

POLLUTION CONTROL EXPENDITURE ESTIMATES

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POLLUTION CONTROL EXPENDITURE ESTIMATES

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POLLUTION CONTROL EXPENDITURE ESTIMATES

EPA requires estimates of total and incremental pollution control expenditures in order to analyze the macroeconomic impact of the nation's pollution control program. This report presents total and incremental expenditure estimates for each year during the period from 1970 through 1990. The report also describes the approach used to derive these estimates.

Introduction

The Agency defines "incremental" expenditure as that amount of total pollution control expenditure that would not occur in the absence of federal pollution control regulations. In order to produce incremental expenditure figures, we estimated a baseline expenditure level which was then subtracted from total expenditures. The baseline represents a level of pollution control expenditure that could reasonably be assumed to occur in the absence of regulations promulgated under the Clean Air Act, Clean Water Act, and RCRA.

We made separate expenditure estimates for air pollution control, water pollution control, and solid waste management. These estimates were made at roughly the two-digit SIC level, corresponding to the categories used by the U.S. Department of Commerce, Bureau of Economic Analysis (BEA), for reporting industrial pollution control expenditures. Additional estimates are provided for state and local government (e.g., for wastewater treatment, solid waste management, and various regulatory activities), for government-owned electric utilities, and for mobile source pollution control expenditures. Separate estimates of capital investment and annual operating and maintenance (O&M) expenditures were produced. In addition, the investment amounts were annualized and combined with the O&M expenditures to provide estimates of the total annualized costs of pollution controls.

Aggregate results in 1972 dollars are presented in Exhibits 1 through 6. Exhibits 1, 2, and 3 report total pollution control capital investment expenditures, O&M expenditures, and annualized cost, respectively. Exhibits 4, 5, and 6 report incremental pollution control investment, O&M, and annualized cost, respectively. Each table combines air, water, and solid waste expenditures.

As discussed below, total capital expenditures are derived from actual expenditure data through 1982 and planned 1983 expenditures. These same data were then used to make simple extrapolative forecasts for 1984 through 1990. Baseline capital expenditures were developed from estimates of pollution control investment in the early 1960's. Historical and forecast O&M expenditures were estimated as a percentage of pollution control capital stock.

The procedures used to derive both historical and projected cost figures are discussed briefly in the remainder of this report. Appendix A provides more detailed notes on the derivation of the expenditure estimates. Appendix B provides and explains detailed tables of mobile source emission control costs. Appendix C presents separate total and incremental cost tables for air, water, and solid waste expenditures.

Capital Investment Expenditures--Total

Historical industrial pollution control capital expenditures for 1973 to 1982 and planned 1983 expenditures were taken directly from BEA reports (Ref. 3, 4, 26). Air and water pollution control expenditures for 1970 to 1972 are based on unpublished BEA estimates (Ref. 6). Solid waste management expenditures for 1970 to 1972 were estimated by assuming that the ratio of solid waste capital expenditure to total new plant and equipment (P&E) expenditures for each industry in those years equalled the lowest such ratio in the 1973 to 1981 period.

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EXHIBIT 1

TABLE 9
TOTAL INVESTMENT FOR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	4850.7	5871.7	6782.9	8517.2	8357.4	10071.3	10457.1	10438.0	10173.7	10733.9
ALL INDUSTRY	2649.7	3251.0	3777.7	4644.5	4687.3	5164.0	5106.5	4843.5	4662.3	4746.7
MANUFACTURING IND.	2053.7	2356.2	2502.9	2917.8	3124.1	3720.1	3462.7	3135.5	2776.8	2762.4
PRIMARY METALS	367.4	341.5	406.9	597.6	610.7	753.1	700.5	606.9	491.4	521.7
ELEC. MACHINERY	81.5	80.5	72.3	113.3	102.3	67.9	59.4	67.5	62.7	68.4
NON-ELEC. MACH.	76.4	58.3	63.9	94.5	75.0	68.3	64.6	80.9	87.6	79.7
TRANSP. EQUIP.	120.0	147.9	140.4	198.5	149.7	121.6	122.2	148.7	181.7	233.5
STONE, CLAY, GLASS	105.5	120.2	109.2	145.2	175.0	165.1	113.0	106.6	143.1	118.8
OTHER DURABLES	207.7	208.6	189.0	229.9	234.4	244.1	210.2	177.6	120.9	121.2
FOOD & BEVERAGE	122.0	142.4	179.8	226.4	209.1	214.2	209.1	182.7	213.4	154.3
TEXTILES	42.4	20.0	36.4	40.5	35.8	40.0	31.2	35.8	26.9	30.1
PAPER	182.9	182.5	288.6	283.7	314.8	377.5	346.0	290.8	181.7	233.6
CHEMICALS	278.4	359.1	436.6	396.5	475.3	625.3	705.6	628.5	457.7	358.9
PETROLEUM	410.5	661.3	511.2	520.1	648.3	957.7	846.5	747.3	745.2	785.2
RUBBER	35.0	18.7	37.9	40.6	44.0	40.0	30.8	46.9	39.1	34.0
OTHER NONDURABLES	24.0	15.2	30.7	31.2	49.7	45.4	23.5	15.5	25.2	22.9
NONMANUFACTURING	596.0	894.7	1274.8	1726.7	1563.2	1443.9	1643.9	1708.0	1885.5	1984.3
MINING	45.2	71.1	91.7	132.3	114.9	104.6	162.5	166.0	253.0	292.0
PRIVATE UTILITIES	386.9	631.4	976.8	1244.0	1166.7	1064.4	1225.2	1368.0	1421.7	1501.8
COMMERCIAL & OTHER	163.9	192.2	206.3	350.4	281.5	274.9	256.2	174.0	210.9	190.5
STATE & LOCAL GOVT.	1742.6	2030.0	2408.5	2563.9	2556.6	3089.9	3228.0	3168.0	3021.6	3503.9
GOVT.-OWNED UTILITIES	87.1	93.3	99.2	136.6	149.0	122.5	160.6	180.1	207.9	211.7
MOBILE SOURCE CONTROLS	371.2	497.4	497.5	1172.2	964.5	1694.9	1962.0	2246.4	2291.9	2271.7

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EXHIBIT 1 (cont'd.)

TABLE 9
TOTAL INVESTMENT FOR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	11001.4	10633.7	9244.5	8634.4	9037.1	9464.1	9732.3	10026.8	10254.3	10486.5	10585.5
ALL INDUSTRY	4710.7	4123.0	3692.3	3417.6	3748.0	4102.2	4377.9	4644.1	4910.1	5151.5	5360.4
MANUFACTURING IND.	2864.6	2520.4	2068.3	1929.4	2210.7	2477.2	2662.0	2834.3	3010.5	3152.4	3274.9
PRIMARY METALS	501.2	358.1	326.3	240.5	376.9	437.8	473.5	498.7	523.2	547.9	567.7
ELEC. MACHINERY	78.1	78.9	70.4	58.6	78.5	85.7	90.0	93.5	98.7	102.5	104.4
NON-ELEC. MACH.	78.1	70.1	83.4	79.3	74.4	83.8	90.9	96.7	102.8	110.1	116.0
TRANSP. EQUIP.	269.5	218.7	174.7	204.2	170.5	197.4	214.2	226.7	242.3	255.3	266.0
STONE, CLAY, GLASS	128.5	73.2	34.8	37.1	57.4	67.3	72.4	73.2	75.4	77.9	79.6
OTHER DURABLES	104.2	103.9	89.0	59.7	91.1	102.6	111.3	117.6	125.6	131.7	136.0
FOOD & BEVERAGE	146.7	144.3	162.1	137.7	138.3	146.3	152.3	160.1	167.9	174.7	181.5
TEXTILES	37.7	24.5	14.6	13.9	21.5	24.2	26.0	27.4	28.9	30.1	31.0
PAPER	203.4	181.6	131.2	175.4	128.3	148.7	160.5	171.0	189.2	203.9	213.8
CHEMICALS	385.7	409.4	288.9	221.5	307.7	342.3	364.1	396.6	423.4	447.6	468.0
PETROLEUM	889.7	815.9	657.8	668.0	731.4	801.0	862.6	925.3	982.3	1017.1	1055.5
RUBBER	20.8	23.3	17.5	12.6	19.5	22.9	25.3	26.9	28.7	30.3	31.3
OTHER NONDURABLES	21.0	18.5	17.5	20.9	15.2	17.3	19.1	20.6	22.2	23.2	24.0
NONMANUFACTURING	1846.1	1602.6	1624.0	1488.1	1537.3	1624.9	1715.8	1809.8	1899.5	1999.1	2085.5
MINING	250.6	213.1	227.2	265.2	225.2	244.3	262.9	283.8	304.8	326.5	346.9
PRIVATE UTILITIES	1426.0	1277.1	1286.7	1129.2	1220.5	1202.8	1350.2	1419.2	1483.3	1556.5	1618.8
COMMERCIAL & OTHER	169.5	112.4	110.1	93.7	91.7	97.8	102.7	106.9	111.5	116.1	119.9
STATE & LOCAL GOVT.	3670.4	3934.0	3100.0	2461.9	2178.8	2022.9	1071.5	1740.5	1625.4	1567.2	1504.2
GOVT.-OWNED UTILITIES	244.0	228.4	204.7	214.5	207.4	218.0	229.5	241.2	252.1	264.5	275.1
MOBILE SOURCE CONTROLS	2376.3	2348.2	2247.4	2540.4	2902.8	3121.1	3253.5	3400.9	3466.8	3503.2	3445.7

* THE CHEMICAL INDUSTRY TOTAL POLLUTION ABATEMENT EXPENDITURE FORECASTS FOR 1984-1990 WERE INCREASED TO INCLUDE CONTROLS ON TOXICS.

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

EXHIBIT 2
TABLE 22
OPERATING & MAINTENANCE FOR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1970 ====	1971 ====	1972 ====	1973 ====	1974 ====	1975 ====	1976 ====	1977 ====	1978 ====	1979 ====
TOTAL	6491.2	7389.0	8433.6	9753.5	10081.8	10091.3	9978.6	10013.5	10032.8	10141.8
ALL INDUSTRY	2370.5	2583.2	2819.4	3177.2	3562.1	3990.9	4409.9	4823.9	5190.4	5589.4
MANUFACTURING IND.	1979.3	2151.5	2326.2	2592.6	2892.7	3240.6	3559.2	3854.3	4104.4	4350.1
PRIMARY METALS	320.6	345.2	372.7	433.9	506.2	597.7	654.1	710.4	753.5	790.5
ELEC. MACHINERY	61.3	69.5	76.7	93.6	103.3	113.8	119.0	128.7	136.5	143.3
NON-ELEC. MACH.	46.2	50.9	56.8	69.6	80.5	90.4	99.5	110.0	119.9	128.2
TRANSP. EQUIP.	250.9	261.2	272.4	296.4	322.1	336.7	356.1	382.1	413.2	451.8
STONE, CLAY, GLASS	37.1	41.9	46.4	52.2	58.7	65.0	71.6	77.9	85.4	90.2
OTHER DURABLES	93.2	107.0	119.7	133.2	146.3	162.0	176.4	188.3	192.8	194.7
FOOD & BEVERAGE	117.1	129.1	143.1	167.3	191.0	216.4	238.1	258.1	283.1	303.0
TEXTILES	27.9	29.8	32.9	37.0	39.9	42.6	45.2	47.5	48.3	48.5
PAPER	67.8	75.8	88.0	97.1	105.8	120.1	135.9	150.7	156.8	167.1
CHEMICALS	281.8	304.5	334.3	361.6	394.0	439.6	490.3	540.8	573.5	592.4
PETROLEUM	625.5	683.4	723.8	783.3	867.2	968.1	1079.6	1156.9	1232.1	1320.7
RUBBER	29.2	31.2	35.1	40.4	45.5	50.0	53.6	61.8	64.3	69.3
OTHER NONDURABLES	20.8	22.2	24.3	26.9	32.4	38.3	40.0	41.2	45.1	50.3
NONMANUFACTURING	391.2	431.7	493.2	584.6	669.4	750.3	850.7	969.7	1086.0	1239.3
MINING	129.6	138.2	148.4	166.8	181.6	204.3	240.0	299.0	356.9	448.9
PRIVATE UTILITIES	93.4	110.6	144.5	184.2	222.4	257.3	296.5	340.4	380.8	422.7
COMMERCIAL & OTHER	168.3	182.9	200.3	233.7	265.4	288.7	314.2	329.4	348.3	367.7
STATE & LOCAL GOVT.	2608.2	2666.5	2736.5	2815.8	2892.5	2987.2	3074.5	3149.3	3215.5	3315.3
GOVT.-OWNED UTILITIES	43.6	45.3	47.1	50.0	53.1	55.5	59.3	63.7	68.0	73.1
MOBILE SOURCE CONTROLS	1468.9	2094.1	2830.5	3710.6	3574.1	3057.7	2435.0	1976.5	1558.9	1163.9

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EXHIBIT 2 (cont'd.)

TABLE 22
OPERATING & MAINTENANCE FOR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
	====	====	====	====	====	====	====	====	====	====	====
TOTAL	10388.7	10644.2	10801.6	10877.7	10966.8	11096.2	11261.7	11413.3	11551.6	11759.9	12036.7
ALL INDUSTRY	5981.4	6309.5	6518.4	6671.2	6830.1	7003.9	7201.5	7397.0	7579.8	7821.5	8127.9
MANUFACTURING IND.	4606.4	4820.0	4920.7	4999.9	5089.9	5200.7	5320.6	5428.5	5520.5	5662.8	5868.7
PRIMARY METALS	835.4	867.3	875.8	882.8	901.7	926.3	947.9	967.0	983.5	1001.7	1035.1
ELEC. MACHINERY	152.8	160.5	166.1	167.5	175.3	182.1	190.2	202.3	214.7	227.8	241.9
NON-ELEC. MACH.	135.4	142.7	153.5	164.0	169.4	174.9	181.8	189.7	198.7	207.0	216.6
TRANSF. EQUIP.	478.7	508.1	518.8	537.6	547.2	558.4	574.8	592.6	613.1	632.8	652.0
STONE, CLAY, GLASS	94.5	96.2	97.3	96.9	97.6	99.0	100.6	101.6	102.6	103.5	103.5
OTHER DURABLES	193.6	191.1	184.3	176.1	172.2	171.2	170.8	167.7	165.9	167.0	175.0
FOOD & BEVERAGE	318.5	330.9	339.7	343.9	347.1	343.5	341.2	338.4	334.9	336.2	337.8
TEXTILES	49.4	49.3	46.7	46.0	44.6	43.0	42.6	42.6	42.3	42.7	44.4
PAAPER	177.7	188.4	188.4	192.9	189.1	191.5	195.1	195.9	194.5	198.1	209.3
CHEMICALS	611.9	645.4	653.3	651.6	649.2	647.3	641.3	631.6	597.5	592.9	610.4
PETROLEUM	1431.5	1507.8	1553.0	1602.8	1656.1	1720.0	1786.1	1846.9	1914.5	1987.5	2069.0
RUBBER	73.6	77.4	78.3	80.5	82.6	85.1	88.4	92.2	96.7	101.9	108.5
OTHER NONDURABLES	53.3	55.1	55.4	57.3	57.9	58.6	59.7	59.8	61.6	63.7	65.2
NONMANUFACTURING	1374.9	1489.5	1597.7	1671.3	1740.2	1803.2	1880.9	1968.5	2059.3	2158.7	2259.2
MINING	529.7	600.3	673.2	728.0	796.7	868.1	946.8	1031.6	1120.0	1213.5	1302.5
PRIVATE UTILITIES	461.2	501.3	536.0	557.0	565.3	570.0	578.7	592.9	605.3	616.2	634.2
COMMERCIAL & OTHER	384.0	387.8	388.5	386.3	378.2	365.1	355.4	344.0	333.9	328.9	322.5
STATE & LOCAL GOVT.	3447.0	3605.3	3744.6	3806.3	3846.5	3877.7	3907.4	3913.9	3911.9	3914.5	3917.5
GOVT.-OWNED UTILITIES	79.9	86.3	91.7	97.2	102.1	106.5	111.1	117.0	122.0	126.9	132.5
MOBILE SOURCE CONTROLS	880.4	643.1	446.9	303.0	188.2	108.1	41.7	-14.5	-62.0	-102.9	-141.3

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

EXHIBIT 3

TABLE 3B
ANNUALIZED CAPITAL INVESTMENT PLUS O&M FOR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	12780.7	14098.2	15664.1	17631.8	18613.9	19387.5	20040.9	20798.5	21502.3	22351.9
ALL INDUSTRY	4529.9	5063.5	5681.8	6527.4	7405.5	8384.3	9336.9	10245.5	11080.7	11952.8
MANUFACTURING IND.	3642.1	4048.5	4477.7	5053.5	5687.2	6438.6	7122.7	7739.5	8265.9	8782.7
PRIMARY METALS	590.6	648.7	718.9	848.0	988.5	1165.9	1302.2	1425.9	1522.1	1613.6
ELEC. MACHINERY	101.3	118.1	133.1	162.3	183.1	200.9	212.5	229.4	243.8	257.9
NON-ELEC. MACH.	82.2	92.8	105.1	127.7	146.3	163.1	178.7	197.5	216.4	233.0
TRANSP. EQUIP.	405.0	427.2	449.5	491.2	529.1	552.6	581.0	619.0	665.9	726.1
STONE, CLAY, GLASS	92.9	111.1	127.7	149.8	176.1	201.0	220.1	238.1	261.4	279.5
OTHER DURABLES	198.2	234.3	267.1	305.9	344.6	386.8	423.5	454.1	471.2	485.8
FOOD & BEVERAGE	195.3	221.3	253.7	301.5	346.5	393.7	436.8	475.1	522.1	557.1
TEXTILES	46.4	50.2	57.2	65.5	72.2	79.3	85.2	91.2	94.9	98.4
PAPER	196.1	222.6	266.6	309.6	356.5	415.7	469.3	514.6	538.4	571.0
CHEMICALS	607.3	665.0	739.6	806.8	888.2	999.0	1122.9	1235.2	1306.7	1351.9
PETROLEUM	1049.2	1172.7	1260.9	1371.4	1521.0	1725.4	1924.4	2076.9	2226.9	2375.7
RUBBER	44.7	48.6	56.7	66.4	76.4	85.4	92.3	105.8	112.8	121.7
OTHER NONDURABLES	33.0	36.0	41.6	47.6	58.7	69.7	73.9	76.7	83.3	90.9
NONMANUFACTURING	887.8	1015.0	1204.1	1473.9	1718.3	1945.7	2214.1	2506.0	2814.9	3170.1
MINING	167.2	183.0	203.2	236.0	263.6	297.5	351.5	429.7	514.7	639.1
PRIVATE UTILITIES	447.3	523.3	652.5	816.0	969.7	1109.3	1270.2	1451.1	1634.3	1827.4
COMMERCIAL & OTHER	273.3	308.7	348.4	421.9	485.1	539.0	592.4	625.2	665.8	703.6
STATE & LOCAL GOVT.	6574.2	6726.3	6930.0	7159.7	7386.1	7687.0	7994.5	8283.3	8548.0	8897.9
GOVT.-OWNED UTILITIES	207.7	214.3	221.7	234.1	248.1	258.6	274.5	293.2	314.6	337.3
MOBILE SOURCE CONTROLS	1468.9	2094.1	2830.5	3710.6	3574.1	3057.7	2435.0	1976.5	1558.9	1163.9

JULY 7, 1983

EXHIBIT 3 (cont'd.)

TABLE 38
ANNUALIZED CAPITAL INVESTMENT PLUS O&M FOR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
	====	====	====	====	====	====	====	====	====	====	====
TOTAL	23347.4	24296.9	24993.0	25494.5	25990.9	26505.4	27058.5	27579.6	28073.7	28648.0	29320.4
ALL INDUSTRY	12804.2	13512.0	14036.2	14460.3	14904.5	15358.5	15855.2	16346.1	16822.8	17371.7	18018.4
MANUFACTURING IND.	9312.4	9748.1	10004.7	10206.6	10436.5	10678.3	10941.1	11181.2	11408.1	11680.8	12038.9
PRIMARY METALS	1709.3	1770.4	1802.7	1822.6	1864.4	1912.5	1959.5	1995.1	2007.0	2028.6	2055.7
ELEC. MACHINERY	276.0	292.2	305.2	312.6	328.6	344.0	360.6	381.1	401.4	422.3	444.4
NON-ELEC. MACH.	248.2	262.5	281.9	300.5	313.3	326.9	342.5	359.2	376.3	393.8	410.1
TRANSP. EQUIP.	778.8	828.2	853.9	889.9	911.7	937.0	968.7	1004.1	1044.5	1083.3	1121.9
STONE,CLAY,GLASS	298.1	307.7	312.1	315.0	321.0	328.1	334.4	338.8	341.0	341.6	341.3
OTHER DURABLES	495.4	503.4	505.4	502.3	506.6	514.3	521.9	526.1	529.7	535.2	547.9
FOOD & BEVERAGE	586.6	613.0	638.0	655.3	671.5	681.4	690.9	698.4	705.4	714.2	723.8
TEXTILES	103.5	106.0	104.7	105.2	105.7	106.2	108.3	110.8	113.0	116.0	119.7
PAPER	598.4	622.4	628.4	644.2	638.4	633.6	626.3	617.2	620.0	632.5	656.5
CHEMICALS	1398.3	1460.9	1477.1	1468.1	1470.4	1472.8	1469.4	1462.2	1440.9	1457.4	1502.7
PETROLEUM	2595.6	2747.4	2856.8	2945.0	3053.7	3164.3	3293.5	3415.4	3546.8	3662.8	3812.7
RUBBER	128.1	134.4	137.1	140.3	143.9	148.1	153.7	159.8	166.1	173.6	181.1
OTHER NONDURABLES	96.1	99.7	101.8	105.6	107.2	109.0	111.5	113.2	116.0	119.5	121.0
NONMANUFACTURING	3491.9	3764.0	4031.5	4253.7	4468.0	4680.2	4914.0	5164.8	5414.8	5690.9	5979.5
MINING	747.7	841.9	939.6	1023.8	1116.9	1213.9	1319.4	1430.8	1546.9	1670.5	1793.8
PRIVATE UTILITIES	2009.2	2176.7	2339.9	2472.7	2602.0	2734.1	2876.7	3031.3	3190.6	3355.9	3534.8
COMMERCIAL & OTHER	735.0	745.4	752.0	757.2	749.0	732.2	717.9	702.7	677.4	664.6	650.9
STATE & LOCAL GOVT.	9297.6	9750.9	10096.7	10294.7	10439.7	10557.7	10656.5	10716.5	10754.8	10793.4	10827.7
GOVT.-OWNED UTILITIES	365.1	390.9	413.2	436.5	458.6	481.1	505.1	531.5	558.1	586.0	615.6
MOBILE SOURCE CONTROLS	880.4	643.1	446.9	303.0	188.2	108.1	41.7	-14.5	-62.0	-102.9	-141.3

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1983 EXPENDITURE ESTIMATES

EXHIBIT 4

JULY 7, 1983 BASELINE: 1960-1962

TABLE 14
INCREMENTAL INVESTMENT FOR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	2308.5	3481.2	4481.4	6133.8	5839.5	7637.7	8121.5	8160.1	7762.3	8297.1
ALL INDUSTRY	1790.8	2472.6	3004.0	3796.1	3706.0	4171.0	4083.9	3760.4	3534.6	3509.6
MANUFACTURING IND.	1402.4	1799.4	1964.7	2317.2	2377.3	2942.7	2671.5	2311.5	1922.8	1808.4
PRIMARY METALS	266.6	262.0	338.9	518.2	505.9	630.5	585.6	504.9	391.1	414.1
ELEC. MACHINERY	71.1	72.1	65.0	104.6	93.9	61.6	52.5	59.2	53.4	57.5
NON-ELEC. MACH.	59.1	44.9	50.8	79.2	57.3	53.1	48.5	62.9	69.2	55.3
TRANSP. EQUIP.	38.5	89.8	71.4	114.6	60.3	51.4	50.6	53.3	63.8	96.8
STONE, CLAY, GLASS	99.0	114.8	101.9	136.9	167.5	158.2	105.7	98.3	132.4	106.4
OTHER DURABLES	187.8	190.9	169.5	206.5	212.3	225.8	191.4	157.4	100.1	100.7
FOOD & BEVERAGE	82.3	105.1	145.0	190.1	173.2	181.5	172.3	145.8	173.5	114.1
TEXTILES	38.5	15.9	31.8	36.3	31.8	36.9	27.9	32.1	23.2	26.4
PAPER	131.6	147.0	250.5	234.4	251.3	317.6	287.0	226.8	115.8	150.4
CHEMICALS	132.5	226.7	306.2	241.7	266.5	400.6	479.8	416.1	252.5	121.1
PETROLEUM	244.2	503.1	372.9	392.7	472.1	746.6	622.6	499.8	492.3	518.1
RUBBER	31.2	15.7	34.2	35.3	39.2	36.7	27.4	42.8	34.3	29.5
OTHER NONDURABLES	20.0	11.3	26.6	26.8	45.9	42.1	20.4	12.1	21.2	17.8
NONMANUFACTURING	388.4	673.3	1039.3	1478.8	1328.7	1228.4	1412.4	1449.0	1611.8	1701.3
MINING	33.4	56.6	75.7	116.0	95.1	80.6	134.8	133.9	220.1	258.7
PRIVATE UTILITIES	229.7	463.2	798.5	1057.5	994.1	909.8	1058.7	1180.8	1225.1	1297.8
COMMERCIAL & OTHER	125.3	153.5	164.1	305.4	239.5	237.9	218.9	134.3	166.7	144.8
STATE & LOCAL GOVT.	90.9	441.4	900.2	1049.8	1042.5	1667.6	1937.6	1998.0	1765.6	2333.9
GOVT.-OWNED UTILITIES	55.6	69.7	79.7	115.7	126.4	104.2	138.0	155.2	180.2	181.9
MOBILE SOURCE CONTROLS	371.2	497.4	497.5	1172.2	964.5	1694.9	1962.0	2246.4	2281.9	2271.7

JULY 7, 1983

BASELINE: 1960-1962

EXHIBIT 4 (cont'd.)

TABLE 14
 INCREMENTAL INVESTMENT FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
	====	====	====	====	====	====	====	====	====	====	====
TOTAL	8477.9	8211.3	7023.6	6552.8	6905.2	7185.7	7342.9	7517.7	7608.7	7724.0	7733.2
ALL INDUSTRY	3395.4	2805.7	2485.1	2315.2	2632.6	2870.4	3054.0	3230.9	3402.0	3568.6	3712.2
MANUFACTURING IND.	1821.5	1478.2	1134.2	1082.2	1339.1	1503.4	1610.5	1708.2	1803.8	1886.5	1957.3
PRIMARY METALS	389.2	253.1	235.3	171.5	278.2	323.2	349.6	368.2	386.3	404.5	419.2
ELEC. MACHINERY	64.9	66.3	58.1	46.5	65.3	71.3	74.9	77.8	82.1	85.3	86.9
NON-ELEC. MACH.	53.5	45.2	60.5	57.1	51.2	57.7	62.6	66.6	70.8	75.8	79.8
TRANSP. EQUIP.	121.5	85.1	70.8	109.4	71.0	82.1	89.1	94.3	100.8	106.2	110.7
STONE,CLAY,GLASS	117.6	65.2	28.5	31.5	50.9	59.7	64.1	64.9	66.8	69.0	70.6
OTHER DURABLES	83.4	83.9	72.2	44.8	73.4	82.7	89.7	94.8	101.3	106.2	109.6
FOOD & BEVERAGE	105.5	103.4	125.8	104.4	102.4	108.3	112.8	118.6	124.3	129.4	134.4
TEXTILES	34.0	21.3	12.0	11.5	18.7	21.1	22.7	23.9	25.2	26.3	27.0
PAPER	110.0	99.1	62.0	108.4	66.9	77.6	83.7	89.2	98.7	106.4	111.5
CHEMICALS	131.5	164.4	63.3	0.3	112.7	127.0	129.9	140.0	142.2	149.9	156.5
PETROLEUM	577.8	458.2	318.7	371.3	421.0	461.0	496.5	532.6	565.4	585.4	607.5
RUBBER	17.5	20.3	14.7	9.8	16.7	19.5	21.6	22.9	24.5	25.8	26.7
OTHER NONDURABLES	15.1	12.9	12.1	15.6	10.7	12.1	13.4	14.5	15.6	16.3	16.8
NONMANUFACTURING	1573.9	1327.5	1350.9	1233.0	1293.5	1367.0	1443.4	1522.7	1598.2	1682.1	1754.9
MINING	214.5	172.2	191.8	231.6	188.8	204.8	220.4	237.9	255.5	273.8	290.8
PRIVATE UTILITIES	1233.0	1084.6	1088.2	944.8	1042.2	1095.4	1153.0	1211.9	1266.6	1329.2	1382.4
COMMERCIAL & OTHER	126.4	70.7	70.8	56.6	62.5	66.7	70.0	72.9	76.0	79.1	81.7
STATE & LOCAL GOVT.	2494.7	2861.6	2119.4	1515.7	1192.4	1007.8	839.2	679.6	524.3	425.9	340.0
GOVT.-OWNED UTILITIES	211.5	195.8	171.6	181.6	177.4	186.5	196.3	206.3	215.6	226.3	235.3
MOBILE SOURCE CONTROLS	2376.3	2348.2	2247.4	2540.4	2902.8	3121.1	3253.5	3400.9	3466.8	3503.2	3445.7

* THE CHEMICAL INDUSTRY TOTAL POLLUTION ABATEMENT EXPENDITURE FORECASTS FOR 1984-1990 WERE INCREASED TO INCLUDE CONTROLS ON TOXICS.

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

BASELINE: 1960-1962

EXHIBIT 5

TABLE 29
 INCREMENTAL OPERATING & MAINTENANCE FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	1842.9	2662.2	3640.7	4889.3	5127.7	5054.9	4875.1	4852.7	4811.9	4860.4
ALL INDUSTRY	380.2	553.2	754.5	1068.5	1389.0	1748.2	2095.8	2432.2	2720.7	3027.8
MANUFACTURING IND.	323.0	465.5	616.4	851.7	1100.7	1393.2	1657.2	1894.9	2088.6	2264.3
PRIMARY METALS	54.3	77.4	105.4	164.3	229.5	311.5	361.0	413.5	454.1	488.2
ELEC. MACHINERY	23.7	30.4	36.3	51.6	59.7	69.3	73.6	82.0	88.3	93.3
NON-ELEC. MACH.	8.1	11.6	16.3	27.5	36.3	44.5	52.0	60.6	68.8	74.4
TRANSP. EQUIP.	15.1	23.1	30.0	46.8	64.2	74.7	90.5	109.0	129.3	153.5
STONE, CLAY, GLASS	16.4	21.3	25.5	30.9	37.1	43.3	49.6	55.5	62.1	65.9
OTHER DURABLES	47.0	59.6	70.7	82.1	93.5	108.1	121.3	131.9	135.3	136.2
FOOD & BEVERAGE	13.7	22.4	33.6	55.0	75.8	98.7	117.6	134.8	156.8	173.6
TEXTILES	9.0	10.3	12.8	16.2	18.7	21.2	23.6	25.6	26.3	26.3
PAPER	15.8	23.3	34.8	42.3	48.3	60.2	74.0	86.7	91.0	98.4
CHEMICALS	41.1	56.2	80.0	100.3	121.9	154.9	192.5	233.3	259.7	267.8
PETROLEUM	64.5	113.7	150.1	208.3	280.5	362.1	452.7	504.7	555.0	616.5
RUBBER	9.1	10.5	13.6	17.4	21.3	25.2	28.2	35.6	37.0	41.0
OTHER NONDURABLES	5.1	5.8	7.3	9.1	14.0	19.5	20.8	21.5	24.9	29.1
NONMANUFACTURING	57.2	87.8	138.1	216.8	288.3	355.0	438.7	537.3	632.1	763.5
MINING	11.1	16.7	23.8	38.2	47.0	60.9	85.5	131.4	174.4	251.9
PRIVATE UTILITIES	25.2	39.6	70.3	106.7	142.2	174.9	211.7	252.8	290.3	329.6
COMMERCIAL & OTHER	20.9	31.5	44.0	71.9	99.1	119.2	141.4	153.1	167.4	182.0
STATE & LOCAL GOVT.	-14.9	3.8	41.7	92.4	142.8	224.2	315.2	410.0	493.6	624.6
GOVT.-OWNED UTILITIES	8.7	11.2	14.0	17.8	21.7	24.8	29.2	34.1	38.8	44.1
MOBILE SOURCE CONTROLS	1468.9	2094.1	2830.5	3710.6	3574.1	3057.7	2435.0	1976.5	1558.9	1163.9

JULY 7, 1983

BASELINE: 1960-1962

EXHIBIT 5 (cont'd.)

TABLE 29
 INCREMENTAL OPERATING & MAINTENANCE FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
	====	====	====	====	====	====	====	====	====	====	====
TOTAL	5034.4	5222.7	5339.5	5396.5	5453.7	5533.8	5640.2	5710.3	5750.5	5826.9	5961.8
ALL INDUSTRY	3311.3	3528.5	3647.8	3729.9	3813.7	3897.8	3999.5	4086.0	4155.2	4261.6	4426.1
MANUFACTURING IND.	2434.2	2560.9	2591.6	2616.8	2647.1	2685.8	2729.1	2749.7	2751.7	2783.8	2874.6
PRIMARY METALS	529.6	558.9	567.2	577.0	594.5	615.8	633.3	647.2	656.5	665.5	688.4
ELEC. MACHINERY	100.4	105.7	109.3	108.7	114.3	118.4	123.7	133.0	142.1	151.7	162.3
NON-ELEC. MACH.	78.7	83.3	91.8	100.1	103.3	106.1	110.1	114.7	120.0	124.1	129.4
TRANSF. EQUIP.	163.6	179.6	183.0	195.5	198.8	201.6	207.8	213.0	218.9	223.2	227.3
STONE, CLAY, GLASS	69.3	70.7	71.8	71.5	72.2	73.3	74.7	75.3	76.1	76.5	76.2
OTHER DURABLES	134.1	130.9	123.9	115.9	111.6	110.0	109.0	104.8	101.7	101.2	107.6
FOOD & BEVERAGE	186.0	195.7	203.2	206.7	208.4	203.2	199.2	193.8	188.3	186.7	185.5
TEXTILES	27.0	26.9	24.6	24.3	23.1	21.7	21.4	21.4	21.0	21.3	22.8
PAPER	105.0	112.7	110.9	113.1	107.8	108.3	110.4	108.8	104.2	104.1	111.2
CHEMICALS	273.7	295.1	290.8	277.9	266.6	255.9	242.7	225.9	190.9	172.5	174.9
PETROLEUM	690.9	721.0	734.4	742.1	760.4	783.1	804.9	817.4	832.8	852.0	877.6
RUBBER	45.0	48.6	49.6	51.8	53.9	56.2	59.4	62.9	67.0	71.8	78.0
OTHER NONDURABLES	31.0	31.7	31.2	32.3	32.3	32.2	32.4	31.6	32.2	33.2	33.4
NONMANUFACTURING	877.1	967.6	1056.2	1113.1	1166.6	1212.0	1270.4	1336.2	1403.5	1477.7	1551.6
MINING	316.5	368.1	425.5	466.2	519.4	573.6	633.9	699.0	766.3	837.4	902.9
PRIVATE UTILITIES	366.2	404.6	437.4	457.3	464.8	468.5	475.8	487.8	497.8	506.1	521.1
COMMERCIAL & OTHER	194.4	194.9	193.3	189.6	182.5	169.9	160.7	149.5	139.4	134.2	127.6
STATE & LOCAL GOVT.	792.0	993.5	1182.0	1295.8	1379.5	1451.9	1518.4	1552.8	1566.7	1573.1	1576.3
GOVT.-OWNED UTILITIES	50.7	57.6	62.8	67.8	72.2	76.1	80.5	86.0	90.7	95.3	100.6
MOBILE SOURCE CONTROLS	880.4	643.1	446.9	303.0	188.2	-108.1	41.7	-14.5	-62.0	-102.9	-141.3

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

EXHIBIT 6

JULY 7, 1983 BASELINE: 1960-1962

TABLE 46
INCREMENTAL ANNUALIZED INVESTMENT PLUS O&M FOR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	2066.7	3228.6	4661.4	6480.5	7279.8	7888.6	8404.3	9042.7	9615.6	10336.2
ALL INDUSTRY	588.4	1049.8	1601.4	2362.2	3119.4	3971.9	4794.7	5563.5	6259.0	6970.8
MANUFACTURING IND.	487.4	843.8	1231.3	1750.2	2289.9	2941.0	3525.4	4038.5	4464.1	4859.7
PRIMARY METALS	86.3	141.6	212.6	338.0	467.2	628.6	751.2	865.9	955.5	1041.1
ELEC. MACHINERY	31.6	46.2	59.4	86.3	105.0	121.6	131.7	146.7	159.0	170.4
NON-ELEC. MACH.	14.9	23.4	33.8	53.9	69.1	83.3	96.1	111.8	127.7	139.4
TRANSF. EQUIP.	19.5	37.6	52.5	82.3	106.5	122.7	144.2	168.6	196.0	231.1
STONE,CLAY,GLASS	27.8	45.9	61.9	83.2	108.8	133.3	151.8	169.0	190.8	206.9
OTHER DURABLES	67.8	101.6	131.7	166.6	202.2	242.1	276.6	304.7	319.2	331.4
FOOD & BEVERAGE	23.2	43.9	71.8	114.9	155.2	198.5	236.8	270.5	312.3	341.9
TEXTILES	13.2	16.2	22.2	29.6	35.7	42.6	48.0	53.7	57.0	60.1
PAPER	31.5	56.5	98.5	136.8	176.7	229.6	278.0	318.0	337.0	363.6
CHEMICALS	58.0	102.0	165.0	216.2	271.7	354.2	451.2	543.2	601.8	626.1
PETROLEUM	93.9	203.7	285.2	392.9	523.5	697.6	863.2	975.4	1085.5	1211.3
RUBBER	12.5	15.8	22.7	30.6	39.0	47.2	53.3	65.7	71.2	78.8
OTHER NONDURABLES	7.4	9.4	14.0	18.9	29.3	39.6	43.3	45.4	51.2	57.5
NONMANUFACTURING	101.0	206.1	370.1	612.0	829.4	1030.9	1269.3	1525.0	1795.0	2111.1
MINING	15.0	27.2	43.5	71.6	91.8	115.3	156.1	217.8	285.9	393.3
PRIVATE UTILITIES	49.6	113.2	228.6	377.3	518.3	647.6	796.8	963.2	1131.0	1308.0
COMMERCIAL & OTHER	36.4	65.7	98.0	163.1	219.3	268.1	316.5	344.0	378.1	409.8
STATE & LOCAL GOVT.	-5.3	60.2	193.7	356.0	517.1	775.8	1072.2	1379.1	1650.1	2029.4
GOVT.-OWNED UTILITIES	14.6	24.5	35.8	51.8	69.2	83.3	102.3	123.7	147.6	172.2
MOBILE SOURCE CONTROLS	1468.9	2094.1	2830.5	3710.6	3574.1	3057.7	2435.0	1976.5	1558.9	1163.9

JULY 7, 1983

BASELINE: 1960-1962

EXHIBIT 6 (cont'd.)

