural economy as a staple crop. Minnesota's cool climate and the fertile, well-drained soils deposited by retreating glaciers proved well-suited to the crop, and oat acreage expanded steadily alongside the state's growing farm population through the early decades of the twentieth century.

The mid-twentieth century brought two forces that fundamentally reshaped the state's grain economy. First, the rapid adoption of gasoline-powered tractors and farm machinery through the 1930s and 1940s eliminated the draft horse from working farms within a single generation—and with it, the primary on-farm market for oats. Second, and more consequentially for the long term, federal commodity support programs introduced under successive farm bills beginning in the 1930s and significantly expanded in the 1970s provided price supports and production incentives that heavily favored corn and soybeans over small grains.[5] Simultaneously, new hybrid seed varieties dramatically increased corn and soybean yields per acre. The combined effect of policy incentives and yield gains made the switch from oats to row crops an economically rational decision for most Minnesota farmers. By the 1960s and 1970s, oat acres were converting to corn and soybeans at a rapid pace. What had been a diverse small grain landscape gave way to the two-crop rotation that still dominates the region today.

Production numbers tell this story starkly. In 1968, American farmers planted 23.3 million acres of oats nationwide; by 2014, that figure had fallen to just 3.03 million acres.[6] Minnesota's trajectory followed this national trend, and in some respects accelerated it. As oat acreage contracted, so did the infrastructure that supported the crop. Grain elevators stopped handling small grains because the volumes no longer justified the equipment and segregated bin space required to process them. Seed dealers reduced their oat variety offerings. Farm equipment manufacturers shifted their innovation and service priorities toward corn and soybean machinery. The agronomic knowledge of how to grow oats well, including understandings of variety selection, seeding rates, pest management, and harvest timing, became less common. Today, approximately 90% of the oats consumed in the United States are imported from Canada, where the cooler, drier Prairie Province climate (particularly in Saskatchewan and Manitoba) consistently produces the higher test weights that food processors require.[7]

The Karst topography of southeast Minnesota's Driftless Area presents a particular challenge within this broader story. Unlike most of Minnesota, this region was never glaciated, which resulted in a highly porous subsurface through which water moves rapidly and with little filtration. The practical consequence for agriculture is that runoff and leachate from farm fields can reach groundwater and streams far more quickly here than in glaciated regions with deeper, more absorptive soils. This geography makes the Driftless Area both ecologically sensitive and particularly responsive to farming practices that reduce nutrient runoff. Oats, with their shorter growing season requirements, and lighter equipment needs, have historically been a better agronomic fit for this landscape than they are for much of the broader Midwest. Yet even as the agronomic case for oats has remained strong here, the economic infrastructure needed to support their production has continued to erode.

[4] Sustainable Food Lab. April 2015. Expanding the production of oats and small grains in Iowa and Minnesota. Available here.

[5] Sustainable Food Lab. April 2025. Crop Diversification in the US: Case Study. US Oats for Oatly. Available here.

[6] Sustainable Food Lab. April 2015. Expanding the production of oats and small grains in Iowa and Minnesota. Available here.

[7] Ehrhardt, M. & M. Leavitt. May 2019. Mission Impossible? Growing Quality Oats. Available here.

1.3. Oats in Crop Rotation: Soil Health, Input Reduction, and Water Quality

The dominant rotation in Southeast Minnesota alternates corn and soybeans – a two-crop cycle that has been the regional norm for decades. This system is productive, but it comes at significant cost to the land, the water, and ultimately to farmers themselves. Repeating the same two crops year after year depletes specific soil nutrients, allows pest and weed species adapted to each crop to establish persistent populations, and over time degrades the soil structure that makes fields productive. Managing these problems requires progressively more herbicide, insecticide, and synthetic fertilizer inputs, the costs of which have risen sharply in recent years. An environmental toll compounds alongside the financial one: excess nitrogen fertilizer applied to corn fields, and not fully taken up by crops, leaches through the soil and enters streams, rivers, and groundwater as nitrate. At elevated concentrations, nitrate can pose documented health risks and communities that draw drinking water from affected aquifers or surface sources face real treatment costs and public health exposure.

Introducing oats as a third crop in a three-year rotation addresses many of these problems simultaneously. The addition of a small grain breaks the two-crop cycle in ways that benefit the soil, the farm's biology, and the bottom line. Research consistently documents the agronomic benefits of small grain inclusion: improved soil structure through diverse root architectures that open different layers of the soil profile; enhanced moisture retention as organic matter content rises with increased plant diversity; and natural suppression of weeds, pests, and diseases that build up under a simplified two-crop rotation.[8] When a nitrogen-fixing cover crop such as clover is seeded alongside the oats—a practice common among experienced Driftless Area growers—the benefits increase further. Nitrogen-fixing plants host specialized bacteria in their roots that convert atmospheric nitrogen gas into a form that plants can use, effectively manufacturing fertilizer from the air. The clover overwinters after oat harvest, continues fixing nitrogen through the fall and following spring, and is then incorporated into the soil before corn planting—reducing the synthetic fertilizer the corn crop requires. At current fertilizer prices, which are at historic highs, this nitrogen credit alone can represent a savings of $30 to $60 per acre on the subsequent corn crop, partially or fully offsetting the cost of growing the oats in the first place.[9]

The water quality implications of oat-inclusive rotations are particularly significant in the Driftless Area. The region's karst geology creates a direct and rapid pathway between farm fields and the groundwater that all residents depend on for drinking water. This connection is further accelerated by tile drainage, the network of perforated pipes buried beneath farm fields that collects excess soil moisture and routes it to surface ditches and streams.[10] While tile drainage is essential for making heavier soils farmable in wet years, it also creates a rapid subsurface channel for dissolved nitrate, bypassing the natural filtration that occurs when water moves slowly through deep soil layers. Nitrate applied to corn fields, whether from synthetic fertilizer or livestock manure, can travel through tile systems and into streams or groundwater within hours of a rain event.

[8] University of Minnesota Extension. Small grain crop rotations. Available here.

[9] University of Minnesota Extension. "Opportunity Knocks for Oats in Minnesota." January 2026. Available here.

[10] Johnson, B. 2025. Minnesota's Oat Mafia 'sitting on nearly all' of its harvest, with no buyer in line. The Minnesota Star Tribune. Available here.

The Minnesota Pollution Control Agency has identified Southeast Minnesota as one of the state's highest-risk regions for nitrate contamination of private drinking water wells.[11] Oats provide a meaningful countermeasure. Planted earlier in the spring than corn or soybeans, oats establish a dense canopy quickly and are highly effective at scavenging residual soil nitrogen before it can leach downward. This uptake occurs precisely during the spring snowmelt and early rain season which is the period of highest nitrate loss risk. Peer-reviewed research on Midwest small grain rotations has documented nitrate leaching reductions of 30 to 50 percent compared to continuous corn-soybean systems.[12] In a region where nitrate in private wells is not an abstract concern but a documented reality affecting real households, these reductions represent a genuine public health benefit with monetary value to the municipalities, rural water systems, and individual families who otherwise bear the cost of treatment or alternative water sources.

These soil health and water quality benefits are well-documented and compelling. It is well documented that oats are an effective way for farmers to improve their soil structure, reduce nitrate leaching, or lower their fertilizer bill. If farmers are to make oats a regular part of their operation rather than a one-time experiment, is a way to sell the crop at a price that makes the effort worthwhile. That is where the market comes in; not as the reason to grow oats, but as the mechanism which makes growing them sustainable over time – and that is where storage becomes indispensable.

1.4. From Field to Market: Why Storage Is Essential

Storage may seem like a logistical detail in the oats value chain, but it is in practice a limiting factor that determines whether oats become a viable market crop or remain an agronomically attractive but commercially unreliable one. Understanding why requires tracing what happens to oats between harvest and sale, and what goes wrong when farmers lack the infrastructure to manage that interval.

Oats are harvested in late July or early August in Southeast Minnesota, at a time when grain moisture is often elevated and market conditions may not be favorable for immediate sale. Unlike corn and soybeans, which have well-developed commodity trading systems and robust local elevator networks, oats move through a thinner, less liquid market where buyers are fewer and delivery windows are more constrained. A farmer who cannot store oats must sell at harvest, accepting whatever price the market offers in that narrow window, regardless of whether it covers the cost of production. A farmer with access to storage can wait: for better prices, for a buyer's order window to open, or for the opportunity to blend low-test-weight grain with higher-quality oats to meet food-grade specifications. In a commodity with thin margins and unpredictable test weights, this flexibility is not a luxury – it is a prerequisite for profitability.

The food-grade oat market makes these dynamics especially acute. To qualify as food-grade, oats must achieve a test weight of at least 38 pounds per bushel, a threshold that can be difficult to meet consistently in the Driftless Area's warm, humid summer climate, which can stress oats during the

[11] EOS Data Analytics. How To Grow Oats and Get Increased Yields. Available here.

[12] Johnson, B. 2025. Minnesota's Oat Mafia 'sitting on nearly all' of its harvest, with no buyer in line. The Minnesota Star Tribune. Available here.

critical pollination and grain-filling phases of development.[13] [14] When a crop falls short of this threshold, the options are limited: either sell at a steep discount as feed grain, or blend with higher-weight oats to bring the combined lot into spec. The blending option, which can save a crop's market value, requires shared or aggregated storage. This is a difficult accomplishment on a farm-by-farm basis because no single operation typically has both the low-weight crop and the surplus high-weight grain needed for remediation. A shared storage facility, with the ability to aggregate oats from multiple producers, test weights, and blend accordingly, could transform a situation that would otherwise result in significant financial loss into one that can be managed and recovered.

Storage also plays an essential role in market development. Buyers, particularly mills and food processors purchasing at volume, need to be able to specify delivery windows months in advance. A farmer without adequate storage cannot reliably commit to a future delivery date, because doing so means gambling on the outcome of a harvest not yet in the bin. Storage removes that uncertainty. It gives farmers the capacity to make forward commitments, which makes them bankable suppliers rather than spot-market participants. As the Driftless Area's oat market grows, the ability to make reliable, scheduled deliveries will be increasingly essential for farmers seeking premium-price contracts with discerning buyers.

Taken together, these dynamics mean that storage infrastructure is the mechanism that converts a sound agronomic decision into a sustainable farming enterprise. The soil health and water quality benefits of integrating oats into the rotation are real whether or not a farmer ever sells a bushel at a premium price. But most farmers cannot absorb the costs and risks of a new crop rotation without some prospect of return from the crop itself. Storage does not create the case for growing oats—the land makes that case on its own. What storage does is make acting on that case financially defensible, year after year.

1.5. Additional Challenges Facing the Current Industry

Even as the rationale for oat production strengthens, the practical obstacles facing Driftless Area farmers remain considerable. Oat prices have held relatively steady in recent years, typically ranging between $3.25 and $3.50 per bushel on commodity markets[15] which provides some stability but offers little upside when weighed against the logistical complexities of growing and marketing a crop with limited local infrastructure. Seed costs add to the burden: farmers in the US Oats for Oatly program spent an average of $35 per acre on seed in 2023.[16] Transportation costs compound the challenge further, with farmers in the same program traveling an average of 67 miles to reach a processing facility—a distance that erodes already thin margins and imposes significant time demands on operations that are, by definition, diversified and therefore stretched across multiple enterprises.[17]

13 Gazibara, I. 2025. What is holding back capital flows in regenerative agriculture? Medium. Available here.

[14] Stoll, A., M. I. Marshall, R. Wiatt, & Y. Feng. 2025. Exploring Consumer Willingness to Pay for Food Safety in Produce: A Focus on Small vs. Large Farms. Available here.

[15] PwC. 2024. Consumers willing to pay 9.7% sustainability premium, even as cost-of-living and inflationary concerns weigh: PwC 2024 Voice of the Consumer Survey. Available here.

[16] USDA National Agricultural Statistics Service (NASS). Historical crop production data. Available here.

[17] Sustainable Food Lab. April 2025. Crop Diversification in the US: Case Study. US Oats for Oatly. Available here.

Crop insurance presents a related structural problem. When oats are priced as a commodity crop by the Chicago Board of Trade, the insurance payout available for a failed or low-quality harvest is set accordingly and it does not account for the premium prices a food-grade crop would command or the full cost of production in a high-input year.[18] A farmer whose oat crop fails to meet food-grade test weights may find that their insurance payout covers neither seed and fertilizer costs nor the opportunity cost of the acres devoted to oats. This asymmetry of risk and reward suppresses adoption, particularly among farmers who cannot absorb a bad year. Access to credit is similarly constrained: lenders applying commodity price assumptions may decline operating loans for oat production when those assumptions imply marginal or negative returns, creating a self-reinforcing cycle in which low prices limit creditworthiness and limited credit perpetuates the infrastructure gaps that keep prices low.[19]

1.6. Market Landscape

The market for food-grade oats grown in Southeast Minnesota is nascent, promising, and fragile in roughly equal measure. Growing consumer interest in oat-based foods driven in part by the global popularity of oat milk and the continued expansion of health-oriented breakfast and baking categories has created real demand. But demand alone does not make a market: supply chains must be reliable, quality must be consistent, and pricing must work for all participants. On each of these dimensions, the Driftless Area oat market is still finding its footing.

The challenges facing Driftless Area oat farmers have attracted significant national attention. Reporting in the Minnesota Star Tribune,[20] the New York Times,[21] and Agweek[22] has chronicled both the group's ambitions and its growing pains in detail. At the center of this coverage is the "Oat Mafia"—an informal coalition of Driftless Area farmers, founded around 2020 by Martin Larsen, Kevin Connelly, and Tom Pyfferoen of Byron, Minnesota, that has grown to include hundreds of members farming a combined 6,000 acres of food-grade oats. The group's story offers a clear illustration of what happens when production outpaces market infrastructure. In the fall of 2025, their primary buyer, La Crosse Milling ran out of storage capacity and could not purchase additional oats from the group. With no alternative buyers willing to step in for high-quality food-grade oats, farmers were left holding their harvest. Selling to a secondary buyer would have required accepting $0.50 less per bushel which represented a substantial revenue loss. By the end of 2025, approximately 600,000 bushels remained unsold in storage bins. The oats were not deficient in quality; the market simply lacked the capacity to absorb excess oat crop. . Without storage infrastructure, those 600,000 bushels represented an immediate crisis. With storage, this becomes a problem that can be managed.

Green Acres Milling's farmer-owned oat mill under construction in Albert Lea represents the most significant near-term opportunity to stabilize the regional market. The project, with sixty farmers from

[18] USDA ERS Commodity Costs and Returns for Oats. Available here.

[19] Investigate Midwest (August 2025) "Midwest Oat Growers Want a Renaissance, But It Will Be Hard Without Big Ag" Available here.

[20] Drinkwater, L.E., Wagoner, P., and Sarrantonio, M. 1998. Legume-based cropping systems have reduced carbon and nitrogen losses. Nature 396:262–265. Available here. See also: Randall, G.W., and Mulla, D.J. 2001. Nitrate nitrogen in surface waters as influenced by climatic conditions and agricultural practices. Journal of Environmental Quality 30(2):337–344. Available here.

[21] New York Times. March 6, 2026. "Where Corn and Soybeans Rule, the 'Oat Mafia' Fights for Turf: Farmers in the Upper Midwest are investing in homegrown oats. It's good for the land. But can it work as a cash crop?" Available at: nytimes.com.

[22] Sustainable Food Lab. April 2015. See also footnote 2.

Minnesota, Iowa, and Wisconsin contributing toward its initial construction, is designed to process around four million bushels of oats per year.[23] When operational, it would provide a committed buyer for Driftless Area oats at prices far exceeding the commodity floor. Green Acres has indicated an ability to pay approximately $6.00 per bushel by restructuring the value chain to eliminate intermediary margins.[24] Even so, the mill's capacity will not fully absorb the supply that a revitalized regional oat industry could generate, and market inconsistencies will persist. Furthermore, Green Acres' model depends on farmers delivering oats on the mill's schedule—which means farmers must be able to store grain between harvest and their assigned delivery window. A mill without upstream storage infrastructure to serve its supply base is, in effect, a buyer without a reliable supplier network.

The global competitive context further underscores the challenge. The European Union and Canada together produce more than half of the world's oats,[25] benefiting from cooler, more predictable growing climates and well-developed export infrastructure. The United States contributes only around 4% of global oat production annually and much of what is consumed domestically is imported from Canada at prices that reflect those producers' efficiency advantages.[26] Competing in this environment requires Minnesota growers to differentiate on dimensions that commodity importers cannot match: traceability, regional identity, lower pesticide residues, and the ability to supply premium food manufacturers with certified, story-driven ingredients. These are real and growing market niches, but they demand a level of supply chain organization—from farm to storage to processor to brand—that the region does not yet fully possess.

The financing environment for regenerative agriculture adds another layer of complexity. Research on capital flows in this sector identifies a persistent mismatch between the financing needs of farms and processors and the pools of capital available to meet them.[27] Three structural problems drive this mismatch:

Capital Deficiency: Lender demand from farmers significantly exceeds the available pool of mission-aligned funding sources, leaving many viable projects without financing.

Misaligned Investment Structures: Available capital tends to concentrate in technology and infrastructure investments perceived as offering faster returns, rather than in the operational and on-farm investments that farmers most need.

Lengthy Time Horizon: Regenerative agriculture improvements—including the soil health gains from oat rotations—often take four or more years to manifest in measurable productivity gains, making them unattractive to investors seeking near-term returns.

Consumer willingness to pay for regeneratively grown food adds a further complication. While surveys suggest that many consumers express support for sustainable agriculture, research indicates that a significant portion are unwilling to pay premiums exceeding 10% for such products,[28] and inflation-

[23] Agweek. February 16, 2026. "Farmer-owned oat mill grows from push to rebuild local markets." Available here.

[24] Landon Plagge, Green Acres Milling, Personal Communication, Site Visit February 19, 2026

[25] USDA Foreign Agricultural Service (FAS). Production, Supply and Distribution data: Oats. Available here. See also: Sustainable Food Lab. April 2015.

[26] Ibid.

[27] Custer, Colin and Alex Healey. "Bridging the Regenerative Agriculture Financing Gap." Yale Center for Business and the Environment, February 2024. Available here and here.

[28] PwC. 2024. "Voice of the Consumer Survey fd2024. May 15, 2024. Available here.

driven cost-of-living pressures have further narrowed the premium that even committed consumers will reliably absorb.[29] The practical implication for the Driftless Area oat industry is that premium pricing, while achievable, cannot be assumed—and market development must account for the full range of buyer segments and price points, not only the most optimistic scenarios.

2. Findings from Stakeholder Engagement

The team conducted outreach with oat farmers and industry stakeholders across the Driftless Area through a combination of virtual interviews, an in-person site visit to evaluate storage facility options, and two facilitated focus groups. A total of ten individuals participated in virtual interviews: five growers, three cooperative experts, and two processing experts. Their perspectives provide essential qualitative context for the quantitative analysis that follows. Key themes that emerged during the interviews and in person focus groups are summarized below.

2.1. General Oats Industry Themes

Across interviews and focus groups, one theme emerged above all others: Driftless Area oat farmers are working to rebuild an industry almost entirely from scratch. The infrastructure, buyer relationships, crop insurance frameworks, and agronomic knowledge that support corn and soybean production have been refined over decades; equivalent systems for small grains were largely dismantled and must now be reconstructed piece by piece. Industry experts consistently identified the lack of committed buyers—not lack of agronomic capacity—as the primary barrier to growth. Most buyers prioritize cost over provenance, and the domestic premium for regeneratively or locally grown oats is real but still developing.

Farmers interviewed described a domestic oat market growing at approximately 8% annually, and several noted that imported oats—which constitute 80 to 92% of US consumption—often carry higher residues of glyphosate and cannot offer the farm-level traceability that Minnesota producers are positioned to provide. This traceability advantage is seen as a genuine differentiator with premium food buyers and an increasingly important consideration for food brands responding to consumer demand for supply chain transparency. The current supply chain structure, however, was widely criticized for concentrating margins in the middle, with processors and distributors capturing returns that do not flow back to farmers.

On the agronomic side, several farmers described active efforts to promote oat adoption among peers by communicating the documented soil health and water quality benefits of the crop and, importantly, the input cost savings that accrue from adopting a rotation incorporating oats and clover. With fertilizer prices at historic highs, the nitrogen credit from a clover cover crop seeded alongside oats has become a tangible and persuasive selling point. Farmers also noted potential value-added opportunities beyond grain sales, including the use of oat straw for animal bedding and oat hulls as a biomass fuel source. Multiple interviewees emphasized a shared commitment to providing quality food to local communities and keeping agricultural income circulating within the region.

[29] Ibid.

Crop insurance was a source of significant frustration. Farmers described a structural mismatch between the insurance products available for oats—priced against commodity values—and the food-grade premiums they are attempting to earn. A crop failure or test weight shortfall that would be adequately covered under a corn or soybean policy can represent an uninsured loss for an oat producer pursuing premium markets. This asymmetry makes oat production a riskier enterprise than its agronomic profile would suggest, and it continues to deter participation by risk-averse or credit-constrained farmers.

2.2. Storage Preference and Structure Themes

Farmers expressed a strong preference for maintaining traceability and identity preservation through the storage phase of the value chain. Many were reluctant to co-mingle their oats with those of other producers, citing concerns about inadvertent variety mixing, different chemical use histories, or the introduction of off-spec grain into a lot they had carefully managed. This concern was shared even by farmers who acknowledged that most large commercial mills ultimately co-mingle incoming oats from multiple sources. Some growers described private co-mingling arrangements with a small, trusted circle of fellow producers as a workable middle ground.

On-farm storage was the preferred solution among farmers in the Green Acres network, primarily because it simplifies traceability and keeps management decisions in the farmer's hands. Many growers have made informal arrangements with neighbors to access unused bin capacity, reflecting both the scarcity of commercial storage options and the resourcefulness of the farming community. When Green Acres surveyed over one hundred farmers interested in partnering with the planned mill, only two indicated an immediate need for off-farm storage and both were smaller operations producing between 2,500 and 5,000 bushels annually. However, twenty growers expressed interest in additional storage as their production scales up, indicating latent demand that will grow with the industry.

The cooperative model attracted interest from farmers who valued democratic governance and the ability to shape the facility's policies directly, particularly if the cooperative were grower-led. Concerns were also raised, however: some farmers worried that a co-op could become "just another middleman," capturing margin rather than returning it. Experts noted that cooperative models tend to succeed when built on shared community values and democratic accountability and tend to fail when individual self-interest overrides collective decision-making. Federal and state tax treatment of cooperative structures was identified as a factor that will significantly influence which organizational model is ultimately most viable.

In terms of physical requirements, interviewees emphasized the importance of right-sizing storage to actual production volumes. A 10,000-bushel oat harvest sitting in a 50,000-bushel bin is economically unsound—the fixed costs of the larger facility cannot be justified by the throughput it receives. The ideal configuration identified in discussions with some interviewees was a facility with approximately fifty 5,000-bushel bins, allowing for identity preservation by farm, batch-level blending, and the flexibility to grow with increased production. Aeration, regular turning, and moisture and test weight monitoring were identified as essential operational requirements. A location in Northern Iowa or Southern Minnesota, ideally on or near a rail line, was broadly considered acceptable. Some participants also raised the possibility of repurposing an existing storage facility rather than building new, as a way to reduce capital costs and accelerate the timeline to operation.

2.3. Processing and Transportation Themes

Processing capacity in the Driftless Area is currently inadequate for the volumes that a revitalized regional oat industry would require. There are limited options for farmers to process oats immediately after harvest in the region, and the facilities that exist elsewhere have delivered inconsistent experiences. Green Acres' planned mill is expected to address much of this gap, but farmers will still depend on additional storage to store grain until delivery and additional storage will be needed outside of this mill to effectively scale up oat production

Green Acres has indicated that the mill will have its own limited storage capacity—six 35,000-bushel bins, representing approximately 13 days of throughput—and that farmers will receive specific delivery windows rather than being able to deliver on their own schedule.[30] This model places the storage burden squarely on farmers and further underscores the need for upstream storage solutions that allow growers to hold grain between harvest and their assigned delivery window. The mill's strong preference for identity-preserved oats, at least for premium product lines, adds another dimension to the storage design question: facilities serving the Green Acres supply chain will need to support lot-level traceability, not just bulk storage.

Transportation logistics present both a challenge and an opportunity. Some Driftless Area farmers already own or operate grain trucks and serve as informal haulers for neighbors—a distributed transportation network that, if formalized, could reduce per-bushel delivery costs for the broader community. The cleanliness of grain transport equipment was raised as a practical concern; cross-contamination between oat loads and commodity grain residues can compromise food-grade status, and some interviewees suggested that a new mill or storage cooperative could play a role in coordinating or certifying compliant transport options. Every additional handling step—each pass through an auger or elevator—adds cost and potential for grain damage or contamination, reinforcing the value of a well-designed storage and handling system that minimizes unnecessary movement of grain.

