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SELECTED ANALYSES OF THE "CREMO PLAN"

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Revenues Available: Different Transitional Withdrawal Rates

The first 2 figures show how the revenues available for appropriation under the Cremo Plan during the transition period are influenced by changing the withdrawal percentage. (All spreadsheet analyses follow the text.)

Figure 1. shows the amount available each year from the fund (in 1993 billion \$) if the assumptions used in the demonstration of the plan (attachment A) prove correct. These include a 10% nominal return on the fund with 4% inflation, initial balance of \$16.3 billion, and Alaska Department of Revenue Fall 1993 Midcase petroleum revenue projections. After falling for a decade, the amount available from the fund begins to increase in 2007. (Case 1.)

Figure 2. shows how a different transitional withdrawal rate changes available revenues. There is a tradeoff between how low the annual withdrawal goes before "bottoming out", and the subsequent withdrawal that can be maintained. The case in Figure 2. "bottoms out" about \$ 50 million higher than the demonstration case depicted in Figure 1., reducing the fiscal squeeze in the mid years of the next decade. The cost of this is a slightly lower withdrawal amount in all subsequent years (about \$25 million lower in 2010). (Case 2.)

This suggests the transitional withdrawal rates should be chosen with explicit recognition of this tradeoff.

Revenues Available: Unexpected Revenues

Figures 3 and 4 show how available revenues are impacted if the Cremo Plan is implemented on the assumption of moderate resource revenues and resource revenues turn out to be larger than expected.

Figure 3. repeats the annual withdrawal from Figure 1. and contrasts it with available revenues in the event that the Department of Revenue high case scenario for petroleum revenues proved to be correct. (Neither analysis includes future petroleum settlement money.) This shows that with higher petroleum revenues the geometrical transitional withdrawal rate results in higher annual withdrawals. However the "bottoming out" becomes more pronounced, and a smoother transition might be preferable. (Case 3.)

Figure 4. shows the transitional rates adjusted for a smoother transition, again at the price of slightly lower annual withdrawals in subsequent years. Furthermore the transitional rates used to create the smoother transition in Figure 4. are not the same as those used in Figure 2. (Case 4.)

This suggests that transitional withdrawal rates based upon one set of revenue assumptions may

not work well if revenue projections prove incorrect. Furthermore it may not be possible to establish a set of withdrawal rate rule that works under a broad range of potential future revenue scenarios.

The Budget Gap Remains with the Cremo Plan

Figure 5. compares the revenues that would be available with adoption of the Cremo Plan with "Maintenance Spending", and shows that a substantial GAP remains. The "income budget" represents annual revenues under the Cremo plan if all assumptions used in developing the proposal prove to be correct. These include the DOR Fall 1993 Midcase petroleum revenue projections, a 10% nominal fund return, 4% inflation, and 12% annual growth in conventional revenues. The assumption on the growth in conventional revenues requires a policy change. (Case 1.)

"Maintenance Spending" consists of both general fund spending (operating, capital, etc.) and the Permanent Fund dividend. It is assumed to grow at the rate of inflation plus the rate of population increase, here assumed to be 1 percent annually.

The Budget Gap is More Sensitive to the Conventional Tax Assumption Than the Return on Investment Assumption

Figure 6. shows the sensitivity of the "income budget" and the GAP to the assumptions about the growth in conventional revenues and the real rate of return (nominal return minus inflation) on the fund. The top "income budget" is a repeat of the line from Figure 5. The next lower "income budget" assumes that there are no new tax initiatives and consequently tax revenues increase at the historical growth rate of 3 percent (nominal \$). (Case 5.) The size of the GAP is quite sensitive to this assumption. The lowest "income budget" assumes no new taxes and also that the return on the Permanent Fund is 5 percent real (after inflation) rather than 6 percent. This is consistent with the historical experience of the fund. (Case 6.) The size of the GAP over the next 15 years is less sensitive to this assumption than the tax revenue growth assumption.

If the Oil Price Stays Low, the Cremo Plan May Provide Little Discipline

Figure 7. compares available revenues with adoption of the Cremo Plan with recurring revenues currently projected by the Alaska Department of Revenue in their fall 1993 Lowcase. The inflation, rate of return and dividend payout assumptions come from the Alaska Permanent Fund Corporation December 1993 Financial Projections. (Case 7.)

In the early years there would be more revenues available under the Cremo Plan than would be available from recurring revenues. (Recurring revenues includes petroleum revenues now deposited annually in the general fund but does not include fund balances, earnings deposited into the earnings reserve of the Permanent Fund, or conventional revenues as defined by Cremo.) For the next several years less revenue would be available.

Figure 8. shows that by the end of the transition phase the Permanent Fund is no larger with the Cremo Plan than it would be if current policies continue. In this case where we assume low petroleum revenues, the two policies have different time patterns of constraint but both get to essentially the same spot by 2010.

If the Oil Price Rebounds, the Cremo Plan Provides More Discipline But it Comes Later

Figure 9. compares available revenues with adoption of the Cremo Plan with recurring revenues currently projected by the Alaska Department of Revenue in their fall 1993 Midcase. The inflation, rate of return and dividend payout assumptions are from the Cremo proposal. (Case 8.)

In the first year there would be more revenues available under the Cremo Plan than would be available from recurring revenues. (Recurring revenues does not include fund balances or earnings deposited into the earnings reserve of the Permanent Fund.) Starting in 1998 the Cremo Plan would impose more discipline because available revenues in that year fall below recurring revenues.

Figure 10. shows that in this case the Permanent Fund grows larger with the Cremo Plan than it would if current policies continue (even with deposit of all available reserves at the start of 1996).

Data from the Department of Revenue and the Permanent Fund Corporation used in these analyses is included as attachment B.

