

State of Washington  
Joint Legislative Audit and  
Review Committee

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# Department of Corrections Dairy Farm Cost/Benefit Analysis

## Report 98-8

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November 10, 1998

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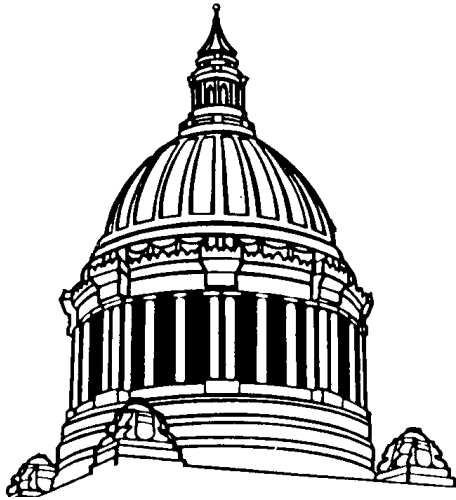


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Established by Chapter 44.28 RCW, the Joint Legislative Audit and Review Committee (formerly the Legislative Budget Committee) provides oversight of state funded programs and activities. As a joint, bipartisan legislative committee, membership consists of eight senators and eight representatives equally divided between the two major political parties.

Under the direction of the Legislative Auditor, committee staff conduct performance audits, program evaluations, sunset reviews, and other types of policy and fiscal studies. Study reports typically focus on the efficiency and effectiveness of agency operations, impact of state programs, and compliance with legislative intent. As appropriate, recommendations to correct identified problem areas are included. The Legislative Auditor also has responsibility for facilitating implementation of effective performance measurement throughout state government.

The JLARC generally meets on a monthly basis during the interim between legislative sessions. It adopts study reports, recommends action to the legislature and the executive branch, sponsors legislation, and reviews the status of implementing recommendations.



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# DEPARTMENT OF CORRECTIONS DAIRY FARM COST/BENEFIT ANALYSIS

## Summary

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### LEGISLATIVE DIRECTION FOR THIS STUDY

The 1998 supplemental to the 1997-99 capital budget included an appropriation of \$1.24 million for the construction of a new animal waste lagoon at the dairy farm operated by the Department of Corrections (DOC) at Monroe. The appropriation for the new animal waste lagoon addresses an urgent environmental problem. The capacity of the existing animal waste lagoon is insufficient, resulting in the lagoon overflowing during the winter months and in the contamination of nearby streams. As a result, the Department of Ecology has required DOC to correct the problem or face the possibility of substantial fines.

The budget included a proviso requiring that the Joint Legislative Audit and Review Committee (JLARC) conduct a cost/benefit review of the operations of the dairy farm. The proviso directed that the cost/benefit review should make recommendations regarding the disposition of the farm. A subsequent letter from Representative Barry Sehlin and Senator Gary L. Strannigan to DOC also suggested that the JLARC analysis focus on an economic analysis of the new lagoon and future capital investments needed to make the dairy a viable program. The letter further suggested the study should provide a critique of previous economic analyses and make an independent assessment of the economic considerations of the current location of the farm.

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Appropriation  
for new  
animal waste  
lagoon . . .

. . . led to  
study  
mandate

## HISTORY OF THE MONROE DAIRY FARM

The Monroe Dairy Farm is operated by the Correctional Industries program of the Department of Corrections and provides jobs for about 100 inmates. There are approximately 500 cows at the farm, 460 of which are milking cows. The number of cows has increased substantially from the early 1990s when there was a total of less than 300 cows at the farm. Dairy products produced at the farm are sold by Correctional Industries to DOC prisons and other state and local agencies. The products are sold for less than the market price, resulting in savings to the purchasing agencies.

---

Severe flood  
at the farm

...

The Monroe Dairy Farm is located in the flood plain of the Snoqualmie River and has been in operation since the 1920s. Many of the farm's buildings are old, and a severe flood damaged the farm in 1990.

## PROPOSAL TO MOVE THE FARM TO EASTERN WASHINGTON

In the early 1990s DOC considered options for relocating the farm due to the age of the farm, its vulnerability to flooding, and increasing environmental concerns. Based on an economic analysis conducted by a consultant in the mid-1990s, DOC proposed to spend about \$10 million to relocate the dairy farm to the Coyote Ridge Correctional Center in Eastern Washington. The analysis indicated it would be more economical to relocate the farm to the Eastern Washington site than to rebuild at the Monroe site.

... led to  
1995  
proposal to  
move the  
farm

The proposal to relocate the dairy farm to Eastern Washington was not approved by the legislature. The Washington State Dairy Federation opposed the move, primarily because the proposal involved the expansion of the size of the dairy herd. Additionally, questions were raised about the reasonableness of the \$10 million cost of building a new farm.

