FINANCIAL ANALYSIS OF RECOMMENDED ALTERNATIVES

In order to provide the Lincoln County Commissioners with a reliable financial model of a development strategy, decisions will have to be made on what model the Commission wants to pursue. Several alternatives have been outlined in this report, both on the types of businesses that can operate at the fairgrounds location as well as the types of organizational structures that can be used to facilitate their locations there, e.g. a Port District, a Public Development Authority, or management by a non-profit agency through contract with the County.

In advance of those decisions, the following narrative describes generic financial models for the two main strategies that have been recommended:

1) Development of a small-scale wheat flour mill at the fairgrounds;

2) Development of an advanced CNC machine shop and fabrication operation to provide supply chain components to local area manufacturers.

Some information is also provided to show potential sources of financing of capital costs as well as operations for both models. These are offered for the purposes of demonstrating financial feasibility only and it is not assumed that funding from these sources will be used. If a Port District is created, most of the funding will come from tax revenues. If a PDA is formed, then most of the revenues will come from bonding.

Strategy #1 Development of a Flour Mill at the Fairgrounds

Much of the analysis in the discussion that follows is taken from a detailed financial model developed by Oklahoma State University as a Flour Milling Feasibility Template. That template, in turn, was developed from the Mill Management Economic Model developed at Kansas State University. That model is interactive, meaning that inputs can be entered to match the scale of the proposed mill size, operational figures, volumes of output, etc., with dependent variables adjusted accordingly. It requires that the input variables be quantified. The model can be accessed at the website: www.*agecon.okstate.edu/coops/files/flour_milling_template_4-5-2004.xls*

It is strongly recommended that the Lincoln County Commission obtain the services of Washington State University to develop a model specifically tailored to the Davenport location with current capital costs and an operational cost/revenue model based on costs and prices currently existing in Lincoln County before making decisions on whether or not to move forward.

There are many variables that are still not resolved in this report including the size of the mill, markets to be served, types of products to sell into those markets, and especially how the organization structure will be determined and how the ownership and management of the mill will be divided among the participants. The model that follows is simply a placeholder until those decisions can be made; it is intended to provide an outline of how to determine the feasibility of the mill once the actual input numbers are developed.

It is definitely true that there are significant economies of scale that can be achieved from larger flour mills, assuming their output can be sold into the market. The financial risks of oversizing a mill can be as great as those from undersizing the mill.

A. Site Costs and Lease Returns to the County

A specific site is not recommended in this report but it is assumed that a site of two ±2 acres of bare land will be required for the mill operations along with ancillary facilities such as storage silos. That site will be leased from the County for an annual cost per acre on a triple-net basis with the mill paying all maintenance, utilities, taxes, and any other costs directly to the service providers.

Prices of industrial sites in Spokane County, including the West Plains area, are relatively cheap compared to many other locations in the Northwest. A review of industrial-zoned land for sale in the region shows a range of $20,000 per acre ($0.46 psf) to about $206,000 per acre ($4.75 psf) in heavily developed areas. On the western side of the Cascades, industrial land sells in the range of $10.00 to $22.00 per square foot. In general, the lower prices are for large tracts of land without internal development of utility and road infrastructure, which means higher development costs. It is estimated that a fully-serviced and accessible two-acre industrial site in Davenport, with all utilities to the site included in the lease, should be priced at about $3.50 per square foot. If the mill is developed in modules, then a sliding scale of lease rates might be considered to reduce entry costs and recoup them as the mill becomes increasingly profitable.

A typical lease rate for a commercial or industrial property is 10% of the land value per year. Based on the commercial value of the land, a land value of $304,920 for two acres will translate into an annual lease payment to the County of **$30,492 per year**.

The County will be responsible for extending the required utility infrastructure to the site. That cost was estimated by MFA as being $200,000 to upgrade electric power to three-phase and extend services to Building 15. Assuming the mill site will be in close proximity, an additional 20% or $40,000 is added to those costs to bring services to the mill.

Site costs:	$40,000 one time, pre-development, allocated to mill only
Site revenues:	$30,500 annually (rounded)

B. Capital Costs

Capital costs will be highly variable depending on the size and type of milling machinery that is installed. However, there are mills that can be acquired as relatively small units with additional units added over time as the output requirements are expanded. It is recommended that this kind of system be used at the Lincoln County Fairgrounds rather than investing in a larger mill upfront.

For example, four of the 20-ton per day units shown below would approximately equal the 75 ton per day AGREX unit described earlier but could be developed incrementally to its full capacity. This would allow some of the capital costs to be paid out of current revenues instead of having to raise all of the capital costs before beginning production.

