

**Labor Force Information for
Placer County
and the
Sacramento Region**

Prepared for the Hewlett-Packard Site Analysis Division
March 28, 2001

J. Robert Fountain, Ph.D.
Regional Economics Consultant

Contents:

1. Introduction and Definition of Geographical Areas	2
2. Projections of Population, Housing, and Employment Through 2020.	3
3. Labor Force and Employment by Type of Firm.	4
4. Current trends in employment, population, and housing.	6
5. Occupational Employment Data.	9
6. Occupational Employment Projections.	10
7. Educational Attainment and Higher Education Graduates.	11
8. Housing Costs	13

Introduction

This report contains information on the population and labor force which will be required to support an expansion of the Hewlett Packard Roseville facility. The information is from available data bases and previously published reports; no new data collection or analysis were performed for this report. The data are the latest available in March 2001. Data sources are cited in each table or topic paragraph.

Definition of Geographical Areas

The data is organized into three geographical levels whenever possible:

1. Placer County, the highest proximity local labor market area where commute distances will be very short – mostly under 10 miles - and freeway travel will not be required for most employees. Although some areas in the northern and eastern parts of Placer County do not fit this description, those areas have almost no population and do not affect the interpretation of the data.
2. The Sub-Regional area is the larger combination of Placer and Sacramento counties, and represents a primary labor market area with a commute radius of under 15 miles for most of the population centers. Commutes for most of this area will be counter to the existing peak hour traffic bound for downtown Sacramento. This is the most functional labor market definition for most types of employees.
3. Wider regional definitions include the Sacramento PMSA (3 counties of El Dorado, Placer, and Sacramento) and the SACOG region which adds Yolo, Yuba, and Sutter Counties. Inconsistency of regional definition is prevalent in the published data and this is reflected in this report. These other counties are part of in the regional labor and housing market area which existing employers consider the maximum commute area. Higher-salary technical and management employees are likely to choose from the broader array of residential opportunities in the expanded region definitions.

A Note on the Projections

Most of the longer-term projections are from the Sacramento Area Council of Governments, the regional planning organization. These projections are based on the land use and development plans of local governments, and incorporate expectations about the economic future of the region. One underlying assumption is that most of the region's industrial areas, including the extensive Hewlett Packard Roseville site, will be built out at prevailing industrial densities over the 20 year projection horizon. In this respect, the contemplated Hewlett Packard expansion which motivated this report is already assumed to occur and has been built into the land use and infrastructure planning for the area.

Projections of Population, Housing Units, and Employment

Projections for population, housing units, and employment are given in the following table. These projections are made by the Sacramento Area Council of Governments, the regional planning organization (like the Bay Area's ABAG) and are based on land use and infrastructure plans of the cities and counties in the region. They show that Placer County and the region are expecting rapid population and employment growth.

The data is organized into the three geographical levels discussed earlier:

- Placer County, the highest proximity local labor market area.
- The Sub-Regional area of Placer and Sacramento counties.
- The SACOG region, which adds other counties in the regional labor and housing market area which existing employers consider the maximum commute area.

The population total for Placer County is projected to increase from the present 230,000 to over 400,000 over the projection period, while the Sub-regional primary labor market increases from about 1.44 to 2.02 million.

Projected employment in the Placer County local labor market increases from 111.9 thousand to almost 196 thousand over the 20-year horizon. The sub-regional primary labor market area employment increases from 643 thousand to almost 951 thousand.

Population	2000	2005	2010	2015	2020
Placer County*	230,060	288,250	345,025	378,500	400,280
Sacramento County	1,203,900	1,306,350	1,431,500	1,555,233	1,620,933
Sub-Regional Total	1,433,960	1,594,600	1,776,525	1,933,733	2,021,213
SACOG REGION	1,634,800	1,816,400	2,008,835	2,183,718	2,295,953
Housing Units	2000	2005	2010	2015	2020
Placer County*	95,011	119,405	142,676	155,783	165,238
Sacramento County	472,322	514,980	566,270	614,983	643,942
Sub-Regional Total	567,333	634,385	708,946	770,766	809,180
SACOG REGION	635,718	711,385	790,365	859,396	907,417
Employment	2000	2005	2010	2015	2020
Placer County*	111,905	135,285	157,100	179,680	195,990
Sacramento County	531,589	591,458	653,401	715,144	754,925
Sub-Regional Total	643,494	726,743	810,501	894,824	950,915
SACOG REGION	735,574	836,738	939,506	1,038,754	1,112,560
Sub-regional totals are for Placer and Sacramento Counties only.					
The Regional totals are for the 6-county planning area including the counties of El Dorado, Placer, Sacramento, Sutter, Yolo and Yuba but exclude areas within the Tahoe Basin planning area.					
Source: Sacramento Area Council of Governments.					
Dr. Robert Fountain March 26, 2001					

Labor Force and Employment Data by Type of Firm

Labor Force Data from the Employment Security Data.

