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February 29, 1996

FOREWORD

The latest version of the Northwest Power Planning Council's energy conservation *Green Book*, Nutrak94, describes Northwest utility accomplishments in acquiring conservation as an electricity resource from 1978 through 1994. In 1994, the region as a whole and most Northwest utilities met or exceeded their conservation targets. On behalf of the Council, I want to commend the region's utilities and conservation industry for a job well done. We also want to thank the Nutrak reporting utilities for their perseverance in providing their information to the regional conservation tracking effort.

The Council recognizes that economic forces in the electricity marketplace are making conservation more difficult to pursue as a utility resource investment. At the same time, the forces of a more competitive utility environment are driving retail utilities toward an active marketing effort to serve and retain their customers -- an effort where conservation services can play a part.

In a recent survey by the Council, the region's utility industry reported that 1995 conservation savings will be about the same as 1994, about 120 average megawatts. Utility conservation plans and other obligations are likely to secure another 70 average megawatts per year in 1996 and 1997 and about 60 average megawatts per year in 1998 and 1999. As would be expected with lower avoided costs, future savings are expected to be only about half the 1994-1995 level. The survey indicates a degree of stability at the local level for utility customers and conservation providers. It also sends a clear message that the future will be different from the past.

One reason future conservation levels will probably be lower than in the past is the fact that our region has so successfully captured the conservation opportunities that were before us. Many measures that were utility-funded in the past have now become standard practice. The Council estimates that in 1996 the region will benefit from about 1,000 average megawatts of energy savings as a direct result of utility-funded conservation achieved since passage of the Northwest Power Act.

It is clear that conservation -- along with many other facets of the utility industry -- will be recast through the coming transition. It is the Council's hope that the wealth of conservation information available to the region through Nutrak will be materially helpful as new approaches to energy efficiency are identified and pursued.



John Etchart, Chairman
Northwest Power Planning Council

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The Green Book (Nutrak94)

**Tracking Pacific Northwest Electric Utility
Conservation Achievements, 1978-1994**

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I. INTRODUCTION

Conservation is defined in the Northwest Power Act as “any reduction in electric power consumption as a result of increases in the efficiency of energy use, production, or distribution.” The Northwest Power Planning Council’s 1991 Northwest Power Plan called for acquiring at least 1,500 average megawatts of conservation resources by the end of this decade. In response, the Bonneville Power Administration and the region’s electric utilities, both public and investor-owned, have established conservation acquisition targets consistent with the regional plan.

Effective conservation implementation requires a straightforward and workable system for tracking conservation acquisitions among various utilities. Such a system helps to measure progress in relation to targets and to demonstrate what’s working and what’s not.

The Northwest Utility Conservation Tracking System (Nutrak) has been established to serve three principal purposes:

- Aid in regional power planning and implementation
- Enhance electric utility planning and operations
- Provide useful information to state utility regulators

II. COUNCIL SUMMARY OF CONSERVATION ACQUISITIONS (1978-1994) AND CONSERVATION EXPENDITURES (1991-1994)

Summary of Conservation Savings.

In 1994, the region’s electric utilities acquired about 120 average megawatts of conservation energy resources. These savings contributed to cumulative total savings of nearly 900 average megawatts from 1978 through January 1, 1995—the energy output of four good-sized gas-fired combustion turbines. Adding the preliminary 1995 savings estimates provided by the Nutrak utilities brings the total utility-funded savings available in 1996 to about 1,000 aMW. On top of this, the Council estimates an additional 200 aMW has been developed without utility funding, through codes, standards, and programs.

Published since 1993, the *Green Book* has assembled a historical summary of the best available information on electric utility conservation activities in the Pacific Northwest from 1978 through the latest reporting year. The source data for this *Green Book* is a database called Nutrak94 (because it contains data through 1994). Table 1 summarizes the regional conservation history from 1978 through 1994 for each of the eleven Nutrak utility data contributors, including the six investor-owned utilities, the four public utilities with the largest history of conservation activities and the Bonneville Power Administration.

The numbers in Table 1 are those reported by the utilities. As the table notes show, these numbers cannot be summed to form a regional conservation total, because they haven’t been adjusted for double-counting of Bonneville-funded conservation delivered by reporting utilities, unequal treatment of transmission and distribution savings, inclusion of fuel-switching (not considered conservation under the Northwest

Power Act), or exclusion of Montana Power Company's service territory outside the region (as defined in the Northwest Power Act).

Table 2 is similar to Table 1, but the numbers have been adjusted by the Council to correct for the factors mentioned above, making them comparable across utilities and additive. Table 2 lists Bonneville's numbers as "BPA (direct & small publics only)." The numbers for Montana Power Company and PacifiCorp reflect only the in-region share of their activities, since they also serve territory outside the region. As adjusted, the individual utility figures can be summed to an incremental total first year's savings for each year from 1978 through 1994—the row of numbers at the bottom of Table 2. During that period, the region's savings first peaked at 93.1 average megawatts in 1983, then declined significantly to an average of about 35 average megawatts from 1984 to 1987, and then ramped up to set a new regional record of 135.7 average megawatts in 1993. Regional conservation dipped in 1994 to about 120 aMW. Preliminary unpublished utility estimates for 1995 indicate that the region's utilities did about 120 aMW that year, the same as 1994.

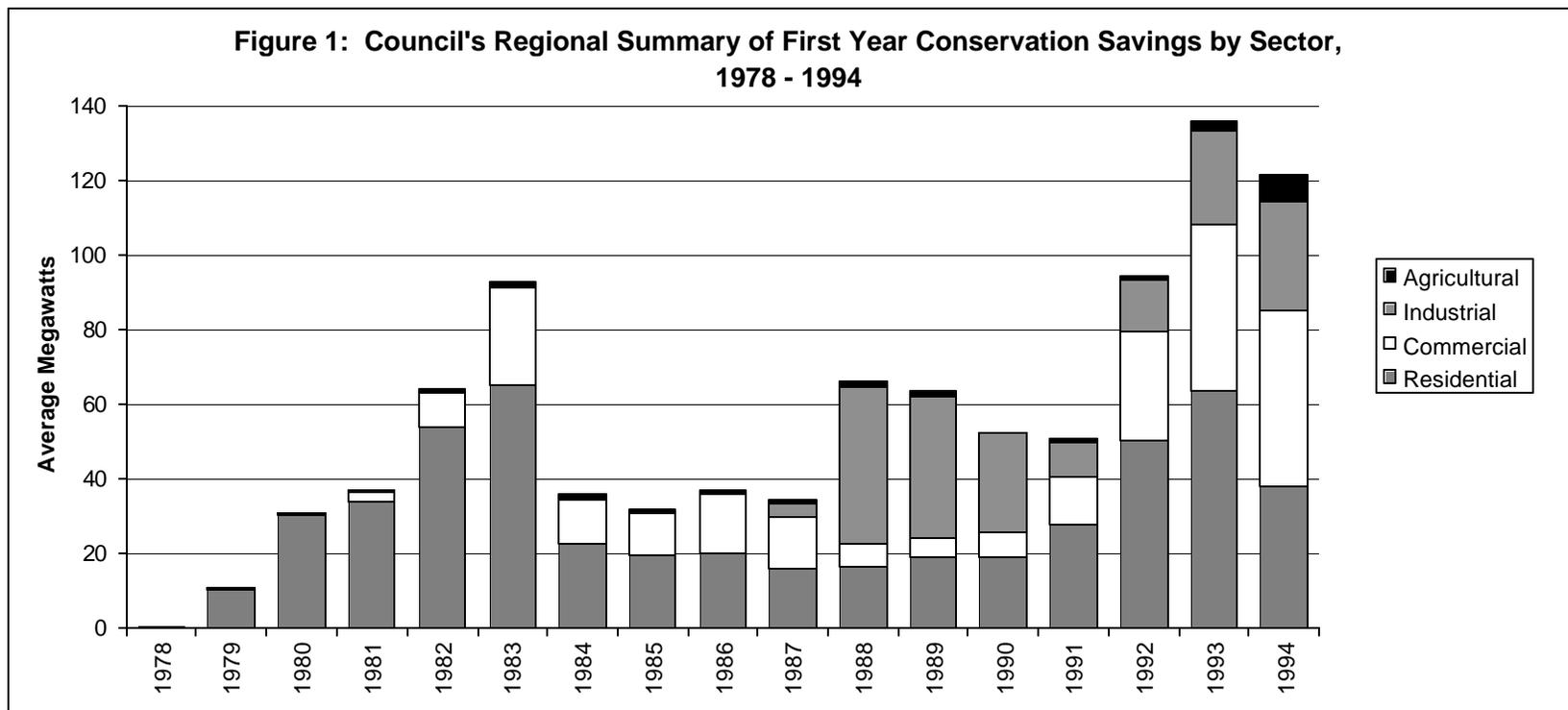
Using Nutrak, the Council has estimated the cumulative historical conservation savings as of January 1, 1995. In this calculation, the adjusted historical annual values from Table 2 are summed to the right, while dropping out savings from programs whose average measure lives have expired. This adjusted cumulative total sums to 875.9 average megawatts. This figure can be described as the quantity of savings that the region enjoyed in the year 1995 as a result of all of the previous years' conservation investments. Adding the preliminary estimate of about 120 average megawatts of conservation resources in 1995, brings the cumulative regional estimate as of January 1, 1996, to about 1,000 average megawatts. This is equivalent to the annual power production of four gas combustion turbines.

The Council began collecting 1995 detailed utility conservation acquisitions data in the winter of 1996 and plans to publish the next *Green Book* (Nutrak95) in late spring this year.

Using the Council's adjusted numbers, Figure 1 charts Northwest utility conservation acquisitions by sector for each year from 1978 through 1994. Looking at the annual totals, conservation savings peaked in 1983, 1988 and again in 1993. Savings from the residential sector, the bottom block in Figure 1, have gone up and down and up and down again over this 17-year period. Conservation in the commercial sector was slower getting started than residential, and has exhibited a somewhat similar up and down and up again pattern, with its highest overall level reported for 1994. An apparent anomaly is the substantial industrial activity from 1988 through 1990. This is due to the Conservation Modernization (CON/MOD) program Bonneville operated directly to capture savings in the plants of its Direct Service Industrial (DSI) customers, principally aluminum plants. In that three-year period, Bonneville acquired about 100 average megawatts of conservation resources through CON/MOD. When the CON/MOD savings are removed, Figure 1 shows an increasing trend in industrial conservation in the period 1991 - 1994.

A look at the whole picture shows the region first getting into residential sector conservation, followed a few years later by commercial, which was followed in a few more years by industrial. When CON/MOD is removed from the picture, 1994 has the most sectoral balance during the 17 year period. One reason why the residential savings were so large in the last three years is the significant contribution of savings from residential energy codes, which were adopted by the states of Washington and Oregon and nearly fifty local governments (mostly in Idaho) and enforced by state

Figure 1: Council's Regional Summary of First Year Conservation Savings by Sector, 1978 - 1994



	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Adjusted Cumulative Total
Residential	0.8	10.2	30.0	33.9	53.6	65.4	22.4	19.6	20.3	15.9	16.3	18.9	19.3	27.8	50.3	63.6	37.9	425.8
Commercial	0.0	0.4	0.6	2.7	9.8	25.9	11.9	11.2	15.5	14.0	6.4	5.3	6.2	12.6	29.4	44.6	47.5	238.9
Industrial	0.0	0.0	0.1	0.2	0.0	0.3	0.4	0.1	0.5	3.4	41.9	38.2	26.6	9.2	13.8	25.0	29.3	189.2
Agricultural	0.0	0.0	0.1	0.3	0.9	1.5	1.3	1.1	0.9	1.3	1.4	1.4	0.1	1.4	1.1	2.5	6.8	22.0
Incremental Total	0.8	10.6	30.9	37.0	64.4	93.1	35.9	32.0	37.1	34.6	66.0	63.8	52.3	51.0	94.6	135.7	121.4	875.9

Note on Figure 1. Utility-reported first year savings are adjusted for: uniform treatment of transmission and distribution savings; exclusion of fuel-switching; reduction of Bonneville numbers to account for double-counting; and reporting only Montana Power Company's in-region conservation. The adjusted cumulative total has been adjusted to exclude savings from expired conservation measures. These adjustments are explained in more detail in the notes under Table 2 and in the Appendix. [FYSSEC94.xls]

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and local building code agencies. Code savings are not entirely accounted for in Nutrak because Nutrak is designed to track savings from utility-funded programs. Bonneville has reported savings from energy codes enforced in the public utility service territory of the region, where adoption and enforcement have received important utility support. For the most part, investor-owned utilities have not reported energy code savings to Nutrak.

In looking at the breakdown of regional savings by sector, data show that almost half the reported savings, 425 average megawatts, came from the residential sector. The commercial sector accounted for about 27 percent of the savings, with the industrial sector at about 22 percent and agriculture at about 2.5 percent.

A task in calculating the regional total was to avoid double counting utility savings acquired through Bonneville programs, since Bonneville reports all of the conservation savings from its programs, including those acquired by retail utilities running its programs. Appendix I describes the methodology used to adjust the regional savings estimates.

Summarized information on individual utility costs and savings can be found in Chapter IV, which contains reports based on the unadjusted numbers reported by each Nutrak utility data contributor. These figures for each utility provide information down to the sector level.

Detailed information is available in Nutrak94, the electronic version of Nutrak. This information was formerly published by the Council as Volume II of *The Green Book*, the technical appendix. Nutrak94 contains detailed descriptions of every program operated by each of the Nutrak contributing utilities, along with detailed reports of conservation activity at the utility and individual program levels. Program activity forms include the number of units processed through the programs. In most cases, commencing with 1991, the utilities have also reported utility costs at both the utility and program levels. Order the electronic version of Nutrak94 from Appendix II, the order form on the last page of this *Green Book*.

Overview of Utility Conservation Expenditures.

Figure 3 is the Council's summary of regional annual utility expenditures for new conservation savings. Like the Council's summary of regional savings, it has been adjusted as indicated on the notes to the figure. Over the four-year period from 1991 - 1994, the region's utilities invested about \$950 million dollars on the region's "conservation power plant." Of that, about 63 percent was spent by customer-owned "public" utilities and about 37 percent by the region's investor-owned utilities.

Table 3 contains the unadjusted utility-reported conservation/DSM expenditures for the same four-year period, broken down by sector. As with unadjusted savings, these figures are not additive to a regional total.

It is very important to point out that the Nutrak utilities do not all follow the same internal accounting and tracking practices for conservation program costs. While they all account for direct measure costs, there is substantial variation as far as including other costs such as administration, corporate overhead, research and development, marketing, and so forth. Nutrak94, the electronic version, contains a great deal

of detail as to the components of costs as reported at both the utility and the program levels. The ultimate and best source is the utility itself.

TABLE 1: Unadjusted Summary of Utility-Reported First Year Conservation/DSM Savings (average megawatts)

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Bonneville Power Administration	0.0	0.0	0.0	0.0	32.0	70.8	17.5	18.5	25.1	21.4	54.9	52.2	38.3	19.7	40.2	65.6	56.9
Eugene Water and Electric Board	0.0	0.0	0.0	0.1	2.3	2.5	1.4	1.4	1.5	1.5	1.9	1.0	0.7	1.6	1.8	2.8	3.1
Idaho Power Company	0.0	0.0	7.1	7.6	3.3	2.0	1.1	0.5	0.5	0.1	0.0	0.2	0.4	0.6	1.6	3.3	3.0
Montana Power Company	0.0	0.0	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.9	0.6	0.7	1.1	1.0	2.9	5.5	7.3
PacifiCorp (in-region)	0.1	3.3	5.0	2.9	2.7	3.5	0.4	0.3	0.6	0.7	0.8	1.1	2.2	2.2	3.3	11.9	9.7
Portland General Electric Company	0.2	2.4	4.5	4.2	1.1	0.6	0.2	0.3	0.8	0.4	0.6	0.7	0.8	5.0	12.0	17.0	21.3
Puget Sound Power and Light Company	0.0	3.0	9.6	9.7	8.6	11.7	9.5	8.4	7.5	7.6	5.4	5.9	7.9	17.6	27.9	29.7	21.7
Seattle City Light	0.2	0.8	1.0	1.4	5.7	5.9	3.2	2.6	2.6	1.7	2.2	1.9	2.2	3.3	8.2	6.0	7.3
Snohomish County Public Utility District	0.0	0.0	0.1	0.7	4.3	6.0	1.4	1.5	0.9	1.2	1.6	1.4	1.6	1.6	3.4	5.0	5.2
Tacoma Public Utilities	0.0	0.0	0.0	0.2	2.7	2.0	1.0	0.5	0.8	0.4	0.8	3.5	0.5	3.9	3.7	6.0	6.3
Washington Water Power Company	0.2	0.3	1.0	7.5	4.7	6.8	2.8	2.3	1.7	0.8	0.2	0.3	0.5	1.3	5.8	17.5	10.2

Note 1. First year savings are the first full year of energy savings resulting from all utility conservation/demand-side activities undertaken in the reporting period.

Note 2. Bonneville's reported savings include an upward adjustment to reflect transmission and distribution savings of 7.5 percent (to be comparable with supply-side resources). No other utility's reported figures include this adjustment.

Note 3. Fuel-switching (to natural gas) acquired as a demand-side resource has been included here. Utilities including fuel-switching include Washington Water Power Co., Montana Power Co., and Bonneville.

Note 4. Bonneville Power Administration reported savings include resources acquired with Bonneville funding by other Nutrak reporting utilities.

Note 5. One hundred percent of Montana Power Company's savings are shown here, reflecting both in-region and out-of-region activity.

