AGRICULTURE
BRIEFING
1-19-81

Alaska State Legislature

Senate

Official Business

Pouch V
State Capitol
Juneau, Alaska 99811

RESOURCES COMMITTEE

January 19, 1981
1:30 p.m.

Butro Room
Capitol 207

MEMBERS PRESENT

SENATOR FAHRENKAMP
SENATOR ELIASON
SENATOR FISCHER
SENATOR GILMAN
SENATOR MULCAHY
SENATOR STURGULEWSKI

MEMBERS ABSENT

SENATOR BRADLEY

The following people briefed the Committee on agriculture:

Dr. James Drew - Director, Agriculture Experiment Station, Dean of School of Agriculture and Land Resources Management.

Robert Pollock - Executive Director, Agriculture Action Council.

Dominic Carney - Director, Alaska Division of Agriculture, Department of Natural Resources.

Claude Hoffman - Director, Alaska Division of Technical Services, Department of Natural Resources.

Art Davidson - Agriculture Land Planner, Department of Natural Resources

Dr. Drew spoke about the basic elements of agriculture: 1. Agriculture is a renewable resource industry; 2. Alaska has a policy for agriculture development. DNR has a long term plan for such development; 3. Modern agriculture is a complex industry; 4. Alaska's agriculture must be competitive, and; 5. Agriculture development requires public support.

Mr. Carney indicated that in order for Alaska to be agriculturally competitive certain conditions must be present: 1. Large parcels of land must be made available for farmers; 2. Farmers must be supplied with low interest loans; 3. Farmers need access to their lands, and; 4. Farmers need to be able to obtain land at a reasonable price.

Mr. Davidson briefed the Committee on DNR'S Action Planning

process (example attached). The basic components are: 1. Project coordination; 2. Area, management and agricultural planning; 3. Project development; 4. Preliminary decision, and; 5. Disposal process.

Mr. Hoffman's agency is responsible for providing the technical aspects of land disposal such as: surveying the land, field identification, placement of monuments, checking ownership status and preparing titles.

Mr. Pollock briefed the Committee on processing and marketing. He indicated that because of the Delta agriculture project Alaska has proven its ability to produce, process and market agricultural products. The success of that project was dependent upon expanses of land being placed into production, experienced farmers using modern equipment and fertilizers. The yields were tested and were found to be able to compete anywhere in the world. He outlined the three variables of production as; land, climate and management.

He also indicated that there are three major markets for Alaska crops: 1. Export; 2. Feed for livestock, and; 3. Alcohol. He stressed the need for an integrated marketing system containing these elements: 1. Elevator/farm storage; 2. Truck movement; 3. Transfer facility; 4. Rail movement; 5. Marketing service; 6. Tidewater export facility; 7. Marketing service; 8. Ocean movement, and; 9. Export market.

In order for the livestock industry to be used as a market for Alaska grains the following conditions would need to be met: 1. A guaranteed supply of feed grain and forage; 2. A competitive feed price, and; 3. Access to modern processing facilities.

He further indicated that in order to have alcohol production, a livestock industry must be in place to use the high protein grain waste.

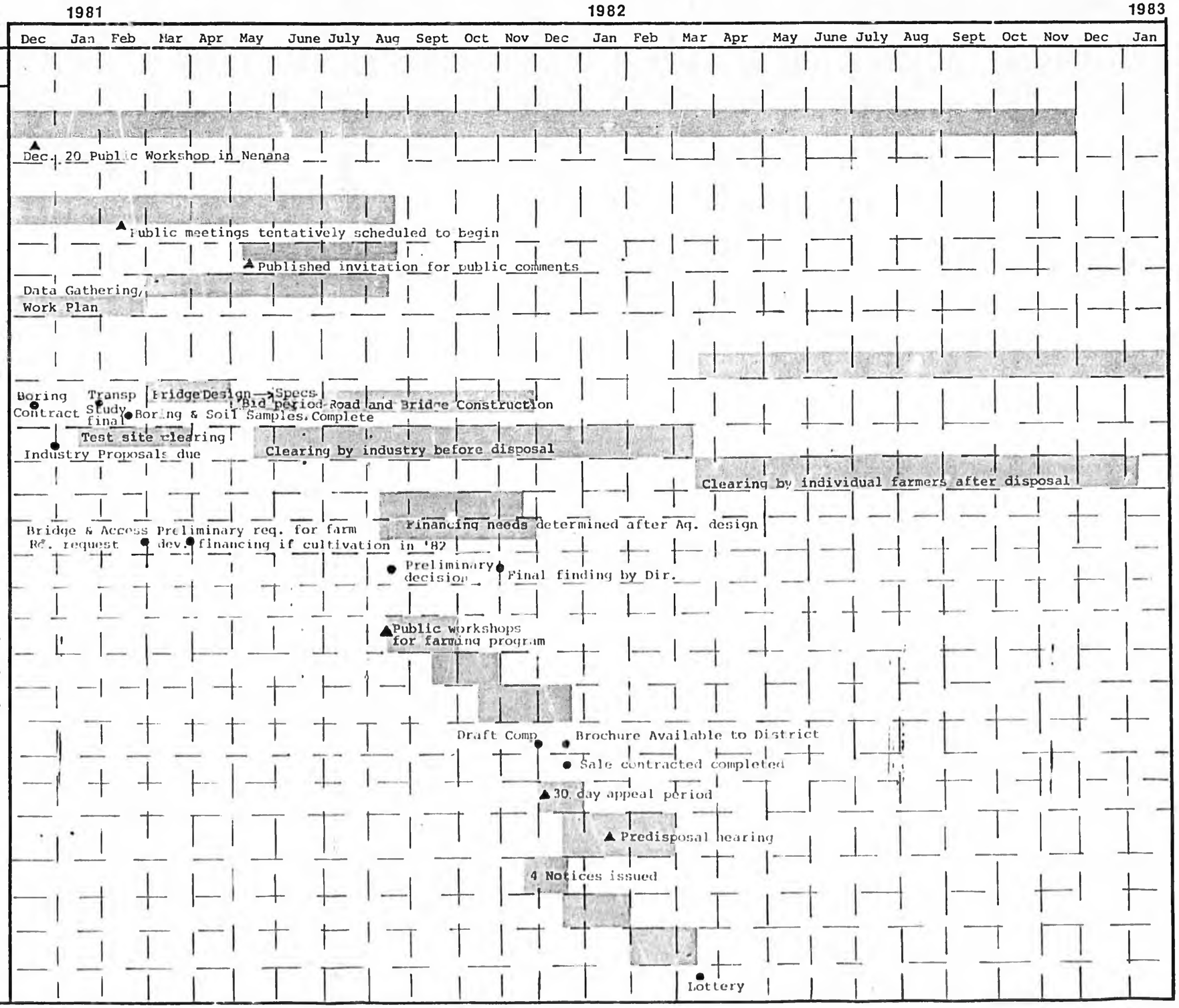
Mr. Carney briefed the Committee on government institutions. He indicated that government regulations are in existence to help protect public health and the industry. He further indicated that state loan programs are necessary because in Alaska the farms, farmers, products and concepts are new. Commercial financial institutions want to see a tract record before they will loan money. He suggested that the state could help with processing plants until a level of volume is reached at which time the private sector can take over.

The last portion of the briefing was about the various research projects around the state: testing plant varieties, test growing plots, in-soil tes of fertilizers and pesticides, soil fertility test on newly cleared land, breeding of seed varieties for climactic conditions, equipment testing and livestock research.

nenana-totchaket tentative schedule of activities

12-80

ACTIVITY	RESPONSIBILITIES
PROJECT COOPDINATION	Div. of Ag., L&RP, Ag. Action Council
Data, Mapping, Analysis *	
AREA, MANAGEMENT & AGRICULTURAL PLANNING ACTIVITIES	
Schematic Area Plan/Management Plan	L&RP, NCDO
Classification	
Agricultural Design Phase I Farm Layout, Service Roads Facilities	Div. of Ag., Ag. Action Council
PROJECT DEVELOPMENT	
Farm Development Financing	Div. of Agriculture
Access Road & Bridge Construction	
Clearing Option #1 - Before Disposal **	FL&WM
Clearing Option #2 - After Disposal	FL&WM
Surveying	DTS
LEGISLATIVE REQUESTS	Ag. Action Council
Preliminary Decision & Final Finding	FL&WM
DISPOSAL PROCESS	
Public Workshops (Farming Program)	Div. of Agriculture
Prequalification Submittal	Div. of Agriculture
Prequalification Selection & Notice	Div. of Agriculture
Lottery Brochure	FL&WM
Sale Contract Form	FL&WM
Appeal Period	FL&WM
Administrative Findings & Appeal Hearings	FL&WM
Notice (345) for Lottery	FL&WM
Lottery Filing Period	FL&WM
15 Day Period	FL&WM
Lottery	FL&WM



* Analysis relates Nenana agricultural development to State agricultural goals, objectives and development program

Data and special studies (including climate, livestock, vegetation, transportation, etc) are incorporated

** Depends upon industry proposals and adequate access

▲ Estimated dates for workshops, hearings and other opportunities for public participation

Address Questions and Suggestions to:

ART DAVIDSON
Land and Resource Planning Section
Department of Natural Resources
323 E. 4th Avenue
Anchorage, Alaska 99501

April 10, 1980

Alaska Agricultural Action Council
Office of the Governor
Juneau, Alaska 99811

RE: Report of Ad Hoc Transportation Committee

The purpose of this letter is to set forth the unanimous recommendations of the Transportation Committee with respect to the transfer of barley produced in the Delta Junction area to port facility for subsequent export and sale.

The involved farmers have presently signed statements declaring an intention to seed approximately 15,000 acres to barley. Accordingly, based on past production, it is reasonable to predict that approximately 12,000 to 15,000 tons of barley could be produced in the Delta area this summer. Local consumption could be approximately 2,000 to 4,000 tons.[a] The committee believes it is very important to arrange for the export of 10,000 tons (500,000 bushels) of barley during 1980-81, but also that sufficient grain should be retained in the State to satisfy local consumption. The legislature has previously made monies available for the purchase of barley pursuant to a test marketing program. However, unless that barley can be sold within a reasonable time, the effect is simply to accumulate barley in warehouses. We need to sell the product to make money available for the purchase of additional feed grains and to reduce storage charges. Additionally, prompt sale of the 1980 crop will permit payment in full to the participating farmers who will need the money for debt service and reinvestment.

The committee has understood its charge is to evaluate and recommend the best possible options in moving 10,000, 20,000 and 30,000 tons of the Delta Agricultural Project's initial barley production to tidewater and therefore into the export market.

In reaching our conclusions, we have traveled to the ports of Anchorage, Seward, Whittier, Valdez and Nenana. Only one of the ports, Whittier, has the capacity to handle 10,000 tons through an existing warehouse with rail access on the dock. However, unless modifications are made[b] conditions of the dock at Whittier are such that it will not accept a vessel larger than 10,000 tons. Grain vessels of 10,000 tons or less are rare. Valdez is not considered a viable option for 1980 because there is only one mode of transportation, no storage is available, transportation cost is excessive, and it is the greatest distance from future agricultural developments. In the future, should Valdez construct suitable grain export facilities, it could become a viable option, especially for Delta Junction agriculture.

The considerations used in determining port locations are as follows:

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[a]Mike Gilleland, correspondence to C. E. Lewis (enclosed)
[b]Obie Weeks, Alaska Railroad, Anchorage, Alaska

1. proximity to the present and future production areas
2. frequency of transportation service
3. location and preparation of the site
4. availability of rail
5. rail delivery cost
6. availability of storage space
7. cost of storage space
8. suitability of storage space
9. proximity to rail
10. spur capacity on the dock
11. availability of dock
12. suitability of dock
13. proximity of rail to dock
14. availability of rail car unloading equipment
15. availability of ship loading equipment
16. suitability of equipment
17. equipment required and cost
18. adaptability of equipment to dock
19. first year development needs
20. third year development needs
21. net contribution to port development

The Committee evaluated in detail how the grain would be stored and transported to port. In doing so, the following conclusions were reached:

1. The Alaska Farmers' Cooperative elevator must be completed (loan from the Agricultural Revolving Loan Fund).

2. Truck movement is the weakest link in the chain because of low tonnage capacity per unit, road conditions, critical scheduling at transfer sites, relative fuel and labor intensity and government regulations. In order to implement the most efficient transportation system, the exemption of motor transportation from tariff regulation is essential.

3. A transfer facility (both for grain and fertilizer) must be constructed by August 30, 1980, and be located in the vicinity of North Pole Refinery which offers convenient multimodal access described later in this report.

