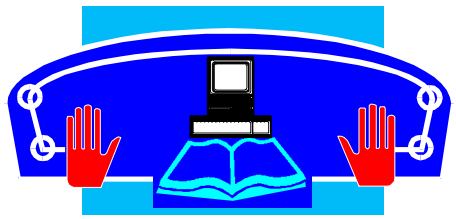

Commercial Fishery Of The Nwt; Proposal For The Construction Of Processing, Freezing And Storage Facility At Hay River Fisheries, Hay River Fish Plant

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SECTION 1

INTRODUCTION

The fish packing plant at Hay River only handles fresh fish. The product is packed in ice and shipped by refrigerated transport to Edmonton and/or Winnipeg. Production at this time is limited to good quality whitefish, lake trout and a small amount of pickerel which, in effect, means that the Great Slave Lake is being highgraded. However, the packing plant is obsolete and is unable to meet Fisheries Inspection requirements.

The Freshwater Fish Marketing Corporation began to market production from the Northwest Territories on May 1, 1969. From the outset the Corporation was confronted with the need to provide expensive facilities, develop new products and find new markets. Priority was assigned to the provision of lake stations and collection and communication services. To complete the program of meeting required plant standards and providing reasonable opportunities for diversification and development of the fisheries of the Northwest Territories, a fish processing plant for Hay River was designed, a building site was located, purchased and prepared, dirt and gravel fill was completed, and piles were driven in preparation for the main building. In providing these facilities and services, the Corporation has to date made capital expenditures of $800,000.

It was estimated that the processing plant could be constructed at a capital cost of $800,000, that the first year's operating cost would be $124,000, and that, after deductions resulting from cost savings, there would be an increase in fishermen's earnings of $64,000 during the first year's operations of the proposed plant. It was on this basis that the Corporation proceeded to incur expenditures with a view to financing the proposed plant from a Government loan, with repayment to be made from the earnings of the fishery served.

When engineering plans and designs were finally completed and tenders submitted, the estimated cost of $800,000 had risen to an actual cost of $1.5 million, and revised projections revealed that in the first year of operation the fishermen would suffer a decrease in earnings of $123,000 instead of receiving an increase of $64,000 as had been estimated before the firm plant cost figures had been obtained. On the other hand, for the operations of the Territories to break even during the first year, the fishermen would have to receive low earnings which are not considered adequate. The directors of the Corporation decided that under the organization's policy, which requires that financial risk of capital programs be reduced to a minimum in order not to cross-subsidize losses in one region with profits from another, construction of a processing plant would be halted unless assistance in the form of a grant was available.

This study is aimed at investigating alternative methods which could be used to finance the cost of the proposed plant. As a prelude to this investigation, the existing facilities that are available in the Northwest Territories Fishery are described, as is the current pattern of fresh-water fish production in the Territories. An historical exposition is also made of the plans of the Freshwater Fish Marketing Corporation to provide for a processing, freezing and storage plant at Hay River, and the benefits that can accrue from such a plant are examined.

Finally, there is the analysis of five alternative methods of financing the cost of the processing plant. The writers make no conclusions concerning the best method of financing. Instead, the analysis is presented in a manner to permit policy-makers to make that choice.

SECTION 2

COMMERCIAL FISHERY OF THE NORTHWEST TERRITORIES

Existing Facilities

Briefly, the facilities that are available in the Northwest Territories Fishery can be divided into three categories:

(a) Lake Receiving and Icing Facilities

These facilities are located at Lac La Martre, are owned by the Government of the Northwest Territories, but are operated as a co-operative. Adequate government-approved facilities on the Great Slave Lake are also available at Wool Bay, Marine Point and Simpson Island, and are owned by the Freshwater Fish Marketing Corporation.

(b) Transportation Facilities

Fish from Lac La Martre are transported to Wool Bay by chartered aircraft, while fish from the three lake stations on Great Slave Lake are transported by a corporation-owned refrigerated lake freighter which delivers the product twice weekly at Hay River.

(c) Packing Facilities

A fish packing plant is located at Hay River. It is capable of only handling fresh fish. The product is packed in ice and shipped by refrigerated transport to Edmonton and/or Winnipeg. The plant is obsolete and is incapable of meeting Fisheries Inspection requirements.

All evidence suggests that a new plant is urgently required if commercial fishing operations are to continue on the Great Slave Lake and surrounding lakes.