TABLE 46
 INCREMENTAL ANNUALIZED INVESTMENT PLUS O&M FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
	====	====	====	====	====	====	====	====	====	====	====
TOTAL	11190.0	12019.0	12642.7	13112.9	13570.0	14001.3	14457.7	14848.2	15189.0	15570.6	16008.1
ALL INDUSTRY	7646.0	8177.9	8558.7	8872.5	9209.4	9516.3	9856.6	10167.8	10457.3	10797.9	11202.3
MANUFACTURING IND.	5250.1	5547.5	5693.0	5815.2	5958.1	6084.5	6225.2	6323.0	6402.5	6510.0	6672.4
PRIMARY METALS	1131.1	1192.1	1229.0	1259.5	1311.5	1353.6	1391.4	1414.9	1413.1	1419.7	1431.1
ELEC. MACHINERY	184.8	197.6	207.7	212.2	225.1	237.2	251.0	268.9	287.3	306.5	323.9
NON-ELEC. MACH.	149.7	159.2	174.5	189.2	198.0	207.2	218.1	230.1	243.2	255.8	265.2
TRANSP. EQUIP.	255.1	280.6	291.9	316.5	327.9	339.8	356.1	371.9	389.1	405.4	419.0
STONE, CLAY, GLASS	223.9	232.8	237.2	240.5	247.1	255.1	263.9	272.0	280.5	289.0	288.1
OTHER DURABLES	338.7	344.8	345.9	342.9	346.8	354.5	363.5	369.9	378.0	389.5	399.4
FOOD & BEVERAGE	366.0	387.7	409.8	425.3	438.8	446.0	454.9	458.5	461.7	465.8	470.8
TEXTILES	64.8	67.2	66.2	67.2	68.2	69.1	71.5	74.3	76.3	79.1	82.6
PAPER	384.3	404.9	405.1	414.3	403.5	392.9	380.0	363.8	357.6	359.9	373.0
CHEMICALS	649.3	683.5	673.0	638.9	623.7	609.5	590.0	563.7	525.5	509.7	521.9
PETROLEUM	1356.6	1443.2	1495.3	1544.9	1598.6	1644.6	1702.4	1745.4	1793.5	1824.2	1885.3
RUBBER	84.8	90.8	93.5	96.8	100.8	105.5	111.1	117.3	123.1	130.0	136.9
OTHER NONDURABLES	61.1	63.2	64.1	67.0	68.3	69.6	71.3	72.2	73.5	75.4	75.2
NONMANUFACTURING	2396.0	2630.4	2865.7	3057.4	3251.3	3431.7	3631.4	3844.8	4054.8	4287.9	4529.9
MINING	483.0	555.0	635.2	703.6	779.0	855.4	938.8	1026.4	1116.9	1213.5	1308.3
PRIVATE UTILITIES	1475.5	1629.0	1777.3	1897.5	2015.6	2135.6	2265.3	2405.9	2550.4	2699.8	2861.0
COMMERCIAL & OTHER	437.4	446.4	453.2	456.3	456.7	440.7	427.2	412.5	387.6	374.7	360.5
STATE & LOCAL GOVT.	2462.3	2969.0	3384.7	3660.8	3872.5	4053.4	4210.6	4318.8	4390.0	4443.4	4484.5
GOVT.-OWNED UTILITIES	201.2	228.9	252.3	276.6	299.9	323.5	348.8	376.2	403.7	432.4	462.6
MOBILE SOURCE CONTROLS	880.4	643.1	446.9	303.0	188.2	108.1	41.7	-14.5	-62.0	-102.9	-141.3

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

Capital expenditures for industrial pollution controls were forecast for 1984 through 1990 by using a simple model relating pollution control expenditures to P&E expenditures. We computed the average annual ratio of pollution control expenditures to P&E expenditures for 1980 through 1982 (Ref. 3, 4, 26). We then applied this ratio to forecasts of annual P&E expenditures (Ref. 12) through 1990 to produce the pollution control capital expenditures forecasts. Separate forecasts were made for each medium and for each industry. Pollution control expenditure forecasts for the chemical industry also include estimates of the costs of complying with the Toxic Substances Control Act (Ref. 27).

Historical capital expenditures by state and local governments are based on reports published by the U.S. Department of Commerce, Bureau of the Census (Ref. 10, 11). State and local government expenditures for solid waste management and air pollution control were not available for the 1970 to 1973 period. For solid waste, we assumed that 1973 expenditures equalled the 1974 constant dollar amount. Cost estimates for the 1970 to 1972 period were derived using the procedure described for the industrial categories. We assumed that air pollution control expenditures were made at the 1974 constant dollar level during 1970 through 1973.

Future air pollution and solid waste control expenditures by state and local governments were estimated using the procedure developed for the industrial expenditure forecasts. The average ratio of pollution control expenditures to total state and local government construction for 1980, 1981, and 1982 was applied to forecasts of annual total construction expenditures (Ref. 12) to obtain a forecast of pollution control capital expenditures.

In order to forecast state and local government wastewater collection and treatment expenditures, we examined the historical relationship between federal outlays for construction grants

(Ref. 22) and total state and local water pollution control capital investment (Ref. 10, 11). We found that the federal outlays have constituted approximately seventy percent of the total state and local capital expenditures. We then projected federal construction grant outlays through 1990, assuming continued federal funding at \$2.4 billion per year (Ref. 22). We then estimated total state and local water pollution control capital expenditures using the seventy percent relationship.

Historical pollution control expenditures for government-owned electric utilities are based on BEA reports (Ref. 1, 2). We could not forecast pollution control expenditures for this industry segment in the same manner as the other industry categories, because total P&E expenditures for government-owned utilities were not available. We used P&E expenditures for privately-owned utilities as an alternative forecast variable. That is, we computed the average ratio of pollution control expenditures by government-owned utilities to total P&E expenditures for privately-owned utilities. That ratio was then applied to forecasts of annual P&E expenditures for privately-owned utilities to estimate future pollution control expenditures by government-owned utilities. This approach assumes that P&E expenditures for government-owned utilities are growing at the same rate as those for privately-owned utilities.

Capital expenditures for mobile source air pollution controls represent the costs of pollution control hardware requirements for automobiles, five weight classes of trucks (less than 6,000 pounds, 6,000-8,500 pounds, 8,500-10,000 pounds, gasoline trucks over 10,000 pounds, and diesel trucks over 10,000 pounds), motorcycles, and aircraft. For all except aircraft, these costs were calculated by multiplying an average cost per vehicle by the annual production (actual historical and forecast) of that vehicle type. Historical production results were taken from an MVMA report and earlier EPA studies (Ref. 13, 20). Future production figures were based on forecasts in Automotive News and

projections by DRI (Ref. 15, 12). Per vehicle cost estimates were based on previous EPA studies (Ref. 16, 20). Cost estimates for aircraft controls were based on the economic impact assessment prepared for a recent relaxation of the aircraft emission control standards (Ref. 14).

Capital Investment Expenditures--Incremental

Baseline expenditure estimates were subtracted from the actual and forecast total pollution control capital expenditures to estimate the incremental pollution control investment resulting from federal environmental regulatory activity. The general procedure used to estimate baseline expenditures is similar to that used in a previous effort (Ref. 24). For air and for water pollution control, we calculated the average ratio of estimated pollution control capital investment to total P&E investment in 1960, 1961, and 1962 for each industrial category (Ref. 6). For solid waste management, we selected for each industry the year during the 1973 to 1982 period that had the smallest ratio of solid waste investment to total P&E investment. For state and local government, we used the ratio of total state and local pollution control capital investment to total state and local government construction. We used the 1960 to 1962 period for water (Ref. 11) and 1974 for both air and solid waste (Ref. 1) (1974 was the earliest year for which state and local government pollution control expenditures were available for air and solid waste). These ratios were then applied to actual and forecast P&E for each industry and to actual and forecast state and local government total construction expenditures to estimate baseline pollution control investment for each year in the 1970 to 1990 period.

No estimate of P&E expenditures by government-owned electric utilities was available. We developed baseline expenditure estimates for this category by assuming that the ratio of baseline to

total pollution control expenditures in each year for government-owned utilities equals that for privately-owned utilities (one of the industrial categories).

In keeping with past EPA/CEQ practice, total and incremental mobile source emissions control expenditures were considered synonymous. Thus, no baseline pollution control expenditure estimate was required.

Operating and Maintenance Expenditures--Total

O&M expenditures are estimated as percentages of annual pollution control capital stocks for each category. We estimated these percentages based on O&M expenditure data reported by the Bureau of the Census (Ref. 7, 8, 10), unpublished BEA pollution control capital stock estimates (Ref. 6), and data from the Bureau of the Census (Ref. 9) on stocks of industrial pollution control capital in 1979.

Pollution control capital stock estimates were developed for each year, 1970 to 1990, using the algorithm chosen by BEA in creating air and water pollution control capital stock estimates for 1960 to 1981 (Ref. 5, 6). In making the stock estimates, we used unpublished BEA estimates of air and water pollution control expenditures for each industrial category for the period from 1960 to 1972 (Ref. 6), in addition to actual expenditures for 1973 to 1983 (Ref. 3, 4) and our forecasts for 1984 through 1990. We assumed that pre-1973 solid waste expenditures were at the baseline level. Thus, we estimated them by applying the baseline solid waste expenditure ratio for each industry to historical P&E expenditure data. As described in Appendix A, we used a similar approach in other situations in which historical pollution control expenditure data were very limited.

Total annual pollution control O&M expenditures were estimated for each medium by multiplying the annual capital stock estimates for each industry by the percentage appropriate to that industry category.

O&M expenditures for mobile sources were developed separately, based on estimates of the average impact of emission controls on fuel economy, fuel cost (due to requirements for unleaded fuel), and maintenance cost in each model year. We used a simple model that took into account the stock of various model year vehicles in each year, numbers of miles driven per year by age, and average fuel economy.

Operating and Maintenance Expenditures--Incremental

We estimated incremental O&M expenditures for 1970 to 1990 by creating baseline capital stock estimates from the baseline capital expenditures discussed above. Baseline investment was defined as being equal to total investment prior to 1963. The O&M percentages used to derive annual total pollution control O&M expenditures were used to estimate annual baseline O&M from the baseline stocks. That is, we assumed that the relationship between baseline pollution control O&M and baseline capital stock is the same as that estimated for total pollution control O&M and total capital stock. Incremental O&M expenditures for 1970 through 1990 were calculated by subtracting baseline O&M from incremental O&M for each year.

Annualized Costs

Each year's capital expenditures (total and incremental) were annualized over a representative useful life (Ref. 5, 23). This was done by creating a series of equal annual constant dollar payments throughout the useful life. The present value of the series, when discounted at a real rate of ten percent, equals

the capital expenditure amount. Cumulative annualized capital costs were computed for each year in the 1970 to 1990 period. The cumulative annualized total costs include amounts based on estimates of capital expenditures made prior to 1970.

Total annualized costs for each year were calculated, for both total and incremental expenditures, by summing the cumulative annualized capital and the O&M expenditures for each year.

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APPENDIX A - METHODOLOGY AND DATA SOURCES

This appendix explains the derivation of the pollution control costs in Exhibits 1-6 and in Appendix C.1. The explanation is divided into separate sections for each of the following broad cost categories:

- I. Historical Investment
- II. Forecast Investment
- III. O&M Costs
- IV. Baseline Costs (which are subtracted from totals to produce incremental costs)

Each section describes the methodology and the data sources. Reference numbers are keyed to the list of sources at the end of the report, immediately preceding this appendix.

I. HISTORICAL INVESTMENT

A. Methodology

We obtained historical plant and equipment (P&E) expenditure and pollution control investment data for all of the industrial categories from the U.S. Department of Commerce, Bureau of Economic Analysis (BEA). BEA reports annual pollution abatement capital expenditures beginning in 1973. These expenditure data are presented by industrial category and are reported separately for air, water, and solid waste (Ref. 3, 4, 26). BEA has also made rough estimates (unpublished) of air and water pollution control capital expenditures during the period from 1960 through 1972 (Ref. 6).

1Appendix B describes the procedures used to develop mobile source emission control cost estimates.

These two BEA data sets are the basis for the historical (1970-1982) total cost estimates for industry presented in this report. We also included BEA's estimates of planned 1983 pollution control expenditures as if they were historical (Ref. 26). The BEA estimates for years prior to 1970 are not reported here, but we used them to estimate the pollution control capital stocks from which O&M expenditures were derived. Whenever possible, we used the BEA expenditure data directly. Where necessary, however, we adjusted the industry categories of both data sets to be consistent with the industry categories of this report. Since BEA has not estimated solid waste management investment for years prior to 1973, we made our own estimates of these amounts. The industry category adjustments and the solid waste management investment estimates are discussed separately below.

The procedures used to estimate pollution control investment for the "State and Local Government" and "Government-Owned Utilities" categories differ from those of the industrial categories. The data sources and various calculations are listed separately in section B below.

1. Industrial Category Aggregation

The industrial categories required for this project differ slightly from the categories used by BEA to report pollution control investment for 1973-1982 (Ref. 3, 4, 26). The BEA reporting categories differ, even more significantly, from those used in the unpublished BEA estimates for 1960-1972 (Ref. 6). We revised both sets of BEA data to conform with the categories required for this report. Each adjustment is discussed below.

Adjustments to Pre-1973 Estimates. Table 1 compares the categories used by BEA to report expenditures for 1973-1981 and those used for the 1960-1972 estimates. The major difference between the two is that the "Other" categories ("Other Durables,"

Table 1
Comparison of BEA Industry Categories

Reported Expenditures ^a <u>(1973-1981)</u>	Unpublished Estimates ^b <u>(1960-1972)</u>
MANUFACTURING	
DURABLES	
Primary Metals	
Blast Furnaces	Blast Furnaces
Nonferrous Metals	Nonferrous Metals
Electrical Machinery	
Machinery	Machinery
Transportation Equipment	
Motor Vehicles	Motor Vehicles
Aircraft	
Stone, Clay, Glass	
Other Durables	Other Durables
NONDURABLES	
Food Including Beverages	Food Including Beverages
Textiles	
Paper	Paper
Chemicals	Chemicals
Petroleum	Petroleum
Rubber	
Other Nondurables	Other Nondurables
NONMANUFACTURING^c	
Mining	
Transportation	
Public Utilities	
Electric Utilities	Electric Utilities
Gas and Other	
Trade and Services	
Communication and Other	Commercial, Communication, and Other
	Other Nonmanufacturing

^aRef. 3, 4

^bRef. 5

^cThis report uses the following nonmanufacturing categories: "Mining," "Public Utilities," and "Commercial and Other." "Commercial and Other" is obtained by summing "Transportation," "Trade and Services," and "Communication and Other."

"Other Nondurables," and "Other Nonmanufacturing") shown for the pre-1973 estimates include some industrial categories for which 1973-1981 expenditures are reported separately. We used a three-step procedure to allocate the estimates for those "Other" categories to the categories used for the 1973-1981 data. First, we aggregated 1973 expenditures to create revised "Other" categories that correspond to the pre-1973 categories. Second, using the 1973 data, we calculated the ratio of the component industry categories to the revised "Other" totals. Third, we applied these ratios to the pre-1973 "Other" categories to estimate pre-1973 expenditures for categories that are consistent with the 1973-1981 BEA data.² When necessary, subcategories were also aggregated to the primary BEA categories. The allocation formulas are presented in Table 2, where they are organized by steps of the allocation procedure.

Adjustments to All BEA Data. The industrial categories used in this report are the same as BEA's categories with two exceptions. The "Other Durables" category in this report includes BEA's "Fabricated Metals" category. The "Commercial" category in this report includes BEA's "Transportation," "Trade and Services," and "Communication" categories.

2. Solid Waste - 1960-1972

Solid waste expenditures for 1960-1972 are not available from BEA. We estimated them by assuming that the level of solid waste management investment as a percentage of total new plant and equipment (P&E) investment for each industry was constant

²This allocation procedure affects the size of the baseline investment estimates (described in Section IV of this appendix). Using the 1973 allocation ratios for "Other Durables" resulted in baseline air and water investment levels that appeared to be excessive for some pollution control industry categories. In these cases, the 1973 ratios were adjusted to approximate the average ratios over 1973-1977.

Table 2
Allocation Formulas

.bea = BEA category
.est = BEA estimate category
.per = allocation percent

1. Aggregate BEA Categories to Correspond to BEA Estimates

Durables

$$\text{othdurrev.bea} = \text{otherdur.bea} + \text{stone.bea} \\ + (\text{transp.bea} - \text{motor.bea}) + \text{elec mach.bea} \\ + (\text{primmtl.bea} - \text{blastfurn.bea} - \text{nonfer.bea})$$

Nondurables

$$\text{othnondurrev.bea} = \text{othnondur.bea} + \text{rubber.bea} + \text{textiles.bea}$$

Nonmanufacturing

$$\text{nonmfg.bea} = \text{mining.bea} + \text{transp.bea} + \text{publicutil.bea} \\ + \text{trade\&serv.bea} + \text{commun\&oth.bea}$$

$$\text{nonmfg.est} = \text{elecutil.est} + \text{comcom\&oth.est} + \text{othnonmfg.est}$$

2. Compute Ratios Using 1973 BEA Data

Other Metals

$$\text{othmtls.per} = (\text{primmtl.bea} - \text{blast.bea} - \text{nonfer.bea}) \\ / \text{othdurrev.bea}$$

Other Transportation

$$\text{othtrans.per} = (\text{trans.bea} - \text{motor veh.bea}) / \\ \text{othdurrev.bea}$$

Electric Machinery

$$\text{electmach.per} = \text{electmach.bea} / \text{othdurrev.bea}$$

Stone, Clay, and Glass

$$\text{stone.per} = \text{stone.bea} / \text{othdurrev.bea}$$

Rubber

$$\text{rubber.per} = \text{rubber.bea} / \text{othnondurrev.bea}$$

Textiles

$$\text{textile.per} = \text{textiles.bea} / \text{othnondurrev.bea}$$

Mining

$$\text{mining.per} = \text{mining.bea} / \text{nonmfg.bea}$$

Other Utilities

$$\text{othutil.per} = (\text{publicutil.bea} - \text{elecutil.bea}) / \\ \text{nonmfg.bea}$$

Table 2 - Continued

3. Apply Ratios to BEA Estimates and AggregateOther Metals

$$\text{othmils.est} = \text{othmtls.per} \times \text{othdur.est}$$

Primary Metals

$$\text{primmtl.est} = \text{blast.est} + \text{nonfer.est} + \text{othmtls.est}$$

Other Transportation

$$\text{othtrans.est} = \text{othtrans.per} \times \text{othdur.est}$$

Total Transportation

$$\text{transp.est} = \text{motorveh.est} + \text{othtrans.est}$$

Electrical Machinery

$$\text{electmach.est} = \text{electmach.per} \times \text{othdur.est}$$

Stone, Clay, and Glass

$$\text{stone.est} = \text{stone.per} \times \text{othdur.est}$$

Revised Other Durables

$$\begin{aligned} \text{othdurrev.est} &= \text{othdur.est} - \text{electmach.est} - \text{stone.est} \\ &\quad - \text{othtrans.est} - \text{othmtls.est} \end{aligned}$$

Rubber

$$\text{rubber.est} = \text{rubber.per} \times \text{othnondur.est}$$

Textiles

$$\text{textiles.est} = \text{textiles.per} \times \text{othnondur.est}$$

Revised Other Nondurables

$$\begin{aligned} \text{othnondurrev.est} &= \text{othnondur.est} - \text{rubber.est} - \\ &\quad \text{textiles.est} \end{aligned}$$

Mining

$$\text{mining.est} = \text{mining.per} \times \text{nonmfg.est}$$

Public Utilities

$$\begin{aligned} \text{publicutil.est} &= (\text{othutil.per} \times \text{nonmfg.est}) + \\ &\quad \text{elecutil.est} \end{aligned}$$

Commercial and Other

$$\begin{aligned} \text{commer\&oth.bea} &= \text{nonmfg.bea} - \text{mining.bea} - \\ &\quad \text{publicutil.bea} \end{aligned}$$

$$\begin{aligned} \text{commer\&oth.est} &= \text{nonmfg.est} - \text{mining.est} - \\ &\quad \text{publicutil.est} \end{aligned}$$

during 1960-1972. The percentage used for each industry was the lowest ratio of solid waste management investment to total new P&E investment for that industry during the 1973-1981 period.

B. Data Sources

1. General Industry Categories

Total Plant and Equipment Expenditure

1960-1981 - Ref. 12, Table 8 (Investment in Plant and Equipment by Industry)
 1982 - Ref. 12, Table 3.7 (Investment in Plant and Equipment by Industry)
 1983 - Ref. 26

Air and Water Pollution Control Investment

1960-1972 - TCS estimates based on Ref. 6
 1973-1980 - Ref. 4
 1981 - Ref. 3
 1982-1983 - Ref. 26

Solid Waste Control Investment

1960-1972 - TCS estimates
 1973-1980 - Ref. 4
 1981 - Ref. 3
 1982-1983 - Ref. 26

2. State and Local Government

Total Plant and Equipment Expenditure

1959-1981 - Used state and local construction expenditures from Ref. 12, Table 4.7 (State and Local Government Receipts and Expenditures).

Air Pollution Control Investment

1960-1973 - TCS estimates
 1974-1980 - Ref. 10
 1981-1982 - Estimated from 1980 with a growth rate of 24.5 percent, the actual growth rate during 1977-1980

Water Pollution Control Investment

- 1960-1964 - TCS estimates
- 1965-1973 - Ref. 11
- 1974-1980 - Ref. 10
- 1981 - Ref. 11
- 1982 - Derived from federal construction grant outlays (Ref. 22) by using the historical relationship between federal outlays and total water pollution control investment expenditures (see Section II for complete explanation).

Solid Waste Control Investment

- 1960-1972 - TCS estimates
- 1973 - Assumed same as 1974, but reported in nominal 1973 dollars
- 1974-1980 - Ref. 10
- 1981-1982 - Estimated from 1980 with a growth rate of 23 percent, the actual growth rate during 1977-1980

3. Government-Owned Utilities

Total Plant and Equipment Expenditure - Not used.

Air Pollution Control Investment

- 1960-1971 - TCS estimates
- 1972-1981 - Ref. 1 and 2, Government Enterprise: Publicly-Owned Electric Utilities from Table 2 (Business and Government Expenditures for Air and Water Pollution Abatement in Current and Constant Dollars and Selected Implicit Price Deflators)
- 1982 - 1980 figure, based on similar pattern in private utilities

Water Pollution Control Investment

- 1960-1971 - TCS estimates
- 1972-1981 - Ref. 1 and 2, Table 2 (Business and Government Expenditures for Air and Water Pollution Abatement in Current and Constant Dollars and Selected Implicit Price Deflators)
- 1982 - 97 percent of 1981, based on similar pattern in private utilities

Solid Waste Control Investment

1960-1971 - TCS estimates

1972-1981 - Since data are not available, we estimated solid waste investment as 5.4 percent of total air and water pollution abatement capital expenditures. The 5.4 figure is the ratio of solid waste to total pollution control investment by privately-owned utilities during 1973-1981.

1982 - 20 percent higher than 1980, based on similar pattern in private utilities

II. FORECAST INVESTMENT

A. Methodology

We based the forecast of total pollution control investment by media on the historical relationship between P&E and pollution control investments for air, water, and solid waste, respectively. First, for each industrial category, we computed the average annual ratio of pollution control investment in each medium, (air, water, solid waste) to total P&E over the 1980-1982 period. Then we applied the average ratio to annual forecast P&E figures to forecast investment in controls for air, water, and solid waste. The only deviations from this approach are in the water pollution control forecasts of the "State and Local Government" category and the forecasts for the "Public Utility" category. These differences are explained below.

1. State and Local Government

The water pollution control forecast was based on forecasts of federal grants to municipalities (Ref. 22). These grants have historically (1976-1981) constituted 70 percent of state and local capital outlays for water and sewerage controls. We divided the forecast grant level by 0.70 to estimate the forecast water pollution control investment for each year.

2. Government-Owned Utilities

The methodology used in forecasting this industrial category is similar to that used for other industrial categories. Total P&E, however, is not available for government-owned utilities. We used P&E for privately-owned utilities as the denominator in the historical ratios of pollution control investment to

P&E and as the basis for the forecasts. We assume by doing this that P&E for government-owned utilities will grow at the same rate as P&E for privately-owned utilities.

B. Data Sources

1. General Industries

Total Plant and Equipment Expenditures

1984-1990 - Ref. 12, Table 3.7 (Investment in Plant and Equipment by Industry)

2. State and Local Government

Total Plant and Equipment Expenditures

1983-1990 - Ref. 12, Table. 4.7 (State and Local Government Receipts and Expenditures, State and Local Construction, 1981-1990)

III. O&M CONTROL COSTS

A. Methodology

Annual O&M expenditures are estimated as a percentage of gross pollution control capital stock in each year for each category. The percentages are shown in Tables 3A, 3B, and 3C. We estimated the percentages and capital stocks using the procedures described below.

Historical O&M expenditures are not available from BEA. We estimated them using O&M and investment figures reported by the Bureau of the Census (Ref. 7 and 8) and investment figures in the BEA data. We calculated the average annual ratio of O&M to stock of capital for 1980 and 1981 for each industry from the Census data. This constant ratio was applied to annual capital stocks estimated from the BEA data to estimate annual O&M costs that would be consistent with the BEA investment figures.³

We estimated the annual stocks of capital for each industry and each medium using the two BEA pollution control investment data sets (Ref. 3, 4, and 6) and the pollution control investment forecasts for 1984-1990. We followed closely the methodology used by BEA (Ref. 5) to estimate gross aggregate air and water pollution control of investment. This method simulates the accumulation and retirement of capital based on a distribution around the assumed useful life of the pollution control equipment.

Because 1973 is the earliest year for which pollution control investment is reported in the Census data, we did not use the BEA method to compute the stock of capital for Census data.

$${}^3O\&M_{BEA} = \frac{O\&M_{CENSUS}}{STOCK_{CENSUS}} \times STOCK_{BEA}$$

TABLE 3A

	1980 =====	1981 =====	AVERAGE O&M RATIO =====
ALL MANUFACTURING	0.0601882003	0.0581385419	0.0591633618
PRIMARY METALS	0.0777441859	0.0734548569	0.0755994916
ELECTRICAL MACHINERY	0.0479012653	0.0424313322	0.0451662838
NON-ELEC. MACHINERY	0.0433844626	0.0330244265	0.0382044315
TRANSPORTATION EQUIP.	0.0631616712	0.0463709719	0.0547662973
STONE, CLAY, GLASS	0.0350367352	0.0281059518	0.0315713286
OTHER DURABLES	0.0208265446	0.0217310227	0.0212787837
FOOD INCLUD. BEVERAGE	0.0427248292	0.0193863995	0.0310556144
TEXTILES	0.0278528370	0.0313980132	0.0296254233
PAPER	-0.00073716487	0.00533310696	0.00229796953
CHEMICALS	0.0989614725	0.0811619759	0.0900617242
PETROLEUM	0.119267464	0.132858753	0.126063108
RUBBER	0.0642361045	0.0543385781	0.0592873394
OTHER NONDURABLES	0.00428802520	0.0340051875	0.0191466063
MINING	0.0777441859	0.0734548569	0.0755994916
PRIVATE UTILITIES	0.0492083393	0.0443270728	0.0467676818
COMMERCIAL	0.00428802520	0.0340051875	0.0191466063
STATE AND LOCAL GOVERNMENT	0.294159234	0.234433532	0.264296353
GOVT.-OWNED UTILITIES	0.0492083393	0.0443270728	0.0467676818

TABLE 3B

WATER O&M RATIOS

	1980 =====	1981 =====	AVERAGE O&M RATIO =====
ALL MANUFACTURING	0.100752354	0.107553184	0.104152739
PRIMARY METALS	0.106580257	0.121190548	0.113885403
ELECTRICAL MACHINERY	0.124996781	0.133553743	0.129275262
NON-ELEC. MACHINERY	0.146063507	0.147677302	0.146870375
TRANSPORTATION EQUIP.	0.116539419	0.120181859	0.118360639
STONE, CLAY, GLASS	0.0900279284	0.0882015228	0.0891147256
OTHER DURABLES	0.112915516	0.104485035	0.108700275
FOOD INCLUD. BEVERAGE	0.154132307	0.151496530	0.152814388
TEXTILES	0.106969535	0.0873833895	0.0971764326
PAPER	0.0728732944	0.0742071867	0.0735402107
CHEMICALS	0.0994778872	0.106864214	0.103171051
PETROLEUM	0.0688537955	0.0731204152	0.0709871054
RUBBER	0.124449432	0.128701150	0.126575291
OTHER NONDURABLES	0.144003928	0.161312222	0.152658045
MINING	0.106580257	0.121190548	0.113885403
PRIVATE UTILITIES	0.00902970508	0.00944724306	0.00923847407
COMMERCIAL	0.144003928	0.161312222	0.152658045
STATE AND LOCAL GOVERNMENT	0.0413345210	0.0425665639	0.0419505239
GOVT.-OWNED UTILITIES	0.00902970508	0.00944724306	0.00923847407

TABLE 3C

SOLID WASTE O&M RATIOS

	1980 =====	1981 =====	AVERAGE O&M RATIO =====
ALL MANUFACTURING	0.511370957	0.506865382	0.509118080
PRIMARY METALS	1.28338528	1.41172981	1.34755707
ELECTRICAL MACHINERY	0.921574831	0.955519259	0.938546658
NON-ELEC. MACHINERY	0.772236705	0.669610023	0.720922947
TRANSPORTATION EQUIP.	1.03098774	0.947047055	0.989017010
STONE, CLAY, GLASS	0.464312971	0.413768768	0.439040840
OTHER DURABLES	0.342764854	0.350473821	0.346619308
FOOD INCLUD. BEVERAGE	0.461014450	0.582427442	0.521720886
TEXTILES	0.837657988	0.410334468	0.623995781
PAPER	0.245583236	0.254847765	0.250215471
CHEMICALS	0.350129724	0.334251702	0.342190683
PETROLEUM	0.798258483	0.732228935	0.765243530
RUBBER	0.860235035	0.983591139	0.921912670
OTHER NONDURABLES	0.515929699	0.484991014	0.500460148
MINING	1.28338528	1.41172981	1.34755707
PRIVATE UTILITIES	0.0337604024	0.0323134623	0.0330369174
COMMERCIAL	0.515929699	0.484991014	0.500460148
STATE AND LOCAL GOVERNMENT	0.414574146	0.408473074	0.411523581
GOVT.-OWNED UTILITIES	0.0337604024	0.0323134623	0.0330369174

Instead, we estimated the Census stocks for 1980 and for 1981 based on the ratio of BEA stocks to eight years of accumulated BEA capital expenditures (for that and the prior seven years). This ratio of stock to accumulated capital was applied to the eight-year summation of Census capital expenditures. Thus, the 1980 Census stock estimate is equal to the ratio of the 1980 BEA stock to 1973-1980 BEA capital expenditures times the 1973-1980 Census capital expenditures.⁴ For 1981, the method is the same; capital expenditures were summed over 1974-1981.

We made several adjustments in the Census data (Ref. 7 and 8). We reaggregated the industrial categories to conform with the categories used in this report, filled in missing data with estimates, and derived net annual O&M costs from reported gross O&M costs by subtracting recovery credits and depreciation. Because Census provides data only for manufacturing industries, O&M costs for nonmanufacturing industries were estimated differently. Historical O&M costs for the "State and Local Government" and "Government-Owned Utilities" categories were available and therefore were not calculated. The methodology for forecasting O&M costs for these categories is discussed in this section; the historical data are discussed separately in Section (B). All of the adjustment procedures are discussed below.

1. Aggregation of Industry Categories

"Other Nondurables" was created by adding:

Tobacco	SIC	21
Printing	SIC	27
Leather	SIC	31

$${}^4\text{STOCK}_{\text{CENSUS}}(1980) = \frac{\text{STOCK}_{\text{BEA}}(1980)}{\text{CAPITAL}_{\text{BEA}}(1973-1980)} \times \text{CAPITAL}_{\text{CENSUS}}(1973-1980)$$

"Other Durables" was created by adding:

Lumber	SIC	24
Furniture	SIC	25
Fab. metal	SIC	34
Instruments	SIC	38
Misc. mfg.	SIC	39

2. Missing Data

Data for particular years were not reported in the Census tables because of unavailability, to avoid disclosure, or because the data collected did not meet statistical standards for publication. Missing figures were estimated by regressing available data on a trend line and applying the coefficient of the trend variable to the missing year.

3. Net O&M Costs

Gross O&M costs reported in the Census references (Ref. 7 and 8) include depreciation expense. Product recovery credits are presented separately. We computed net O&M costs by subtracting these two items from gross O&M. The depreciation costs were reported as a total for air, water, and solid waste. We estimated the amount of depreciation to subtract from the gross O&M cost for each medium by using the ratios of 1979 air, water, and solid waste assets, respectively, to the total pollution control assets in 1979 for each industry (1979 pollution abatement assets were reported in Table 2A of Ref. 9).

4. Nonmanufacturing Categories

The Census documents only report pollution control expenditures for manufacturing industries. Thus, it was necessary to estimate differently the O&M ratio for the nonmanufacturing industries. The ratios for "State and Local Government" and

we used the "Primary Metals" ratio, since a large percentage of firms in the mining industry also process primary metals. For "Privately-Owned Utilities," we used the "Government-Owned Utilities" ratio because of the identical process and product. For "Commercial and Other," we used the "Other Nondurables" ratio.

5. State and Local Government

We used only Census data for both capital and O&M control costs of state and local governments. Because the historical O&M data were available, the O&M ratio was used only to forecast O&M expenses. We computed the ratio of O&M to capital stock for 1978 and 1980 rather than for 1980 and 1981. We used this approach because 1980 is the most recent year for which expenditure data were available and because 1979 user fees were not reported. Stocks were computed by using BEA's methodology with the reported Census capital investment figures.

The state and local government O&M costs for water and solid waste do not include user fees paid by industry. We subtracted industry payments to government for sewerage and nonsewerage waste treatment (Ref. 7) from the water and solid waste totals. This procedure avoids double counting, since O&M costs for other industries include these user fees.

6. Government-Owned Utilities

Since historical O&M data for government-owned utilities were available from BEA documents, the O&M ratio was used only to estimate forecast O&M costs. The O&M ratio was computed from the BEA O&M figures and the estimated BEA capital stocks.

B. Data Sources

1. General Industries

All media, capital and O&M Census figures

1973-1976 - Ref. 7
1977-1981 - Ref. 6.

2. State and Local Government

All Media O&M

1979-1980 - Ref. 10

3. Publicly-Owned Utilities

Air and Water O&M

1980-1981 - Ref. 10, Table 2

Solid Waste O&M

1980-1981 - Estimated using procedure similar to that for capital investment (See I. Historical Investment)

IV. BASELINE

The baseline pollution control costs are those costs that are estimated to be incurred without the mandate of federal government regulations. Incremental costs, those additional costs that are incurred because of federal government regulations, equal total pollution control costs minus baseline costs.

We estimated baseline investment costs by applying a baseline fraction to total P&E for each year in the 1970 to 1990 period. The baseline investment fraction was computed by averaging the ratio of pollution control investment by medium to total P&E for years prior to the development of federal regulations. The baseline years chosen for air and water controls are 1960-1962. (Baseline and total pollution control investment are defined as equal prior to 1963.) For solid waste, we selected, for each industrial category, the year during 1973-1982 for which the ratio of solid waste capital investment to total P&E was smallest. The only variation in this procedure occurs with the "Government-Owned Utilities" category, discussed below.

We developed baseline capital stocks for 1970-1990 using the BEA methodology. We then estimated baseline O&M expenditure from those capital stocks using the procedures described for the total O&M costs.

Government-Owned Utilities

As with the forecast investment costs, baseline costs for government-owned utilities cannot be estimated using P&E expenditures because none are available. Instead, the baseline costs were computed by assuming that the ratio of baseline to total pollution control expenditures in each year for government-owned utilities equals that for privately-owned utilities.