The Committee then addressed the movement of the grain to the best port served by rail. It was also brought to our attention that several North Pole sites offered barge access to the ocean via the Tanana-Yukon River system.[cd] This proposal is discussed later in this report.

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[c]Jim Healy, North Pole Refinery; Lloyd Wohlgemuth, Alaska Railroad, Fairbanks
[d]Larry Swenson, Swenson Trucking and Excavating, Fairbanks

Both Anchorage and Seward can immediately tie up the vessel required, both offer a rail spur and adequate land for development with proximity to the ship. The most immediately apparent difference between the two ports is that the Port of Anchorage is a more highly developed port. Seward, on the other hand, in its beginning stage of development, offers more flexibility.

More specifically, Anchorage offers proximity to production areas, and a more sophisticated management and planning structure. The Port of Seward offers a better ship approach channel[e] and loading equipment which can be modified to move grain.

Because of future uncertainty of volumes through a port facility, it is the Committee's judgment that the investment at the port facility should be kept to a minimum. The Committee feels that the Legislature should be made aware of present and future permanent port facility needs and that funding necessary to meet those needs should be requested. Based on the previous conclusion, the existing loading facilities in Seward become attractive. Also, in the short term, any warehouse must be multipurpose, making certain that other products could be stored in or moved through the facility during the off-season. Again, Seward is attractive because of an expanding wood chipping operation[f] near the dock and the interest expressed in a bonded warehouse.[g] The additional $2.00 per ton rail cost to move the grain to Seward becomes a mitigating factor. However, the Committee's judgment is that higher ship operating costs to Anchorage, and especially the higher facility costs[h] will exceed the additional rail charges to Seward.

The option of moving barley, or any other grain, directly onto barges at North Pole, Nenana or Galena and down river to ocean loading is very real.[i] The Committee can envision that, especially as Nenana production reaches large volumes, the down river option may siphon off significant volumes which would otherwise flow into the rail system. Additionally, encouraging the beginnings of barge traffic to tidewater will encourage agricultural development along the Yukon River, particularly in the Galena-Ruby area.

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[e]Pilots Association, Anchorage: 1) Natural deep water port; 2) Shorter access to dock from bay entrance; and 3) Year-round ice free.

[f]Larry Potts, Louisiana Pacific, Seward.

[g]Daryll Schaefermeier, Seward.

[h]Sealand, Inc., has quoted facility use cost of $79,240 for 10-week period.

[i]Larry Shelver, Yutana Barge correspondence to Ron Walt.

In view of the considerations, the Committee recommends:

1. Grain exported in 1980-81 be shipped through the port of Seward.

2. Additional investigation and evaluation begin immediately into a location for a permanent grain export facility.

Given the above considerations, the Committee's plan for the transport of the barley is as follows. Grain will be picked up at the existing elevator site in Delta Junction. This elevator site accommodates approximately 10,000 tons of grain. The additional grain production will be stored in facilities on the farm for transfer by the farmer to the local elevator. The first step in the transfer will be the movement of grain from the existing elevator facility at Delta Junction to a new and smaller facility to be constructed in North Pole This facility does not now exist and funds will have to be appropriated for its construction. It will essentially be a small elevator composed of four round steel storage bins for grain, two upright tanks for fertilizer, and a flat storage building. Attached to this letter is a report submitted by The Haskins Company, dated March 7, 1980, advising that the grain transfer station would cost $298,840 if constructed in Spokane and the fertilizer facility $111,000. The Committee estimates that there would be an additional 25 percent charge because of transport to Alaska and increased construction costs. Accordingly, the grain and fertilizer facility would cost $512,300 if constructed in interior Alaska. In addition, $100,000 will be required for a railroad spur and $32,000 will be required to construct a suitable flat storage facility. The flat storage facility can be used to store grain, fertilizer, and other agricultural products for availability in the Fairbanks community as well as for the farmers in Delta Junction.

In the near future, permanent grain storage and export facilities will be needed at a tidewater location in Alaska. The Committee's evaluation is that the construction of a multi-purpose flat storage facility could be the logical first step of a phased-in grain export terminal. This first phase could begin construction in 1980-81 at a cost of approximately $750,000.

It is the Committee's recommendation:

1. That the State of Alaska construct and operate the grain/fertilizer facility in the North Pole area.[1]

2. The possible future change in ownership or operation be made at the State's discretion.

3. The transfer tariffs charged to users of the facility be based on operating costs.

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[1]tentative pending site selection

The remaining expenditure required to accommodate movement of 10,000 tons of grain will be $146,000 for modification of temporary facilities and purchase of equipment to be used at the port to off-load railroad cars into storage areas and to transfer grain to a ship. This expenditure would permit purchase of two vacuvators, materials for jackbins, and sufficient conveyors, tubing and related equipment for transfer into the ship. The equipment could then be moved from one port to another. In addition, if necessary, a portion of the equipment could be used in the interior to facilitate movement of the movement of the grain from truck to train.

In summary, the capital cost of the facilities which are believed necessary to accomplish the task will be a total of $1,540,300. At current prices, this expenditure would facilitate movement of approximately 1.4 million dollars worth of feed grain. We strongly believe that these facilities can be used for a period of three to five years and that they will be adequate for the export of grain produced during this period of time. Accordingly, this expenditure for the State of Alaska is a good and necessary investment to accommodate the export of grain which cannot reasonably be locally consumed within the State. Further, the Committee emphasizes the urgency of immediate approval of the funds. Table A shows a suggested time schedule which illustrates this point.

The Committee wishes to express four points which are essential to this year's export effort and for the export of grain in the next three to five years. These are:

1. A well-qualified person should be hired immediately to oversee the construction recommended and to manage the transfer facility.

2. Additional agricultural lands, Delta II, Nenana and possibly Galena are critical to competitiveness of Alaska's grain transportation network to allow it to be competitive with modern facilities in the lower 48 states.

3. Additional and continuing work is needed to keep pace with the rapidly changing transportation modes in the State, changing grain consumption patterns, and changing grain production levels.

4. If grain sales are restricted to a specific time of year, any market consideration will be eliminated.

The Committee understands that a bill is presently pending before the State of Alaska which authorizes the appropriation of funds to accommodate the transfer of the grain. We request that this report be made available to the senators, representatives, and legislative committees considering this bill. In addition, the Committee will be available to give testimony as desired by interested government officials.

Sincerely,

Robert C. Pollock

Robert Pollock - Chairman
Export/Transportation Committee

Lyle R. Carlson

Lyle R. Carlson

Carol E. Lewis

Carol E. Lewis

Ronald S. Walt

Ronald S. Walt

William R. Wood

William R. Wood

CONSTRUCTION FOR 1980-81

Completion by September 1, 1980

	Cost
1. Construct transfer facility at North Pole site	
a. Grain and fertilizer	512,300
b. Flat Storage	32,000
c. Railroad Siding	100,000
	$644,300
2. Temporary facilities and equipment at the port	$146,000
3. Construction of grain storage flathouse	$750,000
TOTAL CAPITAL INVESTMENT	$1,540,300

TABLE A: TASKS TO BE COMPLETED PRIOR TO 1980 MOVEMENT

TASKS	TIME FRAME
1. Trucking	
a. Passage of SB 463 - deregulation of agricultural products by motor transport	by 5-15-80
b. Advertise and let contract for transfer of grain	by 7-1-80
c. Trailers purchased and delivered (responsibility of trucking firm)	
2. Transfer Facility	
a. Secure lease on site	5-1-80
b. Go to construction bid	5-1-80
c. Secure financing	6-1-80
d. Award bid	6-1-80
e. Begin construction	6-1-80
f. Complete construction	9-1-80
3. Railroad	
Secure contract for	5-1-80
a. facilities	
b. rates	
4. Truck/Railcar Unloading System (vacuvators)	
a. Go to bid	5-1-80
b. Secure financing	7-1-80
c. Award bid	7-1-80
d. Delivery	8-1-80
5. Storage Facilities Remodeling:	
a. Go to remodeling bid	5-1-80
b. Secure lease on site (or warehouse)	5-1-80
c. Secure financing	7-1-80
d. Award bid	7-1-80
e. Begin construction	7-1-80
f. Complete construction	9-1-80
6. Pneumatic Ship Loader (if needed)	
a. Go to bid	5-1-80
b. Secure financing	7-1-80
c. Award bid	7-1-80
d. Begin construction	7-1-80
e. Complete construction	9-1-80

ANTICIPATED COST WITH EXPORT ELEVATOR

		low	high
1.	AFC handling	2.00	3.00
2.	Trucking	10.00	15.00
3.	Transfer facility*	3.00	5.00
4.	Rail Road	12.00	15.00
5.	Export facility*	5.00	8.00
		32.00	46.00

* assumes only maintainence and operational costs which will be greatly reduced with additional tonnage.

*Comparable rates in "lower 48"

		single-car	multicar
Great Falls, Mont to West Coast	(650 miles)	27.80	23.2
Wolf Point, Mont to West Coast	(900 miles)	39.20	34.60
Minot, N. Dakota to West Coast	(1100 miles)	45.60	41.00

* These rates are <u>only</u> proposed rates. Current freight rates are as much as $7.00 per ton higher. These rates are for transportation only and do not include transfer thru an export facility or local elevator loading charges.

A. Alaska's Agricultural Development - Dr. James Drew

1. Agriculture is a renewable resource industry.
2. Alaska has a policy for agricultural development.
3. Modern agriculture is a complex industry.
4. Alaska's agriculture must be competitive and have a critical mass.
5. Agricultural development requires public support.

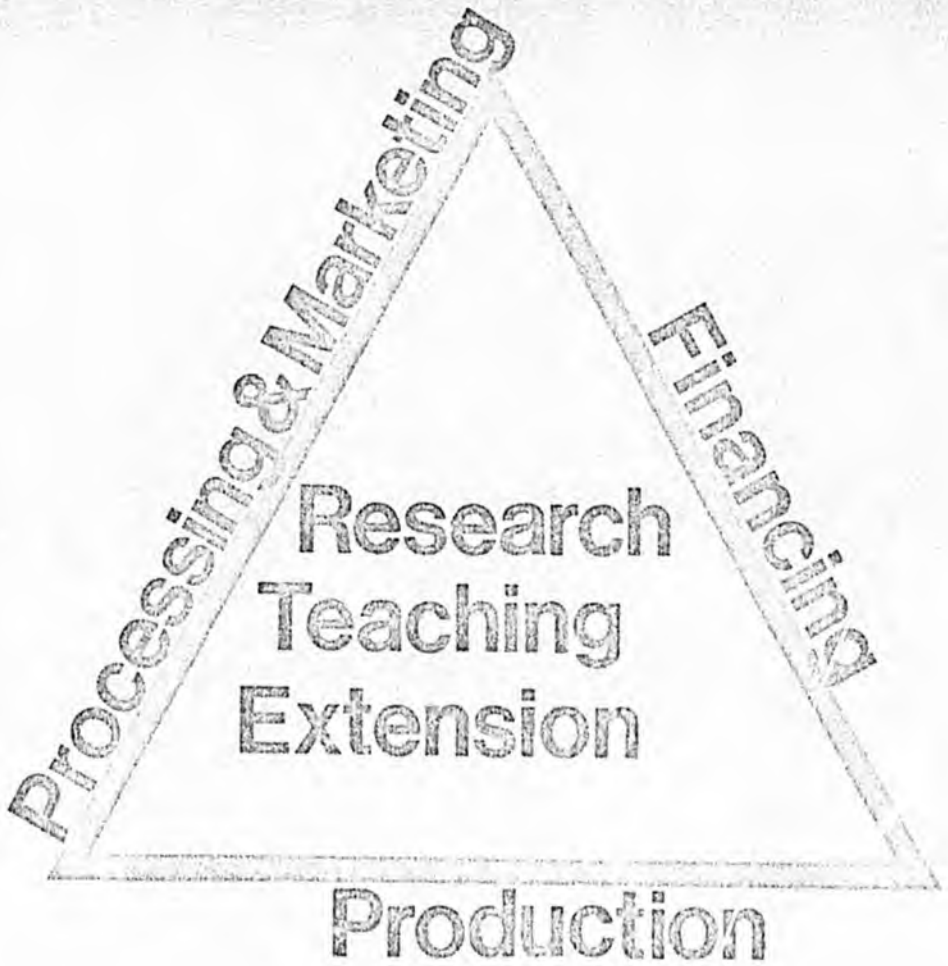
B. Land - Carney 6 min.

