

# 2000 PEO MEMBERSHIP SALARY SURVEY – Summary Report

Conducted on behalf of Professional Engineers Ontario

Results valid as of December 1, 2000

This four-page summary report presents the core findings from the 2000 PEO Survey of Members. The survey's purpose is to provide statistics on basic salaries earned by PEO members employed in full-time positions. This year's research represents the 46th edition of results.

Due to increased web-based enquiries, full reporting of the survey results will be posted on the PEO website. It is supported by this summary of findings distributed through Engineering Dimensions.

Find the Detailed Report at [www.peo.on.ca](http://www.peo.on.ca) Under "Engineering Practice/PEO Salary Surveys"

You are encouraged to visit the association's website for detailed results on salaries and additional cash compensation for Ontario's professional engineering workforce. Refer to page 4 of this report for more instructions on accessing copies of the Detailed Report.

## METHODOLOGY

The Membership Salary Survey was based on active PEO members and EITs residing in Ontario. Retired members were not included. Questionnaires were sent to 100% of the total active PEO membership. Members responded via a custom-built website or through a postage-paid return mail option.

The sample size of 48,780 produced 8275 valid returns, for a response rate of 17%. Women comprised 8.3% of the survey respondents. Of the total returns, 7535 (91%) were from members employed in full-time positions—either permanent or contract. The majority of these respondents (7503) provided salary compensation data.

Not every participant answered all the questions. Returns were included if respondents provided sufficient data to be included in at least one of the salary tables.

## DEFINITIONS

Salaries as defined in this report constitute annual base salaries paid as of December 1, 2000 to full-time employees who work at least 30 hours per week. Salary statistics do **not** include bonuses, commissions, profit sharing or overtime. The only exception in this report is Figure 1 on p. 2, which does include the previously mentioned pay components.

Number of Engineers (#) refers to the usable number of responses from which the statistics were derived for the data line in question. Table counts may not equal the total responses (7503) where the "Not Reported" category is not shown. For the same reason, and due to rounding, percentages may not add up to exactly 100%.

The average salary refers to the **mean** or numerical average. The median, quartiles and deciles are measures of dispersion and are defined below.

**Low Decile (D1\$):** 90% of the salaries were above this point and 10% were below it.

**Low Quartile (Q1\$):** 75% of the salaries were above this point and 25% were below it.

**Median:** the mid-point, 50% above and 50% below.

**High Quartile (Q3\$):** 25% of the salaries were above this point and 75% were below it.

**High Decile (D9\$):** 10% of the salaries were above this point and 90% were below it.

When the sample size is small, greater consideration should be given to **median** values rather than **mean** averages for comparison purposes. **Medians** are less likely to be influenced by a few very high or low salaries.

The percentage increase columns that appear in Tables 1 through 4 indicate the change in the **median** compared to the last survey conducted, dated December 1, 1998.

**Table 1. Annual Base Salaries by Year of Graduation**

(Ontario data as of December 1, 2000)