The most detailed information on technology employment is obtained from the Employment Security (ES-202) survey, which includes data for all private sector firms which have employees covered under social security. This data is reported about 2 years after the year's end, so the latest available is for 1998.

This data shows that the Placer County primary labor force area has about 226 high-technology firms with a total employment of 8,159 and a payroll of about \$416 million per year. The average annual wage of these employees is about \$51,000.

The secondary labor force area is Sacramento County. There 1007 technology companies employ 30,993 with an annual payroll of about \$1.7 billion.

The combined labor force areas total 1233 technology firms with 39,152 employees and annual payroll of about \$2.2 billion.

Placer County		Number of	Annual	Annual	Avg. Annual
SIC	Description	Firms	Employment	Payroll	Wages
357	Computer and Office Equipment Manufacturing	6	3,092	\$ 208,305,573	\$ 67,369
360	Electronic & Other Electric Equipment	23	2,317	\$ 93,269,896	\$ 40,255
480	Communications	35	1,077	\$ 56,752,962	\$ 52,695
737	Computer and Data Processing Services	99	1,258	\$ 38,719,372	\$ 30,779
8711	Engineering Services	48	379	\$ 17,336,824	\$ 45,744
873	Research and Testing Services	15	36	\$ 1,540,542	\$ 42,793
Area Totals		226	8,159	\$ 415,925,169	\$ 50,977

Sacramento County		Number of	Annual	Annual	Avg. Annual
SIC	Description	Firms	Employment	Payroll	Wages
357	Computer and Office Equipment Manufacturing	20	4,114	\$ 178,498,473	\$ 43,388
360	Electronic & Other Electric Equipment	51	6,458	\$ 576,589,023	\$ 89,283
480	Communications	172	9,050	\$ 452,256,325	\$ 49,973
737	Computer and Data Processing Services	457	6,809	\$ 370,117,479	\$ 54,357
8711	Engineering Services	202	3,195	\$ 165,708,407	\$ 51,865
873	Research and Testing Services	105	1,367	\$ 47,653,866	\$ 34,860
Area Totals		1007	30,993	\$ 1,790,823,573	\$ 57,782

Sub-Region Total		Number of	Annual	Annual	Avg. Annual
SIC	Description	Firms	Employment	Payroll	Wages
357	Computer and Office Equipment Manufacturing	26	7,206	\$ 386,804,046	\$ 53,678
360	Electronic & Other Electric Equipment	74	8,775	\$ 669,858,919	\$ 76,337
480	Communications	207	10,127	\$ 509,009,287	\$ 50,263
737	Computer and Data Processing Services	556	8,067	\$ 408,836,851	\$ 50,680
8711	Engineering Services	250	3,574	\$ 183,045,231	\$ 51,216
873	Research and Testing Services	120	1,403	\$ 49,194,408	\$ 35,064
Area Totals		1233	39,152	\$ 2,206,748,742	\$ 56,364

Source: Bureau of Labor Statistics ES-202 Survey 1998 (latest available).

Dr. Robert Fountain March 25, 2001

Data from the Current Population Survey and the Current Employment Survey

These two data sources give more current labor market and employment information, but at the cost of lower levels of accuracy and less detail.

The Current Population Survey (CPS) gives Civilian Labor Force and Civilian Employment estimates based on a small survey of a few hundred households in the Sacramento 3-county region. There is no detail about the type of employment or the salary and wage levels. This data shows a civilian labor force of 124,700 in Placer County and 812,600 in the 3-county Sacramento Primary Statistical Area, comprised of Sacramento, Placer, and El Dorado

CPS Labor Force and Employment Data Year 2000 Average		
	Placer County	Sacramento Region
Civilian Labor Force	124,700	812,600
Civilian Employment	120,700	779,800

Counties.

The Current Employment Survey (CES) is based on a sample of several thousand employers, and gives some detail about the type of firm, but not at the County level. This data has lower detail on types of firms than the ES-202 data, and does not allow disaggregation of Business Services to give detail on Computer and Software Services, so it is unfortunately compounded with a number of other types of business services which are not high technology related. Likewise, the Engineering and Research & Development services data cannot be separated from other types of accounting, management, architectural, and other services.

