ROD KUHN 278-8012

FAX

BARBARA WILSON
→ADMIN. RECORDS TIC.

KAREN KLINGE

U.S.F.S.

EIS
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18

April 19, 1994

To: Rod Kuhn

From: Tim Holder TH

Subject: Minerals Management Service (MMS) Lease Sale 149

Following is the write up the MMS Cook Inlet Lease Sale 149 for use in the cumulative case for the Restoration DEIS.

MMS Lease Sale 149 is proposed to be held in 1996 for the Outer Continental Shelf in Cook Inlet from the north end of Kodiak Island to the north end of the Kenai Peninsula.

The base case in a scenario formulated by MMS projects the following activity over a 30 year period:

3 exploration wells
5 delineation wells
3 production platforms
48 production/service wells
1 shorebase
125 miles of 12 inch pipeline offshore to the Nikiski industrial complex which will self-bury because of turbid conditions
200 million barrels of oil produced

Development of infrastructure and production of oil would include considerable aerial and marine support from a shorebase.

Oil would be utilized locally or sent via tanker to the West Coast of the U.S.

An oil spill of 50,000 barrels is estimated to have a 27 percent chance of occurring at some time over the 19-year period of production.

EIS
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March 28, 1994

To: Rod Kuhn

From: Tim Holder TH

Subject: Economic Analysis by Mike Kavanaugh

I recommend that we request Mike Kavanaugh do additional economic analysis through a whatever administrative means is appropriate. The work to be performed would be to do one run of IMPLAN for a revised Alternative 5 and to run Alternatives 1-5 with breakouts for the sectors of forestry, fisheries, and recreation/tourism. Also time would be for consultation by phone on the overall economic analysis for the Draft Environmental Impact Statement (DEIS) currently being written.

Mike Kavanaugh should be considered for as a sole-source contractor for the following reasons. Mr. Kavanaugh was a subcontractor to Walcoff and Associates for economic analysis. Walkoff and Associates prepared the DEIS in July 1993. Mr. Kavanaugh knows how to run the computer model IMPLAN which produces the primary data for analysis. He therefore can provide a modest amount of additional analysis for substantially lower cost than anyone else.

Mr. Kavanaugh charges $70.00 perhour. I anticipate that this will take not more than 35 hours or $2,4500

Additional background information is as follows. I have reviewed the files on economic analysis for the Restoration DEIS. It appears to me that the economic analysis in the DEIS prepared by Wallcoff and Associates in June 1993 is very much on the right track. This work was done by Mike Kavanaugh as a subcontractor to Wallkoff and Assoicates. He faxed me tables for Alternatives 1-5. These were not in the 1993 DEIS and I had not found in any of the backup material and files. I understand we will have an Alternative 5 which is different than the one analyzed in the July 1993 DEIS.

MG 2/7/24 EIS D

F.S. ECON - ANALYSIS - RESTORATION DOLS

K. Mosher, F. King, C. Cowles, J. Imm; T. Holder.

Kathy → This may go to John Alexander's shop.

Cleve + Jenny will ask Brock what to do

Kathy someone from MMS should contact Paul Bates.

Jenny → will contact Brock + contact

Cleve → what about the TPEC in April?
Jenny → ~~Cleve~~ Fred could back Tim up on that

To Tim

Date _____ Time 10:20

WHILE YOU WERE OUT

M _____

of _____

Phone No. _____

Area Code Number Extension

TELEPHONED		PLEASE CALL	
CALLED TO SEE YOU		WILL CALL AGAIN	
WANTS TO SEE YOU		URGENT	
RETURNED YOUR CALL			

Message Call Rod Kuhn

278-8012

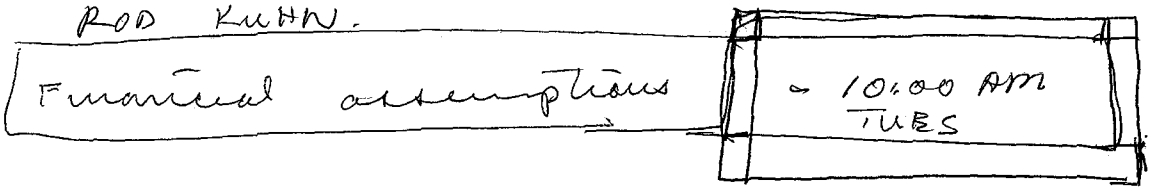
Meet
10:00 AM Tues

Operator me

WYWO 34

EIS
D

ROD KUHN.



EIS
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The Forest Service (FS) has requested MMS for complete an economic analysis component for a draft environemntal impact statement (DEIS). The DEIS is for the restoration plan under the direction of the Trustees Council established as a result of the Exxon Valdez Oil Spill. The FS, represented by Rod Kuhn, has requested the assistance of Tim Holder, MMS Economist.

A scope of work is to be prepared by the FS by about March 1.

The first product for the economic analysis will be due about April 10 for internal staff review, coordination and revisions. The DEIS is due to the printer April 20.

There will be a review and revision period sometime in the following months.

The FS has requested 2 months of time for FTE Economist Holder or 4.67 pay periods. They have budgeted $14,000 plus 15 % general administrative overhead which results in a total of $16,100.

K:\users\ess\forest.th

EIS
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Oil Spill Oil

278-8012
ASOF MON.

MON - mtg w/ Fred 10:00 AM

(1)

ROW KUHN - USFS

2/2/94

Draft Rest. Plan CNov 30 93

vague document

Brochure refers → alternatives

No NEPA.

Contract w/ consult. in Virginia —
but didn't address rest. plan.

Starting EIS. — Programmatic — not site specific directly.

Each alt. Prog. —

eg. salmon beddies,

purchase land & preserve timber —
not to destroy habit.

$600 million for restoration as a whole.

econ effects of disbursement of funds
sport fisheries opportunities.

Many assumptions.

1 contractor used FORPLAN analysis —
came out

(2)

draft to printer by May 23 –
DRAFT EIS. doc.
Inter agency review, Aug 20 –

Economist Meet w/ Team.

Mainly biologists on team.

Kuban + did major clean section for subsistence + restorations.
try geogist / engineering / nat resources. / bio.

MMS editors are "contracted" to do editing of the EIS.

Salary cost + 15% → interest

Walkoff – work. – Fired look at background behind docs.

Tuesday 1/1/94 — CLEVE / TIM — 2/2/94 — Office of Env. Pol. + Compliance, Regl Env. Officer – Alaska — EIS D

TOM _____

271-5011 FAX 271-4102 1689 'C' St Room 119 99501

Paul Gates called in regard to getting economist help for the EIS that the Forest Service has the lead on for the restoration plan.
The budget is approved and $ set aside for $ reimbursible to agency doing work; i.e. MMS.

The project is to start ASAP – like Feb & March so it looks like a TDY for 2 months. Could call him for more information.
I need to get back to Paul as soon as possible so let me know soon.
Could be good experience for someone and an important leading to new jobs.

IRV
2-1-94

I TOLD IRV I'D GET BACK TO HIM 2/2/94

Jon

CALL 9AM

PAM Bergman works for Paul Gates.

FEBRUARY

E15
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SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1	Ground Hog Day 2	Last Quarter Moon 3	4	5
Waitangi Day (N.Z.) 6	7	8	9	New Moon 10	11	Lincoln's Birthday 12
13	Valentine's Day 14	15	Ash Wednesday 16	17	First Quarter Moon 18	19
20	President's Day Observed 21	Washington's Birthday 22	23	24	Purim 25	Full Moon 26
27	28					

JANUARY

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

MARCH

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

The Luncheon
Claude Monet

Printed on recyclable paper

MARCH

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1	2	3	Last Quarter Moon 4	5
6	Labour Day (W.A., Aust.) Eight Hour Day (Tas., Aust.) 7	8	9	10	11	New Moon 12
13	Labour Day (Vic., Aust.) 14	15	16	St. Patrick's Day 17	18	19
First Quarter Moon Spring Equinox 20	Canberra Day (A.C.T., Aust.) 21	22	23	24	25	26
Full Moon Palm Sunday Passover Begins 27	28	29	30	31		

FEBRUARY

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28					

APRIL

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

The Jetty at Le Havre
Claude Monet

EIS
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Author: Thomas C. Warren at ~MMS-Anchorage-AK
Date: 2/2/94 7:44 AM
Priority: Normal
TO: Mail List - #.All LE personnel
Subject: Forest Service Job - Economist
---------- Message Contents ----------

The Forest Service is looking for an economist to assist them in preparing an EIS for a restoration plan (I don't know which plan). The job is temporary and may last about two months. The individual would be detailed to work on the EIS; an individual is needed very soon as the project is scheduled for work in February and March. Money is set aside to pay the individual.

Irv reports that there is the possibility that this may turn into a permanent job at the GS-12 level. If you think that you may qualify and are interested, let your supervisor and me know TODAY 2/2/94, before 2:00 pm. I realize this message provides you with few details about this job but it's all I have right now.