Current Production Pattern

Whitefish and trout constitute 90 per cent of the total fish production from Great Slave Lake. Thw whitefish are of high quality and have a fat content which is suitable for the New York Smoking Trade that was initially developed from the utilization of Great Lake whitefish. Today, the only other quantity of whitefish in the surrounding area that is suitable for smoking comes from Playgreen Lake and Lake Winnipeg. In the main, the price of smoked whitefish is much more buoyant than that of ordinary whitefish.

Trout from Great Slave Lake is considered to be nearly equal in quality and texture to Great Lake Trout, and the destruction of the latter by the lamprey has been a major factor in the growing strength of the market for the Great Slave Lake product.

Other species of fish are not commercially exploited by the private trade, mainly because the traders are reluctant to invest the substantial amounts of capital that are required for the purchase of processing and freezing facilities. The market for the unprocessed form of the other species of fish is not lucrative. In effect, the Great Slave Lake is being highgraded in that other species of fish (besides whitefish, trout and a small amount of pickerel) are not taken, or, if

taken, are discarded. This pattern of exploitation is, of course", contrary to sound lake management, and valuable fish resources go unharvested.

Fish products coming out of Hay River en route to Edmonton and Winnipeg are in a whole and unprocessed form. The decline of high-priced markets for whole, unprocessed fish, coupled with the dependence upon whitefish and trout, could well make commercial fishing in the remote territorial area totally uneconomical unless action is taken soon to Provide facilities for diversification of production through processing and marketing. Quality requirements today demand that facilities be provided to handle or freeze fish products as quickly as possible after removal from water. Current production from Great Slave Lake is often delayed six to eight days from net to freezer - an unacceptable commercial practice.

SECTION 3

PLANS OF THE FRESHWATER FISH MARKETING CORPORATION TO PROVIDE A PROCESSING, FREEZING AND STORAGE PLANT AT HAY RIVER

When the Freshwater Fish Marketing Corporation assumed responsibility for marketing fish in the Northwest Territories on May 1, 1969, it was confronted with the need to provide expensive facilities, develop new products and find new markets. priority was assigned to provision of lake stations, collection and communications services. In providing these facilities and services, the Corporation has to date made a capital expenditure of $800,000. A part of this expenditure included preliminary preparation for the logical next step, that is, to obtain site plans, engineering estimates, and to purchase and prepare a site for a processing plant which would ensure diversification, quality control and expansion of the industry, and thus complement previous expenditures on lake facilities and services.

on the basis that a new processing plant would be built at Hay River, projections of raw material that might be available were made (see Exhibit 1). These projections were based on past production data as well as on assumptions on the potential of exploiting other species that hitherto have not been harvested but would be marketable if a plant were built at Hay River.

The data in Exhibit 1 reveals that total production of fish at Hay River could conceivably increase by 4,000,000 pounds by the end of the projection neriod, that is, from 4,115,000 pounds in 1969-70 to 8,100,000 pounds in 1976-77. The unit prices of fish that were used in the projections are shown in Table 1. The assumptions that were made in

TABLE 1

Species	1969-70 Price per lb. $	1976-77 Price per lb. $
Whitefish	.296	.265
Pickerel	.321	.400
Trout	.342	.350
Northern Pike	.079	.150
Inconnu	.100	.100
Mullet		.060
Maria		.060

employing these price trends were based on the increasing competition in all present and future markets from improving Great Lake whitefish, a continuing improvement in the overall market for pickerel, a greatly improved demand for northern pike in all its marketable forms, and the introduction of mullets and marias into the North American institutional and retail markets as a deboned, cooked and breaded product.

Commercial fishermen and those associated with fishery on the Great Slave Lake are confident that higher production is possible and sustainable, especially if fishing were carried

out during the mullet spawning period, and if all species caught during the normal fishing operations in summer and winter were delivered to a plant at Hay River. It can be assumed, therefore, that the estimated volumes shown in Exhibit 1 are not only attainable but are conservative.

The production of maria would come out of the normal fishery with the product being delivered for processing rather than being thrown away, as has been the case. The estimated volume, if not achieved in this manner, could be supplemented by the introduction of the fairly simple longlining technique.

The introduction of mullet and maria to the fishery is expected to bring about an increase in the production of pickerel and northern pike as a side benefit. In summary, the forecast of increase production would result from (a) the bringing into production of nearby outlying lakes, and (b) the expansion of the mullet and maria production on Great Slave Lake proper, all of which should occur as a direct result of a plant being established at Hay River.