C. Production - Pollock 10 min. Slides and projector

D. Infrastructure - Dr. Drew 3 min.

1. Pollock - 5 min. Slides and Projector - Processing
2. Pollock - 5 min. Marketing Slides and Projector
3. Harker - 5 min. Transportation Slides and Projector
4. Harker - 5 min. Financing Overhead
5. Carney - 5 min. Government Institution Overhead
6. Dr. Drew - 10 min. Research, Education, Extension Overhead slides

E. People - Dr. Drew 3 min. Slides


Processing & Marketing
Financing
Research
Teaching
Extension
Production

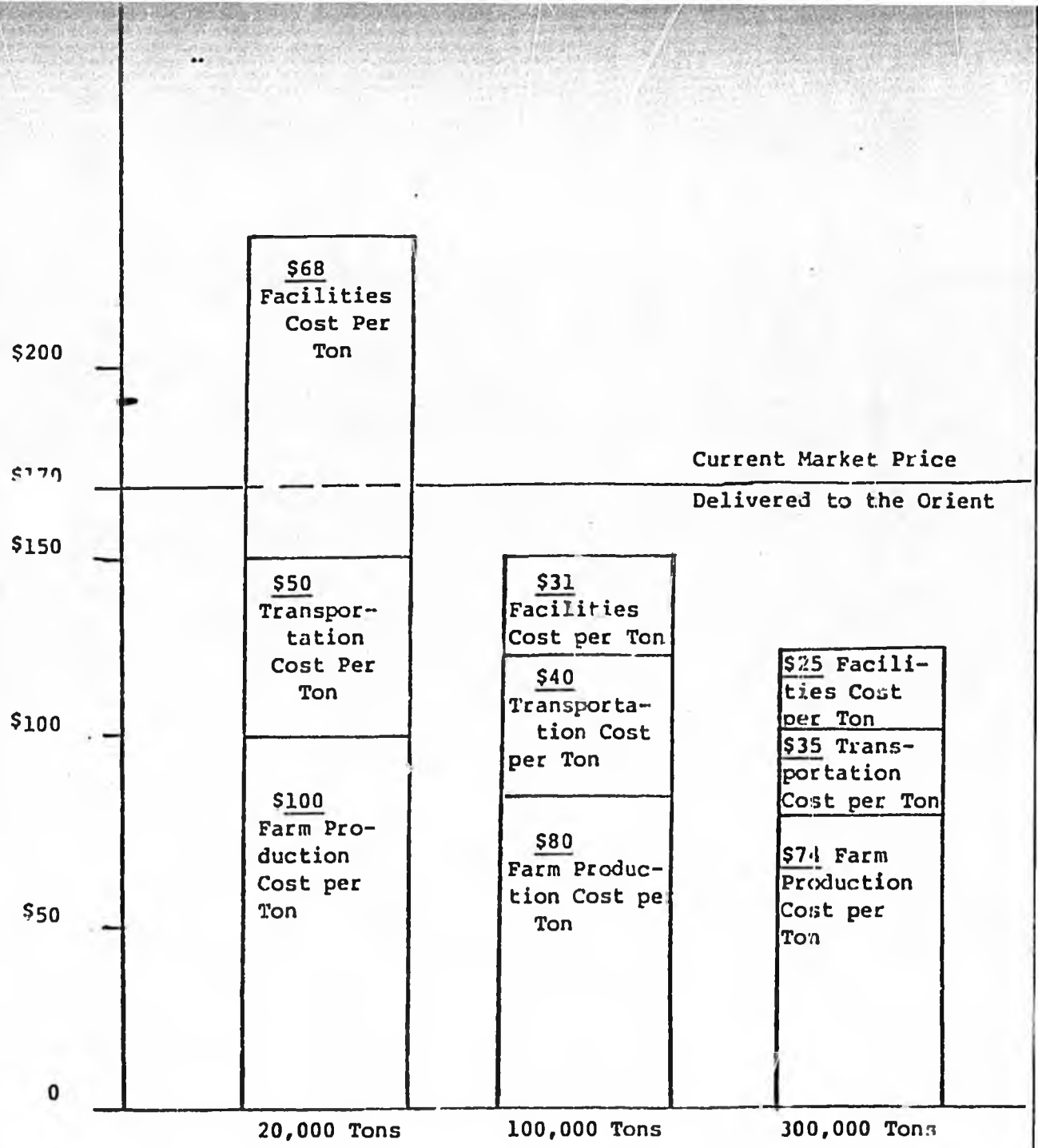


FIGURE 1. An example of the potential reduction of average costs in Alaska's developing barley industry.

I. Marketing

II. Production

1. Agronomic capability slides
2. Size Critical Mass
3. Critical Mass
4. Farm Size
5. Cost of Production
6. Modern Technology
7. Commercial/Subsistence
8. Key crops
9. U. S. Ag. Production
10. Management
11. Why barley/livestock

THE NEED TO BE COMPETITIVE

Private investment in American agriculture depends on achieving an adequate return on investment. The annual cost of doing business, including charges for the opportunity costs of land, capital management and operator-labor must be at least equal to revenue over a sufficient time period to justify undertaking the investment. And the determination of revenue is simple, it is market price times quantity produced within a given unit of time.

We know that for Alaskan farmers to be competitive with other producing regions on world markets, they must sell their grain at a world price, not a regional price protected by geography. World price is readily available; it is the same as received at any other Pacific Northwest barley trading port after considering transportation differences to importing nations and currency exchange transactions.

(Seattle plus freight) the higher prices of the local market

Alaska farmers can continue to hide behind [redacted] only if they remain few in number. In fact, the Delta Agricultural Project itself exceeds domestic needs. The State market for feed grains is small, and even with a greatly expanded livestock industry it still will remain small. The price of feed grains to Alaska livestock producers and Alaska residents as owners of horses and dogs will continue to be influenced by Seattle plus freight prices until we establish ourselves as a reliable grain exporting area. [redacted] related.

Considering the other side of the coin, the cost of doing business can be indluenced by good farm and market management and increased volume. The importance of good management is so obvious [redacted] the concept of greater volume deserves more attention.

Using a bar graph, the effect of volume on lowering costs and thereby making the industry more competitive can be shown (figure 1). At lower [redacted] production levels, the total cost to the tidewater Alaska port is much higher. When the ocean shipping charges are added for a foreign destination, higher costs of transportation are also related to lower volumes. As increased quantities of barley are grown and marketed, the average cost per unit is reduced at all levels.

The data used in figure 1 suggest that somewhere near 100,000 tons are necessary to lower the sum of all costs to the present market price for export to the orient. If this volume is not reached some form of government support in the export grain handling system will be necessary to continue the program unless the world price rises faster than costs of production and marketing.

(With the existence of export shipments at world competative prices, domestic prices will stabilize in a true-free market relationship.

EXPORT MARKET	Free Market Pricing		$180/T
OCEAN MOVEMENT	Market Rate on Shipping (Can be expected to drop $5 to $10/T with larger export volume)	40	140/T
MARKETING SERVICES	Marketing Agents Fee (pure estimate)	5	135/T
EXPORT FACILITY	Requested Flat-Rate Tarriff	3	132/T
Marketing Services			
RAIL MOVEMENT	Tarriff Rate Assumed to Prevail if the Alaska Railroad is Provided 10 Hopper Bottom Cars by Grant From State	10	122/T
TRANSFER FACILITY	Requested Flat-Rate Tariff	2	120
	Free Market Tracking	14	106
DELTA ELEVATOR	Existing Pricing	8	98

Price Floor Mechanism:

Existing Federal Non-Recourse Loan	approx. $64
Proposed State Non-Recourse Loan Tied to Federal Target Price	$30 to $40

Navi Target Price - $106.90

From Ray Morgan Coop. Extension

Bot Pollock

$194/acre cost of Production - U.S. Avg 1980

bushels per acre, the cost of producing a bushel of corn rose only 7 percent nationwide.

Producers in the lake states and Corn Belt—accounting for 70 percent of U.S. corn production—had the lowest per-bushel costs in 1979, at $1.47, while those in the southwest had the highest costs, at $2.41 a bushel.

Costs in the southeast—the second highest cost region—declined slightly in 1979 due to recovery from the poor yields of 1978.

Sorghum Up 24 Percent Per Acre

Nationwide, per-acre production costs jumped 24 percent in 1979 to $119.69. However, with average yields up 8.4 bushels per acre, the average cost per bushel rose less than 7 percent to $1.94.

The cost of producing sorghum varies among regions mainly according to the degree of irrigation. In the Central Plains—where 60 percent of the 1979 sorghum crop was produced—only 16 percent of the land is irrigated, and production costs there were consequently lowest, about $110 an acre.

About 40 percent of the sorghum-growing area in the Southern Plains and nearly all of that in the southwest is irrigated, resulting in proportionally greater per-acre costs—$127 in the Southern Plains and $210 in the southwest.

Even though yields are highest in the southwest, the cost per bushel in 1979 was still highest there at $2.90, compared with $2.47 in the Southern Plains and $1.60 in the Central Plains.

Costs of Producing Corn in 1979

	North-east	Lake states and Corn Belt	Northern Plains	South-east	South-west	United States
			dollars per acre			
Variable costs:						
Seed	12.45	12.52	11.56	12.68	11.52	12.41
Fertilizer	42.07	40.00	23.28	48.77	35.17	37.95
Lime	1.35	1.23	.04	3.04	—	1.18
Chemicals[1]	14.68	14.58	9.05	13.50	21.24	13.67
Custom operations[2]	5.81	4.01	3.57	7.75	9.45	4.49
All labor	13.93	10.72	12.53	12.88	24.97	11.68
Fuel and lubrication	9.93	8.93	17.36	9.58	38.68	11.13
Repairs	7.67	7.42	11.03	6.94	15.06	8.17
Drying	5.72	8.16	4.24	3.87	4.42	6.90
Purchased irrigation water	—	—	.30	—	1.21	.08
Interest	4.20	4.28	3.60	4.83	6.07	4.23
Total variable	117.81	111.95	96.56	123.64	167.79	111.89
Machinery ownership:						
Replacement	19.42	20.12	28.63	18.26	30.35	21.26
Interest	12.11	12.59	17.59	10.53	18.92	13.37
Taxes and insurance	2.96	3.08	4.38	2.59	4.61	3.28
Total machinery	34.49	35.79	48.60	31.38	53.88	37.91
General farm overhead	13.07	7.67	6.75	9.52	9.57	7.92
Management	16.54	15.54	15.19	16.45	23.12	15.77
Cost per acre, excluding land	181.91	170.95	167.08	180.99	254.36	173.49
			bushels per acre			
Average yield	92.3	115.9	105.3	77.8	105.6	109.2
			dollars per bushel			
Cost per bushel, excluding land	1.97	1.47	1.59	2.33	2.41	1.59

[1] Includes herbicides, insecticides, and rodenticides not otherwise included under custom operations. [2] Includes custom application of crop chemicals and custom harvesting and hauling the cost of chemicals in some cases. [3] Based on 10 percent of above costs.

Highest Per Bushel Barley Cost in Southwest

Barley growers in all regions faced higher costs per acre in 1979. Costs ranged from $154 in the southwest to $91 in the Northern Plains—where 49 percent of last year's crop was grown. Per-acre costs were up 17 percent nationwide from 1978.

Despite a record average U.S. yield of 48 bushels per acre, the cost of producing a bushel of barley still rose 12 percent to $2.26. Dramatic yield gains in the Southern Plains and southwest helped bring costs per bushel down somewhat in those regions, although costs rose in all others.

The Southern Plains had the lowest cost per bushel last year at $2.00, while the Northern Plains—which had the lowest cost in 1978—had the second-lowest cost at $2.09.

At $2.87, costs per bushel were highest in the southwest, where most of the barley is grown under irrigation.

Oat Outlays Rise in All Regions

Farmers' outlays in producing oats rose in 1979 for all regions on both a per-acre and per-bushel basis.

With national average costs per acre up 16 percent and yields up a modest 2 percent, the average cost per bushel of oats rose 13 percent from $1.46 to $1.65.

Costs continued to be highest in the northeast—$120 an acre and $2.16 a bushel—and lowest in the Northern Plains—$65 an acre and $1.50 a bushel.

The lake states and Corn Belt region—which accounted for about 50 percent of the 1979 oats crop—had costs of $95 an acre and $1.66 a bushel.

July 10, 1980

Director Ronald F. Shrader
Office of Transportation
1405 Audit Building
U.S. Department of Agriculture
Washington, D.C. 20250

Re: Report on Alaska's transportation systems

Because of my concern with the problems of emergency handling facilities for the State of Alaska for small grains, I thought you might be interested in the enclosed publication entitled "Alaska's Unique Transportation System" issued by University of Alaska, Institute of Social and Economic Research, June 1980, Vol. XVII, No. 2.