APPENDIX B

This appendix explains the derivation of the air pollution control costs for mobile sources. In keeping with past EPA/CEQ practice, total and incremental mobile source emission control costs are considered equal. Thus, baseline expenditure estimates were not required. Mobile source control costs were calculated for eight segments of vehicles: automobiles, five categories of trucks, motorcycles, and aircraft. The truck categories are defined by weight and type of fuel: gasoline trucks 0-6,000 pounds, 6,000-8,500 pounds, 8,500-10,000 pounds, and greater than 10,000 pounds, and diesel trucks, greater than 10,000 pounds.

A. METHODOLOGY

Emission control investment and incremental maintenance costs, fuel economy penalties (benefits), and unleaded fuel cost penalties were estimated for each segment as described below. Costs are presented by category in Table B1.

1. Investment in Controls

For all categories except aircraft, total investment in controls for each year was computed as the product of investment per vehicle and production for the corresponding model year. Total investment costs for aircraft were not calculated in the computer program but entered exogenously.

2. Maintenance Costs

Incremental maintenance costs were computed for all categories except diesel trucks over 10,000 pounds, motorcycles, and aircraft. Emission control related maintenance costs were not

available for diesel trucks over 10,000 pounds or for motorcycles. Maintenance costs for aircraft were computed exogenously and include fuel economy benefits.

Computed maintenance costs per year are equal to the sum of incremental maintenance costs for all model year vehicles operating in that year. For any one year, the maintenance cost of vehicles of a model year is equal to the average incremental maintenance cost per 1,000 miles for the model year multiplied by an estimate of the total miles driven by all vehicles of a model year operating in that year. The total of miles driven in one year by vehicles of a particular model year is estimated by multiplying model year production by the percentage production surviving at that age and by an estimate of the average number of miles driven per vehicle of that age.

3. Fuel Economy Penalty (Benefit)

Fuel economy penalties (benefits) were computed for the same vehicle categories as maintenance costs. There are none for diesel trucks over 10,000 pounds and for motorcycles. The fuel economy benefit for aircraft is included with the maintenance costs, which are entered as totals.

The penalty (benefit) per vehicle mile was computed as the product of the fuel price and the loss (gain) in gallons per mile (gallons per mile in the control case minus gallons per mile in the uncontrolled case). As with maintenance costs, the computed fuel economy penalty (benefit) per year is equal to the sum of the penalty (benefit) for all model year vehicles operating in that year. For any one year, the penalty (benefit) for vehicles of a model year is equal to the penalty (benefit) per mile per

model year vehicle times the total miles driven by all vehicles of a particular model year operating in that year. Total miles driven is computed as described under maintenance costs.

4. Fuel Price Penalty

The fuel price penalty, which is the total cost differential between unleaded and leaded gasoline, was computed for automobiles only. It is equal to the sum of the penalty for all model year vehicles operating in that year. For any one year, the penalty for vehicles of a particular model year is equal to the penalty per mile per model year vehicle times the total miles driven by all vehicles of that model year. Total miles driven is computed as described under maintenance costs. The penalty per vehicle mile is equal to the product of gallons per mile in the controlled case and the unleaded gasoline cost penalty (cents per gallon). This penalty includes additional refinery costs and additional costs to service stations (e.g., for additional pumps).

B. DATA SOURCES

The mobile source input data are presented in Tables B2-B4. In the data description below, variable names that are in parentheses and typed in all caps correspond to the headings in the input tables.

1. General

Mobile Source Price Index (PRICE INDEX)

Ref. 12, Table 17 (historical) and Table 8.4 (forecast).
Prices, Wages and Productivity: Implicit price deflator for "Motor Vehicles and Parts" (1972 = 1.0)--applied to investment and maintenance figures.

Gasoline Price Index (GAS INDEX)

Ref. 12, Table 20 (historical) and Table 9.4 (forecast).
Energy: Personal Consumption Deflator for "Gasoline"--
applied to gasoline prices.

General Price Index (GENERAL INDEX)

Ref. 12, Table 17 (historical) and Table 8.4 (forecast).
Prices, Wages, and Productivity: Implicit Price Deflator
for "Gross Private Domestic Nonresidential Fixed Invest-
ment"--applied to fuel price penalty.

2. Automobiles

Production by Model Year (PROD)

1968-1975	Ref. 20
1976-1981	Ref. 13, p. 17, "Total Passenger Cars"
1982-1984	Ref. 15
1985-1990	Growth from 1984 based on the growth rate de- rived from Ref. 12, Table 1.7. Consumer Expen- ditures for Motor Vehicles and Parts: "Auto- mobiles" Production

**Survival Rate by Age of Car - Ref. 13, p. 26, "Passenger
Cars in Use by Age"**

(SURV RATE 1975) - Applied to model years prior to 1979
(SURV RATE 1981) - Applied to 1979 and later model years

Miles Driven by Age of Car (ANNUAL MILES DRIVEN) - Ref. 20

**Investment Cost--Average Emission Control Hardware Cost by
Model Year (INVEST)**

1968-1980	Ref. 20
1981	Ref. 16
1982-1983	1981 figure inflated using mobile source price index

Maintenance Control Cost--Average Incremental Maintenance Cost by Model Year (MAINT)

1968-1980	Ref. 20. Cost over lifetime of model year automobile converted to cost per 1,000 vehicle miles driven based on lifetime miles driven (80,000 miles for model years 1968-1979 and 86,800 miles for model years 1979-1990)
1981-1990	1980 figure inflated using mobile source price index

Miles Per Gallon--Base Case Without Controls (BASMPG) and Controlled Case (CONMPG)

1968-1978	Ref. 20
1979-1982	Ref. 17

Percent of Each Model Year Auto Using Unleaded Gasoline (UNLEADED PERCENT PER MY)

1968-1980	Ref. 20
1981-1990	TCS estimate

Unleaded Gasoline Premium Relative to Leaded Gasoline Per Year (UNLEADED GASOLINE PREMIUM)

1968-1982	Ref. 18
1983-1990	1982 figure inflated using domestic nonresidential fixed investment price index (Ref.12)

Gasoline Price Per Year (GAS PRICE)

1968-1980	Ref. 19
1981-1990	1980 figure inflated using gasoline price index

3. Trucks**Production (PROD)**

1968-1975	Ref. 20
1976-1981	Ref. 13, p. 19: retail truck sales by weight Ref. 13, p. 13: sales of diesel trucks by weight
	a. 0-6,000 lbs gas = total minus diesels of same weight class

- b. 6,000-8,500 lbs and 8,500-10,000 lbs are in same weight class in Ref. 13. Therefore, to derive gas trucks and to separate into two classes, we performed the following calculations:
 - i. Gasoline trucks 6,000-10,000 lbs = total minus diesels of same weight class
 - ii. Based on 1970-75 data, we computed the percent of total in each weight class:
 - 6,000-8,500 - 91 percent
 - 8,500-10,000 - 9 percent
 - iii. We applied the above percentages to the total gas category computed in (i)
- c. Greater than 10,000 lbs gas = total minus diesels of same weight class
- d. Greater than 10,000 lbs diesels - Ref. 13, p. 13

1982-1990

Ref. 12, Table 3.5 (Business Fixed Investment: Truck Sales)

- a. 0-8,500 lbs - "Light duty and imported trucks"
- b. All other classes of trucks - "Heavy and medium duty trucks"

Survival Rate by Age of Truck - Ref. 25, Table 1. Scrappage Rates -- Survival rate is one minus scrappage rate.

SURV LDT - for light duty trucks 0-10,000 lbs.

SURV HDT - for heavy duty gasoline trucks greater than 10,000 lbs.

Miles Driven - Average Annual Miles Driven at Each Age - Ref. 25, Tables 3 and 4. Vehicle Mileage Accumulation Rates.

TRUCK MILES 0-6,000 - Table 3

TRUCK MILES 6-10,000 - Table 3. Trucks 6,000-8,500 lbs; assumed also to apply to trucks 8,500-10,000 lbs.

TRUCK MILES 10,000 - Table 4. Heavy duty gasoline trucks

Investment Cost - Average Emission Control Hardware Cost per Truck by Model Year (INVEST)

1968-1980	Ref. 20
1981-1990	1980 figure inflated using mobile source price index

Maintenance Control Cost--Average Incremental Maintenance Cost by Model Year (MAINT)

1968-1980	Ref. 20. Cost per model year truck over lifetime converted to cost per 1,000 vehicle miles driven based on average lifetime miles driven by trucks (120,000 miles)
1981-1990	1980 figure inflated using mobile source price index

Miles Per Gallon - Uncontrolled Base Case (BASMPG) and Controlled Case (CONMPG)

1968-1990	Ref. 20
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4. Motorcycles**Production (PROD)**

1968-1978	Ref. 20
1979	Ref. 21
1980-1990	Applied 1975-79 annual growth rate of 3.6 percent to 1979 production

Investment in Controls--Average Emission Control Hardware Cost by Model Year (INVEST)

1968-1980	Ref. 20
1981-1990	1980 figure inflated using mobile source price index

5. Aircraft**Total Investment Per Year (INVEST) - Ref. 14, Table 3.**

Total investment used in this report is different from that reported in the reference. The reference reports the total based on total aircraft sales. We recomputed the total based on U.S. sales, which is 83 percent of the total

(Ref. 14, p. 4). Thus, we revised the sales figures, multiplied them by the average investment per engine (\$8,150 in 1981 dollars) for 1984 and later standards, and added the total costs reported for pre-1984 standards.

Total Incremental Maintenance Per Year (MAINT) - Ref. 14

This total includes fuel economy savings and was computed by multiplying the number of new in-use U.S. engines per year by a net maintenance benefit of \$1,646 (1981 dollars). The number of new in-use U.S. engines is equal to sales per year in Table 3 multiplied by .65 (the U.S. market share (Ref. 14, p. 4) multiplied by .83 (the estimated percent in-use (Ref. 14, Tables 5 and 6))). The maintenance benefit is equal to fuel savings of \$2,422 (1981 dollars) (Ref. 14, p. 4) minus a maintenance cost of \$796 (Ref. 14, p. 3). The maintenance cost (savings) for engines existing prior to 1981 is a small proportion of annualized investment and is not included in these figures.

TABLE B1

 MOBILE SOURCE EMISSION CONTROL COSTS
 (MILLIONS OF NOMINAL DOLLARS)

YEAR	INVESTMENT COST	MAINTENANCE COST	FUEL ECONOMY PENALTY	FUEL PRICE PENALTY

AUTOMOBILES				
1968	48.28	257.93	170.42	0.0
1969	57.50	498.63	304.33	0.0
1970	294.17	682.09	544.11	0.0
1971	416.10	910.95	829.49	0.0
1972	412.30	1106.77	1217.40	0.0
1973	995.19	1278.59	1829.72	0.0
1974	825.19	1410.09	2161.16	0.0
1975	1728.60	1126.97	1910.89	165.72
1976	2143.32	776.02	1412.53	328.06
1977	2628.00	404.22	1139.32	491.19
1978	2805.87	61.08	865.56	622.43
1979	2807.00	-245.34	866.14	676.14
1980	3465.89	-443.57	837.33	753.01
1981	3798.52	-505.91	371.00	777.14
1982	3726.66	-522.02	-87.61	783.86
1983	4342.82	-513.24	-468.98	804.53
1984	5201.02	-500.55	-839.89	844.61
1985	5894.03	-490.10	-1223.26	927.47
1986	6532.57	-491.53	-1619.04	1023.01
1987	7265.52	-495.09	-2030.77	1129.31
1988	7870.32	-505.02	-2457.26	1239.42
1989	8457.01	-522.46	-2919.33	1350.81
1990	8882.82	-549.72	-3413.68	1456.84

LIGHT DUTY TRUCKS 0-6000 POUNDS				
1968	5.34	19.04	18.87	
1969	5.58	38.25	34.92	
1970	36.68	55.36	66.60	
1971	42.66	74.18	99.56	
1972	53.93	97.77	160.18	
1973	152.60	123.44	264.93	
1974	135.15	148.04	332.55	
1975	186.07	137.62	346.74	
1976	235.92	122.06	295.83	
1977	245.15	103.54	270.39	
1978	270.19	85.74	233.42	
1979	268.65	69.09	271.89	
1980	216.38	55.10	319.72	
1981	209.06	42.37	301.04	
1982	244.30	28.35	237.50	
1983	281.91	14.49	212.67	
1984	353.50	0.89	199.16	
1985	414.61	-13.09	185.22	
1986	469.16	-28.95	175.77	
1987	528.75	-46.20	161.65	
1988	580.14	-64.58	148.29	
1989	629.54	-83.61	137.13	
1990	665.45	-103.09	123.49	

TABLE B1 - continued

LIGHT DUTY TRUCKS 6000-8500 POUNDS			
1968	0.0	0.0	0.0
1969	0.0	0.0	0.0
1970	14.74	11.88	47.62
1971	19.15	27.13	101.14
1972	21.85	44.26	181.79
1973	27.32	63.92	348.03
1974	54.98	85.71	444.80
1975	51.63	106.20	415.48
1976	73.93	134.59	416.16
1977	97.53	170.81	378.82
1978	121.16	219.09	325.70
1979	310.74	199.11	382.86
1980	209.03	176.32	456.96
1981	187.24	156.59	441.33
1982	229.16	132.80	359.50
1983	252.32	108.99	328.39
1984	316.41	87.58	301.96
1985	370.95	67.15	284.34
1986	419.71	47.90	268.01
1987	459.67	28.74	248.02
1988	499.37	9.16	230.43
1989	542.06	-10.91	214.06
1990	573.24	-30.74	195.96
TRUCKS 8500-10,000 POUNDS			
1968	0.0	0.0	0.0
1969	0.0	0.0	0.0
1970	1.56	1.26	0.0
1971	2.02	2.87	0.0
1972	2.30	4.67	0.0
1973	2.88	6.73	0.0
1974	5.81	9.04	2.94
1975	5.43	11.20	5.71
1976	7.79	14.19	11.86
1977	9.49	17.63	19.32
1978	11.05	21.90	26.33
1979	18.89	25.12	42.20
1980	12.76	26.63	60.31
1981	11.32	27.81	66.68
1982	9.86	27.64	60.16
1983	11.81	27.47	62.23
1984	15.56	28.62	67.77
1985	17.74	30.62	76.06
1986	20.65	33.45	87.00
1987	23.37	36.70	99.52
1988	25.51	40.22	113.90
1989	28.07	44.09	131.30
1990	30.13	48.24	151.17

TABLE B1 - continued

TRUCKS OVER 10,000 POUNDS--GASOLINE			
1968	0.0	0.0	0.0
1969	0.0	0.0	0.0
1970	5.52	5.38	0.0
1971	6.00	11.05	0.0
1972	7.13	17.69	0.0
1973	7.13	23.39	0.0
1974	14.79	29.83	23.46
1975	12.88	35.15	43.58
1976	11.62	38.71	68.24
1977	12.09	41.22	92.20
1978	15.08	45.58	114.68
1979	22.08	47.33	169.04
1980	15.22	46.75	229.02
1981	9.51	44.63	233.04
1982	8.27	40.54	193.66
1983	10.00	36.67	184.01
1984	13.17	34.76	184.29
1985	14.84	34.16	192.37
1986	17.56	34.86	208.09
1987	19.68	36.16	227.42
1988	21.58	37.96	251.27
1989	23.66	40.23	281.60
1990	25.40	42.88	316.84
TRUCKS OVER 10,000 POUNDS--DIESEL			
1968	0.0		
1969	0.0		
1970	0.0		
1971	0.0		
1972	0.0		
1973	0.0		
1974	0.0		
1975	0.0		
1976	0.0		
1977	0.0		
1978	0.0		
1979	34.20		
1980	27.55		
1981	28.37		
1982	24.75		
1983	29.55		
1984	39.20		
1985	44.30		
1986	52.16		
1987	58.75		
1988	64.25		
1989	70.49		
1990	75.52		

TABLE B1 - continued

MOTORCYCLES		
1968	0.0	
1969	0.0	
1970	0.0	
1971	0.0	
1972	0.0	
1973	0.0	
1974	0.0	
1975	0.0	
1976	0.0	
1977	0.0	
1978	38.20	
1979	47.35	
1980	20.52	
1981	22.20	
1982	23.95	
1983	25.82	
1984	27.78	
1985	30.94	
1986	34.25	
1987	37.78	
1988	41.54	
1989	45.51	
1990	50.96	
AIRCRAFT		
1968	0.0	0.0
1969	0.0	0.0
1970	0.0	0.0
1971	0.0	0.0
1972	0.0	0.0
1973	0.0	0.0
1974	0.0	0.0
1975	5.25	0.0
1976	11.32	0.0
1977	17.98	0.0
1978	12.92	0.0
1979	5.36	0.0
1980	5.79	0.0
1981	7.57	-0.21
1982	30.17	-1.07
1983	52.98	-1.98
1984	7.33	-5.31
1985	7.15	-4.70
1986	8.56	-6.45
1987	10.20	-8.58
1988	11.46	-11.06
1989	12.65	-13.91
1990	9.51	-16.47

Table B2
Mobile Source Input Data

GENERAL VARIABLES															
YEAR	GENERAL PRICE INDEX	MOBILE PRICE INDEX	GAS PRICE INDEX	GAS PRICE	SURV RATE 1975	SURV RATE 1981	ANNUAL MILES DRIVEN	UNLEADED PERCENT PER MY	UNLEADED GASOLINE PREMIUM	SURV RATE LDT	SURV RATE HDT	TRUCK MILES 0-6000	TRUCK MILES 6-10,000	TRUCK MILES >10,000	AGE
1968	0.826	0.901	0.938	0.337	1.00	1.00	15900.	0.0	0.0	1.00	1.00	15900.	15700.	19000.	1
1969	0.866	0.922	0.970	0.348	0.95	0.95	15000.	0.0	0.0	0.97	0.95	15000.	15700.	19000.	2
1970	0.913	0.950	0.978	0.357	0.85	0.87	14000.	0.0	0.0	0.93	0.88	14000.	14100.	17900.	3
1971	0.962	0.977	0.987	0.364	0.73	0.77	13100.	0.0	0.0	0.88	0.79	13100.	12600.	16500.	4
1972	1.000	1.000	1.000	0.361	0.62	0.67	12200.	0.0	0.0	0.83	0.69	12200.	11300.	15000.	5
1973	1.038	1.011	1.095	0.388	0.53	0.58	11300.	0.0	0.0	0.78	0.61	11300.	10200.	13500.	6
1974	1.154	1.074	1.477	0.532	0.45	0.50	10300.	0.0	0.0	0.73	0.54	10300.	9400.	12000.	7
1975	1.322	1.174	1.570	0.567	0.36	0.44	9400.	0.82	0.020	0.68	0.48	9400.	8600.	10600.	8
1976	1.387	1.266	1.644	0.590	0.28	0.36	8500.	0.86	0.020	0.63	0.43	8500.	8000.	9500.	9
1977	1.467	1.340	1.741	0.622	0.21	0.28	7600.	0.87	0.020	0.59	0.38	7600.	7500.	8500.	10
1978	1.577	1.435	1.816	0.626	0.15	0.22	6700.	0.87	0.021	0.55	0.33	6700.	7100.	7800.	11
1979	1.713	1.547	2.448	0.857	0.10	0.17	6600.	0.87	0.021	0.51	0.29	6600.	6600.	7000.	12
1980	1.868	1.672	3.397	1.191	0.07	0.13	6200.	0.95	0.023	0.47	0.25	6200.	6300.	6300.	13
1981	1.951	1.820	3.731	1.329	0.05	0.10	5900.	0.97	0.024	0.43	0.20	5900.	6000.	5900.	14
1982	2.039	1.912	3.532	1.238	0.03	0.08	5500.	0.98	0.025	0.40	0.17	5500.	5500.	5300.	15
1983	2.160	1.971	3.698	1.296	0.02	0.06	5100.	0.98	0.026	0.36	0.14	5100.	5200.	4900.	16
1984	2.209	2.058	3.923	1.375	0.02	0.04	5000.	0.98	0.027	0.32	0.11	5000.	5000.	4700.	17
1985	2.346	2.177	4.237	1.485	0.01	0.03	4700.	0.98	0.029	0.28	0.08	4700.	4700.	4600.	18
1986	2.499	2.322	4.614	1.618	0.01	0.02	4400.	0.98	0.031	0.25	0.06	4400.	4400.	4400.	19
1987	2.656	2.471	5.011	1.757	0.01	0.02	4000.	0.98	0.033	0.21	0.04	4000.	4100.	4200.	20
1988	2.823	2.629	5.467	1.917	0.0	0.0	0.	0.98	0.035	0.18	0.03	3700.	3800.	4000.	21
1989	3.004	2.800	6.030	2.114	0.0	0.0	0.	0.98	0.037	0.15	0.02	3400.	3500.	3800.	22
1990	3.205	2.993	6.693	2.347	0.0	0.0	0.	0.98	0.039	0.12	0.01	3100.	3100.	3600.	23

Table B3
Mobile Source Input Data

YEAR	AUTOMOBILES					TRUCKS 0-6,000 LBS					TRUCKS 6,000-8,500 LBS				
	PROD	INVEST	MAINT	BASMPG	CONMPG	PROD	INVEST	MAINT	BASMPG	CONMPG	PROD	INVEST	MAINT	BASMPG	CONMPG
1968	9656.	5.	1.68	13.8	13.2	1069.	5.	1.12	13.8	13.2	0.	0.	0.0	0.0	0.0
1969	9583.	6.	1.72	13.7	13.2	1117.	5.	1.15	13.7	13.2	0.	0.	0.0	0.0	0.0
1970	8405.	35.	1.77	13.7	12.7	1048.	35.	1.18	13.7	12.7	641.	23.	1.18	9.2	8.2
1971	10950.	38.	1.82	13.9	12.9	1185.	36.	1.22	13.9	12.9	798.	24.	1.22	9.7	8.7
1972	10850.	38.	1.87	13.7	12.3	1498.	36.	1.25	13.7	12.3	950.	23.	1.25	9.9	8.5
1973	11439.	87.	1.89	13.8	12.1	1754.	87.	1.26	13.8	12.1	1188.	23.	1.26	9.4	7.7
1974	8873.	93.	2.00	13.8	13.7	1469.	92.	1.34	13.8	13.7	1078.	51.	1.47	9.4	9.3
1975	8643.	200.	-0.99	13.7	13.6	1101.	169.	-0.33	13.7	13.1	922.	56.	1.50	9.4	9.3
1976	10110.	212.	-1.07	15.0	15.4	1318.	179.	-0.36	15.0	15.4	1253.	59.	1.73	10.0	9.6
1977	11103.	235.	-1.13	15.0	15.0	1304.	188.	-0.38	15.4	15.4	1573.	62.	1.83	10.2	10.2
1978	11314.	246.	-1.21	18.0	18.0	1299.	208.	-0.41	16.6	16.6	1364.	65.	1.96	11.5	11.5
1979	10673.	263.	-1.31	20.1	20.1	1238.	217.	-0.44	16.8	16.8	1432.	217.	-0.44	12.8	12.8
1980	8979.	386.	-1.05	22.4	22.4	913.	237.	-0.47	17.0	17.0	882.	237.	-0.47	13.3	13.3
1981	8536.	445.	-0.31	23.6	24.4	843.	248.	-0.52	17.0	17.0	755.	248.	-0.52	14.9	14.9
1982	7980.	467.	-0.33	24.8	25.8	936.	261.	-0.54	17.0	17.0	878.	261.	-0.54	14.9	14.9
1983	9010.	482.	-0.34	24.8	25.8	1048.	269.	-0.56	17.0	17.0	938.	269.	-0.56	14.9	14.9
1984	10440.	503.	-0.35	24.8	25.8	1258.	281.	-0.58	17.0	17.0	1126.	281.	-0.58	14.9	14.9
1985	11079.	532.	-0.37	24.8	25.8	1396.	297.	-0.62	17.0	17.0	1249.	297.	-0.62	14.9	14.9
1986	11501.	568.	-0.40	24.8	25.8	1480.	317.	-0.66	17.0	17.0	1324.	317.	-0.66	14.9	14.9
1987	12029.	604.	-0.42	24.8	25.8	1569.	337.	-0.70	17.0	17.0	1364.	337.	-0.70	14.9	14.9
1988	12240.	643.	-0.45	24.8	25.8	1616.	359.	-0.75	17.0	17.0	1391.	359.	-0.75	14.9	14.9
1989	12346.	685.	-0.48	24.8	25.8	1648.	382.	-0.79	17.0	17.0	1419.	382.	-0.79	14.9	14.9
1990	12135.	732.	-0.51	24.8	25.8	1631.	408.	-0.85	17.0	17.0	1405.	408.	-0.85	14.9	14.9

Table B4
Mobile Source Input Data

YEAR	TRUCKS 8,500-10,000 LBS					GAS TRUCKS >10,000 LBS					DIESEL TRUCKS >10,000 LBS		MOTORCYCLES		AIRCRAFT	
	PROD	INVEST	MAINT	BASMPG	CONMPG	PROD	INVEST	MAINT	BASMPG	CONMPG	PROD	INVEST	PROD	INVEST	INVEST	MAINT
1968	0.	0.	0.0	0.0	0.0	0.	0.	0.0	0.0	0.0	94.	0.	438.	0.	0.0	0.0
1969	0.	0.	0.0	0.0	0.0	0.	0.	0.0	0.0	0.0	115.	0.	550.	0.	0.0	0.0
1970	68.	23.	1.18	10.0	10.0	240.	23.	1.18	5.1	5.1	108.	0.	751.	0.	0.0	0.0
1971	84.	24.	1.22	10.0	10.0	250.	24.	1.22	5.1	5.1	113.	0.	928.	0.	0.0	0.0
1972	100.	23.	1.25	10.0	10.0	310.	23.	1.25	5.1	5.1	143.	0.	1006.	0.	0.0	0.0
1973	125.	23.	1.26	10.0	10.0	310.	23.	1.26	5.1	5.1	168.	0.	1190.	0.	0.0	0.0
1974	114.	51.	1.47	10.0	9.7	290.	51.	1.47	5.1	4.9	167.	0.	1024.	0.	0.0	0.0
1975	97.	56.	1.60	10.0	9.7	230.	56.	1.60	5.1	4.9	163.	0.	747.	0.	5.25	0.0
1976	132.	59.	1.73	10.0	9.5	197.	59.	1.73	5.1	4.3	128.	0.	783.	0.	11.32	0.0
1977	153.	62.	1.83	10.0	9.5	195.	62.	1.83	5.1	4.3	182.	0.	849.	0.	17.98	0.0
1978	170.	65.	1.96	10.0	9.5	232.	65.	1.96	5.1	4.8	208.	0.	764.	50.	12.92	0.0
1979	142.	133.	1.93	10.0	9.5	166.	133.	1.93	5.1	4.3	225.	152.	861.	55.	5.36	0.0
1980	88.	145.	2.08	10.0	9.5	105.	145.	2.08	5.1	4.8	167.	165.	892.	23.	5.79	0.0
1981	75.	151.	2.27	10.0	9.5	63.	151.	2.27	5.1	4.8	164.	173.	925.	24.	7.57	-0.21
1982	62.	159.	2.38	10.0	9.5	52.	159.	2.38	5.1	4.8	136.	182.	958.	25.	30.17	-1.07
1983	72.	164.	2.46	10.0	9.5	61.	164.	2.46	5.1	4.8	153.	187.	993.	26.	52.98	-1.98
1984	91.	171.	2.57	10.0	9.5	77.	171.	2.57	5.1	4.8	200.	196.	1029.	27.	7.33	-5.31
1985	98.	181.	2.71	10.0	9.5	82.	181.	2.71	5.1	4.8	214.	207.	1067.	29.	7.15	-4.70
1986	107.	193.	2.89	10.0	9.5	91.	193.	2.89	5.1	4.3	236.	221.	1105.	31.	8.56	-6.45
1987	114.	205.	3.08	10.0	9.5	96.	205.	3.08	5.1	4.8	250.	235.	1145.	33.	10.20	-8.58
1988	117.	218.	3.28	10.0	9.5	99.	218.	3.28	5.1	4.3	257.	250.	1187.	35.	11.46	-11.06
1989	121.	232.	3.49	10.0	9.5	102.	232.	3.49	5.1	4.8	265.	266.	1230.	37.	12.65	-13.91
1990	121.	249.	3.73	10.0	9.5	102.	249.	3.73	5.1	4.8	265.	285.	1274.	40.	9.51	-16.47

POLLUTION CONTROL EXPENDITURE ESTIMATES

Final Report Prepared Under
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Work Assignment No. 65

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Volume II

July, 1983

TCS MANAGEMENT GROUP, INC.
210 25th Avenue, North
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POLLUTION CONTROL EXPENDITURE ESTIMATES

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APPENDIX C

Detailed Estimates for 1970-1990 (1972 Dollars)

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JULY 7, 1983

TABLE 9
TOTAL INVESTMENT FOR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	4850.7	5871.7	6782.9	8517.2	8357.4	10071.3	10457.1	10438.0	10173.7	10733.9
ALL INDUSTRY	2649.7	3251.0	3777.7	4644.5	4687.3	5164.0	5106.5	4843.5	4662.3	4746.7
MANUFACTURING IND.	2053.7	2356.2	2502.9	2917.8	3124.1	3720.1	3462.7	3135.5	2776.8	2762.4
PRIMARY METALS	367.4	341.5	406.9	597.6	610.7	753.1	700.5	606.9	491.4	521.7
ELEC. MACHINERY	81.5	80.5	72.3	113.3	102.3	67.9	59.4	67.5	62.7	68.4
NON-ELEC. MACH.	76.4	58.3	63.9	94.5	75.0	68.3	64.6	80.9	87.6	79.7
TRANSP. EQUIP.	120.0	147.9	140.4	198.5	149.7	121.6	122.2	148.7	181.7	233.5
STONE, CLAY, GLASS	105.5	120.2	109.2	145.2	175.0	165.1	113.0	106.6	143.1	118.8
OTHER DURABLES	207.7	208.6	189.0	229.9	234.4	244.1	210.2	177.6	120.9	121.2
FOOD & BEVERAGE	122.0	142.4	179.8	226.4	209.1	214.2	209.1	182.7	213.4	154.3
TEXTILES	42.4	20.0	36.4	40.5	35.8	40.0	31.2	35.8	26.9	30.1
PAPER	182.9	182.5	288.6	283.7	314.8	377.5	346.0	290.8	181.7	233.6
CHEMICALS	278.4	359.1	436.6	396.5	475.3	625.3	705.6	628.5	457.7	358.9
PETROLEUM	410.5	661.3	511.2	520.1	648.3	957.7	846.5	747.3	745.2	785.2
RUBBER	35.0	18.7	37.9	40.6	44.0	40.0	30.8	46.9	39.1	34.0
OTHER NONDURABLES	24.0	15.2	30.7	31.2	49.7	45.4	23.5	15.5	25.2	22.9
NONMANUFACTURING	596.0	894.7	1274.8	1726.7	1563.2	1443.9	1643.9	1708.0	1885.5	1984.3
MINING	45.2	71.1	91.7	132.3	114.9	104.6	162.5	166.0	253.0	292.0
PRIVATE UTILITIES	386.9	631.4	976.8	1244.0	1166.7	1064.4	1225.2	1368.0	1421.7	1501.8
COMMERCIAL & OTHER	163.9	192.2	206.3	350.4	281.5	274.9	256.2	174.0	210.9	190.5
STATE & LOCAL GOVT.	1742.6	2030.0	2408.5	2563.9	2556.6	3089.9	3228.0	3168.0	3021.6	3503.9
GOVT.-OWNED UTILITIES	87.1	93.3	99.2	136.6	149.0	122.5	160.6	180.1	207.9	211.7
MOBILE SOURCE CONTROLS	371.2	497.4	497.5	1172.2	964.5	1694.9	1962.0	2246.4	2281.9	2271.7

JULY 7, 1983

TABLE 9
TOTAL INVESTMENT FOR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	11001.4	10633.7	9244.5	8634.4	9037.1	9464.1	9732.3	10026.8	10254.3	10486.5	10585.5
ALL INDUSTRY	4710.7	4123.0	3692.3	3417.6	3748.0	4102.2	4377.9	4644.1	4910.1	5151.5	5360.4
MANUFACTURING IND.	2864.6	2520.4	2068.3	1929.4	2210.7	2477.2	2662.0	2834.3	3010.5	3152.4	3274.9
PRIMARY METALS	501.2	358.1	326.3	240.5	376.9	437.8	473.5	498.7	523.2	547.9	567.7
ELEC. MACHINERY	78.1	78.9	70.4	58.6	78.5	85.7	90.0	93.5	98.7	102.5	104.4
NON-ELEC. MACH.	78.1	70.1	83.4	79.3	74.4	83.8	90.9	96.7	102.8	110.1	116.0
TRANSP. EQUIP.	269.5	218.7	174.7	204.2	170.5	197.4	214.2	226.7	242.3	255.3	266.0
STONE, CLAY, GLASS	128.5	73.2	34.8	37.1	57.4	67.3	72.4	73.2	75.4	77.9	79.6
OTHER DURABLES	104.2	103.9	89.0	59.7	91.1	102.6	111.3	117.6	125.6	131.7	136.0
FOOD & BEVERAGE	146.7	144.3	162.1	137.7	138.3	146.3	152.3	160.1	167.9	174.7	181.5
TEXTILES	37.7	24.5	14.6	13.9	21.5	24.2	26.0	27.4	28.9	30.1	31.0
PAPER	203.4	181.6	131.2	175.4	128.3	148.7	160.5	171.0	189.2	203.9	213.8
CHEMICALS	385.7	409.4	288.9	221.5	307.7	342.3	364.1	396.6	423.4	447.6	468.0
PETROLEUM	889.7	815.9	657.8	668.0	731.4	801.0	862.6	925.3	982.3	1017.1	1055.5
RUBBER	20.8	23.3	17.5	12.6	19.5	22.9	25.3	26.9	28.7	30.3	31.3
OTHER NONDURABLES	21.0	18.5	17.5	20.9	15.2	17.3	19.1	20.6	22.2	23.2	24.0
NONMANUFACTURING	1846.1	1602.6	1624.0	1488.1	1537.3	1624.9	1715.8	1809.8	1899.5	1999.1	2085.5
MINING	250.6	213.1	227.2	265.2	225.2	244.3	262.9	283.8	304.8	326.5	346.9
PRIVATE UTILITIES	1426.0	1277.1	1286.7	1129.2	1220.5	1282.8	1350.2	1419.2	1483.3	1556.5	1618.8
COMMERCIAL & OTHER	169.5	112.4	110.1	93.7	91.7	97.8	102.7	106.9	111.5	116.1	119.9
STATE & LOCAL GOVT.	3670.4	3934.0	3100.0	2461.9	2178.8	2022.9	1871.5	1740.5	1625.4	1567.2	1504.2
GOVT.-OWNED UTILITIES	244.0	228.4	204.7	214.5	207.4	218.0	229.5	241.2	252.1	264.5	275.1
MOBILE SOURCE CONTROLS	2376.3	2348.2	2247.4	2540.4	2902.8	3121.1	3253.5	3400.9	3466.8	3503.2	3445.7

* THE CHEMICAL INDUSTRY TOTAL POLLUTION ABATEMENT EXPENDITURE FORECASTS FOR 1984-1990 WERE INCREASED TO INCLUDE CONTROLS ON TOXICS.