TABLE 2: Council's Summary of Regional First Year Utility-funded Conservation Savings (average megawatts)

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Adjusted Cumulative Total
BPA (direct & small publics only)	0.0	0.0	0.0	0.0	26.4	49.2	13.5	12.9	19.0	19.0	51.4	46.6	33.9	12.3	26.4	42.0	32.4	351.5
Eugene Water and Electric Board	0.0	0.0	0.0	0.1	2.5	2.7	1.5	1.5	1.6	1.6	2.1	1.0	0.8	1.7	1.9	3.0	3.4	23.4
Idaho Power Company	0.0	0.0	7.9	8.4	3.7	2.2	1.2	0.6	0.6	0.1	0.1	0.2	0.4	0.7	1.8	3.6	3.3	32.6
Montana Power Co. (in-region)	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.3	0.4	0.4	0.9	1.9	2.6	7.6
PacifiCorp (in-region)	0.1	3.7	5.7	3.3	3.1	4.0	0.5	0.4	0.7	0.8	0.9	1.2	2.5	2.4	3.7	13.3	10.9	55.3
Portland General Electric Co.	0.2	2.6	4.9	4.5	1.2	0.7	0.2	0.3	0.9	0.4	0.6	0.8	0.9	5.4	13.0	18.4	23.0	75.3
Puget Sound Power & Light Co.	0.0	3.1	10.1	10.2	9.0	12.3	9.9	8.8	7.9	8.0	5.7	6.1	8.3	18.5	29.3	31.2	22.8	182.3
Seattle City Light	0.2	0.9	1.0	1.5	6.0	6.2	3.4	2.8	2.8	1.8	2.3	2.0	2.3	3.4	8.6	6.3	7.7	49.5
Snohomish County PUD	0.0	0.0	0.1	0.8	4.6	6.3	1.5	1.6	0.9	1.3	1.7	1.5	1.8	1.8	3.7	5.3	5.5	35.4
Tacoma Public Utilities	0.0	0.0	0.1	0.2	2.9	2.1	1.1	0.5	0.9	0.4	0.9	3.8	0.5	4.2	4.0	6.4	6.7	31.6
Washington Water Power Co.	0.2	0.3	1.1	8.1	5.1	7.3	3.1	2.4	1.9	0.9	0.2	0.4	0.5	0.3	1.3	4.3	3.2	31.5
Incremental Total	0.8	10.6	30.9	37.0	64.4	93.1	35.9	32.0	37.1	34.6	66.0	63.8	52.3	51.0	94.6	135.7	121.4	875.9

Note 1. First year savings are the first full year of energy savings resulting from all utility conservation activities undertaken in the reporting period.

Note 2. Where the utility did not already make the adjustment, reported savings were adjusted upward to reflect transmission and distribution savings (to be comparable with supply-side resources).

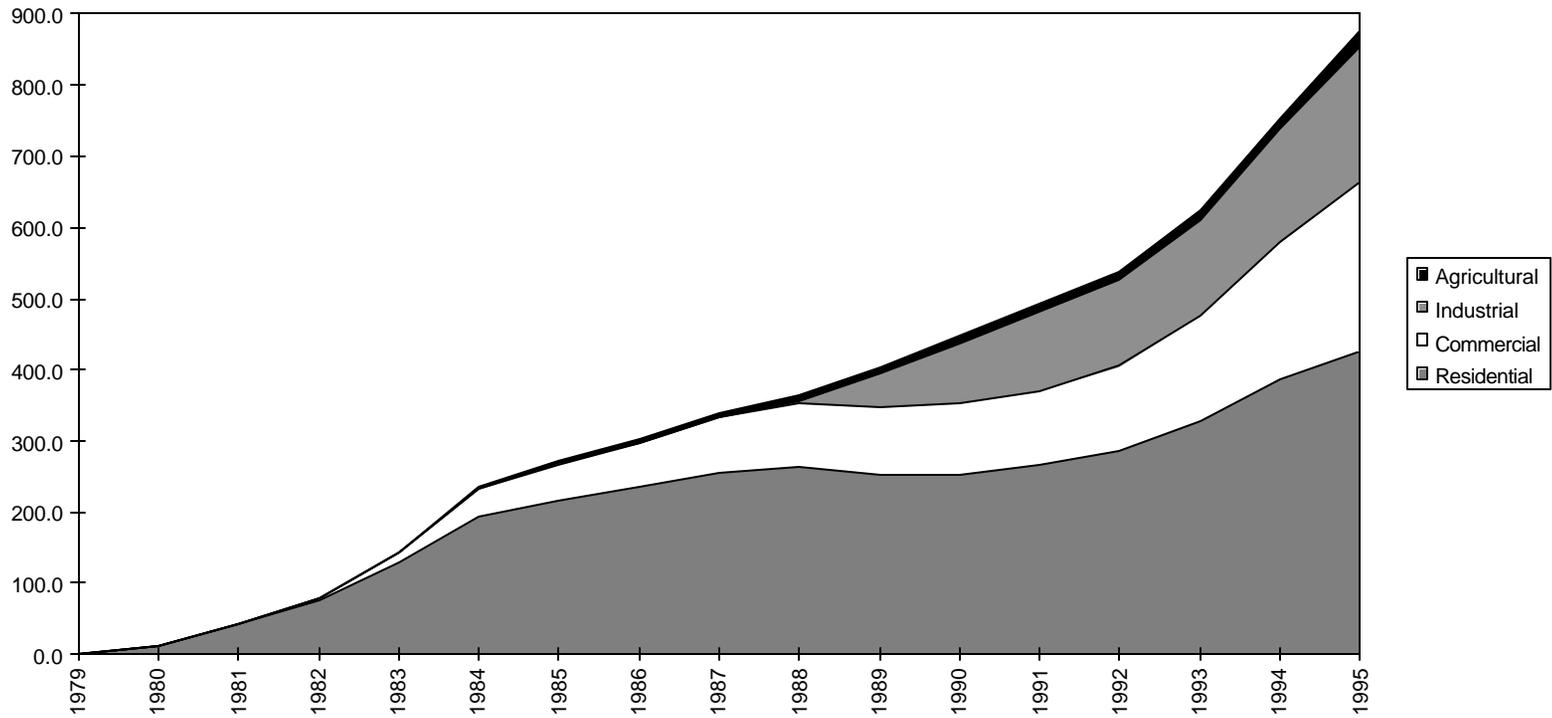
Note 3. Fuel-switching (to natural gas) acquired as a demand-side resource has not been included here as a conservation resource. It is included in the unadjusted utility figures.

Note 4. Bonneville Power Administration reported savings have been reduced to avoid double-counting of resources acquired with Bonneville funding by other NU-Trak reporting utilities. The methodology is described in the appendix.

Note 5. Only 32 percent of Montana Power Company's savings are shown here, to reflect its in-region activity.

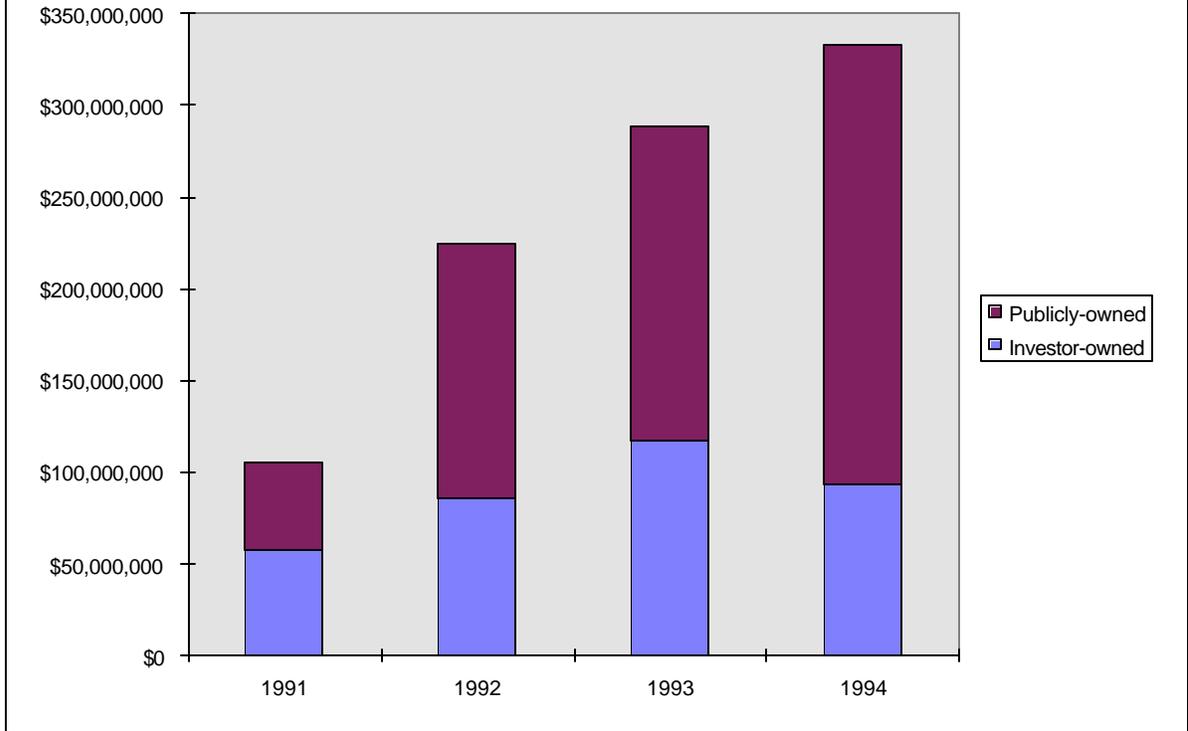
Note 6. The adjusted cumulative regional total reflects the Council's estimate of conservation savings available to the region as of January 1, 1993, as a result of programs from 1978 through 1992. The cumulative total has been adjusted so as not to include savings from program-years where the average measure life has expired.

Figure 2: Council's Regional Summary of Cumulative Conservation Savings by Sector, Available 1979-1995, in Average Megawatts



	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Cumulative Sum
Residential	0.8	11.0	41.0	74.9	128.5	193.9	216.2	235.8	256.0	262.2	252.5	253.5	264.9	286.9	329.0	387.9	425.8	3,621
Commercial	0.0	0.4	1.0	3.7	13.4	39.3	50.7	61.7	76.8	89.6	94.6	99.5	105.8	117.8	147.1	191.4	238.9	1,332
Industrial	0.0	0.0	0.1	0.3	0.3	0.7	1.0	1.1	1.6	5.1	47.0	85.2	111.8	121.1	134.8	159.9	189.2	859
Agricultural	0.0	0.0	0.1	0.4	1.4	2.9	4.1	5.2	6.1	7.4	8.8	10.2	10.3	11.7	12.8	15.2	22.0	119
TOTAL	0.8	11.4	42.2	79.3	143.7	236.7	272.1	303.9	340.5	364.2	402.8	448.4	492.8	537.5	623.7	754.4	875.9	5,930

Figure 3: Council's Summary of Regional Annual Utility Expenditures for New Conservation/DSM Savings



	1991	1992	1993	1994	91-94 Total
Investor-owned	\$57,249,446	\$85,515,530	\$117,514,814	\$93,905,776	\$354,185,566
Publicly-owned	\$48,346,331	\$139,432,659	\$171,069,536	\$238,749,976	\$597,598,502
Regional Total	\$105,595,777	\$224,948,189	\$288,584,350	\$332,655,752	\$951,784,068

Notes: These cost figures are adjusted for double-counting of BPA funding and include only in-region activity of Montana Power Company and PacifiCorp. These costs exclude fuel-switching. grnbk_94\table4a.xls, tab gb94_fig3.

Notes on Table 3. Table 3 on the following page contains unadjusted utility-reported conservation/DSM expenditures for the period 1991 - 1994. These figures are not adjusted for double-counting of BPA funding, for fuel-switching, or for in-region utility activity. These figures are taken from the utility activity form in Nutrak, which, in some cases, accounts for costs differently than at the individual program level. If the reader is in doubt as to differences between the utility and program level costs reported, the very best source is the utility itself. One notable difference bears mentioning. Commencing with its 1993 numbers, PacifiCorp reports overall utility-level costs and savings in the utility activity form. PacifiCorp serves parts of seven states, only four of which are included in Nutrak, so its overall utility figures are naturally larger than its costs and savings in the states of Idaho, Montana, Oregon, and Washington, from 1993 on.

Table 3: Unadjusted Utility-Reported Conservation/DSM Expenditures, 1991 - 1994

Utility	Sect.	1991	1992	1993	1994	91-94 Sum
Bonneville	Res	\$26,707,000	\$80,949,000	\$89,241,000	\$89,726,123	\$286,623,123
	Com	\$858,000	\$25,334,000	\$32,485,000	\$46,264,000	\$104,941,000
	Ind	\$1,071,000	\$8,397,000	\$13,899,000	\$61,845,000	\$85,212,000
	Ag	\$2,007,000	\$2,593,000	\$2,187,000	\$2,617,000	\$9,404,000
	Other	\$0	\$0	\$7,944,000	\$17,133,000	\$25,077,000
Bonneville Total		\$30,643,000	\$117,273,000	\$145,756,000	\$217,585,123	\$511,257,123
EWEB	Res	\$2,019,171	\$2,121,164	\$3,794,543	\$3,854,576	\$11,789,454
	Com	\$1,031,345	\$1,836,032	\$1,321,172	\$1,893,811	\$6,082,360
	Ind	\$40,000	\$101,000	\$488,958	\$408,600	\$1,038,558
EWEB Total		\$3,090,516	\$4,058,196	\$5,604,673	\$6,156,987	\$18,910,372
Idaho Power	Res	\$1,973,524	\$2,744,921	\$4,241,875	\$4,258,766	\$13,219,086
	Com	\$464,555	\$452,034	\$501,054	\$881,120	\$2,298,763
	Ind	\$71,788	\$285,479	\$846,126	\$422,752	\$1,626,145
	Ag	\$348,477	\$274,558	\$572,683	\$1,025,652	\$2,221,370
	Other	\$129,475	\$135,075	\$0	\$0	\$264,550
Idaho Power Total		\$2,987,819	\$3,892,067	\$6,161,738	\$6,588,290	\$19,629,914
Montana Power	Res	\$524,416	\$2,351,475	\$3,092,197	\$3,128,061	\$9,096,149
	Com	\$1,634,907	\$1,970,848	\$4,098,014	\$6,881,888	\$14,585,657
	Ind	\$13,863	\$505,920	\$1,500,022	\$464,171	\$2,483,976
	Ag	\$0	\$0	\$44,357	\$92,127	\$136,484
Montana Power Total		\$2,173,186	\$4,828,243	\$8,734,590	\$10,566,247	\$26,302,266
PacifiCorp	Res	\$6,997,359	\$11,145,645	\$25,566,725	\$26,534,383	\$70,244,112
	Com	\$2,362,586	\$3,987,244	\$5,099,220	\$5,357,414	\$16,806,464
	Ind	\$191,789	\$896,845	\$1,996,633	\$2,591,709	\$5,676,976
	Ag	\$0	\$0	\$0	\$0	\$0
PacifiCorp Total		\$9,551,734	\$16,029,734	\$32,662,578	\$34,483,506	\$92,727,552
PGE	Res	\$5,510,250	\$6,098,553	\$10,777,337	\$12,473,162	\$34,859,302
	Com	\$1,456,807	\$4,737,426	\$6,598,204	\$7,383,559	\$20,175,996
	Ind	\$0	\$0	\$699,261	\$2,858,072	\$3,557,333
PGE Total		\$6,967,057	\$10,835,979	\$18,074,802	\$22,714,793	\$58,592,631
Puget	Res	\$25,273,000	\$26,463,000	\$24,214,000	\$10,022,000	\$85,972,000
	Com	\$8,527,000	\$20,150,000	\$30,876,000	\$14,620,000	\$74,173,000
	Ind	\$3,623,000	\$7,910,000	\$4,249,000	\$7,607,000	\$23,389,000
Puget Total		\$37,423,000	\$54,523,000	\$59,339,000	\$32,249,000	\$183,534,000
Seattle	Res	\$7,110,443	\$7,537,373	\$9,559,037	\$7,944,423	\$32,151,276
	Com	\$4,686,111	\$6,392,559	\$10,963,764	\$10,238,564	\$32,280,998
	Ind	\$401,541	\$479,493	\$886,407	\$1,132,893	\$2,900,334
Seattle Total		\$12,198,095	\$14,409,425	\$21,409,208	\$19,315,880	\$67,332,608
Snohomish	Res	\$7,193,495	\$7,349,288	\$5,107,015	\$3,851,412	\$23,501,210
	Com	\$696,107	\$3,244,911	\$4,259,554	\$2,526,582	\$10,727,154
	Ind	\$0	\$432,067	\$1,094,181	\$942,544	\$2,468,792
Snohomish Total		\$7,889,602	\$11,026,266	\$10,460,750	\$7,320,538	\$36,697,156
Tacoma	Res	\$4,168,084	\$4,435,072	\$6,021,214	\$5,536,971	\$20,161,341
	Com	\$2,708,659	\$4,655,741	\$5,353,739	\$7,771,461	\$20,489,600
	Ind	\$95,828	\$683,625	\$524,817	\$4,385,603	\$5,689,873
Tacoma Total		\$6,972,571	\$9,774,438	\$11,899,770	\$17,694,035	\$46,340,814
Wash. Water Power	Res	\$3,802,752	\$9,889,922	\$22,622,943	\$14,292,706	\$50,608,323
	Com	\$0	\$1,167,700	\$2,799,757	\$3,122,826	\$7,090,283
WWP Total		\$3,802,752	\$11,057,622	\$25,422,700	\$17,415,532	\$57,698,606

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III. DESCRIPTION OF NUTRAK: THE NORTHWEST UTILITY CONSERVATION TRACKING SYSTEM

Nutrak is designed to gather and report information relating to individual utilities' conservation activities. Nutrak information can be broadly split into descriptive information and activity information. Both types of information are collected at the utility level, the program level and at the program unit level. The engine of Nutrak is a computerized relational data base on a software platform of Paradox 4.5 for DOS.

