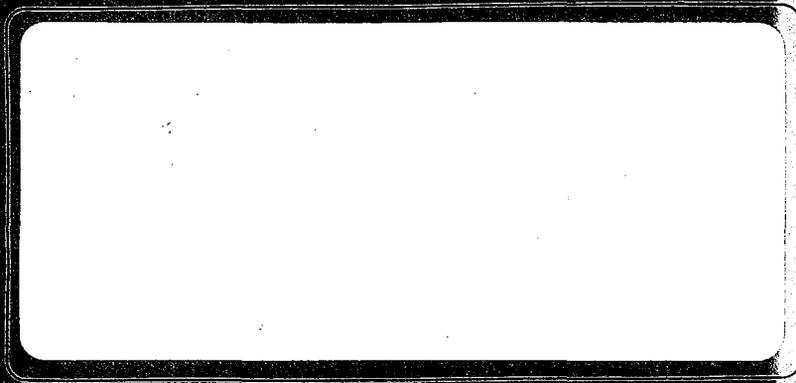


# FRED Reports



Alaska Department of Fish & Game  
Division of Fisheries Rehabilitation,  
Enhancement and Development



Recommended Funding Plan

Fisheries Rehabilitation  
and Enhancement Program  
Briefing for Governor Sheffield

November 22, 1983

By Alaska Department of Fish & Game



Issue: What will be the Sheffield Administration's Fisheries Rehabilitation and Enhancement Program during the next 3 and 7 years?

Considerations:

1. Recommended Investment Plan - Page 3
2. FY 84 Supplemental and Hatchery Transfer - Page 12
3. Russell Creek Hatchery Repair - Page 22
4. Enhancement Package - U.S./Canada Negotiations - Page 32
5. Review FY 85 Capital Budget - Page 44

## A G E N D A

- RECOMMENDED INVESTMENT STRATEGY
- PROGRAM PERSPECTIVE
- DISCUSSION OF CONSIDERATIONS 2-5
- SUMMARY & RECOMMENDATIONS

1. RECOMMENDED INVESTMENT PLAN

--Hatcheries--

- \* \$80 million capital investment to date
- \* Cost \$7.1 million annually to operate
- \* 1983 production 6.7 million fish worth \$13.5 million
- \* Addition capital investment of \$8 million will expand production to 10.4 million fish worth \$32.6 million
- \* Operational cost will elevate \$1.9 over next five years to a total of \$9.0 million.
- \* Recommend funding hatchery construction and equipment at \$8,019.4 and a gradual increase in hatchery operational dollars to \$7,986.4 in FY 86, and \$8,337.5 in FY 87 to a total expected level of \$8900.80 annually by FY 89.

## 1. RECOMMENDED INVESTMENT PLAN

The State's 20 hatcheries have the combined capacity (0.65 billion eggs) to produce 10.4 million fish for harvest annually. Figure 1 illustrates the capacity by geographical area and species. 1982 ex-vessel value of this product would be \$32.6 million. Presently, these hatcheries are producing 6.7 million fish worth \$13.5 million. The State has numerous opportunities to build new hatcheries, and/or expand existing facilities. Compared to other pacific rim countries, Alaska is extremely fortunate with our numerous rivers, streams, protected bays, and estuaries suitable for aquaculture activities. Japan expects to reach a production level of 2.3 billion eggs by the year 2000. In that same period of time, Russia expects to take 5 billion eggs, and British Columbia 1.8 billion. Alaska's goal, set in the mid 1970s, predicted that we would reach a production level of 2.5 billion eggs by the turn of the century. Many experts believe and predict that soon the salmon producing countries along the pacific rim will be negotiating the level of hatchery production that will be allowed to graze in the north pacific pastures. If Alaska were to reach the original goal of 2½ billion eggs by the year 2000 it would be necessary to greatly re-accelerate our capital construction program. The recommended strategy is to complete the hatcheries we now have.

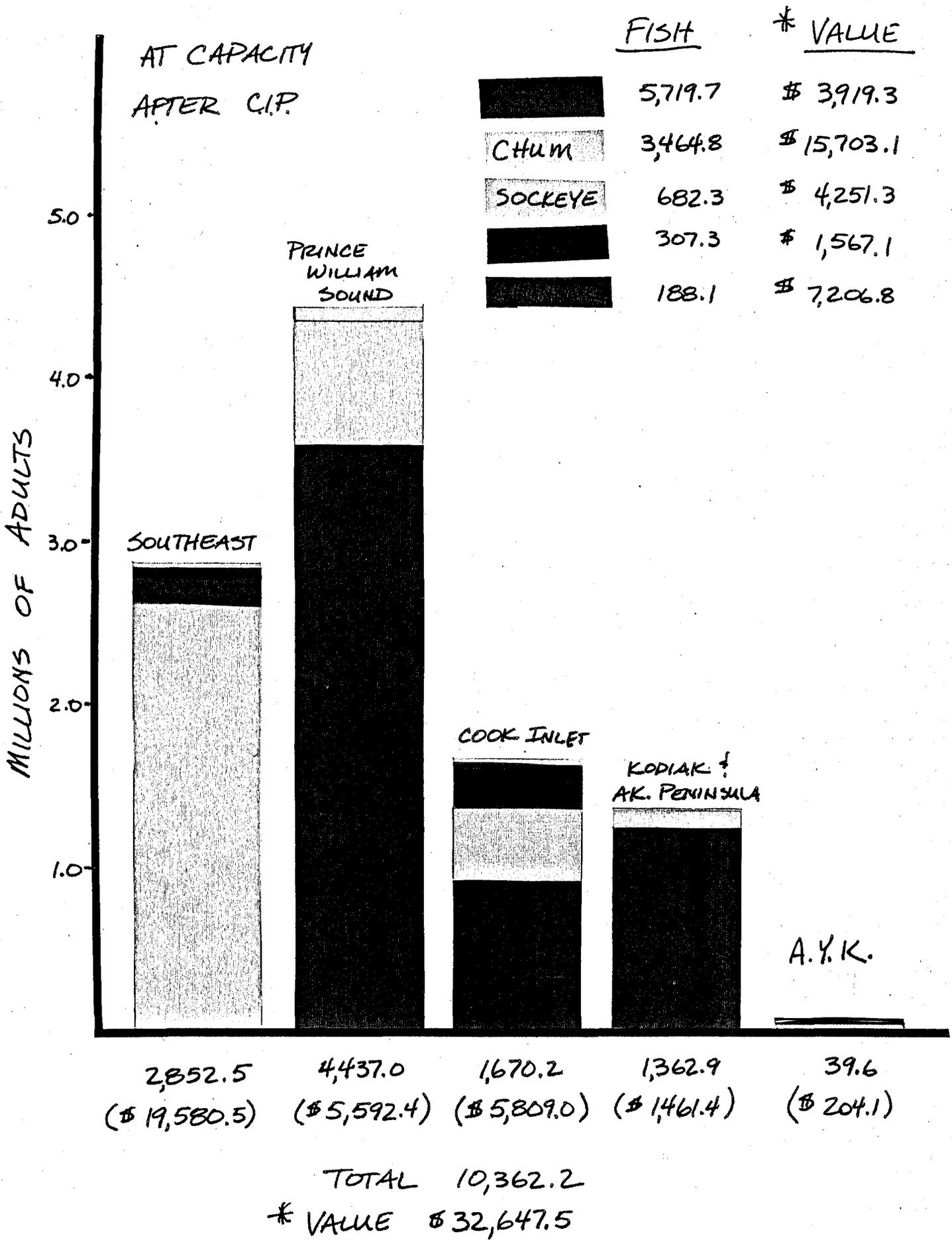
As mentioned, actual production in 1983 will produce a harvest of 6.7 million salmon valued at \$13.5 million, which is illustrated in Figure 2. The difference in actual production, shown by the histogram in Figure 2, and the possible production shown in Figure 1, is best illustrated by the line graph shown as Figure 3. To add in understanding in the line graph, 3 definitions will be helpful. Design Capacity (top line) is the ultimate

number of fish (eggs or adults) that a hatchery could physically hold. The actual capacity (middle line) is the number of fish the hatchery can hold at its present stage of development. The limiting factors could be one of three or a combination of these. Which are: 1) Capital dollars to complete the hatchery; 2) Brood fish available to take eggs from; 3) Operational dollars available. The bottom line which is the actual number of fish or eggs taken, can be limited by two factors; 1) insufficient brood; 2) if brood is available, there may not be sufficient operational dollars to take the eggs.

To close the gap between actual capacity and design capacity, \$8 million in capital monies will be required. All of these funds have been requested in the Department's FY 85 capital budget which is discussed in detail starting on Page 44. The largest portion (63%) would fund the completion of the Hidden Falls Hatchery (\$2018.0), and the Snettisham Hatchery (\$3019.0). The remaining \$3 million, would fund improvements at seven other hatcheries, and purchase equipment for nearly all the hatcheries.

To summarize, Figure 4 illustrates the relationship of the current production level and what the additional capital and operational dollars will buy. The current amount of capital investment is \$80 million. These hatcheries are now producing 6.7 million fish annually, worth \$13.5 million (1982 ex-vessel). Annual operational cost are \$7.1 million. An additional \$8 million in capital investment and a gradual rise in operational cost of \$1.9 million, will produce 10.4 million fish, worth \$32.6 million annually.