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

TABLE 10
INVESTMENT FOR AIR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	1687.7	2193.5	2706.1	4026.5	3808.3	4698.7	4744.0	4867.7	4817.5	4954.6
ALL INDUSTRY	1256.7	1632.5	2140.9	2771.1	2756.7	2922.0	2632.6	2443.5	2379.9	2517.6
MANUFACTURING IND.	929.7	1160.4	1293.8	1730.0	1785.4	2010.3	1624.8	1398.6	1394.2	1454.3
PRIMARY METALS	202.7	220.8	311.9	494.3	458.6	550.3	495.1	394.0	345.5	360.8
ELEC. MACHINERY	28.1	34.9	31.5	47.5	49.1	36.7	27.9	26.3	24.7	28.2
NON-ELEC. MACH.	48.6	36.2	32.0	47.5	32.8	29.3	27.9	32.8	43.2	39.5
TRANSP. EQUIP.	64.8	82.0	73.9	104.6	73.7	51.4	48.8	52.5	80.2	107.1
STONE, CLAY, GLASS	77.9	96.7	87.3	123.6	155.6	139.4	83.7	72.2	98.7	95.8
OTHER DURABLES	79.5	98.7	89.1	142.6	147.4	124.7	90.7	65.7	55.5	62.0
FOOD & BEVERAGE	49.1	55.9	83.0	85.6	65.5	66.0	69.7	59.1	80.2	45.1
TEXTILES	4.8	4.1	10.1	9.5	16.4	22.0	7.0	13.1	12.3	16.9
PAPER	60.4	58.1	109.7	161.6	196.6	198.1	118.5	98.5	80.2	101.5
CHEMICALS	114.2	152.3	188.8	171.1	196.6	227.4	258.0	223.2	191.2	163.5
PETROLEUM	180.3	304.1	236.1	304.2	335.8	520.9	369.6	328.3	345.5	405.9
RUBBER	9.6	8.3	20.2	19.0	24.6	22.0	13.9	26.3	30.8	22.5
OTHER NONDURABLES	9.6	8.3	20.2	19.0	32.8	22.0	13.9	6.6	6.2	5.6
NONMANUFACTURING	327.0	472.1	847.1	1041.1	971.3	911.7	1007.8	1044.9	985.7	1063.2
MINING	18.0	26.0	46.6	57.1	57.1	43.7	76.1	58.2	72.9	83.2
PRIVATE UTILITIES	207.5	335.3	691.0	783.9	767.4	722.5	807.1	909.1	815.5	896.7
COMMERCIAL & OTHER	101.4	110.9	109.5	200.0	146.8	145.6	124.6	77.6	97.3	83.2
STATE & LOCAL GOVT.	4.7	4.7	4.7	4.7	4.7	10.3	46.7	58.2	40.9	21.3
GOVT.-OWNED UTILITIES	55.0	59.0	63.0	78.4	82.4	71.5	102.6	119.5	114.9	144.0
MOBILE SOURCE CONTROLS	371.2	497.4	497.5	1172.2	964.5	1694.9	1962.0	2246.4	2281.9	2271.7

JULY 7, 1983

TABLE 10
INVESTMENT FOR AIR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	5207.4	4891.8	4550.7	4447.8	5199.4	5614.8	5907.9	6207.2	6428.2	6607.7	6672.0
ALL INDUSTRY	2557.8	2253.2	2015.2	1643.4	2034.1	2220.1	2370.0	2509.8	2652.3	2781.5	2892.7
MANUFACTURING IND.	1477.5	1220.1	980.5	733.5	1078.2	1211.8	1306.7	1389.9	1479.0	1548.2	1607.7
PRIMARY METALS	342.5	244.0	191.8	129.7	245.5	285.2	308.5	324.9	340.9	357.0	369.9
ELEC. MACHINERY	35.8	36.2	25.6	20.3	33.5	36.6	38.4	39.9	42.1	43.7	44.5
NON-ELEC. MACH.	35.8	22.6	34.1	32.4	29.6	33.4	36.2	38.5	41.0	43.9	46.2
TRANSP. EQUIP.	158.5	90.4	89.5	89.1	86.3	99.9	108.4	114.7	122.6	129.2	134.6
STONE, CLAY, GLASS	107.4	54.2	21.3	24.3	43.4	50.8	54.6	55.3	56.9	58.8	60.1
OTHER DURABLES	46.0	40.7	38.4	24.3	38.2	43.1	46.7	49.4	52.8	55.3	57.1
FOOD & BEVERAGE	40.9	58.7	72.5	56.7	52.8	55.9	58.2	61.1	64.1	66.7	69.3
TEXTILES	25.6	13.6	4.3	4.1	11.6	13.1	14.1	14.9	15.7	16.3	16.8
PAPER	81.8	72.3	63.9	68.9	54.5	63.2	68.2	72.7	80.4	86.7	90.9
CHEMICALS	163.6	171.7	136.4	85.1	126.3	139.4	151.6	166.2	182.1	192.8	201.8
PETROLEUM	424.3	397.7	285.6	186.4	341.5	374.0	402.7	432.0	458.6	474.9	492.8
RUBBER	10.2	9.0	8.5	4.1	8.8	10.3	11.4	12.1	12.9	13.6	14.1
OTHER NONDURABLES	5.1	9.0	8.5	8.1	6.1	6.9	7.6	8.3	8.9	9.3	9.6
NONMANUFACTURING	1080.3	1033.2	1034.7	910.0	956.0	1008.3	1063.3	1119.8	1173.4	1233.3	1285.0
MINING	85.2	81.6	89.8	122.0	83.5	90.6	97.5	105.2	113.0	121.1	128.6
PRIVATE UTILITIES	910.0	901.6	889.3	747.3	827.9	870.1	915.8	962.6	1006.1	1055.8	1098.1
COMMERCIAL & OTHER	85.2	49.9	55.6	40.7	44.6	47.6	49.9	52.0	54.2	56.4	58.3
STATE & LOCAL GOVT.	88.4	105.4	125.6	95.1	99.2	102.1	103.8	106.7	110.7	114.7	117.0
GOVT.-OWNED UTILITIES	184.9	184.9	162.4	168.8	163.3	171.6	180.6	189.8	198.4	208.2	216.5
MOBILE SOURCE CONTROLS	2376.3	2348.2	2247.4	2540.4	2902.8	3121.1	3253.5	3400.9	3466.8	3503.2	3445.7

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

TABLE 11
 INVESTMENT FOR WATER
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	2752.0	3284.4	3691.0	3976.7	3999.6	4858.6	5202.1	5057.7	4812.3	5151.2
ALL INDUSTRY	1209.4	1444.1	1460.0	1586.9	1609.0	1951.6	2144.3	2061.9	1932.3	1822.5
MANUFACTURING IND.	1019.2	1105.2	1120.9	1014.1	1131.8	1513.3	1621.4	1531.6	1180.2	1063.2
PRIMARY METALS	158.3	115.7	90.8	84.5	126.7	171.6	198.1	199.2	133.2	149.4
ELEC. MACHINERY	50.3	43.0	38.6	56.3	50.7	23.4	29.3	34.3	31.7	34.5
NON-ELEC. MACH.	24.5	19.5	29.5	37.6	33.8	31.2	29.3	41.2	38.1	34.5
TRANSF. EQUIP.	43.4	57.7	56.8	75.1	50.7	54.6	51.4	68.7	69.8	92.0
STONE,CLAY,GLASS	25.4	21.7	19.5	18.8	16.9	23.4	22.0	27.5	38.1	17.2
OTHER DURABLES	121.0	103.5	92.8	75.1	76.0	109.2	110.1	103.0	57.1	51.7
FOOD & BEVERAGE	62.6	77.0	88.0	122.1	126.7	132.6	124.7	109.9	114.2	92.0
TEXTILES	35.9	14.0	24.3	28.2	16.9	15.6	22.0	20.6	12.7	11.5
PAPER	116.2	120.1	174.2	112.7	109.8	163.8	220.1	171.7	88.8	103.4
CHEMICALS	146.5	190.8	232.2	206.6	253.4	366.6	403.5	370.9	234.8	160.9
PETROLEUM	199.3	328.1	249.9	169.0	244.9	390.0	388.8	364.0	342.6	304.6
RUBBER	23.9	9.3	16.2	18.8	16.9	15.6	14.7	13.7	6.3	5.7
OTHER NONDURABLES	12.0	4.6	8.1	9.4	8.4	15.6	7.3	6.9	12.7	5.7
NONMANUFACTURING	190.1	338.9	339.1	572.8	477.2	438.3	522.9	530.3	752.1	759.3
MINING	22.2	39.0	38.9	65.7	49.6	45.7	64.7	67.4	149.0	152.4
PRIVATE UTILITIES	124.2	237.2	223.6	394.4	336.7	286.1	357.4	388.8	516.2	533.6
COMMERCIAL & OTHER	43.8	62.7	76.6	112.7	90.9	106.5	100.7	74.1	86.9	73.4
STATE & LOCAL GOVT.	1517.0	1812.9	2202.0	2339.1	2331.9	2862.3	3008.7	2944.8	2798.4	3272.6
GOVT.-OWNED UTILITIES	25.7	27.5	29.0	50.7	58.7	44.7	49.2	51.0	81.6	56.1

TABLE 11
 INVESTMENT FOR WATER
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	5096.4	5009.9	3982.7	3557.6	3176.1	3138.7	3085.8	3045.2	3019.7	3035.4	3041.5
ALL INDUSTRY	1711.5	1436.4	1317.6	1415.6	1333.3	1460.8	1564.0	1663.3	1766.1	1853.1	1929.2
MANUFACTURING IND.	1099.9	1002.9	860.9	963.3	879.1	979.8	1055.3	1125.9	1201.2	1257.8	1307.3
PRIMARY METALS	137.5	90.3	121.1	93.8	112.8	131.0	141.7	149.2	156.5	163.9	169.9
ELEC. MACHINERY	31.7	33.3	35.9	34.1	35.0	38.2	40.1	41.7	44.0	45.7	46.5
NON-ELEC. MACH.	37.0	42.8	35.9	34.1	37.1	41.7	45.3	48.2	51.2	54.9	57.8
TRANSP. EQUIP.	89.9	99.8	71.7	93.8	68.1	78.8	85.5	90.5	96.7	101.9	106.2
STONE, CLAY, GLASS	15.9	14.3	4.5	8.5	8.6	10.1	10.9	11.0	11.3	11.7	12.0
OTHER DURABLES	47.6	52.3	40.4	29.8	43.0	48.5	52.5	55.5	59.3	62.2	64.2
FOOD & BEVERAGE	95.2	66.5	71.7	63.9	70.9	75.0	78.1	82.1	86.1	89.6	93.1
TEXTILES	10.6	9.5	9.0	8.5	8.5	9.6	10.3	10.9	11.5	12.0	12.3
PAPER	84.6	57.0	40.4	68.2	44.7	51.8	55.9	59.6	65.9	71.0	74.5
CHEMICALS	169.2	171.1	121.1	110.8	123.9	136.7	148.7	163.0	178.6	189.0	197.9
PETROLEUM	364.9	351.7	300.4	404.9	315.2	345.2	371.8	398.8	423.3	438.4	454.9
RUBBER	5.3	9.5	4.5	4.3	6.1	7.2	8.0	8.4	9.0	9.5	9.8
OTHER NONDURABLES	10.6	4.8	4.5	8.5	5.2	6.0	6.6	7.1	7.6	8.0	8.3
NONMANUFACTURING	611.5	433.6	456.7	452.3	454.2	481.1	508.7	537.3	564.9	595.3	621.9
MINING	113.8	84.5	88.6	109.5	93.7	101.6	109.4	118.0	126.8	135.8	144.3
PRIVATE UTILITIES	440.9	306.8	332.6	312.1	329.0	345.8	364.0	382.6	399.9	419.6	436.4
COMMERCIAL & OTHER	56.9	42.3	35.4	30.7	31.5	33.6	35.3	36.7	38.3	39.9	41.2
STATE & LOCAL GOVT.	3339.4	3542.3	2636.6	2108.9	1810.8	1644.1	1486.3	1344.7	1214.5	1141.3	1069.8
GOVT.-OWNED UTILITIES	45.6	31.1	28.5	33.2	32.1	33.7	35.5	37.3	39.0	40.9	42.6

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

TABLE 12
 INVESTMENT FOR SOLID WASTE
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	411.0	393.7	385.8	514.1	549.5	514.0	511.0	512.7	543.9	628.1
ALL INDUSTRY	183.6	174.4	176.8	286.6	321.6	290.4	329.6	338.1	350.2	406.6
MANUFACTURING IND.	104.8	90.7	88.2	173.7	206.9	196.6	216.4	205.4	202.4	244.8
PRIMARY METALS	6.4	5.0	4.2	18.8	25.3	31.2	7.3	13.7	12.7	11.5
ELEC. MACHINERY	3.1	2.5	2.2	9.4	2.5	7.8	2.2	6.9	6.3	5.7
NON-ELEC. MACH.	3.3	2.5	2.4	9.4	8.4	7.8	7.3	6.9	6.3	5.7
TRANSP. EQUIP.	11.7	8.2	9.7	18.8	25.3	15.6	22.0	27.5	31.7	34.5
STONE, CLAY, GLASS	2.2	1.8	2.4	2.8	2.5	2.3	7.3	6.9	6.3	5.7
OTHER DURABLES	7.3	6.4	7.1	12.2	11.0	10.1	9.5	8.9	8.2	7.5
FOOD & BEVERAGE	10.3	9.5	8.8	18.8	16.9	15.6	14.7	13.7	19.0	17.2
TEXTILES	1.7	1.8	2.0	2.8	2.5	2.3	2.2	2.1	1.9	1.7
PAPER	6.4	4.3	4.7	9.4	8.4	15.6	7.3	20.6	12.7	28.7
CHEMICALS	17.8	16.0	15.6	18.8	25.3	31.2	44.0	34.3	31.7	34.5
PETROLEUM	30.9	29.1	25.2	46.9	67.6	46.8	88.0	54.9	57.1	74.7
RUBBER	1.5	1.2	1.5	2.8	2.5	2.3	2.2	6.9	1.9	5.7
OTHER NONDURABLES	2.4	2.3	2.4	2.8	8.4	7.8	2.2	2.1	6.3	11.5
NONMANUFACTURING	78.9	83.7	88.6	112.9	114.7	93.9	113.2	132.8	147.8	161.8
MINING	5.0	6.1	6.2	9.4	8.3	15.2	21.6	40.4	31.0	56.4
PRIVATE UTILITIES	55.1	58.9	62.2	65.7	62.6	55.8	60.7	70.1	90.0	71.5
COMMERCIAL & OTHER	18.8	18.7	20.2	37.7	43.8	22.8	30.9	22.2	26.7	33.9
STATE & LOCAL GOVT.	220.9	212.5	201.8	220.0	220.0	217.2	172.6	165.0	182.3	209.9
GOVT.-OWNED UTILITIES	6.4	6.8	7.2	7.5	7.8	6.3	8.8	9.6	11.4	11.6

JULY 7, 1983

TABLE 12
 INVESTMENT FOR SOLID WASTE
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	697.5	732.1	711.1	629.0	644.3	689.0	723.4	759.9	801.9	839.2	868.0
ALL INDUSTRY	441.4	433.4	359.5	358.5	363.3	399.6	428.6	456.7	487.1	512.6	534.6
MANUFACTURING IND.	287.1	297.5	226.9	232.7	236.2	264.0	284.7	304.0	325.9	342.2	355.9
PRIMARY METALS	21.2	23.8	13.5	17.0	18.6	21.6	23.3	24.6	25.8	27.0	28.0
ELEC. MACHINERY	10.6	9.5	9.0	4.3	10.0	11.0	11.5	12.0	12.6	13.1	13.4
NON-ELEC. MACH.	5.3	4.8	13.5	12.8	7.7	8.6	9.4	10.0	10.6	11.4	12.0
TRANSP. EQUIP.	21.2	28.5	13.5	21.3	16.2	18.7	20.3	21.5	23.0	24.2	25.2
STONE, CLAY, GLASS	5.3	4.8	9.0	4.3	5.5	6.4	6.9	7.0	7.2	7.4	7.6
OTHER DURABLES	10.6	10.9	10.3	5.5	9.8	11.1	12.0	12.7	13.6	14.2	14.7
FOOD & BEVERAGE	10.6	19.0	17.9	17.0	14.6	15.4	16.0	16.9	17.7	18.4	19.1
TEXTILES	1.6	1.4	1.3	1.3	1.3	1.4	1.6	1.6	1.7	1.8	1.8
PAPER	37.0	52.3	26.9	38.4	29.1	33.7	36.4	38.7	42.9	46.2	48.4
CHEMICALS	52.9	66.5	31.4	25.6	40.3	44.5	48.4	53.0	58.1	61.5	64.4
PETROLEUM	100.5	66.5	71.7	76.7	74.7	81.8	88.1	94.5	100.3	103.9	107.8
RUBBER	5.3	4.8	4.5	4.3	4.6	5.4	6.0	6.4	6.8	7.2	7.4
OTHER NONDURABLES	5.3	4.8	4.5	4.3	3.9	4.4	4.9	5.3	5.7	5.9	6.1
NONMANUFACTURING	154.3	135.8	132.6	125.8	127.2	135.6	143.9	152.6	161.2	170.5	178.7
MINING	51.7	47.0	48.7	33.7	48.0	52.1	56.1	60.5	65.0	69.6	73.9
PRIVATE UTILITIES	75.2	68.7	64.8	69.8	63.6	66.8	70.3	73.9	77.3	81.1	84.3
COMMERCIAL & OTHER	27.4	20.2	19.1	22.3	15.6	16.7	17.5	18.2	19.0	19.8	20.4
STATE & LOCAL GOVT.	242.6	286.3	337.8	258.0	268.9	276.7	281.4	289.2	300.2	311.1	317.4
GOVT.-OWNED UTILITIES	13.5	12.4	13.8	12.5	12.1	12.7	13.4	14.1	14.7	15.4	16.0

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

BASELINE: 1960-1962

TABLE 14
 INCREMENTAL INVESTMENT FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	2308.5	3481.2	4481.4	6133.8	5839.5	7637.7	8121.5	8160.1	7762.3	8297.1
ALL INDUSTRY	1790.8	2472.6	3004.0	3796.1	3706.0	4171.0	4083.9	3760.4	3534.6	3509.6
MANUFACTURING IND.	1402.4	1799.4	1964.7	2317.2	2377.3	2942.7	2671.5	2311.5	1922.8	1808.4
PRIMARY METALS	266.6	262.0	338.9	518.2	505.9	630.5	585.6	504.9	391.1	414.1
ELEC. MACHINERY	71.1	72.1	65.0	104.6	93.9	61.6	52.5	59.2	53.4	57.5
NON-ELEC. MACH.	59.1	44.9	50.8	79.2	57.3	53.1	48.5	62.9	69.2	55.3
TRANSP. EQUIP.	38.5	89.8	71.4	114.6	60.3	51.4	50.6	53.3	63.8	96.8
STONE,CLAY,GLASS	99.0	114.8	101.9	136.9	167.5	158.2	105.7	98.3	132.4	106.4
OTHER DURABLES	187.8	190.9	169.5	206.5	212.3	225.8	191.4	157.4	100.1	100.7
FOOD & BEVERAGE	82.3	105.1	145.0	190.1	173.2	181.5	172.3	145.8	173.5	114.1
TEXTILES	38.5	15.9	31.8	36.3	31.8	36.9	27.9	32.1	23.2	26.4
PAPER	131.6	147.0	250.5	234.4	251.3	317.6	287.0	226.8	115.8	150.4
CHEMICALS	132.5	226.7	306.2	241.7	266.5	400.6	479.8	416.1	252.5	121.1
PETROLEUM	244.2	503.1	372.9	392.7	472.1	746.6	622.6	499.8	492.3	518.1
RUBBER	31.2	15.7	34.2	35.3	39.2	36.7	27.4	42.8	34.3	29.5
OTHER NONDURABLES	20.0	11.3	26.6	26.8	45.9	42.1	20.4	12.1	21.2	17.8
NONMANUFACTURING	388.4	673.3	1039.3	1478.8	1328.7	1228.4	1412.4	1449.0	1611.8	1701.3
MINING	33.4	56.6	76.7	116.0	95.1	80.6	134.8	133.9	220.1	258.7
PRIVATE UTILITIES	229.7	463.2	798.5	1057.5	994.1	909.8	1058.7	1180.8	1225.1	1297.8
COMMERCIAL & OTHER	125.3	153.5	164.1	305.4	239.5	237.9	218.9	134.3	166.7	144.8
STATE & LOCAL GOVT.	90.9	441.4	900.2	1049.8	1042.5	1667.6	1937.6	1998.0	1765.6	2333.9
GOVT.-OWNED UTILITIES	55.6	69.7	79.7	115.7	126.4	104.2	138.0	155.2	180.2	181.9
MOBILE SOURCE CONTROLS	371.2	497.4	497.5	1172.2	964.5	1694.9	1962.0	2246.4	2281.9	2271.7

TABLE 14
 INCREMENTAL INVESTMENT FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	8477.9	8211.3	7023.6	6552.8	6905.2	7185.7	7342.9	7517.7	7608.7	7724.0	7733.2
ALL INDUSTRY	3395.4	2805.7	2485.1	2315.2	2632.6	2870.4	3054.0	3230.9	3402.0	3568.6	3712.2
MANUFACTURING IND.	1821.5	1478.2	1134.2	1082.2	1339.1	1503.4	1610.5	1708.2	1803.8	1886.5	1957.3
PRIMARY METALS	389.2	253.1	235.3	171.5	278.2	323.2	349.6	368.2	386.3	404.5	419.2
ELEC. MACHINERY	64.9	66.3	58.1	46.5	65.3	71.3	74.9	77.8	82.1	85.3	86.9
NON-ELEC. MACH.	53.5	45.2	60.5	57.1	51.2	57.7	62.6	66.6	70.8	75.8	79.8
TRANSP. EQUIP.	121.5	85.1	70.8	109.4	71.0	82.1	89.1	94.3	100.8	106.2	110.7
STONE, CLAY, GLASS	117.6	65.2	28.5	31.5	50.9	59.7	64.1	64.9	66.8	69.0	70.6
OTHER DURABLES	83.4	83.9	72.2	44.8	73.4	82.7	89.7	94.8	101.3	106.2	109.6
FOOD & BEVERAGE	105.5	103.4	125.8	104.4	102.4	108.3	112.8	118.6	124.3	129.4	134.4
TEXTILES	34.0	21.3	12.0	11.5	18.7	21.1	22.7	23.9	25.2	26.3	27.0
PAPER	110.0	99.1	62.0	108.4	66.9	77.6	83.7	89.2	98.7	106.4	111.5
CHEMICALS	131.5	164.4	63.3	0.3	112.7	127.0	129.9	140.0	142.2	149.9	156.5
PETROLEUM	577.8	458.2	318.7	371.3	421.0	461.0	496.5	532.6	565.4	585.4	607.5
RUBBER	17.5	20.3	14.7	9.8	16.7	19.5	21.6	22.9	24.5	25.8	26.7
OTHER NONDURABLES	15.1	12.9	12.1	15.6	10.7	12.1	13.4	14.5	15.6	16.3	16.8
NONMANUFACTURING	1573.9	1327.5	1350.9	1233.0	1293.5	1367.0	1443.4	1522.7	1598.2	1682.1	1754.9
MINING	214.5	172.2	191.8	231.6	188.8	204.8	220.4	237.9	255.5	273.8	290.8
PRIVATE UTILITIES	1233.0	1084.6	1088.2	944.8	1042.2	1095.4	1153.0	1211.9	1266.6	1329.2	1382.4
COMMERCIAL & OTHER	126.4	70.7	70.8	56.6	62.5	66.7	70.0	72.9	76.0	79.1	81.7
STATE & LOCAL GOVT.	2494.7	2861.6	2119.4	1515.7	1192.4	1007.8	839.2	679.6	524.3	425.9	340.0
GOVT.-OWNED UTILITIES	211.5	195.8	171.6	181.6	177.4	186.5	196.3	206.3	215.6	226.3	235.3
MOBILE SOURCE CONTROLS	2376.3	2348.2	2247.4	2540.4	2902.8	3121.1	3253.5	3400.9	3466.8	3503.2	3445.7

* THE CHEMICAL INDUSTRY TOTAL POLLUTION ABATEMENT EXPENDITURE FORECASTS FOR 1984-1990 WERE INCREASED TO INCLUDE CONTROLS ON TOXICS.

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

BASELINE: 1960-1962

TABLE 15
 INCREMENTAL INVESTMENT FOR AIR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	1316.8	1861.0	2378.4	3662.4	3394.5	4287.4	4319.4	4419.0	4344.9	4432.3
ALL INDUSTRY	906.9	1315.9	1823.6	2418.6	2354.4	2520.6	2220.0	2007.8	1921.7	2011.5
MANUFACTURING IND.	660.7	930.3	1069.2	1476.0	1475.8	1692.5	1301.5	1061.9	1040.8	1056.6
PRIMARY METALS	146.6	176.1	273.3	449.0	400.0	482.6	431.3	337.2	289.2	300.2
ELEC. MACHINERY	25.2	32.5	29.4	45.0	46.8	34.9	26.0	23.9	22.0	25.1
NON-ELEC. MACH.	39.4	29.0	24.9	39.2	23.3	21.3	19.4	23.3	33.4	26.4
TRANSP. EQUIP.	23.6	52.2	38.2	60.9	28.2	16.1	12.7	4.3	20.1	37.1
STONE, CLAY, GLASS	74.6	93.9	83.4	119.2	151.7	135.8	79.9	67.9	93.1	89.3
OTHER DURABLES	73.9	93.7	83.5	135.8	141.2	119.7	85.5	60.1	49.7	56.2
FOOD & BEVERAGE	36.8	44.2	71.9	73.9	54.3	56.0	58.4	47.7	67.7	32.4
TEXTILES	4.5	3.8	9.7	9.2	16.1	21.8	6.7	12.8	12.0	16.6
PAPER	43.9	46.5	97.1	145.1	176.0	179.1	99.7	77.9	58.8	74.3
CHEMICALS	56.0	98.8	135.5	107.4	112.8	139.0	168.5	138.8	108.7	67.4
PETROLEUM	118.6	244.5	183.4	255.2	269.9	443.5	286.9	236.6	250.7	305.3
RUBBER	8.9	7.7	19.5	17.9	23.6	21.4	13.3	25.5	29.9	21.7
OTHER NONDURABLES	8.8	7.5	19.4	18.1	32.0	21.4	13.3	5.9	5.4	4.6
NONMANUFACTURING	246.2	385.7	754.4	942.6	878.6	828.1	918.5	946.0	881.0	954.9
MINING	15.1	22.3	42.8	52.9	52.1	37.7	69.2	50.2	64.7	74.8
PRIVATE UTILITIES	144.1	267.2	618.3	707.1	695.7	658.6	738.7	832.9	735.8	814.2
COMMERCIAL & OTHER	87.0	96.2	93.3	182.6	130.8	131.8	110.6	62.8	80.5	65.9
STATE & LOCAL GOVT.	0.5	0.6	0.9	0.9	0.8	6.7	43.4	55.2	37.7	18.3
GOVT.-OWNED UTILITIES	38.2	47.0	56.4	70.7	74.7	65.2	93.9	109.5	103.7	130.8
MOBILE SOURCE CONTROLS	371.2	497.4	497.5	1172.2	964.5	1694.9	1962.0	2246.4	2281.9	2271.7

TABLE 15
 INCREMENTAL INVESTMENT FOR AIR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	4656.3	4346.7	4053.2	3992.3	4736.7	5103.3	5358.4	5621.4	5804.1	5952.7	5990.2
ALL INDUSTRY	2025.4	1726.9	1534.9	1207.3	1588.2	1726.2	1838.9	1943.3	2048.4	2147.6	2232.8
MANUFACTURING IND.	1047.9	797.8	604.3	394.5	724.7	815.5	878.6	931.8	988.6	1033.6	1072.1
PRIMARY METALS	279.9	185.7	141.3	91.4	190.8	221.6	239.7	252.5	264.9	277.4	287.4
ELEC. MACHINERY	32.1	32.6	22.1	16.9	29.8	32.5	34.2	35.5	37.5	38.9	39.6
NON-ELEC. MACH.	22.7	9.4	22.0	20.7	17.4	19.6	21.3	22.6	24.1	25.8	27.1
TRANSP. EQUIP.	83.2	23.0	37.1	41.3	36.1	41.8	45.3	48.0	51.3	54.0	56.3
STONE, CLAY, GLASS	101.6	50.1	18.0	21.4	40.0	46.8	50.3	50.9	52.5	54.2	55.4
OTHER DURABLES	40.2	35.1	33.7	20.2	33.4	37.6	40.8	43.1	46.0	48.3	49.8
FOOD & BEVERAGE	28.1	46.1	61.3	46.5	41.7	44.1	46.0	48.3	50.7	52.7	54.8
TEXTILES	25.3	13.3	4.1	3.9	11.4	12.9	13.8	14.6	15.4	16.0	16.5
PAPER	51.6	45.9	41.8	47.4	34.9	40.5	43.7	46.5	51.5	55.5	58.2
CHEMICALS	61.8	74.6	47.0	-2.6	49.0	54.1	58.8	64.4	70.6	74.7	78.2
PETROLEUM	307.9	265.5	160.4	76.8	226.8	248.4	267.5	287.0	304.6	315.4	327.3
RUBBER	9.6	8.5	8.0	3.5	8.2	9.7	10.7	11.3	12.1	12.7	13.2
OTHER NONDURABLES	3.9	7.9	7.5	7.1	5.2	5.9	6.5	7.1	7.6	8.0	8.2
NONMANUFACTURING	977.6	929.1	930.6	812.8	863.5	910.7	960.3	1011.5	1059.8	1114.0	1160.7
MINING	76.1	71.4	81.0	113.6	74.4	80.8	86.9	93.8	100.7	107.9	114.7
PRIVATE UTILITIES	832.5	823.5	808.7	672.4	755.5	794.0	835.7	878.5	918.1	963.5	1002.0
COMMERCIAL & OTHER	69.0	34.3	40.9	26.7	33.6	35.9	37.7	39.2	40.9	42.6	44.0
STATE & LOCAL GOVT.	85.4	102.7	123.1	92.7	96.7	99.5	101.2	104.0	107.9	111.8	114.1
GOVT.-OWNED UTILITIES	169.2	168.9	147.7	151.9	149.0	156.6	164.8	173.2	181.1	190.0	197.6
MOBILE SOURCE CONTROLS	2376.3	2348.2	2247.4	2540.4	2902.8	3121.1	3253.5	3400.9	3466.8	3503.2	3445.7

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

BASELINE: 1960-1962

TABLE 16
 INCREMENTAL INVESTMENT FOR WATER
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	985.5	1614.2	2096.6	2349.4	2302.9	3227.1	3675.6	3615.1	3282.3	3653.5
ALL INDUSTRY	878.1	1151.1	1174.5	1273.6	1227.9	1554.9	1738.3	1636.4	1495.4	1341.0
MANUFACTURING IND.	739.5	867.4	893.7	761.8	808.5	1170.5	1274.0	1172.3	812.9	653.7
PRIMARY METALS	120.0	86.0	65.6	55.3	87.2	124.6	154.3	160.4	95.5	109.1
ELEC. MACHINERY	46.0	39.6	35.6	52.8	47.1	20.7	26.4	30.9	27.8	29.9
NON-ELEC. MACH.	19.6	15.8	25.9	33.4	28.8	26.9	24.8	36.1	33.0	27.7
TRANSP. EQUIP.	13.7	36.8	32.2	45.4	18.3	28.8	25.1	33.9	27.1	42.7
STONE, CLAY, GLASS	24.5	21.0	18.5	17.6	15.8	22.4	20.9	26.3	36.5	15.5
OTHER DURABLES	113.9	97.2	86.0	66.9	68.2	102.7	103.3	95.8	49.8	44.5
FOOD & BEVERAGE	45.5	61.0	73.2	106.7	111.3	118.4	108.8	93.9	97.0	74.7
TEXTILES	34.0	12.0	22.1	26.1	15.0	14.1	20.4	18.8	10.8	9.7
PAPER	87.7	100.6	153.4	85.8	74.7	130.4	187.3	136.2	52.5	57.6
CHEMICALS	75.5	127.0	169.9	133.0	152.3	256.6	293.4	267.5	135.5	46.4
PETROLEUM	125.6	258.6	189.6	113.7	167.2	295.8	289.3	254.2	231.1	187.3
RUBBER	22.4	8.1	14.7	16.6	14.9	14.3	13.3	12.1	4.4	3.9
OTHER NONDURABLES	11.2	3.8	7.3	8.5	7.7	14.9	6.7	6.2	11.9	4.7
NONMANUFACTURING	138.6	283.6	280.8	511.8	419.4	384.3	464.3	464.1	682.4	687.2
MINING	18.2	34.2	34.0	60.4	43.0	37.7	55.6	56.7	138.1	141.4
PRIVATE UTILITIES	82.0	192.2	176.0	345.0	291.3	245.3	313.2	338.8	463.6	478.9
COMMERCIAL & OTHER	38.3	57.3	70.8	106.5	85.1	101.3	95.5	68.5	80.7	67.0
STATE & LOCAL GOVT.	90.4	440.8	899.3	1031.4	1024.2	1633.9	1894.2	1934.3	1713.6	2262.1
GOVT.-OWNED UTILITIES	16.9	22.2	22.8	44.4	50.8	38.3	43.1	44.4	73.3	50.4

TABLE 16
 INCREMENTAL INVESTMENT FOR WATER
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	3553.6	3551.9	2651.1	2296.1	1876.1	1766.0	1660.3	1557.7	1457.3	1407.7	1367.2
ALL INDUSTRY	1189.4	909.9	837.6	976.6	889.9	969.8	1035.2	1097.5	1160.4	1217.1	1266.6
MANUFACTURING IND.	647.9	547.2	451.2	589.9	499.5	556.2	598.0	635.5	674.7	705.2	731.9
PRIMARY METALS	95.2	50.3	86.4	67.5	75.2	87.3	94.4	99.5	104.3	109.3	113.2
ELEC. MACHINERY	26.2	27.9	30.7	29.0	29.5	32.2	33.7	35.1	37.0	38.4	39.2
NON-ELEC. MACH.	30.2	35.7	29.4	27.8	30.5	34.4	37.3	39.7	42.2	45.2	47.6
TRANSF. EQUIP.	36.2	50.9	33.7	59.1	31.6	36.6	39.7	42.0	44.9	47.3	49.3
STONE, CLAY, GLASS	14.3	13.1	3.6	7.7	7.7	9.0	9.7	9.8	10.1	10.4	10.6
OTHER DURABLES	40.2	45.2	34.4	24.5	36.7	41.4	44.9	47.4	50.7	53.1	54.8
FOOD & BEVERAGE	77.5	48.8	56.0	49.5	55.4	58.6	61.0	64.1	67.2	70.0	72.7
TEXTILES	8.8	7.9	7.7	7.3	7.2	8.1	8.7	9.2	9.7	10.1	10.4
PAPER	33.0	11.2	1.9	30.9	10.6	12.3	13.2	14.1	15.6	16.8	17.6
CHEMICALS	46.0	51.6	11.0	2.9	28.7	31.7	34.5	37.8	41.4	43.8	45.9
PETROLEUM	227.1	192.7	149.7	273.0	177.2	194.1	209.0	224.2	238.0	246.5	255.7
RUBBER	3.9	8.3	3.4	3.1	5.0	5.8	6.4	6.8	7.3	7.7	7.9
OTHER NONDURABLES	9.4	3.6	3.4	7.5	4.3	4.9	5.4	5.8	6.3	6.6	6.8
NONMANUFACTURING	541.5	362.7	386.4	386.7	390.4	413.5	437.3	461.9	485.7	511.9	534.7
MINING	101.8	71.0	76.9	98.4	81.6	88.5	95.3	102.8	110.4	118.3	125.7
PRIVATE UTILITIES	388.9	255.3	279.6	262.8	281.4	295.7	311.3	327.2	342.0	358.9	373.2
COMMERCIAL & OTHER	50.8	36.4	29.9	25.5	27.4	29.2	30.7	31.9	33.3	34.7	35.8
STATE & LOCAL GOVT.	2324.0	2616.0	1789.6	1291.6	958.8	767.4	594.7	428.3	263.5	155.6	64.2
GOVT.-OWNED UTILITIES	40.2	25.9	24.0	27.9	27.4	28.8	30.4	31.9	33.3	35.0	36.4

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

BASELINE: 1960-1962

TABLE 17
 INCREMENTAL INVESTMENT FOR SOLID WASTE
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	6.2	6.0	6.4	122.0	142.1	123.2	126.5	125.9	135.1	211.3
ALL INDUSTRY	5.8	5.6	5.9	103.8	123.7	95.6	125.5	116.2	117.5	157.1
MANUFACTURING IND.	2.1	1.7	1.8	79.5	93.0	79.6	95.9	77.3	69.1	98.0
PRIMARY METALS	-0.0	-0.0	-0.0	13.9	18.7	23.3	0.0	7.2	6.4	4.7
ELEC. MACHINERY	-0.0	0.0	0.0	6.8	0.0	5.9	0.1	4.4	3.5	2.5
NON-ELEC. MACH.	0.0	0.0	-0.0	6.6	5.1	4.9	4.3	3.4	2.9	1.2
TRANSP. EQUIP.	1.2	0.8	1.0	8.3	13.9	6.5	12.7	15.2	16.6	17.1
STONE, CLAY, GLASS	-0.0	0.0	-0.0	0.1	0.0	0.0	4.9	4.1	2.8	1.7
OTHER DURABLES	-0.0	-0.0	0.0	3.7	2.9	3.4	2.6	1.5	0.7	0.0
FOOD & BEVERAGE	0.0	-0.0	-0.0	9.6	7.7	7.1	5.1	4.2	8.8	6.9
TEXTILES	0.0	0.0	0.0	1.0	0.8	1.0	0.8	0.5	0.3	0.1
PAPER	0.0	-0.1	0.0	3.4	0.6	8.1	0.0	12.7	4.5	18.5
CHEMICALS	0.9	0.9	0.8	1.3	1.4	5.1	17.9	9.8	8.2	7.3
PETROLEUM	0.0	0.0	-0.0	23.8	35.0	7.4	46.4	9.0	10.4	25.6
RUBBER	-0.0	-0.0	0.0	0.7	0.6	1.0	0.8	5.2	0.0	4.0
OTHER NONDURABLES	0.0	-0.0	-0.0	0.2	6.2	5.8	0.3	0.0	3.9	8.5
NONMANUFACTURING	3.6	3.9	4.1	24.4	30.7	16.0	29.6	39.0	48.4	59.1
MINING	0.1	0.0	-0.0	2.7	0.0	5.2	10.0	27.0	17.3	42.5
PRIVATE UTILITIES	3.6	3.9	4.1	5.4	7.1	6.0	6.8	9.1	25.8	4.7
COMMERCIAL & OTHER	-0.0	0.0	-0.0	16.3	23.6	4.8	12.8	2.9	5.4	11.9
STATE & LOCAL GOVT.	-0.0	-0.0	0.0	17.5	17.5	27.0	0.0	8.5	14.3	53.4
GOVT.-OWNED UTILITIES	0.4	0.4	0.5	0.6	0.9	0.7	1.0	1.2	3.3	0.8