Figure 4 is a block diagram that depicts the conceptual data base design of Nutrak. Those interested in the detailed structure of Nutrak should request a copy of the electronic version of Nutrak94 and print the data dictionary report from Nutrak's system menu. Also available on the disk version is the Nutrak System Documentation, which provides substantial detail about the Nutrak structure, data elements and operation.

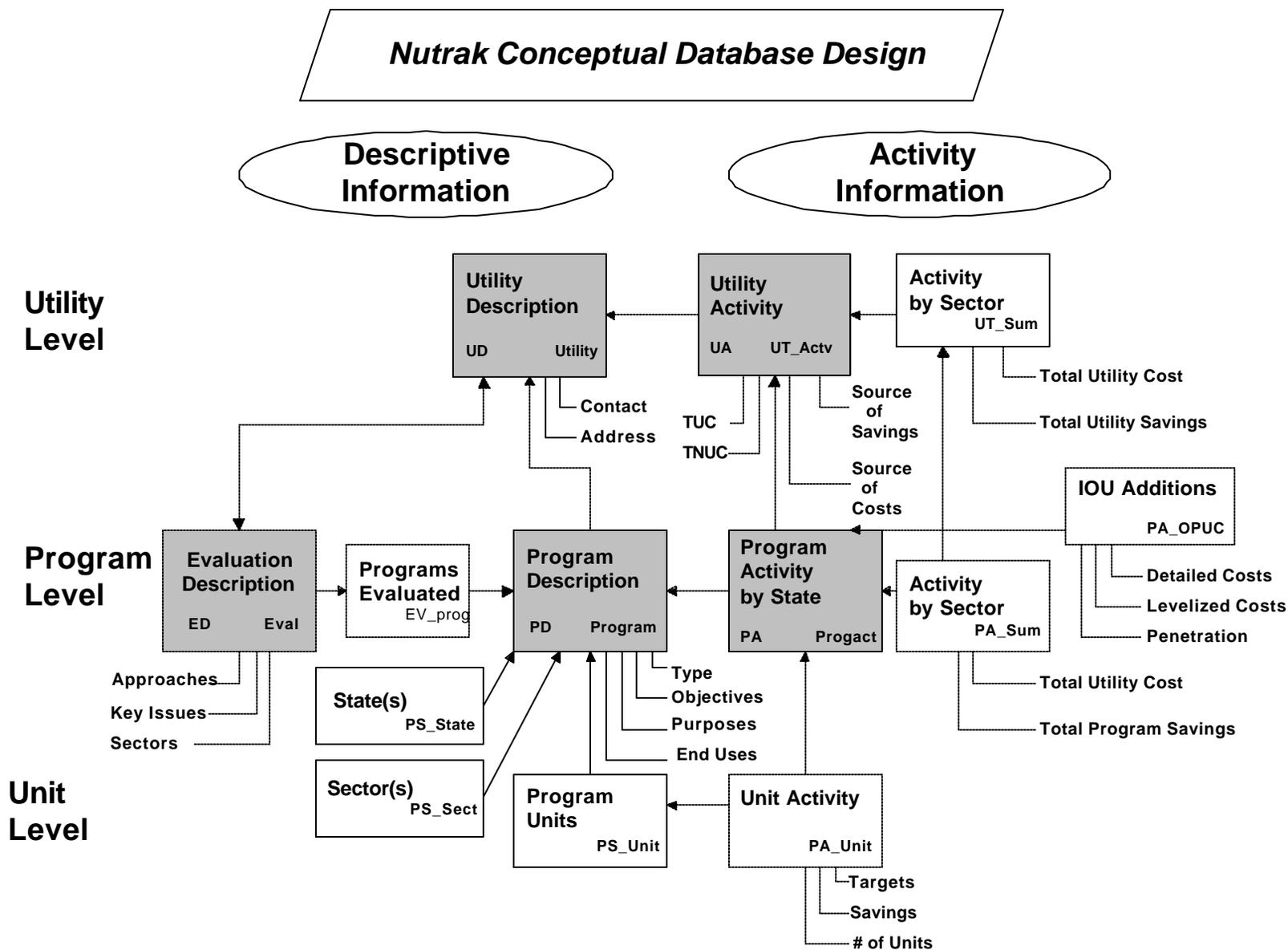
There are four principal building blocks of Nutrak, which can be thought of as four separate but related forms that are completed and retained in the data base. They (and their shortcut abbreviations) are:

- Utility Description (UD), which has the name, data contact, address and an optional utility statement for each contributing utility.
- Utility Activity (UA), one for each year of activity, which contains the overall utility level activity information, including energy and capacity savings acquired through that year's program activity and costs incurred.
- Program Description (PD), which is a detailed description of each program the utility operates. PD is updated whenever a program changes. The program attributes identified in the program description are key to queries of the data base.
- Program Activity (PA), which, like UA, is completed for each program for each year that program has any activity. It contains the annual activity for that program, including capacity and energy savings, costs and numbers of program units. Where a utility has program activity in more than one state, a PA form is completed for each state's activity.

Individual utilities in the Pacific Northwest track different types of data regarding their conservation programs. Each utility's selection of what to track and how to format that information is based on that utility's determination of its own data needs, as well as regulatory commission tracking or reporting requirements, where applicable. For a regionwide tracking system to be useful, the information should be reported in ways that are both consistent and accurate. At the same time, utilities should not be forced to redesign their internal tracking systems to conform with a regionwide template.

Building Nutrak required looking at how data is being collected at individual utilities, as well as identifying possible new collecting and reporting approaches that could be used in the region. The tracking work group, which developed Nutrak, wanted to work with existing information, utilize existing institutions and minimize duplication of efforts.

Figure 4: Nutrak Conceptual Database Design



Key Regional Sources of Utility Conservation Data

Even though many complex questions arise in trying to collect, aggregate and interpret existing regional conservation data, there is, fortunately, a fairly small population of regional utilities that generate conservation information. This means that while the task of building a useful regional tracking system is substantial, at least there is a manageable number of sources for the information.

The key sources for conservation data are these utilities:

- Bonneville Power Administration
(Historically, Bonneville has collected most of the data for the many smaller public utilities that run its conservation programs.)

Large Public Utilities

- Eugene Water and Electric Board
- Seattle City Light
- Snohomish County Public Utility District
- Tacoma Public Utilities

Investor-Owned Utilities

- Idaho Power Company
- Montana Power Company
- PacifiCorp
- Portland General Electric Company
- Puget Sound Power and Light Company
- Washington Water Power Company

The value of Nutrak depends on the quality of the data made available from each entity involved. Bonneville (providing its information and a summary of its small to mid-sized customer public utilities), the region's four largest conserving customer utilities, and the six investor-owned utilities each provide data on their conservation programs along with whatever additional information is necessary to correctly interpret the numbers. The utilities (including Bonneville) are "contributors" to the system.

Contributors and Users of Nutrak

Following are brief descriptions of the roles of the identified contributors and users of the system. They are presented to give a sense of how the pieces fit together, not to constrain or limit any party's role.

The Northwest Power Planning Council

As the entity charged with regional power planning, the Council has a particular interest and role in implementing and maintaining the regional conservation tracking system. The Council convened the tracking work group and will continue to provide leadership in involving interested contributors and users of the system as it is implemented, operated and modified over time.

The Council has provided staff and contractor resources to pull together a history of conservation activities in the region and to address issues surrounding estimates of energy savings and conservation cost

accounting and reporting. The Council is the responsible party for the integrated system and the repository for the system data base.

The information from the system is of keen interest to the Council for planning purposes and will be used by Council technical staff in various planning and analytical activities. The Council regularly publishes *The Green Book*, which summarizes and reports the assembled information.

Regulatory Commissions

Information from regulated utilities is provided to the four state regulatory commissions, as well as to the Council. The regulatory commission staff screens the submitted information for completeness and consistency with system definitions, and works with the utility where the information needs to be refined. Where the commissions have additional information needs not served by the basic regionwide system, the commission may ask regulated utilities to provide additional information.

Investor-Owned Utilities

Investor-owned utilities provide information to their respective regulatory commissions as well as to the Council.

Bonneville Power Administration

As the largest historical sponsor of conservation programs in the region, Bonneville has played a key role in the regional conservation picture. As this report goes to press, Bonneville has steeply reduced its financial support for future utility conservation programs. Bonneville's Conservation Information Systems Project is not moving forward and information about Bonneville-funded public utility conservation is dwindling.

Public Utilities

The original design intention for Nutrak was for information regarding public utilities that operate only Bonneville conservation programs to be collected as part of Bonneville's own reporting activities. The Council will continue to collect conservation information directly from the largest conserving public utilities. Recently, Clark Public Utilities has expressed an interest to join the ranks of the Nutrak utilities, which will be done as the 1995 information is collected.

Frequency of Data Collection

Nutrak data is collected and updated annually. Nutrak has the capability of storing data on other time cycles, such as quarterly, but there are no current plans to do so.

What Nutrak is Not

There are many things that a tracking system is *not* designed to do, and there are many opportunities to reach erroneous or at least misleading conclusions through misuse of its information. Most of this section describes what a regional tracking system should be. Here is what it will *not* be.

- Nutrak is not a substitute for competent independent analysis
- Nutrak is not an evaluation
- Nutrak is not a black box to do cost-effectiveness tests

- Nutrak is not sufficient on its own to support regulatory decisions
- Nutrak is not detailed enough to meet a utility's program operational needs
- Nutrak is not a report card on individual utilities

IV. SUMMARY UTILITY TRACKING REPORTS: 1978 THROUGH 1994, BY SECTOR

This chapter contains spreadsheet tables and charts of conservation costs and savings for each of the 11 Nutrak utility data contributors. These numbers were all provided to the Council by the individual utilities. The source data for these sectoral summaries is contained in Nutrak94, the electronic version of *The Green Book*. All source data were reviewed by each utility contributor prior to publication.

Each utility report that follows identifies the utility and the name and address of the utility's Nutrak data contact.

Some utilities have chosen to provide an optional utility statement that explains or clarifies its Nutrak reported information.

Summary Tracking Report, Bonneville Power Administration

Utility ID 1; Utility Type: BPA

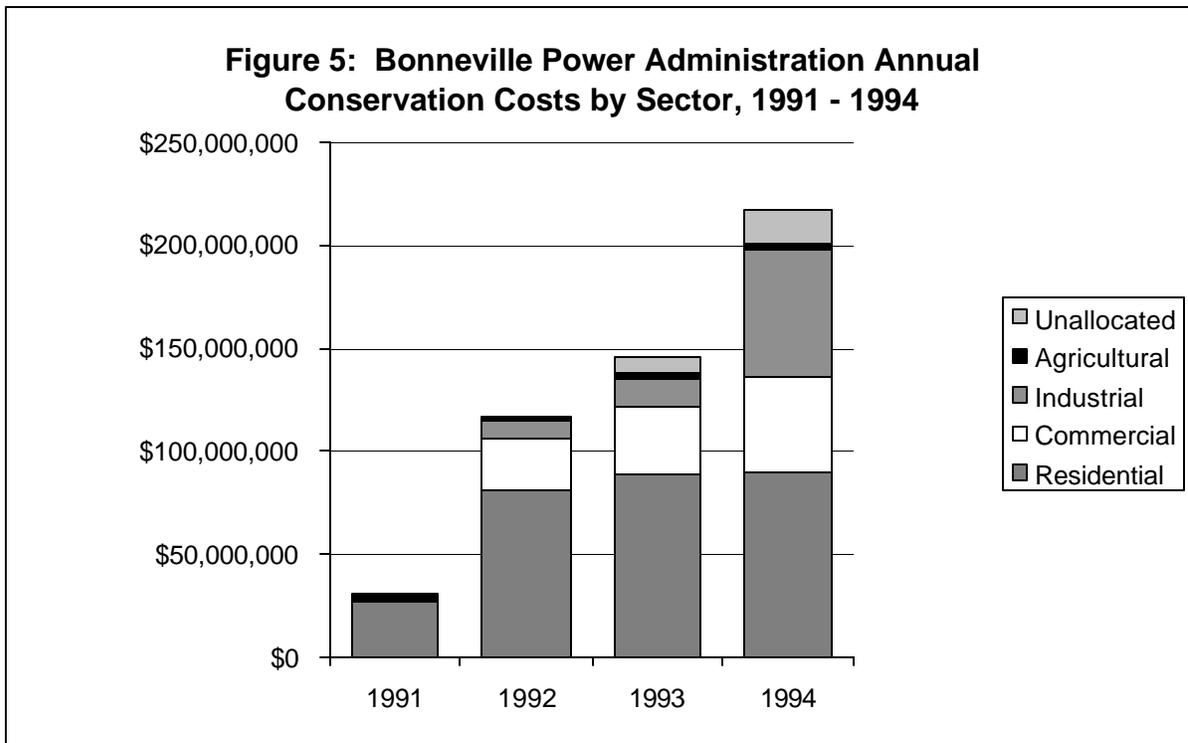
Data Contact: Jean Oates, RPEB, Program Evaluation, Energy Resrces

P.O. Box 3621

Portland, OR 97208

Phone # (503) 230-5861; Fax # (503) 230-7568

Utility Abbreviation BPA

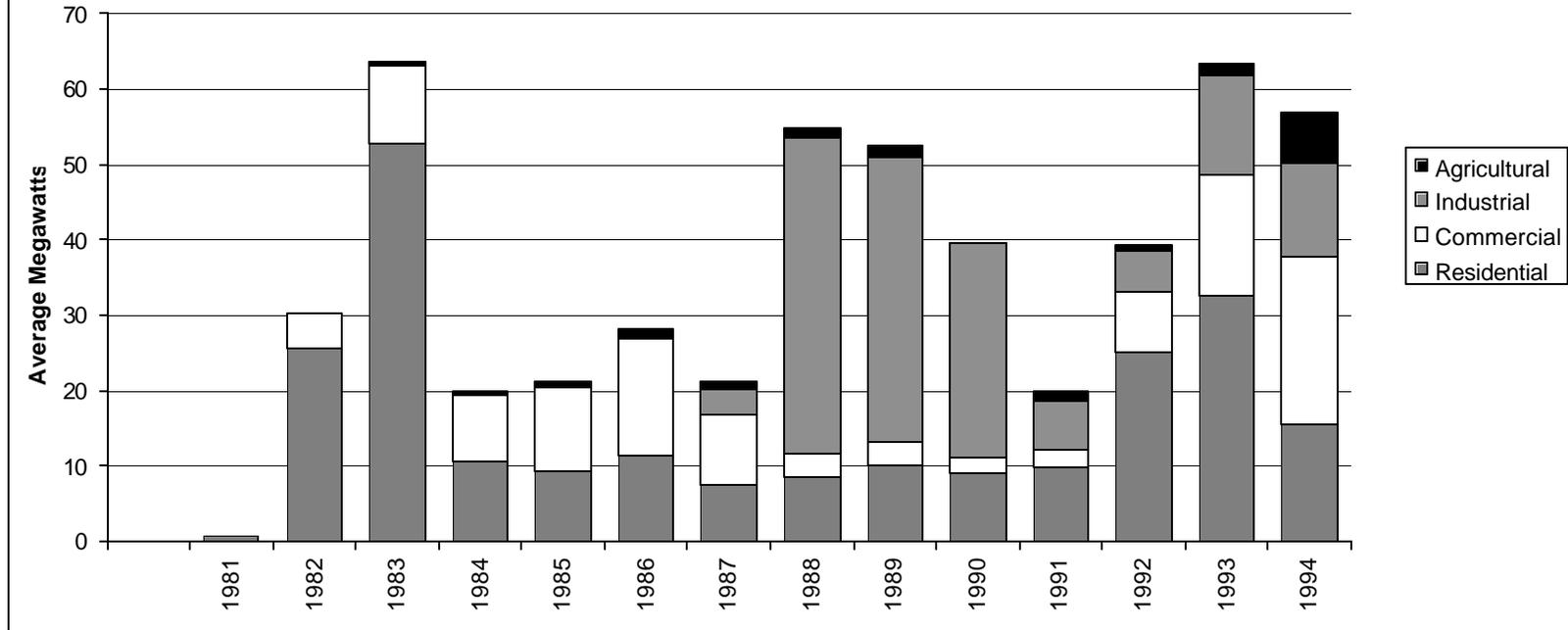


Bonneville Power Administration

	1991	1992	1993	1994	91-94 Total
Residential	\$26,707,000	\$80,949,000	\$89,241,000	\$89,726,123	\$286,623,123
Commercial	\$858,000	\$25,334,000	\$32,485,000	\$46,264,000	\$104,941,000
Industrial	\$1,071,000	\$8,397,000	\$13,899,000	\$61,845,000	\$85,212,000
Agricultural	\$2,007,000	\$2,593,000	\$2,187,000	\$2,617,000	\$9,404,000
Unallocated	\$0	\$0	\$7,944,000	\$17,133,000	\$25,077,000
Total	\$30,643,000	\$117,273,000	\$145,756,000	\$217,585,123	\$511,257,123

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Figure 6: Bonneville Power Administration Summary of Unadjusted First Year Conservation Savings by Sector, 1981 - 1994



	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Residential	0.9	25.7	52.8	10.6	9.4	11.4	7.6	8.5	10.1	9.0	9.9	25.1	32.7	15.5
Commercial	0.0	4.7	10.1	8.9	10.9	15.5	9.1	3.1	3.1	2.0	2.3	8.0	16.0	22.2
Industrial	0.0	0.0	0.0	0.0	0.0	0.4	3.4	41.9	37.8	28.5	6.3	5.4	13.1	12.5
Agricultural	0.0	0.0	0.5	0.5	1.0	0.9	1.3	1.4	1.4	0.1	1.2	0.9	1.7	6.7
Incremental Total	0.9	30.4	63.5	20.0	21.3	28.1	21.4	54.9	52.4	39.7	19.8	39.4	63.4	56.9