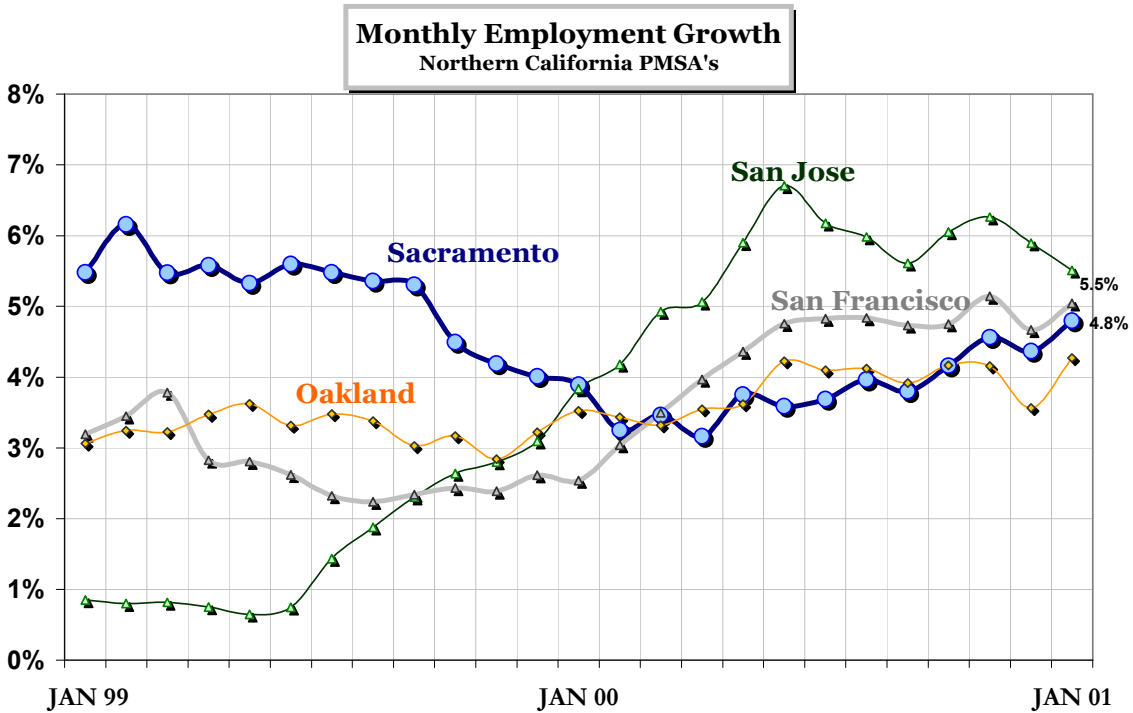
CES Employment by Sector Data	
Year 2000 Average Sacramento Region	
Computer & Office Equipment	6,600
Electronic Equipment	10,600
Communications	11,100
Business Services	57,100
Engineering & Management	18,600
Total These Technology Sectors	104,000
Total, All Industries	716,000
Source: Employment Development Department Year 2000 benchmark.	
Dr. Robert Fountain March 25, 2001	

The CES data shows a total employment of 104,000 in the SIC sectors which contain technology activities, out of a total regional employment of 716,000 in all industries.

Current Trends in Employment, Population, and Housing

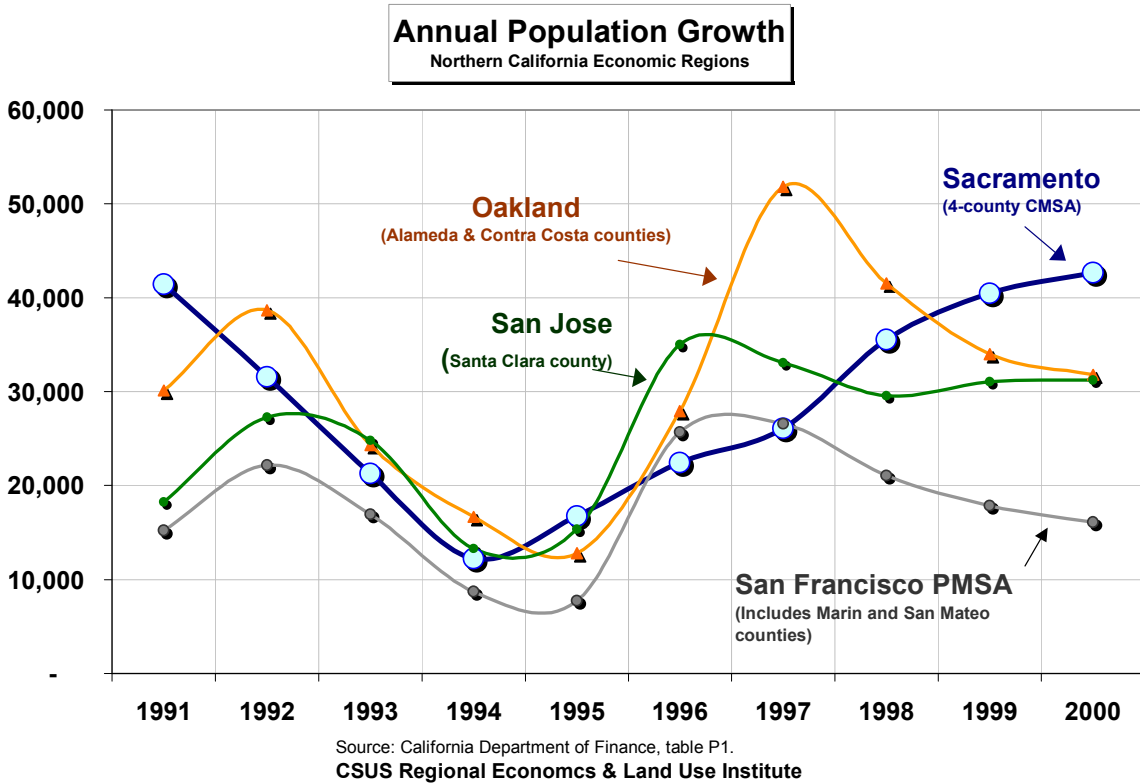
Recent trends in levels of population, employment, and housing for selected Northern California areas are shown below. (The data for Sacramento contains El Dorado, Placer, and Sacramento Counties. Oakland contains both Alameda and Contra Costa counties, while the San Francisco data include Marin, San Francisco, and San Mateo Counties.)

