

# Rosecrans East Corridor Workforce Study



Presented to  
**The South Bay Economic Development Partnership**

Prepared by  
**The USC Center for Economic Development  
School of Policy, Planning, and Development  
University of Southern California**

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## Executive Summary

This report identifies strategies for the development of a trained workforce for the future of the Rosecrans East Corridor Project Area and the Tri-Cities area of Gardena, Hawthorne, and Lawndale, in Los Angeles County, California.

The key findings of this study are:

- 1) Lifelong education and training opportunities are excellent
  - Local training providers are able to provide entry-level job skills
  - Higher education opportunities are readily available
- 2) The local workforce is not taking full advantage of the abundant training and educational opportunities
  - The Tri-Cities area workforce is lower skilled than the state as a whole
  - The size of the lowest skilled portion of the Tri-Cities area workforce is 6 percentage points greater than for the state as a whole
  - 44 percent fewer local residents have a bachelor's degree than in the county or the state
- 3) The High Schools are not providing strong academic preparation for the next generation
  - Too many students are dropping out of High Schools
  - API test scores are lower compared to County and State scores
  - There is a general lack of preparation for college level as a majority of students do not meet UC/CSU entrance criteria

Based on the future scenarios provided for consideration, the recommendations and strategies are:

- Improve the technical skills of incumbent workers
  - Strategy #1: Develop Statistical Analysis Class for Manufacturing
  - Strategy #2: Promote Skills Upgrading
- Improve High School Achievement and Increase College Preparedness
  - Strategy #3: Form Education Partnership for High School Achievement
- Enhance High School Education Aimed at High-Tech Occupations
  - Strategy #4: Implement High Tech Magnet Program
- Identify Target Industry Cluster(s) for High Tech Industrial Park
  - Strategy #5: Develop Integrated Workforce Strategy for High Tech Industrial Park
  - Strategy #6: Seek Outside Funding to Support Youth Workforce Program

## Introduction

The Rosecrans East Corridor project area which is outlined in red on the cover of this report extends from the 405 freeway on the west to Vermont Avenue on the east. The project area falls with the three cities of Gardena, Hawthorne, and Lawndale which are collectively known as the Tri-Cities.

The USC Center for Economic Development (Center) was asked to perform an analysis of:

- The existing residential workforce in the Tri-Cities
- The workforce as employed by businesses in the Tri-Cities
- The workforce currently employed by business establishments within the project area
- The future workforce within the project area provided by the South Bay Economic Development Partnership

The Center collected data from government agencies, surveys, and interviews to profile both the locally employed and resident workforce, analyze the existing local job opportunities, identify education levels required, workforce preparedness gaps, and make recommendations for closing those gaps as well as provide an assessment of the availability of opportunities for lifelong learning and continuing improvement of one's employment and financial position in the Tri-Cities.

In the next section, we discuss findings and analysis of the existing residential workforce in the Tri-Cities.

## **Task One: Existing Workforce Analysis**

An analysis of the workforce of the Tri-Cities area involves two groups of workers; those employed by companies within the three cities and those who reside in the three cities and who may or may not work in the area. The information on the first group, which is referred to as the “employed workforce,” was obtained from the California State Employment Development Department for 2001. The information on the second group, the “residential workforce,” was obtained from the 2000 U.S. Census.

To understand the employment patterns in the three cities, the employed workforce analysis includes the number of workers per industry, the number of establishments per industry, the average number of employees per establishment by industry and the average annual wage per employee by industry. The residential workforce data is collected by the Census Bureau on residents aged 16 and older. The analysis includes the number employed by occupation and industry as well as the overall unemployment rate. The educational attainment of the population over age 25 was also tabulated as a proxy for skills level. Generally, government employment at the local, state and federal level has been excluded from this analysis.

The two employment patterns were then compared to understand how well the residential workforce could fill the jobs offered by local companies. Finally, an analysis was performed on existing local job opportunities. Local job listings were reviewed to determine occupations for which local firms are currently hiring.

### **Employed Workforce**

The employed workforce data collected by the California State Employment Development Department (EDD) comes from payroll information reported by businesses and is tabulated by industry and zip code. The zip codes in the Tri-Cities area don’t conform to city boundaries, resulting in some variation in this data versus city business license data. The data reported for the City of Gardena includes the following zip codes, 90247, 90248, and 90249. Without addresses, businesses can not be eliminated from the data sets that are located outside city boundaries. The data reported for the City of Hawthorne is for zip code 90250 and for the City of Lawndale is for zip code 90260.

In cases where there are only one or two businesses in an industry, the data is not provided by EDD to protect the confidentiality of those businesses since it would be obvious who they were. One industry in one city fell into this category, the information services industry in Lawndale. Because there was only one firm, the number of employees and wage information were not provided.

### ***Workers per Industry***

Among the various industries located in the Tri-Cities area, the manufacturing sector employs the largest number of workers, followed by the professional management;



education, health, social service; and retail trade sectors as shown in Table 1. These industries represent approximately two-thirds of the employed workforce—the manufacturing sector alone makes up 31 percent of the employed workforce. However, this distribution varies by individual city. In Gardena, the manufacturing sector employs well over a third of the city’s total employed workforce (39%), but the largest sector in Hawthorne and Lawndale is education, health, social service, employing 22 percent and 45 percent of the employed workforce respectively.

Gardena employs the largest number of workers in the Tri-Cities area with a little over two-thirds of the area’s total employed workforce (70%). Hawthorne employs close to a quarter of the area’s employed workforce with 23 percent, while firms in Lawndale employ the remaining 7 percent. However, the cities have a different industry distribution so Gardena doesn’t have the largest share of workers in the education, health, social services industry. Hawthorne employs the largest share with 47 percent followed by Lawndale with 29 percent and Gardena with 24 percent.

Table 1: Employees per Industry by City

Industry	Gardena	Hawthorne	Lawndale	Tri-Cities
Manufacturing	18,716	2,185	116	21,017
Professional, Scientific, Mgmt, Admin.	5,852	1,917	613	8,382
Education, Health, Social Services	1,753	3,502	2,173	7,428
Retail Trade	3,900	2,634	634	7,168
Wholesale Trade	4,794	641	175	5,610
Construction	4,297	759	334	5,390
Food Services and Recreation	3,018	1,277	331	4,626
Transportation, Warehousing	1,899	1,651	74	3,624
Other Services	2,109	735	274	3,118
Finance, Insurance, Real Estate	1,560	556	123	2,239
Information Services	785	371	NA	1,156
Total Industries	48,683	16,228	4,847	69,758

Source: California State Employment Development Department, 2001

### *Number of Establishments per Industry*

The manufacturing and retail industries contain the largest number of establishments in the Tri-Cities area with 821 and 512 firms respectively. Table 2 shows the number of establishments in each industrial category for each of the Tri-Cities and for the group. It shows that while manufacturing or retail trade businesses represent the first or second largest number of establishments in each of the individual cities, other industries hold either the first or second position. For example, the manufacturing industry in Gardena is the largest sector with 690 establishments followed by wholesale trade with 361 establishments. In Hawthorne and Lawndale, the education, health, social services establishments comprise the largest sector followed closely by retail.

Gardena contains 2,734 firms which is approximately two-thirds (65%) of all the firms in the Tri-Cities area; Hawthorne and Lawndale contain 24 percent and 11 percent.

Table 2: Establishments per Industry by City

Industry	Gardena	Hawthorne	Lawndale	Tri-Cities
Manufacturing	690	108	23	821
Professional, Scientific, Mgmt, Admin.	263	107	53	423
Education, Health, Social Services	155	144	90	389
Retail Trade	292	138	82	512
Wholesale Trade	361	43	19	423
Construction	169	60	38	267
Food Services and Recreation	224	89	34	347
Transportation, Warehousing	132	74	16	222
Other Services	244	136	68	448
Finance, Insurance, Real Estate	175	66	39	280
Information Services	29	23	1	53
Total Establishments	2,734	988	463	4,185

Source: California State Employment Development Department, 2001

### *Average Number of Employees per Establishment by Industry*

In the Tri-Cities area, the industry with the highest average number of employees per establishment is manufacturing with an average of 26 employees per firm, followed by information at 22 and professional, management, administrative and construction with an average of 20 employees per firm (see Table 3). Within those averages the individual cities vary considerably. For instance, manufacturing firms in Lawndale employ an average of 5 employees per firm and information firms in Gardena average 27 employees per firm. The average number of employees per establishment of all industries combined for the Tri-Cities area is 17.

Table 3: Average Number of Employees per Establishment by Industry

Industry	Gardena	Hawthorne	Lawndale	Tri-Cities
Manufacturing	27	20	5	26
Information Services	27	16	NA	22
Professional, Scientific, Mgmt, Admin.	22	18	12	20
Construction	25	13	9	20
Education, Health, Social Services	11	24	24	19
Transportation, Warehousing	14	22	5	16
Retail Trade	13	19	8	14
Wholesale Trade	13	15	9	13
Food Services and Recreation	13	14	10	13
Finance, Insurance, Real Estate	9	8	3	8
Other Services	9	5	4	7
All Industries Combined	18	16	10	17

Source: California State Employment Development Department, 2001

*Average Wage per Employee by Industry*

Firms in the information and manufacturing industry sectors offer the highest average annual wages in the Tri-Cities area with \$53,954 and \$48,723 respectively as shown in Table 4. In Lawndale, the two highest average annual wages are reported in the truck transportation and professional, scientific, management, administration industries at \$32,850 and \$30,753 respectively. In Hawthorne, the highest average annual wages are in the construction industry at \$41,152 followed by the information services industry at \$37,686. Gardena has the overall highest average annual wages of \$38,211.

Table 4: Average Annual Employee Wages per Industry by City

Industry	Gardena	Hawthorne	Lawndale	Tri-Cities
Information Services	\$61,649	\$ 37,686	\$ -	\$53,954
Manufacturing	\$49,423	\$ 35,524	\$ 19,273	\$48,723
Construction	\$43,701	\$ 41,152	\$ 30,299	\$42,318
Wholesale Trade	\$37,183	\$ 33,303	\$ 30,315	\$36,459
Transportation, Warehousing	\$41,527	\$ 33,215	\$ 32,850	\$37,265
Finance, Insurance, Real Estate	\$36,577	\$ 26,889	\$ 29,680	\$33,539
Education, Health, Social Services	\$24,207	\$ 28,455	\$ 29,500	\$27,758
Professional, Scientific, Mgmt, Admin.	\$27,394	\$ 29,695	\$ 30,753	\$28,213
Retail Trade	\$24,158	\$ 22,951	\$ 22,918	\$23,605
Other Services	\$20,818	\$ 20,441	\$ 13,301	\$20,046
Food Services and Recreation	\$14,593	\$ 16,151	\$ 13,795	\$14,966
All Industries Combined	\$38,211	\$ 29,036	\$ 26,705	\$35,277

Source: California State Employment Development Department, 2001

**Residential Workforce**

The residential workforce consists of people living in one of the Tri-Cities who reported being employed on the 2000 U.S. Census. Census tracts were identified for each of the three cities (see Table 5). Data was compiled on the residents on their occupation, industry, educational attainment, and employment status. The map on the next page shows the differing boundaries of the census tracts, zip codes, and city boundaries.

Although the boundaries don't match, they are close enough to provide a useful comparative analysis. Gardena's employed workforce is nearly three times the size of Hawthorne's, but Hawthorne's residential workforce is over two times the size of Gardena's. Gardena provides roughly two thirds of the jobs in the Tri-Cities area and Hawthorne provides almost half of the residents.

Table 5: Census Tracts by City

<b>Gardena</b>	<b>Hawthorne</b>	<b>Lawndale</b>
6026, 6029, 6030.01, 6030.03, 6030.04, 6031.01, 6031.02, 6032, 6033.01, 6033.02, 6034, 6035, 6036	6020.02, 6021.03, 6021.04, 6021.05, 6021.06, 6023.02, 6024.02, 6024.03, 6024.04, 6025.01, 6025.02, 6025.03, 6027, 6037.03	6038, 6039, 6040, 6041

Source: U.S. Census (2000)

***Number of Employed Residents by Occupation***

The occupation group with the largest number of residents in the Tri-Cities area is sales and office followed by management and professional (see Table 6). The construction, extraction, maintenance occupations employ the smallest share of each city's residential workforce.

Table 6: Residents by Occupation by City

Occupation	Gardena	Hawthorne	Lawndale	Tri-Cities
Sales, Office	7,139	10,329	4,030	21,498
Management, Professional	6,713	7,304	2,718	16,735
Service	3,795	6,192	2,765	12,752
Production, Transportation, Material Moving	4,494	5,236	2,264	11,994
Construction, Extraction, Maintenance	1,755	2,353	1,421	5,529
All Occupations	23,954	31,460	13,198	68,612

Source: US Census (2000) Summary File 3 Table DP-3

A comparison of the Tri-Cities residential occupation profile with Los Angeles County and California reveals that the State and the County have a significantly higher percentage of residents employed in Management and Professional occupations and a correspondingly lower percentage of residents employed in the Sales, Office; Service; and Production, Transportation, Material Moving occupations as seen in Table 7.

Table 7: Percentage of Residents Employed by Occupation for the Tri-Cities, Los Angeles County, and California

Occupation	Tri-City	LA County	State
Sales, Office	31.4	27.6	26.8
Management, Professional	24.9	34.3	36.0
Service	18.1	14.7	14.8
Production, Transportation, Material Moving	17.4	15.5	12.7
Construction, Extraction, Maintenance	8.1	7.8	8.4

Source: US Census (2000) Summary File 3 Table DP - 3

*Number of Employed Residents by Industry*

In the Tri-Cities area, 17 percent of the residential workforce is employed in the education, health, social service sector. This represents the largest share of any industry in the area – followed by the manufacturing industry with 15 percent. In Gardena and Lawndale, the manufacturing sector employs the largest share of residents followed by the education, health, and social service industry. In Hawthorne, the education, health, and social service industry leads the manufacturing industry in residential employment.

Table 8 shows the number of residents employed in each industry by city. The agriculture, forestry, fishing, hunting, mining industry employment accounts for less than 1 percent employment and has been included with construction. Public administration industry employment accounts for 4 percent of employment and has been included with other services.

Table 8: Employed Residents by Industry

Industry	Gardena	Hawthorne	Lawndale	Total
Education, Health, Social Services	3,936	5,859	1,949	11,744
Manufacturing	4,484	3,974	2,060	10,518
Retail Trade	2,719	3,303	1,753	7,775
Food Services and Recreation	1,993	3,361	1,598	6,952
Transportation, Warehousing	2,162	3,332	1,048	6,542
Professional, Scientific, Mgmt, Admin.	2,103	3,224	1,132	6,459
Other Services	2,415	3,379	1,169	6,963
Finance, Insurance, Real Estate	1,175	1,501	844	3,520
Wholesale Trade	1,389	1,046	460	2,895
Construction	875	1,383	772	3,030
Information Services	703	1,098	413	2,214
Total	23,954	31,460	13,198	68,612

Source: US Census (2000) Summary File 3 Table DP-3

To gain a better understanding of the workforce in the Tri-Cities area, the industry profile of the residential workforce was compared with that of Los Angeles County and State of California. Table 9 shows the share of the resident workforce in each industry for the Tri-Cities, Los Angeles County and California. The Tri-Cities has a higher percentage of residents employed in manufacturing; other services; food services, recreation; and transportation, warehousing than the county or state. Retail trade is even with the state, although higher than the county, and therefore the rest of the industries hold a lower percentage of residents than the county or state.

**Table 9: Percentage of Residents Employed by Industry for the Tri-Cities, Los Angeles County, and California**

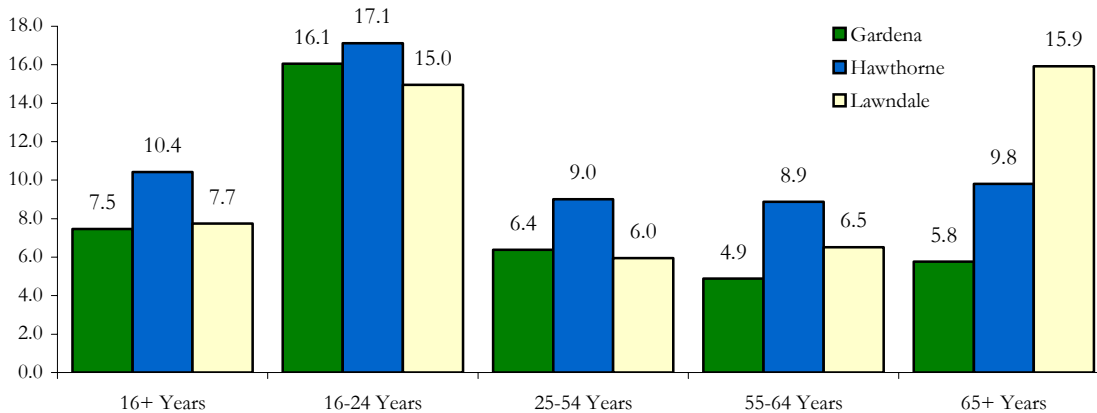
Industry	Tri-Cities	County	State
Education, Health, and Social Services	16.7	18.3	18.5
Manufacturing	15.8	14.8	13.1
Retail Trade	11.2	10.5	11.2
Other Services	10.1	9.1	9.7
Food Services, Recreation	10.1	8.4	8.2
Transportation, Warehousing	9.6	5.0	4.7
Professional, Scientific, Mgmt, Admin.	9.4	11.5	11.6
Finance, Insurance, Real Estate	5.2	6.9	6.9
Construction	4.4	5.4	8.1
Wholesale Trade	4.3	4.7	4.1
Information Services	3.2	5.4	3.9

Source: US Census (2000) Summary File 3 GCT-P13

### *Percent Unemployed Residents 16 Years and Older in the Labor Force*

The percentage of residents in the labor force who reported being unemployed in the 2000 census are graphed in Figure 1. The overall percentage in the Tri-Cities area was 8.7 percent, with 16 to 24 year olds exhibiting a much higher rate at 16.6 percent. Among the three cities, Hawthorne has the highest percent unemployed at 10 percent. The percent unemployed for Gardena and Lawndale is relatively even at 7.5 percent and 7.7 percent respectively.

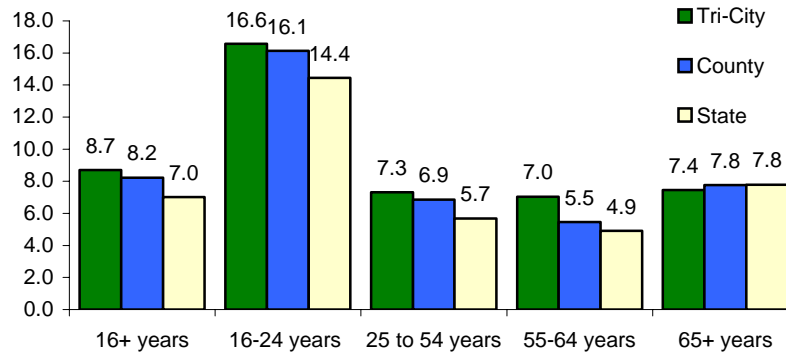
**Figure 1: Unemployment Rate of Workforce by Age Group and City**



Source: U.S. Census (2000) Summary File 3 QT-P27

The Tri-Cities area is compared with the County of Los Angeles and the State of California in Figure 2. The unemployment rate for every age group except aged 65+ in the Tri-Cities area is higher than either county or state levels.

Figure 2: Tri-City, County, and State Workforce Unemployment Rate



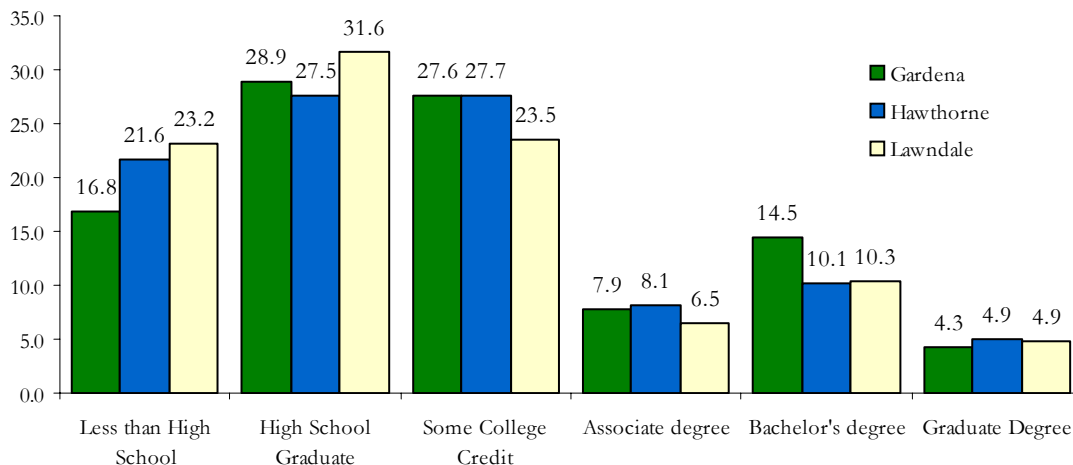
Source: U.S. Census 2000 Summary File 3

Currently, the overall unemployment within the Tri-Cities area stands at 8.7 percent compared to 8.2 percent in the county and 7.0 percent in the state.

**Educational Attainment**

Over half of the residential workforce in the Tri-Cities area has either completed high school (28.8%) or some college (26.9%), and a little under a quarter have either an associate’s degree (7.7%), a bachelor’s degree (11.9%), or a graduate degree (4.7%). The graph in Figure 3 shows what percentage of the population in each of the cities has attained each level of education.

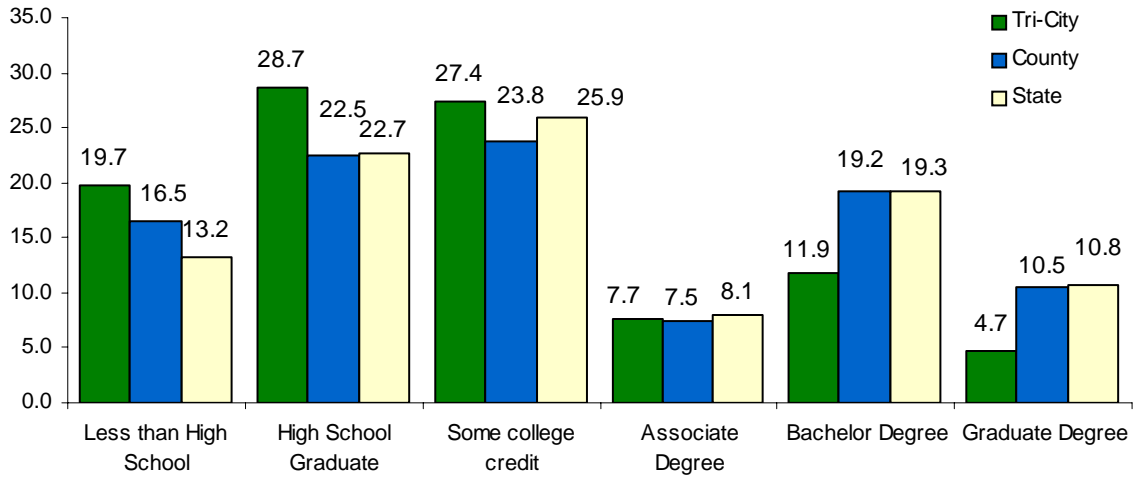
Figure 3: Educational Attainment of Workforce by City



Source: U.S. Census (2000) Summary File 3

The educational attainment levels of the Tri-Cities area is compared to Los Angeles County and the State in Figure 4.

Figure 4 Educational Attainment of Tri-City, County, and State Workforce



Source: U.S. Census (2000) Summary File 3 QT

Comparing educational attainment, 28.7 percent of Tri-Cities area residents have a high school diploma compared to 22.5 percent of county residents and 22.7 percent of state residents. A higher percentage (27.4%) of Tri-Cities area residents have earned some college credit compared to county residents (23.8%) and state residents (25.9%). The Tri-Cities area also leads all three with the highest percentage of non-high school graduate residents (19.7%). County and state non-high school graduate levels are 16.5 percent and 13.2 percent in comparison. The Tri-Cities area lags behind the county and the state in higher educational attainment. 19.2 percent and 19.3 percent of county and state residents have bachelor degrees compared to only 11.9 percent of Tri-Cities area residents.



**Comparison of Employed and Resident Workforce**

The number of jobs slightly outnumbers the number of employed workers in the Tri-Cities area. Some industries; such as Manufacturing; and Professional, Scientific, Management, and Administration; employ more workers than the number of residents that work in that industry. Others, such as Education, Health, Social Services; and Retail Trade employ fewer workers than the number of residents that work in that industry. Although we don't know what percentage of jobs are held by local residents, we do know that at least 16,351 residents are traveling outside the Tri-Cities area to seek employment. This number was calculated by totaling the grey boxes in the Tri-Cities column of "Residents per Industry by City" in Table 10 and subtracting the total of the white boxes in the Tri-Cities column of "Employees per Industry by City".

Industry classification provides one level of information about the local workforce. People with the same skills and occupation can work in any number of industries. Bookkeepers for example, are employed in manufacturing, retail, construction, and information services firms.

**Table 10: Comparison of Employed and Resident Workforce by Industry by City**

Industry	Employees per Industry by City				Residents per Industry by City			
	Gardena	Hawthorne	Lawndale	Tri-Cities	Gardena	Hawthorne	Lawndale	Tri-Cities
Manufacturing	18,716	2,185	116	21,017	4,484	3,974	2,060	10,518
Professional, Scientific, Mgmt, Admin.	5,852	1,917	613	8,382	2,103	3,224	1,132	6,459
Education, Health, Social Services	1,753	3,502	2,173	7,428	3,936	5,859	1,949	11,744
Retail Trade	3,900	2,634	634	7,168	2,719	3,303	1,753	7,775
Wholesale Trade	4,794	641	175	5,610	1,389	1,046	460	2,895
Construction	4,297	759	334	5,390	875	1,383	772	3,030
Food Services and Recreation	3,018	1,277	331	4,626	1,993	3,361	1,598	6,952
Transportation, Warehousing	1,899	1,651	74	3,624	2,162	3,332	1,048	6,542
Other Services	2,109	735	274	3,118	2,415	3,379	1,169	6,963
Finance, Insurance, Real Estate	1,560	556	123	2,239	1,175	1,501	844	3,520
Information Services	785	371	NA	1,156	703	1,098	413	2,214
Total Industries	48,683	16,228	4,847	69,758	23,954	31,460	13,198	68,612
Highlighted numbers indicate greater number of workers	Source: California State Employment Development Department				Source: US Census (2000) Summary File 3 Table DP-3			

**Existing Job Opportunities**

Local job listings were obtained by city from the California State Employment Development Department's CALJOBS database between November 3 and November 15, 2002 to identify available occupations at local firms. The majority of the job listings in the Tri-Cities area were in the manufacturing sector (Production, Transportation, Material Moving). Table 11 shows the distribution of the job listings. Although the list is not comprehensive, involving only those jobs listed with CALJOBS, it does provide some insight into types of jobs and the education, experience, and skills being sought.

**Table 11: Distribution of Job Listings in the Tri-City Area**

<u>Occupation</u>	<u>Number of Listings</u>	<u>Percent of Listings</u>
Production, Transportation, Material Moving	32	43
Sales, Office	20	27
Service	8	11
Management, Professional	13	18
Construction, Extraction, Maintenance	1	1
<b>Total</b>	<b>74</b>	<b>100.0</b>

Source: California State Employment Development Department, 2002

***Education and Experience Requirements***

The jobs listed required little formal education, training, or experience. Of the jobs listed in the database for the Tri-Cities area, 33.8 percent required a high school degree or GED while only 8.1 percent required some post-secondary training or bachelor's degree as shown in Table 12. Furthermore, over half of the jobs listed required less than two years experience as shown in Table 13.

**Table 12: Education and Training Requirements**

	<u>Number of Listings</u>	<u>Percent of Listings</u>
Not Stated or Listed	29	39%
Not Required	10	14%
Some High School	4	5%
High School/GED	25	34%
Bachelor Degree	4	5%
Post Secondary/Some College	2	3%
<b>Total</b>	<b>74</b>	<b>100%</b>

Source: California State Employment Development Department, 2002

Table 13 shows that 20 percent of the jobs indicated experience was not required and 34 percent required two years of experience or less. Because 39 percent of the job listings

provided no information on training or education qualifications and 30 percent provided no work experience requirements, the education levels and experience may be higher or lower than shown.

**Table 13: Experience Requirements**

Experience	Number of Listings	Percent of Listings
5 yrs	8	11
4 yrs	1	1
3 yrs	3	4
2 yrs	14	19
1 yr and less	11	15
Not Required	15	20
Not Stated or Listed	22	30
Total	74	100.0

Source: California State Employment Development Department, 2002

A few jobs indicated specific skills such as being bilingual in Spanish or speaking Korean. Others required certain knowledge or training pertaining to the specific job such as car audio installation training for an electronics technician, an accounting degree for a senior accountant, social service experience for an assistant manager position, color matching for a spray painter, and knowledge of blueprint, aerospace specs, and PCM for an inspector.

## **Task Two: Local Education and Existing Workforce**

The goal of this task was to determine if the average graduate of the educational system(s) would qualify for employment at local wealth creating companies and whether educational opportunities exist for supporting career growth within local companies.

Education offerings at public and private post-secondary institutions accessible to residents in the Tri-Cities were reviewed. Public education offerings were collected from El Camino College, California State Dominguez Hills, Los Angeles Harbor College, Santa Monica College, University of California at Los Angeles (UCLA), and UCLA Extension. Private education offerings were collected from Bryman College Gardena, Bryman College Torrance, DeVry University, University of Phoenix, Loyola Marymount, Loyola Marymount Extension, and University of Southern California

The major findings of this task are outlined, followed by a table of high growth occupations and wages, followed by a matrix of public education institutions available to residents indicating which educational institutions provide training in each industry cluster.

### **Rosecrans East Corridor Workforce Survey**

A survey was conducted of companies within the Tri-Cities, the Rosecrans East Corridor Workforce Survey. The methodology and results of the questions designed to identify the education requirements and career opportunities for growth at local companies follows.

#### ***Methodology***

23 businesses along the Rosecrans Avenue Corridor were surveyed by phone and/or in person over a two-month period between December 2002 and January 2003. Of the businesses surveyed, 16 are located on Rosecrans Avenue while the rest are located no more than two blocks off the corridor in either direction. The survey sampled a wide range of businesses from differing industries, but by and large concentrated on firms located in the area's two largest industries – manufacturing and aerospace. Due to the abundance of manufacturing and aerospace firms in Gardena, 18 of the firms surveyed were located in Gardena while the rest were located in Hawthorne. No businesses were surveyed along the Corridor in Lawndale since a majority of the manufacturing and aerospace firms in the city are located well south of Rosecrans Avenue in the vicinity of Hawthorne Blvd and Marine Avenue.

To ensure the accuracy of the information collected, owners and managers of the businesses along the Rosecrans Corridor were solicited to participate whenever possible. During the course of the survey, the availability of respondents and their willingness to participate influenced the quality of the information collected. When necessary, every effort was made by staff to clarify respondent answers and blank responses on returned

questionnaires. In this instance, staff followed up promptly with a phone call in an effort to collect the missing information. The following analysis is based on information as reported by the respondents; no assumptions were made about questions left blank.