Note on Figure 6. First year savings are the first full year of energy savings resulting from all utility conservation/demand-side activities undertaken in the reporting period. Bonneville's reported savings include an upward adjustment to reflect transmission and distribution savings of 7.5 percent (to be comparable with supply-side resources). No other utility's reported figures include this adjustment. Fuel-switching (to natural gas) acquired as a demand-side resource has been included here. Bonneville's reported savings include resources acquired with Bonneville funding by other Nutrak reporting utilities. [FYSSEC94.xls]

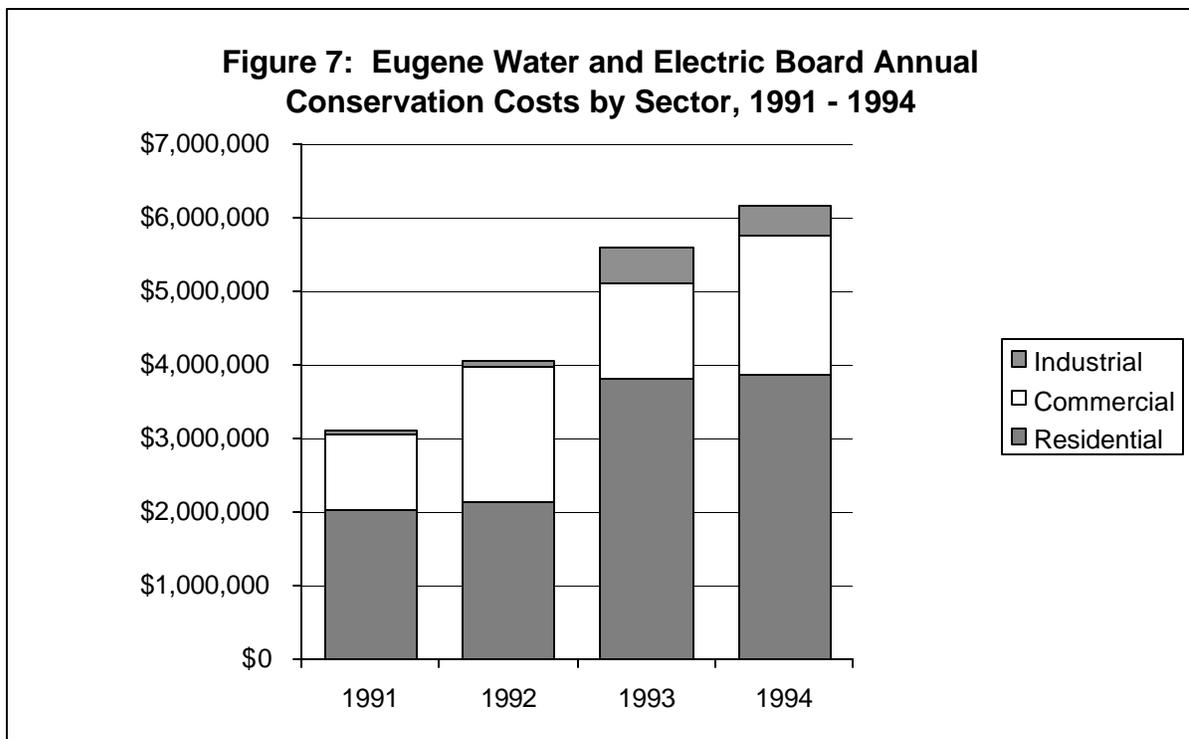
Summary Tracking Report, Eugene Water and Electric Board

Utility ID 2; Utility Type: MUNI

Data Contact: Mathew Northway, Energy Management Services Dept. Manager
 500 East Fourth Avenue, P.O. Box 10148
 Eugene, OR 97440
 Phone # (503) 484-1125; Fax # (503) 334-4619

Utility Abbreviation EWEB

Utility Statement: The records shown here represent the programmatic portion of EWEB's demand-side management programs. Savings shown are based on engineering estimates with installation verification inspections. Utility costs shown include customer incentive costs and direct administrative costs for most programs, but generally do not include indirect costs associated with the operation of EWEB's Energy Management Services office.

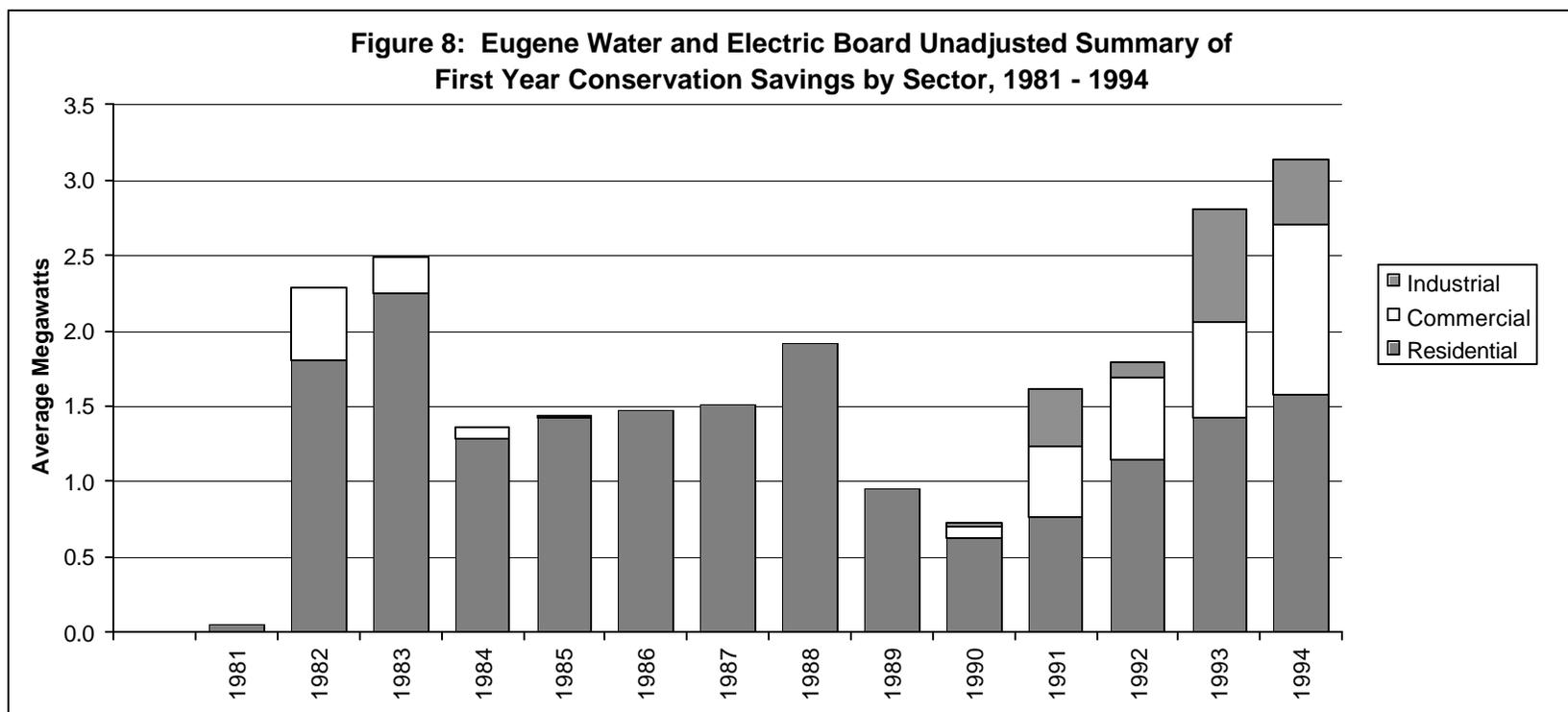


Eugene Water and Electric Board

	1991	1992	1993	1994	91-94 Total
Residential	\$2,019,171	\$2,121,164	\$3,794,543	\$3,854,576	\$11,789,454
Commercial	\$1,031,345	\$1,836,032	\$1,321,172	\$1,893,811	\$6,082,360
Industrial	\$40,000	\$101,000	\$488,958	\$408,600	\$1,038,558
Total	\$3,090,516	\$4,058,196	\$5,604,673	\$6,156,987	\$18,910,372

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Figure 8: Eugene Water and Electric Board Unadjusted Summary of First Year Conservation Savings by Sector, 1981 - 1994



	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Residential	0.1	1.8	2.3	1.3	1.4	1.5	1.5	1.9	1.0	0.6	0.8	1.1	1.4	1.6
Commercial	0.0	0.5	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.5	0.6	1.1
Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	0.7	0.4
Incremental Total	0.1	2.3	2.5	1.4	1.4	1.5	1.5	1.9	1.0	0.7	1.6	1.8	2.8	3.1

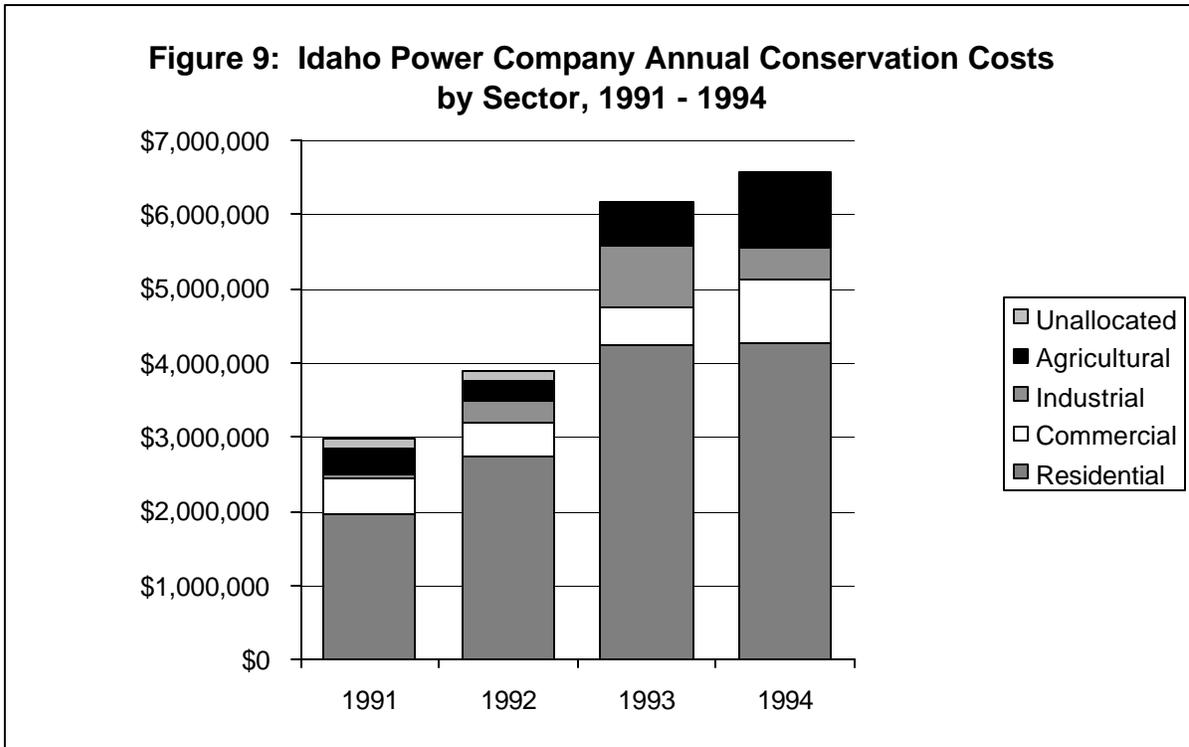
Note on Figure 8. First year savings are the first full year of energy savings resulting from all utility conservation/demand-side activities undertaken in the reporting period. EWEB's reported savings do not include an upward adjustment to reflect transmission and distribution savings (to be comparable with supply-side resources). [FYSSEC94.xls]

Summary Tracking Report, Idaho Power Company

Utility ID 3; Utility Type: IOU

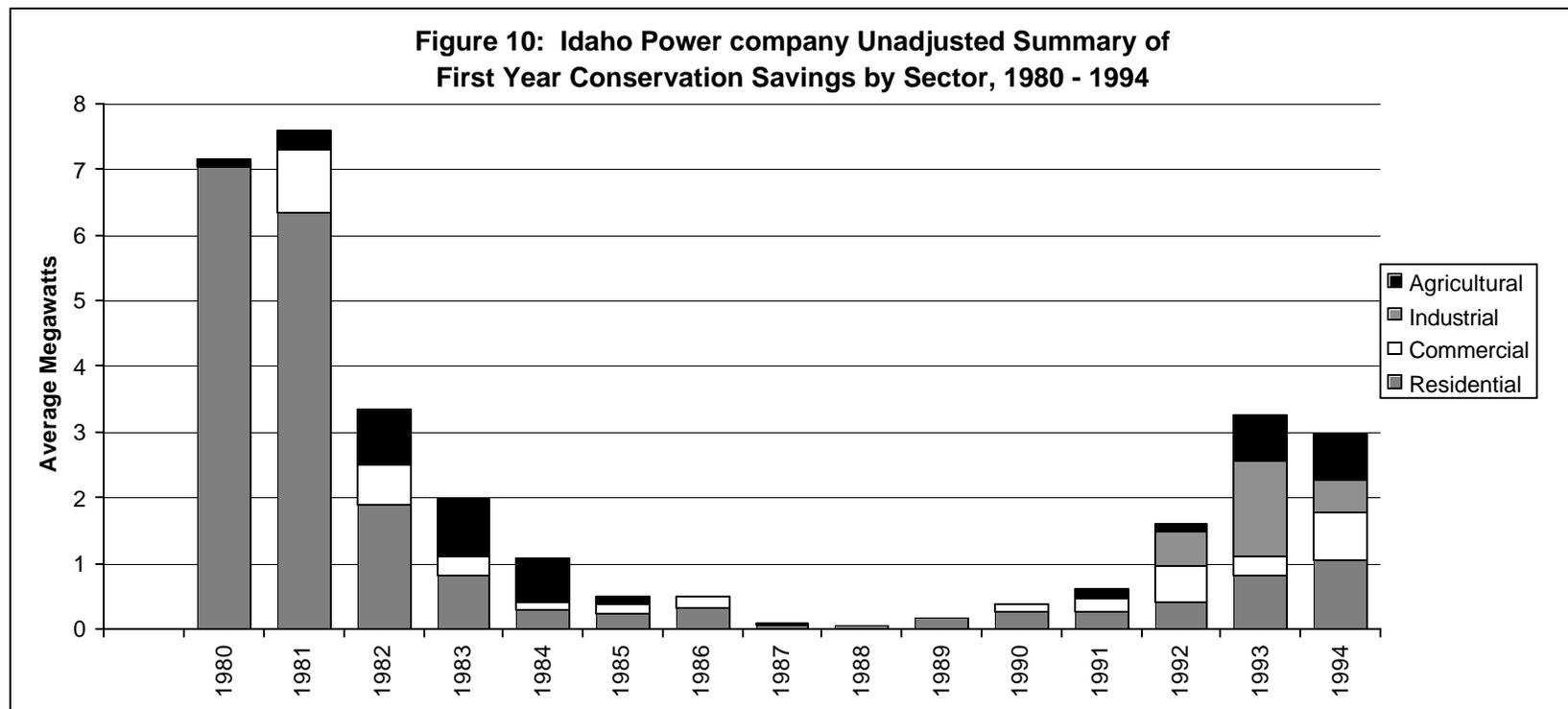
Data Contact: Becky Andersohn, Economic Analyst, Energy Svcs. Dept.
 1220 W. Idaho, 7th Floor
 Boise, ID 83702
 Phone # (208) 388-2869; Fax # (208) 388-6910

Utility Abbreviation IPC



Idaho Power Company					
	1991	1992	1993	1994	91-94 Total
Residential	\$1,973,524	\$2,744,921	\$4,241,875	\$4,258,766	\$13,219,086
Commercial	\$464,555	\$452,034	\$501,054	\$881,120	\$2,298,763
Industrial	\$71,788	\$285,479	\$846,126	\$422,752	\$1,626,145
Agricultural	\$348,477	\$274,558	\$572,683	\$1,025,652	\$2,221,370
Unallocated	\$129,475	\$135,075	\$0	\$0	\$264,550
Total	\$2,987,819	\$3,892,067	\$6,161,738	\$6,588,290	\$19,629,914

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	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Residential	7.0	6.3	1.9	0.8	0.3	0.2	0.3	0.1	0.0	0.2	0.3	0.3	0.4	0.8	1.1
Commercial	0.0	1.0	0.6	0.3	0.1	0.2	0.2	0.0	0.0	0.0	0.1	0.2	0.5	0.3	0.7
Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.4	0.5
Agricultural	0.1	0.3	0.9	0.9	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.7	0.7
Incremental Total	7.1	7.6	3.3	2.0	1.1	0.5	0.5	0.1	0.0	0.2	0.4	0.6	1.6	3.3	3.0