In 1969/70, the Great Slave Lake and the Territories produced 4,115,000 pounds of fish (see Exhibit 1). It has been estimated that slightly over 3 million pounds of this production could have been frozen at a plant in Hay River rather than in Winnipeg, and that, in which case, the Corporation would then have spent $188,000 less due to the

six cents per pound cost savings for packing and transporting fish destined for Edmonton and Winnipeg (see Exhibit 2). Preliminary estimates indicated that a new processing plant could be built in Hay River at a capital cost of $800,000. By applying interest and depreciation charges to this capital cost, it was estimated that the first year operating cost of the plant would be $124,000 which, when deducted from the $188,000 cost saving above, would leave the fishermen with an increase of $64,000 in earnings during the first year of the plant's operations.

It was on this basis that the Corporation proceeded to complete engineering plans, purchase slow delivery equipment and prepare a site, etc. When the engineering design and bid plans were finally completed and tenders submitted, the estimated cost of $800,000 had risen to an actual cost of $1,350,000, and a revised five-year projection (Exhibit 2) revealed that in the first year of operation the fishermen would suffer a decrease in earnings of $123,000 instead of an increase of $64,000 as had been estimated before firm plant cost figures had been obtained.

The directors of the Corporation arrived at the following conclusions:

(a) The first year's operation of the proposed plant indicated the necessity for a substantial reduction in prices to fishermen in order that the operation in the Territories

could break even. Average earnings per man would therefore be at a low level, and this would be inadequate.

(b) There was a possibility of an improving financial situation in the second and subsequent years; but this was predicated on production estimates for increased volumes of pickerel, northern pike, mullets and marias which, from management's point of view, seemed attainable but which had to be considered purely speculative and as contributing a considerable degree of commercial risk to the situation.

(c) In addition to this commercial risk was the downward trend being anticipated in the price of whitefish and the speculative assumption that suitable markets could be obtained for the new product that would be developed from marias and mullets.

Grant Assistance

Insuxmningup these conclusions, the directors of the Corporation agreed that continuation and diversification of the Northwest Territories Commercial Fishery required assistance for capital development in the form of a grant of $1 million to be applied toward the construction of the proposed plant at Hay River.

The Corporation examined the effect that such a grant could have on fishermen's average annual earnings (see Exhibit 5, Section B) , and concluded that, among other things, the provision of a grant would reduce interest and depreciation costs (see Exhibits 2 & 2A), effectively increasing profits to fishermen.

A grant of $1 million would still require a Corporation investment of $500,000 in the plant, which, when added to expenditures already made for freighter vessel, lake stations, radio equipment, etc. would bring the Corporationts capital assets in the area to nearly $1.5 million.

Functio"n's and Capacities "of Proposed Plant

(a) Receiving, grading, icing and packing fish for fresh shipment.

The plant has flake ice-making capacity of two tons an hour with a fifty ton holding capacity. It requires one pound of ice for each pound of fish packed for fresh shipment. With this capacity the plant would produce sufficient ice for use within the plant as well as for lake stations. Ice for lake stations would be distributed twice weekly by the refrigerated freighter. Sufficient space and equipment are provided in the chilled receiving area of the plant to receive, grade, pack and hold the product for shipment at the rate of 5,000 pounds per hour.

(b) Freezing, grading, glazing and storing.

The plant is designed to carry out the total freezing requirements of the first two years projected production. It is equipped with a continuous spiral belt freezer which will sharp-freeze whole fish at the rate of 2,000

pounds per hour. Frozen fish will be deposited directly to an electronic grader which will automatically and accurately grade the whole fish into the weight and , size required by the market. The fish will then be batch-weighed to suit corrugated cartons, and eventually and automatically will be glazed and moved to storage.

The inclusion of the spiral freezer, electronic grader and automatic freezing equipment will greatly enhance quality; fish will be rapidly frozen and handled quickly. The capital cost of this equipment will be justified in labour saving and quality gain of the product.

(c) Deboning

Space and equipment will be provided for the proposed plant to handle a production of 2,500 pounds per hour of headless dressed mullets or maria, or other species of fish. These facilities will be capable of packaging and freezing 1,500 pounds of finished product every hour.

(d) Cold Storage

The **plant is** designed to hold 200,000 pounds of product in cold storage.

(e) Office, employee service areas and warehouse requirement.

All of these requirements are provided for in the plans of the proposed plant.