Shown to the left is an advanced **complete wheat / maize milling machine set** for small scale flour mill plants with compact structures. The capacity of this unit is 20 tons per day. The pre-processing section of this small plant includes 1 sifter, 1 scourer, 1 stoner and 1 damper. The milling section includes 5 sets of flour milling machines, 5 sets of reel separators and 1 square screen. Four sets of flour milling machines can run continuously and the capacity of each mill in the small plant can reach 20-22 tons per day.

The 20-ton machine shown is advertised at a price of $26,500 USD by ABC Machinery Company based in China. Smaller 10 ton units are also available at prices advertised from $15,000 to $23,000. It can be expected that there will be additional costs for shipping, insurance, set-up, and other related expenses. Comparable modular mills might be acquired from providers in the United States and Canada.

A breakdown of capital costs for the AGREX 75-ton wheat grain flour mill was provided in the last section of this report. Those costs totaled $1,685,000 for the required accessory facilities and service expenses. A 6,200-square foot building would be required which would average about $200 per square foot or $1,240,000. External storage tanks and conveyors would add another $180,000. Total capital costs for that system are estimated at:

Mill (4x20-ton units @ $35,000 delivered and set up):	$ 140,000
Mill building (with loading docks, etc.)	1,240,000
Accessory units and conveyors	180,000
Mill equipment (per UV study)	1,685,000
Total Costs	$ 3,245,000

Note that these figures represent an 80-ton per day capacity for four (4) 20-ton milling machines. Initial costs could be reduced by at least $105,000 through modular installments.

C. Labor and Operating Requirements

Investigation of operating requirements for flour mills revealed a wide variety of personnel and other operating costs depending on equipment and volumes of grain processed. The Kansas State model shows a total of 31 employees required to operate a mill processing 7,000 cwt of grain per day, which is more than four times the 80-tons per day estimated for the mill at the fairgrounds at full buildout.

For comparison, the University of Vermont feasibility study showed only

- One full-time plant manager/head miller
- Four production staff (to cover two shifts)
- One office manager
- One agronomist/lab/production/grower liaison
- One sales/marketing associate

That represents a total of seven employees, with the note that additional production staff would be hired as production increases. These represent only employees paid from the mill revenues and do not include truck drivers, maintenance and repair workers, and equipment installers. If the units are installed as modules over time, the additional labor costs would run about 40% per installation as labor inputs are spread out rather than multiplied.

Based on current estimates of wages and salaries, labor costs will run about $440,000 annually plus $154,000 for benefits, for a total of about $594,000 per year.

Depending on what markets are served, there may also be costs for bagging and shipping and other product handling. Utility costs are also not included in the above analysis.

D. Supply (input) Costs

The greatest variable in the model will be the cost of wheat to feed into the mill. Assuming 20-ton per day units, each unit could consume 20 tons of wheat per day and up to 80 tons per day when all four units are operating.

Wheat prices have been volatile over the past several years, running as high as $7.08 per bushel on May 31, 2014 to a current price of $5.10 per bushel on March 31, 2018. Based on a ratio of 36.744 bushels per ton of wheat, 20 tons of input would represent about 735 bushels per day at a current cost of about $3,748 per day. If all four units were operating, the daily cost for raw material would be about $14,992 per day.

If the mill were to operate six days per week at 60% of capacity, the daily cost of wheat would be $2,248 for one unit and $8,995 for four units. The annual costs would be $701,376 for one unit and $2,805,504 for four units.

E. Revenues

The Kansas State University model used an input of 44.4 pounds of flour produced from each bushel of wheat. Using that ratio, a 20-ton per day flour mill operating at 60% capacity would process 24,000 lbs of wheat per day which would equal 441.29 bushels of wheat and produce roughly 19,600 lbs of wheat flour. That is approximately 1,000 lbs of wheat flour per one ton of machine capacity. Four such machines with capacity of 80 tons would produce about 80,000 pounds of flour per day.

The statistical average price of wheat flour in the United States in 2017 was $0.46 per pound. This was down from $0.52 in 2013 and $0.50 in 2016.

At the 2017 average price, the wheat flour would have a market price of just over $9,000 per day per unit or $36,000 per day for four units operating at 60% of capacity. The actual amount would increase or decrease according to capacity utilization.

Operating the mill six days per week at 60% of capacity would produce annual revenue of $1,638,624 for one unit and up to $6,554,496 for all four units. Those figures are consistent with revenues shown in the various university feasibility studies.