Graduation Year	#	Mean	D1 \$	Q1 \$	Median \$	Q3 \$	D9 \$	Median % Increase 1998-2000
<b>All Years</b>	<b>7,503</b>	<b>81,647</b>	<b>53,000</b>	<b>63,000</b>	<b>77,000</b>	<b>92,500</b>	<b>114,000</b>	<b>12.8</b>
2000	6	46,272	42,000	42,500	45,765	48,000	53,600	-
1999	66	47,459	36,000	40,000	46,000	50,000	62,000	-
1998	158	51,749	40,000	45,000	50,000	56,000	65,000	22.0
1997	193	54,686	42,000	47,400	52,250	57,800	69,000	24.4
1996	310	57,150	42,250	48,500	55,000	63,000	73,750	22.2
1995	288	59,934	45,000	50,000	58,500	65,500	75,000	24.5
1994	244	64,429	50,000	54,400	61,000	70,000	85,000	22.0
1993	223	67,227	50,000	59,100	64,000	72,000	81,200	23.1
1992	227	72,533	50,602	59,371	68,500	80,000	98,000	23.2
1991	218	71,967	55,000	60,000	69,398	78,000	92,000	18.6
1990	238	74,575	55,000	64,000	71,000	80,000	97,000	17.7
1989	209	77,845	55,000	65,000	72,500	84,000	100,000	14.4
1988	220	78,696	60,000	66,000	74,500	86,500	101,300	12.9
1987	246	80,941	60,000	66,300	76,338	88,800	104,000	14.4
1986	249	82,296	60,000	67,200	78,000	92,500	114,000	11.4
1985	256	83,439	60,000	69,054	77,894	90,000	110,000	13.7
1984	238	84,408	60,000	68,500	80,970	92,500	116,000	12.5
1983	215	88,000	61,000	72,000	83,000	100,000	122,000	15.8
1982	223	87,324	62,500	70,800	82,715	95,000	121,200	10.3
1981	214	85,127	62,000	70,000	80,000	92,800	116,400	6.7
1980	221	90,553	65,977	74,000	85,130	103,000	120,000	12.2
1979	202	89,302	64,200	73,000	82,000	98,000	125,000	6.2
1978	188	88,830	62,600	75,288	84,150	98,150	115,000	6.0
1977	191	94,223	66,000	74,114	84,780	102,000	120,000	7.3
1976	175	92,896	67,000	73,840	86,000	103,000	126,000	10.3
1975	203	97,911	68,000	78,000	89,000	105,540	140,000	11.3
1974	182	88,918	63,264	75,000	84,600	97,000	115,000	6.6
1973	166	93,967	66,000	79,600	90,000	105,000	124,000	4.7
1972	177	93,999	65,000	75,589	86,818	103,000	120,000	3.4
1971	169	93,277	67,920	78,000	89,000	103,000	126,000	9.4
1970	176	96,775	67,200	76,000	86,256	100,100	130,000	6.1
1969	129	94,288	67,300	80,000	90,000	105,000	125,000	6.1
1968	139	96,508	70,000	79,000	90,000	105,269	129,000	9.0
1967	107	100,965	68,760	79,000	92,000	112,500	147,500	5.4
1966	85	105,472	70,000	86,000	100,000	120,000	150,000	12.3
1965	90	104,284	68,900	78,800	92,334	115,000	150,000	8.6
1964 & earlier	279	98,101	69,300	80,000	92,000	106,000	130,000	6.5
No degree	254	77,387	53,000	63,000	75,000	90,000	104,000	5.6
Not reported	129	85,000	53,000	62,400	71,500	85,000	120,000	2.1

## ANNUAL SALARIES BY YEAR OF GRADUATION

The median base salary for full-time engineers was \$77,000 as of December 1, 2000. The majority (80%) of PEO members earn an annual base salary between \$53,000 and \$114,000.

The 2000 median is 12.8% higher than the median salary reported in 1998. During the same two-year period, the consumer price index for Canada rose 4.5%.

Engineering graduates from 1990 to 1998 received the largest increases, ranging from 17.7% to 24.5%. Above average increases are usually noted for the more recent graduates, because they are advancing more quickly through their careers to positions of greater responsibility during this period.

**SALARIES BY RESPONSIBILITY LEVEL**

Table 2 reports the salary increases measured since the 1998 PEO Survey of Members according to the seven levels of responsibility.

**Note: The PEO website provides definitions for each of the engineering responsibility levels.**

Engineers and EITs in the junior level (Level A) now make a median salary of \$44,000, an 11.4% rise from the 1998 survey findings. The 80% spread from low to high decile is \$35,000 to \$55,000.

The largest median increase by level is found in Level B. The 1998 base salary figure of \$43,355 took a 15.3% jump to \$50,000 in the year 2000.

Level D engineers, who are the first level of sustained supervision over other engineers, reported an increase of 9.4% and now earn a median base salary of \$73,265.

For Level F (upper management), the 80% spread from low to high decile is \$77,000 to \$128,520. The median in this level was measured at \$97,118.

Engineers working as senior executives (Level F+) reported a median base salary of \$120,000, a 7.3% increase over the two-year period. The spread from low to high decile is almost \$100,000-\$85,500 to \$183,000.

**ADDITIONAL CASH COMPENSATION**

A brief glimpse of the overall effect of additional cash payments for Ontario engineers is shown in Figure 1.

Additional cash components include: cash bonuses, profit sharing, commissions, overtime, on-call pay, shift premiums, consulting fees and other miscellaneous amounts. Not included in data collection were: deferred profit sharing, car allowances and fringe benefits.

Overall, the mean figure for total cash compensation was \$94,182 (or 15.4% above the base salary of \$81,647).

Below is a quick synopsis of total cash statistics reported by each responsibility level. As the levels rise, so do the percentages and figures relevant to additional cash pay components.