Tom

C 12

D

Michael Kavanaugh
Research Economist
160 Wood Street
Batavia, OH 45103
Voice/Fax (513) 732-3939
Tax ID: 280-48-5668

March 28, 1994

TO: Tim Holder
FROM: M. Kavanaugh

SUBJECT: Additional Analysis

I am interested and available to continue working on estimating the economic changes from spending the settlement funds. I would continue on the same terms as my previous work. The terms were time and materials with a ceiling on total spending. My rate is $70.00/hr. I do not anticipate any charges for materials (e.g., data, books, phone, regular mail) unless there is a request for overnight mail or for travel. In any event, I would notify you in advance of any charges for materials. I think I could analyze another alternative in about 2 days of work. I would suggest setting a high ceiling ($5000) in case there is more work than anticipated.

Please call if you have questions.

Table 1
Analysis of Alternatives
1990$ Millions

Base

Sector	Final Demand $	Industry Output $	Employee Comp. $	Property Income $	Value Added $	Employment #
Agriculture, Forest and fisheries	340.7	462.1	28.1	151.3	189.6	8,091
Mining	6,061.0	6,199.0	502.4	2,835.3	4,745.4	6,335
Construction	1,246.1	1,420.3	495.1	363.9	861.9	11,751
Manufacturing	948.6	1,072.4	226.5	82.0	319.5	7,655
Transportation, communication and Utilities	1,933.3	2,265.9	543.7	768.5	1,405.1	13,795
Trade	1,125.7	1,252.6	752.6	138.2	1,035.4	33,790
Fire	988.3	1,137.4	245.4	337.3	734.1	11,329
Services	2,018.0	2,514.4	944.9	546.2	1,507.8	48,779
Government	2,105.6	2,151.5	1,934.2	76.5	2,010.7	46,428
Misc. Special sectors	44.5	12.3	0.0	33.4	33.4	0
	16,811.8	18,487.9	5,673.1	5,332.7	12,843.0	187,953

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513

Alternative 1

Change from Base for direct, indirect and induced effects from 10 yrs of
Adminstration
Monitoring
Balance in endowment

	Final Demand $	Industry Output $	Employee Comp. $	Property Income $	Value Added $	Employment #
Agriculture, Forest and fisheries	0.0001	0.0005	0.0001	0.0001	0.0001	0.01
Mining	0.0047	0.0125	0.001	0.0057	0.0096	0.01
Construction	0	0.019	0.0103	0.0035	0.0139	0.25
Manufacturing	0.0042	0.0182	0.0046	0.0025	0.0072	0.16
Transportation, communication and Utilities	0.0108	0.115	0.0335	0.04	0.0759	0.9
Trade	0.0381	0.0467	0.0276	0.0058	0.0387	1.22
Fire	1.5109	1.6025	0.6277	0.3605	1.0329	21.17
Services	0.5797	0.77	0.2886	0.2205	0.5151	15.07
Government	0.446	0.4565	0.4502	0.0021	0.4522	8.39
Misc. Special sectors	0	0	0	0	0	0
	2.5945	3.0409	1.4436	0.6407	2.1456	47.18

Alternative 2

Change from Base for direct, indirect and induced effects from 10 yrs of
Adminstration
Monitoring
Habitat Purchase w/ respending

	Final Demand $	Industry Output $	Employee Comp. $	Property Income $	Value Adcec $	Employment #
Agriculture, Forest and fisheries	-31.9767	-38.8218	-8.219	-5.2829	-14.6414	-440.02
Mining	0.0652	-0.0427	-0.0034	-0.0197	-0.0328	-0.04
Construction	8.0662	7.3758	2.7049	1.0998	3.8239	64.66
Manufacturing	0.0616	-0.6096	-0.0972	-0.0279	-0.1422	-1.22
Transportation, communication and Utilities	0.1525	0.1721	0.0474	0.0728	0.1219	1.24
Trade	0.5303	0.2352	0.1158	0.0241	0.1489	9.08
Fire	2.5531	2.3244	0.5857	0.1628	0.7677	52.09
Services	6.0367	2.8359	4.6217	-1.1249	3.5008	959.44
Government	0.8094	0.6767	0.7299	-0.0189	0.7109	13.75
Misc. Special sectors	0	0	0	0	0	0
	-13.7017	-25.854	0.4858	-5.1148	-5.7223	658.88

Table 1 (continued)

Alternative 3

Change from Base for direct, indirect and induced effects from 10 yrs of
Adminstration
Monitoring
Restoration
Habitat purchase w/respending

	Final Demand $	Industry Output $	Employee Comp. $	Property Income $	Value Added $	Employment #
Agriculture, Forest and fisheries	-26.5006	-32.6154	-7.2206	-4.1676	-12.4089	-329.49
Mining	0.058	0.0007	0.0001	0.0003	0.0005	0
Construction	8.4277	7.8569	2.9088	1.1774	4.1068	69.56
Manufacturing	0.0546	-0.338	-0.0522	-0.0113	-0.073	-0.67
Transportation, communication and Utilities	0.1355	0.2274	0.0674	0.0847	0.1555	1.85
Trade	0.4721	0.3111	0.1675	0.0367	0.2287	9.9
Fire	2.0687	1.8532	0.4635	0.132	0.6307	41.33
Services	5.1646	2.5365	3.7855	-0.8371	2.9552	766.79
Government	1.5449	1.438	1.4781	-0.0141	1.4637	27.58
Misc. Special sectors	0	0	0	0	0	0
	-8.5795	-18.7276	1.5961	-3.599	-2.9408	586.85

Alternative 4

Change from Base for direct, indirect and induced effects from 10 yrs of
Adminstration
Monitoring
Restoration
Spill Prevention
Habitat purchase w/respending

	Final Demand $	Industry Output $	Employee Comp. $	Property Income $	Value Added $	Employment #
Agriculture, Forest and fisheries	-19.6192	-24.7403	-5.8949	-2.8028	-9.5563	-196.74
Mining	-0.0049	-0.0071	-0.0006	-0.0033	-0.0055	-0.01
Construction	9.8829	9.4421	3.5334	1.4229	4.9813	84.53
Manufacturing	-0.0043	-0.0838	-0.0118	-0.0005	-0.015	-0.35
Transportation, communication and Utilities	-0.0111	0.1149	0.0395	0.0411	0.0812	1.24
Trade	-0.0396	-0.0274	-0.0181	-0.0025	-0.0249	-0.62
Fire	0.9571	0.6805	0.1185	0.0569	0.1801	17.08
Services	0.8213	-1.1042	-0.2672	-0.4726	-0.7336	-11.42
Government	3.1135	3.0314	3.0877	-0.0204	3.0674	57.09
Misc. Special sectors	0	0	0	0	0	0
	-4.9043	-12.6939	0.5865	-1.7812	-2.0247	-49.2

Alternative 5

Change from Base for direct, indirect and induced effects from 10 yrs of
Adminstration
Monitoring
Restoration
Spill prevention
Habitat purchase w/respending

	Final Demand $	Industry Output $	Employee Comp. $	Property Income $	Value Added $	Employment #
Agriculture, Forest and fisheries	-10.8969	-14.4444	-3.9257	-1.221	-5.7457	-53.27
Mining	0.0141	0.0792	0.0063	0.0363	0.0606	0.06
Construction	9.5556	9.3257	3.5227	1.4124	4.9598	84.31
Manufacturing	0.0131	0.2471	0.045	0.0238	0.0739	0.69
Transportation, communication and Utilities	0.0326	0.2939	0.0952	0.0925	0.1937	2.79
Trade	0.1147	0.292	0.1763	0.0411	0.2579	6.39
Fire	0.7365	0.6119	0.1365	0.0486	0.1998	13.82
Services	1.2018	0.3652	0.2312	-0.0244	0.2187	13.31
Government	4.041	4.0056	4.0223	-0.0059	4.0162	74.46
Misc. Special sectors	0	0	0	0	0	0
	4.8127	0.7762	4.3098	0.4034	4.2344	142.58

Michael Kavanaugh 513-732-3939

3-28-94

TO: TIM Holder

907-271-6507 - MMS

907-258-9860 - SPill

7 pages including cover

Kavanaugh, Mike

703-522-8521
Fax same number
Ohio number is:
513-732-3939

EIS
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United States Department of the Interior

TAKE PRIDE IN AMERICA

MINERALS MANAGEMENT SERVICE
Alaska Outer Continental Shelf Region
949 E. 36th Avenue, Room 110 Anchorage, AK 99508-4302

FAX TRANSMITTAL SHEET

To: MIKE KAVANAUGH

Date: 3-28-94

Time:

No. of Pages: 7
(Including this page)

Agency/
Company:

City/State: OHIO

Telefax No: 513-732-3939

Please Confirm receipt of this telefax with above person at (907) 271-6080.

From: TIM HOLDER

Minerals Management Service
Leasing and Environment Office
949 East 36th Avenue, Room 603
Anchorage, Alaska 99508-4302
(907) 271-6614.