E. Cost / Revenue Comparison

Operating costs were not fully developed, although labor costs were estimated at about $600,000 per year. If all other operating costs were assumed to total $200,000 per year, the total would be $800,000 annually.

Those numbers produce the following cost/revenue comparison, with labor and other operating costs increased by 40% when all four units are operating:

	1 Unit	4 Units
Cost of grain	$ 701,376	$ 2,805,504
Labor costs	600,000	840,000
Other operating costs	200,000	280,000
Total Operating Costs	$ 1,501,376	$ 3,925,504

Based on these estimates the following figures show the net annual operating margins.

	1 Unit	4 Units
Total Operating Revenues	$1,638,624	$ 6,554,496
Total Operating Costs	1,501,376	3,925,504
Net Operating Income	$ 137,248	$ 2,628,992

As noted earlier, there are definitely economies of scale that can be realized from larger scale production.

The NOI figures represent what is available to amortize capital debt, repay other loans, distribute dividends, build up reserve cash accounts, and pay the County a portion of the proceeds for a participation agreement.

Strategy #2: Develop a Supply Chain Machining & Fabrication Business

The strategy to develop a CNC machine shop and metals fabrication operation in Building 15 is also one that can be started relatively small and expanded as the operation becomes established in its markets and the business grows. It can be started with some basic equipment and grow into full CAD machining, injection molding, 3D printing and other related services.

The strategy recommended in this analysis is to form a partnership with an established machining and fabrication business and set up a satellite facility at the Lincoln County Fairgrounds. That facility will not seek business on its own, initially, but will assist its partner company to obtain orders and perform support operations at lower costs than the partner company can provide. Some of the work may be overflow, providing increased capacity for the partner company.

It is also recommended that the facility at the fairgrounds should include an education and training component, as well as an entrepreneurial component providing shared workspace and mentoring services. Those activities will enable the operation at the fairgrounds to obtain financing from various State and federal agencies and to participate in innovation programs.

At this point it is not known what organizational and managing entity will implement this strategy: a Port District, a Public Development authority, or a non-profit agency under contract with the County. There are substantial variables in the funding capabilities of each organization so until that is decided, the financial model given here is primarily for reference only.

Cash Flow Model for Davenport Precision Machine

The actual cash flow model will depend on how much capital investment the operators put into the venture along with how much expenses and operating revenues will be generated from operations. That will determine the two parts of the cash flow model: Return on investment (ROI) and Net Operating Income (NOI).

Following is a model that can be used as a guide for determining those numbers. It is based on an actual pro forma for a job shop with CNC machine tools but has been modified to represent estimated costs and revenues in the Spokane / West Plains area in 2018. It also removes the tax effects on income, including depreciation. It is not represented that this model will apply directly to the business that will be created in Building 15 at the fairgrounds.

Revenue to the County

Again, without knowing the structure of the operation and how the County might derive revenues from it, the primary revenue cited here is for leasing the operating facility, i.e. Building 15.

Building 15 has a floor space of 4,800 square feet. Industrial space typically rents from about $0.35 per square foot per month for warehouse and storage space up to about $2.00 per square foot for manufacturing space that is fully serviced for heavy duty industrial operations, including overhead cranes. It would not be reasonable to expect that Building 15 could command that level of rent. Instead, a rental estimate of $0.60 per square foot per month on a NNN basis is assumed. For a 4,800 square foot building, that would produce rent of $2,880 per month or **$34,560 per year**.

That assumes that only the minimum physical requirements listed in the MFA evaluation, such as restrooms and three-phase power, are installed. To operate year round, the building will also require improved heating and air conditioning systems. With those improvements, the rent could be increased to about $0.80 per square foot per month which would produce revenue to the County of $3,840 per month or $**46,080** per year. Whether the costs of those improvements would be paid by the County, a Port District or a PDA has yet to be determining.

Combining the lease revenues from both strategies results in a net monthly revenue to the County of **$65,052** from the minimal cost scenario for Strategy #2 to **$76,572** from the higher rents derived from the higher improvement costs.