LEVEL	Mean Total Cash Compensation	Percentage Above Mean Base Salary
A	\$ 46,390	5.5 %
B	\$ 53,337	7.2 %
C	\$ 67,845	8.5 %
D	\$ 82,601	9.7 %
E	\$ 97,154	11.6 %
F	\$ 123,349	22.0 %
F+	\$ 170,975	33.4 %
Not Reported	\$ 111,793	22.6 %

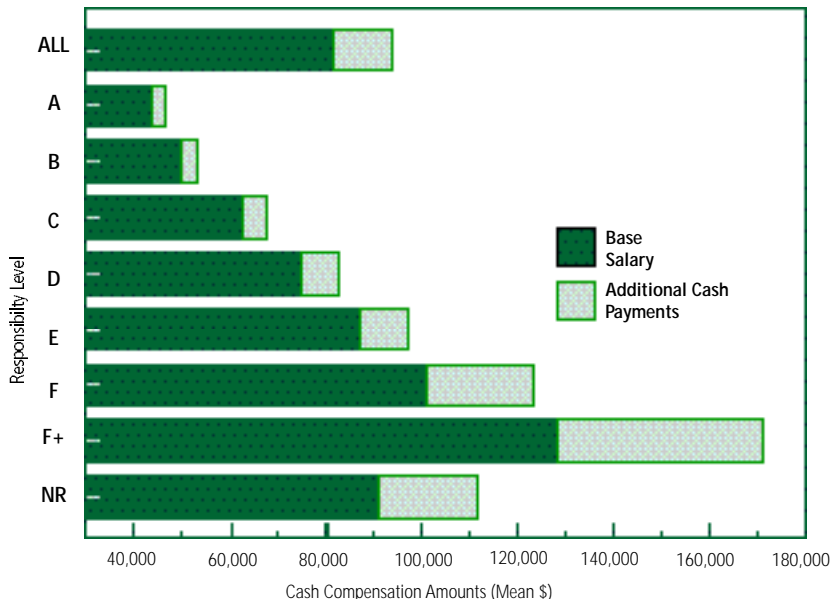
Several more tables and graphs related to additional cash and total cash compensation are included in the Detailed Report.

There were 555 self-employed PEO members who responded to this year's survey and provided detailed compensation data. Their median figure reported for total cash compensation was \$100,000. A strong jump over the 1998 survey results with a 14.2% increase.

**Table 2. Annual Base Salaries by Responsibility Level**  
(Comparison December 1, 1998 and December 1, 2000)

Responsibility Level	No. of Engs.	Mean	Low Decile	Low Quartile	Median	High Quartile	High Decile
<b>All Levels Combined</b>							
Dec 2000	7,503	81,647	53,000	63,000	77,000	92,500	114,000
Dec 1998	6,041	72,254	44,000	54,990	68,273	83,400	100,000
% Increase		13.0	20.5	14.6	12.8	10.9	14.0
<b>Level A</b>							
Dec 2000	53	43,958	35,000	38,000	44,000	49,500	55,000
Dec 1998	161	39,139	32,000	35,000	39,500	42,420	45,760
% Increase		12.3	9.4	8.6	11.4	16.7	20.2
<b>Level B</b>							
Dec 2000	333	49,739	38,480	44,000	50,000	55,000	60,000
Dec 1998	473	44,005	35,000	39,000	43,355	48,000	54,000
% Increase		13.0	9.9	12.8	15.3	14.6	11.1
<b>Level C</b>							
Dec 2000	1,423	62,550	48,000	54,000	60,600	69,600	79,848
Dec 1998	1,201	56,731	43,000	48,750	55,000	63,100	72,592
% Increase		10.3	11.6	10.8	10.2	10.3	10.0
<b>Level D</b>							
Dec 2000	1,706	75,269	59,900	65,000	73,265	82,200	92,500
Dec 1998	1,249	68,119	54,000	60,000	67,000	75,000	84,000
% Increase		10.5	10.9	8.3	9.4	9.6	10.1
<b>Level E</b>							
Dec 2000	1,756	87,057	67,500	75,000	85,000	95,000	108,800
Dec 1998	1,270	80,707	65,000	71,000	80,000	88,234	98,970
% Increase		7.9	3.8	5.6	6.3	7.7	9.9
<b>Level F</b>							
Dec 2000	724	101,094	77,000	85,000	97,118	110,000	128,520
Dec 1998	501	91,714	70,000	80,000	90,000	100,000	115,000
% Increase		10.2	10.0	6.3	7.9	10.0	11.8
<b>Level F+</b>							
Dec 2000	344	128,146	85,500	100,000	120,000	145,000	183,000
Dec 1998	256	122,214	82,000	95,000	111,870	140,000	175,000
% Increase		4.9	4.3	5.3	7.3	3.6	4.6
<b>Not Reported</b>							
Dec 2000	1,164	91,186	55,000	68,500	82,316	102,600	135,000
Dec 1998	930	82,176	45,000	57,200	71,000	91,800	120,450
% Increase		11.0	22.2	19.8	15.9	11.8	12.1