Telefax No.: (907) 271-6507.

Message: 6 pages from "WALCOFF Draft EIS" follow.

EIS
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Michael Kavanaugh
Research Economist
160 Wood Street
Batavia, OH 45103
Voice/Fax (513) 732-3939

March 28, 1994

TO: Tim Holder
FROM: M. Kavanaugh

SUBJECT: Tables

Attached are the tables I prepared to summarize the analysis I performed for the Walcoff Draft EIS. Table 1 has six panels (Base, Alternative 1, Alternative 2, Alternative 3, Alternative 4, and Alternative 5). The "Alternative" panels are stated in terms of the change from Base and are either in millions of 1990 dollars or number of man-years of employment. Table 2 has seven panels and states selected percent changes from base.

There are some differences between the percent changes for Alternative 2 reported in the text on page IV-80 and those reported in Table 2. The explanation is: the changes in Table 2 have as their numerator the change from the base and have as their denominator the sector value (e.g., final demand change by sector in agriculture for alternative 2 is -31.97/340.7 = -9.39%). The changes reported on Page IV-80 have the same numerator (the change from base) but have as their denominator the regional value (e.g.,final demand change by sector in agriculture for alternative 2 is -31.97/16811.8 = -.19%). The measures reported in the text were made in Anchorage by members of the working group. The group members thought the measure reported in the text was the more appropriate.

Please call if you have questions.

EIS
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Michael Kavanaugh 513-732-3539

3-28-94

TO: TIM Holder

907-271-6507

7 pages including cover

EIS D

Exxon Valdez Oil Spill Trustee Council

Restoration Office
645 G Street, Suite 401, Anchorage, Alaska 99501-3451
Phone: (907) 278-8012 Fax: (907) 276-7178

MEMORANDUM

To: Simpson Building EVRO Staff

From: Molly McCammon PAW FOR
Director of Operations

Date: March 25, 1994

Subj: Response to Public Inquires on Small Parcel Process

When members of the public call with questions or nominations for the Small Parcel Process, as a rule, these calls should be referred to either the Public Information Specialist, L.J. Evans or to OSPIC. The following message should be courteously conveyed:

- The small parcel process is being developed, and should be completed by April.
- Once a small parcel process is approved, it will include a nomination process. That process will be made public via public notice.
- Information regarding parcels and nominations should be held until the public notice goes out regarding nominations. We are not prepared at this time to receive this information

If you have any questions, please contact me. All written inquiries should be date stamped and given to Rebecca Williams for filing.

$600

EIS
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Alt 1 No Action

Alt 2

.91 x $600 M	Habitat Protection
.00	Gen Dept
.05 x	Monitoring + Research
.04 x	Admin + Pub. Inf.

Alt 3

.75	H.P
.12	Gen Restoration
.07	M + R
.06	A + P.I.

Alt 4

.50	H.P.
.35	G.R.
.08	M + R
.07	A + PI

Alt 5

.35	N.P.
.48	G.R.
.10	M + R
.07	A + PI.

EIS
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JOBS
INCOME
OUTPUT.

NO ACTION

Assume $600 spent by purchasers of Timber + Minerals over 10 yrs on

$600M x FPM. =

$ FISH x COMFISH. MULT.

$ REC/TOUR x REC/TOUR MULT.

[~~[illegible]~~] x $600 M x [Forestry Products Multiplier]

[Com FISH / SPORT FISH } MULT.]

[RECREATION / TOURISM } MULT.]

SUBSISTENCE

EIS
D

Timber Sales

Habitat Protection benefits — Comm fish + Sports fish + recreation + tourism + subsistence

Restoration — benefits " " "

Passive Uses

Ser

Habitat Protection -

Restoration

EIS
D

November 11, 1992
(revised)

TO: Sharon Saari (copy to Ken Rice)
FROM: M. Kavanaugh

SUBJECT: IMPLAN description for DOI

This memorandum briefly describes IMPLAN, a computer model for regional, economic impact analysis. It provides an overview of the approach, major assumptions, data and results for a hypothetical project.

IMPLAN is a linear programming, input-output, computer model developed by the United States Department of Agriculture to perform regional impact analysis. The model is versatile and allows analysis of economies as small as one county and its associated industries. Although there is a capability to disaggregate to 528 industries, it is more telling to group industries in about ten sectors. IMPLAN, because it estimates direct, indirect and induced effects, has been used to fulfill the Council on Environmental Quality regulations for environmental impact statements.

Impact analysis proceeds as follows. First, the regional economy experiences a change, up or down, in demand. Next, the changes in spending and respending caused by the demand change are traced. Finally, direct, indirect and induced changes in income, population and employment are stated.

Direct effects are changes caused by the immediate effects of the demand change. Indirect effects are the changes in the industries that supply the directly affected industries. Induced effects are the changes in spending patterns caused by the income changes generated by the direct and indirect effects.

For example, the purchase of timber rights decreases forest product industry output (direct effect). In turn the industries supplying the forest product industry see their sales fall (indirect effects). Finally, the decrease in demand causes income and employment to fall, reducing spending in the economy (induced effects). This, of course, works in reverse. The purchase of timber rights increases the income of the owners of these rights. They spend this income and increase the demand for

the products they buy (direct effects). In turn, the industries supplying the directly effected industries experience an increase in demand (indirect effects). Finally the increase in demand increases employment and income and stimulates the economy in general (induced effects).

At its simplest level, the change in income and employment is the product of the demand change (e.g., purchase timber rights) and a multiplier. Multipliers are specific to a region and industry. They reflect three complications. First, not all new income will be spent; some will be saved. Second, some new spending will occur outside the study region. Third, only some new spending within the region creates jobs. IMPLAN considers these complications when it computes multipliers.

Estimating multipliers requires data and a description of the economy. The data are the national input-output matrices that show the transactions among industries and final demand. The national matrices are stepped-down to the county level by using county population and employment data, and ratios of employment to output. At present the benchmark national data is for 1985, although 1990 data is in preparation and may be available in the first quarter of 1993. The vintage of the data is not crucial to the analysis since changes are best reported as percentages. Vintage is important only to the extent that significant, regional, structural changes in the economy occurred between 1985 and 1990.

Data that show the dollar volume flow of commodities among industries and to final demand describe the economy. The data are presented to show the absolute and relative contribution each industry makes to every other industry and to final demand. To change this data collection framework to a tractable, analytical model requires simplifying assumptions about production and markets.

The key assumptions are that there is one output for each industry and each industry has one output. There is a fixed way of making commodities and there can be no substitutions. There are only constant returns to scale, to make twice as much of something, double all inputs. Adjustments are timeless; technology does not change.

Obviously, the assumptions do not depict the economy as it is known today; but, use of these assumptions does not lead to gross error. There are several reasons for this. Technology changes are adopted slowly; constant returns are observed more often than not; industry and commodity can be redefined to mean bundles of goods; and the time and path of adjustment is usually not crucial. If there is interest in adjustment paths, there is another model--IPASS--that may be used.

A limitation of any economic analysis is that only market commodities are included and they are valued at market prices. Non-market activities such as barter; subsistence fishing/hunting; experiences whose price is essentially zero; or the willingness-to-pay for the simple existence of wilderness is not addressed. The implication of this is simply that economic analysis should be supplemented with other, non-market analyses such as contingent valuation.

An impact analysis of a restoration alternative has three parts. A description of the alternative, a baseline description of the economy and results.

The essential elements needed to model an alternative are: How much; of What; from Whom; for What. The hypothetical restoration option is: remove $50 million of trees from production in the forest product industry by purchasing $25 million (in timber rights) from nonprofit corporations and $25 million from private estates and trusts. The recipients invest the proceeds in residential, industrial, and government structures and recreational facilities.

Two regions are considered, one includes Anchorage and the other does not. Each region's baseline economy is shown on Exhibits 1 and 2 in 1985 dollars.

The results are in Exhibits 3 and 4. For the region that includes Anchorage, the purchase of $50 million of trees decreases, by a small amount, the regional economy's reliance on natural resources and increases its reliance on construction and services. Compare industry #1 with industry #66 and #460. Approximately 43 jobs are lost in the timber industry, but this would be compensated by an increase of nearly 500 jobs in other sectors of the regional economy. Overall, regional employment increases .3%; employee compensation increases .3% (the equal increases signal no change in average earnings from labor.) Final demand and value added are unchanged.

For the region that excludes Anchorage the purchase of $50 million of trees decreases, by a small amount, the regional economy's reliance on natural resources and increases its reliance on construction and services. Approximately 48 jobs are lost in the timber industry, but this would be compensated by an increase of nearly 450 jobs in other sectors of the regional economy. Total, regional employment increases 1.5%; employee compensation increases 2.1% (the increases signal a small increase in average earnings from labor.) Final demand and value added are unchanged. These results are only illustrative. By altering investment strategies, larger or smaller changes in income and employment can be obtained.