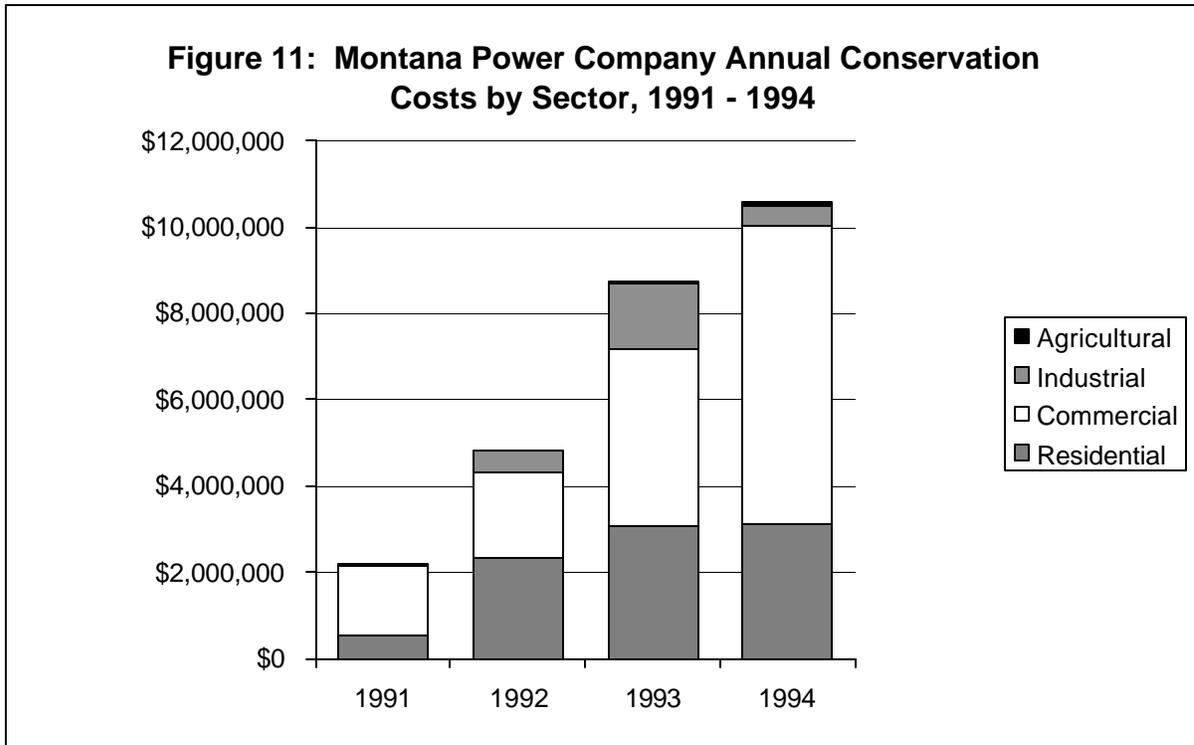
Note on Figure 10. First year savings are the first full year of energy savings resulting from all utility conservation/demand-side activities undertaken in the reporting period. Idaho Power Company's reported savings do not include an upward adjustment to reflect transmission and distribution savings (to be comparable with supply-side resources). [FYSSEC94.xls]

Summary Tracking Report, Montana Power Company

Utility ID 4; Utility Type: IOU

Data Contact: Donna O’Neill, Analyst
 40 East Broadway
 Butte, MT 59701
 Phone # (406) 723-5454 X72617; Fax # (406) 496-5026

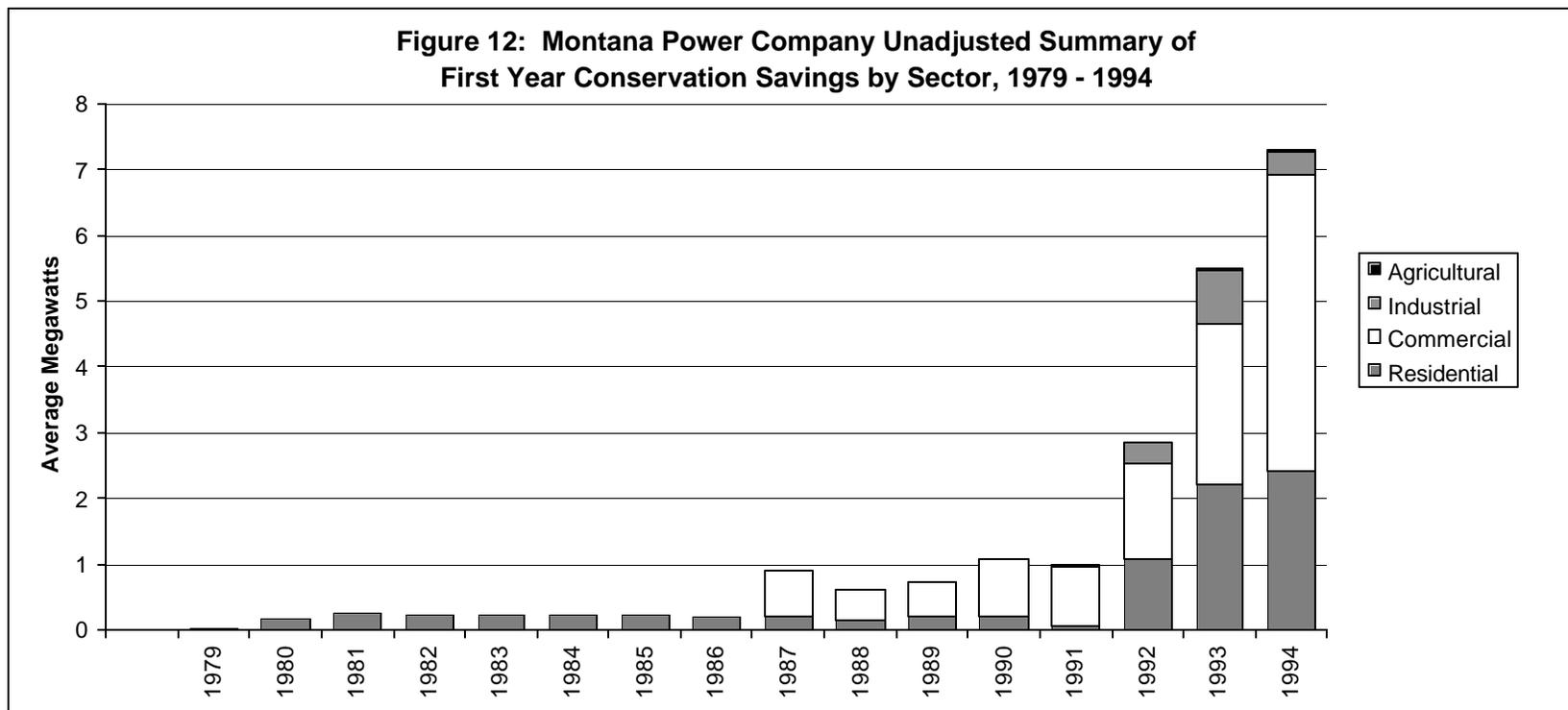
Utility Abbreviation MPC



Montana Power Company					
	1991	1992	1993	1994	91-94 Total
Residential	\$524,416	\$2,351,475	\$3,092,197	\$3,128,061	\$9,096,149
Commercial	\$1,634,907	\$1,970,848	\$4,098,014	\$6,881,888	\$14,585,657
Industrial	\$13,863	\$505,920	\$1,500,022	\$464,171	\$2,483,976
Agricultural	\$0	\$0	\$44,357	\$92,127	\$136,484
Total	\$2,173,186	\$4,828,243	\$8,734,590	\$10,566,247	\$26,302,266

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Figure 12: Montana Power Company Unadjusted Summary of First Year Conservation Savings by Sector, 1979 - 1994



	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Residential	0.0	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	1.1	2.2	2.4
Commercial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.4	0.5	0.9	0.9	1.5	2.4	4.5
Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.8	0.4
Agricultural	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incremental Total	0.0	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.9	0.6	0.7	1.1	1.0	2.9	5.5	7.3

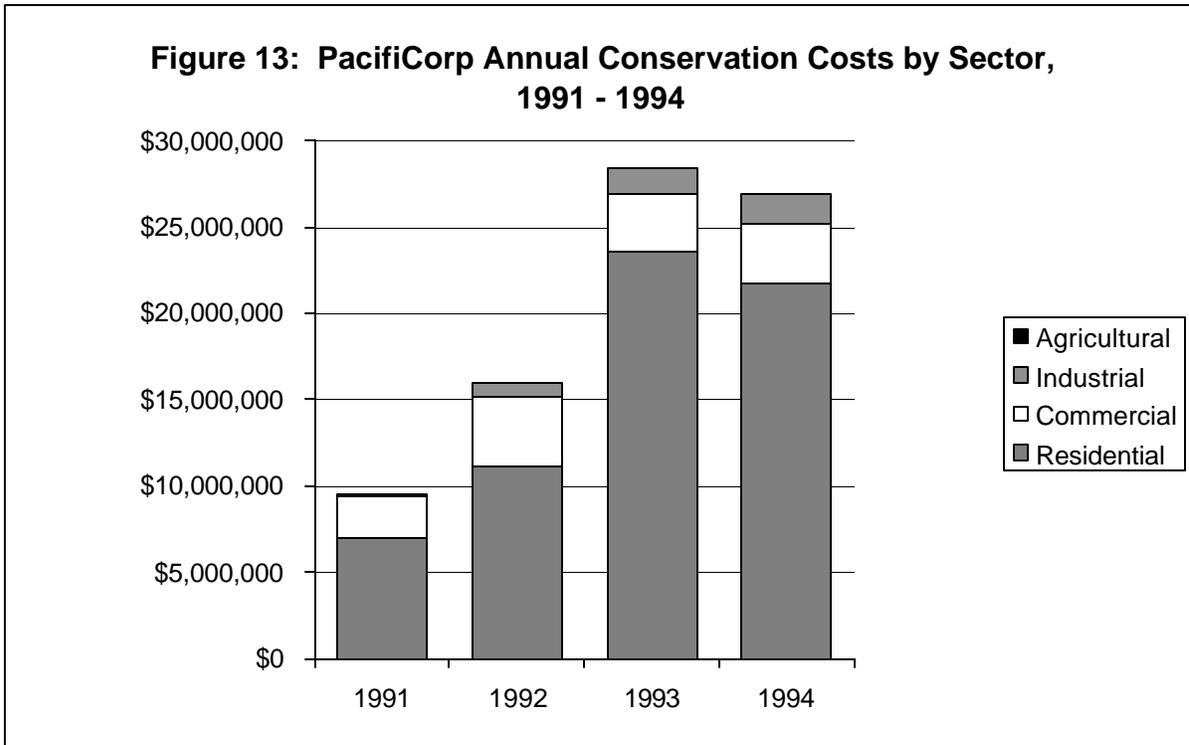
Note on Figure 12. First year savings are the first full year of energy savings resulting from all utility conservation/demand-side activities undertaken in the reporting period. Montana Power Company's reported savings do not include an upward adjustment to reflect transmission and distribution savings (to be comparable with supply-side resources). Fuel-switching (to natural gas) acquired as a demand-side resource has been included here. One hundred percent of Montana Power Company's savings are shown here, reflecting both in-region and out-of-region activity. [FYSSEC94.xls]

Summary Tracking Report, PacifiCorp

Utility ID 5; Utility Type: IOU

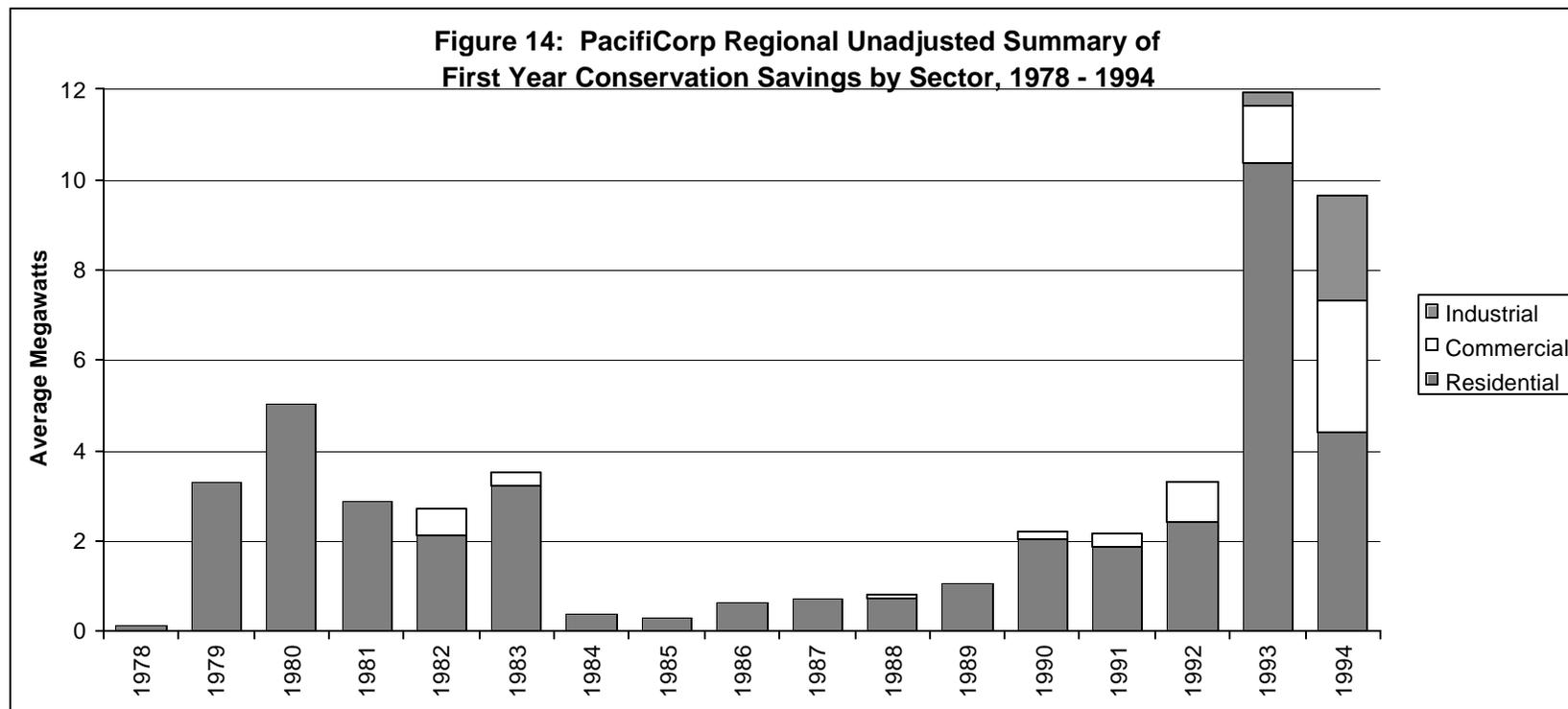
Data Contact: Margot Everett, Manager, Retail Program Performance
 920 S.W. Sixth Avenue, 1280 PSB
 Portland, OR 97204
 Phone # (503) 464-6518; Fax # (503) 275-2896

Utility Abbreviation Pacific



PacifiCorp	1991	1992	1993	1994	91-94 Total
Residential	\$6,997,359	\$11,145,645	\$23,550,596	\$21,785,667	\$63,479,267
Commercial	\$2,362,586	\$3,987,244	\$3,401,070	\$3,426,332	\$13,177,232
Industrial	\$191,789	\$896,845	\$1,435,469	\$1,669,762	\$4,193,865
Agricultural	\$0	\$0	\$0	\$10,080	\$10,080
Total	\$9,551,734	\$16,029,734	\$28,387,135	\$26,891,841	\$80,860,444

Note on Figure 13. The cost figures reported here are for PacifiCorp's conservation expenditures in the states of Idaho, Montana, Oregon and Washington only.



	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Residential	0.1	3.3	5.0	2.9	2.1	3.2	0.4	0.3	0.6	0.7	0.7	1.1	2.0	1.9	2.4	10.3	4.4
Commercial	0.0	0.0	0.0	0.0	0.6	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.3	0.9	1.3	2.9
Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.3
Incremental Total	0.1	3.3	5.0	2.9	2.7	3.5	0.4	0.3	0.6	0.7	0.8	1.1	2.2	2.2	3.3	11.9	9.7

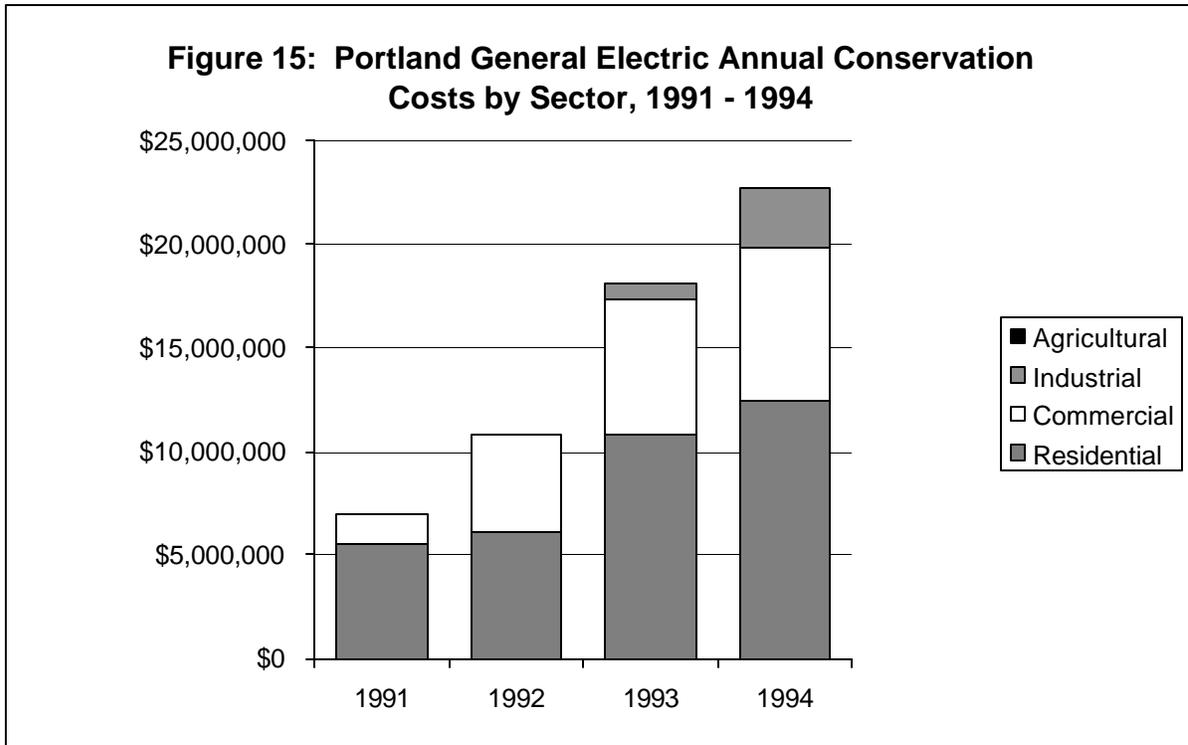
Note on Figure 14. First year savings are the first full year of energy savings resulting from all utility conservation/demand-side activities undertaken in the reporting period. PacifiCorp's reported savings do not include an upward adjustment to reflect transmission and distribution savings (to be comparable with supply-side resources). The savings reported here are for PacifiCorp's conservation activities in the states of Idaho, Montana, Oregon and Washington only. [FYSSEC94.xls]