PRO FORMA INCOME STATEMENT
JOBBING MACHINE SHOP WITH CNC MACHINE TOOLS
(in dollars)

	1st Year				2nd Year	3rd Year	4th Year
	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter			
Sales	80,000	160,000	240,000	350,,000	1,400,000	1,400,000	1,400,000
Raw Materials	16,000	32,000	48,000	70,000	280,000	280,000	280,000
Direct Labor	76,076	101,430	126,786	152,146	608,560	608,560	608,560
Manufacturing Overhead	35,094	36,507	44,658	46,070	183,696	183,111	182,527
Cost of Goods Sold	76,763	101,732	219,444	268,216	1,072,256	1,071,671	679,877
Gross Profit	-47,170	-9,937	20,556	81,784	327,744	328,329	328,913
Administrative Expenses	18,113	18,113	25,300	25,300	101,200	101,200	101,200
Selling Expenses	11,600	23,200	34,800	46,400	86,000	86,000	86,000
Services	25,000	4,000	4,000	4,000	16,000	16,000	16,000
Total Operating Expenses	54,713	45,313	64,100	75,700	203,200	203,200	203,200
Operating Income	-101,883	-55,250	-43,544	6,084	124,544	124,544	124,544
Interest	0	0	0	0	0	0	0
Net Income	-101,883	-55,250	-43,544	6,084	124,544	124,544	124,544
Cumulative Net Income	-101,883	-157,133	-198,191	-192,107	-67,563	56,981	181,525

The model assumes that the first year is a building period to a level of sales of $1,400,000 annually where it remains steady. That should be an achievable sales volume considering the CNC machine shops researched for this report that do business in the $2.5 - $5 million range.

According to this model, the business will show negative operating income during the first three quarters and will turn a small surplus in the fourth quarter. The numbers are positive in years two through four.

On a cumulative basis, however, the owner would have to carry negative cash flow through the second year, turning positive in the third year and increasing in the fourth year.

Raw materials are priced at 20% of sales volume. Direct labor costs are estimated at 44% of sales. The model that was used as the base for these calculations priced direct labor at only 18% of sales but that seems unreasonably low considering the requirement for skilled machinists and other experienced workers.

Full costs for building and equipping the facility have not been calculated because there are too many variables in how the owner decides to acquire the CNC machines and other equipment. Investigations into the costs of acquiring machinery from an existing machine shop for sale show a range for used equipment from about $200,000 to $600,000 for a fully equipped shop. Using the estimated costs for the facility, the total capital costs for this venture could be in the area of about $1,000,000. If all of that were paid by the owner, then the negative cash flows would be recovered in years three and four. The model shows the annual net income stabilizing in year two at about 12.5% ROI. The cumulative net income in year four would represent a return on investment of about 18%. Adjustments would have to be made for changes in sales volume and costs due to inflation.

The model shows the maximum exposure of negative cash flow to the owner of about $200,000. It is assumed, however, that grants will be available to cover a major portion of those costs. That will significantly affect the ROI calculations.

The primary requirement will be training workers to become skilled CNC machine operators. The business will have to start off by offering (and delivering) superior quality of products to its partner company and eventually to its own customers.

Following are ten suggested “Tips” from the Thomas Publishing Company for growing the Davenport Precision Machine CNC business.

Thomas Publishing Company 10 Tips for Growing Your CNC Machining Business

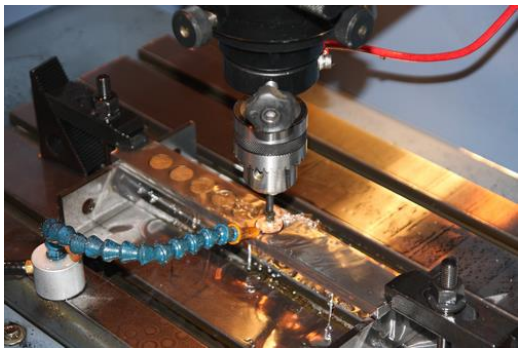
Starting a new business can be a challenging endeavor, especially if the entrepreneur is entering a crowded market with large, well-established competitors already in place. Small CNC machine shops face hurdles similar to those of other small businesses, and, like their non-industrial counterparts, have the same potential for securing contracts and growing within the industry despite these obstacles. Here are some tips and suggestions that may help in establishing or expanding your small CNC shop. For even more tips to help grow your business, check link below:

1. **Develop Partnerships:** For many start-up machine shop owners, the early days can be an uncertain time in which numerous concerns, such as volume expectations, client lists, or even floor plans, have yet to be resolved. In these circumstances, existing friendships and business connections can be valuable assets. Whether having friends steer clients in your direction, enter into partnerships, or simply provide advice on business practices, relying on your current connections can give you a useful leg-up.