## **COST/BENEFIT ANALYSIS OF DAIRY FARM OPERATIONS**

DOC financial statements for the dairy farm indicate that it approximately breaks even on its operations. That is, the sale of dairy products from the farm approximately equals the costs of operating the farm. However, these financial statements do not account for several different costs and benefits generated by the operations of the farm. For example, the financial statements do not include capital costs and do not consider the cost of replenishing the dairy herd with cows from the Correctional Industry Farm at Walla Walla. The financial statements also do not consider the benefit to the department resulting from the purchase of dairy products at below market rates.

When all quantified costs and benefits are accounted for, the costs of the dairy farm are greater than the quantified benefits. Capital costs for infrastructure improvements are a major reason why the costs exceed the quantified benefits.

An unquantified benefit of the farm is the value of the inmate jobs provided. While there certainly is some value to the provision of inmate jobs, from our observation it does not appear that many of the inmate jobs at the dairy farm are providing marketable job-specific skills to inmates. The value of such jobs is probably more related to the provision of a work ethic rather than learning job-specific skills.

Since the costs are greater than the quantified benefits, the cost/benefit analysis of the operations of the farm can be viewed in terms of the annual cost for each inmate job provided. Using the viewpoint of the annual cost per inmate job, comparisons could be made of the costs and benefits of different potential capital investments within Correctional Industries to provide additional inmate jobs. It would make sense for comparisons to give more weight to inmate jobs which provide marketable skills to inmates than to inmate jobs which do not provide such skills. Such comparisons were beyond the scope of this study.

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**Costs of the farm exceed quantified benefits**



## DISPOSITION OF THE DAIRY FARM

While the costs of operating the dairy farm exceed the quantified benefits, there is not an economic justification to discontinue the operation of the farm at this time. Capital costs are a major reason why the costs of the dairy farm exceed the benefits. Many of the capital costs needed to sustain the operations of the farm over the next ten years have already been spent and are sunk costs. Since significant capital expenditures have already been made, there is no economic justification for discontinuing the farm. Subsequent operations of the farm should recoup some of the capital expenditures that have already been made.

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Little  
economic  
justification  
for closing or  
moving farm

For the same reason, there is no economic justification for moving the farm to Eastern Washington at this time. The economic analysis that supported moving the farm to Eastern Washington identified only a slight economic benefit from moving the farm. This slight benefit was due to slightly lower capital costs associated with building a new farm in Eastern Washington versus rebuilding the farm at Monroe. Significant capital investments have been recently made at Monroe, and DOC projects relatively fewer investments needed at Monroe in the next ten years. Therefore, due to the sunk costs of capital investments recently made at Monroe, there is no economic justification for moving the farm to Eastern Washington at this time.

## COST OF NEW ANIMAL WASTE LAGOON

In our research, we were unable to find an example of an animal waste lagoon of similar size or cost. JLARC spoke with the Washington State Dairy Federation, Washington State University dairy economists, and representatives from the Natural Resource Conservation Service (NRCS). No one we spoke with knew of a waste lagoon even approaching the cost of the proposed facility at Monroe. A cost-estimating model provided by the NRCS suggested that the cost of the DOC facility should be about \$354,000. The existing lagoon, which is one-third the size of the proposed lagoon, was built in 1988 and cost \$16,000.

The cost of the animal waste lagoon also would seem to exceed what the economics of the dairy farm operation would support for animal waste handling. In other words, a private sector dairy farm of comparable size would be unable to economically justify a \$1.24 million expense for waste handling.

There are several factors that explain the high cost of the DOC facility at Monroe, including a design that exceeds required standards, contracted design costs, and the nature of public works contracts including the requirement to pay prevailing wage. These and other factors are discussed in the report. Some of the factors were possibly controllable by DOC and others were probably not. We were unable to attribute the extent to which the high cost of the project is attributable to factors that could be controlled by DOC.

## CONCLUSIONS

When all quantified costs and benefits are considered, the costs of the Monroe Dairy Farm exceed its benefits. However, a major reason why the costs exceed the benefits is the inclusion of capital costs in the analysis. Since many of the capital costs needed to allow continued operation of the dairy for the next ten years have already been spent, there is no economic justification for relocating or closing the farm at this time. However, the issue of economic costs and benefits should be reconsidered prior to making additional substantial capital investments at Monroe.

The cost of the animal waste lagoon exceeds an amount that can be economically supported by the operations of the farm. Unlike the situation for a private dairy farm, capital costs for the DOC dairy farm do not have to be supported by its operations because they are provided by a separate appropriation. Because capital costs do not have to be supported by the dairy farm's operations, there may be less incentive for DOC to pursue cost-effective capital investments than if capital costs are supported by the operations of the farm. This may partially explain the high cost of the new animal waste lagoon. State statutes require Class II correctional industries to be closely patterned after private sector industries.

---

Cost of new  
animal waste  
lagoon high

## RECOMMENDATIONS

The report includes two recommendations that are intended to improve the evaluation of potential capital investments for providing additional inmate jobs in correctional industries and to provide additional incentives for DOC to identify cost-effective capital investments at the dairy farm.