This is a summary/overview of the entire transportation system and could be of some assistance to the Office of Transportation, USDA.

I am sending this as a follow-up to my telephone call I made to your office on 9 July, 1980 with respect to the need of the State of Alaska for grain handling facilities. The idea of using Liberty Ships, with installed equipment for handling such grain prompted the telephone call. Thank you for the assistance, and helpful attitude provided by Mr. Crowdus.

If this office can be of any assistance to you, please do call upon us.

James E. Fisher
U.S. Department of Agriculture
Representative

Encl.

cc: Paul Huppert
Member, Alaska Agriculture Action Council

Robert Pollock
Executive Director
Alaska Agriculture Action Council

REVIEW OF

SOCIAL AND ECONOMIC

CONDITIONS

UNIVERSITY OF ALASKA, INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH, JUNE 1980, Vol. XVII, No. 2

Alaska's Unique Transportation System

INTRODUCTION

General

Alaska's transportation needs are unique compared to those of the contiguous states. This uniqueness results from a small population being scattered across a vast, rugged area, mostly in urban coastal centers. These centers either have no highway connections to the outside or can be served by overland transportation only at considerable expense. Consequently, the dominant modes of transport in Alaska are air and marine, precisely those that play the smallest role in the domestic commerce of the contiguous states. It is only in Alaska's railbelt corridor that a variety of transport modes compete for the market.

Except for the region surrounding Fairbanks, all significant population centers in Alaska have access to marine transport, with most of the Interior having access to seasonal river transportation. Thus, this is the mode used to transport most goods into and out of the state. The pervasive nature of marine transport in Alaska is reflected in Table 1, which shows types and frequency of marine services provided selected Alaska ports. Historical trends in marine traffic through selected Alaska ports are shown in Table 2.

Because of the long distances between urban areas and the lack of direct surface transport over many shorter distances, air travel dominates in moving passengers throughout the state. It provides the only year-round access to many of the more remote areas and takes the traditional place of trucking as the primary mover of high-value items into many of these locations.

The Regional Approach

For purposes of describing Alaska's transport system, we have divided the state into three major regions: (1) the Southeastern (2) the Southcentral/Interior, and (3) the Western/Arctic. Each of these regions has, for a variety of reasons, developed a transport system whose structure is closely identified with its particular population and resource requirements. The Southeast network is primarily concerned with the forest products industry, the Western/Arctic is

The information on which this article is based was gathered for a study being performed by the Institute of Social and Economic Research for the United States Department of Transportation. Entitled "the Alaska Transportation Systems Study," the project interconnects computer simulation models of Alaska's economic and transportation systems. It uses these interconnected models to evaluate impacts of alternative transportation policies on both the operation of the state's transportation system and the patterns of state and regional development. By creating a method for systematically analyzing the interaction between economic development and transportation, ISER hopes that this study will provide a basis for informed and objective policy decisions in the transportation sphere.

To fully appreciate the need for systemwide planning for the Alaska transportation system, one must first understand the economic and geographic influences that make the system and its problems unique among the states. Thus, the purpose of this *Review* is to provide a basis for such understanding by briefly examining the Alaska transportation network and its interrelationships with the population, geography, and the economy of the state. A fuller description of the Alaska Transportation Systems Study and its results will be presented in a future issue of the *Review*.

tial or actual economic development before transport development.

The sparseness of the network even in relatively developed regions makes it obvious that any facility additions or changes or any flow pattern or volume changes may impact major portions of the system. This is particularly true if such a change were to lead to a substantial flow across regional boundaries. The relatively small traffic volumes and primitive facilities make the term "major change" refer to projects or commodity quantities which would be regarded as incremental improvements or flow diversions in more highly developed parts of the nation. Thus, a system-wide model that takes the whole network into account would likely be the most appropriate tool for assisting the planning and decision-making process in the transport sector.

Another characteristic that has determined the state's pattern of transport development is the flow imbalance which results in low back-haul rates. Even though the state's imports and exports are somewhat balanced in terms of total quantities, the mix of commodity types (export of bulk resource materials versus imports of manufactured goods and food) is such that one type of vehicle cannot be used for both export and import. In any case, the import commodity flows have to be broken down into relatively small shipment sizes because of the small markets and long distances. This has prevented the development of a modern efficient transport infrastructure in most areas. In most of the state, only the most rudimentary cargo handling facilities are available due to the limited volumes which are being moved. This severely limits the types of of vehicles that can be used in a particular service, a problem made even more serious by the limited number of transport modes available.

In this article we have outlined the structure and constraints of the Alaska transport system. Subsequent *Reviews* will define the procedure designed to replicate and simulate this system in a computer model and detail findings regarding the interrelationship of transportation and various kinds of development.

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INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH
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Featherstone Corporation

A PRELIMINARY REPORT
ON THE
FEASIBILITY OF A LIVESTOCK INDUSTRY
IN ALASKA

PRESENTED

DECEMBER 2, 1980

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PHONE (314) [illegible]

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I. INTRODUCTION

THE PURPOSE OF THIS PRELIMINARY REPORT IS TO GIVE THE ALASKA AGRICULTURAL ACTION COUNCIL AN INSIGHT INTO THE FINAL REPORT EARLY ENOUGH TO START PREPARING NECESSARY LEGISLATION FOR THE 1981 ALASKA LEGISLATIVE SESSION. FEATHERSTONE MUST STRESS THE TERM PRELIMINARY FOR THIS REPORT. ONE TRIP OF FIVE DAYS WAS SPENT IN THE AREA BY A FEATHERSTONE REPRESENTATIVE AND THREE WEEKS OF RESEARCH AND DATA COLLECTION IN THE LOWER 48. AS A RESULT THIS REPORT WILL ADDRESS ONLY BROAD AREAS IN GIVING DEFINITIVE YES-NO TYPE ANSWERS WITHOUT GIVING DETAILED QUANTITATIVE ANSWERS.

SOME OF THE BROAD AREAS ADDRESSED WILL BE SUPPORTED BY DETAILED FACTS OR INFORMATION. OTHER AREAS WILL BE SUPPORTED BY ONLY THE INTUITION, GENERAL KNOWLEDGE, AND BEST GUESS THAT FEATHERSTONE CAN DERIVE. IN THE FINAL REPORT FEATHERSTONE WILL TRY TO SUPPORT THESE OTHER AREAS WITH MORE DETAILED FACTS.

THE TIME SEQUENCING OF THE PROJECTED INDUSTRY WILL BE ADDRESSED ONLY IN RELATIONSHIP OF ONE MAJOR EVENT TO ANOTHER AND IN A TIME FRAME OF YEAR COMPLETED. THE FINAL REPORT WILL REFINE THE EVENTS INTO BETTER DETAIL WITH PROJECTED TIME NEEDED TO COMPLETE THE DEVELOPMENT.

THE SIZING AND NUMBER OF PRODUCING FARM UNITS WILL BE TREATED THE SAME AS TIME SEQUENCING. THE GENERALLY ACCEPTED ECONOMICAL SIZE UNIT FROM THE LOWER 48 WILL BE USED TO PROVE VIABILITY FOR THIS REPORT. A FULL DISCUSSION OF VARIATIONS IN SIZE WILL BE MADE IN THE FINAL REPORT.

FEATHERSTONE CORP. AT THIS TIME WOULD LIKE TO EXPRESS ITS APPRECIATION TO THE PEOPLE IN THE FAIRBANKS AREA THAT TOOK THEIR TIME TO GIVE IDEAS AND INSIGHTS INTO THE LIVESTOCK INDUSTRY OF ALASKA. SPECIFIC COMMENTS AND STATISTICS WILL BE GIVEN DIRECT CREDIT OR WILL BE FOOTNOTED. FEATHERSTONE ALSO WOULD BE AMISS IF CREDIT WAS NOT GIVEN TO THE PEOPLE OF ELLERBE ALASKA OFFICE IN FAIRBANKS WHO HAVE AGREED TO BE OUR LOCAL REPRESENTATIVE FOR THIS PROJECT.

II. ASSUMPTIONS

CERTAIN ASSUMPTIONS HAD TO BE MADE IN ORDÉR TO GET THIS PRELIMINARY REPORT MADE ON TIME. MOST OF THESE ASSUMPTIONS WILL BE VERIFIED IN THE FINAL REPORT. IN THIS REPORT, HOWEVER, FEATHERSTONE HAD TO RELY ON LOCAL INFORMATION AND RESEARCH AS BEING VALID. IN OTHER CASES, DATA BELIEVED BY FEATHERSTONE TO BE APPLICABLE WAS USED. UNDOUBTEDLY, IN A FEW OF THESE CASES, THE ASSUMPTION WILL NOT BE PRACTICAL OR VALID BECAUSE OF LOCAL CONDITIONS. HOPEFULLY THESE CASES WILL BE CORRECTED IN THE FINAL REPORT.

THE FIRST ASSUMPTION MADE IS THAT RED MEAT CONSUMPTION IN ALASKA WAS ACCURATELY DETAILED IN SUPPLYING ALASKA'S RED MEAT AND POULTRY MARKETS.(1) THE AMOUNT OF BEEF AND PORK THAT WAS CONSUMED AT THAT TIME DID NOT DIFFER SIGNIFICANTLY FROM THE LOWER 48 ON A PER CAPITA BASIS. CONSEQUENTLY, IT HAS BEEN ASSUMED THE PRESENT CONSUMPTION FIGURES OF THE LOWER 48 CAN BE APPLIED TO ALASKA FOR THE PRESENT TIME. THOSE PRESENT FIGURES ARE 105 POUNDS OF BEEF PER CAPITA PER YEAR AND 53 POUNDS OF PORK PER CAPITA PER YEAR.

A SLIGHT VARIATION IN PORK CONSUMPTION WAS FOUND. THIS VARIATION WAS FELT TO BE DUE TO HANDLING AND TRANSPORTATION PROBLEMS ASSOCIATED WITH FRESH PORK AND NOT A BIAS OF THE PEOPLE. IF PORK IS PRESENTED TO THE PEOPLE OF ALASKA IN THE SAME CONDITION AND PRICE RELATIONSHIP TO BEEF AS IN THE LOWER 48, IT IS ASSUMED THE CONSUMPTION PER CAPITA WILL BE THE SAME.

THE SECOND ASSUMPTION IS THAT THE ALASKA LIVESTOCK INDUSTRY WILL FOLLOW THE SAME ECONOMIC AND MARKETING TRENDS OF THE LOWER 48. THAT IS TO SAY THE PRODUCTS AND SERVICES DEMANDED AND SUPPLIED BY ALASKANS WILL HAVE THE SAME ECONOMIC FORCES WORKING ON THEM AS IN THE LOWER 48. EXAMPLES OF THIS ASSUMPTION IS THE RED MEAT CONSUMPTION IN THE PREVIOUS PARAGRAPH. ANOTHER EXAMPLE USED IN THIS REPORT IS THAT THE LOWER 48 HAS FOUND THAT SHIPPING LIGHT WEIGHT ANIMALS TO GRAIN SOURCES IS MORE PROFITABLE THAN SHIPPING GRAIN TO THE ANIMALS.

THE THIRD ASSUMPTION IS THAT FREIGHT RATES FROM SEATTLE TO ALASKA FOR CHILLED FOOD STUFFS IS $12.00 PER HUNDREDWEIGHT (CWT.). THIS PRICE PER CWT. WAS OBTAINED FROM DIFFERENT LITERATURE AND FROM DISCUSSIONS WITH LOCAL RETAILERS. THIS TRANSPORTATION FACTOR ON RED MEAT EQUALS $54.00 PER HEAD OF BEEF AND $16.30 PER HEAD OF SWINE.(2) CONSEQUENTLY IF THE ADDED COST OF RAISING AND PROCESSING CATTLE AND SWINE IN ALASKA (DUE TO REGIONAL CONDITIONS) IS LESS THAN THE TRANSPORTATION FACTORS, IT IS ASSUMED THE INDUSTRY IS POTENTIALLY VIABLE ECONOMICALLY.

THE FOURTH ASSUMPTION IS THAT ADEQUATE TRANSPORTATION SYSTEMS AND ELECTRICITY WILL BE AVAILABLE TO LIVESTOCK PRODUCERS AND PROCESSORS. WHEN IDENTIFYING PRODUCING AREAS, EFFORTS WILL BE MADE TO COORDINATE THOSE LOCATIONS WITH THE RESULTS OF THE TRANSPORTATION STUDY PRESENTLY UNDER WAY.