TABLE 17
 INCREMENTAL INVESTMENT FOR SOLID WASTE
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	268.0	312.8	319.2	264.4	275.2	294.8	309.0	324.2	342.8	359.4	371.8
ALL INDUSTRY	180.5	168.8	112.6	131.3	137.2	152.8	164.5	175.7	188.7	199.6	208.8
MANUFACTURING IND.	125.8	133.2	78.7	97.8	97.6	110.0	118.7	126.5	136.0	143.4	149.3
PRIMARY METALS	14.1	17.1	7.6	12.6	12.3	14.3	15.4	16.2	17.0	17.8	18.5
ELEC. MACHINERY	6.6	5.7	5.3	0.6	6.1	6.6	7.0	7.2	7.6	7.9	8.1
NON-ELEC. MACH.	0.7	0.0	9.1	8.6	3.3	3.7	4.0	4.2	4.5	4.8	5.1
TRANSP. EQUIP.	2.1	11.2	0.0	9.0	3.3	3.8	4.1	4.4	4.7	4.9	5.1
STONE, CLAY, GLASS	1.6	2.1	6.9	2.4	3.3	3.8	4.1	4.2	4.3	4.4	4.5
OTHER DURABLES	3.0	3.6	4.1	0.1	3.3	3.8	4.1	4.3	4.6	4.8	5.0
FOOD & BEVERAGE	0.0	8.4	8.5	8.4	5.3	5.6	5.8	6.1	6.4	6.7	6.9
TEXTILES	0.0	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
PAPER	25.5	42.0	18.3	30.0	21.4	24.8	26.8	28.6	31.6	34.1	35.7
CHEMICALS	23.7	38.2	5.3	0.0	17.8	19.6	21.3	23.4	25.6	27.1	28.4
PETROLEUM	42.8	0.0	8.7	21.5	16.9	18.5	20.0	21.4	22.7	23.5	24.4
RUBBER	4.0	3.6	3.4	3.1	3.5	4.1	4.5	4.8	5.1	5.4	5.6
OTHER NONDURABLES	1.7	1.3	1.3	1.1	1.2	1.3	1.4	1.6	1.7	1.8	1.8
NONMANUFACTURING	54.8	35.6	33.9	33.5	39.6	42.8	45.8	49.2	52.7	56.2	59.5
MINING	36.6	29.8	33.9	19.6	32.8	35.5	38.3	41.3	44.3	47.5	50.5
PRIVATE UTILITIES	11.7	5.8	0.0	9.6	5.4	5.6	5.9	6.2	6.5	6.8	7.1
COMMERCIAL & OTHER	6.5	0.0	0.0	4.3	1.5	1.6	1.7	1.7	1.8	1.9	1.9
STATE & LOCAL GOVT.	85.4	142.9	206.6	131.4	137.0	140.9	143.3	147.3	152.9	158.5	161.6
GOVT.-OWNED UTILITIES	2.1	1.0	0.0	1.7	1.0	1.1	1.1	1.2	1.2	1.3	1.4

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

TABLE 22
OPERATING & MAINTENANCE FOR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	6491.2	7389.0	8433.6	9753.5	10081.8	10091.3	9978.6	10013.5	10032.8	10141.8
ALL INDUSTRY	2370.5	2583.2	2819.4	3177.2	3562.1	3990.9	4409.9	4823.9	5190.4	5589.4
MANUFACTURING IND.	1979.3	2151.5	2326.2	2592.6	2892.7	3240.6	3559.2	3854.3	4104.4	4350.1
PRIMARY METALS	320.6	345.2	372.7	433.9	506.2	597.7	654.1	710.4	753.5	790.5
ELEC. MACHINERY	61.3	69.5	76.7	93.6	103.3	113.8	119.0	128.7	136.5	143.3
NON-ELEC. MACH.	46.2	50.9	56.8	69.6	80.5	90.4	99.5	110.0	119.9	128.2
TRANSF. EQUIP.	250.9	261.2	272.4	296.4	322.1	336.7	356.1	382.1	413.2	451.8
STONE, CLAY, GLASS	37.1	41.9	46.4	52.2	58.7	65.0	71.6	77.9	85.4	90.2
OTHER DURABLES	93.2	107.0	119.7	133.2	146.3	162.0	176.4	188.3	192.8	194.7
FOOD & BEVERAGE	117.1	129.1	143.1	167.3	191.0	216.4	238.1	258.1	283.1	303.0
TEXTILES	27.9	29.8	32.9	37.0	39.9	42.6	45.2	47.5	48.3	48.5
PAPER	67.8	75.8	88.0	97.1	105.8	120.1	135.9	150.7	156.8	167.1
CHEMICALS	281.8	304.5	334.3	361.6	394.0	439.6	490.3	540.8	573.5	592.4
PETROLEUM	625.5	683.4	723.8	783.3	867.2	968.1	1079.6	1156.9	1232.1	1320.7
RUBBER	29.2	31.2	35.1	40.4	45.5	50.0	53.6	61.8	64.3	69.3
OTHER NONDURABLES	20.8	22.2	24.3	26.9	32.4	38.3	40.0	41.2	45.1	50.3
NONMANUFACTURING	391.2	431.7	493.2	584.6	669.4	750.3	850.7	969.7	1086.0	1239.3
MINING	129.6	138.2	148.4	166.8	181.6	204.3	240.0	299.8	356.9	448.9
PRIVATE UTILITIES	93.4	110.6	144.5	184.2	222.4	257.3	296.5	340.4	380.8	422.7
COMMERCIAL & OTHER	168.3	182.9	200.3	233.7	265.4	288.7	314.2	329.4	348.3	367.7
STATE & LOCAL GOVT.	2608.2	2666.5	2736.5	2815.8	2892.5	2987.2	3074.5	3149.3	3215.5	3315.3
GOVT.-OWNED UTILITIES	43.6	45.3	47.1	50.0	53.1	55.5	59.3	63.7	68.0	73.1
MOBILE SOURCE CONTROLS	1468.9	2094.1	2830.5	3710.6	3574.1	3057.7	2435.0	1976.5	1558.9	1163.9

TABLE 22
OPERATING & MAINTENANCE FOR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	10388.7	10644.2	10801.6	10877.7	10966.8	11096.2	11261.7	11413.3	11551.6	11759.9	12036.7
ALL INDUSTRY	5981.4	6309.5	6518.4	6671.2	6830.1	7003.9	7201.5	7397.0	7579.8	7821.5	8127.9
MANUFACTURING IND.	4606.4	4820.0	4920.7	4999.9	5089.9	5200.7	5320.6	5428.5	5520.5	5662.8	5868.7
PRIMARY METALS	835.4	867.3	875.8	882.8	901.7	926.3	947.9	967.0	983.5	1001.7	1035.1
ELEC. MACHINERY	152.8	160.5	166.1	167.5	175.3	182.1	190.2	202.3	214.7	227.8	241.9
NON-ELEC. MACH.	135.4	142.7	153.5	164.0	169.4	174.9	181.8	189.7	198.7	207.0	216.6
TRANSP. EQUIP.	478.7	508.1	518.8	537.6	547.2	558.4	574.8	592.6	613.1	632.8	652.0
STONE, CLAY, GLASS	94.5	96.2	97.3	96.9	97.6	99.0	100.6	101.6	102.6	103.5	103.5
OTHER DURABLES	193.6	191.1	184.3	176.1	172.2	171.2	170.8	167.7	165.9	167.0	175.0
FOOD & BEVERAGE	318.5	330.9	339.7	343.9	347.1	343.5	341.2	338.4	334.9	336.2	337.8
TEXTILES	49.4	49.3	46.7	46.0	44.6	43.0	42.6	42.6	42.3	42.7	44.4
PAPER	177.7	188.4	188.4	192.9	189.1	191.5	195.1	195.9	194.5	198.1	209.3
CHEMICALS	611.9	645.4	653.3	651.6	649.2	647.3	641.3	631.6	597.5	592.9	610.4
PETROLEUM	1431.5	1507.8	1563.0	1602.8	1656.1	1720.0	1786.1	1846.9	1914.5	1987.5	2069.0
RUBBER	73.6	77.4	78.3	80.5	82.6	85.1	88.4	92.2	96.7	101.9	108.5
OTHER NONDURABLES	53.3	55.1	55.4	57.3	57.9	58.6	59.7	59.8	61.6	63.7	65.2
NONMANUFACTURING	1374.9	1489.5	1597.7	1671.3	1740.2	1803.2	1880.9	1968.5	2059.3	2158.7	2259.2
MINING	529.7	600.3	673.2	728.0	796.7	868.1	946.8	1031.6	1120.0	1213.5	1302.5
PRIVATE UTILITIES	461.2	501.3	536.0	557.0	565.3	570.0	578.7	592.9	605.3	616.2	634.2
COMMERCIAL & OTHER	384.0	387.8	388.5	386.3	378.2	365.1	355.4	344.0	333.9	328.9	322.5
STATE & LOCAL GOVT.	3447.0	3605.3	3744.6	3806.3	3846.5	3877.7	3907.4	3913.9	3911.9	3914.5	3917.5
GOVT.-OWNED UTILITIES	79.9	86.3	91.7	97.2	102.1	106.5	111.1	117.0	122.0	126.9	132.5
MOBILE SOURCE CONTROLS	880.4	643.1	446.9	303.0	188.2	108.1	41.7	-14.5	-62.0	-102.9	-141.3

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

TABLE 23
OPERATING & MAINTENANCE FOR AIR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	1917.7	2626.9	3467.3	4485.2	4482.7	4125.2	3644.8	3328.8	3042.8	2780.6
ALL INDUSTRY	389.8	471.9	573.8	708.9	839.9	995.1	1122.7	1246.9	1365.5	1489.3
MANUFACTURING IND.	314.3	378.4	444.0	536.2	626.3	744.2	828.9	908.6	986.6	1067.3
PRIMARY METALS	73.9	87.8	108.7	143.2	174.8	213.2	246.9	272.3	293.3	314.0
ELEC. MACHINERY	5.5	7.0	8.4	10.5	12.7	14.3	15.5	16.6	17.6	18.7
NON-ELEC. MACH.	6.4	7.7	8.8	10.4	11.5	12.5	13.4	14.5	16.0	17.3
TRANSP. EQUIP.	31.5	34.9	37.8	42.4	45.3	46.9	48.4	50.0	53.0	57.4
STONE, CLAY, GLASS	10.7	13.7	16.3	20.2	25.0	29.3	31.8	33.9	36.8	39.5
OTHER DURABLES	7.3	9.4	11.2	14.2	17.3	19.9	21.7	23.0	24.0	25.1
FOOD & BEVERAGE	4.5	3.9	4.0	4.2	4.1	5.4	5.0	5.8	8.5	10.4
TEXTILES	0.5	0.6	0.9	1.2	1.7	2.3	2.5	2.9	3.3	3.7
PAPER	0.6	0.7	1.0	1.3	1.7	2.1	2.4	2.5	2.6	2.7
CHEMICALS	43.1	48.7	57.2	64.9	70.5	76.1	79.7	91.7	102.1	109.7
PETROLEUM	127.5	160.5	184.7	217.1	253.1	311.9	350.4	382.5	414.9	452.9
RUBBER	2.1	2.6	3.8	4.9	6.3	7.6	8.4	9.9	11.6	12.8
OTHER NONDURABLES	0.7	0.8	1.2	1.6	2.2	2.6	2.9	3.0	3.1	3.1
NONMANUFACTURING	75.4	93.5	129.8	172.7	213.6	250.9	293.8	338.3	378.9	422.0
MINING	6.2	7.9	11.3	15.4	19.5	22.6	28.0	32.0	37.1	42.7
PRIVATE UTILITIES	62.1	76.4	107.4	142.6	176.8	208.5	243.9	283.4	317.5	354.0
COMMERCIAL & OTHER	7.2	9.2	11.1	14.7	17.3	19.8	21.9	22.9	24.3	25.2
STATE & LOCAL GOVT.	21.7	22.2	22.6	23.0	23.4	25.2	36.5	50.8	60.4	64.9
GOVT.-OWNED UTILITIES	37.3	38.7	40.3	42.7	45.3	47.3	50.6	54.6	58.0	62.6
MOBILE SOURCE CONTROLS	1468.9	2094.1	2830.5	3710.6	3574.1	3057.7	2435.0	1976.5	1558.9	1163.9

JULY 7, 1983

TABLE 23
OPERATING & MAINTENANCE FOR AIR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	2638.9	2536.5	2441.8	2352.2	2299.2	2270.9	2260.7	2268.4	2246.8	2254.2	2284.5
ALL INDUSTRY	1602.7	1704.8	1769.4	1794.7	1826.8	1848.4	1873.6	1906.2	1910.1	1938.4	1980.9
MANUFACTURING IND.	1140.1	1200.2	1227.5	1226.7	1248.7	1262.5	1276.9	1293.6	1282.9	1298.0	1319.0
PRIMARY METALS	331.7	340.2	342.4	337.0	338.2	339.1	338.9	338.2	336.2	335.0	334.7
ELEC. MACHINERY	20.1	21.4	22.2	22.6	23.6	24.6	25.5	26.4	27.3	28.2	29.0
NON-ELEC. MACH.	18.4	18.9	19.8	20.6	21.2	21.9	22.5	23.2	23.9	24.6	25.3
TRANSP. EQUIP.	64.5	67.7	70.7	73.5	76.0	79.1	82.4	85.9	89.5	93.4	97.3
STONE, CLAY, GLASS	42.4	43.6	43.5	43.3	43.6	43.9	44.0	43.9	43.7	43.3	42.7
OTHER DURABLES	25.8	26.2	26.6	26.4	26.5	26.5	26.4	26.2	26.0	25.7	25.3
FOOD & BEVERAGE	11.5	13.5	15.2	16.2	18.3	18.0	19.2	19.8	17.8	17.5	17.9
TEXTILES	4.4	4.8	4.9	4.9	5.1	5.4	5.7	5.9	6.1	6.4	6.6
PAPER	2.8	2.8	2.7	2.6	2.5	2.3	2.2	2.1	2.0	2.0	2.0
CHEMICALS	111.7	123.1	127.6	130.4	130.7	126.5	120.3	118.5	91.2	87.4	86.0
PETROLEUM	490.5	521.1	534.8	531.7	545.6	557.8	572.2	585.8	601.7	617.2	634.9
RUBBER	13.3	13.6	13.9	13.8	14.0	14.1	14.2	14.3	14.3	14.3	14.3
OTHER NONDURABLES	3.2	3.3	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.2	3.2
NONMANUFACTURING	462.6	504.7	541.9	568.0	578.1	585.9	596.8	612.6	627.2	640.3	661.8
MINING	48.4	53.5	59.0	66.5	70.8	75.2	79.6	84.2	89.0	93.8	99.0
PRIVATE UTILITIES	388.3	425.2	457.1	476.3	482.9	487.3	494.9	507.2	518.1	527.6	544.8
COMMERCIAL & OTHER	26.0	26.0	25.8	25.1	24.3	23.4	22.3	21.2	20.0	19.0	18.1
STATE & LOCAL GOVT.	87.0	113.6	145.5	169.5	194.5	220.3	246.7	272.4	289.6	304.9	325.5
GOVT.-OWNED UTILITIES	68.8	74.9	80.0	85.1	89.8	94.1	98.7	104.3	109.1	113.8	119.4
MOBILE SOURCE CONTROLS	880.4	643.1	446.9	303.0	188.2	108.1	41.7	-14.5	-62.0	-102.9	-141.3

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

TABLE 24
OPERATING & MAINTENANCE FOR WATER
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	1879.5	2020.9	2183.9	2356.5	2530.6	2756.0	2988.7	3192.8	3356.4	3517.7
ALL INDUSTRY	732.3	839.2	951.5	1070.9	1193.6	1349.1	1509.3	1651.7	1763.0	1842.8
MANUFACTURING IND.	678.2	769.9	865.0	957.1	1058.5	1191.5	1328.0	1451.1	1531.7	1583.4
PRIMARY METALS	114.6	124.5	131.6	139.0	151.5	168.6	187.5	206.1	217.3	224.6
ELEC. MACHINERY	25.6	31.1	35.9	43.0	49.3	51.9	55.0	58.4	60.6	62.2
NON-ELEC. MACH.	14.4	17.0	21.0	26.3	30.9	35.2	39.2	44.7	49.6	53.7
TRANSP. EQUIP.	60.9	65.9	70.8	77.9	82.1	86.2	89.1	93.3	97.2	104.8
STONE, CLAY, GLASS	8.9	10.8	12.5	14.1	15.5	17.4	19.2	21.3	24.0	24.5
OTHER DURABLES	51.8	62.8	72.6	80.3	88.0	99.1	109.8	118.8	121.0	121.0
FOOD & BEVERAGE	49.2	59.6	71.7	88.8	106.7	125.5	142.8	157.8	173.3	185.5
TEXTILES	11.6	12.9	15.2	17.8	19.3	20.6	22.3	23.6	23.7	23.1
PAPER	47.0	54.7	66.4	73.8	80.8	91.7	106.3	116.7	120.6	124.6
CHEMICALS	152.5	167.8	187.4	204.2	226.0	259.2	295.1	325.8	341.3	345.1
PETROLEUM	125.4	145.0	158.9	167.1	180.5	204.2	227.4	248.3	265.8	277.7
RUBBER	10.1	11.2	13.1	15.4	17.4	19.2	20.7	21.9	21.6	20.9
OTHER NONDURABLES	6.1	6.8	7.9	9.3	10.5	12.8	13.7	14.4	15.7	15.7
NONMANUFACTURING	54.1	69.3	86.6	113.8	135.1	157.6	181.3	200.6	231.2	259.4
MINING	16.0	20.1	24.2	31.3	36.6	41.2	48.0	54.8	70.7	86.6
PRIVATE UTILITIES	8.4	10.4	12.3	15.7	18.6	20.9	23.9	27.1	31.3	35.5
COMMERCIAL & OTHER	29.6	38.8	50.0	66.8	79.9	95.4	109.4	118.7	129.2	137.3
STATE & LOCAL GOVT.	1143.6	1177.8	1228.4	1281.3	1332.3	1401.9	1474.1	1535.5	1587.3	1668.5
GOVT.-OWNED UTILITIES	3.7	3.8	3.9	4.3	4.7	5.0	5.3	5.6	6.2	6.5

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TABLE 24
OPERATING & MAINTENANCE FOR WATER
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	3670.2	3794.2	3831.9	3832.5	3795.3	3752.7	3714.2	3630.5	3548.2	3495.8	3481.7
ALL INDUSTRY	1911.2	1945.0	1935.7	1923.9	1899.6	1881.3	1869.9	1837.9	1811.0	1811.2	1856.8
MANUFACTURING IND.	1629.1	1652.0	1634.4	1618.8	1594.0	1583.8	1573.1	1541.3	1514.2	1508.2	1557.8
PRIMARY METALS	229.8	228.1	223.8	221.3	222.7	226.7	227.5	225.4	221.5	218.2	228.9
ELEC. MACHINERY	61.9	60.9	59.0	57.9	57.5	55.2	54.1	57.0	59.7	63.0	67.5
NON-ELEC. MACH.	57.2	61.9	63.6	65.7	66.8	67.5	69.2	71.8	75.2	77.6	81.2
TRANSP. EQUIP.	111.5	117.9	121.3	125.6	126.8	127.3	131.9	137.5	144.9	151.3	156.9
STONE,CLAY,GLASS	24.4	23.8	22.0	20.8	19.8	19.1	18.7	17.7	17.1	16.3	14.9
OTHER DURABLES	117.2	112.2	103.5	95.5	90.1	87.5	85.5	80.6	76.9	76.1	82.2
FOOD & BEVERAGE	197.6	201.4	202.8	200.8	198.3	191.2	183.9	176.6	171.1	168.6	165.9
TEXTILES	23.1	22.6	20.0	19.4	17.9	16.2	15.7	15.6	15.1	15.4	16.9
PAPER	126.8	125.4	119.9	116.0	106.3	101.8	97.9	90.6	80.4	74.5	75.9
CHEMICALS	348.9	352.8	350.1	341.9	330.7	323.5	313.0	293.2	273.1	258.6	263.2
PETROLEUM	293.1	307.6	314.7	320.2	324.9	337.7	346.9	348.2	351.7	360.1	373.9
RUBBER	20.7	20.6	18.2	17.5	16.3	14.9	13.9	13.2	13.0	13.4	15.2
OTHER NONDURABLES	16.8	16.7	15.6	16.2	15.7	15.3	15.1	13.9	14.3	15.0	15.2
NONMANUFACTURING	282.1	293.0	301.2	305.1	305.5	297.5	296.7	296.6	296.8	303.0	299.0
MINING	97.7	105.7	113.3	121.3	127.6	131.8	138.7	147.3	154.9	163.4	164.0
PRIVATE UTILITIES	38.5	40.6	42.5	43.2	44.2	43.8	44.2	45.2	45.8	46.4	46.2
COMMERCIAL & OTHER	145.9	146.7	145.4	140.6	133.7	121.9	113.8	104.1	96.1	93.2	88.8
STATE & LOCAL GOVT.	1752.3	1842.5	1889.4	1901.8	1888.9	1864.7	1837.9	1786.2	1731.0	1678.4	1618.9
GOVT.-OWNED UTILITIES	6.7	6.7	6.7	6.8	6.8	6.7	6.4	6.4	6.3	6.2	6.0

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

TABLE 25
OPERATING & MAINTENANCE FOR SOLID WASTE
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	2694.0	2741.3	2782.4	2911.9	3068.5	3210.1	3345.1	3491.9	3633.6	3843.5
ALL INDUSTRY	1248.4	1272.0	1294.0	1397.4	1528.6	1646.7	1777.9	1925.2	2062.0	2257.4
MANUFACTURING IND.	986.7	1003.2	1017.1	1099.3	1207.9	1304.9	1402.2	1494.5	1586.1	1699.5
PRIMARY METALS	132.1	132.8	132.4	151.8	179.9	215.9	219.7	232.0	242.9	252.0
ELEC. MACHINERY	30.1	31.4	32.4	40.1	41.4	47.6	48.4	53.7	58.3	62.4
NON-ELEC. MACH.	25.4	26.3	27.0	32.9	38.0	42.6	46.9	50.8	54.2	57.2
TRANSP. EQUIP.	158.4	160.3	163.7	176.0	194.7	203.6	218.6	238.9	263.0	289.6
STONE, CLAY, GLASS	17.5	17.4	17.6	17.9	18.2	18.3	20.6	22.7	24.6	26.3
OTHER DURABLES	34.0	34.8	35.9	38.7	41.0	43.1	44.9	46.5	47.7	48.7
FOOD & BEVERAGE	63.5	65.6	67.4	74.3	80.3	85.5	90.2	94.4	101.3	107.2
TEXTILES	15.7	16.2	16.8	17.9	18.9	19.7	20.3	20.9	21.4	21.7
PAPER	20.2	20.4	20.6	22.1	23.3	26.3	27.2	31.4	33.6	39.9
CHEMICALS	86.2	88.0	89.7	92.4	97.4	104.3	115.5	123.3	130.0	137.6
PETROLEUM	372.6	377.9	380.2	399.1	433.6	452.1	501.8	526.0	551.5	590.0
RUBBER	17.0	17.4	18.1	20.1	21.7	23.2	24.5	30.1	31.1	35.6
OTHER NONDURABLES	14.0	14.6	15.2	16.0	19.6	22.9	23.4	23.8	26.4	31.5
NONMANUFACTURING	261.7	268.8	276.9	298.1	320.7	341.8	375.7	430.7	475.8	557.9
MINING	107.4	110.1	112.9	120.0	125.6	140.5	164.0	213.0	249.2	319.6
PRIVATE UTILITIES	22.9	23.8	24.8	26.0	27.0	27.8	28.7	30.0	31.9	33.1
COMMERCIAL & OTHER	131.4	134.9	139.2	152.2	168.1	173.5	182.9	187.8	194.8	205.2
STATE & LOCAL GOVT.	1442.9	1466.5	1485.5	1511.5	1536.8	1560.1	1563.8	1563.0	1567.8	1582.0
GOVT.-OWNED UTILITIES	2.7	2.8	2.9	3.0	3.2	3.2	3.4	3.6	3.8	4.1

JULY 7, 1983

TABLE 25
OPERATING & MAINTENANCE FOR SOLID WASTE
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	4079.6	4313.6	4528.0	4692.9	4872.3	5072.6	5286.9	5514.4	5756.5	6010.0	6270.5
ALL INDUSTRY	2467.4	2659.7	2813.3	2952.6	3103.8	3274.2	3458.0	3652.9	3858.7	4071.9	4290.3
MANUFACTURING IND.	1837.2	1967.8	2058.7	2154.4	2247.2	2354.4	2470.6	2593.6	2723.4	2856.6	2991.8
PRIMARY METALS	273.9	299.0	309.7	324.5	340.8	360.5	381.6	403.4	425.7	448.5	471.4
ELEC. MACHINERY	70.9	78.2	84.9	86.9	94.3	102.3	110.5	119.0	127.7	136.6	145.4
NON-ELEC. MACH.	59.8	61.9	70.1	77.6	81.3	85.5	90.0	94.7	99.6	104.8	110.1
TRANSP. EQUIP.	302.6	322.5	326.8	338.5	344.4	352.1	360.5	369.3	378.6	388.1	397.7
STONE, CLAY, GLASS	27.7	28.8	31.8	32.8	34.2	36.0	38.0	39.9	41.9	43.9	45.9
OTHER DURABLES	50.7	52.6	54.3	54.2	55.5	57.1	59.0	60.9	63.0	65.2	67.5
FOOD & BEVERAGE	109.4	116.0	121.7	126.9	130.5	134.3	138.1	142.0	146.0	150.0	154.1
TEXTILES	21.9	21.9	21.9	21.7	21.5	21.4	21.3	21.2	21.1	21.0	20.9
PAPER	48.1	60.2	65.8	74.2	80.3	87.4	95.1	103.2	112.1	121.6	131.5
CHEMICALS	151.3	169.5	175.5	179.2	187.7	197.4	208.0	219.9	233.1	246.9	261.2
PETROLEUM	647.9	679.1	713.5	750.9	785.5	824.5	867.0	912.8	961.1	1010.2	1060.2
RUBBER	39.6	43.1	46.3	49.2	52.3	56.1	60.3	64.7	69.4	74.2	79.0
OTHER NONDURABLES	33.4	35.0	36.5	37.7	38.7	39.9	41.2	42.6	44.0	45.4	46.8
NONMANUFACTURING	630.2	691.8	754.6	798.2	856.6	919.8	987.4	1059.3	1135.3	1215.4	1298.4
MINING	383.6	441.1	500.9	540.2	598.3	661.1	728.4	800.1	876.2	956.3	1039.6
PRIVATE UTILITIES	34.4	35.5	36.4	37.4	38.1	38.9	39.7	40.5	41.4	42.3	43.2
COMMERCIAL & OTHER	212.2	215.2	217.2	220.6	220.2	219.8	219.3	218.7	217.8	216.8	215.6
STATE & LOCAL GOVT.	1607.7	1649.2	1709.7	1735.0	1763.1	1792.7	1822.9	1855.2	1891.3	1931.2	1973.1
GOVT.-OWNED UTILITIES	4.4	4.7	5.0	5.3	5.5	5.7	6.0	6.3	6.6	6.9	7.1

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

BASELINE: 1960-1962

TABLE 29
 INCREMENTAL OPERATING & MAINTENANCE FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	1842.9	2662.2	3640.7	4889.3	5127.7	5054.9	4875.1	4852.7	4811.9	4860.4
ALL INDUSTRY	380.2	553.2	754.5	1068.5	1389.0	1748.2	2095.8	2432.2	2720.7	3027.8
MANUFACTURING IND.	323.0	465.5	616.4	851.7	1100.7	1393.2	1657.2	1894.9	2088.6	2264.3
PRIMARY METALS	54.3	77.4	105.4	164.3	229.5	311.5	361.0	413.5	454.1	488.2
ELEC. MACHINERY	23.7	30.4	36.3	51.6	59.7	69.3	73.6	82.0	88.3	93.3
NON-ELEC. MACH.	8.1	11.6	16.3	27.5	36.3	44.5	52.0	60.6	68.8	74.4
TRANSP. EQUIP.	15.1	23.1	30.0	46.8	64.2	74.7	90.5	109.0	129.3	153.5
STONE, CLAY, GLASS	16.4	21.3	25.5	30.9	37.1	43.3	49.6	55.5	62.1	65.9
OTHER DURABLES	47.0	59.6	70.7	82.1	93.5	108.1	121.3	131.9	135.3	136.2
FOOD & BEVERAGE	13.7	22.4	33.6	55.0	75.8	98.7	117.6	134.8	156.8	173.6
TEXTILES	9.0	10.3	12.8	16.2	18.7	21.2	23.6	25.6	26.3	26.3
PAPER	15.8	23.3	34.8	42.3	48.3	60.2	74.0	86.7	91.0	98.4
CHEMICALS	41.1	56.2	80.0	100.3	121.9	154.9	192.5	233.3	259.7	267.8
PETROLEUM	64.5	113.7	150.1	208.3	280.5	362.1	452.7	504.7	555.0	616.5
RUBBER	9.1	10.5	13.6	17.4	21.3	25.2	28.2	35.6	37.0	41.0
OTHER NONDURABLES	5.1	5.8	7.3	9.1	14.0	19.5	20.8	21.5	24.9	29.1
NONMANUFACTURING	57.2	87.8	138.1	216.8	288.3	355.0	438.7	537.3	632.1	763.5
MINING	11.1	16.7	23.8	38.2	47.0	60.9	85.5	131.4	174.4	251.9
PRIVATE UTILITIES	25.2	39.6	70.3	106.7	142.2	174.9	211.7	252.8	290.3	329.6
COMMERCIAL & OTHER	20.9	31.5	44.0	71.9	99.1	119.2	141.4	153.1	167.4	182.0
STATE & LOCAL GOVT.	-14.9	3.8	41.7	92.4	142.8	224.2	315.2	410.0	493.6	624.6
GOVT.-OWNED UTILITIES	8.7	11.2	14.0	17.8	21.7	24.8	29.2	34.1	38.8	44.1
MOBILE SOURCE CONTROLS	1468.9	2094.1	2830.5	3710.6	3574.1	3057.7	2435.0	1976.5	1558.9	1163.9

TABLE 29
 INCREMENTAL OPERATING & MAINTENANCE FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	5034.4	5222.7	5339.5	5396.5	5453.7	5533.8	5640.2	5710.3	5750.5	5826.9	5961.8
ALL INDUSTRY	3311.3	3528.5	3647.8	3729.9	3813.7	3897.8	3999.5	4086.0	4155.2	4261.6	4426.1
MANUFACTURING IND.	2434.2	2560.9	2591.6	2616.8	2647.1	2685.8	2729.1	2749.7	2751.7	2783.8	2874.6
PRIMARY METALS	529.6	558.9	567.2	577.0	594.5	615.8	633.3	647.2	656.5	665.5	688.4
ELEC. MACHINERY	100.4	105.7	109.3	108.7	114.3	118.4	123.7	133.0	142.1	151.7	162.3
NON-ELEC. MACH.	78.7	83.3	91.8	100.1	103.3	106.1	110.1	114.7	120.0	124.1	129.4
TRANSF. EQUIP.	163.6	179.6	183.0	195.5	198.8	201.6	207.8	213.0	218.9	223.2	227.3
STONE, CLAY, GLASS	69.3	70.7	71.8	71.5	72.2	73.3	74.7	75.3	76.1	76.5	76.2
OTHER DURABLES	134.1	130.9	123.9	115.9	111.6	110.0	109.0	104.8	101.7	101.2	107.6
FOOD & BEVERAGE	186.0	195.7	203.2	206.7	208.4	203.2	199.2	193.8	188.3	186.7	185.5
TEXTILES	27.0	26.9	24.6	24.3	23.1	21.7	21.4	21.4	21.0	21.3	22.8
PAPER	105.0	112.7	110.9	113.1	107.8	108.3	110.4	108.8	104.2	104.1	111.2
CHEMICALS	273.7	295.1	290.8	277.9	266.6	255.9	242.7	225.9	190.9	172.5	174.9
PETROLEUM	690.9	721.0	734.4	742.1	760.4	783.1	804.9	817.4	832.8	852.0	877.6
RUBBER	45.0	48.6	49.6	51.8	53.9	56.2	59.4	62.9	67.0	71.8	78.0
OTHER NONDURABLES	31.0	31.7	31.2	32.3	32.3	32.2	32.4	31.6	32.2	33.2	33.4
NONMANUFACTURING	877.1	967.6	1056.2	1113.1	1166.6	1212.0	1270.4	1336.2	1403.5	1477.7	1551.6
MINING	316.5	368.1	425.5	466.2	519.4	573.6	633.9	699.0	766.3	837.4	902.9
PRIVATE UTILITIES	366.2	404.6	437.4	457.3	464.8	468.5	475.8	487.8	497.8	506.1	521.1
COMMERCIAL & OTHER	194.4	194.9	193.3	189.6	182.5	169.9	160.7	149.5	139.4	134.2	127.6
STATE & LOCAL GOVT.	792.0	993.5	1182.0	1295.8	1379.5	1451.9	1518.4	1552.8	1566.7	1573.1	1576.3
GOVT.-OWNED UTILITIES	50.7	57.6	62.8	67.8	72.2	76.1	80.5	86.0	90.7	95.3	100.6
MOBILE SOURCE CONTROLS	880.4	643.1	446.9	303.0	188.2	108.1	41.7	-14.5	-62.0	-102.9	-141.3

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

TABLE 30
 INCREMENTAL OPERATING & MAINTENANCE FOR AIR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	1613.6	2313.5	3147.2	4158.7	4148.7	3782.2	3291.3	2963.9	2667.6	2392.8
ALL INDUSTRY	136.6	208.9	303.3	431.3	554.0	699.4	815.7	927.8	1035.2	1145.6
MANUFACTURING IND.	106.9	163.2	223.7	311.2	395.1	505.0	580.4	650.0	718.9	788.2
PRIMARY METALS	25.0	38.3	59.0	92.8	122.9	159.0	190.9	215.3	235.5	255.3
ELEC. MACHINERY	4.3	5.8	7.1	9.1	11.2	12.8	13.9	15.0	15.9	16.9
NON-ELEC. MACH.	2.8	3.9	4.8	6.3	7.2	8.0	8.7	9.6	10.9	11.8
TRANSP. EQUIP.	1.9	4.7	6.8	10.1	11.7	12.5	13.2	13.4	14.5	16.5
STONE, CLAY, GLASS	9.0	12.0	14.6	18.4	23.2	27.4	29.9	31.9	34.7	37.2
OTHER DURABLES	6.0	8.0	9.7	12.6	15.6	18.1	19.9	21.1	22.1	23.1
FOOD & BEVERAGE	2.3	1.7	1.8	1.8	1.6	2.7	2.2	2.9	5.5	7.3
TEXTILES	0.4	0.5	0.8	1.1	1.6	2.2	2.4	2.8	3.1	3.6
PAPER	0.3	0.4	0.6	1.0	1.4	1.8	2.0	2.1	2.2	2.3
CHEMICALS	12.1	13.8	19.7	25.9	31.3	36.1	37.4	47.4	57.1	63.0
PETROLEUM	40.6	71.4	94.4	126.3	159.8	214.9	249.4	276.5	303.8	336.3
RUBBER	1.7	2.1	3.3	4.3	5.7	7.0	7.7	9.2	10.9	12.1
OTHER NONDURABLES	0.5	0.7	1.1	1.4	2.0	2.4	2.7	2.8	2.8	2.9
NONMANUFACTURING	29.7	45.7	79.6	120.1	158.9	194.5	235.4	277.7	316.2	357.4
MINING	3.6	5.3	8.5	12.5	16.4	19.2	24.3	27.9	32.5	37.7
PRIVATE UTILITIES	21.7	34.2	63.1	96.1	128.7	159.0	192.8	230.6	263.3	298.4
COMMERCIAL & OTHER	4.4	6.2	8.0	11.4	13.9	16.3	18.3	19.2	20.5	21.3
STATE & LOCAL GOVT.	0.2	0.4	0.6	0.8	1.0	2.8	14.3	28.9	38.8	43.6
GOVT.-OWNED UTILITIES	7.9	10.1	12.7	16.1	19.5	22.3	26.2	30.7	34.7	39.7
MOBILE SOURCE CONTROLS	1468.9	2094.1	2830.5	3710.6	3574.1	3057.7	2435.0	1976.5	1558.9	1163.9

TABLE 30
 INCREMENTAL OPERATING & MAINTENANCE FOR AIR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	2236.7	2120.3	2011.4	1912.6	1848.5	1807.0	1782.8	1776.2	1749.7	1741.0	1753.8
ALL INDUSTRY	1244.0	1331.1	1380.9	1396.8	1417.8	1426.3	1437.5	1455.8	1455.2	1467.8	1493.2
MANUFACTURING IND.	847.4	893.8	907.7	898.1	909.6	911.0	912.3	916.5	903.2	904.8	911.1
PRIMARY METALS	272.0	280.1	282.5	278.4	279.5	279.7	278.4	276.5	272.9	270.1	267.9
ELEC. MACHINERY	18.2	19.4	20.1	20.5	21.3	22.2	23.1	23.9	24.6	25.4	26.1
NON-ELEC. MACH.	12.6	12.8	13.5	14.0	14.4	14.8	15.1	15.5	15.8	16.1	16.4
TRANSP. EQUIP.	20.9	22.0	23.8	25.8	27.3	29.1	31.0	32.8	34.7	36.7	38.6
STONE, CLAY, GLASS	40.1	41.2	41.1	41.0	41.2	41.5	41.6	41.5	41.2	40.8	40.2
OTHER DURABLES	23.7	24.2	24.4	24.3	24.4	24.3	24.2	24.0	23.7	23.4	23.0
FOOD & BEVERAGE	8.3	10.2	11.8	12.8	14.7	14.4	15.5	16.0	14.4	14.1	14.4
TEXTILES	4.3	4.7	4.7	4.8	5.0	5.3	5.5	5.8	6.0	6.2	6.4
PAPER	2.3	2.2	2.2	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.3
CHEMICALS	62.9	72.9	73.6	73.7	71.2	64.6	56.8	55.0	38.0	34.5	32.7
PETROLEUM	366.6	388.2	393.7	384.7	392.2	396.8	402.9	407.5	413.8	419.8	427.9
RUBBER	12.6	12.9	13.2	13.1	13.3	13.4	13.5	13.5	13.6	13.6	13.5
OTHER NONDURABLES	2.9	3.0	3.1	3.2	3.2	3.1	3.1	3.0	3.0	2.9	2.9
NONMANUFACTURING	396.6	437.3	473.2	498.7	508.2	515.4	525.2	539.3	552.0	563.0	582.1
MINING	42.8	47.4	52.4	59.6	63.5	67.4	71.3	75.4	79.7	84.0	88.6
PRIVATE UTILITIES	331.8	368.0	399.1	418.0	424.4	428.5	435.5	446.5	456.1	463.9	479.2
COMMERCIAL & OTHER	22.0	21.9	21.7	21.1	20.3	19.4	18.4	17.4	16.2	15.2	14.3
STATE & LOCAL GOVT.	66.2	93.3	125.7	150.1	175.4	201.5	228.0	253.7	270.8	285.7	305.9
GOVT.-OWNED UTILITIES	46.0	52.8	57.9	62.8	67.1	71.1	75.7	81.1	85.8	90.4	96.0
MOBILE SOURCE CONTROLS	880.4	643.1	446.9	303.0	188.2	108.1	41.7	-14.5	-62.0	-102.9	-141.3