2. **Target Your Segment of the Marketplace:** It is generally a good practice to focus on the specific types of purchasers that will buy your products at the best volume rate. For example, if your shop specializes in producing gear shafts with a diameter under five inches, try to establish relationships with companies that purchase this product at a rate favorable to your production cycle and turnover. Targeting your market niche will help you make the best use of your specialty. A good example of a company who targets a niche market is Fanuc Spares. They focus only on this specific manufacturer and specialize only in replacement parts. This proved to be a very successful model for what may seem like a limited market. Another marketing method is leveraging, emerging technologies such as the internet and social networking can help leverage your shops visibility in both search engines and online helping reach people near and far.

3. **Don’t Rush to Expand:** Purchasing machines that are not yet cost-efficient or enlarging facilities without the staff needed to maintain them can slowdown revenue growth and actually hinder long-term expansion. In many cases, it may be better to concentrate on making steady gains rather than giant leaps forward, as even a small shop with fewer than a dozen machines or employees can still meet or exceed the national productivity average.

4. **Diversify According to Demand:** While it's usually a bad idea to take on a job outside the capabilities of your shop, new projects that seem within reach and will provide a cost-efficient result can be a helpful way to diversify your operations. If, for example, a lathing shop has the training and funds to undertake a profitable milling or plastic fabrication contract, then the resulting diversity can help provide sustainable growth even during periods when one sector of the market is on a downswing.



5. **Remain Open to New Technology:** Even though a new technical innovation can be costly in terms of additional training and initial set-up, recently-developed equipment may have a positive long-term effect by simplifying production methods or providing the means to accomplish tasks that were once considered impractical. New technology can sometimes help a business remain competitive, especially if the innovation gains widespread notice.

6. **React to Your Competition:** Being aware of your main competitors is a valuable practice under most circumstances, particularly in times of economic volatility. For example, market fluctuations can cause a slowdown in commercial manufacturing, while leaving military production relatively unchanged (and vice-versa). In this case, competitors from one side of the spectrum may bring their operating standards to the other, forcing companies to accelerate their production rates or lower prices in order to maintain market share.

7. **Be Flexible in Multi-Stage Processes:** Companies that combine both internal fabrication and machining operations can often save time or money by acquiring equipment that incorporates secondary work into its primary function. For example, using a cutting laser can often reduce the need for post-fabrication finishing, such as smoothing or evening edges.

8. **Integrate Your Operations:** While vertical or horizontal integration is beyond the reach of many small CNC businesses, it may still be helpful to bring as much of the manufacturing process in-house as you can. Streamlining measures, such as organizing a production schedule around a machine shop's in-house capabilities or prioritizing jobs based on your own production center rather than an external supplier's availability, can help smooth workflow and ultimately improve output.

9. **Initiate Scalable Growth:** In many cases, successful business growth is not dependent on the size of the products being manufactured, but on the depth of the fabricating process. It can be beneficial to evaluate the services or products you provide to your customers, and see if you can expand the reach of those services. For example, if you are producing steel tubing for your purchasers, see if you can also provide them with the fasteners used to join these components together. Securing more expansive contracts from within existing relationships can be a secure and scalable method of growth.

10. **Step-by-Step Value Addition**: CNC machining is essentially a multi-staged process in which there is the potential for value-added work at each stage. Consequently, a shop's potential for expanding its business largely depends on how many of those value-added steps it is able to perform. A small business seeking to expand can evaluate its manufacturing strengths and take advantage of any opportunity to insert itself into a value-added production stage. This approach, coupled with gradual service integration and streamlining, can be a valuable way to expand your small CNC business.

This concludes Elesco's report on the Highest and Best Use Analysis for County-Owned Property Currently Serving as a Fairgrounds in Davenport. The findings and conclusions were negatively influenced by the small economic base in Lincoln County, by the lack of diversification in the local economy, and by the trends and forecasts for very low levels of population growth.

However, the analysis showed that there are opportunities to overcome these handicaps. Developing businesses linked to the county's dominant agricultural sector has the potential to capture market shares that are presently being served outside of Lincoln County. This will increase local employment, bring new income into the county, and provide additional revenues to the fairgrounds.

But perhaps the most important opportunity is to link Lincoln County into the much larger and rapidly growing economy in Spokane County. The geographic pattern of economic growth in Spokane County is moving into the West Plains area and toward Davenport. Developing businesses that can become part of the supply chain for Spokane area manufacturers will provide the diversification of economic activities that Lincoln County presently lacks.

That will not be an easy task and will take three to five years to implement the effort. However, the County Commission has tools available to make it happen, including the possible formation of a port district in Lincoln County or creating a Public Development Authority to finance and manage the transition. In the meantime, the County can use the fairgrounds as an asset for developing and recruiting businesses that will achieve the vision.