The employment growth rate for Sacramento has been below that of the Bay Area economies for the past year, but has converged in February. Of interest is the fact that the growth trends in the Sacramento and Bay economies are not synchronized. In fact, for much of the recent decade, the relative growth rates diverged widely.

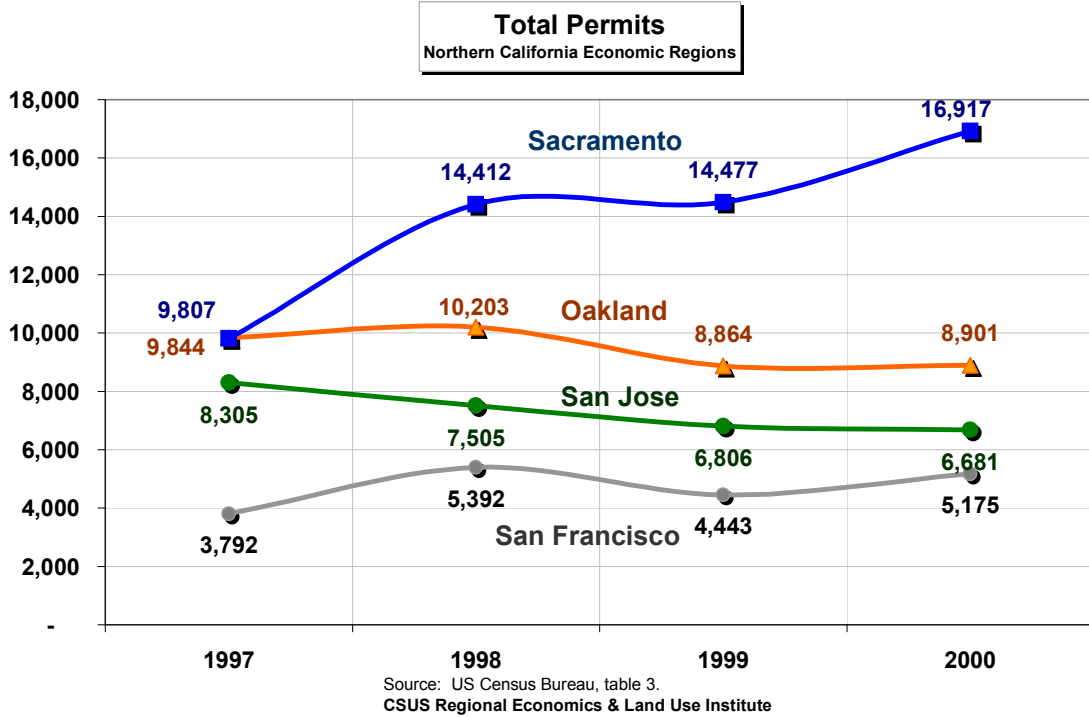


Source: Employment Development Department. Non-agricultural wage & salary

One major difference between Sacramento and the Bay Area is the trend in population growth. Although both regions suffered lower population growth after the 1991-1992 recessions, the Bay Area economies recovered sooner, and regained high levels of population growth before Sacramento did. At present, Sacramento is growing in population at a rate of about 43,000 per year, while the Bay area economic areas have falling rates of population growth, related to housing costs and transportation issues.



Housing construction is another great difference between Sacramento and the Bay Area. Sacramento built an all-time high of nearly 17,000 new housing units in year 2000, while the rate of new construction fell in each of the major Bay Area economic areas. The Sacramento units were primarily single family units, while the Bay Area construction was heavily multifamily.



Occupational Employment Data

Data in this table are based on occupational category, rather than type of firm or industry in which the worker is employed, and is not available at the county level. This data shows that in 1998 (the latest year available) there were over 19,000 employees in the Sacramento region with occupations directly related to technology development and production.

