

A FEASIBILITY STUDY ON REPLACING A HAY OPERATION WITH AN EQUESTRIAN BOARDING
FACILITY

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ABSTRACT

The purpose of this project was to determine whether it would be feasible for Brians Dairy to convert their dairy farm into an equestrian boarding facility.

There are two major costs involved in this project, the development of the facility and the operation of the business. Once all of the costs were determined, they were entered into an Excel spreadsheet using the format of an Enterprise Budget. From the Enterprise Budget, revenues and expenses were used to develop an Investment Analysis, where a positive Net Present Value and a 30% Internal Rate of Return were discovered.

Using figures from the Enterprise Budget and the Investment Analysis, it has been concluded that converting the Brians Dairy into an equestrian boarding facility is feasible.

TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION	1
Problem Statement	2
Hypothesis	2
Objectives	2
Justification	2
II. REVIEW OF THE LITERATURE.....	4
The Dairy Industry	4
The Equestrian Industry	5
Equestrian Activities	5
Equestrian Facilities	6
Enterprise Budgeting.....	7
Net Present Value Calculations.....	7
III. METHODOLOGY	8
Procedures for Data Collection	8
Procedures for Data Analysis.....	9
Assumptions	9
IV. DEVELOPMENT OF THE STUDY.....	11
V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS.....	14
Summary	14
Conclusions	14
Recommendations	14
REFERENCES CITED.....	16
APPENDIX.....	18

Chapter 1

INTRODUCTION

In California, dairy farmers are struggling to maintain profitable business operations. Increasing input costs and decreasing milk prices continue to be problematic. According to the California Department of Food and Agriculture, in the first six months of 2009, dairy farmers received an average price of \$10.47 per hundredweight of milk, while it cost them an average of \$18.51 per hundredweight to produce it. Overall milk production decreased by 3.1% in California compared to the first six months of 2008. The implications of these negative trends resulted in the loss of ninety-nine California dairies in 2008.

In sharp contrast to the dairy industry, California's equestrian community is growing rapidly each year. According to the American Quarter Horse Association, there are 141,272 horses in California. With more opportunities available for people to access horses and horse related activities, the industry has seen a great increase in the number of participants.

In the small town of Penngrove, located on the North Coast of California, there is a dairy that sprawls over three hundred acres. The Brians Dairy was a victim of poor management practices mixed with decreasing milk prices, and was forced to sell its herd of Jersey milk cows. Today the fields are used in the production of forage hay, while the milking parlors and free-stall barns stand empty.

In order to take advantage of the rapidly growing equestrian industry in Sonoma County, the owners of the Brians Dairy are interested in converting their land and buildings into a fully operational horse boarding and training business. This will include constructing a covered arena and converting the existing barns and buildings into horse stalls. The business operation would include renting stalls to horse owners, charging for facility and land use, and holding events such as horse shows and clinics.

Problem Statement

Is it feasible to convert a three hundred acre dairy farm in Penngrove, California into a public equestrian boarding and training operation?

Hypothesis

Converting the dairy into a public equestrian boarding and training operation will have a positive Net Present Value of three percent or greater and will provide an internal rate of return on investment of five percent or greater.

Objectives

- 1) To determine the costs involved in converting a dairy into a fully operational equestrian facility using an Enterprise Budget.
- 2) To determine the feasibility of the conversion using Net Present Value and Return on Investment analysis.

Justification

An equestrian facility at the Brians Dairy in Penngrove, California would be beneficial to the equestrian community in Sonoma County. It would offer people who live in the surrounding

urban areas without property a place to keep their horses and facilities to ride them. It would also serve as a host for larger equestrian events that would draw crowds from all over the state of California, acting as a meeting place for the entire equestrian community. Once a breeding program is established, through selective breeding programs, the optimal traits of the animals will be preserved.

Once this facility is developed, it can take on many faces. There is an opportunity for use as a rehabilitation facility for injured horses from race tracks and other aspects of horsemanship with plenty of pasture space for recovering or retiring horses. The facility can also be used for a therapeutic riding program, a fast growing sector of the industry that provides opportunities for people with both physical and mental disorders to interact with horses.

Using this project as starting point, the owners of the Brians Dairy can make a decision on whether or not they will develop their property into an equestrian facility. If the project shows a profit for them over a period of time, they will be likely to go through with the project. Using the data that will be calculated regarding the Net Present Value and return on the investment, the owners will have a clear picture of the financial benefits of converting their dairy.