***Business Profile***

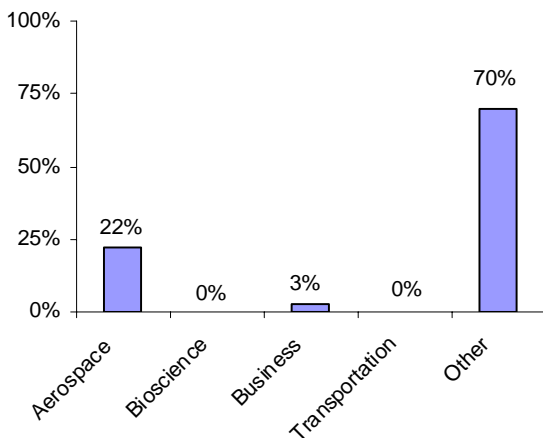
The following is a profile of businesses surveyed. The questionnaire asked businesses to classify the South Bay industry cluster they belong to, their primary function, size (number of employees), and the type of occupations they employ.

Industry Clusters

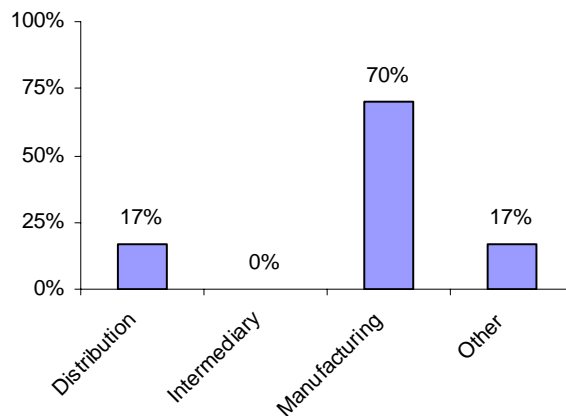
Industry clusters are groups of inter-related industries that represent broadly defined businesses from suppliers to end product producers, including supporting services and specialized infrastructure. Respondents were asked to classify their business within one of the industry clusters identified by the South Bay Economic Development Partnership in their 2002 South Bay Economic Digest.

Many of the companies found it difficult to classify their business within one of the specified industry categories. When asked which South Bay industry cluster they belonged to, just under three quarters (70%) of the firms surveyed listed them selves in the “other” category as shown in Figure 5. Although there may be companies within the Tri-Cities that are a part of the South Bay industry clusters, they are not clustered along the Rosecrans Corridor. Examples of these self-reported industries include: garment manufacturing, healthcare supply manufacturing, plastics manufacturing, construction, social services, and retail. Nearly one quarter (22%) of the firms surveyed, reported belonging to the aerospace industry, while three percent considered themselves part of the business services sector.

**Figure 5: Industry Clusters Represented**



**Figure 6: Primary Functions Represented**



Source: Rosecrans Corridor East Workforce Survey, USC Center for Economic Development, January 2003

### Primary Function

Figure 6 shows the main function of firms along the Rosecrans Corridor. 70 percent listed manufacturing as one of their main tasks. Other functions reported by firms included distribution (17%) and functions listed as “other” (17%) such as sales, repair, or personnel services.

### Size

Relatively all of the establishments surveyed along the Rosecrans East Corridor are classified as small businesses according to the Small Business Administration’s Office of Size Standards, which defines a small business as employing not more than 500 employees. Along the corridor, there was a relatively even distribution among number of employees. Over one-third (39%) of the businesses along the corridor employ between 1 and 10 workers, a little under one-quarter (22%) of the companies employ between 11 and 25 employees, just over one-quarter (26%) of the businesses employ between 26 and 50 workers, and 13 percent of the firms employ 50 or more workers.

### Occupational Distribution

Many of the businesses along the corridor reported having one position performing duties within multiple occupations, so the number of occupations and number of employees to not match. For managerial and back office occupations, nearly three quarters (70%) of the surveyed firms have managerial or professional positions while over one half (52%) have clerical positions. In addition, nearly half (47%) have sales representatives, while a little under one-third (30%) have customer service personnel.

### Assessment of Employability of Local High School Graduates

Two types of measures were used to assess the employability of the local high school graduates, the first was to survey and interview and resulted in the Rosecrans Corridor East Workforce Survey and interviews and focus groups conducted with educators and business people, and second was to look at the standard academic performance measures such as graduation rates, preparation for higher education, and test scores.

#### *Rosecrans Corridor East Workforce Survey*

The Rosecrans East Corridor Workforce Survey provides a view of the success of the High Schools in preparing graduates for working as seen through the eyes of employers. 53 of the 55 companies responded to the survey question, “Have you hired local high school students/graduates for entry level jobs?” Only 13 (25%) had done so. The other 40 (75%) responded “no”.

Of the 13 companies that had experience in employing high school graduates, 11 responded to the follow-on question, “Have you been satisfied with their performance?” Ten responses (77%) were in the affirmative, they did find the performance of the high

school students satisfactory, with only one respondent (7%) feeling that high school graduates were unsatisfactory.

They were also asked if they were satisfied with the skill level of high school students/graduates. Six (46%) said they were satisfied, three (23%) said no, and four (31%) did not respond.

### *Southwest Los Angeles College Focus Group<sup>1</sup>*

Los Angeles Southwest College held a focus group on March 25, 2004 to bring together members of the public, community-based, higher education, and business sectors together to discuss economic development. The focus group determined that the most important current trend is that today's students have low basic skills, their writing and mathematic skills aren't sufficient for success in the junior college or university setting. In addition, the low basic skills of students entering the community college system are insufficient for success in the job market. In fact, 85 percent of students entering Los Angeles Southwest College require some remedial math and or English.

The trend of lacking skills among college students requires the higher education sector to remediate the current situation. Rather than making the K-12 system more effective, higher education has had to bring about corrections to the basic skill deficiencies of current college students. As a result, transfer students from community college are often better prepared for 4-year college than those entering from high school. However, the process of remediation takes resources away from other programs run by the higher education sector.

The business sector participants questioned whether high school graduates requiring remedial learning can learn and become competent employees. They explained that even entry-level applicants have to have some basic skills – reading etc. and that they can't afford to take on that type of training. The public sector participants pointed out that the low skill level of high school graduates makes it harder to recruit businesses to the area.

The impact on the business sector is that the business owner fears that if an applicant didn't learn basic skills in school the first time around will they really put in the effort to achieve the second time around? They question why they should take over the individual's responsibility to obtain basic skills, they want employees who are motivated enough to have obtained basic skills.

Training is needed, so one business owner offers to pay for courses, 50 percent take advantage, some of them don't finish. The business owner feels that it's the individual's responsibility to achieve. He also said that if basic skills are there, he promotes from within and sends individuals to community college to obtain advanced training if they'll spend the time. Unfortunately, the motivation isn't always there to take the time out of their life to get ahead.

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<sup>1</sup>Final Report on Focus Group Facilitation for Development of iLEAD "Economic Development Strategies Report", November 2004, USC Center for Economic Development

One business owner has a training department because of the need to have employees trained fast. Sometimes that means training from 10pm – 3am; the community college couldn't provide that type of immediate response. Also, there are strings attached for matching funds from the state and federal government. Those strings were too expensive when he investigated it; he said he could do it cheaper himself.

*Gateway Cities: The Education Gap in the Gateway Cities<sup>2</sup>*

In 2001, the Gateway Cities Partnership published its first report: Gateway Cities Region—A Profile at the Start of the 21<sup>st</sup> Century. The report benchmarked a number of critical economic performance data sets for the region. One of the most critical data sets addressed educational attainment and student performance at the high school level. That data was updated and expanded to provide a better illustration of the state of education in the region in 2002. One goal of the report was to provide information that the community can use to infer how well students are prepared for the workplace upon completion of high school.

Interviews were conducted with community members, industry partners, and senior administrators of local school districts and community colleges. A summary of relevant comments follows:

- The underlying cause of low educational attainment, a major hindrance to workforce development, is a lack of parental involvement. When parents are involved in their children's education, children perform better than their counterparts who do not have parental guidance.
- The lack of consistency in the reading program was a major problem identified by the ABC School District. Significant progress has been made by adopting a Singular Reading Program that provides training to teachers and standardizes evaluation methods of students.
- A high number of students from the Gateway Cities Region are non-college bound. They are compelled to drop out and work for economic reasons. Economic reasons, rather than racial/ethnic backgrounds contribute to a high dropout/attrition rate.
- Educators feel that knowledge of the subject matter is enough to get students' a good job. Employers disagree. Employers find characteristics like flexibility, teamwork, communication, critical thinking, and other interpersonal skills are often more important. These attributes are not developed or taught as part of a high school curriculum.

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<sup>2</sup> Gateway Cities: The Education Gap in the Gateway Cities, May 2002, USC Center for Economic Development



- Partnerships and innovations are critical to improve student outcomes. For example, Cerritos College is finalizing a partnership with the ABC Unified for K to K16 colleges. They plan to work with parents, teachers, and students to explore the various career opportunities and understand what academic and other skills are necessary to be successful.
- One of the top priorities for the ABC School District has been to merge the academic education and career path of students. ABC has been making efforts to strengthen student applications' to colleges by providing them with specific skills. The regional occupation plan is one such step in this direction. Through this program, high school students in their senior years can explore more education and career pathways during an internship or apprenticeship.
- A large number of employees, particularly Hispanic women with children, are not motivated to pursue higher education. Due to their family situation, most of these women tend to continue work at low wages and are not particularly inclined to enhance their skills. The only opportunity for upward career mobility is to join another firm after gaining significant experience in the field. Even then, without the required academic qualifications and skills mix, the increase in income is just marginal.

### *High School Performance Measures*

Selected High School performance measures are tabulated in Table 14 on the following page. These measures can be used to benchmark the schools as well as for comparison to county and state averages. Moneta Continuation High School is unique in that it offers a curriculum that requires all students to complete the courses required for admission to the University of California (UC) or California State University (CSU) system. Explanations follow for the data presented in the table.

#### *Students meeting UC/CSU course requirements in 2001-02*

Percent of graduates passing all the courses required for admission to the UC or CSU systems.

#### *2002-03 Graduation Rates*

The U.S. Department of Education's National Center for Educational Statistics definition of graduation rate was used here. The graduation rate is calculated by dividing the number of graduates in year 4 by Number of Graduates (Year 4) + Gr. 9 Dropouts (Year 1) + Gr. 10 Dropouts (Year 2) + Gr. 11 Dropouts (Year 3) + Gr. 12 Dropouts (Year 4).

#### *Number of students per computer in 2001-02*

This figure was obtained by dividing student enrollment from the 2001–2002 school year by the count of all computers available for student use.

#### *Los Angeles County Ranking of top 160 schools out of 306 schools*

An index is calculated which is a complicated weighted average based on the California Standards Tests and SAT-9 tests given spring 2002 to students in grades 9 through 11.

County schools are ranked according to API scores up to the top 160 schools. After that they are listed as below the top 160 schools with no specific ranking.

*API 2003, API Base*

API Base is a numeric index (or score) between 200 and 1000 that reflects a school's or school district's performance on statewide student assessments administered in 2003.

*Decile Ranking*

A rating, usually of performance, on a scale of 1 to 10 where 10 is best, 1 is worst, and each number corresponds to an increment of 10 percentage points. The statewide ranking includes all schools in the state. The ranking within deciles refers to the school's ranking within the statewide decile.

Table 14: High School Performance Measures

Tri-Cities High Schools and County and State Averages	Students meeting UC/CSU course requirements in 2001-02		2002-03 Graduation Rates	Number of students per computer in 2001-02	Los Angeles County Ranking of top 160 schools out of 306 schools Spring 2002	API 2003		
	Rank out of top 197 schools out of 306 in county	% of graduates				Base	Decile Ranking	
							Statewide	Ranking Within Deciles
Leuzinger High	146	26%	54%	3	151	518	1	4
Hawthorne High	155	23%	67%	4	144	845	9	2
Gardena Senior High	186	9%	61%	11	>160	n/a	n/a	n/a
Lawndale High	191	5%	78%	7	131	589	3	8
Moneta Continuation High School	1	100%	n/a	5	>160	n/a	n/a	n/a
County		40%	81%	5				
State		38%	87%	5		Ave = 647		

Sources: California Department of Education (API) <http://data1.cde.ca.gov/dataquest/>, School Wise Press <http://www.schoolwisepress.com/>

The schools are ranked by their performance in student accomplishment of the UC/CSU course requirements. Their ranking by graduation rate, county rank, and API vary. Leuzinger is ranked lower overall within the County of Los Angeles, has the lowest API score, and the lowest graduation rate, and yet is preparing the highest percentage of graduates for college. Hawthorne High appears to be doing the best overall. Lawndale High is graduating the highest percentage of students, but they are the least prepared for attending a UC/CSU.

### Available Education Opportunities

A total of 15 local secondary and post high school educational institutions were identified which prepare graduates for employment at local wealth creating companies. The courses offered at these institutions were categorized according to the industrial sector they served. Areas of study at each institution were matched with their most likely career choice. For example, a molecular biology major would most likely choose a career in the biological sciences field as a molecular biologist. After this pairing, careers were then matched with industry clusters identified by the South Bay Economic Development Partnership and located in the South Bay Region.

A total of 494 areas of study were examined among the 15 educational institutions surveyed. Out of the 494 areas of study, 338 career-to-industry clusters matches were made. Table 15 lists the industry clusters and the number of corresponding matches. The business services, medical services, and bioscience industry clusters benefit the most from local training institutions. Local schools offer 82 areas of study geared toward the business services cluster representing almost a quarter (24%) of the matches made. Following closely behind, local institutions offer 69 programs (20%) geared toward the medical services cluster and 56 programs (17%) geared towards the bioscience cluster.

**Table 15: Career-to-Industry Match Distribution**

Industrial Clusters	Areas of Study/Careers	Percent
Business Services	82	24
Medical Services	69	20
Bio – Science	56	17
Communications	29	9
Computer Services	25	7
Financial Services	22	7
Environmental Technology	20	6
Software	13	4
Aerospace	9	3
Horticulture	5	1
Hospitality	5	1
Recreational Goods Manufacturing	3	1
Total	338	100.0

Source: USC Center for Economic Development

### Growth Opportunities in the Future

The California Employment Development Department has identified 50 occupations as having the greatest growth projects for the period 2001 – 2008. Those occupations have been loosely grouped by Industry Cluster or Industry in Table 16 on the three pages following the definitions on the next page. Many occupations can be found in more than one industry however, they are listed in only one for the purpose of simplicity.

Table 16 contains information on the number of jobs in each occupation in year 2001, the projection for the number of jobs in 2008, the net number of new jobs over that seven year period, the percent increase in jobs, the type of education and/or experience required, and the average annual income if over a living wage established as roughly \$9/hr by the City of Los Angeles. For those occupations offering an average wage lower than \$9/hr, the notation Under LW is used. Table 17 follows and contains a matrix of local educational and technical school programs offered for the same industry clusters.

In the classification system used for education/experience required reflects the manner in which most workers become proficient in that occupation and the preferences of most employers.<sup>3</sup> The definitions of the training levels in the table follow<sup>4</sup>:

Short-Term OJT = Short-term on-the-job-training: Occupations in which workers can develop skills needed after a short demonstration or up to one month of on-the-job experience and instruction.

Moderate-Term OJT = Moderate-term on-the-job-training: Occupations in which workers can develop average job performance after 1 to 12 months of combined on-the-job experience and informal training.

Long-Term OJT = Long-term on-the-job-training: Occupations that require more than 12 months of on-the-job-training or combined work experience and formal classroom instruction for workers to develop the skills needed for average job performance.

Work Experience: Occupations that require skills obtained through work experience in a related occupation.

Post-Sec. VocEd = Post-secondary vocational education: Occupations that require completion of vocational school training.

Associate Degree: Occupations that require the completion of at least 2 years of full-time academic study beyond high school.

BA/BS Degree = Bachelor's degree: Occupations that require the completion of at least 4 but not more than 5 years of full-time academic study beyond high school resulting in a Bachelor's degree.

BA/BS + Experience = Bachelor's or higher and some work experience: Occupations that generally require work experience in an occupation requiring a bachelor's or higher degree. Most occupations in this category are managerial occupations that require work experience in a related non-managerial occupation.

Professional Degree: Occupations that require at least two years of full-time academic study beyond a bachelor's degree (for example, law, medicine, dentistry and clergy).

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<sup>3</sup> Bureau of Labor Statistics Training Level Definitions, <http://www.calmis.ca.gov/FILE/resource/BLSTrainLvltx.htm>

<sup>4</sup> *ibid.*

**Table 16: Los Angeles County - Occupations With Greatest Growth, 2001-2008**

Occupation	Annual Averages		Absolute Change	Percent Change	Education/ Experience	Average Annual Wages
	2001	2008				
<b>Industry Clusters Identified by South Bay Economic Development Partnership</b>						
<b>Business and Financial Services Industry Cluster</b>						
Security Guards	51,720	63,410	11,690	22.6	Short-Term OJT	\$19,633
Janitors & Clean, except Maids & Housekeeping Cleaners	62,350	72,020	9,670	15.5	Short-Term OJT	\$21,691
Customer Service Representatives	55,070	64,570	9,500	17.3	Moderate-term OJT	\$31,529
Truck Drivers, Light or Delivery Services	37,620	42,420	4,800	12.8	Short-Term OJT	\$25,100
Packers & Packers, Hand	43,780	48,520	4,740	10.8	Short-Term OJT	Under LW
Executive Secretaries & Administrative Assistants	62,870	67,000	4,130	6.6	Moderate-term OJT	\$37,715
Receptionists & Information Clerks	30,030	33,210	3,180	10.6	Short-Term OJT	\$23,846
Accountants & Auditors	25,910	28,330	2,420	9.3	BA/BS Degree	\$57,615
Financial Managers	17,770	20,180	2,410	13.6	BA/BS + Experience	\$90,567
Lawyers	19,310	21,550	2,240	11.6	Professional Degree	\$106,761
First Line Sups/Mgrs of Office & Admin Support	50,490	52,370	1,880	3.7	Work Experience	\$48,486
Bill & Account Collectors	12,290	14,080	1,790	14.6	Short-term OJT	\$30,753
			58,450			
<b>Hospitality Industry Cluster</b>						
Combination Food Prep & Serving Workers, Inc. Fast	47,160	55,720	8,560	18.2	Short-term OJT	Under LW
Waiters & Waitresses	60,260	68,240	7,980	13.2	Short-term OJT	Under LW
Cooks, Restaurant	29,980	34,830	4,850	16.2	Long-term OJT	\$19,077
Maids & Housekeeping Cleaners	22,730	26,520	3,790	16.7	Short-term OJT	Under LW
Food Preparation Workers	20,460	22,680	2,220	10.9	Short-term OJT	Under LW
Food Service Managers	14,710	16,860	2,150	14.6	Work Experience	n/a
First-Line Sups/Mgrs of Food Prep & Serving Workers	21,370	23,080	1,710	8.0	Work Experience	\$27,379
			31,260			

Occupation	Annual Averages		Absolute Change	Percent Change	Education/ Experience	Average Annual Wages
	2001	2008				
<b>Computer Services and Software Industry Cluster</b>						
Computer Support Specialists	13,830	21,220	7,390	53.4	Associate Degree	\$44,713
Computer Software Engineers, Applications	11,960	17,050	5,090	42.6	BA/BS Degree	\$78,774
Network & Computer Systems Administrators	9,910	14,470	4,560	46.0	BA/BS Degree	\$60,267
Computer Software Engineers, Systems Software	7,200	10,130	2,930	40.7	BA/BS Degree	\$74,730
Computer Systems Analysts	21,930	24,250	2,320	10.6	BA/BS Degree	\$64,118
Computer & Information Systems Managers	7,050	8,950	1,900	27.0	BA/BS + Experience	\$89,530
			24,190			
<b>Manufacturing Industry Cluster</b>						
Laborers & Freight, Stock, & Material Movers	77,780	85,150	7,370	9.5	Short-term OJT	\$20,401
General & Operations Managers	68,340	74,140	5,800	8.5	BA/BS + Experience	\$93,833
Truck Drivers, Heavy & Tractor-Trailer	28,750	33,320	4,570	15.9	Short-term OJT	\$46,418
			17,740			
<b>Medical Services Industry Cluster</b>						
Registered Nurses	65,450	73,600	8,150	12.5	Associate Degree	\$56,682
Nursing Aides, Orderlies, & Attendants	30,190	33,390	3,200	10.6	Short-term OJT	\$20,412
Medical Assistants	13,270	15,950	2,680	20.2	Moderate-term OJT	\$26,603
Dental Assistant	11,570	13,460	1,890	16.3	Moderate-term OJT	\$37,526
			15,920			
<b>Other Industries</b>						
<b>Retail Trade</b>						
Retail Salespersons	108,710	122,650	13,940	12.8	Short-term OJT	\$22,191
Cashiers	92,410	103,620	11,210	12.1	Short-term OJT	\$19,766
First-Line Sups/Mgrs of Retail Sales Workers	35,020	39,290	4,270	12.2	Work Experience	\$38,187
Stock Clerks & Order Fillers	55,700	58,550	2,850	5.1	Short-term OJT	\$23,620
Sales Managers	10,890	13,150	2,260	20.8	BA/BS + Experience	\$86,732
			34,530			

Occupation	Annual Averages		Absolute Change	Percent Change	Education/ Experience	Average Annual Wages
	2001	2008				
<b>Education</b>						
Teacher Assistants	54,480	64,640	10,160	18.6	Short-Term OJT	\$24,287
Elementary School Teachers, except Special Ed.	50,140	56,710	6,570	13.1	BA/BS Degree	\$49,625
Secondary School Teachers, except Special Ed. & Voc. Ed.	29,340	34,320	4,980	17.0	BA/BS Degree	\$54,297
Special Ed. Teachers: Preschool, Kindergarten, & Elementary School	7,450	9,590	2,140	28.7	BA/BS Degree	\$51,749
			23,850			
<b>Construction</b>						
Carpenters	16,840	19,950	3,110	18.5	Long-term OJT	\$43,764
Electricians	13,570	16,420	2,850	21.0	Long-term OJT	\$42,065
Construction Laborers	12,790	15,570	2,780	21.7	Moderate-term OJT	\$34,003
Cement Masons & Concrete Finishers	8,610	10,370	1,760	20.4	Long-term OJT	\$25,144
			10,500			
<b>Other</b>						
Landscaping & Groundskeeping Workers	18,630	21,190	2,560	13.7	Short-term OJT	\$21,907
Automotive Service Technicians & Mechanics	21,930	24,250	2,320	10.6	Post-Sec. VocEd	\$31,396
			4,880			



**Table 17: Matrix of Educational Institutions and Programs Offered by Industry Cluster with Greatest Job Growth**

<b>Educational Institution</b>	<b>Business and Financial Services</b>	<b>Computer Services and Software</b>	<b>Manufacturing</b>	<b>Medical Services</b>
<b>Bryman College Gardena</b>				Medical Assisting, Dental Assisting, Medical Administrative, Medical Insurance Billing/Coding, Dialysis Technician, (Certificate)
<b>Bryman College Torrance</b>				Massage Therapy, Pharmacy Technician (Certificate)
<b>DeVry University</b>	Computer Information Systems, Network Systems Administration, (BA)	Computer Engineering Technology, Computer Technology, Technical Management, Electronics and Computer Technology, Electronics and Engineering Technology, Electronics Technology, (BA)		
<b>ITT Technical Institute</b>	Business Accounting Technology, Business Administration, Information Systems Security, (BS)	Electronics and Communications Engineering Technology, Computer and Electronics Engineering Technology, Data Communication Systems Technology, Digital Entertainment and Game Design, Information Technology - Multimedia, (BS)	Computer Drafting and Design (BS)	
<b>University of Phoenix</b>	Accounting, Business Administration, Business Management, Human Services, (BS), Business Administration (MBA), Organizational Management (MA)	Information Technology (BS), Business Administration - Technology Management (MBA), Microsoft® Certified Systems Engineer (Certificate)		Nursing (BS, MS), Family Nurse Practitioner (MS), Business Administration - Health Management (BS)
<b>Pepperdine University</b>	Accounting, Finance, (BA) , Business Administration (BA, MBA)	Technology Management (BA)		

<b>Educationmal Institution</b>	<b>Business and Financial Services</b>	<b>Computer Services and Software</b>	<b>Manufacturing</b>	<b>Medical Services</b>
<b>Loyola Marymount and Loyola Marymount Extension</b>	Financial, Human Resources, (Continuing Ed), Business Administration (BS, Continuing Ed)	Electrical Engineering, Computer Science (MA, BA), Computer Science Engineer (BA)	Mechanical Engineering, (MA, BA), Engineering, Manufacturing (Certificates)	
<b>El Camino College</b>	Accounting, Business, Business Administration, Business Management, Marketing, Office Administration, Real Estate (AA or AS), Business/ Accounting, Bookeeping Clerk, Management, Marketing, Office Clerk, Office Administration Computer Applications (Certificate)	Computer Science, Electronics, (Certificate or AA), Electronics and Computer Hardware Technology (AS, pending state approval), Computer Information Systems (AA)	Construction Technology, Machine Tool Technology, Manufacturing Technology, Industrial Technology (Certificate or AA) Pre-Engineering (AA)	Pre-Nursing, Nursing, (RN, LVN, LPN - Certificate or AA), Medical Lab Technician, Pre-Dentistry, Pre-Medicine, Pre-Optometry, Pre-Pharmacy, Psychology (AA)
<b>Santa Monica College</b>	Accounting (AA, Career Certificates), Computer Information Systems (AA)	Computer Science, Computer Programming, (AA)	Mathematics (AA)	Nursing (RN)
<b>California State University Dominguez Hills</b>	Accounting (Certificate)	Computer Science (BA), Computer Information Systems (Certificate)		BSN, MSN, Clinical Science - Medical Technician, Orthotics, Prosthetics (Certificate)
<b>Los Angeles Harbor College</b>	Accounting, Business Management, Office Administration, Computer Information Systems, Business Technology, (BA, Certificate)			Nursing (CNA, RN)
<b>University of California, Los Angeles and UCLA Extension</b>	Accounting , Statistics-(BA,MA)	Electrical Engineering, Computer Programming, Computer Science (BS, MS)	Manufacturing Engineering, Mechanical Engineering, Management, (BS, MS)	Nursing (BSN, MSN)
<b>University of Southern California</b>	Accounting, Business Administration, (BA,MA)	Computer Science Engineering, Electrical Engineering, (BS,MS)	Aerospace Engineering, Biomedical Engineering, Industrial and Systems Engineering, Mathematics, Mechanical Engineering (BS, MS)	Nursing (BSN, MSN), Pharmacy, (BS), Dentistry (DDS), Dental Hygiene (BS), Periodontology (BS), Occupational Therapy (BS)

## **Task Three: Local Job Training**

To provide a picture of the local job training opportunities, the Center interviewed local job training program staff, surveyed businesses and assessed the availability of opportunities for lifelong learning and the continuing improvement of one's employment and financial position in the Tri-Cities area.

### **Interviews with Local Job Training Providers**

Local job training providers such as one-stop centers, trade specific trainers, and occupational centers were interviewed to obtain information on the types of programs they offer and on the backgrounds of their clients. Specifically, providers were asked how they determine what training programs to offer and how they relate to employer requirements. Providers were also asked to provide information on individual trainees such as city of residence, high school attended, and educational attainment in an effort to obtain a profile on the clients they serve. Finally, if their clients rate the programs upon completion and, if so, what methods they use to obtain these ratings. In all, a total of 27 local training providers located in Gardena, Hawthorne, Lawndale, and the surrounding area were surveyed by telephone between November and December 2002. Of the 27 providers, 13 responded and the remainder either declined to be interviewed or failed to return telephone calls.

### ***Determining Training Programs to Offer***

When determining what programs to offer, local training providers reported that they often consult with local industries and businesses for input. However, the approach used by each provider to obtain this information varied. For example, three of the providers reported convening industrial advisory boards once a year to discuss changes in program curriculum. Other providers survey local businesses and industry to determine the needs of the local businesses community. Some providers reported receiving input from the South Bay Workforce Investment Board and One-Stop Centers when developing new programs.

### ***Relating to Employer Requirements***

When asked how they relate to current employer requirements, local training providers reported that they rely on several of the same sources they use in determining what programs to offer. Furthermore, providers also reported receiving input from instructors, corporate trainers, and human resource departments. Providers reported using telephone surveys and/or informal personal contacts when eliciting information on employer needs from the business community. When asked if businesses contract with them to provide training for their employees, some providers stated that local businesses often contact them for training services while others reported seldom to never. In addition, six providers reported being contacted by corporate trainers to offer training services.

### *Trainee Profile*

All but one of the 13 training providers reported collecting information such as successful completion, city of residence, high school attended, and educational attainment from clients. Unfortunately, the providers were either unable and/or unwilling to disclose specific information on their clients. However, they were willing to provide a general client overview. A majority of those receiving training finish their course work. At least 50 percent of those enrolled in Workforce Investment Board funded programs successfully complete their courses. A majority of those trained by the providers reside in the South Bay region. A few clients commute from communities located in greater Los Angeles for specific, high tech related programs. For example, trainers providing fiber optic and computer training draw clients from the San Gabriel and Antelope Valleys. A majority of those trained by local providers attended high school locally as well. As for general educational attainment, most of the clients served by local training providers have either completed high school or received a general high school equivalency degree.

### *Placement Success Rate*

To determine how successful clients were in the job market, placement success rates were collected from training providers. Placement rates for the five training providers who reported results to us were excellent, ranging from 75 percent to 98.8 percent. However, the placement rates of the other 22 providers were not made available.

Placement success rates were also collected for individual programs of study. Lifetime placement rates for 39 programs (reporting figures other than zero) ranged from 33 percent to 100 percent while year 2000 placement rates for 26 programs (reporting rates other than zero) fared worse ranging from 20 percent to 100 percent. Again, not all rates were made available. Placement rates were available for only 55 of the 218 programs identified.

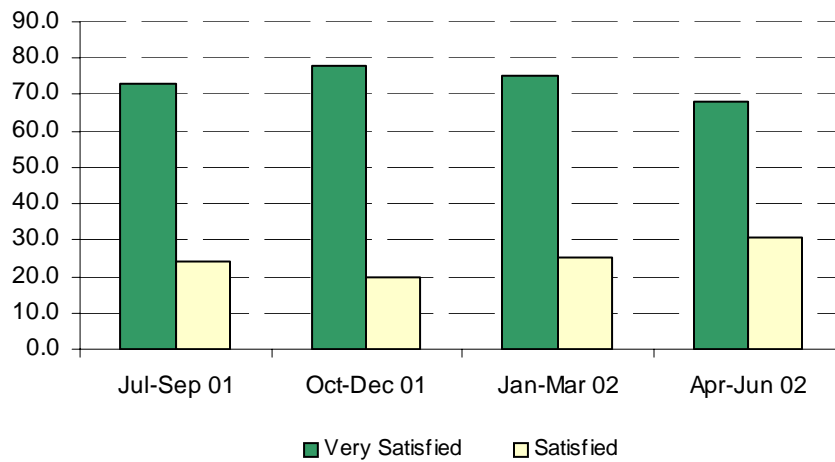
### *Customer Satisfaction*

Of the 13 local training providers responding to the survey, the majority collected detailed records on how graduates of their courses rated their experience. To obtain this information, providers administered exit interviews, mailed surveys, or conducted instructor evaluations at the end of each course. However, as the case with client profiles, providers were either unable and/or unwilling to supply these figures. As an alternative to this data, results of several customer satisfaction surveys administered by the South Bay Workforce Investment Board (WIB) were tallied together and used as a proxy. The surveys focused on customer satisfaction with services provided by One-Stop Business and Career Centers directed by the South Bay WIB throughout the region. The South Bay WIB combined responses from six centers located in Inglewood, Gardena, Hawthorne, Lawndale, Redondo Beach, and Westchester to determine general satisfaction ratings for all centers in the region.