This is much lower than the number of employees in technology firms, but focuses on the employees with specific technology skills.

Sacramento Region Employment and Wages by Occupational Category 1998									
<u>Source: Employment Development Department http://www.calmis.cahwnet.gov/FILE/occup\$/oeswages/SAC\$oes98.xls</u>									
Occupation and Employment Survey Wages & Employment by Occupational Category Worksheet									
MSA Code	OES Code	Occupational Title	Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage	25th Percentile Hourly Wage	50th Percentile (Median) Hourly Wage	75th Percentile Hourly Wage
6920	22126	Electrical and Electronic Engineers	2,420	\$26.28	\$31.41	\$65,340	\$27.06	\$33.52	\$39.99
6920	22127	Computer Engineers	1,040	\$22.44	\$30.09	\$62,590	\$25.05	\$32.32	\$39.58
6920	22128	Industrial Engineers, Except Safety	210	\$19.33	\$27.34	\$56,860	\$21.99	\$29.13	\$36.86
6920	22505	Electrical and Electronic Engineering Technicians and Technologists	2,120	\$11.23	\$17.72	\$36,860	\$11.65	\$16.40	\$21.21
6920	22511	Mechanical Engineering Technicians and Technologists	450	\$15.97	\$21.97	\$45,700	\$18.64	\$21.62	\$24.21
6920	22599	Engineering and Related Technicians and Technologists, All Other	1,860	\$11.36	\$18.80	\$39,100	\$13.02	\$17.27	\$23.41
6920	25103	Data Base Administrators	890	\$13.08	\$21.38	\$44,470	\$14.02	\$20.14	\$29.22
6920	25104	Computer Support Specialists	2,120	\$10.22	\$17.32	\$36,020	\$11.60	\$16.87	\$21.61
6920	25105	Computer Programmers	3,920	\$17.59	\$26.48	\$55,070	\$20.37	\$25.67	\$35.81
6920	25199	Computer Scientists, All Other	540	\$15.52	\$25.10	\$52,200	\$18.51	\$24.85	\$35.25
6920	25302	Operations and Systems Researchers and Analysts, Except Computer	290	\$14.23	\$23.88	\$49,680	\$16.70	\$23.01	\$33.08
6920	34005	Technical Writers and Editors	320	\$16.32	\$20.44	\$42,520	\$17.40	\$19.65	\$23.11
6920	49005	Sales Representatives, Scientific and Related Products and Services, Except Retail	1,570	\$13.47	\$24.08	\$50,090	\$15.77	\$20.25	\$32.43
6920	56011	Computer Operators, Except Peripheral Equipment	1,020	\$9.75	\$14.14	\$29,420	\$11.12	\$13.87	\$16.64
6920	56014	Peripheral EDP Equipment Operators	50	\$9.61	\$12.78	\$26,580	\$10.78	\$12.43	\$14.80
6920	85599	Communications Equipment Mechanics, Installers, and Repairers, All Other	(4)	\$16.37	\$20.01	\$41,620	\$19.50	\$21.21	\$22.88
6920	85799	Electrical and Electronic Equipment Mechanics, Installers, and Repairers, All Other	240	\$9.37	\$13.79	\$28,690	\$9.80	\$11.30	\$17.27
6920	93111	Electromechanical Equipment Assemblers, Precision	(4)	\$7.42	\$9.53	\$19,820	\$7.28	\$8.59	\$11.21
6920	93114	Electrical and Electronic Equipment Assemblers, Precision	(4)	\$8.41	\$15.00	\$31,190	\$10.10	\$15.78	\$19.13
Total Selected Occupations			19,060						
(1) The mean of the first third of the wage distribution is provided as a proxy for entry-level wage.									
(4) An estimate of employment could not be provided									
Source: Employment Development Department Occupation and Employment Survey. Data are for occupation not industry type.									
Dr. Robert Fountain March 26, 2001									