EX 1

Restoration Option Study Area
$MM 1985 (millions of 1985$)
Base Year Information
10/21/92

Industry	Base Year Final Demand (MM$)	Base Year TIO (MM$)	Employee Comp Income (MM$)	Property Income (MM$)	Total PCW Income (MM$)	Total Value Added (MM$)	Employment Number of Jobs)
1 Agriculture, Forestry & F	551.0985	621.8636	10.1300	262.2534	272.3835	305.6023	6997.00
31 Mining	8054.9220	8465.7930	573.9301	4507.5010	5081.4320	7475.9830	8942.00
66 Construction	1557.9020	1726.0840	523.6720	310.9619	834.6339	851.6898	13878.00
83 Manufacturing	664.7484	833.4996	127.8620	91.7754	219.6374	234.7898	4659.00
447 Transportation, Comm. & U	1885.8180	2301.6270	450.8949	760.6172	1211.5120	1388.3680	11243.00
460 Wholesale & Retail Trade	967.0153	1238.7790	577.1870	195.5683	772.7555	877.2776	20583.00
464 Finance, Insurance & Real	915.7360	1408.0100	275.4690	497.4077	772.8766	1052.1700	12793.00
471 Services	1627.9450	2205.0920	893.6330	489.4847	1383.1180	1461.3340	44030.00
516 Govt. Enterprise & Speca	3732.6040	3777.5510	1364.7190	2261.9450	3626.6650	3626.6650	37752.00
Total	19956.7900	22578.3000	4797.4970	9377.5160	14175.0100	17273.8300	160877.00
Population = 29590.							

8 x 2

Restoration Option Study Area - w/o Anchorage
$MM 1985 (millions of 1985$)
Base Year Information
10/20/92

Industry	Base Year Final Demand (MM$)	Base Year TIO (MM$)	Employee Comp Income (MM$)	Property Income (MM$)	Total PoW Income (MM$)	Total Value Added (MM$)	Employment Number of Jobs)
1 Agriculture, Forestry & F	377.3683	427.7899	6.4531	168.8539	175.3070	196.5497	5741.00
41 Mining	1022.5190	1132.6530	79.0700	597.8258	676.8958	997.0515	1236.00
66 Construction	267.6855	295.7485	89.8020	53.1958	142.9978	145.9212	2378.00
91 Manufacturing	401.6193	470.7438	63.8410	46.7477	110.5887	117.9286	2239.00
447 Transportation, Comm. & U	444.4266	528.2041	84.2070	184.8508	269.0578	320.6662	2170.00
460 Wholesale & Retail Trade	90.7173	133.4571	64.1370	19.1634	83.3004	93.2259	2313.00
464 Finance, Insurance & Real	96.8148	113.9207	21.3350	43.7288	65.0638	87.3774	980.00
471 Services	197.7547	258.6137	98.0560	56.0516	154.1076	163.8039	4880.00
516 Govt. Enterprise & Specia	480.5459	483.7025	197.4860	270.8658	468.3518	468.3518	4843.00
Total	3379.4520	3844.8330	704.3871	1441.2840	2145.6710	2590.8760	26780.00
Population = 63600.							

6 x 4

Total direct, indirect and induced effects on
Restoration Study area without Anchorage
in millions of 85 dollars
purchase trees from non-profits and estates and trusts
invest proceeds from sale in buildings and recreational facilities
Scenario INV3 : Total Effects 11/ 9/92

Industry	Final Demand (MM$)	TIO (MM$)	Employee Comp Income (MM$)	Property Income (MM$)	Total PoW Income (MM$)	Total Value Added (MM$)	Employment Number of Jobs)
1 Agriculture, Forestry & F	-38.4347	-43.4047	-.4557	-21.8879	-22.3437	-25.4835	-47.85
41 Mining	.1246	.3012	.0207	.1597	.1804	.2655	.32
66 Construction	33.3811	32.5286	10.2353	4.9244	15.1598	15.4699	257.38
91 Manufacturing	.2263	1.0398	.2573	.0769	.3344	.3574	11.75
447 Transportation, Comm. & U	.8540	1.4443	.4262	.4657	.8916	1.0243	9.95
460 Wholesale & Retail Trade	4.7218	5.7730	2.9523	.6168	3.5690	3.8942	114.84
464 Finance, Insurance & Real	.1945	.1602	.0723	.0098	.0820	.0990	2.95
471 Services	1.3157	2.9593	1.1687	.7365	1.9053	1.9972	48.86
516 Govt. Enterprise & Specia	.7192	.7272	.2082	.1106	.3189	.3189	7.98
Total	3.1025	1.5289	14.8853	-14.7875	.0977	-2.0571	406.18
Change in Population =	965.						

EIS
D

October 23, 1992

TO: All
From: M. Kavanaugh

Subject: Sample Results

Attached is an impact analysis using IMPLAN. It has three parts: a restoration option; a baseline, and results.

The restoration option is: remove $50 million of trees from production by purchasing $25 million (in development rights) from nonprofit corporations and $25 million from private estates and trusts. The recipients invest the proceeds in residential industrial, and government structures and recreational facilities. The essential elements needed to model an option are: How much; of What; from Whom; for What. Absent this information I cannot conduct an impact analysis using IMPLAN.

I do not know how much acreage $50 million will buy. I can conduct an impact analysis without knowing but I would prefer to know since it may provide a useful check on the analysis. For example, I received a document from Ken Rice on 10/20/92 that has quotes for fee simple purchases. A representative price is about $1000/A for large purchases. Thus $50 million buys 50,000 A. The same document has calculations for the purchase of development rights. These calculations suggest a price of $10,000/A. Thus $50 million buys 5000 A. This is odd. Fee simple should cost more. Nevertheless, this is the type of information needed to quantify how much $50 million will buy.

The regional economy is shown as the shaded area on Exhibit 1. The area's baseline economy (also called the no action alternative) is shown on Exhibit 2 in 1985 dollars. This is an artifact of the model and there is little that can be done about it except to report the changes as percentage changes or do a FEW hand calculations to restate the results in 1992 dollars. It is possible, but not desirable, to dissolve the region and the sectors into their components.

The results are in Exhibit 3. Briefly, the purchase of $50 million of trees from nonprofits and private estates and trusts decreases, by a small amount, the regional economy's reliance on natural resources and increases its reliance on construction and services. Compare industry #1 with industry #66 and #460. Overall, regional employment increases .3%; employee compensation increases .3% (the equal increases signal no change in average earnings from labor.) Final demand increases .02% and value added decreases .00% respectively. Probably, these results are within the margin for error for this model.

These results illustrate the type of analysis and should not be considered indicative of the final results. Indeed, I have altered investment strategies and produced larger and smaller

changes in income and employment (not shown). Again, the goods and services purchased with the funds received from the sale of development rights or simple fee purchase is a key influence on the results.

These results and the final results will have at least two important limitations. First, they are not estimates of an option's economic benefit; nor do they indicate in anyway the approximate size of an option's economic benefit. Second, they do not address, at all, barter transactions or subsistence hunting and fishing. The results are simply estimates of the direct, indirect and induced changes in regional income and employment likely to accompany the transactions described above.

ARCTIC OCEAN
ALASKA
NORTH SLOPE
NORTHWEST ARCTIC
YUKON-KOYUKUK
NOME
WADE HAMPTON
BETHEL
DILLINGHAM
LAKE AND PENINSULA
BRISTOL BAY
MATANUSKA-SUSITNA
ANCHORAGE
VALDEZ-CORDOVA
KENAI PENINSULA
FAIRBANKS NORTH STAR
SOUTHEAST FAIRBANKS
Fairbanks
Anchorage
KODIAK ISLAND
ALEUTIANS EAST
ALEUTIANS WEST
CANADA
U.S.
PACIFIC OCEAN
ALEUTIANS WEST
0

$M4 1985 (millions of 1985$)
Base Year Information
10/21/92

Industry	Base Year Final Demand (MM$)	Base Year TIO (MM$)	Employee Comp Income (MM$)	Property Income (MM$)	Total PoW Income (MM$)	Total Value Added (MM$)	Employment Number of Jobs)
1 Agriculture, Forestry & F	553.0985	621.8636	10.1300	262.2534	272.3835	305.6023	6997.00
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66 Construction	1557.9020	1726.0840	523.6720	310.9619	834.6339	851.6898	13878.00
83 Manufacturing	664.7484	833.4996	127.8620	91.7754	219.6374	234.7898	4659.00
447 Transportation, Comm. & U	1882.8180	2301.6270	450.8949	760.6172	1211.5120	1388.3680	11243.00
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516 Govt. Enterprise & Specia	3732.6040	3777.5510	1364.7190	2261.9450	3626.6650	3626.6650	37752.00
Total	19956.7900	22578.3000	4797.4970	9377.5160	14175.0100	17273.8800	160877.00
Population = 295900.							