While one-stop centers provide job training services similar to local training providers, they differ in that they provide services such as job preparation workshops and employer interviews. In addition, one-stop centers often work in conjunction with local training providers to match clients with training programs.

Figure 5 illustrates a summary of the results. Surveys were administered quarterly between July 1, 2001 and June 30, 2002. As depicted, customers generally gave the centers high marks. Over the course of the survey period, around 70 percent of those surveyed felt “very satisfied” with the level of service they received at the centers. The remainder felt “satisfied”. Over the same period, only a few (1%) felt “dissatisfied” with their experience at the centers.

Figure 7: Customer Satisfaction for South Bay One-Stop Career Centers



Source: South Bay Workforce Investment Board

**Rosecrans East Corridor Workforce Survey**

The following is a description of the Rosecrans East Corridor Workforce Survey results dealing with job training. The survey focused on determining workforce training opportunities and potential for upward mobility within the companies surveyed. Businesses were asked how they interface with local job training providers and how they rate the quality of services provided. They were also asked to identify specific promotion criteria they employ when promoting workers. Finally, businesses were asked to list the continuing education and professional development opportunities they provide to current employees.

***Job Training Provider Interface and Level of Satisfaction***

Many businesses in the study area conduct in-house or outside job-training programs. 46 of 55 companies responded to the survey question, “What training mechanisms do you use?” Of those that responded, 45 companies (98%) use in-house training programs, and the remaining company uses outside training providers. Of the companies utilizing in-

house training programs, 5 companies (11%) also use professional development, 9 companies (20%) include technical training, 10 companies (22%) utilize some outside training, and 4 companies (9%) use “other” mechanisms such as schools.

Of the 10 companies that utilized outside training, all responded with satisfaction; 60 percent were “very satisfied.” 6 companies also reported the use of a local training organization to develop a company-specific training program, two of which appear to be used in-house.

### ***Promotion Criteria***

Most (83%, 41 of 55 companies) of the companies surveyed along the Rosecrans East Corridor promote from within their own ranks. Although promotion criterion differs slightly among businesses, the most common considerations among firms for promotion are increased skill level (73%), and above satisfactory job performance (71%). Other factors include job training and furthering ones education (39%) and tenure with the organization (24%). When considering employees for promotion, businesses seem to be concerned with employees’ ability to perform the job, as well as employees’ tenure with the company.

### ***Continuing Education & Job Training Practices***

The traditional types of continuing education programs such as opportunities to earn a college degree or a professional certificate are not supported by many businesses that were surveyed. Professional development and technical training were the least offered types of training provided by businesses within the corridor. Of the firms that did offer continuing education programs, it was done for the purpose of complying with employee safety regulations, rather than for personal or professional development.

### **Availability of Lifelong Learning and Improvement**

Information was collected on training programs offered by area universities, colleges, technical schools, and local training providers. These training programs were matched with occupations and then linked to selected South Bay Economic Development Partnership’s industry clusters. The number of available programs points to the plethora of available opportunities for lifelong learning and continuing improvement of one’s employment and financial position in the Tri-Cities area.

The focus was on certificate programs, not associate (2-year) or bachelor degrees (4-year), because of their relatively short duration and scheduling flexibility – ideal conditions for the working professional. Programs offered by major universities, colleges, and technical schools will be discussed first, followed by an assessment of local training providers.

### *Universities, Colleges, and Technical Schools*

The certificate programs and associate degrees offered at the following universities, colleges, and technical schools were collected for this study: Bryman College Gardena, Bryman College Torrance, DeVry University, El Camino College, California State Dominguez Hills, Los Angeles Harbor College, Loyola Marymount Extension, Pepperdine University, Santa Monica College, and University of California at Los Angeles (UCLA) Extension. They have been tabulated by Industry Cluster along with sample occupations that match the type of training offered.

### Business Services and Financial Services Clusters

Occupations found within the South Bay Economic Development Partnership's business services and financial services clusters are tabulated in Table 18. The Business Services cluster is formed by businesses performing a variety of professional services to other businesses. These services include management, legal and personnel supply services, including general payroll, human resource management and purchasing. Other business services are reception, administrative and clerical support, and facilities management.<sup>5</sup> The Financial Services cluster includes industries engaged primarily in deposit banking, extended credit in the form of loans, and exchange of securities and commodities.<sup>6</sup>

The certificate programs identified in Table 18 provide opportunities for employees within these industry clusters to improve their skills or to learn skills that make them more likely to be promoted. Given the pervasiveness of such occupations, most universities and colleges in the area offer continuing educational opportunities for office and clerical professions. Those employed in business administration have the most diverse offering of programs available to them, followed by information technology managers and staff, and bookkeepers and accountants.

**Table 18: Universities and Colleges Offering Certificate Programs in the Business Services and Financial Services Cluster Occupations**

<b>Occupational Category</b>	<b>Program</b>	<b>Educational Institution</b>
<b>Accountant/Bookkeeper</b>	Accounting	Santa Monica College Los Angeles Harbor College UCLA Extension University of Phoenix
	Business/Accounting	El Camino College
	Business Accounting	ITT Technical Institute
	Technology	
<b>Administrative Assistant</b>	Office of Information Service	Santa Monica College
	Clerical	Santa Monica College

<sup>5</sup> Review of South Bay Key Industry Clusters, South Bay Economic Development Partnership, 2001

<sup>6</sup> Ibid.

Table 18 cont'd: Universities and Colleges Offering Certificate Programs in the Business Services and Financial Services Cluster Occupations

<b>Occupational Category</b>	<b>Program</b>	<b>Educational Institution</b>
<b>Bookkeeping Clerk</b>	Business/Bookkeeping	El Camino College
<b>Comptroller</b>	Financial	Loyola Marymount Extension
<b>Data Processor, Database Administrator</b>	Data Communications Computer Information Systems	UCLA Extension El Camino College
<b>E-Commerce</b>	Computer Information Systems	El Camino College
<b>Executive Assistant, Manager, Business Consultant</b>	General Business Business/Management General Business Business Finance Entrepreneurship Business Administration Business Administration Business Administration Organizational Management Professional Supervision Business/ Business Management	Santa Monica College Los Angeles Harbor College           UCLA Extension           CSU Dominguez Hills - Ext. Ed. El Camino College
<b>Human Resources Manager or Staff</b>	Human Resources  Organization/Personal Management. Business Human Resource Human Services	Loyola Marymount Extension  Loyola Marymount Extension UCLA Extension University of Phoenix
<b>Information Technology Technician/Manager</b>	Computer Information Systems  Technology Management Information Systems Security Network Systems Administration	DeVry University  Santa Monica College Los Angeles Harbor College Pepperdine University ITT Technical Institute  DeVry University
<b>Marketing Manager or Staff</b>	Business Marketing Business/Marketing	UCLA Extension El Camino College
<b>Mortgage Loan Broker</b>	Real Estate	El Camino College
<b>Office Administrator</b>	Office Administration	LA Harbor College
<b>Office Administration Computer Applications</b>	Business/Office Administration Computer	El Camino College



Table 18 cont'd: Universities and Colleges Offering Certificate Programs in the Business Services and Financial Services Cluster Occupations

<b>Occupational Category</b>	<b>Program</b>	<b>Educational Institution</b>
<b>Office Clerk</b>	Business/Office Clerk	El Camino College
<b>Project Manager</b>	Project Management	UCLA Extension
<b>Windows Networking</b>	Computer Information Systems	El Camino College

Source: Program offerings, USC Center for Economic Development

### Computer Services and Software Clusters

Occupations found within the South Bay Economic Development Partnership's computer services and software clusters are tabulated in Table 19. The computer services cluster includes industries that manufacture and assemble electronic components and products.<sup>7</sup> The software industry cluster includes industries that provide services such as computer programming, prepackaged software, and software development.<sup>8</sup>

The certificate programs identified in Table 19 provide opportunities for employees within these industry clusters to improve their skills for their current job or for a promotion.

Table 19: Universities and Colleges Offering Certificate Programs in the Computer Services and Software Industry Cluster Occupations

<b>Occupation</b>	<b>Program</b>	<b>Educational Institution</b>
<b>Cisco Networking Administrator</b>	Computer Information Systems	El Camino College
<b>Computer Information Systems Consultant/Technician</b>	Computer Information Systems	DeVry University Santa Monica College CSU Dominguez Hills
	System Analyst	El Camino College
<b>Computer Programmer</b>	Computer Programming	Santa Monica College UCLA Extension
	Computer Science	El Camino College
<b>Computer Technician</b>	Computer Science	CSU Dominguez Hills El Camino College Santa Monica College
	Computer Technology	DeVry University
<b>Electronics and Computer Technician</b>	Electronics and Computer Technology	DeVry University
	Manufacturing Technology	El Camino College

<sup>7</sup> Review of South Bay Key Industry Clusters, South Bay Economic Development Partnership, 2001

<sup>8</sup> Ibid.

Table 19 cont'd: Universities and Colleges Offering Certificate Programs in the Computer Services and Software Industry Cluster Occupations

<b>Occupation</b>	<b>Program</b>	<b>Educational Institution</b>
<b>Electronics Technician</b>	Electronics Technology	DeVry University
	Electronics and Computer	El Camino College
	Hardware Technology	
<b>Film/Video Production</b>	Electronics and Computer	El Camino College
	Hardware Technology	
<b>Industrial Computer Control Technician</b>	Electronics and Computer	El Camino College
	Hardware Technology	
<b>Microcomputer Applications, Microcomputer support and Network Manager</b>	Computer Information Systems	El Camino College
<b>Web Programmer</b>	Computer Information Systems	El Camino College

Source: Program offerings, USC Center for Economic Development

### Medical Services Cluster

Occupations found within the South Bay Economic Development Partnership's medical services cluster are tabulated in Table 20. The medical services cluster includes industries primarily offering health services to the general public through hospitals, medical facilities, and offices.<sup>9</sup>

The certificate programs identified in Table 20 provide opportunities for employees within these industry clusters to improve their skills for their current job or for a promotion.

Table 20: Universities and Colleges Offering Certificate Programs in the Medical Service Cluster Occupations

<b>Occupation</b>	<b>Program</b>	<b>Educational Institution</b>
<b>Counselor</b>	Human Development	Santa Monica College
	Psychology	
	Psychology/Counseling	Loyola Marymount Extension
	Counseling	UCLA Extension
	Alcohol/Drug Abuse Studies	
	Alcohol and Drug Counseling	CSU Dominguez Hills
<b>Dental Assistant</b>	Dental Assisting	Bryman College Gardena
<b>Dialysis Technician</b>	Dialysis Technician	Bryman College Gardena
<b>Massage Therapist</b>	Massage Therapy	Bryman College Torrance

<sup>9</sup> Review of South Bay Key Industry Clusters, South Bay Economic Development Partnership, 2001

Table 20 cont'd: Universities and Colleges Offering Certificate Programs in the Medical Service Cluster Occupations

<b>Occupation</b>	<b>Program</b>	<b>Educational Institution</b>
<b>Medical Administration</b>	Health Care Delivery Systems Health Care Data Content & Structure	El Camino College
<b>Medical Administrative Assistant</b>	Medical Administrative Assistant	Bryman College Gardena
<b>Medical Assistant</b>	Medical Assisting	Bryman College Gardena
<b>Medical Insurance Billing</b>	Medical Insurance Billing/Coding Medical Billing and Reimbursement	Bryman College Gardena El Camino College
<b>Medical Specialist</b>	Orthopedics Prosthetics	CSU Dominguez Hills
<b>Medical Technician</b>	Clinical Science-Medical Technology	CSU Dominguez Hills
<b>Nurse</b>	Biomedical Science 2 – Pathophysiology/ Disease Process/ Pharmacology	El Camino College
<b>Paramedical Technician</b>	Fire & Emergency Control	El Camino College
<b>Pharmacy Technician</b>	Pharmacy Technician	Bryman College Torrance
<b>Radiologic Technician (X-Ray)</b>	Radiologic Technology	El Camino College
<b>Respiratory Therapist</b>	Respiratory Therapy	Santa Monica College

Source: Program offerings, USC Center for Economic Development

### Aerospace Cluster

Occupations found within the South Bay Economic Development Partnership's Aerospace cluster are tabulated in Table 21. The aerospace cluster includes industries engaged in development, manufacturing or assembling aircraft, spacecraft, and defense related products such as guided missiles and unmanned surveillance aircraft.<sup>10</sup>

The certificate programs identified in Table 21 provide opportunities for employees within these industry clusters to improve their skills. The number of programs is much less than previous industry clusters due in part to the need for a bachelor's degree and in part to the diversity of training needs and low numbers of related needs. Training tends to be related to the introduction of new equipment which is not available at the local education and training providers, hence is provided by the equipment manufacturer. Any new employees are trained on-the-job. When speaking to owners and managers of firms in this industry cluster their main training desire is for trainable entry-level workers that can read, write, and do math at a 12<sup>th</sup> grade level.

<sup>10</sup> Review of South Bay Key Industry Clusters, South Bay Economic Development Partnership, 2001

Table 21: Universities and Colleges Offering Programs in Aerospace Cluster Occupations

<b>Occupation</b>	<b>Program</b>	<b>Educational Institution</b>
<b>Computer Aided Design Operator or Designer</b>	Computer Aided Design/Drafting	El Camino College
<b>Engineer</b>	Manufacturing Engineer	UCLA Extension
<b>Machinist</b>	Machine Tool Technology	El Camino College
<b>Numerical Control Programmer</b>	Machine Tool Technology	El Camino College
<b>Quality Assurance</b>	Quality Assurance	El Camino College
<b>Site Manager</b>	Manufacturing	Loyola Marymount Extension
<b>Technician</b>	Engineering	Loyola Marymount Extension
	Manufacturing Technology	El Camino College
	Industrial Technology	El Camino College

Source: Program offerings, USC Center for Economic Development

### *Local Training Providers*

The tables on the following pages identify training programs offered by local training providers. They have many offerings for office and clerical occupations, occupations within the medical services, as well as a variety of technology-related occupations.

Table 22: Training Providers Offering Programs for Office and Clerical Occupations

<b>Occupation</b>	<b>Program</b>	<b>Provider</b>	
<b>Clerks</b>	General Office Clerk	Larson Training Center	
	General Office Clerk	SC Regional Occupational Center	
	General Clerk/Office Assistant	Gardena Community Adult School	
	Office Occupations	Gardena Community Adult School	
<b>Data Entry Clerk</b>	Data Entry Specialist	Larson Training Center	
<b>Accounting or Bookkeeping Clerk</b>	Accounting Clerk	Gardena Community Adult School	
	Accounting	Hamilton Adult Center	
	Accounting Clerk	Larson Training Center	
	Bookkeeping Clerk	Larson Training Center	
	Accounting & Auditing Clerk	Larson Training Center	
	Accounting Clerk	SC Regional Occupational Center	
	Automated Financial Operations	Right Way CLC	
<b>Administrative Assistant</b>	Administrative Assistant	Larson Training Center	
	Office Assistant	Gardena Community Adult School	
<b>Business Administration</b>	Automated Business Operation Certificate	Right Way CLC	
<b>Insurance Claims</b>	Insurance Claims Handler	Larson Training Center	
	Insurance Processing Clerk	SC Regional Occupational Center	
<b>Office worker – any type</b>	Keyboarding	Gardena Community Adult School Inglewood Adult School	
	Typist/Computer Keyboarding	Gardena Community Adult School	
	Computer Operator	El Camino College Inglewood Adult School SC Regional Occupational Center	
	Computer Operator/Literacy	Gardena Community Adult School	
	Computer Operator/Software Applications	Gardena Community Adult School	
	Microsoft Windows 2000	CSU Dominguez Hills - Ext. Ed.	
	Windows	Communities in Schools	
	Microsoft Word	Communities in Schools	
	Word Processing	Right Way CLC Larson Training Center Inglewood Adult School	
	<b>Bookkeeper or Office Worker</b>	Microsoft Excel	Communities in Schools
	<b>Advanced Office Worker</b>	Microsoft Access	Communities in Schools

Source: Program offerings, USC Center for Economic Development

Table 23: Local Training Providers Offering Programs in Medical Services Occupations

<b>Occupation</b>	<b>Program</b>	<b>Provider</b>
<b>Dental Office</b>	Dental Administration - Front Office	Centinela Valley Adult School
<b>Dental Assistant</b>	Dental Chairside Assisting	Centinela Valley Adult School
	Dental Infection Control Assistant	Centinela Valley Adult School
	Dental Radiation Safety Certificate	Centinela Valley Adult School
	Accelerated Dental Assisting	SC Regional Occupational Center
	Dental Assisting	SC Regional Occupational Center
<b>Emergency Responder</b>	EMT	SC Regional Occupational Center
<b>Home Health Aide</b>	Home Health Aide	Career Development Institute
		Torrance Adult School
<b>Medical Assistant</b>	Medical Assistant	CSI Bryman College
		SC Regional Occupational Center
<b>Medical Administrative Asst./ Manager</b>	Medical Office Management	CSI Bryman College
	Medical Insurance Billing	CSU Dominguez Hills - Ext. Ed.
	Medical Accounting & Auditing Clerk	Larson Training Center
	Medical Biller	Larson Training Center
	Medical Billing	SC Regional Occupational Center
	Medical Bookkeeper	Larson Training Center
	Medical Collector	Larson Training Center
	Medical File Clerk	Larson Training Center
	Medical Office Administrator	Larson Training Center
	Medical Records Clerk	SC Regional Occupational Center
	Medical Record & Health Information Special.	Larson Training Center
	Medical Transcriptionist	Larson Training Center
	<b>Nurse Aide</b>	Nurse Aide
<b>Nurse Assistant</b>	Certified Nurse Asst/Home Health	Advanced Institute of Health & Tech
	Certified Nursing Home Assistant	Career Development Institute
	Certified Nursing Assistant	Career Development Institute
	Certified Nurse Assistant	SC Regional Occupational Center
<b>EKG Technician</b>	EKG Technician	SC Regional Occupational Center

Source: Program offerings, USC Center for Economic Development

Table 24: Training Providers Offering Programs for Technology-Related Occupations

<b>Occupation</b>	<b>Program</b>	<b>Provider</b>
<b>Cable Repair</b>	Cable Television/ Satellite Installer	RWM Fiber Optics
<b>Computer Repair Technician</b>	Computer Repair	Gardena Community Adult School
<b>Fiber Optics Technician</b>	Fiber Optics Broadband Technician	RWM Fiber Optics
<b>Engineer/Architect</b>	AutoCAD Operations	Right Way CLC
	Computer Aided Drafting	SC Regional Occupational Center
<b>Micro-Computer Administrator</b>	Micro-Computer Operations Specialist	Right Way CLC
	Micro-Computer Operations Certificate	
	Micro-Computing Assembly	
<b>Computer Programmer</b>	Video Game Design	CSU Dominguez Hills - Ext. Ed.
<b>Computer Repair Technician</b>	Computer Repair	Gardena Community Adult School
	Electronics Tech/Computer Repair	Gardena Community Adult School
<b>Computer Systems Engineer</b>	Computer Systems Engineer	Gates College
<b>Database Administrator</b>	Database Driven Websites	CSU Dominguez Hills - Ext. Ed.
	Oracle Database Certification	CSU Dominguez Hills - Ext. Ed.
<b>Network Administrator</b>	Computer Network/ Programming	Computer Education Institute
	Cisco Certified Network Associate	Gates College
<b>Website Administrator</b>	Web Administration	CSU Dominguez Hills - Ext. Ed.
<b>Website Designer</b>	Web Design	CSU Dominguez Hills - Ext. Ed.

Source: Program offerings, USC Center for Economic Development

## Task Four: How Tasks 1 to 3 Relate to Future Study Area Employment

Two future employment development scenarios are compared to the baseline education/training/employment data for Tri-Cities residents developed in tasks one to three to identify the prospects of matching the population to each future employment scenario.

### Comparison of Small Growth Scenario to Residents Education/Employment Profile

This scenario is based on analysis conducted by Joe Maggadino at California State University Long Beach. One note, the industry categories used in the workforce analysis do not correspond to the industry categories in this scenario. The two industry classifications do not directly match, however a rough correlation can be made as follows:

**Table 25: Comparison of Future Scenario #1 to Present with Education Requirements**

<b>Scenario #1</b>	<b>Workforce Analysis</b>	<b>Average Required Entry-level Education/Training</b>
Durable Manufacturing Non-Durable Manufacturing	Manufacturing	High School On-the job Training Special Training
Construction	Construction	High School On-the job Training Special Training
Retail Trade	Retail Trade	High School On-the-job Training
Wholesale Trade	Wholesale Trade	High School On-the Job Training
Transportation, Communications, and Utilities	Transportation, Warehousing	High School On-the job Training
Finance, Insurance, Real Estate	Finance, Insurance, Real Estate	Bachelors Degree
Services	Professional, Scientific, Management, Administration Education, Health, Social Services Food Services and Recreation Other Services Information Services	Bachelors Degree  Special Training or Bachelors Degree High School and/or On-the-Job Training High School and/or On-the-Job Training Bachelors Degree

Source: Bureau of Labor Statistics, California Employment Development Department



Average required education and training for entry-level positions is also noted for each industry. This information will be used to compare the current education/training level of Tri-Cities Area residents to the projected need for employees.

Figures 8 – 10 on the following pages show the projected number of jobs in each industry for the period 2000 through 2010.

***Figure 8: Projected Employment Growth by Industry in Gardena***

Gardena is projected to have the greatest increase in employment in the Services, Retail, Construction, and Durable Manufacturing industries. The remaining industries are projected to have relatively small growth.

Workforce Comparison

Eighty-three percent of Gardena residents have a High School education or greater and would be qualified to join any of the higher growth industries at an entry-level position. Gardena currently has more people than residents employed in most of these industry sectors. The average annual wages paid are highest in the Manufacturing (\$49,423/year) and Construction (\$43,701) industries and some of the Services categories such as Information Services (\$61,649), and Professional, Scientific, Management, Administration (\$27,394). Comparing the average annual wages in Gardena for these industries with Hawthorne and Lawndale, workers in Gardena are making more money in all but Professional, Scientific, Management, Administration suggesting that the firms located in Gardena are more productive.

Local Education Opportunities

Seventeen percent of Gardena residents do not have a high school education meaning their employment is dependent upon experience and opportunities for on-the-job training. That portion of the workforce would benefit from either education or training. Opportunities are plentiful for obtaining a Graduate Equivalent Diploma (GED) to replace the missing High School Diploma or to attend a community college to acquire better writing and math skills.

Of greater concern are the number of young people either dropping out of High School or graduating with a less adequate command of writing and math than previous generations. In the 2002-03 school year, 54 percent of the students graduated at Leuzinger High in Lawndale, 61 percent at Gardena High School, 67 percent at Hawthorne High, and 78 percent at Lawndale High. Assuming an average entering class size across the four schools of 2500 students, that means that between 800 and 1000 students are dropping out of High School each year. All occupational projections point to a decreasing number of low-skill jobs and a higher number of high-skill jobs. These youth are at risk of becoming unemployable and with the low API scores, they likely have a longer way to go to acquire the needed skills.

The local community colleges find that they must provide an increasing amount of remedial writing and math skills. They would prefer to see the High School graduation rate and the basic skills level of High Schools graduates increase.

#### Local Job Training

Job training opportunities are quite extensive between the educational institutions and the local job training providers. Institutions offering education or training are identified for each of the industries with the highest employment growth.

#### *Construction*

Education opportunities in Construction are available at El Camino College in their Construction Technology Certificate Program. Their Tech Prep Program works with the high schools to make certain their students have a viable career path.

#### *Durable Manufacturing*

Education opportunities in Durable Manufacturing are available at El Camino College through certificate and Associate Degree programs in Machine Tool Technology, Manufacturing Technology, Automotive Technology, Computer Aided Design/Drafting, Electronics, Quality Assurance, and Technical Mathematics and Welding from their Industry and Technology Division. Their Tech Prep Program works with the high schools to make certain their students have a viable career path.

#### *Information Services*

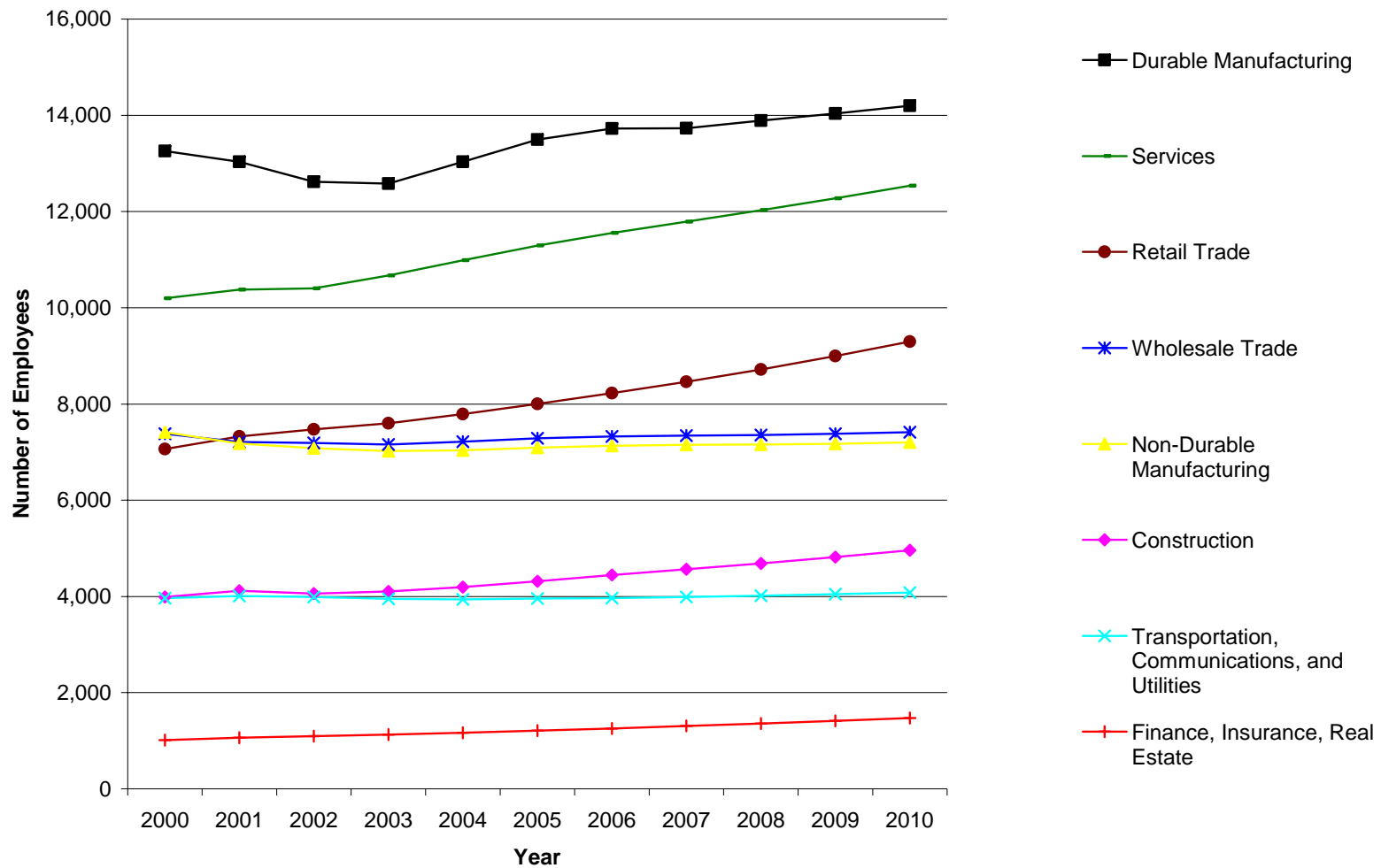
Education opportunities in Information Services are available at El Camino College, Los Angeles Harbor College, or Santa Monica College through an Associate Degree in Computer Information Systems from the Business Division, and at the following technical schools, ITT Technical Institute in Torrance, and the DeVry University in Long Beach. The following four-year colleges also offer Bachelors Degrees in Information Services fields: University of Phoenix, California State University Dominguez Hills, University of California Los Angeles, and University of Southern California.

#### *Professional, Scientific, Management, Administration*

Aside from the associated office jobs, most occupations in the Professional, Scientific, Management, Administration industry require a bachelor's degree. Education opportunities for occupations in the Professional, Scientific, Management, Administration industry are available at California State Dominguez Hills, University of California at Los Angeles, University of Phoenix, Loyola Marymount, and University of Southern California or as transfer students to a four-year college from El Camino College, Los Angeles Harbor College, Santa Monica College.