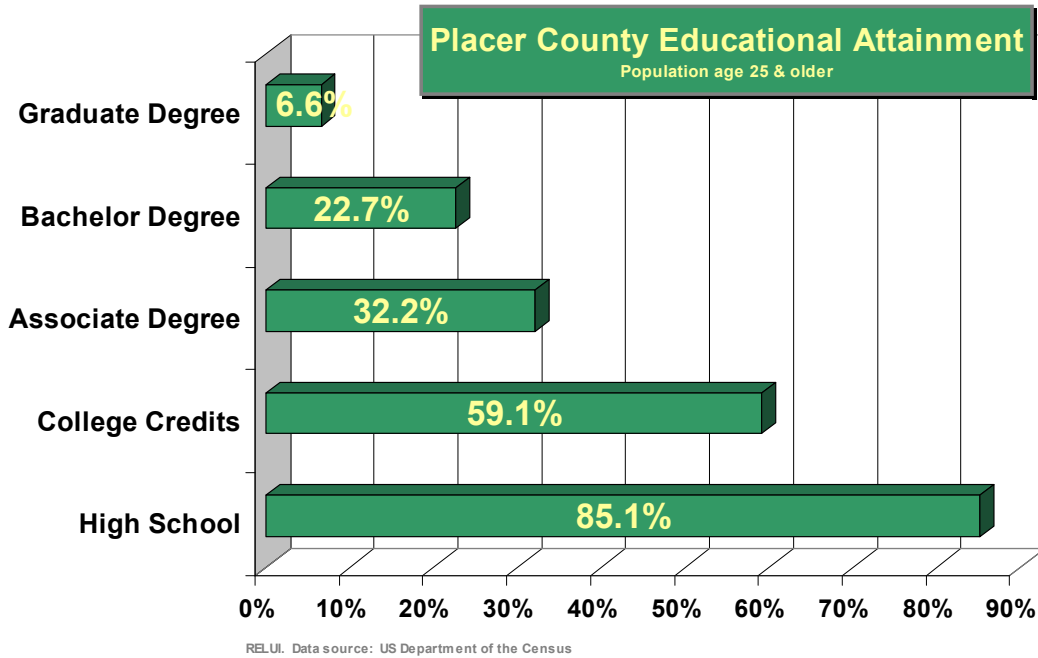
Occupational Employment Projections

The attached tables show the projected employment growth in selected technology occupations (not industry sectors) over the period 1997 –2004 for Sacramento County (Comparable projections for Placer County are not available.). The employment in these occupations is projected to grow from about 36,000 to nearly 53,000, an increase of over 16,000 or about 46% increase.

Projections of Employment Growth by Occupation					
Source: Employment Development Department					
http://www.calmis.cahwnet.gov/file/occproj/sactb6.xls					
TABLE 6					
OCCUPATIONAL EMPLOYMENT PROJECTIONS, 1997 - 2004					
SACRAMENTO COUNTY					
OCCUPATION	ANNUAL AVERAGES		ABSOLUTE	PERCENT	BLS TRAINING LEVEL
	1997	2004	CHANGE	CHANGE	
TOTAL, ALL OCCUPATIONS	501,400	580,300	78,900	15.7	
MANAGERS & ADMINISTRATORS OCCUPATIONS					
ENGINEERING, MATHEMATICAL, AND NATURAL SCIENCE MANAGERS	2,760	3,520	760	27.5	WORK EXPERIENCE, PLUS A BACHELOR'S OR HIGHER (4)
MANAGEMENT SUPPORT OCCUPATIONS					
ELECTRICAL AND ELECTRONIC ENGINEERS	1,790	2,440	650	36.3	BACHELOR'S DEGREE (5)
COMPUTER ENGINEERS	690	1,300	610	88.4	BACHELOR'S DEGREE (5)
INDUSTRIAL ENGINEERS--EXCEPT SAFETY	170	200	30	17.6	BACHELOR'S DEGREE (5)
MECHANICAL ENGINEERS	470	650	180	38.3	BACHELOR'S DEGREE (5)
ENGINEERING & RELATED TECHNICIANS					
ELECTRICAL & ELECTRONIC ENGINEERING TECHS	1,640	2,100	460	28	ASSOCIATE DEGREE (6)
INDUSTRIAL ENGINEERING TECHS	140	160	20	14.3	ASSOCIATE DEGREE (6)
COMPUTER, MATHEMATICAL, OPERATIONS RESEARCH & RELATED	12,260	19,010	6,750	55.1	
COMPUTER SCIENTISTS AND RELATED					
SYSTEMS ANALYSTS--ELECTRONIC DATA PROCESSING	4,370	6,800	2,430	55.6	BACHELOR'S DEGREE (5)
DATA BASE ADMINISTRATORS	650	1,130	480	73.8	BACHELOR'S DEGREE (5)
COMPUTER SUPPORT SPECIALISTS	1,550	2,880	1,330	85.8	BACHELOR'S DEGREE (5)
COMPUTER PROGRAMMERS	3,100	4,630	1,530	49.4	BACHELOR'S DEGREE (5)
COMPUTER PROGRAMMER AIDES	1,710	1,950	240	14	BACHELOR'S DEGREE (5)
COMPUTER SCIENTISTS & RELATED WORKERS--NEC	380	1,000	620	163.2	BACHELOR'S DEGREE (5)
MATH SCIENTISTS AND RELATED					
OPERATIONS/SYSTEMS RESEARCHERS--EX COMPUTER	250	290	40	16	MASTER'S DEGREE (3)
COMMUNICATIONS EQUIPMENT MECHANICS	560	790	230	41.1	
COMMUNICATIONS EQUIPMENT MECHANICS, NEC	250	330	80	32	POST-SECONDARY VOCATIONAL EDUCATION (7)
OTHER ELECTRICAL/ELECTRONIC EQUIPMENT MECHANICS					
DATA PROCESSING EQUIPMENT REPAIRERS	230	310	80	34.8	POST-SECONDARY VOCATIONAL EDUCATION (7)
ELECTRONICS REPAIRERS--COMMERCIAL	550	440	-110	-20	POST-SECONDARY VOCATIONAL EDUCATION (7)
ELECTRICAL/ELECTRONIC EQUIPMENT MECHANICS, NEC	190	280	90	47.4	LONG-TERM ON-THE-JOB TRAINING (9)
ELECTRONIC SEMICONDUCTOR PROCESSORS	290	530	240	82.8	MODERATE-TERM ON-THE-JOB TRAINING (10)
ASSEMBLERS, PRECISION					
ELECTROMECHANICAL EQUIPMENT ASSEMBLERS--PRECISION	180	290	110	61.1	WORK EXPERIENCE (8)
ELECTRICAL EQUIPMENT ASSEMBLERS--PRECISION	1,430	900	-530	-37.1	WORK EXPERIENCE (8)
ASSEMBLERS, NEC--PRECISION	290	360	70	24.1	WORK EXPERIENCE (8)
ELECTRICAL & ELECTRONIC ASSEMBLERS	240	330	90	37.5	SHORT-TERM ON-THE-JOB TRAINING (11)
Totals and Total Change	36140	52620	16480	46%	
Source: Employment Development Department.					
Dr. Robert Fountain March 28, 2001					