SECTION 4

BENEFITS TO BE GAINED FROM PROCESSING PLANT

A fish processing plant at Hay River should contribute the following benefits:

(a) Provide an economic base for removal of hitherto unharvested species of freshwater fish, thereby contributing to the ecological balance of all species in Great Slave Lake, and to possible improvement in production of whitefish, pickerel and trout.

(b) Under present conditions, fish are held fresh for three to five days before they are placed in freezers in Edmonton and/or Winnipeg. This delay contributes to quality deterioration and culling of valuable product prior to freezing. In 1970-71, eleven per cent of **total** production had to be culled prior to freezing operations. Fifty per cent of these culls could have been processed and would have increased the fishermen's earnings by approximately $66,490.

(c) Presently, fish being marketed must be handled in all respects as a fresh product until it arrives at Edmonton or Winnipeg freezers. Boxes, costing three cents per pound of fish, are therefore required for shipping the fresh product. There is also additional labour costs for handling and packing the product, as well as the cost of ice, and for transporting the product to freezers.

With the provision of the proposed plant, these costs (totalling 6 cents per pound of fish) will be eliminated.

(d) It is well known that present facilities at Hay River , are not acceptable to the Fish Inspection Branch of the Department of the Environment, nor to the U.S.A. Pure Food and Drug Administration. As a consequence, the continued operation of this commercial fishery beyond the present summer and next winter's season is dependent upon the provision of the proposed processing plant.

(e) Exhibit 5, with the provision of the financial grant, projects an increase in average earnings to fishermen of $500 per year, and an increase in the number of fishermen from 200 to 280 in the five year period.

(f) The operation of the proposed plant at Hay River would be expected to bring into production the mullets and marias as indicated in Exhibit 1. This will have the effect of diversifying the fishery.

(g) Indian fishermen are generally reluctant to fish very far from shore on Great Slave Lake. The mullets, marias, and dark coloured infested whitefish could be produced in large quantities close to shore, and could be processed at the proposed plant, thereby opening up a new area for fishing and the possibility of greater Indian participation in the fishery of the Northwest Territories. Furthermore, there are a number of other lakes, adjacent to Great Slave Lake, where Indian

settlements are located. A plant at Hay River would ultimately enable the less desirable whitefish and other species to be produced on these lakes.

(h) Diversification of the fishery, as a result of the capabilities of the proposed plant, would provide an opportunity for Indian fishermen to gain experience and expertise to compete in deep water fishing.

(i) Diversification of the fishery and provision of processing facilities would ensure that the industry could be geared to benefit from market trends instead of being limited to a one-product operation.

(j) A processing plant would generate additional income to residents of Hay River and the Territories. This is particularly important in view of the imminent closure of gold mines in the Yellowknife region. Generally speaking, the industry is locally-based (see Table 2), and, with a few exceptions, those engaged in commercial fishing in the area live in the Territories. In addition, the Corporation at Hay River is a source of employment for northern residents (see Table 3), and though the industry is not primarily native-oriented, the Indian involvement is sufficiently large (see Table 4) to be an important factor in the distribution of income in the Territories. It is reasonable to say, therefore, that a significant multiplier effect exists in the circumstances.

TABLE 2

LICENSED FISHERMEN, NORTHWEST TERRITORIES FISHERY

	1969-70		
	White and Metis	Indian	1970-71
Great Slave Lake: residents	73	50	179
Great Slave Lake: non-residents	84		68
Other Lakes: residents	35	37	38
Other Lakes: non-residents			15
TOTAL	192	87	300*

* 222 licenses were issued to White and Metis fishermen, and 78 to Indian fishermen.

TABLE 3

FRESHWATER FISH MARKETING CORPORATION, HAY RIVER, N. W.T.

- Employment -

Ethnic Origin	Summer 1969		Winter 1969-70		Summer 1970		Winter 1970-71	
	No.	Wages ($)	No.	Wages ($)	No.	Wages ($)	No.	Wages ($)
White	24	42,820	9	37,284	15	32,367	8	20,021
.Metis	20	12,661	6	11,951	35	44,214	15	18,965
Indian	16	14,590	8	18,644	15	30,330	10	24,035
TOTAL								

TABLE 4

COMMERCIAL FRESH WATER F=S× PRODUCTIONS

N W

	No. of Fishermen	Fish sold to Corporation (lbs.)	Value of Fish ($)
1969 Summer			
White and Metis	125	1,074,808	308,895
Indian	54	179,402	40,521
1969-70 Winter			
White and Metis	64	1,750,867	490,457
Indian	44	164,506	50,983
1970 Summer			
White and Metis	97	2,048,341	632,887
Indian	78	429,302	131,819
1970-71 Winter			
White and Metis	≤2	1,283,017	290,249
Indian	'2	82,109	22,554