## AGENCY RESPONSE

The Department of Corrections provided a response to this report concurring with Recommendation 1 and partially concurring with Recommendation 2. Their response, as well as the auditor's comments on this response, are provided in Appendix 2.

## ACKNOWLEDGEMENTS

We wish to express our appreciation to DOC Correctional Industries and Engineering, Facilities, and Capital Programs staff for providing and interpreting the data used for this study. Additionally, we thank the experts we talked to from Washington State University, the Natural Resource Conservation Service, and the Washington State Dairy Federation for their assistance.

This study was conducted by Larry Brubaker. Bob Thomas was the Project Supervisor.

Thomas M. Sykes  
Legislative Auditor

On November 10, 1998, this report was approved by the Joint Legislative Audit and Review Committee and its distribution authorized.

Representative Cathy McMorris  
Chair

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# RECOMMENDATIONS

## Summary

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### *Recommendation 1*

The Department of Corrections should conduct a cost/benefit analysis of various capital investment alternatives to expand the number of inmate jobs provided by Correctional Industries. The analysis should consider both capital and operating costs and should give greater weight to jobs that provide inmates with skills that are in demand in the private sector.

### *Recommendation 2*

Future capital improvements at the dairy farm should be financed from revenues generated by the operations of the farm.

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# STUDY BACKGROUND AND HISTORY OF THE DAIRY FARM

## Chapter One

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### DESCRIPTION OF THE DAIRY FARM

The Department of Corrections (DOC) has operated a dairy farm near the Washington State Reformatory at Monroe since the 1920s. The size of the farm has increased over time, particularly in recent years. In the 1920s the dairy farm had about 60 cows. By the 1960s the number had increased to 120, and by 1991 the farm had 295 cows. There are currently 501 cows at the farm, of which 461 are milking cows. Most of the buildings at the farm are old and have required substantial repairs to maintain their utility.

The farm is operated by the Correctional Industries Division of DOC. It is a Class II Correctional Industry. By statute, Class II Correctional Industries are to be designed to reduce the costs for goods and services for tax-supported agencies and for nonprofit organizations.

The farm includes a creamery that processes the raw milk products into finished and packaged dairy products. The products are sold by Correctional Industries to DOC prisons and other state and local public institutions. The products are sold at below-market prices, resulting in cost savings to the customers of the dairy farm. The Monroe Dairy Farm is supported by another farm at the Washington State Penitentiary at Walla Walla. The Walla Walla farm produces milking cows for use by the Monroe farm. The Monroe farm provides jobs for about 100 inmates and the Walla Walla farm provides jobs for another 23 inmates.

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Size of the farm has grown over time

## 1995 PROPOSAL TO MOVE THE FARM

The Monroe farm is located on a floodplain near the Snoqualmie River. A severe flood in 1990 damaged some of the farm's buildings. A less severe flood occurred in 1995. The high water table of the site and threat of flooding result in concerns about animal waste contaminating the ground water and streams near the site. Because of such concerns, dairy farms have recently become the subject of increased scrutiny by environmental agencies.

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DOC  
proposed to  
spend \$10  
million to  
move the  
farm . . .

In addition to the environmental concerns about the site, the 1990 flood and the age of the buildings at the farm created the impetus for DOC to consider alternative locations for the dairy farm. A 1994 economic analysis by a consulting firm concluded that it would be more economical to build a new farm at the Coyote Ridge Correctional Center in Connell, Washington, rather than to rebuild the existing farm at Monroe.

. . . but  
proposal was  
not approved

DOC requested \$10 million in 1995 to build a new farm at the Connell site. The Washington State Dairy Federation opposed the proposal. The Federation was concerned that the proposal involved expanding the size of the farm to about 600 milking cows. This would have involved an expansion of the size of the milking herd by more than 50 percent from the size of the herd at the time the proposal was made. Additionally, concerns were raised by some legislators that the \$10 million cost of the new farm was excessive. The proposal to move the farm to Connell was not approved by the legislature.

## CURRENT SITUATION

Since the legislature did not approve DOC's proposal to relocate the dairy farm, expenditures have been made to address some of the most pressing infrastructure problems at the Monroe site. Approximately \$1.6 million has been spent to make repairs at the site since the 1995 proposal to move the farm. These funds have been used to address safety and environmental concerns and to upgrade equipment at the creamery.

The 1998 supplemental appropriation for a new animal waste lagoon raises the total to be spent since 1995 to more than \$2.8 million. The new animal waste lagoon was proposed because the capacity of the existing lagoon is insufficient. Overflow of the lagoon during the winter of 1997 resulted in the Department of Ecology notifying DOC to correct the problem or face the possibility of fines up to \$10,000 per day.

The construction contract for the new animal waste lagoon was awarded in September 1998.