2.4. Financial Themes

The financial picture for Driftless Area oat farmers varies significantly depending on market access and production quality. At the commodity end of the market, national oat prices typically range between $3.25 and $3.50 per bushel[31] which are prices that most growers interviewed described as insufficient to make oat production financially attractive on its own terms, particularly when transportation and storage costs are factored in. At the food-grade end of the market, however, the economics change dramatically. Some farmers have received as much as $7.00 per bushel for certified food-grade oats; most growers stated that a price between $5.00 and $6.00 per bushel would make oat production genuinely viable for them. Green Acres' commitment to paying approximately $6.00 per bushel which will be made possible by restructuring the value chain to eliminate middlemen therefore represents a transformative opportunity if it can be reliably delivered.

[30] Landon Plagge, personal communication, February 19, 2026.
[31] USDA National Agricultural Statistics Service (NASS). *Crop Values 2024 Summary.* February 2025, p. 18 ("Oat Price per Bushel and Value of Production – States and United States: 2022–2024"). Available here. For up to date prices USDA NASS Quick Stats Available here (survey-crops-field crops-oats- price received).

The gap between commodity and food-grade pricing (roughly $1.50 to $3.50 per bushel) is significant enough that it changes the investment calculus for storage infrastructure entirely. At commodity prices, the margin available to cover storage costs is thin and any dedicated storage facility must operate at very high utilization to be financially viable. At food-grade prices, storage becomes a value-creating investment: it enables the blending and quality management that makes food-grade certification achievable, and it provides the schedule flexibility that premium buyers require. One farmer estimated current production at approximately 100 bushels per acre, with gross revenue of around $325 per acre at prevailing prices which is a figure that improves substantially when food-grade premiums apply and input costs are reduced through oat-clover rotation practices.

Current informal storage arrangements—typically bin rental from neighboring farmers—cost between $0.10 and $0.20 per bushel according to multiple growers. These arrangements are accessible and flexible but offer none of the cleaning, blending, aggregation, or quality management capabilities that a purpose-built facility would provide. The preferred financing model for a new shared storage facility, as described by several farmers, would begin with a substantial private capital investment—reducing the initial risk burden on growers—followed by a per-bushel management fee structure that scales with usage. This model aligns costs with throughput and avoids placing large, fixed obligations on farmers whose production volumes are still building toward commercial scale.

3. Ownership and Management Structures

The decision to organize and operate a shared grain storage facility requires considering a broad range of legal and fiscal issues including agricultural regulatory laws, entity formation laws, federal and multi-state income tax laws, environmental compliance requirements, and succession planning. A well-designed structure can reduce regulatory exposure, minimize state and federal tax burdens, facilitate access to agricultural lending, and provide durable governance arrangements that survive the departure, death, or financial distress of individual members. A poorly designed structure, by contrast, can expose operators to personal liability, inadvertently disqualify favorable tax elections, and create intractable governance disputes.

This chapter provides an overview of ownership and management structures that could be used to establish and operate shared oat grain storage facilities physically located in Minnesota. The analysis is based on Minnesota State Law, Minnesota Department of Agriculture (MDA) licensing requirements, federal tax law, and the multi-state regulatory considerations that apply when members, partners, or grain depositors reside in neighboring states—specifically North Dakota, South Dakota, Iowa, and Wisconsin.

This chapter is organized into three sections. Section 3.1 lays out the Minnesota regulatory foundation that is applicable to all shared grain storage facilities regardless of ownership structure, the principal entity formation statutes, and the general rules governing multi-state grain depositors. Section 3.2 provides a detailed analysis of eight ownership and management structures—ranging from sole proprietorship to agricultural cooperative. For each structure formation requirements, management risks, management opportunities, and tax implications are presented. Funding and financing opportunities are also explored for each ownership structure. The section concludes with a consolidated table summarizing each structure across all four dimensions and a summary table highlighting funding and financing opportunities. Section 3.3 addresses Minnesota-specific operational and regulatory considerations, including MDA record-keeping requirements, environmental compliance, property taxation, and occupational safety.

3.1. Minnesota Regulatory Foundation

Shared grain storage facilities in Minnesota are subject to a layered regulatory framework that applies regardless of the ownership or organizational structure. This framework includes state-level licensing under the MDA Grain Licensing Program, entity formation requirements governed by the Minnesota Secretary of State, and the jurisdictional rules that determine when accepting grain from neighboring-state producers triggers regulatory obligations in those states. This section provides an overview of these elements.

Minnesota Department of Agriculture Grain Licensing MDA Grain Licensing Program

The MDA Grain Licensing Program governs grain buyers and grain warehouses under Minnesota Statutes Chapters 223 (Grain Buyers Act) and 232 (Grain Storage Act).[32] Any entity that stores grain for compensation must hold a current MDA license. The principal requirements are summarized in Table 1.

Table 1. Minnesota Department of Agriculture Grain Licensing Requirements

Requirement	Description
Grain Buy & Store License	Required to operate a grain warehouse storing grain for compensation. License period runs July 1 through June 30, with annual renewal required by July 1.
New Licensee Bond	A $100,000 bond is required for all new licensees in their first three years of operation. The Commissioner may require additional bonding based on financial statements; bond size for grain buyers is scaled to annual purchase volume.
Annual MDA Inspection	Each licensed location is subject to an annual onsite examination covering audit of records, physical measurement of bin capacities, verification of stored grain quantities against obligations, insurance review, and facility safety assessment.
Federal Warehouse Exemption	Facilities holding a USDA-issued federal warehouse license under the United States Warehouse Act are exempt from the MDA annual inspection requirement. Federal licensing is practical for larger facilities (generally 500,000+ BU) and enables interstate warehouse receipts.
Grain Delivery Obligation	A licensed public grain warehouse must deliver stored grain within 48 hours of demand by the depositor.
Warehouse Receipts	Must be issued in duplicate, consecutively pre-numbered, and show the facility name and location. Grain in open storage for six or more months must have a receipt issued unless the depositor has signed a waiver.
Insurance Requirement	All grain in the warehouse must be fully insured against fire, windstorm, and extended coverage risks at all times. Evidence of insurance must be maintained with the MDA.
Tariff Posting	A statement of all storage charges must be posted conspicuously at the licensed location.
Daily Position Record	The operator must maintain a daily record of each kind of grain stored, including warehouse-owned grain, priced grain, and stored grain under warehouse receipts.

Table Sources: Minn. Stat. ch. 223 (2024) (Grain Buyers Act); Minn. Stat. ch. 232 (2024) (Grain Storage Act); Minnesota Department of Agriculture, Grain Licensing Program.

[32] Minn. Stat. ch. 223 (2024) (Grain Buyers Act), Minn. Legislature, Off. of the Revisor of Statutes, available here.

Key Statutes for Minnesota Entity Formation

Five primary statutory frameworks govern entity formation for Minnesota grain storage entities.

1. The Minnesota Revised Uniform Limited Liability Company Act, Minn. Stat. ch. 322C (2024), governs **LLCs** formed through Articles of Organization filed with the Minnesota Secretary of State; no annual renewal is required, though a Minnesota registered agent must be maintained.
2. **General and limited partnerships** are governed by the Minnesota Uniform Partnership Act (Minn. Stat. ch. 323A (2024)) and Uniform Limited Partnership Act (Minn. Stat. ch. 322A (2024)) respectively; a limited partnership must file a Certificate of Limited Partnership with the Secretary of State.
3. Traditional **agricultural cooperatives** are formed under Minn. Stat. ch. 308A (2024)—Minnesota Cooperative Law—which requires Articles of Incorporation filed with the Secretary of State, annual renewal by December 31, a board of at least five directors, and one-member-one-vote governance.
4. The **flexible cooperative** form under Minn. Stat. ch. 308B (2024) permits investor (non-patron) members and provides more flexible governance and capital structure than Minn. Stat. ch. 308A (2024), though investor membership may affect federal Section 521 qualification and requires careful tax counsel.
5. **Standard Minnesota stock corporations**, whether electing S-Corporation or operating as C-Corporation status, are formed under Minn. Stat. ch. 302A (2024), which requires annual renewal by December 31; failure to renew results in administrative dissolution.

Multi – State Ownership and Sourcing

While the primary focus of this analysis is on operations and operators based in the Minnesota Driftless Area, the possibility exists that ownership interest may span multiple states and that grain may be sourced and purchased from producers in multiple states. This has potential ramifications that must be considered. Facilities with any neighboring-state connection must navigate two distinct regulatory questions that require separate analysis. The first question is whether out-of-state ownership structure triggers tax and compliance obligations in the owners' home states. The answer is generally yes: for example, a North Dakota resident who holds a membership interest in a Minnesota LLC receives Minnesota-source income and must file a Minnesota nonresident return; Minnesota must also withhold state income tax on their distributive share.

The second question is whether the facility's grain procurement activities trigger licensing or registration obligations in neighboring states. The grain storage license follows the physical location of the facility, not the origin of the grain or the residence of the depositor.[33] A Minnesota-licensed grain warehouse may receive delivery of grain from North Dakota, South Dakota, Iowa, or Wisconsin producers without obtaining a warehouse license in those states, provided title does not transfer in the neighboring state and the entity does not maintain a physical business presence there, and the entity does not actively purchase grain at originating locations within those states.

This principle applies regardless of whether those producers are also owners of the entity. The threshold is crossed when a Minnesota operator actively solicits, negotiates, or closes grain purchase contracts within a neighboring state whether at the farm gate or at originating locations in that state. If the entity

[33] Minn. Stat. ch. 232 (2024) (Grain Storage Act), Minn. Legislature, Off. of the Revisor of Statutes, available here.

sends representatives into neighboring states to contract for grain purchases at the farm gate or at originating locations rather than merely receiving delivery at the Minnesota facility it may trigger grain buyer licensing requirements in those states. As a best practice, all neighboring-state producer storage agreements should specify that the contract is executed at and governed by Minnesota law, with delivery and title transfer occurring at the Minnesota facility.

3.2. Ownership and Management Structures

This section explores eight primary ownership structures available for a Minnesota-based shared oat grain storage facility. Each subsection addresses Minnesota-specific formation requirements, management risks, management opportunities, and tax implications. The section concludes with a comparative roll-up table summarizing all eight structures across each dimension.

Sole Proprietorship with Shared-Use Agreements

Under this structure, a single individual or farming entity holds the MDA Grain Buy & Store License and owns the facility outright. Other operators deliver grain under written shared-use or custom storage contracts; there is no co-ownership. This is the simplest structure available and the most appropriate starting point for a single Minnesota operator running a smaller facility with limited external participation. Because ownership cannot be shared under this structure, the multi-state ownership considerations addressed in subsequent structures do not apply here; any neighboring-state connection is limited to the depositor relationships governed by storage contracts.

Formation and Licensing

No entity filing is required with the Minnesota Secretary of State. The owner operates under their legal name or a registered assumed name (DBA) filed with the county. The MDA Grain Buy & Store License is issued in the sole owner's name, with annual renewal required by July 1 and a $100,000 bond required in the first three years, after which no bond is necessary. A written shared-use agreement with each grain depositor—including any neighboring-state producers delivering to the facility—should specify capacity allocation, moisture standards, drying charges, and liability for quality loss. If the owner is not purchasing grain for resale, no separate grain dealer license is required.

Management Risks

The central risk of the sole proprietorship is the concentration of unlimited personal liability in one individual. The owner bears all MDA regulatory, Occupational Safety and Health Administration (OSHA), environmental, and legal liability arising from facility operations. Minnesota farm operations face significant exposure under OSHA 29 CFR 1910.272 (grain handling) and confined space entry rules, and a neighboring-state depositor whose grain is damaged or shorted may pursue claims against the owner personally in Minnesota district court or through the MDA complaint process. The new licensee bond ceiling of $100,000 may not be sufficient to cover a catastrophic grain shortage or contamination event affecting multiple depositors simultaneously. Beyond liability, the concentration of all operational decisions in one person creates a continuity risk: illness or incapacity during a critical harvest or delivery window can be operationally catastrophic, and neighboring-state depositors under a storage agreement have no ownership stake and limited legal recourse if service is inadequate.

Management Opportunities

The sole proprietorship offers complete operational control without the need for partnership votes to change pricing, adjust storage terms, or establish new grain relationships. The owner retains all facility appreciation and may mortgage or refinance the facility independently, leveraging agricultural land values as collateral. The contract structure required for neighboring-state producers is straightforward: a well-drafted storage agreement is all that is legally required. The sole proprietorship is also the easiest structure from which to transition to a Limited Liability Corporation (LLC) structure or cooperative as the facility grows and additional partners are brought in, making it a logical starting point for a phased development strategy.

Tax Implications

Income and expenses flow directly to the owner's individual tax return without any entity-level tax, and net operating income is subject to self-employment tax. Standard federal and Minnesota depreciation rules apply to facility assets, and agricultural use classification of the land, where available, affects property tax rather than income tax treatment. A tax advisor should be consulted to evaluate the full scope of federal and Minnesota income tax obligations specific to the owner's individual circumstances.

Funding and Financing Opportunities

The capital structure for a sole proprietorship is simple. The owner contributes personal equity at formation and retains all net income or reinvests it directly in the facility. There are no formal equity mechanics, no membership units, no stock, and no contribution agreements because there is only one owner.

A sole proprietor finances the grain storage facility entirely through personal creditworthiness and individual assets. The primary debt vehicle is a conventional agricultural real estate loan secured by the facility land and improvements, typically provided through a local agricultural lender or a commercial bank with an agricultural portfolio. Because there is no entity structure, all borrowing is in the owner's individual name and appears on their personal balance sheet. Equipment financing through chattel mortgages or U.S. Department of Agriculture Farm Service Agency (USDA FSA) equipment loans may be available for dryers, conveyors, and handling systems independently of real estate financing.[34]

The USDA FSA offers two relevant programs for individual operators: FSA Direct Farm Ownership Loans for purchase or construction of facilities, and FSA Guaranteed Loans through approved lenders, which carry a federal guarantee that reduces lender risk and can improve terms for qualified borrowers. The Minnesota Rural Finance Authority (RFA) Ag BMP Loan Program and Beginning Farmer programs may also be available to individual operators who meet eligibility criteria.[35] The RFA programs typically offer below-market interest rates through a participation structure with local lenders and can be stacked with FSA guarantees.

U.S. Department of Agriculture (USDA) Rural Development Business & Industry (B&I) loan guarantees[36] and Value-Added Producer Grants (VAPG)[37] may be available for sole proprietors in eligible rural areas;

[34] Up to date information on FSA loans can be found here, here, and here.
[35] Minnesota Department of Agriculture (MDS) Ag BMP Page. Available here.
[36] USDA Business and Industry Loan Program. Available here.
[37] USDA Value- Added Producer Grants Program. Available here.

however, eligibility depends on specific project, location, and applicant criteria that require direct confirmation with the applicable Rural Development state office before relying on these programs in a financing plan.

The central financing constraint of the sole proprietorship is concentration: the owner's borrowing capacity is limited to their individual balance sheet, and lenders evaluating a large facility construction loan—particularly in the range needed for a 500,000-plus bushel facility—may find individual creditworthiness insufficient without substantial existing land equity as collateral.

Tenancy in Common

Under a tenancy in common, two or more parties each hold an undivided fractional interest in the Minnesota facility. A written Tenancy in Common (TIC) Agreement governs usage, cost-sharing, and exit. No separate entity is formed, and each co-tenant's interest is a real property interest subject to Minnesota's real property laws. This structure is particularly common among farm families where a facility is inherited by siblings or where neighboring farm operations collectively invest in a new facility. The TIC is one of the few structures that can include neighboring-state co-tenants without any entity formation, but it does result in additional legal complexity.

Formation and Licensing

No Minnesota Secretary of State filing is required. The MDA Grain Buy & Store License should be issued in all co-tenants' names or in the name of a designated managing co-tenant as operator of record. A written TIC Agreement should be executed and recorded in the county where the facility is located. Any co-tenant may seek a partition action in Minnesota district court if disputes arise. A well-drafted TIC Agreement should address this risk through buy-out provisions. When neighboring-state parties hold a co-tenancy interest in Minnesota real property, that interest is subject to Minnesota real property law and, on the co-tenant's death, may require probate proceedings in both Minnesota and the co-tenant's home state simultaneously.

Management Risks

The most significant governance risk is that Minnesota's partition statute (Minn. Stat. ch. 558 (2024)) permits any co-tenant to force a sale of the facility without a veto right from the others; a single disagreeing co-tenant from any state may initiate partition proceedings in Minnesota district court. The death of a Minnesota co-tenant passes that interest through the decedent's estate, but the death of an out-of-state co-tenant may trigger probate in their home state for their Minnesota real property interest, potentially involving North Dakota, South Dakota, Iowa, or Wisconsin probate courts simultaneously. Joint and several liability means each co-tenant may be pursued for the facility's full obligations in Minnesota courts. Additionally, if any co-tenant becomes subject to a judgment lien in their home state, that lien may attach to their TIC interest in the Minnesota facility, a material risk when neighboring-state co-tenants carry significant farm debt. The absence of an entity-level bank account or credit facility means all financial decisions require informal coordination.

Management Opportunities

The tenancy in common carries no formation cost and no annual state filing fees, making it well-suited for small groups of farm families building a first shared facility as well as small groups of producers

across state lines who want to share a facility without the overhead of an entity like an LLC or a formal partnership. Each co-tenant retains separate estate planning control over their interest, which is important for Minnesota farm succession planning where land and storage assets are intertwined. Proportional tax reporting means each party manages their own state tax obligations without entity-level administration. A management agreement can designate one co-tenant as operating manager, creating a de facto management structure without the need for a formal entity. The structure also accommodates neighboring-state participants readily: a North Dakota or South Dakota co-tenant simply holds an undivided interest in Minnesota real property.

Tax Implications

The TIC is not a separate tax entity; each co-tenant reports their proportional share of storage income and expenses on their own individual return. Neighboring-state co-tenants receive Minnesota-source income and will generally be subject to Minnesota income tax on their share, with credits typically available in their home states for taxes paid to Minnesota to mitigate double taxation. If co-tenants are actively managing operations and sharing profits, there is a risk that the Internal Revenue Service (IRS) may recharacterize the arrangement as a partnership for tax purposes, which would result in significant additional compliance implications. As with the sole proprietorship, a tax advisor should be consulted to evaluate the full scope of federal and Minnesota income tax obligations specific to the circumstances.

Funding and Financing Opportunities

Financing a TIC facility is structurally more complex than any entity-based structure because lenders must underwrite undivided fractional interests rather than a clean entity-level pledge of assets. A lender making a construction loan secured by TIC property holds a mortgage on each co-tenant's undivided share and faces partition risk where any co-tenant could force a court-ordered sale of the whole property. Some agricultural lenders decline TIC collateral entirely; others require cross-guarantees from all co-tenants or a blanket mortgage covering all interests simultaneously.

Where lenders are willing to extend credit, the most common structure is a joint loan with all co-tenants as co-borrowers, each personally liable for the full obligation. This effectively treats the TIC as a joint venture for lending purposes and allows the collective creditworthiness of the co-tenants (which may be strong if all are active farm operators with substantial land equity) to support the facility loan. Farm Credit System lenders, USDA FSA Guaranteed Loans, and conventional agricultural lenders may all be willing to lend on this basis.

The Minnesota Rural Finance Authority (RFA) offers loan programs for qualifying individuals that can reduce the effective interest rate on agricultural real estate and improvement loans.[38] Individual co-tenants may each be eligible for RFA participation on their proportional share of the financing, though RFA program eligibility and per-borrower caps should be confirmed directly with the RFA.

Equity mechanics in a TIC are informal by nature. Each co-tenant contributes capital in proportion to their ownership share as specified in the TIC Agreement. There are no units, interests, or certificates—each co-tenant holds a fractional real property interest. Additional capital calls require unanimous or majority consent as specified in the TIC Agreement, and a co-tenant who cannot meet a capital call may

[38] Minnesota Department of Agriculture Rural Finance Authority. Available here.

face dilution of their ownership share if the Agreement provides for it or it may trigger a buy-out or partition proceeding if it does not.

USDA B&I and VAPG programs may be available for TIC-owned facilities in eligible rural areas; eligibility for entity-level programs where the TIC is not a formal legal entity requires direct confirmation with the applicable Rural Development state office.

General Partnership

Under Minnesota's Uniform Partnership Act (Minn. Stat. ch. 323A (2024)) a general partnership is where two or more partners share active management and all profits, losses, and liabilities of the grain storage facility. Partners may be Minnesota residents, neighboring-state residents, or entities formed in any state. The structure provides a flexible, multi-party management framework without the formation costs of an LLC, but results in unlimited personal liability for every general partner.

Formation and Licensing

No state filing is required to form a general partnership under Minn. Stat. ch. 323A (2024), though registration with the Minnesota Secretary of State is recommended for notice purposes and to establish an official record. The MDA Grain Buy & Store License should be held in the partnership's name, with each general partner potentially bearing joint responsibility for MDA compliance obligations. A form M3 (Minnesota Partnership Return) must be filed annually. Minnesota imposes a minimum fee on partnerships ranging from $0 to $9,020 based on the sum of Minnesota property, payroll, and sales, applicable each year regardless of profitability. When neighboring-state residents are general partners, the partnership must address Minnesota nonresident withholding obligations from the outset.

Management Risks

Every general partner bears unlimited personal liability for all partnership obligations, including MDA regulatory actions, OSHA penalties, environmental liabilities, and tort claims arising at the Minnesota facility, regardless of their state of residence. Under Minn. Stat. ch. 323A (2024), any general partner may bind the partnership in contracts, which means that an out-of-state partner entering an unauthorized purchase commitment can legally obligate the Minnesota facility. Dissociation of a partner as a result of death, bankruptcy, or voluntary withdrawal triggers dissolution rights under Minnesota default rules unless the Partnership Agreement specifies continuity provisions. Neighboring-state general partners carrying significant farm debt present a creditor-access risk, as general partner creditors may pursue partnership assets beyond a charging order and a North Dakota or Iowa judgment against a general partner can be filed in Minnesota courts and enforced against partnership assets.

Management Opportunities

The general partnership structure allows partners from multiple states to pool diverse grain production and marketing experience and perspectives, potentially enabling better collective oat marketing than any single operator could achieve. Special allocations in the Partnership Agreement, permitted under Internal Revenue Code (IRC) section 704(b), can structure preferential returns for capital-contributing Minnesota partners relative to service-contributing out-of-state partners, aligning economic incentives with actual contributions. The collective creditworthiness of multiple general partners from Minnesota, North Dakota, and Iowa with strong balance sheets could potentially support larger USDA Business &

Industry or FSA guaranteed loans for facilities than any single operator could access. Formation costs remain lower than those of a Limited Partnership or Limited Liability Corporation while preserving a robust multi-party management structure.

Tax Implications

A general partnership is a pass-through entity; profits and losses flow to each partner's individual return in proportion to their interest, and the partnership itself pays no entity-level income tax. Active general partners are subject to self-employment tax on their distributive share of operating income, and the partnership must address Minnesota income tax withholding obligations for any nonresident partners. Partners from neighboring states will generally be subject to Minnesota income tax on their Minnesota-source income, and tax counsel should be engaged to structure withholding and filing obligations from the outset.

Funding and Financing Opportunities

A general partnership can borrow in the partnership's name with all general partners personally liable, which both strengthens and complicates the financing picture. Agricultural lenders including Farm Credit System institutions, commercial agricultural banks, and USDA FSA Guaranteed Loan lenders will underwrite a general partnership loan by evaluating the collective balance sheet and cash flow of all general partners. A partnership of active Minnesota and neighboring-state farm operators with strong individual balance sheets can often access larger loan amounts and better terms than any single partner could obtain individually.

USDA FSA Guaranteed Loans are available to partnerships and can provide federal guarantee coverage that substantially reduces lender risk on large facility construction loans. The Minnesota RFA offers participation loan programs available to partnerships for agricultural improvements; RFA participation typically provides a portion of the loan at a reduced interest rate funded through the RFA, with the balance at the lender's market rate, reducing the effective blended rate for the borrower.

Equity mechanics are governed by the Partnership Agreement. Each partner's capital contribution is tracked in a capital account, and the Agreement specifies each partner's contribution obligation, timing, and the consequences of a failure to contribute. Additional capital needs are addressed through capital calls at the consent level specified in the Agreement, and partners may also make loans to the partnership that are treated as partnership debt and repaid before equity distributions.

The primary financing constraint of the general partnership is that lenders with a claim against the partnership also hold claims against each general partner individually. A neighboring-state general partner carrying significant personal farm debt may constrain the partnership's borrowing capacity if lenders factor existing personal obligations into their underwriting.

USDA B&I and VAPG programs may be available for partnership-owned facilities in eligible rural areas; eligibility requires direct confirmation with the applicable Rural Development state office.

Limited Partnership

A Minnesota Limited Partnership (LP) consists of one or more General Partners (GP) with full management authority and unlimited personal liability, and one or more Limited Partners who contribute capital with liability limited to their investment. The structure is governed by Minn. Stat. ch.