Apr 19, 1993

137

E25
D

TO: Matt McMillen
FROM: M. Kavanaugh

SUBJECT: Sector descriptions

IMPLAN's classification system is based on systems defined by the Bureau of Economic Analysis (BEA-Department of Commerce) and the Standard Industrial Classification (SIC) used by the Office of Management and Budget (OMB). The analysis is conducted using 528 industries and the results are aggregated into ten sectors. In SIC nomenclature the sectors are collections of Groups. The SIC assigns a 2-digit number to every Group. Within a Group are 3-digit and 4-digit Industries.

1. Agriculture, Forestry and Fishing - These businesses engage in agricultural production, forestry, commercial fishing, hunting and trapping and related services. Agricultural production firms produce crops and livestock. Forestry firms operate timber tracts, tree farms, forest nurseries or perform forestry services. Fishing, hunting and trapping covers commercial fishing, fish hatcheries, fish and game preserves and commercial hunting and trapping. This sector includes SIC groups 01 to 10.

2. Mining - These businesses extract minerals occurring naturally. Mining includes quarries, wells, milling and other preparations commonly done at mine site. This sector includes SIC groups 11 to 14.

3- Construction - These businesses build new work, additions, alterations and repairs. This sector includes SIC groups 15 to 17. (The SIC reserves 18&19).

4. Manufacturing - These businesses mechanically or chemically transform materials or substances into new products. The materials and substances are produced by other sectors (e.g., agricultural, forests and fisheries) or other manufacturers. This sector includes SIC groups 20 to 39.

5. Transportation, communication and utilities - These businesses provide to the public or to other businesses passenger and freight transportation, communication services, electricity, gas, steam, water or sanitary services. The U.S. Postal Service is included here. This sector includes SIC groups 40 to 49.

6. Trade - These businesses retail merchandise to households or wholesale it to retailers; other wholesalers; to other businesses; or act as agents or brokers in buying or selling goods. This sector includes SIC groups 50 to 59.

7. Finance, Insurance and Real Estate (FIRE) - These businesses engaged in the fields of finance, insurance and real

estate. This sector includes SIC groups 60 to 67. (The SIC reserves 68&69).

8. Services - These businesses provide a variety of services for individuals, businesses, governments, and other organizations. Examples include hotels, amusements, health, legal, engineering and other professional services. This sector includes SIC groups 70 to 89.

9. Government - This sector includes the legislative, judicial, administrative and regulatory activities of Federal, State, local and international governments. Government-owned businesses are classified according to the activity in which they are engaged. This sector includes SIC industry groups 90 to 97.

10. Misc. Special Services - These cannot be classified in any other industry.

Apr 19, 1993

TO: Matt McMillen
FROM: M. Kavanaugh

SUBJECT: Significance of modeling results

IMPLAN's data is from the 1990 U.S. Census, the U.S. Department of Labor and the Bureau of Economic Analysis of the U.S, Department of Commerce. Although the data comes from sampling, the results approximate the characteristics of the population. The Census, for example, uses a 1 in 6 sample. That is, although the Census counts everyone, one in every six persons answers additional questions including those about employment. Repeating the sampling changes the results. Probability theory shows that the results of the repeated sampling vary around the population value in a normal distribution.

The purpose of sampling is to make statements about the population. Since a sampled value varies randomly with repeated sampling (e.g., person A gets the long form rather than person B) it is fair to ask how accurate is the sampled value. Probability theory shows that for a normal distribution 95% of the sampled estimates are within (plus or minus) 1.96 standard deviations of the population characteristic. In other words, a value greater than plus or minus 1.96 standard deviations is not the result of a random event (i.e., the result of one person receiving the form rather than another person).

These considerations suggest assessing the significance of the modeling results by reference to the standard deviation of the underlying data. The impact procedure: first, samples baseline regional employment; then, spends the civil settlement; then, calculates regional employment. A significant change occurs if the two employment estimates differ by roughly two standard deviations. Alternatively, assume employment changes are assessed by sampling employment before and after the spending of the civil settlement. The two estimates do not differ significantly if they are within two standard deviations. Any change in sampled employment could be attributed to a random factor such as one person receiving the form rather than another.

The standard deviation for 1990 employment in the boroughs of Anchorage, Kenai, Kodiak and Valdez-Cordova is 684. A significant change in regional employment is an increase or decrease of 1368. Any change between zero and 1368 could be the result of sampling not of settlement spending.

Table 2
IMPLAN Inputs
10 yr annual 1990$ (000)

	1	2	3	4	5
Admin	$544	$2,178	$3,267	$3,811	$3,811
FG	50%	50%	50%	50%	50%
SLG	50%	50%	50%	50%	50%
Monitor	$2,722	$2,722	$3,811	$4,356	$5,445
FG	33%	33%	33%	33%	33%
SLG	34%	34%	34%	34%	34%
UNIV	33%	33%	33%	33%	33%
Restore	$0	$0	$6,534	$13,612	$17,968
SLG			33%	33%	33%
FISH			34%	34%	34%
CONSTRUCT			33%	33%	33%
Spr	$0	$0	$0	$5,445	$8,167
SLG				100%	100%
Habitat	$0	$49,547	$40,835	$27,224	$19,056
REAL ESTATE		0.4%	0.3%	0.3%	0.5%
FORESTRY		70%	76%	96%	96%
HOUSEHOLDS		30%	23%	3%	4%
yield	$1,791	$0	$0	$0	$0
BANKS	100%				
respend	$0	$33,259	$26,249	$14,959	$10,478
SECURITIES		23%	25%	32%	32%
CONSTRUCT		24%	27%	33%	32%
S.SERVICES		23%	25%	32%	32%
HOUSEHOLDS		30%	23%	3%	4%

The dollar value change is determined by: the lump sum amount of the remaining funds; the percent allocation each category receives of the remaining funds; a deflator to turn the settlement's 1993 dollars into IMPLAN's 1990 dollars; and a factor that turns the lump sum amount into an annual amount. The amount and the allocation are from the Summary p.4, 29 respectively. The change in the fixed-weight price index changes the 1993 amounts into 1990 amounts. The spending occurs over a ten year period; see the Summary p. 4, 30, 37. These computations are in Table 1.

The last task prepares inputs for IMPLAN. This involves taking the annualized, 1990 dollar allocation and distributing it over industries. Although the distribution is straightforward three comments follow. Table 2 gives the results.

The first comment involves Section 7(i) on ANCSA that requires the sharing of proceeds from timber sales by one Native Corporation with the other Native Corporations. Accordingly, spending from the proceeds is less than the amount received from habitat purchase.

The second comment notes that most habitat purchases are from stocks of commercial timberland. This is based on "Analysis of Habitat Protection Acquisition Alternatives in Draft Restoration Plan." Timberland purchases reduce economic activity more than purchases of non-commercial land for two reasons. First, timberland provides regional employment, non-commercial land does not. Second, spending the funds received from habitat acquisitions increases employment if the spending occurs within the region. The sharing requirements of ANCSA represent a strong leakage from the regional economy. Proceeds from non-commercial land are not shared and are more likely to remain in the regional economy.

The third comment involves the endowment. Impact analysis involves a demand change and a multiplier matrix. The dollar value of an endowment's corpus is different from the demand change for bank output. Service sector output is difficult to measure and measuring bank output is no exception. For this analysis bank output is the endowment's yield. The yield is determined by applying a 3.5% risk-free rate to the endowment where the risk-free rate is the rate on 90 day U.S. Treasury bills.

Table 1
Alaska Restoration Planning Alternatives Allocation
(percent)

	1	2	3	4	5
Admin	1.00%	4.00%	6.00%	7.00%	7.00%
Monitor	5.00%	6.00%	7.00%	8.00%	10.00%
Restore	0.00%	0.00%	11.00%	[illegible]	[illegible]
Habitat	0.00%	91.00%	75.50%	[illegible]	[illegible]
SPR	0.00%	0.00%	0.00%	10.00%	15.00%
Balance	94.00%	0.00%	0.00%	0.00%	0.00%
	100.00%	100.00%	100.00%	100.00%	100.00%

Source: Draft Exxon Valdez Oil Spill Restoration Plan
Summary of Alternatives for Public Comment
p.[illegible]

Alaska Restoration Planning Alternatives Allocation
(000) 1993

	1	2	3	4	5
Admin	$8,100	$24,400	$[illegible]	$48,700	$48,700
Monitor	$[illegible]0,100	$[illegible]	$48,700	$[illegible]	$61,000
Restore	$0	$0	$[illegible]	$1[illegible]	$[illegible]
Habitat	$0	$[illegible],100	$457,500	$308,000	$[illegible]
Acquire	$0	$[illegible]	$1,800	$1,000	$1,000
Commercial	$0	$[illegible]	$[illegible]	$[illegible]	$[illegible]
Non-com	$0	$1[illegible],100	$107,000	$10,000	$7,[illegible]
SPR	$0	$0	$0	$[illegible]1,000	$[illegible]1,[illegible]
Balance	$[illegible],400	$0	$0	$0	$0
	$810,000	$810,000	$810,000	$810,000	$810,000