## **LEGISLATIVE DIRECTION FOR THIS STUDY**

The legislature mandated this study via a proviso in the 1998 capital budget. The proviso directed JLARC to conduct a cost/benefit review of the operations of the dairy farm and to include recommendations regarding the disposition of the farm.

Further clarification for the study was provided in a March 10, 1998, letter to DOC from the Chair of the House Capital Budget Committee and the Vice Chair of the Senate Ways and Means Committee. The letter suggested the study should: 1) focus on an economic evaluation of the new lagoon and future capital investments that are needed to make the dairy a viable program; 2) provide a critique of previous economic studies of the dairy; and 3) make an independent assessment of the economic considerations of the current location of the farm.

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**New animal waste lagoon provides additional capacity**

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**1998 Legislature approved new lagoon and mandated this study**

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# COST/BENEFIT ANALYSIS

## Chapter Two

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### METHODOLOGY

DOC financial statements for the operations of the Monroe Dairy Farm indicate that the farm approximately breaks even on its operations. However, these financial statements do not include certain costs and benefits. For example, the financial statements do not include the capital costs for facilities and do not reflect the benefit of the provision of dairy products to DOC prisons at below market-rate costs. Additionally, certain accounting procedures inherent in the financial statements do not reflect an accurate representation of the true costs and benefits. For example, the financial statements include revenue from the General Fund to purchase equipment. This revenue is not generated by the operations of the dairy farm and, therefore, is not a resource generated by the dairy farm.

Our cost/benefit analysis includes the following components.

#### Costs:

- Operating costs of the Monroe Dairy Farm
- Operating costs of the Walla Walla farm supporting the Monroe Dairy Farm
- Amortized annual capital costs of the Monroe Dairy Farm
- Amortized annual capital costs of the Walla Walla farm supporting the Monroe Dairy Farm

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**DOC financial statements do not capture all costs and benefits**



### Quantified Benefits:

- External sales of the Walla Walla farm (i.e., sales to customers other than Correctional Industries)
- External sales of the Monroe Dairy Farm (i.e., sales to customers other than Correctional Industries)
- Savings to Correctional Industries' customers resulting from the purchase of dairy products at below market-rate prices

### Unquantified Benefits:

- Inmate jobs at the Monroe and Walla Walla farms

Exhibit 1 illustrates the results of the cost/benefit analysis.

### Exhibit 1 Costs and Benefits of the Dairy Farm

<b>Monroe (and Walla Walla) Dairy Farm Cost/Benefit Analysis</b>				
	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>11 Months 1998</b>
<b>Costs</b>				
Monroe Operating	3,019,854	3,153,589	2,892,811	3,144,104
Monroe Amortized Capital Costs <sup>1</sup>	225,313	225,313	225,313	225,313
Walla Walla Operating Costs	421,787	557,269	504,930	480,409
Walla Walla Amortized Capital Costs	-	-	-	-
<b>Total Costs</b>	<b>\$ 3,666,954</b>	<b>\$ 3,936,171</b>	<b>\$ 3,623,054</b>	<b>\$ 3,849,826</b>
<b>Benefits-Quantifiable</b>				
Monroe External Sales	2,962,098	2,940,440	2,893,209	3,086,997
Walla Walla External Sales	40,693	68,959	85,330	96,626
Customer Savings on Dairy Products	467,551	464,132	456,677	487,266
<b>Total Quantified Benefits</b>	<b>\$ 3,470,342</b>	<b>\$ 3,473,531</b>	<b>\$ 3,435,216</b>	<b>\$ 3,670,889</b>
<b>Net Profit (Loss)</b>	<b>\$ (196,612)</b>	<b>\$ (462,640)</b>	<b>\$ (187,838)</b>	<b>\$ (178,938)</b>
<b>Benefits-Unquantified</b>				
Inmate Jobs – Monroe				<b>100</b>
Inmate Jobs – Walla Walla				<b>23</b>

<sup>1</sup> Source: Financial statements and other information provided by DOC. The table does not show the actual cash flow of capital costs at the dairy farm, but rather a conservative estimate of an annualized equivalent of those costs.

## RESULTS OF COST/BENEFIT ANALYSIS

As indicated by Exhibit 1, the cost/benefit analysis indicates that the costs of the Monroe Dairy Farm and supporting operations at Walla Walla exceed the quantified benefits by as little as \$178,938 and as much as \$462,640 per year.

An important factor in explaining why the costs exceed the quantified benefits is the inclusion of capital costs in the analysis. Correctional Industries' financial statements do not include these costs. When capital costs are included, the operation of the dairy farm loses money.

## UNQUANTIFIED BENEFITS

As mentioned, the cost/benefit analysis indicates that the costs of the dairy farm operation exceed the quantified benefits. However, we have not attempted to quantify the value of the 123 inmate jobs provided at Monroe and Walla Walla. There is certainly some value to these jobs; providing inmate jobs is the purpose of Correctional Industries.