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

BASELINE: 1960-1962

TABLE 31
 INCREMENTAL OPERATING & MAINTENANCE FOR WATER
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	217.2	335.2	478.7	631.3	781.2	988.6	1215.3	1424.5	1597.0	1769.7
ALL INDUSTRY	231.6	331.0	436.5	545.4	651.8	790.4	937.3	1069.4	1173.4	1241.5
MANUFACTURING IND.	204.7	289.7	379.0	461.5	547.4	664.4	788.6	902.5	977.2	1018.4
PRIMARY METALS	29.5	39.3	46.8	53.1	63.0	77.4	95.0	113.3	125.2	133.0
ELEC. MACHINERY	19.6	24.7	29.3	36.1	42.2	44.7	47.7	51.0	53.1	54.7
NON-ELEC. MACH.	5.4	7.7	11.5	16.4	20.7	24.6	28.2	33.5	38.4	42.2
TRANSP. EQUIP.	3.9	8.3	12.1	17.5	19.6	22.9	25.6	29.1	32.2	37.9
STONE, CLAY, GLASS	7.3	9.2	10.9	12.4	13.8	15.8	17.5	19.6	22.2	22.7
OTHER DURABLES	41.0	51.6	60.9	68.2	75.6	86.5	97.0	105.9	108.1	108.0
FOOD & BEVERAGE	11.4	20.8	31.9	48.2	65.2	83.3	100.0	114.3	129.2	140.6
TEXTILES	8.6	9.8	11.9	14.5	15.9	17.2	18.9	20.3	20.4	19.9
PAPER	15.5	22.9	34.1	40.5	45.9	55.4	69.0	78.4	81.5	84.2
CHEMICALS	26.5	39.6	57.1	70.9	86.6	113.1	143.3	170.8	184.8	184.6
PETROLEUM	24.0	42.3	55.8	63.9	75.7	96.7	117.2	135.3	150.2	159.6
RUBBER	7.4	8.5	10.3	12.4	14.3	16.0	17.5	18.6	18.3	17.5
OTHER NONDURABLES	4.6	5.1	6.3	7.6	8.7	10.9	11.8	12.5	13.8	13.7
NONMANUFACTURING	26.8	41.2	57.5	83.8	104.4	126.0	148.7	166.8	196.3	223.1
MINING	7.5	11.3	15.2	22.1	27.0	31.1	37.2	43.2	58.2	73.2
PRIVATE UTILITIES	2.8	4.6	6.2	9.4	12.1	14.3	17.1	20.0	24.1	28.1
COMMERCIAL & OTHER	16.6	25.3	36.1	52.4	65.4	80.6	94.4	103.6	114.0	121.8
STATE & LOCAL GOVT.	-15.1	3.4	41.1	84.3	127.3	195.9	275.3	352.1	419.9	524.1
GOVT.-OWNED UTILITIES	0.7	0.9	1.2	1.6	2.0	2.4	2.7	3.1	3.7	4.0

TABLE 31
 INCREMENTAL OPERATING & MAINTENANCE FOR WATER
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	1931.0	2064.5	2114.8	2126.3	2091.4	2046.5	2004.0	1902.4	1785.4	1683.3	1617.5
ALL INDUSTRY	1293.0	1310.7	1289.7	1265.4	1228.0	1194.3	1169.9	1119.0	1066.0	1034.5	1047.6
MANUFACTURING IND.	1048.4	1056.5	1028.2	1000.9	963.7	939.1	916.4	866.7	814.9	778.4	796.8
PRIMARY METALS	138.7	137.1	133.2	131.1	132.2	135.9	136.5	133.6	127.9	121.0	127.7
ELEC. MACHINERY	54.2	53.1	51.1	49.8	49.0	46.3	44.8	47.0	49.1	51.6	55.3
NON-ELEC. MACH.	45.3	49.6	51.1	52.8	53.5	53.7	54.9	56.8	59.4	60.7	63.1
TRANSP. EQUIP.	41.8	46.3	48.7	51.3	51.2	50.2	52.8	54.7	57.5	59.3	61.2
STONE, CLAY, GLASS	22.5	22.0	20.1	18.9	17.9	17.2	16.7	15.7	15.0	14.2	12.8
OTHER DURABLES	104.2	99.3	90.7	82.8	77.4	74.6	72.4	67.2	62.9	61.5	66.9
FOOD & BEVERAGE	152.0	155.4	157.0	155.2	152.5	145.1	137.5	129.2	122.8	119.1	115.4
TEXTILES	19.9	19.4	16.9	16.4	15.0	13.2	12.7	12.5	11.9	12.0	13.4
PAPER	84.4	81.7	75.3	70.2	59.7	54.3	49.9	41.5	29.5	21.5	20.5
CHEMICALS	182.6	181.0	174.4	161.6	147.0	136.6	124.4	101.9	75.9	52.9	48.6
PETROLEUM	170.9	179.7	181.5	182.5	181.6	187.3	190.3	185.2	181.6	182.5	188.1
RUBBER	17.3	17.3	14.9	14.3	13.1	11.7	10.7	10.0	9.7	10.0	11.7
OTHER NONDURABLES	14.7	14.6	13.4	14.0	13.5	13.0	12.7	11.5	11.7	12.3	12.2
NONMANUFACTURING	244.6	254.2	261.4	264.6	264.3	255.3	253.6	252.3	251.2	256.1	250.8
MINING	83.4	90.2	96.9	104.2	109.6	112.8	118.9	126.6	133.3	141.0	140.7
PRIVATE UTILITIES	30.9	33.0	34.8	35.5	36.4	36.0	36.2	37.1	37.5	37.9	37.5
COMMERCIAL & OTHER	130.3	131.0	129.7	124.9	118.3	106.5	98.4	88.6	80.3	77.1	72.6
STATE & LOCAL GOVT.	633.7	749.4	820.7	856.4	858.9	847.8	829.8	779.2	715.2	644.6	566.0
GOVT.-OWNED UTILITIES	4.2	4.4	4.4	4.5	4.5	4.4	4.2	4.2	4.2	4.2	3.9

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

BASELINE: 1960-1962

TABLE 32
 INCREMENTAL OPERATING & MAINTENANCE FOR SOLID WASTE
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	12.2	13.5	14.9	99.3	197.8	284.1	368.6	464.3	547.4	697.9
ALL INDUSTRY	12.1	13.4	14.7	91.9	183.2	258.3	342.8	435.0	512.1	640.6
MANUFACTURING IND.	11.4	12.5	13.7	79.0	158.2	223.8	288.1	342.3	392.5	457.6
PRIMARY METALS	-0.2	-0.3	-0.3	18.4	43.7	75.1	75.1	84.9	93.5	99.9
ELEC. MACHINERY	-0.1	-0.1	-0.1	6.3	6.3	11.9	12.0	16.1	19.4	21.7
NON-ELEC. MACH.	-0.0	0.0	-0.0	4.7	8.4	11.9	15.0	17.5	19.6	20.4
TRANSP. EQUIP.	9.3	10.1	11.1	19.2	32.9	39.2	51.6	66.4	82.6	99.1
STONE, CLAY, GLASS	0.0	0.0	0.0	0.1	0.1	0.1	2.2	4.0	5.3	6.0
OTHER DURABLES	0.0	-0.0	0.0	1.3	2.3	3.5	4.4	4.9	5.2	5.2
FOOD & BEVERAGE	0.0	-0.0	-0.0	5.0	9.0	12.7	15.4	17.6	22.1	25.8
TEXTILES	-0.0	0.0	0.0	0.7	1.2	1.8	2.3	2.6	2.8	2.9
PAPER	-0.0	-0.0	-0.0	0.8	1.0	3.0	3.0	6.2	7.3	11.9
CHEMICALS	2.5	2.8	3.1	3.5	4.0	5.7	11.8	15.1	17.8	20.3
PETROLEUM	-0.1	-0.0	-0.1	18.1	44.9	50.6	86.1	93.0	101.0	120.6
RUBBER	-0.0	-0.1	-0.0	0.6	1.2	2.2	3.0	7.8	7.8	11.5
OTHER NONDURABLES	0.0	0.0	-0.0	0.1	3.2	6.1	6.3	6.3	8.3	12.5
NONMANUFACTURING	0.7	0.9	1.0	12.9	25.0	34.5	54.6	92.7	119.6	183.0
MINING	-0.0	0.0	0.0	3.6	3.6	10.6	24.1	60.4	83.7	141.0
PRIVATE UTILITIES	0.8	0.9	1.0	1.2	1.4	1.6	1.8	2.1	3.0	3.1
COMMERCIAL & OTHER	-0.1	-0.1	-0.1	8.1	19.9	22.3	28.7	30.2	32.9	38.8
STATE & LOCAL GOVT.	0.0	0.0	0.0	7.2	14.4	25.6	25.6	29.0	34.9	56.9
GOVT.-OWNED UTILITIES	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.4

TABLE 32
 INCREMENTAL OPERATING & MAINTENANCE FOR SOLID WASTE
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
	====	====	====	====	====	====	====	====	====	====	====
TOTAL	866.8	1037.8	1213.2	1357.5	1513.7	1680.3	1853.4	2031.7	2215.4	2402.7	2590.5
ALL INDUSTRY	774.3	886.6	977.2	1067.7	1167.9	1277.1	1392.1	1511.1	1634.0	1759.3	1885.4
MANUFACTURING IND.	538.4	610.5	655.7	717.8	773.9	835.8	900.5	966.5	1033.6	1100.6	1166.6
PRIMARY METALS	118.9	141.6	151.4	167.5	182.8	200.2	218.4	237.1	255.7	274.4	292.9
ELEC. MACHINERY	27.9	33.2	38.1	38.5	44.0	49.8	55.9	62.1	68.4	74.7	81.0
NON-ELEC. MACH.	20.9	20.8	27.3	33.3	35.4	37.7	40.0	42.4	44.9	47.4	49.8
TRANSP. EQUIP.	100.9	111.4	110.5	118.4	120.3	122.3	124.1	125.5	126.6	127.3	127.5
STONE, CLAY, GLASS	6.7	7.6	10.6	11.6	13.0	14.7	16.4	18.1	19.8	21.6	23.3
OTHER DURABLES	6.2	7.4	8.8	8.8	9.9	11.1	12.3	13.7	15.0	16.4	17.8
FOOD & BEVERAGE	25.8	30.1	34.5	38.7	41.2	43.7	46.2	48.7	51.1	53.4	55.7
TEXTILES	2.9	2.9	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.0
PAPER	18.3	28.8	33.4	40.8	46.2	52.3	58.8	65.8	73.3	81.2	89.4
CHEMICALS	28.2	41.2	42.8	42.6	48.4	54.7	61.6	69.0	77.0	85.2	93.6
PETROLEUM	153.3	153.1	159.2	175.0	186.5	198.9	211.7	224.6	237.3	249.7	261.6
RUBBER	15.1	18.4	21.5	24.4	27.5	31.2	35.2	39.4	43.7	48.2	52.8
OTHER NONDURABLES	13.4	14.0	14.6	15.1	15.6	16.1	16.6	17.1	17.6	18.0	18.3
NONMANUFACTURING	235.9	276.1	321.5	349.9	394.0	441.3	491.6	544.7	600.4	658.6	718.7
MINING	190.3	230.5	276.2	302.4	346.3	393.3	443.6	497.0	553.2	612.4	673.6
PRIVATE UTILITIES	3.4	3.6	3.5	3.8	3.9	4.0	4.1	4.2	4.2	4.3	4.4
COMMERCIAL & OTHER	42.1	42.0	41.8	43.6	43.9	44.0	43.9	43.5	42.9	42.0	40.8
STATE & LOCAL GOVT.	92.0	150.7	235.6	289.3	345.2	402.6	460.7	519.9	580.7	642.7	704.4
GOVT.-OWNED UTILITIES	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

TABLE 38
ANNUALIZED CAPITAL INVESTMENT PLUS O&M FOR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	12780.7	14098.2	15664.1	17631.8	18613.9	19387.5	20040.9	20798.5	21502.3	22351.9
ALL INDUSTRY	4529.9	5063.5	5681.8	6527.4	7405.5	8384.3	9336.9	10245.5	11080.7	11952.8
MANUFACTURING IND.	3642.1	4048.5	4477.7	5053.5	5687.2	6438.6	7122.7	7739.5	8265.9	8782.7
PRIMARY METALS	590.6	648.7	718.9	848.0	988.5	1165.9	1302.2	1425.9	1522.1	1613.6
ELEC. MACHINERY	101.3	118.1	133.1	162.3	183.1	200.9	212.5	229.4	243.8	257.9
NON-ELEC. MACH.	82.2	92.8	105.1	127.7	146.3	163.1	178.7	197.5	216.4	233.0
TRANSF. EQUIP.	405.0	427.2	449.5	491.2	529.1	552.6	581.0	619.0	665.9	726.1
STONE, CLAY, GLASS	92.9	111.1	127.7	149.8	176.1	201.0	220.1	238.1	261.4	279.5
OTHER DURABLES	198.2	234.3	267.1	305.9	344.6	386.8	423.5	454.1	471.2	485.8
FOOD & BEVERAGE	195.3	221.3	253.7	301.5	346.5	393.7	436.8	475.1	522.1	557.1
TEXTILES	46.4	50.2	57.2	65.5	72.2	79.3	85.2	91.2	94.9	98.4
PAPER	196.1	222.6	266.6	309.6	356.5	415.7	469.3	514.6	538.4	571.0
CHEMICALS	607.3	665.0	739.6	806.8	888.2	999.0	1122.9	1235.2	1306.7	1351.9
PETROLEUM	1049.2	1172.7	1260.9	1371.4	1521.0	1725.4	1924.4	2076.9	2226.9	2395.7
RUBBER	44.7	48.6	56.7	66.4	76.4	85.4	92.3	105.8	112.8	121.7
OTHER NONDURABLES	33.0	36.0	41.6	47.6	58.7	69.7	73.9	76.7	83.3	90.9
NONMANUFACTURING	887.8	1015.0	1204.1	1473.9	1718.3	1945.7	2214.1	2506.0	2814.9	3170.1
MINING	167.2	183.0	203.2	236.0	263.6	297.5	351.5	429.7	514.7	639.1
PRIVATE UTILITIES	447.3	523.3	652.5	816.0	969.7	1109.3	1270.2	1451.1	1634.3	1827.4
COMMERCIAL & OTHER	273.3	308.7	348.4	421.9	485.1	539.0	592.4	625.2	665.8	703.6
STATE & LOCAL GOVT.	6574.2	6726.3	6930.0	7159.7	7386.1	7687.0	7994.5	8283.3	8548.0	8897.9
GOVT.-OWNED UTILITIES	207.7	214.3	221.7	234.1	248.1	258.6	274.5	293.2	314.6	337.3
MOBILE SOURCE CONTROLS	1468.9	2094.1	2830.5	3710.6	3574.1	3057.7	2435.0	1976.5	1558.9	1163.9

JULY 7, 1983

TABLE 38
ANNUALIZED CAPITAL INVESTMENT PLUS O&M FOR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	23347.4	24296.9	24993.0	25494.5	25990.9	26505.4	27058.5	27579.6	28073.7	28648.0	29320.4
ALL INDUSTRY	12804.2	13512.0	14036.2	14460.3	14904.5	15358.5	15855.2	16346.1	16822.8	17371.7	18018.4
MANUFACTURING IND.	9312.4	9748.1	10004.7	10206.6	10436.5	10678.3	10941.1	11181.2	11408.1	11680.8	12038.9
PRIMARY METALS	1709.3	1770.4	1802.7	1822.6	1864.4	1912.5	1959.5	1995.1	2007.0	2028.6	2055.7
ELEC. MACHINERY	276.0	292.2	305.2	312.6	328.6	344.0	360.6	381.1	401.4	422.3	444.4
NON-ELEC. MACH.	248.2	262.5	281.9	300.5	313.3	326.9	342.5	359.2	376.3	393.8	410.1
TRANSP. EQUIP.	778.8	828.2	853.9	889.9	911.7	937.0	968.7	1004.1	1044.5	1083.3	1121.9
STONE, CLAY, GLASS	298.1	307.7	312.1	315.0	321.0	328.1	334.4	338.8	341.0	341.6	341.3
OTHER DURABLES	495.4	503.4	505.4	502.3	506.6	514.3	521.9	526.1	529.7	535.2	547.9
FOOD & BEVERAGE	586.6	613.0	638.0	655.3	671.5	681.4	690.9	698.4	705.4	714.2	723.8
TEXTILES	103.5	106.0	104.7	105.2	105.7	106.2	108.3	110.8	113.0	116.0	119.7
PAPER	598.4	622.4	628.4	644.2	638.4	633.6	626.3	617.2	620.0	632.5	656.5
CHEMICALS	1398.3	1460.9	1477.1	1468.1	1470.4	1472.8	1469.4	1462.2	1440.9	1457.4	1502.7
PETROLEUM	2595.6	2747.4	2856.8	2945.0	3053.7	3164.3	3293.5	3415.4	3546.8	3662.8	3812.7
RUBBER	128.1	134.4	137.1	140.3	143.9	148.1	153.7	159.8	166.1	173.6	181.1
OTHER NONDURABLES	96.1	99.7	101.8	105.6	107.2	109.0	111.5	113.2	116.0	119.5	121.0
NONMANUFACTURING	3491.9	3764.0	4031.5	4253.7	4468.0	4680.2	4914.0	5164.8	5414.8	5690.9	5979.5
MINING	747.7	841.9	939.6	1023.8	1116.9	1213.9	1319.4	1430.8	1546.9	1670.5	1793.8
PRIVATE UTILITIES	2009.2	2176.7	2339.9	2472.7	2602.0	2734.1	2876.7	3031.3	3190.6	3355.9	3534.8
COMMERCIAL & OTHER	735.0	745.4	752.0	757.2	749.0	732.2	717.9	702.7	677.4	664.6	650.9
STATE & LOCAL GOVT.	9297.6	9750.9	10096.7	10294.7	10439.7	10557.7	10656.5	10716.5	10754.8	10793.4	10827.7
GOVT.-OWNED UTILITIES	365.1	390.9	413.2	436.5	458.6	481.1	505.1	531.5	558.1	586.0	615.6
MOBILE SOURCE CONTROLS	880.4	643.1	446.9	303.0	188.2	108.1	41.7	-14.5	-62.0	-102.9	-141.3

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

TABLE 39
ANNUALIZED CAPITAL INVESTMENT PLUS O&M FOR AIR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	2898.1	3792.2	4877.0	6220.3	6542.7	6533.5	6367.1	6337.0	6320.9	6339.0
ALL INDUSTRY	1256.9	1520.5	1863.0	2317.9	2768.0	3266.1	3695.2	4089.8	4465.1	4855.0
MANUFACTURING IND.	961.0	1157.2	1373.9	1673.2	1978.4	2341.9	2620.6	2861.2	3092.2	3328.2
PRIMARY METALS	206.6	244.9	301.9	396.6	483.8	589.7	685.0	758.7	820.7	882.3
ELEC. MACHINERY	19.8	25.4	30.4	38.0	45.9	51.7	56.1	60.2	64.0	68.3
NON-ELEC. MACH.	26.5	31.6	36.1	42.9	47.5	51.5	55.3	59.8	65.9	71.4
TRANSP. EQUIP.	101.6	112.2	121.4	135.9	145.1	150.3	155.1	160.5	170.6	185.2
STONE, CLAY, GLASS	50.6	64.7	77.4	95.5	118.4	138.8	150.9	161.3	175.5	189.3
OTHER DURABLES	48.0	61.4	73.5	93.0	113.2	130.2	142.4	151.2	158.5	166.6
FOOD & BEVERAGE	28.0	33.7	43.4	53.6	60.9	69.7	77.4	84.8	96.7	103.4
TEXTILES	2.7	3.3	4.8	6.2	8.7	12.0	13.0	15.0	16.8	19.4
PAPER	41.5	49.0	64.1	87.1	115.2	143.4	159.3	171.4	180.2	190.4
CHEMICALS	153.7	177.9	210.7	239.9	270.4	304.5	339.1	375.2	401.6	420.1
PETROLEUM	270.3	338.9	389.6	457.8	533.7	657.4	740.0	810.5	882.8	968.2
RUBBER	6.5	8.0	11.6	15.0	19.4	23.3	25.7	30.4	35.9	39.8
OTHER NONDURABLES	5.1	6.2	9.0	11.7	16.3	19.3	21.2	22.1	22.9	23.6
NONMANUFACTURING	295.9	363.3	489.1	644.7	789.6	924.2	1074.6	1228.6	1372.9	1526.8
MINING	17.1	22.1	31.3	42.6	53.9	62.5	77.6	89.0	103.2	119.2
PRIVATE UTILITIES	221.1	268.0	369.2	484.5	597.1	702.4	820.3	953.2	1070.9	1199.4
COMMERCIAL & OTHER	57.7	73.3	88.6	117.6	138.6	159.3	176.7	186.5	198.9	208.1
STATE & LOCAL GOVT.	32.3	32.9	33.6	34.2	34.7	37.3	53.3	73.4	87.1	93.5
GOVT.-OWNED UTILITIES	140.0	144.7	149.9	157.6	165.9	172.4	183.6	197.2	209.9	226.7
MOBILE SOURCE CONTROLS	1468.9	2094.1	2830.5	3710.6	3574.1	3057.7	2435.0	1976.5	1558.9	1163.9

JULY 7, 1983

TABLE 39
ANNUALIZED CAPITAL INVESTMENT PLUS O&M FOR AIR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	6483.2	6618.5	6718.4	6767.1	6876.3	6990.7	7131.5	7274.6	7373.9	7505.5	7683.4
ALL INDUSTRY	5228.7	5541.0	5773.0	5911.9	6081.7	6220.3	6369.7	6509.5	6604.9	6726.4	6884.5
MANUFACTURING IND.	3549.8	3716.3	3807.4	3825.9	3894.5	3933.6	3976.6	4001.4	3990.3	3993.2	4016.7
PRIMARY METALS	937.3	966.2	981.1	980.3	993.9	1005.7	1017.0	1018.1	995.8	981.3	957.3
ELEC. MACHINERY	73.9	79.3	83.0	85.6	90.1	94.7	98.9	102.8	106.0	108.8	111.6
NON-ELEC. MACH.	76.3	79.1	83.6	87.8	91.3	95.2	99.1	102.8	105.4	108.8	109.3
TRANSF. EQUIP.	208.5	220.1	231.2	241.4	249.7	259.3	269.7	281.8	295.6	308.1	320.2
STONE, CLAY, GLASS	204.6	211.8	213.8	215.8	220.1	224.6	227.8	229.5	228.6	226.3	223.6
OTHER DURABLES	172.5	177.4	181.8	183.8	187.3	190.6	192.6	193.4	191.9	189.0	186.0
FOOD & BEVERAGE	108.8	117.2	126.9	133.9	141.5	146.7	151.4	153.5	152.5	150.1	148.5
TEXTILES	23.2	25.1	25.6	26.0	27.5	28.9	30.7	32.4	34.0	35.7	36.7
PAPER	195.9	199.0	199.5	201.0	192.7	178.2	159.2	140.7	135.0	133.2	134.8
CHEMICALS	430.6	450.9	453.0	439.7	433.0	419.9	401.9	385.8	352.2	348.6	353.1
PETROLEUM	1052.6	1121.8	1157.7	1159.5	1195.3	1216.9	1253.9	1284.9	1317.5	1326.7	1361.2
RUBBER	41.5	42.8	43.9	44.1	44.8	45.5	46.5	47.4	47.8	48.5	47.7
OTHER NONDURABLES	24.3	25.4	26.3	27.1	27.3	27.4	27.9	28.2	28.0	28.1	26.8
NONMANUFACTURING	1678.9	1824.7	1965.6	2086.0	2187.1	2286.7	2393.1	2508.1	2614.5	2733.2	2867.9
MINING	135.4	150.3	166.4	188.5	202.5	216.4	230.2	242.5	254.6	267.9	284.2
PRIVATE UTILITIES	1327.2	1456.7	1579.9	1675.4	1766.7	1860.3	1962.0	2073.4	2188.1	2306.5	2437.1
COMMERCIAL & OTHER	216.3	217.7	219.3	222.0	218.0	210.0	200.8	192.2	171.8	158.9	146.5
STATE & LOCAL GOVT.	124.6	162.1	207.1	240.8	276.0	312.4	349.4	386.2	414.8	442.0	474.7
GOVT.-OWNED UTILITIES	249.5	272.2	291.4	311.5	330.4	349.9	370.6	393.4	416.2	440.0	465.5
MOBILE SOURCE CONTROLS	880.4	643.1	446.9	303.0	188.2	108.1	41.7	-14.5	-62.0	-102.9	-141.3

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

TABLE 40
ANNUALIZED CAPITAL INVESTMENT PLUS O&M FOR WATER
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	6440.7	6802.1	7228.4	7694.6	8164.7	8777.2	9433.4	10045.7	10591.5	11171.0
ALL INDUSTRY	1716.6	1955.6	2201.6	2468.3	2740.5	3081.9	3448.5	3788.5	4083.6	4335.7
MANUFACTURING IND.	1513.5	1704.1	1899.8	2081.2	2284.4	2559.7	2849.9	3117.1	3304.7	3450.8
PRIMARY METALS	239.8	258.9	272.5	285.9	308.7	341.0	377.9	414.5	436.8	456.8
ELEC. MACHINERY	47.4	57.3	66.1	79.0	90.6	95.6	101.7	108.6	114.0	119.1
NON-ELEC. MACH.	26.0	30.4	37.4	46.4	54.5	61.9	68.7	78.4	87.2	94.8
TRANSP. EQUIP.	125.4	134.9	144.2	157.6	165.5	173.7	180.4	190.2	199.9	215.7
STONE, CLAY, GLASS	19.9	24.0	27.7	31.3	34.4	38.8	42.8	47.7	54.4	56.7
OTHER DURABLES	104.2	125.8	145.1	160.6	176.0	198.4	220.4	240.2	248.1	253.2
FOOD & BEVERAGE	88.9	106.6	127.0	156.2	186.6	218.5	248.1	273.8	300.5	321.5
TEXTILES	24.8	27.5	32.3	37.8	41.0	43.8	47.8	51.2	52.5	53.1
PAPER	124.5	143.3	171.9	189.6	206.6	233.2	269.6	296.6	308.3	321.6
CHEMICALS	336.6	367.6	407.2	441.5	485.6	553.1	627.3	692.8	728.7	745.0
PETROLEUM	346.5	395.3	430.1	450.6	484.4	543.8	602.6	656.6	704.8	743.4
RUBBER	18.9	20.9	24.5	28.8	32.5	35.9	38.9	41.4	41.8	41.6
OTHER NONDURABLES	10.5	11.6	13.7	16.0	18.1	22.0	23.6	25.0	27.6	28.2
NONMANUFACTURING	203.1	251.5	301.9	387.1	456.1	522.3	598.6	671.4	779.0	884.8
MINING	32.8	40.8	48.7	62.4	72.6	81.8	95.1	108.8	140.1	171.9
PRIVATE UTILITIES	118.3	143.2	166.6	209.6	246.0	276.5	315.2	357.4	414.2	472.8
COMMERCIAL & OTHER	52.0	67.5	86.6	115.0	137.5	163.9	188.3	205.2	224.7	240.2
STATE & LOCAL GOVT.	4669.0	4790.0	4968.5	5163.9	5356.7	5624.3	5910.0	6178.1	6421.1	6743.8
GOVT.-OWNED UTILITIES	55.1	56.6	58.2	62.4	67.5	70.9	74.9	79.1	86.8	91.5

TABLE 40
ANNUALIZED CAPITAL INVESTMENT PLUS O&M FOR WATER
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	11735.8	12262.9	12594.8	12844.6	13016.0	13178.0	13338.5	13449.6	13559.4	13700.6	13880.9
ALL INDUSTRY	4564.5	4729.6	4838.9	4956.2	5052.2	5167.8	5301.1	5424.5	5563.8	5739.5	5968.6
MANUFACTURING IND.	3594.9	3705.9	3761.4	3829.7	3879.8	3955.2	4038.2	4107.6	4189.6	4298.7	4468.7
PRIMARY METALS	473.6	478.3	483.8	488.2	498.5	513.3	526.1	536.7	546.4	557.4	583.1
ELEC. MACHINERY	122.1	124.5	126.3	128.7	131.8	133.5	136.5	143.7	151.0	159.0	168.3
NON-ELEC. MACH.	102.0	111.0	116.3	121.9	126.7	131.6	137.9	145.4	154.1	162.1	171.6
TRANSP. EQUIP.	230.3	245.6	254.9	267.5	274.3	281.5	293.5	307.1	323.1	338.6	353.9
STONE, CLAY, GLASS	58.2	59.1	57.7	57.3	57.2	57.5	58.1	58.3	58.8	59.2	59.0
OTHER DURABLES	254.3	254.5	249.7	244.6	243.6	245.8	249.0	249.8	252.1	257.6	270.2
FOOD & BEVERAGE	342.8	352.7	360.7	364.6	368.7	368.6	368.7	369.1	371.8	377.9	384.1
TEXTILES	54.1	54.5	52.7	53.0	52.3	51.5	52.0	53.0	53.7	55.1	57.8
PAPER	331.3	334.3	331.4	333.2	326.6	325.9	326.3	323.7	318.9	318.9	326.6
CHEMICALS	762.2	779.7	785.4	784.4	781.8	784.5	785.3	778.3	772.6	773.6	794.6
PETROLEUM	791.9	838.1	871.5	914.3	946.9	990.6	1033.6	1071.6	1114.5	1163.7	1220.2
RUBBER	41.9	42.8	40.7	40.5	39.8	39.1	38.9	39.1	39.8	41.1	43.9
OTHER NONDURABLES	30.4	30.8	30.1	31.6	31.7	31.8	32.2	31.8	33.0	34.5	35.5
NONMANUFACTURING	969.6	1023.7	1077.5	1126.6	1172.3	1212.5	1262.9	1316.9	1374.2	1440.7	1499.9
MINING	194.8	211.4	228.1	247.4	263.3	278.0	296.2	317.0	337.7	360.3	375.9
PRIVATE UTILITIES	520.3	552.7	587.7	619.3	653.0	687.0	723.8	763.2	804.0	846.9	890.8
COMMERCIAL & OTHER	254.5	259.5	261.7	259.8	256.0	247.5	242.9	236.7	232.5	233.5	233.2
STATE & LOCAL GOVT.	7076.3	7436.6	7657.6	7788.1	7861.7	7906.3	7931.5	7916.8	7884.8	7847.6	7796.1
GOVT.-OWNED UTILITIES	95.0	96.8	98.2	100.3	102.1	104.0	106.0	108.3	110.8	113.5	116.2

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

TABLE 41
ANNUALIZED CAPITAL INVESTMENT PLUS O&M FOR SOLID WASTE
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	3441.9	3503.9	3558.7	3717.0	3906.6	4076.9	4240.4	4415.8	4589.8	4842.0
ALL INDUSTRY	1556.4	1587.5	1617.2	1741.2	1897.1	2036.3	2193.2	2367.2	2532.0	2762.2
MANUFACTURING IND.	1167.6	1187.2	1204.0	1299.1	1424.4	1537.1	1652.2	1761.2	1869.0	2003.7
PRIMARY METALS	144.1	144.9	144.5	165.5	196.1	235.2	239.3	252.8	264.6	274.5
ELEC. MACHINERY	34.1	35.5	36.6	45.3	46.7	53.7	54.7	60.6	65.8	70.4
NON-ELEC. MACH.	29.7	30.7	31.6	38.4	44.3	49.7	54.7	59.3	63.3	66.8
TRANSP. EQUIP.	177.9	180.1	183.9	197.7	218.6	228.6	245.5	268.2	295.4	325.3
STONE, CLAY, GLASS	22.5	22.3	22.5	23.0	23.3	23.4	26.4	29.1	31.5	33.5
OTHER DURABLES	46.0	47.1	48.5	52.3	55.4	58.2	60.7	62.8	64.6	65.9
FOOD & BEVERAGE	78.4	81.0	83.2	91.7	99.0	105.5	111.3	116.4	124.9	132.2
TEXTILES	18.8	19.4	20.1	21.4	22.5	23.5	24.3	25.0	25.6	26.0
PAPER	30.1	30.3	30.7	32.8	34.6	39.0	40.4	46.6	49.9	59.0
CHEMICALS	117.0	119.5	121.7	125.4	132.1	141.4	156.5	167.1	176.4	186.8
PETROLEUM	432.4	438.6	441.2	463.0	502.9	524.2	581.7	609.8	639.3	684.1
RUBBER	19.3	19.7	20.5	22.7	24.6	26.2	27.7	34.0	35.1	40.2
OTHER NONDURABLES	17.4	18.1	18.9	19.9	24.4	28.5	29.1	29.6	32.7	39.0
NONMANUFACTURING	388.8	400.2	413.2	442.1	472.6	499.3	540.9	606.0	663.0	758.5
MINING	117.3	120.2	123.2	130.9	137.0	153.3	178.8	232.0	271.4	348.0
PRIVATE UTILITIES	107.9	112.1	116.7	121.9	126.6	130.3	134.7	140.5	149.3	155.3
COMMERCIAL & OTHER	163.6	168.0	173.2	189.3	209.0	215.7	227.4	233.5	242.3	255.3
STATE & LOCAL GOVT.	1872.9	1903.4	1927.9	1961.6	1994.7	2025.4	2031.3	2031.8	2039.8	2060.6
GOVT.-OWNED UTILITIES	12.6	13.0	13.6	14.2	14.8	15.2	16.0	16.8	18.0	19.2

JULY 7, 1983

TABLE 41
ANNUALIZED CAPITAL INVESTMENT PLUS O&M FOR SOLID WASTE
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	5128.4	5415.6	5679.8	5882.9	6098.6	6336.8	6588.5	6855.4	7140.4	7442.0	7756.1
ALL INDUSTRY	3011.0	3241.4	3424.3	3592.3	3770.6	3970.5	4184.4	4412.1	4654.1	4905.8	5165.3
MANUFACTURING IND.	2167.6	2325.9	2435.9	2551.1	2662.1	2789.4	2926.3	3072.3	3228.1	3388.8	3553.5
PRIMARY METALS	298.4	325.9	337.8	354.1	372.0	393.5	416.5	440.3	464.8	489.8	515.3
ELEC. MACHINERY	80.0	88.3	95.9	98.4	106.7	115.8	125.1	134.6	144.4	154.5	164.5
NON-ELEC. MACH.	69.9	72.3	82.0	90.9	95.3	100.2	105.5	111.0	116.8	122.9	129.2
TRANSP. EQUIP.	340.0	362.6	367.8	381.0	387.7	396.2	405.5	415.2	425.8	436.7	447.9
STONE, CLAY, GLASS	35.3	36.8	40.7	41.9	43.7	46.0	48.4	50.9	53.5	56.1	58.7
OTHER DURABLES	68.6	71.5	73.9	73.9	75.7	77.9	80.3	82.9	85.7	88.6	91.8
FOOD & BEVERAGE	135.1	143.1	150.3	156.8	161.3	166.1	170.9	175.9	181.1	186.2	191.3
TEXTILES	26.2	26.3	26.3	26.2	26.0	25.8	25.5	25.4	25.3	25.2	25.2
PAPER	71.2	89.1	97.5	110.1	119.1	129.6	140.8	152.8	166.1	180.3	195.1
CHEMICALS	205.4	230.2	238.6	244.0	255.6	268.3	282.2	298.1	316.1	335.2	355.0
PETROLEUM	751.1	787.5	827.5	871.2	911.5	956.8	1005.9	1058.8	1114.9	1172.3	1231.3
RUBBER	44.8	48.8	52.4	55.7	59.3	63.6	68.3	73.3	78.6	84.0	89.6
OTHER NONDURABLES	41.5	43.5	45.4	47.0	48.2	49.8	51.4	53.1	55.0	56.8	58.7
NONMANUFACTURING	843.4	915.5	988.4	1041.2	1108.5	1181.0	1258.1	1339.8	1426.0	1517.0	1611.8
MINING	417.6	480.1	545.1	587.9	651.1	719.5	792.9	871.3	954.5	1042.3	1133.7
PRIVATE UTILITIES	161.7	167.3	172.4	178.0	182.4	186.8	190.9	194.7	198.5	202.5	206.9
COMMERCIAL & OTHER	264.1	268.1	270.9	275.4	275.0	274.7	274.2	273.7	273.0	272.2	271.2
STATE & LOCAL GOVT.	2096.7	2152.2	2232.0	2265.8	2302.0	2339.1	2375.6	2413.5	2455.2	2503.8	2557.0
GOVT.-OWNED UTILITIES	20.7	22.0	23.5	24.8	26.0	27.3	28.5	29.8	31.1	32.4	33.9