322A (2024) and is particularly well suited to an operator-plus-investor model in which active Minnesota managers seek capital from investors without ceding operational control.

Formation and Licensing

A Certificate of Limited Partnership must be filed with the Minnesota Secretary of State, and the LP Agreement governs all material terms. Minnesota allows considerable flexibility in LP Agreement drafting, including priority returns, differentiated profit allocations, and management delegation. The MDA license should be held by the general partner or in the LP's name with the general partner identified as managing operator. Annual Form M3 filing is required, and the Minnesota minimum fee applies at the LP level. If the LP is organized with a Minnesota LLC as the general partner under Minn. Stat. ch. 322C (2024), the operator-members of the GP entity retain personal liability protection while the GP entity maintains operational control over the LP.

Management Risks

The central structural risk is that the general partner, whether an individual or entity, bears unlimited personal liability. If a Minnesota-registered LLC is not used as the general partner, individual operators are fully exposed to facility liabilities, OSHA penalties, and grain legal liability claims. If neighboring-state limited partners participate in management decisions, they risk losing limited liability protection under Minnesota's control rule. LP agreements must explicitly prohibit LP management participation to preserve this protection. Investor LPs from outside Minnesota may have expectations for quarterly distributions or redemption timelines that conflict with facility capital reinvestment needs, and simultaneous exit requests from multiple neighboring-state LP investors can create liquidity pressure without a clear buy-sell mechanism. If LP interests are offered to more than a limited number of investors, the offering may trigger state securities registration requirements in Minnesota and in the LPs' home states. For this reason, legal and tax experts should be engaged before structuring any multi-state LP offering.

Management Opportunities

The limited partnership structure allows Minnesota operators to raise capital from neighboring-state farm investors without giving up operational control. LP investors from South Dakota benefit from the absence of individual income tax in that state, paying only Minnesota tax on their LP income, which makes the investment financially attractive relative to other pass-through structures. Preferred return structures can give LP investors a priority return on stored grain service, creating a compelling proposition for cross-border participation. The LP structure is also excellent for transferring grain storage facility ownership across generations. Retiring Minnesota farm operators can hold LP interests while active management passes to the next generation as general partner members. Farm Credit System and USDA Business & Industry guaranteed loans are available to LP entities for major facility construction and expansion.

Tax Implications

The limited partnership is a pass-through entity; profits and losses flow to partners' individual returns, and the partnership itself pays no entity-level income tax. Active general partners are subject to self-employment tax on their distributive share, while limited partners' shares are generally treated as passive income—a distinction that has both self-employment tax and loss-limitation implications that

should be evaluated with qualified tax counsel. Neighboring-state limited partners will be subject to Minnesota income tax on their Minnesota-source distributive income, and the partnership must address withholding obligations accordingly.

Funding and Financing Opportunities

Of any non-cooperative structure, the limited partnership structure offers the most flexible mechanism for raising private capital. By separating general partner management from limited partner investment, the LP can raise construction and expansion capital from neighboring-state farm investors, family members, or agricultural investors without requiring them to participate in operations. LP interests can be structured with preferred returns—for example, a priority annual distribution to LP investors before any general partner distributions—making them attractive to capital contributors who want exposure to grain storage returns without operational involvement.

Conventional debt financing follows the general partner's creditworthiness. Most agricultural lenders will require the general partner—whether an individual or a Minn. Stat. ch. 322C (2024) LLC serving as GP—to personally guarantee the LP's debt. Farm Credit System lenders, commercial agricultural banks, and USDA FSA Guaranteed Loan programs are all available to LP entities, and the LP's combined equity base from LP capital contributions can support larger loan amounts than any single operator could access alone.

Minnesota RFA participation programs are also available to LP entities for qualifying agricultural improvement projects. In these cases, the RFA evaluates the entity and its general partner rather than individual limited partners for program eligibility.

LP equity mechanics are governed by the LP Agreement. Limited partners contribute capital at formation or in staged tranches tied to construction milestones, with each contribution recorded in their capital account. The LP Agreement specifies a waterfall for distributions. Typically, there is a preferred return to LPs first, then return of LP capital, then residual sharing between GPs and LPs in agreed proportions. Delivery rights that are structured as a contractual right of each LP to deliver a specified quantity of oats to the facility at set storage rates can be a compelling supplement to or substitute for cash equity contributions, aligning LP investment with ongoing facility utilization.

If LP interests are to be offered to more than a limited number of investors across state lines, the offering may trigger securities registration requirements in Minnesota and in the LPs' home states. So again, legal counsel familiar with agricultural securities exemptions should be engaged before structuring any effort to raise capital from multiple states.

USDA B&I and VAPG programs may be available for LP-owned facilities in eligible rural areas; eligibility requires direct confirmation with the applicable Rural Development state office.

Multi-Member LLC (Minn. Stat. ch. 322C (2024))

A Multi-Member LLC organized under Minn. Stat. ch. 322C (2024) is the most widely recommended structure for shared oat grain storage facilities of 500,000 bushels and above. It combines personal liability protection for all members, maximum Operating Agreement flexibility, favorable pass-through tax treatment, and has broad familiarity among Minnesota agricultural lenders. Minn. Stat. ch. 322C (2024) provides an updated statutory framework closely aligned with the national Revised Uniform LLC Act. Farm Credit, AgStar, Compeer Financial, and USDA Business & Industry programs are all comfortable

with LLC-owned grain storage, and the Operating Agreement can address all critical concerns—proportional grain handling rights, capacity allocation, neighboring-state member governance, buyout of departing members, and continuation on death without statutory dissolution.

Formation and Licensing

Articles of Organization are filed with the Minnesota Secretary of State (online, typically processed within one to five business days). A registered agent in Minnesota is required, but no annual renewal filing is required for Minnesota LLCs, which is a meaningful advantage over corporations, which face administrative dissolution if the annual renewal is missed. A comprehensive Operating Agreement should be executed at the time of formation. Minnesota Statute (ch. 322C (2024)) provides a default-rule statute, and the Operating Agreement can and should customize most governance provisions. The MDA Grain Buy & Store License is issued to the LLC as the operating entity. Form M3 is filed annually (or Form M8 if an S-Corp election is made).

Management Risks

Liability protection can be lost if members use LLC funds for personal expenses, fail to maintain a separate bank account, or consistently ignore Operating Agreement governance requirements. Without a robust buyout provision, the exit of a founding member can force a dissolution demand or a dispute over fair value, which is particularly disruptive during harvest season. Ambiguity in a manager-managed LLC's authority to execute contracts on behalf of out-of-state members can also generate disputes; the Operating Agreement must define manager authority with precision.

Management Opportunities

The Operating Agreement can create separate classes of membership with each having different governance rights and economic interests. For example, the LLC could designate a class of Storage Members that might be used for neighboring-state producers who use capacity and a class of Capital Members that would include investors contributing construction funding. A manager-managed structure allows designation of a professional grain elevator manager or a managing member from the most operationally experienced party without requiring all members' day-to-day involvement. Minnesota LLC interests can be transferred to family members, trusts, or estates without triggering dissolution, supporting farm succession planning for both Minnesota and neighboring-state member families. The LLC is also the best structure for managing complex multi-state member relationships. The Operating Agreement can specify arbitration in Minnesota, Minnesota governing law, and buyout valuation formulas applicable regardless of a member's home state.

Tax Implications

A multi-member LLC is treated as a partnership for federal and Minnesota income tax purposes by default, with profits and losses flowing through to members' individual returns and no entity-level income tax. The LLC may alternatively elect to be taxed as a corporation, and the choice among available tax treatments—together with the self-employment tax implications for managing members and Minnesota withholding obligations for nonresident members warrants early consultation with a tax advisor. Minnesota does not conform to the federal Qualified Business Income deduction under IRC section 199A, meaning that deduction is available on federal returns only.

Funding and Financing Opportunities

The Multi-Member LLC is the structure most consistently accepted by Minnesota agricultural lenders for grain storage facility financing and in most cases offers the broadest combination of debt access and equity flexibility of any non-cooperative structure. Farm Credit System lenders like Compeer Financial[39] routinely finance construction, equipment, and working capital for LLC entities. Commercial agricultural banks and USDA FSA Guaranteed Loan programs are similarly available.

The Operating Agreement can create capital contribution mechanics tailored to the specific mix of members. A common approach designates two classes: Capital Members who contribute cash equity and receive a preferred distribution return before operating distributions, and Storage Members—neighboring-state producers who contribute delivery commitments rather than cash and receive proportional storage capacity rights. This structure allows the LLC to attract construction capital from investors while also locking in grain volume commitments from producers, simultaneously strengthening both the balance sheet and the revenue base that lenders evaluate in underwriting.

Each member's capital contribution is recorded in a capital account under the Operating Agreement. The Agreement specifies contribution obligations, call procedures, and the consequences of a member failing to meet a capital call, typically dilution of the non-contributing member's interest or a mandatory buy-out at a formula price. The LLC may also borrow from members on terms specified in the Operating Agreement, treating member loans as senior to equity distributions but junior to third-party lenders.

The Minnesota RFA offers participation loan programs available to LLC entities for qualifying agricultural improvement projects, reducing effective borrowing costs through a blended-rate structure with a participating local lender. USDA FSA Guaranteed Loans are available to LLC entities where the members meet FSA eligibility requirements.

USDA B&I and VAPG programs may be available for LLC-owned facilities in eligible rural areas; eligibility depends on project, location, and member criteria that require direct confirmation with the applicable Rural Development state office before including these sources in a financing plan.

S-Corporation

A Minnesota S-Corporation is formed as a standard corporation under Minn. Stat. ch. 302A (2024) and then elects S-Corp status with the IRS via Form 2553. Minnesota conforms to the federal S-Corp election for state income tax purposes. The primary advantage of the S-Corp structure, relative to a partnership-taxed LLC is the ability to reduce self-employment tax through a salary-and-distribution split for active shareholder-employees; this advantage, however, comes with strict federal eligibility requirements and governance formality obligations that create meaningful multi-state risks.

Formation and Licensing

Articles of Incorporation are filed with the Minnesota Secretary of State, and annual renewal is required by December 31. Failure to renew results in administrative dissolution. The S-Corp election is made with the IRS via Form 2553, and no separate Minnesota election is required. Federal eligibility requirements are strict: a maximum of 100 shareholders, all of whom must be U.S. citizens or permanent residents; only one class of stock; and no partnerships, LLCs, or corporations as shareholders. This last requirement

[39] Compeer Financial. Farmland Loans. Available here.

poses a particular multi-state risk: if a neighboring-state member's farming operation is held in an LLC or partnership—as is common across Minnesota and its neighboring states—that entity cannot hold S-Corp stock, and any inadvertent transfer to such an entity terminates S-Corp status.

Management Risks

The termination risk is the most significant management risk associated with the S-Corp structure. A single ineligible shareholder (for example including a North Dakota LLC that acquires a share) terminates S-Corp status retroactively for the entire tax year, converting the entity to a C-Corp for that period with no grace period in most circumstances. The one-class-of-stock rule prevents the creation of differentiated returns for Minnesota operator-shareholders versus neighboring-state investor-shareholders, limiting the capital structure flexibility that the LLC and LP structures provide. Careful attention must also be paid to S-Corp salary distributions in agricultural operations and state payroll tax obligations apply to salaries paid to shareholder-employees. Minn. Stat. ch. 302A (2024) requires strict corporate governance, including annual meetings, board resolutions, and a stock ledger; failure to maintain these formalities risks piercing claims in Minnesota district courts, whereby the court would disregard the separation between the business and individual owners and hold owners personally responsible for the debts or actions of the business. S-Corp stock generally cannot be held by most trusts or foreign entities, which risks creating complications for neighboring-state farm families that use revocable trusts or family limited partnerships for estate planning.

Management Opportunities

The S-Corps' primary operational advantage is self-employment tax savings for active shareholder-employees. For example, at a large oat storage facility active members would only pay FICA on their salary, not on S-Corp distributions compared to partnership treatment. Also, Minnesota individual income tax applies only to each shareholder's K-1 income. In addition, no Minnesota entity-level corporate franchise tax applies if S-Corp status is properly maintained. A Board of Directors sets policy while officers manage operations, creating defined governance roles suitable for facilities where Minnesota and neighboring-state shareholders want structured accountability. Health and retirement benefits are deductible as corporate expenses for W-2 shareholder-employees.

Tax Implications

An S-Corporation is a pass-through entity with no entity-level federal income tax with profits and losses flowing to shareholders' individual returns. The primary tax planning consideration is the appropriate allocation of income between reasonable compensation and distributions for active shareholder-employees, which has payroll and self-employment tax consequences that should be evaluated with a qualified tax advisor. Shareholders from neighboring states will be subject to Minnesota income tax on their Minnesota-source income, and the corporation must address withholding obligations accordingly.

Funding and Financing Opportunities

An S-Corporation can borrow in the corporation's name through conventional agricultural lending channels, Small Business Association (SBA)-guaranteed loans, and USDA FSA Guaranteed Loan programs. Agricultural lenders evaluate the S-Corp on its entity-level financial statements combined with shareholder guarantees. In practice, most lenders will require personal guarantees from the principal shareholder-employees.

Small Business Administration (SBA) 7(a) loans and SBA 504 loans[40] for fixed assets including real estate and equipment are available to S-Corporations in eligible industries and can be particularly useful for facility construction and major equipment purchases. USDA FSA Guaranteed Loans are also available to S-Corporations where the shareholders meet FSA eligibility requirements. The Minnesota RFA participation programs are available to S-Corporation entities for qualifying agricultural improvement projects.

Equity mechanics in the S-Corp are constrained by the one-class-of-stock requirement, which prevents the corporation from issuing preferred stock or creating differentiated economic rights to attract outside investors at different return thresholds. All shareholders hold the same class of stock with identical economic rights per share, meaning that a new investor contributing construction capital receives the same per-share rights as a founding operator—which can make outside equity difficult to price attractively. Additional equity is raised by issuing new shares at a board-determined price, subject to the 100-shareholder cap and the restriction on entity shareholders.

USDA B&I and VAPG programs may be available for S-Corporation facilities in eligible rural areas; eligibility requires direct confirmation with the applicable Rural Development state office.

C-Corporation

A C-Corporation is taxed as an independent entity under Minn. Stat. ch. 302A (2024) and is subject to both federal (21 percent) and Minnesota franchise taxes. The double-taxation burden makes the C-Corp generally unfavorable for shared grain storage, and it is discussed here primarily for completeness and for the narrow circumstances in which it may be the appropriate vehicle.

Formation and Licensing

Articles of Incorporation are filed with the Minnesota Secretary of State, and annual renewal is required by December 31. Minnesota corporate franchise tax applies at 9.8 percent of net income allocated to Minnesota, in addition to the 21 percent federal corporate tax rate, creating a combined rate exceeding 30 percent at both levels before any dividend distribution. There are no restrictions on shareholder type or number; institutional investors, out-of-state corporations, and trusts may all hold stock.

Management Risks

The fundamental economic risk is double taxation. After the combined corporate-level tax burden exceeding 30 percent, shareholders pay individual income tax on dividends, and the combined effective tax burden on distributed corporate earnings can exceed 50 percent. The Minnesota franchise tax applies annually on Minnesota net income which can constitute a meaningful ongoing cost even in years of modest profitability. Liquidating a C-Corp grain storage facility triggers a double-tax event. Corporate gain is recognized on the asset sale, and shareholders are then taxed on liquidating distributions, which would be particularly costly for Minnesota-sited facilities where real property values have appreciated substantially. Minn. Stat. ch. 302A (2024) imposes the highest governance burden of any structure. Annual Secretary of State renewal, board meetings, officer elections, and stock records are all required to maintain good standing.

[40] U.S. Small Business Administration. Funding Programs. Available here.

Management Opportunities

The absence of restrictions on shareholder type or number makes the C-Corp the only structure that can receive investment from institutional capital sources—agriculture-focused funds, grain trader investment arms, or Minnesota-based Small Business Investment Company programs offered by the Minnesota Department of Employment and Economic Development, the Small Business Development Centers or through the University of Minnesota's State Small Business Credit Initiative.[41] Minnesota C-Corps with operations across Minnesota and neighboring states can use apportionment formulas to allocate income across states, potentially reducing the effective state tax burden. Retained earnings taxed at the 21 percent federal rate may be advantageous relative to pass-through treatment for shareholders in the 37 percent federal bracket, though the Minnesota franchise tax increases the effective corporate rate to approximately 30 percent. The C-Corp structure is also the most familiar to institutional buyers and their counsel, making it the best-positioned vehicle for a future strategic sale to a regional cooperative, grain trader, or national agribusiness.

Tax Implications

The C-Corporation is subject to income tax at the entity level, and shareholders are taxed again when earnings are distributed as dividends. This structure is commonly referred to as double taxation, and it makes the C-Corp generally less tax-efficient than pass-through structures for most grain storage operations. This combined tax burden is a significant consideration in the decision to use a C-Corp and should be carefully weighed against any financing or strategic advantages the structure provides. Qualified tax counsel should be engaged before selecting this form.

Funding and Financing Opportunities

The C-Corporation's primary financing advantage over every other structure is its unrestricted ability to issue multiple classes of stock—common stock, preferred stock, convertible notes, and warrants—to a fully unlimited range of investors, including institutional funds, corporate investors, and non-U.S. entities. This makes the C-Corp the appropriate vehicle when a grain storage project seeks institutional equity capital that cannot participate in an LLC, LP, S-Corp, or cooperative.

Conventional debt financing follows the corporate balance sheet. Agricultural lenders, SBA 7(a) and 504 programs, commercial banks, and USDA FSA Guaranteed Loans are all available to C-Corporations. The C-Corp can also issue corporate bonds or notes to private lenders or investors.

Equity mechanics in the C-Corp are the most sophisticated of any structure. Preferred stock can carry a fixed dividend, liquidation preference, and anti-dilution protections that make it attractive to institutional investors while preserving common shareholder upside. Convertible notes—debt instruments that convert to equity at a future financing round—can bridge early-stage capital needs without immediately fixing a valuation, and staged equity rounds can be tied to construction milestones.

USDA B&I and VAPG programs may be available for C-Corporation facilities in eligible rural areas; eligibility requires direct confirmation with the applicable Rural Development state office.

[41] Minnesota Department of Employment and Economic Development, SBA Finance Programs here, and Small Business Development Centers here, Minnesota SSBCI Venture Capital Programs, here.

However, the double-taxation cost of the C-Corp structure should be weighed carefully against any financing advantages when evaluating it against the Multi-Member LLC, which offers comparable debt access with significantly better tax treatment for most grain storage projects

Agricultural Cooperatives—Minnesota Chapters 308A and 308B

The economic foundation of an agricultural cooperative is the patronage system, which is what distinguishes a cooperative from every other business structure discussed in this chapter. Rather than distributing profits based on ownership share as an LLC or corporation would, a cooperative distributes profits based on how much each member uses the cooperative. In a grain storage cooperative, a member who delivers 50,000 bushels of oats in a given year receives a larger share of the cooperative's net income than a member who delivers 10,000 bushels, regardless of whether both hold equal membership interests. This distribution is called a patronage dividend, and it is calculated as a percentage of each member's business volume with the cooperative for that fiscal year.

Federal tax rules require that at least 20 percent of any patronage dividend be paid in cash. The remainder is typically retained by the cooperative and credited to the member's equity account as a patronage retain. Over time, patronage retains accumulate in each member's equity account and represent their growing stake in the cooperative's assets. For a new facility, patronage retains are not just a tax planning tool: they are the primary mechanism through which the cooperative builds the equity base needed to service its construction debt and qualify for favorable lender financing terms.

Minnesota has one of the strongest agricultural cooperative traditions in the United States, and the state's legal and financial infrastructure provides advantages to cooperative grain storage that are not available through any other structure. [3] Two statutes govern Minnesota agricultural cooperatives. Minn. Stat. ch. 308A (2024) (Traditional Cooperative) requires one-member-one-vote governance, does not allow for investor (non-patron) members, and is highly suitable for facilities where all members are active producers and the facility is structured primarily for member benefit. Minn. Stat. ch. 308B (2024) (Flexible Cooperative / New Generation Cooperative model) allows investor (non-patron) members alongside patron members and provides greater flexibility in governance, capital structure, and profit allocation. However, significant non-patron membership may disqualify the cooperative from Subchapter T preferred tax treatment or federal Section 521 exempt status, and careful tax counsel is required.

Formation and Licensing

In order to form a cooperative, articles of Incorporation are filed with the Minnesota Secretary of State. There is an annual renewal requirement by December 31. It is a hard compliance deadline and failure results in involuntary dissolution by the Secretary of State, which can create MDA licensing complications and trigger lender covenant breaches. A minimum of five directors is required on the board under Minn. Stat. ch. 308A (2024), and directors must generally be members. The MDA Grain Buy & Store License is held in the cooperative's corporate name. Federal Section 521 Exempt Farmers' Cooperative status may be available, providing additional Subchapter T benefits, if the cooperative limits non-member business and meets patronage payment requirements. Minn. Stat. ch. 308B (2024) cooperatives can accept investor (non-patron) members from neighboring states without violating the cooperative structure, making them attractive for multi-state member participation.

Management Risks

Minn. Stat. ch. 308A (2024)'s has a one-member-one-vote requirement which means that a single small out-of-state producer member has the same governance vote as the largest Minnesota producer contributing the most capital. This can frustrate large-volume members if facility policy decisions go against their interests. The December 31 annual renewal deadline is an operational risk because missing it results in automatic Secretary of State dissolution, MDA licensing complications, and potential lender covenant breaches. Undercapitalization also presents a structural risk at larger facility sizes. Equity accumulation through patronage retains can be slow, and facilities in the 2–3.5 million bushel range typically require external debt financing from CoBank or USDA in addition to member equity contributions. If significant non-patron membership is used under Minn. Stat. ch. 308B (2024) to raise capital from neighboring-state investors, the cooperative may fail to qualify for Subchapter T preferred treatment, subjecting income attributable to non-patron business to standard C-Corp double taxation. Equity redemption policies must be clearly specified in the bylaws because poorly defined redemption provisions can create legal disputes with out-of-state member estates.

Management Opportunities

The patronage dividend structure perfectly aligns Minnesota and neighboring-state member incentives. Put simply, members who deliver more oats receive more patronage, eliminating conflict between high-volume producers and lower-volume members. As a Farm Credit System bank with a major Minnesota presence, CoBank specifically funds agricultural cooperatives, often at rates and terms superior to commercial lenders for qualifying entities. USDA Rural Development Business & Industry loan guarantees (up to $25 million) are also available for cooperative grain storage infrastructure, and Minnesota Rural Development offices have established experience processing agricultural cooperative loans. Minn. Stat. ch. 308B (2024) allows producer-members from Minnesota, North Dakota, South Dakota, Iowa, and Wisconsin to hold patron memberships. It also permits investment-only non-patron memberships for outside capital which provides a hybrid approach to multi-state participation. Democratic governance builds genuine commitment from multi-state producer members, who have a direct voice in storage rates, capacity expansion, and service quality. Specialty oat marketing is a particular opportunity. A producer-owned cooperative has the potential to support establishing identity-preserved oat programs that may be attractive to processors.

Tax Implications

Agricultural cooperatives are governed by a specialized federal tax framework that allows qualified patronage dividends paid to members to be deducted at the cooperative level, substantially reducing or eliminating entity-level federal income tax on amounts returned to members based on their patronage. Minnesota imposes its corporate franchise tax on cooperative net income not distributed as patronage dividends. The tax treatment of patronage income received by members, including neighboring-state members, requires careful planning with a tax advisor experienced in cooperative taxation. Cooperatives qualifying for federal exempt status under IRC section 521 gain additional tax benefits that further reinforce the cooperative form's tax efficiency for producer-owned grain storage.

Funding and Financing Opportunities

Because of decades of federal and state policy designed to support cooperative grain infrastructure agricultural cooperatives have access to a deeper and more favorable set of financing programs than any other ownership structure for grain storage. This financing advantage is a primary reason the cooperative form remains prevalent in Minnesota's grain sector.

CoBank, a Farm Credit System bank with a major Minnesota presence, specifically finances agricultural cooperatives and is typically the first lender evaluated for cooperative grain storage projects. CoBank and the Farm Credit System offer long-term real estate loans, equipment loans, and revolving operating lines at rates and terms that often cannot be matched by commercial lenders for qualifying cooperative borrowers.

USDA Rural Development Business & Industry (B&I) loan guarantees may also be available to cooperative entities for qualifying projects in eligible rural areas, and USDA Value-Added Producer Grants (VAPG) may be available for working capital and planning grants related to value-added grain storage and processing activities. Both programs require direct confirmation of eligibility with the applicable USDA Rural Development state office. The Minnesota RFA offers cooperative development financing programs, and the Minnesota Department of Agriculture's Agricultural Growth, Research, and Innovation (AGRI) Program provides grants and loans for cooperative agricultural projects meeting specified criteria.