III. SUMMARY

FEATHERSTONE CORPORATION APPROACHED THIS PRELIMINARY REPORT IN AN UNUSUAL METHOD FOR DETERMINING THE VIABILITY OF THE BEEF CATTLE AND SWINE INDUSTRY FOR ALASKA. DUE TO THE ISOLATED NATURE OF THE STATE, IT WAS ASSUMED IF THE ADDED COSTS OF PRODUCTION WERE LESS THAN THE TRANSPORTATION COSTS FROM THE LOWER 48, THE INDUSTRY COULD BE VIABLE IN THE LONG RUN. THE TOTAL ADDED COSTS TO PRODUCE BEEF IN ALASKA WERE FOUND TO BE $34.56 PER HEAD COMPARED TO TRANSPORTATION CHARGES FROM SEATTLE OF $54.00 PER HEAD. THE TOTAL ADDED COSTS TO PRODUCE PORK IN ALASKA WERE FOUND TO BE $12.35 PER HEAD COMPARED TO TRANSPORTATION CHARGES FROM SEATTLE OF $16.32.

ONCE THE INDUSTRY WAS PROVED VIABLE, FEATHERSTONE TRIED TO DETERMINE A FEASIBLE SIZE FOR THE INDUSTRY. IN LOOKING AT THE MARKET IT IS APPARENT THE RAILBELT IS THE MOST ACCESIBLE MARKET AND IT HAS APPROXIMATELY 300,000 PEOPLE. DUE TO THE RELATIVELY SMALL PERCENTAGE (56%) THE RETAIL MARKET HAS OF THE TOTAL MARKET, FEATHERSTONE FEELS THE LOCAL INDUSTRY COULD CAPTURE 50% OF THE RAILBELT MARKET WITHIN A REASONABLE PERIOD OF TIME. IN ORDER TO OBTAIN 50% OF THAT MARKET, THE PROCESSING UNIT MUST PROCESS 500 CATTLE AND 1600 SWINE PER WEEK.

AFTER FEATHERSTONE HAD MADE ITS PRELIMINARY REVIEW OF THE STATE AND TALKED TO SOME OF THE PEOPLE, A COOPERATIVE FORM OF INDUSTRY APPEARED TO BE THE MOST FEASIBLE. THE COOPERATIVE WOULD OWN THE PROCESSING UNIT, A CATTLE FEED LOT, AND A FEED

MILL WHICH WOULD BE NEEDED BY THE INDUSTRY. INDIVIDUALS WOULD OWN THE COW-CALF RANCHING OPERATIONS, THE CONFINED SWINE OPERATIONS, AND THE GRAIN FARMS. THE GROWING AND FINISHING OF CATTLE COULD BE DONE BY INDIVIDUALS WITH THE FEED LOT ACTING AS A BACKUP FOR THE PROCESSING UNIT.

NEXT, THE INITIAL NUMBER OF ANIMALS, INITIAL SUPPLY OF FEED, INVENTORY AND INITIAL NUMBER OF PRODUCING UNITS (AND IN WHAT SEQUENCE) WAS DETERMINED. THE PRICE TAG FOR THESE ITEMS WAS DETERMINED TO BE APPROXIMATELY $55,000,000. AND THE ANNUAL RETURN FROM JUST THE TRANSPORTATION COSTS WOULD BE APPROXIMATELY $2,600,000. IN ADDITION TO THE TRANSPORTATION "PROFIT", THE STATE WOULD ALSO PROFIT FROM THE DIFFERENT RELATED INDUSTRIES AS TO THEIR TAXES, AND PAYROLLS.

WITH THE PRELIMINARY INFORMATION THAT FEATHERSTONE HAS BEEN ABLE TO OBTAIN, IT HAS BEEN DETERMINED THAT A BEEF CATTLE AND SWINE INDUSTRY IS NOT ONLY VIABLE AND FEASIBLE, BUT ALSO WOULD BE ADVANTAGEOUS FOR THE STATE OF ALASKA TO FUND.

IV. CONSIDERATIONS FOR A BEEF CATTLE INDUSTRY IN THE STATE OF ALASKA

THE MOST PIVOTAL POINT OF THE AMERICAN BEEF CATTLE INDUSTRY IS THE FEED LOT SEGMENT. BOTH THE COW-CALF OPERATOR AND THE PACKING HOUSE OPERATOR HAVE LARGE FRONT END FIXED INVESTMENTS WHICH MEAN BOTH MUST LOOK TO THE LONG TERM TO MAKE A RETURN ON THEIR INVESTMENT. THE FEED LOT OPERATOR HAS A RELATIVELY SMALL FIXED COST BASIS IN HIS OPERATION AND CAN INCREASE OR DECREASE HIS INVENTORY RATHER QUICKLY IN RESPONSE TO MARKET CONDITIONS. AS A RESULT NEITHER THE COW-CALF OPERATOR NOR THE PACKING HOUSE OPERATOR WILL MAKE THE NECESSARY INVESTMENT TO START OPERATIONS WITHOUT A STABLE LONG-TERM FEEDING OPERATION GUARANTEED TO THEM.

THE COW-CALF OPERATORS WILL NOT GROW BEEF CATTLE IF THERE IS NOT A FEED LOT TO FINISH THOSE CATTLE. WITHOUT A FEED LOT TO WHICH HE CAN SEND HIS CATTLE THE COW-CALF OPERATOR MUST "FINISH" HIS OWN CATTLE WHICH OFTEN REQUIRES INVESTMENT IN EQUIPMENT BEYOND HIS COW INVESTMENT AND HIS MEANS. RARELY, HAS A COW-CALF OPERATOR BEEN BIG ENOUGH TO BUILD AN ECONOMICALLY EFFICIENT FEED LOT FOR FINISHING ONLY HIS CATTLE.

THE PACKING HOUSE OPERATOR (OR PROCESSOR) HAS A LARGE FRONT END INVESTMENT IN BUILDING AND EQUIPMENT. HE CANNOT AFFORD TO HAVE HIS INVESTMENT SIT IDLE FOR LACK OF CATTLE TO KILL. IF A SOURCE OF CATTLE IS AVAILABLE THAT HE CAN SELL PROFITABLY, HE WILL THEN MAKE THAT LONG-TERM INVESTMENT.

FOR THE ABOVE REASONS FEATHERSTONE ENVISIONS THE ALASKAN BEEF INDUSTRY BEGINNING WITH A COOPERATIVE FEED LOT AND PACKING HOUSE COMBINATION. BY THE COOPERATIVE (COOP) HAVING BOTH OPERATIONS UNDER ITS CONTROL, TWO OBJECTIVES ARE MET. 1) THE COW-CALF OPERATOR SEES A LONG-TERM INVESTMENT IN THE PACKING HOUSE AND THE FEED LOT AS A PLACE TO FINISH HIS CATTLE. 2) THE PACKING HOUSE-FEED LOT OPERATION CAN IMPORT FEEDER CATTLE FROM THE LOWER 48 TO START THE OPERATION AND TO FILL IN TIMES OF INADEQUATE SUPPLY IN THE SHORT RUN. THE IMPORTATION OF LIVE FEEDER CATTLE IS NOT A LONG TERM ECONOMICALLY FEASIBLE OPTION, BUT MUST BE TREATED AS A SHORT TERM COST TO START UP THE INDUSTRY AND COVER SHORT TERM SUPPLY PROBLEMS.

MEMBERSHIP IN THE COOP SHOULD BE OPEN TO ALL PHASES OF THE LIVESTOCK INDUSTRY INCLUDING GRAIN FARMERS. THROUGH REGULARLY SCHEDULED AUCTIONS THE COOP COULD SELL TO MEMBERS FEEDER CATTLE THAT WERE BROUGHT UP FROM THE LOWER 48 OR RECEIVED FROM MEMBER ALASKAN COW-CALF OPERATORS. FEEDERS NOT SOLD AT THE AUCTION WOULD BE FED OUT IN THE COOP FEED LOT. IN THE INITIAL YEARS TO INDUCE FARMERS TO GROW OUT FEEDER CATTLE, A GUARANTEED PRICE SUPPORT SYSTEM WOULD HAVE TO BE USED. WITH A KNOWN NUMBER OF FEEDER CATTLE IN THE HANDS OF COOP MEMBERS OR IN ITS OWN FEED LOT, A CO-OP PACKING HOUSE IS GUARANTEED A SUPPLY OF CATTLE FOR PROCESSING.

THE COOP FEED LOT ALSO WOULD OPERATE A FEED MILL FOR ITS MEMBERS. THIS SERVICE WOULD ALLOW MEMBERS WHO ARE GRAIN FARMERS TO HAVE THEIR CROPS MILLED AND MIXED FOR ANIMAL FEED, AND USED BY

OTHER MEMBERS OR FOR THEMSELVES IF THEY WISHED TO EXPAND THEIR OPERATION INTO CATTLE FEEDING. THE FEED MILL WOULD SUPPLY THE FEED LOT AS WELL AS MEMBERS WHO ARE GROWING CATTLE THAT NEED SUPPLEMENTAL FEED, VITAMINS, OR PROTEIN CONCENTRATES. BEING IN A CENTRAL LOCATION FOR ALL FEEDER CATTLE OPERATIONS WOULD BE IMPORTANT FOR THE FEED MILL'S SUCCESSFUL OPERATIONS. ALSO BY HAVING A CENTRALIZED MILL, THAT MILL CAN BE BIG ENOUGH TO HANDLE THE DIVERSE NEEDS OF THE FEEDER CATTLE INDUSTRY AND THE SWINE INDUSTRY IN BAGGED OR BULK FORM, IN LOOSE OR PELLET FORM OR ON A WILL-CALL BASIS OR DELIVERED BASIS.

THE PACKING HOUSE OPERATION MAY OR MAY NOT BE PHYSICALLY LOCATED NEXT TO THE FEED LOT. THE FEED LOT NEEDS A GOOD SIZE PIECE OF LAND THAT IS RELATIVELY INEXPENSIVE NOT TOO CLOSE TO A POPULATION CENTER. THE PACKING HOUSE HOWEVER NEEDS VERY LITTLE LAND BUT REQUIRES A LOT OF UTILITIES IN THE FORM OF ELECTRICITY, WATER, SEWER, AND CHEAP ENERGY TO PRODUCE STEAM FOR RENDERING BY PRODUCTS.

BY HAVING THE PACKING HOUSE A COOP VENTURE SEVERAL ADVANTAGES ARE OBTAINED. FIRST, THE COW-CALF OPERATORS AND THE FEEDER INDUSTRY WILL FEEL MORE SECURE INVESTING IN THEIR HERDS, KNOWING THEY ARE PART OWNERS IN THE COOP PACKING HOUSE. SEVERAL OF THESE OPERATORS EXPRESSED RELUCTANCE TO EXPAND IF A PACKING HOUSE WAS BUILT BY PRIVATE OR GOVERNMENTAL MEANS. SECONDLY THE PACKING HOUSE, IF A COOPERATIVE VENTURE, CAN BE A SOURCE OF INFORMATION GATHERING AND DISSEMINATION FOR THE REST OF THE INDUSTRY. GRADE

AND YIELD INFORMATION REGARDING CERTAIN LOTS OF CATTLE WOULD BE GIVEN TO MEMBER OPERATORS TO IMPROVE THEIR FEED LOT TECHNIQUES. THIRDLY, TO DISPERSE INFORMATION GAINED FROM RESEARCH FACILITIES IN ALASKA AND THE LOWER 48 THROUGH THE COOP WOULD BE A NATURAL FUNCTION.

WHILE IN ALASKA THE FEATHERSTONE REPRESENTATIVE HEARD SOME PEOPLE EXPRESS CONCERN OVER THE ABILITY OF A LOCAL PROCESSOR TO BE ABLE TO MARKET HIS PRODUCT EFFECTIVELY. FEATHERSTONE'S EXPERIENCE INDICATES THE END MARKETING PHASE OF THE INDUSTRY IS THE EASIEST TO ACCOMPLISH. DUE TO VERY THIN MARGINS IN THE RETAIL FOOD MARKETS AND THE VOLUME THAT BEEF REPRESENTS IN A NORMAL STORE, THE MEAT DEPARTMENT IS ALWAYS LOOKING FOR MORE SOURCES OF BEEF. OFTEN, ONLY A HALF-CENT PER POUND WILL SWING A DECISION ON WHICH SUPPLIER GETS THE BUSINESS FOR A PARTICULAR WEEK. REALIZING THE LONG-TERM NATURE OF THE PRESENT CUSTOMER-SUPPLIER RELATIONSHIPS AND THE DEPENDENCY OF THE CUSTOMER ON A CONSISTENT SUPPLIER, FEATHERSTONE SUGGESTS A RETAIL MARKETING STRATEGY OF BEGINNING AS A SECONDARY SOURCE OF SUPPLY. THIS POSITION WOULD BE TO FILL IN SHORTED ORDERS OR BE A BACKUP SOURCE FOR A LARGE ADVERTISED SALE.