$810 million available for restoration from
Draft Exxon Valdez Oil Spill Restoration Plan
Summary of Alternatives for Public Comment p.4

Alaska Restoration Planning Alternatives Allocation
(000) 19[illegible]

	1	2	3	4	5
Admin	$[illegible]	$21,779	$[illegible]	$[illegible],113	$[illegible],113
Monitor	$27,2[illegible]	$27,[illegible]	$[illegible],11[illegible]	$[illegible]	$[illegible],447
Restore	$0	$0	$[illegible]	$1[illegible],11[illegible]	$17[illegible]
Habitat	$0	$[illegible]	$[illegible]	$[illegible]	$1[illegible]
Acquire	$0	$1,7[illegible]	$1,[illegible]	$[illegible]	$[illegible]
Commercial	$0	$[illegible],312	$[illegible]	$[illegible],417	$1[illegible]
Non-com.	$0	$14[illegible],47[illegible]	$[illegible]	$[illegible]	$[illegible]
SPR	$0	$0	$0	$[illegible],447	$[illegible]1,[illegible]71
Balance	$[illegible]11,[illegible]	$0	$0	$0	$0
total	$[illegible]44,471	$[illegible]44,471	$[illegible]44,471	$[illegible]44,471	$[illegible]44,471

This table restates the allocation in 19[illegible],
the year on which IMPLAN is based. The restatement uses
the fixed-weight price index.

Alaska Restoration Planning Alternatives Allocation
Annual for 10 yrs. (000) 19[illegible]

	1	2	3	4	5
Admin	$[illegible]44	$[illegible],178	$[illegible]	$[illegible],911	$[illegible],911
Monitor	$[illegible],7[illegible]	$[illegible],72[illegible]	$[illegible],611	$4,[illegible]	$[illegible],44[illegible]
Restore	$0	$0	$[illegible]	$1[illegible],[illegible]1[illegible]	$17,[illegible]
Habitat	$0	$[illegible],847	$40,[illegible]	$[illegible]7,[illegible]	$1[illegible]
Acquire	$0	$17[illegible]	$1[illegible]	$[illegible]	$[illegible]
Commercial	$0	$[illegible]4,731	$[illegible]1,161	$[illegible]	$1[illegible]
Non-com.	$0	$14,[illegible]47	$[illegible]	$[illegible]	$[illegible]
SPR	$0	$0	$0	$[illegible]	$[illegible],167
Balance	$[illegible]1,1[illegible]	$0	$0	$0	$0
total	$[illegible]4,447	$[illegible]4,447	$[illegible]4,447	$[illegible]4,447	$[illegible]4,447

IMPLAN requires annual inputs and gives results as
annual changes.
Civil settlement is paid over a ten yr period p.4
Funds will be spent over a ten year period p.[illegible], [illegible]7

TO: Matt McMillen
FROM: M. Kavanaugh

SUBJECT: Industries with initial changed final demand

IMPLAN is a demand-driven model. It combines user-supplied changes in final demand with a multiplier matrix to provide information about regional changes in income and employment. While the multiplier matrix incorporates the structural, technological and trade related information, the user must supply the information about the final demand change.

The necessary information about the final demand changes are: which commodity or industry has the demand change and the dollar value of the change. The industry involved is important since the multiplier matrix reflects the strengths of inter-industry linkages and linkages vary in strength across industries. The dollar value gives the change's strength.

The "Draft Exxon Valdez Oil Spill Restoration Plan Summary of Alternatives for Public Comment" (Summary) distributes the dollars from the civil settlement over six categories: administration and public information, monitoring and research, general restoration, habitat protection, spill prevention and response and balance. Unfortunately, these categories are not IMPLAN industries. So, spending must be translated into IMPLAN industries.

The translations are:

Administration and public information - Federal and State and local government

Monitoring and research - Federal and state and local government and universities

General restoration - State and local government, private fisheries and construction

Spill prevention and response - State and local government

Habitat protection - Forestry, real estate, households

Balance - Banking

Respending of Habitat Protection - Securities, social services, construction, households

The last category "Respending of Habitat Protection" does not appear in the Summary. It is part of the modeling exercise. Habitat purchases put dollars in the hands of resource owners. This category specifies a spending pattern for these funds that saves/invests part (securities, construction) and consumes part (social services).

Rod Kuhn
Gary Scruggs - FWS
Rick - FS
Bill Hauser - ADFG

EIS
D

RESTORATION - DEIS
TEAM mtg
3/23/94

EDITING/FORMATTING

1. 88 TMS 10 RMN.
2. Listings - no #'s, just dashes, unless order # is significant.
3. U/L cases

CH. IV

1. Short/long term needs to be addressed.
   Define short + long terms for the resource
   under analysis.

Deadlines.

By alternative or by resource/species/presence

Mon April 11 - John Farrell arrives + Starts his review.
Tues " 15 " " leaves.

EIS
D

MBG 3/23/94

Ch IV -

Ch. II describes alternatives + assumptions.
So can refer to Ch II in Sec IV ~~for~~ in discussion of each resources / species / activity.
Geography of ~~the~~ 4 subregions of the EVOS area.
~~Need~~ to be done on different geog. for each res.
I.D. any map — curto needs

Habitat acquisition + groups. -
Meeting on Tues March ~~23~~ 29 — possibly.

Large
Parcels on maps on wall. mean Rod's
Rated in priority → for acquisition. ~~also~~ potential effect on ecosystem res.
These are large parcels - which will lead to small parcel acquisition
In Ch II -, a description of the listing of the parcels - ~~spec~~ small + large
With Maps.

E18
10

"CONFIDENTIAL LITIGATION SENSITIVE ATTORNEY WORK PRODUCT"

RPWG Meeting
Economics Workshop
November 7, 1991

Attendees:

Susan MacMullin	EPA	(202) 260-6412
Jeff Hartman	ADF&G	(907) 465-4160
Mike Mills	ADF&G	(907) 267-2369
Lewis Queirolo	NOAA/NMFS	(206) 526-6364
George Peterson	USDA/FS	(303) 498-1885, 1886
Sandy Rabinowitch	DOI/RPWG	(907) 257-2653
John Strand	NMFS/RPWG	(907) 789-6601
Art Weiner	ADNR/RPWG	(907) 278-8012
Ken Rice	USFS/RPWG	(907) 278-8012
Mark Brodersen	ADEC	(907) 465-2610
Gardner Brown	Univ. of WA	(206) 523-7915
Alex Swiderski	AG's Office	(907) 269-5274
Peg Kehrer	OSIAR/ADF&G	(907) 465-4125
Stan Senner	ADF&G	(907) 278-8012
Regina Sleater	DOI	(907) 271-4131
Barbara Iseah	CACI/RPWG	(907) 278-8012

Meeting began at 9:15

Stan - gave an overview of restoration planning; stated that Alex would speak on legal aspect of economic analysis; this is an initial scoping meeting; restoration group needs to get a better understanding of economic point of view; a secondary purpose is that we have three proposals put forth by the Department of Fish and Game to carry out economic restoration studies; need to evaluate those proposals; no members of federal economics team have seen the proposals; copies are being prepared; will give time to scan them; don't need to do a detailed critique but see if they fit with the emerging program; the Restoration Work Group consists of seven agencies which have worked together since January 1990 as a planning team and have identified a wide array of restoration options and concepts; are now evaluating individual ideas; focus of our efforts was doing this in the context of litigation and ultimately would have prepared a damage claim; basic job is still to identify options and formulate a restoration plan which involves public participation; past public involvement had been kept to a minimum prior to the settlement; the charge in the settlement is still to restore, replace, acquire resources and enhance

Stan diagramed the following as a sequence to look at different restoration options:

Injury - resource
service

Susan - do we have to do grossly disproportionate?

Comment - may not even be relevant

Alex - addresses inadvertent or accidental discharge

Comment - disproportionate rule benefits the spiller

Ken - the parallel is back to the EIS process where you have a reasonable set of options; have used the red face test in proposing projects; need some bounds for what suite of alternatives that we put forth

Comment - regarding GDT, does the law describe cost as social cost?

Alex - don't know

Stan - does GDT involve a valuation of the damaged or undamaged resource?

Alex - value resource and service; don't know how you would separate them

Comment - can't understand why you would want to consume more value than you produce, is it because of political restraints?