Member equity mechanics are at the heart of cooperative finance and take several forms. At formation, members contribute an initial equity payment—typically a per-bushel or per-unit delivery right fee—that establishes their membership and proportional capacity allocation. For a Minn. Stat. ch. 308B (2024) New Generation Cooperative, delivery rights—contractual obligations to deliver a specified annual quantity of oats—are the primary equity instrument; members purchase delivery rights at a price that reflects their share of facility construction cost, and those rights are both the equity stake and the marketing commitment that underlies the facility's revenue model.

Ongoing equity accumulation occurs through patronage retains rather than distributing the full patronage dividend in cash. The cooperative retains a portion credited to the member's equity account as a written notice of allocation. Over time, patronage retains build the cooperative's equity base and reduce its debt-to-equity ratio, improving borrowing terms in subsequent financing rounds. The cooperative's board adopts a formal equity redemption policy specifying when and how retained equity is returned to members—typically through a revolving redemption cycle—which must be clearly stated in the bylaws to avoid disputes with departing or deceased members.

Summary of Ownership Structures and Financing Opportunities

For ease of reference the key characteristics of the four dimensions associated with the eight structures are consolidated in Table 2 below. Table 3 provides an overview of the funding and financing opportunities associated with each of the ownership structures.

Table 2. Summary of Ownership Structures: Eight Structures Across Four Dimensions

Structure	Formation & Licensing	Key Management Risks	Key Management Opportunities	Tax Treatment
Sole Proprietorship + Shared-Use	No SOS filing; MDA license in owner's name; $100K bond (yrs 1–3); written storage agreements with depositors.	Unlimited personal liability; no management redundancy; bond may not cover catastrophic loss; depositors have no ownership stake.	Complete operational control; simple contract structure; retains full facility appreciation; easiest transition path to LLC.	Pass-through; income taxed to owner personally; self-employment tax on net income.
Tenancy in Common	No SOS filing; TIC Agreement recorded with county; MDA license in co-tenants' names.	Any co-tenant can force partition; cross-border probate risk on death; joint and several liability; judgment liens may attach.	No formation cost; separate estate planning per co-tenant; proportional tax reporting; flexible for neighboring-state participants.	Pass-through; each co-tenant reports proportional share; Minnesota source income rules apply to out-of-state owners.
General Partnership	Optional SOS registration; MDA license in partnership name; Form M3 annually; MN minimum fee $0–$9,020.	Unlimited personal liability for all GPs; any partner can bind the partnership; dissociation triggers dissolution risk.	Special allocations under section 704(b); collective creditworthiness for USDA loans; flexible profit sharing.	Pass-through; active GPs subject to self-employment tax; Minnesota withholding required for nonresident partners.
Limited Partnership	SOS Certificate of LP required; LLC recommended as GP; Form M3 annually; MN minimum fee applies.	GP bears unlimited liability (unless LLC-GP used); LP participation in management voids limited liability; securities law risk for multi-state offerings.	Raises capital without ceding control; LP shares exempt from SE tax; generational transfer vehicle; estate valuation discounts.	Pass-through; GP shares subject to self-employment tax; LP shares generally passive; Minnesota withholding required for non-resident partners.
Multi-Member LLC (Ch. 322C) Recommended	SOS Articles of Organization; no annual renewal; MDA license to LLC; Form M3; no SOS annual fee.	Veil-piercing risk if formalities ignored; active out-of-state managers may create nexus; MN minimum fee applies even in loss years.	Separate member classes (Storage vs. Capital); manager-managed flexibility; family succession without dissolution; PTE SALT benefit.	Pass-through by default (partnership taxation); S-Corp election available; Minnesota does not conform to the federal section 199A QBI deduction.
S-Corporation	SOS Articles + IRS Form 2553; annual SOS renewal required; max 100	Single ineligible shareholder terminates S status retroactively; one-	SE tax savings via salary/distribution split (~$17K savings at $280K net); defined	Pass-through; no entity-level tax; appropriate salary/distribution

Structure	Formation & Licensing	Key Management Risks	Key Management Opportunities	Tax Treatment
	shareholders; one class of stock; no entity shareholders.	class rule limits capital flexibility; strict corporate formalities required.	governance structure; benefits deductible for W-2 employees.	split for shareholder-employees is key planning issue.
C-Corporation	SOS Articles of Incorporation; annual renewal required; no shareholder restrictions; MN franchise tax at 9.8%.	Double taxation (30%+ combined rate at entity level); liquidation triggers double-tax event; highest ongoing governance burden.	Unlimited shareholder types for institutional capital; apportionment flexibility across states; best structure for strategic sale to institutional buyer.	Entity-level tax; double taxation on distributions; combined federal and Minnesota rate exceeds 30%; generally unfavorable for grain storage.
Ag Cooperative (Ch. 308A or 308B)	SOS Articles of Incorporation; annual renewal by Dec. 31 (hard deadline); min. 5 directors; MDA license in co-op name.	One-member-one-vote limits capital-weighted governance; missed Dec. 31 renewal causes dissolution; 308B investor members may forfeit Subchapter T.	Patronage dividends align member incentives; CoBank cooperative financing; USDA B&I guarantees up to $25M; identity-preserved oat marketing advantage.	Subchapter T pass-through on patronage distributions; entity-level Minnesota franchise tax on non-patronage income; significant tax advantages for qualifying cooperatives.

Note: MN = Minnesota; SOS = Secretary of State; SE = self-employment tax; PTE = Pass-Through Entity tax; GP = general partner; LP = limited partner; DPAD = Domestic Production Activities Deduction; QPAI = Qualified Production Activities Income.

Table 3. Funding and Financing Opportunities by Ownership Structure

Structure	Primary Debt Sources	Member Equity Mechanics	MN State Programs	Key Financing Constraint
Sole Proprietorship	Conventional ag mortgage; FSA Direct & Guaranteed Loans; chattel mortgage for equipment	No formal mechanics; single owner contributes personal equity; all net income retained or reinvested	MN RFA Ag BMP Loan; Beginning Farmer programs; stacks with FSA guarantee	Borrowing capacity limited to individual balance sheet; insufficient for large facilities without substantial land equity
Tenancy in Common	Joint loan with all co-tenants as co-borrowers; FSA Guaranteed Loans; Farm Credit System where lender accepts undivided interest	Proportional contributions per TIC Agreement; no units or certificates; capital calls require Agreement-level consent	MN RFA participation available to individual co-tenants on proportional share	Lenders face partition risk on undivided interests; some decline TIC collateral; cross-guarantees typically required
General Partnership	Partnership-name loans; FSA Guaranteed Loans; Farm Credit System; commercial ag banks	Partner capital accounts per Partnership Agreement; capital calls at Agreement consent level; partners may loan to partnership	MN RFA participation programs available to partnerships	Each GP's existing personal debt constrains partnership borrowing; neighboring-state GP creditors can pursue partnership assets
Limited Partnership	GP-guaranteed loans; FSA Guaranteed Loans; Farm Credit System; LP equity raise from investors	LP capital accounts at formation or in tranches; preferred return waterfall; delivery rights as alternative or supplement to cash equity	MN RFA participation programs available to LP entities; GP must meet RFA eligibility	GP must personally guarantee; LP capital raise may trigger multi-state securities law requirements
Multi-Member LLC (Ch. 322C) — Recommended	Farm Credit System (Compeer, AgStar); FSA Guaranteed Loans; commercial ag banks; SBA 7(a)/504	Capital accounts per Operating Agreement; Capital Member (cash) and Storage Member (delivery rights) classes; capital calls; member loans subordinate to third-party debt	MN RFA participation programs; blended-rate structure with local lender	Veil-piercing risk if formalities ignored; MN minimum fee applies in loss years

Structure	Primary Debt Sources	Member Equity Mechanics	MN State Programs	Key Financing Constraint
S-Corporation	Conventional commercial lending; SBA 7(a) and 504; FSA Guaranteed Loans	Single class of stock only; new equity by share issuance at board-set price; shareholder loans increase debt basis; 100-shareholder cap limits raise size	MN RFA participation programs available to S-Corps; shareholder guarantees typically required	One-class-of-stock rule prevents preferred equity; cannot accept entity investors; S termination risk forfeits financing structure
C-Corporation	Conventional commercial lending; SBA 7(a)/504; corporate bonds/notes; institutional equity; FSA Guaranteed Loans	Multiple stock classes (common, preferred, convertible); preferred stock with liquidation preference; convertible notes for bridge capital; staged equity rounds tied to construction milestones	MN DEED Investment Fund; Job Creation Fund for qualifying projects; MN RFA participation programs	Double-taxation burden offsets financing flexibility; not recommended unless institutional capital is essential
Ag Cooperative (Ch. 308A or 308B)	CoBank / Farm Credit System at preferential rates; USDA B&I guarantees; conventional ag lenders	Initial member equity via delivery right purchase or per-unit fee; ongoing equity through patronage retains as written notice of allocation; revolving equity redemption cycle	MN RFA cooperative development programs; MN AGRI Program grants and loans; USDA VAPG	Equity accumulation through patronage retains is slow; large facilities require substantial external debt alongside member equity; missed Dec. 31 renewal jeopardizes lending covenants

Note: FSA = USDA Farm Service Agency; RFA = Minnesota Rural Finance Authority; DEED = Minnesota Department of Employment and Economic Development; AGRI = Agricultural Growth, Research, and Innovation Program; VAPG = Value-Added Producer Grant; B&I = Business & Industry Loan Guarantee. USDA B&I and VAPG eligibility varies by project, location, and applicant; direct confirmation with the applicable USDA Rural Development state office is required before relying on these programs in any financing plan.

Minnesota-Specific Operational and Regulatory Considerations

MDA Inspections and Record-Keeping

All licensed Minnesota grain warehouses are subject to annual MDA examination covering grain inventory reconciliation, warehouse receipt integrity, insurance certificates, tariff compliance, and physical facility safety. Daily position records must be maintained and made available to MDA examiners; electronic record-keeping is accepted but records must be accessible at the licensed facility.

All grain in storage must be fully insured against fire, windstorm, and extended coverage risks, with evidence of insurance on file with the MDA at all times. This obligation extends to both Minnesota-resident and out-of-state depositor grain. Scale tickets and grain receipts must be consecutively pre-numbered and issued in duplicate for each delivery, regardless of the depositor's state of residence.

Minnesota Environmental Compliance

Grain drying operations using natural gas or propane may require air quality permits under the regulations of the Minnesota Pollution Control Agency. Facilities above certain emission thresholds may need a State Air Permit or a federal Title V permit. Grain storage facilities occupying more than one acre of land require an NPDES/SDS Construction Stormwater Permit from the MPCA during construction, and operational stormwater management may require a General Industrial Stormwater Permit. Grain handling operations are subject to Minn. R. 7011.0150 (particulate matter standards); dust control systems, including enclosed conveyors and dust collectors, are typically required for facilities of this size. If fumigants or anhydrous ammonia for grain conditioning are used above threshold quantities, OSHA Process Safety Management and EPA Risk Management Program requirements may apply.

Property Tax Considerations

Grain storage structures in Minnesota may qualify for agricultural property tax classification under Minn. Stat. § 273.13, subd. 23 (2024), if they are part of a qualifying agricultural operation. Agricultural classification carries significantly lower effective tax rates than commercial or industrial classification. The entity's ownership structure can affect whether the facility qualifies; county assessors in some Minnesota counties are conservative in extending agricultural classification to cooperative or corporate-owned facilities that store grain from multiple parties. Grain storage bins may qualify as Class 2a property if the primary use is storage of grain grown on agricultural land. Out-of-state members holding an LLC interest in a Minnesota facility have no property tax obligation in their home state for Minnesota-sited real property; the property is assessed by the Minnesota county only.

Occupational Safety—Minnesota OSHA (MnOSHA)

Minnesota operates its own OSHA-approved State Plan through MnOSHA (Minnesota Department of Labor and Industry). MnOSHA standards must be at least as stringent as federal OSHA standards and may impose additional requirements. Grain handling facilities are subject to 29 C.F.R. § 1910.272 (Grain Handling Facilities standard) as adopted and enforced by MnOSHA; key provisions include grain entrapment prevention, bin entry procedures, permit-required confined space programs, emergency action plans, and housekeeping requirements. Employers at Minnesota grain storage facilities must conduct MnOSHA-compliant training in English and in any language spoken by employees. MnOSHA has authority to assess civil penalties and shut down facilities for serious violations. Falls from bins, grain entrapment, and dust explosions constitute the most serious hazards.

3.3. Conclusions and Recommendations

There are many options for ownership structure, and no single ownership structure will meet the needs of every shared oat grain storage operation. The right choice will depend on the scale of the facility, the number and geographic distribution of participants, and the operator's appetite for governance complexity. For smaller facilities—generally below 250,000 bushels—and single-operator situations, the

sole proprietorship with shared-use agreements or a simple tenancy in common offer the lowest formation cost and administrative burden, though both carry meaningful liability exposure and limited financing leverage. For facilities in the 250,000-to-750,000-bushel range involving multiple Minnesota and neighboring-state participants, the multi-member LLC is the most consistently recommended structure. It provides personal liability protection for all members, allows for maximum flexibility to accommodate diverse participant types through differentiated membership classes, and can generate broad lender acceptance that can support the level of debt financing these mid-size projects require.

For operations at or above 1 million bushels—or those with ambitions to reach that scale—the agricultural cooperative offers the strongest long-term platform. It provides access to CoBank and Farm Credit System financing at preferential rates, USDA Rural Development loan guarantees, and the patronage retain equity mechanics that steadily build the balance sheet over time make it uniquely well-suited to large-scale grain infrastructure. For smaller operations, the cooperative also provides the best scaling pathway, because the right delivery structure and patronage system naturally expand capacity commitments and equity as member volume grows, rather than requiring renegotiation of ownership interests each time the facility expands. Operators considering future growth should weigh the cooperative's higher formation complexity and governance requirements against this long-term structural advantage from the outset, as transitioning from an LLC to a cooperative after the fact can be operationally and legally difficult.

Chapter four outlines four storage scenarios and presents preliminary cost estimates and financial projections for each. The choice of storage configuration (individual on-farm, condominium, blended or purchase and retrofit) will also inform the choice of management structure. The final chapter of this report considers the two facets together and offers insights into the tradeoffs, opportunities, and risks.

4. Oat Storage Cost Analysis Scenarios

Based on the site visits and focus group four initial scenarios were developed and evaluated: on-farm storage, condominium storage, blended and condominium storage, and facility purchase and retrofit. Preliminary designs, cost estimates and financial projections were developed for these four scenarios. The results were shared with producers, and a third virtual focus group was held to evaluate the four alternatives. As a result of the focus group discussions a fifth scenario - consolidated on-farm storage, was developed and modeled. This chapter summarizes preliminary designs, cost estimates and financial projections associated with five oat storage scenarios: on-farm individual storage, consolidated on-farm storage (intermediate scale), condominium storage, blended storage with both individual and condominium styles, and facility purchase and retrofit. All scenarios are limited to storage only; no equipment related to post-harvest cleaning or processing is included.

Facility specifications and capacity requirements, equipment and systems needed, location analysis and siting criteria, operating cost estimates and capital cost estimates were considered in the development of the four scenarios. There are several different scales of anticipated storage capacity needs modeled across the scenarios. In three of the scenarios the storage needs were estimated based on surveyed acreage, yields, and total annual production volumes collected from growers in interviews for this project.

Findings from this analysis are displayed in pro forma financial projections of various operating scales and breakeven costs (in terms of monthly costs per bushel). In the final section findings from the sensitivity analysis are presented. These findings are presented to inform future investment decisions. It should be noted that all cost estimates are preliminary in nature (presented at a planning level only) and are not necessarily specific to any one particular site.

4.1. Five Storage Scenarios

Details for the five scenarios are described below.

Scenario 1: On-Farm Storage

This scenario models the costs for all growers to install new on-farm storage systems to meet their own needs, assuming no existing on-farm storage. Cost estimates were based on prices associated with small (10,000 to 15,000 bushel) hopper bottom bins. The cost projections were compiled over 22 operations requiring an average of nearly 13,000 bushels annually for a total capacity of 284,272 bushels. This may overestimate the reality of storage needs for the sample of growers interviewed for this study, but completely new storage is a consistent assumption and variable for all modeled scenarios. Storage systems for this scenario include new single hopper bottom bins and new augers on a concrete foundation, and assume the land is already owned.

Scenario 2: Consolidated On-Farm Storage

This scenario models a lower-cost, intermediate shared storage option in which one participating host farm provides centralized storage capacity for other growers using land already owned by the host farm. Storage would consist of five mid-sized (20,000 bushel) storage bins (totaling 100,000 bushel storage capacity) that are loaded and unloaded with grain conveyors. The facility would also include a scale

house adjacent to a truck scale. This scenario was developed based on feedback from growers interviewed for this project, and is intended to represent a lower-capital pathway for establishing near-term shared oat storage capacity. Also unique to this scenario is the inclusion of remote grain bin monitoring equipment, reflecting growers' interest in minimizing labor requirements. Sensors measure storage conditions (temperature, humidity, inventory levels) in real time and environmental controls can be automated and pared with aeration equipment to maintain specific conditions (AGI, 2026).[42] Monitoring equipment and automated controls are common in most large-scale commercial grain elevators as well as some on-farm systems.

A preliminary site design for this scenario is provided in Figure 2 below.

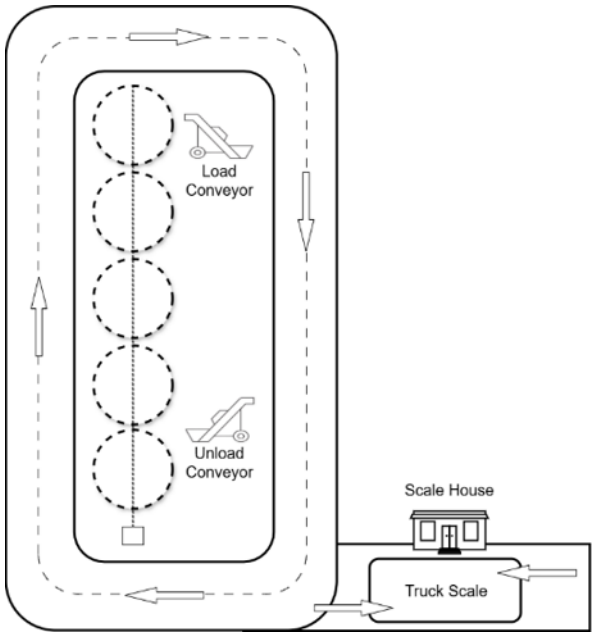


Figure 2. Preliminary Site Design – Consolidated On-Farm Storage

Scenario 3: Condominium Storage

This scenario models the capital costs required to purchase land and erect a 'condo' storage facility, where producers own space within a licensed facility to store their grain off farm and closer to end markets. The condo facility will contain enough individual bins for all grower members to independently manage their grain and keep it separated and traceable. The facility will include shared infrastructure, including a concrete foundation, truck scale and scale house, and grain vacuum system.

One example of this type of oat storage facility is found on the outskirts of Saskatoon, Canada and is owned by Bay State Milling (BSM). An aerial view of the oat storage infrastructure is included in Figure 3 below.

[42] This is the only scenario that models grain monitoring equipment. If there is a need to model this equipment with other scenarios, the user can define these parameters within the workbook titled "Oats Cost Analysis....xls"



Figure 3. Bay State Milling Facility, Saskatoon Canada

A preliminary site design for this scenario is provided in Figure 4 below.

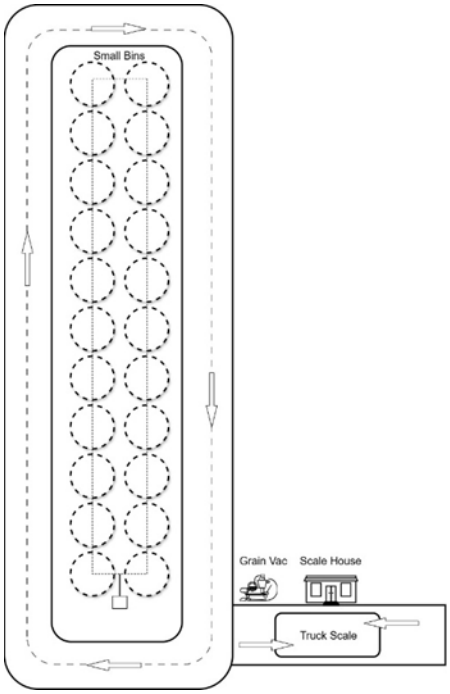


Figure 4. Preliminary Site Design- Condominium Storage

Scenario 4: Blended & Condominium Storage

This scenario models a hybrid facility design where a portion of oats are stored in individual traceable bins (as described in Scenario 3) with the remainder being stored in larger shared bins for aggregation and blending. The default assumption is that 50 percent of oats require 'field' traceable storage, and the remainder can be sold into markets with a limited amount of blending.[43]

As in Scenario 3, the facility will include shared infrastructure, including a concrete foundation, truck scale and scale house, shared grain vacuum system for traceable bins, and an elevator and pit system for large bins. A preliminary site design for this scenario is depicted in Figure 5 below.

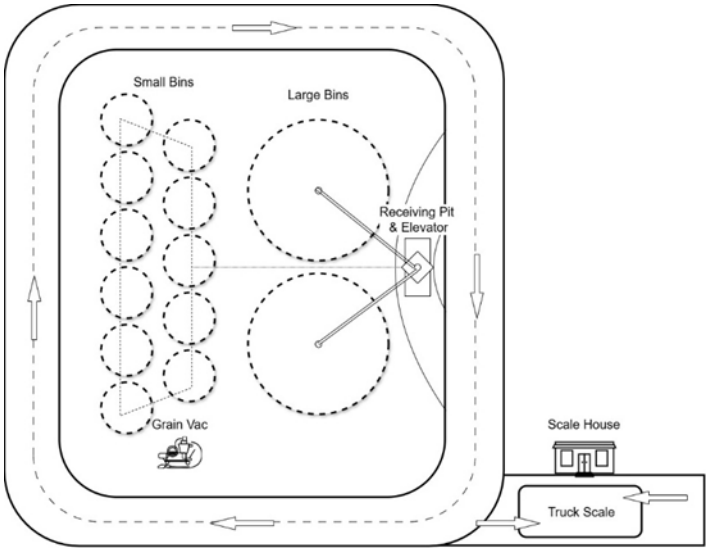


Figure 5. Preliminary Site Design- Condominium and Blended Storage

Scenario 5: Facility Purchase & Retrofit

An existing corn grain storage facility was identified as a potential candidate for purchase and retrofit for oat storage.[44] This existing grain elevator is located in Blooming Prairie, Minnesota on Mill Avenue South (identified in the aerial photograph figure below as "Blooming Prairie Scale"). The existing infrastructure at the site includes two recently built 115,000 BU bins, two 80,000 BU and two 50,000 BU bins built in the 1970's that likely require floor replacement, along with three 10,000 BU overhead bins. Two existing elevators, with spouting, and conveyors transport grain to these bins from an existing corn dryer. The facility also includes two receiving pits, a scale house, and rail spur. Altogether, the site has a combined capacity of approximately 520,000 BU. An ariel view of the facility is provided in Figure 6 below.

[43] At the level of blending that is modeled here there would be three or four farmers blending their grain in the larger (blended) storage. While not field level traceability, it would provide traceability to a reasonable level, specific to the set of producers who would store their grain together.

[44] Through personal communication with TJ Kartes, February, 2026.



Figure 6. Aerial View of Blooming Prairie Facility

4.2. Scenario Assumptions, Data Sources and Cost Information

Production & Volume Values

Required storage capacity was estimated using aggregated survey responses from participating growers, which indicate a total regional production of 284,272 BU annually. This level of storage represents roughly 8 percent of the estimated 3.5 million BU produced in the Driftless Area, and scenarios 1, 3, and 4 are modeled are based on this capacity. The estimate of total oat production in the Driftless area is estimated using the average annual oat acreage in the Driftless Area[45] (>30,000 acres) from the USDA Cropland Data Layer multiplied by a typical or representative yield of 100 BU per acre (CroplandCROS, 2026).

Scenario 2 is modeled using a capacity of 100,000 BU annually to represent an intermediate scale for an oat storage facility that would still meet the near-term needs of growers in the area. Scenario 5, which is the purchase and retrofit of an existing corn storage facility, is modeled using the existing facility design capacity of 520,000 BU.

Model Variables

Several adjustable parameters were incorporated into the analysis. Default values are summarized below.

[45] Boundary provided by the University of Wisconsin-Madison (Carson et al., 2023).