FIGURE 1
WITHDRAWAL FROM FUND

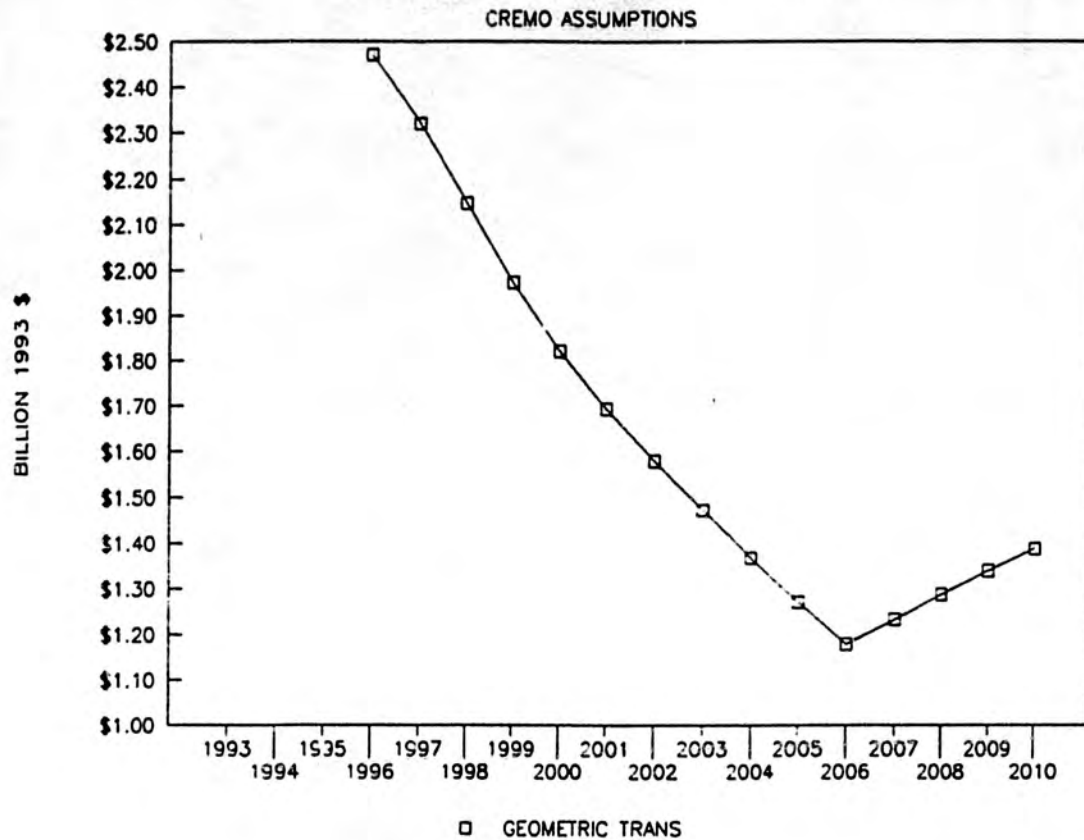


FIGURE 2
WITHDRAWAL FROM FUND

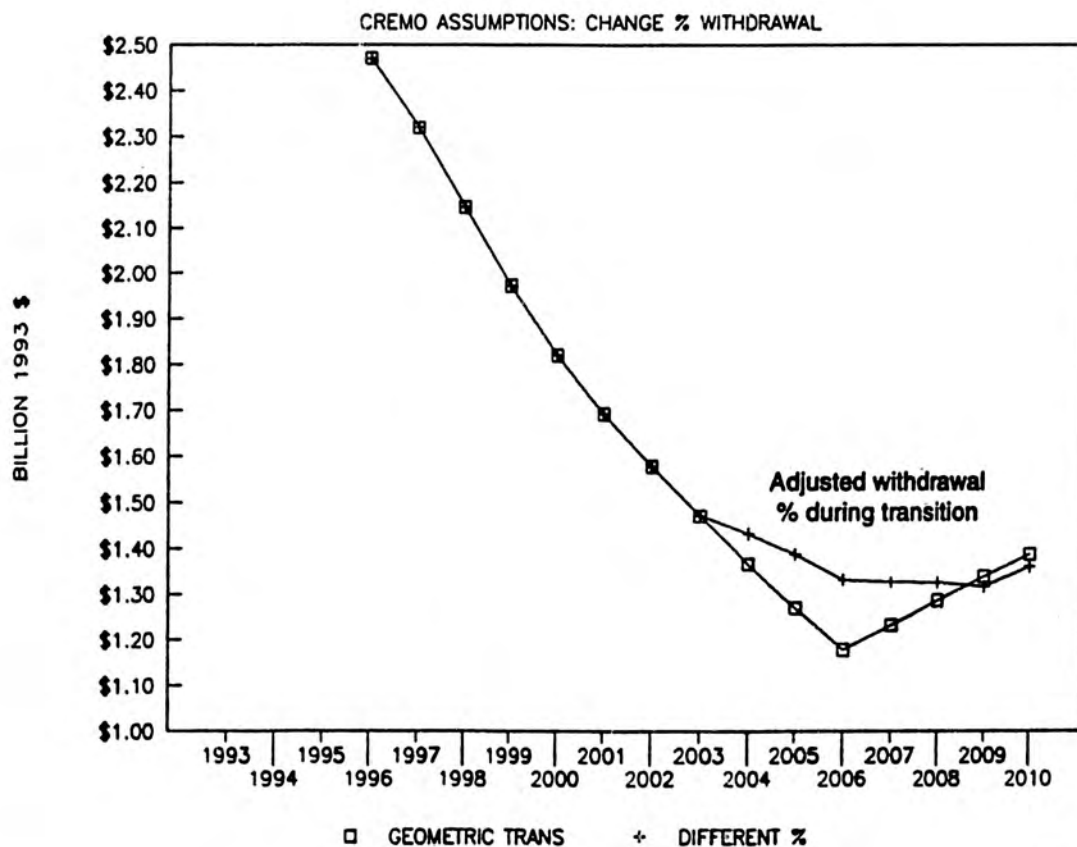


FIGURE 3

WITHDRAWAL FROM FUND: UNEXPECTED \$\$\$\$\$\$

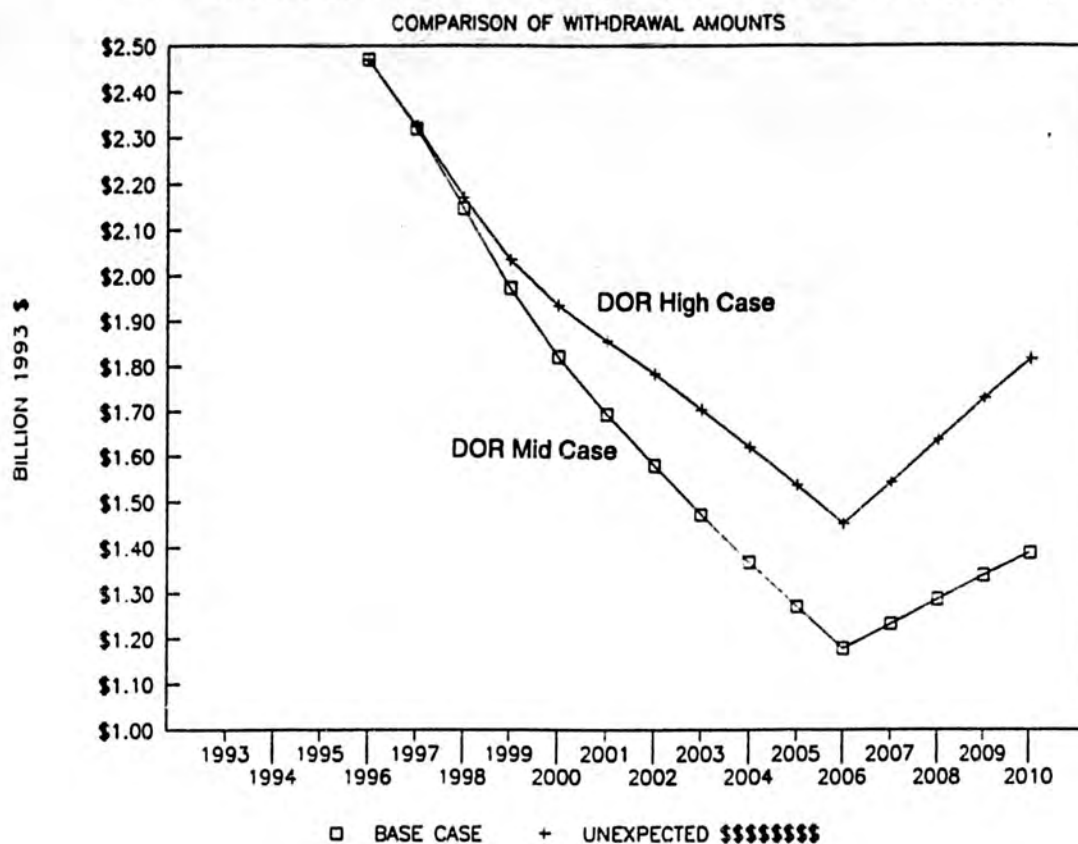


FIGURE 4

WITHDRAWAL FROM FUND: UNEXPECTED \$\$\$\$\$\$

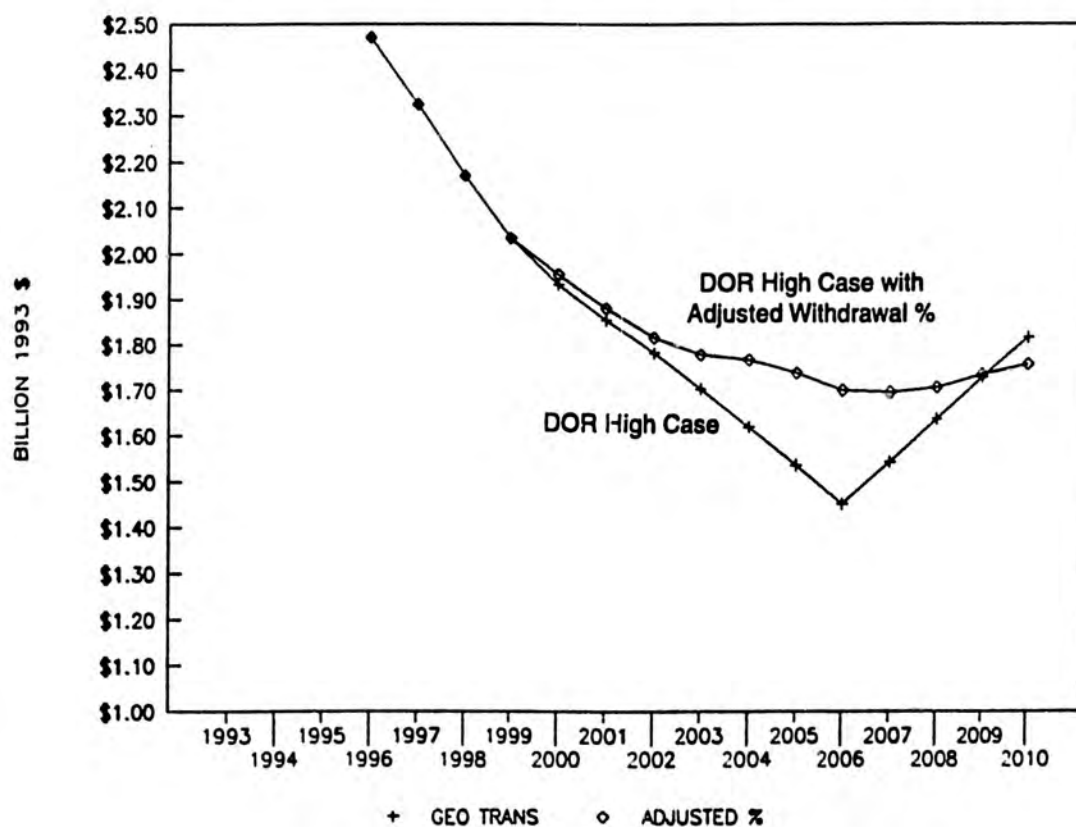


FIGURE 5
BUDGET GAP WITH PF DIVIDEND

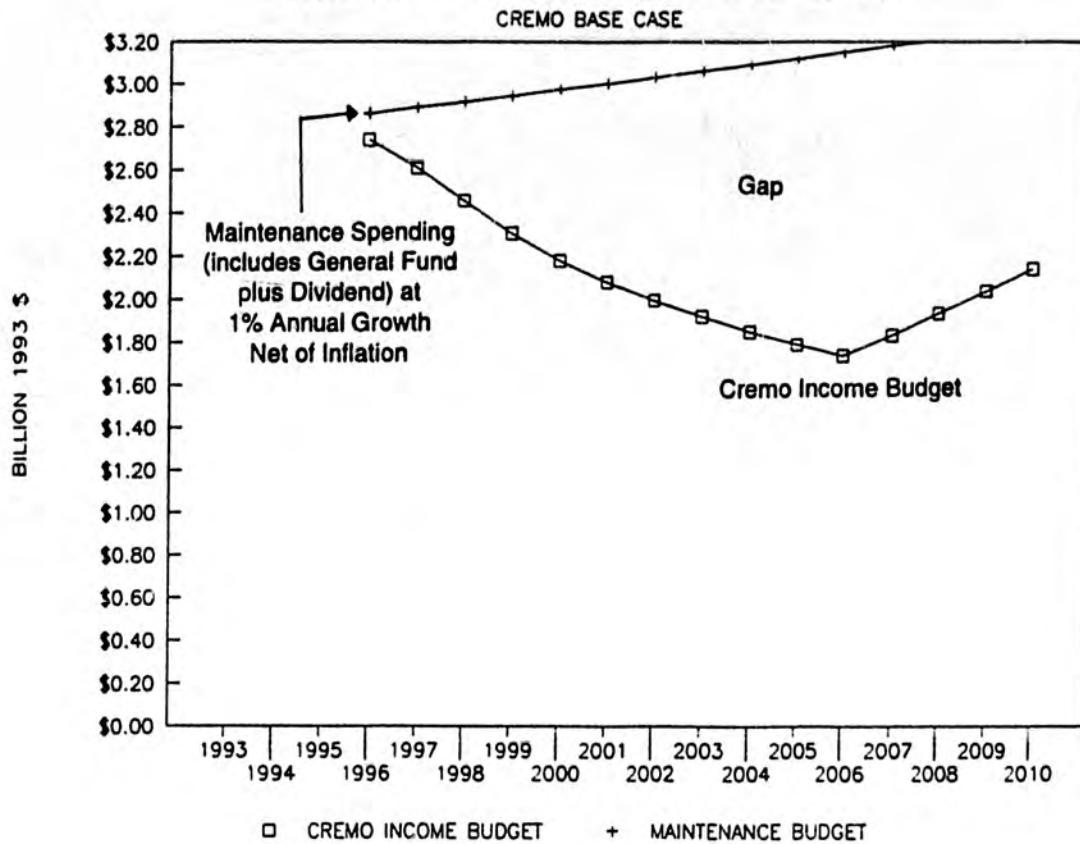


FIGURE 6
BUDGET GAP INCLUDING PF DIVIDEND

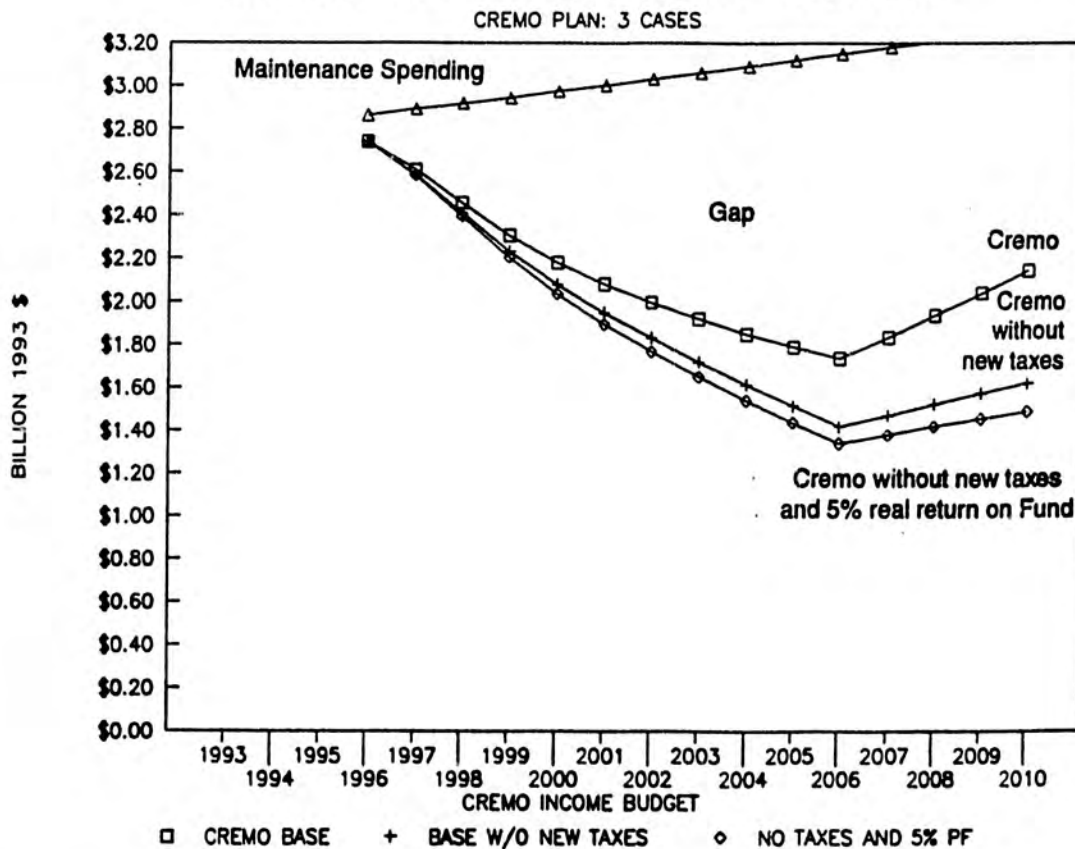


FIGURE 7
BUDGET GAP INCLUDING PF DIVIDEND

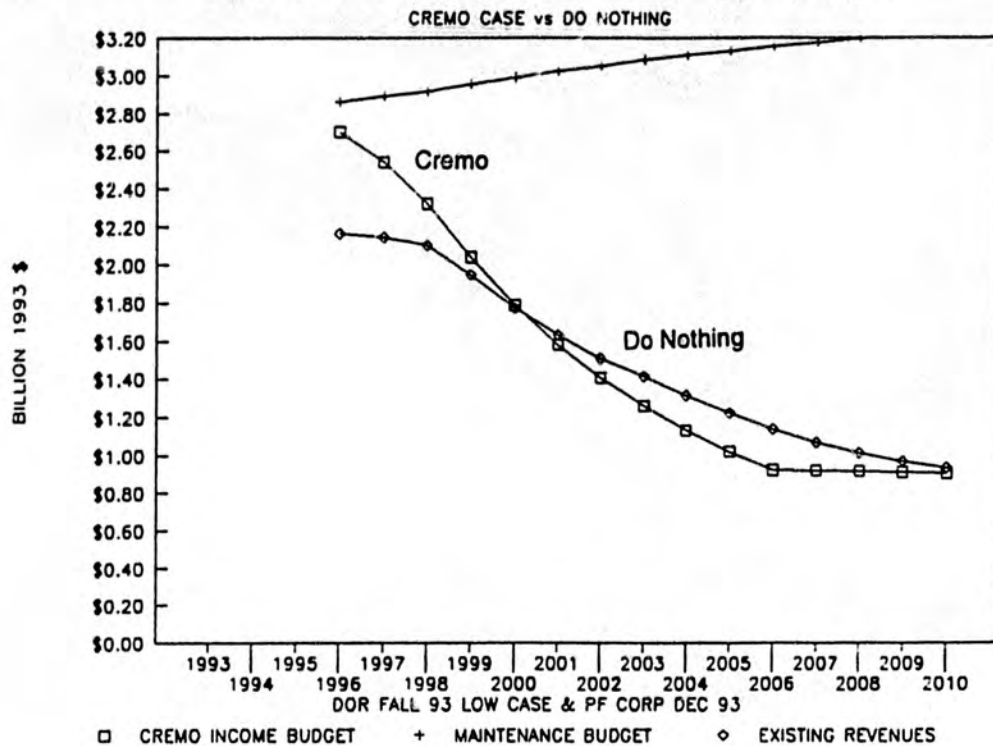


FIGURE 8
PERMANENT FUND BALANCE

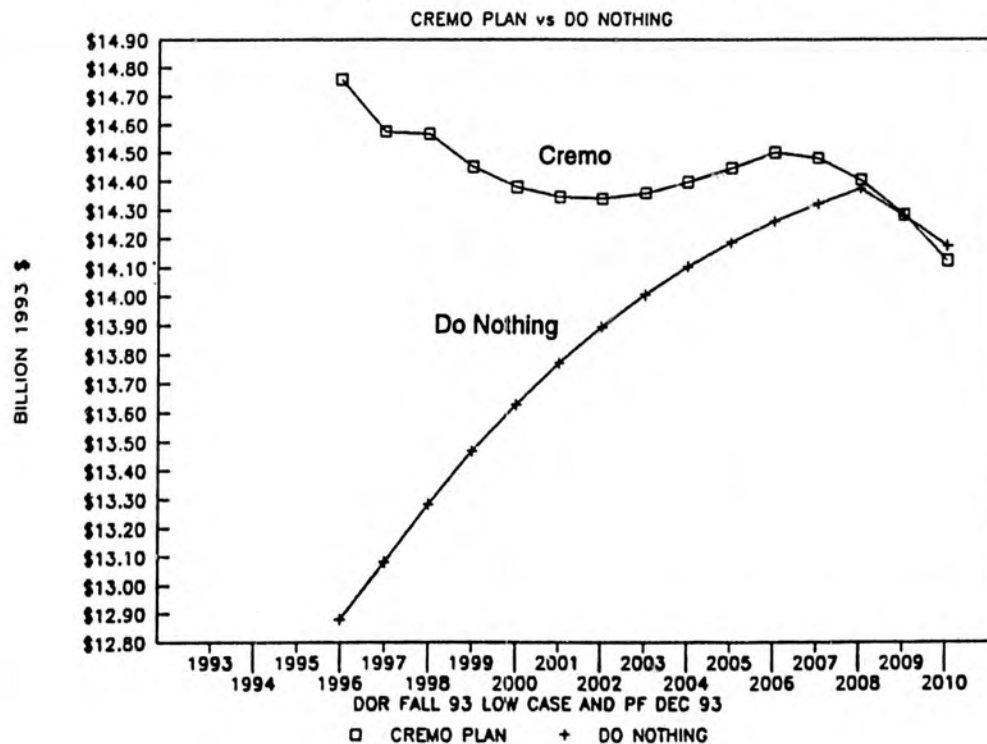


FIGURE 9
BUDGET GAP INCLUDING PF DIVIDEND

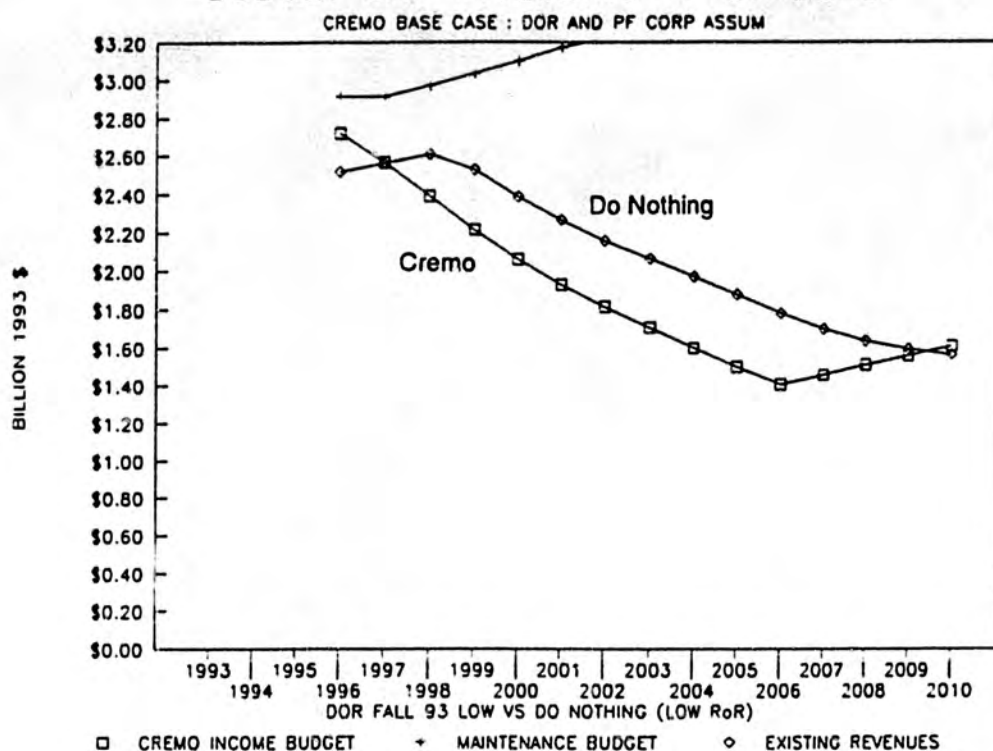
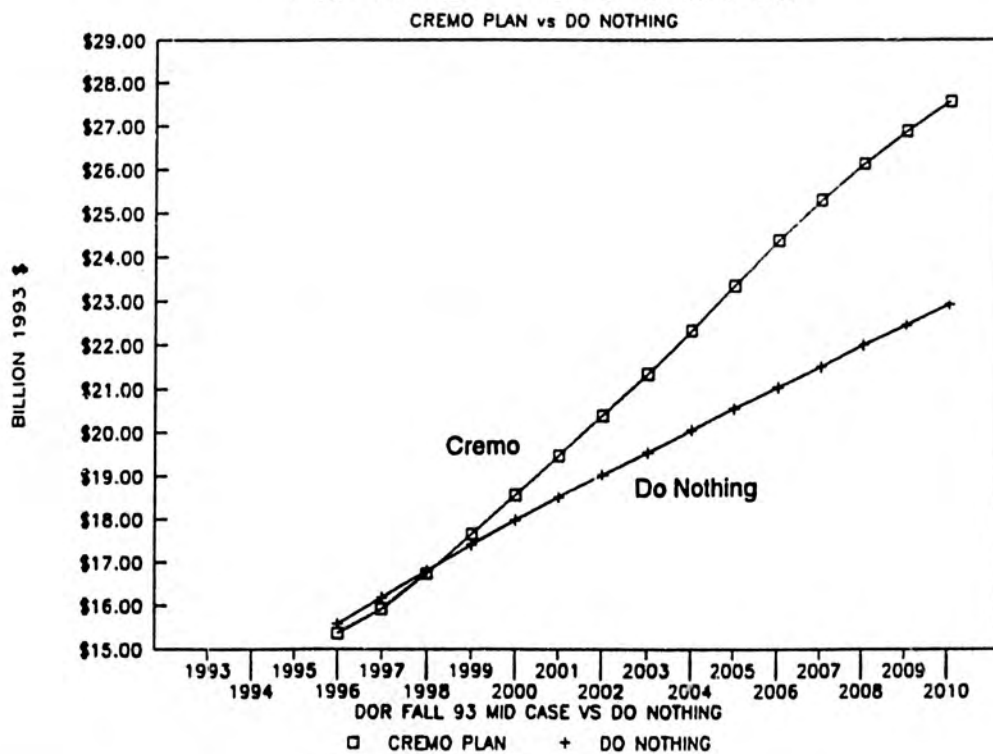


FIGURE 10
PERMANENT FUND BALANCE



\$ 2.5 billion = 93 budget
 1.8 rev (full 92)
 \$ 700 shortfall

unrealized
 gain
 705' net
 (37) land
 782 debt
 \$ 1450

Date: Dept. of Revenue (projections: fall, 1993, mid case)
 = Permanent Fund Corp. (projections: October 31, 1993, mid case)
 Transitional withdrawal: 20% in initial year to permanent % in 2006
 Permanent withdrawal: 6%
 Total return: 10%
 Reserves: 2,500

490 inflation

Proposed State Financial System (millions of dollars)

\$ 12 385

1773
 1788
 312

Fiscal Year	Deposit	Year Begin	2nd Qtr Begin	3rd Qtr Begin	4th Qtr Begin	Year End	Avg Prior Bal	Wdr %	Withdrawal
1993 =		11,911.33	12,238.08	12,564.83	12,891.58	13,218.33			
1994 =		13,426.67	13,735.42	14,044.17	14,352.92	14,661.67			
1995 =		14,870.00	15,221.75	15,573.50	15,925.25	16,277.00			
1996	2,117.12	16,277.00	16,514.25	16,757.44	17,006.70	17,262.19	13,896.29	20.00	2,779.26
1997	2,295.33	17,262.19	17,586.35	17,918.61	18,259.17	18,608.25	15,308.75	17.73	2,714.45
1998	2,416.40	18,608.25	19,024.06	19,450.27	19,887.13	20,334.91	16,597.68	15.72	2,609.17
1999	2,354.71	20,334.91	20,808.15	21,293.22	21,790.41	22,300.04	17,879.28	13.94	2,491.82
2000	2,175.06	22,300.04	22,802.17	23,316.86	23,844.42	24,385.16	19,351.89	12.36	2,391.12
2001	2,008.86	24,385.16	24,916.66	25,461.45	26,019.85	26,592.22	21,121.66	10.95	2,313.76
2002	1,883.00	26,592.22	27,164.51	27,751.10	28,352.37	28,968.66	23,106.11	9.71	2,244.03
2003	1,754.37	28,968.66	29,585.50	30,217.75	30,865.82	31,530.08	25,242.23	8.61	2,173.42
2004	1,626.18	31,530.08	32,196.66	32,879.90	33,580.22	34,298.05	27,523.42	7.63	2,101.02
2005	1,486.83	34,298.05	35,016.69	35,753.30	36,508.32	37,282.22	29,973.73	6.77	2,028.52
2006	1,321.81	37,282.22	38,051.51	38,840.03	39,648.26	40,476.70	32,616.75	6.00	1,957.00
2007	1,175.92	40,476.70	41,244.66	42,031.83	42,838.67	43,665.69	35,465.44	6.00	2,127.93
2008	1,057.16	43,665.69	44,436.30	45,226.18	46,035.81	46,865.67	38,499.19	6.00	2,309.95
2009	965.92	46,865.67	47,644.49	48,442.78	49,261.03	50,099.73	41,648.15	6.00	2,498.89
2010	892.22	50,099.73	50,891.33	51,702.71	52,534.38	53,386.84	44,847.48	6.00	2,690.85

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ATTACHMENT A

PF simulated ip

add 2 years of revenues & inflation
 proofing

16 735 at constant value
 15 285 at cost

94 207 500 = 700
 15 207 500 = 700

add reserves at end of 1995
 \$ 1.5 billion

Low Scenario Detailed Revenue Projections (Millions of Dollars)

Table 22

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
FY	SEVERANCE TAX	PROPERTY TAX	OIL & GAS INC TAX	GROSS ROYALTIES	MINERAL RENTS	BONUS SALES	INCOME FROM PRIOR YEARS	TOTAL PETROLEUM REVENUES	NON-PETR NON-INTR REVENUES	GEN FUND INTEREST REVENUES	TOTAL REVS W/PERM FND DEDICATION
1981	1170.20	143.00	860.10	1501.60	7.90	14.10	0.00	3696.90	186.10	227.80	4110.80
1982	1581.70	142.70	668.90	1553.20	26.40	10.30	0.00	3983.20	209.00	324.70	4516.90
1983	1493.70	152.60	236.00	1447.40	54.20	73.10	0.00	3457.00	228.60	375.80	4061.40
1984	1393.10	131.00	265.10	1409.00	21.90	16.70	0.00	3236.80	245.80	282.70	3765.30
1985	1389.40	128.40	168.60	1390.30	23.70	23.60	0.00	3124.00	283.00	233.50	3640.50
1986	1107.90	113.50	133.90	1098.20	44.50	70.10	460.70	3028.80	222.40	195.20	3446.40
1987	648.50	102.50	120.40	591.60	29.10	1.00	85.20	1578.30	243.00	161.90	1983.20
1988	818.70	96.20	158.00	953.50	24.20	11.30	329.00	2390.90	223.60	132.60	2747.10
1989	698.80	89.70	166.00	818.70	18.00	23.00	259.70	2073.90	245.10	100.70	2419.70
1990	1001.60	89.80	117.20	1004.43	21.00	0.00	156.80	2390.83	271.33	117.90	2780.06
1991	1284.80	85.00	185.10	1292.83	21.30	38.30	398.59	3305.92	291.04	125.00	3721.96
1992	1053.20	69.00	165.50	1021.32	17.10	5.25	362.07	2693.44	353.40	101.80	3148.64
1993	1017.60	66.90	834.70	982.62	20.30	76.60	75.82	3074.54	325.58	70.90	3471.02
1994	877.20	63.20	156.90	781.80	21.85	1.10	9.40	1911.45	253.39	32.40	2197.24
1995	791.80	60.20	106.00	785.70	20.76	0.00	9.40	1773.86	261.67	5.00	2040.53
1996	778.10	56.70	106.00	803.70	19.72	0.00	9.40	1773.62	262.29	5.00	2040.91
1997	779.00	53.10	90.00	833.30	18.73	0.00	13.40	1787.53	270.16	27.38	2085.08
1998	774.70	49.90	87.00	869.50	17.80	0.00	13.40	1812.30	278.26	27.54	2118.10
1999	688.60	46.00	83.00	837.70	16.91	0.00	13.40	1685.61	286.61	27.90	2000.12
2000	592.50	42.80	78.00	769.80	16.06	0.00	13.40	1512.56	295.21	26.24	1834.01
2001	514.60	39.80	71.00	712.10	15.26	0.00	13.40	1366.16	304.07	24.03	1694.25
2002	450.80	36.80	69.00	667.60	14.50	0.00	0.00	1238.70	313.19	22.18	1574.07
2003	388.30	34.10	64.00	623.50	13.77	0.00	0.00	1123.67	322.58	20.77	1467.03
2004	329.20	31.50	58.00	577.20	13.08	0.00	0.00	1009.98	332.26	19.36	1360.60
2005	272.90	29.60	52.00	524.50	12.43	0.00	0.00	891.43	342.23	17.95	1251.61
2006	214.20	27.70	45.00	473.80	11.81	0.00	0.00	772.51	352.50	16.54	1141.54
2007	164.50	26.10	41.00	432.00	11.22	0.00	0.00	674.82	363.07	15.10	1052.99
2008	126.70	24.70	38.00	398.00	10.66	0.00	0.00	598.06	373.96	13.95	985.97
2009	104.20	23.30	35.00	366.50	10.12	0.00	0.00	539.12	385.18	13.09	937.39
2010	89.20	21.80	31.00	338.20	9.62	0.00	0.00	489.82	396.74	12.49	899.04

(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
	TOTAL REVS W/ PERM FND	PUB SCH	NPR-A	OTHER	PERM FUND	CONSTITUTIONAL BUDGET RESERVE	NET GEN FUND UNRESTRD REVENUES	
FY	DEDICATION	FUND	FUND	FUNDS	DEDICATN	FUND	NOM \$	REAL 1992\$
1981	4110.80	7.50	0.00	74.30	385.10	0.00	3718.20	
1982	4516.90	8.00	0.00	0.00	400.50	0.00	4108.40	
1983	4061.40	9.40	0.00	0.00	421.00	0.00	3631.00	
1984	3765.30	9.00	0.00	0.00	366.20	0.00	3390.10	
1985	3640.50	7.10	5.40	0.00	368.00	0.00	3260.00	
1986	3446.40	6.50	41.00	0.00	323.40	0.00	3075.50	
1987	1983.20	3.30	9.90	0.00	170.60	0.00	1799.40	
1988	2747.10	6.60	1.00	15.80	417.90	0.00	2305.80	
1989	2419.70	4.30	0.80	0.00	228.40	0.00	2186.20	
1990	2780.06	5.13	0.60	0.00	267.10	0.00	2507.23	
1991	3721.96	8.83	0.37	0.00	435.00	291.20	2986.56	
1992	3148.64	15.04	0.13	0.00	337.80	333.07	2462.60	2462.60
1993	3471.02	6.80	0.19	0.00	315.30	67.13	3081.60	2991.84
1994	2197.24	4.02	0.40	0.00	209.02	0.00	1983.80	1886.40
1995	2040.53	4.03	0.30	7.00	209.20	0.00	1820.00	1695.05
1996	2040.91	4.12	0.10	7.00	213.60	0.00	1816.09	1654.19
1997	2085.08	4.26	0.00	7.00	221.02	0.00	1852.80	1650.56
1998	2118.10	4.44	0.00	10.00	230.16	0.00	1873.50	1632.34
1999	2000.12	4.27	0.00	10.00	221.69	0.00	1764.16	1503.31
2000	1834.01	3.93	0.00	10.00	203.85	0.00	1616.23	1347.00
2001	1694.25	3.64	0.00	10.00	188.68	0.00	1491.93	1215.50
2002	1574.07	3.41	0.00	10.00	176.94	0.00	1383.72	1102.04
2003	1467.03	3.19	0.00	0.00	165.31	0.00	1298.53	1010.98
2004	1360.60	2.95	0.00	0.00	153.12	0.00	1204.53	916.75
2005	1251.61	2.68	0.00	0.00	139.28	0.00	1109.65	825.58
2006	1141.54	2.43	0.00	0.00	125.97	0.00	1013.14	736.86
2007	1052.99	2.22	0.00	0.00	114.97	0.00	935.80	665.34
2008	985.97	2.04	0.00	0.00	106.01	0.00	877.92	610.18
2009	937.39	1.88	0.00	0.00	97.70	0.00	837.81	569.23
2010	899.04	1.74	0.00	0.00	90.22	0.00	807.08	536.05

Table 23

Mid Scenario Detailed Revenue Projections (Millions on Dollars)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
FY	SEVERANCE TAX	PROPERTY TAX	OIL&GAS INC TAX	GROSS ROYALTIES	MINERAL RENTS	BONUS SALES	INCOME FROM PRIOR YEARS	TOTAL PETROLEUM REVENUES	NON-PETR NON-INTR REVENUES	GEN FUND TOTAL REVS INTEREST W/ PERM FND REVENUES DEDICATION	
1981	1170.20	143.00	860.10	1501.60	7.90	14.10	0.00	3696.90	186.10	227.80	4110.80
1982	1581.70	142.70	668.90	1553.20	26.40	10.30	0.00	3983.20	209.00	324.70	4516.90
1983	1493.70	152.60	236.00	1447.40	54.20	73.10	0.00	3457.00	228.60	375.80	4061.40
1984	1393.10	131.00	265.10	1409.00	21.90	16.70	0.00	3236.80	245.80	282.70	3765.30
1985	1389.40	128.40	168.60	1390.30	23.70	23.60	0.00	3124.00	283.00	233.50	3640.50
1986	1107.90	113.50	133.90	1098.20	44.50	70.10	460.70	3028.80	222.40	195.20	3446.40
1987	648.50	102.50	120.40	591.60	29.10	1.00	85.20	1578.30	243.00	161.90	1983.20
1988	818.70	96.20	158.00	953.50	24.20	11.30	329.00	2390.90	223.60	132.60	2747.10
1989	698.80	89.70	166.00	818.70	18.00	23.00	259.70	2073.90	245.10	100.70	2419.70
1990	1001.60	89.80	117.20	1004.43	21.00	0.00	156.80	2390.83	271.33	117.90	2780.06
1991	1284.80	85.00	185.10	1292.83	21.30	38.30	398.59	3305.92	291.04	125.00	3721.96
1992	1053.20	69.00	165.50	1021.32	17.10	5.25	447.61	2693.44	353.40	101.80	3148.64
1993	1017.60	66.90	834.70	982.62	20.30	76.60	75.82	3074.54	325.58	70.90	3471.02
1994	942.80	63.20	189.90	851.20	21.85	1.10	9.40	2079.45	275.69	36.30	2391.44
1995	921.70	60.20	139.00	926.40	20.76	0.00	9.40	2077.46	280.11	27.20	2384.77
1996	924.90	56.70	139.00	967.40	19.72	0.00	9.40	2117.12	280.86	27.20	2425.18
1997	1011.70	53.10	127.00	1071.40	18.73	0.00	13.40	2295.33	289.29	32.20	2616.82
1998	1052.10	49.90	119.00	1164.20	17.80	0.00	13.40	2416.40	297.96	34.55	2748.91
1999	994.80	46.00	111.00	1172.60	16.91	0.00	13.40	2354.71	306.90	36.15	2697.76
2000	888.20	42.80	109.00	1105.60	16.06	0.00	13.40	2175.06	316.11	35.33	2526.50
2001	793.20	39.80	105.00	1042.20	15.26	0.00	13.40	2008.86	325.59	33.02	2367.47
2002	726.50	36.80	99.00	1006.20	14.50	0.00	0.00	1883.00	335.36	30.91	2249.26
2003	649.10	34.10	94.00	963.40	13.77	0.00	0.00	1754.37	345.42	29.50	2129.30
2004	574.20	31.50	89.00	918.40	13.08	0.00	0.00	1626.18	355.79	27.88	2009.85
2005	498.60	29.60	84.00	862.20	12.43	0.00	0.00	1486.83	366.46	26.29	1879.57
2006	406.60	27.70	79.00	796.70	11.81	0.00	0.00	1321.81	377.45	24.57	1723.83
2007	326.90	26.10	76.00	735.70	11.22	0.00	0.00	1175.92	388.78	22.50	1587.19
2008	265.60	24.70	71.00	685.20	10.66	0.00	0.00	1057.16	400.44	20.71	1478.31
2009	226.20	23.30	67.00	639.30	10.12	0.00	0.00	965.92	412.45	19.29	1397.67
2010	200.90	21.80	62.00	597.90	9.62	0.00	0.00	892.22	424.83	18.28	1335.32

(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
	TOTAL REVS W/ PERM FND	PUB SCH	NPR-A	OTHER	PERM FUND	CONSTITUTIONAL BUDGET RESERVE	NET GEN FUND UNRESTRD REVENUES	
FY	DEDICATION	FUND	FUND	FUNDS	DEDICATN	FUND	NOM\$	REAL 1992\$
1981	4110.80	7.50	0.00	74.30	385.10	0.00	3718.20	
1982	4516.90	8.00	0.00	0.00	400.50	0.00	4108.40	
1983	4061.40	9.40	0.00	0.00	421.00	0.00	3631.00	
1984	3765.30	9.00	0.00	0.00	366.20	0.00	3390.10	
1985	3640.50	7.10	5.40	0.00	368.00	0.00	3260.00	
1986	3446.40	6.50	41.00	0.00	323.40	0.00	3075.50	
1987	1983.20	3.30	9.90	0.00	170.60	0.00	1799.40	
1988	2747.10	6.60	1.00	15.80	417.90	0.00	2305.80	
1989	2419.70	4.30	0.80	0.00	228.40	0.00	2186.20	
1990	2780.06	5.13	0.60	0.00	267.10	0.00	2507.23	
1991	3721.96	8.83	0.37	0.00	435.00	291.20	2986.56	
1992	3148.64	15.04	0.13	0.00	337.80	333.07	2462.60	2462.60
1993	3471.02	6.80	0.19	0.00	315.30	67.13	3081.60	2991.84
1994	2391.44	4.37	0.40	0.00	228.07	0.00	2158.60	2032.71
1995	2384.77	4.74	0.30	7.00	246.83	0.00	2125.90	1941.73
1996	2425.18	4.94	0.10	7.00	257.24	0.00	2155.90	1895.76
1997	2616.82	5.45	0.00	7.00	284.09	0.00	2320.28	1964.35
1998	2748.91	5.91	0.00	10.00	308.03	0.00	2424.97	1976.56
1999	2697.76	5.95	0.00	10.00	309.99	0.00	2371.82	1861.27
2000	2526.50	5.61	0.00	10.00	292.31	0.00	2218.58	1676.20
2001	2367.47	5.29	0.00	10.00	275.57	0.00	2076.61	1509.86
2002	2249.26	5.10	0.00	10.00	265.99	0.00	1968.17	1377.14
2003	2129.30	4.89	0.00	0.00	254.65	0.00	1869.76	1259.02
2004	2009.85	4.66	0.00	0.00	242.74	0.00	1762.45	1142.08
2005	1879.57	4.37	0.00	0.00	227.93	0.00	1647.27	1027.25
2006	1723.83	4.04	0.00	0.00	210.70	0.00	1509.09	905.65
2007	1587.19	3.73	0.00	0.00	194.65	0.00	1388.81	802.08
2008	1478.31	3.48	0.00	0.00	181.34	0.00	1293.49	718.90
2009	1397.67	3.25	0.00	0.00	169.24	0.00	1225.18	655.30
2010	1335.32	3.04	0.00	0.00	158.32	0.00	1173.96	604.26