Class II Correctional Industries are directed by statute to be "closely patterned after private sector industries" and to "as much as possible, match inmate skills and aptitudes with the work opportunities in the free community." Based on our observation, the inmate job opportunities provided at the Monroe Dairy Farm are probably only distantly related to these statutory goals. The 100 inmate jobs at the Monroe Dairy Farm far exceed the number of civilian jobs at a similar private sector dairy farm. The manager of the dairy farm indicated that a similar private sector farm might provide 8-10 jobs. It seems unlikely that many of the inmates working at the Monroe Dairy Farm are acquiring specific work skills that will assist them upon their release. Instead, the value of these jobs may be more related to keeping the inmates occupied and the development of a work ethic, rather than acquiring specific job-related skills.

Chapter 20, Laws of 1993, required DOC to expand the number of inmate jobs in Class I and II correctional industries by 1,500 inmates between 1993 and 2000. The requirement to expand

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Costs exceed  
quantified  
benefits

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Value of  
inmate jobs  
not quantified

inmate jobs may conflict somewhat with the requirement that correctional industries be closely patterned after private sector industries. The new jobs created may provide few skills marketable to employers in the private sector.

### Evaluation of the Cost per Inmate Job

The methodology used for the cost/benefit analysis conducted for this project could be useful to Correctional Industries in evaluating various capital investment alternatives for different industries. The cost/benefit information could be portrayed in terms of annual cost per inmate job. A comparison of the annual cost per inmate job could assist Correctional Industries in identifying the most cost/effective alternatives for different potential capital investments intended to increase the number of inmate jobs.

For such an analysis, it would make sense to weight inmate jobs in accordance with the perceived value of those jobs. For example, a job in a Class I industry (a business operated by the private sector) may provide more useful job skills to inmates and be more valuable than an inmate job in a Class II industry (operated by Correctional Industries). The cost/benefit analysis of different investment alternatives should weight the Class I inmate jobs more highly than Class II jobs.

### ***Recommendation 1***

*The Department of Corrections should conduct a cost/benefit analysis of various capital investment alternatives to expand the number of inmate jobs provided by Correctional Industries. The analysis should consider both capital and operating costs and should give greater weight to jobs that provide inmates with skills that are in demand in the private sector.*

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Analysis identifies the cost per inmate job provided . . .

. . . this cost can be compared to other correctional industries

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# DISPOSITION OF THE DAIRY FARM

## Chapter Three

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The budget proviso requiring this study requested that JLARC make recommendations concerning the disposition of the dairy farm. We interpreted this request to provide answers to the following questions:

1. Should consideration be given to moving the dairy farm to another location?
2. Should consideration be given to discontinuing the operation of the dairy farm?

## ECONOMIC CONSIDERATIONS OF MOVING THE FARM

### Results of Previous Studies

A 1994 economic analysis conducted by a consultant supported DOC's proposal to move the dairy farm to Eastern Washington. This analysis indicated it would cost \$10.1 million to move the farm to Eastern Washington versus \$10.6 million to rebuild the Monroe Farm. Operating revenue and costs were projected to be the same at either location. Therefore, the entire difference in costs and benefits between the two locations was the \$500,000 additional capital costs to rebuild at Monroe.

The 1994 analysis assumed a substantial expansion in the size of the dairy herd and further assumed that economies of scale generated by the larger farm would generate sufficient revenue to pay for the \$10.1 million capital costs out of operating profits. However, the proposed expansion of the farm generated political opposition to the proposal to move the farm.

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### Summary

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Previous studies supported moving the farm . .

. . . because the capital costs of moving were slightly less

Because of this opposition, in 1995 DOC commissioned another consultant to provide further information regarding the capital costs of moving (but not expanding) the farm. The 1995 analysis also found that the capital costs of moving the farm to Eastern Washington would be less than long-term options for rebuilding the farm at Monroe. Because the farm assumed in the 1995 study was smaller in size, the capital costs of moving to Eastern Washington declined to \$9.4 million, while the cost of rebuilding the farm at Monroe was estimated to be \$10 million. There was no comparison of operating revenues and costs among the various proposals in the 1995 study.