- **Maximum Percent Stored**: All scenarios assume sufficient capacity to store 100 percent of annual production at the time of harvest. The timing of sales and offloading inventory is variable throughout the year, and is described further in the revenue projections discussed below.
- **Site Size**: Scenarios 3 and 4 assume construction of a shared facility requiring approximately two acres of land. Land cost is modeled using an average listing value for undeveloped agricultural land of $39,373 per acre.
- **Percent Blended**: Scenario 2 assumes all oats are blended in quantities sufficient to maintain traceability (≤20,000 BU per bin). Scenario 4 assumes 50 percent of oats being stored are aggregated into large, blended bins, with the remaining 50 percent stored in traceable individual bins. This parameter can be adjusted depending on traceability and identity-preservation requirements for the oat market. Scenario 5 assumes full utilization of existing infrastructure (bins of all sizes) and will have different traceable versus blended storage potential (though limited by fewer existing small bins).

Data Sources & Cost Information

Cost estimates for the capital costs of grain storage infrastructure and the operating costs for a grain storage facility were derived from multiple sources including:

- Extension publications
- Equipment supplier listings
- Industry price references
- Custom quotes and discussions with equipment suppliers

Where multiple sources reported comparable values, average costs were used to derive representative cost estimates. Capital costs include materials, freight, and construction unless otherwise noted. The sources for key cost variables used in the model are summarized in Table 4.

Table 4. Cost Variables and Sources

Item	Scenario					Cost Range	Cost Unit	Sources
	1	2	3	4	5			
Capital Costs								
Land Purchase			x	x		$14,462-$59,690	$/Acre	A
Small Hopper Bottom Bins: On-Farm	x					$6.00-$7.00	$/BU Installed	B, C, D, E, F, G
Small Flat Bottom Bins: On-Farm		x				$3.50-$4.50	$/BU Installed	B, C, D, E, F, G
Small Hopper Bottom Bins: Condo			x	x		$5.75-$6.75	$/BU Installed	B, C, D, E, F, G
Large Flat Bottom Bins: Condo				x		$3.00-$4.00	$/BU Installed	B, C, D, E, F, G
AGI BinManager (Monitoring)		x				$68,671-$75,899	Total	R

Item	Scenario					Cost Range	Cost Unit	Sources
	1	2	3	4	5			
Load / Unload Augers	x	x				$4,000-$17,000	Each	H, I
Sweep Augers		x		x		$0.20-$0.38	$/BU Installed	B, F
Conveyors		x		x		$0.14-$0.19	$/BU Installed	C, H
Elevator & Spouting				x		$206,721-$279,681	Total	C, H
Receiving Pit				x		$144,704-$195,777	Total	C, H
Truck Scale		x	x	x		$45,000-$95,000	Total	I
Office / Scale House		x	x	X		$5,000-$7,000	Total	J
Grain Vac			x	x	x	$30,000-$120,000	Each	H, I
Facility Purchase					x	$552,500-$747,500	Total	Quote
Aeration Fans					x	$0.22-$0.52	$/BU Installed	H, L, M
New Floors					x	$36,138-$56,138	Each	N, O
Labor & Installation					x	15%	of Equipment Cost	B, C, F
Operating Costs								
Electricity	x	x	x	x	x	$0.15	$/KWH	P
Labor Value	x	x	x	x	x	$31.27	$/hr	Q
Remote Monitoring Subscription		x				$400	$/year	R
Fuel & Lubrication	x	x	x	x	x	$0.02	$/BU	F
Loan Repayment	x	x	x	x	x	10-year term @ 7.5%	$/year	
Repairs & Maintenance	x	x	x	x	x	1.5% of Equipment Cost	$/year	F, G
Insurance & Taxes	x	x	x	x	x	1% of Total Investment	$/year	F, G
Capital Recovery	x	x	x	x	x	(Equipment Cost – Salvage Value) / Useful Life	$/year	

A. (LandSearch, 2026)
B. (Martin, 2025)
C. (Farm Progress, 2024)
D. (Tharran Gaines, 2024)
E. (FBN Network, 2025)
F. (Duncan et al., 2022)
G. (Iowa State University, 2018)
H. (TractorHouse, 2026)
I. (Prime USA Scales, 2026)
J. (Minnesota Association of Assessing Officers, 2019)
K. (Keast Enterprises Equipment, 2026)
L. (University of Minnesota, 2026)
M. (Grain Supply, 2026a)
N. (Grain Supply, 2026b)
O. (Darmani North America, 2026)
P. (Rochester Public Utilities, 2026)
Q. (BLS, 2024)
R. (Turkey River Ag Sales, 2026)

Capital Costs

The following table presents the capital cost assumptions for each scenario based on the previously described parameters and cost variables.

Table 5. Capital Cost Assumptions

Cost Component	Scenario				
	1	2	3	4	5
Land/Facility Purchase	n/a	n/a	2-acre lot: $78,746	2-acre lot: $78,746	Existing site and all facility equipment: $650,000
Bins	Single overhead hopper bottom bins (10,000-15,000 BU): $6.50 per BU	Mid-sized flat bottom bins (20,000 BU): $4.00 per BU	Single overhead hopper bottom bins (10,000-15,000 BU): $6.25 per BU[46]	Large flat bottom bins (>80,000 BU): $3.50 per BU Single overhead hopper bottom bins (10,000-15,000 BU): $6.25 per BU	n/a
AGI BinManager (Monitoring)	n/a	Remote monitoring system fully installed: $72,285	n/a	n/a	n/a
Load/Unload Augers	Per bin / farm: $7,000	One auger for unloading trucks into conveyor: $7,000	n/a	n/a	n/a
Sweep Augers	n/a	Sweep augers for flat bottom bins: $0.29 per BU	n/a	Sweep augers for flat bottom bins: $0.29 per BU	n/a
Conveyors	n/a	Two conveyors (load and unload): $0.17 per BU each	n/a	Conveyors for the large bins: $0.17 per BU	n/a
Elevator, Spouting, & Receiving Pit	n/a	n/a	n/a	Elevator with spouting and pit: $413,000 fully installed	n/a
Grain Vac		n/a	Shared grain vacuum system: $50,000	Shared grain vacuum system (for small bins): $50,000	n/a
Truck Scale	n/a	Single truck scale: $70,000 including shipping	Single truck scale: $70,000 including shipping	A single truck scale:$70,000 including shipping	n/a
Office/Scale House	n/a	100 sq ft office or scale house: $5,000	100 sq ft office or scale house: $5,000	100 sq ft office or scale house: $5,000	n/a
Aeration Fans	Included in equipment costs	Included in equipment costs	Included in equipment costs	Included in equipment costs	n/a

[46] Savings reflect economies of scale from shared foundations and centralized construction.

New Floors	n/a	n/a	n/a	n/a	Replacement of the corrugated metal floors on the four older mid-sized bins: $46,000 per floor
Labor & Installation	Included in equipment costs	n/a	Included in equipment costs	Included in equipment costs	15% of equipment purchase costs.

Based on the assumptions in the table above, the tables below present the total capital cost requirements for each scenario, as well as the capital costs on a per BU basis.

Table 6. Capital Costs; Scenarios 1-5

Item	Cost				Item	Cost
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	
Land	$0	$0	$78,746	$78,746	Facility Purchase	$650,000
Small Hopper Bottom Bins: On-Farm	$1,847,770	$0	$0	$0	New Floors	$184,553
Small Flat Bottom Bins: On-Farm	$0	$400,000	$0	$0	Labor & Install	$27,683
Small Hopper Bottom Bins: Condo	$0	$0	$1,776,702	$888,351		
Large Flat Bottom Bins: Condo	$0	$0	$0	$497,477		
AGI BinManager (Monitoring)	$0	$72,285	$0	$0		
Load/Unload Augers	$154,000	$7,000	$0	$0		
Sweep Augers	$0	$29,016	$0	$41,243		
Conveyor	$0	$33,545	$0	$23,840		
Mobile Grain Vac	$0	$0	$50,000	$50,000		
Truck Scale	$0	$70,000	$70,000	$70,000		
Office / Scale House	$0	$6,000	$6,000	$6,000		
Elevator & Spouting	$0	$0	$0	$243,201		
Receiving Pit	$0	$0	$0	$170,240		
Total	$2,001,770	$617,846	$1,981,447	$2,069,097	Total	$862,235
$/BU	$7.04	$6.18	$6.97	$7.28	$/BU	$1.66

Scenario 2 is the lowest cost option by nearly 70 percent due to the low modeled facility capacity of 100,000 BU, totaling around $618,000. On a per bushel basis, however, it is still cheapest among the other 'build' scenarios (1, 3, & 4) primarily because of the lower cost flat bottom bins relative to hopper bottom bins. Despite the significantly higher facility capacity (520,000 BU), Scenario 5 is the second lowest total cost option due to the existing grain bins and elevator infrastructure, totaling just over $860,000, and is the lowest cost option on a per bushel basis ($1.66 per BU). The purchase price for the facility in Blooming Prairie, Minnesota is comparable to other turnkey grain storage facilities on the market, including a 1.1 million BU capacity facility in Manito, Illinois, publicly listed for $900,000. Therefore, this scenario (buying an existing facility) is not limited to the identified site at Blooming Prairie as other existing facilities may be for sale in the region now or in the future at a similar cost.

The build scenarios are modeled to accommodate the same volume of oats (284,000 BU, Scenarios 1, 3, and 4) and have capital cost estimates within roughly $90,000 of each other. Among them, Scenario 3— separate and traceable condo storage—is the least cost scenario at around $1.98 million or $6.97 per BU, owed to shared equipment without the large-scale machinery needed for blended storage. Scenario 1— multi-farm individual storage—is estimated to cost just over $2 million.

At this scale and under the default parameters, the hybrid Scenario 4 is the highest cost option at approximately $2.07 million or $7.28 per BU. Unique to this scenario is the purchase of the elevator and receiving pit, making up roughly 20 percent of the total cost. This type of infrastructure (elevator leg and receiving pit) could accommodate additional storage added on in the future at no additional conveyance cost, as the same equipment to move grain from the pit to bins could handle higher volumes. It should be noted that at a facility capacity of 370,000 BU for scenarios 1, 3, and 4 (as opposed to 284,272 BU, or 30 percent increase in capacity), the total capital costs for Scenario 4 would become the lowest of the three.

Further, a larger percentage of the total facility capacity stored in large, blended bins would also lower the price per BU of Scenario 4. Specifically, this analysis reveals that if 64 percent of the total capacity modeled for scenarios 1, 3, and 4 was blended (as opposed to 50 percent), total capital costs for Scenario 4 would become the lowest of the three build scenarios.

Operating Costs

The following table details the key operating assumptions for each scenario.

Table 7. Operating Cost Assumptions

Item	Scenario					Detail
	1	2	3	4	5	
cfm/BU	0.10					Target airflow for aeration[47]
3 hp Fans (hrs/ventilation)	4,264	1,500	4,264	2,132	450	150 hours per 10,000 BU [48]
15 hp Fans (hrs/ventilation)	-		-	213	735	150 hours per 100,000 BU [3]
Ventilation Frequency (times/year)	9					3X per week in spring & fall
Monitoring Labor (hrs)	284	-	284	284	520	5 hours per 30,000 BU for 6 months[49]
Auger / Conveyor Labor (hrs)	569	200	-	-	-	1,000 BU/hr X 2 (load & unload)
Grain Vac Load & Unload (hrs)	-	-	114	57	-	5,000 BU/hr X 2 (load & unload)
Elevator Load & Unload (hrs)	-	-	-	28	100	10,000 BU/hr X 2 (load & unload)

[47] No additional drying is modeled: oats are delivered and remain at or near to desired moisture content.

[48] Based on estimated oat ventilation requirements and frequency information from the University of Minnesota and Oklahoma State University (University of Minnesota, 2026)(Jones, 2018).

[49] Based on estimated monitoring labor from Iowa State University (Iowa State University, 2018). This frequency equals approximately $0.03/BU/year.

This analysis does not include hauling costs, as they would not be incurred by the facility. Participation in the off-farm scenarios (3-5) and for all but the host farm in Scenario 2 may necessitate additional hauling (e.g., farm -> storage -> market). Hauling costs in the region are expected to align with custom rates published by Iowa State University: $0.013 per bushel per mile by truck (average of 5-, 25-, and 100-mile rates) (Iowa State University, 2026).

Based on the assumptions in the table above, the table below presents the total operating costs for each scenario, as well as the capital costs on a per BU basis. These numbers assume 100 percent storage utilization, and differ from the pro forma financial projections due to the variable storage occupancy considered over time.

Table 8. Operating Costs; Cash Costs

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Electricity cost	$13,816	$4,860	$13,816	$11,001	$15,570
Loading & Unloading Labor	$17,778	$6,254	$3,556	$2,667	$3,252
Manual Monitoring Labor	$8,889	$0	$8,889	$8,889	$16,260
Remote Monitoring Subscription	$0	$400	$0	$0	$0
Fuel & Lubrication	$6,538	$2,300	$6,538	$3,269	$11,959
Repairs & Maintenance	$30,027	$8,183	$28,582	$29,855	$39,995[50]
Insurance & Taxes	$19,798	$6,178	$19,799	$20,676	$8,445
Total Operating Costs ($/year)	$97,065	$28,176	$81,194	$76,372	$95,658
Operating Costs ($/BU @ 100% capacity)	$0.34	$0.28	$0.29	$0.27	$0.18

Scenario 2 has the lowest annual operating cost due to the lower modeled capacity (100,000 BU) and, to a lesser extent, labor savings from remote monitoring equipment. Of all the build scenarios (1-4), multi-farm storage in Scenario 1 represents the highest annual operating costs per BU driven by the lower labor efficiency of using auger equipment for loading and unloading. Scenarios 2, 3, and 4 have similar operating costs on a per BU basis, though cost savings from the consolidated grain storage and labor-efficient elevator system make Scenario 4 operating costs lowest amount the build options modeled. Scenario 5 has the lowest expected operating costs per bushel of capacity due to the economies of scale in operating the facility and blended nature of the storage.

Revenues

Revenues for Scenarios 2-5 were modeled as part of this analysis in the form of storage fees received by the owner / operator. This analysis considered the entity in question (e.g. a cooperative or private group of producers) to not be concerned with profitability of the storage function itself, but rather provide a service to the producer at the least cost possible. Thus, revenue projections were modeled as a storage fee for a specific time period. Specifically, the projections presented below model all year 1 estimates at 38 percent occupancy, with subsequent years increasing in storage utilization to the maximum capacity across a six-month period (50 percent occupancy) in the fifth year. The storage fees received by the

[50] Calculated as 1.5% of the facility equipment purchase price if it were bought new, which winds up being 4.7% of capital costs under Scenario 5.

entity vary based on the costs modeled but range from a low of $0.07 per bushel monthly (Scenario 5) to a high of $0.20 per bushel monthly (Scenarios 3 & 4). It is important to note that in some scenarios there may be opportunities for additional storage related to storing other grains (e.g. soy, corn, winter camelina, etc.) when bin capacity is available. However, this additional storage revenue is not modeled in this analysis. Prices were set in the pro formas to a minimum level to cover the operating costs and debt service in year 3 of the projections. Thus, the beginning cash reserves in year 1 were modeled to cover the financing needs of the project along with any cash shortfalls in years 1 and 2.

Pro Forma Financial Projections

This section presents five years of pro forma financial projections for Scenarios 2-5 described above, based on the assumptions of operating and capital costs. No pro formas were developed for Scenario 1, as the expenses associated with on-farm storage would be the responsibility of the producer and not any one entity. There are pro forma financial projections for cash flow, profit and loss (income statement), and balance sheet. Cash flow statements report the amount of cash and cash equivalents, showing how the entity in question would generate cash to pay debts and fund operations. The statement itself is also useful in understanding what level of cash is necessary to undertake a specific investment (beginning cash) and displays the relationship and timing between investments made and financing costs. The income statement (or profit and loss statement) summarizes a business's revenues and expenses, along with measures of profitability and financial performance. The balance sheet shows a statement of liabilities and assets at a particular point in time (modeled here as the end of the fiscal year).

Cash Flow Statements

The projections for cash flow were modeled with a beginning cash balance that would cover the cash needs of the first and second years of the projections only, with revenues (storage fees) being able to cover future costs in subsequent years.

The Financing Activities identifies the inflow and outflow associated with the loan for the investments modeled, modeled as a 10-year loan with a 4.25 percent interest rate, and 15 percent down payment. An amortization table for these loans is provided in the Excel File "Oats Cost Analysis." This loan is modeled after the Farm Service Agency's (FSA) Farm Storage Facility Loan Program.[51]

Table 9. Scenario 2. Cash Flow

	Year 1	Year 2	Year 3	Year 4	Year 5
Beginning Cash	$200,000	$14,606	$19,404	$29,404	$44,996
Operating Revenue					
BU in storage	75,000	80,625	86,672	93,172	100,000
Cash Brought In	$85,648	$92,071	$98,977	$106,400	$114,197
Operating Expenses					
Electricity cost	$3,645	$3,918	$4,212	$4,528	$4,860

[51] Farm Service Agency. (2026, March). Farm Storage Facility Loan. Retrieved from FSFL: https://www.fsa.usda.gov/resources/loans/farm-storage-facility-loan-fsfl-program

	Year 1	Year 2	Year 3	Year 4	Year 5
Loading & Unloading Labor	$4,690	$5,042	$5,420	$5,827	$6,254
Monitoring	$300	$323	$347	$373	$400
Fuel & Lubrication	$1,725	$1,854	$1,993	$2,143	$2,300
Repairs	$6,138	$6,598	$7,093	$7,625	$8,183
Insurance and taxes	$4,634	$4,981	$5,355	$5,757	$6,178
Total Operating Activities	$64,516	$69,355	$74,556	$80,148	$86,022
Investing Activities					
Capital Costs	$617,846				
Sale of Used Equipment	$0				
Cash from Investing Activities	-$617,846				
Financing Activities					
Grants	$0				
Inflow	$525,169				
Downpayment	$92,677				
Principal	$43,069	$44,936	$46,883	$48,915	$51,035
Interest	$21,487	$19,621	$17,673	$15,641	$13,522
Cash from Financing	$367,936	-$64,556	-$64,556	-$64,556	-$64,556
Total Change in Cash	-$185,394	$4,798	$10,000	$15,592	$21,465
Ending Cash	$14,606	$19,404	$29,404	$44,996	$66,461

Table 9 for Scenario 2 outlines a five-year cash flow projection for an oat storage investment, requiring an initial cash balance of $200,000. This starting position is intended to cover the 15 percent down payment on the loan and cash needs for the first year of operation. The scenario experiences a significant total change of cash of over $185,000 in year 1 due to the capital investment and down payment, leaving an ending cash balance of $14,606. However, as described above, the operation is modeled to become cash positive as soon as year 2, when storage fees of $0.19 per month are modeled, which results in an ending cash reserve of over $66,000 by the end of Year 5.

Table 10. Scenario 3. Cash flow

	Year 1	Year 2	Year 3	Year 4	Year 5
Beginning Cash	$630,000	$9,821	$1,303	$11,303	$41,210
Operating Revenue					
BU in storage	213,204	229,195	246,384	264,863	284,272
Cash Brought In	$254,284	$273,355	$293,857	$315,896	$339,045
Operating Expenses					
Electricity cost	$10,362	$11,139	$11,974	$12,872	$13,816
Loading & Unloading Labor	$2,667	$2,867	$3,082	$3,313	$3,556
Monitoring	$6,667	$7,167	$7,704	$8,282	$8,889
Fuel & Lubrication	$4,903	$5,271	$5,666	$6,091	$6,538
Repairs	$28,582	$28,582	$28,582	$28,582	$28,582
Insurance and taxes	$19,814	$19,814	$19,814	$19,814	$19,814
Total Operating Activities	$181,289	$198,516	$217,034	$236,941	$257,851
Investing Activities					
Capital Costs	$1,981,447				
Sale of Used Equipment	$0				
Cash from Investing Activities	-$1,981,447				
Financing Activities					
Grants	$0				
Inflow	$1,684,230				
Downpayment	$297,217				
Principal	$138,124	$144,110	$150,356	$156,872	$163,670
Interest	$68,910	$62,924	$56,678	$50,162	$43,364
Cash from Financing	$1,179,979	-$207,034	-$207,034	-$207,034	-$207,034
Total Change in Cash	-$620,179	-$8,518	$10,000	$29,907	$50,817
Ending Cash	$9,821	$1,303	$11,303	$41,210	$92,027

Table 10 for Scenario 3 outlines a five-year cash flow projection for an oat storage investment, requiring an initial cash balance of $630,000. This starting position is intended to cover the 15 percent down payment on the loan and cash needs for the first year of operation. The scenario experiences a significant total change of cash of over $620,000 in year 1 due to the capital investment and down payment, leaving an ending cash balance of $9,821. However, as described above, the operation is modeled to become cash positive in year 3, when storage fees ($0.20 per month) result in a $10,000 net change in cash. In this projection there is an ending cash reserve of $92,000 by the end of Year 5.

Table 11. Scenario 4. Cash Flow

	Year 1	Year 2	Year 3	Year 4	Year 5
Beginning Cash	$658,000	$10,003	$696	$10,696	$41,451
Operating Revenue					
BU in storage	213,204	229,195	246,384	264,863	284,272
Cash Brought In	$258,840	$278,253	$299,122	$321,556	$345,120
Operating Expenses					
Electricity cost	$8,251	$8,870	$9,535	$10,250	$11,001
Loading & Unloading Labor	$2,000	$2,150	$2,311	$2,485	$2,667
Monitoring	$6,667	$7,167	$7,704	$8,282	$8,889
Fuel & Lubrication	$2,452	$2,636	$2,833	$3,046	$3,269
Repairs	$29,855	$29,855	$29,855	$29,855	$29,855
Insurance and taxes	$20,691	$20,691	$20,691	$20,691	$20,691
Total Operating Activities	$188,925	$206,885	$226,192	$246,948	$268,748
Investing Activities					
Capital Costs	$2,069,097				
Sale of Used Equipment	$0				
Cash from Investing Activities	-$2,069,097				
Financing Activities					
Grants	$0				
Inflow	$1,758,732				
Downpayment	$310,364				
Principal	$144,234	$150,485	$157,007	$163,811	$170,910
Interest	$71,958	$65,707	$59,186	$52,381	$45,282
Cash from Financing	$1,232,175	-$216,192	-$216,192	-$216,192	-$216,192
Total Change in Cash	-$647,997	-$9,307	$10,000	$30,755	$52,556
Ending Cash	$10,003	$696	$10,696	$41,451	$94,007

In both Scenarios 3 and 4 the minimum cash needed at the beginning of the investment is estimated between $630,000 and $660,000 to cover the downpayment on the loan (difference between the investing activity and financing activities in year 1), along with other startup costs.[52] Grant funds may be available to cover some of this cost, but are not included in the cash flow analysis assumptions. Like Scenario 3, Scenario 4 does not become cash positive until year 3 at the assumed revenue of $0.20 per bushel per month, which results in an ending cash reserve of $94,000 by the end of Year 5.

[52] This is based on an annual projection, a monthly projection would likely result in a higher minimum cash balance to start.

Table 12. Scenario 5. Cash Flow

	Year 1	Year 2	Year 3	Year 4	Year 5
Beginning Cash	$270,000	$1,303	$928	$10,928	$32,081
Operating Activities					
BU in storage	390,000	419,250	450,694	484,496	520,000
Cash Brought In	$163,964	$176,261	$189,481	$203,692	$218,618
Operating Expenses					
Electricity cost	$11,678	$12,553	$13,495	$14,507	$15,570
Loading & Unloading Labor	$2,439	$2,622	$2,819	$3,030	$3,252
	$12,195	$13,110	$14,093	$15,150	$16,260
Fuel & Lubrication	$8,969	$9,642	$10,365	$11,142	$11,959
Repairs	$39,995	$39,995	$39,995	$39,995	$39,995
Insurance and taxes	$8,622	$8,622	$8,622	$8,622	$8,622
Total Operating Activities	$80,066	$89,717	$100,092	$111,245	$122,960
Investing Activities					
Capital Costs	$862,235	$0	$0	$0	$0
Sale of Used Equipment	$0	$0	$0	$0	$0
Cash from Investing Activities	-$862,235	$0	$0	$0	$0
Financing Activities					
Grants	$0				
Inflow	$732,900				
Downpayment	$129,335				
Principal	$60,105	$62,710	$65,428	$68,263	$71,222
Interest	$29,986	$27,382	$24,664	$21,828	$18,870
Cash from Financing	$513,473	-$90,092	-$90,092	-$90,092	-$90,092
Total Change in Cash	-$268,697	-$375	$10,000	$21,153	$32,868
Ending Cash	$1,303	$928	$10,928	$32,081	$64,949

The beginning cash requirement of Scenario 5 ($270,000) is just 33% higher than Scenario 2 despite having more than 5 times the storage capacity. Furthermore, the fees brought in (revenue needs) to cover the cash needs of the storage entity on a per bushel basis are nearly 1/3 the rate, with lower overall revenue brought in than scenarios 3 and 4. It should be noted that the assumption on storage occupancy is the same, even though the storage capacity of Scenario 5 is much larger, which results in a higher implication of storage utilization (e.g. in year 1 there are 390,000 bushels of oats stored in Scenario 5 versus 75,000 bushels in Scenario 2 and 213,000 bushels in scenarios 3 and 4.