**Figure 1. Base Salary plus Additional Cash Payments by Responsibility Level**



**SALARIES BY INDUSTRY**

Table 3 reports the annual base salaries for 28 main industry sectors where engineers work.

Percentage increases vary widely from 2.4% to 50.6% over the 1998 median base salary results. Some of the higher increases may be due to differences in survey samples from year to year.

The highest median salary in all 28 categories is \$97,000 for the data processing sector in non-manufacturing. The lowest reported median is \$68,243 for metals manufacturing.

Within the manufacturing sector, engineers who work for petroleum products companies earn the highest median salary at \$90,000. Second highest at \$85,000 is electronics and electrical products engineers.

As already stated, the top earners in non-manufacturing work in data processing organizations. The second highest median is the computer systems development sector at \$86,000. The two lowest non-manufacturing medians are consulting engineering (\$71,450) and construction (\$73,000).

Within government and education, the educational institutions sector historically leads the field with the highest of the four median figures. The 2000 survey results showed this trend once again. While municipal government engineers earn a \$70,000 median base salary, engineers in education earn considerably more at \$80,000.

Federal government engineers reported slightly higher salaries than their provincial government counterparts—\$75,621 and \$75,000 respectively.

**MAJOR INDUSTRY GROUPING**

The proportion of engineers working in the manufacturing sector has remained relatively stable over the past 14 years. Percentages in manufacturing have ranged from 39% up to this year's high of almost 46%. The second largest group within the seven defined major industries is consulting at just under 16% of responses.

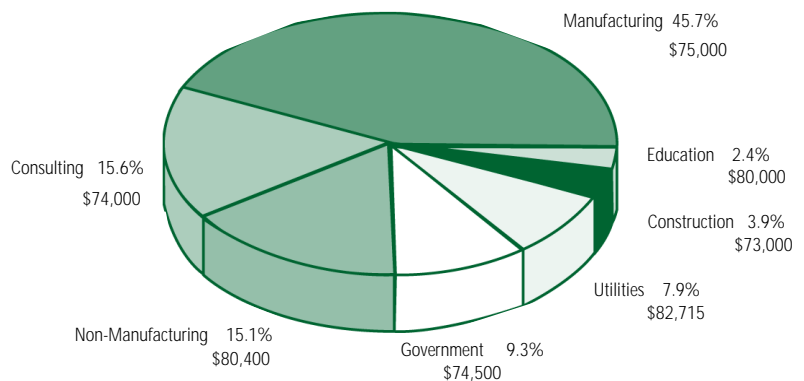
The government sector continues to decrease and now represents just over nine percent. Only 2.4% of full-time engineers work within educational institutions.

After regrouping the salary figures of the 28 industry categories down to seven major areas, engineers working for utility companies have the highest median salary of \$82,715. The lowest median base amount was reported in the construction industry (\$73,000).