Chapter 2

REVIEW OF THE LITERATURE

In order to determine the profitability of converting the three hundred acre dairy farm into an equestrian boarding facility, financial information must be gathered and analyzed regarding each step in the process. The information will focus on the cost of converting the current facilities into useable stables, as well as adding additional structures to support equestrian activities. Then the actual profitability of the operation must be determined through the use of an Enterprise Budget. Finally, analysis techniques will include Net Present Value calculations and Return on Investment calculations to determine the ultimate feasibility of this project.

The Dairy Industry

The current state of the dairy industry in California is tumultuous. Milk prices at the lowest they have been in years. Every year more dairy farms are either sold out or converted to other types of operations. Dairy farmers are unable to maintain profitability when the costs of feed are increasing and the prices for their milk are decreasing. Because of this farmers are finding new ways to remain productive at their current locations rather than selling out completely or relocating. These new types of ventures include organic milk, specialty “boutique” cheeses, wine grapes, and olive orchards. The unique aspect of these emerging specialty food operations is that the drive is not necessarily market based. The farmers are

engaging in more creative farming techniques in order to preserve the land that they live on (Fairfax, Gwin, Guthey 2003).

The Equestrian Industry

The hobby of horseback riding evolved from necessity. Before tractors and automobiles horses were a vital form of transportation. Horses pulled carriages and wagons used to transport both people and supplies. People rode horses to town from their farms and ranches, or rode their horses to visit friends. Soon friendly competitions began to determine who had the fastest horse, or who could ride the best. This began the transition from necessity to hobby. Today the equestrian industry is booming with approximately 9.2 million horses within the United States. The horse industry has a direct economic effect on the United States of \$39 billion annually and provides approximately 460,000 full-time jobs (American Horse Council).

Equestrian Activities

There are two different types of horseback riding: English and Western. Western riding events evolved from the ranch work that was performed on cattle ranches across the great western plains. There are many western riding activities that require the use of cattle such as cutting and working cow horse events, where a horse and rider must exhibit control over a cow and demonstrate their ability to maneuver it through different obstacles. Other western events include western pleasure and reining, where the rider's ability to control their horse through different maneuvers are showcased and judged.

English riding is the traditional form of riding that was first established in Europe. English riding events include dressage, jumping, and eventing. In dressage a horse and rider demonstrate many difficult maneuvers which exhibit the riders control over their horse. Jumping

events usually consist of a course of different jumps that are set up in an arena. The horse and rider combination can be judged on either the time it takes to complete the course or the style or accuracy in which it is completed. Eventing is a combination of both dressage and jumping which is showcased in international competitions including the Olympics.

Both disciplines of horseback riding require a tremendous amount of training for both the horse and the rider. A horse can begin training at the age of two and remain in training for many years. Olympic level horse competitors are usually upwards of ten years old by the time they reach the level of training needed to compete in international competition. Most show horses are kept in stalls year round and are ridden multiple times a week. Professional horsemen and women are paid for their training services which usually include training the horse, as well as giving the rider lessons with the horse.

Equestrian Facilities

Most equestrian facilities include a variety of buildings and structures. Most important are barns and stalls. Horses are kept in stalls to shelter them from bad weather conditions and to keep them from being injured by other horses. Stall size can vary but the standard is 12 feet by 12 feet. A barn can consist of anywhere from 4 stalls all the way up to fifty or more. The building can be constructed from a variety of materials but usually consists of either wood or metal or a combination of both. In addition to box stalls, a barn usually will have an area for feed, tack, and washing facilities.

A good equestrian facility must also include a riding arena. The arena can be either square or oval and can vary in size. An ideal arena would be at least 100-feet by 200-feet. There are many factors to consider when constructing a good arena. A covered arena is necessary in

location where poor weather would prohibit outdoor riding activities. Lights are also a need for riding after sunset. The most critical aspect of an arena is the type of footing. A good footing can prevent injury to the horses, and provide for drainage. Equipment may also be necessary to maintain the footing.

Other facilities might include a round pen for lunging and warming up, turnout pastures for horses that are not in training, and depending on the size of the property may also include riding trails. Special areas may be needed to house cattle for western activities or equipment for dressage and jumping (McDonald, 1997).