Income Statements

The income statement shows profitability projections for the oat storage concept. As mentioned above, the storage fees are set at a level above breakeven in year 3, so the net income estimates are positive at some point in the projections. The Net Operating Income (NOI) of the venture is a measure of income above operating expenses from the oat storage concept. The NOI is divided by the financing costs assumed in these models to measure the Debt Service Coverage Ratio (DSCR). DSCR is the measure of a business' ability to use operating income to pay debt obligations. A DSCR of 1.0 or higher indicates the venture has the ability to cover their debt obligations. Most lenders require a DSCR of 1.2 or higher to lend on a project.

Finally, the statements below also show depreciation expense, a non-cash expense based on capital expenditures and interest costs anticipated. Depreciation expenses presented below are based on a straight-line method, with useful life of bins at 25 years, and equipment at 10 years. It should be noted that there are accelerated depreciation schedules that would increase the depreciation expense, and lower corresponding net income estimates (and income tax implications) in the short term. These methods are not considered in these projections.

Table 13. Scenario 2. Income Statement

	Year 1	Year 2	Year 3	Year 4	Year 5
Revenues (storage fees paid)	$85,648	$92,071	$98,977	$106,400	$114,197
Expenses					
Electricity cost	$3,645	$3,918	$4,212	$4,528	$4,860
Loading & Unloading Labor	$4,690	$5,042	$5,420	$5,827	$6,254
Monitoring	$300	$323	$347	$373	$400
Fuel & Lubrication	$1,725	$1,854	$1,993	$2,143	$2,300
Repairs	$6,138	$6,598	$7,093	$7,625	$8,183
Insurance and taxes	$4,634	$4,981	$5,355	$5,757	$6,178
Total Operating Expenses	$21,132	$22,717	$24,420	$26,252	$28,176
Net Operating Income	$64,516	$69,355	$74,556	$80,148	$86,022
Other Expenses					
Depreciation	$42,420	$42,420	$42,420	$42,420	$42,420
Interest Expense	$21,487	$19,621	$17,673	$15,641	$13,522
Total Other Expenses	$63,908	$62,041	$60,094	$58,062	$55,942
Net Income	$608	$7,314	$14,463	$22,086	$30,079
Debt Service Coverage Ratio	1.00	1.07	1.15	1.24	1.33

As described in the Revenue section above, Scenario 2 is modeled with storage fee revenues above the breakeven point. When all expenses are deducted from revenues, the net income of year 1 is $608, growing to $30,000 in year 5. At these operating income levels, DSCR is estimated at 1.00 to 1.33 in these projections for Scenario 2.

Table 14. Scenario 3. Income Statement

	Year 1	Year 2	Year 3	Year 4	Year 5
Revenues (storage fees paid)	$254,284	$273,355	$293,857	$315,896	$339,045
Expenses					
Electricity cost	$10,362	$11,139	$11,974	$12,872	$13,816
Loading & Unloading Labor	$2,667	$2,867	$3,082	$3,313	$3,556
Monitoring	$6,667	$7,167	$7,704	$8,282	$8,889
Fuel & Lubrication	$4,903	$5,271	$5,666	$6,091	$6,538
Repairs	$28,582	$28,582	$28,582	$28,582	$28,582
Insurance and taxes	$19,814	$19,814	$19,814	$19,814	$19,814
Total Operating Expenses	$72,995	$74,840	$76,823	$78,955	$81,194
Net Operating Income	$181,289	$198,516	$217,034	$236,941	$257,851
Other Expenses					
Depreciation	$79,143	$79,143	$79,143	$79,143	$79,143
Interest Expense	$68,910	$62,924	$56,678	$50,162	$43,364
Total Other Expenses	$148,053	$142,067	$135,821	$129,305	$122,507
Net Income	$33,237	$56,449	$81,213	$107,636	$135,345
Debt Service Coverage Ratio	0.88	0.96	1.05	1.14	1.25

As described in the Revenue section above, Scenario 3 is modeled with storage fee revenues above the breakeven point. When all expenses are deducted from revenues, the net income of year 1 is $33,237, growing to $135,345 in year 5. At these operating income levels, DSCR is estimated at 0.88 to 1.25 in these projections of Scenario 3.

Table 15. Scenario 4. Income Statement

	Year 1	Year 2	Year 3	Year 4	Year 5
Revenues (storage fees paid)	$258,840	$278,253	$299,122	$321,556	$345,120
Expenses					
Electricity cost	$8,251	$8,870	$9,535	$10,250	$11,001
Loading & Unloading Labor	$2,000	$2,150	$2,311	$2,485	$2,667
Monitoring	$6,667	$7,167	$7,704	$8,282	$8,889
Fuel & Lubrication	$2,452	$2,636	$2,833	$3,046	$3,269
Repairs	$29,855	$29,855	$29,855	$29,855	$29,855
Insurance and taxes	$20,691	$20,691	$20,691	$20,691	$20,691
Total Operating Expenses	$69,916	$71,368	$72,930	$74,609	$76,372
Net Operating Income	$188,925	$206,885	$226,192	$246,948	$268,748

	Year 1	Year 2	Year 3	Year 4	Year 5
Other Expenses					
Depreciation	$100,045	$100,045	$100,045	$100,045	$100,045
Interest Expense	$71,958	$65,707	$59,186	$52,381	$45,282
Total Other Expenses	$172,004	$165,753	$159,231	$152,427	$145,328
Net Income	$16,921	$41,132	$66,961	$94,521	$123,421
Debt Service Coverage Ratio	0.87	0.96	1.05	1.14	1.24

Similar to Scenario 3, the above table for Scenario 4 is modeled with storage fee revenues just slightly above the breakeven point. When all expenses are deducted from revenues, the net income of year 1 is $16,921, growing to $123,421 in year 5. At these operating income levels, the DSCR is estimated at 0.87 to 1.24 in the projections of Scenario 4.

Table 16. Scenario 5. Income Statement

	Year 1	Year 2	Year 3	Year 4	Year 5
Revenues (storage fees paid)	$163,964	$176,261	$189,481	$203,692	$218,618
Expenses					
Electricity cost	$11,678	$12,553	$13,495	$14,507	$15,570
Loading & Unloading Labor	$2,439	$2,622	$2,819	$3,030	$3,252
Monitoring	$12,195	$13,110	$14,093	$15,150	$16,260
Fuel & Lubrication	$8,969	$9,642	$10,365	$11,142	$11,959
Repairs	$39,995	$39,995	$39,995	$39,995	$39,995
Insurance and taxes	$8,622	$8,622	$8,622	$8,622	$8,622
Total Operating Expenses	$83,898	$86,544	$89,389	$92,447	$95,658
Net Operating Income	$80,066	$89,717	$100,092	$111,245	$122,960
Other Expenses					
Depreciation	$38,741	$38,741	$38,741	$38,741	$38,741
Interest Expense	$29,986	$27,382	$24,664	$21,828	$18,870
Total Other Expenses	$68,728	$66,123	$63,405	$60,570	$57,611
Net Income	**$11,338**	**$23,594**	**$36,687**	**$50,675**	**$65,349**
Debt Service Coverage Ratio	**0.89**	**1.00**	**1.11**	**1.23**	**1.36**

The net income projections for Scenario 5, as detailed in Table 17, require about 1/3 the revenue compared to Scenarios 2, and 3, and 4 to consistently maintain profitability. Specifically, the Scenario 5 projections show a net income of $11,338 in year 1 up to $65,349 in year 5. At these operating income levels, the DSCR is projected to be 0.89 to 1.36.

Balance Sheet

The projections for the balance sheets are presented at the end of the year, with the asset and liability schedule for the venture in question along with owner's equity. The key assets include cash available (current assets) along with the bins and equipment for oat storage (fixed assets) identified in the capital costs descriptions above, while liabilities are mainly tied to the loans associated with the investment.

Table 17. Scenario 2. Balance Sheet

		Year 1	Year 2	Year 3	Year 4	Year 5
Assets						
	Current Assets	$14,606	$19,404	$29,404	$44,996	$66,461
	Fixed Assets	$617,846	$617,846	$617,846	$617,846	$617,846
Total Assets		$632,452	$637,250	$647,250	$662,842	$684,307
Liabilities		$485,759	$440,982	$394,264	$345,522	$294,667
Owner Equity		$146,693	$196,268	$252,986	$317,320	$389,640
Liabilities & Owners Equity:		$632,452	$637,250	$647,250	$662,842	$684,307

Table 17 presents the balance sheet projections for Scenario 2, detailing the venture's assets, liabilities, and owner's equity over a five-year period. The growth in equity over the projection period, more than doubling, reflects the accumulation of cash and reduction of debt over that time period. While the equity modeled is lower than other scenarios, this is directly correlated with both a lower cash position and less value of fixed assets compared to the other scenarios.

Table 18. Scenario 3. Balance Sheet

		Year 1	Year 2	Year 3	Year 4	Year 5
Assets						
	Current Assets	$9,821	$1,303	$11,303	$41,210	$92,027
	Fixed Assets	$1,981,447	$1,981,447	$1,981,447	$1,981,447	$1,981,447
Total Assets		$1,991,268	$1,982,750	$1,992,750	$2,022,657	$2,073,474
Liabilities		$1,557,842	$1,414,240	$1,264,415	$1,108,097	$945,004
Owner Equity		$433,427	$568,510	$728,335	$914,560	$1,128,470
Liabilities & Owners Equity:		$1,991,268	$1,982,750	$1,992,750	$2,022,657	$2,073,474

Table 18 presents the balance sheet projections for Scenario 3, detailing the venture's assets, liabilities, and owner's equity over a five-year period. The growth in equity over the projection period, nearly tripling, reflects the accumulation of cash and reduction of debt over that time period.

Table 19. Scenario 4. Balance Sheet

		Year 1	Year 2	Year 3	Year 4	Year 5
Assets						
	Current Assets	$10,003	$696	$10,696	$41,451	$94,007
	Fixed Assets	$2,069,097	$2,069,097	$2,069,097	$2,069,097	$2,069,097
Total Assets		$2,079,100	$2,069,793	$2,079,793	$2,110,548	$2,163,104
Liabilities		$1,476,799	$1,476,799	$1,320,346	$1,157,113	$986,807
Owner Equity		$602,301	$592,994	$759,446	$953,435	$1,176,297
Liabilities & Owners Equity:		$2,079,100	$2,069,793	$2,079,793	$2,110,548	$2,163,104

Owner's equity in Scenario 4 roughly doubles over the five-year projection. Like the preceding scenarios, this is largely due to the increase in cash and reduction in debt over that time period.

Table 20. Scenario 5. Balance Sheet

		Year 1	Year 2	Year 3	Year 4	Year 5
Assets						
	Current Assets	$1,303	$928	$10,928	$32,081	$64,949
	Fixed Assets	$862,235	$862,235	$862,235	$862,235	$862,235
Total Assets		$863,539	$863,164	$873,164	$894,317	$927,185
Liabilities		$550,216	$615,413	$550,216	$482,193	$411,223
Owner Equity		$313,323	$247,751	$322,948	$412,124	$515,962
Liabilities & Owners Equity:		$863,539	$863,164	$873,164	$894,317	$927,185

The balance sheet projections for Scenario 5, detailed in Table 20, represent a similar investment scale compared to Scenario 2 but considerably smaller than Scenarios 3 and 4, with total assets beginning at $863,539 in Year 1 and growing to just over $927,000 by Year 5. Similar to Scenario 2, the equity modeled is lower than Scenarios 3 and 4 due to both a lower cash position and less value of fixed assets. As stated previously, the cash positions in Scenarios 3 and 4 are higher due to the higher rates charged to the producers for oat storage, relative to other scenarios modeled.

Breakeven Analysis

A breakeven analysis was conducted to determine the monthly storage fee that would need to be charged to cover all fixed and variable costs (discussed above), resulting in zero profit for each development scenario considered. Further, a range of capacity and occupancy assumptions were employed in this breakeven analysis. The low end of capacity is based on the intermediate scale used in Scenario 2, while the high-end estimate is an approximation of the total oats currently grown in the Driftless Area. The latter was estimated using the average annual oat acreage in the Driftless Area[53] (>30,000 acres) from the USDA Cropland Data Layer multiplied by a yield of 100 BU per acre

[53] Boundary provided by the University of Wisconsin-Madison (Carson et al., 2023).

(CroplandCROS, 2026). Variable costs that depend on design capacity (bin size, number of augers, etc.) scale with design capacity, while the fixed costs (elevator, truck scale, etc.) do not. For Scenario 5, the breakeven analysis includes a range of occupancy but is based on a fixed capacity (520,000 BU) and fixed purchase price for the existing facility. For example, if the estimated regional needs are for 200,000 BU, Scenarios 2-4 are designed to meet this demand and development costs are proportional to that capacity, but Scenario 5 purchase costs are fixed.

Results of the matrices of monthly storage fees by occupancy percentage and estimated capacity need (top row) are shown in the following tables.

Table 21. Scenario 2. Breakeven (monthly storage fee) by Occupancy and Capacity

	Estimated Need & Designed Storage Capacity (BU)						
Occupancy	100,000	200,000	400,000	600,000	800,000	1,000,000	3,000,000
30%	$0.336	$0.322	$0.315	$0.312	$0.311	$0.310	$0.309
35%	$0.273	$0.261	$0.255	$0.253	$0.252	$0.252	$0.250
40%	$0.230	$0.219	$0.214	$0.212	$0.211	$0.211	$0.209
45%	$0.198	$0.188	$0.183	$0.182	$0.181	$0.181	$0.179
50%	$0.168	$0.159	$0.155	$0.153	$0.153	$0.152	$0.151
55%	$0.151	$0.143	$0.139	$0.138	$0.137	$0.137	$0.136
60%	$0.137	$0.130	$0.126	$0.125	$0.124	$0.124	$0.123
65%	$0.125	$0.118	$0.115	$0.114	$0.113	$0.113	$0.112
70%	$0.115	$0.109	$0.106	$0.105	$0.104	$0.104	$0.103
75%	$0.106	$0.100	$0.097	$0.096	$0.096	$0.096	$0.095
80%	$0.098	$0.093	$0.090	$0.089	$0.089	$0.089	$0.088

Table 22. Scenario 3. Breakeven (monthly storage fee) by Occupancy and Capacity

	Estimated Need & Designed Storage Capacity (BU)						
Occupancy	100,000	200,000	400,000	600,000	800,000	1,000,000	3,000,000
30%	$0.440	$0.398	$0.377	$0.370	$0.367	$0.365	$0.359
35%	$0.365	$0.329	$0.311	$0.305	$0.302	$0.300	$0.296
40%	$0.312	$0.280	$0.264	$0.259	$0.256	$0.255	$0.251
45%	$0.271	$0.243	$0.229	$0.225	$0.222	$0.221	$0.217
50%	$0.236	$0.211	$0.198	$0.194	$0.192	$0.190	$0.187
55%	$0.213	$0.190	$0.179	$0.175	$0.173	$0.172	$0.169
60%	$0.194	$0.173	$0.163	$0.159	$0.157	$0.156	$0.153
65%	$0.178	$0.159	$0.149	$0.146	$0.144	$0.143	$0.140
70%	$0.164	$0.146	$0.137	$0.134	$0.133	$0.132	$0.129
75%	$0.152	$0.135	$0.127	$0.124	$0.123	$0.122	$0.120
80%	$0.142	$0.126	$0.118	$0.116	$0.114	$0.113	$0.111

Table 23. Scenario 4. Breakeven (monthly storage fee) by Occupancy and Capacity

	Estimated Need & Designed Storage Capacity (BU)						
Occupancy	100,000	200,000	400,000	600,000	800,000	1,000,000	3,000,000
30%	$0.716	$0.415	$0.264	$0.214	$0.189	$0.174	$0.134
35%	$0.604	$0.346	$0.217	$0.174	$0.152	$0.140	$0.105
40%	$0.523	$0.297	$0.184	$0.146	$0.127	$0.116	$0.086
45%	$0.460	$0.259	$0.159	$0.125	$0.109	$0.099	$0.072
50%	$0.407	$0.227	$0.136	$0.106	$0.091	$0.082	$0.058
55%	$0.369	$0.205	$0.123	$0.095	$0.082	$0.074	$0.052
60%	$0.338	$0.187	$0.112	$0.087	$0.074	$0.066	$0.046
65%	$0.311	$0.172	$0.102	$0.079	$0.067	$0.060	$0.042
70%	$0.288	$0.159	$0.094	$0.072	$0.062	$0.055	$0.038
75%	$0.268	$0.147	$0.087	$0.067	$0.057	$0.051	$0.035
80%	$0.250	$0.137	$0.081	$0.062	$0.053	$0.047	$0.032

Table 24. Scenario 5. Breakeven (monthly storage fee) by Occupancy and Estimated Capacity Needed

	Estimated Need (BU) of Fixed Facility Capacity (520,000 BU)			
Occupancy	100,000	200,000	400,000	520,000
30%	$0.811	$0.405	$0.203	$0.165
35%	$0.645	$0.323	$0.161	$0.132
40%	$0.532	$0.266	$0.133	$0.109
45%	$0.450	$0.225	$0.113	$0.092
50%	$0.371	$0.185	$0.093	$0.077
55%	$0.332	$0.166	$0.083	$0.069
60%	$0.299	$0.149	$0.075	$0.062
65%	$0.271	$0.136	$0.068	$0.056
70%	$0.248	$0.124	$0.062	$0.051
75%	$0.227	$0.114	$0.057	$0.047
80%	$0.209	$0.105	$0.052	$0.043

As indicated in the tables above, there are economies of scale in grain storage. As such, the larger the capacity and more occupancy of the storage facility, the lower the breakeven point becomes, especially in scenarios with equipment designed for larger quantities (large blended bins, elevators, etc.). In larger grain cooperatives, storage fees of around $0.03 per bushel are common. Scenario 4 reaches level with a design capacity of 3 million bushels (the estimated total regional production) and 80 percent occupancy rate. In comparison, Scenario 5 (the purchased facility with a fixed capacity of 520,000 BU) is within roughly $0.01 of commercial levels at nearly 1/6th of the size. No other scenarios were found to have breakeven points that approached typical storage fees of larger grain cooperatives.

Sensitivity Analysis

A sensitivity analysis was conducted to evaluate how the range of any one particular capital cost items (presented above) affect the overall investment requirement of the scenarios considered. The statistical

programming software @Risk, by Palisade Corporation, was used to evaluate sensitivity of the expected capital expenditures. Results of the sensitivity assessment are presented as histograms below. Each histogram is presented as bars with relative frequency (%) of iterations (on the y axis) and capital expenditure needs. The relative frequency histograms display the proportion of data points within each interval, showing how estimated findings are distributed across the classes (x axis). These findings suggest that Scenarios 1, 3, and 4 would require an investment of between $1.9 million to $2.2 million (5th percentile to 95th percentile results) to build oat storage with 284,000 BU capacity. Scenario 2 investment ranges between $590,000 and $646,000 for a capacity of 100,000 BU, and Scenario 5 investment is between $750,000 and $930,000 for the existing facility with a capacity of 520,000 BU. These findings are plotted in the histograms below.