(k) Failure to upgrade present facilities at Hay River could possibly result in the demise of the commercial fish industry around Great Slave Lake. If this should occur, the following would result:

(i) The Territorial Government operates a fishery loan program whereby loans are guaranteed to fishermen for the purchase of equipment. Presently, there are approximately $267,000 outstanding in loans. If the industry should collapse, it would be difficult, if not impossible, for the Territorial Government to collect loan payments. Repossession of equipment would not be the answer, for the Government would be in a position of having fishing equipment in an area where there was no commercial fishery.

(ii) The economic base of the Northwest Territories would become narrower than it presently is.

(iii) The Federal Government would have to provide social assistance for the unemployed. Approximately 80 per cent of the 217 resident fishermen in 1970-71 are married, with the average family consisting of five persons. Should the industry collapse, 173 families or 865 persons would be forced to accept full time social assistance because the majority of fishermen are not trained in other skills but fishing. Social assistance for 173

families, at the rate of $375 a month per family (based on Hay River data) would amount to $778,500 per annum.

Should the Government decide to retrain the 217 resident commercial fishermen, training costs, at $6,000 per person, would amount to $1.3 million.

SECTION 5

PROJECTED RATIOS AND BREAK-EVEN ANALYSIS

At the time that the directors of the Freshwater Fish Marketing Corporation decided to halt the construction of the processing plant at Hay River unless assistance in the form of a grant were available, it was noted that substantial government grants and other forms of assistance had been given, except in the case of the Northwest Territories Commerical Fishery, to all segments of the Canadian commercial fishery. However, most of this assistance to fishery has been granted by the Department of Regional Economic Expansion (DREE) whose assistance programs do not extend into the Northwest Territories and the Yukon. Under the circumstances, the question naturally arises: If DREE operated North of 60, what assistance would it give to the Corporation for the construction of the plant at Hay River?

This section is devoted to the kind of analyses that is required to provide pertinent information for DIAND officials who may wish to approach DREE on the question of grant financing of the processing plant. The analyses consist of projecting ratios and break-even points with regard to five alternative methods of financing the proposed plant, namely:

1. No loan and no grant assistance.
2A. No loan, but grant assistance.
2B. No loan, but grant assistance, with sales increased by 10 per cent.

3. Loan to partially cover the capital cost of the plant, but no grant.
4. Loan to partially cover the capital cost of the plant, with the remainder of the financing to be made up by grant assistance.
5. Loan to fully cover the capital cost of the plant.

The results of the analyses were obtained from the Expansion Exec Space DCF Computer Program of the Department of Regional Economic Expansion. In all cases, it was assumed that the life of the project would be 25 years. All value figures in the results that follow are in 'thousands of dollars'.

METHOD 1

No loan, no grant

(a) Fixed Assets (obtained from Exhibit 4):

Land = $100

Building = $952

- $720 for building, electrical, mechanical and refrigeration systems.
- $100 for deboning equipment and installation.
- $S7 for contingency.
- $75 representing 50% of increase in construction cost due to delay.

(b) Working Capital

	YR.O	1	2	3	4	5
	$	$	$	$	$	$
Accts. Rec. (3 months prodn. value)		300	330	370	390	420
Cash (1 month costs)		50	60	60	70	80
Inventory (33% prodn. value)		400	450	500	520	560
Other		50	50	50	50	50
		800	890	980	1,030	1,110
Accts. Payable (1 month costs)		50	60	60	70	80
Working capital	250	750	830	920	960	1,030
Incremental working capital	250	500	80	90	40	70

(c) profit before taxes, depreciation and interest for year 1 to 5 (as in Exhibit 2, Gross Income less Subtotal Operating Expenses) :

YR.1	2	3	4	5
$127	$202	$261	$294	$318

(d) Simple rate of interest, years O-5, without grant is 7.62%

Simple rate of interest, year 3, without grant is 8.93%.

(e) Payback period without grant without working capital is 5.96 years.

Payback period without grant with working capital is 9.23 years.

METHOD 2A

With grant, but no loan

(a) Grant

In first year, Corporation requires $700 to complete plant, $250 for working capital, total $950.