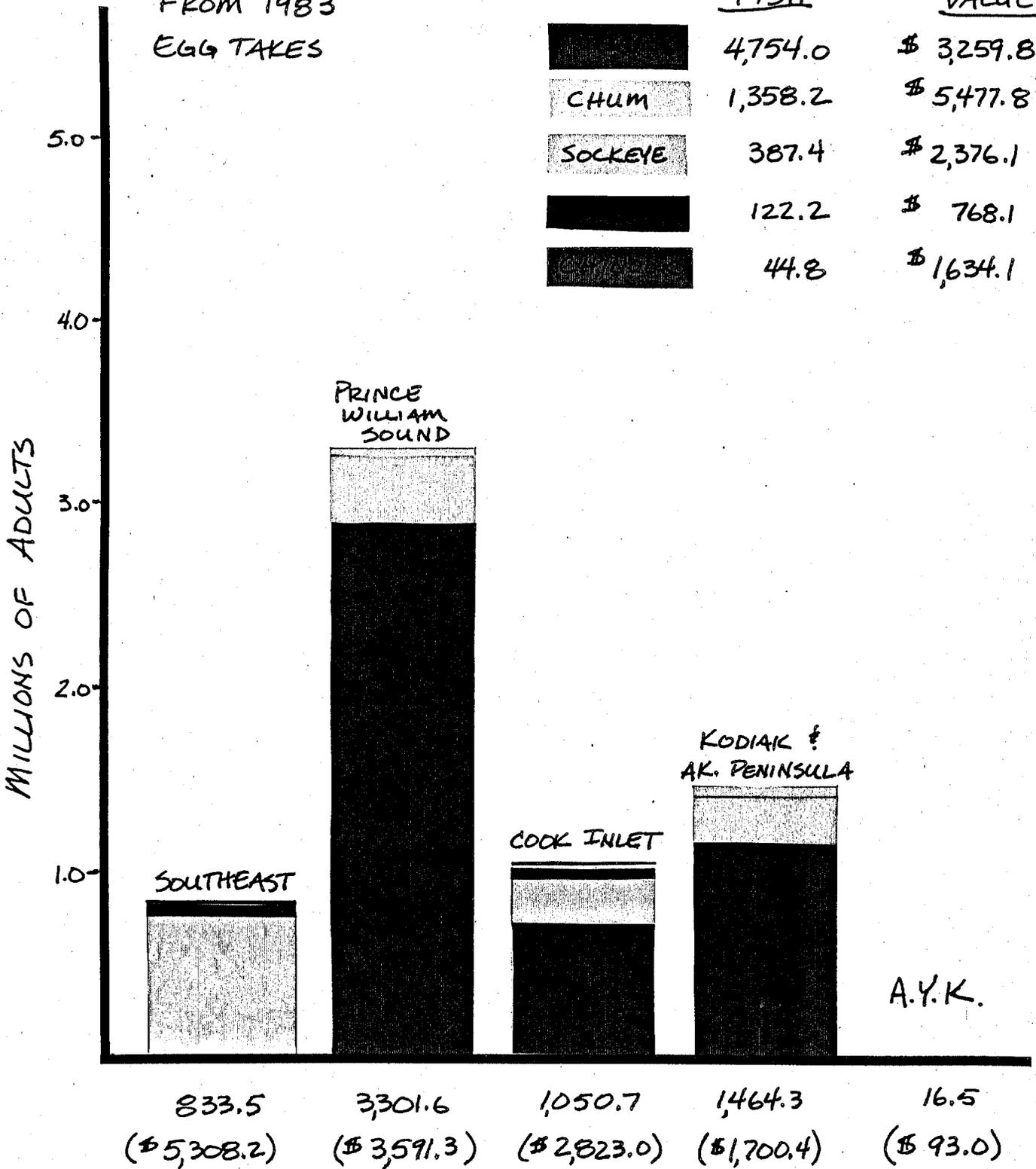
Figure 1.



\* USING 1982 EX-VESSEL PRICES (ALL FIGURES IN THOUSANDS)

Figure 2.

F.R.E.D. RETURNS  
FROM 1983  
EGG TAKES



TOTAL 6,666.6  
\* VALUE \$13,515.9

\* USING 1982 EX-VESSEL PRICES (ALL FIGURES IN THOUSANDS)

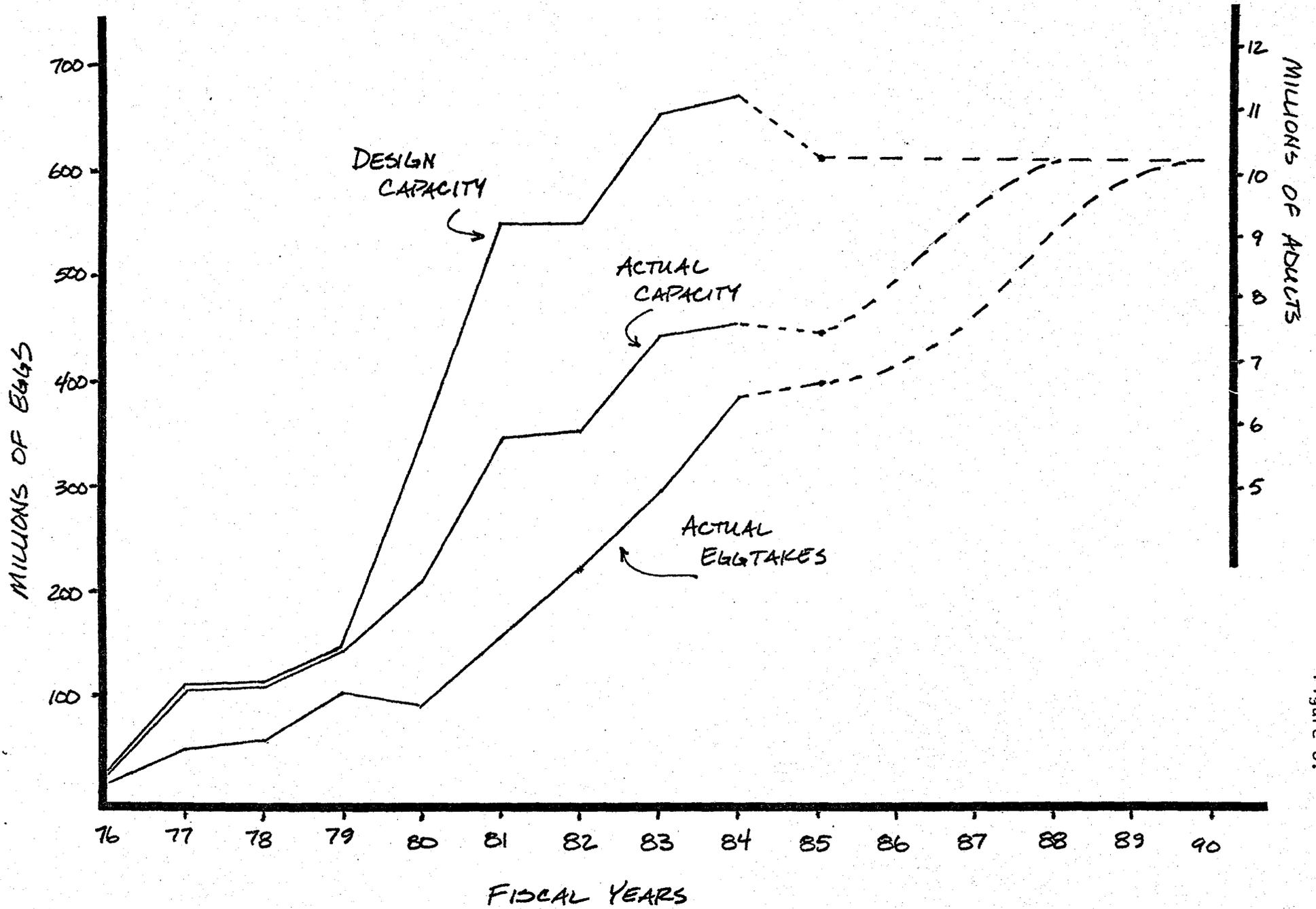


Figure 3.