Alaska Permanent Fund Corporation

FINANCIAL PROJECTIONS (in millions)

as of December 31, 1993

GROWTH OF FUND PRINCIPAL

FY	FY Begin Balance	Appropriations	Dedicated State Revenues*	Inflation-Proofing	FY End Balance	Inflation-Proofing Shortfall
78	0		54		54	
79	54		84		139	
80	139		344		483	
81	463	900	385		1,769	
82	1,769	800	400		2,969	
83	2,969	400	421	231	4,021	
84	4,021	300	366	151	4,838	
85	4,838	300	368	235	5,741	
86	5,741		323	216	6,281	
87	6,281	1,264 **	170	148	7,864	
88	7,864		418	303	8,585	
89	8,585		228	360	9,173	
90	9,173		267	454	9,894	
91	9,894		435	559	10,888	
92	10,888		338	477	11,703	
93	11,703	5 ***	315	362	12,385	
94	12,385	5	209	372	12,971	
95	12,971	5	209	527	13,713	
96	13,713	5	214	557	14,489	
97	14,489	5	221	589	15,304	
98	15,304	6	230	622	16,161	
99	16,161	4	222	983	17,370	
0	17,370	4	204	1,055	18,633	
1	18,633	4	189	1,130	19,956	
2	19,956	4	177	1,208	21,345	
3	21,345	5	165	1,291	22,806	
4	22,806	5	153	1,378	24,342	
5	24,342	5	139	1,469	25,955	
6	25,955	5	126	1,565	27,651	
7	27,651	5	115	1,666	29,438	
8	29,438	5	106	1,773	31,322	
9	31,322	6	98	1,552	32,977	334
10	32,977	6	90	1,629	34,702	355
Cumulative Totals Projected For FY 1994 - 2010:						
			2,777	19,365	689	

USE OF FUND INCOME

Net Income	Distributions		Reserves		FY End Balance	FY
	Dividends	Inflation-Proofing	General Fund	Add (Delete)		
2			1			78
8			7			79
32	12		12			80
150	28		28	59	59	81
368	71		71	185	244	82
471	108	231	110	110	354	83
530	175	151		203	557	84
658	217	235		206	763	85
1,021	303	216		501	1,264 **	86
1,069	391	148		529	529	87
789	424	303		62	591	88
868	460	360	4	44	635	89
916	487	454	4	(30)	605	90
1,030	489	559	4	(24)	581	91
1,036	488	477	5	64	645	92
1,226	532	362	5	320	965	93
1,075	555	372	5	139	1,104	94
1,239	589	527		118	1,221	95
1,314	619	557		133	1,355	96
1,394	656	589		144	1,498	97
1,478	683	622		168	1,667	98
1,691	747	983		(44)	1,623	99
1,800	806	1,055		(65)	1,558	0
1,912	869	1,130		(91)	1,467	1
2,027	935	1,208		(121)	1,346	2
2,147	1,006	1,291		(155)	1,192	3
2,269	1,066	1,378		(180)	1,012	4
2,396	1,129	1,469		(207)	805	5
2,528	1,194	1,565		(236)	569	6
2,665	1,261	1,666		(267)	303	7
2,808	1,330	1,773		(300)	2	8
2,957	1,402	1,552		(2)		9
3,112	1,477	1,629				10
34,812	16,322	19,365	5			

REALIZED RATE OF RETURN ASSUMPTIONS:

	Nominal	Inflation	Real
FY 94:	7.81%	2.95%	4.86%
FY 95 - 98: ****	8.37%	4.00%	4.37%
FY 99 - 2010:	9.00%	6.00%	3.00%

* Department of Revenue Fall 1993 Low-Case Revenue Forecast.

** Earnings reserve appropriated to Fund principal by the Legislature July 1, 1987.

*** Transferred to principal from earnings reserve account per AS 37.13.145(d).

**** Based on capital market assumptions adopted by the Trustees in April 1993.

STATUS QUO

CASE 1 CREMO BASE CASE

	DEPOSIT		PERMANENT FUND	PF AVERAGE	WITHDRAWAL		CONVENTIONAL	INCOME BUDGET	PRESENT VALUE OF \$1 (1993)	PRESENT VALUE IN 1993 \$				CREMO GAP	
	UN-EXPECTED	EXPECTED	YEAR END	12 PRIOR QUARTERS	%	AMOUNT	REVENUES			FUND	WITHDRAWAL	CONVENTIONAL REV	INCOME BUDGET	NOM \$	1993 \$
1993			\$13,218						\$1.00						
1994			\$14,661						\$0.96						
1995			\$16,277						\$0.92						
1996	\$2,117	\$2,117	\$17,279	\$13,896	20.00%	\$2,779	\$300	\$3,079	\$0.89	\$15,361	\$2,471	\$267	\$2,737	\$140	\$124
1997	\$2,295	\$2,295	\$18,638	\$15,311	17.73%	\$2,715	\$336	\$3,051	\$0.85	\$15,932	\$2,320	\$287	\$2,608	\$329	\$282
1998	\$2,416	\$2,416	\$20,370	\$16,607	15.72%	\$2,611	\$376	\$2,987	\$0.82	\$16,743	\$2,146	\$309	\$2,455	\$562	\$462
1999	\$2,354	\$2,354	\$22,339	\$17,899	13.94%	\$2,495	\$421	\$2,917	\$0.79	\$17,655	\$1,972	\$333	\$2,305	\$810	\$640
2000	\$2,175	\$2,175	\$24,429	\$19,382	12.36%	\$2,396	\$472	\$2,868	\$0.76	\$18,564	\$1,820	\$359	\$2,179	\$1,045	\$794
2001	\$2,008	\$2,008	\$26,644	\$21,158	10.95%	\$2,317	\$529	\$2,845	\$0.73	\$19,469	\$1,693	\$386	\$2,079	\$1,263	\$923
2002	\$1,883	\$1,883	\$29,032	\$23,147	9.71%	\$2,248	\$592	\$2,840	\$0.70	\$20,397	\$1,579	\$416	\$1,995	\$1,474	\$1,036
2003	\$1,754	\$1,754	\$31,606	\$25,290	8.61%	\$2,177	\$663	\$2,841	\$0.68	\$21,352	\$1,471	\$448	\$1,919	\$1,689	\$1,141
2004	\$1,626	\$1,626	\$34,390	\$27,580	7.63%	\$2,104	\$743	\$2,847	\$0.65	\$22,339	\$1,367	\$483	\$1,849	\$1,909	\$1,240
2005	\$1,486	\$1,486	\$37,392	\$30,042	6.77%	\$2,034	\$832	\$2,866	\$0.62	\$23,355	\$1,270	\$520	\$1,790	\$2,128	\$1,329
2006	\$1,321	\$1,321	\$40,608	\$32,699	6.00%	\$1,962	\$932	\$2,894	\$0.60	\$24,388	\$1,178	\$560	\$1,738	\$2,350	\$1,411
2007	\$1,175	\$1,175	\$43,828	\$35,565	6.00%	\$2,134	\$1,044	\$3,177	\$0.58	\$25,310	\$1,232	\$603	\$1,835	\$2,328	\$1,344
2008	\$1,057	\$1,057	\$47,070	\$38,619	6.00%	\$2,317	\$1,169	\$3,486	\$0.56	\$26,136	\$1,287	\$649	\$1,936	\$2,295	\$1,274
2009	\$965	\$965	\$50,355	\$41,794	6.00%	\$2,508	\$1,309	\$3,817	\$0.53	\$26,885	\$1,339	\$699	\$2,038	\$2,253	\$1,203
2010	\$892	\$892	\$53,704	\$45,029	6.00%	\$2,702	\$1,466	\$4,168	\$0.51	\$27,570	\$1,387	\$753	\$2,140	\$2,206	\$1,132

DOR FALL 1993 MID CASE PROJECTIONS

INFLATION RATE

ANNUAL NOMINAL RATE OF RETURN (REAL RATE PLUS INFLATION)

CONVENTIONAL REVENUE GROWTH RATE

CURRENT SPENDING TREND==INFLATION RATE PLUS POPULATION GROWTH @

CREMO GAP DEFINED AS MAINTENANCE BUDGET MINUS CREMO INCOME BUDGET

4.00%

10.38%

12.00%

1.00%

CASE

CURRENT SPENDING TREND					CURRENT REVENUE STRUCTURE				CURRENT POLICY FISCAL GAP	
GENERAL FUND	PF DIVIDEND	SUM	SUM IN 1993 \$	GENERAL FUND	PERM FUND	SUM	SUM IN 1993 \$	NOM \$	1993 \$	
1993										
1994										
1995										
1996	\$2,600	\$619	\$3,219	\$2,862	\$2,155	\$619	\$2,774	\$2,466	\$445 \$396	
1997	\$2,730	\$650	\$3,380	\$2,889	\$2,320	\$650	\$2,970	\$2,539	\$410 \$350	
1998	\$2,867	\$682	\$3,549	\$2,917	\$2,424	\$682	\$3,106	\$2,553	\$443 \$364	
1999	\$3,010	\$717	\$3,726	\$2,945	\$2,371	\$717	\$3,088	\$2,440	\$639 \$505	
2000	\$3,160	\$752	\$3,913	\$2,973	\$2,218	\$752	\$2,970	\$2,257	\$942 \$716	
2001	\$3,318	\$790	\$4,108	\$3,002	\$2,076	\$790	\$2,866	\$2,094	\$1,242 \$908	
2002	\$3,484	\$830	\$4,314	\$3,031	\$1,968	\$830	\$2,798	\$1,965	\$1,516 \$1,065	
2003	\$3,658	\$871	\$4,529	\$3,060	\$1,869	\$871	\$2,740	\$1,851	\$1,789 \$1,209	
2004	\$3,841	\$915	\$4,756	\$3,089	\$1,762	\$915	\$2,677	\$1,739	\$2,079 \$1,351	
2005	\$4,033	\$960	\$4,994	\$3,119	\$1,647	\$960	\$2,607	\$1,628	\$2,386 \$1,491	
2006	\$4,235	\$1,008	\$5,243	\$3,149	\$1,509	\$1,008	\$2,517	\$1,512	\$2,726 \$1,637	
2007	\$4,447	\$1,059	\$5,506	\$3,179	\$1,388	\$1,059	\$2,447	\$1,413	\$3,059 \$1,766	
2008	\$4,669	\$1,112	\$5,781	\$3,210	\$1,293	\$1,112	\$2,405	\$1,335	\$3,376 \$1,875	
2009	\$4,903	\$1,167	\$6,070	\$3,241	\$1,225	\$1,167	\$2,392	\$1,277	\$3,678 \$1,964	
2010	\$5,148	\$1,226	\$6,373	\$3,272	\$1,173	\$1,226	\$2,399	\$1,231	\$3,975 \$2,041	

DIVIDEND FROM PF CORP DECEMBER 1993 REPORT--GROWTH AT 1% ABOVE INFLATION
GF SPENDING FOR 1996 ESTIMATED--GROWTH AT 1% ABOVE INFLATION
GR REVENUES FROM DOR FALL 1993 MID CASE

CASE 2 CREMO BASE CASE WITH REVISED TRANSITIONAL WITHDRAWAL RATE

DEPOSIT			PERMANENT FUND	Pf	WITHDRAWAL		CONVEN-	INCOME BUDGET	PRESENT VALUE OF \$1 (1993)	PRESENT VALUE IN 1993 \$				CREMO GAP	
UN-EXPECTED	EXPECTED	TOTAL	YEAR END	AVERAGE 12 PRIOR QUARTERS	%	AMOUNT	TIONAL REVENUES			FUND	WITH-DRAWAL	CONVEN-TIONAL REV	INCOME BUDGET	NOM \$	1993 \$
1993			\$13,218						\$1.00						
1994			\$14,661						\$0.96						
1995			\$16,277						\$0.92						
1996	\$2,117	\$2,117	\$17,279	\$13,896	20.00%	\$2,779	\$300	\$3,079	\$0.89	\$15,361	\$2,471	\$267	\$2,737	\$140	\$124
1997	\$2,295	\$2,295	\$18,638	\$15,311	17.73%	\$2,715	\$336	\$3,051	\$0.85	\$15,932	\$2,320	\$287	\$2,608	\$335	\$287
1998	\$2,416	\$2,416	\$20,370	\$16,607	15.72%	\$2,611	\$376	\$2,987	\$0.82	\$16,743	\$2,146	\$309	\$2,455	\$563	\$462
1999	\$2,354	\$2,354	\$22,339	\$17,899	13.94%	\$2,495	\$421	\$2,917	\$0.79	\$17,655	\$1,972	\$333	\$2,305	\$840	\$664
2000	\$2,175	\$2,175	\$24,429	\$19,382	12.36%	\$2,396	\$472	\$2,868	\$0.76	\$18,564	\$1,820	\$359	\$2,179	\$1,099	\$835
2001	\$2,008	\$2,008	\$26,644	\$21,158	10.95%	\$2,317	\$529	\$2,845	\$0.73	\$19,469	\$1,693	\$386	\$2,079	\$1,342	\$980
2002	\$1,883	\$1,883	\$29,032	\$23,147	9.71%	\$2,248	\$592	\$2,840	\$0.70	\$20,397	\$1,579	\$416	\$1,995	\$1,579	\$1,110
2003	\$1,754	\$1,754	\$31,606	\$25,290	8.61%	\$2,177	\$663	\$2,841	\$0.68	\$21,352	\$1,471	\$448	\$1,919	\$1,824	\$1,232
2004	\$1,626	\$1,626	\$34,284	\$27,580	8.00%	\$2,206	\$743	\$2,949	\$0.65	\$22,271	\$1,433	\$483	\$1,916	\$1,958	\$1,272
2005	\$1,486	\$1,486	\$37,079	\$30,029	7.40%	\$2,222	\$832	\$3,054	\$0.62	\$23,160	\$1,388	\$520	\$1,908	\$2,108	\$1,317
2006	\$1,321	\$1,321	\$39,997	\$32,626	6.80%	\$2,219	\$932	\$3,150	\$0.60	\$24,021	\$1,332	\$560	\$1,892	\$2,279	\$1,369
2007	\$1,175	\$1,175	\$42,983	\$35,351	6.50%	\$2,298	\$1,044	\$3,341	\$0.58	\$24,822	\$1,327	\$603	\$1,930	\$2,367	\$1,367
2008	\$1,057	\$1,057	\$46,065	\$38,185	6.25%	\$2,387	\$1,169	\$3,555	\$0.56	\$25,579	\$1,325	\$649	\$1,974	\$2,444	\$1,357
2009	\$965	\$965	\$49,288	\$41,120	6.00%	\$2,467	\$1,309	\$3,776	\$0.53	\$26,315	\$1,317	\$699	\$2,016	\$2,528	\$1,350
2010	\$892	\$892	\$52,581	\$44,153	6.00%	\$2,649	\$1,466	\$4,115	\$0.51	\$26,994	\$1,360	\$753	\$2,113	\$2,510	\$1,288

DOR FALL 1993 MID CASE PROJECTIONS

INFLATION RATE

ANNUAL NOMINAL RATE OF RETURN (REAL RATE PLUS INFLATION)

CONVENTIONAL REVENUE GROWTH RATE

4.00%

10.38%

12.00%

CURRENT SPENDING TREND==INFLATION RATE PLUS POPULATION GROWTH @

1.00%

CREMO GAP DEFINED AS MAINTENANCE BUDGET MINUS CREMO INCOME BUDGET

SE

CURRENT SPENDING TREND

GENERAL FUND	PF DIVIDEND	SUM	SUM IN 1993 \$
-----------------	----------------	-----	-------------------

1993			
1994			
1995			
1996	\$2,600	\$619	\$3,219
1997	\$2,730	\$656	\$3,386
1998	\$2,867	\$683	\$3,550
1999	\$3,010	\$747	\$3,757
2000	\$3,160	\$806	\$3,966
2001	\$3,318	\$869	\$4,187
2002	\$3,484	\$935	\$4,419
2003	\$3,658	\$1,006	\$4,664
2004	\$3,841	\$1,066	\$4,907
2005	\$4,033	\$1,129	\$5,162
2006	\$4,235	\$1,194	\$5,429
2007	\$4,447	\$1,261	\$5,708
2008	\$4,669	\$1,330	\$5,999
2009	\$4,903	\$1,402	\$6,305
2010	\$5,148	\$1,477	\$6,625

CASE 3 CREMO WITH UNEXPECTED REVENUES

DEPOSIT				PERMANENT FUND	P.F.	WITHDRAWAL		CONVENTIONAL REVENUES	INCOME BUDGET	PRESENT VALUE IN 1993 \$				CREMO GAP		
UN-EXPECTED	EXPECTED	TOTAL	YEAR END	AVERAGE 12 PRIOR QUARTERS	%	AMOUNT				PRESENT VALUE OF \$1 (1993)	FUND	WITHDRAWAL	CONVENTIONAL REV	INCOME BUDGET	NOM \$	1993 \$
1993			\$13,218							\$1.00						
1994			\$14,661							\$0.96						
1995			\$16,277							\$0.92						
1996	\$2,117	\$242	\$2,359	\$17,531	\$13,896	20.00%	\$2,779	\$300	\$3,079	\$0.89	\$15,585	\$2,471	\$267	\$2,737	\$140	\$124
1997	\$2,295	\$552	\$2,847	\$19,482	\$15,341	17.73%	\$2,720	\$336	\$3,056	\$0.85	\$16,654	\$2,325	\$287	\$2,612	\$330	\$282
1998	\$2,416	\$708	\$3,124	\$22,007	\$16,794	15.72%	\$2,640	\$376	\$3,016	\$0.82	\$18,088	\$2,170	\$309	\$2,479	\$533	\$438
1999	\$2,354	\$842	\$3,196	\$24,938	\$18,465	13.94%	\$2,574	\$421	\$2,995	\$0.79	\$19,709	\$2,034	\$333	\$2,367	\$761	\$602
2000	\$2,175	\$845	\$3,020	\$28,021	\$20,580	12.36%	\$2,544	\$472	\$3,016	\$0.76	\$21,294	\$1,933	\$359	\$2,292	\$951	\$722
2001	\$2,008	\$875	\$2,883	\$31,287	\$23,188	10.95%	\$2,539	\$529	\$3,068	\$0.73	\$22,861	\$1,855	\$386	\$2,242	\$1,120	\$818
2002	\$1,883	\$927	\$2,810	\$34,819	\$26,125	9.71%	\$2,537	\$592	\$3,129	\$0.70	\$24,463	\$1,782	\$416	\$2,198	\$1,290	\$907
2003	\$1,754	\$961	\$2,715	\$38,634	\$29,292	8.61%	\$2,522	\$663	\$3,185	\$0.68	\$26,099	\$1,704	\$448	\$2,152	\$1,479	\$999
2004	\$1,626	\$989	\$2,615	\$42,771	\$32,675	7.63%	\$2,493	\$743	\$3,236	\$0.65	\$27,783	\$1,619	\$483	\$2,102	\$1,672	\$1,086
2005	\$1,486	\$1,012	\$2,498	\$47,252	\$36,319	6.77%	\$2,459	\$832	\$3,291	\$0.62	\$29,513	\$1,536	\$520	\$2,055	\$1,872	\$1,169
2006	\$1,321	\$1,042	\$2,363	\$52,102	\$40,263	6.00%	\$2,416	\$932	\$3,348	\$0.60	\$31,291	\$1,451	\$560	\$2,010	\$2,082	\$1,250
2007	\$1,175	\$1,074	\$2,249	\$57,072	\$44,534	6.00%	\$2,672	\$1,044	\$3,716	\$0.58	\$32,958	\$1,543	\$603	\$2,146	\$1,992	\$1,150
2008	\$1,057	\$1,066	\$2,123	\$62,141	\$49,126	6.00%	\$2,948	\$1,169	\$4,116	\$0.56	\$34,505	\$1,637	\$649	\$2,286	\$1,883	\$1,046
2009	\$965	\$1,073	\$2,038	\$67,346	\$53,965	6.00%	\$3,238	\$1,309	\$4,547	\$0.53	\$35,957	\$1,729	\$699	\$2,428	\$1,758	\$938
2010	\$892	\$1,048	\$1,940	\$72,678	\$58,971	6.00%	\$3,538	\$1,466	\$5,004	\$0.51	\$37,311	\$1,816	\$753	\$2,569	\$1,620	\$832

DOR FALL 1993 HIGH CASE PROJECTIONS

INFLATION RATE

ANNUAL NOMINAL RATE OF RETURN (REAL RATE PLUS INFLATION)

CONVENTIONAL REVENUE GROWTH RATE

CURRENT SPENDING TREND==INFLATION RATE PLUS POPULATION GROWTH @

CREMO GAP DEFINED AS MAINTENANCE BUDGET MINUS CREMO INCOME BUDGET

4.00%

10.38%

12.00%

1.00%

CASE

CURRENT SPENDING TREND

	GENERAL FUND	PF DIVIDEND	SUM	SUM IN 1993 \$
1993				
1994				
1995				
1996	\$2,600	\$619	\$3,219	\$2,862
1997	\$2,730	\$656	\$3,386	\$2,894
1998	\$2,867	\$683	\$3,550	\$2,917
1999	\$3,010	\$747	\$3,757	\$2,969
2000	\$3,160	\$806	\$3,966	\$3,014
2001	\$3,318	\$869	\$4,187	\$3,060
2002	\$3,484	\$935	\$4,419	\$3,105
2003	\$3,658	\$1,006	\$4,664	\$3,151
2004	\$3,841	\$1,066	\$4,907	\$3,188
2005	\$4,033	\$1,129	\$5,162	\$3,224
2006	\$4,235	\$1,194	\$5,429	\$3,261
2007	\$4,447	\$1,261	\$5,708	\$3,296
2008	\$4,669	\$1,330	\$5,999	\$3,331
2009	\$4,903	\$1,402	\$6,305	\$3,366
2010	\$5,148	\$1,477	\$6,625	\$3,401

CASE 4 CREMO WITH UNEXPECTED REVENUES AND REVISED TRANSITIONAL WITHDRAWAL RATE

	DEPOSIT			PERMANENT FUND YEAR END	PF AVERAGE 12 PRIOR QUARTERS	WITHDRAWAL		CONVEN- TIONAL REVENUES	INCOME BUDGET	PRESENT VALUE OF \$1 (1993)	PRESENT VALUE IN 1993 \$				CREMO GAP	
	UN- EXPECTED	EXPECTED	TOTAL			%	AMOUNT				FUND	WITH- DRAWAL	CONVEN- TIONAL REV	INCOME BUDGET	NOM \$	1993 \$
1993				\$13,218						\$1.00						
1994				\$14,661						\$0.96						
1995				\$16,277						\$0.92						
1996	\$2,117	\$242	\$2,359	\$17,531	\$13,896	20.00%	\$2,779	\$300	\$3,079	\$0.89	\$15,585	\$2,471	\$267	\$2,737	\$140	\$124
1997	\$2,295	\$552	\$2,847	\$19,482	\$15,341	17.73%	\$2,720	\$336	\$3,056	\$0.85	\$16,654	\$2,325	\$287	\$2,612	\$330	\$282
1998	\$2,416	\$708	\$3,124	\$22,007	\$16,794	15.72%	\$2,640	\$376	\$3,016	\$0.82	\$18,088	\$2,170	\$309	\$2,479	\$533	\$438
1999	\$2,354	\$842	\$3,196	\$24,938	\$18,465	13.94%	\$2,574	\$421	\$2,995	\$0.79	\$19,709	\$2,034	\$333	\$2,367	\$761	\$602
2000	\$2,175	\$845	\$3,020	\$27,991	\$20,580	12.50%	\$2,573	\$472	\$3,045	\$0.76	\$21,271	\$1,955	\$359	\$2,314	\$922	\$700
2001	\$2,008	\$875	\$2,883	\$31,218	\$23,184	11.10%	\$2,573	\$529	\$3,102	\$0.73	\$22,811	\$1,880	\$386	\$2,267	\$1,085	\$793
2002	\$1,883	\$927	\$2,810	\$34,693	\$26,106	9.90%	\$2,585	\$592	\$3,177	\$0.70	\$24,375	\$1,816	\$416	\$2,232	\$1,243	\$873
2003	\$1,754	\$961	\$2,715	\$38,381	\$29,243	9.00%	\$2,632	\$663	\$3,295	\$0.68	\$25,929	\$1,778	\$448	\$2,226	\$1,369	\$925
2004	\$1,626	\$989	\$2,615	\$42,257	\$32,573	8.35%	\$2,720	\$743	\$3,463	\$0.65	\$27,449	\$1,767	\$483	\$2,249	\$1,445	\$938
2005	\$1,486	\$1,012	\$2,498	\$46,350	\$36,116	7.70%	\$2,781	\$832	\$3,613	\$0.62	\$28,950	\$1,737	\$520	\$2,257	\$1,550	\$968
2006	\$1,321	\$1,042	\$2,363	\$50,676	\$39,871	7.10%	\$2,831	\$932	\$3,763	\$0.60	\$30,435	\$1,700	\$560	\$2,260	\$1,667	\$1,001
2007	\$1,175	\$1,074	\$2,249	\$55,222	\$43,834	6.70%	\$2,937	\$1,044	\$3,980	\$0.58	\$31,890	\$1,696	\$603	\$2,299	\$1,727	\$998
2008	\$1,057	\$1,066	\$2,123	\$59,969	\$48,015	6.40%	\$3,073	\$1,169	\$4,242	\$0.56	\$33,299	\$1,706	\$649	\$2,355	\$1,757	\$976
2009	\$965	\$1,073	\$2,038	\$64,937	\$52,417	6.20%	\$3,250	\$1,309	\$4,559	\$0.53	\$34,670	\$1,735	\$699	\$2,434	\$1,746	\$932
2010	\$892	\$1,048	\$1,940	\$70,139	\$57,035	6.00%	\$3,422	\$1,466	\$4,888	\$0.51	\$36,008	\$1,757	\$753	\$2,509	\$1,737	\$892