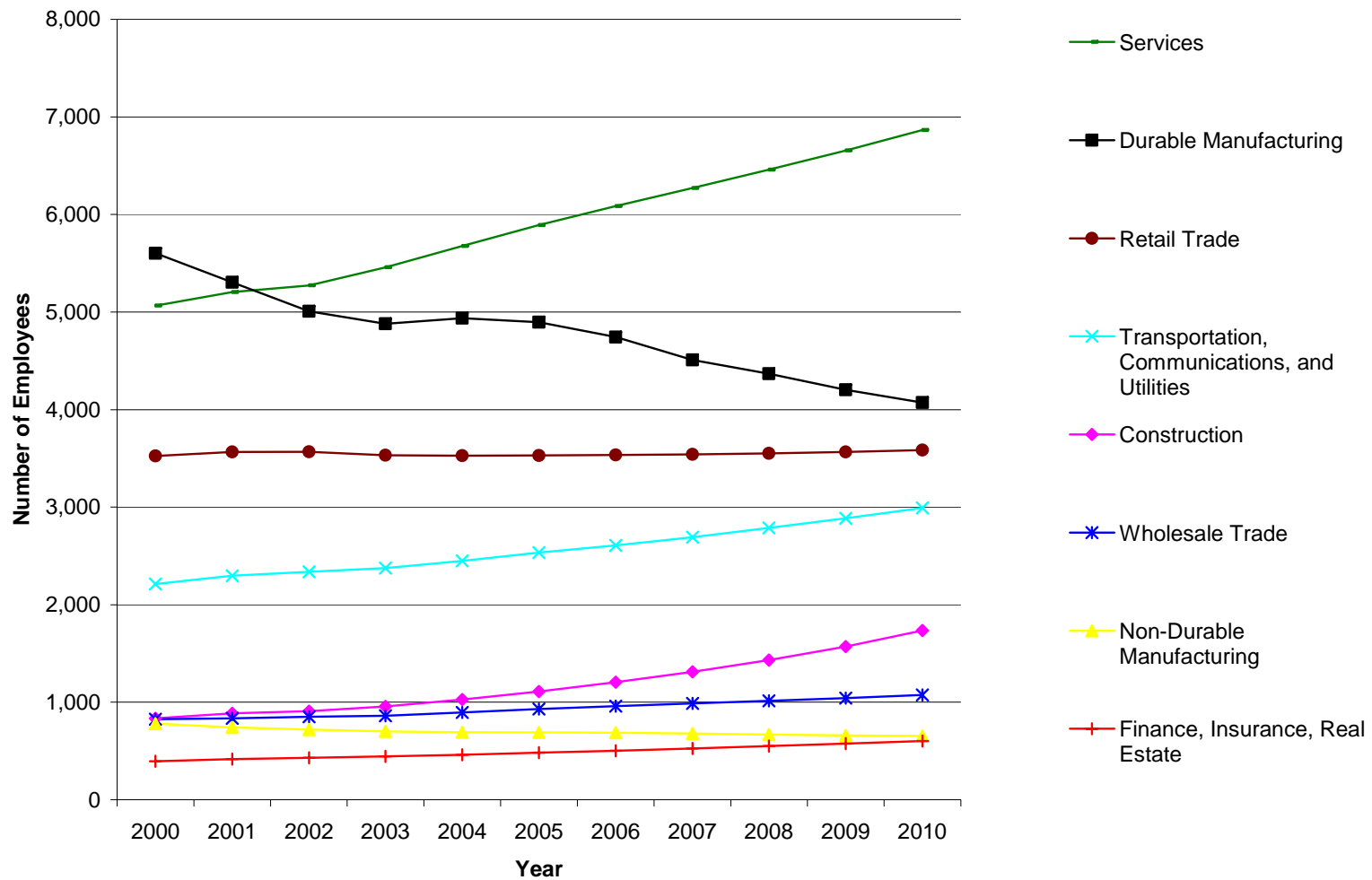
Office skills can be upgraded from a variety of local educators as demonstrated in Table 18, or from a local training provider as shown in Table 22. For example, if an office worker needed to maintain an information database they could learn how to use Microsoft Excel or Microsoft Access at Communities in Schools.

Figure 8: Projected Employment Growth by Industry in Gardena



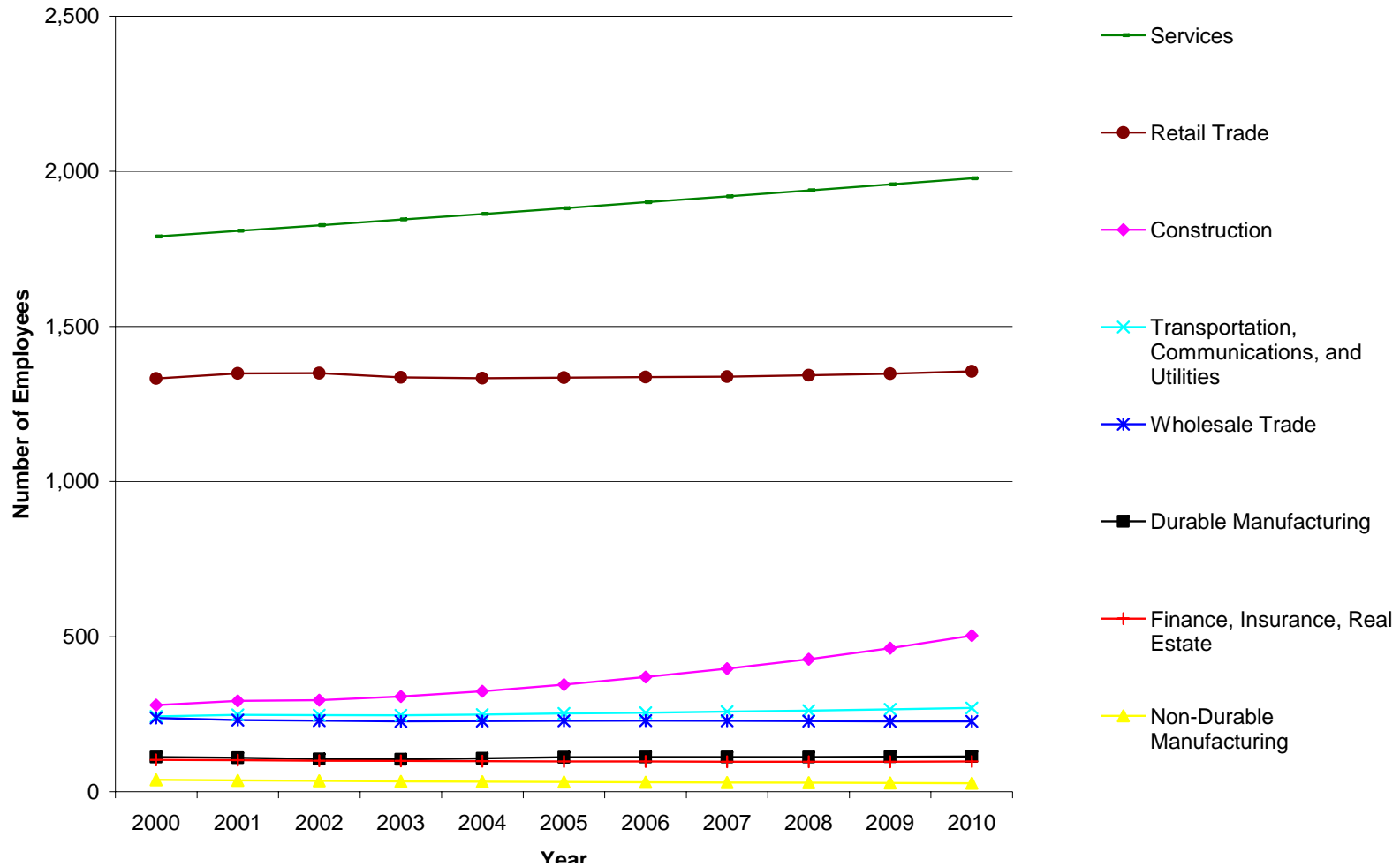
Source: California State University Long Beach

Figure 9: Projected Employment Growth by Industry in Hawthorne



Source: California State University Long Beach

Figure 10: Projected Employment Growth by Industry in Lawndale



Source: California State University Long Beach

*Figure 9: Projected Employment Growth by Industry in Hawthorne*

Hawthorne is projected to have the greatest increase in employment in the Services; Transportation, Communications, and Utilities; and Construction industries. Employment in Durable Manufacturing is projected to decline by 1,500 jobs.

Workforce Comparison

Seventy-eight percent of Hawthorne residents have a High School education or greater and would be qualified to join any of the higher-growth industries in an entry-level position. Hawthorne has more residents employed in every industry than it has jobs so there are probably plenty of trained residents that could work closer to home. The annual average wage in the Transportation, Warehousing (\$33,215) and Construction (\$41,152) industries is lower than Gardena but higher than Lawndale. The Services industry with the largest employment is the Education, Health, Social Services sector. The average annual wage paid is \$28,455 which is higher than in Gardena, but lower than in Lawndale.

Local Education Opportunities

Hawthorne has a higher percentage of residents lacking a High School education than Gardena and thus has a larger lower skilled workforce. In all other respects, the local education opportunities are the same.

Local Job Training

Institutions offering education or training are identified for each of the industries with the highest employment growth. Hawthorne has access to the same job training programs in the Construction industry as Gardena.

*Transportation, Warehousing*

Training in these industries is generally on-the-job.

*Education, Health, Social Services*

Education opportunities in Education, Health, Social Services are available at every educational institution we reviewed except those technical schools that specialize in technology training. The list of schools offering opportunities in all three areas are California State Dominguez Hills, El Camino College, Los Angeles Harbor College, University of California at Los Angeles, University of Phoenix, Loyola Marymount, Santa Monica College, and University of Southern California. The Bryman Colleges only offer training in the Health industry and the University of Phoenix offers both Health and Education training.

*Figure 10: Projected Employment Growth by Industry in Lawndale*

Lawndale is projected to have some growth in the Construction, and Services industries.

Workforce Comparison

Seventy-six percent of Lawndale residents have a High School education or greater and would be qualified to join any of the higher-growth industries in an entry-level position.

With the exception of the Education, Health, Social Services industry, Lawndale has more residents employed in every industry than it has jobs so there are probably plenty of trained residents that could work closer to home. The annual average wage paid in the Construction (\$30,299) industry is lower than both Gardena and Lawndale. The local companies may be involved in the lower skill end of the industry. The Services industry with the largest employment is the Education, Health, Social Services sector. The average annual wage paid is \$29,500 which is higher than in Gardena and Hawthorne suggesting a higher-skilled employee.

#### Local Education Opportunities

Lawndale has a higher percentage of residents lacking a High School education than Gardena and Hawthorne but its population is lower so has a smaller low skilled workforce. In all other respects, the local education opportunities are the same.

#### Local Job Training

Institutions offering education or training are identified for each of the industries with the highest employment growth. Lawndale has access to the same job training programs in the Construction industry as Gardena and the same job training programs in the Education, Health, Social Services sector as Hawthorne.

### **Comparison of Build-Out Scenario to Residents Education/Employment Profile**

A market analysis was performed by Economics Research Associates resulting in a potential development build-out scenario of the Rosecrans East Corridor Study Area for a ten-year period which includes both new development and the rehabilitation and repositioning of existing uses. The information in Table 27 lists the types of job-producing development envisioned and is compared to the current development mix.

This scenario introduces new development designed to attract high-tech industry as well as the support structure of incubator space and industrial services. The jobs at these new companies will be high-wage, high-skilled jobs.

An industry profile was developed in Table 27 of 103 manufacturing and engineering service firms identified within Rosecrans East Corridor Project Area.

Table 26: Comparison of Future Scenario to Present and the Impact on Occupations

ERA Build-Out Scenario	Current Scenario	Impact on Occupations
<b>Industrial</b>		
Industrial Park (Manufacturing)	Manufacturing	No change
High Tech Industrial	Metal fabricating	Increase high-tech occupations
Warehousing and Logistics	Warehousing and Logistics	No change
Auto Park	Auto Repair	No change
Incubator/Industrial Services	Engineering Srv	Increase high-tech occupations
<b>Office</b>		
Low Density Office	Very little	No change
Medium Density Office	Very little	No change
High Density Office	None	No change
<b>Retail</b>		
Stand Alone	Power Centers	No change
Mixed Use	None	No change – same occupations

Table 27: Number of Firms in Rosecrans East Corridor by Industry

Manufacturing Industry	# of Firms
FOOD AND KINDRED PRODUCTS	4
TEXTILE MILL PRODUCTS	3
APPAREL AND OTHER FINISHED PRODUCTS MADE FROM FABRICS AND SIMILAR MATERIALS	4
LUMBER AND WOOD PRODUCTS, EXCEPT FURNITURE	2
FURNITURE AND FIXTURES	4
PAPER AND ALLIED PRODUCTS	4
PRINTING, PUBLISHING, AND ALLIED INDUSTRIES	4
CHEMICALS AND ALLIED PRODUCTS	3
RUBBER AND MISCELLANEOUS PLASTICS PRODUCTS	7
LEATHER AND LEATHER PRODUCTS	2
STONE, CLAY, GLASS, AND CONCRETE PRODUCTS	2
PRIMARY METAL INDUSTRIES	4
FABRICATED METAL PRODUCTS, EXCEPT MACHINERY AND TRANSPORTATION EQUIPMENT	12
INDUSTRIAL AND COMMERCIAL MACHINERY AND COMPUTER EQUIPMENT	22
ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS, EXCEPT COMPUTER EQUIPMENT	4
TRANSPORTATION EQUIPMENT	12
MEASURING, ANALYZING, AND CONTROLLING INSTRUMENTS; PHOTOGRAPHIC, MEDICAL, AND OPTICAL GOODS; WATCHES AND CLOCKS	2
MISCELLANEOUS MANUFACTURING INDUSTRIES	3
<b>Service Industry</b>	
ENGINEERING, ACCOUNTING, RESEARCH, MANAGEMENT, AND RELATED SERVICES	5
<b>Total</b>	<b>103</b>



### Workforce Comparison

Most jobs in the high-tech companies will require a bachelor's degree. The residential population in the Tri-Cities area has 44 percent fewer residents with a bachelor's degree than the County of Los Angeles. The local residents will need to increase their rate of attendance in college to capture their share of the new jobs. Otherwise they will go to commuters.

### Local Education Opportunities

While some people do attend college at a later date, most people attend college in their late teens and early twenties before financial commitments make it more difficult. Looking at the performance of the high schools in the area, it is clear that intervention will be needed to prepare the youth of these cities for the high-tech industry. In fact, in a report titled "The Graying of the Technical Student", Ronald Way, Dean of Industry and Technology Division at El Camino College says that the median age of the technical student is 29. Young people are realizing they need a skill in their late twenties and are returning to school, but they have lost much ground in the intervening years and must relearn their writing and math skills.

### Local Job Training

El Camino College has a strong technician-level training program and UCLA and USC will provide workers at the engineer and management level. While it's true that the industry clusters identified in the South Bay will be an attraction and a demonstration of the availability of trained workers, the question is whether the local population will obtain any of these new high-wage jobs.

## **Strengths and Weaknesses of the Current Education/Training/Employment Profile of Tri-Cities Residents**

### *Strengths*

- Local residents already work outside the area in the industries expected to expand
- Local training providers are able to provide entry-level job skills
- Higher education opportunities are readily available

### *Weaknesses*

- The Tri-Cities area workforce is lower skilled than the state as a whole
- The size of the lowest skilled portion of the Tri-Cities area workforce is 6 percentage points greater than for the state as a whole
- 44 percent fewer local residents have a bachelor's degree than in the county or the state
- Poor performing High Schools
  - Too many students are dropping out
  - API test scores are lower compared to County and State scores
  - There is a general lack of preparation for college level as a majority of students do not meet UC/CSU entrance criteria

## **Task Five: Recommendations**

### **Description of the Workforce Preparedness Gap**

The workforce preparedness gap is defined under three scenarios. The first is the current business climate, the second is the Small Growth Scenario with expansion of the current mix of businesses, and the third is the Build-Out Scenario which emphasizes the development of high-tech manufacturing and incubator space to attract businesses with higher wages and higher growth potential.

The discussion of workforce preparedness is focused on manufacturing and industrial service occupations because most retail and office jobs require a high school education and on-the-job training. Issues pertaining to the quality of the education at the high schools and the lack of skills in today's high school graduates will be covered in the discussion of manufacturing.

#### ***Workforce Preparedness Gap in Current Business Climate***

The businesses found in the Rosecrans East Corridor Study Area are generally small businesses, having fewer than 50 employees. They are challenged to increase productivity in order to pay for the increased costs of health care and the high cost of workmen's compensation insurance. Although relief has been promised on workmen's compensation insurance, businesses have a new cost, "paid family leave", which provides up to six weeks of paid family leave to care for a seriously ill family member or to bond with a new child. This new legislation went into effect on July 1, 2004 and is covered by the State Disability Insurance Program which is funded through matching employee and employer contributions on average of \$27/person/month (\$54 total). Small businesses also struggle with compliance with environmental regulation, finding they are below the size necessary to enjoy economies of scale and energy costs are higher in this corridor than in neighboring Los Angeles due to deregulation. The result is that many businesses are investing in machinery and physical improvements to increase productivity rather than hiring more workers or they are expanding their operations into other states rather than locally.<sup>11</sup>

In this business climate the gap in work-force preparedness stems from the education offered at the K-12 level as demonstrated in the poor performance measures of the local High Schools. The training and post-secondary education offerings available in the region are more than sufficient to provide machinists, engineers, office workers, management, and financial service workers. The gap exists in the quality of the basic reading and writing skills of the local High School graduates to allow them to pursue these additional skills.

The second issue is in the area of job skills. In the Rosecrans East Corridor Workforce Survey employers were asked "What are the greatest weaknesses and strengths in current employees that adversely affect or compliment their performance? Check all that apply."

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<sup>11</sup> Barbara Levine, Los Angeles County Economic Development Corporation

The survey listed 15 items and asked to check “strong” or “weak”. Some employers checked both. The survey results are tabulated on the following page.

The way to interpret the results is as follows, a choice of “strong” indicates that their employees exhibit this characteristic or skill and that it improves employee performance, a choice of “weak” indicates that their current employees are either lacking this characteristic or that it is weak and so adversely affects performance.

From these survey results we can conclude that the top four skills adversely affecting job performance are technical writing skills, written communication, performing statistical analysis, math skills through calculus, and computer literacy. Although fewer companies require the last three skills they are skills lacking in current employees for over 50 percent of the responding companies. These are the skills that they would like their current employees to improve and would therefore like their future employees to possess.

The survey targeted manufacturing companies because manufacturing is the door for a high school graduate to enter the middle class. The expectation is that a high school graduate will be able to write well, have completed math through calculus, and be computer literate. Technical writing and statistical analysis are generally skills learned in supplemental class work, although they may be a useful addition to the High School curriculum.

The workforce preparedness gap in current business climate stems from the need to increase productivity. The gap is in technical writing skills, written communication, performing statistical analysis, math skills through calculus, and computer literacy.

**Table 28: Job Skills**


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Reading Comprehension: <i>42 companies responded to this option</i>	Strong: (23) <b>55%</b>	Weak: (31) <b>36%</b>	Both: (4)	<b>10%</b>
Listening (i.e. following instructions) <i>41 companies responded to this option</i>	Strong: (32) <b>78%</b>	Weak: (9) <b>22%</b>	Both –	
Written communications skills: <i>40 companies responded to this option</i>	Strong: (11) <b>27.5%</b>	Weak: (27) <b>67.5%</b>	Both: (2)	<b>5%</b>
Technical writing skills: <i>29 companies responded to this option</i>	Strong: (2) <b>6.9%</b>	Weak: (24) <b>82.8%</b>	Both: (3)	<b>10.3%</b>
Math skills through calculus: <i>29 companies responded to this option</i>	Strong: (10) <b>34.5%</b>	Weak: (18) <b>62.1%</b>	Both: (1)	<b>3.4%</b>
Performing statistical analysis: <i>25 companies responded to this option</i>	Strong: (8) <b>32%</b>	Weak: (16) <b>64%</b>	Both: (1)	<b>4%</b>
Computer literacy skills: <i>33 companies responded to this option</i>	Strong: (13) <b>39.4%</b>	Weak: (18) <b>54.5%</b>	Both: (2)	<b>6.1%</b>
Ability to meet deadlines: <i>39 companies responded to this option</i>	Strong: (34) <b>87.2%</b>	Weak: (5) <b>12.8%</b>	Both –	
Problem solving skills: <i>41 companies responded to this option</i>	Strong: (28) <b>68.3%</b>	Weak: (10) <b>24.4%</b>	Both (3)	<b>7.3%</b>
Creative thinking skills: <i>36 companies responded to this option</i>	Strong: (22) <b>61.1%</b>	Weak: (11) <b>30.5%</b>	Both (3)	<b>8.3%</b>
Demonstrated self motivation or initiative: <i>39 companies responded to this option</i>	Strong: (26) <b>66.7%</b>	Weak: (13) <b>33.3%</b>	Both -	
Language fluency in another language: <i>38 companies responded to this option</i>	Strong: (18) <b>47.4%</b>	Weak: (20) <b>52.6%</b>	Both -	
Time management skills: <i>37 companies responded to this option</i>	Strong: (20) <b>54%</b>	Weak: (16) <b>43.3%</b>	Both: (1)	<b>2.7%</b>
Works well in teams: <i>35 companies responded to this option</i>	Strong: (28) <b>80%</b>	Weak: (6) <b>17.1%</b>	Both: (1)	<b>2.9%</b>
Works well unsupervised: <i>41 companies responded to this option</i>	Strong: (30) <b>73.2%</b>	Weak: (10) <b>24.4%</b>	Medium: (1)	<b>2.4%</b>

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Source: Rosecrans East Corridor Workforce Survey, Jan 2003

### *Workforce Preparedness Gap in the Small Growth Scenario*

This scenario assumes that the business mix remains stable and that employment growth is within the currently established businesses. Any new jobs, therefore, will be within the same industry and occupation mix, requiring similar education and skills. As was shown in Task Three the workforce preparedness gap primarily lies in high school preparation for the workforce.

The workforce preparedness gap in the Small Growth Scenario is the preparation of today's youth. The gap is in the high percentage of students not graduating from High School, the low attainment level of written and math skills demonstrated in the low API scores, and the low number of students completing the coursework needed to attend a UC/CSU to attain a higher education.

### *Workforce Preparedness Gap in the Build-Out Scenario*

This scenario introduces new development designed to attract high-tech industry as well as the support structure of incubator space and industrial services. The jobs at these new companies will be high-wage, high-skilled jobs. If this development replaces some of the local companies, eliminating jobs held by local residents, it may also force the retraining of those workers for the new high-tech industry.

The workforce preparedness gap in the Build-Out Scenario is the performance of the K-12 school system. Too many students are dropping out. The API test scores and lack of preparation for college are impediments to the attraction of high tech companies that are looking for a ready supply of eager new employees. Another potential gap exists in work-force preparedness, the gap between current skills and skills needed to operate newer, high-tech equipment.

### **Education/Training/Employment Recommendations for Closing the Gap**

- 1) Recommendation for Current Business Climate – Identify existing classes in technical writing skills, written communication, performing statistical analysis, math skills through calculus, and computer literacy and or develop them and promote their availability through industry and business associations.
- 2) Recommendation for Small Growth Scenario – Increase Involvement of Business and Professional Community in Junior and Senior High Schools to increase graduation rates, improve rates of CSU/UC requirements,
  - Bring line supervisors and managers from local manufacturing companies to speak to Jr. and Sr. High School Math and English classes to explain how they use those skills every day and to talk about work habits.
  - Bring employers (both business owners and managers) in to Jr. and Sr. High School classes to discuss:

- the education, training, qualities, and skills they look for in an entry level employee
- the qualities and skills they look for in an employee being considered for promotion
- the income range for various positions within their firm

3) Recommendation for Build-Out Scenario – Work with industry cluster advisory boards to identify most likely industry cluster(s) for location in Rosecrans East Corridor. Then work with the advisory boards of the selected industry clusters to identify training/education gap across the industry that could be addressed through workforce training.

Other recommendations:

- Meet with ABC School District to learn more about their programs and find out how successful they have been
- Approach local K-12 School Districts to Discuss Partnership to Improve Student Motivation to Successfully Complete High School
- Offer Technical English Language Classes to Incumbent Workers
- Increase GED Attainment Rates Among 20 – 35 year olds
- Promote Machinist Training CDROMS and classes at El Camino College

## Task Six - Overall Recommendations

The Tri-Cities workforce has a lower educational attainment profile and a lower income occupation profile than the average for the State of California and the County of Los Angeles. The most serious problem is the poor performance of the K-12 education system.

### **Improve Technical Skills of Incumbent Workers**

Five skill areas were identified as deficient by the employers in the project area: technical writing skills, written communication, performing statistical analysis, math skills through calculus, and computer literacy. All of these deficiencies can be addressed by the local education and training providers. The gap appears to be the result of time constraints and lack of information.

The following skills can be obtained from the local community colleges, writing, math skills through calculus, statistics, and computer literacy. The local training providers also offer courses in basic computer literacy.

Technical writing is available from the UCLA Extension online program. Participants are expected to have a competent level of writing. The courses offer training in the specific techniques of writing technical material effectively.

#### **Technical Communication Online**

Technical communicators play a central role in conveying complex information to a range of audiences—from scientists to stockholders. In addition, they often manage projects and knowledge. Both these areas of responsibility require specialized skills, and practitioners must stay up-to-date in a rapidly evolving field.

UCLA Extension's online courses in technical communication provide the perspectives and knowledge professionals need. Our courses cover all aspects of technical communication, including current practices in various segments of the industry, and are intended for both beginners and experienced professionals. Our renowned certificate program in Technical Communication is provided entirely online, offering convenience and accessibility to technical communicators all over the world. Our partnership with the Los Angeles Society for Technical Communication helps keep us on the cutting edge of this dynamic field.

For more information on online Technical Communication courses and our Technical Communication certificate program, contact Yvette de la Cruz at (310) 206-1578 or e-mail [ydelacru@uclaextension.edu](mailto:ydelacru@uclaextension.edu).

#### **Technical Communication Courses**

Technical Writing  
Technical Editing  
Creating Readable Documents  
Strategic Communications Planning  
Information Design  
Introduction to Policies and Procedures Communications  
Project Management Communications

***Strategy #1: Develop Statistical Analysis Class for Manufacturing***

An on-line statistical analysis course addressing the needs of the manufacturing, aerospace, and high-tech industry would address the need expressed in the Rosecrans East Corridor Workforce Survey. UCLA extension offers an on-line Introduction to Statistics and Quantitative Methods as well as Introduction to Calculus. However, the introduction to Statistics is geared toward “the role of statistics in research; understanding statistical terminology; the use of appropriate statistical techniques; and interpreting findings in the fields of science, economics, nursing, business, and medical research”<sup>12</sup> The UCLA Extension has developed a large number of courses addressing the needs of the technical management and engineering professions as described on their UCLA Extension website in the box below. If the demand meets their criteria for development, it would be a far simpler process to modify the existing course than to create one from scratch. Having a course geared to industry would be more attractive to workers than having to wade through material that isn’t relevant or material that is required for academic merit.

**Engineering & Technical Management**

*Extension’s unique and well-regarded courses enable working professionals to stay abreast of rapid changes in their fields.*

Los Angeles’ enormous technical community looks to UCLA Extension for training that is not offered in typical graduate or undergraduate programs, as well as training that fits within a busy professional’s schedule. Extension’s unique and well-regarded technical management and in-depth engineering courses enable working professionals to develop competency in a special area of concentration and to stay abreast of rapid changes in their fields.

The Engineering and Technical Management unit of UCLA Extension’s Department of Engineering, Information Systems and Technical Management offers relevant, in-depth courses that may be taken individually or as part of a specified sequential or certificate program—for students and working professionals looking to develop competency in a special area of concentration.

Each quarter, we also offer a range of two-to-five-day short courses that immerse technical professionals in the latest information and developments in their fields. The courses cover both theory and application and are taught by highly regarded experts from industries, organizations, and educational institutions worldwide.

***Strategy #2: Promote Skill Upgrading***

The second recommendation is to promote the existence of the available courses in technical writing skills, written communication, statistics, math skills through calculus, and computer literacy and make presentations to industry and business associations about them. Partner with the South Bay Workforce Investment Board (WIB). Work with colleges to develop flyers directed at manufacturers highlighting their relevant courses for distribution via industry and business associations and WIB and One-Stop Business

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<sup>12</sup> [www.uclaextension.edu](http://www.uclaextension.edu)



and Career Centers. Develop an industry advisory group to review courses and recommend the most relevant curriculum. Invite the instructors to meet with advisory board members to discuss the course content and to devise relevant examples for case studies in their courses. Work with the South Bay WIB and the Los Angeles County Economic Development Corporation to develop incentive programs encouraging employees to upgrade their skills. Target GED achievement for 20 to 35 year old workers in the incentive program.

### **Improve High School Achievement and Increase College Preparedness**

The current high school graduation rates of the high schools in the Tri-Cities area range from 54 percent to 78 percent and lag the State's rate of 87 percent and even the Los Angeles County rate of 81 percent. The Tri-Cities community needs to set a goal of improving their graduation rate to 81 percent, possibly within the next five years. The companion goal must be to increase the API scores to the current State average of 647 at Gardena, Lawndale, and Leuzinger High Schools.


With the exception of Moneta Continuation High School, the Tri-Cities High Schools are failing to prepare students to attend college in the UC/CSU system. The state-wide average is 38 percent; Leuzinger comes the closest with 26 percent. The goal should be to increase the percentage of students completing the course requirements to 38 percent in years and to 30 percent five years. Some schools have a very long way to go and may not be offering many sessions of the more advanced required courses. Structural changes will be required in addition to motivating students and providing them with the necessary tools to stay the course in accomplishing their dreams. If the structural changes aren't made, the percentage of students qualifying may decrease in the short run as the goal of increasing graduation rates increases.

### ***Strategy #3: Form Education Partnership for High School Achievement***

Except Gardena which is in the Los Angeles Unified School District, the remaining four High Schools are in the Centinella Valley Union High School District (CVUHSD). A district-wide effort could be initiated for CVUHSD. Create a partnership between the cities, the school district, and the South Bay Economic Development Partnership similar to the Paramount Education Partnership in the Gateway Cities Region (see box on next page). Use the partnership to achieve the goals to increase graduation rates, API scores, and the achievement of UC/CSU entrance requirements.

Involve the parents and the community in motivating the students, especially the business and professional community. Bring line supervisors and managers from local manufacturing companies to the Junior and Senior High Schools to speak to students in Math and English classes to explain how they use those skills on a daily basis and to discuss their work ethic. Bring employers (both business owners and managers) to Jr. and Sr. High School classes to discuss the education, training, qualities, and skills they

look for in an entry level employee, the qualities and skills they look for in an employee being considered for promotion, and the income range for various positions within their firm.



**PARAMOUNT EDUCATION PARTNERSHIP (PEP)**

PEP is a partnership between the City of Paramount, Paramount Unified School District, Gateway Cities Partnership and the community. The purpose of the PEP program is to dramatically increase the educational attainment of residents throughout the City of Paramount.

Intended Outcomes

- Transform the City of Paramount into a learning community
- Involve every resident in the education process
- Increase the overall educational attainment level of the residents
- Significantly improve student reading and math scores
- Increase eligibility rate for entrance into the UC/CSU system

For more information: <http://www.gatewaycities.org/>

### **Enhance High School Education Aimed at High-Tech Occupations**

Manufacturing used to be able to rely on High Schools to produce qualified applicants for entry-level jobs with the promise of on-the-job-training for advancement. This is no longer the case. High school graduates lack basic skills in writing and math and the technical training needed to advance in the high-tech industrial world requires a skills set which is falling more and more on the shoulders of the employee.

Junior and Senior High Schools need to educate the youth about the nature of manufacturing jobs, the range of jobs, the skills required, and pay and benefits offered. This needs to happen early on so that the students understand the opportunities, select a goal and get on a path of achievement to reach their goal. High Schools need to understand that high-tech jobs are available to their graduates if they can write well, perform statistical analysis, have completed calculus, and have some training in technical writing. Technical writing could be offered as an upper level English class. Calculus is regularly taught at the High School level although may not be available at all High Schools in which case students often take it at the local Community College. Statistics is

generally not taught at the High School level and will not be until and unless a special program was developed and promoted.

***Strategy #4: Implement High Tech Magnet Program***

A High Tech Magnet Program at one or more High Schools in the Tri-Cities area that prepares students for a college technical or engineering degree would fulfill the needs of industry, academic achievement, and achievement of UC/CSU entrance requirements as well as increase graduation rates and API scores. The term magnet is used to express the attraction of students to a specialized program of education that acts like a school within a school and encourages peer support. The Los Angeles Unified School District (LAUSD) runs a Magnet Program and has numerous schools from elementary to high school with science and math magnet programs. Appendix IV contains a fact sheet on the LAUSD Magnet Program, a list of magnet schools and programs in Math and Science, and information on programs at three schools.