Summary Tracking Report, Portland General Electric

Utility ID 6; Utility Type: IOU

Data Contact: Bruce True, Program Evaluation
 121 SW Salmon 1WTC, mailstop 0702
 Portland, OR 97204
 Phone # (503) 464-7491; Fax # (503) 464-7651

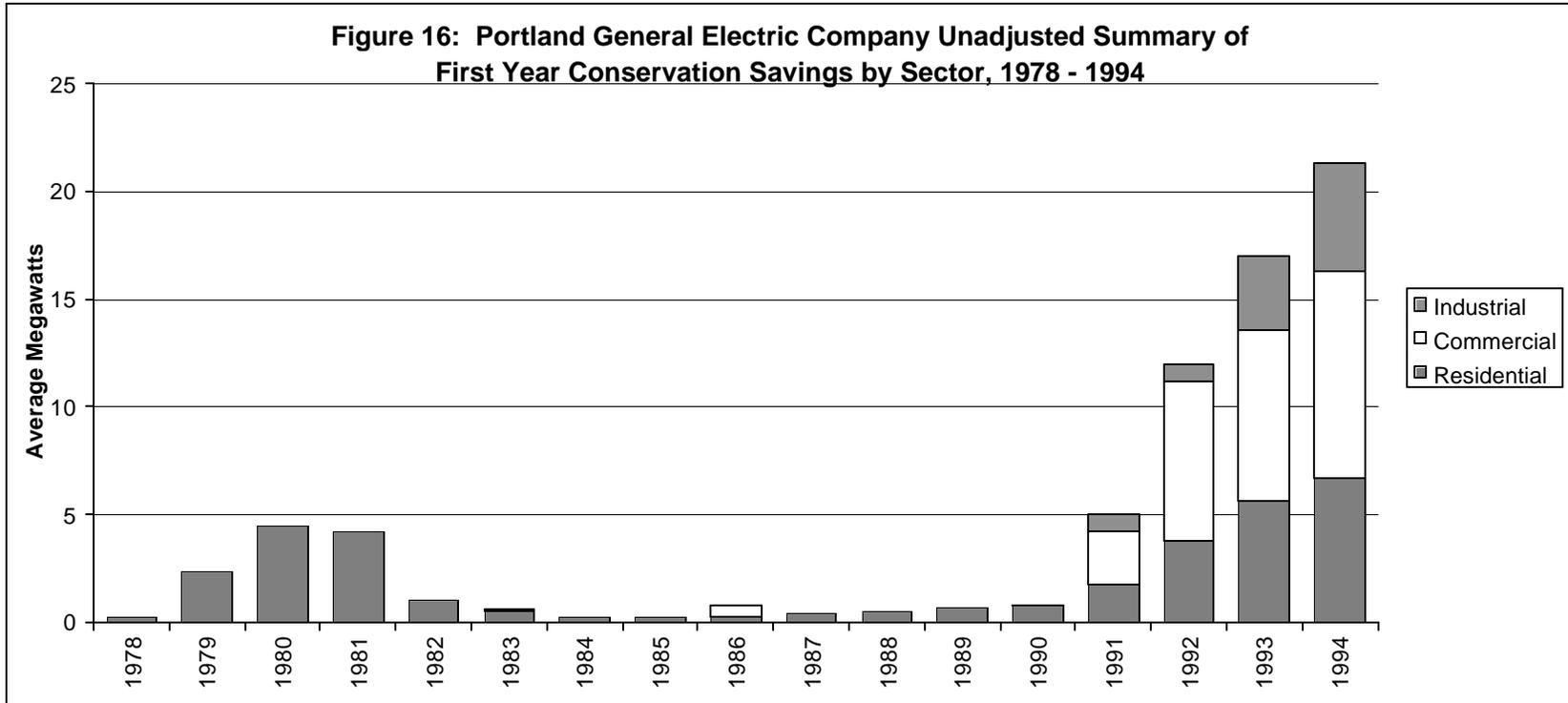
Utility Abbreviation PGE



Portland General Electric					
	1991	1992	1993	1994	91-94 Total
Residential	\$5,510,250	\$6,098,553	\$10,777,337	\$12,473,162	\$34,859,302
Commercial	\$1,456,807	\$4,737,426	\$6,598,204	\$7,383,559	\$20,175,996
Industrial	\$0	\$0	\$699,261	\$2,858,072	\$3,557,333
Agricultural	\$0	\$0	\$0	\$0	\$0
Total	\$6,967,057	\$10,835,979	\$18,074,802	\$22,714,793	\$58,592,631

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Figure 16: Portland General Electric Company Unadjusted Summary of First Year Conservation Savings by Sector, 1978 - 1994



	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Residential	0.2	2.4	4.5	4.2	1.1	0.5	0.2	0.3	0.3	0.4	0.6	0.7	0.8	1.8	3.8	5.7	6.7
Commercial	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.5	0.0	0.0	0.0	0.1	2.4	7.4	7.9	9.6
Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	3.5	5.0
Incremental Total	0.2	2.4	4.5	4.2	1.1	0.6	0.2	0.3	0.8	0.4	0.6	0.7	0.8	5.0	12.0	17.0	21.3

Note on Figure 16. First year savings are the first full year of energy savings resulting from all utility conservation/demand-side activities undertaken in the reporting period. Portland General Electric Company's reported savings do not include an upward adjustment to reflect transmission and distribution savings (to be comparable with supply-side resources). [FYSSEC94.xls]

Summary Tracking Report, Puget Sound Power and Light Co.

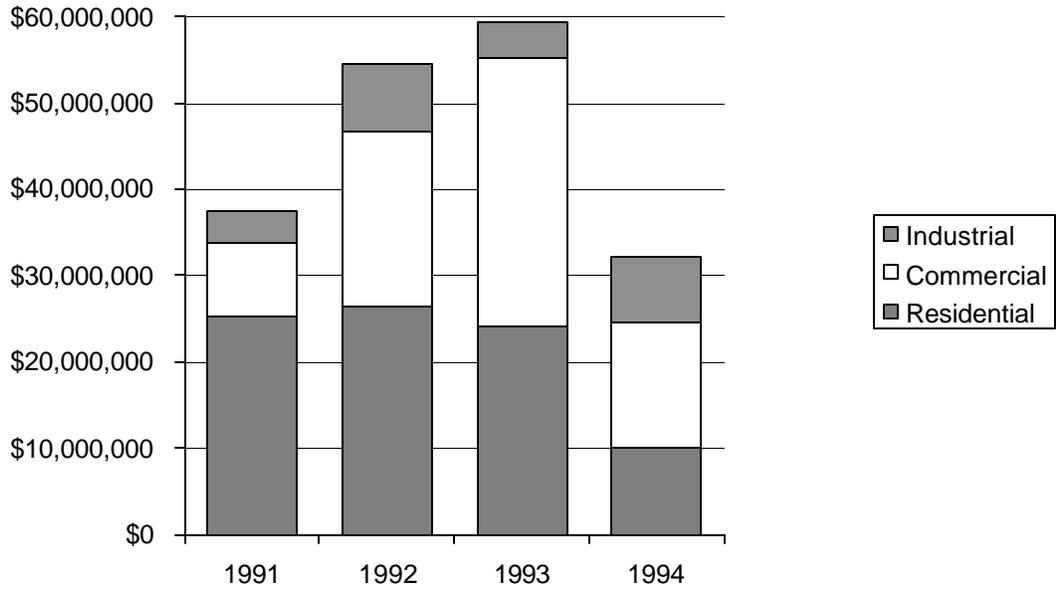
Utility ID 7; Utility Type: IOU

Data Contact: Brian A. Clayton, Manager, Contracts and Reporting
P.O. Box 97034 OBC-08N
Bellevue, WA 98009-9734
Phone # (206) 462-3430; Fax # (206) 462-3344

Utility Abbreviation Puget

Utility Statement: Puget defines programs primarily by unique delivery mechanisms. For example, the same kind of energy efficient measure may be provided to a customer through the mail, or by contractor delivery and installation. Both of these methods may result in uniquely different energy savings and administrative costs. For the purpose of clarity and comparability, Puget programs have been recalculated to reflect specific end uses. In these cases, costs are footnoted. Where possible, all costs are directly identified to specific programs. These costs include program planning, evaluation, employee overheads etc.. Some administrative costs cannot be directly identified to programs. These costs are allocated to programs on the basis of direct program costs. Costs of the advertising program and the carrying costs of conservation investment are not included in this report.

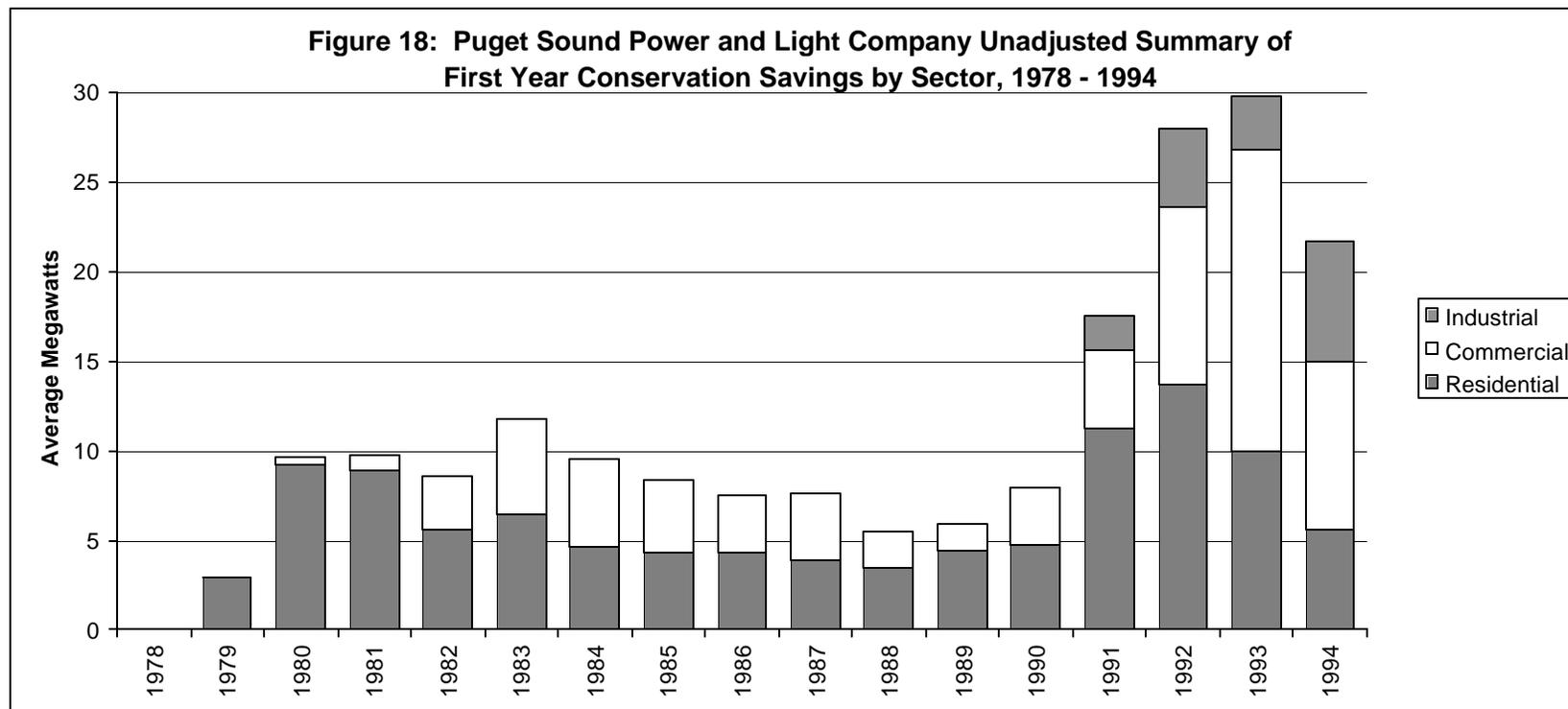
Figure 17: Puget Sound Power and Light Annual Conservation Costs by Sector, 1991 - 1994



Puget Sound Power and Light

	1991	1992	1993	1994	91-94 Total
Residential	\$25,273,000	\$26,463,000	\$24,214,000	\$10,022,000	\$85,972,000
Commercial	\$8,527,000	\$20,150,000	\$30,876,000	\$14,620,000	\$74,173,000
Industrial	\$3,623,000	\$7,910,000	\$4,249,000	\$7,607,000	\$23,389,000
Total	\$37,423,000	\$54,523,000	\$59,339,000	\$32,249,000	\$183,534,000

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	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Residential	0.0	2.9	9.2	8.9	5.6	6.5	4.7	4.3	4.3	3.9	3.5	4.4	4.8	11.2	13.7	9.9	5.6
Commercial	0.0	0.1	0.4	0.9	3.0	5.3	4.8	4.1	3.2	3.7	2.0	1.5	3.1	4.4	9.9	16.9	9.3
Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	4.3	2.9	6.8
Incremental Total	0.0	3.0	9.6	9.7	8.6	11.7	9.5	8.4	7.5	7.6	5.4	5.9	7.9	17.6	27.9	29.7	21.7

Note on Figure 18. First year savings are the first full year of energy savings resulting from all utility conservation/demand-side activities undertaken in the reporting period. Puget Sound Power and Light Company's reported savings do not include an upward adjustment to reflect transmission and distribution savings (to be comparable with supply-side resources). [FYSSEC94.xls]

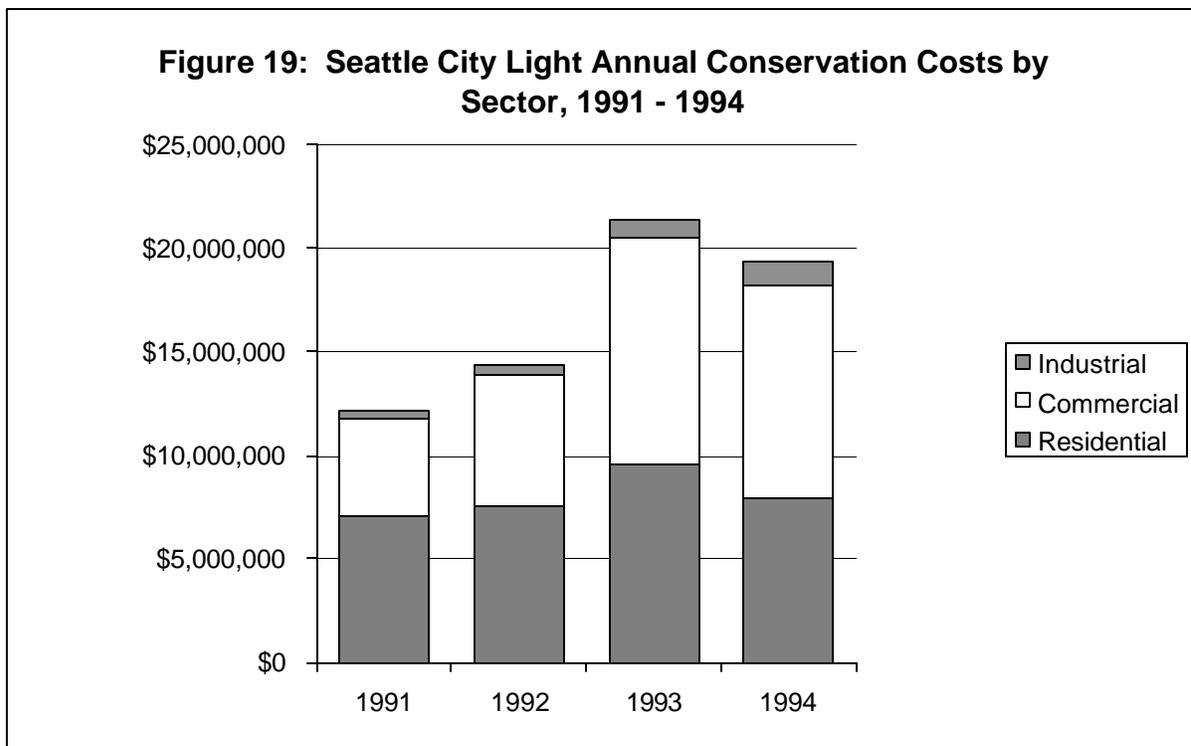
Summary Tracking Report, Seattle City Light