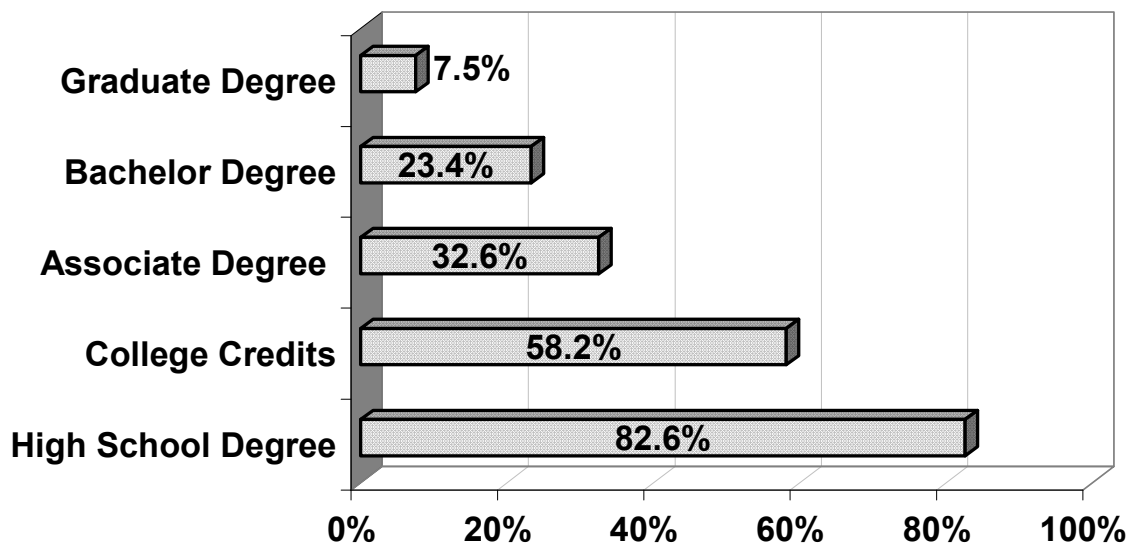
Educational Attainment and Higher Education Graduates

The data show the accumulative level of educational attainment. For Placer County, a total of 22.7% have a bachelor's degree or higher, 32% have a college degree, and 59% have some college education.



In the 3-County Sacramento Region (which includes El Dorado, Placer, and Sacramento counties), 32.6% have college degrees and 58.2% have some college credits.

Sacramento Region Educational Attainment



Regional Economics & Land Use Institute, CSUS
Data are for the 4-county CMSA based on 1990 census for population over age 25.

The future supply of skilled labor is indicated by enrollment and graduation from higher education institutions, as well as migration into the region. There were over 137,000 enrollees in higher education in the region last year. Over 10,000 graduated from UC Davis and California State University, Sacramento, and nearly 6,000 associate degrees and certificates were granted.