### Critique of Previous Studies

We found a few weaknesses in the 1994 and 1995 consultant reports comparing the economics of moving the farm to Eastern Washington versus rebuilding in Monroe. For example:

- The 1994 report assumed that operating revenues and costs would not differ between Eastern Washington and Monroe. We find this assumption to be simplistic. It is possible that both revenues and costs would differ with location. For example, the manager of the dairy farm indicated that the amount of milk produced by the dairy herd would likely be lower in Eastern Washington due to greater temperature extremes; thus, lowering revenue per milking cow. However, costs to acquire feed for the herd would likely be lower in Eastern Washington due to the proximity of farms producing such feed. Transportation costs of finished dairy products would likely be higher in Eastern Washington since the majority of the customers for these products are in Western Washington.
- The 1994 analysis indicated that the new farm in Eastern Washington could generate sufficient operating profits to pay for the \$10 million cost of construction. This seems somewhat optimistic. The consultant's report assumed that *revenue* per milking cow would be about 12 percent greater than historical levels and that *costs* per milking cow would be about 12 percent less than historical levels. While the larger size farm assumed in the analysis may

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Previous studies assumed no difference in operating costs at different locations

generate economies of scale sufficient to reduce costs per dairy cow, we know of no reason why revenue per milking cow would be higher with a larger herd. In fact, as mentioned above, it is possible revenue per milking cow would decline with a move to Eastern Washington.

- Both the 1994 and 1995 analyses assumed that the Monroe farm would need to be completely rebuilt at a cost of more than \$10 million in order to remain at the site. In fact, while there has been a substantial amount of money spent to maintain the Monroe site since these analyses (\$2.9 million spent since 1995, plus an estimated \$1.4 million needed over the next 10 years), these costs have not approached the \$10 million estimated in the consultant's reports. It has not been necessary to completely rebuild the Monroe farm.
- Expansion of the size of the dairy herd at Monroe is a major factor in the need for the new animal waste lagoon, in addition to increased regulation and enforcement. The problem with the existing lagoon is insufficient capacity. The size of the dairy herd at Monroe has increased by 70 percent since 1991 (the existing animal waste lagoon was built in 1988). There has been no analysis of the costs and benefits of reducing the size of the dairy herd in comparison with the costs and benefits of building the new animal waste lagoon.

## Current Economic Considerations

Because the proposal to move the farm was not approved by the legislature, DOC has spent approximately \$2.9 million (including the \$1.2 million to be spent on the new animal waste lagoon) for improvements needed to maintain the operations of the dairy farm. Because these funds have either been spent, or are committed to be spent (in the case of the new animal waste lagoon), these are considered as sunk costs in our analysis.

We asked DOC for an estimate of further capital expenditures needed to maintain the viability of the dairy farm at Monroe over the next ten years. This estimate amounted to about \$1.4 million.

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Previous studies assumed the Monroe farm needed to be completely rebuilt . . .

. . . but this has not been necessary

Therefore, the total capital cost of maintaining the viability of the farm at Monroe is \$4.3 million.

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No  
justification  
for moving  
farm now . . .

This compares to the estimate of \$9.4 million to move the farm to Eastern Washington. However, since \$2.9 million of the \$4.3 million costs to maintain operations at Monroe are sunk costs (meaning the money has already been spent), the appropriate comparison at this time is \$9.4 million to move the farm versus the additional \$1.4 million not yet spent to remain at Monroe. Exhibit 2 summarizes this analysis:

### Exhibit 2

#### Capital Costs of Various Locations for the Dairy Farm

	Monroe	Eastern Washington
<b>Sunk Costs</b>	\$2.9 million	\$0
<b>Future Costs</b>	\$1.4 million	\$9.4 million

Source: DOC.

. . . but there  
may be in  
the future

Based on this comparison, there is no economic justification at this time for moving the farm to Eastern Washington. However, the estimate provided by DOC of future capital costs to maintain the viability of the Monroe farm was for the next ten years only. It is likely that the useful life of the improvements made at Monroe will not equal the useful life of building a new farm in Eastern Washington. Therefore, it would be useful to revisit the economics of the location of the farm should additional substantial capital investments be needed at Monroe after the next ten years.

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Closing the  
farm would  
not recover  
capital costs  
already spent

## ECONOMIC CONSIDERATIONS OF CLOSING THE FARM

As indicated in the cost/benefit analysis, the costs of the dairy farm are greater than the quantified benefits. This leads to the question of whether the state should consider discontinuing the operations of the dairy farm.

As also indicated in the cost/benefit analysis, capital costs are a major reason why the costs of the dairy farm exceed the

quantified benefits. However, the majority of the capital costs for maintaining the Monroe Dairy Farm over the next 10 years has already been spent and are sunk costs. Since these costs have already been spent, they should not be considered in an analysis of the economics of closing versus continuing the operations of the farm. Closing the farm would not result in saving money that has already been spent. Furthermore, closing the farm would result in the loss of the unquantified benefit of 123 inmate jobs. Therefore, there is little justification for closing the farm at this time.



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# COST AND ECONOMICS OF NEW ANIMAL WASTE LAGOON

## Chapter Four

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The \$1.24 million cost of the new animal waste lagoon exceeds the cost of similar facilities in the private sector. We discussed the cost of the lagoon with Washington State University dairy economists, the Washington State Dairy Federation, and staff from two different offices of the federal Department of Agriculture's Natural Resource Conservation Service, which develops standards for dairy farm waste lagoons. No one we spoke to knew of a dairy farm animal waste lagoon costing anywhere close to \$1.24 million. The existing animal waste lagoon, which was built in 1988 and is one-third the size of the new lagoon, cost \$16,000. Even after adjusting for the difference in size and allowing for inflation, the comparable cost of a new lagoon today would be about \$80,000.