One example of a program that could augment the program is MESA (see box below).

**MESA**

The goal of the Mathematics, Engineering, Science Achievement (MESA) program is to increase the number of historically underrepresented minorities prepared to succeed in mathematics-based majors in college and to increase their awareness in the math and science fields

**Mathematics, Engineering, Science Achievement Program at El Camino College**

MESA California Community College Program (CCCP), part of the MESA Undergraduate Program, provides support to community college students who are majoring in math or science so they excel academically and transfer to four-year institutions.

MESA CCCP is based on a rigorous academic program that uses various components to support their students. The program components help build an academically based peer community to provide student support and motivation.

The program has received outstanding results providing a diverse pool of transfer-ready students who are prepared to excel as math, engineering and science majors. MESA CCCP's rigorous academics, leadership preparation, and collaborative problem-solving training have helped produce transfer students who graduate as part of the high-tech workforce that is so urgently needed by industry.

**MESA Pre-College Programs**

MESA serves pre-college students through two academic enrichment through a collaboration with educators, parents, and community members. Industry also provides resources to MESA's pre-college programs. For instance, SBC sponsors the annual MESA Day Academies, where hands-on competitions test students' understanding of math, science and physics concepts.

Students are selected to take part in MESA through a process that involves teachers at participating schools and local MESA center personnel.

The MESA Schools Programs assists elementary, middle and senior high school students throughout the state to excel in math and science. Students are supported through academic partnerships and comprehensive enrichment programs.

**For more information: <http://www.mesa.ucop.edu/home.html>**

### **Identify Target Industry Cluster(s) for High Tech Industrial Park**

Attraction of high-tech companies that are looking for a ready supply of eager new employees will be more difficult with the current High School performance. A strategy needs to be developed that will overcome their concern about the overall performance of the High Schools. By targeting one or two South Bay industry clusters, a workforce strategy can be developed that will instill confidence in companies that they will have access to a skilled workforce.

#### ***Strategy #5: Develop Integrated Workforce Strategy for High Tech Industrial Park***

Work with representatives from the South Bay industry clusters to identify the most likely industry cluster(s) for location in the Rosecrans East Corridor study area. Work with advisory boards of the selected industry clusters to identify specific training and education gaps across the industry that could be addressed through workforce training. Integrate the High School Magnet Program and the MESA program to create a pipeline for educating a local workforce. Track the number of graduates from the MESA and Magnet programs. Track the colleges attended and majors of Magnet program graduates. Track the GEDs achieved through the incentive program. Track the number of employees and companies that participate in upgrading their skills in recommended courses. Involve new high-tech companies in the Magnet and MESA programs. Link students to the new companies as well as existing companies through internships.

#### ***Strategy #6: Seek Outside Funding to Support Youth Workforce Program***

Work with a grant writer to seek funding from The James Irvine Foundation's new Youth program. The goal of the Youth program is to enhance the academic preparation of low-income youth, aged 14 to 24, for successful transition to post-secondary opportunities, the workplace, and citizenship. Integrate the programs outlined above to develop a seamless program to prepare the youth of the Tri-Cities area for the new high-tech jobs.

## **Appendices**

### **Appendix I: Presentations**

November 19, 2002: Rosecrans East Corridor Workforce Study

May 8, 2003: Today's Workers, Tomorrow's Jobs

### **Appendix II: Survey Forms**

South Bay Economic Development Partnership Employer Workforce Survey

Training Provider Phone Survey

### **Appendix III: Los Angeles County Employment Projections 2001-2008 with 2002 Wage Data**

### **Appendix IV: Magnet Programs of the Los Angeles Unified School District**

### **Appendix V: James Irvine Foundation Grant Program: Youth**

# **Appendix I: Presentations**

- **November 19, 2002: Rosecrans East Corridor Workforce Study**
- **May 8, 2003: Presentation of the Tri-Cities Workforce**



## **Rosecrans East Corridor Workforce Study**

Presented to:

The South Bay Economic Development Partnership

Proposed by

The USC Center for Economic Development  
School of Policy, Planning, and Development  
University of Southern California

Los Angeles, CA 90089-0041



## Task 1 – Existing Workforce Analysis

- ✓ Profile of the employed workforce
- ✓ Profile of the resident workforce
- ✓ Analysis of existing local job opportunities





## Task 2 – Local Education & Existing Workforce

### ✓ Matrix

- Occupations of local wealth creating companies
- Public education institutions available to area residents
- Training institutions available to area residents
- Occupation growth prospects



## Task 3 – Local Job Training

- ✓ Employer Workforce Survey & Report
  - Results of the interviews
  - Integrated results of the Rosecrans East Corridor Workforce Survey
  - Assessment of life long learning opportunities



## Task 4 – Future Study: Area Employment

### ✓ Matrix

- Strengths and Weaknesses of current education/training/employment profile
- Application to future employment scenarios within the Rosecrans East Corridor



## Task 5 – Recommendations

### ✓ Memo

- Focus on education/ training/ employment
- Identify workforce preparedness gap
- Business climate
- Anticipated small growth scenario
- Anticipated growth indicators



## Task 6 – Overall Recommendations

### ✓ Road Map

- Development of workforce strategies based on intrinsic qualities of the residential labor pool



## Task 8 – Presentations

### ✓ Matrix

- Creation of Presentation Materials
- Up to (4) Oral presentations of project conclusions and findings



# Rosecrans East Project Community Forum May 8, 2003



## **Today's Workers, Tomorrow's Jobs**

**Dion Jackson**

The USC Center for Economic Development  
School of Policy, Planning, and Development  
University of Southern California  
Los Angeles, CA 90089-0041

**Rosecrans East Project Community Forum: May 8, 2003**



- **Task 1 - Profile Existing Workforce**
- **Task 2 - Profile Local Education Opportunities**
- **Task 3 – Local Job Training**

**Rosecrans East Project Community Forum: May 8, 2003**





✓ Profile of the locally employed workforce

Gardena	Hawthorne	Lawndale
70%	23%	7%

✓ Profile of the resident workforce

Gardena	Hawthorne	Lawndale
35%	46%	19%

✓ Analysis of existing local job opportunities

44%	15%	23%
Manufacturing	Clerical/Admin	Sales/Service



## **Profile of the Locally Employed Workforce**

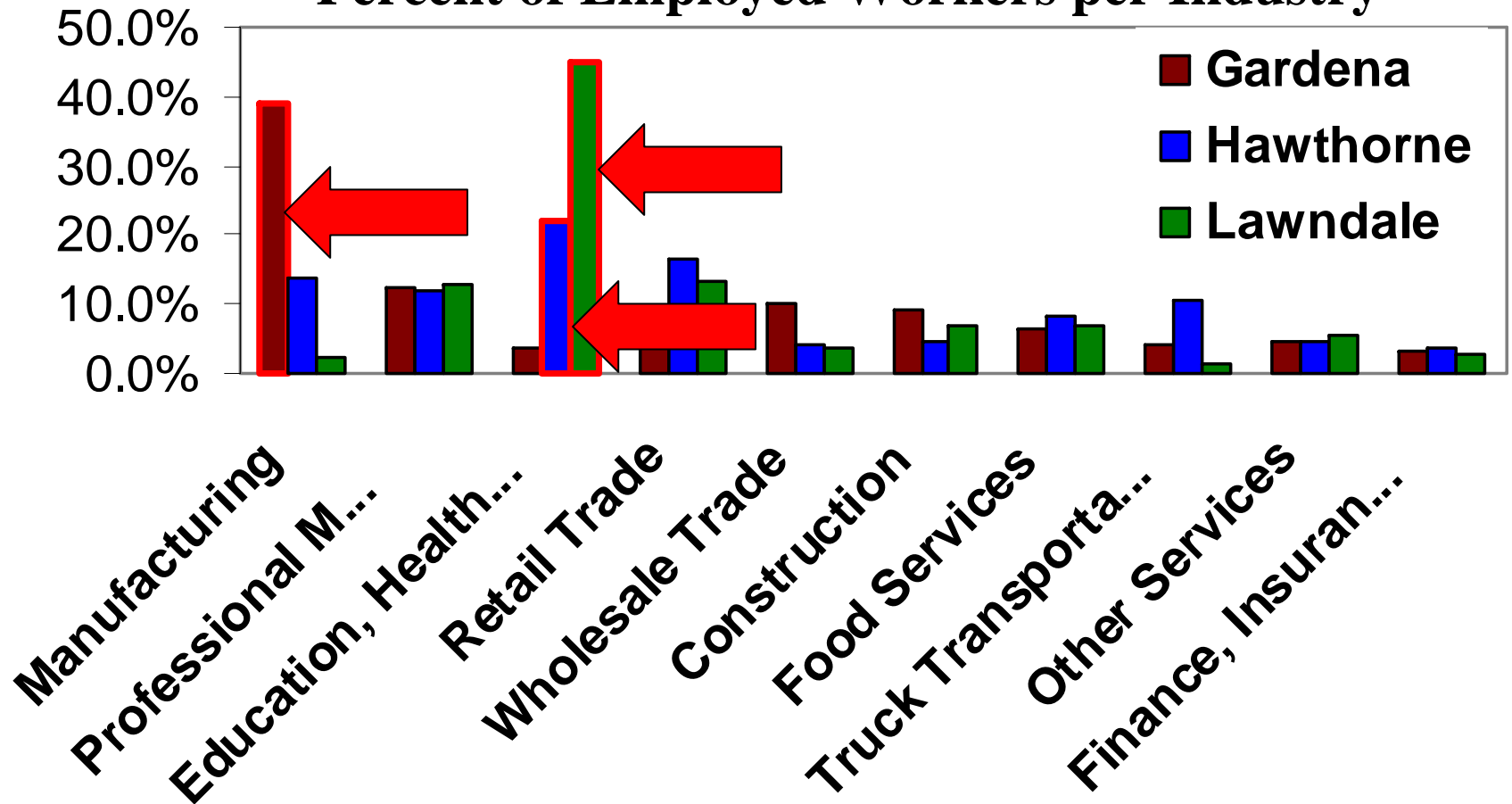
**Rosecrans East Project Community Forum: May 8, 2003**



## **A Comparison of:**

- ✓ **# of employees per industry**
- ✓ **# of establishments per industry**
- ✓ **Average # of employees per establishment by industry**
- ✓ **Average annual wage per employee by industry**

## Percent of Employed Workers per Industry



**USC**

UNIVERSITY  
OF SOUTHERN  
CALIFORNIA



Gardena	Hawthorne	Lawndale
65%	24%	11%

Ranking of # of Firms By Industry By City

	Gardena	Hawthorne	Lawndale
Manufacturing	1		
Retail Trade		2	2
Other Services		2	3
Professional Management		4	4
Wholesale Trade	2	10	9
Education, Health and Social Services	7	1	1
Food Services	6	6	7
FIRE	7	7	5
Construction	7	9	5
Truck Transportation	10	7	10
Info	11	11	11

**Rosecrans East Project Community Forum: May 8, 2003**



Gardena	Hawthorne	Lawndale
18	17	10

Gardena	Hawthorne	Lawndale
\$34,657	\$29,587	\$25,268

Info - \$49, 667 and 53 firms

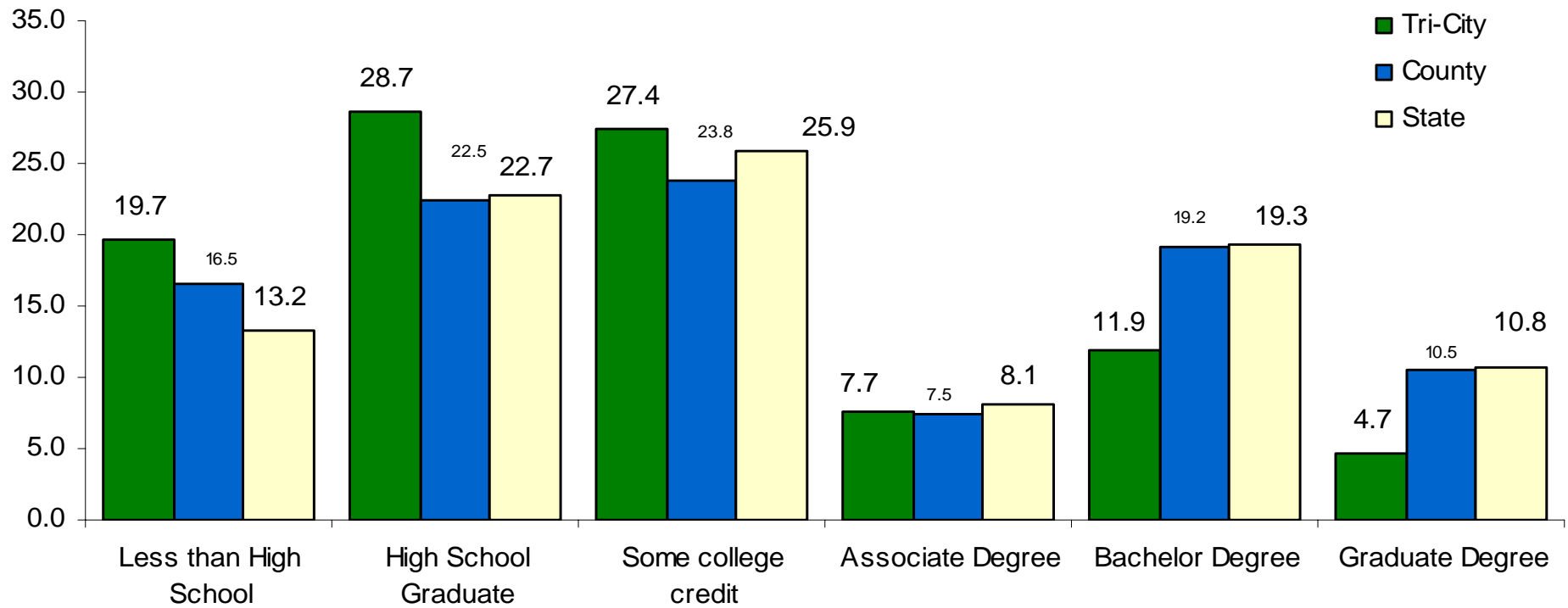
Construction - \$38, 384 and 267 firms

Manufacturing - \$34,740 and 821 firms



## **Profile of Resident Workforce**

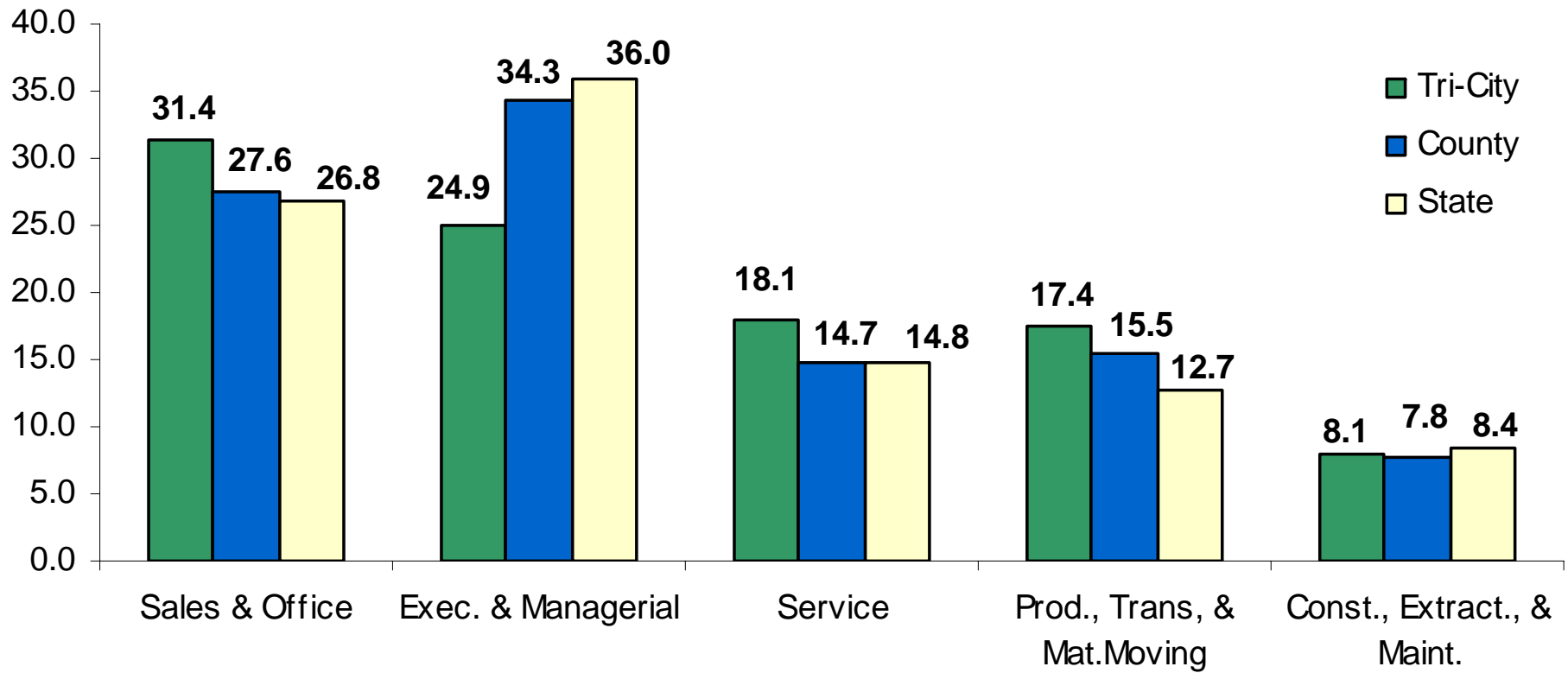
**Rosecrans East Project Community Forum: May 8, 2003**



Source: U.S. Census (2000) Summary File 3 QT-P20

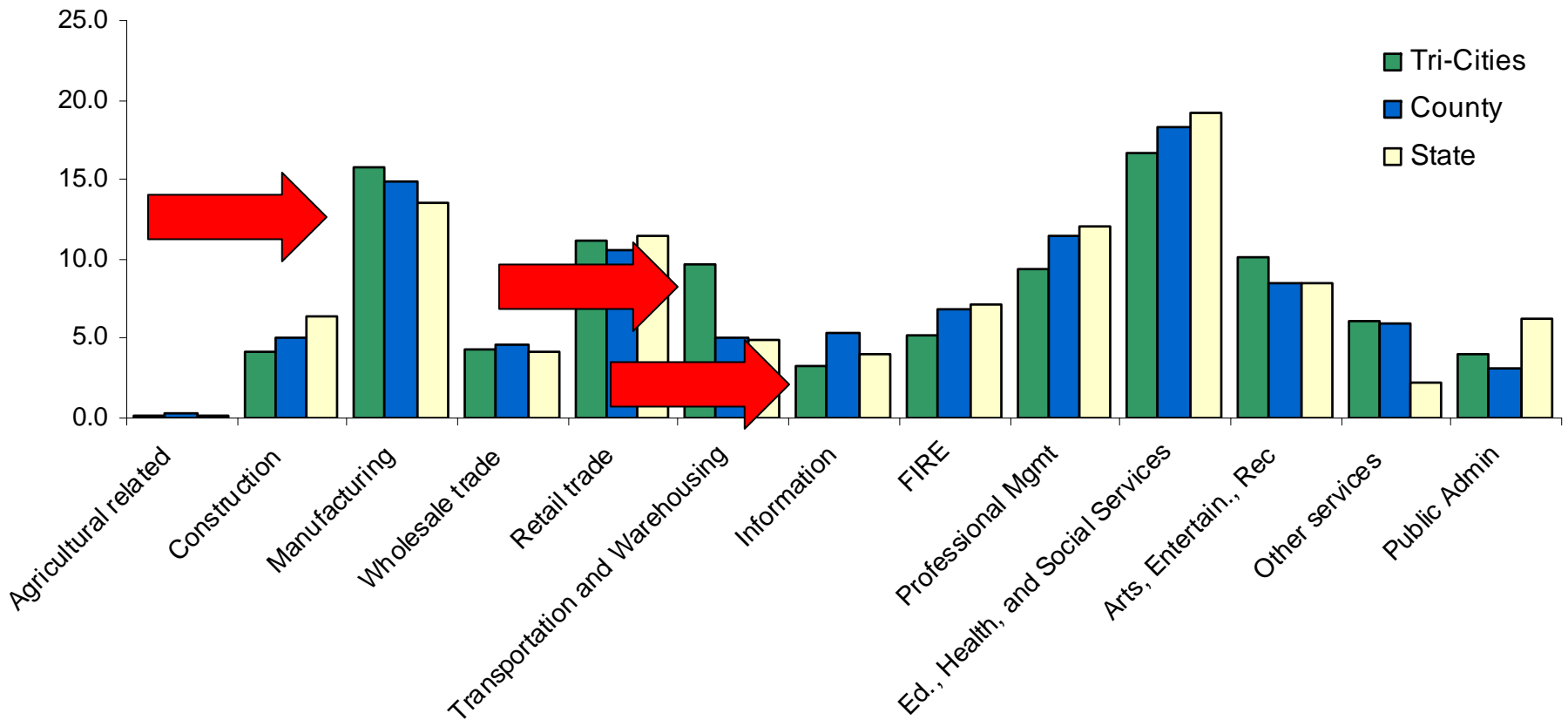
**Rosecrans East Project Community Forum: May 8, 2003**



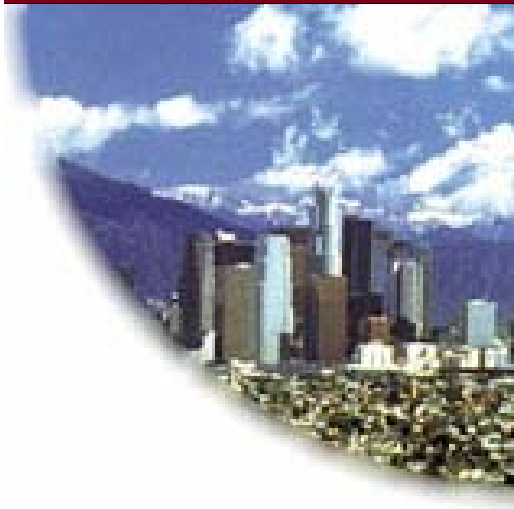


Source: U.S. Census (2000) Summary File 3 QT-P27

**Rosecrans East Project Community Forum: May 8, 2003**



Source: U.S. Census (2000) Summary File 3 QT-P27



## **Task 2 – Local Education & Existing Workforce**

**Rosecrans East Project Community Forum: May 8, 2003**



## Matrix

- Occupations of local wealth creating companies
- Public education institutions available to area residents
- Training institutions available to area residents
- Occupation growth prospects



## Growth Occupations in Los Angeles County

Occupation	Annual Averages		Absolute Change	Percent Change
	1999	2006		
Systems Analysts, Electric Data Processing	12560	19750	7190	57.2
Computer Support Specialists	11800	17990	<b>Info Sector</b>	52.5
Computer Engineers	8460	11660	3200	37.8
Database Administrators	2650	3590	940	35.5
Respiratory Care Practitioners	2310	3010	700	30.3
Financial Analysts, Statistical	1980	2580	600	30.3
Engineering, Math, Natural Science Managers	9220	11430	2210	24.0
Registered Nurses	51240	56520	5280	10.3
Financial Managers	21790	23830	2040	9.4
Accountants & Auditors	30490	32940	2450	8.0

**Rosecrans East Project Community Forum: May 8, 2003**



Occupation	Program	University
Application/ Computer Engineer	Computer Engineering Technology	DeVry University
Computer Information Systems Consultant	Computer Information Systems	CSU Dominguez Hills
Computer Information Technologist	Computer Information Systems	DeVry University
Computer Programmer	Computer Programming	Santa Monica College
	Computer Programming	UCLA Extension
Computer Artist	Computer Art	CSU Dominguez Hills
Computer Scientist	Computer Science	CSU Dominguez Hills
Computer Specialist	Computer Information Systems	Santa Monica College
Computer Technician	Computer Science	Santa Monica College
Computer Technologist	Computer Technology	DeVry University
Data Processor	Data Communications	UCLA Extension
Digital Processor	Digital Signal Processing	UCLA Extension
Electronics and Computer Technologist	Electronics and Computer Technology	DeVry University
Electronics Technologist	Electronics Technology	DeVry University
Graphics Designer	Computer Graphics	UCLA Extension
Information Specialist	Computer Information Systems	LA Harbor College
Information Technologist	Information Technology	DeVry University
Network Systems Administrator	Network Systems Administration	DeVry University

**Rosecrans East Project Community Forum: May 8, 2003**



## **Task 3 – Local Job Training**

**Rosecrans East Project Community Forum: May 8, 2003**



## Task 3 – Local Job Training

- ✓ Employer Workforce Survey & Report
  - Results of the interviews
  - Integrated results of the Rosecrans East Corridor Workforce Survey
  - Assessment of life long learning opportunities

**Rosecrans East Project Community Forum: May 8, 2003**





South Bay Industrial Clusters	Programs	Percent
Medical Services	55	33.3
Software	50	30.3
Business Services	28	17.0
Financial Services	27	10.3
Hospitality	6	3.6
Computer Services	5	3.0
Communications	2	1.2
Entertainment	2	1.2
Total	165	100.0

**Rosecrans East Project Community Forum: May 8, 2003**



TriCities: 65 surveys

Corridor: 27 Surveys

Rosecrans Blvd.: 16 Surveys

Training – majority conduct in-house  
training if any at all

High School diploma preferred

Follow Directions and Simple Math

**Rosecrans East Project Community Forum: May 8, 2003**

## **Appendix II: Survey Forms**

- **South Bay Economic Development Partnership Employer Workforce Survey**
- **Training Provider Phone Survey**

## South Bay Economic Development Partnership Employer Workforce Survey

The University of Southern California Center for Economic Development is conducting this survey for the South Bay Economic Development Partnership. The intent is to gather detailed information about the workforce currently employed and understand existing local employment opportunities in the Tri-City area (Gardena, Lawndale, and Hawthorne).

The results of the survey and accompanying analysis will be made available to all participating businesses/companies. **This is a confidential survey that will be entered into a database and aggregated for statistical purposes only.**

*Instructions: Estimated time to complete this survey is 10 minutes. Please answer the questions as thoroughly as possible. If needed, you may attach a separate sheet for written responses.*

If you have any questions regarding this survey, please call (213) 740-9494 and ask to speak with a Workforce Survey team member.

Please fax to – USC, Center for Economic Development  
(213) 740-0373

Business/ Company Name: \_\_\_\_\_

Organization Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Email: \_\_\_\_\_

Website: \_\_\_\_\_

Name of the person completing form: \_\_\_\_\_

Position: \_\_\_\_\_

May we contact you for further information?  Yes  No

### Company Profile

Years conducting business in present location:  0 – 2 years  2 – 5 years  5+years

Which of the following industry cluster categories best describes your organization?

- |  |   |   |   |
|--|---|---|---|
| <input type="checkbox"/> Aerospace         | <input type="checkbox"/> Computer Services  | <input type="checkbox"/> Horticulture     | <input type="checkbox"/> Transportation |
| <input type="checkbox"/> Bioscience        | <input type="checkbox"/> Entertainment      | <input type="checkbox"/> Hospitality      | <input type="checkbox"/> Other: _____   |
| <input type="checkbox"/> Business Services | <input type="checkbox"/> Environmental Tech | <input type="checkbox"/> Recreation Goods |   |
| <input type="checkbox"/> Communications    | <input type="checkbox"/> Financial Services | <input type="checkbox"/> Software         |   |

What are the primary functions of your organization? Check **all** that apply.

- Consulting  Investment  Manufacturing  Distribution  Intermediary  Other

What is your standard industrial classification (SIC) or (NAICS)? \_\_\_\_\_

### Internal Labor Market

Number of workers employed at this location:  1 – 10  11 – 25  26 – 50  50 +

Average number of employees hired annually? \_\_\_\_\_ Reason for hiring new employees? Check **all** that apply.

- Expansion       Turnover       Other

What is your employee retention rate? \_\_\_\_\_

Do you promote within the company?  Yes  No If yes, what kind of promotion criteria do you use?

- Above satisfactory job performance       Received job training/furthered education  
 Increased skill level       Tenure with organization  
 Other \_\_\_\_\_

Is there currently a career ladder within your organization?  Yes  No If yes, how many steps/levels? \_\_\_\_\_

*Example: Entry level (Step One) + Assistant Supervisor (Step Two) + Supervisor (Step Three) + Manager (Final level) = 4 Steps*

Which types of Occupational Categories do you employ? Check **all** that apply. For the following positions: What is the percent distribution for your employees? What is the turnover rate? Do you currently have openings? Entry-level positions?

	Percentage	Turnover	Job Openings	Entry-Level Positions?
Professional, Technical and Managerial	_____ %	_____	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Clerical	_____ %	_____	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Customer Service	_____ %	_____	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Production:				
Unskilled	_____ %	_____	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Skilled	_____ %	_____	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sales	_____ %	_____	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Information Technology (IT)	_____ %	_____	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No
Other _____	_____ %	_____	_____	<input type="checkbox"/> Yes <input type="checkbox"/> No

What are your top three current job skills (hard or soft) required in each classification?

- a.) Technical/Design: \_\_\_\_\_  
b.) Operational: \_\_\_\_\_  
c.) Entry-level: \_\_\_\_\_

**Recruitment/ Training/ Retention Policies**

What methods do you use to recruit new employees? Check **all** that apply.

- Employment Agencies       Internet  
 Job Fairs       Informal Networking  
 Newspaper       Other \_\_\_\_\_

Have you hired local high school students/graduates for entry level jobs?  Yes  No

If yes, have you been satisfied with their performance?  Yes  No Skill level?  Yes  No

What training mechanisms do you use? Check **all** that apply.

- In house training programs       Outside training company  
 Professional Development       Other \_\_\_\_\_  
 Technical training

If you use local outside training companies, please rate your level of satisfaction:

- Very Satisfied     Somewhat Satisfied     Dissatisfied     Very Dissatisfied

Has an outside local training organization developed a company-specific training program for you?  Yes  No

Do you use contract workers?  Yes  No      Do you use contingent workers?  Yes  No

**Retention Mechanisms**

- Promotion mobility       Retirement benefits (401K, etc.)  
 Child care benefits       Compensation for training and education  
 Life insurance benefits       Other \_\_\_\_\_  
 Stock options

**Job Openings**

Instructions: Please circle the appropriate *occupational code*, *vacancy period*, and *factor causing* each job opening. Space is provided to list out potential future job openings.