DOR FALL 1993 HIGH CASE PROJECTIONS

INFLATION RATE

ANNUAL NOMINAL RATE OF RETURN (REAL RATE PLUS INFLATION)

CONVENTIONAL REVENUE GROWTH RATE

CURRENT SPENDING TREND==INFLATION RATE PLUS POPULATION GROWTH @

CREMO GAP DEFINED AS MAINTENANCE BUDGET MINUS CREMO INCOME BUDGET

4.00%

10.38%

12.00%

1.00%

CASE

CURRENT SPENDING TREND

	GENERAL FUND	PF DIVIDEND	SUM	SUM IN 1993 \$
1993				
1994				
1995				
1996	\$2,600	\$619	\$3,219	\$2,862
1997	\$2,730	\$656	\$3,386	\$2,894
1998	\$2,867	\$683	\$3,550	\$2,917
1999	\$3,010	\$747	\$3,757	\$2,969
2000	\$3,160	\$806	\$3,966	\$3,014
2001	\$3,318	\$869	\$4,187	\$3,060
2002	\$3,484	\$935	\$4,419	\$3,105
2003	\$3,658	\$1,006	\$4,664	\$3,151
2004	\$3,841	\$1,066	\$4,907	\$3,188
2005	\$4,033	\$1,129	\$5,162	\$3,224
2006	\$4,235	\$1,194	\$5,429	\$3,261
2007	\$4,447	\$1,261	\$5,708	\$3,296
2008	\$4,669	\$1,330	\$5,999	\$3,331
2009	\$4,903	\$1,402	\$6,305	\$3,366
2010	\$5,148	\$1,477	\$6,625	\$3,401

*

CASE 5 CREMO BASE CASE WITH 1.) HISTORICAL GROWTH RATE FOR CONVENTIONAL REVENUES (NO NEW TAXES)

DEPOSIT			PERMANENT FUND	PF AVERAGE 12 PRIOR QUARTERS	WITHDRAWAL		CONVENTIONAL REVENUES	INCOME BUDGET	PRESENT VALUE IN 1993 \$					CREMO GAP	
UN-EXPECTED	EXPECTED	TOTAL	YEAR END		%	AMOUNT			PRESENT VALUE OF \$1 (1993)	FUND	WITHDRAWAL	CONVENTIONAL REV	INCOME BUDGET	NOM \$	1993 \$
1993			\$13,218						\$1.00						
1994			\$14,661						\$0.96						
1995			\$16,277						\$0.92						
1996	\$2,117	\$2,117	\$17,279	\$13,896	20.00%	\$2,779	\$300	\$3,079	\$0.89	\$15,361	\$2,471	\$267	\$2,737	\$140	\$124
1997	\$2,295	\$2,295	\$18,638	\$15,311	17.73%	\$2,715	\$309	\$3,024	\$0.85	\$15,932	\$2,320	\$264	\$2,585	\$362	\$310
1998	\$2,416	\$2,416	\$20,370	\$16,607	15.72%	\$2,611	\$318	\$2,929	\$0.82	\$16,743	\$2,146	\$262	\$2,407	\$621	\$510
1999	\$2,354	\$2,354	\$22,339	\$17,899	13.94%	\$2,495	\$328	\$2,823	\$0.79	\$17,655	\$1,972	\$259	\$2,231	\$934	\$738
2000	\$2,175	\$2,175	\$24,429	\$19,382	12.36%	\$2,396	\$338	\$2,733	\$0.76	\$18,564	\$1,820	\$257	\$2,077	\$1,233	\$937
2001	\$2,008	\$2,008	\$26,644	\$21,158	10.95%	\$2,317	\$348	\$2,665	\$0.73	\$19,469	\$1,693	\$254	\$1,947	\$1,523	\$1,113
2002	\$1,883	\$1,883	\$29,032	\$23,147	9.71%	\$2,248	\$358	\$2,606	\$0.70	\$20,397	\$1,579	\$252	\$1,831	\$1,813	\$1,274
2003	\$1,754	\$1,754	\$31,606	\$25,290	8.61%	\$2,177	\$369	\$2,546	\$0.68	\$21,352	\$1,471	\$249	\$1,720	\$2,118	\$1,431
2004	\$1,626	\$1,626	\$34,390	\$27,580	7.63%	\$2,104	\$380	\$2,484	\$0.65	\$22,339	\$1,367	\$247	\$1,614	\$2,423	\$1,574
2005	\$1,486	\$1,486	\$37,392	\$30,042	6.77%	\$2,034	\$391	\$2,425	\$0.62	\$23,355	\$1,270	\$244	\$1,515	\$2,737	\$1,710
2006	\$1,321	\$1,321	\$40,608	\$32,699	6.00%	\$1,962	\$403	\$2,365	\$0.60	\$24,388	\$1,178	\$242	\$1,420	\$3,064	\$1,840
2007	\$1,175	\$1,175	\$43,828	\$35,565	6.00%	\$2,134	\$415	\$2,549	\$0.58	\$25,310	\$1,232	\$240	\$1,472	\$3,159	\$1,824
2008	\$1,057	\$1,057	\$47,070	\$38,619	6.00%	\$2,317	\$428	\$2,745	\$0.56	\$26,136	\$1,287	\$238	\$1,524	\$3,254	\$1,807
2009	\$965	\$965	\$50,355	\$41,794	6.00%	\$2,508	\$441	\$2,948	\$0.53	\$27,885	\$1,339	\$235	\$1,574	\$3,356	\$1,792
2010	\$892	\$892	\$53,704	\$45,029	6.00%	\$2,702	\$454	\$3,156	\$0.51	\$27,570	\$1,387	\$233	\$1,620	\$3,469	\$1,781

DOR FALL 1993 MID CASE PROJECTIONS

INFLATION RATE

ANNUAL NOMINAL RATE OF RETURN (REAL RATE PLUS INFLATION)

CONVENTIONAL REVENUE GROWTH RATE

CURRENT SPENDING TREND==INFLATION RATE PLUS POPULATION GROWTH @

CREMO GAP DEFINED AS MAINTENANCE BUDGET MINUS CREMO INCOME BUDGET

4.00%

10.38%

3.00% BASED ON \$222 IN 1986 AND \$299 ESTIMATED FOR 1995 (DOR)

1.00%

CASE

CURRENT SPENDING TREND

GENERAL FUND	PF DIVIDEND	SUM	SUM IN 1993 \$
-----------------	----------------	-----	-------------------

1993			
1994			
1995			
1996	\$2,600	\$619	\$3,219
1997	\$2,730	\$656	\$3,386
1998	\$2,867	\$683	\$3,550
1999	\$3,010	\$747	\$3,757
2000	\$3,160	\$806	\$3,966
2001	\$3,318	\$869	\$4,187
2002	\$3,484	\$935	\$4,419
2003	\$3,658	\$1,006	\$4,664
2004	\$3,841	\$1,066	\$4,907
2005	\$4,033	\$1,129	\$5,162
2006	\$4,235	\$1,194	\$5,429
2007	\$4,447	\$1,261	\$5,708
2008	\$4,669	\$1,330	\$5,999
2009	\$4,903	\$1,402	\$6,305
2010	\$5,148	\$1,477	\$6,625

CASE 6 CREMO BASE WITH 1.) HISTORICAL GROWTH RATE FOR CONVENTIONAL REVENUES (NO NEW TAXES), 2.) HISTORICAL RATE OF RETURN ON PERMANENT FUND

DEPOSIT			PERMANENT FUND	PF	WITHDRAWAL		CONVEN-		PRESENT VALUE IN 1993 \$				CREMO GAP		
UN-			YEAR	AVERAGE			TIONAL	INCOME	PRESENT	CONVEN-					
EXPECTED	EXPECTED	TOTAL	END	12 PRIOR	%	AMOUNT	REVENUES	BUDGET	VALUE OF \$1 (1993)	FUND	WITH-DRAWAL	TIONAL REV	INCOME BUDGET	NOM \$	1993 \$
				QUARTERS											

DOR FALL 1993 MID CASE PROJECTIONS

INFLATION RATE

ANNUAL NOMINAL RATE OF RETURN (REAL RATE PLUS INFLATION)

CONVENTIONAL REVENUE GROWTH RATE

CURRENT SPENDING TREND==INFLATION RATE PLUS POPULATION GROWTH @

CREMO GAP DEFINED AS MAINTENANCE BUDGET MINUS CREMO INCOME BUDGET

4.00%

9.31% BASED ON 5 PERCENT REPORTED IN PF ANNUAL REPORT

3.00% BASED ON \$222 IN 1986 AND \$299 ESTIMATED FOR 1995 (DOR)

1.00%

CASE

CURRENT SPENDING TREND				CURRENT REVENUE STRUCTURE				CURRENT POLICY FISCAL GAP	
GENERAL FUND	PF DIVIDEND	SUM	SUM IN 1993 \$	GENERAL FUND	PERM FUND	SUM	SUM IN 1993 \$	NOM \$	1993 \$
1993									
1994									
1995									
1996	\$2,600	\$619	\$3,219	\$2,862	\$2,155	\$619	\$2,774	\$2,466	\$445 \$396
1997	\$2,730	\$656	\$3,386	\$2,894	\$2,320	\$656	\$2,976	\$2,544	\$410 \$350
1998	\$2,867	\$683	\$3,550	\$2,917	\$2,424	\$683	\$3,107	\$2,554	\$443 \$364
1999	\$3,010	\$747	\$3,757	\$2,969	\$2,371	\$747	\$3,118	\$2,464	\$639 \$505
2000	\$3,160	\$806	\$3,966	\$3,014	\$2,218	\$806	\$3,024	\$2,298	\$942 \$716
2001	\$3,318	\$869	\$4,187	\$3,060	\$2,076	\$869	\$2,945	\$2,152	\$1,242 \$908
2002	\$3,484	\$935	\$4,419	\$3,105	\$1,968	\$935	\$2,903	\$2,040	\$1,516 \$1,065
2003	\$3,658	\$1,006	\$4,664	\$3,151	\$1,869	\$1,006	\$2,875	\$1,942	\$1,789 \$1,209
2004	\$3,841	\$1,066	\$4,907	\$3,188	\$1,762	\$1,066	\$2,828	\$1,837	\$2,079 \$1,351
2005	\$4,033	\$1,129	\$5,162	\$3,224	\$1,647	\$1,129	\$2,776	\$1,734	\$2,386 \$1,491
2006	\$4,235	\$1,194	\$5,429	\$3,261	\$1,509	\$1,194	\$2,703	\$1,623	\$2,726 \$1,637
2007	\$4,447	\$1,261	\$5,708	\$3,296	\$1,388	\$1,261	\$2,649	\$1,530	\$3,059 \$1,766
2008	\$4,669	\$1,330	\$5,999	\$3,331	\$1,293	\$1,330	\$2,623	\$1,456	\$3,376 \$1,875
2009	\$4,903	\$1,402	\$6,305	\$3,366	\$1,225	\$1,402	\$2,627	\$1,403	\$3,678 \$1,964
2010	\$5,148	\$1,477	\$6,625	\$3,401	\$1,173	\$1,477	\$2,650	\$1,360	\$3,975 \$2,041

*

CASE 7 CREMO CASE: LOW OIL \$ WITH 1.) DOR PROJECTED CONVENTIONAL REVENUES (NO NEW TAXES), 2.) PF CORP PROJECTED RATE OF RETURN ON PERMANENT FUND

DEPOSIT			PERMANENT FUND	PF	WITHDRAWAL		CONVENTIONAL REVENUES	INCOME BUDGET	PRESENT VALUE IN 1993 \$					CREMO GAP	
UN-EXPECTED	EXPECTED	TOTAL	YEAR END	AVERAGE 12 PRIOR QUARTERS	%	AMOUNT			PRESENT VALUE OF \$1 (1993)	FUND	WITHDRAWAL	CONVENTIONAL REV	INCOME BUDGET	NOM \$	1993 \$
1993			\$13,218						\$1.00						
1994			\$14,661						\$0.96						
1995			\$16,277						\$0.92						
1996	\$1,773	\$1,773	\$16,602	\$13,896	20.00%	\$2,779	\$262	\$3,041	\$0.89	\$14,759	\$2,471	\$233	\$2,704	\$178	\$158
1997	\$1,787	\$1,787	\$17,051	\$15,228	17.73%	\$2,700	\$270	\$2,970	\$0.85	\$14,575	\$2,308	\$231	\$2,539	\$416	\$356
1998	\$1,812	\$1,812	\$17,723	\$16,187	15.72%	\$2,545	\$278	\$2,823	\$0.82	\$14,567	\$2,092	\$228	\$2,320	\$727	\$597
1999	\$1,685	\$1,685	\$18,636	\$16,821	13.94%	\$2,345	\$286	\$2,631	\$0.78	\$14,450	\$1,818	\$222	\$2,040	\$1,183	\$918
2000	\$1,512	\$1,512	\$19,657	\$17,375	12.36%	\$2,148	\$295	\$2,443	\$0.73	\$14,379	\$1,571	\$216	\$1,787	\$1,645	\$1,204
2001	\$1,366	\$1,366	\$20,787	\$18,123	10.95%	\$1,984	\$304	\$2,288	\$0.69	\$14,345	\$1,370	\$210	\$1,579	\$2,092	\$1,444
2002	\$1,238	\$1,238	\$22,026	\$19,048	9.71%	\$1,850	\$313	\$2,163	\$0.65	\$14,340	\$1,204	\$204	\$1,408	\$2,530	\$1,647
2003	\$1,123	\$1,123	\$23,379	\$20,109	8.61%	\$1,731	\$322	\$2,053	\$0.61	\$14,359	\$1,063	\$198	\$1,261	\$2,973	\$1,826
2004	\$1,009	\$1,009	\$24,849	\$21,280	7.63%	\$1,624	\$332	\$1,956	\$0.58	\$14,398	\$941	\$192	\$1,133	\$3,412	\$1,977
2005	\$891	\$891	\$26,427	\$22,563	6.77%	\$1,527	\$342	\$1,869	\$0.55	\$14,446	\$835	\$187	\$1,022	\$3,862	\$2,111
2006	\$772	\$772	\$28,118	\$23,958	6.00%	\$1,437	\$352	\$1,789	\$0.52	\$14,500	\$741	\$182	\$923	\$4,330	\$2,233
2007	\$674	\$674	\$29,767	\$25,467	6.00%	\$1,528	\$363	\$1,891	\$0.49	\$14,481	\$743	\$177	\$920	\$4,640	\$2,257
2008	\$598	\$598	\$31,385	\$27,068	6.00%	\$1,624	\$373	\$1,997	\$0.46	\$14,405	\$745	\$171	\$917	\$4,972	\$2,282
2009	\$539	\$539	\$32,987	\$28,713	6.00%	\$1,723	\$385	\$2,108	\$0.43	\$14,283	\$746	\$167	\$913	\$5,328	\$2,307
2010	\$489	\$489	\$34,580	\$30,354	6.00%	\$1,821	\$396	\$2,217	\$0.41	\$14,125	\$744	\$162	\$906	\$5,716	\$2,335

DOR FALL 1993 LOW CASE PROJECTIONS

INFLATION RATE

ANNUAL NOMINAL RATE OF RETURN (REAL RATE PLUS INFLATION)

CONVENTIONAL REVENUE GROWTH RATE

CURRENT SPENDING TREND==INFLATION RATE PLUS POPULATION GROWTH

CREMO GAP DEFINED AS MAINTENANCE BUDGET MINUS CREMO INCOME BUDGET

4.00% 1995-1998 6.00% 1999-2010
8.37% 1995-1998 9.00% 1999-2010
DOR FALL 1993 LOW CASE PROJECTIONS

1.00%

CASE

CURRENT SPENDING TREND					CURRENT REVENUE STRUCTURE				CURRENT POLICY FISCAL GAP		CURRENT POLICY PERMANENT FUND	
GENERAL FUND	PF DIVIDEND	SUM	SUM IN 1993 \$	GENERAL FUND	PERM FUND	SUM	SUM IN 1993 \$	NOM \$	1993 \$	NOM \$	1993 \$	
1993										NO DEPOSIT OF RESERVES IN 1996		
1994												
1995												
1996	\$2,600	\$619	\$3,219	\$2,862	\$1,816	\$619	\$2,435	\$2,165	\$784	\$697	\$14,489	\$12,881
1997	\$2,730	\$656	\$3,386	\$2,894	\$1,852	\$656	\$2,508	\$2,144	\$878	\$751	\$15,304	\$13,082
1998	\$2,867	\$683	\$3,550	\$2,917	\$1,873	\$683	\$2,556	\$2,101	\$994	\$817	\$16,161	\$13,283
1999	\$3,067	\$747	\$3,814	\$2,958	\$1,764	\$747	\$2,511	\$1,947	\$1,303	\$1,010	\$17,370	\$13,469
2000	\$3,282	\$806	\$4,088	\$2,990	\$1,616	\$806	\$2,422	\$1,772	\$1,666	\$1,219	\$18,633	\$13,630
2001	\$3,512	\$869	\$4,381	\$3,023	\$1,491	\$869	\$2,360	\$1,629	\$2,021	\$1,394	\$19,956	\$13,772
2002	\$3,757	\$935	\$4,692	\$3,055	\$1,383	\$935	\$2,318	\$1,509	\$2,374	\$1,546	\$21,345	\$13,897
2003	\$4,020	\$1,006	\$5,026	\$3,087	\$1,298	\$1,006	\$2,304	\$1,415	\$2,722	\$1,672	\$22,806	\$14,007
2004	\$4,302	\$1,066	\$5,368	\$3,110	\$1,204	\$1,066	\$2,270	\$1,315	\$3,098	\$1,795	\$24,342	\$14,104
2005	\$4,603	\$1,129	\$5,732	\$3,133	\$1,109	\$1,129	\$2,238	\$1,223	\$3,494	\$1,910	\$25,955	\$14,188
2006	\$4,925	\$1,194	\$6,119	\$3,156	\$1,013	\$1,194	\$2,207	\$1,138	\$3,912	\$2,017	\$27,651	\$14,259
2007	\$5,270	\$1,261	\$6,531	\$3,177	\$935	\$1,261	\$2,196	\$1,068	\$4,335	\$2,109	\$29,438	\$14,322
2008	\$5,639	\$1,330	\$6,969	\$3,198	\$877	\$1,330	\$2,207	\$1,013	\$4,762	\$2,185	\$31,322	\$14,376
2009	\$6,034	\$1,402	\$7,436	\$3,219	\$837	\$1,402	\$2,239	\$969	\$5,197	\$2,250	\$32,977	\$14,278
2010	\$6,456	\$1,477	\$7,933	\$3,240	\$807	\$1,477	\$2,284	\$933	\$5,649	\$2,307	\$34,702	\$14,175

DIVIDEND FROM PF CORP DECEMBER 1993 REPORT
 GF SPENDING FOR 1996 ESTIMATED--GROWTH AT 1% ABOVE INFLATION
 GF REVENUES FROM DOR FALL 1993 LOW CASE

PF BALANCE PROJECTION FROM PF CORP DECEMBER 1993 REPORT

CASE 8 CREMO CASE: MID OIL WITH 1.) DOR PROJECTED CONVENTIONAL REVENUES (NO NEW TAXES), 2.) CREMO PROJECTED RATE OF RETURN ON PERMANENT FUND

DEPOSIT			PERMANENT FUND	PF	WITHDRAWAL		CONVENTIONAL REVENUES	INCOME BUDGET	PRESENT VALUE IN 1993 \$				CREMO GAP		
UN-EXPECTED	EXPECTED	TOTAL	YEAR END	AVERAGE 12 PRIOR QUARTERS	%	AMOUNT			PRESENT VALUE OF \$1 (1993)	FUND	WITHDRAWAL	CONVENTIONAL REV	INCOME BUDGET	NOM \$	1993 \$
1993			\$13,218						\$1.00						
1994			\$14,661						\$0.96						
1995			\$16,277						\$0.92						
1996	\$2,117	\$2,117	\$17,279	\$13,896	20.00%	\$2,779	\$280	\$3,059	\$0.89	\$15,361	\$2,471	\$249	\$2,720	\$219	\$195
1997	\$2,295	\$2,295	\$18,638	\$15,311	17.73%	\$2,715	\$289	\$3,004	\$0.85	\$15,932	\$2,321	\$247	\$2,567	\$404	\$346
1998	\$2,416	\$2,416	\$20,370	\$16,607	15.72%	\$2,611	\$297	\$2,908	\$0.82	\$16,743	\$2,146	\$244	\$2,390	\$709	\$583
1999	\$2,354	\$2,354	\$22,339	\$17,899	13.94%	\$2,495	\$306	\$2,801	\$0.79	\$17,655	\$1,972	\$242	\$2,214	\$1,039	\$821
2000	\$2,175	\$2,175	\$24,429	\$19,382	12.36%	\$2,396	\$316	\$2,712	\$0.76	\$18,564	\$1,820	\$240	\$2,061	\$1,370	\$1,041
2001	\$2,008	\$2,008	\$26,644	\$21,158	10.95%	\$2,317	\$325	\$2,642	\$0.73	\$19,469	\$1,693	\$237	\$1,930	\$1,703	\$1,244
2002	\$1,883	\$1,883	\$29,032	\$23,147	9.71%	\$2,248	\$335	\$2,583	\$0.70	\$20,397	\$1,579	\$235	\$1,815	\$2,006	\$1,409
2003	\$1,754	\$1,754	\$31,606	\$25,290	8.61%	\$2,177	\$345	\$2,522	\$0.68	\$21,352	\$1,471	\$233	\$1,704	\$2,322	\$1,569
2004	\$1,626	\$1,626	\$34,390	\$27,580	7.63%	\$2,104	\$355	\$2,459	\$0.65	\$22,339	\$1,367	\$231	\$1,598	\$2,653	\$1,723
2005	\$1,486	\$1,486	\$37,392	\$30,042	6.77%	\$2,034	\$366	\$2,400	\$0.62	\$23,355	\$1,270	\$229	\$1,499	\$2,993	\$1,869
2006	\$1,321	\$1,321	\$40,608	\$32,699	6.00%	\$1,962	\$377	\$2,339	\$0.60	\$24,388	\$1,178	\$226	\$1,405	\$3,348	\$2,011
2007	\$1,175	\$1,175	\$43,828	\$35,565	6.00%	\$2,134	\$388	\$2,522	\$0.58	\$25,310	\$1,232	\$224	\$1,456	\$3,474	\$2,006
2008	\$1,057	\$1,057	\$47,070	\$38,619	6.00%	\$2,317	\$400	\$2,717	\$0.56	\$26,136	\$1,287	\$222	\$1,509	\$3,603	\$2,000
2009	\$965	\$965	\$50,355	\$41,794	6.00%	\$2,508	\$412	\$2,920	\$0.53	\$26,885	\$1,339	\$220	\$1,559	\$3,740	\$1,997
2010	\$892	\$892	\$53,704	\$45,029	6.00%	\$2,702	\$424	\$3,126	\$0.51	\$27,570	\$1,387	\$218	\$1,605	\$3,891	\$1,998

DOR FALL 1993 MID CASE PROJECTIONS

INFLATION RATE

ANNUAL NOMINAL RATE OF RETURN (REAL RATE PLUS INFLATION)