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

BASELINE: 1960-1962

TABLE 46
 INCREMENTAL ANNUALIZED INVESTMENT PLUS O&M FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	2066.7	3228.6	4661.4	6480.5	7279.8	7888.6	8404.3	9042.7	9615.6	10336.2
ALL INDUSTRY	588.4	1049.8	1601.4	2362.2	3119.4	3971.9	4794.7	5563.5	6259.0	6970.8
MANUFACTURING IND.	487.4	843.8	1231.3	1750.2	2289.9	2941.0	3525.4	4038.5	4464.1	4859.7
PRIMARY METALS	86.3	141.6	212.6	338.0	467.2	628.6	751.2	865.9	955.5	1041.1
ELEC. MACHINERY	31.6	46.2	59.4	86.3	105.0	121.6	131.7	146.7	159.0	170.4
NON-ELEC. MACH.	14.9	23.4	33.8	53.9	69.1	83.3	96.1	111.8	127.7	139.4
TRANSP. EQUIP.	19.5	37.6	52.5	82.3	106.5	122.7	144.2	168.6	196.0	231.1
STONE, CLAY, GLASS	27.8	45.9	61.9	83.2	108.8	133.3	151.8	169.0	190.8	206.9
OTHER DURABLES	67.8	101.6	131.7	166.6	202.2	242.1	276.6	304.7	319.2	331.4
FOOD & BEVERAGE	23.2	43.9	71.8	114.9	155.2	198.5	236.8	270.5	312.3	341.9
TEXTILES	13.2	16.2	22.2	29.6	35.7	42.6	48.0	53.7	57.0	60.1
PAPER	31.5	56.5	98.5	136.8	176.7	229.6	278.0	318.0	337.0	363.6
CHEMICALS	58.0	102.0	165.0	216.2	271.7	354.2	451.2	543.2	601.8	626.1
PETROLEUM	93.9	203.7	285.2	392.9	523.5	697.6	863.2	975.4	1085.5	1211.3
RUBBER	12.5	15.8	22.7	30.6	39.0	47.2	53.3	65.7	71.2	78.8
OTHER NONDURABLES	7.4	9.4	14.0	18.9	29.3	39.6	43.3	45.4	51.2	57.5
NONMANUFACTURING	101.0	206.1	370.1	612.0	829.4	1030.9	1269.3	1525.0	1795.0	2111.1
MINING	15.0	27.2	43.5	71.6	91.8	115.3	156.1	217.8	285.9	393.3
PRIVATE UTILITIES	49.6	113.2	228.6	377.3	518.3	647.6	796.8	963.2	1131.0	1308.0
COMMERCIAL & OTHER	36.4	65.7	98.0	163.1	219.3	268.1	316.5	344.0	378.1	409.8
STATE & LOCAL GOVT.	-5.3	60.2	193.7	356.0	517.1	775.8	1072.2	1379.1	1650.1	2029.4
GOVT.-OWNED UTILITIES	14.6	24.5	35.8	51.8	69.2	83.3	102.3	123.7	147.6	172.2
MOBILE SOURCE CONTROLS	1468.9	2094.1	2830.5	3710.6	3574.1	3057.7	2435.0	1976.5	1558.9	1163.9

TABLE 46
 INCREMENTAL ANNUALIZED INVESTMENT PLUS O&M FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	11190.0	12019.0	12642.7	13112.9	13570.0	14001.3	14457.7	14848.2	15189.0	15570.6	16008.1
ALL INDUSTRY	7646.0	8177.9	8558.7	8872.5	9209.4	9516.3	9856.6	10167.8	10457.3	10797.9	11202.3
MANUFACTURING IND.	5250.1	5547.5	5693.0	5815.2	5958.1	6084.5	6225.2	6323.0	6402.5	6510.0	6672.4
PRIMARY METALS	1131.1	1192.1	1229.0	1259.5	1311.5	1353.6	1391.4	1414.9	1413.1	1419.7	1431.1
ELEC. MACHINERY	184.8	197.6	207.7	212.2	225.1	237.2	251.0	268.9	287.3	306.5	323.9
NON-ELEC. MACH.	149.7	159.2	174.5	189.2	198.0	207.2	218.1	230.1	243.2	255.8	265.2
TRANSP. EQUIP.	255.1	280.6	291.9	316.5	327.9	339.8	356.1	371.9	389.1	405.4	419.0
STONE, CLAY, GLASS	223.9	232.8	237.2	240.5	247.1	255.1	263.9	272.0	280.5	289.0	288.1
OTHER DURABLES	338.7	344.8	345.9	342.9	346.8	354.5	363.5	369.9	378.0	389.5	399.4
FOOD & BEVERAGE	366.0	387.7	409.8	425.3	438.8	446.0	454.9	458.5	461.7	465.8	470.8
TEXTILES	64.8	67.2	66.2	67.2	68.2	69.1	71.5	74.3	76.3	79.1	82.6
PAPER	384.3	404.9	405.1	414.3	403.5	392.9	380.0	363.8	357.6	359.9	373.0
CHEMICALS	649.3	683.5	673.0	638.9	623.7	609.5	590.0	563.7	525.5	509.7	521.9
PETROLEUM	1356.6	1443.2	1495.3	1544.9	1598.6	1644.6	1702.4	1745.4	1793.5	1824.2	1885.3
RUBBER	84.8	90.8	93.5	96.8	100.8	105.5	111.1	117.3	123.1	130.0	136.9
OTHER NONDURABLES	61.1	63.2	64.1	67.0	68.3	69.6	71.3	72.2	73.5	75.4	75.2
NONMANUFACTURING	2396.0	2630.4	2865.7	3057.4	3251.3	3431.7	3631.4	3844.8	4054.8	4287.9	4529.9
MINING	483.0	555.0	635.2	703.6	779.0	855.4	938.8	1026.4	1116.9	1213.5	1308.3
PRIVATE UTILITIES	1475.5	1629.0	1777.3	1897.5	2015.6	2135.6	2265.3	2405.9	2550.4	2699.8	2861.0
COMMERCIAL & OTHER	437.4	446.4	453.2	456.3	456.7	440.7	427.2	412.5	387.6	374.7	360.5
STATE & LOCAL GOVT.	2462.3	2969.0	3384.7	3660.8	3872.5	4053.4	4210.6	4318.8	4390.0	4443.4	4484.5
GOVT.-OWNED UTILITIES	201.2	228.9	252.3	276.6	299.9	323.5	348.8	376.2	403.7	432.4	462.6
MOBILE SOURCE CONTROLS	880.4	643.1	446.9	303.0	188.2	108.1	41.7	-14.5	-62.0	-102.9	-141.3

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

BASELINE: 1960-1962

TABLE 47
 INCREMENTAL ANNUALIZED INVESTMENT PLUS O&M FOR AIR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	1732.0	2602.7	3667.5	4986.0	5276.0	5234.2	5033.9	4969.2	4922.5	4907.5
ALL INDUSTRY	250.9	488.9	808.4	1235.8	1650.4	2113.0	2505.4	2862.6	3204.6	3559.0
MANUFACTURING IND.	192.5	370.6	572.7	853.6	1131.6	1466.4	1716.0	1927.5	2133.9	2342.3
PRIMARY METALS	44.3	80.8	137.3	230.2	312.8	412.4	501.0	569.8	628.0	687.2
ELEC. MACHINERY	7.3	12.5	17.3	24.6	32.2	37.9	42.1	45.9	49.4	53.4
NON-ELEC. MACH.	7.4	11.9	15.8	21.9	25.5	28.8	31.8	35.4	40.6	44.7
TRANSP. EQUIP.	4.6	13.6	20.2	30.7	35.5	38.3	40.5	41.2	44.6	50.9
STONE, CLAY, GLASS	17.8	31.8	44.2	62.0	84.6	104.8	116.6	126.6	140.3	153.4
OTHER DURABLES	14.7	27.6	39.2	58.1	77.6	94.2	106.0	114.3	121.1	128.7
FOOD & BEVERAGE	6.9	11.8	20.9	30.2	36.8	45.0	51.8	58.4	69.5	75.3
TEXTILES	1.0	1.5	3.0	4.4	6.8	10.1	11.1	13.1	14.9	17.4
PAPER	6.8	13.7	28.2	49.8	76.0	102.7	117.5	129.1	137.8	148.8
CHEMICALS	20.8	37.8	64.9	87.8	110.7	137.2	164.7	196.2	222.8	239.2
PETROLEUM	56.7	120.7	168.6	235.2	305.3	420.5	494.0	553.3	614.6	688.5
RUBBER	2.7	4.1	7.7	10.9	15.2	19.0	21.4	26.0	31.4	35.2
OTHER NONDURABLES	1.6	2.7	5.4	8.0	12.5	15.5	17.4	18.2	18.9	19.5
NONMANUFACTURING	58.4	118.3	235.7	382.1	518.9	646.5	789.4	935.0	1070.7	1216.7
MINING	5.6	10.2	19.1	30.0	40.7	48.5	62.7	72.9	86.0	101.0
PRIVATE UTILITIES	36.9	77.8	172.3	280.4	386.7	486.9	599.1	725.3	836.0	957.5
COMMERCIAL & OTHER	15.8	30.3	44.3	71.8	91.4	111.2	127.7	136.9	148.7	158.2
STATE & LOCAL GOVT.	0.3	0.5	0.8	1.1	1.4	3.9	20.0	40.4	54.4	61.1
GOVT.-OWNED UTILITIES	12.0	19.2	27.8	38.6	50.0	59.6	73.6	89.7	104.7	123.5
MOBILE SOURCE CONTROLS	1468.9	2094.1	2830.5	3710.6	3574.1	3057.7	2435.0	1976.5	1558.9	1163.9

TABLE 47
 INCREMENTAL ANNUALIZED INVESTMENT PLUS O&M FOR AIR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	5022.6	5133.5	5212.8	5252.6	5357.1	5444.8	5558.2	5668.6	5747.9	5852.8	5980.3
ALL INDUSTRY	3901.7	4187.2	4396.5	4524.9	4688.5	4799.0	4919.6	5025.6	5100.0	5194.3	5301.3
MANUFACTURING IND.	2538.4	2681.9	2753.5	2766.7	2826.4	2843.6	2864.9	2864.0	2840.8	2826.0	2809.1
PRIMARY METALS	740.8	773.3	794.3	802.1	829.3	838.5	845.5	840.8	813.1	794.1	766.2
ELEC. MACHINERY	58.4	63.5	66.8	69.2	73.5	78.2	83.1	88.0	93.2	98.5	100.9
NON-ELEC. MACH.	48.1	49.4	52.7	55.7	58.1	60.8	63.6	66.6	69.7	73.1	71.9
TRANSP. EQUIP.	65.2	68.9	75.1	81.9	87.7	94.4	101.6	109.1	117.0	125.3	131.0
STONE, CLAY, GLASS	168.2	175.1	177.2	179.6	184.5	190.2	196.3	202.1	208.0	213.9	211.1
OTHER DURABLES	134.1	138.6	142.9	145.1	149.1	153.5	158.2	163.0	168.1	173.5	170.2
FOOD & BEVERAGE	79.8	87.6	96.8	103.6	110.8	116.0	122.8	124.8	124.0	121.3	119.3
TEXTILES	21.2	23.2	23.7	24.2	25.9	27.7	29.7	31.7	33.2	35.0	36.0
PAPER	156.4	163.1	162.7	162.7	153.4	137.9	118.4	98.8	91.6	88.3	88.1
CHEMICALS	248.7	261.6	254.3	232.9	221.3	205.6	185.3	167.3	139.7	130.9	130.8
PETROLEUM	760.6	818.2	845.6	846.9	869.1	874.3	891.8	900.7	911.8	900.3	913.9
RUBBER	36.8	38.2	39.4	39.8	41.0	42.3	43.7	45.1	45.5	46.1	45.3
OTHER NONDURABLES	20.1	21.1	22.1	23.0	23.7	24.4	25.1	25.9	25.7	25.7	24.3
NONMANUFACTURING	1363.3	1505.2	1643.0	1758.2	1862.1	1955.4	2054.7	2161.6	2259.3	2368.3	2492.2
MINING	116.2	130.1	145.8	167.9	181.6	194.2	206.6	217.4	227.9	239.6	254.3
PRIVATE UTILITIES	1079.2	1202.7	1319.6	1409.8	1496.4	1584.7	1680.4	1784.6	1891.5	2001.5	2123.1
COMMERCIAL & OTHER	168.0	172.4	177.6	180.4	184.1	176.5	167.8	159.7	139.9	127.2	114.8
STATE & LOCAL GOVT.	92.8	130.8	176.2	210.4	246.0	282.6	319.8	356.6	385.1	412.0	444.3
GOVT.-OWNED UTILITIES	147.7	172.4	193.2	214.2	234.4	255.0	277.0	300.9	324.8	349.5	376.0
MOBILE SOURCE CONTROLS	880.4	643.1	446.9	303.0	188.2	108.1	41.7	-14.5	-62.0	-102.9	-141.3

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

BASELINE: 1960-1962

TABLE 48
 INCREMENTAL ANNUALIZED INVESTMENT PLUS O&M FOR WATER
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	321.7	611.0	976.9	1378.7	1772.8	2322.7	2939.3	3531.9	4052.5	4612.8
ALL INDUSTRY	324.7	546.2	776.3	1020.3	1257.0	1560.6	1891.9	2197.5	2460.2	2670.5
MANUFACTURING IND.	283.2	460.2	644.2	807.6	979.2	1220.4	1479.8	1718.0	1878.9	1989.5
PRIMARY METALS	42.2	61.1	75.6	87.7	106.9	134.5	168.5	203.8	225.8	245.3
ELEC. MACHINERY	24.4	33.8	42.1	54.5	65.6	70.3	76.1	82.7	87.7	92.5
NON-ELEC. MACH.	7.5	11.5	18.0	26.5	33.8	40.6	46.8	56.0	64.3	71.0
TRANSP. EQUIP.	5.4	13.6	20.9	31.0	35.1	41.5	46.8	54.0	59.9	70.1
STONE, CLAY, GLASS	9.9	14.0	17.6	21.1	24.2	28.5	32.4	37.3	43.8	45.9
OTHER DURABLES	53.1	74.0	92.5	106.8	121.5	143.2	164.7	183.8	191.2	195.8
FOOD & BEVERAGE	16.3	32.1	51.0	78.6	107.4	138.1	166.2	190.6	215.7	235.1
TEXTILES	12.2	14.6	19.1	24.4	27.5	30.2	34.1	37.5	38.8	39.3
PAPER	24.8	42.8	70.4	85.8	99.2	122.5	156.0	179.8	188.5	197.3
CHEMICALS	34.5	61.1	96.7	124.5	156.4	210.0	271.4	327.3	355.7	360.3
PETROLEUM	37.3	83.1	116.7	136.8	166.4	218.7	270.0	314.9	354.4	383.7
RUBBER	9.8	11.7	15.1	19.0	22.5	25.7	28.5	30.9	31.1	30.7
OTHER NONDURABLES	5.7	6.7	8.6	10.8	12.8	16.6	18.2	19.5	22.0	22.5
NONMANUFACTURING	41.5	86.0	132.1	212.7	277.8	340.1	412.1	479.4	581.3	681.0
MINING	9.4	16.9	24.4	37.7	47.1	55.3	67.2	79.2	108.9	138.9
PRIVATE UTILITIES	11.5	33.6	53.9	93.7	127.3	155.5	191.5	230.5	283.7	338.5
COMMERCIAL & OTHER	20.6	35.5	53.8	81.3	103.3	129.3	153.3	169.7	188.7	203.6
STATE & LOCAL GOVT.	-5.5	59.7	192.8	345.5	497.1	739.0	1019.4	1301.3	1550.9	1895.1
GOVT.-OWNED UTILITIES	2.5	5.1	7.7	12.8	18.7	23.1	28.0	33.1	41.5	47.2

TABLE 48
 INCREMENTAL ANNUALIZED INVESTMENT PLUS O&M FOR WATER
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	5151.1	5661.4	5992.9	6248.0	6412.1	6554.6	6688.1	6751.8	6789.4	6836.6	6915.8
ALL INDUSTRY	2848.2	2962.4	3030.2	3109.6	3166.6	3235.8	3321.2	3386.6	3456.8	3554.3	3701.8
MANUFACTURING IND.	2088.3	2154.4	2174.0	2209.2	2225.0	2259.4	2300.1	2317.9	2337.6	2375.9	2472.0
PRIMARY METALS	261.0	264.7	270.1	275.1	284.2	297.1	307.7	315.4	320.7	325.5	344.1
ELEC. MACHINERY	94.9	96.7	98.0	99.7	102.1	102.8	104.8	110.8	116.8	123.4	131.2
NON-ELEC. MACH.	77.3	85.5	90.0	94.8	98.7	102.5	107.7	113.8	120.8	126.9	134.5
TRANSF. EQUIP.	77.9	87.8	93.7	102.6	105.9	108.7	115.6	121.9	129.5	136.3	143.5
STONE, CLAY, GLASS	47.3	48.1	46.6	46.2	46.1	46.3	46.8	46.9	47.2	47.5	47.2
OTHER DURABLES	196.3	196.2	191.2	185.9	184.5	186.1	188.6	188.4	189.5	193.7	204.9
FOOD & BEVERAGE	254.6	263.2	270.8	274.3	277.4	276.3	275.1	273.6	274.3	278.1	282.0
TEXTILES	40.2	40.6	38.9	39.2	38.5	37.6	38.0	38.8	39.2	40.4	42.9
PAPER	201.0	199.4	193.3	191.5	182.1	178.0	175.0	168.1	157.8	151.5	152.4
CHEMICALS	363.2	367.2	361.7	349.2	337.7	330.6	322.1	303.6	282.0	263.6	264.2
PETROLEUM	419.1	448.3	465.9	495.9	513.8	540.1	565.3	584.0	605.6	632.6	665.4
RUBBER	30.9	31.8	29.8	29.5	28.8	28.0	27.7	27.7	28.2	29.3	31.8
OTHER NONDURABLES	24.5	24.8	24.0	25.3	25.3	25.3	25.6	24.9	25.8	27.1	27.8
NONMANUFACTURING	759.9	808.0	856.2	900.4	941.6	976.4	1021.1	1068.8	1119.2	1178.4	1229.8
MINING	159.9	174.2	189.1	206.8	220.9	233.5	249.7	268.3	286.7	307.0	320.0
PRIVATE UTILITIES	382.6	411.7	443.2	471.7	502.6	533.5	566.7	602.3	639.0	677.5	716.6
COMMERCIAL & OTHER	217.4	222.1	224.0	221.8	218.1	209.4	204.6	198.1	193.4	193.9	193.2
STATE & LOCAL GOVT.	2251.3	2644.5	2905.6	3078.3	3182.5	3252.8	3297.9	3292.7	3256.7	3202.6	3130.8
GOVT.-OWNED UTILITIES	51.6	54.5	57.1	60.1	63.1	66.0	69.1	72.4	75.9	79.7	83.3

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

BASELINE: 1960-1962

TABLE 49
 INCREMENTAL ANNUALIZED INVESTMENT PLUS O&M FOR SOLID WASTE
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	12.9	14.9	17.1	115.8	231.0	331.8	431.1	541.7	640.6	815.9
ALL INDUSTRY	12.8	14.7	16.7	106.1	211.9	298.3	397.5	503.4	594.3	741.2
MANUFACTURING IND.	11.6	12.9	14.4	89.0	179.1	254.1	329.7	392.9	451.3	527.9
PRIMARY METALS	-0.2	-0.3	-0.3	20.0	47.5	81.7	81.7	92.3	101.6	108.6
ELEC. MACHINERY	-0.1	-0.1	-0.1	7.1	7.1	13.4	13.5	18.1	21.8	24.5
NON-ELEC. MACH.	-0.0	0.0	-0.0	5.5	9.8	13.9	17.4	20.3	22.8	23.7
TRANSP. EQUIP.	9.5	10.4	11.5	20.6	35.9	42.9	56.8	73.4	91.6	110.1
STONE, CLAY, GLASS	0.0	0.0	0.0	0.1	0.1	0.1	2.8	5.1	6.7	7.6
OTHER DURABLES	-0.0	-0.0	0.0	1.7	3.1	4.7	5.9	6.6	6.9	6.9
FOOD & BEVERAGE	0.0	-0.0	-0.1	6.1	11.0	15.5	18.8	21.5	27.1	31.6
TEXTILES	-0.0	0.0	0.0	0.8	1.4	2.2	2.8	3.1	3.3	3.4
PAPER	-0.0	-0.0	-0.0	1.2	1.4	4.4	4.4	9.1	10.8	17.6
CHEMICALS	2.6	3.0	3.4	4.0	4.6	6.9	15.1	19.6	23.3	26.6
PETROLEUM	-0.1	-0.0	-0.1	20.9	51.8	58.3	99.3	107.2	116.5	139.1
RUBBER	-0.0	-0.1	-0.0	0.7	1.4	2.5	3.3	8.8	8.8	12.9
OTHER NONDURABLES	0.0	0.0	-0.0	0.1	4.0	7.6	7.8	7.8	10.2	15.4
NONMANUFACTURING	1.1	1.8	2.4	17.1	32.8	44.2	67.8	110.5	143.0	213.3
MINING	-0.0	0.0	0.0	3.9	3.9	11.5	26.2	65.6	91.0	153.3
PRIVATE UTILITIES	1.2	1.8	2.4	3.2	4.3	5.2	6.2	7.5	11.4	12.0
COMMERCIAL & OTHER	-0.1	-0.1	-0.1	10.0	24.6	27.6	35.5	37.3	40.6	48.0
STATE & LOCAL GOVT.	0.0	0.0	0.0	9.3	18.6	32.8	32.8	37.3	44.9	73.2
GOVT.-OWNED UTILITIES	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.4	1.5

TABLE 49
 INCREMENTAL ANNUALIZED INVESTMENT PLUS O&M FOR SOLID WASTE
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	1016.3	1224.1	1437.0	1612.3	1800.8	2002.0	2211.4	2427.8	2651.7	2881.3	3112.0
ALL INDUSTRY	896.1	1028.3	1132.1	1238.0	1354.4	1481.5	1615.8	1755.5	1900.5	2049.3	2199.2
MANUFACTURING IND.	623.4	711.2	765.6	839.2	906.7	981.5	1060.2	1141.1	1224.2	1308.0	1391.3
PRIMARY METALS	129.2	154.0	164.7	182.2	199.0	218.0	238.1	258.7	279.3	300.1	320.8
ELEC. MACHINERY	31.5	37.4	42.9	43.4	49.5	56.2	63.1	70.1	77.3	84.6	91.8
NON-ELEC. MACH.	24.3	24.2	31.7	38.7	41.2	43.9	46.8	49.7	52.7	55.7	58.8
TRANSP. EQUIP.	112.1	123.9	123.0	132.0	134.3	136.7	139.0	140.9	142.6	143.8	144.5
STONE, CLAY, GLASS	8.5	9.6	13.4	14.8	16.5	18.6	20.8	23.0	25.3	27.5	29.7
OTHER DURABLES	8.3	9.9	11.8	11.8	13.3	14.9	16.7	18.5	20.4	22.3	24.3
FOOD & BEVERAGE	31.6	36.9	42.3	47.5	50.6	53.8	57.0	60.1	63.3	66.4	69.5
TEXTILES	3.4	3.4	3.6	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.7
PAPER	26.9	42.3	49.1	60.1	67.9	76.9	86.6	96.9	108.2	120.1	132.5
CHEMICALS	37.3	54.8	57.0	56.8	64.7	73.3	82.7	92.8	103.8	115.2	126.9
PETROLEUM	176.9	176.6	183.8	202.1	215.6	230.2	245.3	260.7	276.1	291.3	306.0
RUBBER	17.1	20.7	24.2	27.5	31.1	35.2	39.7	44.5	49.4	54.6	59.8
OTHER NONDURABLES	16.5	17.3	18.1	18.7	19.3	20.0	20.7	21.3	22.0	22.6	23.1
NONMANUFACTURING	272.7	317.1	366.5	398.8	447.6	499.9	555.6	614.4	676.3	741.2	807.9
MINING	206.9	250.6	300.3	328.8	376.5	427.7	482.5	540.7	602.2	666.9	734.1
PRIVATE UTILITIES	13.8	14.6	14.5	15.9	16.7	17.4	18.2	19.0	19.9	20.7	21.2
COMMERCIAL & OTHER	52.0	51.9	51.7	54.0	54.5	54.8	54.9	54.7	54.2	53.5	52.6
STATE & LOCAL GOVT.	118.3	193.8	302.9	372.1	444.1	518.0	592.9	669.4	748.2	828.8	909.5
GOVT.-OWNED UTILITIES	1.8	2.0	2.0	2.2	2.4	2.5	2.7	2.9	3.0	3.2	3.3

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

TABLE 55
TOTAL STOCK OF CAPITAL EQUIPMENT FOR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	49023.7	52567.0	57006.5	62424.6	67788.9	74010.4	80046.6	85626.6	90686.1	96231.5
ALL INDUSTRY	16901.0	19521.5	22654.5	26657.5	30637.4	35060.8	39213.8	43154.0	46786.7	50207.8
MANUFACTURING IND.	12835.9	14674.4	16646.5	19044.4	21592.7	24720.5	27401.9	29839.4	31838.4	33599.8
PRIMARY METALS	2081.7	2354.0	2691.0	3226.9	3775.9	4460.9	5075.4	5583.8	5968.4	6312.2
ELEC. MACHINERY	351.7	429.2	498.4	608.3	706.3	768.8	820.5	876.4	919.8	961.2
NON-ELEC. MACH.	301.0	352.5	409.7	497.4	565.5	626.7	683.2	754.8	831.4	896.9
TRANSP. EQUIP.	1250.9	1356.7	1454.8	1611.3	1717.5	1790.8	1856.7	1941.6	2054.5	2226.1
STONE, CLAY, GLASS	477.8	593.4	697.9	838.0	1007.1	1165.3	1269.5	1364.1	1489.6	1584.8
OTHER DURABLES	919.2	1118.9	1299.0	1518.8	1741.0	1970.0	2159.7	2307.4	2379.0	2432.4
FOOD & BEVERAGE	587.9	641.5	727.1	858.1	981.9	1157.4	1268.2	1400.2	1599.8	1752.0
TEXTILES	162.4	180.4	214.7	253.0	285.9	322.1	347.6	374.7	387.6	398.3
PAPER	990.4	1145.0	1404.6	1660.6	1942.8	2282.4	2580.8	2808.1	2912.0	3042.0
CHEMICALS	2210.0	2425.9	2715.3	2972.8	3261.0	3664.3	4085.0	4539.8	4825.1	4968.6
PETROLEUM	3265.3	3808.8	4200.7	4597.8	5117.2	5941.3	6638.4	7220.1	7755.7	8275.9
RUBBER	133.8	151.0	187.2	226.0	267.8	304.8	331.3	371.7	400.5	420.3
OTHER NONDURABLES	103.7	117.2	146.1	175.5	222.9	265.7	285.8	296.6	315.1	329.1
NONMANUFACTURING	4065.1	4847.1	6008.0	7613.1	9044.7	10340.3	11811.9	13314.6	14948.3	16607.9
MINING	301.8	363.6	445.8	568.1	672.2	764.8	913.4	1063.0	1295.8	1562.6
PRIVATE UTILITIES	2930.3	3480.9	4376.8	5534.4	6608.6	7567.8	8673.6	9900.5	11147.2	12418.5
COMMERCIAL & OTHER	833.1	1002.6	1185.3	1510.6	1763.9	2007.7	2224.9	2351.1	2505.3	2626.9
STATE & LOCAL GOVT.	30848.1	31724.4	32978.5	34302.6	35582.9	37305.0	39077.7	40592.7	41875.6	43861.6
GOVT.-OWNED UTILITIES	1274.6	1321.1	1373.5	1464.4	1568.7	1644.8	1755.1	1880.0	2023.8	2162.2

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TABLE 55
TOTAL STOCK OF CAPITAL EQUIPMENT FOR
POLLUTION CONTROL, 1970-1990
MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	101590.0	106526.5	109439.4	110679.4	111109.7	111105.3	111252.7	110806.4	109839.9	109540.1	109766.7
ALL INDUSTRY	53256.8	55698.3	57104.2	57772.7	58237.9	58559.4	59091.3	59577.4	59673.7	60368.5	61734.2
MANUFACTURING IND.	35226.9	36425.0	36742.4	36754.9	36882.6	37117.0	37369.4	37386.6	37088.0	37365.5	38299.4
PRIMARY METALS	6608.5	6724.5	6723.5	6641.7	6681.4	6743.7	6763.0	6752.5	6708.0	6680.7	6787.8
ELEC. MACHINERY	998.8	1028.7	1038.6	1041.8	1067.2	1080.1	1101.1	1152.1	1202.6	1256.3	1318.7
NON-ELEC. MACH.	953.2	1002.2	1049.0	1094.7	1123.2	1150.5	1186.0	1227.6	1275.4	1317.1	1367.5
TRANSP. EQUIP.	2425.5	2558.3	2646.1	2745.6	2807.8	2875.2	2983.7	3103.0	3242.1	3375.5	3504.7
STONE, CLAY, GLASS	1680.4	1713.1	1697.0	1680.9	1681.2	1685.7	1689.7	1681.3	1670.3	1653.1	1624.4
OTHER DURABLES	2435.7	2417.7	2356.5	2277.1	2233.8	2214.3	2197.0	2149.7	2110.1	2094.5	2139.0
FOOD & BEVERAGE	1869.5	1973.0	2046.1	2077.1	2133.3	2085.9	2083.5	2062.4	1969.4	1951.5	1952.9
TEXTILES	422.8	429.4	404.5	400.0	392.4	382.9	386.5	393.2	396.1	406.7	429.7
PAPER	3125.2	3148.5	3065.7	3011.0	2840.1	2745.6	2667.2	2550.1	2413.7	2354.1	2408.6
CHEMICALS	5067.5	5284.9	5327.8	5289.7	5209.5	5120.3	4980.9	4804.0	4344.6	4201.6	4271.4
PETROLEUM	8866.8	9353.7	9608.3	9709.6	9932.1	10258.9	10558.4	10745.1	10983.8	11288.8	11689.4
RUBBER	430.5	439.7	428.2	425.3	421.4	416.4	414.8	415.5	419.2	427.9	446.3
OTHER NONDURABLES	342.5	351.4	351.2	360.4	359.4	357.6	357.4	350.1	352.6	357.7	359.1
NONMANUFACTURING	18029.9	19273.4	20361.8	21017.8	21355.3	21442.4	21722.0	22190.9	22585.7	23002.9	23434.8
MINING	1782.6	1963.3	2146.5	2345.9	2501.2	2642.9	2812.1	3000.8	3187.1	3385.3	3520.6
PRIVATE UTILITIES	13510.4	14563.1	15480.1	15997.2	16267.1	16339.2	16562.8	16962.1	17287.7	17583.3	17958.0
COMMERCIAL & OTHER	2737.0	2747.0	2735.2	2674.8	2587.1	2460.3	2347.1	2227.9	2110.9	2034.4	1956.1
STATE & LOCAL GOVT.	46007.0	48357.0	49744.4	50192.5	50048.1	49640.6	49173.6	48118.7	46953.5	45854.4	44617.9
GOVT.-OWNED UTILITIES	2326.3	2471.3	2590.9	2714.3	2823.7	2905.3	2987.8	3110.3	3212.7	3317.2	3414.8

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

TABLE 56
 STOCK OF AIR CAPITAL EQUIPMENT FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	7184.4	8528.6	10371.3	12857.5	15278.8	17850.7	20048.9	22211.8	24267.9	26372.6
ALL INDUSTRY	6305.1	7617.2	9423.6	11857.6	14222.6	16744.7	18828.9	20853.1	22798.5	24789.4
MANUFACTURING IND.	4520.2	5399.2	6398.8	7836.5	9280.4	10951.1	12101.0	13172.3	14249.0	15336.8
PRIMARY METALS	977.0	1162.0	1437.4	1893.6	2312.5	2819.8	3265.7	3602.1	3879.9	4153.1
ELEC. MACHINERY	121.2	155.5	186.2	233.0	281.2	316.7	343.1	367.2	389.1	413.6
NON-ELEC. MACH.	167.8	200.6	229.1	273.0	302.2	327.8	351.6	380.1	418.2	451.7
TRANSF. EQUIP.	575.9	637.6	691.0	774.8	827.2	856.8	883.1	912.1	967.3	1047.6
STONE, CLAY, GLASS	337.8	432.5	517.7	638.9	791.8	927.9	1007.2	1073.5	1164.4	1249.8
OTHER DURABLES	344.4	441.0	528.0	668.2	812.9	934.3	1020.4	1080.1	1127.7	1179.1
FOOD & BEVERAGE	144.6	126.0	129.1	134.6	129.7	172.3	160.5	186.5	271.7	332.9
TEXTILES	17.8	21.8	31.7	41.0	57.2	78.9	85.5	98.2	109.8	125.8
PAPER	270.9	319.9	419.5	569.3	751.2	931.2	1026.4	1095.3	1137.7	1189.1
CHEMICALS	479.7	542.1	637.0	723.0	785.5	847.7	887.2	1021.5	1136.6	1221.8
PETROLEUM	1011.4	1272.8	1464.7	1722.4	2007.9	2473.9	2779.8	3034.6	3291.1	3592.5
RUBBER	35.8	43.8	63.7	82.3	106.4	127.9	141.1	166.3	195.8	216.5
OTHER NONDURABLES	35.8	43.8	63.7	82.3	114.6	136.1	149.3	154.8	159.7	163.4
NONMANUFACTURING	1784.9	2217.9	3024.9	4021.1	4942.2	5793.6	6727.9	7680.8	8549.6	9452.6
MINING	81.4	105.1	149.3	203.8	258.0	298.3	370.5	423.8	490.4	565.3
PRIVATE UTILITIES	1327.2	1633.8	2296.1	3048.1	3779.8	4459.1	5214.4	6058.7	6789.6	7569.8
COMMERCIAL & OTHER	376.3	479.0	579.5	769.2	904.4	1036.2	1143.0	1198.3	1269.6	1317.5
STATE & LOCAL GOVT.	82.1	83.9	85.6	87.2	88.5	95.3	138.2	192.2	228.7	245.4
GOVT.-OWNED UTILITIES	797.1	827.6	862.1	912.7	967.7	1010.7	1081.9	1166.6	1240.6	1337.8

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TABLE 56
 STOCK OF AIR CAPITAL EQUIPMENT FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	28393.0	30208.4	31514.3	32199.3	32783.4	33181.2	33674.2	34307.0	34496.1	34988.5	35781.1
ALL INDUSTRY	26592.5	28176.1	29253.7	29738.4	30128.2	30336.2	30631.3	31045.6	31067.4	31400.9	31995.9
MANUFACTURING IND.	16293.4	17020.7	17351.8	17360.0	17594.5	17699.9	17833.4	17978.5	17765.3	17888.9	18094.3
PRIMARY METALS	4387.0	4500.1	4528.5	4457.7	4473.0	4485.7	4482.3	4474.2	4446.9	4431.8	4427.8
ELEC. MACHINERY	444.5	474.1	491.4	501.3	522.2	543.8	564.7	584.7	604.4	623.4	641.3
NON-ELEC. MACH.	480.5	494.7	518.8	539.4	555.2	572.4	590.0	607.5	625.0	643.4	662.0
TRANSP. EQUIP.	1177.2	1235.8	1290.9	1342.6	1388.2	1444.0	1504.8	1568.0	1634.8	1704.8	1776.8
STONE, CLAY, GLASS	1343.5	1379.8	1377.8	1372.8	1380.6	1389.0	1393.6	1391.3	1383.1	1370.1	1352.8
OTHER DURABLES	1211.2	1233.3	1247.9	1242.3	1244.3	1244.1	1240.5	1232.3	1220.9	1206.0	1188.2
FOOD & BEVERAGE	366.7	432.8	485.8	520.0	585.4	577.1	615.2	634.8	569.8	560.5	572.2
TEXTILES	150.1	162.1	164.1	165.4	173.7	182.3	191.1	199.2	206.8	214.9	222.3
PAPER	1208.1	1202.4	1172.9	1136.4	1073.8	1012.6	956.6	905.8	872.9	855.3	850.9
CHEMICALS	1243.6	1370.2	1421.0	1452.1	1455.1	1408.2	1339.5	1319.1	1015.9	973.3	957.3
PETROLEUM	3890.8	4133.5	4242.0	4217.6	4328.1	4424.7	4538.7	4647.1	4772.7	4895.7	5036.5
RUBBER	224.2	230.0	234.5	233.5	236.0	238.1	239.9	240.8	241.1	241.3	240.4
OTHER NONDURABLES	165.9	171.7	176.1	179.0	178.9	177.8	176.4	173.7	171.0	168.4	166.1
NONMANUFACTURING	10299.2	11155.4	11901.9	12378.4	12533.7	12636.3	12797.9	13067.1	13302.1	13512.1	13901.7
MINING	639.7	707.7	780.1	879.9	937.0	995.4	1053.3	1113.6	1177.2	1240.9	1309.5
PRIVATE UTILITIES	8302.0	9091.6	9773.3	10185.3	10325.5	10418.6	10581.5	10844.5	11078.9	11280.3	11648.6
COMMERCIAL & OTHER	1357.5	1356.1	1348.4	1313.2	1271.2	1222.3	1163.2	1109.0	1046.0	990.9	943.6
STATE & LOCAL GOVT.	329.1	429.8	550.7	641.2	735.9	833.6	933.3	1030.6	1095.8	1153.8	1231.5
GOVT.-OWNED UTILITIES	1471.4	1602.6	1709.9	1819.7	1919.3	2011.3	2109.6	2230.8	2332.9	2433.8	2553.6