Figure 4

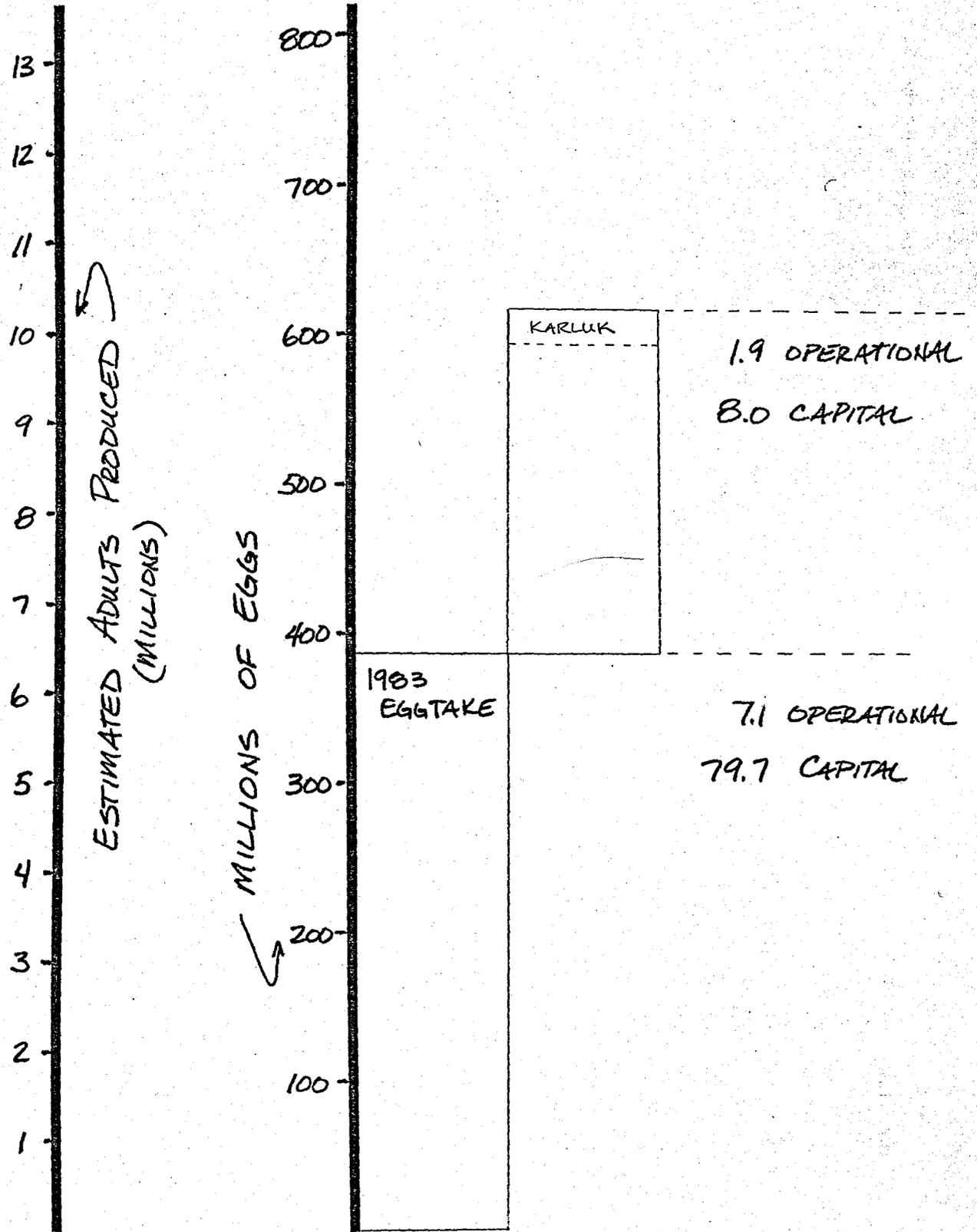
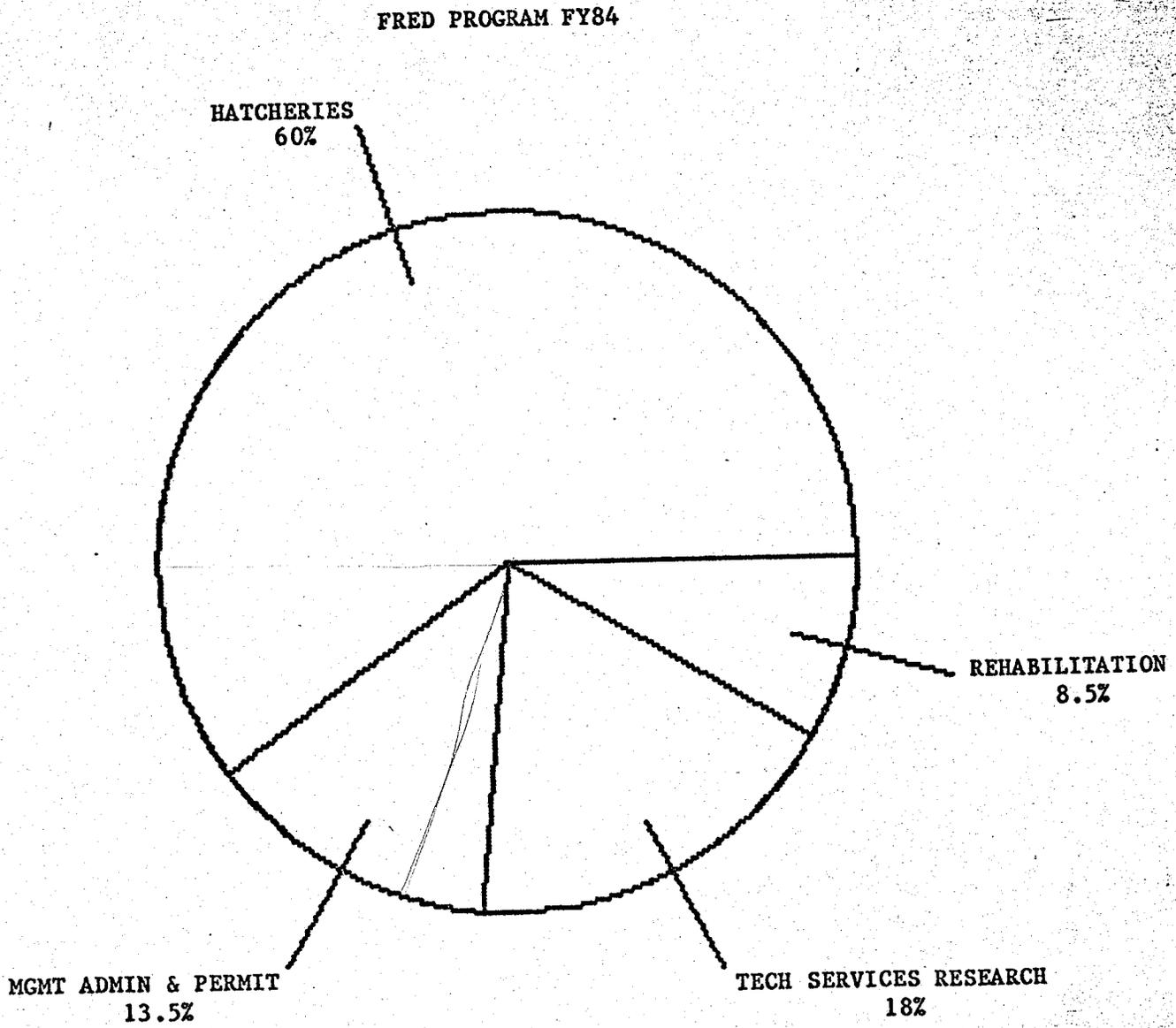
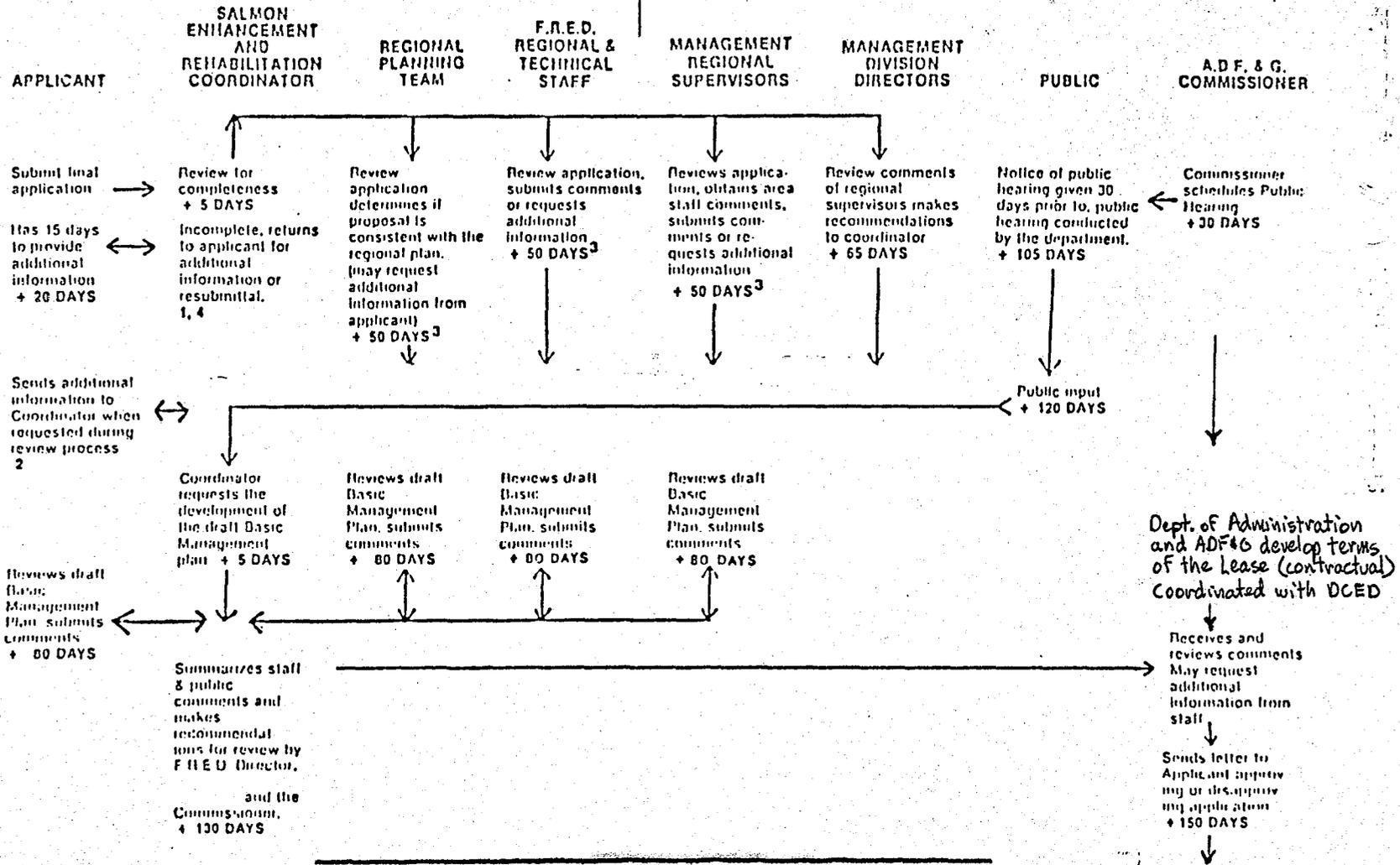


Figure 5



Permit application submitted to Commerce (DCED)  
and Dept. of Administration (DOA)

### Final Application - Review and Approval Procedure Schedule



- 1 Processing of application will not proceed until all requested additional information has been received.
- 2 Each request for additional information from applicant will add 15 days to review time.
- 3 All requests for additional information during the review period will be directed to the coordinator.
- 4 Resubmittal required when complete application requires more than 15 days.

#### Lease of Hatchery

To include:

- A) Biological & Operational permit from ADF&G
- B) Contractual arrangements from DOA
- C) Terms of Loan from DCED

Figure 6

2. FY 84 Supplemental

- \* Governor's budget funded the operation of all hatcheries in FY 84
- \* Legislature passed hatchery transfer legislation, SB 156
- \* Legislature names four hatcheries for transfer and reduced FY 84 funding for them by 50% (\$718.3)
- \* Legislative intent instructed department to request supplemental funding if legislation failed or a hatchery could not be transferred
- \* Intent was not to stop hatchery operations
- \* Governor vetoed SB 156
- \* Four hatcheries funded at 50% are being operated at full capacity
- \* Funding has been restored to FY 85 base.
- \* Recommend requesting supplemental FY 84 of \$718.3

2. ISSUE: FY 84 SUPPLEMENTAL

BACKGROUND:

In March, 1983, the Department discussed the funding of the fisheries rehabilitation and enhancement program (FRED) with the Governor and the L/BRC. The program received an additional \$800.0 as a result. This amount, coupled with a reprogramed \$300.0, was sufficient to operate all the State's hatcheries during FY 84. The Legislature passed SB 156 (Attachment 1), which authorized the Commissioner of Fish and Game to transfer hatcheries to the private sector. Four hatcheries were specifically named, and the operational funding for those four facilities was cut in half to "encourage the Commissioner to dispose of them expeditiously." Intent language was added to the FRED Division budget (Attachment 2) by the Legislature. This language instructed the Department, in the event the legislation did not pass, or a willing recipient could not be found for transfer of the hatcheries, to seek supplemental funding for FY 84. The Governor vetoed the legislation in July (Attachment 3), accordingly, the bill did not survive the legislative process.

A briefing was held with the L/BRC in August to select a strategy for continued operation and/or transfer of hatcheries. It was decided that the four facilities should continue their normal operations and the request for supplemental funding was taken under advisement. The shortfall is \$718.3. The Office of Management and Budget also instructed the Department to restore this amount of funding to the FY 85 base which has been done.

It is not known if any of the hatcheries could have been transferred even

if the legislation had passed. The Department reviewed permitting procedures and determined that the final application process, which includes public hearings, can be adapted to accommodate leasing of public hatcheries to the private sector. Preliminary discussions have been held with the Department of Administration, Department of Commerce and the Department of Law. The four departments will develop procedures to coordinate their activities, should transfer legislation be passed this coming session. Testimony during the legislative session revealed that two of the regional aquaculture associations were interested. The Southern Southeast Regional Aquaculture Association, of Ketchikan, expressed interest in the Beaver Falls Hatchery (1976 vintage). The Prince William Sound Aquaculture Association expressed an interest in receiving the Main Bay Hatchery (1982 vintage) and Cannery Creek Hatchery (1980 vintage), both located in Prince William Sound. None of the Regional Aquaculture Associations expressed an interest in the fourth facility, the Klawock Hatchery (1979 vintage). However, there was an individual entrepreneur that expressed an interest. During testimony, the Regional Associations stated that they did not feel that they could operate the hatcheries at lower operating cost or more efficiently than the State. They indicated that it would be necessary for them to borrow the funds from the State to operate the hatcheries for some period of time.