Utility ID 8; Utility Type: MUNI

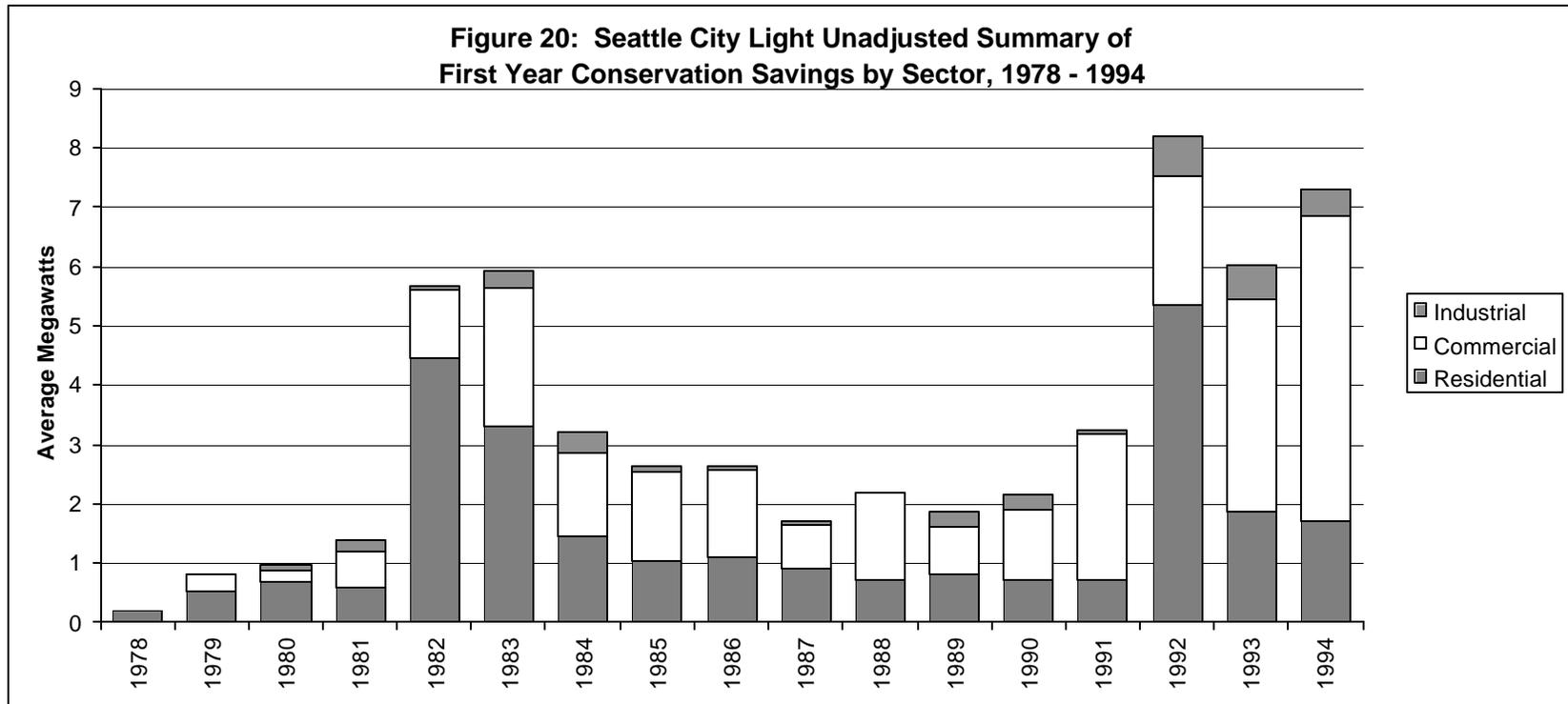
Data Contact: Debra L.O. Tachibana, Evaluation Unit
 700 Fifth Avenue, Suite 3100
 Seattle, WA 98104-5031
 Phone # (206) 684-3874; Fax # (206) 684-3385

Utility Abbreviation SCL

Utility Statement: The conservation program data provided to Nutrak for Seattle City Light came from the Evaluation Unit in the Energy Management Services Division. These data are published annually in Seattle City Light's "Energy Conservation Accomplishments Report." The sources for specific data items are more completely footnoted in that reference document. In defining program participants, Seattle City Light's figures include Completed jobs instead of Contracted jobs. Users of the savings data should keep in mind that only savings for "new" 1994 program participants are included here. Since SCL has been conducting conservation programs since 1977, there are also sizeable savings continuing to accrue in 1994 from previous program participants.



Seattle City Light					
	1991	1992	1993	1994	91-94 Total
Residential	\$7,110,443	\$7,537,373	\$9,559,037	\$7,944,423	\$32,151,276
Commercial	\$4,686,111	\$6,392,559	\$10,963,764	\$10,238,564	\$32,280,998
Industrial	\$401,541	\$479,493	\$886,407	\$1,132,893	\$2,900,334
Total	\$12,198,095	\$14,409,425	\$21,409,208	\$19,315,880	\$67,332,608



	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Residential	0.2	0.5	0.7	0.6	4.5	3.3	1.5	1.0	1.1	0.9	0.7	0.8	0.7	0.7	5.4	1.9	1.7
Commercial	0.0	0.3	0.2	0.6	1.2	2.3	1.4	1.5	1.5	0.7	1.5	0.8	1.2	2.5	2.2	3.6	5.1
Industrial	0.0	0.0	0.1	0.2	0.0	0.3	0.4	0.1	0.1	0.1	0.0	0.2	0.3	0.1	0.6	0.6	0.4
Incremental Total	0.2	0.8	1.0	1.4	5.7	5.9	3.2	2.6	2.6	1.7	2.2	1.9	2.2	3.3	8.2	6.0	7.3

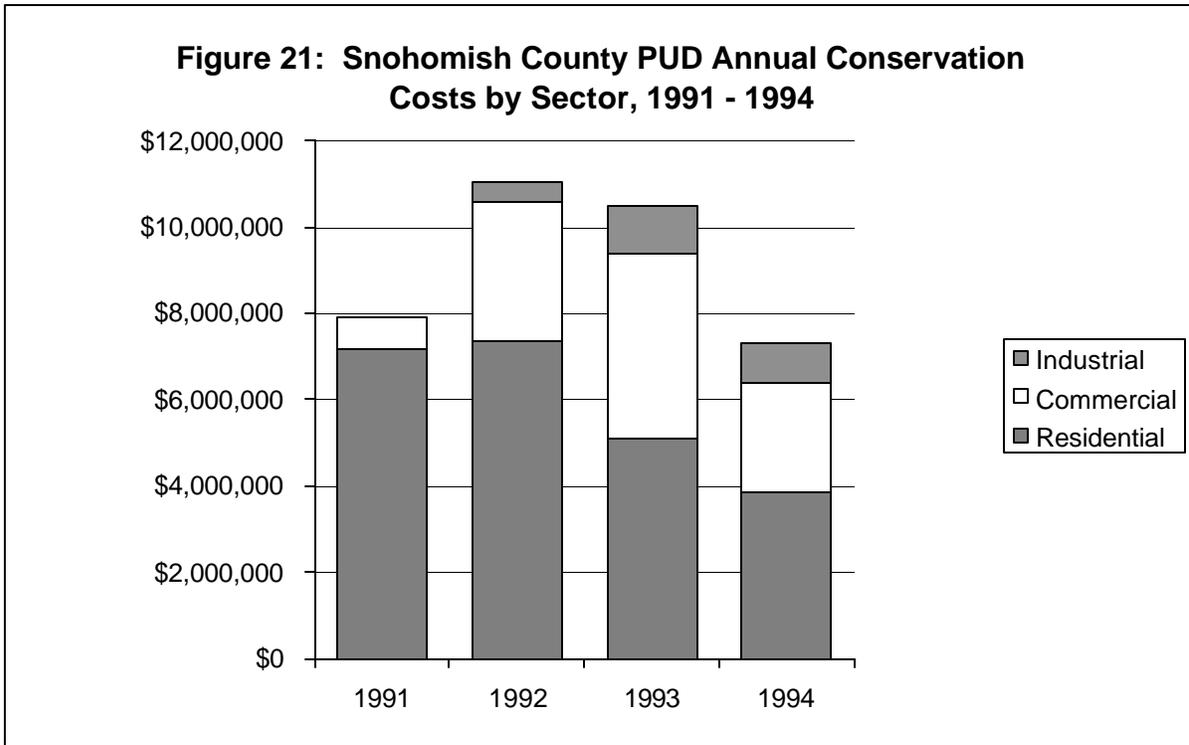
Note on Figure 20. First year savings are the first full year of energy savings resulting from all utility conservation/demand-side activities undertaken in the reporting period. Seattle City Light's reported savings do not include an upward adjustment to reflect transmission and distribution savings (to be comparable with supply-side resources). [FYSSEC94.xls]

Summary Tracking Report, Snohomish County PUD

Utility ID 11; Utility Type: PUD

Data Contact: Kim Roberts, Programs Analyst
 P.O. Box 1107
 Everett, WA 98206
 Phone # (206) 304-1798; Fax # (206) 304-1774

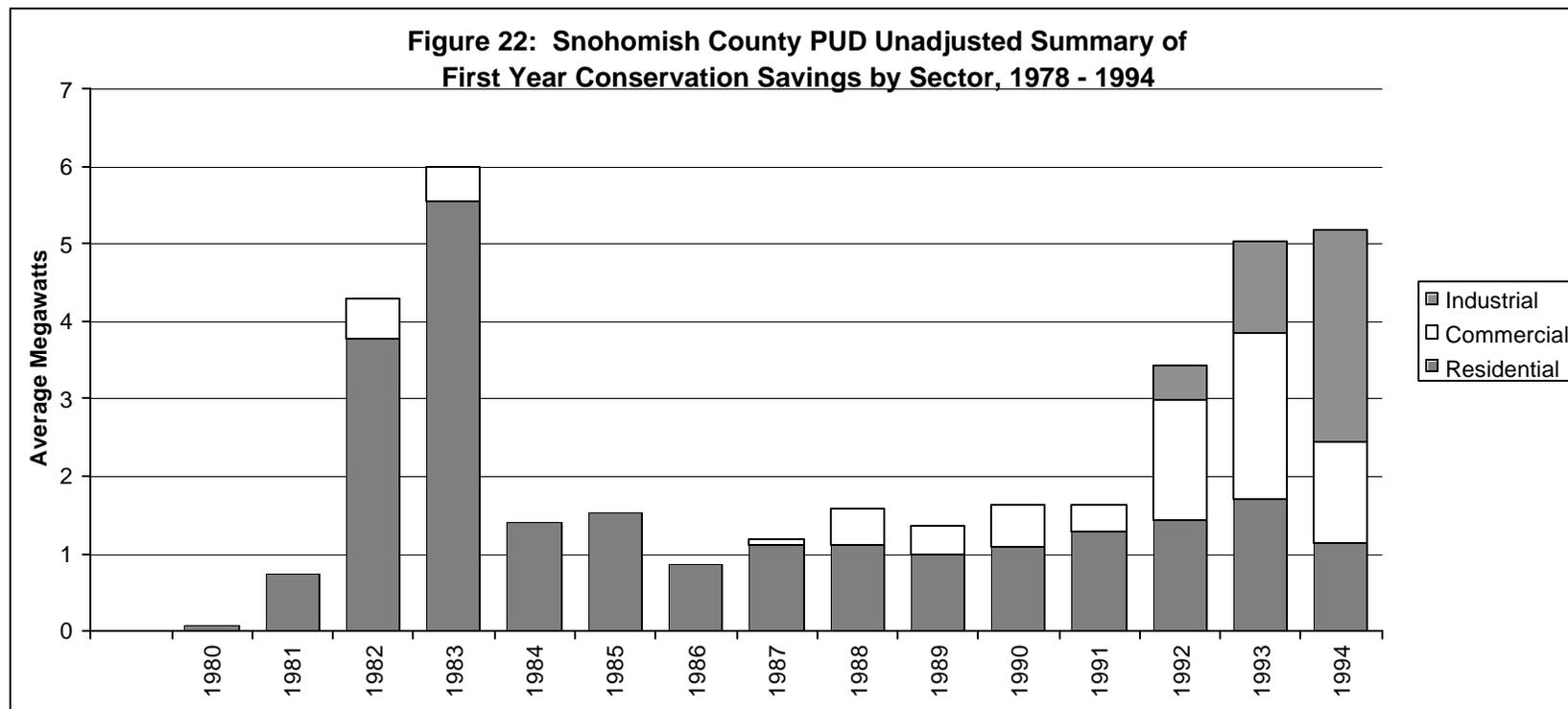
Utility Abbreviation SnoPUD



Snohomish County PUD

	1991	1992	1993	1994	91-94 Total
Residential	\$7,193,495	\$7,349,288	\$5,107,015	\$3,851,412	\$23,501,210
Commercial	\$696,107	\$3,244,911	\$4,259,554	\$2,526,582	\$10,727,154
Industrial	\$0	\$432,067	\$1,094,181	\$942,544	\$2,468,792
Total	\$7,889,602	\$11,026,266	\$10,460,750	\$7,320,538	\$36,697,156

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	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Residential	0.1	0.7	3.8	5.6	1.4	1.5	0.9	1.1	1.1	1.0	1.1	1.3	1.4	1.7	1.1
Commercial	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.1	0.5	0.4	0.5	0.3	1.6	2.1	1.3
Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.2	2.7
Incremental Total	0.1	0.7	4.3	6.0	1.4	1.5	0.9	1.2	1.6	1.4	1.6	1.6	3.4	5.0	5.2

Note on Figure 22. First year savings are the first full year of energy savings resulting from all utility conservation/demand-side activities undertaken in the reporting period. Snohomish County Public Utility District's reported savings do not include an upward adjustment to reflect transmission and distribution savings (to be comparable with supply-side resources). [FYSSEC94.xls]

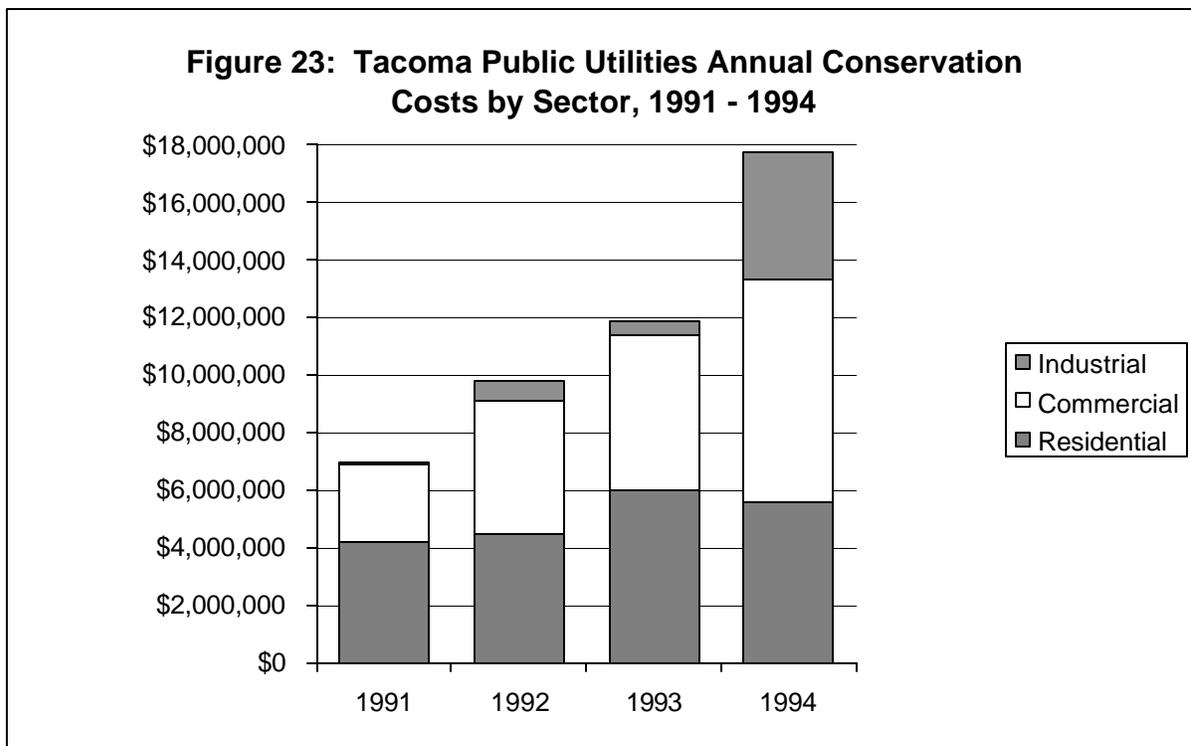
Summary Tracking Report, Tacoma Public Utilities

Utility ID 9; Utility Type: MUNI

Data Contact: Jim Perich-Anderson, Conservation Planning & Eval, Light Div.
 3315 South 23rd Street, P.O. Box 11007
 Tacoma, WA 98411
 Phone # (206) 502-8619; Fax # (206) 502-8276

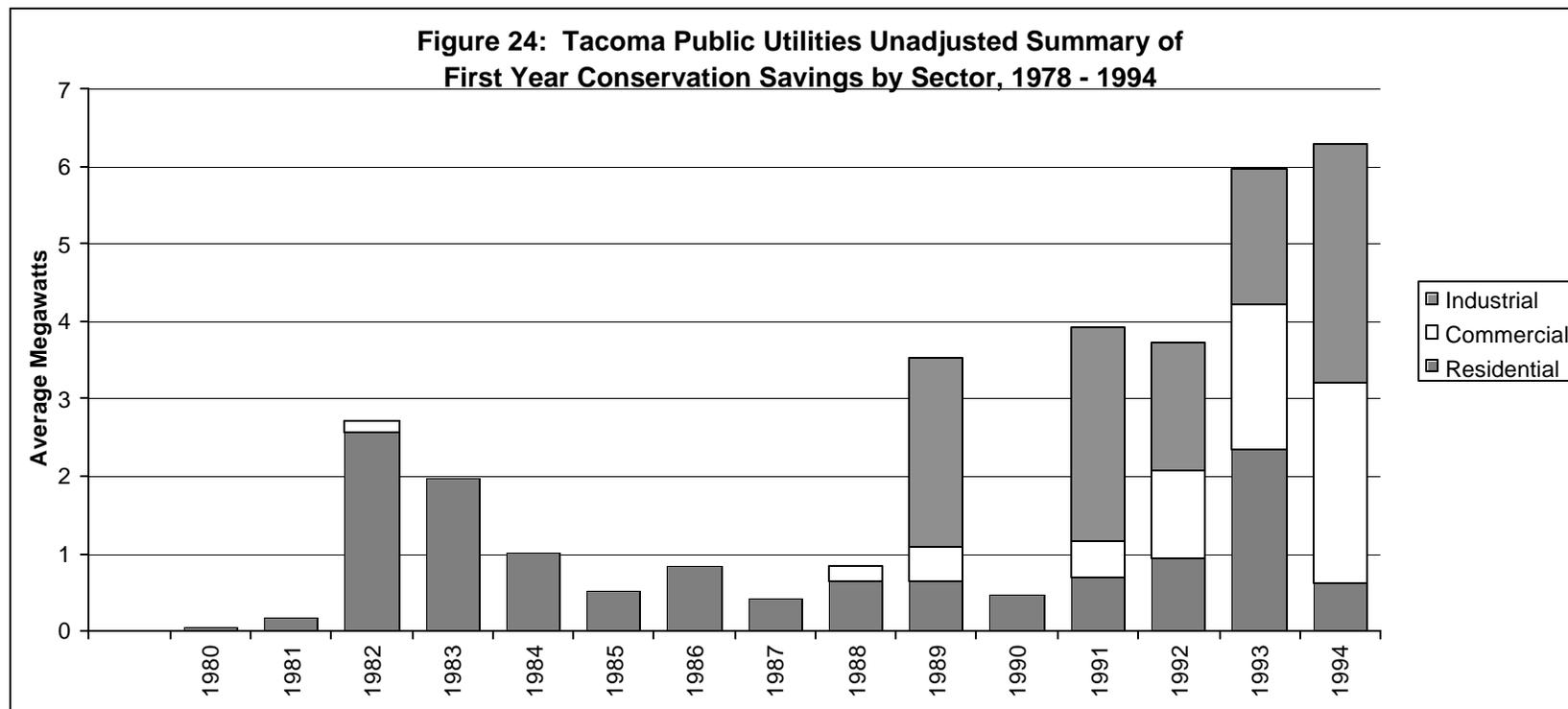
Utility Abbreviation TPU

Utility Statement: The following information can serve as an indicator of overall conservation activity levels. The conservation program data is not intended to report specific savings or costs attributable to energy conservation programs for specific years. Ongoing savings from previously completed programs are not reported. 1994 expenditures include some for projects that will be completed in 1995 and beyond. As a result, 1994 expenditures cannot be accurately correlated to 1994 savings. The conservation program data provided to Nutrak for Tacoma Public Utilities came from the Planning and Evaluation Unit of the Energy Conservation Office. Updated information on program milestones, expenditures and first year savings is published annually in the utility's "Energy Conservation Accomplishments Report." Additional information on conservation programs can be obtained from Tacoma Public Utilities.