1999-2000 Academic Year Enrollment in the Sacramento Region	
University of California, Davis	25,092
California State University, Sacramento	24,530
American River College	22,888
Sacramento City College	17,655
Sierra College	16,832
Cosumnes River College	15,175
Yuba College	8,976
Lake Tahoe Community College	2,656
Western Career College - Sacramento	681
Heald College, School of Business - Sacramento	647
High-Tech Institute	576
Heald College School of Technology - Sacramento	550
ITT Technical Institute - Sacramento	438
D-Q University	257
Calif. Academy of Merchandising Art & Design	146
Total	137,099

Regional Economics & Land Use Institute, CSUS

Source: California Postsecondary Education Commission

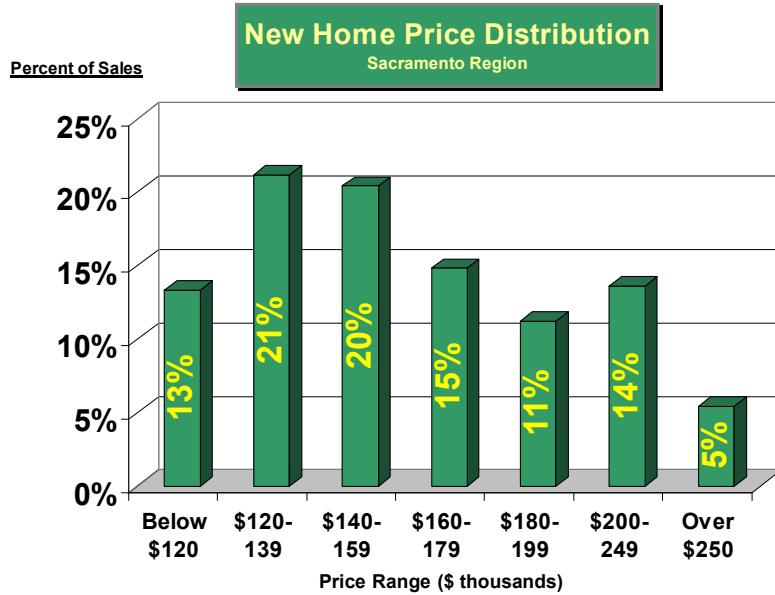
Academic Year 1999 - 2000	Bachelors Degrees	Graduate Degrees
Bachelors and Graduate Degrees		
University of California, Davis	4,347	919
California State University, Sacramento	3,894	1,226
Regional Total	8,241	2,145
	Associate Degrees	Certificates
Associate Degrees and Certificates		
American River College	1,017	400
Cosumnes River College	697	484
Sacramento City College	796	163
Sierra College	1,117	126
Yuba College	703	411
Regional Total	4,330	1,584

Regional Economics & Land Use Institute, CSUS

Source: California Postsecondary Education Commission.

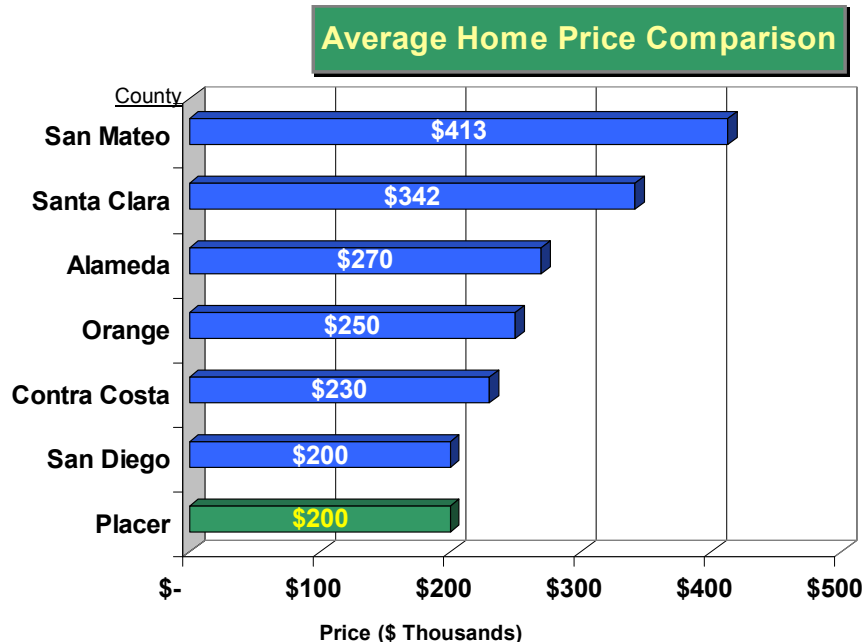
Housing Costs

Reasonably priced housing is a major factor in attracting highly skilled employees to the Sacramento region. The new home price distribution for the region has a median in the \$140,000-\$159,000 price range, and a significant number of new homes are priced below \$140,000.



RELUI. Source: Building Industry Association of Superior California

The \$200,000 average for all home sales in Placer County includes both new and resale houses, lowest of all of the major urban areas of California



RELUI. Source: California Association of Realtors
Includes both new and resale homes.