Art - enhancement constraints may force us into this; an example would be recreation enhancement opportunities

Mark - another example is a unique salt marsh that would cost a lot to fix; in terms of value to ecosystem, may be more important than value in dollars and cents

Alex - in the preamble to the proposed regs in terms of cost benefit:

> the trustee should consider the relationship of the expected costs of an alternative to the benefits from the implementation of that alternative, both in terms of the recovery of the resource and the benefits to the public that would result. This consideration is not intended to be a straight cost/benefit analysis. The trustee should weigh circumstances unique to each assessment against the expected alternative costs. Such circumstances might include seasonal conditions, e.g., long winters resulting in a short field sampling season requiring extra personnel, overtime, and high travel costs. All relevant consideration that might affect the weighing of costs and benefits should be taken into account by the trustee on a case-by-case basis. The trustee will document this consideration within the Restoration and Compensation Determination Plan that is subject to

Art - run options through decision tree

Stan - it is a series of decisions made in sequence but not spread out over ten years

10 minute break

Stan - the RPWG is working on a process by which we are identifying the relevant habitats; showing which ones are on public and private land and ultimately enabling us to make recommendations to the trustees; need to translate from the conceptual down to the specific which will enable us to get down to cost

Jeff - had an opportunity to see some projects generated by biologist for fisheries and can't see where benefit side is equal; if cost effective analysis is to be a meaningful exercise, you have to make sure two projects have identical benefits

Comment - RPWG has to bring economists some very precise information about the physical attributes, status of resource, level of recovery and rate at which that recovery will occur for them to tell RPWG about the cost benefit; will be hard for economists to do much in a quantitative way otherwise

Mark - that would be requesting a level of understanding of the ecosystem that we don't possess

Comment - can't definitively determine cost benefit unless very precise about benefit scheme

Art - if we decrease the recovery time, is that a benefit?

Comment - would have to see an explicit example

John - are getting some information from a contract dealing with estimating

Art - Alternatives are no action, management action and direct intervention action

Comment - can tell us difference in cost and productivity; one in dollars and one physical units; have trick ways of computing

Ken - putting in a net present value

Comment - the problem in reality is that the political decision will be made; all they can do is summarize the information in a useful way

Comment - the one advantage is that the goal is defined to pre-spill equilibrium; can determine relative performance of options

Stan - when cost is incurred and when the benefits are realized should be noted; maintenance operating cost and at what intervals are also information we desire to have; another is planning and compliance cost;

Stan diagramed the following for project costs:

Internal Project Costs

Planning/compliance
Construction/acquisition
when incurred
when benefit realized (rate of benefit accrual)
maintenance
  -interval
administrative/fixed

Benefit
service restored
when realized
  -rate of accrual

External Project Costs

Costs	**Benefit**
lost use	services restored
-technical spill overs	-joint products
	-additional benefits

Community/Regional Impact

who gains?
who loses?
how much?

Art - would we need to provide a no action scenario?

Comment - yes

Comment - some of these lost uses are lost property, and others are de facto losses that are not recognized under the law

Comment - you can't collect what you never owned

Comment - be careful of double counting

Stan - do we need to look at economic impacts?

Art - would be politically impossible not to

. Department of the Interior
erals Management Service
ska OCS Region

East 36th Avenue, Room 110
horage, Ak 99508-4302

ial Business
~~ity for Private~~ Use $300

Tim Holder
mms
949

MS

BUSINESS CARD

313
D

USDA Forest Service
R-10 Alaska Region

ROD KUHN

Interagency ~~Subsistence~~ Coordinator

278-8012

Office of Subsistence Management
3301 C. Street, Suite 202
Anchorage, AK 99503

(907) 271-2325
FTS 868-2325
FAX 271-2335

[redacted]

Karen Klinge 278-8012

Barbara Iseah "

↖ keeps EIS Admin. record.

[redacted]

E15
D

EVOS Restoration

Economic Impact of Alternatives 1-5

1. Jobs

Jobs by sector: fishing, lumber, tourism, other categories

Jobs by local area (Valdez, Seward, Kodiak, etc.) by economic sector

2. Income

Aggregate income of individuals

Income to land owners, primarily Native coroprations which would recieve payments for land purchased with restoration funds.

3. Economic value of resources restored (birds, marine life, etc.) for which a dollar value is not normally assigned. Their value as part of a natural system and their aesthetic value.

4. Economic benefits to subsistence users, recreationists (hikers, boaters, and general outdoor recreationists for improved views of landscapes and wildlife viewing including killer whales, sea otters, harbor seals, bald eagles, and various seabirds), tourists, commerical fisheries, sport fisheries.

Economic benefit of restoration of passive uses. Passive use of resources includes the appreciation of the aesthetic and intrinsic values of undisturbed areas, the value derived from simply knowing that a resource exists, and other nonuse values.

General restoration and habitat protection and acquisition have these types of benefits.

4. Value of subsistence resources to subsistence users.

5. Taxes

Property Tax

Income Tax

Revenues to the State

++

about $600 million to be spent

b:restoration disk:economic

Draft:
July 21, 1989

Tim Holder

Micro IMPLAN

Software Manual

List of Authors: Greg Alward
Eric Siverts
Doug Olson
John Wagner
Dave Senf
Scott Lindall

Compiled and Edited by Judy Olson

A changing s[illegible]ottom of the screen will follow the progre[illegible]. When the inversion is complete, IMPLAN will return you to the main menu.

Type I Multipliers:

A Type I multiplier is the direct effect (produced by a change in final demand) plus the indirect effect divided by the direct effect. Increased demands are assumed to lead to increased employment and population with the average income level remaining constant.

The Leontief inverse (Type I multipliers matrix) is derived by inverting the direct coefficients matrix:

$$[\text{Indentity matrix} - \text{Regional IxI Coefficient matrix}]^{-1}$$

The result is a matrix of total requirement coefficients (the amount each industry must produce in order for the purchasing industry to deliver one dollar's worth of output to final demand).

Type III Multipliers:

The IMPLAN Type III multiplier is a modification of the Type III multiplier developed by Miernyk. Type III multipliers compare direct, indirect and induced effects to the direct effects generated by a change in final demand (direct + indirect + induced, all divided by direct).

The Type III induced effects are quite different from the induced effects of a Type II multiplier. A Type II multiplier captures induced effects by assuming a linear relationship between income and consumption changes. The assumption is that an increase in output will raise income levels, and therefore increase household spending proportionately. Population is assumed stable. The result is a much larger total effect. This exageration is useful for identifying where an impact occurs, but will not give an indication of the degree of the effect. Type II multipliers are not available from IMPLAN.

To minimize the over-estimation that occurs with a linear consumption function, IMPLAN estimates induced effects based on the changes in employment and population. The resultant multipliers are typically five to fifteen percent smaller than Type II multipliers.

EIS
D

ID Team Meeting Agenda

Time: 1:00 pm **Date:** March 23, 1994

Location: Rod's Office or TC Room if available

Agenda:

Presenter:	Topic:	Time:	Decision/Info:
Rod	Review agenda	0:15	D
Rod	Formating in Documents for EIS (Headers/Footers; Fonts; Tables; Spaces; Tabs)	0:20	I
Rod	Discuss Chapter 4 writing. (Short/Long-term Impacts)	0:30	I/D
Rod	Where we are and how will we get everything done.	0:15	I/D
Rod	Intermediate deadlines:	0:30	D

1. No Action : 3/28
2. Alt 2: 4/1
3. Alt 3: 4/4
4. Alt 4: 4/8
5. Alt 5: 4/11

Additions:

Bin Items:

Critique:

EIS
D

3/22/94

Rod Kuhn

April 10 — John Farrell. review
↕ revisions
April 22 — to T.C.

Jeremiah.
John Day
Tongass Land Mgt Team. → F.S. 586-8706
Chugach - Montague Island. →
AK Land Comp. →

Team Mtg 1 pm — Wed
MARH

3/22/94

ROD KUHN

EIS

D

deal w/ it as generalities.

Subsistence

Wolcoff ⇒ too much detail.

Comm Fish

Tourism

Passive uses

~~$4.0 Million~~

EIS
D

FS. Restoration DEIS

3/8/94

(1)

ROD KUHN,

former draft of DEIS — by Walcott → "very fuzzy"

correct spelling

"Restoration Planning Workgroup" of the Trustees Council held hearings on "brochure" newspaper

↓

NOV 93 → Restoration Plan — "blue book"

$350,000 for DEIS → F.S. lead, FWS.

Trustees Council

DOI → AS Parks and Wildlife → Frampton.
Curt McVee
Paul Gates, AK Env. Officer.

Trustee Council – Duties

Assumptions

1. Monitoring + Research – no effects
2. Regulatory actions of other agencies (e.g. restrictions on subsistence fishing) no effect

3. Habitat acquisitions – $200 - 3,500/ac
evaluation of 800,000 acres. –
map shows areas evaluated.

{acquiring timber rights, mineral rights →
leasing recreation for eg. Eyak Corp members.

Dec 91 → 1st pmts out of $900,000 ~~million~~
Exxon pd fine then reimbursed
for expenditures of settlement (c. $15 m)
+ other exp. = $250m. –
↓
to fed/state agencies for their clean up costs.
FY92, 93, 94 Trustee.
{92 – $19 mil
93 $52 "
94 $36 "

T.C.

did not clear alt since "monitoring" + restoration.