Tacoma Public Utilities

	1991	1992	1993	1994	91-94 Total
Residential	\$4,168,084	\$4,435,072	\$6,021,214	\$5,536,971	\$20,161,341
Commercial	\$2,708,659	\$4,655,741	\$5,353,739	\$7,771,461	\$20,489,600
Industrial	\$95,828	\$683,625	\$524,817	\$4,385,603	\$5,689,873
Total	\$6,972,571	\$9,774,438	\$11,899,770	\$17,694,035	\$46,340,814



	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Residential	0.0	0.2	2.6	2.0	1.0	0.5	0.8	0.4	0.6	0.6	0.5	0.7	0.9	2.4	0.6
Commercial	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.0	0.4	1.1	1.9	2.6
Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	2.8	1.7	1.8	3.1
Incremental Total	0.0	0.2	2.7	2.0	1.0	0.5	0.8	0.4	0.8	3.5	0.5	3.9	3.7	6.0	6.3

Note on Figure 24. First year savings are the first full year of energy savings resulting from all utility conservation/demand-side activities undertaken in the reporting period. Tacoma Public Utilities' reported savings do not include an upward adjustment to reflect transmission and distribution savings (to be comparable with supply-side resources). [FYSSEC94.xls]

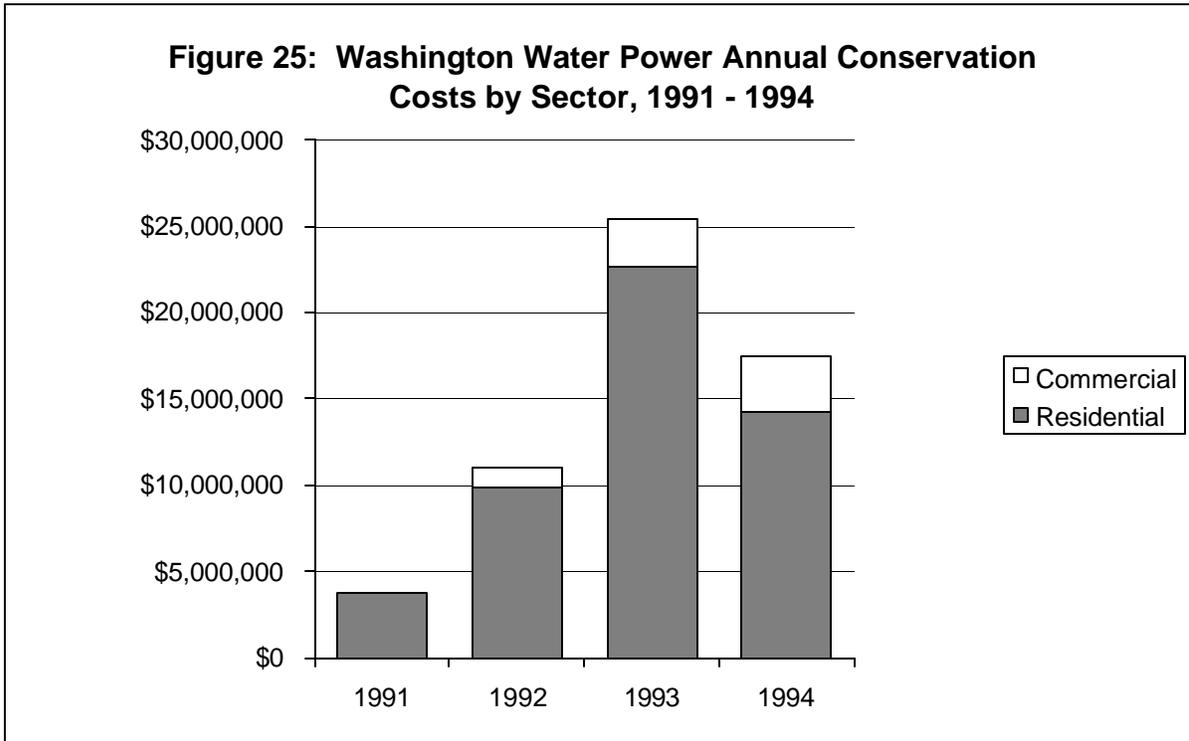
Summary Tracking Report, Washington Water Power Co.

Utility ID 10; Utility Type: IOU

Data Contact: Merilee Updike, DSM Budget & Reporting Specialist
 E. 1411 Mission Avenue, P.O. Box 3727
 Spokane, WA 99220-3727
 Phone # (509) 482-4471; Fax # (509) 482-8095

Utility Abbreviation WWP

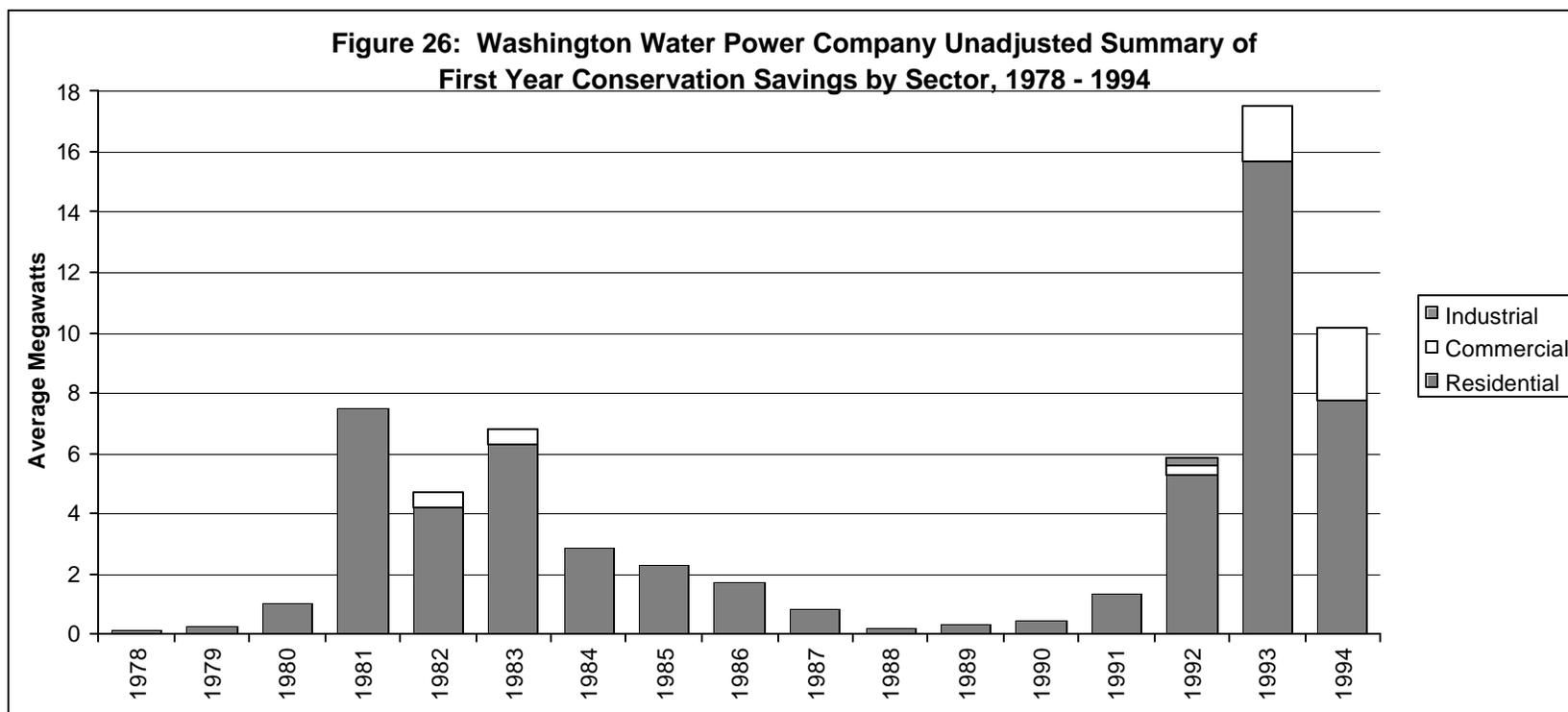
Utility Statement: The demand-side management program data provided to Nutrak for The Washington Water Power Company (WWP) came from the DSM data base, which stores all pertinent program information. These data are published monthly in WWP’s “Demand Side Management Monthly Program Report.” In defining program participants, WWP’s figures are a summary of completed jobs, that is to say that those jobs have been completed and incentivized paid. Users of the savings data should keep in mind that savings are estimates and are currently being evaluated in WWP’s measurement and evaluation process.



Washington Water Power	1991	1992	1993	1994	91-94 Total
Residential	\$3,802,752	\$9,889,922	\$22,622,943	\$14,292,706	\$50,608,323
Commercial	\$0	\$1,167,700	\$2,799,757	\$3,122,826	\$7,090,283
Total	\$3,802,752	\$11,057,622	\$25,422,700	\$17,415,532	\$57,698,606

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Figure 26: Washington Water Power Company Unadjusted Summary of First Year Conservation Savings by Sector, 1978 - 1994



	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Residential	0.2	0.3	1.0	7.5	4.2	6.3	2.8	2.3	1.7	0.8	0.2	0.3	0.5	1.3	5.2	15.7	7.7
Commercial	0.0	0.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.8	2.4
Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Incremental Total	0.2	0.3	1.0	7.5	4.7	6.8	2.8	2.3	1.7	0.8	0.2	0.3	0.5	1.3	5.8	17.5	10.2

Note on Figure 26. First year savings are the first full year of energy savings resulting from all utility conservation/demand-side activities undertaken in the reporting period. Washington Water Power Company's reported savings do not include an upward adjustment to reflect transmission and distribution savings (to be comparable with supply-side resources). Fuel-switching (to natural gas) acquired as a demand-side resource has been included here. [FYSSEC94.xls]

APPENDIX I: METHODOLOGY USED TO CALCULATE THE REGIONAL CONSERVATION SAVINGS ESTIMATES, 1978-94

Montana Power Company System and Regional Savings

The information for Montana Power Company in Nutrak94 and in the unadjusted tables in *The Green Book* is for the company's entire system, most of which is outside the Pacific Northwest region as defined in the Northwest Power Act. The savings attributed to Montana Power Company in the Council's summary of regional conservation, reflect 32 percent of Montana Power's conservation savings, the share the company advised the Council to use.

Fuel-Switching Programs

Savings from fuel-switching programs are included in Nutrak94's "Volume II" material (the electronic version of Nutrak94) and in the unadjusted figures in *The Green Book*. The adjusted tables, including the Council's regional summaries of conservation savings and expenditures, do not include fuel-switching.

Avoiding Double Counting Bonneville Program Savings

Determining the level of conservation savings is not as simple as adding up the individual estimates from the region's utilities. The complicating factor is the Bonneville Power Administration. Bonneville runs and funds multiple conservation programs and estimates and tallies the savings that have resulted from those programs. Some of the Bonneville programs deal directly with end users, such as the Bonneville Con/Mod program, which was a conservation program directed at the region's aluminum companies that buy power directly from Bonneville. The majority of Bonneville conservation programs, however, are run by local retail utilities.

In the regional conservation tracking system, conservation estimates are collected from eleven utilities: the six investor-owned utilities, the four public utilities with the largest conservation efforts, and Bonneville. Because the four public utilities and five of the six investor-owned utilities run (or have run in the past) Bonneville conservation programs, double counting of conservation savings would occur if a simple sum of the eleven utilities' conservation savings were taken to arrive at a regional total. For example, adding the residential weatherization savings estimates reported by Seattle City Light along with the estimates from Bonneville, would double count some savings since both utilities attempt to measure the same thing.

At a conceptual level, a procedure to eliminate the double counting is straightforward: just remove the savings of the Bonneville-run conservation programs as reported by the 10 retail utilities, from the total Bonneville-reported conservation savings. The problem is that the data to do this calculation, for the most part, do not allow such a simple adjustment. Avoiding double counting is complicated principally by two factors:

1) Different Estimates of Conservation Savings

The savings estimates calculated by Bonneville and a local utility may not be the same. That is, for the same weatherization job, Bonneville may tally 1,970 kilowatt-hours saved, and Seattle may show 1,835 kilowatt-hours. This difference may result from a number of factors. Bonneville uses a

regionwide estimate of conservation savings per unit and then multiplies this estimate by the number of units in the region to arrive at a regionwide conservation savings total. A local utility running a Bonneville program may use its own methods to determine the estimated savings for a conservation job. The difference could also stem from options that a local utility may add to the basic Bonneville program. For example, Seattle may use some of its own money to add conservation measures not included in the Bonneville program.

2) Calendar year and Federal Fiscal Year Data

All of the retail utilities in the Council's tally of regional conservation savings use a standard calendar year to report savings. Bonneville alone uses a federal fiscal year, which runs from October to September. For many Bonneville conservation programs, the historic utility data do not exist to adjust for this difference. It is possible for some Bonneville programs to aggregate the data into calendar years, but not for all programs.

To avoid double counting conservation savings in calculating a regionwide total, the unadjusted annual savings from each Bonneville conservation program were reduced by the amount of savings accomplished that year with Bonneville funding by Nutrak reporting utilities. The data source for the adjustment is Bonneville's internal information system that tracks individual utility conservation achievements using Bonneville dollars. After deducting the savings achieved by these utilities with Bonneville funding, the remainder reflects the savings achieved by Bonneville directly and by non-Nutrak reporting utilities, which are the small to mid-sized group.

By making the adjustments to Bonneville's total activity, it was unnecessary to adjust the conservation savings reported by Nutrak utilities other than Bonneville. This approach is consistent with the first complication cited above, "Different Estimates of Conservation Savings." By using Bonneville's own conservation estimates to adjust its own total, no inconsistency is introduced. Furthermore, this approach means that the Nutrak utility reports the full savings it accomplished within its service territory, without regard for the source of funding.

On the cost side, the methodology used to adjust for double-counting of Bonneville funding subtracts the Bonneville funding reported by individual utilities in the utility activity forms from the total utility cost reported by that utility in the utility activity form. The difference is tallied as net regional cost by Nutrak. The adjusted cost figures are reported in Figure 3, "Council's Summary of Regional Annual Utility Expenditures for New Conservation/DSM Savings."

APPENDIX II: NUTRAK PRODUCT INFORMATION ORDER FORM

Nutrak, the Northwest Utility Conservation Tracking System, is a regional effort, from which is published The *Green Book* of Northwest electric utility conservation achievements. Nutrak is published in two parts: 1) the *Green Book*, a small volume that summarizes the overall data; and 2) an electronic version containing the detailed information as reported by the Nutrak utilities.

Name: _____
Organization: _____
Address: _____
City, State, Zip: _____
Phone: _____
Fax #: _____

Copies

_____ (96-2) *The Green Book: Tracking Pacific Northwest Electric Utility Conservation Achievements, 1978-1994* (Nutrak94), Regional Summary
(formerly called Volume I)

_____ Nutrak94 Electronic Version (replaces former Volume II)
(three 3.5" 1.44 MB IBM format diskettes).
(Requires DOS machine, 386 or better, 6 MB RAM, HDD w/ 20 MB free, Paradox 4.5 for DOS or Paradox RunTime for DOS.)

_____ Paradox RunTime 4.5 for DOS
(two 3.5" 1.44 MB IBM format diskettes)

Please send or fax to:

Northwest Power Planning Council
851 SW Sixth Avenue, Suite 1100
Portland, OR 97204

(503) 222-5161
(503) 795-3370 fax

Questions or suggestions about Nutrak may be directed to Jim Nybo, Conservation Analyst, at the address above.

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