CONVENTIONAL REVENUE GROWTH RATE

CURRENT SPENDING TREND==INFLATION RATE PLUS POPULATION GROWTH @

CREMO GAP DEFINED AS MAINTENANCE BUDGET MINUS CREMO INCOME BUDGET

4.00% 1995-1998 4.00% 1999-2010
10.38% 1995-1998 10.38% 1999-2010
DOR FALL 1993 MID CASE PROJECTIONS

1.00%

CASE

CURRENT SPENDING TREND				CURRENT REVENUE STRUCTURE				CURRENT POLICY FISCAL GAP		CURRENT POLICY PERMANENT FUND		CURRENT POLICY PERMANENT FUND BY QUARTER				PERMANENT FUND	
GENERAL FUND	PF DIVIDEND	SUM	SUM IN 1993 \$	GENERAL FUND	PERM FUND	SUM	SUM IN 1993 \$	NOM \$	1993 \$	NOM \$	1993 \$	BEGIN 1ST Q	BEGIN 2ND Q	BEGIN 3RD Q	BEGIN 4TH Q	YEAR END	
1993																11703	
1994																12385	
1995																12971	
1996	\$2,600	\$678	\$3,278	\$2,914	\$2,155	\$678	\$2,833	\$2,519	\$445	\$396	\$17,530	\$15,584	\$16,277	\$16,579	\$16,888	\$17,205	\$17,530
1997	\$2,730	\$678	\$3,408	\$2,913	\$2,320	\$678	\$2,998	\$2,562	\$410	\$350	\$18,941	\$16,191	\$17,530	\$17,870	\$18,218	\$18,575	\$18,941
1998	\$2,867	\$750	\$3,617	\$2,973	\$2,424	\$750	\$3,174	\$2,609	\$443	\$364	\$20,448	\$16,807	\$18,941	\$19,304	\$19,676	\$20,057	\$20,448
1999	\$3,010	\$831	\$3,841	\$3,035	\$2,371	\$831	\$3,202	\$2,530	\$639	\$505	\$22,029	\$17,410	\$20,448	\$20,829	\$21,219	\$21,619	\$22,029
2000	\$3,160	\$921	\$4,082	\$3,102	\$2,218	\$921	\$3,139	\$2,386	\$942	\$716	\$23,663	\$17,982	\$22,029	\$22,423	\$22,826	\$23,239	\$23,663
2001	\$3,318	\$1,026	\$4,344	\$3,174	\$2,076	\$1,026	\$3,102	\$2,267	\$1,242	\$908	\$25,339	\$18,515	\$23,663	\$24,067	\$24,480	\$24,905	\$25,339
2002	\$3,484	\$1,104	\$4,588	\$3,224	\$1,968	\$1,104	\$3,072	\$2,158	\$1,516	\$1,065	\$27,099	\$19,039	\$25,339	\$25,763	\$26,197	\$26,643	\$27,099
2003	\$3,658	\$1,186	\$4,844	\$3,273	\$1,869	\$1,186	\$3,055	\$2,064	\$1,789	\$1,209	\$28,945	\$19,554	\$27,099	\$27,543	\$27,999	\$28,466	\$28,945
2004	\$3,841	\$1,271	\$5,112	\$3,321	\$1,762	\$1,271	\$3,033	\$1,970	\$2,079	\$1,351	\$30,882	\$20,060	\$28,945	\$29,411	\$29,889	\$30,379	\$30,882
2005	\$4,033	\$1,359	\$5,393	\$3,368	\$1,647	\$1,359	\$3,006	\$1,878	\$2,386	\$1,491	\$32,912	\$20,557	\$30,882	\$31,371	\$31,872	\$32,386	\$32,912
2006	\$4,235	\$1,452	\$5,687	\$3,415	\$1,509	\$1,452	\$2,961	\$1,778	\$2,726	\$1,637	\$35,040	\$21,044	\$32,912	\$33,424	\$33,950	\$34,488	\$35,040
2007	\$4,447	\$1,549	\$5,996	\$3,462	\$1,388	\$1,549	\$2,937	\$1,696	\$3,059	\$1,766	\$37,271	\$21,523	\$35,040	\$35,577	\$36,128	\$36,692	\$37,271
2008	\$4,669	\$1,650	\$6,320	\$3,509	\$1,293	\$1,650	\$2,943	\$1,634	\$3,376	\$1,875	\$39,614	\$21,997	\$37,271	\$37,835	\$38,414	\$39,007	\$39,614
2009	\$4,903	\$1,757	\$6,660	\$3,556	\$1,225	\$1,757	\$2,982	\$1,592	\$3,678	\$1,964	\$42,078	\$22,466	\$39,614	\$40,208	\$40,816	\$41,439	\$42,078
2010	\$5,148	\$1,869	\$7,017	\$3,602	\$1,173	\$1,869	\$3,042	\$1,562	\$3,975	\$2,041	\$44,670	\$22,932	\$42,078	\$42,702	\$43,342	\$43,998	\$44,670

ALL RESERVES
DEPOSITED IN 1996

ALL RESERVES DEPOSITED IN 1996

1996 DIVIDEND FROM PF CORP DECEMBER 1993 REPORT AND THEN PROJECTED BY AUTHOR
GF SPENDING FOR 1996 ESTIMATED--GROWTH AT 1% ABOVE INFLATION
GF REVENUES FROM DOR FALL 1993 MID CASE

PF BALANCE PROJECTED BY AUTHOR WITH DOR FALL 1993 MID CASE CONTRIBUTION

CASE

 CALCULATED PF
 DIVIDEND CONTRIBUTION

1993		
1994		
1995		
1996	\$678	\$257
1997	\$678	\$284
1998	\$750	\$308
1999	\$831	\$309
2000	\$921	\$292
2001	\$1,026	\$275
2002	\$1,104	\$265
2003	\$1,186	\$254
2004	\$1,271	\$242
2005	\$1,359	\$227
2006	\$1,452	\$210
2007	\$1,549	\$194
2008	\$1,650	\$181
2009	\$1,757	\$169
2010	\$1,869	\$158

Legislative Research Agency

Alaska State Legislature



130 Seward Street, Suite 218
Juneau, Alaska 99801-2196

Phone: (907) 465-3991
Fax: (907) 463-3351

February 9, 1994

MEMORANDUM

TO: Senator Johnny Ellis

FROM: Betsy A. Jensvold ^{BAJ}
Legislative Analyst

RE: Analysis of Fiscal Plan Advocated by Roger Cremo
Research Request 94.109

You were one of several legislators who asked for an analysis of the fiscal plan advocated by Mr. Roger Cremo. None of the requests we received specified the type or the details of the analysis we should perform, so we chose a line of inquiry that seemed to us to be the most useful at this point in the discussion of the Cremo Plan: we examined the plan to see how it would perform if events conspired against it--if oil prices stayed low, the state's reserve accounts were smaller than assumed by Mr. Cremo, and real earnings of the fund were less than expected. These are the three aspects of the plan that seem the most likely to go awry, and we sought to examine how the fund would perform under a set of pessimistic circumstances (a bad, but not necessarily "worst case," scenario).

We begin this memorandum by giving a brief description of the Cremo proposal, including a comparison of money available for appropriation under the plan (as forecast on the basis of assumptions used by Mr. Cremo) and under a continuation of the present "system" of muddling through (although the use of existing reserves are excluded from the projection of future spending without the Cremo plan). This description of the plan identifies the key independent variables of the plan, and how these variables are influenced. We then examine the impact of the plan on money available for appropriation, and on the fund balance, if state petroleum revenues were lower than expected, and if the initial contribution from reserves to the fund was \$1 billion short, and real earnings of the fund were 4 percent rather than 6 percent.

The Cremo Plan

The Cremo plan seeks to turn irregular, declining natural resource revenues (mostly from oil) into a relatively steady, perpetual source of funds for state government. It requires spending discipline, but enforces that discipline through an amendment to the state constitution.

The plan requires that all revenues derived from natural resources, the permanent fund, and reserves totaling \$2.5 billion be placed into a single fund. That fund would be invested aggressively by a public corporation similar to the Permanent Fund Corporation.

Stringent rules would govern the withdrawal of money from the fund. In the first year (1996), the withdrawal amount would equal 20 percent of the average market value of the fund during the 12 preceding calendar quarters. For the next ten years (the "transition period"), the withdrawal rate decreases geometrically until it reaches the long-term, stable rate of 6 percent per year in 2006.¹

Comparison of the Cremo Plan and the Current System

Figures 1 and 2, attached, compare the money available for appropriation through the year 2010 under the Cremo plan and under the conventional budgetary system of spending recurring revenues. Figure 1 provides a comparison in nominal dollars (inflated dollars); Figure 2 provides a comparison in 1996 dollars (real, or constant dollars). These comparisons incorporate some important adjustments and assumptions:

Cremo plan projections assume a *significant* increase in non-oil revenues. Consequently, the same assumption was used in calculating state budget figures for the existing system. The specific assumption used is that non-oil revenues will increase by 12 percent per year through 2006 and by 4 percent per year (inflation) thereafter. A similar increase could be achieved by implementing an income tax of \$300 million in 1996 and increasing that amount by the rate of inflation each year.

Cremo plan projections represent the maximum funds available for all state appropriations, including dividends.

Two lines are used to illustrate spendable, recurring revenue under the existing system. The lower line represents the total funds appropriable by the state to pay for all government services except permanent fund dividends. The higher line represents the total funds available with dividends; so the difference between the two lines is the amount projected to be paid out as dividends. '

Revenues available for appropriation under the current system are only recurring revenues, and exclude the use of money now in the statutory budget reserve fund,

¹The proposed constitutional amendment states that the withdrawal rate shall decrease geometrically throughout the transition period, but does not provide specific details. The formula Roger Cremo uses is: prior year rate * (6 percent/20 percent)^{1/(2006 - 1996)}.

the constitutional budget reserve fund, and the earnings reserve account of the permanent fund (reserves which are incorporated into the Cremo proposal).

Although both systems provide roughly similar amounts of money throughout the period, several important distinctions exist.

The Cremo Plan constrains spending more than the current system throughout most of the early years.

The Cremo plan creates a long-term funding source which the existing system does not. By the year 2006, money available for appropriation is increasing under the Cremo plan, but it is decreasing under the current system.

Under the existing system, dividends quickly outstrip money available for all other government services, even under a scenario in which non-oil revenues increase substantially.

Important Assumptions of the Plan

The Cremo plan makes several important assumptions. The table below lists key variables (assumptions) of the plan, who (or what) controls that variable, the assumptions used in the Cremo base case, and alternative assumptions evaluated for this report.

Cremo Plan Assumptions:

Key Variables	Variable controlled by			Base Case Assumptions	Alternate Assumptions
	Market	Legislature Plan	Other		
Resource revenues	x			DOR 10/31/93 mid-case projection	20% less '96-'98, 10% less '99-'00
Investment returns	x			10% nominal	8% nominal
Inflation	x			4%	
Initial funds			x	\$2.5 B reserves added to fund	\$1B reduction
Withdrawal rate/rule		x		6% of fund's market value	
Transition period:					
Length (years)		x		10 years (1996-2005)	
Withdrawal rates		x		20% decreasing geometrically	
Conventional (nonresource) income:			x	12%/year thru transition, 4% thereafter	

Prepared February 1994 (94.109A).

Plan Sensitivity to Key Variables

The table groups the key variables of the Cremo plan by the forces that control them. Several are within the control of the Legislature (or the electorate), and others are subject

to the control of external, market forces. The former are the long-term withdrawal rate; the length of the transition period and withdrawal rates throughout that period; the addition of reserves (and the availability of reserves); the amount of additional, nonpetroleum revenue that is raised; and the investment strategy of fund managers. Variables in the Cremo plan that are market-driven are oil revenues (which are dependent on both market price and production volume), investment returns and inflation (which together determine the "real" increase in fund value).

How sensitive is the Cremo plan to variation in some of these variables? That is, how much does the outcome change if different assumptions are used? We have run the Cremo plan computer model using three pessimistic (yet plausible) assumptions: 1) less oil revenue (20 percent less than the fall 1993 mid-case projection for FY 96 and 98, and 10 percent less for the period FY 99 - FY 2000, 2) \$1.5 billion initial contribution from reserves, rather than \$2.5 billion, and 3) a 4 percent real rate of return on the investment of the fund rather than a 6 percent real rate of return. We examine these assumptions individually and cumulatively.

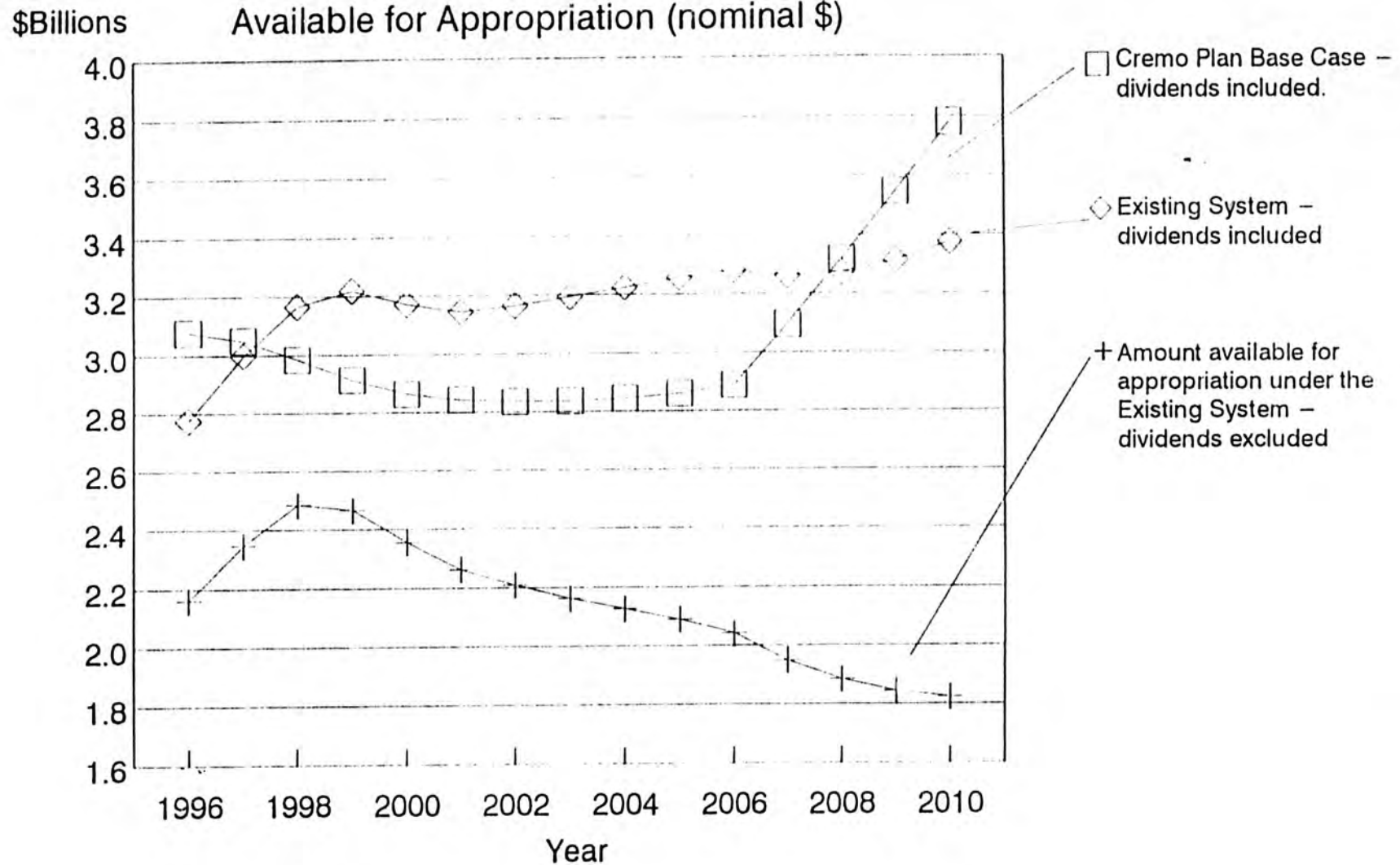
Figures 3 and 4 show the effects of these assumptions on the money available for appropriation. Figure 3 shows the results in nominal (inflated) dollars and Figure 4 shows the results in 1996 (real, or constant) dollars. Thus, for example, if all three pessimistic assumptions were to prevail, and all else remained unchanged, the amount available for appropriation in the year 2002 would be \$2.050 billion (nominal) in contrast to \$2.863 billion under the base case (the numbers in 1996 dollars are \$2.142 billion versus \$2.447). Figure 5 shows the effects (in nominal dollars) of the three pessimistic assumptions on the balance of the fund. *The numbers from which the figures were prepared are included in this memorandum as an attachment.*

Although we offer no comment on the many public policy issues that the Cremo proposal raises, or on the adequacy of the funds it makes available for appropriation, we do note the surprisingly resiliency of the model in the face of these pessimistic assumptions. A number of factors account for this resiliency. For example, the balance of the fund (and money available for appropriation) eventually turns up in our analysis (through the year 2010) even though the withdrawal rate of 6 percent is greater than the real earning rate of 4 percent. This is because there are continuing deposits to the fund of petroleum revenues, and because the withdrawal amount is based on the average value of the fund over the prior three years when it would normally have a lower market value.

Although it raises only some of the questions that might be asked of the Cremo proposal, I hope you find this analysis informative. Call if you have questions would like additional information.

Attachments

Figure 1
Cremo Plan vs. Existing System
Available for Appropriation (nominal \$)

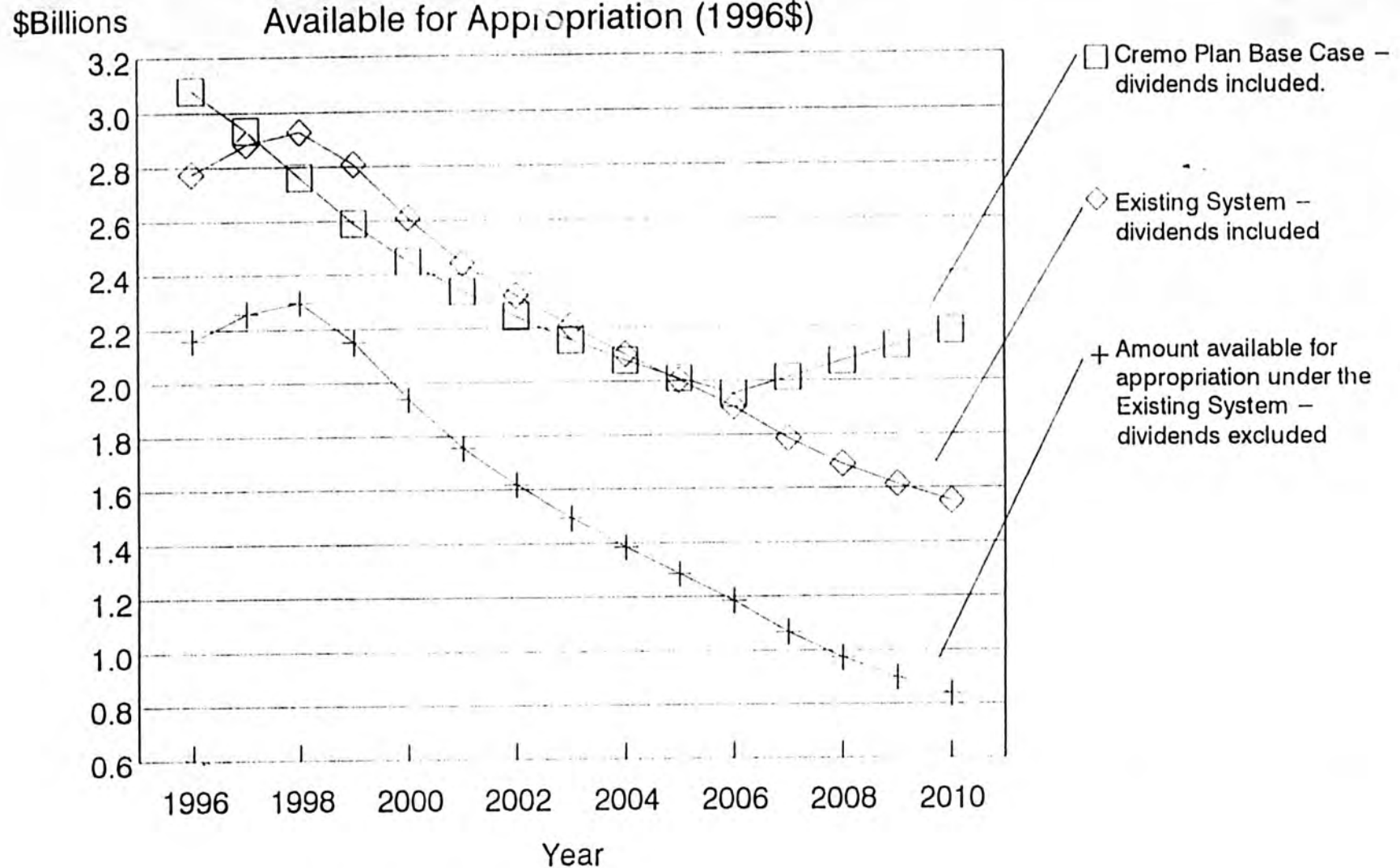


□ Cremo (w/dividends) + Existing System ◇ Existing w/dividend

Note: All three lines assume that nonresource revenues are increased; revenue shown available for appropriation under the existing system excludes the use of reserve funds.

Prepared by the Legislative Research Agency, February 1994 (94.109B.ebudg-n).

Figure 2
Cremo Plan vs. Existing System
Available for Appropriation (1996\$)

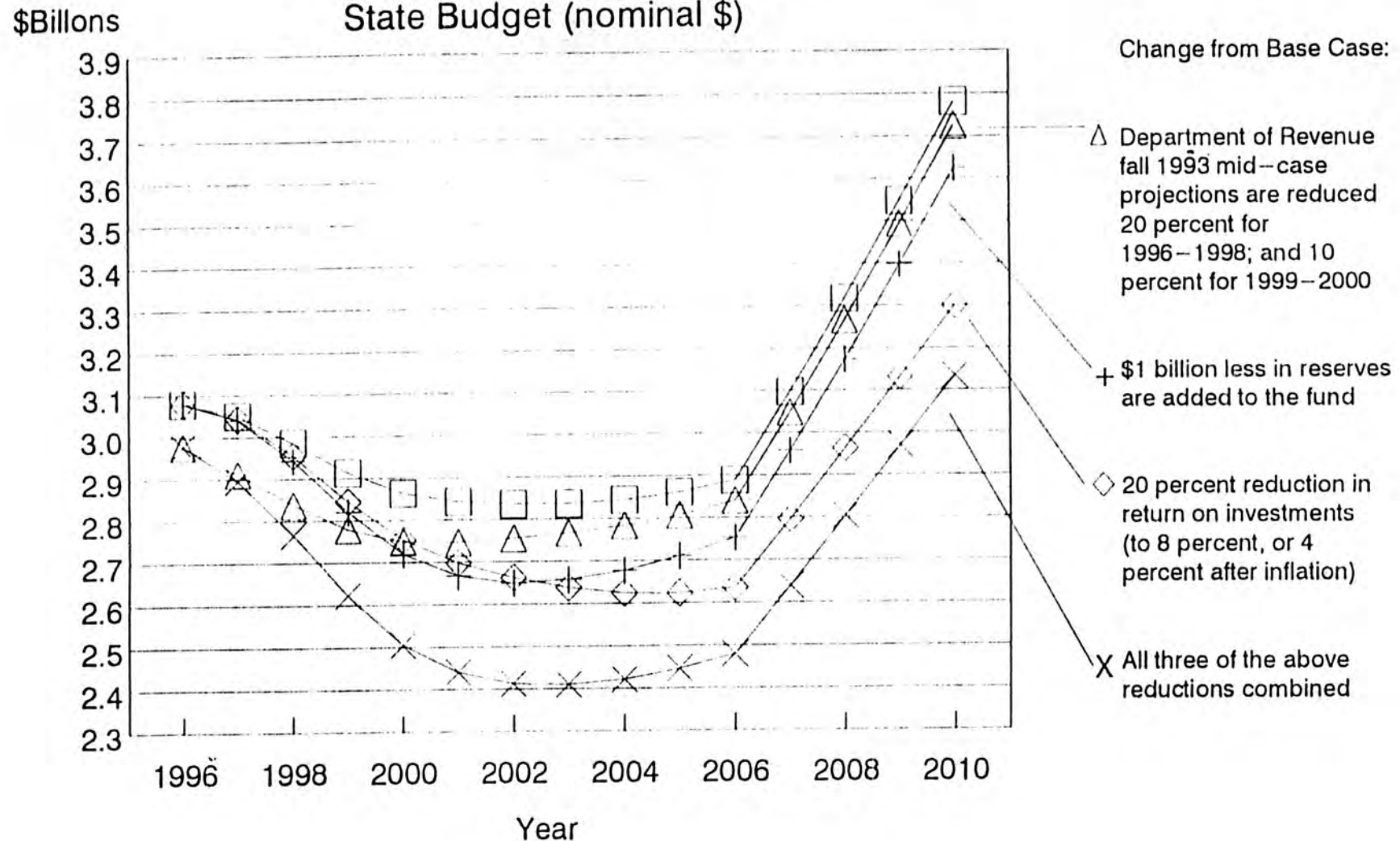


□ Cremo (w/dividends) + Existing System ◇ Existing w/dividend

Note: All three lines assume that nonresource revenues are increased; revenue shown available for appropriation under the existing system excludes the use of reserve funds.