Occupations

A = Professional, Technical, and Managerial  
 B = Clerical Sales  
 C = Service Occupations  
 D = Processing

E = Machine Trades  
 F = Bench Work  
 G = Structural Work  
 H = Miscellaneous

Factor causing job opening

1 = Turnover  
 2 = Lack of Qualified Applicants  
 3 = Expansion of Workforce  
 4 = Other

<u>Occupation</u>	<u>Job Title</u>	<u>Vacancy Period</u>			<u>Factors</u>			
A B C D E F G H	_____	<input type="checkbox"/> < 30 days	<input type="checkbox"/> < 6 months	<input type="checkbox"/> > 6 months	1	2	3	4
A B C D E F G H	_____	<input type="checkbox"/> < 30 days	<input type="checkbox"/> < 6 months	<input type="checkbox"/> > 6 months	1	2	3	4
A B C D E F G H	_____	<input type="checkbox"/> < 30 days	<input type="checkbox"/> < 6 months	<input type="checkbox"/> > 6 months	1	2	3	4
A B C D E F G H	_____	<input type="checkbox"/> < 30 days	<input type="checkbox"/> < 6 months	<input type="checkbox"/> > 6 months	1	2	3	4
A B C D E F G H	_____	<input type="checkbox"/> < 30 days	<input type="checkbox"/> < 6 months	<input type="checkbox"/> > 6 months	1	2	3	4
A B C D E F G H	_____	<input type="checkbox"/> < 30 days	<input type="checkbox"/> < 6 months	<input type="checkbox"/> > 6 months	1	2	3	4
A B C D E F G H	_____	<input type="checkbox"/> < 30 days	<input type="checkbox"/> < 6 months	<input type="checkbox"/> > 6 months	1	2	3	4
A B C D E F G H	_____	<input type="checkbox"/> < 30 days	<input type="checkbox"/> < 6 months	<input type="checkbox"/> > 6 months	1	2	3	4
A B C D E F G H	_____	<input type="checkbox"/> < 30 days	<input type="checkbox"/> < 6 months	<input type="checkbox"/> > 6 months	1	2	3	4
A B C D E F G H	_____	<input type="checkbox"/> < 30 days	<input type="checkbox"/> < 6 months	<input type="checkbox"/> > 6 months	1	2	3	4

What kind of jobs do you expect in the future?

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**Job Skills**

What are the greatest weaknesses and strengths in **current** employees that adversely affect or compliment their performance? Check **all** that apply.

	<b>Weak</b>	<b>Strong</b>		<b>Weak</b>	<b>Strong</b>
Reading comprehension (technical, manuals, procedures)	<input type="checkbox"/>	<input type="checkbox"/>	Problem solving skills	<input type="checkbox"/>	<input type="checkbox"/>
Listening (i.e. following instructions)	<input type="checkbox"/>	<input type="checkbox"/>	Creative thinking skills	<input type="checkbox"/>	<input type="checkbox"/>
Written communications skills	<input type="checkbox"/>	<input type="checkbox"/>	Demonstrated self motivation or initiative	<input type="checkbox"/>	<input type="checkbox"/>
Technical writing skills	<input type="checkbox"/>	<input type="checkbox"/>	Language fluency in another language	<input type="checkbox"/>	<input type="checkbox"/>
Math skills through calculus	<input type="checkbox"/>	<input type="checkbox"/>	Time management skills	<input type="checkbox"/>	<input type="checkbox"/>
Performing statistical analysis	<input type="checkbox"/>	<input type="checkbox"/>	Works well in teams	<input type="checkbox"/>	<input type="checkbox"/>
Computer literacy skills	<input type="checkbox"/>	<input type="checkbox"/>	Works well unsupervised	<input type="checkbox"/>	<input type="checkbox"/>
Ability to meet deadlines	<input type="checkbox"/>	<input type="checkbox"/>	Other _____	<input type="checkbox"/>	<input type="checkbox"/>

GENERAL TIPS TO BE FOLLOWED:

- 1) EARLY TO MID MORNING CALLING
- 2) IDENTIFY YOURSELF/CED & 5 MINUTES SURVEY
- 3) REQUEST TO SPEAK W/THE HIGHEST HUMAN RESOURCE PERSON AVAILABLE

INTERVIEWER \_\_\_\_\_  
DATE \_\_\_\_\_

LAWNDALE

## TRAINING PROVIDER PHONE SURVEY

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**Provider:** South Bay One-Stop Center

Company Interviewee \_\_\_\_\_

Contact Information (310) 330-8734

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### **General ?'s**

How long have you been a Workforce Investment Board contractor?

Do you have any public information on the placement and/or success rates of your individual clients (reports, summaries, status reports) that we may request?

### **Program ?'s**

How do you determine what training programs to offer?

How do you relate to current employer requirements?

What types of communication do you have with companies that you provide training for?

Do business contract your services to provide schedule training programs for their employees?

### **Individual Clients ?'s**

Do you collect data on trainees?  
[city of residence, high schools, educational attainment]

What measurement tools do you use?

Do your graduates rate your program?

Information available?

**Appendix III: Los Angeles County Employment  
Projections 2001-2008 with 2002  
Wage Data**



## Los Angeles County Employment Projections 2001-2008 with 2002 Wage Data

Table 6  
Occupational Employment Projections (1)  
2001 - 2008  
*Los Angeles County*

Released December 2003

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)
		2001 (2)	2008	Number	Percent		
00-0000	Total, All Occupations	4,093,900	4,474,500	380,600	9.3	715,460	
11-0000 to 13-0000	Management, Business, & Financial Occupations	397,440	437,460	40,020	10.1	52,660	
11-0000	Management Occupations	229,500	253,900	24,400	10.6	28,460	
11-1011	Chief Executives General & Operations	13,840	15,100	1,260	9.1	3,150 BA/BS + exper (4)	
11-1021	Managers	68,340	74,140	5,800	8.5	8,220 BA/BS + exper (4)	
11-1031	Legislators Advertising & Promotions	390	420	30	7.7	90 BA/BS + exper (4)	
11-2011	Managers	3,140	3,760	620	19.7	340 BA/BS + exper (4)	
11-2021	Marketing Managers	6,930	7,980	1,050	15.2	730 BA/BS + exper (4)	
11-2022	Sales Managers	10,890	13,150	2,260	20.8	1,180 BA/BS + exper (4)	
11-2031	Public Relations Managers Administrative Services	1,550	1,870	320	20.6	180 BA/BS + exper (4)	
11-3011	Managers Computer & Information	11,820	13,140	1,320	11.2	1,400 BA/BS + exper (4)	
11-3021	Systems Managers	7,050	8,950	1,900	27.0	930 BA/BS + exper (4)	
11-3031	Financial Managers	17,770	20,180	2,410	13.6	1,990 BA/BS + exper (4)	
11-3040	Human Resources Managers Industrial Production	5,610	5,920	310	5.5	*	
11-3051	Managers	5,500	5,340	-160	-2.9	610 BA/BS Degree (5)	
11-3061	Purchasing Managers Transportation, Storage, & Distribution Managers	3,470	3,250	-220	-6.3	730 BA/BS + exper (4)	
11-3071	Distribution Managers	3,540	3,970	430	12.1	420 Work Exper (8)	
11-9021	Construction Managers	3,960	4,750	790	19.9	490 BA/BS Degree (5)	
11-9031	Educ Adms, Preschool & Child Care Center	1,160	1,330	170	14.7	220 BA/BS + exper (4)	
11-9032	Educ Adms, Elementary & Secondary School Education Administrators,	4,730	5,350	620	13.1	900 BA/BS + exper (4)	
11-9033	Postsecondary	1,090	1,230	140	12.8	210 BA/BS + exper (4)	
11-9041	Engineering Managers	7,420	7,030	-390	-5.3	810 BA/BS + exper (4)	
11-9051	Food Service Managers	14,710	16,860	2,150	14.6	1,280 Work Exper (8)	
11-9061	Funeral Directors	450	500	50	11.1	60 AA Degree (6)	
11-9081	Lodging Managers	430	450	20	4.7	40 Work Exper (8)	

### Portions of Occupational Employment (2001) & Wage (2002) Data Occupational Employment Statistics (OES) Survey Results (Sorted by SOC code) (Revised January 2003)

These survey data are from the 2001 Occupational Employment Statistics (OES) survey. The wages have all been updated to the third quarter of 2002 by applying the US Department of Labor's Employment Cost Index to the 2001 wages. Occupations are classified using the Standard Occupational Classification (SOC) codes. For details of the methodology, see the Overview of the OES Survey at [http://www.calmis.ca.gov/file/occup\\$oeswages/oestechnotes.htm](http://www.calmis.ca.gov/file/occup$oeswages/oestechnotes.htm).

2001 Employment Estimates	2002 Wages		
	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
4,073,190	\$7.96	\$18.13	\$37,708
228,250	\$22.36	\$41.28	\$85,869
13,850	\$41.06	(3)	(3)
68,000	\$24.53	\$45.12	\$93,833
420	\$17.79	\$21.16	\$44,022
3,040	\$20.96	\$40.15	\$83,510
6,890	\$25.06	\$42.00	\$87,355
10,740	\$24.02	\$41.70	\$86,732
1,550	\$23.82	\$35.63	\$74,105
11,910	\$18.22	\$31.60	\$65,713
6,900	\$28.03	\$43.04	\$89,530
17,780	\$26.92	\$43.54	\$90,567
5,620	\$21.26	\$34.20	\$71,121
5,210	\$22.26	\$34.91	\$72,610
3,420	\$21.46	\$35.79	\$74,453
3,160	\$20.27	\$32.24	\$67,057
(4)	\$13.35	\$28.95	\$60,230
4,160	\$26.58	\$39.73	\$82,629
1,160	\$12.26	\$20.00	\$41,609
4,820	(2)	(2)	\$90,846
1,070	\$24.73	\$36.79	\$76,525
7,240	\$31.65	\$45.45	\$94,532
470	\$18.07	\$34.74	\$72,253
60	\$23.65	\$40.22	\$83,656

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
11-9111	Medical & Health Services Managers	5,410	6,180	770	14.2	690	BA/BS + exper (4)	380	\$14.55	\$21.69	\$45,119
11-9121	Natural Sciences Managers	800	850	50	6.3	100	BA/BS + exper (4)	5,520	\$23.16	\$37.07	\$77,093
11-9141	Property, Real Estate, & Community Assn Mgrs	8,040	9,400	1,360	16.9	980	BA/BS Degree (5)	820	\$23.84	\$39.23	\$81,607
11-9151	Social & Community Service Managers	2,210	2,410	200	9.0	300	BA/BS Degree (5)	8,240	\$7.98	\$18.24	\$37,947
11-9199	Managers, All Other	19,250	20,390	1,140	5.9	2,410	Work Exper (8)	2,240	\$17.43	\$26.59	\$55,313
<b>13-0000</b>	<b>Business &amp; Financial Operations Occupations</b>	<b>167,940</b>	<b>183,560</b>	<b>15,620</b>	<b>9.3</b>	<b>24,200</b>		<b>18,950</b>	<b>\$23.02</b>	<b>\$38.21</b>	<b>\$79,477</b>
13-1011	Agents & Bus Mgrs of Artists, Performers & Athletes	880	1,020	140	15.9	130	BA/BS + exper (4)	168,420	\$16.74	\$27.79	\$57,812
13-1021	Purchasing Agents & Buyers, Farm Products	400	450	50	12.5	60	Work Exper (8)	940	\$22.98	\$45.53	\$94,712
13-1022	Wholesale & Retail Buyers, Except Farm Products	5,650	5,370	-280	-5.0	1,170	BA/BS Degree (5)	410	\$17.98	\$26.55	\$55,221
13-1023	Purch Agents, Ex Wholesale, Retail, & Farm Products	8,180	8,360	180	2.2	1,130	BA/BS Degree (5)	5,750	\$14.15	\$26.54	\$55,199
13-1031	Claims Adjusters, Examiners, & Investigators	7,760	8,530	770	9.9	630	12 mos OJT (9)	7,750	\$15.26	\$24.39	\$50,727
13-1032	Insurance Appraisers, Auto Damage	360	390	30	8.3	30	12 mos OJT (9)	7,780	\$16.10	\$24.56	\$51,083
13-1041	Comp Officers, Ex Ag, Const, Hlth & Safety, & Trans	4,950	5,130	180	3.6	890	12 mos OJT (9)	360	\$16.87	\$21.61	\$44,955
13-1051	Cost Estimators	5,100	5,690	590	11.6	820	BA/BS Degree (5)	5,190	\$15.49	\$23.63	\$49,152
13-1061	Emergency Management Specialists	160	170	10	6.3	30	Work Exper (8)	5,010	\$15.06	\$26.56	\$55,240
13-1071	Employment, Recruitment, & Placement Specialists	4,850	5,170	320	6.6	670	BA/BS Degree (5)	160	\$18.41	\$26.77	\$55,672
13-1072	Compensation, Benefits, & Job Analysis Specialists	2,120	2,290	170	8.0	290	BA/BS Degree (5)	4,970	\$13.33	\$23.62	\$49,130
13-1073	Training & Development Specialists	4,330	4,800	470	10.9	610	BA/BS Degree (5)	2,120	\$17.66	\$24.03	\$49,987
13-1111	Management Analysts	11,100	12,190	1,090	9.8	700	BA/BS + exper (4)	4,310	\$16.26	\$24.62	\$51,222
13-1121	Meeting & Convention Planners	1,060	1,220	160	15.1	150	BA/BS Degree (5)	10,940	\$21.42	\$35.51	\$73,864
13-1199	Business Operations Specialists, All Other	52,390	58,010	5,620	10.7	9,700	BA/BS Degree (5)	1,060	\$12.44	\$19.67	\$40,915
13-2011	Accountants & Auditors	25,910	28,330	2,420	9.3	2,770	BA/BS Degree (5)	52,260	\$16.95	\$27.56	\$57,309
13-2021	Appraisers & Assessors of Real Estate	1,300	1,410	110	8.5	270	Post-sec voc educ (7)	26,020	\$18.25	\$27.70	\$57,615
13-2031	Budget Analysts	1,400	1,500	100	7.1	200	BA/BS Degree (5)	1,360	\$19.60	\$26.86	\$55,879
13-2041	Credit Analysts	2,550	2,810	260	10.2	370	BA/BS Degree (5)	1,410	\$21.17	\$28.82	\$59,943
13-2051	Financial Analysts	4,790	5,360	570	11.9	480	BA/BS Degree (5)	2,590	\$15.49	\$28.24	\$58,728
13-2052	Personal Financial Advisors	3,120	3,840	720	23.1	280	BA/BS Degree (5)	4,780	\$21.03	\$32.79	\$68,191

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
13-2053	Insurance Underwriters	2,620	2,540	-80	-3.1	270	BA/BS Degree (5)	2,600	\$16.85	\$26.72	\$55,567
13-2061	Financial Examiners	690	730	40	5.8	90	BA/BS Degree (5)	700	\$18.84	\$30.20	\$62,803
13-2071	Loan Counselors	320	370	50	15.6	50	BA/BS Degree (5)	340	\$12.68	\$29.00	\$60,307
13-2072	Loan Officers	6,680	7,190	510	7.6	960	BA/BS Degree (5)	6,910	\$17.43	\$30.90	\$64,269
13-2081	Tax Examiners, Collectors, & Revenue Agents	1,660	1,760	100	6.0	310	BA/BS Degree (5)	1,670	\$20.96	\$29.07	\$60,463
13-2082	Tax Preparers	1,900	2,070	170	8.9	270	1-12 mos OJT (10)	2,010	\$11.26	\$23.51	\$48,884
13-2099	Financial Specialists, All Other	5,710	6,860	1,150	20.1	870	BA/BS Degree (5)	5,880	\$13.96	\$23.98	\$49,873
<b>15-0000 to 29-0000</b>	<b>Professional &amp; Related Occupations</b>	<b>792,290</b>	<b>904,290</b>	<b>112,000</b>	<b>14.1</b>	<b>112,870</b>					
<b>15-0000</b>	<b>Computer &amp; Mathematical Science Occupations</b>	<b>80,350</b>	<b>106,210</b>	<b>25,860</b>	<b>32.2</b>	<b>5,560</b>		<b>78,410</b>	<b>\$18.68</b>	<b>\$30.28</b>	<b>\$62,981</b>
15-1011	Computer & Information Scientists, Research	470	540	70	14.9	30	PhD Degree (2)	460	\$24.52	\$39.75	\$82,682
15-1021	Computer Programmers	14,330	14,480	150	1.0	2,090	BA/BS Degree (5)	14,140	\$21.78	\$31.68	\$65,887
15-1031	Computer Software Engineers, Applications	11,960	17,050	5,090	42.6	650	BA/BS Degree (5)	11,550	\$23.72	\$37.87	\$78,774
15-1032	Computer Software Engineers, Systems Software	7,200	10,130	2,930	40.7	390	BA/BS Degree (5)	6,990	\$23.86	\$35.93	\$74,730
15-1041	Computer Software Engineers, Systems Software Computer Support Specialists	13,830	21,220	7,390	53.4	490	AA Degree (6)	13,600	\$14.72	\$21.49	\$44,713
15-1051	Computer Systems Analysts	9,670	12,070	2,400	24.8	640	BA/BS Degree (5)	9,460	\$21.26	\$30.83	\$64,118
15-1061	Database Administrators	2,880	3,760	880	30.6	90	BA/BS Degree (5)	2,830	\$17.67	\$28.89	\$60,091
15-1071	Network & Computer Systems Administrators	9,910	14,470	4,560	46.0	340	BA/BS Degree (5)	9,570	\$19.77	\$28.97	\$60,267
15-1081	Network Systems & Data Communications Analysts	2,920	4,040	1,120	38.4	100	BA/BS Degree (5)	2,820	\$17.52	\$29.05	\$60,435
15-1099	Computer Specialists, All Other	4,160	5,430	1,270	30.5	280	Post-sec voc educ (7)	4,060	\$14.75	\$25.55	\$53,154
15-2011	Actuaries	340	350	10	2.9	30	BA/BS + exper (4)	330	\$23.84	\$40.75	\$84,760
15-2031	Operations Research Analysts	1,570	1,510	-60	-3.8	340	MA/MS Degree (3)	1,480	\$19.88	\$29.26	\$60,862
15-2041	Statisticians	450	460	10	2.2	40	MA/MS Degree (3)	(4)	\$28.38	\$37.87	\$78,775
15-2099	Mathematical Science Occupations, All Other	660	700	40	6.1	50	MA/MS Degree (3)	30	\$9.33	\$16.41	\$34,125
<b>17-0000</b>	<b>Architecture &amp; Engineering Occupations</b>	<b>74,840</b>	<b>75,020</b>	<b>180</b>	<b>0.2</b>	<b>11,070</b>		<b>73,570</b>	<b>\$18.86</b>	<b>\$30.99</b>	<b>\$64,457</b>
17-1011	Architects, Except Landscape & Naval	1,530	1,710	180	11.8	60	BA/BS Degree (5)	1,630	\$20.30	\$31.33	\$65,148
17-1012	Landscape Architects	570	610	40	7.0	20	BA/BS Degree (5)	(4)	\$14.86	\$20.69	\$43,039
17-1022	Surveyors	560	570	10	1.8	120	BA/BS Degree (5)	(4)	\$23.27	\$29.36	\$61,057
								(4)	\$17.26	\$23.27	\$48,407

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
17-2011	Aerospace Engineers	7,150	6,790	-360	-5.0	1,460	BA/BS Degree (5)	6,180	\$28.79	\$35.85	\$74,564
17-2031	Biomedical Engineers	160	200	40	25.0	30	BA/BS Degree (5)	170	\$22.20	\$30.42	\$63,284
17-2041	Chemical Engineers	840	900	60	7.1	110	BA/BS Degree (5)				
17-2051	Civil Engineers	4,640	4,750	110	2.4	510	BA/BS Degree (5)	5,040	\$23.28	\$31.13	\$64,757
17-2061	Computer Hardware Engineers	1,450	1,510	60	4.1	150	BA/BS Degree (5)	1,450	\$21.91	\$37.84	\$78,715
17-2071	Electrical Engineers	5,500	5,510	10	0.2	700	BA/BS Degree (5)	5,520	\$24.54	\$34.81	\$72,386
17-2072	Electronics Engineers, Except Computer	4,300	4,620	320	7.4	560	BA/BS Degree (5)	4,280	\$23.66	\$36.46	\$75,846
17-2081	Environmental Engineers	1,330	1,460	130	9.8	190	BA/BS Degree (5)	1,450	\$23.79	\$34.88	\$72,553
17-2111	Health & Safety Engrs, Ex Mining Safety Engrs & Inspectors	1,260	1,400	140	11.1	150	BA/BS Degree (5)	1,310	\$15.71	\$23.29	\$48,439
17-2112	Industrial Engineers	4,860	4,530	-330	-6.8	540	BA/BS Degree (5)	4,570	\$22.14	\$31.44	\$65,386
17-2131	Materials Engineers	490	470	-20	-4.1	70	BA/BS Degree (5)	490	\$17.36	\$27.52	\$57,245
17-2141	Mechanical Engineers	6,930	7,020	90	1.3	1,430	BA/BS Degree (5)	6,670	\$23.46	\$33.75	\$70,207
17-2151	Mining & Geological Engrs, Incl Mining Safety Engineers	130	140	10	7.7	20	BA/BS Degree (5)				
17-2161	Nuclear Engineers	100	110	10	10.0	20	BA/BS Degree (5)				
17-2171	Petroleum Engineers	390	350	-40	-10.3	60	BA/BS Degree (5)	370	\$31.11	\$40.49	\$84,227
17-2199	Engineers, All Other	10,850	10,080	-770	-7.1	1,440	BA/BS Degree (5)	10,640	\$24.05	\$36.93	\$76,815
17-3011	Architectural & Civil Drafters	1,630	1,770	140	8.6	360	Post-sec voc educ (7)	1,730	\$18.19	\$24.65	\$51,266
17-3012	Electrical & Electronics Drafters	1,080	1,130	50	4.6	230	Post-sec voc educ (7)	1,030	\$12.39	\$23.31	\$48,482
17-3013	Mechanical Drafters	1,190	1,140	-50	-4.2	250	Post-sec voc educ (7)	1,110	\$13.75	\$20.95	\$43,593
17-3021	Aerospace Engineering & Operations Technicians	1,850	1,670	-180	-9.7	240	AA Degree (6)	1,630	\$21.03	\$27.94	\$58,103
17-3022	Civil Engineering Technicians	910	960	50	5.5	130	AA Degree (6)	980	\$17.01	\$22.65	\$47,103
17-3023	Electrical & Electronic Engineering Technicians	6,300	6,260	-40	-0.6	870	AA Degree (6)	6,250	\$13.67	\$22.08	\$45,935
17-3024	Electro-Mechanical Technicians	1,330	1,380	50	3.8	190	AA Degree (6)	1,330	\$11.90	\$18.56	\$38,596
17-3025	Environmental Engineering Technicians	370	400	30	8.1	50	AA Degree (6)	390	\$16.96	\$23.87	\$49,637
17-3026	Industrial Engineering Technicians	1,190	1,160	-30	-2.5	160	AA Degree (6)	1,120	\$14.69	\$23.13	\$48,098
17-3027	Mechanical Engineering Technicians	1,520	1,650	130	8.6	220	AA Degree (6)	1,540	\$12.37	\$18.83	\$39,177
17-3031	Surveying & Mapping Technicians	500	570	70	14.0	120	1-12 mos OJT (10)	540	\$14.00	\$20.48	\$42,601
17-3099	Drafters, Engineering, & Map Technicians, All Other	3,930	4,200	270	6.9	610	AA Degree (6)	3,750	\$15.23	\$23.03	\$47,923
<b>19-0000</b>	<b>Life, Physical, &amp; Social Science Occupations</b>	<b>29,130</b>	<b>32,280</b>	<b>3,150</b>	<b>10.8</b>	<b>6,030</b>		<b>29,860</b>	<b>\$13.80</b>	<b>\$24.77</b>	<b>\$51,529</b>
19-1010	Agricultural & Food Scientists	230	260	30	13.0	*		230	\$14.61	\$26.30	\$54,699
19-1021	Biochemists & Biophysicists	250	300	50	20.0	70	PhD Degree (2)	260	\$20.32	\$31.09	\$64,674
19-1022	Microbiologists	310	350	40	12.9	80	PhD Degree (2)	330	\$17.45	\$26.05	\$54,180

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
19-1041	Epidemiologists Medical Scientists, Except	1,310	1,500	190	14.5	220	PhD Degree (2)	40 30 (4)	\$18.04 \$21.20 \$23.49	\$25.67 \$30.95 \$26.20	\$53,394 \$64,371 \$54,501
19-1042	Epidemiologists	2,090	2,320	230	11.0	350	PhD Degree (2)	2,140	\$15.21	\$26.66	\$55,454
19-1099	Life Scientists, All Other	1,970	2,220	250	12.7	530	PhD Degree (2)				
19-2012	Physicists	360	370	10	2.8	80	PhD Degree (2)				
19-2021	Scientists Atmospheric & Space	100	110	10	10.0	20	BA/BS Degree (5)	110	\$23.03	\$34.88	\$72,553
19-2031	Chemists	2,150	2,410	260	12.1	500	BA/BS Degree (5)	2,200	\$16.26	\$26.17	\$54,437
19-2032	Materials Scientists Environmental Scientists &	310	320	10	3.2	70	BA/BS Degree (5)	280	\$21.98	\$32.95	\$68,524
19-2041	Specialists, Incl Health Geoscientists, Except	600	650	50	8.3	140	BA/BS Degree (5)	640	\$20.76	\$31.84	\$66,234
19-2042	Hydrologists & Geographer	1,140	1,230	90	7.9	270	BA/BS Degree (5)				
19-2043	Hydrologists	100	130	30	30.0	30	BA/BS Degree (5)	110	\$23.67	\$35.30	\$73,433
19-2099	Physical Scientists, All Other	690	730	40	5.8	220	BA/BS Degree (5)	660	\$17.68	\$33.30	\$69,275
19-3021	Market Research Analysts	3,630	4,080	450	12.4	590	BA/BS Degree (5)	60	\$22.84	\$35.32	\$73,463
19-3022	Survey Researchers	1,060	1,260	200	18.9	180	BA/BS Degree (5)	3,630 (4)	\$14.45 \$8.78	\$25.07 \$21.17	\$52,151 \$44,036
19-3031	Clinical, Counseling, & School Psychologists	3,300	3,610	310	9.4	550	MA/MS Degree (3)	3,390	\$22.41	\$32.27	\$67,126
19-3051	Urban & Regional Planners	630	690	60	9.5	110	MA/MS Degree (3)	(4) 680	\$22.57 \$17.98	\$30.43 \$25.20	\$63,294 \$52,406
19-3099	Social Scientists & Related Workers, All Other	1,080	1,160	80	7.4	200	MA/MS Degree (3)	(4)	\$11.45	\$18.83	\$39,165
19-4011	Technicians Agricultural & Food Science	350	370	20	5.7	60	AA Degree (6)	360	\$8.16	\$14.13	\$29,388
19-4021	Biological Technicians	980	1,130	150	15.3	170	AA Degree (6)	1,010	\$10.63	\$17.67	\$36,757
19-4031	Chemical Technicians Geological & Petroleum	1,370	1,520	150	10.9	230	AA Degree (6)	1,410	\$11.49	\$18.15	\$37,762
19-4041	Technicians	170	180	10	5.9	30	AA Degree (6)	170	\$10.63	\$17.69	\$36,786
19-4091	Environ Science & Protection Techs, Incl Health	560	600	40	7.1	150	AA Degree (6)	590	\$13.49	\$20.48	\$42,595
19-4092	Forensic Science Technicians	110	120	10	9.1	30	AA Degree (6)				
19-4093	Forest & Conservation Technicians	270	270	0	0.0	70	AA Degree (6)	270	\$12.23	\$15.28	\$31,783
19-4099	Life, Physical, & Social Science Techs, All Other	4,010	4,390	380	9.5	1,080	AA Degree (6)				
<b>21-0000</b>	<b>Community &amp; Social Services Occupations</b>	<b>52,280</b>	<b>59,230</b>	<b>6,950</b>	<b>13.3</b>	<b>6,300</b>		<b>50,550</b>	<b>\$10.33</b>	<b>\$18.80</b>	<b>\$39,109</b>
21-1011	Substance Abuse & Behavioral Disorder Counselors	1,300	1,430	130	10.0	190	MA/MS Degree (3)	1,340	\$10.28	\$14.88	\$30,943
21-1012	Educational, Vocational, & School Counselors	5,770	6,890	1,120	19.4	880	MA/MS Degree (3)	5,900	\$15.56	\$26.79	\$55,723

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
21-1013	Marriage & Family Therapists	3,980	4,270	290	7.3	580	MA/MS Degree (3)	(4)	\$9.67	\$13.59	\$28,263
21-1014	Mental Health Counselors	2,500	2,510	10	0.4	350	MA/MS Degree (3)	2,570	\$11.27	\$15.88	\$33,032
21-1015	Rehabilitation Counselors	1,890	1,970	80	4.2	270	MA/MS Degree (3)	1,930	\$7.52	\$13.55	\$28,178
21-1021	Child, Family, & School Social Workers	8,860	10,000	1,140	12.9	720	BA/BS Degree (5)	9,330	\$12.47	\$18.55	\$38,593
21-1022	Medical & Public Health Social Workers	3,880	4,360	480	12.4	310	BA/BS Degree (5)	4,080	\$14.83	\$20.47	\$42,565
21-1023	Mental Health & Substance Abuse Social Workers	1,690	1,950	260	15.4	140	MA/MS Degree (3)	1,740	\$11.50	\$16.91	\$35,159
21-1091	Health Educators	910	990	80	8.8	100	MA/MS Degree (3)	930	\$10.34	\$16.32	\$33,946
21-1092	Probation Offcrrs & Correctional Treatment Specialists	3,600	4,150	550	15.3	390	BA/BS Degree (5)				
21-1093	Social & Human Service Assistants	5,170	6,570	1,400	27.1	600	1-12 mos OJT (10)	5,270	\$8.86	\$13.33	\$27,736
21-2011	Clergy	2,340	2,570	230	9.8	470	LLD/MD Degree (1)	820	\$17.93	\$28.24	\$58,738
21-2021	Directors, Religious Activities & Education	1,860	2,060	200	10.8	230	BA/BS Degree (5)	510	\$9.33	\$16.11	\$33,526
21-9099	Counselors, Social & Religious Workers, All Other	8,530	9,510	980	11.5	1,070	BA/BS Degree (5)	8,070	\$8.89	\$17.23	\$35,845
<b>23-0000</b>	<b>Legal Occupations</b>	<b>33,590</b>	<b>37,970</b>	<b>4,380</b>	<b>13.0</b>	<b>2,000</b>		<b>34,940</b>	<b>\$19.48</b>	<b>\$39.49</b>	<b>\$82,151</b>
23-1011	Lawyers	19,310	21,550	2,240	11.6	940	LLD/MD Degree (1)	20,040	\$34.02	\$51.33	\$106,761
23-1021	Admin Law Judges, Adjudicators, & Hearing Officers	630	640	10	1.6	130	BA/BS + exper (4)	660	\$19.91	\$34.24	\$71,211
23-1022	Arbitrators, Mediators, & Conciliators	320	390	70	21.9	70	BA/BS + exper (4)	330	\$13.19	\$24.10	\$50,125
23-1023	Judges, Magistrate Judges, & Magistrates	660	670	10	1.5	130	BA/BS + exper (4)				
23-2011	Paralegals & Legal Assistants	5,270	6,480	1,210	23.0	240	AA Degree (6)	5,420	\$20.38	\$26.51	\$55,137
23-2091	Court Reporters	1,350	1,520	170	12.6	90	Post-sec voc educ (7)				
23-2092	Law Clerks	750	730	-20	-2.7	50	BA/BS Degree (5)	750	\$12.82	\$16.91	\$35,170
23-2093	Title Examiners, Abstractors, & Searchers	1,260	1,250	-10	-0.8	80	1-12 mos OJT (10)	1,320	\$13.63	\$20.76	\$43,180
23-9099	Legal & Related Workers, All Other	4,040	4,740	700	17.3	270	BA/BS Degree (5)				
<b>25-0000</b>	<b>Education, Training, &amp; Library Occupations</b>	<b>236,700</b>	<b>275,410</b>	<b>38,710</b>	<b>16.4</b>	<b>38,160</b>		<b>237,720</b>	<b>\$11.11</b>	<b>\$21.43</b>	<b>\$44,576</b>
25-1011	Business Teachers, Postsecondary	760	910	150	19.7	160	PhD Degree (2)	740	(2)	(2)	\$76,951
25-1021	Computer Science Teachers, Postsecondary	390	470	80	20.5	80	PhD Degree (2)	390	(2)	(2)	\$69,480
25-1022	Mathematical Science Teachers, Postsecondary	420	510	90	21.4	90	PhD Degree (2)	410	(2)	(2)	\$70,492
25-1032	Engineering Teachers, Postsecondary	280	340	60	21.4	60	PhD Degree (2)				