THE RETAIL VOLUME IN ALASKA TO TOTAL VOLUME IS ONLY 56% OF THE MARKET WITH THE WHOLESALE AND MILITARY MAKING UP THE BALANCE.[3] THE WHOLESALE MARKET (23% OF TOTAL) IS NOT BRAND IDENTIFICATION CONSCIOUS DUE TO THE NATURE OF THE MARKET. BY

DEMONSTRATING THE QUALITY OF PRODUCT AND QUICKNESS OF DELIVERY, THE WHOLESALE MARKET SHOULD BE RELATIVELY EASY TO ENTER. THE MILITARY MARKET (21% OF TOTAL) SHOULD BE EVEN EASIER SINCE THE FEDERAL GOVERNMENT HAS PUT OUT DIRECTIVES TO HAVE COMMISSARIES PURCHASE LOCALLY PRODUCED PRODUCTS WHENEVER POSSIBLE.

FEATHERSTONE IS PROJECTING IN THE INITIAL STAGE THE INDUSTRY SHOULD BE BUILT FOR ONLY 50% OF THE TOTAL MARKET OF THE RAILBELT AREA. USING 300,000 POPULATION WITH A 105 POUND ANIMAL CONSUMPTION AND 50% OF THE MARKET, THE PACKING PLANT AND FEED LOT SHOULD BE SIZED TO PROVIDE 500 BEEF ANIMALS PER WEEK.

THE LAST SEGMENT OF THE BEEF INDUSTRY FEATHERSTONE FEELS MUST BE DISCUSSED IS THE RESEARCH, DEVELOPMENT AND EDUCATIONAL NEEDS. THE AGRICULTURAL RESEARCH FACILITIES FOR LIVESTOCK OF THE STATE APPEAR TO BE LACKING. FEATHERSTONE STRONGLY RECOMMENDS THAT THE STATE OF ALASKA BUILD A DEMONSTRATION AND RESEARCH FACILITY OF AT LEAST A 500 COW CAPACITY. THIS FACILITY WILL SERVE A MULTIPLE OF NEEDS. FIRST, IT CAN BE A TRAINING GROUND FOR STUDENTS TO GET HANDS-ON EXPERIENCE. SUCH PERSONNEL WILL BE SORELY NEEDED IF THE SECOND 50% OF THE TOTAL MARKET IS TO BE SERVED BY LOCALLY PRODUCED PRODUCT OR IF INCREASES IN POPULATION OCCUR.

THE SECOND NEED, IS ONE OF SUPPLYING PURE BRED BREEDING STOCK FOR LOCAL BREEDERS. THE OUTLOOK FOR AN ECONOMICALLY FEASIBLE PURE BRED BREEDER IN ALASKA IS SLIM. THE HANDLING, TESTING, AND RECORD KEEPING IS VERY LABORIOUS AND THE RATE OF

RETURN IS ONLY GOOD IN LARGE MARKET PLACES. STUDENTS WOULD BE AN EXCELLENT SOURCE OF LABOR FOR SUCH A PROJECT. THIRDLY, A NEED EXISTS TO TEST LOCALLY PRODUCED FEEDSTUFFS UNDER LOCAL CONDITIONS. THE TESTING OF PRODUCTS LIKE CRAB MEAL, RAPE SEED, ETC. IN ALASKAN CONDITIONS IS CRITICAL TO THE LONG-TERM GROWTH AND DEVELOPMENT OF THE INDUSTRY. TO EXPECT INDIVIDUAL FARMERS TO EXPERIMENT OR PIONEER NEW DEVELOPMENTS IN ALASKA, AT THE SAME TIME THEY ARE TRYING TO MAKE A START, IS JUST NOT PRACTICAL. IF THE STATE IS REALLY SERIOUS ABOUT A LONG-TERM BEEF CATTLE INDUSTRY BEING BUILT IN ALASKA, SUCH A LONG-TERM INVESTMENT LIKE A PURE BRED COW OPERATION IS A MUST.

V. CONSIDERATIONS FOR A SWINE INDUSTRY IN THE STATE OF ALASKA

TO START A SWINE INDUSTRY IN ALASKA MANY OF THE SAME PROBLEMS EXIST AS FOR THE BEEF CATTLE INDUSTRY. THE PACKER OR PROCESSOR WILL NOT BUILD A PLANT WITHOUT A SUPPLY OF SWINE TO SLAUGHTER AVAILABLE. LIKEWISE THE SOW AND FEEDER PIG OPERATORS WILL NOT PRODUCE WITHOUT A PROCESSING UNIT AVAILABLE FOR THEIR END PRODUCT. FEATHERSTONE SUGGESTS TO START THIS INDUSTRY THAT A SWINE SLAUGHTERING FACILITY BE BUILT IN CONJUNCTION WITH THE BEEF SLAUGHTERING FACILITY. NO COMPARABLE FEED LOT OPERATION FOR SWINE SHOULD BE NECESSARY DUE TO THE NATURE OF THE MARKET. SWINE REPRODUCE AND GROW MUCH MORE RAPIDLY THAN CATTLE AND THE POUNDS OF PRODUCT DEMANDED ARE LESS. AS A RESULT, IF A RELATIVELY FEW OPERATORS ARE GIVEN INCENTIVES TO ENTER THE SWINE PRODUCING SEGMENT OF THE INDUSTRY THE START-UP NEEDS OF THE PLANT WILL BE SATISFIED.

FROM LOCAL SOURCES FEATHERSTONE HAS LEARNED THERE ARE ALREADY A FEW CONFINED SWINE BREEDING AND FINISHING OPERATIONS IN EXISTENCE IN ALASKA. UNDOUBTEDLY IF THESE OPERATORS HAD A PROCESSING PLANT AVAILABLE AND WERE GIVEN SOME INCENTIVES TO GROW, THEY WOULD SERVE AS GOOD EXAMPLES FOR OTHERS TO ENTER THE BUSINESS. WITHIN ONE YEAR AFTER PURCHASING BREED STOCK, AN OPERATOR CAN BE PRODUCING 2000 TO 2500 ANIMALS PER YEAR. IT IS ESTIMATED WITHIN 4 YEARS A GOOD OPERATOR CAN HAVE SUCH AN OPERATION TO A BASIS WHERE NO ADDITIONAL BREED STOCK WOULD BE NEEDED. HAVING SUCH A "CLOSED OUT" OPERATION GREATLY REDUCES THE DISEASE PROBLEMS THAT PLAGUE MANY OPERATORS.

THE SWINE INDUSTRY NATURALLY WOULD BE PART OF THE COOP AND WOULD PROBABLY BE A LARGE PURCHASER OF THE FEED MILL PRODUCTS. OF COURSE SPECIALIZED RESEARCH TO DEVELOP NEEDS OF THE INDUSTRY COULD EASILY BE SUPPLIED ALSO BY THE COOP.

THE MARKETING OF PORK PRODUCTS IN ALASKA SHOULD BE EVEN EASIER THAN BEEF. FROM THE INHERENT NATURE OF FRESH PORK IT IS MORE PERISHABLE AND DISCOLORS FASTER THAN BEEF. FOR THIS REASON A HIGHER PERCENTAGE OF PORK IS FLOWN TO ALASKA INSTEAD OF A 14 DAY BARGE TRIP. THE ADDED EXPENSE OF AIR FREIGHT AND THE GREATER HANDLING PROBLEMS OF PORK SHOULD MAKE A LOCALLY PRODUCED PRODUCT EASY TO SELL AND POSSIBLY EVEN DEMAND A PREMIUM SINCE IT WILL DISPLAY BETTER AT THE RETAIL LEVEL. AGAIN USING 300,000 POPULATION OF THE RAILBELT, 63 POUNDS OF PORK CONSUMED ANNUALLY PER CAPITA, AND 50% OF THE MARKET, THE INDUSTRY SHOULD SUPPLY 1600 ANIMALS PER WEEK FOR THE MARKET.

A PROBLEM IN MARKETING BEEF (THAT WILL BE DISCUSSED IN THE FINAL REPORT) IS CARCASS GRADING ON A U.S.D.A. BASIS WHICH WILL BE VERY EXPENSIVE TO DO IN ALASKA WITH A LIMITED NUMBER OF CARCASSES TO GRADE. PORK ON THE OTHER HAND IS ACTUALLY SOLD BY CUTS WITHIN A WEIGHT RANGE WITHOUT A U.S.D.A. GRADE. CONSUMER ACCEPTANCE OF PORK SHOULD BE NO PROBLEM.

THE SWINE INDUSTRY (LIKE THE BEEF INDUSTRY) NEEDS TO HAVE A RESEARCH FACILITY AND DEMONSTRATING UNIT. FOR SWINE, FEATHERSTONE RECOMMENDS THE STATE HAVE A 150 SOW UNIT BUILT FOR THE UNIVERSITY OF ALASKA. SUCH A UNIT WOULD SUPPLY THE EDUCATIONAL AND RESEARCH

NEEDS OF THE INDUSTRY AS WELL AS SUPPLY PURE BRED STOCK FOR REPLACEMENT NEEDS IN THE STATE.

FEATHERSTONE REALIZES THE DEVELOPMENT PROPOSED HERE IS RATHER SHORT ON DETAIL. THIS FACT IS DUE TO SEVERAL FACTORS:

1) TIME WAS SHORT AND ONLY ONE SPECIES COULD BE ADEQUATELY INVESTIGATED.

2) SEVERAL LOCAL AUTHORITIES FELT IF PROVED ECONOMICALLY FEASIBLE AND A PLANT WAS BUILT THAT SWINE PRODUCERS WOULD BE EASILY OBTAINED.

3) THE NUMBER OF POUNDS OF PORK CONSUMED AND ITS ECONOMIC VALUE TO THE STATE IS NOT AS GREAT AS BEEF.

4) A MORE DETAILED DESCRIPTION WILL BE MADE IN THE FINAL REPORT.

VI. DETERMINING THE ECONOMIC VIABILITY OF A LIVESTOCK INDUSTRY IN ALASKA

IT HAS BEEN ESTIMATED THAT 90% OF [illegible] MEAT CONSUMED IN ALASKA IS BROUGHT IN FROM THE LOWER 48. MOST OF THIS MEAT ARRIVES BY BARGE, AIRPLANE OR TRUCK TO A CENTRAL DISTRIBUTION POINT IN EITHER ANCHORAGE OR FAIRBANKS. THAT CENTRAL DISTRIBUTION POINT WOULD BE THE SAME AS THE PROCESSING UNIT FOR TRANSPORTATION PURPOSES. AS A RESULT WE CAN LOOK AT THE FREIGHT FACTOR FROM SEATTLE TO ANCHORAGE OR FAIRBANKS AS THE ECONOMIC DIF[illegible]AL LOST BY ALASKA. ALASKAN LIVESTOCKMEN AND PROCESSORS MUST PRODUCE MEAT PRICED F.O.B. MANUFACTURER FOR A DIFFERENTIAL (COMPARED TO SEATTLE PRODUCERS) LESS THAN THE FREIGHT FACTOR. THAT IS TO SAY IF THE ADDED COST OF PRODUCING THE PRODUCT IN ALASKA DUE TO CLIMATIC AND ECONOMIC CONDITIONS IS LESS THAN THE TRANSPORTATION FACTOR, THEN THE INDUSTRY IS ECONOMICALLY FEASIBLE.

IN CLASSICAL ECONOMIC DEFINITIONS A LOCAL FREIGHT ADVANTAGE IS NORMALLY TERMED A SHORT-TERM CONDITION THAT WILL BE CORRECTED IN THE LONG TERM. IN THIS SITUATION, HOWEVER, FEATHERSTONE FEELS THAT CORRECTION WILL NOT BE MADE. BECAUSE OF ALASKA'S RELATIVE ISOLATION TO COMPETITIVE MARKETS, THE STATE BECOMES A MARKET INTO ITSELF. ALSO DUE TO THE RELATIVE SMALL POPULATION, ALASKA WILL NOT ATTRACT COMPETITION TO MOVE INTO THE STATE IN THE SHORT TERM. FOR THESE REASONS, FEATHERSTONE IS NOT CONVINCED THAT A LOCAL ALASKAN INDUSTRY MUST BE

COMPETITIVE ON WORLD MARKETS IF IT IS TO BE ECONOMICALLY VIABLE. IF THE LOCAL DEMAND IS ADEQUATE AND THE LOCAL FREIGHT ADVANTAGE SUFFICIENT, A LOCAL INDUSTRY CAN BE VIABLE IN ALASKA IF ITS ADDITIONAL COSTS OF PRODUCTION IS LESS THAN THE FREIGHT DIFFERENTIAL.