There is no indication of wide support for the transfer. Testimony by the processing industry opposed the transfer. Fishermen's groups have requested public hearings on the issue. The legislation was advanced as a "necessary mechanism" that needed to be in place should it be necessary to move fast. It was stated that the Commissioner would have the control

and could prevent a transfer from occurring if it were not biologically sound. It was also stated that with revenues declining, it might be necessary to transfer the hatcheries as an alternative to closing them if they were not funded by the State.

Some legislators anticipated problems with the transfer legislation, as well as the possibility that there may be no recipients for the hatcheries, i.e., the reason the intent language was added (Attachment 2).

If the Legislature does not approve the supplemental funding that has been requested by the Governor, then they must assume the responsibility for the adverse impacts on the program. The Governor's position is clear; he added money to his FY 84 request to adequately fund the program, i.e., run all hatcheries. It was the Legislature that removed the funding in order to encourage transfer and instructed the Department to seek a supplemental if the transfer failed.

Contingency alternatives are few. It is incredibly difficult to walk away from a several million dollar investment. It has been our experience that to close a hatchery it takes a minimum of 12 months to and/or surplus the property. The cost of accomplishing this is approximately 50% of one year's funding. Also, as we approach closure, the biological inventory is reduced. All of the four hatcheries in question have entered FY 84 at normal operating levels, i.e., they are full of fish. Public reaction would be extremely adverse should we attempt to dispose of the fish in the winter with the attendant fish mortality. If the Division

had to internally adjust for the \$718.3 deficit, beginning on January 1, it would have a devastating effect on the entire program.

Because of the extremely high mortality of fish which would be experienced with a midwinter release, closing the hatcheries is not considered a viable option. Instead, we would reduce the work force to the extent that the shortfall could be absorbed. The payroll for the FRED Division, excluding hatchery and managerial personnel, is about \$250.0 each month. Essentially we would lay off nearly enough employees for three months to make up the deficit. It is assumed that, since the funding has been restored to the FY 85 base for the Division, the work force would be rehired on July 1, 1984.

**RECOMMENDATION:**

Prepare a FY 84 supplemental request for \$718.3.

Offered: 6/10/83

Attachment

Original sponsor: Eliason

1 IN THE SENATE

BY THE RULES COMMITTEE

2

CS FOR SENATE BILL NO. 156 (Rules)

3

IN THE LEGISLATURE OF THE STATE OF ALASKA

4

THIRTEENTH LEGISLATURE - FIRST SESSION

5

A BILL

6

For an Act entitled: "An Act relating to the sale, lease, or grant of

7

state hatchery facilities."

8

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

9

\* Section 1. AS 16.05.050 is amended by adding a new paragraph to

10 read:

11

(13) sell, lease, or grant a state hatchery facility to a

12

qualified regional aquaculture association formed under AS 16.10.380

13

or to a local nonprofit hatchery corporation if the sale, lease, or

14

grant is approved by the regional aquaculture association for the

15

region in which the hatchery facility is located.

\* \* \* \* \* C. C. ANALYSIS \* \* \* \* \*

OBJECT GROUP	VARIATION		DESCRIPTION:	C. C. (\$8,968.5) VERSUS GOV.AMD. (\$10,352.9)
01 PERS. SERV.	-451.5	-7.0%	ALLOCATE GOV REDUCTION <66.5>, DELETE CIP TRANSFERS-COOK INLET STREAM CLEARANCE <34.3>, LAKE FERTILIZATION <350.7>.	
02 TRAVEL	-44.1	-17.1%	ALLOCATE GOV REDUCTION <20.1>, DELETE CIP TRANSFERS-COOK INLET STREAM CLEARANCE <2.0>, LAKE FERTILIZATION <22.0>.	
03 CONTRACTUAL	-262.1	-14.7%	ALLOCATE GOV REDUCTION <19.6>, DELETE CIP TRANSFERS-COOK INLET STREAM CLEARANCE <6.1>, LAKE FERTILIZATION <235.0>, DELETE DP <1.4>.	
04 COMMODITIES	-243.4	-14.4%	ALLOCATE GOV REDUCTION <33.9>, DELETE CIP TRANSFERS-COOK INLET STREAM CLEARANCE <4.5>, LAKE FERTILIZATION <205.0>.	
05 EQUIPMENT	-55.0	-37.4%	DELETE CIP TRANSFERS-COOK INLET STREAM CLEARANCE <5.0>, LAKE FERTILIZATION <50.0>.	
08 MISC.	-328.3	100.0%	REDUCED FOUR HATCHIERS 50%-KLAWOCK <212.9>, BEAVER FALLS <125.0>, CANNERY CREEK <210.1>, MAIN BAY <170.3>, ADDED-150.0 FOR RUSSEL CREEK HATCHERY, AND 240.0 FOR COOPER RIVER LAKE STUDIES.	
** TOTALS	-1384.4	-13.4%		

LEGISLATIVE INTENT:

THE SUM OF \$150,000 IS ALLOCATED TO THE DEPARTMENT OF FISH AND GAME, SUPPLEMENTAL PRODUCTIONS FOR INCREASED PRODUCTION AT THE RUSSELL CREEK HATCHERY.

LEGISLATIVE INTENT:

THE SUM OF \$240,000 IS ALLOCATED TO THE DEPARTMENT OF FISH AND GAME, SUPPLEMENTAL PRODUCTIONS FOR COPPER RIVER LAKE STUDIES-COOPERATIVE PROGRAM.

LEGISLATIVE INTENT:

IT IS THE INTENT OF THE LEGISLATURE THAT WITHIN THE FY 84 APPROPRIATION SET FORTH, THE DEPARTMENT WILL CONTINUE TO OPERATE THE RUSSEL CREEK HATCHERY AT A SUFFICIENT CONTINUATION LEVEL.

IT IS INTENDED THAT THE KLAWOCK HATCHERY, BEAVER FALLS HATCHERY, CANNERY CREEK HATCHERY AND THE MAIN BAY HATCHERY BE FUNDED AT 50% TO ALLOW FOR OPERATIONS THROUGH DECEMBER 31, 1983 AT WHICH TIME IT IS INTENDED THAT THESE HATCHERIES BE TRANSFERRED TO PRIVATE NON-PROFIT ACQUACULTURE ASSOCIATIONS. IN THE EVENT THAT THE DEPARTMENT IS UNABLE TO TRANSFER THESE HATCHERIES DUE TO 1) NON PASSAGE OF LEGISLATION AUTHORIZING TRANSFER OF HATCHERIES, OR 2) A NON-PROFIT ACQUACULTURE ASSOCIATION'S REFUSAL TO ASSUME THE OPERATION OF A HATCHERY.

IT IS THEN INTENDED BY THE LEGISLATURE THAT THE FOUR HATCHERIES NOT BE SHUT DOWN WITHOUT FURTHER REVIEW BY THE LEGISLATURE. IF THIS OCCURS THE DEPARTMENT SHALL UTILIZE EXISTING FUNDS AND SUBMIT TO THE LEGISLATURE BY JANUARY 31, 1984 A REQUEST FOR A SUPPLEMENTAL APPROPRIATION TOGETHER WITH A REPORT EXPLAINING WHY THE DEPARTMENT WAS NOT ABLE TO IMPLEMENT THIS LEGISLATIVE INTENT.





Attachment  
3

STATE OF ALASKA  
OFFICE OF THE GOVERNOR  
JUNEAU

July 19, 1983

The Honorable Jalmar Kerttula  
President of the Senate  
Alaska State Legislature  
Pouch V  
Juneau, AK 99811

Re: CS SB 156 (Rls) --  
Relating to the sale,  
lease, or grant of  
state hatchery  
facilities.

Dear Mr. President:

Under the authority granted in art. II, sec. 15, of the Alaska Constitution, I have vetoed Committee Substitute for Senate Bill No. 156 (Rls).

The sale, lease, or granting of publicly financed hatchery facilities to the private sector, some of which have been constructed with publicly endorsed bond monies, represents a major public policy issue having significant long term institutional implications. This Administration may conclude after thorough review of the subject that it is in the public interest to provide for such transfers. However, that policy determination has yet to be developed.

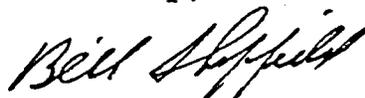
I asked my Fisheries Task Force to review the state's hatchery program and recommend to me long term goals and objectives for this important activity. The Task Force did review the program, but made a determination that the issue was complicated and of such importance that they ultimately recommended I establish a special Aquaculture Policy Study Group to perform the necessary, indepth analysis of the present program, goals and problems of the state's salmon aquaculture program.

The Governor is elected by the citizens and is directly accountable to the citizens. This bill fragments that line of accountability by requiring the regional quasi-private, non-profit associations to approve of transfer to non-association, private, non-profit operators, thus giving a group in the private sector very unusual authorities over executive actions.

The Attorney General has also advised me that there is a possible constitutional problem with the bill in its provision that the commissioner may grant hatcheries to aquaculture associations or non-profit hatchery corporations. If "grant" means without payment, as it presumably does, the transaction might be in violation of the requirements of Article IX, Section 6 of the State Constitution, which prohibits the expenditure of public money or transfer of public property for other than public purposes. Similar problems might arise if a hatchery was sold for less than its fair market value.

Until these several issues are clarified and until the Legislature and I have had an opportunity to establish the state's Aquaculture Policy I have determined that it is not in the public's interest to approve this legislation and perhaps to allow the transfer of a facility prior to making these determinations.

Sincerely,



Bill Sheffield  
Governor



STATE OF ALASKA  
OFFICE OF THE GOVERNOR

ENROLLED BILL REPORT

Department Fish and Game	Sponsor(Principal) Eliason	Bill Number (Final Version) CS SB 156 (Rules)	
Division Director	Date	Commissioner <i>Don Collinsworth</i>	Date 7-15-83

SUMMARY

1. Related Bills (Similar or Conflicting)

HB 393 (Similar)

2. a) Organizations Sponsoring and Supporting Bill

2. b) Organizations Opposing Bill

See attached

3. Program Effects of Bill

4. Fiscal Impact  None  Fiscal Analysis Attached  Unknown

Recommended Action by Governor:

In the absence of a yet to be developed Administration position or policy on the controversial issue of hatchery transfers, our position is neutral

Comments:

This bill provides the Commissioner of Fish and Game the "authority" to grant, lease or sell public hatcheries to the private sector. It lacks any indication of criteria which should be used to determine whether such transfers are in the broad public interest. There does exist a considerable division of public opinion regarding this subject - it is a major public policy issue.