Prepared by the Legislative Research Agency, February 1994 (94.109B.ebudg-r).

Figure 3
Cremo Plan Market Sensitivities
State Budget (nominal \$)

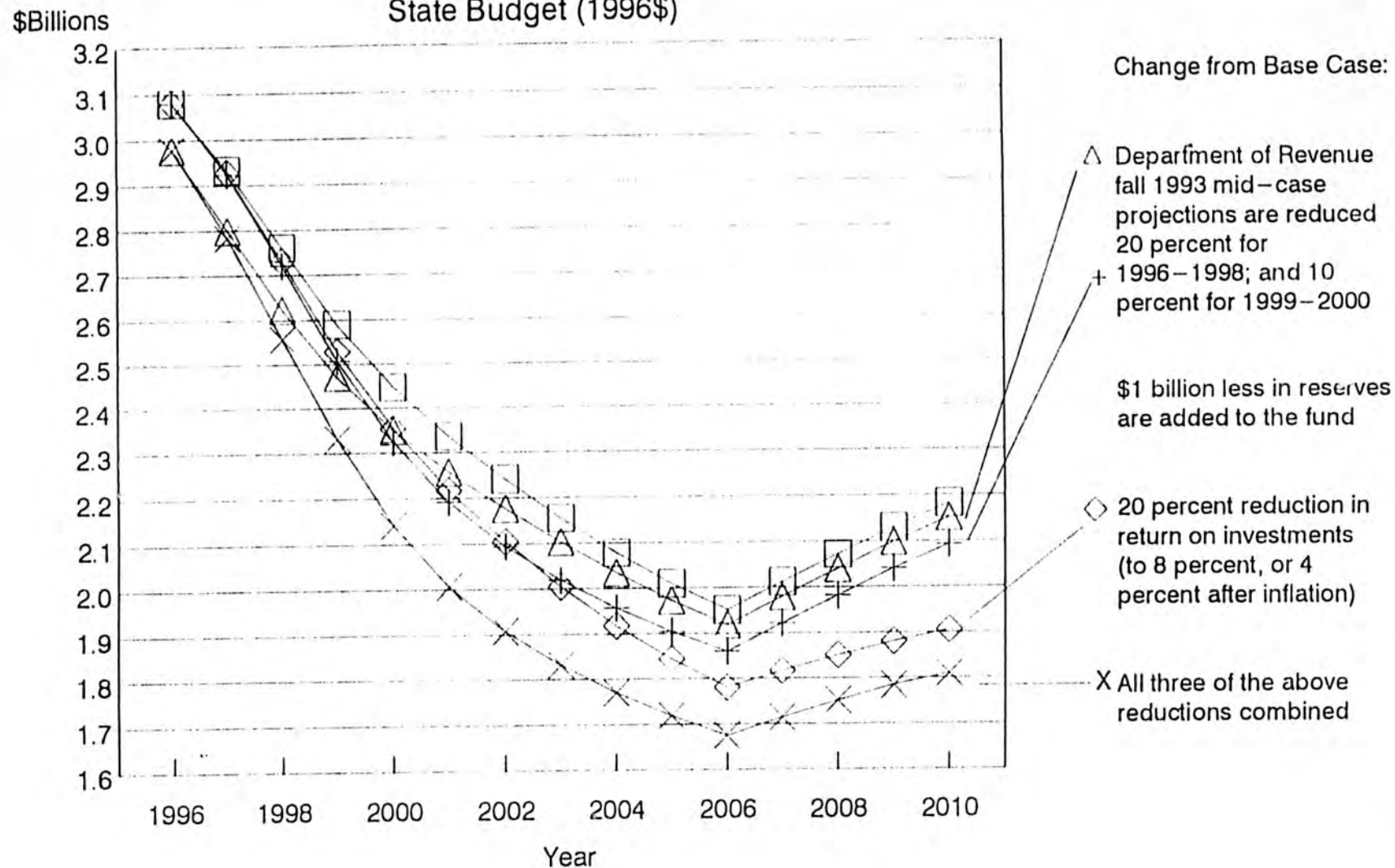


□ Base Case + Rev. Red. ◇ 8% Return △ -\$1B Reserves X Cumulative

Figure 4

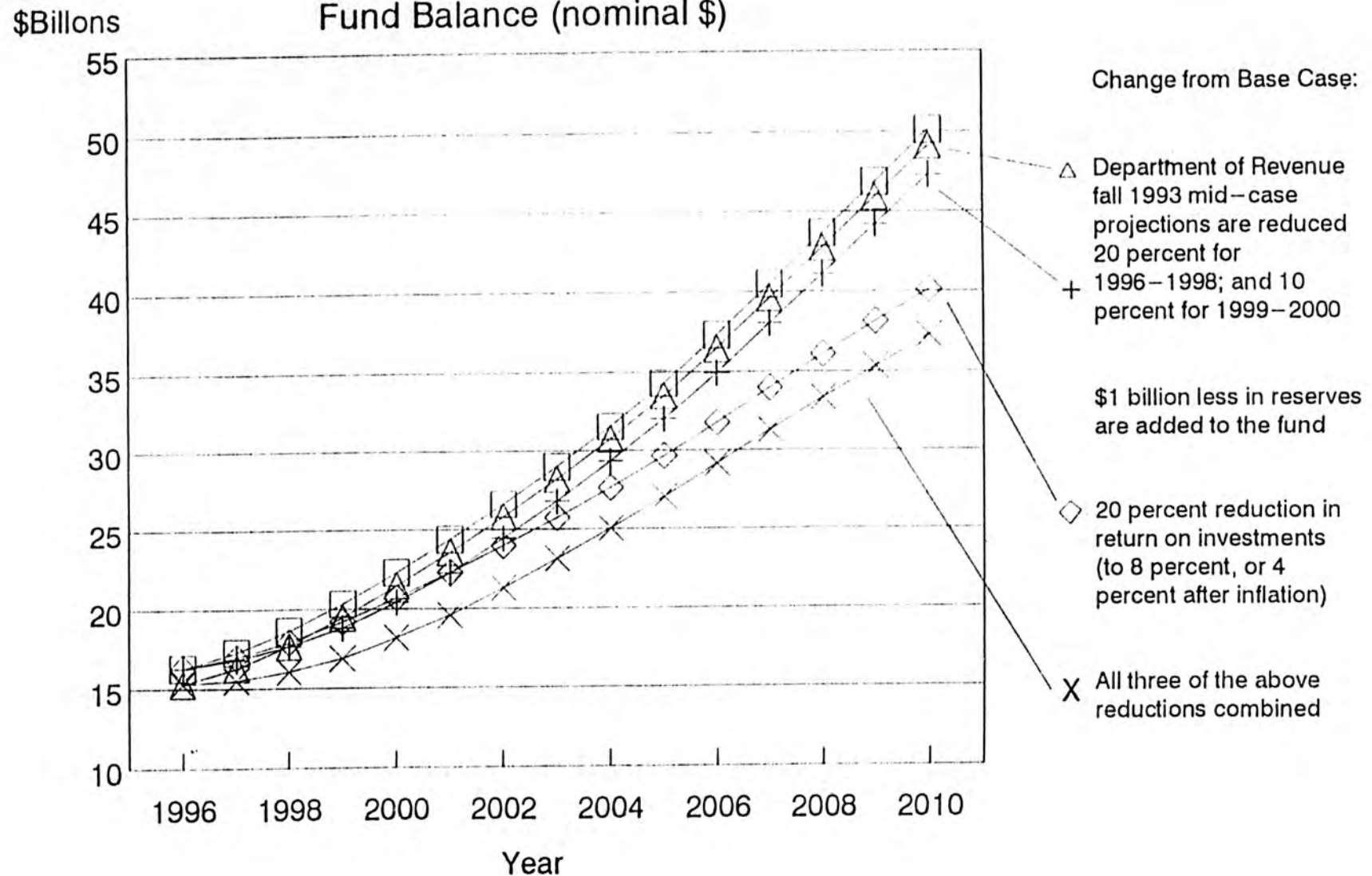
Cremo Plan Market Sensitivities

State Budget (1996\$)



□ Base Case + Rev. Red. ◇ 8% Return △ -\$1B Reserves X Cumulative

Figure 5
Cremo Plan Market Sensitivities
Fund Balance (nominal \$)



□ Base Case + Rev. Red. ◇ 8% Return △ -\$1B Reserves X Cumulative

Data Used to Generate Figure 3
Amount Available for Appropriation (Nominal \$)

<u>Fiscal Year</u>	<u>Base Case</u>	<u>Base Case reduced by 20% FY 96 – FY 98 10% FY 99 – FY 2000</u>	<u>Base Case with 8% 8% inflation instead of 10%</u>	<u>Base case with \$1 Billion less in Reserves</u>	<u>Cumulative*</u>
1996	3,079	3,079	3,079	2,977	2,977
1997	3,050	3,041	3,043	2,911	2,895
1998	2,985	2,943	2,954	2,838	2,766
1999	2,913	2,821	2,845	2,778	2,623
2000	2,863	2,719	2,753	2,749	2,505
2001	2,842	2,667	2,698	2,746	2,441
2002	2,836	2,650	2,662	2,755	2,413
2003	2,837	2,657	2,638	2,767	2,410
2004	2,844	2,678	2,625	2,783	2,423
2005	2,860	2,711	2,624	2,807	2,446
2006	2,889	2,754	2,637	2,841	2,480
2007	3,097	2,958	2,797	3,048	2,639
2008	3,318	3,174	2,963	3,267	2,804
2009	3,547	3,397	3,132	3,494	2,970
2010	3,781	3,624	3,299	3,725	3,134

*Cumulative incorporates previous three changes.

Data Used to Generate Figure 4
Amount Available for Appropriation (1996 \$)

<u>Fiscal Year</u>	<u>Base Case</u>	<u>Base Case reduced by 20% FY 96 – FY 98 10% FY 99 – FY 2000</u>	<u>Base Case with 8% 8% inflation instead of 10%</u>	<u>Base case with \$1 Billion less in Reserves</u>	<u>Cumulative*</u>
1996	3,079	3,079	3,079	2,977	2,977
1997	2,933	2,924	2,926	2,799	2,784
1998	2,760	2,721	2,731	2,624	2,557
1999	2,590	2,508	2,529	2,470	2,332
2000	2,447	2,325	2,354	2,350	2,142
2001	2,336	2,192	2,217	2,257	2,006
2002	2,241	2,094	2,104	2,177	1,907
2003	2,156	2,019	2,005	2,103	1,832
2004	2,078	1,957	1,918	2,034	1,770
2005	2,010	1,905	1,843	1,972	1,719
2006	1,952	1,860	1,781	1,919	1,675
2007	2,012	1,921	1,817	1,980	1,715
2008	2,072	1,982	1,851	2,040	1,751
2009	2,130	2,040	1,881	2,098	1,784
2010	2,183	2,093	1,905	2,151	1,810

*Cumulative incorporates previous three changes.

**Data Used to Generate Figure 5
Fund Balance (Nominal \$)**

<u>Fiscal Year</u>	<u>Base Case</u>	<u>Base Case reduced by 20% FY 96 – FY 98 10% FY 99 – FY 2000</u>	<u>Base Case with 8% inflation instead of 10%</u>	<u>Base case with \$1 Billion less in Reserves</u>	<u>Cumulative*</u>
1996	16,277	16,277	16,277	15,277	15,277
1997	17,262	16,812	16,923	16,267	15,503
1998	18,608	17,633	17,885	17,658	16,021
1999	20,335	18,789	19,190	19,443	16,862
2000	22,300	20,442	20,700	21,459	18,165
2001	24,305	22,255	22,294	23,579	19,583
2002	26,592	24,428	23,964	25,804	21,299
2003	28,969	26,778	25,743	28,185	23,120
2004	31,530	29,304	27,633	30,739	25,034
2005	34,298	32,017	29,641	33,489	27,041
2006	37,282	34,924	31,764	36,446	29,136
2007	40,477	38,017	33,980	39,605	31,300
2008	43,666	41,099	36,096	42,756	33,360
2009	46,866	44,186	38,128	45,916	35,333
2010	50,100	47,301	40,096	49,108	37,241

*Cumulative incorporates previous three changes.

SCOMM

101:42

RANKING THE 50 STATES

	(1) State solvency index— per capita net financial assets	(2) Bond ratings— Standard & Poor's	(3) State & local spending per capita	(4) State's share of state & local tax revenue
1	Alaska \$21,344	Maryland AAA	Alaska \$11,226	Delaware 82.9%
2	Wyoming 5,572	Missouri AAA	New York 6,841	Hawaii 79.9
3	New Mexico 2,812	North Carolina AAA	Wyoming 5,862	New Mexico 79.3
4	Oregon 1,138	Utah AAA	Hawaii 5,753	West Virginia 78.3
5	North Dakota 801	Virginia AAA	New Jersey 5,733	Kentucky 77.1
6	Colorado 784	Delaware AA+	Washington 5,388	Arkansas 75.6
7	Iowa 723	Georgia AA+	Connecticut 5,253	Idaho 73.9
8	Kansas 582	Maine AA+	California 5,191	North Carolina 72.7
9	North Carolina 545	Minnesota AA+	Rhode Island 5,106	Mississippi 72.1
10	South Dakota 527	New Jersey AA+	Massachusetts 5,081	Oklahoma 71.8
11	Nebraska 498	New Mexico AA+	Minnesota 5,052	Montana 71.1
12	Arkansas 483	South Carolina AA+	Nevada 4,823	Alabama 71.0
13	Utah 359	Tennessee AA+	Delaware 4,749	Washington 71.0
14	Texas 352	Alabama AA	Oregon 4,617	Alaska 70.5
15	Montana 259	Alaska AA	Nebraska 4,614	South Carolina 69.0
16	Wisconsin 251	Arkansas AA	Vermont 4,527	North Dakota 67.5
17	Delaware 200	Florida AA	Pennsylvania 4,422	Minnesota 67.2
18	Minnesota 179	Hawaii AA	Michigan 4,382	Nevada 67.2
19	Tennessee 142	Kentucky AA	Wisconsin 4,381	Massachusetts 64.7
20	Georgia 137	Michigan AA	Colorado 4,356	Utah 64.5
21	Idaho 137	Nevada AA	North Dakota 4,245	Indiana 64.1
22	Arizona 97	New Hampshire AA	Maine 4,233	California 64.0
23	Alabama 46	Ohio AA	Maryland 4,199	Wisconsin 63.6
24	Missouri -19	Oklahoma AA	New Mexico 4,168	Iowa 63.2
25	New York -134	Texas AA	Arizona 4,162	Maine 62.6
26	Ohio -178	Washington AA	Ohio 4,137	Arizona 62.3
27	Indiana -233	Wisconsin AA	New Hampshire 4,113	Pennsylvania 61.9
28	Mississippi -256	Connecticut AA-	Louisiana 4,108	Tennessee 61.2
29	Virginia -292	Illinois AA-	Montana 4,036	Connecticut 60.4
30	Nevada -319	Mississippi AA-	Illinois 4,022	Louisiana 60.1
31	Kentucky -339	Montana AA-	Florida 4,014	Wyoming 59.5
32	Florida -424	North Dakota AA-	Utah 4,008	Missouri 59.3
33	Pennsylvania -474	Oregon AA-	Iowa 3,944	Georgia 58.7
34	California -512	Pennsylvania AA-	Tennessee 3,930	Vermont 58.6
35	New Hampshire -521	Rhode Island AA-	South Carolina 3,871	Nebraska 58.4
36	Washington -767	Vermont AA-	Georgia 3,863	Rhode Island 58.2
37	Oklahoma -782	Massachusetts A+	Kansas 3,807	Ohio 56.8
38	Illinois -854	West Virginia A+	West Virginia 3,765	Kansas 56.7
39	South Carolina -877	California A	North Carolina 3,708	Maryland 56.7
40	New Jersey -885	Louisiana A-	Virginia 3,689	Florida 56.0
41	Maryland -951	New York A-	Texas 3,677	New Jersey 56.0
42	Vermont -1,061	Arizona None	Alabama 3,648	Virginia 55.4
43	Michigan -1,097	Colorado None	Oklahoma 3,619	Michigan 55.0
44	Hawaii -1,119	Idaho None	Kentucky 3,513	Oregon 53.2
45	Rhode Island -1,649	Indiana None	Indiana 3,510	Illinois 52.6
46	West Virginia -1,657	Iowa None	South Dakota 3,446	Texas 51.9
47	Maine -1,802	Kansas None	Idaho 3,418	South Dakota 51.0
48	Louisiana -2,206	Nebraska None	Missouri 3,273	Colorado 50.2
49	Connecticut -2,895	South Dakota None	Mississippi 3,224	New York 47.1
50	Massachusetts -2,943	Wyoming None	Arizona 3,053	New Hampshire 35.5

(1) The state solvency index was calculated to reflect what states would have left besides land and buildings if they ceased operations. It includes balances, excess pension fund assets, rainy day funds and permanent funds used by some states for resource revenues from which are subtracted outstanding debt and unfunded liabilities of pension funds. (2) General obligation bond ratings are from Standard & Poor's as of November 1994. Where ratings are identical, states are listed in alphabetical order. (3) State and local direct expenditures per capita were calculated from *Government Finances: 1991-92 (Preliminary Report)* from the U.S. Census Bureau. (4) State percentage of state and local tax revenue was calculated by the Center for the Study of the States from *Government Finances*.

ON THESE TWO PAGES, GOVERNING ranks the 50 states from highest to lowest in eight categories that provide snapshots of fiscal and governmental performance. No attempt has been made to come up with an overall, composite ranking for the states based on these measures. In several categories, combined state and local figures were used since the level of government that is responsible for certain functions (such as education, Medicaid and highway maintenance) varies among states. The rankings were compiled for GOVERNING by Hal Hovey of State Policy Research Inc.

(5) State & local taxes as % of personal income		(6) State and local employees per 10,000 residents		(7) Average pay of state & local employees		(8) Total government units per 10,000 population		
Alaska	18.8%	Wyoming	785	Alaska	\$40,956	North Dakota	43.5	1
New York	15.8	Alaska	784	California	39,744	South Dakota	25.1	2
Hawaii	14.1	Montana	658	Connecticut	38,460	Nebraska	18.2	3
Wyoming	14.0	New Mexico	648	New York	37,752	Montana	15.5	4
Minnesota	13.7	New York	635	New Jersey	36,876	Kansas	15.2	5
Wisconsin	13.1	Kansas	622	Michigan	35,652	Vermont	12.0	6
Vermont	12.8	Nebraska	620	Maryland	34,008	Wyoming	11.8	7
New Mexico	12.5	Mississippi	594	Rhode Island	33,912	Idaho	10.2	8
Arizona	12.5	North Dakota	590	Minnesota	33,420	Minnesota	8.0	9
Maine	12.3	Georgia	588	Nevada	33,144	Iowa	6.7	10
Washington	12.2	Oklahoma	585	Wisconsin	33,048	Maine	6.5	11
Oregon	12.1	Louisiana	582	Washington	32,952	Missouri	6.4	12
Idaho	11.9	Alabama	569	Massachusetts	32,832	Arkansas	6.0	13
Utah	11.9	Idaho	563	Illinois	31,980	Illinois	5.8	14
Iowa	11.8	South Carolina	560	Hawaii	31,932	Oklahoma	5.6	15
Michigan	11.7	Texas	560	Pennsylvania	31,704	Wisconsin	5.5	16
Connecticut	11.7	Hawaii	556	Oregon	31,212	Indiana	5.1	17
West Virginia	11.7	Iowa	554	Colorado	31,104	Colorado	5.1	18
Rhode Island	11.6	South Dakota	551	Delaware	30,744	Oregon	4.9	19
New Jersey	11.5	Delaware	547	Arizona	30,048	New Hampshire	4.8	20
Montana	11.5	Virginia	541	Ohio	29,820	Pennsylvania	4.3	21
Nebraska	11.5	North Carolina	539	New Hampshire	29,328	Delaware	4.0	22
Delaware	11.4	Washington	536	Iowa	28,716	West Virginia	3.8	23
California	11.4	Arkansas	536	Vermont	28,284	Kentucky	3.5	24
Pennsylvania	11.4	New Jersey	536	Virginia	27,660	Utah	3.5	25
Kentucky	11.4	Vermont	536	Indiana	27,480	Washington	3.4	26
North Dakota	11.3	Minnesota	536	Florida	27,264	Mississippi	3.3	27
Massachusetts	11.1	Colorado	534	North Dakota	27,036	Ohio	3.2	28
Louisiana	11.1	Maine	528	Maine	26,592	Alaska	3.0	29
Texas	11.0	Indiana	526	Nebraska	26,340	Michigan	2.9	30
Ohio	11.0	Kentucky	525	North Carolina	26,220	Texas	2.7	31
North Carolina	10.9	Wisconsin	522	Texas	25,980	Alabama	2.7	32
Kansas	10.8	Oregon	521	Utah	25,896	New Mexico	2.2	33
Colorado	10.7	Arizona	520	Wyoming	25,872	New Jersey	1.9	34
Georgia	10.7	Utah	513	Kansas	25,812	South Carolina	1.9	35
Illinois	10.7	West Virginia	509	Missouri	25,380	Georgia	1.9	36
Nevada	10.7	Tennessee	506	Kentucky	25,356	Tennessee	1.8	37
Maryland	10.6	Nevada	497	Montana	25,080	New York	1.8	38
Oklahoma	10.6	Florida	492	Idaho	24,600	Connecticut	1.7	39
Indiana	10.5	Ohio	490	Tennessee	24,564	Nevada	1.6	40
Arkansas	10.5	Maryland	488	South Carolina	24,216	Arizona	1.5	41
South Carolina	10.4	Michigan	488	New Mexico	24,132	California	1.4	42
Florida	10.3	Illinois	488	Georgia	23,976	Massachusetts	1.4	43
Virginia	10.1	Missouri	477	West Virginia	23,880	North Carolina	1.4	44
Mississippi	10.0	Rhode Island	474	Alabama	23,616	Rhode Island	1.3	45
South Dakota	9.8	New Hampshire	466	Oklahoma	23,412	Louisiana	1.1	46
New Hampshire	9.7	California	463	South Dakota	23,400	Maryland	0.8	47
Alabama	9.4	Massachusetts	462	Louisiana	23,364	Florida	0.8	48
Missouri	9.4	Connecticut	461	Arkansas	22,704	Virginia	0.7	49
Tennessee	9.1	Pennsylvania	425	Mississippi	20,700	Hawaii	0.2	50

(5) State and local taxes as a percentage of personal income were calculated from *Government Finances*. (6) State and local employees per 10,000 residents was published by the Census Bureau in *Public Employment: 1992*. The calculation represents full-time equivalent employees. (7) Pay of state and local workers reflects October 1992 monthly payrolls shown in *Public Employment: 1992* multiplied by 12. (8) The number of governments (including school and special districts) per 10,000 population was calculated from the *Census of Governments, 1992* from the Census Bureau. State population estimates are from the Census for July 1, 1992, as printed in *State Government Finances: 1992* from the Census Bureau.

Statewide Library Electronic Doorway marks a year on-line

You may have forgotten it, or maybe weren't even aware of it. One of the most significant on-line anniversaries happened just a year ago in April. Pretty much all of Alaska got plugged into the information superhighway via SLED.

The Statewide Library Electronic Doorway, or SLED, opened its electronic doors and began to offer access not only to electronic library card catalogs around the state but also to a world of information via the Internet, all free of charge, accessible in over 40 communities via AlaskaNet. Whether you are in Anchorage or Yakutat, all you need is a computer, modem and terminal program to start "SLEDding."

Susan Elliott, Information Technology Librarian for the Alaska State Library (susane@mus-kox.alaska.edu), says the first year has been good. "Logins are well over 1,200 to 1,300 per day; an average of more than 50 per hour around the clock. People are accessing the Web, White House News, the UA's library catalog and the Economic Bulletin Board."

"We conducted a zip code survey during the last nine days of March. Alaskans accounted for 97 percent of SLED use, with 48 communities logging in an average of once a day during that nine-day period, with access from 37 other states, plus Puerto Rico,



CHERYL KIRK

Washington, D.C., and the Virgin Islands. Juneau topped the list of logins, with Anchorage and Fairbanks close behind."