BY USING THIS METHOD TO DEFINE VIABILITY OF A LOCAL INDUSTRY, ONE MUST ASSUME THAT THE BASIC INDUSTRY (THAT IS BEING USED AS A COMPARISON BASIS) IS ALSO VIABLE. THAT IS TO SAY THE UPS AND DOWNS OF THE SHORT-TERM MARKETS EXPERIENCED IN THE LOWER 48 ARE GOING TO OCCUR IN ALASKA. IN THE LONG RUN, HOWEVER, IT MUST BE ASSUMED THAT THE LOWER 48 HAS A VIABLE LIVESTOCK INDUSTRY IN ORDER TO COMPARE DIFFERENTIAL COSTS WITH ALASKA. TO STOP TIME AND TAKE AN ISOLATED MARKET CONDITION AND COMPARE INDUSTRIES ON A GROSS DOLLAR BASIS IS UNREALISTIC. ONE CANNOT COMPARE THE TOTAL DOLLARS PER HEAD THAT A PACKER OR FEED LOT OPERATOR GETS IN THE LOWER 48 TO THE TOTAL DOLLARS EACH WOULD GET IN ALASKA ON, FOR EXAMPLE, JANUARY 1, 1980 TO MAKE A DECISION CONCERNING VIABILITY. COMPARING THE DIFFERENTIAL COSTS OF PRODUCTION IS A MORE POSITIVE LONG-TERM DECISION TOOL.

THE TRANSPORTATION COSTS TO ALASKA HAVE BEEN IDENTIFIED AS BEING $12.00 PER HUNDREDWEIGHT BY LOCAL RESIDENTS. THIS FIGURE WILL BE VERIFIED IN THE FINAL REPORT. THE COST THEN TO DELIVER ONE HEAD OF BEEF TO A CENTRAL MARKETING PLACE IS $54.00[2] AND ONE HEAD OF HOGS IS $16.30.[2] THE ADDITIONAL COSTS OF RAISING AND PROCESSING THESE SPECIES IN ALASKA MUST BE LESS THAN THOSE

FIGURES IN ORDER TO SAY THE LOCAL INDUSTRY IS VIABLE IN THE LONG TERM.

THE CATTLE INDUSTRY WILL BE ANALYZED FIRST. THE FIRST SEGMENT OF THE INDUSTRY IS THE COW-CALF OPERATION. THE KENAI PENINSULA AREA IN THE JUNE, 1980 ALASKA AGRICULTURAL STATISTICS SHOW CLIMATOLOGICAL CONDITIONS VERY SIMILAR TO SOUTHERN MISSOURI, OKLAHOMA, NORTHERN ARKANSAS, AND TENNESSEE AREA OF THE LOWER 48 WHICH HAS FOR YEARS PRODUCED CALVES VERY ECONOMICALLY. THE CALVES COMING FROM THIS PORTION OF THE LOWER 48 HAVE TRADITIONALLY BEEN FINISHED IN WESTERN TEXAS, ARIZONA AND NORTHEASTERN COLORADO. THE KENAI PENINSULA CAN PRODUCE 400 LB. FEEDER CALVES AS ECONOMICALLY AS THE LOWER 48 WITH PROPER BREEDING AND CULLING TECHNIQUES. THE NUMBER OF CATTLE NEEDED IS THE NEXT QUESTION. ASSUMING THE RAILBELT AREA IS OUR MARKET, WE WANT TO SUPPLY BEEF FOR 50% OF THAT AREA. THE FOLLOWING CALCULATIONS DETERMINE NUMBERS OF ANIMALS NEEDED:

POPULATION - 300,000

CONSUMPTION OF BEEF PER CAPITA PER YEAR - 105 LBS.

TOTAL CARCASS BEEF CONSUMPTION - 31,500,000 LBS.

WEIGHT PER BEEF CARCASS - 600 LBS.

TOTAL CARCASSES NEEDED - 52,500

50% OF MARKET PER YEAR - 26,250

WEEKLY MARKETINGS - 504 OR 500

DAILY KILL RATE - 100

THE ANIMAL SCIENTIST OF THE AGRICULTURAL EXPERIMENTAL STATION OF UNIVERSITY OF ALASKA, DR. FRED HUSBY, HAS ESTIMATED

THAT THE KENAI PENINSULA AREA HAS 230,000 ACRES OF POTENTIAL GRAZING LAND THAT CAN SUPPORT 30,000 COW-CALF UNITS. THE TOTAL 26,250 HEAD NEEDED COULD COME FROM THIS AREA ALONE IF NEEDED. OTHER PARTS OF THE STATE, HOWEVER, WILL BE PRODUCING CALVES. IT IS ESTIMATED 30% OF THE PRESENT BEEF CONSUMPTION IS IN THE FORM OF MANUFACTURING BEEF (LESS THAN U.S.D.A. GOOD GRADE) IN THE PRODUCTION OF GROUND BEEF. ANIMALS PERFECT FOR SUCH USE COME FROM DAIRY HERD STEERS AND CULL COWS AND BULLS. THE 30% FACTOR WOULD AMOUNT TO 7,875 PER YEAR WHICH SHOULD BECOME AVAILABLE WHEN THE POINT MACKENZIE AREA IS DEVELOPED FOR DAIRY PURPOSES. THE SOUTHWEST OF ALASKA AND KODIAK ISLAND ALREADY ARE PRODUCING OVER 2,000 HEAD OF CALVES A YEAR. UNDOUBTEDLY THIS AREA COULD BE UPGRADED TO PRODUCE MORE. FEATHERSTONE ESTIMATES THAT IF THE KENAI COULD PRODUCE 50% OF ITS CAPACITY OR 15,000 HEAD PER YEAR, THE REST OF THE STATE CAN PRODUCE THE BALANCE NEEDED OR 11,250 PER YEAR. THESE CALVES SHOULD HAVE NO APPRECIABLE COST DIFFERENTIAL FROM THE SAME AGE AND WEIGHT CALVES OF THE LOWER 48. (FACTORS THAT CAN BE USED TO STIMULATE THE KENAI PRODUCTION OF CALVES WILL BE DISCUSSED IN THE FINAL REPORT.)

THE NEXT SEGMENT OF THE MARKET IS THE GROWING AND FINISHING OF STOCKERS AND FEEDERS. THE AREAS BEST SUITED TO PRODUCE BARLEY HAVE BEEN IDENTIFIED AS THE DELTA-CLEARWATER AREA AND THE NENANA-TOKLAT AREA. EXPERIENCE IN THE LOWER 48 SHOW THAT CATTLE IDEALLY SHOULD BE GROWN AND FINISHED NEAR THE SOURCE OF GRAIN WHICH APPEARS TO BE THE BARLEY PRODUCING AREAS. TRANSPORTATION

OF CALVES FROM THE SOUTHERN AREAS TO GROWING AND FINISHING AREAS OF ALASKA IS NO DIFFERENT THAN SHIPPING THEM WEST OR SOUTH AS IS DONE IN THE LOWER 48. IN THE FINAL REPORT FEATHERSTONE WILL DISCUSS THE POSSIBILITY OF FREIGHTING IN FEEDER CALVES FROM THE LOWER 48 TO START UP THE INDUSTRY. THIS SUPPLYING SHOULD BE VIEWED AS A SHORT TERM START UP COST THAT DOES NOT ACCRUE TOWARD THE INDUSTRY'S COST DIFFERENTIAL OF $54.00.

THE MONTANA LIVESTOCK COOPERATIVE AND THE UNIVERSITY OF MONTANA AGRICULTURAL SCHOOL WERE REQUESTED TO WORK UP PRESENT DAY LEAST COST FEEDING FORMULAS AND RATES OF DAILY GAIN. THE RATE OF GAIN WAS ESTIMATED TO BE 10% LESS IN ALASKA DUE TO THE COLD WEATHER WHICH IS A HIGH DIFFERENTIAL IN FEATHERSTONE'S OPINION AND WILL GIVE A CONSERVATIVE DIFFERENTIAL COST FIGURE. THE FEED CONVERSION WAS DETERMINED TO BE 6.5 TO 1 FOR GROWING AND 8 TO 1 FOR FINISHING USING THE FOLLOWING RATIONS:

STANDARD CATTLE RATION USING BARLEY AND CONSUMPTION DATA

	GROWING RATION		FINISHING RATION	
	PERCENT	ANIMAL**	PERCENT	ANIMAL***
BARLEY*-STEAMED & ROLLED	68.57	1560.00	87.27	1745.00
ROUGHAGE HAY	28.57	650.00	9.09	182.00
LIMESTONE	.90	20.50	1.14	23.00
CALCIUM PHOSPHATE	.36	8.00	.45	9.00
TRACE MINERALIZED SALT	.36	8.00	.45	9.00
MOLASSES	1.255	28.50	1.59	32.00
VITAMIN A 50,000 IU/DAY/ANIMAL		140.00		100.00

*ASSUMES 12% PROTEIN BARLEY WHICH WILL NOT NEED PROTEIN SUPPLEMENT. ALASKA BARLEY IN 1980 HAD A 12.6% DM PROTEIN.
**FEED FROM 400 LBS. TO 750 LBS. OR 350 LBS. TIMES 6.5 CONVERSION EQUALS 2,275 LBS. OF RATION PER ANIMAL.
***FEED FROM 750 LBS. TO 1,000 LBS. OR 250 LBS. TIMES 8.0 CONVERSION EQUALS 2,000 LBS. OF RATION PER ANIMAL.

TOTAL CONSUMPTION OF BOTH RATIONS AND PRESENT ESTIMATED COST IS:

ITEM	TOTAL CONSUMPTION	COST/UNIT	TOTAL COST PER ANIMAL
BARLEY - STEAMED & ROLLED	3305.0	.0694 (a)	$229.37
ROUGHAGE HAY	832.0	.0660 (b)	54.91
LIMESTONE	43.5	.0135 LB. (c)	.59
CALCIUM PHOSPHATE	17.0	.1486 LB. (c)	2.53
TRACE MINERAL SALT	17.0	.05 LB. (c)	.85
MOLASSES ($94.00/CWT.)	60.5	.0715 (d)	4.33
VITAMIN A 50,000 I.U.	240 DAYS	.01¢ DAY (c)	2.40
TOTAL COST			$294.98

(a) PRICE WINNEPEG - NOVEMBER 25, 1980.

(b) AVERAGE PRICE RCD. IN ALASKA IN 1977 TO 1979 FOR ALL HAY JUNE, 1980 ALASKA AG. STATISTICS.

(c) PRICES FURNISHED BY BIO-ZYME INDUSTRIES 11-26-80.

(d) PRICES DELVD. ATCHISON, KS DELVD. BY BARGE 11-26-80.

THE 10% SLOWER RATE OF GAIN WOULD EQUAL A 10% INCREASE IN FEED COST OR $29.50 PER ANIMAL DIFFERENTIAL WITH THE LOWER 48. FEATHERSTONE IS IN THE PROCESS OF DETERMINING COST OF CONFINED FEEDING OF CATTLE WHICH MAY SUBSTANTIALLY REDUCE THIS FIGURE.

ONCE THE CATTLE ARE FINISHED THEY MUST BE SLAUGHTERED. USING FIGURES OF A LARGE BEEF SLAUGHTER THAT FEATHERSTONE DOES CONSULTING WORK FOR AS A BASIS, IT HAS BEEN DETERMINED THE ADDITIONAL COST TO PROCESS BEEF IN ALASKA IS APPROXIMATELY $5.06 PER

ANIMAL.[4] THIS PROJECTION WAS MADE ON THE FOLLOWING ASSUMPTIONS:

1) LABOR RATES AND EFFICIENCY DUE TO SMALL KILL RATE WOULD INCREASE LABOR COST 50%.
2) UTILITY RATES WOULD BE HIGHER DUE TO DIFFERENCE IN RATE AND SMALLER KILL CAUSING A 50% INCREASE IN POWER COSTS.
3) GENERAL AND ADMINISTRATIVE EXPENSES ARE ESTIMATED LOWER FOR ALASKA DUE TO LARGE LEGAL FEES AND INTEREST PAYMENTS MADE BY THE PLANT IN THE LOWER 48.

ADDING THE INCREASED COST OF FEEDING AND THE INCREASED COST OF SLAUGHTERING, THE DIFFERENTIAL COST OR BEEF PRODUCED IN ALASKA IS $34.56 PER HEAD. THIS FIGURE BEING LESS THAN $54.00 PROVES A BEEF INDUSTRY IN ALASKA IS ECONOMICALLY VIABLE.