Enterprise Budgeting

An enterprise budget is a farm management tool that can determine whether or not a farming enterprise is profitable. This technique projects the costs and returns of a specific product or enterprise. These budgets are usually prepared on a per unit basis and can be multiplied by the entire number of the enterprise to determine overall values. For the purpose of this project an enterprise budget will be constructed on a per horse basis.

Net Present Value Calculations

The Net Present Value is a calculation used to compare the value of money today versus the value of money in the future. A dollar in the present is always more valuable than a dollar in the future due to the effects of inflation on the buying power of that dollar. It is a standard method for using the time value of money to appraise long-term projects. Overall, it measures the excess or shortfall of cash flows, in present value terms, once financing charges are met (Kantrowitz, 2009). This information is critical in determining whether or not the owners of the Briens Dairy will convert their current operation into an equestrian facility.

Chapter 3

METHODOLOGY

Procedures for Data Collection

In order to determine the feasibility of converting the Brians Dairy into an equestrian facility, information must be gathered regarding the start-up costs involved in constructing the facilities necessary for a successful equestrian business. These costs include prices for building materials and labor for a covered arena and a sixteen stall horse barn. Additional implements will include footing for the arena, a tractor, a comb, a round pen and fencing for the property. It is critical that the data gathered is relevant to the area in which the business is located so the information will pertain as closely as possible to Sonoma County, California. This information will be collected by contacting several construction companies in the area for building and labor quotes. Regarding the repair and addition of fencing, several different options will be researched and information will be collected on the most compatible type of fencing for the operation. Other costs that will need to be collected include any necessary building and/or use permits. This information can be obtained through the Sonoma County Permit and Resource Management Department Office.

In order to establish an outline for the operation of the facility, data will be gathered from comparable facilities in the area. This information will include the amount charged for boarding

a horse in a stall in addition to other services such as turnout, blanketing, and feeding. Input costs relating to feeding the horses will be collected by contacting local feed suppliers. Other costs such as utilities, maintenance, and labor costs will be collected as well.

In order to obtain information regarding NPV and ROI data on future costs and returns of the operation will be projected for a set number of years. Information from a lender will be obtained to determine average loan principal and interest payments.

Procedures for Data Analysis

The first method of data analysis will be an Enterprise Budget. This is a tool that breaks down all costs on a per unit basis. There are sections for returns, variable costs, and fixed costs. The returns section will include the revenues generated from boarding and other services provided to each horse. The variable cost section will include the cost of feeding the horse, including hay and concentrated feeds (grain, etc.) The operational costs will include labor costs involved in feeding the horses, cleaning their stalls, any additional services provided and general repair and maintenance of the facility. The fixed costs will include facility and land costs that are not affected by the number of horses that are on the property.

Finally, to determine the overall feasibility of the conversion the Net Present Value and the Internal Rate of Return on the money invested in the upgrades will be calculated. The data gathered from local lenders as well as current tax data will be used to determine this information. If a positive NPV is calculated, then the project should be considered feasible.

Assumptions

This study assumes that the pricing data on the start-up costs of constructing the facility are accurate and standard for any person who intends to purchase the given items. All financial data is assumed to be accurate as it is obtained from a reliable source. This study also assumes that net present value and return on investment calculations are accurate methods of judging the profitability of an investment.

Chapter 4

DEVELOPMENT OF THE STUDY

In order to meet the objectives set to determine the feasibility of converting the dairy into an equestrian facility, an Enterprise Budget and an Investment Analysis were developed (Appendix Tables 1 and 2).

In developing the Enterprise Budget, the first determining factor to consider was the number of horses the facility would hold. The property currently has two free stall barns that could easily be converted into 25 stall horse barns. This would facilitate a total of fifty horses. Additionally, there is acreage on the property that could be used to house up to 50 horses at pasture. Therefore, the Enterprise Budget accounted for 100 head of horses.

The first section of the Enterprise Budget was for Revenues. After evaluating prices for similar facilities in the area, it was determined that an appropriate amount to charge for stall boarding would be \$750 and for pasture boarding would be \$450. Additional services included in the revenue portion included blanketing services, a facility use fee, exercising services, and supplement feeding fees.