**Table 3. Annual Base Salaries by Industry**

Industry	No. of Engs.	Mean	Low Decile	Low Quartile	Median	High Quartile	High Decile	% Increase 1998-2000 Median
<b>MANUFACTURING</b>								
Petroleum Products	157	92,547	57,720	68,000	90,000	105,540	132,000	11.1
Electronics/Electrical Prods.	727	89,918	56,250	68,000	85,000	105,000	127,000	17.4
Food, Beverages, Tobacco	85	85,734	56,000	66,700	83,000	99,900	116,000	16.9
Chemical/Pharmaceutical	279	84,311	55,000	65,000	80,000	95,000	120,000	11.7
Heavy Electrical	80	77,807	58,500	66,000	75,513	88,056	97,380	2.4
Plastics & Rubber	191	79,890	50,000	60,000	75,000	90,100	111,000	26.8
Transportation Equipment	538	78,612	55,000	62,400	74,000	87,000	106,831	13.8
Pulp, Paper, Wood Prods.	110	75,730	49,550	60,000	72,000	87,000	98,000	7.5
Other Manufacturing	363	76,226	50,000	59,700	71,400	88,000	110,000	16.8
Aerospace/Aircraft Prods.	276	75,984	53,500	58,000	71,210	88,460	107,500	16.1
Machinery (ex. electrical)	315	75,979	51,000	60,000	70,000	85,000	106,000	14.8
Metals	274	74,691	50,000	59,000	68,243	80,700	106,000	8.3
<b>NON-MANUFACTURING</b>								
Data Processing	36	101,091	60,000	76,800	97,000	120,000	140,000	30.2
Computer Systems Dev.	238	91,883	60,000	70,000	86,000	105,000	130,000	19.0
Electrical Utilities	409	86,697	69,504	75,500	84,240	93,184	107,100	6.2
Consulting, Other	189	92,786	51,000	63,000	84,000	100,000	135,000	8.1
Petroleum	24	83,429	57,200	73,600	82,070	95,500	102,600	50.6
Communication Services	249	93,544	60,000	73,400	82,000	100,000	120,000	12.7
Utilities, Other	176	81,131	60,000	70,000	80,000	90,000	100,000	8.1
Mining	153	86,474	59,000	65,500	78,000	96,000	125,000	8.3
Other Non-Manufacturing	309	86,290	50,000	64,769	78,000	100,000	132,000	10.3
Transportation Services	108	85,290	54,000	68,862	76,750	93,223	120,000	10.8
Construction	293	78,832	48,000	60,000	73,000	90,700	120,000	12.3
Consulting Engineering	968	74,674	45,000	55,600	71,450	87,390	105,000	19.1
<b>GOVERNMENT &amp; EDUCATION</b>								
Educational Institutions	181	81,093	59,785	65,000	80,000	93,905	105,000	14.3
Federal Government	373	76,338	59,000	66,000	75,621	85,000	91,000	12.0
Provincial Government	114	77,144	60,000	68,000	75,000	85,000	94,500	8.0
Municipal Government	206	72,199	56,000	62,000	70,000	80,499	96,000	3.9

**Figure 2. Distribution by Major Industry Sectors plus Median Base Salaries (Full-Time Employment Status)**



## SALARIES BY DISCIPLINE

Table 4 provides the membership salary survey results by 12 distinct disciplines, as well as a miscellaneous other category.

The "computer, systems" discipline achieved the highest median base salary of \$86,000. Second highest is nuclear at \$83,500.

Engineers in the environmental discipline reported the lowest median income (\$61,000). Other low earning disciplines appear to be "biomedical, biological" and "civil, structural."

The discipline "systems design" was a new addition to the 2000 questionnaire. Engineers in this discipline reported strong earnings (\$81,000 median) and placed in the fourth highest position.

The two-year survey rate increases in Table 4 range from 6.2% to 22%.

## SALARIES BY REGION

Refer to Figure 3 for survey findings based on geographical regions of respondents. Each PEO membership salary survey in recent history concludes that engineers who work outside of the province earn more than those who stay within Ontario. As of December 1, 2000, the median base salary for PEO members working out of the province was \$88,941.

Ottawa and Toronto tend to alternate as the second and third highest medians. This year, the Greater Ottawa region is second and Greater Toronto third. Ottawa engineers report a median of \$80,532—slightly above the Toronto median of \$78,800.

## HOURLY RATES FOR CONTRACT ENGINEERS

A number of members are employed by organizations on a contract basis. A guideline (Table 5) has been prepared to assist engineers in establishing rates to be charged for professional services while working exclusively for one employer on the employer's premises, with set working hours and vacation and statutory holiday pay (but not employee benefits) provided by the employer.

For the purpose of this guideline, benefits are assumed to be 15% of salary.

This formula does **not** apply to engineers who are working out of their own offices and must bear the overhead costs associated with accommodation rental, equipment costs and various other operating and maintenance costs.

Similarly, it does not apply to engineering consulting companies, which use charge-out rates for various levels of professional staff working on a client's project. Nor does it apply to engineers furnished by an agency where the agency is paid for the services.

**Note:** To find out about consulting engineering fee rates, refer to PEO's Schedule of Fees for Engineering Services. This guideline is available on the PEO website under "Professional Guidelines."