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
25-1042	Biological Science Teachers, Postsecondary	410	490	80	19.5	90	PhD Degree (2)	400	(2)	(2)	\$67,965
25-1051	Atmos, Earth, Marine, & Space Sciences Teachrs	110	130	20	18.2	20	PhD Degree (2)	110	(2)	(2)	\$71,884
25-1052	Chemistry Teachers, Postsecondary	100	120	20	20.0	20	PhD Degree (2)	100	(2)	(2)	\$73,672
25-1054	Physics Teachers, Postsecondary	140	170	30	21.4	30	PhD Degree (2)	140	(2)	(2)	\$71,163
								40	(2)	(2)	\$63,146
								70	(2)	(2)	\$78,890
								20	(2)	(2)	\$67,775
25-1065	Political Science Teachers, Postsecondary	150	180	30	20.0	30	PhD Degree (2)	150	(2)	(2)	\$75,005
25-1066	Psychology Teachers, Postsecondary	230	280	50	21.7	50	PhD Degree (2)	230	(2)	(2)	\$68,832
								80	(2)	(2)	\$65,472
25-1071	Health Specialties Teachers, Postsecondary	1,240	1,490	250	20.2	260	PhD Degree (2)	1,210	(2)	(2)	\$78,985
25-1072	Nursing Instructors & Teachers, Postsecondary	470	540	70	14.9	100	MA/MS Degree (3)	470	(2)	(2)	\$63,669
25-1081	Education Teachers, Postsecondary	280	330	50	17.9	60	PhD Degree (2)	280	(2)	(2)	\$55,666
								40	(2)	(2)	\$67,914
25-1112	Law Teachers, Postsecondary	130	150	20	15.4	30	PhD Degree (2)	120	(2)	(2)	\$97,179
25-1121	Art, Drama, & Music Teachers, Postsecondary	1,400	1,650	250	17.9	290	PhD Degree (2)	1,400	(2)	(2)	\$60,041
25-1122	Communications Teachers, Postsecondary	560	680	120	21.4	120	PhD Degree (2)				
25-1123	English Lang & Literature Teachers, Postsecondary	740	890	150	20.3	150	PhD Degree (2)	720	(2)	(2)	\$67,931
25-1124	Foreign Language & Lit Teachrs, Postsecondary	260	320	60	23.1	60	PhD Degree (2)	260	(2)	(2)	\$58,476
25-1125	History Teachers, Postsecondary	140	160	20	14.3	30	PhD Degree (2)	130	(2)	(2)	\$66,747
25-1126	Philosophy & Religion Teachers, Postsecondary	160	190	30	18.8	30	PhD Degree (2)	150	(2)	(2)	\$61,915
25-1191	Graduate Teaching Assistants	3,940	4,760	820	20.8	830	BA/BS Degree (5)	3,850	(2)	(2)	\$34,894
25-1193	Recreation & Fitness Studies Teachrs, Postsecondary	140	170	30	21.4	30	MA/MS Degree (3)	140	(2)	(2)	\$56,774
25-1194	Vocational Education Teachers, Postsecondary	3,890	4,710	820	21.1	820	Work Exper (8)	4,020	\$13.49	\$21.09	\$43,854
25-1199	Postsecondary Teachers, All Other	13,870	16,750	2,880	20.8	2,940	PhD Degree (2)				
25-2011	Preschool Teachers, Except Special Education	11,490	11,990	500	4.4	1,000	BA/BS Degree (5)	11,160	\$7.35	\$11.18	\$23,268

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
25-2012	Kindergarten Teachers, Except Special Education	2,960	3,350	390	13.2	270	BA/BS Degree (5)	3,010	(2)	(2)	\$49,209
25-2021	Elementary School Teachers, Except Special Ed	50,140	56,710	6,570	13.1	8,350	BA/BS Degree (5)	51,060	(2)	(2)	\$49,625
25-2022	Mid School Teachers, Ex Special & Vocational Ed	7,090	7,840	750	10.6	1,170	BA/BS Degree (5)	7,240	(2)	(2)	\$52,110
25-2023	Vocational Education Teachers, Middle School	110	130	20	18.2	20	BA/BS Degree (5)	110	(2)	(2)	\$37,114
25-2031	Secondary School Teachers, Ex Special & Voc Ed	29,340	34,320	4,980	17.0	6,730	BA/BS Degree (5)	29,980	(2)	(2)	\$54,297
25-2032	Vocational Education Teachers, Secondary School	1,190	1,320	130	10.9	270	BA/BS Degree (5)	1,200	(2)	(2)	\$58,650
25-2041	Special Ed Teachers, Preschool, Kindergarten, & Elem School	7,450	9,590	2,140	28.7	730	BA/BS Degree (5)	7,550	(2)	(2)	\$51,749
25-2042	Special Education Teachers, Middle School	930	1,120	190	20.4	90	BA/BS Degree (5)	950	(2)	(2)	\$53,894
25-2043	Special Education Teachers, Secondary School	2,820	3,410	590	20.9	270	BA/BS Degree (5)	2,880	(2)	(2)	\$57,474
25-3011	Adult Literacy, Remedial Ed, & GED Teachers & Instructors	4,220	4,890	670	15.9	310	BA/BS Degree (5)				
25-3021	Self-Enrichment Education Teachers	4,850	5,590	740	15.3	360	Work Exper (8)	4,950	\$10.16	\$16.93	\$35,216
25-3999	Teachers, Primary, Secondary, & Adult, All Other	14,850	17,530	2,680	18.0	1,120	BA/BS Degree (5)	14,140	(2)	(2)	\$45,268
25-4010	Archivists	820	920	100	12.2		* MA/MS Degree (3)	800	\$17.28	\$27.83	\$57,906
25-4021	Librarians	2,500	2,690	190	7.6	370	MA/MS Degree (3)	2,540	\$19.58	\$26.71	\$55,554
25-4031	Library Technicians	4,020	4,590	570	14.2	1,370	30-days OJT (11)	4,190	\$12.36	\$16.20	\$33,688
25-9011	Audio-Visual Collections Specialists	1,920	2,230	310	16.1	210	1-12 mos OJT (10)	(4)	\$8.84	\$11.72	\$24,379
25-9031	Instructional Coordinators	2,480	2,940	460	18.5	270	MA/MS Degree (3)	2,540	\$19.12	\$27.82	\$57,886
25-9041	Teacher Assistants	54,480	64,640	10,160	18.6	8,570	30-days OJT (11)	54,570	(2)	(2)	\$24,287
25-9099	Education, Training, & Library Workers, All Other	2,830	3,220	390	13.8	300	BA/BS Degree (5)	2,810	\$8.83	\$15.56	\$32,361
<b>27-0000</b>	<b>Arts, Design, Entertainment, Sports, &amp; Media Occs</b>	<b>120,710</b>	<b>134,000</b>	<b>13,290</b>	<b>11.0</b>	<b>17,090</b>		<b>116,870</b>	<b>\$9.95</b>	<b>\$25.64</b>	<b>\$53,339</b>
27-1011	Art Directors	910	1,140	230	25.3	150	BA/BS + exper (4)	880	\$21.83	\$38.19	\$79,418
27-1013	Fine Artists, Incl Painters, Sculptors, & Illustrators	420	450	30	7.1	60	12 mos OJT (9)	420	\$10.17	\$18.81	\$39,126
27-1014	Multi-Media Artists & Animators	2,900	3,540	640	22.1	460	BA/BS Degree (5)	2,790	\$19.03	\$30.69	\$63,829
27-1021	Commercial & Industrial Designers	480	520	40	8.3	30	BA/BS Degree (5)	460	\$17.93	\$28.63	\$59,549
27-1022	Fashion Designers	1,730	2,090	360	20.8	130	BA/BS Degree (5)	1,580	\$18.88	\$28.46	\$59,209
27-1023	Floral Designers	1,700	1,790	90	5.3	120	1-12 mos OJT (10)	1,720	\$8.85	\$11.34	\$23,590
27-1024	Graphic Designers	5,810	7,000	1,190	20.5	440	BA/BS Degree (5)	5,570	\$12.56	\$22.36	\$46,492
27-1025	Interior Designers	1,450	1,730	280	19.3	110	BA/BS Degree (5)	(4)	\$20.35	\$27.97	\$58,177



SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
27-1026	Merchandise Displayers & Window Trimmers	2,060	2,480	420	20.4	160	1-12 mos OJT (10)	2,090	\$7.34	\$10.84	\$22,533
27-1027	Set & Exhibit Designers	440	500	60	13.6	30	BA/BS Degree (5)	440	\$14.78	\$23.23	\$48,309
27-1099	Art & Design Workers, All Other	2,160	2,430	270	12.5	260	BA/BS Degree (5)	2,120	\$11.41	\$18.38	\$38,230
27-2011	Actors	33,130	34,480	1,350	4.1	4,520	12 mos OJT (9)	32,490	(2)	(2)	\$53,617
27-2012	Producers & Directors	8,390	9,630	1,240	14.8	1,210	BA/BS + exper (4)	8,300	(2)	(2)	\$100,007
27-2021	Athletes & Sports Competitors	290	340	50	17.2	40	12 mos OJT (9)				
27-2022	Coaches & Scouts	1,670	1,940	270	16.2	250	12 mos OJT (9)	1,700	(2)	(2)	\$41,732
27-2031	Dancers	590	690	100	16.9	90	12 mos OJT (9)				
27-2032	Choreographers	210	240	30	14.3	30	Work Exper (8)				
27-2041	Music Directors & Composers	540	600	60	11.1	70	BA/BS + exper (4)	190	(2)	(2)	\$39,399
27-2042	Musicians & Singers	5,860	6,870	1,010	17.2	830	12 mos OJT (9)	4,980	(2)	(2)	\$34,635
27-2099	Entertainers & Performers, Sports & Rel Workers	13,820	15,200	1,380	10.0	1,940	12 mos OJT (9)	(4)	(2)	(2)	\$57,941
27-3010	Announcers	1,390	1,360	-30	-2.2	0		1,340	\$9.30	\$19.53	\$40,627
27-3020	News Analysts, Reporters & Correspondents	2,230	2,250	20	0.9	*		2,040	\$11.70	\$25.34	\$52,706
27-3031	Public Relations Specialists	4,100	4,890	790	19.3	530	BA/BS Degree (5)	4,110	\$15.58	\$24.54	\$51,041
27-3041	Editors	5,010	5,510	500	10.0	1,180	BA/BS Degree (5)	4,640	\$13.45	\$21.80	\$45,347
27-3042	Technical Writers	1,600	1,760	160	10.0	350	BA/BS Degree (5)	1,570	\$22.73	\$28.32	\$58,900
27-3043	Writers & Authors	3,590	4,150	560	15.6	440	BA/BS Degree (5)	3,530	\$18.16	\$33.60	\$69,889
27-3091	Interpreters & Translators	840	940	100	11.9	120	12 mos OJT (9)	840	\$11.87	\$16.67	\$34,670
27-3099	Media & Communication Workers, All Other	2,810	3,220	410	14.6	410	12 mos OJT (9)	2,700	\$11.23	\$19.19	\$39,911
27-4011	Audio & Video Equipment Technicians	1,650	1,780	130	7.9	350	12 mos OJT (9)	1,520	\$10.04	\$22.51	\$46,805
27-4012	Broadcast Technicians	1,770	1,920	150	8.5	380	Post-sec voc educ (7)	1,610	\$8.51	\$24.99	\$51,981
27-4013	Radio Operators	450	470	20	4.4	90	12 mos OJT (9)	410	\$11.62	\$22.08	\$45,923
27-4014	Sound Engineering Technicians	920	960	40	4.3	190	Post-sec voc educ (7)	870	\$12.51	\$22.89	\$47,614
27-4021	Photographers	1,940	2,190	250	12.9	290	12 mos OJT (9)	1,910	\$7.41	\$13.00	\$27,048
27-4031	Camera Ops, Television, Video, & Motion Picture	1,750	2,030	280	16.0	260	1-12 mos OJT (10)	1,670	\$15.75	\$25.67	\$53,399
27-4032	Film & Video Editors	2,290	2,520	230	10.0	330	BA/BS Degree (5)	2,210	\$13.38	\$24.56	\$51,068
27-4099	Media & Communication Equip Workers, All Other	3,810	4,390	580	15.2	1,240	1-12 mos OJT (10)	(4)	\$11.51	\$16.79	\$34,927
<b>29-0000</b>	<b>Healthcare Practitioners &amp; Technical Occupations</b>	<b>164,690</b>	<b>184,170</b>	<b>19,480</b>	<b>11.8</b>	<b>26,660</b>		<b>176,580</b>	<b>\$14.82</b>	<b>\$27.07</b>	<b>\$56,315</b>
29-1011	Chiropractors	610	630	20	3.3	80	LLD/MD Degree (1)	(4)	\$19.34	\$25.41	\$52,853
29-1020	Dentists	1,220	1,250	30	2.5	*		1,340	\$51.04	(3)	(3)
29-1031	Dietitians & Nutritionists	1,440	1,540	100	6.9	280	BA/BS Degree (5)	1,460	\$16.07	\$24.52	\$50,985
29-1041	Optometrists	430	450	20	4.7	60	LLD/MD Degree (1)	440	\$31.69	\$44.41	\$92,359
29-1051	Pharmacists	5,390	6,140	750	13.9	1,200	LLD/MD Degree (1)	5,770	\$34.64	\$41.92	\$87,194
29-1062	Family & General Practitioners	5,520	6,030	510	9.2	590	LLD/MD Degree (1)				
29-1063	Internists, General	580	600	20	3.4	60	LLD/MD Degree (1)	570	\$49.80	\$59.70	\$124,163

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
29-1064	Obstetricians & Gynecologists	250	260	10	4.0	30	LLD/MD Degree (1)	250	\$39.28	(3)	(3)
29-1065	Pediatricians, General	330	370	40	12.1	40	LLD/MD Degree (1)	330	\$16.47	\$39.90	\$82,998
29-1066	Psychiatrists	610	680	70	11.5	70	LLD/MD Degree (1)	640	\$45.00	\$55.25	\$114,918
29-1067	Surgeons	270	290	20	7.4	30	LLD/MD Degree (1)	270	\$49.75	(3)	(3)
								7,620	\$39.24	(3)	(3)
29-1071	Physician Assistants	1,220	1,440	220	18.0	200	BA/BS Degree (5)	1,240	\$22.88	\$34.64	\$72,051
29-1081	Podiatrists	490	490	0	0.0	60	LLD/MD Degree (1)	(4)	\$28.69	\$33.59	\$69,873
29-1111	Registered Nurses	65,450	73,600	8,150	12.5	9,640	AA Degree (6)	67,090	\$21.85	\$27.25	\$56,682
29-1121	Audiologists	250	300	50	20.0	50	MA/MS Degree (3)	260	\$18.78	\$25.55	\$53,155
29-1122	Occupational Therapists	2,220	2,530	310	14.0	410	BA/BS Degree (5)	2,290	\$17.70	\$25.43	\$52,893
29-1123	Physical Therapists	2,890	3,210	320	11.1	530	MA/MS Degree (3)	2,950	\$22.46	\$31.91	\$66,380
29-1124	Radiation Therapists	120	130	10	8.3	20	AA Degree (6)	120	\$25.83	\$31.09	\$64,661
29-1125	Recreational Therapists	460	470	10	2.2	80	BA/BS Degree (5)	480	\$11.11	\$17.06	\$35,477
29-1126	Respiratory Therapists	2,110	2,590	480	22.7	410	AA Degree (6)	2,160	\$17.43	\$20.68	\$43,025
29-1127	Speech-Language Pathologists	1,030	1,260	230	22.3	200	MA/MS Degree (3)	1,050	\$22.18	\$29.80	\$61,981
29-1131	Veterinarians	470	530	60	12.8	60	LLD/MD Degree (1)	490	\$28.14	\$45.58	\$94,816
29-1199	Health Diagnosing & Treating Practitioners, All Other	1,980	2,190	210	10.6	320	LLD/MD Degree (1)	2,170	\$19.00	\$28.19	\$58,627
29-2011	Medical & Clinical Laboratory Technologists	4,640	5,110	470	10.1	790	BA/BS Degree (5)	4,730	\$20.16	\$26.16	\$54,405
29-2012	Medical & Clinical Laboratory Technicians	4,010	4,360	350	8.7	680	AA Degree (6)	4,070	\$11.24	\$16.06	\$33,419
29-2021	Dental Hygienists	3,820	4,430	610	16.0	420	AA Degree (6)				
29-2031	Cardiovascular Technologists & Technicians	910	1,080	170	18.7	150	AA Degree (6)	940	\$13.36	\$19.53	\$40,623
29-2032	Diagnostic Medical Sonographers	730	800	70	9.6	120	AA Degree (6)	740	\$17.84	\$22.90	\$47,649
29-2033	Nuclear Medicine Technologists	310	340	30	9.7	50	AA Degree (6)	310	\$23.43	\$27.67	\$57,553
29-2034	Radiologic Technologists & Technicians	4,290	4,640	350	8.2	680	AA Degree (6)	4,360	\$17.40	\$21.30	\$44,309
29-2041	Emergency Medical Technicians & Paramedics	2,730	3,100	370	13.6	510	Post-sec voc educ (7)	2,480	\$8.27	\$12.52	\$26,051
29-2051	Dietetic Technicians	1,150	1,290	140	12.2	220	1-12 mos OJT (10)	1,180	\$10.79	\$13.88	\$28,884
29-2052	Pharmacy Technicians	4,660	5,700	1,040	22.3	930	1-12 mos OJT (10)	5,040	\$11.66	\$15.02	\$31,240
29-2053	Psychiatric Technicians	3,490	3,550	60	1.7	630	Post-sec voc educ (7)	3,590	\$14.68	\$17.79	\$36,997
29-2054	Respiratory Therapy Technicians	700	860	160	22.9	140	Post-sec voc educ (7)	710	\$16.78	\$20.52	\$42,684
29-2055	Surgical Technologists	2,040	2,370	330	16.2	400	Post-sec voc educ (7)	2,090	\$13.30	\$16.96	\$35,269
29-2056	Veterinary Technologists & Technicians	1,220	1,330	110	9.0	230	AA Degree (6)	1,260	\$8.94	\$11.63	\$24,184
29-2061	Licensed Practical & Licensed Vocational Nurses	17,070	18,200	1,130	6.6	3,140	Post-sec voc educ (7)	17,410	\$14.53	\$17.90	\$37,231
29-2071	Medical Records & Health Information Technicians	3,960	4,840	880	22.2	680	AA Degree (6)	3,970	\$9.84	\$14.47	\$30,107
29-2081	Opticians, Dispensing	740	760	20	2.7	100	12 mos OJT (9)	760	\$11.54	\$15.29	\$31,809
								50	\$17.99	\$24.31	\$50,581
29-9010	Occupational Health & Safety Specialists & Techs	480	520	40	8.3	*		490	\$18.22	\$26.79	\$55,728
29-9091	Athletic Trainers	210	230	20	9.5	40	BA/BS Degree (5)	220	(2)	(2)	\$32,257

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
29-9199	Health Professionals & Technicians, All Other	12,140	13,630	1,490	12.3	2,320	AA Degree (6)	12,160	\$8.09	\$16.46	\$34,235
<b>31-0000 to 39-0000</b>	<b>Service Occupations</b>	<b>651,030</b>	<b>734,640</b>	<b>83,610</b>	<b>12.8</b>	<b>162,970</b>					
<b>31-0000</b>	<b>Healthcare Support Occupations</b>	<b>81,620</b>	<b>92,940</b>	<b>11,320</b>	<b>13.9</b>	<b>11,320</b>		<b>84,240</b>	<b>\$8.07</b>	<b>\$12.27</b>	<b>\$25,520</b>
31-1011	Home Health Aides Nursing Aides, Orderlies, &	9,010	10,370	1,360	15.1	850	30-days OJT (11)	9,430	\$7.42	\$9.25	\$19,240
31-1012	Attendants	30,190	33,390	3,200	10.6	2,800	30-days OJT (11)	30,650	\$7.87	\$9.81	\$20,412
31-1013	Psychiatric Aides Occupational Therapist	600	630	30	5.0	50	30-days OJT (11)	610	\$9.84	\$11.66	\$24,251
31-2011	Assistants	340	400	60	17.6	80	AA Degree (6)	350	\$15.43	\$20.07	\$41,742
31-2012	Occupational Therapist Aides	180	210	30	16.7	40	30-days OJT (11)	180	\$8.06	\$11.16	\$23,221
31-2021	Physical Therapist Assistants	760	890	130	17.1	170	AA Degree (6)	770	\$16.85	\$22.31	\$46,404
31-2022	Physical Therapist Aides	830	990	160	19.3	190	30-days OJT (11)	860	\$8.32	\$10.29	\$21,401
31-9011	Massage Therapists	620	700	80	12.9	110	Post-sec voc educ (7)	660	\$7.37	\$17.16	\$35,691
31-9091	Dental Assistants	11,570	13,460	1,890	16.3	1,540	1-12 mos OJT (10)	13,030	\$14.57	\$18.04	\$37,526
31-9092	Medical Assistants Medical Equipment	13,270	15,950	2,680	20.2	2,700	1-12 mos OJT (10)	13,090	\$9.34	\$12.79	\$26,603
31-9093	Preparers	510	560	50	9.8	100	30-days OJT (11)	520	\$9.68	\$12.77	\$26,568
31-9094	Medical Transcriptionists	2,250	2,550	300	13.3	440	Post-sec voc educ (7)	2,230	\$14.22	\$17.47	\$36,353
31-9095	Pharmacy Aides Veterinary Assistants & Lab	1,320	1,510	190	14.4	260	30-days OJT (11)	1,420	\$8.71	\$12.00	\$24,961
31-9096	Animal Caretakers Healthcare Support Workers,	830	920	90	10.8	160	30-days OJT (11)	860	\$6.75*	\$8.68	\$18,050
31-9099	All Other	9,340	10,410	1,070	11.5	1,830	30-days OJT (11)	9,590	\$8.58	\$12.49	\$25,972
<b>33-0000</b>	<b>Protective Service Occupations</b>	<b>96,480</b>	<b>114,400</b>	<b>17,920</b>	<b>18.6</b>	<b>22,450</b>		<b>100,670</b>	<b>\$7.78</b>	<b>\$16.55</b>	<b>\$34,437</b>
33-1011	First-Line Sups/Managers of Correctional Officers	190	220	30	15.8	20	Work Exper (8)	220	\$24.97	\$29.96	\$62,330
33-1012	First-Line Sups/Managers of Police & Detectives	3,040	3,300	260	8.6	590	Work Exper (8)				
33-1021	First-Line Sups/Mgrs of Fire Fighting & Prevention	1,500	1,600	100	6.7	340	Work Exper (8)				
33-1099	First-Line Sups/Mgrs, Protective Serv Wrkrs, All	1,800	2,120	320	17.8	420	Work Exper (8)	1,870	\$10.77	\$18.14	\$37,738
33-2011	Other Fire Fighters	5,260	5,730	470	8.9	980	12 mos OJT (9)	5,640	\$21.98	\$27.67	\$57,555
33-2021	Fire Inspectors & Investigators	110	110	0	0.0	20	Work Exper (8)	110	\$23.13	\$29.52	\$61,406
								(4)	\$17.21	\$25.04	\$52,076
33-3012	Correctional Officers & Jailers	1,680	1,950	270	16.1	310	1-12 mos OJT (10)	1,870	\$18.57	\$22.74	\$47,300
33-3021	Detectives & Criminal Investigators	2,020	2,330	310	15.3	340	Work Exper (8)	2,090	\$23.01	\$30.50	\$63,456
33-3031	Fish & Game Wardens	150	160	10	6.7	10	12 mos OJT (9)				

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
33-3041	Parking Enforcement Workers	330	360	30	9.1	30	30 30-days OJT (11)	360	\$13.68	\$17.04	\$35,436
33-3051	Police & Sheriff's Patrol Officers	17,340	20,180	2,840	16.4	2,730	12 mos OJT (9)				
33-3052	Transit & Railroad Police	830	950	120	14.5	140	12 mos OJT (9)				
33-9011	Animal Control Workers	320	350	30	9.4	190	1-12 mos OJT (10)	330	\$9.46	\$14.16	\$29,468
33-9021	Private Detectives & Investigators	1,230	1,590	360	29.3	280	Work Exper (8)	1,240	\$10.55	\$16.67	\$34,662
33-9031	Gaming Surveillance Officers & Gaming Investigators	130	130	0	0.0	30	1-12 mos OJT (10)	130	\$10.17	\$12.12	\$25,201
33-9032	Security Guards	51,720	63,410	11,690	22.6	11,120	30-days OJT (11)	52,650	\$7.64	\$9.44	\$19,633
33-9091	Crossing Guards	1,400	1,630	230	16.4	370	30-days OJT (11)				
33-9099	Protective Service Workers, All Other	7,430	8,280	850	11.4	4,530	30-days OJT (11)				
<b>35-0000</b>	<b>Food Preparation &amp; Serving Related Occupations</b>	<b>284,400</b>	<b>311,430</b>	<b>27,030</b>	<b>9.5</b>	<b>95,270</b>		<b>281,780</b>	<b>\$6.75*</b>	<b>\$8.42</b>	<b>\$17,523</b>
35-1011	Chefs & Head Cooks	2,040	2,140	100	4.9	470	Post-sec voc educ (7)	2,000	\$11.86	\$18.36	\$38,200
35-1012	First-Line Sups/Mgrs of Food Prep & Serving Wrks	21,370	23,080	1,710	8.0	3,930	Work Exper (8)	21,200	\$8.55	\$13.16	\$27,379
35-2011	Cooks, Fast Food	18,350	18,280	-70	-0.4	3,790	30-days OJT (11)	18,130	\$7.35	\$7.73	\$16,078
35-2012	Cooks, Institution & Cafeteria	6,480	6,780	300	4.6	1,370	12 mos OJT (9)	6,530	\$7.72	\$10.55	\$21,944
35-2014	Cooks, Restaurant	29,980	34,830	4,850	16.2	6,710	12 mos OJT (9)	29,560	\$7.17	\$9.18	\$19,077
35-2015	Cooks, Short Order	2,740	2,860	120	4.4	580	30-days OJT (11)	2,700	\$7.89	\$9.84	\$20,465
35-2021	Food Preparation Workers	20,460	22,680	2,220	10.9	6,070	30-days OJT (11)	20,430	\$7.19	\$8.94	\$18,590
35-3011	Bartenders	8,700	9,460	760	8.7	2,500	30-days OJT (11)	8,550	\$6.92	\$8.60	\$17,901
35-3021	Comb Food Prep & Serving Wrks, Incl Fast Food	47,160	55,720	8,560	18.2	22,880	30-days OJT (11)	46,820	\$6.75*	\$7.67	\$15,965
35-3022	Counter Attends, Cafe, Food Concess, & Coffee Shop	11,930	13,350	1,420	11.9	7,490	30-days OJT (11)	12,150	\$6.75*	\$8.45	\$17,583
35-3031	Waiters & Waitresses	60,260	68,240	7,980	13.2	25,610	30-days OJT (11)	59,410	\$6.75*	\$7.30	\$15,181
35-3041	Food Servers, Nonrestaurant Dining Rm & Cafeteria Attendants & Bartender	3,570	3,940	370	10.4	1,230	30-days OJT (11)	3,480	\$6.75*	\$8.88	\$18,468
35-9011	Helpers	21,480	20,250	-1,230	-5.7	5,110	30-days OJT (11)	21,320	\$6.75*	\$7.14	\$14,860
35-9021	Dishwashers	16,260	15,170	-1,090	-6.7	4,370	30-days OJT (11)	16,030	\$6.75*	\$7.01	\$14,591
35-9031	Hosts & Hostess, Restaurant, Lounge, & Coffee Shop	11,260	12,420	1,160	10.3	2,520	30-days OJT (11)	11,100	\$6.75*	\$7.74	\$16,094
35-9099	Food Prep & Serving Related Workers, All Other	2,360	2,230	-130	-5.5	640	30-days OJT (11)	2,360	\$6.75*	\$7.57	\$15,757
<b>37-0000</b>	<b>Building &amp; Grounds Cleaning &amp; Maintenance Occs</b>	<b>117,500</b>	<b>135,890</b>	<b>18,390</b>	<b>15.7</b>	<b>17,900</b>		<b>115,800</b>	<b>\$7.30</b>	<b>\$10.64</b>	<b>\$22,118</b>