### 3. RUSSELL CREEK HATCHERY

- \* Hatchery designed to incubate 50 million eggs, return 750,000 chum salmon worth \$2.2 million (1982 ex-vessel)
- \* Design errors resulted in maximum capacity of 14 million eggs, i.e., 200,000 adults
- \* State litigated and prevailed--awarded \$2.5 million, which is being held in a trust account
- \* Minimum renovation cost estimated to be \$7.5 million
- \* With legislative support, we recommend \$5 million capital plus litigation award of \$2.5 million be allocated. Operation in FY 85 will cost \$400.0 which should be added to budget. At full operation, the annual operating budget is estimated to be \$600.0
- \* Without legislative support, we recommend closure, \$200.0 should be added to FY 85 operational budget to accomplish closure

ISSUE: RUSSELL CREEK HATCHERY UPGRADE

The Russell Creek Hatchery, located near Cold Bay on the Alaska Peninsula, was designed to incubate 50 million chum salmon eggs, rear 39 million fingerlings, and return 750,000 adult salmon for harvest annually. The Alaska Peninsula seine and gillnet permit holders (403 permits) fishing in the vicinities of King Cove and False Pass are the benefactors of this hatchery production.

Design errors have limited Russell Creek Hatchery production to a program of brood-stock maintenance (14 million eggs). The question of responsibility for hatchery design was litigated, the State prevailed and was awarded \$2.5 million. This sum of money is currently in trust account (64030010625).

As part of the State's case in the court proceedings, the redesign of the hatchery was contracted for. The engineering design firm of Kramer, Chin and Mayo (KCM) developed the redesign and acted as the State's expert witness during the litigation.

A team of FRED Division engineers and fish culturists reviewed the preliminary design(s) and cost estimates developed by KCM. Several options were developed (enclosed) by KCM. These options range from nearly \$10 million to \$12.7 million. Option #1 (Page 28) offers the most control over the fish with as little risk as possible and the lowest annual operating cost.

The FRED review team was instructed to develop an option that removed all items not absolutely essential. This option is from the KCM design given as option #2 (Page 29).

### Notable Features of the Design

- a. It is the product of a cooperative effort between FRED personnel with on-site experience and the consultant.
- b. It is based upon and designed to correct observed, measured conditions.
- c. It is a simple, passive design; no complicated mechanics.
- d. It involves almost no increase in energy consumption.
- e. The construction is permanent and will require little maintenance.
- f. It allows multiple use of raceways.
- g. It allows the use of less-than-ideal stream water.

The FRED team was also asked to develop an option using only available monies, i.e., \$2.5 million. This option assumes less control over the fish, higher risk, and higher annual operational cost. This option is given as option #3 (Page 30). Proceeding with this option will require authorization by DOTPF to allow the FRED Division to "force account" the repair work.

Option #4 (Page 30) tables the decision for one more year. The liabilities are high operational cost and high risk for the small amount of fish produced.

Option #5 (Page 30) tables the decision until some future date, but costs 40% of the cost of option #4 with no fish produced.

Option #6 (Page 31) closes the hatchery. Approximately \$200.0 is required to move hatchery material from Cold Bay to other hatcheries in the State.

#### RECOMMENDATIONS:

A partnership approach needs to be developed with the area legislators. The House Special Committee on fisheries toured the Hatchery in September. If mutual support for the Hatchery can be developed, then it is recommended option #2 be selected. This necessitates adding 5 million dollars to the CIP budget (budget item 42) and authorizing the use of the litigation funds now being held in trust. It will be necessary to add \$400.0 to the operational budget in FY 85 and when repairs are complete (FY 86) the final operation costs are estimated to be \$600.0. If option #2 is rejected then option #6 is recommended. This option will require \$200.0 be added to the FY 85 operating budget.

The benefits accrued to the State and the fishery users through hatchery upgrade are several, and can be supported as follows:

#### Present - Advantages/Investments

- a. A \$3.5 million ('77 money) basic plant with extremely good structures now exists on site.

- b. About 750,000 chum salmon will be produced annually worth \$2.2 million (ex-vessel 1982).
- c. A brood stock has been developed (a \$2 million cost) which will allow us to take 100 million eggs in 1984.
- d. We now have several years of experience with the stream, so the site has been well-studied.
- e. We have four houses, two on site (\$220,000) and two newly-remodeled in the town of Cold Bay for hatchery personnel.
- f. We have acquired two trailers to serve as bunkhouses for 12 people.
- g. The hatchery is located in an ideal management area, with no mixed-stock fishery.
- h. Canneries are located nearby, so a superior product may be produced.
- i. The local population is very supportive of the hatchery and are waiting expectantly for the returns.
- j. The original cost of \$3.5 million is quite low and additional expenditures for completion of the hatchery (assume \$7-9 million) will bring the total cost only up to a level similar to other hatcheries of the same capacity in remote areas of the State.

- k. No fish from other rivers are mixed the the Russell Creek chums.
- l. Russell Creek chums may be a viable alternative if the south Peninsula salmon fleets are regulated away from the harvest of traveling fish destined for the Kuskokwim, Yukon, Kobuk, and Noatak Rivers.
- m. Legislative intent attached to the FY 84 operating budget provided for the continued operation of the Russell Creek Hatchery.
- n. When completed, the benefit-cost analyses (1.44:1) indicates a positive return on investment.

Some of the consequences of not upgrading the Russell Creek Hatchery are:

- 1. Hatchery will not produce fishable numbers of chum salmon.
- 2. Benefit-cost of hatchery operations is 0.8 to 1.
- 3. Managerial, maintenance, and fiscal resources afforded the hatchery place a drain on more productive projects.
- 4. The Alaska public has voted on four hatchery bond issues since 1974. Each proposal was passed in nearly every election district in the State. Closing or mothballing this facility carries with it some liability with the public's opinion.

Option #1: Kramer, Chin and Mayo Construction Plans.

a. 50 million green eggs, ~40 million rearing, with no expansion capability to be built in. Items deleted are: second bank of raceways and associated piping, raceway reaeration, settling pond reduced in size (settles only incubator water).

CIP cost (1983 dollars)	9,974,232
Adults returned/year	794,000
Annual operational cost	550,000
(1982 dollars)	

b. 50 million green eggs, ~40 million rearing, with piping necessary to allow expansion to 100 million. Items deleted are: second bank of rearing raceways, settling pond reduced in size.

CIP cost (1983 dollars)	10,209,628
Adults returned/year	794,000
Annual operational cost	550,000
(1982 dollars)	

c. 100 million green eggs capacity, ~80 million rearing. Nothing deleted, but settling pond reduced in size.

CIP cost (1983 dollars)	11,461,817
Adults returned/year	1,588,000
Annual operational cost	700,000
(1982 dollars)	

d. 100 million green eggs capacity, ~80 million rearing, with full-sized settling pond.

CIP cost (1983 dollars)	12,706,768
Adults returned/year	1,588,000
Annual operational cost (1982 dollars)	700,000

Option #2: FRED Revision of Proposed KCM Construction Plans.

The capacity will be 50 million green eggs with 40 million rearing. Items included from the KCM plan will be essentially as designed (except for the settling pond). The reliability of this case will be the same as the other KCM proposals; however, only the absolutely essential items have been retained. Expansion piping has been included. Items to be deleted are: tempering pond, roadway, settling structure has been reduced in size, pump house modifications, second bank of raceways and associated piping, fry feeders, spawn house, shop/storage building, bear fence.

CIP cost (1983 dollars)	7,708,231
Adults returned/year	794,000
Benefit: Cost	1.44:1
Annual operational cost (1982 dollars)	600,000

Option #3.

Use the \$2.5 million award for in-house construction to bring the hatchery to a 50-million level. This would be an option with higher operational costs and a possible decreased survival rate of eggs and fish. The latter has been assumed to be 25% loss of brood fish and 25% loss of eggs once every five years.

CIP cost (1983 dollars)	2,500,000
Adults returned/year	794,000
Annual operational cost	725,000

Option #4.

Continue in brook stock development phase. The capacity is 14.0 million green eggs.

Annual operating costs	400,000
Adults returned/year	216,000
CIP cost	None

Option #5: Mothball.

If we ever want to fund the facility again, it must be kept warm and protected, with a caretaker on site.

Annual operating costs	150,000
------------------------	---------

Option #6: Close.

Approximately \$200,000 will be required to move hatchery material from Cold Bay to other hatcheries in the State.

#### 4. Enhancement - U.S./Canada Negotiations

- \* Assume added production of 1½ million chum for harvest value \$7.5 million annually (1982 ex-vessel)
- \* Assume added production of 100,000 chinook for harvest value \$4,100,000 annually (1982 ex-vessel)
- \* Assume Federal Government will share in capital cost
- \* Assume State will share some capital cost and all operational cost

#### 4. Enhancement - U.S./Canada Negotiations

Summary of resources 1) present, 2) necessary to maximize existing hatcheries in Southeast Alaska for chum and chinook production, and 3) build new facilities to achieve an additional harvest of 1½ million chum salmon and 100,000 chinook salmon annually.

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1) To maintain present production capacity	* Requires no additional capital dollars * Operating funds in FY 85 budget * Will produce 917,300 chum by 1990 51,800 chinook by 1990 * Maximum production 917,500 chum in 1991 54,000 chinook in 1991
2) Expand existing facilities CIP budget items 7, 13, 14, 26, 42 & 52	* Requires capital funds \$6,109.4 * OMB has approved \$4,091.4 * Will raise operational cost \$370.0 * Will raise total production to 2,309,300 chum by 1990 62,800 chinook by 1990 * Will raise maximum production to 2,644,500 chum by 1991 142,900 chinook by 1994
3) Build new hatchery at Swan Lake and expand further at Hidden Falls	* Requires \$12 million capital * Increases operational cost \$1,050.0 * Will raise total production to 2,463,300 chum by 1990 97,000 chinook by 1990 * Will increase maximum production to 4,374,500 chum by 1997 236,500 chinook by 1997

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Note: 1982 ex-vessel value of chum \$5.00, chinook \$41.00.

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Issue: Chum Enhancement - Re: U.S./Canada Negotiations

Current capacity of State hatcheries will provide 917,300 chum salmon for harvest by 1990. Cost to maintain this production will be continued funding of the annual operational budget.

If capital improvements (requested in the FY 85 CIP budget) are made to existing hatcheries, 2,309,300 chum salmon will be produced by 1990. The capital cost of these improvements is \$3,667,000 and an increase in operational dollars of \$255,000 annually.

If, in addition to the above mentioned capital improvements, a major new hatchery is approved at Swan Lake, 2,463,300 chum salmon could be provided by 1990 and 4,374,500 by 1997. Cost to construct this new hatchery is \$7,500,000 with an annual operational budget of \$750,000.

Issue: Chinook Enhancement - Re: U.S./Canada Negotiations

Current capacity of State hatcheries will provide 51,800 chinook for harvest by 1990 and 54,000 by 1994. Cost to maintain this production will be continued funding of the annual operational budget.

If capital improvements (requested in the FY 85 CIP budget) are made to existing hatcheries, 62,800 chinook will be produced by 1990 and 142,900 by 1994. The capital cost of these improvements is \$2,442,400 and an increase in operational dollars of \$203,000 annually.