It's no wonder many use it. SLED offers a ton of information via computer, all free, available 24 hours a day. You can search the Loussac Library's card catalog, check out the latest news on the O.J. Simpson trial via the Tacoma News Tribune's Web page, search Bell's Alaska Travel Guide for places to take the relatives, read the latest lawyer bashing jokes from Nolo Press, look up someone's e-mail address, check job prospects, read up on Alaska Supreme Court decisions, find out what's going on with various legislative bills, or read the Department of Fish and Game's Spring newsletter, "Currents."

A simple menu system guides you from one place to another, so no special knowledge outside how to use your modem is needed.

Help is a telephone call away if you have problems connecting or just can't seem to find what you are looking for. For those who need a little bit more hand holding, training classes are held at the Loussac Library, 261-2976.

Over the last year, SLED has grown considerably. In the past few months SLED has added a guide to the U.S. Congress, the Children's Literature Web Guide, consumer product safety information, the Juneau Daily Newsminute, access to the National Public Radio, and profiles of Alaska communities. You can also use SLED to access the World Wide Web, meaning that every time you see those funky computer addresses like, <http://www.alaska.net/ckirk/hello.html>, you can login to SLED, select the Internet Connections menu, follow the instructions and read what's available at that address.

What's so great about SLED is that it is ever-changing. New sites are added all the time. "When a user suggests a new resource, or an information provider contacts us, we put a link to their Internet site on our test system.

GO SLEDDING

Anchorage Access: 258-7222
(Outside of Anchorage check local telephone directory listing for AlaskaNet number.)
Modem settings: 1200 to 9600 baud
No Parity
Eight Data Bits
One Stop Bit
Full Duplex

To Login: Type SLED and press return, then SLED for the password, or follow the directions on the screen.

Internet Access:
Telnet to sled.alaska.edu

Loussac Library (2nd Floor), or contact your local library for more information.

For more information on SLED, call 1-800-478-4867.

Then the advisory group evaluates it based on a set of criteria. In general we are looking for information that is of particular interest to Alaskans statewide. Sites that are stable and well organized. We are always actively seeking new sites, since SLED almost never 'hosts' anything. We just connect and encourage folks to put up good things!" Elliott said.

Even if you don't have a computer, modem access to SLED is as close as your library. "The state library funded a direct Internet connection to computers in the public libraries in Anchorage, Fairbanks and Juneau for high-speed access to SLED. SLED is also available via Telnet, (sled.alaska.edu), via dial-up to some local library systems and as a host on Alascom's AlaskaNet," she said. "The result is that most libraries and citizens around the state can use computers and modems to connect to SLED without being charged for a long-distance call."

But all this free access is not without a price. "The state library pays by the hour for each AlaskaNet connection to SLED," says Elliott.

□ Cheryl Kirk is a local computer, trainer and consultant. Her advice and opinion column appears every other Monday. Questions may be faxed to Cheryl at 258-2157 or mailed c/o Anchorage Daily News, P.O. Box 149001, Anchorage 99514-9001. Her e-mail addresses are CLKIRK@EWorld.COM, or KIRKCLK@AOL.COM, or CompuServe 76200,1660.

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*Saturday June 17th issue of
Ketchikan Daily News*

End of the week

Deferred maintenance

By LEW M. WILLIAMS, JR.

For the Daily News

It's encouraging that the state's Long Range Fiscal Planning Commission, early in its life, is looking at deferred maintenance of state facilities. The goal is to figure a way to catch up on deferred maintenance of state facilities and to finance annual maintenance on a regular basis so it isn't deferred in the future.

The commission is considering maintenance as it does its main job — devising a plan to

close the money gap in state budgets in either three, five or 10 years.

It's no surprise that the commission is paying attention to maintenance. Chairman of the commission is Brian Rogers,

who was vice president for finance for the University of Alaska until last January. The university has been lobbying heavily for three years for funds to clean up \$156 million in deferred maintenance on university campuses. When Gov. Tony Knowles signs the budget bills this month, enough deferred maintenance will be funded that the University's deferred maintenance bill will be reduced to \$120 million, still the biggest amount of deferred maintenance for the state.

Facilities other than the University buildings have been neglected. The deferred maintenance for highways is about \$30 million, for airports \$12 million, for harbors \$30 million and for the ferry system \$8 million. The Office of Management and Budget estimates that it will take \$51 million a year to properly maintain all facilities, plus another \$22 million a year for the next 10 years at least to catch up on the deferred work.

Deferred maintenance for the university and all other state facilities totals

Finance Committee and Sen. Steve Rierger, an Anchorage financial advisor. With all of that money experience, plus the public and private experience of the other seven commission members, we expect some solid recommendations.

The other seven are Sen. Georgianna Lincoln, Mike O'Connor of Peak Oilfield Services, Rep. Sean Parnell, Bruce Ludwig of the Alaska Public Employees Association, Pat Purchot, the governor's legislative liaison, and Bob Loescher, Sealaska vice president for resources.

The governor and legislative leaders agreed early this year on forming the commission to review the state's income and expenses to find a way to bring them together.

A problem facing the commission, and which is not new to anyone, is that there are so many variables. There are fluctuating oil prices, the declining oil production rate and whether new fields will be developed. Oil pays 85 percent of state expenses so the concentration on oil is expected.

What happens if the state does nothing?

According to OMB, if the people of the state and their leaders do nothing, the Budget Reserve Fund will be used up between 1999 and 2003. The fund, near \$2 billion at the end of the fiscal year in two weeks, is built from revenue the state receives from settling oil tax cases.

The Legislature had to dip into the Budget Reserve for \$498 million to finance fiscal '96 that begins July 1. That is more than double the amount appropriated from reserve last year for the current fiscal year, \$242 million. OMB predicts that next year the Legislature will have to appropriate \$700 million from the reserve to finance state operations. At that rate, the Budget Reserve Fund goes dry between 1999 and 2003, even if the state picks up an expected \$1.1 billion in the next four years.

For those who say just cut government spending to close the gap, it should



\$331 million. It accumulates every year that \$51 million isn't spent on repair and maintenance.

The problem with maintenance in the past is that lawmakers and governors have been more inclined to put money into new projects for which they can take credit. Just fixing up something isn't as noticeable at election time. It's hard to put a plaque on a new sewer line or take credit for filling potholes that people expect to be filled anyway.

Thank goodness the new bi-partisan fiscal commission is going to consider maintenance of facilities as it figures a way to close the budget gap and put the state on a sound financial program.

The commission has met three times. It held a teleconference meeting Friday and Saturday. So far it is outlining the issue areas, such as maintenance, and working in subcommittees. A progress report is due out July 15.

The Aug. 26 meeting, however, may garner more attention than the progress report. That is when commission members get into the issue of more revenue — taxes, if and when. The final report goes to the governor and the Legislature by Oct. 1.

The Long Range Fiscal Planning Commission was appointed in March by Gov. Tony Knowles. House Speaker Gail Phillips and Senate President Drue Pierce. Each appointed five members. In addition to Chairman Rogers, there are others with extensive government financing experience, such as Marie Westfall of Ketchikan, former director of revenue and assessing for the borough; Lee Gorsuch, chancellor of the University of Alaska, Anchorage; Annalee McConnell, director of the state Office of Management and Budget; Judy Brady, former executive director of the Alaska Municipal Bond Bank Authority; Mary Nordale, former Commissioner of Revenue who also has served on the boards of the Permanent Fund, the Alaska Housing Finance Corporation and the Alaska Industrial Development and Export Authority; Rep. Mike Navarre, former chairman of the House

be noted that if every state employee were fired only about \$550 million would be saved, \$150 million less than it will take to close the gap next year.

When it is noted that the Legislature cut the budget for next year over this year by up to \$22 million (some say it wasn't even cut), the fiscal gap is serious. Legislatures have been trying to cut budgets for a half dozen years with little success compared to the size of the problem. The general fund budget for the past four years has been lingering in the \$2.3 billion area despite the best efforts to cut. Inflation, population and entitlement programs keep growing.

The commission, of course, will have its eye on the Alaska Permanent Fund earnings reserve and on new taxes. We are assured that commission members are a long way from deciding whether to recommend capping the dividend or tapping the Permanent Fund earnings. They also are a long way from deciding on new taxes.

The Department of Revenue is doing a review of all taxes and possible tax sources which it will give the commission by June 30. There will be public hearings as the commission proceeds with its work, especially after the August meeting to consider revenue sources, and before the final recommendations are made Oct. 1.

OMB has conducted financial reviews for past governors Steve Cowper and Walter Hickel, although not as extensive. But there appears to be no new ideas out there.

And the facts remain: the state is spending more than it takes in with no change in sight; the state is letting its facilities fall into disrepair while it hands out dividends to all Alaskans rather than collecting taxes from them.

There isn't going to be a painless way to correct the situation.

Sunday is father's day. It reminds us of the description of a modern dad.

He has a son who wears earrings. His daughter has a tattoo. His wife is the breadwinner. He is so confused he is thinking of going home to his father.

Happy Father's Day.

If derivatives are permitted, the issuer should ensure that the skills and systems are in place to monitor and manage the risks associated with derivatives. Also it is important that municipal issuers have the checks and balances in place to ensure that the investment guidelines and policies are being followed. Examples of prudent

checks and balances include board or committee oversight, frequent marking to market, and an independent third-party audit of the portfolio.

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ALASKA LEGISLATURE TO VOTE ON FUTURE OF AHFC

Legislation proposed on March 24, 1995 by Alaska Gov. Tony Knowles holds promise for the future financial stability of the Alaska Housing Finance Corp. (AHFC).

If the state legislature approves the bill in the form presented to S&P, the 'A+' G.O. and 'A-1' Eurocommercial paper ratings of the corporation will be removed from CreditWatch and assigned a stable outlook. If the legislation does not pass, AHFC's ratings will remain on CreditWatch, pending further review.

STATE TRANSFER PLAN

The governor's bill calls for enactment of an agreement between the state commissioner of revenue and AHFC, known as the State Transfer Plan. The plan fixes AHFC payments of \$270 million to the state's general fund over five years, beginning in fiscal 1996 with an initial payment of \$70 million. This payment, along with four \$50 million installments, cannot exceed the corporation's net income earned in the prior fiscal year. AHFC's earnings are projected to be more than \$100 million for fiscal 1995 and should remain strong, barring a precipitous economic decline. Should AHFC post losses such as during the 1986-1989 Alaskan recession, when the corporation lost \$124 million, payments to the state may not occur.

AHFC's \$1.7 billion equity base, \$908 million of which is unrestricted as of Dec. 31, 1994, will be substantially protected for bondholder security. The corporation relies on these reserves to absorb a significant level of loan losses resulting from unexpected fluctuations in the Alaskan economy.

Any payment made by the corporation to the state must be approved by AHFC's board of directors. The board must certify that the corporation's equity base will remain at the prior year's level or such a level to support the G.O. and Eurocommercial paper ratings. This requirement is in addition to meeting financial covenants under various bond indentures.

The security measures are important for maintaining long-term capital adequacy and liquidity, especially since AHFC pledges its G.O. to over \$2.51 billion of debt, including \$150 million of commercial paper. S&P rates only \$1.4 billion of this debt, based solely on the AHFC G.O. pledge (see list). Certain obligations, such as AHFC's veterans mortgage program, receive higher ratings due to the higher rated collateral or credit sup-

AHFC ratings will be CreditWatch; implications noted in accompanying

	Rating
\$366.95 mil. ins. rmp. prog. bonds, sec. 1977-1, 1977-2, 1977-3, 1978-1, 1980-1, 1982-1	A+
\$46.088 mil. ins. div. bonds, sec. 1991A, 1992A, 1993A-E	A+
\$218.3 mil. gen. inv. purpose bonds, sec. 1980A, 1984A	A+
\$228 mil. gen. inv. rmp. bonds, sec. 1991A, 1991C	A+/A-1+
\$22.825 mil. gen. inv. rmp. bonds, sec. 1991B	A+
\$150 mil. Eurocommercial paper prog.	A-1

ports underlying each issue (See Aug. 15, 1994 CreditWeek Municipal).

Included in the legislation is authorization for \$30 million of AHFC G.O. bonds to pay for deferred housing maintenance at University of Alaska campuses. If the legislation passes, bond proceeds will pay for renovations at university dormitories helping to pay down the \$150 million deferred maintenance backlog across the university system. Debt service payments for the bonds will be paid directly from AHFC's general account over the next 11 years. Although this outflow will put additional pressure on the corporation's general account, S&P does not expect that debt service will substantially decrease liquidity, impair AHFC's ability to support outstanding G.O.s, or make payments under the State Transfer Plan.

The G.O. and Eurocommercial paper ratings of AHFC were placed on CreditWatch with negative implications on Feb. 23, 1995 reflecting uncertainty over the scope and magnitude of future corporate asset transfers to the state's general fund. Rating implications were revised to developing on March 19, 1995 reflecting the introduction of the legislation, as well as efforts by the state to establish long-term solutions to ensure the state's future financial stability.

LONG-RANGE PLANNING

Recent efforts by Alaska ('AA' G.O. debt) to rectify financial instability resulting from volatile oil revenues could lead to decreased reliance on AHFC payments beyond the State Transfer Plan. On Feb. 10, 1995, the state legislature created a bipartisan Long-Range Financial Planning Commission. The commission's primary goal is to propose financial and capital planning procedures and to look for ways to promote economic stability and diversification, thereby lessening dependence on the oil industry.

The commission's proposals ultimately could lead to future G.O. debt issuance by the state, as

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declining oil revenues make it increasingly difficult for the state to continue its practice of funding capital projects on a pay-as-you-go basis.

THE FUTURE

S&P continues to have some concerns about additional AHFC payments and outright asset transfers to the state, beyond the proposed State Transfer Plan. AHFC payments represented 10% of the state's unrestricted revenue, the second-largest item in fiscal 1995. Moreover, since G.O. debt issuance requires voter approval, AHFC's equity base could be a more politically attractive alternative to remedy budget shortfalls resulting from lower-than-projected oil revenues. AHFC has repaid the state \$595 million of its \$1.07 billion contributed capital appropriation under various repayment plans, including the State Payment Plan (\$200 million) and the State Dividend Plan (\$114 million), which is being phased out.

Despite the concerns, the commission is expected to propose alternatives for the legislature to develop more stable revenue and expenditure budgeting procedures. S&P also expects that AHFC's management will successfully collaborate with Gov. Knowles' administration and the legislature over the next five years to devise longer-term and more predictable solutions to resource allocations involving AHFC. A downgrade could occur if agreements that ensure bondholder protection at AHFC's current rating level cannot be reached over the next several years. S&P will continue to monitor the legislation and assess the commission's findings, due July 15, 1996, for potential effects on AHFC's credit quality.

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GEORGIA INVESTMENT IN EDUCATION SPURS DEVELOPMENT

Under Gov. Zell Miller, Georgia has increased funding for primary and secondary education to levels that are unprecedented in the state's recent history. This investment has played an important role in the state's current economic strength and the revision last week of its G.O. rating outlook to positive from stable.

This effort has been dubbed the "Georgia Research Alliance." The state has used its private and public universities as tools for economic development by promoting a working alliance between the academic and corporate communities in fostering research into such areas as telecommunications, environmental technology, and biotechnology. In addition, the new Chancellor of the University System of Georgia, Stephen R. Porch, is reviewing the university system's administration standards with the goal of upgrading them.

Realizing that a large number of jobs created in the state's economy require more training than a high school education provides, the state also has increased resources to the state's technical schools over the past four years. These schools have become a key ingredient in the state's economic development efforts. Over \$130 million has been appropriated for the planning, design, and construction of new technical schools. Of this amount, nearly \$23 million came from lottery proceeds. This level of investment in technical education facilities in Georgia is unparalleled.

The Department of Technical & Adult Education's budget has increased to \$203 million in fiscal 1996, from \$120 million in fiscal 1993—a 69% increase in only three years. The number of full-time faculty added to the department during this period increased by 137 positions and non-faculty positions are up by 101 positions, a 12.7% increase.

EDUCATION HELPS ECONOMY

Georgia's economy is exhibiting solid growth, spurred by an expanding population, continued corporate relocations, and the impact of the 1996 Olympic Games. Total nonagricultural employment increased 8% in 1994—the seventh-fastest growth rate in the nation.

Georgia's four key industries—construction, transportation, trade, and services—have provided the bulk of this job growth. The state's service sector, which grew 7.6% in 1994, is expected to expand by over 180,000 jobs by the end of the decade and become the state's largest employment sector. This continued expansion in the state's economy has positive long-term implications for Georgia's G.O. rating. S&P rates Georgia's G.O. bonds 'AA+', and the outlook was revised to positive from stable only last week. Part of the reason for the outlook revision was the expansion of the state's economy and the prospects for continued growth over the next few years.

While much of this growth can be attributed to variables outside the control of state government, most economists believe a well-trained and educated work force plays a key role in economic expansion. This element of job creation can be severely affected by the policies and practices of the state.

GEORGIA RESEARCH ALLIANCE

The Georgia Research Alliance is a partnership among Georgia's public and private universities and private corporations designed to move Georgia to the forefront of growth in the high-technology industry. It already has had a demonstrated impact on economic development efforts.

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ASSET ALLOCATION STUDY
FOR
THE ALASKA PERMANENT FUND

Prepared by Ibbotson Associates, Inc.
January, 1994



Summary of Recommendations

Currently, the Alaska Permanent Fund is a well diversified portfolio that has enjoyed tremendous success in recent years. This success is mainly due to the Board's knowledge of the importance of asset allocation and its commitment to diversification. This has resulted in the Fund earning high rates of return at relatively conservative levels of risk. The Fund is well positioned to reap the benefits of diversification, having made investments in many different asset classes, both domestic and international. Also, the Fund appears to be efficiently managed, employing reputable and capable managers for both its equity and fixed income assets. The Fund has been able to manage its substantial fixed income portfolio entirely in-house, keeping administrative costs and outside management fees to a minimum. Several important issues must be addressed, however, in order to ensure the Fund's continued success.

Our analysis suggests the Permanent Fund should alter its asset allocation policy in order for the Fund to enjoy returns similar to those it has earned in recent years. Specifically, the Board should consider the following actions:

- Revise its current three-year target asset mix to include a larger allocation to domestic mid and small capitalization equities, European, Pacific Rim and emerging market equities, and mortgage-backed securities.
- Adopt a more aggressive investment style by allocating a larger percentage of Fund assets to equity assets and real estate.
- Revise its equity management plan by setting specific allocations for international and domestic mid and small capitalization equity managers.
- Set specific target allocations across fixed income sectors.

By implementing these changes, the Board can help ensure that the Permanent Fund will achieve the highest expected return for its chosen risk level. This will help the Board achieve its statutory goals of maximizing total Fund return and providing the maximum amount of disposable income to Alaska's citizens.



This report presents recommendations concerning the Alaska Permanent Fund. The first section provides background information on the procedures we used to perform the asset allocation study. The second section suggests improvements for those portfolios, and outlines a third portfolio suited to a more aggressive investment philosophy. The final section provides guidance on several important implementation issues.

I. Analyzing an Investment Portfolio

A first step in analyzing an investment portfolio is determining whether the portfolio adequately compensates the investor for taking risk. Ideally, the portfolio is *efficient* in providing return to the investor; i.e., the portfolio provides the most return possible for the amount of risk taken. In reality, however, few portfolios accomplish this objective.

Defining Asset Classes

In order to analyze the Fund's portfolio, we had to decide which assets to include in the Fund's investment universe. Currently, the Fund invests in 12 different asset classes that comprise six main categories. The benchmarks used to represent each asset class in our analysis are listed in Appendix A at the end of this report. The asset classes used in our study are as follows:

U.S. Equity Assets

Large Capitalization
Mid/Small Capitalization

Non-U.S. Equity Assets

Canada
Europe
Pacific
Emerging Markets

Other Assets

Real Estate

Non-U.S. Fixed Income Assets

Intermediate-Term Government/Corporate Bonds
Long-Term Government/Corporate Bonds
Mortgage-Backed Securities

Non-U.S. Fixed Income Assets

Non-U.S. Government Bonds

Cash

U.S. Treasury Bills

Forecasting Return

We also had to forecast three estimates for each asset class: expected return, expected risk (as measured by standard deviation), and expected return correlation between assets. Summary tables of our forecasts are provided in Appendix B. It is important to note that our return, risk, and correlation forecasts are *long-term* -- they apply to an investment horizon of 10 years or more. Our forecasts are passive in nature and, therefore, would not change dramatically if we were to recalculate them a year from now. Consequently, the portfolio allocations we recommend will remain stable over a very long time period, and will require few changes over a long-term investment horizon.

The basis for our equity return forecasts is the risk-free rate of return and the historical premium, called an equity risk premium, that is demanded by investors for holding risky assets. We use the historical premium because the amount by which common stocks have outperformed risk-free government bonds has been consistent over time. The long-term equity risk premium for large capitalization domestic equities over the period January 1926 to September 1993 was 7.25 percent. Also, many researchers have found that, as the risk of an investment increases, so does its expected return. For this reason, we forecast the expected return of other equity asset classes, such as domestic small capitalization equities and international equities, to have greater expected returns.

The basis of our fixed income return forecasts is the current risk-free rate of return, as proxied by the current yield on a risk-free government bond with a maturity matching the investment time horizon. Currently, this rate is 6.81 percent, the current yield on 20-year U.S. Treasury bond. To this rate, we add the appropriate maturity premium (additional return required by investors for relinquishing the use of their money for long time periods) and default premium (additional return that compensates investors for buying bonds that have default risk, such as corporate bonds) for each class of bonds for which we are forecasting returns.

For international fixed income assets, we forecast returns as if the assets were denominated in U.S. dollars. Since currency fluctuations are expected to average to zero over time, any short-term currency gains or losses will not affect the long-term return on international assets. Currency fluctuations do increase risk, however, and are accounted for in our risk forecasts of non-U.S. fixed income assets.

Forecasting Risk

When forecasting the risk of an asset, we typically assume that the future will equal the past. Therefore, we forecast risk by calculating the historical standard deviation using a long time period over which we have reliable data, and data that is representative of possible future scenarios. Although investment risk can be quantified in a number of

ways for asset allocation purposes, we believe that risk is best modeled as the annual volatility of returns, and standard deviation provides an estimate of how much actual returns may deviate from the average, expected return over time. We use shorter time periods only when we can identify a permanent and dramatic process shift in the behavior of an asset class, such as the late 1960s when bond market volatility increased noticeably from its observed volatility during the previous 40 years.

Forecasting Return Correlation

Return and risk are not the only factors that determine how a portfolio performs. The correlation between the returns of two assets also plays an important role in portfolio performance. Correlation measures how much the returns of two assets tend to move together or move separately. If the returns move together, the assets are positively correlated. If they move in opposite directions, the assets are negatively correlated. If no pattern can be detected in the way the assets' returns move, the assets have a return correlation of zero.

Portfolios comprised only of assets that have high, positive correlations with each other are not well diversified. This tends to exaggerate both upside and downside volatility, and the risk of the portfolio. On the other hand, portfolios with assets that have low or negative return correlations will provide more stable returns because, even though some assets may perform poorly, other portfolio assets will perform better, serving to reduce portfolio volatility. The benefits of diversification, therefore, are a direct result of relatively low return correlations among portfolio assets.

When forecasting return correlation, we again typically assume that the future will equal the past. The basis for our forecast of return correlation is, therefore, the historical correlation between assets, observed over the longest time period for which reliable data is available.

Determining the Fund's Current Allocation

The amount of the Fund currently allocated to each asset class was determined by using information in the Fund's 1993 Annual Report, with supplemental information provided by William L. Means, the Fund's Chief Investment Officer. Market values of all investments came from the Annual Report, while Mr. Means provided clarification regarding the amount currently invested in equities of domestic companies with capitalizations larger than \$1 billion (large capitalization equities), the amount currently invested in equities of companies with capitalizations of \$1 billion or less (mid and small capitalization equities), and the amount currently invested in domestic government and corporate bonds with maturities ranging from one to seven years (intermediate-term),



and more than seven years (long-term). The Fund's current allocation, and its expected return and standard deviation is given on page 5.

Determining the Fund's Three-Year Target Allocation

The Permanent Fund's investment manual provided information regarding the three-year target allocation, although some guidelines were too broad for our purposes. For example, the manual lists a 10 percent target allocation for international equities, but gives no country-specific allocations. In this case, we assumed the Fund would increase its international equity exposure to 10 percent, while maintaining the current proportion invested among sectors. Also, the target allocation constrains the amount invested in non-domestic fixed income assets to 10 percent or less, but provides no specific number. We assumed the amount invested in international debt would decrease in proportion to the total decrease in the amount allocated to all fixed income assets. The Fund's three-year target allocation, and its expected return and risk, is listed on the following page.