TO DETERMINE THAT VIABILITY OF THE SWINE INDUSTRY IS CONSIDERABLY LESS COMPLICATED DUE TO THE CONFINEMENT METHOD OF FEEDING. IT HAS BEEN ESTIMATED THAT 50% OF ALL COMMERCIAL PORK PRODUCTION IS PRESENTLY DONE IN CONFINEMENT. IN CONFINEMENT WITH THE TEMPERATURE AND HUMIDITY CONTROLLED, SWINE WILL GROW AT THE SAME RATE AS IN THE LOWER 48. THE COST OF CONSTRUCTION AND OPERATING THE CONFINEMENT UNIT WILL BE GREATER AND THOSE INCREASED COSTS MUST BE COMPARED TO THE $16.32 PER HEAD TO DETERMINE VIABILITY.

THE COST OF CONSTRUCTING A CONFINED HOG OPERATION IN THE LOWER 48 IS $375,000 FOR A 144 SOW OPERATION. ELLERBE ALASKA

HAS ESTIMATED BUILDING COSTS IN ALASKA TO BE APPROXIMATELY 20% HIGHER BECAUSE OF FREIGHT, AND LABOR COSTS. THE ADDED 20% WOULD MAKE THE UNIT COST $450,000 OR A DIFFERENCE OF $75,000. IF THAT DIFFERENCE IS AMORTIZED OR DEPRECIATED OVER THE 20 YR. LIFE OF THE BUILDING AND ON THE BASIS OF 2,500 HEAD PER YEAR THE ADDED COST AMOUNTS TO $1.50 PER HEAD. IF THE ADDITIONAL MONEY REQUIRED COULD BE BORROWED AT 10% INTEREST AND DISPERSED OVER THE SAME 2,500 HEAD ANNUALLY, THE ADDED INTEREST COST WOULD BE $3.00 PER HEAD.

THE ADDED POWER COSTS TO HEAT THE BUILDINGS AND HANDLE WASTE PRODUCTS HAS BEEN ESTIMATED TO COST $3.00 PER CWT. OF FINISHED ANIMAL OR $6.60 PER HEAD.

THE FOLLOWING IS A SUMMARY OF THE TOTAL COSTS TO RAISE SWINE IN ALASKA:

ADDED BUILDING COSTS	$1.50/HEAD
ADDED INTEREST COSTS	$3.00/HEAD
ADDED POWER COSTS	$6.60/HEAD
TOTAL ADDED COST	$11.10/HEAD

AS WITH BEEF, SWINE WILL HAVE AN ADDITIONAL COST OF SLAUGHTERING BECAUSE OF CLIMATE, RELATIVELY SMALL CAPACITY, AND ADDED POWER COSTS. FEATHERSTONE ESTIMATES THAT THESE COSTS SHOULD NOT EXCEED $1.25 PER HEAD.

WHEN THE $1.25 PER HEAD IS ADDED TO THE $11.10 ADDED RAISING COST, THE TOTAL ADDED PRODUCTION COST FIGURE IS $12.35 WHICH IS LESS THAN THE $16.32 PRESENTLY USED TO TRANSPORT FRESH PORK TO ALASKA. WITHOUT A DOUBT THE SWINE INDUSTRY IN ALASKA IS ECONOMICALLY VIABLE.

VII. GENERAL FUNDING REQUIREMENTS AND SEQUENCING OF A SWINE AND BEEF CATTLE INDUSTRY IN THE STATE OF ALASKA

FEATHERSTONE HAS ENVISIONED THE INDUSTRY BEGINNING WITH A COOPERATIVE VENTURE WHICH IN REALITY MUST BE INITIALLY FUNDED BY STATE FUNDS. THE FUNDS WHICH WILL BE NEEDED, WILL HAVE TO BE ON AN INTEREST FREE BASIS FOR SEVERAL YEARS OR HAVE TO ACCUMULATE INTEREST UNTIL A POSITIVE CASH FLOW CAN BE GENERATED FROM OPERATIONS. FEATHERSTONE HAS NOT PROJECTED ANY FINANCIAL CARRYING COSTS BECAUSE THE AMOUNT WILL DEPEND ON HOW RAPIDLY THE STATE LEGISLATURE WANTS A SELF SUSTAINING INDUSTRY. THE LONGER THE INDUSTRY TAKES TO RELIEVE ITSELF OF ITS STATE DEBT, THE LONGER IT WILL TAKE TO BECOME SELF SUFFICIENT.

FEATHERSTONE WILL NOW GIVE A BROAD VIEW OF THE TIMING AND THE INITIAL COSTS OF EACH PHASE.

A. PROCESSING UNIT - WORK AND FUNDING ON THIS PHASE SHOULD BEGIN IMMEDIATELY. THE COMBINED SWINE AND CATTLE UNIT PROJECTED BY FEATHERSTONE SHOULD HAVE A CAPACITY OF 100 HEAD OF CATTLE PER DAY AND 320 HEAD OF SWINE PER DAY WHICH COST APPROXIMATELY $1.5 TO $1.7 MILLION TO BUILD IF AN ADEQUATE SITE IS FOUND WITH PROPER UTILITIES. WORKING CAPITAL REQUIREMENTS OF THE PLANT ON TODAY'S LIVESTOCK PRICES WILL BE APPROXIMATELY $1,400,000 FOR INVENTORY AND PAYROLL NEEDS. SITE SELECTION AND DESIGN WILL TAKE A MINIMUM OF SIX MONTHS. CONSTRUCTION OF THE BUILDING AND

INSTALLATION OF EQUIPMENT WILL TAKE APPROXIMATELY 18 MONTHS AFTER THE DESIGN PHASE. IF APPROVAL FOR THE PROJECT WAS GIVEN IN MAY OF 1981, THE FIRST ANIMALS WOULD PROBABLY BE PROCESSED IN MAY OF 1983.

B. THE COW-CALF OPERATION WHICH HAS MINIMAL BEGINNING NEEDS TO BE UPGRADED AND STOCKED WITH A MINIMUM OF 20,000 YOUNG COWS AND 1,000 BULLS. THIS INVESTMENT IN THE INDUSTRY WILL COST APPROXIMATELY $26,500,000 ON TODAY'S MARKET. IF THE COWS ARE BROUGHT TO ALASKA ALREADY BRED, THEY NEED TO START ARRIVING IN THE SPRING OF 1982 IN ORDER FOR THEIR CALVES TO BE READY IN THE SUMMER OF 1983.

ALONG WITH THIS COW-CALF OPERATION THERE SHOULD BE AN EXPERIMENTAL RANCH STARTED FOR THE UNIVERSITY OF ALASKA PROBABLY NEAR THE HOMER EXTENSION STATION. THE LAND, BUILDINGS, EQUIPMENT, AND STOCK SHOULD COST APPROXIMATELY $1,800,000. THE SOONER THIS DEMONSTRATION UNIT IS STARTED, THE SOONER THE PRESENT RANCHING OPERATIONS WILL BE IMPROVED.

C. THE FEED LOT AND FEED MILL SHOULD BE BUILT TOGETHER AND SHOULD TAKE APPROXIMATELY 6 MONTHS OF CONSTRUCTION. THESE FACILITIES SHOULD BE READY FOR USE IN THE EARLY SPRING OF 1983 OR ABOUT 4 MONTHS PRIOR TO THE PROCESSING FACILITY. THE FEED LOT EQUIPPED SHOULD COST APPROXI-

MATELY $500,000 AND THE FEED MILL ABOUT $1,000,000. THE INITIAL ANIMAL INVENTORY SHOULD COST $5,200,000 ON TODAY'S PRICES AND THE INITIAL FEED $3,900,000. THESE INVENTORY FIGURES WILL BE NEEDED FOR THE INDUSTRY WHETHER THE RANCHER OR THE FEED LOT INITIALLY BUYS THE STOCK.

D. THE CONFINED SWINE UNITS WILL COST $475,000 A PIECE AND 22 WILL BE NEEDED TO GET 50% OF THE MARKET WHICH WILL COST $10,450,000. THE BEGINNING BREEDER STOCK WILL COST $825,000 FOR ALL 22 UNITS AND THE INITIAL FEED INVENTORY WILL COST $1,300,000. THE CONFINED UNITS SHOULD BE BUILT AND FINISHED 180 DAYS OR 6 MONTHS PRIOR TO THE COMPLETION OF THE PROCESSING UNIT IN ORDER TO HAVE ANIMALS READY ON TIME. THE EXPERIMENTAL UNIT IS CONSIDERED ONE OF THE 22 UNITS.

SUMMARY OF COSTS OF LIVESTOCK INDUSTRY

A.	PROCESSING UNIT - PLANT AND EQPMNT.	$1,600,000
	WORKING CAPITAL	1,400,000
B.	COW-CALF OPERATION - BREEDING STOCK	26,500,000
	- EXPERIMENTAL RANCH	1,800,000
C.	FEED MILL AND LOT - BUILDING COSTS	1,500,000
	- ANIMAL COSTS	5,200,000
	- FEED COSTS	3,900,000
D.	SWINE OPERATION - CONFINED UNITS	10,450,000
	- BREED STOCK	825,000
	- FEED INVENTORY	1,300,000
	TOTAL INITIAL COSTS	$54,475,000

ALL OF THESE COSTS ARE WITHOUT LAND COSTS OR THE COSTS OF ANY INFRASTRUCTURE. IT MUST BE REALIZED THAT THE TOTAL COSTS OF $54,575,000 REPRESENTS THE TOTAL INVESTMENT IN THE LIVESTOCK INDUSTRY AND IS NOT JUST THE ANIMAL EXPENSE. THE FIGURES ARE COSTS OF BUILDING AND INVENTORY. THE DECISION THAT THE STATE HAS TO MAKE IS WHETHER THIS INVESTMENT BY THE STATE OR ITS RESIDENCE IS WORTH THE RETURN ON 25,000 HEAD OF CATTLE AND 80,000 HEAD OF SWINE PROCESSED PER YEAR. IN MAKING THAT DECISION NOT ONLY THE PROFIT SHOULD BE CONSIDERED BUT ALSO THE BALANCE OF THE ADDED COSTS WHICH WILL STAY IN ALASKS INSTEAD OF GOING TO SEATTLE. AT $54.00 PER HEAD FOR CATTLE AND $16.30 FOR SWINE THE TOTAL FIGURE THAT STAYS IN ALASKA IS $2,654,000 PER YEAR. IT ALSO MUST BE REMEMBERED THAT THIS FIGURE WILL GROW IF THE INDUSTRY GETS MORE THAN 50% OF THE MARKET OR IF THE POPULATION OF THE RAILBELT GROWS. ADDITIONALLY THE NORMAL PROFIT MADE BY THE LOWER 48 IN THE COW-CALF OPERATION, THE FEED MILL AND FEED LOT OPERATIONS, THE CONFINED FEEDING OPERATION, AND THE PROCESSING UNIT WILL BE MADE IN ALASKA AND STAY IN ALASKA. A SUMMARY OF THESE AVERAGE PROFITS WILL BE PUT IN THE FINAL REPORT. THE STATE OF ALASKA WILL GAIN MANY ADDITIONAL BENEFITS AS WELL; SUCH AS THE JOBS CREATED, INCREASE IN INDUSTRIAL TAX BASE, AND DECREASE IN DEPENDENCY ON THE SHIPPING YARDS OF SEATTLE.

FOOTNOTES

[1] Christopher A. Stevens et al., Supplying Alaska's Red Meat and Poultry Markets (Institute of Agricultural Sciences, Bulletin 41, May, 1975).

[2] The total dollars per head were calculated as follows:

	Cattle	Swine
Live Wt. Per Hd.	1,000 Lbs.	220 Lbs.
Dressing Percent	60%	62%
Dressed Weight	600 Lbs.	136 Lbs.
Fabricating Percent	73%	--
Market Wt. Delvd.	450 Lbs.	136 Lbs.
Transportation Cost	12¢/Lb.	12¢/Lb.
	$54.00	$16.32

[3] Christopher A. Stevens et al., Supplying Alaska's Red Meat and Poultry Markets (Institute of Agricultural Sciences,) p. 9.

[4] Slaughtering Costs Based on 100 Lb. Dressed Weight

	Lower 48	Alaska	Diff.
1. Direct Labor including Taxes and Fringes	$2.407	$3.610	+1.203
2. Operating Expenses	1.466	1.585	+ .119
3. General and Administration	1.042	.563	- .479
Total	$4.915	$5.758	$ .843

600 Lb. Carcass x .843 = $5.06

[5] Time was not available to get this figure verified. The final report will have this figure verified.