If, in addition to the above mentioned capital improvements, a major expansion is approved at the Hidden Falls Hatchery, a total of 97,000 chinook could be provided by 1990, 208,500 by 1994, and reach a peak of 236,500 in 1997. Capital construction costs are \$4,500,000 and the annual operating cost will increase by \$300,000.

To achieve maximum expansion of existing hatcheries and provide an additional 100,000 chinook by expanding Hidden Falls Hatchery \$6,942,400 are required for capital construction (all facilities) and the annual operating budget must be increased by \$455,000 annually.

Projected Chum Production by Year  
for F.R.E.D. Division Facilities in Southeast<sup>1/</sup>

<u>Facility</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
Beaver Falls <sup>2/</sup>	46,000	41,000	22,000	3,900				
Crystal Lake	240	360	1,100	1,000	1,100	1,600	3,300	3,500
Hidden Falls	165,000	213,000	398,000	514,000	730,000	914,000	941,000	941,000
Klawock <sup>3/</sup>	59,000	78,000	206,000	214,000	268,000	313,000	582,000	600,000
Snettisham	<u>30,000</u>	<u>127,000</u>	<u>159,000</u>	<u>181,000</u>	<u>249,000</u>	<u>294,000</u>	<u>783,000</u>	<u>1,100,000</u>
TOTAL	300,000	459,360	786,100	913,900	1,248,100	1,522,600	2,309,300	2,644,500

<sup>1/</sup> This represents the best scenario for chum broodstock development. It assumes that the requested hatchery expansion will be complete as the eggs are available so as not to slow development. Uses FRED standard assumptions.

<sup>2/</sup> Returning adult chums will be used to supplement the egg takes at Klawock Hatchery. The chum program is to be abandoned at Beaver Falls.

<sup>3/</sup> Resulting returns include additional eggs from Beaver Falls adult return.

FY85 OMB approved projects does not include the completion of the Hidden Falls Hatchery reducing the total production to:

	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
Total	300,000	459,360	786,100	913,900	1,032,100	1,122,600	1,832,300	2,217,500

Total chum production with no CIP expansion:

	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
Total	300,000	459,360	780,100	899,900	915,100	915,600	917,300	917,500

Total chum production with the completion of all the existing hatcheries and the addition of Swan Lake ( $7.5 \times 10^6$ ):

	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
Total <sup>4/</sup>	300,000	459,360	786,100	913,900	1,263,100	1,645,600	2,463,300	2,810,500

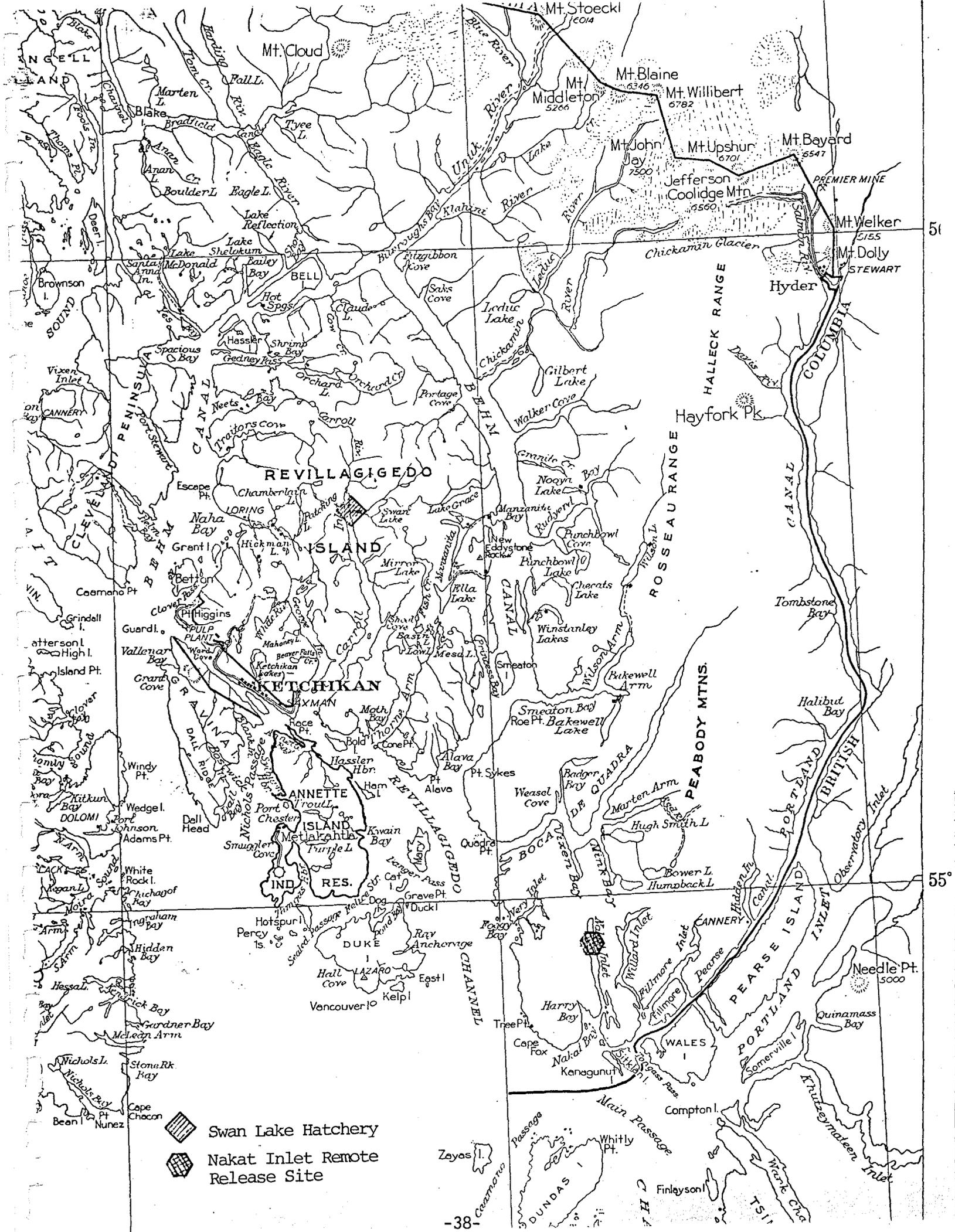
Production continues on and stabilizes at 4,274,500 chum annually in 1997

Future Capital and Operational Costs  
Related to Chum Production in Southeast

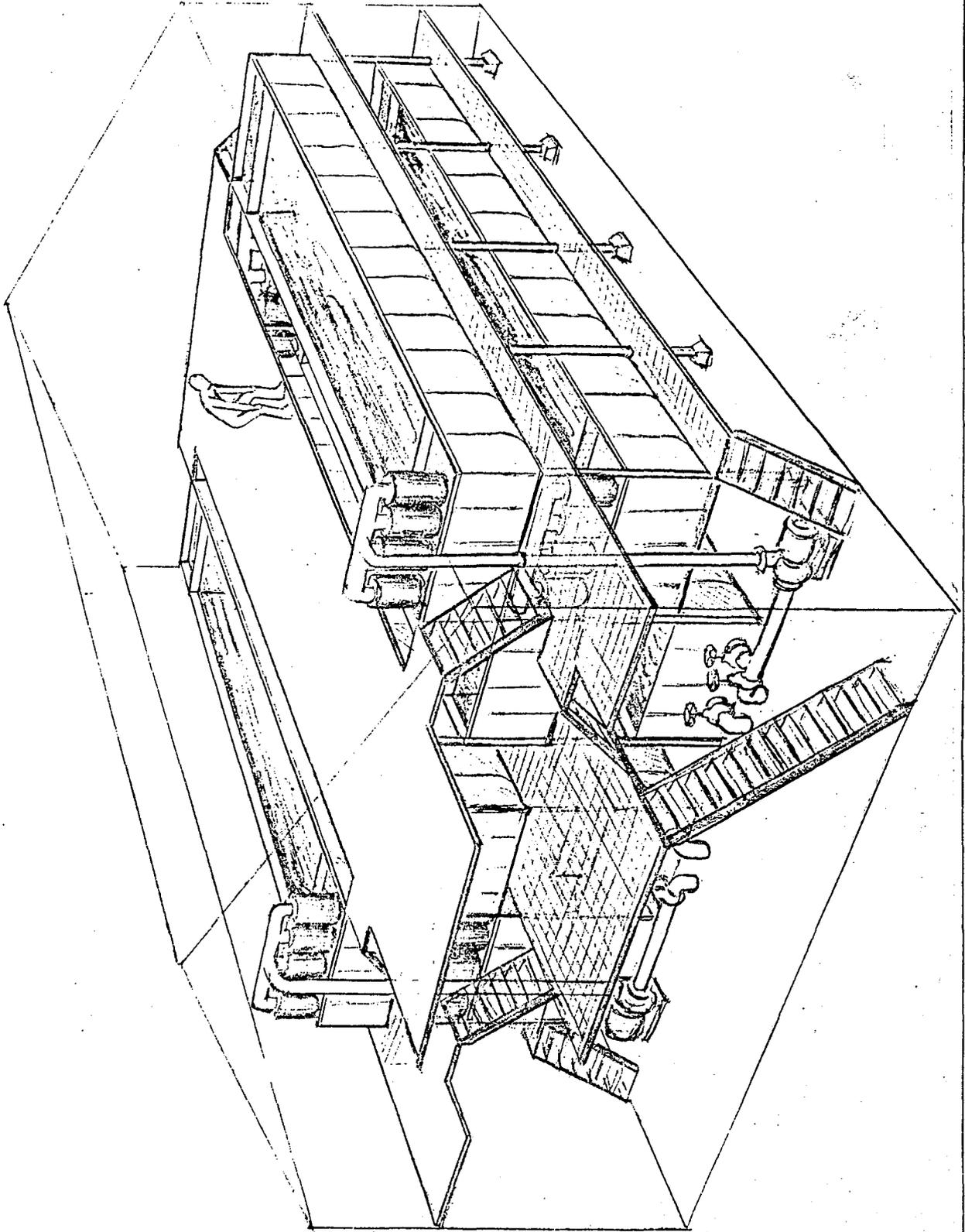
<u>Facility</u>	<u>Current Adult Production Capacity</u>	<u>By the Year</u>	<u>Adult Production Planned</u>	<u>By the Year</u>	<u>CIP to Expand</u>	<u>Increase to Annual Operation Cost</u>
<u>State Operations</u>						
Beaver Falls	0 <sup>1/</sup>	-	-	-	-	-
Crystal Lake	3,500	1991	3,500	1991	-	-
Hidden Falls	514,000	1987	941,000	1990	1328.0	125.0
Klawock	200,000	1986	600,000	1991	320.0	40.0
Snettisham	<u>200,000</u>	<u>1988</u>	<u>1,100,000</u>	<u>1991</u>	<u>2319.0</u>	<u>90.0</u>
SUBTOTALS	<u>917,500</u>	<u>1988</u>	<u>2,644,500</u>	<u>1991</u>	<u>3667.0</u>	<u>255.0</u>

<sup>1/</sup> Returning adult chums will be used to supplement the egg takes at Klawock Hatchery. The chum program is to be abandoned at Beaver Falls.