In second year, Corporation requires a grant of $373 ($S00 working capital less $127 cash flow from operations).

(b) Simple rate of interest, years O-5, with grant is 13.5%.

Simple rate of interest, year 3 with grant is 14.20%.

(c) Payback period with grant without working capital is 1.25 years.

Payback period with grant with working capital is 5.05 years.

(d) Sales, years 1-5 (as in Exhibit 2, Gross Income) :

YR.1	2	3	4	5
$646	$810	$919	$1,015	$1,122

(e) Variable and Fixed Costs (disaggregation of Operating Expenses, Exhibit 2):

	YR.1	2	3	4	5
Variable ($)	217	247	257	287	313
Fixed ($)	302	361	401	434	491

(f) Break-even sales ($), years 1-5, and break-even sales as a per cent of projected sales, years 1-s:

	YR.1	2	3	4	5
($)	661.35	687.56	695.91	725.95	785.63
(%)	102.37	84.88	75.72	71.52	70.20

(g) profit, years 1-5:

YR. 1	2	3	4	5
$127	$202	$261	$294	$318

METHOD 2B

With grant,' but "no 'loan '- increase sales by 10%

(a) Break-even sales ($) , years 1-5, and break-even sales as a per cent of projected sales, years 1-5:

	YR.1	2	3	4	5
($)	661.35	687.56	695.91	725.95	785.63
(%)	93.07	77.16	68.84	65.02	63.65

(b) Profit, years 1-5:

YR.1	2	3	4	5
$169	$258	$327	$366	$398

METHOD 3

Loan, no grant

(a) Loan of $323 at 8% for 25 years (cumulative short fall in first two years less $1,000 = 950 + 373 - 1,000 = 323)

(b) Discounted cash flow rate of interest is 11.05%.

Discounted cash flow return on equity is 11.41%.

(c) Simple rate of interest, years 0-5, without grant is 6.97%.

Simple rate of interest, year 3, without grant is 8.28%

(d) Payback period without grant without working capital is 6.43 years.

Payback period without grant with working capital is 9.89 years.

METHOD 4

Loan, with grant

(a) Loan of $323.

(b) Grant in first year of $627 ($950 - 323 ❑627)

Grant in second year of $373 ($500 working capital less $127 cash flow from operations).

(c) Discounted cash flow return on equitY (including grants) is 21.05%.

(d) Simple rate of interest, years 0-5, with grant is 11.07%.

Simple rate of interest, year 3, with 9rant is 12026%0

(e) Payback period with grant without working capital is 2.95 years.

Payback period with grant with working capital is 6.54 years.

METHOD 5

With loan to cover complete capital cost of $1,323

(a) Loan of $1,323 at 8% for 25 years.

(b) Discounted cash flow rate of interest is 11.06%.

(c) Simple rate of interest, years 0-5, without grant is 4.94%.

Simple rate of interest, year 3, without grant is 6.29%.

(d) Payback period without grant without working capital is 8.23 years.

Payback period without grant with working capital is 12.41 years.

EXHIBIT 1

('000 lbs.)
($ '000)

FIVE YEAR PROJECTED PRODUCTION OF FISH THROUGH PROPOSED PLANT AT HAY RIVER, N.W.T.

Species	1969-70 Actual Production	1969-70 Value	1972-73 Projected Production	1972-73 Value	1973-74 Projected Production	1973-74 Value	1974-75 Projected Production	1974-75 Value	1975-76 Projected Production	1975-76 Value	1976-77 Projected Production	1976-77 Value
Whitefish	3,300	977	3,600	1,080	3,900	1,100	4,000	1,120	4,300	1,140	4,300	1,140
Pickerel	81	26	100	35	200	80	250	100	300	120	300	120
Trout	467	160	400	120	400	120	400	140	500	175	500	175
Northern Pike	177	14	400	48	600	.913	750	112	800	120	800	120
Inccnnu	90	9	100	10	100	10	100	10	100	10	100	10
Mullet			500	30	900	, 54	1,000	60	1,250	75	1,500	90
Maria			200	12	300	18	400	. 24	500,	3 0	600	36
TOTAL	4,115	1,186	5,300	1,335	6,400	1,472	' '6,900	1,566	7,750	1,670	8,100	1,691

I? XHIBIT 2

FIVE YEAR PROJECTED REVENUE AND EXPENSES ($'000)