The second section of the Enterprise Budget was for Expenses. This was the total amount of variable costs added to the total amount of fixed costs. The variable costs included feed costs, labor costs and operating costs. The feed costs were determined by researching prices from local feed suppliers in the area surrounding the facility. Labor costs were determined by

researching the number of hours required per horse per month for feeding, stall cleaning, and general facility maintenance. Wages were set at \$10 per hour for this type of labor, which is comparable to wages offered by similar facilities in the area. Operating costs include fuel, utilities, manure disposal, taxes, and insurance. All of these prices were determined by researching comparable rates within Sonoma County. The fixed cost included costs associated with developing the facility, in addition to land taxes, and management costs. Facility development costs were determined by researching companies that provided materials needed and considering the size of the operation. It was also determined that a full time facility manager would be needed and should be offered a salary of \$45,000, based on their experience and current industry standards.

From Revenue and Expenses sections the total net benefit per month was determined. The Enterprise Budget showed that the facility would garner a total net benefit of approximately \$10,000 per month.

Information that was gathered in the Enterprise Budget was then used to develop an Investment Analysis which calculated Net Present Value and Internal Rate of Return. The initial investment amount was determined by adding the fixed cost from the enterprise budget associated with development of the facility. This included the covered arena, the arena footing, the barn conversions, and corrals and fencing. The total investment amount was \$124,000. The annual cash inflow was determined by taking the monthly revenue from the Enterprise Budget and multiplying it by 12 months for a total annual cash inflow of \$1,003,500. The annual cash outflow was determined by taking the total monthly expenses from the Enterprise Budget and multiplying it by 12 months for a total annual cash outflow of \$900,096. Annual taxes were determined by using an average tax rate of 19%.

Net cash inflows were determined for a period of 10 years by taking the annual cash inflows and subtracting annual cash outflows and annual taxes then adding any tax credits or salvage values.

To perform the feasibility analysis for the project it was determined that a down payment on the investment amount of 25% would be made, with an annual interest rate of money borrowed of 8% and a length of debt service of 6 years. This resulted in an annual payment of \$20,117.

The Net Present Value was calculated using a discount rate of 5%, the values of the annual net cash inflows, and the initial investment. The Net Present Value of the investment was calculated to be \$157,183. The Internal Rate of Return was calculated at 30%. Due to a positive Net Present Value, the project was deemed an acceptable investment with a payback period of between 2 & 3 years. Additionally, the project was considered feasible due to the fact that there were positive cash inflows available to cover the annual loan payments.

Chapter 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

In order to determine the feasibility of converting a dairy into an equestrian facility all costs involved in the development of the new facilities were determined. Then, all revenues and costs involved in operating the boarding facility were determined and input into an excel spreadsheet in the form of an enterprise budget. From the figures in the Enterprise Budget, an Investment Analysis spreadsheet was developed. It was determined that this project had a positive Net Present Value and an Internal Rate of Return of 30%.

Conclusions

After developing an Enterprise Budget and Investment Analysis for the costs involved in converting a dairy into and equestrian facility it was determined that the project would have a positive Net Present Value and an Internal Rate of Return of 30%, meaning that the requirements for determining this project to be feasible were met.

Recommendations

With a positive Net Present Value and an Internal Rate of Return of 30% the project of converting the Brian's Dairy into an equestrian facility is feasible. Therefore, the investment is recommended to the owners of the dairy. The first step to be taken should be the development of

a strong management team in order to insure that the goals for the project are met, and that there is continued successful operation of the business in the future.

To expand on this study, other factors that could affect the profitability of the equestrian operation could be researched and evaluated. There are several different areas of interest for the average horse owner, so it would be beneficial to develop a few different strategies to cater to the specific events and interest of the clients.

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APPENDIX

ENTERPRISE BUDGET

Number of Horses = 100

Interest Rate = 8%

Revenues:

	<u>(Unit)</u>	<u>(Value/Month)</u>	<u>(Quantity/Head)</u>	<u>(Value/Month)</u>
Stall Boarding Fee	Head	\$750.00	0.50	\$37,500.00
Pasture Boarding Fee	Head	\$450.00	0.50	\$22,500.00
Blanketing Services	Head	\$50.00	0.50	\$2,500.00
Facility Use Fee	Head	\$200.00	1.00	\$20,000.00
Supplement/Special Feeding	Head	\$15.00	0.50	\$750.00
Exercising Services	Head	\$15.00	0.25	\$375.00
Total Monthly Revenues				\$83,625.00

Variable Costs:

<u>Feed Costs:</u>				
	<u>(Unit)</u>	<u>(Cost)</u>	<u>(lbs/Horse/Month)</u>	<u>(Cost/Month)</u>
Alfalfa Hay	Ton	\$170.00	300.00	\$2,550.00
Oat Hay	Ton	\$105.00	300.00	\$1,575.00
Pasture	Acre	\$75.00	1.00	\$7,500.00
Grain	Bag	\$25.00	150.00	\$7,500.00
Salt and Mineral	Block	\$20.00	1.00	\$2,000.00
Subtotal, Monthly Feed Costs				\$21,125.00
<u>Labor Costs:</u>				
	<u>(Unit)</u>	<u>(Cost)</u>	<u>(Horse/Month)</u>	<u>(Cost/Month)</u>
Stall Cleaning	Hours	\$10.00	7.50	\$7,500.00
Feeding	Hours	\$10.00	5.00	\$5,000.00
Maintenance	Hours	\$10.00	1.00	\$1,000.00
Monthly Labor Costs				\$13,500.00
<u>Operating Costs:</u>				
	<u>(Unit)</u>	<u>(Cost)</u>	<u>(Horse/Month)</u>	<u>(Cost/Month)</u>
Fuel and Oil	Gallon	\$3.10	1.00	\$310.00
Utilities	KWH	\$0.18	100.00	\$1,790.00
Manure Disposal	Hours	\$100.00	1.00	\$10,000.00
General Supplies	Enterp	\$50.00	1.00	\$5,000.00
Taxes	%	9.00%	692.50	\$3,116.25
Insurance	Enterp	\$2,000.00	0.02	\$4,000.00
Monthly Operating Costs				\$24,216.25
Total Monthly Variable Costs				\$58,841.25

Fixed Costs:

	<u>(Unit)</u>	<u>(Cost)</u>	<u>(Enterprise/Year)</u>	<u>(Value/Month)</u>
Covered Arena	Dollars	\$100,000.00	1.00	\$8,333.33
Equipment and Machinery	Dollars	\$5,000.00	1.00	\$416.67
Arena Footing	Dollars	\$9,000.00	1.00	\$750.00
Corrals and Facilities	Dollars	\$10,000.00	1.00	\$833.33
Taxes (Land)	Dollars	\$25,000.00	1.00	\$2,083.33
Land (Net Rent)	Dollars	\$0.00	1.00	\$0.00
Management Costs	Dollars	\$45,000.00	1.00	\$3,750.00
Total Monthly Fixed Costs				\$16,166.67

Total Monthly Costs

\$75,007.92

Total Net Benefit per Month

\$8,617.08

INVESTMENT ANALYSIS

Five Year Average Discount Rate = 5.00%

Input Section:

Initial Investment = \$124,000

Useful Life for Taxes = 5

Percent Down Payment = 25%

Salvage Value for Taxes = 0

Useful Life for Sale = 10

Annual Interest Rate on Debt = 8%

Salvage Value for Sale = \$50,000

Investment Tax Credit = 10%

Length of Debt Service (yrs) = 6

Results:

<u>Year</u>	<u>Annual Cash Inflow</u>	<u>Annual Cash Outflow</u>	<u>Annual Taxes</u>	<u>Investment Tax Credit</u>	<u>Salvage Value</u>	<u>Net Cash Inflows</u>	<u>Accumulated ANCF</u>	<u>Accumulated Payments</u>	<u>Annual Payment = (\$20,117) Difference</u>
0	0	124,000				(124,000)	0		
1	1,003,500	900,096	63,669	12,400	0	52,135	52,135	20,117	32,017
2	1,003,500	900,096	63,669	0	0	39,735	91,870	40,235	51,635
3	1,003,500	900,096	63,669	0	0	39,735	131,604	60,352	71,252
4	1,003,500	900,096	63,669	0	0	39,735	171,339	80,469	90,870
5	1,003,500	900,096	63,669	0	0	39,735	211,074	100,587	110,487
6	1,003,500	900,096	83,757	0	0	19,647	230,721	120,704	110,017
7	1,003,500	900,096	83,757	0	0	19,647	250,367	0	No Payment
8	1,003,500	900,096	83,757	0	0	19,647	270,014	0	No Payment
9	1,003,500	900,096	83,757	0	0	19,647	289,661	0	No Payment
10	1,003,500	900,096	83,757	0	50,000	69,647	359,308	0	No Payment

NPV = \$157,183

IRR = 29.61% Acceptable

PBP = Between 2 & 3 Years

Project is feasible