-  Swan Lake Hatchery
-  Nakat Inlet Remote Release Site



NATIONAL  
42,381 50 SHEETS 5 SQUARE  
42,382 100 SHEETS 3 SQUARE  
42,389 200 SHEETS 3 SQUARE

Projected Chinook Production by Year  
for F.R.E.D. Division Facilities in Southeast<sup>1/</sup>

<u>Facility</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Crystal Lake	950	5,600	5,200	22,000	13,000	14,000	37,000	41,000	46,000	49,000	49,500
Deer Mt.	1,300	1,900	3,500	5,700	7,700	11,000	13,000	14,000	15,000	15,000	15,000
Hidden Falls	-0-	-0-	1,200	3,200	3,500	2,900	2,800	5,500	8,200	8,400	8,400
Snettisham	<u>390</u>	<u>950</u>	<u>4,000</u>	<u>11,000</u>	<u>8,800</u>	<u>6,900</u>	<u>10,000</u>	<u>39,000</u>	<u>68,000</u>	<u>70,000</u>	<u>70,000</u>
TOTAL	2,640	8,450	13,900	41,900	33,000	34,800	62,800	99,500	137,200	142,400	142,900

<sup>1/</sup> This represents the best scenario of chinook broodstock development. It assumes that requested hatchery expansion will be complete before the eggs are available so as not to slow development. Uses FRED standard assumptions.

FY85 OMB approved projects does not include 690.0 for Hidden Falls reducing the total production to:

	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Total	2,640	8,450	13,900	41,900	33,000	34,800	62,800	98,200	133,200	138,200	138,700

Total chinook production with no CIP expansion:

	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Total	2,640	8,450	13,900	41,600	33,000	34,800	51,800	54,000	54,000	54,000	54,000

Total chinook production with the \$4.5 million CIP expansion at Hidden Falls:

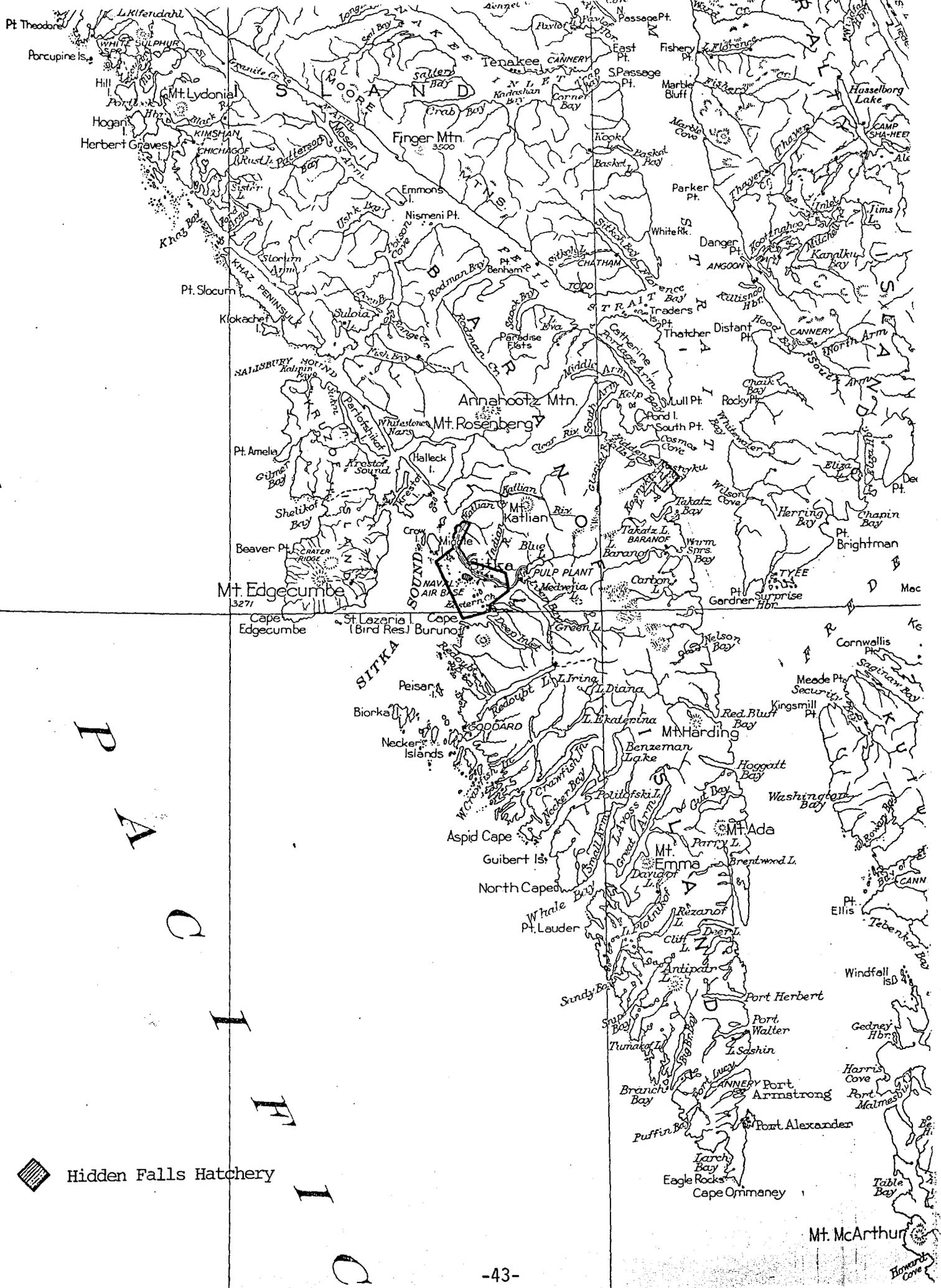
	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Total <sup>2/</sup>	2,640	8,450	13,900	41,900	33,000	34,800	97,000	150,000	203,000	208,000	208,500

<sup>2/</sup> Total continues on and stabilizes at 236,500 chinook annually in 1997.

Future Capital and Operational Costs  
Relating to Chinook Production in Southeast

<u>Facility</u>	<u>Current Adult Production Capacity</u>	<u>By the Year</u>	<u>Adult Production Planned</u>	<u>By the Year</u>	<u>CIP to Expand</u>	<u>Increase to Annual Operation Cost</u>
<u>State Operations</u>						
Crystal Lake	27,000	1990	49,500	1993	646.4	75.0
Deer Mountain	12,000	1990	15,000	1992	106.0	---
Hidden Falls	4,300	1991	8,400	1993	690.0	68.0
Snettisham	<u>10,700</u>	<u>1990</u>	<u>70,000</u>	<u>1993</u>	<u>1,000.0</u>	<u>60.0</u>
SUBTOTALS	<u>54,000</u>	<u>1992</u>	<u>142,900</u>	<u>1993</u>	<u>2,442.4</u>	<u>203.0</u>
<u>Federal</u>						
Little Port Walter	5,340	1989	5,340	1989		
<u>Other</u>						
Tamgas	6,670	1992	53,400	1994		





 Hidden Falls Hatchery

5. FRED FY 85 Capital Budget

- \* OMB has approved funds for 4 hatcheries in Southeast Alaska \$4,091.4
- \* Other capital funds are required to take advantage of opportunities in 1984. Requested \$1,441.5
- \* Completion of the Hidden Falls Hatchery could wait another year or be connected to U.S./Canada enhancement package. Completion is recommended as part of Investment Plan and was requested in FY 85 capital budget
- \* Fish ladder construction and repair funds are very important to Project #40. This project is outside the Investment Plan discussed for hatchery completion
- \* Attention is called to project #58 which provides facilities at 4 hatcheries in the Cook Inlet area to accommodate tourist industry

## 5. Review FY 85 Capital Budget

OMB recommendations include approval for capital improvements at four hatcheries in the Southeast region. The recommended projects will annually produce 84,700 additional chinook salmon, 1,300,000 additional chum salmon. Increased operational cost for the four hatcheries will be \$265.0. The increased value of these additional fish will be \$9,972,700 annually (ex-vessel 1982). Note: The Capital dollar request for Snettisham Hatchery is \$3,091.0 rather than \$3,319.0.

Other capital request include 5 projects totaling \$1,441.5 which would provide incubators for 80 million eggs, adult holding for Cannery Creek Hatchery in Prince William Sound for 20 million eggs, construction and maintenance of fishladders, a cooperative project with the U.S. Forest Service, and provide scientific equipment and alarms for newly constructed hatcheries that will reduce risks as well as personal services.

Completion of the Hidden Falls Hatchery will cost \$2,018,0 with increased operational costs of \$193.0. The annual production increase will be 4,200 chinook and 500,000 chum salmon with an annual value of \$2,672,200 (ex-vessel 1982) which doubles the hatchery production.

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Projects approved by OMB are:

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Project 7. <u>Crystal Lake Hatchery</u> (Petersburg)	<u>F&amp;G</u>	<u>OMB</u>
	646.4	646.4

This product will increase the chinook salmon smolt production by 83% (from 900,000 to 1,650,000). This will increase adult returns from 29,000 to 49,500 annually, an increase in \$840,000 annually (1982 ex-vessel). Operational cost will increase 75.0 (fish food and electricity to pump water).

Project 13. <u>Deer Mountain Hatchery</u> (Ketchikan)	106.0	106.0
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Provide for emergency water by pass system and will decrease risk of fish loss. Hatchery provides 400,000 chinook smolts annually and in 1983 provided 1.2 million eggs collected from adult chinook returning to the hatchery. Provides roof repair to hatchery building. No increase in operational cost.

Project 14. <u>Klawock Hatchery</u> (Klawock)	320.0	320.0
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This project increases chum salmon production from 10 million fry to 30 million and brings coho smolt production up to design level of 74,000 smolts. The tripling of the chum salmon production is done by decreasing the incubation water temperature to delay development of the fish. By retarding the fry emergence time, the rearing period required by these fish is shortened and more fish can utilize the existing rearing space. This increases fish production without affecting hatchery operations or survival rates.

This request also provides for skylights to be installed so that the electrical consumption in high use areas is reduced. Electricity in Klawock is \$0.38/KWH.

Operational costs are expected to increase \$40.0 (fish food and electricity for chiller and additional personnel services to handle fish).

Project 26. <u>Snettisham Hatchery Completion</u> (Juneau)	3,019.0	3,319.0
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Completion of the hatchery will increase the chum salmon production from ~~200,000~~ to 1,100,000 and the chinook/coho from 20,000 to 160,000. Added annual benefits from increased production is \$10 million (1982 ex-vessel). The project builds ~~5~~ raceways, 2 bunkhouses, storage, adult holding and egtake facilities, dock storage and purchase additional incubators. Increased operating cost will be \$150.0.