The Natural Resource Conservation Service (NRCS) assists dairy farmers in meeting environmental standards, including designing animal waste lagoons which meet environmental standards. The NRCS has developed a cost model to help farmers estimate the costs of waste lagoons. The model estimates the cost of the lagoon based on its size and uses the actual cost of over 200 such projects in its calculations. Based on the size of the new waste lagoon, the NRCS model estimates it should cost about \$354,000.

## EXPLANATIONS FOR HIGH COST OF WASTE LAGOON

There are several factors that may explain the high cost of the animal waste lagoon. Among these are:

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**\$1.2 million for animal waste lagoon exceeds similar projects in private sector**

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## High project costs partially due to urgency to complete project in 1998

- The Monroe Dairy Farm includes a creamery (to process raw milk into dairy products). The creamery generates a substantial amount of waste water. Therefore, the size of the Monroe waste lagoon must be substantially larger than similar dairy farms without a creamery.
- The NRCS model does not include costs for design or other consulting fees. NRCS will design animal waste lagoons that meet environmental standards. NRCS provides this service for free. Due to time constraints, DOC did not make use of this service. The design cost for the Monroe Dairy Farm facility was \$120,000.
- According to NRCS staff, the design of the Monroe facility exceeds the required standards. According to DOC, additional safety features were incorporated into the design which are not required by NRCS standards.
- The project budget includes a 10 percent contingency cost and a 3 percent DOC project management cost. These costs are not included in the NRCS model.
- The project is subject to the public works contracting process that includes the requirement for prevailing wages to be paid.

DOC capital program staff suggests the high cost of the project is attributable to the requirements of the public works contracting process—such as the requirement to pay prevailing wage, payment and performance bond requirements, and mandatory minority and women business participation. Also, it was explained that DOC did not make use of the free design service provided by NRCS due to the urgency to complete the design in time to go to construction sometime during 1998. The NRCS free design service could have partially reduced the engineering consultant cost on the project.

Some of the factors listed above may have been within the control of DOC and others were probably not. It is not possible to quantify the extent to which the high cost of this project is attributed among the various factors, or the extent to which DOC could have controlled these factors.

## ECONOMICS OF WASTE LAGOON PROJECT

Regardless of the extent to which the high cost of this project was controllable by DOC, from our review of the economics of the Monroe Dairy Farm (as reflected in the cost/benefit analysis) it seems clear that the \$1.24 million cost of the project exceeds an amount that can be reasonably supported by the economics of the dairy farm. In other words, the funds generated by the operations of the farm are insufficient to support a \$1.24 million expenditure for waste handling. It is also unlikely that a private dairy farmer in a similar situation would be able to spend \$1.24 million for an animal waste lagoon and still operate at a profit. This perception was confirmed by the experts we talked to from Washington State University, the Washington State Dairy Federation, and the Natural Resource Conservation Service. We were told that dairy farms of this size do not generate sufficient revenue to justify an expenditure of \$1.24 million for waste storage.

As a state agency, DOC is not required to operate at a profit or to generate sufficient revenue from operations to pay for capital costs. Capital costs for Correctional Industries' facilities are paid for by appropriations in the capital budget. However, a private sector business must pay for its capital costs from revenue generated by its operations.

As mentioned previously, Class II Correctional Industries are mandated by statute to be "closely patterned after private industries." Because private industries must pay for capital costs out of operating revenue, there is an incentive for a private industry to identify the most cost-effective alternatives for addressing facilities requirements. Since Correctional Industries does not have to pay for facilities costs, there is less of an incentive to identify cost-effective capital alternatives.

We cannot say the different incentives between Correctional Industries and the private sector led to excessive costs of the animal waste lagoon project. DOC staff suggest strong incentives currently exist to minimize capital costs, because the need for capital facilities exceeds the availability of funds. However, it

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**Project cost  
not supported  
by economics  
of the farm**

seems likely that if the dairy farm were required to pay for capital costs out of operating revenues, there would be even more of an incentive for DOC to identify less costly capital projects.

Requiring the dairy farm to pay for capital costs out of operating revenues does not necessarily require the dairy farm to earn an operating profit sufficient to pay for capital costs. There could still be a subsidy from the department or the General Fund if there are insufficient operating funds to pay for capital costs. However, to the extent that a subsidy is required, it would result in greater visibility to the full cost of maintaining the operations of the dairy farm.

Finally, we note that when DOC requested to relocate the dairy farm to Eastern Washington, the department itself proposed to pay for the \$10 million cost of the new farm with funds generated by the operation of the farm.