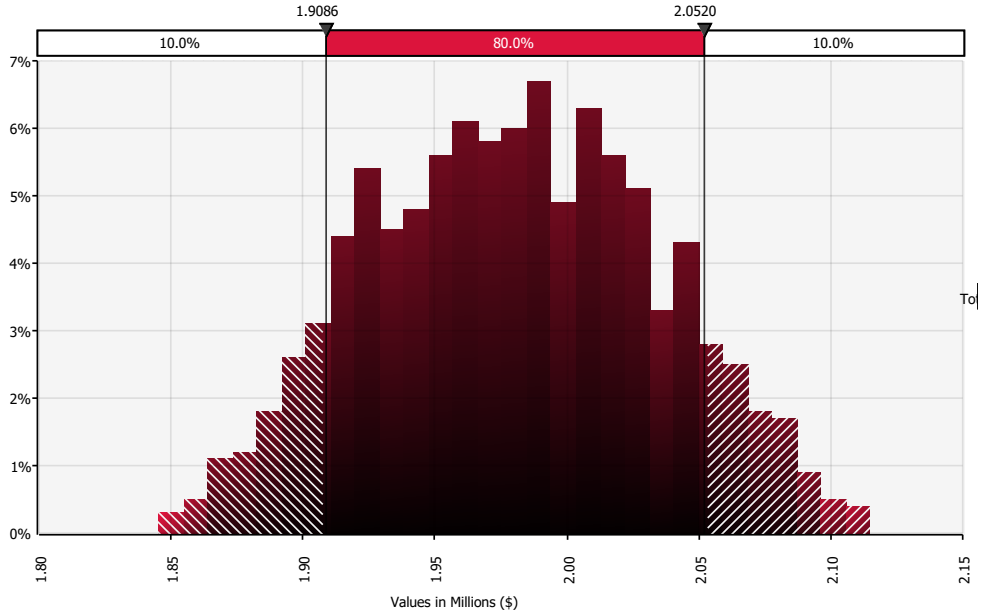


Figure 7. Total Capital Costs: Scenario 1

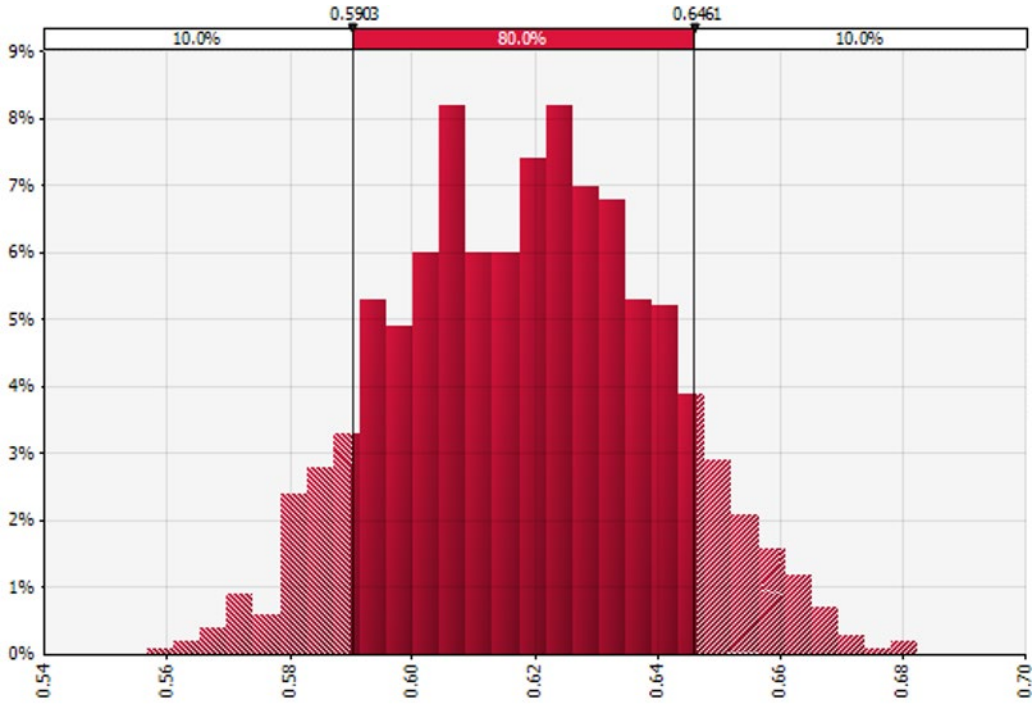


Figure 8. Total Capital Costs: Scenario 2

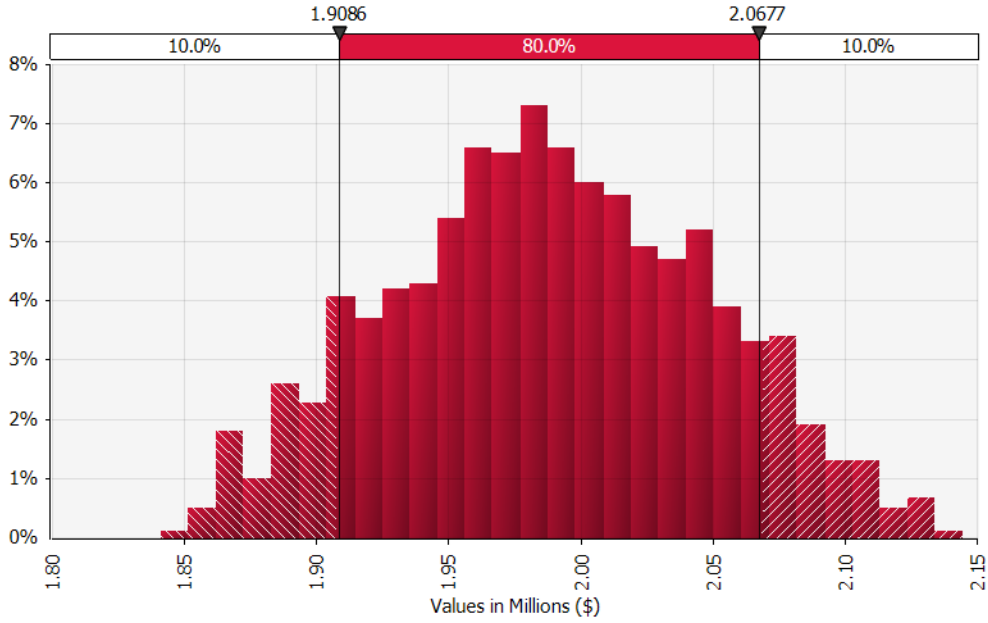


Figure 9. Total Capital Costs: Scenario 3

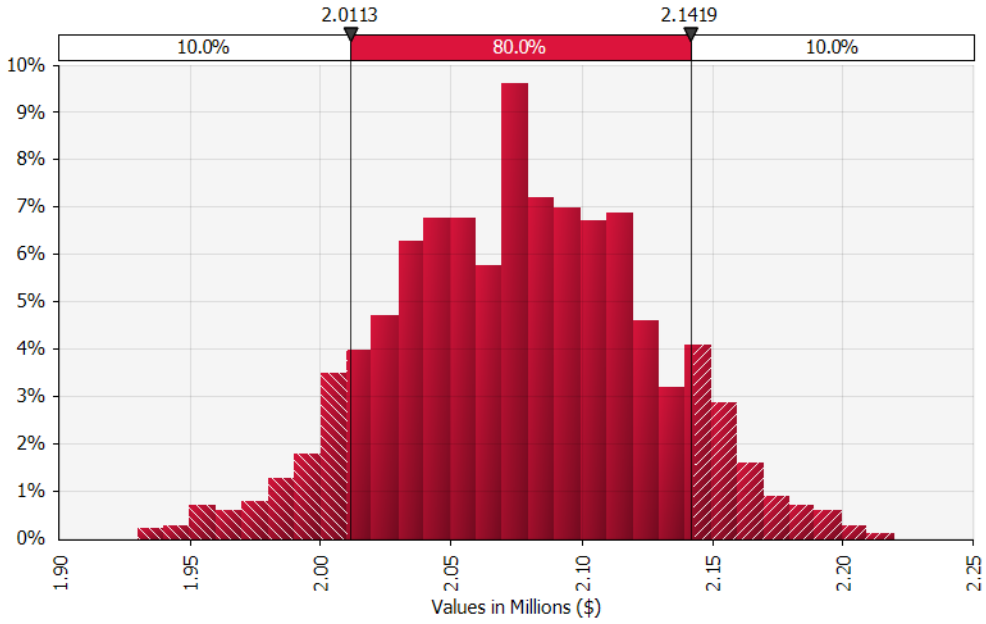


Figure 10. Total Capital Costs: Scenario 4

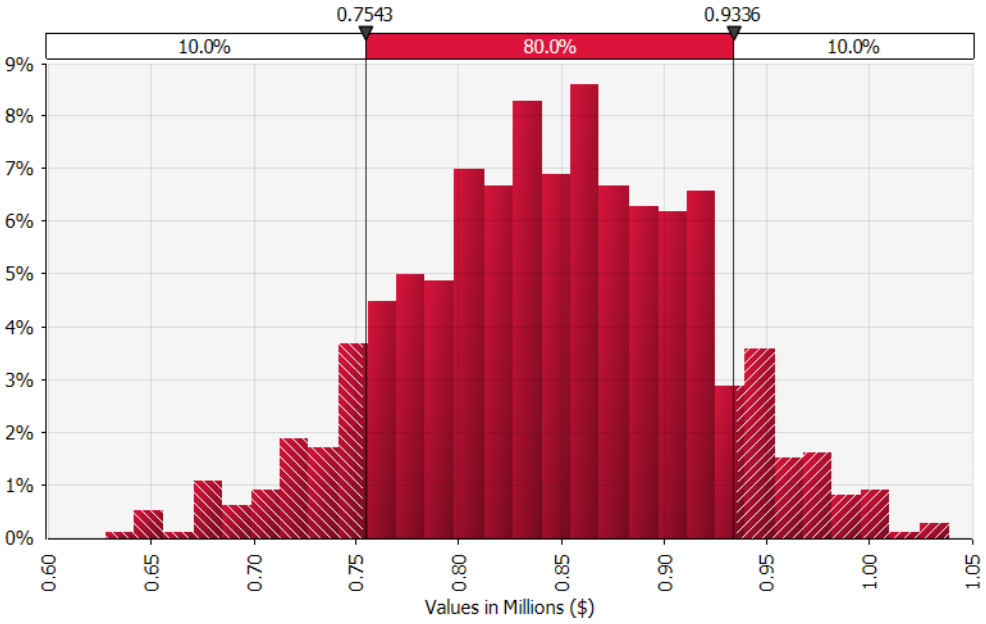


Figure 11. Total Capital Costs: Scenario 5

These results suggest that Scenario 2 has a lower capital cost per than all other scenarios considered even in the high end estimate of costs, followed closely by Scenario 5. This distinction is plotted between Scenario 2 (red histogram) Scenario 3 (blue histogram), Scenario 4 (green histogram), and Scenario 5 (purple histogram) in the figure below. Note the low-end (10th percentile) estimate of capital costs of Scenario 2 is only $590,000 compared to the high-end estimate (90th percentile) of Scenario 4 at roughly $2.14 million.

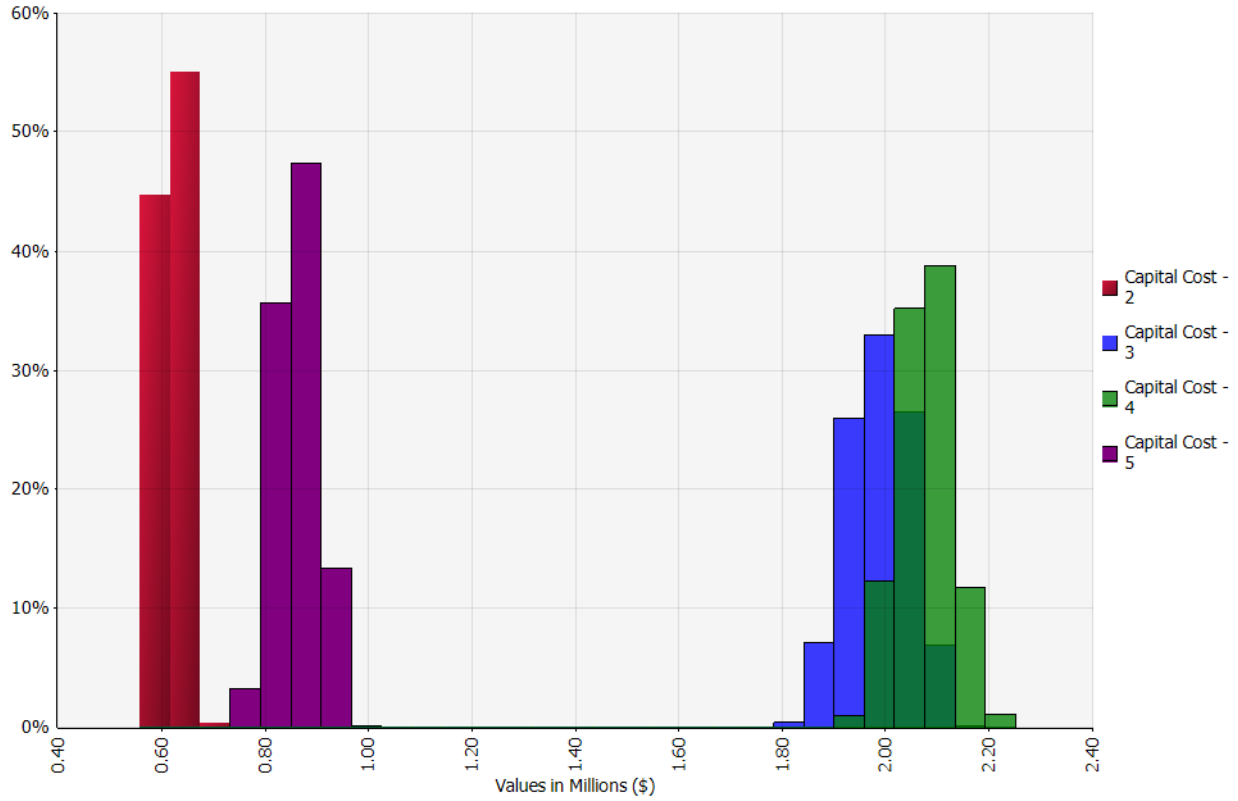


Figure 12. Total Capital Costs: Scenarios 2-5

A sensitivity tornado displays the key variables that are influencing the capital cost estimates in the histograms provided above. The tornado diagrams displayed below show the impact on capital expenditure needs given the range of likely cost for that item, and keeping all other variables constant. The variables with the most influence are represented on top of the figures, and have the longest bars, while the variables with the least influence are at the bottom of the figures and have the shortest bars.

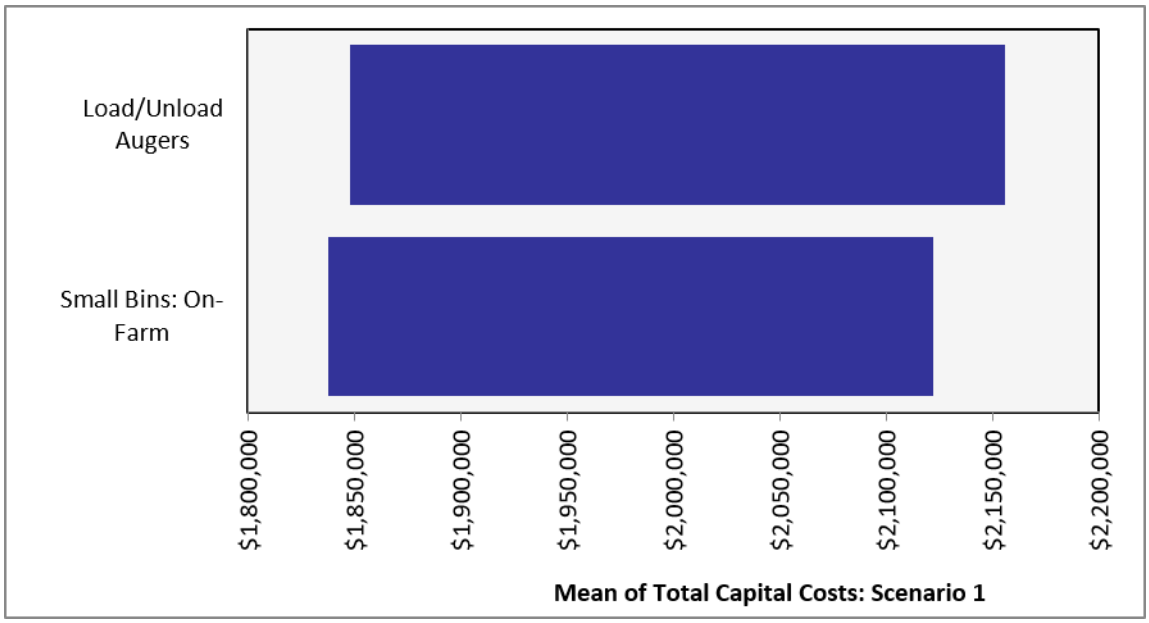


Figure 13. Capital Costs Sensitivity Tornado: Scenario 1

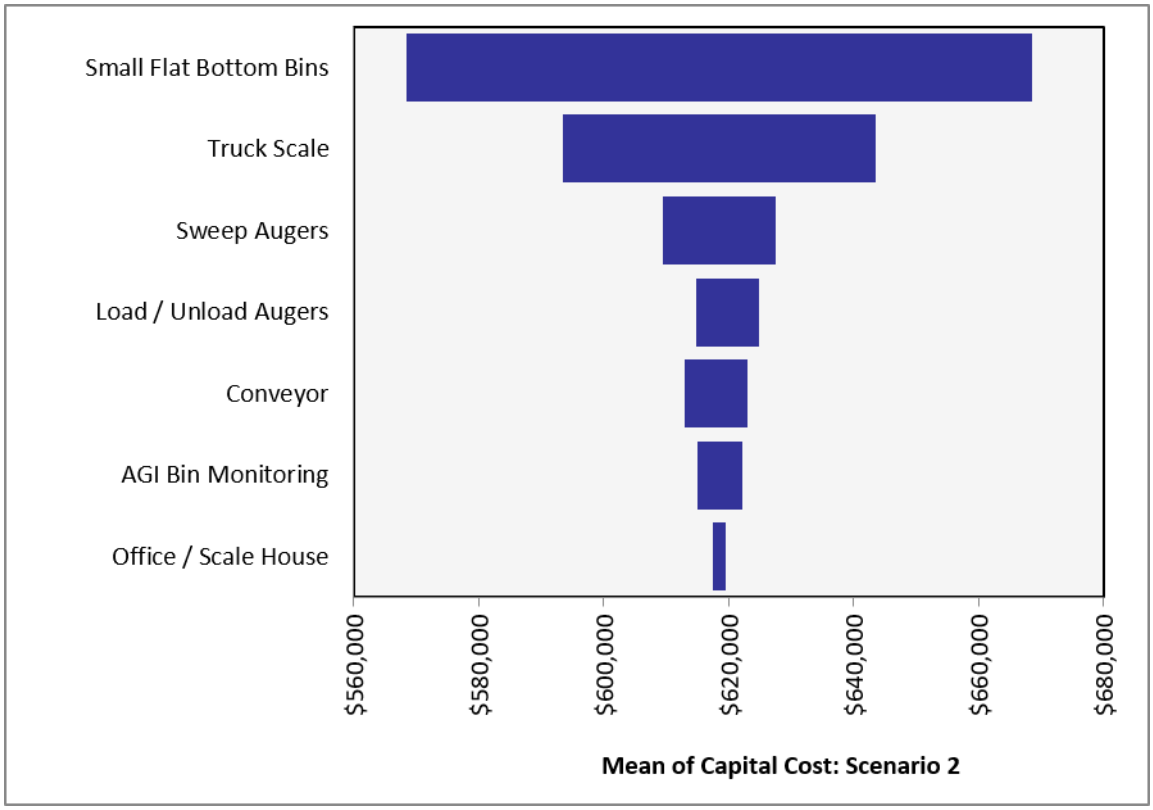


Figure 14. Capital Costs Sensitivity Tornado: Scenario 2

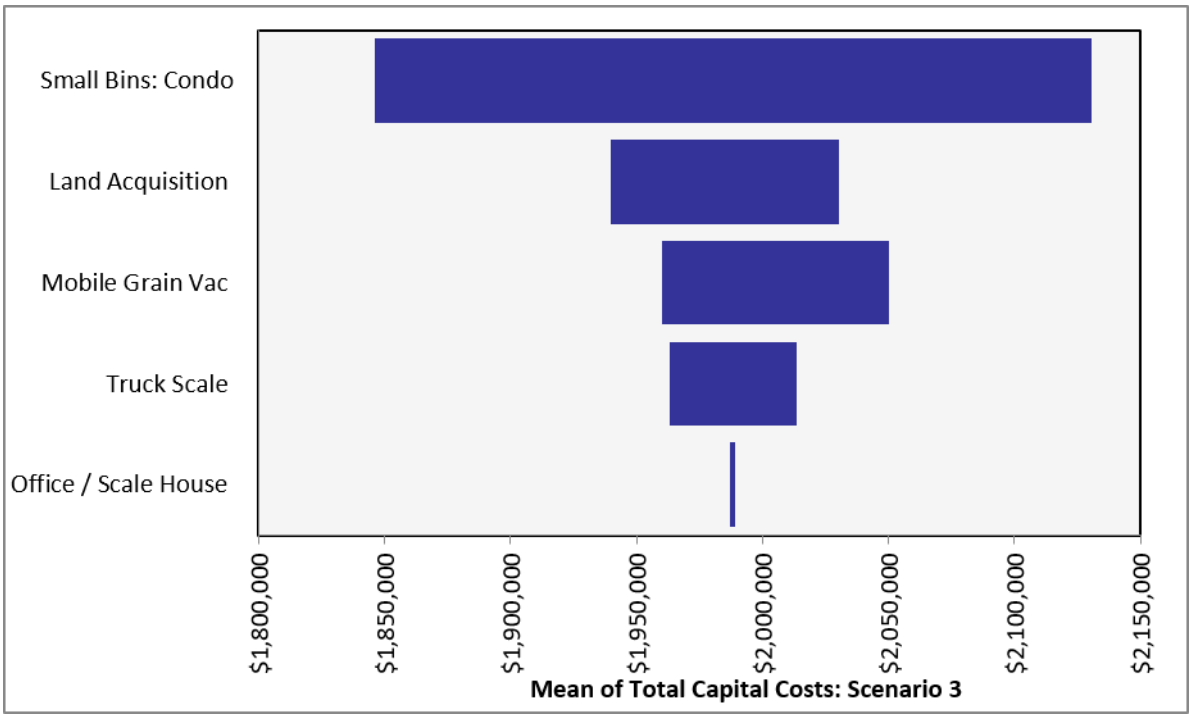


Figure 15. Capital Costs Sensitivity Tornado: Scenario 3

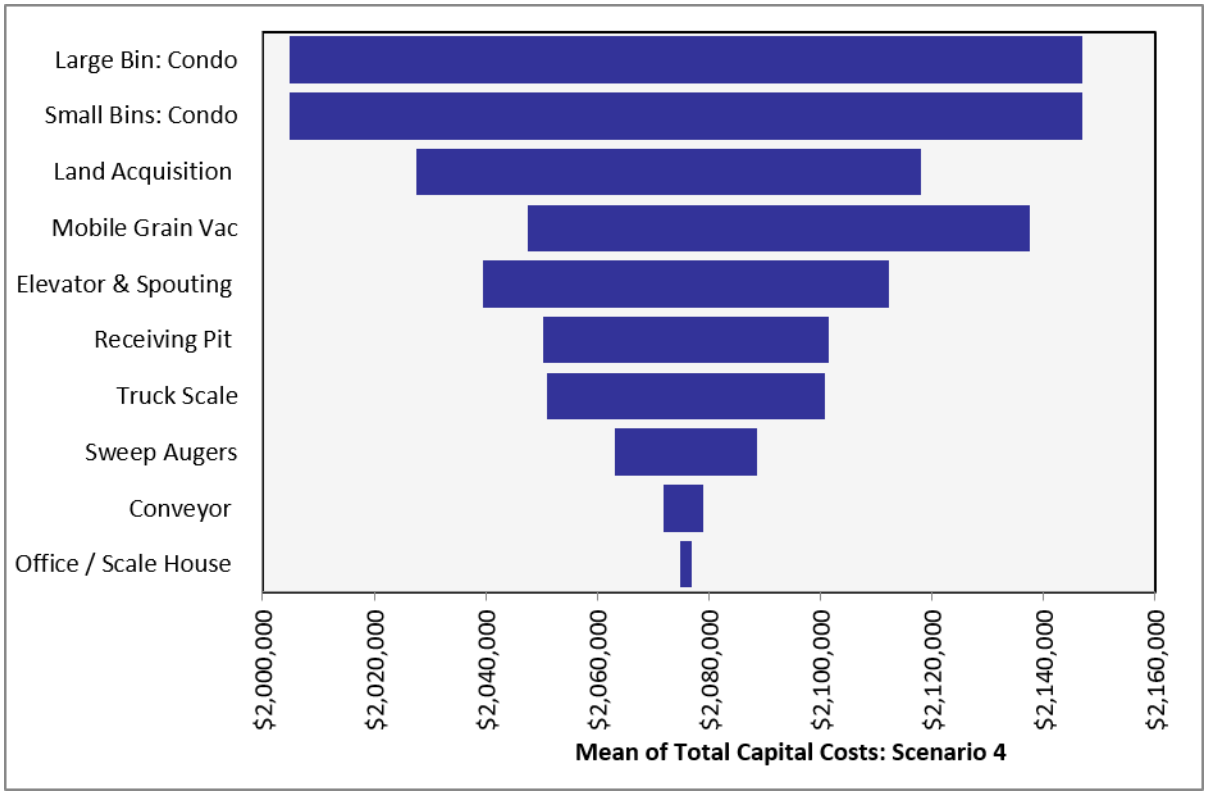


Figure 16. Capital Costs Sensitivity Tornado: Scenario 4

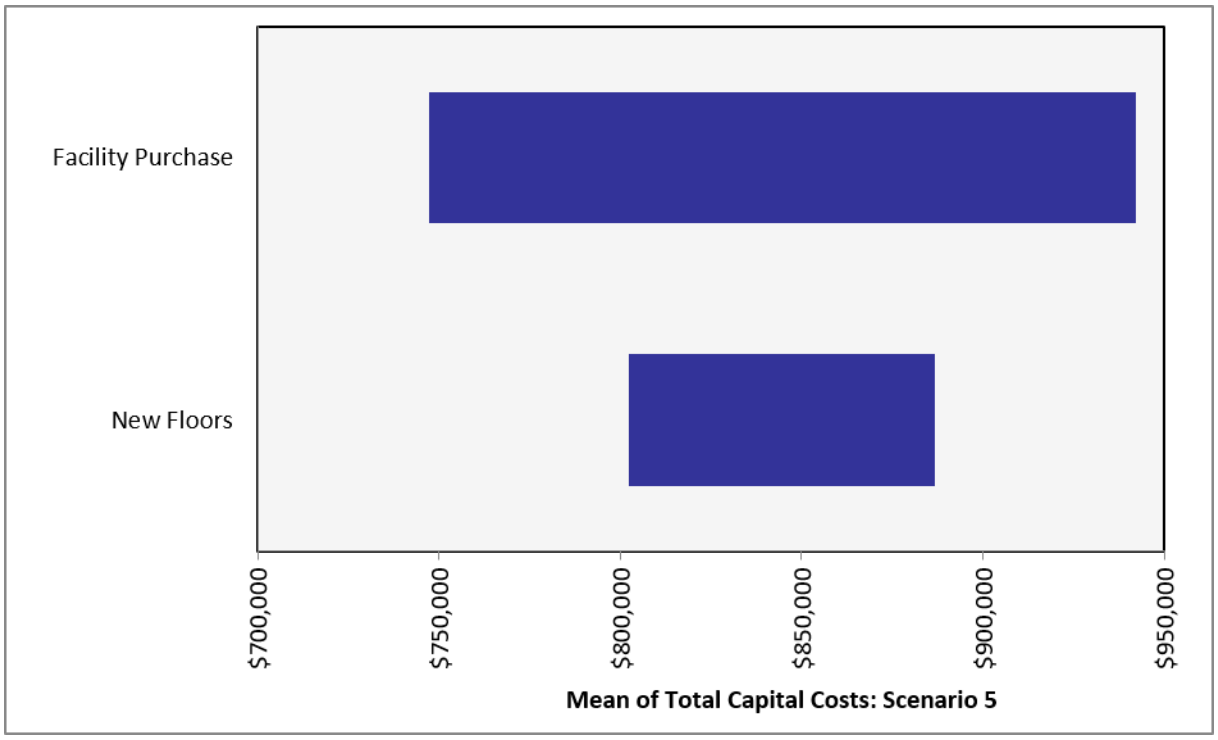


Figure 17. Capital Costs Sensitivity Tornado: Scenario 5

4.3. Key Findings

Of the build scenarios (1-4), Scenario 2 is the least total cost scenario at around $617,000 (due to lowest modeled capacity), followed by Scenario 3 ($1.98 million), Scenario 1 ($2.00 million) and Scenario 4 ($2.07 million). Scenario 5 is the lowest investment cost scenario on a per bushel basis given its higher existing capacity relative to other scenarios (larger by over 75 percent), totaling $1.66 per bushel.

The sensitivity analysis indicates a capital need of around $590,000 to $646,000 for a capacity of 100,000 BU (Scenario 2) and $1.91 to $2.14 million for a capacity of 284,000 BU (Scenarios 3 and 4), with the most sensitive variable being the cost of the bins.

The breakeven storage fee for the build Scenario 4 approaches the breakeven of larger grain cooperatives (around $0.03 per bushel monthly) at a capacity of 3 million bushels (the estimated total regional production). Scenario 5 would have breakeven storage fees within $0.01 of commercial fees at the current fixed capacity of 520,000 bushels.

Scenario 2 has the lowest annual operating cost due to the low modeled capacity (100,000 BU) and, to a lesser extent, labor savings from remote monitoring equipment.

Of the build scenarios (1-4), Scenario 1 (on-farm storage) has the highest annual variable costs (total and per BU) driven by the lower labor efficiency of using auger equipment for loading and unloading.

Cash flow projections indicate that Scenarios 3 and 4 (new 284,000 BU capacity facility) would require between $630,000 and $660,000 in cash at the beginning of the project to be solvent; cash needs of Scenario 2 (new 100,000 BU capacity facility on-farm) and Scenario 4 (purchased 520,000 BU capacity

facility) would be $200,000 and $275,000, respectively, at the start of the project. These projections assume a similar occupancy using different volumes of capacity.