Current and Three-Year Target Portfolios

Asset Class	Current Allocation (%)	3-Year Target Allocation (%)
U.S. Large Capitalization Stocks	21.17	24.00
U.S. Mid/Small Capitalization Stocks	0.65	6.00
Canadian Stocks	0.03	0.04
European Stocks	2.54	4.28
Pacific Region Stocks	2.94	4.97
Emerging Market Stocks	0.42	0.72
Real Estate	6.69	10.00
Cash	4.64	0.00
Intermediate Govt/Corp Bonds	30.86	25.32
Long-Term Govt/Corp Bonds	25.27	20.74
Mortgage-Backed Securities	3.94	3.24
Non-U.S. Government Bonds	0.85	0.69
Expected Return (%)	8.53	9.93
Standard Deviation (%)	7.57	9.91

II. Asset Allocation Recommendations

The next step in our analysis was to improve the Fund's current and target portfolios by increasing their expected return while keeping expected risk at a constant level.

Allocation with Risk of the Current Portfolio

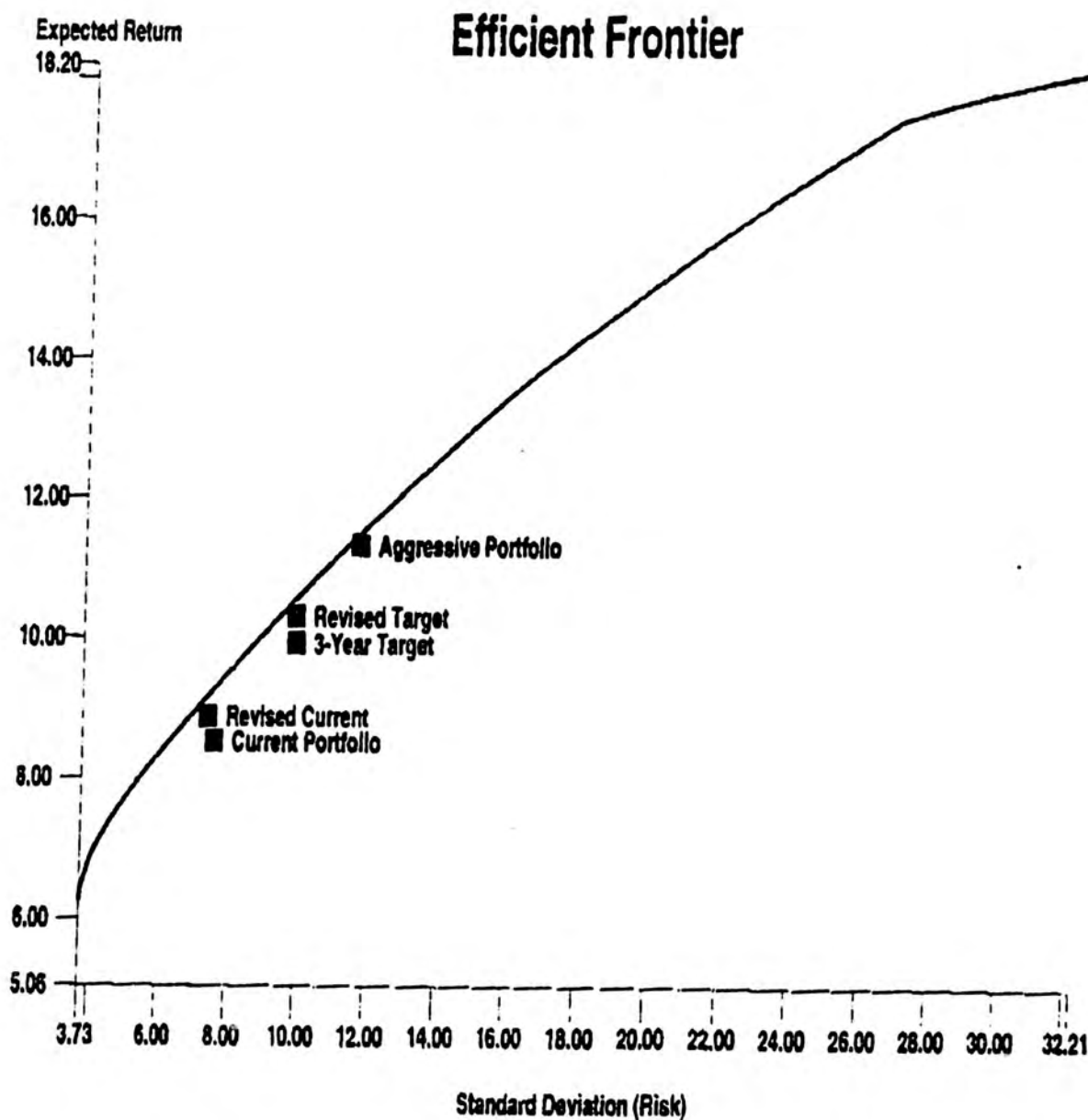
As shown in the graph on page 7, the Fund's current portfolio does not provide the maximum amount of expected return for the amount of risk taken. For example, the portfolio labeled "revised current" provides a higher expected return and slightly less risk than the current portfolio. (The graph is titled "Efficient Frontier" because the line in the graph represents those portfolios which are the most efficient in providing return to the investor; i.e., those portfolios provide the maximum return for a given level of risk.) The allocations for both the current and revised portfolios, as well as their expected returns and standard deviations, are shown on page 8.

The current portfolio need not be drastically changed in order to achieve a higher expected return. In fact, the percent of the portfolio invested in equities (approximately 35 percent, including real estate) and in fixed income assets (approximately 65 percent), is the same in both the current and revised portfolios. Rather, the composition of the equity and fixed income portions need only change. By shifting part of the equity portion from large capitalization stocks to mid and small capitalization and international stocks, and part of the fixed income portion from cash and long-term bonds to intermediate-term bonds and mortgage-backed securities, the Fund can achieve a higher expected return while taking less risk.

Although these changes represent shifts from safer assets to more risky ones, the overall risk of the portfolio actually decreases. This is because domestic mid and small stocks, mortgage-backed securities, and international stocks have low correlations with many of the other portfolio assets.

Allocation with Risk of the Target Portfolio

The graph on page 7 shows that the Fund's target portfolio also does not provide the highest possible expected return for the amount of risk taken. Although both the allocations of the target and revised target portfolios are equally divided between equity and fixed income assets, the revised target portfolio has a significantly higher expected return and less risk. The composition of both portfolios, along with their expected returns and standard deviations, is given on page 8.



Current and Recommended Portfolio Allocations

Asset Classes	Allocations				
	Current Portfolio (%)	Revised Current (%)	3-Year Target (%)	Revised Target (%)	Aggressive Portfolio (%)
U.S. Large Cap Stocks	21.17	11.00	24.00	16.00	18.00
U.S. Mid/Small Cap Stocks	0.65	4.00	6.00	8.00	10.00
Canadian Stocks	0.03	0.00	0.04	0.00	0.00
European Stocks	2.54	9.50	4.28	6.00	7.50
Pacific Region Stocks	2.94	4.00	4.97	7.00	10.50
Emerging Market Stocks	0.42	2.50	0.72	3.00	4.00
Real Estate	6.69	10.00	10.00	10.00	10.00
Cash	4.64	1.00	0.00	1.00	1.00
Intermediate-Term Govt/Corp Bonds	30.86	40.00	25.32	30.00	18.00
Long-Term Govt/Corp Bonds	25.27	12.00	20.74	5.00	6.00
Mortgage-Backed Securities	3.94	12.00	3.24	14.00	15.00
Non-U.S. Govt Bonds	0.85	0.00	0.69	0.00	0.00
Expected Return	8.53	8.89	9.93	10.31	11.33
Standard Deviation	7.57	7.40	9.91	9.89	11.69

The superior tradeoff between risk and return of the revised target portfolio can be accomplished by shifting a larger portion of Fund assets into domestic mid and small capitalization stocks, international stocks, mortgage securities, and real estate. Again, these riskier assets have low correlations with many other portfolio assets, and therefore provide enhanced diversification benefits.

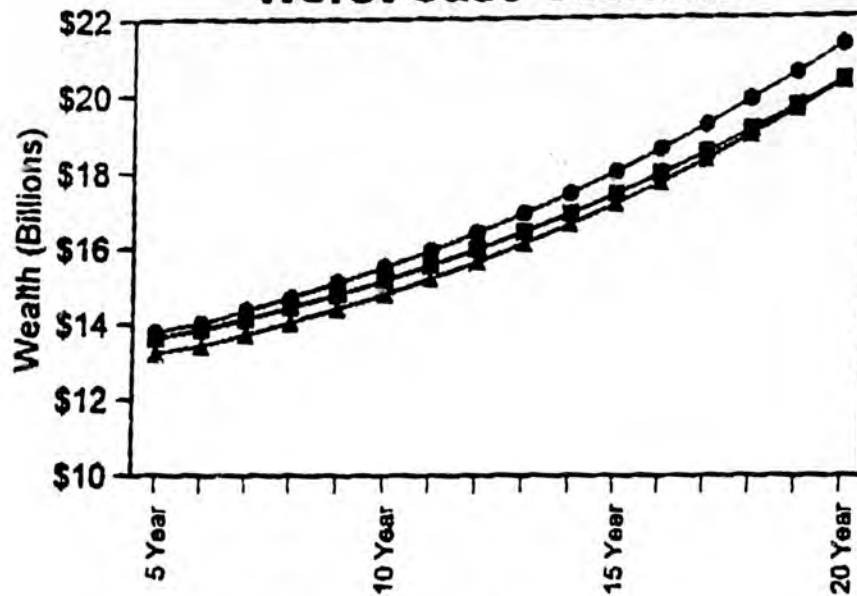
Allocation of a More Aggressive Portfolio

Although we have analyzed and suggested improvements to both the current and target portfolios, we have not yet commented on whether either portfolio is appropriate for the Fund. Ideally, a portfolio provides enough return to meet the goals of the investor while maintaining a level of risk that is comfortable for the investor. By setting a three-year target portfolio that has an increased allocation to equity assets, the Board has indicated that it is comfortable with a more aggressive investment philosophy. In our opinion, such an aggressive investing strategy is appropriate and necessary for achieving the Fund's statutory goals of maximizing total return and providing the maximum amount of disposable income to the citizens of Alaska. Consequently, we believe the Fund should consider the benefits of investing in the "aggressive portfolio," also shown in the graph on page 7.

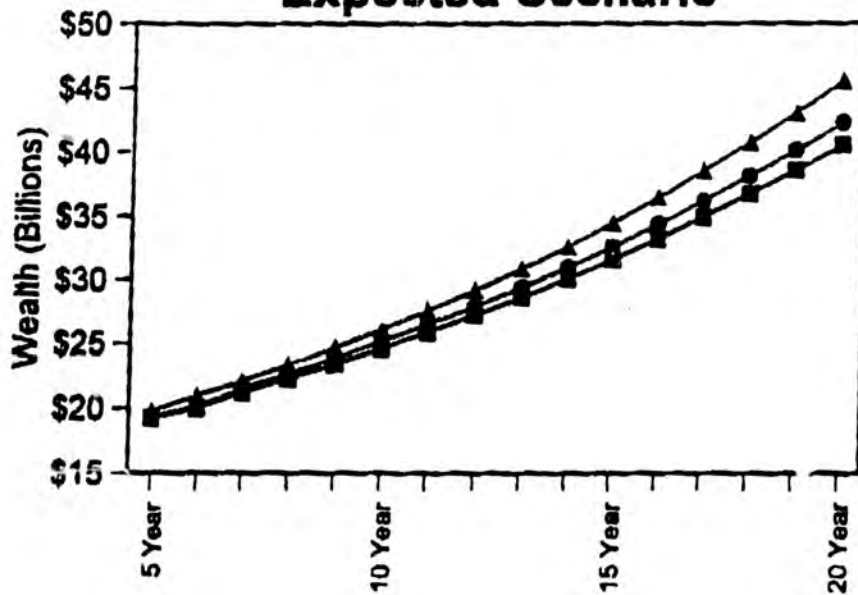
In recent years, the Fund has enjoyed relatively high returns, particularly on its fixed income investments. These high returns were due, in part, to rather unique market conditions, such as a dramatic decline in U.S. interest rates. These market conditions, however, are not expected to continue in the future, as evidenced by the returns expected on the current and target Fund portfolios. The potentially lower returns earned by both these portfolios are important factors to consider, because such low returns will inevitably lead to lower dividend payments to Alaskans. Our recommended aggressive portfolio, however, with its significant allocations to international equities and mortgage-backed securities, has an expected return in the range of the Fund's recent returns. The allocation of this aggressive portfolio, along with its expected return and standard deviation, is provided on page 8.

The graphs on the following page can help to compare the expected performance of each portfolio. The graphs show expected wealth values under the target, revised target, and aggressive portfolios for five-, ten-, and twenty-year investment horizons. Although the Board may consider the aggressive portfolio too risky, the graph shows that the majority of this portfolio's volatility is due to its broad range of possible high, *positive* returns, not negative ones. For all investment time horizons, the aggressive portfolio has a higher expected wealth value under the best- and expected-case scenarios. Only under the worst-case scenario does the aggressive portfolio underperform the target portfolio, while the revised target portfolio performs better than the target portfolio in *all* cases.

Worst Case Scenario

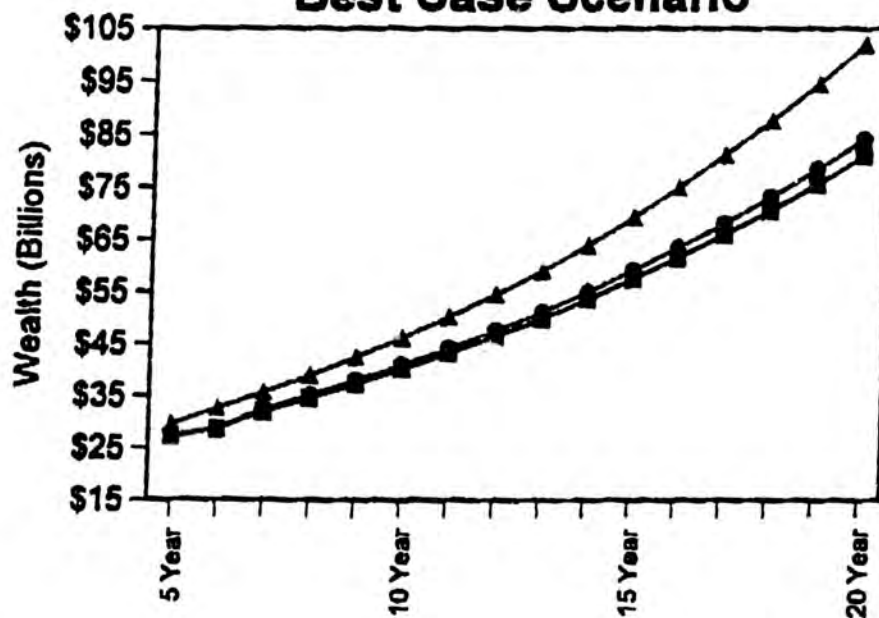


Expected Scenario



- 3-Year Target Portfolio
- Revised Portfolio
- ▲ Aggressive Portfolio

Best Case Scenario



Testing Our Recommended Portfolios

To ensure the validity of our recommended portfolios, we tested those portfolios and the Fund's current and target portfolios for *stability*. A stable portfolio is one that performs well under a variety of possible future market conditions; i.e., the portfolio provides adequate return for the amount of risk taken under conditions that differ from our forecasts. We tested the portfolios using "worst-case" scenarios where the return of one or more assets is lower than expected and the risk is higher than expected. The following scenarios were used, both individually and in combination, to test our recommended portfolios:

- U.S. equity risk premium decreases to 5 percent
- Mid and small capitalization equity return decreases to 15 percent
- Europe equity return decreases to 10 percent
- Europe equity standard deviation increases to 26 percent
- Pacific equity return decreases to 10 percent
- Pacific equity standard deviation increases to 34 percent
- Emerging market equity return decreases to 10 percent
- Return between long-term and intermediate-term bonds increases to 1 percent
- Intermediate-term bond standard deviation increases to 6 percent
- Mortgage-backed securities return decreases to 6 percent
- Mortgage-backed securities standard deviation increases to 11 percent
- Real estate standard deviation increases to 25 percent
- Correlation between U.S. stocks and U.S. bonds increases 30 percent
- Correlation between U.S. stocks and non-U.S. stocks increases 30 percent

Under these scenarios, our recommended portfolios provided higher returns with less risk than either the Fund's current or target portfolios. For example, the improved target portfolio had 10 basis points more return and less risk than the current target portfolio when tested under the assumption that all international markets had the lower returns and higher risks outlined above. This indicates that the revised portfolios will perform better over the long run, despite possible extreme underperformance of some markets.

III. Implementation Issues

Whichever portfolio the Board chooses, several issues must be addressed by the Board to ensure maximum Fund performance. The single most important issue is the degree of adherence to the chosen allocation. Research has suggested that the asset allocation decision accounts for over 90 percent of the variability of returns on a portfolio, and is the single largest determinant of portfolio performance.¹ Consequently, individual security selection and active security management, the two factors commonly assumed to contribute the most to the return of a portfolio, actually account for only a small amount of portfolio return variability. Therefore, adherence to the chosen allocation is *crucial* to the future performance of any investment portfolio, including the Permanent Fund. Accordingly, the Board must decide whether the current investment strategy of the Fund accommodates a strict adherence to the chosen allocation. We address this issue separately for equity and fixed income assets in the following two sections.

Equity Assets

As of April 1993, the Board decided to use active managers only for domestic mid/small capitalization stocks and all international equities. Since our recommended portfolios are based on passive benchmarks, we believe that the long-term performance we forecast can be achieved through the use of passive managers, although it is certainly possible for active managers to meet or exceed that performance. For this reason, we believe the Board's decision to retain active managers is appropriate, *as long as each manager is given only that portion of Fund assets that is recommended in the chosen allocation, and is required to invest those assets in the specific, recommended asset class.*

This stipulation is in direct contrast to the Board's new global investment strategy as outlined in the Fund's 1993 Annual Report. The new strategy allows active international equity managers to decide when and where to invest Fund assets, essentially shifting the asset allocation decision from the Board to the manager. As mentioned earlier, asset allocation, not security selection or active market timing, is the largest determinant of portfolio performance. Under the planned strategy, the Fund's equity allocation will shift continuously, violating the most crucial aspect of strategic asset allocation: maintaining a stable asset mix which was chosen based on long-term forecasts and needs of the fund. For this reason, we suggest a slightly modified strategy where the Board hires managers that have a specific style of investing. For example, under this modified strategy, the European equity allocation would be managed by a manager who specializes in European equities. This type of management strategy would allow the Board to retain control over the equity allocation of the Fund.

¹ Gary P. Brinson, Brian D. Singer, and Gilbert L. Beebower, "Determinants of portfolio performance II: An update," *Financial Analysts Journal*, May-June 1991.

The Fund's domestic equity managers also have similar control over the asset allocation decision. Currently, the performance of each domestic equity manager is evaluated by using a benchmark portfolio that consists of 80 percent large capitalization equities and 20 percent mid and small capitalization equities. The equity managers, however, are not specifically required to invest 80 percent of their Fund allocation in large capitalization stocks and 20 percent in mid and small capitalization stocks. A manager could alternate between large cap and mid and small cap stocks, and still *average* an 80 percent large cap and 20 percent mid and small cap investment. This manager could potentially be 100 percent invested in large cap stocks when the return in the mid and small cap market is high, and vice-versa. Again, this causes the overall equity allocation of the Fund to change continuously, and shifts control of the asset allocation decision to individual managers. Because the asset allocation decision is so important to the overall performance of the Fund, we feel the Board should set specific domestic equity allocations, and select managers who specialize in each asset class. This will ensure the maximum expected return for the Fund's equity investments.

Fixed Income Assets

Currently, the Fund's fixed income assets are passively managed in-house by the Fund's Chief Investment Officer, and are generally treated as a single asset class. Our analysis, however, treats the fixed income category as five distinct asset classes, because each contributes unique benefits to the overall portfolio. Treasury bills, for example, provide more liquidity than the other assets, and are, consequently, the least risky. Also, mortgage-backed securities perform differently from government or corporate bonds. For this reason, each fixed income asset class must be considered separately in the asset allocation decision.

Currently, the Board treats all fixed income assets as a single asset class and provides only a broad allocation directive. This essentially shifts the asset allocation decision to the fixed income manager. While the current allocation across fixed income assets may be appropriate when viewed in isolation, that same allocation may be inappropriate when viewed in the context of the overall portfolio. The Board has a comprehensive perspective on the Fund and, as such, should determine the Fund allocation to each asset class. For this reason, we suggest that the Board set specific target allocations for fixed income asset classes. In this way, the Board maintains control over the Fund's asset allocation and ensures maximum overall Fund performance.

Prior to beginning our study, several Board members and senators voiced concern over the Fund having only one manager for the entire fixed income portfolio. We feel that a single, capable manager, such as the current manager, can manage a large, passive fixed income portfolio with few problems, as long as that portfolio has only a small allocation to mortgage-backed securities. However, if a larger proportion of funds was invested in

mortgage-backed securities (as is our recommendation), it may be required to hire additional staff. This is because mortgage-backed securities are more complex to analyze, and the holders of mortgage securities continually receive principal and interest payments which must be accurately recorded. All our recommended portfolios contain substantial allocations to mortgage-backed securities. Consequently, we suggest that the Board hire an outside manager to manage the mortgage portfolio, or, at the very least, hire additional support staff.

Conclusion

Although the Permanent Fund has an excellent performance history, the Fund faces new and uncertain investment challenges in the coming years. The Board, realizing the importance of asset allocation to overall Fund performance, has created a target allocation to meet those challenges. However, as our analysis reveals, the Board can implement a better allocation for the Fund, one that has higher expected return and less risk than the Fund's target portfolio. Also, the Board can implement a new investing policy, one emphasizing an adherence to the chosen allocation. By doing so, the Board will help ensure the maximum expected performance of the Fund over the long-term investment horizon, thereby providing the highest possible income to the State's citizens and fulfilling its obligation to those citizens.

Appendix A: Benchmarks Used in Asset Allocation Study

<u>Asset Class</u>	<u>Benchmark Description</u>
U.S. Large Capitalization Equity	S&P 500: A market capitalization-weighted index of 500 of the largest stocks of companies domiciled in the United States.
U.S. Mid/Small Capitalization Equity	Russell 2000 Index: A market capitalization-weighted index of the stocks of the bottom two thirds of the largest 3,000 publicly traded companies domiciled in the United States.
Canada Equity	Morgan Stanley Capital International Canada Total Return Index: A market capitalization-weighted index of 81 large Canadian stocks.
Europe Equity	Morgan Stanley Capital International Europe Total Return Index: A market capitalization-weighted index of large stocks from Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, and the United Kingdom.
Pacific Equity	Morgan Stanley Capital International Pacific Total Return Index: A market capitalization-weighted index of large stocks from Australia, Hong Kong, Japan, Malaysia, New Zealand, and Singapore.
Emerging Markets Equity	IFC Emerging Market Composite Index: A broad-based, market capitalization-weighted index of stocks listed in countries with a per capita GDP below an annually-disclosed figure. Currently, 20 countries are represented in the Composite index.
Cash	U.S. 90-Day Treasury Bills: Published by Salomon Brothers in <i>International Bond and Money Market Performance</i> .

IT Govt/Corp Bonds

Lehman Brothers Intermediate-Term Government/Corporate Bond Total Return Index: A portfolio of U.S. government issues (>\$100 million par value) and investment grade corporate debt (>\$50 million par value) with an average maturity of 4.42 years as of November 29, 1993.

LT Govt/Corp Bonds

Lehman Brothers Government/Corporate Bond Total Return Index: A portfolio of U.S. government issues (>\$100 million par value) and investment grade corporate debt (>\$50 million par value) with an average maturity of 10.91 years as of November 29, 1993.

Mortgage-Backed Securities

Lehman Brothers Mortgage-Backed Securities Total Return Index: An index of all fixed-rate securities backed by mortgage pools of the Government National Mortgage Association (GNMA), Federal Home Loan Mortgage Corporation (FHLMC), and the Federal National Mortgage Association (FNMA). The index has an average maturity of 6.89 years.

Non-U.S. Bonds

Salomon Brothers Non-U.S. 1+ Bond Index: A market capitalization-weighted index of bonds from Australia, Canada, Germany, Japan, Netherlands, Switzerland, and the United Kingdom with one year or more to maturity. The average maturity of bonds in the index is 6.95 years.

Real Estate

Willshire Real Estate Securities Total Return Index: A market capitalization-weighted index of approximately 85 real estate investment trust and real estate operating companies.

Appendix B: Forecasts Used in Asset Allocation Study

Forecasts of Expected Return and Standard Deviation

Asset Class	Expected Return	Standard Deviation
U.S. Large Cap Stocks	13.56	20.61
U.S. Mid/Small Cap Stocks	18.03	32.95
Canada Stocks	13.73	24.64
Europe Stocks	13.98	22.69
Pacific Stocks	15.11	28.24
Emerging Market Stocks	21.38	47.00
Real Estate	9.90	13.63
Cash	4.61	2.73
IT Govt/Corp Bonds	5.89	4.10
LT Govt/Corp Bonds	6.37	7.22
Mortgage-Backed Securities	7.45	9.28
Non-U.S. Govt Bonds	6.01	14.75