From News pap April 93

Alt - I - no action

II habitat acq. (no rest.) - 90% $

III

IV

~~V~~ deleted + replaced w/ "blue book"

↓

econ analysis → $750m.

distrib effect of all expenditures incl. admin, eg. $ local labor mkt. travel by T.C.C + administrators.

Team finished by Mar 11

Team has written Ch. III - Affected Env. ✓

Tim needs to write team Ch. III. +
also Ch. IV - Analysis of effects.

Walcott did EMOLAN runs which may be useful
cash flow & put in "blue book"

Apparent resource users →
Subsistence, commfish, tourism, etc.?

April 26 Trustee Council - get prelim draft ~~fin~~ DEIS ?
review
- 2 mths review

May 03 — to printer.

June 17 notice of availability of DEIS
45 days - review —
Aug 1 —
Sept 30 - ~~on~~ notice of availability of final EIS

before ~~the~~ elections

Wadcoff ⇒ 4 out of 30 references in bibliog. recon. contractors to ↑ is avail. by phone.

"proposal" being forwd to T.C. by Rod
1 page transmitted + 15 pages of attachments
awaiting sign of approval by T.C.

The public responses – doesn't include (as expressed in pub comment) that ———

Public Advisory Committee to T.C. (under Ad. Adv. Com. Act) has been estb'd

"minimum flows" to habitat ⇒ the logic has been used in last 3 yrs.

Spill – by PWS + lost to SW, eg - Seward hatch but # is ~~unclear~~ distributed inversely.
Kenai River – salmon restoration: has rec'd about $1 million/yr.

(C)

List of budgeted expenditure - FY 92, 93, 93

(describe ~~in~~ einer. Dec 91)

Quantify effects of expenditure of FY 92, ~~93~~3, + 94.
AND proposed alts.

Possible to Incorporate by ref.

OK to use MMS BK model—
from CEQ.

Barbara- [Iseah] Wilson ✓ got married - 4th Floor - knows where
box of Wilcoff stuff is .. / State Spill Staff.
Karen KLINGE 278-8012

F.S. → additional information that may not be in box
Ken Rice, - FS- 271-2751 - - - Chalats B~~ly~~

Conclusions TH make up scheme of level of effects
make as definitive as possible.

Estimate Value of —

e.g. Com- salmon — (from)

e.g. valuation of subsistence. (but Walcoff [illegible]

→ to detailed. +

EIS
D

2/6/94 ①

4 T.T. Team members

+ B.T.

Fred Clark, F.S. - Subsistence (+ socio-cult.), birds, etc

Karen Klingle F.S.

Contract PD EIS by Walcott Assoc. VA.
met w/ disfavor - and contract ended.

Econ. section may be usable — reusable.
Bio - was too mushy/vague.

Mike Cavanagh — Economist from Walcott.
IMPLAN Runs were done + should be in file.

ADFG/FRED → fish biologists will be 1 of 4 F.T.

HISTORY

April – ~~June~~ Aug 93 – alternatives were prepared. comment period.
published in brochure for public review.
In midst – Walcott – terminated.
Public comment was part of plng processes
Est'd % of $ from settlement

NOV 23-93 - Proposed Action for DEIS
alternatives were formulated from pub. plng process.
Programmatic doc. –
Not site specific.
Analyze typical projects that would fit
under each alt. +
eg. are fish ladders practical?
very rough cost estimates.

Consensus is to
R.F. = $900M originally.
2 yrs of expenditure from R.F. (Restoration Fund)
have been made w/o plan. c. $300 m.
for land acquisition - Eg. Kachemak Bay. + Afognak Bay.
siwash, litigation. etc.
Seward Marine Science, Cordova, etc.
~~Now~~ from 94 forward ~~add~~ a max of $70/yr.

milestone: Oct 94 – Decision
by a "committee of the Terrestrial Council"
which = FS, ~~Dept~~ Dept. of Commerce, State.

Tech Analysis

Ron: technical analysis is up to TH.
funding + time is not adequate. So do the
best we can w/ time + $ avail..
Need to have econ. box ✓

Com. Fish Harvest

assume cash value.

Less tangible → acquired habitat.
so diminished resource may be tourism -
tourist cannot go - or

Danes + Moore — study just on tourism.

TOURISM

WHERE (Reg'l distn) will $ flow through community

FRED → IMPLAN — May or May not be most appropriate tool
need to get F.S. IMPLAN.
Tony Nakazawa —
Div. of Rural — DCRA —
Gold —— UC Berkeley.

Tabloid – map ~~on~~ back – geog. has been excluded S.W. since.

Jim walkoff Ch 3 – look to 1st. for pt. of departure "Draft 5/21/93" – ~~on~~ disk. of big chunks look good. "Admin Record" is about 2 boxes.

remaining $

There will be a desire to buy habitat - est. 80% of
so can effect of lost lodge. in or
lost timber volume.

Rank + rate parcels. about this DEIS. will be in
the draft.

Large % of land buyout will be
on Kodiak + PWS.

W.P. Windows is adequately compatible - words + graphics

Hoft works in B/W not color.

↓

including imported graphics

Schedule

c. April 10? due for my econ piece for 1st review.

April 20 - due date for ~~my piece~~ whole piece to printer -

Funding

2 mos of my salary has been allocated from budget.
$14,000 → 4.67 Pay Periods.
salary + 15% "general admin" - "overhead.
$16,100

Ron K. will work w/ Paul Gates ~~...~~ + NMS admin on admin + $ aspects of my.

Tim should get cost code.

2/2/94

E1s
D

PAUL GATES → Trustee Council for DOI.

271-2325
US. FS. TEAM LEADER / RON KUHN
\ did sabbatical on EIS

Restoration – Exxon –
outline w/ teams –
not great detail.
review dates on
audit at ~~the~~ mms spill –
MMS reimbursed for work #19,000

I ~~also~~ FWS
MMS-Edit
NOAA
State agencies.

Kuhn met w/ Farrell

Hr ~~Turner~~ Gates + FS. → to formalize arrangement w/ MMS

Hr already. done for mms editing.

let Paul know about arrangements.

E15 D

Reforms would have Forest Service pay its way

By SCOTT SONNER
The Associated Press

WASHINGTON — Congress should revamp a budget system that rewards the Forest Service for logging over other uses of lands, and the agency should demand more money for the natural resources it sells in national forests, a House panel was told this week.

"The Forest Service needs to work closely with the Congress to obtain a better return for the sale or use of natural resources on its land," said James Duffus of the General Accounting Office, the investigative arm of Congress.

Duffus, who is in charge of natural-resource management issues for the GAO, said the Forest Service receives most of its operating funds from receipts retained from timber sales and from appropriated funds linked primarily to timber harvests.

"Therefore in every national forest — even in those where timber harvesting is uneconomic and other activities and uses are more valuable — forest managers are overwhelmingly dependent on timber sales for funds," he said.

Ross Gorte, a natural-resources specialist for the Congressional Research Service and a project director for the Office of Technology Assessment, agreed there are concerns about "the emphasis on physical outputs, especially timber, with relatively little regard to ecosystem conditions and other values of the national forests."

The hearing Tuesday on proposed Forest Service reforms was the first of two scheduled this week before the House Natural Resources subcommittee on national parks and public lands.

"For years we have heard testimony about what is wrong with the Forest Service. Now is the time to end the acrimony and roll up our sleeves to come up with some solutions," said Rep. Bruce Vento, D-Minn., subcommittee chairman.

Randall O'Toole, a forest economist from Portland, Ore., asked the panel to imagine a supermarket whose owners rewarded the manager for selling dairy products no matter what the price, but gave the manager no reward for selling anything else.

Since dairy products provide the only reward, it wouldn't be long before the market was stocked mostly with dairy products, he said.

"Of course, the store's losses would skyrocket as the manager responded to the incentives to lose money by selling more at lower prices," O'Toole said.

"This is the situation in the national forests today. Forest managers are rewarded for losing money on timber sales, but are given little reward for recreation, wildlife or watersheds," he said.

The GAO has completed more than 70 audits related to the Forest Service over the past five years.

"The infrastructure of buildings, roads, trails, bridges, developed sites, water and sewer systems, dams and other facilities constructed to provide access to or make use of natural resources on lands — approaching $200 billion in value — is in a growing state of disrepair and the condition of lands is deteriorating," Duffus said.

At least $644 million is needed to eliminate maintenance backlogs and reconstruct trails and develop recreation sites, he said.

The GAO said the Forest Service is short of money partly because it sells some timber at prices lower than it costs to harvest the trees.

Depending on what costs are included, the agency lost between $35.6 million and $112 million on below-cost timber sales in 1990, the GAO said.

The Congressional Budget Office concluded taxpayers would save $230 million if logging stopped in three of the Forest Service's regions where, "on average over the last decade, cash expenditures have exceeded cash receipts by a 3-1 ratio," Duffus said.

Skiing also fails to bring in as much money as it should in national forests, he said.

"The ski fee system does not, as required by law, ensure that the Forest Service receives fees that are based on fair market value," he said.