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TOTAL	4,091.4	4,391.4
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Projects not approved by OMB are listed below:

Projects 27, 28, 36, 37 & 40 totaling \$1,441.5 will provide required equipment for new hatcheries, incubators to hold 80 million eggs--construct and maintain fishladders, and provide holding facilities to take 20 million more eggs at Cannery Creek Hatchery. The operational budget will be reduced by \$20.0 and with the increased efficiency fish production will increase significantly without increasing the operational budget.

Project	No.	Cost	Operational Decreases	Benefits - Opportunity
PWS Hatchery Upgrade	27	300.0	reduces 20.0	Increases holding of adults to assure additional 20 million eggs
Ft. Richardson Equipment	28	190.0	-0-	Scientific equipment needed for new hatchery
Incubators Rearing Containers	36	600.0	-0-	Provide incubators for 8 hatcheries. 234 of the 400 are for PWS--new hatcheries. Incubators will handle 80 million eggs.
Alarms	37	150.0	-0-	Reduce risk--increase efficiency by est. 10%-- reduce labor costs
Fishladders	40	201.5	-0-	Investigate sites. Complete construction on Irish Creek Repair & maintenance on existing ladders
	TOTAL	1,441.5	<20.0>	

Other projects not approved by OMB are:

<u>Project</u>	<u>No.</u>	<u>Cost</u>	<u>Operational Increase</u>	<u>Benefits-Opportunity</u>
Completion of Hidden Falls Hatchery	42 52	690.0 1328.0	68.0 125.0	Produces 8400 chinook Double production of chum salmon to 991,000 annually.
Disease Detection & Control	44	120.0	-0-	Reduce risk and spreading of disease. Provides neces- sary laboratory equipment at 12 hatcheries.
Water Supply at Elmendorf	50	550.0	-0-	Replace poor quality & inadequate water supply-- Elmendorf targets on sport fish production.
TOTAL		2,688.0	193.0	

Note: Excluding project #40, projects listed thus far total 8,019.4, the amount recommended in the Investment Plan.

Other projects requested FY 85 CIP budget:

Russell Creek	55	5000.0	450.0	Produce 750,000 chum for harvest.
Kitoi	56	240.0	-0-	DROP (Third house being built).
Paint River Fishladder	57	1815.0	60.0	Produce 1 million salmon for harvest.
Visitor Centers	58	1031.0	15.0	Provide facilities to accommodate 80-100,000 visitors annually.

HATCHERY COSTS

FACILITY	FY 84	FY 85	CIP NEEDED	OPERATIONAL FUNDING.		
	(ALLOC.)	(100%)		FY86	FY 87	ULTIMATE
<u>SOUTHEAST</u>						
1 BEAVER FALLS	123.5	231.6		230.0	230.0	230.0
2 CRYSTAL LAKE	485.6	490.5	646.4 <sup>1/</sup>	565.5	565.5	565.5
3 DEER MOUNTAIN	160.0	175.9	106.0 <sup>1/</sup>	175.9	175.9	175.9
4 HIDDEN FALLS	505.6	481.5	2018.0	698.0	698.0	698.0
5 KLAWOCK	204.8	431.5	320.0 <sup>1/</sup>	471.5	471.5	471.5
6 SNETTISHAM	483.9	476.8	3019.0 <sup>1/</sup>	676.0	676.0	676.0
<u>PRINCE WM. SOUND</u>						
7 CANNERY CREEK	213.0	422.5	150.0 <sup>2/</sup>	531.3	531.3	531.3
8 GULKANA	130.6	127.7		160.0	160.0	160.0
9 MAIN BAY	177.0	391.5	150.0 <sup>2/</sup>	430.0	500.0	670.8
<u>COOK INLET</u>						
10 BIG LAKE	296.5	349.7		350.0	350.0	350.0
11 CROOKED CREEK	369.0	373.4		414.5	414.5	414.5
12 ELMENDORF	528.2	487.9	300.0 <sup>3/</sup>	517.0	517.0	517.0
13 FT. RICHARDSON	442.0	575.2	440.0 <sup>3/</sup>	600.0	700.0	862.5
14 TRAIL LAKES	400.7	361.8		400.0	490.0	720.0
15 TUTKA	386.0	377.2		400.0	441.1	441.1
<u>KODIAK &amp; AK. PENINSULA</u>						
16 KARLUK	153.4	190.0 <sup>4/</sup>		202.9	202.9	202.9
17 KITOI BAY	362.5	409.1		440.0	490.0	490.0
18 RUSSELL CREEK	331.3	0.0		0.0	0.0	0.0
<u>ARCTIC-YUKON-KUSKOKWIM</u>						
19 CLEAR	308.2	341.9		350.0	350.0	350.0
20 SIKUSUILAQ	303.4	342.9		373.8	373.8	373.8
	6365.2	7038.6	7149.4	7986.4	8337.5	8900.8
	718.3 <sup>5/</sup>		870.0 <sup>6/</sup>			
	7083.5		8019.4			

<sup>1/</sup> CIP approved by OMB. Projects 7,13,14 & 26.

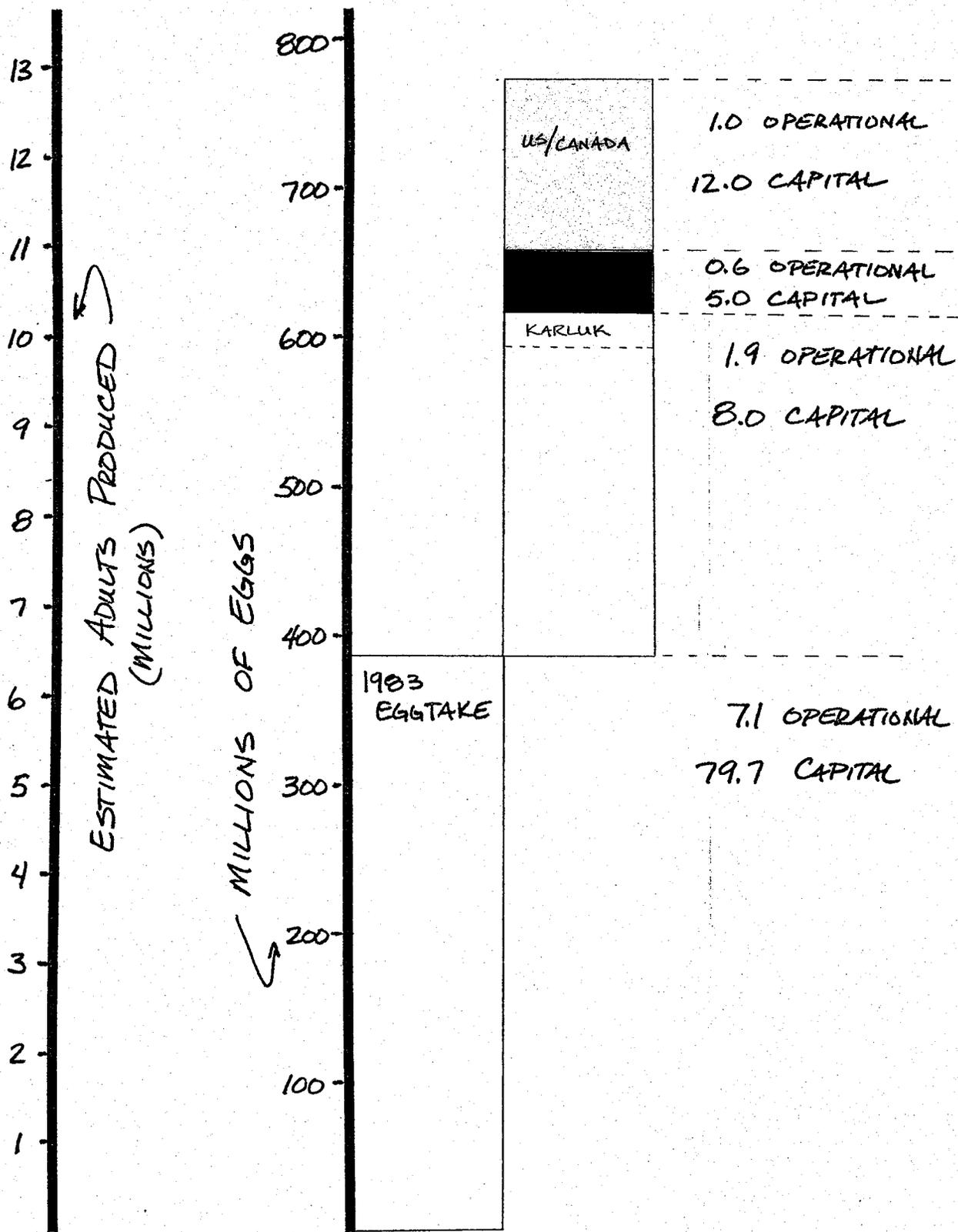
<sup>2/</sup> CIP project 27.

<sup>3/</sup> CIP projects 28 & 50.

<sup>4/</sup> Operational funds not approved by OMB.

<sup>5/</sup> Amount needed for FY 84 supplemental.

<sup>6/</sup> CIP needed for statewide equipment. Projects 36,37 & 44.



	<u>CAPITAL COST</u>	<u>OPERATIONAL COST</u>	<u>CUM. OPER. COST</u>	<u>VALUE</u> <u>1/</u>	<u>CUMMULATIVE VALUE</u> <u>1/</u>
EXISTING PROGRAM	79.7	7.1	7.1	13.5	\$ 13.5
INVESTMENT PROGRAM	8.0	1.9	9.0	19.1	\$ 32.6
ADD RUSSELL CREEK HATCHERY	5.0	0.6	9.6	2.1	\$ 34.7
ADD U.S./CANADA HATCHERIES	12.0	1.0	10.6	11.6	\$ 46.3

1/ BASED UPON 1982 EX-VESSEL PRICES

## Summary and Recommendations

### Consideration 1. Governors Hatchery Investment Strategy (Page 3)

Recommendation: Complete existing hatcheries and fund their operation.  
Cost \$8 million CIP and \$2 million operations. Benefits 10.4 million fish worth \$32.4 million annually.

Decision:

### Consideration 2. FY 84 Supplemental request \$718.3 (Page 12)

Recommendation: Prepare request.

Decision:

### Consideration 3. Russell Creek Hatchery Repair (Page 22)

Recommendation: Select option 2 - approve \$5 million CIP and \$400.0 operational.

Decision:

### Consideration 4. Enhancement - U.S./Canada Negotiations (Page 32)

Recommendation: None?

Decision:

### Consideration 5. FY 85 Capital Budget (Page 44)

Recommendation: Fund project 40 for \$201.5 - Fishladder construction

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