The Income Statement projections indicate that Scenarios 2, 3 and 4 would achieve a debt-service coverage ratio (DSCR) of 1.2 or higher (the benchmark for lending) when storage rates are $0.19-$0.20 per bushel monthly and occupancy is above 50 percent (e.g. 100% utilization for 6 months, 50% occupancy for 12 months or similar). Similarly, the DSCR of Scenario 5 (buy existing) is above 1.2 when rates are at $0.07 per bushel monthly and occupancy is around 50 percent.

5. Recommendations and Conclusions

This chapter synthesizes findings from across the market, technical, financial, and organizational dimensions examined in this feasibility study. It identifies the factors most likely to determine whether shared oat storage in the Driftless Area succeeds or fails, highlights the key decision points that a group of farmers must navigate, and provides actionable recommendations for moving the work forward. The chapter is organized around six themes: integration of findings, critical success factors, key decision points and tradeoffs, barriers and constraints, opportunities and enabling factors, and preliminary conclusions.

For the community of farmers already connected to Green Acres Milling, the study provides a detailed financial and organizational framework to support decisions about the scale, structure, and governance of the storage infrastructure needed to fulfill that market relationship. For other farmers producing oats in the Driftless Area , the study offers a broader assessment of market options, storage configurations, and organizational models that can help make oat production commercially viable regardless of which buyer or market channel they pursue.

The essential finding of this study is that shared oat storage infrastructure is both technically achievable and financially viable under the right conditions. The agronomic case for oat production in the Driftless Area is strong and well-documented. What remains fragile is the commercial infrastructure that converts that agronomic opportunity into a dependable economic enterprise. Storage is the linchpin: it creates the flexibility, quality management capability, and delivery reliability that premium market access requires. Without it, the oat industry in the region will remain vulnerable to exactly the kind of market disruption experienced in the Fall of 2025, when roughly 600,000 bushels sat unsold because the supply chain lacked the capacity to absorb them.

5.1. Integration of Market, Technical, and Organizational Findings

Across the market, technical, and organizational domains, the study's findings converge on a consistent picture: the Driftless Area oat industry possesses genuine competitive advantages and growing market momentum, but faces structural gaps in infrastructure, financing access, and supply chain organization that must be addressed for those advantages to translate into durable commercial viability.

Market Findings

Consumer demand for domestically grown, traceable oat products is expanding at approximately 8% annually. Domestic production cannot meet that demand, and U.S. farmers, especially those growing in identifiable regions with verifiable practices, are increasingly well-positioned to capture the premium end of the market. Driftless Area oats carry authentic differentiation credentials: lower glyphosate residues than Canadian imports, farm-level traceability, and a documented connection to soil health and water quality outcomes that resonate with mission-aligned buyers.

Green Acres Milling represents the most significant near-term market anchor for Driftless Area oat producers. Many Oat Mafia farmers are already invested in and aligned with the Green Acres model, which is designed to offer approximately $6.00 per bushel by restructuring the value chain to eliminate

intermediary margins. Under the mill's delivery window model, farmers receive scheduled delivery slots rather than delivering on demand, which creates a specific and well-defined upstream storage requirement: producers need the ability to hold grain between harvest and their assigned window. At the same time, the premium oat market extends beyond any single buyer, and producers not yet connected to the Green Acres supply chain have real options in the broader food-grade market, including emerging regional buyers and direct-to-processor relationships, but the same principle applies: committed buyer relationships should precede significant storage investment.

Technical Findings

The technical analysis confirms that several feasible configurations exist at different scales and capital investment levels. Scenario 5 (the purchase and retrofit of an existing grain storage facility) stands out as the most capital-efficient pathway to meaningful storage capacity (520,000 bushels), with a capital cost of approximately $862,000 and a storage fee of only $0.07 per bushel per month required to achieve financial viability. This analysis used the Blooming Prairie, Minnesota corn storage facility as a representative example to model this scenario; it illustrates the cost and financial profile of an acquisition approach, and comparable facilities exist in the region. At $1.66 per bushel of capital cost, the acquisition pathway is less than half the capital needed for new construction at comparable capacity, and the per-bushel storage cost approaches commercial cooperative rates at roughly one-sixth the volume threshold.

For groups with more modest near-term needs and limited capital, Scenario 2 (consolidated on-farm storage, 100,000 bushels, approximately $617,000) offers the most accessible entry point. Scenarios 3 and 4 (new construction at 284,000 bushels, approximately $1.98 to 2.07 million) are technically sound but require substantially higher beginning capital and carry more financial risk during the ramp-up period. In all scenarios, financial sustainability depends critically on achieving storage occupancy above 50%.

A technically important finding that cuts across all scenarios is the value of blending capability. When oat test weights fall below the 37-pound-per-bushel food-grade threshold (a real risk in the Driftless Area's warm, humid summer climate), the ability to blend lower-weight grain with higher-quality oats can mean the difference between receiving food-grade prices and accepting a feed-grade discount. No individual farm can accomplish this alone; it requires aggregated supply from multiple producers. Any shared facility serving premium market channels should incorporate blending capability as a design requirement.

Organizational Findings

The legal and governance analysis identifies the multi-member LLC and agricultural cooperative structures (Minnesota Chapters 308A or 308B) as the most suitable frameworks for a shared grain storage entity. Both provide strong liability protection, pass-through tax treatment, and access to the suite of USDA financing programs most relevant to this investment. The choice between them hinges on governance preferences and capital structure: a cooperative offers democratic, one-member-one-vote governance and potential federal Section 521 tax advantages on patronage dividends but requires careful cultivation of shared values and governance discipline. An LLC provides more flexible governance and is somewhat simpler to form and administer.

Interviewees consistently emphasized that organizational structure matters less than organizational culture. Cooperatives and LLCs alike succeed when built on genuine trust and fail when members prioritize individual gain over collective decision-making. The founding group's shared commitment to mission, transparent governance from the outset, and clear policies for dispute resolution and member exit are likely to prove more determinative of long-term viability than the specific entity form chosen.

5.2. Critical Success Factors

Based on the full body of evidence assembled in this study, the following factors are most likely to determine whether a shared oat storage facility in the Driftless Area succeeds over the medium and long term.

Committed Market Access Tied to Storage Design

Storage occupancy above 50% is essential for financial viability, and that occupancy depends on producers having confidence that their grain can be sold at prices that justify storage costs. For Green Acres-connected producers, the mill's delivery window model creates a concrete use case: storage is required to bridge harvest and assigned delivery slots. For producers outside that supply chain, the same logic applies: a committed buyer relationship should be in place before a significant storage investment is made. Facility design, capacity, and governance should follow from the market relationships that will actually fill the bins.

Right-Sizing Capacity to Committed Production

Facilities sized beyond current committed production volumes create fixed cost burdens that undermine early financial performance and can threaten viability during the critical ramp-up period. The founding group should establish a realistic estimate of committed production in the first two to three years of operation rather than aspirational projections, and size the initial facility accordingly. Beginning with Scenario 2 (100,000 bushels) or acquiring an existing facility at the scale modeled in Scenario 5 (520,000 bushels) offers far more financial flexibility than constructing new at 284,000 bushels without strong committed volume.

Adequate Beginning Capital and Cash Reserves

All scenarios require beginning cash sufficient to cover the initial down payment and first-year operations before storage fee revenues reach adequate levels. For Scenario 2 that figure is $200,000; for Scenario 5 it is $270,000; for Scenarios 3 and 4 it ranges from $630,000 to $660,000. Insufficient starting capital is the most common cause of early-stage cooperative and infrastructure venture failure. The founding group should secure beginning capital commitments: from member equity contributions, grant programs (USDA Value-Added Producer Grants, Rural Development Business and Industry loans, Minnesota Rural Finance Authority programs), and any available philanthropic capital, before committing to a facility investment.

Governance Trust and Democratic Accountability

The literature on cooperative and shared infrastructure ventures consistently finds that governance quality, particularly trust, transparency, and accountability among founding members, is more predictive of long-term success than financial structure or facility design. The founding group should invest in

governance infrastructure before operational launch: a clear operating agreement or cooperative bylaws, transparent financial reporting systems, well-defined policies for member admission, equity contributions, and exit, and a process for resolving disputes. Building governance rigor early is less costly than repairing fractures later.

Identity Preservation and Traceability Capability

The premium oat market's value proposition depends on traceability. Green Acres Milling has indicated a strong preference for identity-preserved oats for premium product lines, and an increasing share of food brand buyers are demanding farm-level supply chain documentation. Any facility designed to serve this market must be capable of maintaining lot-level identity through intake, storage, and delivery. This requirement should be a design input from the beginning. Scenario 3 (condominium storage) is purpose-built for this function; an acquired facility would require deliberate bin management protocols to achieve similar outcomes.

Blending Capability as a Quality Management Tool

Given the Driftless Area's climate conditions and the test weight variability documented in stakeholder interviews, blending capability is a strategic asset that directly protects revenue. A facility that can aggregate oats from multiple producers and blend low-weight grain to food-grade specification is providing a service that no individual farm can replicate. This capability should be explicitly designed into any shared facility, and the governance structure should include clear protocols for how blending decisions are made, communicated to producers, and compensated.

5.3. Barriers and Constraints

The following barriers are material to the viability of shared oat storage. None are insurmountable, but each requires active management.

Financial and Capital Barriers

- Beginning capital requirements are substantial, particularly for Scenarios 3 and 4, and mission-aligned agricultural financing does not fully meet demand in the regenerative agriculture space. Member equity contributions and conventional agricultural debt should be the planning baseline, with grant funding treated as supplemental.
- DSCR thresholds below 1.2 in the early years of Scenarios 3 and 4 may complicate conventional lending without additional collateral or grant support, arguing for starting at a scale where financial projections are more lender-friendly.
- Crop insurance products for food-grade oats remain misaligned with premium market values. A test weight shortfall or crop failure may not be adequately covered, which suppresses adoption by risk-averse producers and limits the committed production volume available to fill storage capacity.

Market and Buyer Constraints

- For producers outside the Green Acres supply chain, the domestic premium oat market remains thin and concentrated. Developing and maintaining direct buyer relationships requires sustained

organizational capacity that smaller producer groups may find difficult without dedicated leadership.

- Price premiums are real but not guaranteed. The model spreadsheet should be used to test financial projections against food-grade prices of $4.50 to $5.00 per bushel rather than relying solely on the $6.00 figure Green Acres has indicated.
- Green Acres Milling is not yet operational. Until it opens, producers aligned with the mill must continue managing grain through existing channels, underscoring the near-term urgency of upstream storage solutions. Due to space limitations at the mill, some farmers will have to continue to store their harvests offsite until their delivery window.

Organizational and Regulatory Risks

- Shared infrastructure ventures are vulnerable to governance breakdown when individual interests diverge from collective ones. Multiple interviewees noted that cooperatives tend to fail for social and political reasons rather than technical or financial ones. Governance investment is the mitigation.
- MDA Grain Licensing requirements, OSHA grain handling standards, and multi-state tax compliance impose administrative obligations that volunteer-led organizations often struggle to meet. Professional operational capacity, including an operations manager and licensed grain handler, should be budgeted from the outset.

Technical and Site Constraints

- Oat test weight variability in the Driftless Area's climate means that quality management, including moisture monitoring, aeration, and blending, must be an active operational function, not a passive service. Facilities without adequate quality management infrastructure will fail to deliver the consistency premium buyers require.
- The acquisition pathway depends on identifying a suitable facility at an acceptable price. Candidates exist in the region, but availability at any given time is uncertain. Multiple candidates should be evaluated in parallel; the pathway should not be treated as contingent on any single site.

5.4. Opportunities and Enabling Factors

Against the barriers identified above, the study also documents a substantial set of opportunities and enabling conditions that improve the prospects for shared oat storage and justify continued investment of time and resources in moving the concept forward.

An Established Market Relationship with Green Acres Milling

The farmer-owned Green Acres Mill represents a significant investment in locally produced oats. The mill's delivery window model means that storage is not optional for producers in this supply chain: it is a prerequisite for fulfilling their obligations as mill partners. This creates a direct, motivated user base for a shared storage facility whose economic interest in seeing it succeed is contractual rather than aspirational.

The Acquisition Pathway: A More Accessible Route to Scale

Acquiring an existing grain storage facility rather than building new can deliver substantially more capacity at a fraction of the per-bushel capital cost, with storage fee requirements that approach commercial cooperative levels. The Blooming Prairie, Minnesota corn storage facility was used as a representative example in this analysis. Similar infrastructure, including former elevator complexes, unused cooperative bins, and repurposed commodity grain facilities, exists within the region and periodically becomes available. Actively seeking such opportunities should be a core near-term activity rather than a fallback option.

Federal and State Financing Programs

Multiple programs are available to reduce the beginning capital burden. USDA Farm Storage Facility Loans, modeled in the pro formas at 4.25% interest over ten years, are directly applicable. USDA Value-Added Producer Grants, Rural Development Business and Industry loan guarantees, and Minnesota Rural Finance Authority programs offer additional support. Philanthropic capital from nonprofits, impact investors aligned with regenerative agriculture, and program-related investments from food brands seeking supply chain security represent additional sources worth exploring.

The Oat Mafia Coalition as Organizing Infrastructure

The Oat Mafia coalition, an active network of Driftless Area farmers growing approximately 6,000 combined acres of food-grade oats, many of them already invested in Green Acres Milling, provides an organizational foundation that most nascent cooperatives lack. The coalition has demonstrated the capacity to coordinate production at scale, maintain processor relationships, and weather market disruptions. Formalizing the coalition, or a subset of it, into a legal entity capable of holding storage assets builds on existing trust rather than requiring new social infrastructure from scratch.

Growing National Attention

Media coverage in the Star Tribune, New York Times, and Agweek has elevated the Driftless Area oat story to visibility that may attract impact investors, food brand partnerships, and policy attention beyond what a small regional initiative would typically access. The Nature Conservancy's engagement in this study, combined with the documented soil health and water quality co-benefits of oat rotations in a karst-sensitive watershed, positions the initiative well for conservation finance mechanisms and environmental co-investment.

Economies of Scale at Achievable Volumes

The acquisition scenario (Scenario 5) at 520,000 bushels produces storage fees within approximately $0.01 per bushel of the rates common at established large grain cooperatives, a level of competitiveness that would require three million bushels of capacity for a new-build facility. As the regional oat industry grows toward the estimated 3.5 million bushels already produced in the Driftless Area, the economics of shared storage will only improve.

5.5. Key Decision Points

Any individual (or group of individuals) who chooses to move forward with developing shared infrastructure will face several consequential decisions in the near term. Each involves genuine tradeoffs that should be understood before commitments are made. It is important to note that the decisions identified here are not listed in priority order.

Decision 1: Build New Versus Acquire Existing

This is the most financially consequential decision. The cost analysis strongly favors acquisition when capacity needs fall in the 300,000 to 520,000-bushel range. The Blooming Prairie facility served as the representative example: capital cost per bushel for the acquisition scenario ($1.66) is less than one-quarter that of comparable new-build scenarios ($6.97 to $7.28), beginning cash requirements are substantially lower, and the storage fee needed to break even ($0.07 per bushel monthly) approaches commercial cooperative rates. The principal tradeoff is that acquisition requires identifying and securing a suitable facility. The founding group's first practical step should be an active search for candidates running in parallel with governance and financing development.

Decision 2: Serving the Green Acres Supply Chain and/or a Broader Market

The oat farmers in the Driftless have different storage needs. Producers aligned with Green Acres Milling have a defined market relationship, an established price point, and a delivery window model that creates a specific storage use case: grain must be held between harvest and an assigned mill delivery slot, with lot-level traceability maintained throughout. For this group, storage infrastructure that supports identity preservation and scheduled delivery logistics is a direct enabler of their existing business model.

Producers not currently in the Green Acres supply chain face a different set of considerations. Their storage needs may be oriented toward broader market optionality: the ability to hold grain while developing buyer relationships, to access blending capability that enables food-grade qualification, or to aggregate production to meet volume thresholds that smaller individual operations cannot achieve alone and the ability to meet a variety of different buyer traceability requirements . A shared facility designed with flexible governance and multi-user protocols can serve both populations. The founding group should be explicit, however, about whether the facility is being designed primarily to serve the Green Acres supply chain, primarily to serve a broader producer community, or both, because those goals carry different implications for governance structure, traceability infrastructure, and the terms under which farmers store their grain.

Decision 3: Governance Structure: LLC Versus Cooperative

Both a multi-member LLC and an agricultural cooperative under Chapter 308A or 308B are well-suited to this opportunity. The choice should be driven by three factors: (1) whether the founding group values democratic, one-member-one-vote governance or prefers a more flexible governance structure; (2) whether federal Section 521 cooperative tax treatment (which allows deduction of patronage dividends) is material to the group's financial plan; and (3) whether outside equity capital will be needed. Chapter 308B allows investor members and is therefore better suited if non-patron capital is required.

Whatever entity form is chosen, the founding group is strongly advised to retain legal counsel familiar with Minnesota agricultural cooperative and LLC law to draft the governing documents. The governance provisions, including contribution requirements, voting rights, dividend or patronage policies, buy-sell provisions, and dispute resolution processes matter far more than the entity label.

Decision 4: Phased Entry Versus Full Commitment

A phased entry strategy has merit for groups that are not yet ready to commit to full facility ownership. Beginning with Scenario 2 (consolidated on-farm, 100,000 bushels) allows a founding group to establish operations, build governance experience, develop or deepen buyer relationships, and demonstrate financial performance before committing to a larger facility. The risk is that Scenario 2's infrastructure is not readily scalable; a separate acquisition or construction phase would be required to grow capacity.

Alternatively, moving directly to an acquisition at the scale of Scenario 5 provides substantially more capacity at comparable beginning cash cost, with a dramatically lower per-bushel storage fee, which positions the facility to serve both Green Acres-aligned producers and the broader regional oat community. For groups with sufficient committed volume and capital readiness, this path is more financially advantaged over the medium term.

Decision 5: Geographic Siting and Transportation Network

The location of any shared facility has material implications for transportation costs, traceability logistics, and buyer access. Interviewees broadly identified a location in Northern Iowa or Southern Minnesota, ideally on or near a rail line, as acceptable. Proximity to the Green Acres Milling facility in Albert Lea is a relevant consideration for producers in that supply chain, as it affects transportation logistics and delivery window timing. Any site, whether acquired or newly constructed, should be evaluated against criteria that include proximity to participating producers' farms, access to the mill and other buyers, and the potential for rail-competitive delivery as volumes grow.

5.6. Next Steps and Recommendations for Moving Forward

Based on the evidence assembled in this study, the following preliminary observations and recommendations are offered. These are informed judgments, not definitive conclusions; final determinations of viability will depend on factors that are not yet fully resolved, including the founding group's capital commitments, the Green Acres mill's opening timeline, and the identification of suitable acquisition candidates.

With respect to individual scenarios, the following observations apply:

Scenario 5 (facility acquisition, 520,000 BU) is the most viable pathway when a suitable acquisition candidate can be identified and secured. Its per-bushel economics are dramatically superior to new construction, its beginning capital requirement is manageable, and its capacity is sufficient to serve a meaningful share of regional production: both Green Acres-aligned producers and others. The Blooming Prairie facility used as the reference case in this analysis is one example of what this approach can look like; comparable sites exist in the region and should be actively sought.

Scenario 2 (consolidated on-farm, 100,000 BU) is a viable near-term entry point for groups with limited capital or that are not yet ready to commit to full facility ownership. It carries the lowest financial risk of the build scenarios and can be implemented quickly. Its limitation is scale: at 100,000 bushels it will not serve the full production needs of the existing Oat Mafia coalition, and will not approach commercial-level storage economics.

Scenarios 3 and 4 (new construction, 284,000 BU) are financially viable at 50%+ occupancy but carry the highest beginning capital requirement and the most financial risk during ramp-up. They are best suited for a group with strong member equity commitments and substantial grant funding. Given the financial advantages of the acquisition pathway, new-build scenarios should be pursued only if no suitable acquisition candidate can be identified.

Scenario 1 (distributed on-farm storage) represents the baseline against which shared arrangements should be evaluated. While it provides the maximum traceability and farmer control, it does not provide blending capability, cannot support aggregation for large buyers, and does not pool the capital burden. It remains the practical default for farmers who cannot or will not participate in a shared arrangement, but it does not address the systemic vulnerability the 2025 storage crisis exposed.

Table 25 below provides a condensed guide to scenario selection based on the founding group's circumstances and priorities, to be read alongside the viability assessment and recommendations below.

Table 25. Scenario Selection Guide

Scenario	Capacity	Capital Cost	Storage Fee	DSCR[54] ≥1.2	Best Fit When
1: On-Farm	284,000 BU	$2.00 M	$0.18/bu/mo	N/A	Producer has land available on-farm and the ability to handle storage and hauling needs; or other storage needs to utilize storage when oats are not in the bin. Fees represent total annual costs spread across an estimated 6 months of storage.
2: Consolidated On-Farm	100,000 BU	$617K	$0.19/bu/mo	>50% occ.	Near-term needs are modest and host farmland is available
3: Condominium	284,000 BU	$1.98M	$0.20/bu/mo	>50% occ.	Identity preservation is paramount and capital is available
4: Blended & Condo	284,000 BU	$2.07M	$0.20/bu/mo	>50% occ.	Volume exceeds 370K BU or blended share exceeds 64%
5: Facility Purchase & Retrofit	520,000 BU	$862K	$0.07/bu/mo	~50% occ.	Capacity needs approach 520K BU and a suitable acquisition candidate is identified

[54] This column indicates the occupancy level at which the Debt Service Coverage Ratio (DSCR) reaches 1.2, the standard benchmark lenders use to confirm a borrower can service its debt from operating income.

On the question of organizational viability, the evidence is broadly positive but conditioned on governance quality. The legal and regulatory landscape is navigable. The financing programs are relevant and accessible. The fundamental requirement is a founding group that is willing to invest in governance infrastructure, commit meaningful equity, and sustain collective decision-making discipline through the inevitable difficulties of a startup period. The existing Green Acres investor relationships and the Oat Mafia coalition's track record of coordination are meaningful assets in this regard.

Recommendations for Moving Forward

Recommendation 1: Convene the Founding Group and Resolve Core Organizational Questions

The Oat Mafia coalition, including producers already invested in Green Acres, provides the natural organizing nucleus for a founding group. A facilitated convening should be the first priority, focused on three questions this study cannot resolve on the group's behalf: who the facility is intended to serve (Green Acres-aligned producers, the broader oat community, or both); what governance model the group prefers (cooperative versus LLC, and on what terms); and how much equity each potential member is willing to commit. The answers to these questions will determine which scenario is appropriate, what financing is needed, and what facility characteristics matter most. Legal counsel familiar with Minnesota agricultural cooperative law and a CPA with grain storage experience should be engaged before entity formation decisions are made.

Recommendation 2: Develop a Grant-Independent Financing Plan

Once the founding group has a clear picture of governance structure and committed equity, the next step is a financing plan grounded in what member contributions and conventional agricultural debt can actually support. Grant funding from USDA, TNC, and state programs should be pursued, but the plan must be viable without it. The pro formas in this study demonstrate positive financial performance under that conservative assumption. Modeling beginning capital requirements under both grant and no-grant scenarios will clarify which storage scenarios are within reach and strengthen both lender credibility and grant competitiveness.

Recommendation 3: Align Facility Design with Market Relationships

Facility design, operational protocols, and governance provisions should follow from the market relationships the group intends to serve. For Green Acres-aligned producers, this means bin-level traceability systems, intake and delivery documentation, and scheduling systems calibrated to the mill's delivery window model. For producers outside that supply chain, the priority is blending capability, market optionality, and aggregation capacity. These design requirements should be confirmed before a site is selected or construction or retrofit specifications are finalized.

Recommendation 4: Launch an Active Search for Acquisition Candidates

With governance structure, committed capital, and target capacity range established, the founding group is in a position to conduct a meaningful facility search should that be the objective. The search should be structured and active, covering former elevator complexes, unused cooperative storage, and repurposed commodity grain infrastructure in the Northern Iowa and Southern Minnesota corridor. Evaluation criteria should include capacity, physical condition, location relative to producers and buyers,

rail access, and asking price. Multiple candidates should be assessed concurrently before any purchase commitment is made. If no suitable acquisition candidate emerges, Scenario 2 (consolidated on-farm storage) is the appropriate fallback for groups with near-term needs and limited capital.

Recommendation 5: Build a Producer Enrollment Strategy Before Opening

Financial viability depends on achieving and sustaining occupancy above 50%, which requires committed producer participation before the facility opens, not after. For Green Acres-aligned producers, the enrollment case is concrete: storage is a prerequisite for fulfilling mill delivery obligations. For producers outside that network, the value proposition centers on quality management, blending capability, and the ability to meet buyer volume thresholds that no individual farm can reach alone. Outreach materials and committed storage agreements should be in place before operations begin.

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