**MORE COMPREHENSIVE RESULTS of the 2000 PEO Membership Salary Survey can be found on the association's website ([www.peo.on.ca](http://www.peo.on.ca)). Select "Engineering Practice," then "PEO Salary Surveys," from the navigational menus.**

Included in the Detailed Report are an in-depth comparison of engineers' salaries by gender for graduating years of 1978-99, and also salary tables by job category, function, highest degree and size of organization. Detailed total cash compensation figures are presented for both full-time and self-employed engineers. Benefits and working conditions are also included.

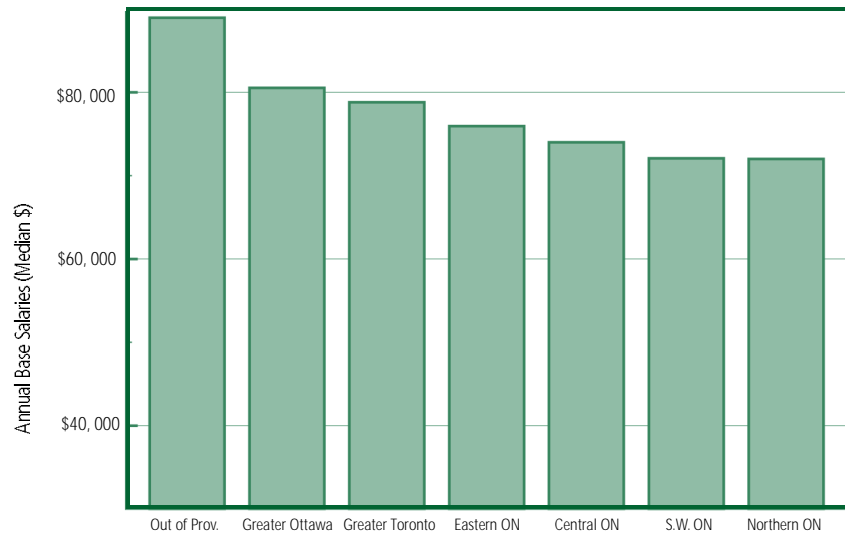
If you do not have access to the Internet, PEO's Publications Desk can forward a printed copy in the mail. Please contact PEO to request your copy of the **PEO Membership Salary Survey—Detailed Report**.

Telephone : 416-224-1100 or 1-800-339-3716 (within Ontario)

**Table 4. Annual Base Salaries by Discipline**

Discipline	No. of Engs.	Mean	Low Decile	Low Quartile	Median	High Quartile	High Decile	% Increase 1998-2000 Median
Computer, Systems	249	90,885	61,000	73,400	86,000	104,000	120,000	22.0
Nuclear	129	86,298	65,000	74,200	83,500	94,000	108,000	6.2
Electrical, Electronics	1,503	87,926	59,800	70,000	82,000	98,000	120,000	12.2
Systems Design	92	90,244	65,000	70,000	81,000	102,500	126,000	n/a
Other	177	84,936	52,860	65,000	78,987	98,000	129,000	17.9
Chemical	798	83,246	54,480	63,500	77,311	95,000	116,900	13.7
Metallurgical/ Materials/Mining	301	83,761	56,000	63,000	77,250	94,000	120,000	9.8
Aeronautical, Aerospace	230	78,641	55,000	63,500	76,155	90,000	101,500	14.6
Mechanical, Industrial	2,255	79,807	53,400	62,476	75,000	89,000	109,000	11.9
Geological, Geotechnical	122	74,515	41,500	53,006	72,500	90,000	106,000	12.0
Civil, Structural	1,392	76,996	47,500	60,000	72,000	88,900	110,000	10.8
Biomedical, Biological	30	78,203	50,000	60,000	70,781	97,500	112,500	11.8
Environmental	215	66,359	42,000	50,000	61,000	79,500	95,000	8.8

**Figure 3. Median Annual Base Salaries by Region**



**Table 5. Guideline for Hourly Rates for Contract Engineers**

$$\text{Hourly Charge Rate} = \frac{\text{Annual salary from salary tables} \times 1.15}{\text{Annual working hours} (7.5 \times 5 \times 52 = 1950)}$$

## ABOUT THE SURVEY CONSULTANT

Janet Dalton is an independent research consultant with over 15 years of experience in research and database analysis. She has been involved in several major compensation studies throughout her career. Her portfolio includes 10 years' involvement in PEO's Employer and Membership salary surveys. She has also conducted studies within the engineering and technology industry sectors for such organizations as CSA International and OACETT.