PROPOSED NAY RIVER PLANT, VESSEL AND LAKE STATIONS

WITHOUT THE RECOMMENDED GOVERNMENT GRAM

Plant Income	72/73	73/74	74175	75/76	76/77
Income from Agency fee	408	514	599	727	826
Income from Stores (net)	25	25	25	25	25
Income from Boat Freight (net)	25	25	25	25	25
	458	564	649	777	876
Savinga on Packing & Transportation @ 6¢ lb.	188	246	270	238	246
Gross Income	646	810	919	1,015	1,122
Operating Expenses					
Lobour	235	307	322	359	390
Employee Benefics	12	15	16	18	19
Utilitiee	20	21	23	25	27
Taxes & Insurance	13	15	17	17	19
Communication	12	12	13	13	15
Travel	6	6	7	7	8
Gas and Oil	6	6	8	8	9
Accommodation	5	5	6	6	6
Repairs & Maintenance	34	34	50	50	74
cookhouse	5	5	6	7	8
supplies	145	156	160	MO	197
Ice	10	10	12	12	13
Office	16	16	18	18	19
Subtotal Operating Expense	519	608	658	721	804
Interest @ 8%	135	126	117	110	103
Depreciation	115	105	96	88	80
Total Expense	769	839	870	919	987
Profit Or 1.0ss	(123)	(29)	48	96	135

ESNIBIT 2A -

FIVE YEAR PROJECTED REVENUE AND EXPENSES ($'000)

PROPOSED HAY RIVER PLANT. VESSEL AND LAKE STATIONS

WITS RECOMMENDED GOVERNMENT GRANT

Plant Income	72/73	73/74	74/75	75/76	76/77
Income from Agency fee	408	514	599	727	826
Income from Stores (net)	25	25	25	25	25
Income from Boat Freight (net)	25	25	25	25	25
	458	564	649	777	876
Savings on Packing & Transportation @6¢ lb.	188	246	270	238	246
Gross Income	646	810	919	1,015	1,122
Operating Expenses					
Labour	235	307	322	359	390
Employee Benefits	12	15	16	18	19
Utilities	20	21	23	25	27
Taxes & Insurance	13	15	17	17	19
Communication	12	12	13	13	15
Travel	6	6	7	7	8
Gas and Oil	6	6	8	8	9
Accommodation	5	5	6	6	6
Repairs & Maintenance	34	34	50	50	74
Cookhouse	5	5	6	7	8
Supplies	145	156	160	180	197
Ice	10	10	12	12	13
Office	16	16	19	18	19
Subtotal Operating Expense	519	608	658	721	804
Interest @ 8%	40	36	32	28	24
Depreciation	50	50	50	50	50
Total Expense	609	694	740	799	878
Profit or Loss	37	116	179	216	244

EXHIBIT 2 AND 2A
- EXPLANATORY NOTES

Plant Income

(a) Income from agency fee - Data obtained from Exhibit 6. The Corporation pays itself, as the N.W.T. agent, the same custom rates for processing and handling fish as is the case in every private or co-operative agency.

(b) Income from stores - This represents profits obtained from sale of fishing equipment by the Corporation. The figures in the exhibits are conservative, judging from historical data.

(c) Income from boat freight - This represents revenue paid by the fishermen for use of the Corporation's freighter to transport fish to Hay River (See Exhibit 3).

(d) Savings on parking and transportation - Data obtained from Exhibit 3, and represents charges made to fishermen who, at this time, are paying parking and transportation costs of fish.

Operating Expenses

(a) Labour - Represents wages paid to plant labourers.

(b) Employee Benefits - Cost of unemployment insurances, etc.

(c) Utiiities - Charges for usc of utilities, e.g. electricity.

(dj Taxes and Insurance - Business taxes, tire insurance, etc.

(e) Communication - Cast of telex messages, etc.

(f) Travel - Air transport cost, etc.

(g) Gas and Oil - Operating costs of vehicles.

(h) Accommodation -- Accommodation costs of maintaining employees in remote areas.

(i) Repairs and Maintenance - As related to the building and equipment.

(j) Cookhouse - Cost of operating same for employees.

(k) Supplies - Cost of wrapping paper, cartons, etc.

(1) Icc - Cost of making ice for plant operations.

(m) office - Staff wages.