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

TABLE 57
 STOCK OF WATER CAPITAL EQUIPMENT FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	35741.3	37816.3	40298.0	42988.0	45656.2	49069.8	52679.2	55871.6	58625.8	61740.9
ALL INDUSTRY	8084.7	9329.8	10590.8	11984.9	13390.7	15115.2	16969.6	18664.8	20121.9	21268.7
MANUFACTURING IND.	6839.5	7772.3	8720.8	9571.8	10534.3	11860.7	13242.8	14472.0	15262.1	15763.1
PRIMARY METALS	1006.7	1093.5	1155.3	1220.7	1329.9	1480.9	1646.7	1809.6	1908.3	1972.1
ELEC. MACHINERY	198.3	240.2	277.6	332.5	381.0	401.4	425.8	452.0	468.5	481.2
NON-ELEC. MACH.	97.9	115.5	143.1	178.8	210.6	239.8	266.6	304.3	338.0	365.8
TRANSP. EQUIP.	514.8	557.0	598.2	658.5	693.5	728.2	752.5	788.0	821.2	885.7
STONE, CLAY, GLASS	100.0	121.2	140.1	158.2	173.9	195.7	215.3	238.7	269.0	275.3
OTHER DURABLES	476.8	577.5	667.5	739.0	809.7	911.4	1009.7	1093.2	1113.6	1112.8
FOOD & BEVERAGE	321.6	389.8	468.9	581.1	698.3	821.1	934.6	1032.7	1134.0	1213.7
TEXTILES	119.5	132.6	156.1	183.2	198.5	211.7	229.4	243.0	243.4	237.7
PAPER	638.9	743.8	902.7	1003.0	1098.5	1246.3	1445.6	1587.2	1639.9	1693.7
CHEMICALS	1478.5	1626.6	1816.1	1979.7	2190.9	2512.0	2860.4	3158.2	3308.5	3344.7
PETROLEUM	1766.9	2042.1	2239.1	2353.8	2542.7	2876.7	3202.7	3498.2	3743.9	3912.3
RUBBER	79.6	88.3	103.9	121.9	137.8	151.8	163.7	172.8	170.9	165.3
OTHER NONDURABLES	39.9	44.3	52.1	61.2	69.0	83.8	89.7	94.2	102.8	102.8
NONMANUFACTURING	1245.2	1557.5	1870.0	2413.2	2856.4	3254.4	3726.8	4192.8	4859.8	5505.6
MINING	140.7	176.8	212.7	275.2	321.0	362.2	421.2	481.2	620.5	760.1
PRIVATE UTILITIES	910.4	1126.7	1329.4	1700.6	2011.8	2267.5	2589.2	2934.0	3392.8	3846.2
COMMERCIAL & OTHER	194.1	254.0	327.8	437.4	523.6	624.8	716.4	777.5	846.5	899.4
STATE & LOCAL GOVT.	27259.7	28076.9	29283.2	30542.6	31760.0	33418.7	35139.5	36602.3	37837.2	39771.9
GOVT.-OWNED UTILITIES	396.9	409.7	424.0	460.5	505.5	536.0	570.1	604.5	666.7	700.3

JULY 7, 1983

TABLE 57
 STOCK OF WATER CAPITAL EQUIPMENT FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
	====	====	====	====	====	====	====	====	====	====	====
TOTAL	64692.7	67404.2	68634.9	68908.1	68470.4	67753.5	67072.8	65637.4	64099.4	62903.9	61922.7
ALL INDUSTRY	22200.3	22757.7	22865.9	22837.4	22704.3	22582.6	22565.7	22367.9	22156.1	22220.0	22686.2
MANUFACTURING IND.	16220.9	16472.2	16313.8	16171.9	15920.8	15883.5	15821.6	15501.3	15210.3	15152.0	15663.8
PRIMARY METALS	2018.2	2002.5	1965.2	1943.3	1955.5	1990.6	1997.6	1978.9	1945.2	1916.1	2010.2
ELEC. MACHINERY	478.8	471.2	456.8	447.8	444.5	427.4	418.6	440.7	462.2	487.4	522.5
NON-ELEC. MACH.	389.7	421.6	433.0	447.6	455.1	459.5	471.1	488.7	512.2	528.3	552.7
TRANSP. EQUIP.	942.4	996.4	1024.8	1060.8	1071.3	1075.2	1114.4	1161.6	1224.5	1278.2	1325.8
STONE, CLAY, GLASS	273.9	267.6	246.7	233.5	222.7	214.6	209.6	199.0	191.7	183.0	167.2
OTHER DURABLES	1078.4	1032.5	951.9	878.2	829.3	805.2	786.4	741.7	707.5	700.2	756.0
FOOD & BEVERAGE	1293.0	1317.9	1327.0	1313.9	1297.8	1251.4	1203.7	1155.5	1119.7	1103.4	1085.4
TEXTILES	237.6	232.2	205.3	199.8	184.2	166.3	161.4	160.0	155.6	158.2	173.9
PAPER	1724.8	1705.7	1629.8	1577.9	1445.5	1383.7	1330.6	1231.9	1092.6	1012.7	1032.3
CHEMICALS	3381.7	3419.3	3393.9	3313.9	3205.7	3135.4	3033.5	2842.2	2647.5	2506.8	2550.7
PETROLEUM	4129.3	4332.8	4433.9	4510.7	4577.4	4756.7	4886.6	4905.2	4955.1	5072.9	5267.4
RUBBER	163.4	162.9	143.5	138.5	128.6	117.4	109.5	104.5	102.9	106.1	120.2
OTHER NONDURABLES	109.8	109.6	102.1	106.0	103.1	100.0	98.7	91.3	93.7	98.5	99.4
NONMANUFACTURING	5979.4	6285.5	6552.0	6665.4	6783.5	6699.1	6744.1	6866.6	6945.8	7068.1	7022.4
MINING	858.2	928.2	994.7	1065.1	1120.2	1157.0	1218.3	1293.4	1359.8	1434.7	1439.7
PRIVATE UTILITIES	4165.6	4396.3	4604.7	4679.5	4787.3	4743.4	4780.1	4891.2	4956.4	5023.0	5001.1
COMMERCIAL & OTHER	955.6	961.0	952.7	920.8	875.9	798.7	745.7	682.0	629.7	610.3	581.7
STATE & LOCAL GOVT.	41771.1	43919.6	45039.2	45335.2	45028.0	44450.8	43810.7	42579.9	41261.9	40007.9	38591.7
GOVT.-OWNED UTILITIES	721.3	727.0	729.8	735.6	738.2	720.2	696.5	689.6	681.3	676.0	644.8

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

TABLE 58
 STOCK OF SOLID WASTE CAPITAL EQUIPMENT FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	6098.0	6222.0	6337.2	6579.1	6854.0	7090.0	7318.5	7543.2	7792.4	8118.1
ALL INDUSTRY	2511.2	2574.6	2640.1	2815.0	3024.1	3200.9	3415.3	3636.1	3866.3	4149.6
MANUFACTURING IND.	1476.1	1502.9	1526.9	1636.2	1778.0	1908.6	2058.1	2195.1	2327.3	2500.0
PRIMARY METALS	98.0	98.5	98.3	112.6	133.5	160.2	163.0	172.2	180.2	187.0
ELEC. MACHINERY	32.1	33.5	34.5	42.7	44.1	50.7	51.6	57.2	62.2	66.5
NON-ELEC. MACH.	35.2	36.4	37.5	45.6	52.7	59.1	65.0	70.4	75.2	79.4
TRANSP. EQUIP.	160.2	162.1	165.5	178.0	196.8	205.8	221.1	241.5	265.9	292.8
STONE, CLAY, GLASS	39.9	39.7	40.1	40.9	41.4	41.7	47.0	51.8	56.1	59.8
OTHER DURABLES	98.1	100.5	103.5	111.6	118.4	124.3	129.5	134.0	137.7	140.5
FOOD & BEVERAGE	121.6	125.7	129.1	142.5	153.9	163.9	173.0	181.0	194.2	205.4
TEXTILES	25.2	26.0	27.0	28.8	30.2	31.5	32.6	33.5	34.3	34.8
PAPER	80.6	81.3	82.4	88.2	93.0	105.0	108.7	125.5	134.4	159.3
CHEMICALS	251.8	257.2	262.1	270.1	284.6	304.7	337.4	360.2	380.0	402.1
PETROLEUM	486.9	493.9	496.9	521.5	566.6	590.7	655.8	687.4	720.7	771.1
RUBBER	18.5	18.9	19.7	21.8	23.5	25.1	26.6	32.6	33.7	38.6
OTHER NONDURABLES	27.9	29.1	30.3	32.0	39.2	45.8	46.8	47.6	52.7	62.8
NONMANUFACTURING	1035.0	1071.7	1113.2	1178.8	1246.1	1292.3	1357.2	1441.1	1539.0	1649.7
MINING	79.7	81.7	83.8	89.1	93.2	104.3	121.7	158.0	184.9	237.2
PRIVATE UTILITIES	692.7	720.4	751.3	785.8	817.0	841.3	870.0	907.8	964.8	1002.5
COMMERCIAL & OTHER	262.6	269.6	278.1	304.0	335.9	346.7	365.5	375.3	389.2	410.0
STATE & LOCAL GOVT.	3506.2	3563.7	3609.7	3672.8	3734.4	3791.0	3800.1	3798.2	3809.7	3844.3
GOVT.-OWNED UTILITIES	80.6	83.8	87.4	91.3	95.4	98.1	103.1	108.9	116.5	124.1

JULY 7, 1983

TABLE 58
 STOCK OF SOLID WASTE CAPITAL EQUIPMENT FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	8504.3	8913.8	9290.3	9572.0	9855.9	10170.6	10505.6	10862.0	11244.4	11647.6	12063.0
ALL INDUSTRY	4464.0	4764.5	4984.7	5196.9	5405.4	5640.6	5894.3	6163.8	6450.1	6747.5	7052.0
MANUFACTURING IND.	2712.6	2932.1	3076.8	3223.0	3367.2	3533.6	3714.3	3906.8	4112.3	4324.7	4541.3
PRIMARY METALS	203.3	221.9	229.8	240.8	252.9	267.5	283.2	299.4	315.9	332.8	349.8
ELEC. MACHINERY	75.5	83.3	90.4	92.6	100.5	109.0	117.8	126.7	136.1	145.5	154.9
NON-ELEC. MACH.	83.0	85.8	97.2	107.7	112.8	118.6	124.9	131.4	138.2	145.4	152.8
TRANSP. EQUIP.	306.0	326.1	330.5	342.2	348.2	356.0	364.5	373.4	382.8	392.4	402.1
STONE, CLAY, GLASS	63.0	65.7	72.5	74.6	77.9	82.0	86.5	90.9	95.4	100.0	104.5
OTHER DURABLES	146.1	151.9	156.7	156.5	160.2	164.9	170.1	175.7	181.8	188.2	194.8
FOOD & BEVERAGE	209.8	222.3	233.4	243.2	250.1	257.3	264.6	272.1	279.8	287.6	295.3
TEXTILES	35.1	35.1	35.1	34.8	34.5	34.3	34.1	33.9	33.8	33.7	33.5
PAPER	192.3	240.4	263.0	296.7	320.9	349.3	380.0	412.4	448.1	486.1	525.4
CHEMICALS	442.2	495.4	512.9	523.8	548.6	576.7	607.9	642.7	681.2	721.5	763.4
PETROLEUM	846.7	887.5	932.3	981.3	1026.5	1077.5	1133.0	1192.9	1255.9	1320.2	1385.5
RUBBER	43.0	46.7	50.2	53.3	56.8	60.9	65.4	70.2	75.2	80.5	85.7
OTHER NONDURABLES	66.7	70.0	72.9	75.4	77.4	79.8	82.4	85.1	87.9	90.8	93.5
NONMANUFACTURING	1751.3	1832.5	1907.9	1973.9	2038.2	2107.0	2180.0	2257.1	2337.8	2422.8	2510.7
MINING	284.7	327.4	371.7	400.9	444.0	490.6	540.5	593.8	650.2	709.7	771.5
PRIVATE UTILITIES	1042.8	1075.1	1102.1	1132.3	1154.2	1177.2	1201.2	1226.4	1252.5	1279.9	1308.4
COMMERCIAL & OTHER	423.9	430.0	434.1	440.8	439.9	439.2	438.3	436.9	435.2	433.2	430.9
STATE & LOCAL GOVT.	3906.8	4007.6	4154.5	4216.1	4284.3	4356.2	4429.6	4508.2	4595.8	4692.8	4794.6
GOVT.-OWNED UTILITIES	133.6	141.7	151.1	159.0	166.2	173.8	181.7	190.0	198.5	207.4	216.4

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

JULY 7, 1983

BASELINE: 1960-1962

TABLE 63
 BASELINE STOCK OF CAPITAL EQUIPMENT FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	44041.9	44747.2	45346.4	45922.7	46544.0	46993.6	47218.3	47239.7	47221.3	47106.1
ALL INDUSTRY	11810.9	12104.5	12377.1	12703.8	13109.6	13522.7	13925.7	14335.8	14712.4	15173.6
MANUFACTURING IND.	8982.7	9167.0	9316.6	9514.4	9813.4	10133.2	10433.4	10721.2	10974.1	11315.7
PRIMARY METALS	1491.5	1502.0	1500.7	1519.9	1565.4	1622.5	1660.4	1677.7	1684.8	1693.4
ELEC. MACHINERY	105.4	110.7	115.1	120.4	124.8	127.5	130.5	134.1	137.4	141.2
NON-ELEC. MACH.	192.3	199.0	205.4	213.9	224.7	232.9	241.3	250.4	258.7	272.6
TRANSP. EQUIP.	1174.5	1190.5	1217.2	1259.3	1305.4	1328.5	1346.6	1382.7	1434.2	1505.2
STONE, CLAY, GLASS	108.8	109.5	112.3	115.7	117.9	119.9	122.1	125.0	130.0	136.8
OTHER DURABLES	261.5	270.3	280.9	294.5	304.9	312.3	319.3	326.7	333.0	339.0
FOOD & BEVERAGE	439.4	451.2	462.2	474.6	487.5	500.1	512.8	524.3	537.2	549.6
TEXTILES	60.0	62.1	64.6	66.6	67.8	68.2	68.5	68.6	68.3	68.3
PAPER	640.8	649.0	659.3	683.2	718.7	749.6	774.3	800.5	823.9	860.4
CHEMICALS	1810.8	1880.5	1932.5	1987.5	2061.7	2149.7	2245.2	2312.3	2346.3	2419.5
PETROLEUM	2605.5	2646.1	2665.9	2672.2	2723.7	2808.4	2896.2	2999.7	3097.1	3202.0
RUBBER	47.0	48.4	50.5	54.1	56.8	58.2	59.5	61.2	63.5	65.4
OTHER NONDURABLES	45.4	47.6	50.0	52.6	54.3	55.6	56.7	58.1	59.7	62.3
NONMANUFACTURING	2828.2	2937.5	3060.5	3189.4	3296.2	3389.5	3492.3	3614.6	3738.3	3857.9
MINING	188.3	193.6	199.3	206.0	215.7	230.1	248.0	270.3	293.3	316.8
PRIVATE UTILITIES	2142.8	2230.1	2327.7	2427.9	2508.1	2575.2	2649.0	2736.8	2822.1	2902.1
COMMERCIAL & OTHER	497.1	513.7	533.5	555.5	572.3	584.2	595.3	607.4	622.9	639.0
STATE & LOCAL GOVT.	31208.1	31643.0	31996.9	32271.2	32509.0	32563.4	32398.6	32020.6	31635.3	31065.1
GOVT.-OWNED UTILITIES	1022.9	999.7	972.4	947.6	925.5	907.6	894.0	883.2	873.6	867.5

TABLE 63
 BASELINE STOCK OF CAPITAL EQUIPMENT FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	47004.1	46847.7	46644.3	46369.2	46297.5	46352.3	46502.6	46928.1	47561.8	48626.7	49770.2
ALL INDUSTRY	15707.1	16218.6	16652.6	16991.4	17343.8	17769.5	18196.8	18706.7	19187.1	19869.1	20597.8
MANUFACTURING IND.	11751.0	12168.9	12516.1	12797.2	13107.9	13479.7	13840.8	14256.2	14634.1	15205.2	15808.8
PRIMARY METALS	1704.1	1710.1	1704.4	1684.1	1688.1	1702.1	1719.7	1746.1	1785.4	1841.6	1906.5
ELEC. MACHINERY	147.2	152.6	157.3	162.4	169.1	176.9	184.6	193.9	204.2	215.6	227.6
NON-ELEC. MACH.	286.6	299.9	310.8	321.6	332.9	346.3	360.6	377.3	396.1	417.2	439.7
TRANSP. EQUIP.	1588.2	1652.8	1688.6	1722.3	1754.4	1796.2	1846.6	1914.6	1994.1	2076.7	2153.9
STONE,CLAY,GLASS	142.2	144.2	144.6	144.2	144.6	146.2	148.0	149.9	151.8	154.0	155.7
OTHER DURABLES	344.4	347.7	348.3	347.3	348.8	352.4	356.7	363.7	372.3	382.6	393.0
FOOD & BEVERAGE	560.7	570.6	576.6	578.3	585.7	592.0	600.0	611.6	606.5	618.1	629.0
TEXTILES	68.7	68.1	67.1	65.7	64.5	64.4	64.3	65.2	66.6	68.5	69.8
PAPER	912.0	947.8	968.7	995.5	1011.5	1032.1	1048.6	1074.4	1111.4	1155.5	1205.5
CHEMICALS	2515.5	2598.8	2693.2	2778.9	2850.2	2917.5	2963.0	3002.3	2960.6	3056.3	3162.7
PETROLEUM	3350.4	3542.5	3720.7	3858.8	4018.9	4212.4	4405.0	4609.7	4832.5	5061.8	5303.3
RUBBER	65.6	65.2	64.8	64.8	64.5	64.3	64.4	65.3	66.7	68.0	69.1
OTHER NONDURABLES	65.6	68.6	71.1	73.3	74.7	76.9	79.4	82.4	85.8	89.5	93.3
NONMANUFACTURING	3956.0	4049.7	4136.5	4194.2	4235.9	4289.8	4356.0	4450.5	4553.0	4663.9	4789.0
MINING	343.0	373.2	397.4	418.5	442.1	468.3	494.9	522.7	551.7	581.6	613.3
PRIVATE UTILITIES	2961.8	3015.8	3072.3	3105.9	3130.2	3161.6	3205.0	3273.7	3348.1	3428.9	3522.1
COMMERCIAL & OTHER	651.3	660.7	666.8	669.8	663.6	659.8	656.1	654.1	653.2	653.4	653.6
STATE & LOCAL GOVT.	30426.2	29773.3	29132.7	28507.4	28071.8	27690.4	27411.5	27320.8	27469.1	27845.4	28256.6
GOVT.-OWNED UTILITIES	870.9	855.8	859.1	870.4	881.8	892.4	894.3	900.6	905.6	912.2	915.8

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

TABLE 64
 BASELINE STOCK OF AIR CAPITAL EQUIPMENT FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	4436.1	4562.5	4667.9	4783.5	4906.5	5033.9	5177.7	5336.7	5489.1	5673.7
ALL INDUSTRY	3726.8	3868.6	3995.0	4130.0	4272.2	4415.0	4572.6	4744.3	4909.2	5103.9
MANUFACTURING IND.	2680.7	2774.5	2847.0	2925.9	3021.9	3125.7	3242.3	3368.1	3488.7	3643.3
PRIMARY METALS	645.7	654.8	657.5	666.2	687.5	716.5	740.2	753.9	764.7	776.5
ELEC. MACHINERY	26.1	27.8	29.2	31.1	32.7	33.7	34.8	36.2	37.8	39.8
NON-ELEC. MACH.	95.9	99.5	103.1	107.9	113.7	118.1	122.8	128.4	134.0	142.7
TRANSP. EQUIP.	542.1	551.6	566.8	589.8	614.2	627.7	641.5	666.5	702.3	746.8
STONE, CLAY, GLASS	51.2	52.1	53.9	56.3	58.1	59.5	61.1	63.1	66.2	70.2
OTHER DURABLES	64.0	67.0	70.6	75.2	79.2	82.0	84.8	87.8	90.8	93.6
FOOD & BEVERAGE	70.9	71.5	73.1	76.1	79.4	84.5	88.7	92.2	96.6	99.9
TEXTILES	3.8	4.0	4.3	4.5	4.6	4.7	4.8	4.9	5.0	5.0
PAPER	131.5	134.6	138.4	145.3	155.8	163.9	170.7	178.6	186.9	199.8
CHEMICALS	344.7	388.9	417.2	434.8	437.1	445.5	470.5	494.0	501.1	520.8
PETROLEUM	689.5	706.6	715.9	720.3	740.0	769.5	801.8	841.1	880.9	924.6
RUBBER	7.7	8.1	8.5	9.3	10.0	10.3	10.6	11.0	11.6	12.0
OTHER NONDURABLES	7.5	8.0	8.5	9.1	9.6	9.9	10.2	10.5	10.9	11.5
NONMANUFACTURING	1046.1	1094.1	1148.0	1204.1	1250.2	1289.3	1330.3	1376.2	1420.5	1460.6
MINING	33.3	34.8	36.4	38.5	41.3	44.9	49.5	55.1	61.0	66.9
PRIVATE UTILITIES	864.0	903.4	947.4	992.2	1028.2	1059.1	1091.3	1127.2	1159.9	1188.4
COMMERCIAL & OTHER	148.9	156.0	164.1	173.4	180.7	185.2	189.5	193.8	199.6	205.3
STATE & LOCAL GOVT.	81.3	82.4	83.4	84.1	84.6	84.6	84.1	83.0	81.9	80.3
GOVT.-OWNED UTILITIES	628.0	611.5	589.6	569.4	549.8	534.3	521.0	509.4	497.9	489.5

TABLE 64
 BASELINE STOCK OF AIR CAPITAL EQUIPMENT FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	5875.4	6047.7	6216.4	6324.4	6449.5	6601.7	6765.2	6940.0	7000.3	7199.2	7420.0
ALL INDUSTRY	5308.8	5496.6	5669.1	5773.7	5893.0	6039.9	6202.6	6373.6	6431.3	6626.2	6844.3
MANUFACTURING IND.	3819.4	3980.7	4128.7	4221.3	4335.4	4473.1	4619.5	4758.7	4780.8	4936.0	5106.8
PRIMARY METALS	788.6	794.4	791.7	775.7	776.3	785.5	799.7	817.0	836.7	859.2	884.7
ELEC. MACHINERY	42.3	44.4	46.3	48.1	50.0	52.1	54.2	56.5	58.9	61.4	63.9
NON-ELEC. MACH.	151.1	159.4	166.2	172.2	178.4	185.8	194.0	202.7	212.1	222.4	233.3
TRANSP. EQUIP.	795.1	834.0	856.2	872.3	889.3	912.7	939.6	968.6	1000.8	1035.5	1072.2
STONE, CLAY, GLASS	73.2	74.6	74.9	74.8	75.0	75.8	76.7	77.5	78.4	79.3	80.3
OTHER DURABLES	96.2	98.3	99.2	99.3	99.9	100.9	102.1	103.4	105.0	106.8	108.7
FOOD & BEVERAGE	101.7	104.9	109.5	111.1	114.6	116.8	119.9	122.4	108.5	109.1	109.9
TEXTILES	5.1	5.1	5.0	4.9	4.8	4.7	4.7	4.6	4.6	4.6	4.6
PAPER	215.6	227.2	233.8	239.0	241.7	246.6	251.8	257.4	265.1	273.8	283.5
CHEMICALS	543.5	559.0	601.8	631.8	662.1	688.9	707.2	706.4	592.5	589.2	593.4
PETROLEUM	982.6	1054.4	1118.6	1166.0	1216.9	1276.7	1342.7	1414.5	1489.9	1565.8	1642.6
RUBBER	12.2	12.3	12.3	12.2	12.2	12.2	12.2	12.2	12.3	12.5	12.6
OTHER NONDURABLES	12.2	12.8	13.3	13.7	14.0	14.4	14.8	15.3	15.9	16.5	17.1
NONMANUFACTURING	1489.4	1515.8	1540.3	1552.4	1557.6	1566.8	1583.1	1614.9	1650.5	1690.2	1737.5
MINING	73.4	80.8	86.7	91.9	97.4	103.3	109.6	116.1	123.0	130.2	137.6
PRIVATE UTILITIES	1206.8	1223.0	1240.2	1246.9	1250.0	1256.2	1268.8	1296.5	1327.3	1361.3	1402.0
COMMERCIAL & OTHER	209.3	212.0	213.5	213.6	210.3	207.3	204.7	202.3	200.3	198.8	197.9
STATE & LOCAL GOVT.	78.5	76.7	75.0	73.3	72.2	71.4	70.8	70.7	71.4	72.7	74.0
GOVT.-OWNED UTILITIES	488.1	474.5	472.4	477.3	484.3	490.4	491.8	495.6	497.6	500.3	501.6

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

TABLE 65
 BASELINE STOCK OF WATER CAPITAL EQUIPMENT FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	33550.0	34010.9	34395.9	34736.5	35101.8	35310.8	35289.0	35051.7	34765.7	34350.0
ALL INDUSTRY	5612.4	5706.4	5792.9	5913.5	6091.3	6280.0	6436.0	6569.0	6666.8	6805.6
MANUFACTURING IND.	4842.3	4907.6	4962.4	5051.6	5205.6	5370.3	5500.2	5602.2	5670.8	5782.6
PRIMARY METALS	747.6	748.5	744.7	754.8	776.8	801.5	812.9	814.6	809.3	804.0
ELEC. MACHINERY	47.0	49.3	51.2	53.3	54.7	55.8	56.9	57.9	58.1	58.1
NON-ELEC. MACH.	61.2	63.0	64.7	67.0	69.9	72.3	74.3	75.9	76.6	78.8
TRANSP. EQUIP.	481.6	487.0	496.1	511.0	527.7	534.5	536.3	541.9	549.6	565.8
STONE, CLAY, GLASS	17.7	17.9	18.3	18.8	18.7	18.9	19.1	19.3	19.7	20.5
OTHER DURABLES	99.3	102.8	106.9	111.5	114.0	116.1	117.7	119.1	119.3	119.7
FOOD & BEVERAGE	246.9	254.0	259.9	265.5	271.4	275.9	280.6	284.7	288.8	293.7
TEXTILES	31.0	32.1	33.5	34.5	34.8	35.0	34.9	34.4	33.5	33.1
PAPER	428.6	432.9	438.5	453.0	473.7	492.7	506.9	521.1	531.8	549.0
CHEMICALS	1221.6	1242.6	1262.2	1292.9	1351.7	1416.2	1471.7	1502.2	1517.3	1555.8
PETROLEUM	1429.0	1445.6	1453.0	1454.1	1475.8	1514.2	1551.1	1592.7	1627.5	1663.9
RUBBER	20.7	21.4	22.3	23.7	24.6	25.1	25.6	26.0	26.7	27.2
OTHER NONDURABLES	10.1	10.6	11.1	11.7	11.9	12.1	12.3	12.5	12.7	12.9
NONMANUFACTURING	770.1	798.8	830.5	861.9	885.7	909.6	935.8	966.7	996.0	1023.1
MINING	75.3	77.2	79.1	81.2	83.9	88.7	94.6	102.0	109.5	117.4
PRIVATE UTILITIES	609.3	633.5	660.2	686.4	706.4	724.1	743.3	766.0	786.7	804.4
COMMERCIAL & OTHER	85.5	88.1	91.2	94.3	95.4	96.8	97.8	98.7	99.8	101.3
STATE & LOCAL GOVT.	27620.6	27997.0	28304.0	28531.9	28725.1	28749.9	28576.5	28210.0	27828.6	27278.8
GOVT.-OWNED UTILITIES	317.0	307.5	299.0	291.2	285.4	281.0	276.5	272.8	270.3	265.6

TABLE 65
 BASELINE STOCK OF WATER CAPITAL EQUIPMENT FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	33926.1	33496.8	33061.8	32653.0	32435.9	32302.5	32241.9	32431.7	32927.4	33700.6	34518.0
ALL INDUSTRY	6998.7	7187.3	7336.0	7482.0	7633.6	7815.7	7972.4	8192.5	8485.1	8833.9	9199.5
MANUFACTURING IND.	5954.1	6122.6	6252.6	6388.2	6531.3	6699.5	6839.4	7032.4	7296.0	7614.3	7944.9
PRIMARY METALS	800.4	798.9	795.3	791.9	794.5	797.6	799.0	805.6	822.6	853.2	889.3
ELEC. MACHINERY	59.2	60.3	61.1	62.7	65.5	69.0	72.2	76.7	82.1	88.3	95.0
NON-ELEC. MACH.	81.5	83.6	85.3	87.8	90.7	94.1	97.2	102.0	108.0	115.1	122.8
TRANSP. EQUIP.	589.0	605.3	613.7	627.4	638.5	651.2	668.0	699.5	738.5	777.4	808.4
STONE, CLAY, GLASS	21.2	21.3	21.2	21.3	21.3	21.9	22.2	22.7	23.2	23.9	24.0
OTHER DURABLES	119.8	118.9	117.8	116.8	117.1	118.6	120.1	123.9	128.8	134.9	140.7
FOOD & BEVERAGE	298.6	301.2	299.8	298.2	299.9	301.6	304.1	310.3	316.1	323.9	330.4
TEXTILES	33.2	32.5	31.9	31.1	30.3	30.5	30.6	31.7	33.3	35.2	36.5
PAPER	577.3	595.3	605.3	623.0	633.4	645.2	652.0	667.4	691.1	720.2	754.0
CHEMICALS	1612.3	1664.6	1703.7	1747.8	1780.9	1811.7	1827.8	1854.8	1911.8	1994.5	2079.5
PETROLEUM	1721.5	1800.8	1877.8	1940.2	2019.2	2118.1	2205.9	2295.9	2396.8	2502.2	2617.1
RUBBER	26.8	26.1	25.7	25.6	25.4	25.1	24.9	25.6	26.5	27.4	28.0
OTHER NONDURABLES	13.4	13.8	14.1	14.3	14.4	14.9	15.4	16.2	17.1	18.2	19.2
NONMANUFACTURING	1044.6	1064.7	1083.5	1093.9	1102.3	1116.2	1133.1	1160.1	1189.1	1219.6	1254.7
MINING	126.2	136.0	143.9	150.2	157.7	166.3	174.0	181.6	189.1	196.2	204.1
PRIVATE UTILITIES	816.1	825.9	836.8	841.0	843.5	848.7	858.2	876.7	896.6	918.2	944.3
COMMERCIAL & OTHER	102.3	102.7	102.8	102.6	101.1	101.2	100.9	101.9	103.4	105.2	106.2
STATE & LOCAL GOVT.	26664.5	26055.3	25475.8	24921.0	24554.3	24241.1	24030.6	24005.3	24213.1	24641.7	25099.7
GOVT.-OWNED UTILITIES	262.9	254.2	250.0	250.0	248.0	245.6	238.9	233.9	229.2	224.9	218.8

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES

TABLE 66
 BASELINE STOCK OF SOLID WASTE CAPITAL EQUIPMENT FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1970 =====	1971 =====	1972 =====	1973 =====	1974 =====	1975 =====	1976 =====	1977 =====	1978 =====	1979 =====
TOTAL	6055.7	6173.7	6282.5	6402.7	6535.7	6648.9	6751.6	6851.3	6966.6	7082.4
ALL INDUSTRY	2471.7	2529.5	2589.2	2660.4	2746.1	2827.7	2917.2	3022.6	3136.3	3264.0
MANUFACTURING IND.	1459.8	1484.9	1507.1	1537.0	1585.9	1637.1	1690.9	1751.0	1814.6	1889.8
PRIMARY METALS	98.2	98.7	98.5	98.9	101.1	104.5	107.3	109.2	110.9	112.9
ELEC. MACHINERY	32.2	33.6	34.6	36.0	37.3	38.0	38.9	40.1	41.5	43.3
NON-ELEC. MACH.	35.2	36.4	37.5	39.0	41.0	42.6	44.2	46.2	48.1	51.1
TRANSP. EQUIP.	150.7	151.9	154.3	158.5	163.6	166.2	168.9	174.4	182.4	192.6
STONE, CLAY, GLASS	39.9	39.6	40.0	40.6	41.1	41.4	41.9	42.6	44.1	46.2
OTHER DURABLES	98.1	100.5	103.4	107.8	111.7	114.2	116.8	119.8	122.9	125.6
FOOD & BEVERAGE	121.6	125.8	129.2	133.0	136.7	139.6	143.5	147.3	151.7	156.0
TEXTILES	25.2	26.0	26.9	27.7	28.3	28.6	28.9	29.4	29.8	30.2
PAPER	80.7	81.4	82.5	84.9	89.1	93.0	96.6	100.8	105.2	111.6
CHEMICALS	244.5	249.0	253.1	259.8	272.9	288.0	302.9	316.0	327.8	342.9
PETROLEUM	487.0	493.9	497.0	497.9	507.9	524.7	543.3	565.9	588.7	613.5
RUBBER	18.5	19.0	19.7	21.1	22.2	22.8	23.3	24.2	25.2	26.2
OTHER NONDURABLES	27.9	29.1	30.3	31.8	32.8	33.6	34.3	35.1	36.2	37.9
NONMANUFACTURING	1011.9	1044.6	1082.1	1123.5	1160.2	1190.6	1226.3	1271.7	1321.8	1374.2
MINING	79.7	81.7	83.8	86.4	90.5	96.4	103.9	113.2	122.8	132.5
PRIVATE UTILITIES	669.4	693.2	720.1	749.3	773.5	792.0	814.4	843.6	875.5	909.3
COMMERCIAL & OTHER	262.7	269.7	278.2	287.8	296.2	302.1	308.0	314.9	323.5	332.4
STATE & LOCAL GOVT.	3506.2	3563.6	3609.6	3655.2	3699.3	3728.9	3738.0	3727.6	3724.8	3706.0
GOVT.-OWNED UTILITIES	77.9	80.6	83.7	87.0	90.3	92.3	96.4	101.0	105.4	112.4

TABLE 66
 BASELINE STOCK OF SOLID WASTE CAPITAL EQUIPMENT FOR
 POLLUTION CONTROL, 1970-1990
 MILLIONS OF CONSTANT 1972 DOLLARS

	1980 =====	1981 =====	1982 =====	1983 =====	1984 =====	1985 =====	1986 =====	1987 =====	1988 =====	1989 =====	1990 =====
TOTAL	7202.6	7303.1	7366.1	7391.8	7412.1	7448.1	7495.5	7556.4	7634.1	7727.0	7832.2
ALL INDUSTRY	3399.6	3534.7	3647.5	3735.6	3817.2	3913.8	4021.8	4140.6	4270.6	4409.0	4554.0
MANUFACTURING IND.	1977.5	2065.6	2134.8	2187.7	2241.2	2307.1	2382.0	2465.2	2557.3	2654.9	2757.2
PRIMARY METALS	115.1	116.8	117.4	116.5	117.3	118.9	121.1	123.5	126.2	129.2	132.5
ELEC. MACHINERY	45.7	47.9	49.9	51.6	53.6	55.9	58.2	60.6	63.2	65.9	68.7
NON-ELEC. MACH.	54.0	56.9	59.4	61.5	63.8	66.4	69.4	72.5	75.9	79.7	83.6
TRANSP. EQUIP.	204.0	213.5	218.7	222.5	226.6	232.3	239.1	246.5	254.8	263.7	273.2
STONE, CLAY, GLASS	47.8	48.4	48.4	48.1	48.2	48.6	49.1	49.7	50.2	50.8	51.5
OTHER DURABLES	128.3	130.5	131.3	131.2	131.8	133.0	134.5	136.3	138.5	140.9	143.5
FOOD & BEVERAGE	160.4	164.6	167.3	169.0	171.1	173.5	176.1	178.8	181.9	185.1	188.6
TEXTILES	30.5	30.5	30.2	29.8	29.4	29.2	29.0	28.8	28.7	28.7	28.7
PAPER	119.1	125.3	129.6	133.4	136.4	140.3	144.8	149.6	155.2	161.4	168.0
CHEMICALS	359.7	375.1	387.7	399.3	407.2	416.8	428.0	441.1	456.3	472.6	489.7
PETROLEUM	646.3	687.4	724.3	752.6	782.7	817.5	856.4	899.3	945.8	993.8	1043.6
RUBBER	26.6	26.8	26.9	26.9	26.9	27.0	27.3	27.5	27.8	28.1	28.5
OTHER NONDURABLES	40.0	42.0	43.7	45.2	46.3	47.6	49.1	50.9	52.8	54.8	57.0
NONMANUFACTURING	1422.1	1469.1	1512.7	1547.9	1576.0	1606.7	1639.8	1675.4	1713.3	1754.0	1796.9
MINING	143.4	156.3	166.8	176.4	187.0	198.7	211.3	225.0	239.6	255.2	271.6
PRIVATE UTILITIES	938.9	966.8	995.4	1017.9	1036.7	1056.7	1078.0	1100.6	1124.2	1149.4	1175.8
COMMERCIAL & OTHER	339.8	346.0	350.6	353.6	352.2	351.3	350.5	349.9	349.5	349.4	349.4
STATE & LOCAL GOVT.	3683.2	3641.3	3582.0	3513.1	3445.3	3377.9	3310.1	3244.8	3184.6	3131.0	3082.9
GOVT.-OWNED UTILITIES	119.9	127.1	136.7	143.1	149.6	156.4	163.5	171.0	178.8	187.0	195.3

** EXPENDITURES FOR 1984-1990 WERE FORECAST BASED ON 1980-1982 EXPENDITURE ESTIMATES