### ***Recommendation 2***

*Future capital improvements at the dairy farm should be financed from revenues generated by the operations of the farm.*

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# SCOPE AND OBJECTIVES

## Appendix 1

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### SCOPE

Conduct an economic analysis of alternatives for the continued operation of the Department of Corrections dairy farm.

### OBJECTIVES

- Review and assess previous economic analyses of alternatives for the operation of the dairy farm.
- Assess the Department of Corrections current plans for capital investments at the Monroe site.
- Evaluate the economic costs and benefits of continuing the operations of the dairy farm at its current location versus alternative locations.

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# **AGENCY RESPONSES**

## **Appendix 2**

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- **Department of Corrections**
- **Auditor's Comments**



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STATE OF WASHINGTON

DEPARTMENT OF CORRECTIONS

P.O. Box 41111 • Olympia, Washington 98504-1111 • TEL: (360) 736-6111  
FAX Number: (360) 736-8721

October 20, 1998

Mr. Tom Sykes, Legislative Auditor  
Joint Legislative Audit and Review Committee  
PO Box 40910  
Olympia, Washington 98504-0910

Dear Mr. Sykes:

Subject: Dairy Farm Cost/Benefit Analysis

This is the Department's formal response to the Dairy Farm Cost/Benefit Analysis Preliminary Report dated October 6, 1998, conducted by the Joint Legislative Audit and Review Committee (JLARC). The following are our comments:

Recommendation 1

*"DOC should conduct a cost/benefit analysis on various capital investment alternatives to expand the number of inmate jobs provided by Correctional Industries. The analysis should consider both capital and operating costs and should give greater weight to jobs that provide inmates with skills that are in demand in the private sector."*

Recommendation	Agency Position	Comments
Recommendation 1	Concur	See Below

The Department concurs that cost/benefit analysis should be conducted when considering new industries. However, there are a number of additional issues that must be considered. For instance, the Department is legislatively mandated to increase the number of offender jobs, a concept we fully support. Work programs should teach accountability and responsibility in addition to providing inmates with the work ethic, social skills and as much as possible, with skills that are transferable to jobs in the community. Correctional Industries does have constrained markets and must enter businesses where the market supports adequate sales for viable operations, yet does not negatively impact in-state industry. All of these factors must be considered when evaluating new businesses.

Recommendation 2

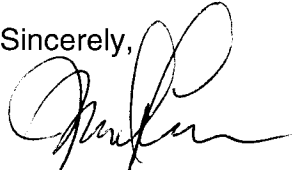
*"Future capital improvements at the dairy should be financed from revenues generated by the operations of the farm."*

Recommendation	Agency Position	Comments
Recommendation 2	Partially Concur	See Below

We concur that it would be desirable for the dairy to support the full cost of operations, including capital investment. However, as the study points out, the dairy does not generate adequate revenue to fully support capital investment. Given the constraints of the site, it is probably not possible to expand the dairy at that location to attain economies of scale sufficient to fully support capital improvements on a facility of the dairy's age and condition. Unlike the private sector, Correctional Industries operates under market constraints that deny access to a major portion of the dairy market. The Department is restricted to selling its goods and services to public sector organizations and to nonprofit organizations.

When possible, the operating revenues have supported debt services for specific capital projects. For instance, the loafing shed repairs are being funded using Certificates of Participation (COP). The COP debt service for the loafing shed is being paid for with CI operating revenues. The Department has dual responsibility. A legislative mandate, which we agree with, requires the Department to employ as many offenders as possible to meet statutory goals. There is also an expectation that we operate industries as cost-effectively as possible. Sometimes these dual roles are in conflict.

If you have questions, please call Mr. Bill Phillips, Administrator, Engineering, Facilities, and Capital Programs, at (360) 586-3907.

Sincerely,  
  
Joseph D. Lehman  
Secretary

JDL:lsf  
Enclosure  
cc: Cathy McMorris  
Bob Thomas  
Larry Brubaker  
Patria Robinson-Martin



## Auditors' Comments on Department's Response

**Recommendation 1:** The Department of Corrections should conduct a cost/benefit analysis of various capital investment alternatives to expand the number of inmate jobs provided by Correctional Industries. The analysis should consider both capital and operating costs and should give greater weight to jobs that provide inmates with skills that are in demand in the private sector.

**Agency Position and Comments:** Concur

**Auditors' Comment:** None

**Recommendation 2:** Future capital improvements at the dairy farm should be financed from revenues generated by the operations of the farm.

**Agency Position and Comments:** Partially Concur. The department agrees it would be desirable to support the full cost of operations, but that the dairy does not generate sufficient revenue to do so.

**Auditors' Comment.** The report notes that this recommendation does not necessarily mean that the farm must generate sufficient revenue to pay for capital costs. There could be an ongoing subsidy from the Department of Corrections' general fund budget. In addition to creating additional incentives to identify cost-effective capital alternatives, the recommendation would bring greater visibility to the full cost of operating the farm.