EXHIBIT 3

ESTIMATED COST PER POUND MAJOR PROJECT ITEMS FOR 1972/73

F.O.B. HAY RIVER ALL COSTS INCLUDED

				Savings in Transportation	Yield/	Co	Total Ha	Total Wp	Current Selling
(A)	Fresh Fish								
	Whitefish	22¢	.020	.095	--	--	.030	.365	$ .425	.55
	Pickerel	.330	.020	.095	--	--	.030	.475	.535	.70
	Troutw	.280	.020	.095	--	--	.030	.425	.485	.60
∃)	Frozen Fish								
	Med. Whitefish	.22¢	.020	.065	.06	--	.03¢	.395	.425	.39
	Smokers Whites	.350	.020	.065	.06	--	.030	.525	.555	.50
	Trout	.280	.020	.065	.06	--	.030	.455	.485	.55
	Pickerel	.13¢	.02¢	.065	.06	--	.03¢	.505	.535	.7¢
	Nor. Pike	.120	.020	.065	.06	--	.030	.295	.325	.3—
(C)	_____								
	Frozen Blocks	.06¢	020	.09¢	--	.35	.03¢	235	265	--

NOTE: 1. Deboned Block Fillets--This product would be shipped via C.N..refrigerated reefer direct from Hay River to "fish stick", "fish portion" processor being the Corporation in Winnipeg or U.S.A. Processors. Current prices for raw material of this quality going to processors from Atlantic Coast producers is 25¢ to 30¢ lb. depending on variety. Extreme shortages of raw material exist now and the situation is expected to grow more critical. Hence prices should increase in the next 12 months.

2. The sale of frozen product direct from Hay River to ultimate user will na additional savings over Winnipeg co∃t.

EXHIBIT 4

HAY RIVER PLANT SUMMARIZED COST ESTIMATE

Land & Site Fill	$ 100,000	
Plant - building, electrical, mechanical & refrigeration aystema	720,000	
	$ 820,000	$ 820,000
Spiral Freezer	$ 165,000	-
Receiving Room Equipment	34,600	
Grading & Glazing Equipment	25,900	
Cold Storage Equipment	16,000	
Debonirfg Equipment & Installation	100,000	
Miscellaneous Equipment	21.000	
	$ 362,500	$ 362,500
Installation & Miscellaneous Lsbour	$ 10,000	10,000
Engineering Fees	$ 100,000	100,000
PROJECTED" TOTAL		$ 1,292,500
CONTINGENCY		57,500
BUDGET		$ 1,350,000
INCREASE DUE TO DELAY IN CONSTRUCTION FROM 1971 to 1972 estimated at		150,000
TOTAL ESTIMATED COST		$ 1,500,000

EXHIBIT 5

PRODUCING UNITS AND FISHERKEN

	B Y M	B Y M	B Y M	B Y M	B Y M	B Y M
Great 'Slave Lake	35 52 170	35 60 190	35 70 200	35 70 200	35 70 200	35 70 200
Lac La Martre	-- 10 20	-- 10 20	-- 10 20	-- 10 20	-- 10 20	-- 10 20
Other Lakes	-- 5 10	-- 10 20	"-- 15 30	-- 20 40	- 25 50	-- 30 60
TOTAL	35 67 200	35 80 230	35 95 250	35 100 260	35 105 270	35 110 280

Average Earnings

Per ?lan Engaged

in Fishing	SEE "A" $5 930.00	$5,900.00	$5,880.00	S6,020..00	$6,180.00	S6,040.00
	SEE "B" S5,930.00	$6,500.00	S6,468.00	$6,523.00	$6,629.00	$6,420.00

NOTES: B -- Large Great Slave Lake Boat

Y --. Yawls or Small Boat

M -- Men engaged in fishing

A -- Without the Recommended Capital Grant

B -- With the Recommended Capital Grant

Number of fishermen and of equipment based on existing methods ; more intensive capitalization in gear and attention to fishing methods could alter these estimates considerably.

Earnings calculated from data in Exhibits 1 and 5.

EXHIBIT 6

PROJECTED AGENCY REVENUE

HAY RIVER, N.W.T.

'000 lbs.)

$ '000

Year	Fresh			Frozen			Dessicated			Total Revenue
	Lbs.	Rate	Value	Lbs.	Rate	Value	Lbs.	Rate	Value	
1972/73	1,500	.095	142	3,130	.065	203	700	.090	63	
1973/74	1,100	.102	112	4,100	.070	287	1,190	.097	115	514
1974/75	1 000	110	110	4,500	076	342	1.400	.105	147	599
1975/76	1,000	.119	119	5,000	.082	410	1,750	.113	196	727
1976/77	1,000	.125	125	5,000	.089	445	2,100	.122	256	826