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
37-1011	First-Line Sups/Mgrs of Housekeep & Janitor Wrks	4,730	5,240	510	10.8	950	Work Exper (8)	4,710	\$11.64	\$18.59	\$38,655
37-1012	First-Line Sups/Mgrs of Lndscp, Lwn Serv, & Grndskeeping Wrks	2,030	2,080	50	2.5	80	Work Exper (8)	2,030	\$12.28	\$18.25	\$37,966
37-2011	Janitors & Clean, Ex Maids & Housekeep Cleaners	62,350	72,020	9,670	15.5	8,490	30-days OJT (11)	61,090	\$7.22	\$10.42	\$21,691
37-2012	Maids & Housekeeping Cleaners	22,730	26,520	3,790	16.7	3,730	30-days OJT (11)	21,780	\$7.18	\$8.64	\$17,954
37-2021	Pest Control Workers	4,020	5,490	1,470	36.6	670	1-12 mos OJT (10)	(4)	\$8.07	\$11.51	\$23,927
37-3011	Landscaping & Groundskeeping Workers	18,630	21,190	2,560	13.7	3,510	30-days OJT (11)	18,970	\$7.35	\$10.53	\$21,907
37-3013	Tree Trimmers & Pruners	850	830	-20	-2.4	150	30-days OJT (11)	80	\$9.52	\$11.91	\$24,778
37-9099	Bldng & Grounds Cleaning & Maint Wrks, All Other	2,160	2,520	360	16.7	320	30-days OJT (11)	(4)	\$10.31	\$12.53	\$26,071
<b>39-0000</b>	<b>Personal Care &amp; Service Occupations</b>	<b>71,030</b>	<b>79,980</b>	<b>8,950</b>	<b>12.6</b>	<b>16,030</b>		<b>70,410</b>	<b>\$6.86</b>	<b>\$12.22</b>	<b>\$25,431</b>
39-1011	Gaming Supervisors	390	440	50	12.8	80	Post-sec voc educ (7)	400	\$11.52	\$16.10	\$33,472
39-1021	First-Line Sups/Mgrs of Personal Service Workers	2,140	2,420	280	13.1	450	Work Exper (8)	(4)	\$7.13	\$14.28	\$29,687
39-2011	Animal Trainers	220	260	40	18.2	30	1-12 mos OJT (10)	2,030	\$11.42	\$18.92	\$39,345
39-2021	Nonfarm Animal Caretakers	2,840	3,270	430	15.1	450	30-days OJT (11)	(4)	\$6.75*	\$11.10	\$23,084
39-3011	Gaming Dealers	2,650	3,130	480	18.1	730	Post-sec voc educ (7)	2,980	\$6.75*	\$9.04	\$18,808
39-3021	Motion Picture Projectionists Ushers, Lobby Attendants, & Ticket Takers	1,770	1,580	-190	-10.7	280	30-days OJT (11)	2,660	\$6.75*	\$8.23	\$17,110
39-3031	Amusement & Recreation Attendants	3,420	3,850	430	12.6	2,200	30-days OJT (11)	(4)	\$10.64	\$12.05	\$25,068
39-3091	Costume Attendants	4,080	4,690	610	15.0	1,070	30-days OJT (11)	3,530	\$6.75*	\$8.04	\$16,736
39-3092	Locker Room, Coatroom, & Dressing Room Attendants	100	110	10	10.0	10	30-days OJT (11)	4,150	\$6.75*	\$8.26	\$17,173
39-3093	Entertainment Attendants & Rel Workers, All Others	660	710	50	7.6	150	30-days OJT (11)	110	\$15.50	\$19.90	\$41,377
39-3099	Gaming Workers, All Other	100	120	20	20.0	30	30-days OJT (11)	680	\$6.90	\$9.92	\$20,646
39-4011	Embalmers	1,250	1,370	120	9.6	320	1-12 mos OJT (10)	170	\$14.81	\$18.05	\$37,532
39-4021	Funeral Attendants	160	170	10	6.3	30	Post-sec voc educ (7)	450	\$9.18	\$11.86	\$24,681
39-5011	Barbers	430	520	90	20.9	80	30-days OJT (11)	180	\$6.75*	\$8.47	\$17,624
39-5012	Hairdressers, Hairstylists, & Cosmetologists	170	180	10	5.9	40	Post-sec voc educ (7)	7,600	\$6.75*	\$8.93	\$18,587
39-5092	Manicurists & Pedicurists	7,400	8,150	750	10.1	1,320	Post-sec voc educ (7)	100	\$11.98	\$22.68	\$47,167
39-5093	Shampooers	200	250	50	25.0	40	Post-sec voc educ (7)	(4)	\$6.75*	\$10.89	\$22,667
39-5094	Skin Care Specialists	310	340	30	9.7	60	30-days OJT (11)	500	\$6.75*	\$12.81	\$26,645
39-5094	Skin Care Specialists	480	540	60	12.5	90	Post-sec voc educ (7)				

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
39-6011	Baggage Porters & Bellhops	1,820	2,010	190	10.4	480	30-days OJT (11)	1,670	\$6.75*	\$9.77	\$20,331
39-6012	Concierges	400	450	50	12.5	110	Work Exper (8)	380	\$9.54	\$15.20	\$31,607
39-6021	Tour Guides & Escorts	460	500	40	8.7	110	1-12 mos OJT (10)	430	\$6.93	\$10.89	\$22,664
39-6022	Travel Guides	400	440	40	10.0	90	12 mos OJT (9)	(4)	\$7.80	\$12.64	\$26,301
39-6031	Flight Attendants	6,880	7,220	340	4.9	1,770	12 mos OJT (9)	6,150	(2)	(2)	\$51,231
39-6032	Trans Attendants, Ex Flight Attendants & Bag Porters	920	1,110	190	20.7	260	30-days OJT (11)	810	\$7.62	\$10.23	\$21,278
39-9011	Child Care Workers	8,150	9,590	1,440	17.7	2,160	30-days OJT (11)	7,860	\$7.18	\$9.84	\$20,478
39-9021	Personal & Home Care Aides	6,900	8,040	1,140	16.5	790	30-days OJT (11)	7,100	\$7.27	\$10.46	\$21,764
39-9031	Fitness Trainers & Aerobics Instructors	4,840	5,760	920	19.0	760	Post-sec voc educ (7)	4,880	\$7.70	\$18.88	\$39,277
39-9032	Recreation Workers	7,560	8,320	760	10.1	1,140	BA/BS Degree (5)	7,550	\$7.27	\$9.86	\$20,522
39-9041	Residential Advisors	180	200	20	11.1	30	1-12 mos OJT (10)	160	\$8.58	\$12.73	\$26,487
39-9099	Personal Care & Service Workers, All Other	3,750	4,240	490	13.1	870	30-days OJT (11)	3,650	\$8.96	\$13.12	\$27,298
<b>41-0000</b>	<b>Sales &amp; Related Occupations</b>	<b>393,000</b>	<b>435,380</b>	<b>42,380</b>	<b>10.8</b>	<b>97,760</b>		<b>393,890</b>	<b>\$7.16</b>	<b>\$15.38</b>	<b>\$31,984</b>
41-1011	First-Line Sups/Mgrs of Retail Sales Workers	35,020	39,290	4,270	12.2	3,690	Work Exper (8)	35,280	\$10.78	\$18.36	\$38,187
41-1012	First-Line Sups/Mgrs of Non-Retail Sales Workers	8,830	9,290	460	5.2	920	Work Exper (8)	8,870	\$16.20	\$29.76	\$61,893
41-2011	Cashiers	92,410	103,620	11,210	12.1	32,630	30-days OJT (11)	93,910	\$6.75*	\$9.50	\$19,766
41-2012	Gaming Change Persons & Booth Cashiers	670	800	130	19.4	240	30-days OJT (11)				
41-2021	Counter & Rental Clerks	16,150	18,380	2,230	13.8	5,650	30-days OJT (11)	16,380	\$7.24	\$10.57	\$21,979
41-2022	Parts Salespersons	5,790	5,480	-310	-5.4	1,180	1-12 mos OJT (10)	5,820	\$7.01	\$12.78	\$26,578
41-2031	Retail Salespersons	108,710	122,650	13,940	12.8	31,600	30-days OJT (11)	108,000	\$6.97	\$10.67	\$22,191
41-3011	Advertising Sales Agents	6,610	7,910	1,300	19.7	1,020	1-12 mos OJT (10)	6,250	\$13.89	\$31.45	\$65,423
41-3021	Insurance Sales Agents	9,450	10,180	730	7.7	1,740	BA/BS Degree (5)	9,220	\$11.15	\$22.30	\$46,390
41-3031	Securities, Commodities, & Financial Serv Sales	5,650	6,550	900	15.9	340	BA/BS Degree (5)	5,770	\$15.65	\$34.88	\$72,547
41-3041	Travel Agents	5,720	6,280	560	9.8	1,020	Post-sec voc educ (7)	5,350	\$7.34	\$13.78	\$28,647
41-4011	Sales Reps, Wholesale & Mfg, Tech & Scientific Products	7,870	7,940	70	0.9	1,500	1-12 mos OJT (10)	9,110	\$11.27	\$26.71	\$55,562
41-4012	Sales Reps, Wholesale & Mfg, Ex Tech & Scientific Products	49,970	51,490	1,520	3.0	9,610	1-12 mos OJT (10)	7,960	\$16.81	\$32.36	\$67,311
41-9011	Demonstrators & Product Promoters	3,460	4,010	550	15.9	850	1-12 mos OJT (10)	50,280	\$11.91	\$23.13	\$48,109
41-9021	Real Estate Brokers	870	930	60	6.9	110	Work Exper (8)	3,500	\$7.29	\$11.01	\$22,894
41-9022	Real Estate Sales Agents	4,210	4,700	490	11.6	530	Post-sec voc educ (7)	890	\$19.73	(3)	(3)
41-9031	Sales Engineers	2,120	2,210	90	4.2	390	BA/BS Degree (5)	4,360	\$7.19	\$17.00	\$35,352
41-9041	Telemarketers	10,310	11,450	1,140	11.1	1,570	30-days OJT (11)	2,100	\$21.53	\$34.82	\$72,432
41-9091	Dr-to-Dr Sales Wrkrs, Nws & St Vndrs, & Rel Wrks	970	1,020	50	5.2	180	30-days OJT (11)	10,250	\$7.04	\$10.90	\$22,666
								940	\$6.78	\$11.51	\$23,938

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages					
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage		
41-9099	Sales & Related Workers, All Other	18,210	21,200	2,990	16.4	2,990	1-12 mos OJT (10)						
<b>43-0000</b>	<b>Office &amp; Administrative Support Occupations</b>	<b>824,760</b>	<b>857,890</b>	<b>33,130</b>	<b>4.0</b>	<b>122,680</b>		<b>822,350</b>	<b>\$9.24</b>	<b>\$14.78</b>	<b>\$30,738</b>		
43-1011	First-Line Sups/Mgrs of Office & Admin Support Wrkrs	50,490	52,370	1,880	3.7	6,820	Work Exper (8)	50,180	\$15.31	\$23.31	\$48,486		
43-2011	Switchboard Operators, Including Answering Service	6,880	5,900	-980	-14.2	1,330	30-days OJT (11)	6,620	\$8.90	\$11.52	\$23,968		
43-2021	Telephone Operators	1,440	1,090	-350	-24.3	260	30-days OJT (11)						
43-2099	Communications Equipment Operators, All Other	310	260	-50	-16.1	70	30-days OJT (11)	360	\$9.96	\$17.20	\$35,766		
43-3011	Bill & Account Collectors	12,290	14,080	1,790	14.6	2,270	30-days OJT (11)	12,250	\$10.13	\$14.78	\$30,753		
43-3021	Billing & Posting Clerks & Machine Operators	13,170	12,930	-240	-1.8	2,230	30-days OJT (11)	13,090	\$10.36	\$14.31	\$29,773		
43-3031	Bookkeeping, Accounting, & Auditing Clerks	54,010	55,230	1,220	2.3	7,200	1-12 mos OJT (10)	54,220	\$10.43	\$15.51	\$32,251		
43-3041	Gaming Cage Workers	280	310	30	10.7	100	30-days OJT (11)	280	\$9.24	\$10.66	\$22,171		
43-3051	Payroll & Timekeeping Clerks	5,420	5,410	-10	-0.2	1,100	30-days OJT (11)	5,420	\$11.95	\$16.42	\$34,159		
43-3061	Procurement Clerks	1,820	1,660	-160	-8.8	280	30-days OJT (11)	1,780	\$10.90	\$16.08	\$33,458		
43-3071	Tellers	17,310	16,390	-920	-5.3	5,770	30-days OJT (11)	17,340	\$8.81	\$10.62	\$22,095		
43-4011	Brokerage Clerks	3,010	2,980	-30	-1.0	270	1-12 mos OJT (10)	3,040	\$13.30	\$18.19	\$37,839		
43-4021	Correspondence Clerks	1,000	1,030	30	3.0	210	30-days OJT (11)	950	\$10.07	\$13.95	\$29,028		
43-4031	Courts, Municipal, & License Clerks	2,320	2,530	210	9.1	270	30-days OJT (11)						
43-4041	Credit Authorizers, Checkers, & Clerks	3,030	3,090	60	2.0	190	30-days OJT (11)	2,890	\$9.37	\$13.30	\$27,661		
43-4051	Customer Service Representatives	55,070	64,570	9,500	17.3	3,450	1-12 mos OJT (10)	53,570	\$10.13	\$15.16	\$31,529		
43-4061	Eligibility Interviewers, Government Programs	8,170	7,660	-510	-6.2	1,600	1-12 mos OJT (10)						
43-4071	File Clerks	8,180	8,250	70	0.9	1,850	30-days OJT (11)	8,240	\$7.51	\$10.86	\$22,583		
43-4081	Hotel, Motel, & Resort Desk Clerks	3,650	4,500	850	23.3	1,270	30-days OJT (11)	3,280	\$7.87	\$9.78	\$20,353		
43-4111	Interviewers, Except Eligibility & Loan	5,010	5,910	900	18.0	810	30-days OJT (11)	5,210	\$8.74	\$13.61	\$28,321		
43-4121	Library Assistants, Clerical	1,740	1,990	250	14.4	590	30-days OJT (11)	1,800	\$8.55	\$12.32	\$25,621		
43-4131	Loan Interviewers & Clerks	3,760	3,270	-490	-13.0	160	30-days OJT (11)	3,900	\$11.47	\$15.26	\$31,747		
43-4141	New Accounts Clerks	3,680	3,870	190	5.2	560	Work Exper (8)	3,590	\$9.96	\$13.58	\$28,257		
43-4151	Order Clerks	17,790	15,230	-2,560	-14.4	2,420	30-days OJT (11)	17,740	\$8.63	\$13.12	\$27,296		
43-4161	Human Resources Assist, Ex Pay & Timekeepers	5,940	6,630	690	11.6	1,000	30-days OJT (11)	5,980	\$11.98	\$16.95	\$35,253		
43-4171	Receptionists & Information Clerks	30,030	33,210	3,180	10.6	4,910	30-days OJT (11)	30,330	\$8.11	\$11.46	\$23,846		
43-4181	Reservation & Trans Ticket Agents & Travel Clerks	8,490	9,170	680	8.0	1,680	30-days OJT (11)	7,660	\$9.54	\$14.30	\$29,739		
43-4999	Financial, Information, & Record Clerks, All Other	8,330	9,630	1,300	15.6	820	30-days OJT (11)	8,360	\$10.98	\$15.21	\$31,646		
43-5011	Cargo & Freight Agents	4,620	4,810	190	4.1	660	1-12 mos OJT (10)	4,310	\$12.30	\$18.62	\$38,725		
43-5021	Couriers & Messengers	7,160	6,900	-260	-3.6	1,360	30-days OJT (11)	7,150	\$6.75*	\$9.58	\$19,917		

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
43-5031	Police, Fire, & Ambulance Dispatchers	740	820	80	10.8	90	1-12 mos OJT (10)	800	\$16.43	\$20.00	\$41,612
43-5032	Dispatchers, Except Police, Fire, & Ambulance	6,500	7,370	870	13.4	790	1-12 mos OJT (10)	6,450	\$9.84	\$15.53	\$32,295
43-5041	Meter Readers, Utilities	950	740	-210	-22.1	140	30-days OJT (11)				
43-5051	Postal Service Clerks	2,500	2,440	-60	-2.4	370	30-days OJT (11)				
43-5052	Postal Service Mail Carriers	11,160	10,900	-260	-2.3	2,320	30-days OJT (11)				
43-5053	Postal Serv Mail Sort, Processors, & Processing	7,030	6,870	-160	-2.3	1,040	30-days OJT (11)				
43-5061	Production, Planning, & Expediting Clerks	23,830	25,320	1,490	6.3	2,830	30-days OJT (11)	22,810	\$10.82	\$16.73	\$34,801
43-5071	Shipping, Receiving, & Traffic Clerks	41,560	43,180	1,620	3.9	5,940	30-days OJT (11)	40,750	\$7.74	\$11.45	\$23,821
43-5081	Stock Clerks & Order Fillers	55,700	58,550	2,850	5.1	15,070	30-days OJT (11)	55,770	\$7.25	\$11.36	\$23,620
43-5111	Weigh, Measure, Check, & Sample, Recordkeeping	1,940	2,120	180	9.3	350	30-days OJT (11)	1,910	\$8.06	\$14.01	\$29,143
								1,810	\$8.85	\$13.85	\$28,795
43-6011	Executive Secretaries & Administrative Assistants	62,870	67,000	4,130	6.6	7,600	1-12 mos OJT (10)	62,460	\$13.19	\$18.13	\$37,715
43-6012	Legal Secretaries	17,150	18,290	1,140	6.6	2,080	Post-sec voc educ (7)	17,710	\$12.32	\$18.16	\$37,779
43-6013	Medical Secretaries	14,340	14,390	50	0.3	1,680	Post-sec voc educ (7)	15,310	\$12.67	\$15.11	\$31,433
43-6014	Secretaries, Except Legal, Medical, & Executive	36,060	35,590	-470	-1.3	4,190	1-12 mos OJT (10)	35,960	\$10.60	\$15.08	\$31,363
43-9011	Computer Operators	6,200	5,300	-900	-14.5	710	1-12 mos OJT (10)	6,160	\$10.25	\$15.69	\$32,643
43-9021	Data Entry Keyers	16,540	16,120	-420	-2.5	1,790	1-12 mos OJT (10)	16,420	\$8.80	\$11.50	\$23,933
43-9022	Word Processors & Typists	14,030	12,120	-1,910	-13.6	1,840	1-12 mos OJT (10)	14,820	\$11.80	\$14.65	\$30,473
43-9031	Desktop Publishers	1,080	1,500	420	38.9	160	Post-sec voc educ (7)	1,040	\$11.93	\$18.19	\$37,848
43-9041	Insurance Claims & Policy Processing Clerks	9,980	9,640	-340	-3.4	1,160	1-12 mos OJT (10)	9,770	\$13.50	\$17.53	\$36,450
43-9051	Mail Clerks & Mail Mach Ops, Ex Postal Service	5,930	6,270	340	5.7	1,270	30-days OJT (11)	5,720	\$7.35	\$10.63	\$22,113
43-9061	Office Clerks, General	107,130	115,590	8,460	7.9	15,010	30-days OJT (11)	107,570	\$8.47	\$12.31	\$25,613
43-9071	Office Machine Operators, Except Computer	2,520	2,200	-320	-12.7	590	30-days OJT (11)	2,540	\$8.68	\$12.40	\$25,791
43-9081	Proofreaders & Copy Markers	810	800	-10	-1.2	210	30-days OJT (11)	800	\$9.01	\$13.14	\$27,326
43-9111	Statistical Assistants	1,290	1,330	40	3.1	80	1-12 mos OJT (10)	(4)	\$14.51	\$16.38	\$34,072
43-9199	Office & Administrative Support Workers, All Other	32,520	32,580	60	0.2	3,860	1-12 mos OJT (10)				
								31,520	\$10.83	\$15.58	\$32,412
<b>45-0000</b>	<b>Farming, Fishing, &amp; Forestry Occupations</b>	<b>2,940</b>	<b>3,260</b>	<b>320</b>	<b>10.9</b>	<b>410</b>		<b>3,160</b>	<b>\$6.75*</b>	<b>\$10.06</b>	<b>\$20,912</b>
45-1011	First-Line Sups/Mgrs of Farm, Fish, & Forest Wrkrs	130	150	20	15.4	30	Work Exper (8)	(4)	\$15.41	\$21.39	\$44,490
45-2011	Agricultural Inspectors	180	190	10	5.6	30	Work Exper (8)	190	\$11.69	\$17.34	\$36,079



SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
45-2041	Graders & Sorters, Agricultural Products	590	640	50	8.5	100	Work Exper (8)	620	\$6.75*	\$7.89	\$16,405
45-2092	Farmwrks & Labor, Crop, Nursery, & Greenhouse	980	1,120	140	14.3	120	30-days OJT (11)	1,060	\$6.75*	\$8.13	\$16,903
45-2093	Farmworkers, Farm & Ranch Animals	350	390	40	11.4	40	30-days OJT (11)	370	\$7.54	\$9.10	\$18,926
45-4011	Forest & Conservation Workers	250	260	10	4.0	40	1-12 mos OJT (10)	290	\$6.75*	\$8.32	\$17,303
45-9099	Farming, Fishing, & Forestry Workers, All Other	450	500	50	11.1	50	1-12 mos OJT (10)	460	\$8.05	\$12.75	\$26,522
<b>47-0000</b>	<b>Construction &amp; Extraction Occupations</b>	<b>129,810</b>	<b>153,060</b>	<b>23,250</b>	<b>17.9</b>	<b>19,280</b>		<b>134,370</b>	<b>\$9.76</b>	<b>\$18.23</b>	<b>\$37,916</b>
47-1011	First-Line Sups/Mgrs of Construction Trades	7,280	8,580	1,300	17.9	1,250	Work Exper (8)	7,610	\$17.93	\$28.90	\$60,100
47-2011	Boilermakers	130	130	0	0.0	20	12 mos OJT (9)	120	\$18.11	\$24.79	\$51,563
47-2021	Brickmasons & Blockmasons	1,120	1,410	290	25.9	160	12 mos OJT (9)	1,140	\$11.82	\$20.35	\$42,323
47-2031	Carpenters	16,840	19,950	3,110	18.5	2,150	12 mos OJT (9)	17,820	\$12.55	\$21.04	\$43,764
47-2041	Carpet Installers	2,280	2,500	220	9.6	280	1-12 mos OJT (10)	2,490	\$10.64	\$15.15	\$31,512
47-2042	Floor Layers, Except Carpet, Wood, & Hard Tiles	770	920	150	19.5	100	1-12 mos OJT (10)	(4)	\$12.26	\$16.91	\$35,175
47-2043	Floor Sanders & Finishers	460	560	100	21.7	60	1-12 mos OJT (10)	(4)	\$11.63	\$17.20	\$35,765
47-2044	Tile & Marble Setters	720	850	130	18.1	90	12 mos OJT (9)	760	\$12.22	\$18.86	\$39,226
47-2051	Cement Masons & Concrete Finishers	8,610	10,370	1,760	20.4	560	12 mos OJT (9)	(4)	\$6.75*	\$12.09	\$25,144
47-2053	Terrazzo Workers & Finishers	550	600	50	9.1	30	12 mos OJT (9)	(4)	\$9.75	\$12.68	\$26,375
47-2061	Construction Laborers	12,790	15,570	2,780	21.7	890	1-12 mos OJT (10)	13,560	\$9.51	\$16.35	\$34,003
47-2071	Paving, Surfacing, & Tamping Equipment Operator	790	910	120	15.2	110	1-12 mos OJT (10)	880	\$13.24	\$23.62	\$49,127
47-2072	Pile-Driver Operators	130	150	20	15.4	20	1-12 mos OJT (10)	130	\$22.95	\$28.98	\$60,280
47-2073	Operating Engineers & Oth Const Equipment Ops	3,020	3,340	320	10.6	480	1-12 mos OJT (10)	3,140	\$20.41	\$28.26	\$58,763
47-2081	Drywall & Ceiling Tile Installers	5,780	7,030	1,250	21.6	420	1-12 mos OJT (10)	6,120	\$11.01	\$18.63	\$38,741
47-2082	Tapers	1,680	2,010	330	19.6	120	1-12 mos OJT (10)	1,780	\$16.07	\$21.17	\$44,052
47-2111	Electricians	13,570	16,420	2,850	21.0	1,940	12 mos OJT (9)	13,350	\$13.29	\$20.22	\$42,065
47-2121	Glaziers	400	470	70	17.5	60	12 mos OJT (9)	430	\$11.36	\$18.72	\$38,944
47-2130	Insulation Workers	630	750	120	19.0	*		(4)	\$8.35	\$14.00	\$29,122
47-2141	Painters, Construction & Maintenance	7,790	9,200	1,410	18.1	1,040	1-12 mos OJT (10)	8,010	\$8.82	\$15.23	\$31,679
47-2142	Paperhangers	110	140	30	27.3	20	1-12 mos OJT (10)	110	\$16.45	\$20.59	\$42,823
47-2151	Pipelayers	510	580	70	13.7	60	1-12 mos OJT (10)	530	\$16.38	\$24.93	\$51,851
47-2152	Plumbers, Pipefitters, & Steamfitters	10,920	12,620	1,700	15.6	1,340	12 mos OJT (9)	11,120	\$10.56	\$19.69	\$40,957
47-2161	Plasterers & Stucco Masons	3,620	4,280	660	18.2	510	12 mos OJT (9)	3,810	\$10.29	\$13.96	\$29,052
47-2171	Reinforcing Iron & Rebar Workers	850	1,010	160	18.8	70	12 mos OJT (9)	890	\$14.57	\$21.69	\$45,108
47-2181	Roofers	2,840	3,350	510	18.0	490	1-12 mos OJT (10)	2,820	\$10.61	\$16.57	\$34,466
47-2211	Sheet Metal Workers	3,840	4,170	330	8.6	580	1-12 mos OJT (10)	3,560	\$9.43	\$17.11	\$35,593

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
47-2221	Structural Iron & Steel Workers	1,460	1,740	280	19.2	120	12 mos OJT (9)	1,470	\$13.77	\$22.20	\$46,160
47-3011	Helpers--Brick, Block, Stonemasons, & Tile & Marble	1,070	1,280	210	19.6	410	30-days OJT (11)	(4)	\$8.36	\$13.03	\$27,106
47-3012	Helpers--Carpenters	1,910	2,230	320	16.8	720	30-days OJT (11)	2,040	\$7.71	\$10.64	\$22,119
47-3013	Helpers--Electricians	1,990	2,360	370	18.6	760	30-days OJT (11)	1,960	\$9.61	\$13.63	\$28,351
47-3014	Helpers--Paint, Paperhanger, Plaster, & Stucco	2,620	3,110	490	18.7	1,000	30-days OJT (11)	(4)	\$7.47	\$8.39	\$17,467
47-3015	Helpers--Pipelayer, Plumber, Pipefitter, & Steamfitters	1,890	2,220	330	17.5	710	30-days OJT (11)	1,940	\$8.79	\$12.98	\$26,998
47-3016	Helpers--Roofers	560	670	110	19.6	210	30-days OJT (11)	560	\$8.08	\$10.30	\$21,422
47-3019	Helpers, Construction Trades, All Other	1,080	1,350	270	25.0	420	30-days OJT (11)	1,110	\$6.75*	\$11.60	\$24,133
47-4011	Inspectors Construction & Building	1,340	1,530	190	14.2	230	Work Exper (8)	1,430	\$17.21	\$25.87	\$53,799
47-4021	Elevator Installers & Repairers	1,180	1,390	210	17.8	290	12 mos OJT (9)	(4)	\$16.13	\$21.66	\$45,033
47-4031	Fence Erectors Hazardous Materials Removal Workers	1,890	2,090	200	10.6	240	1-12 mos OJT (10)	(4)	\$6.75*	\$9.85	\$20,480
47-4041	Highway Maintenance Workers	850	930	80	9.4	190	1-12 mos OJT (10)	880	\$11.36	\$16.71	\$34,759
47-4051	Construction & Related Workers	260	260	0	0.0	30	1-12 mos OJT (10)	(4)	\$14.74	\$19.59	\$40,737
47-4099	Workers, All Other	2,510	2,990	480	19.1	830	1-12 mos OJT (10)	2,390	\$9.84	\$14.94	\$31,081
47-5011	Derrick Operators, Oil & Gas Rotary Drill Operators, Oil & Gas	170	150	-20	-11.8	40	1-12 mos OJT (10)	(4)	\$12.80	\$15.06	\$31,318
47-5012	Service Unit Operators, Oil, Gas, & Mining	190	160	-30	-15.8	40	1-12 mos OJT (10)	100	\$17.41	\$19.21	\$39,965
47-5013		100	80	-20	-20.0	20	1-12 mos OJT (10)	90	\$16.50	\$21.41	\$44,539
47-5071	Roustabouts, Oil & Gas	440	370	-70	-15.9	100	1-12 mos OJT (10)	470	\$13.51	\$17.04	\$35,450
47-5081	Helpers--Extraction Workers	100	110	10	10.0	30	30-days OJT (11)	110	\$12.01	\$13.95	\$29,013
47-5099	Extraction Workers, All Other	170	170	0	0.0	40	1-12 mos OJT (10)	40	\$10.70	\$14.37	\$29,892
<b>49-0000</b>	<b>Installation, Maintenance, &amp; Repair Occupations</b>	<b>141,390</b>	<b>152,270</b>	<b>10,880</b>	<b>7.7</b>	<b>21,670</b>		<b>138,830</b>	<b>\$9.81</b>	<b>\$17.59</b>	<b>\$36,603</b>
49-1011	First-Line Sups/Mgrs of Mechanics, Installer	9,560	10,570	1,010	10.6	1,800	Work Exper (8)	9,350	\$17.31	\$26.79	\$55,725
49-2011	Computer, Automated Teller, & Office Mach Repairers	2,910	2,960	50	1.7	220	Post-sec voc educ (7)	2,960	\$9.95	\$16.75	\$34,833
49-2021	Radio Mechanics	100	90	-10	-10.0	10	Post-sec voc educ (7)	100	\$9.87	\$14.30	\$29,745
49-2022	Telecomm Equipmt Install & Repair, Ex Line Installers	9,690	9,760	70	0.7	1,250	Post-sec voc educ (7)	9,140	\$15.25	\$21.36	\$44,433

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
49-2091	Avionics Technicians	630	600	-30	-4.8	90	Post-sec voc educ (7)	550	\$16.38	\$22.17	\$46,105
49-2092	Electric Motor, Power Tool, & Related Repairers	1,850	1,960	110	5.9	300	Post-sec voc educ (7)	(4)	\$10.50	\$17.03	\$35,422
49-2093	Electrical & Electronics Install & Repair, Trans Equip	850	850	0	0.0	110	Post-sec voc educ (7)				
49-2094	Electrical & Electronics Repair, Comm'l & Industrial Equip	1,760	1,820	60	3.4	250	Post-sec voc educ (7)	1,730	\$16.13	\$21.78	\$45,300
49-2096	Electronic Equipt Install & Repair, Motor Vehicles	730	790	60	8.2	120	Post-sec voc educ (7)	(4)	\$8.44	\$12.15	\$25,282
49-2097	Electronic Home Entertainment Equipt Install & Repairers	480	420	-60	-12.5	60	Post-sec voc educ (7)	490	\$7.74	\$14.70	\$30,583
49-2098	Security & Fire Alarm Systems Installers	4,680	6,230	1,550	33.1	700	Post-sec voc educ (7)	(4)	\$8.98	\$13.74	\$28,578
49-2099	Electrical & Electronic Equipt Mechs, Installers	380	420	40	10.5	60	Post-sec voc educ (7)	370	\$10.25	\$16.05	\$33,389
49-3011	Aircraft Mechanics & Service Technicians	4,280	4,370	90	2.1	630	Post-sec voc educ (7)	3,730	\$14.72	\$21.38	\$44,471
49-3021	Automotive Body & Related Repairers	3,660	3,880	220	6.0	650	12 mos OJT (9)	3,620	\$8.81	\$15.42	\$32,066
49-3022	Automotive Glass Installers & Repairers	950	970	20	2.1	170	12 mos OJT (9)	(4)	\$7.80	\$10.36	\$21,551
49-3023	Automotive Service Technicians & Mechanics	21,930	24,250	2,320	10.6	3,790	Post-sec voc educ (7)	21,790	\$9.32	\$15.10	\$31,396
49-3031	Bus & Truck Mechs & Diesel Engine Specialists	5,700	6,380	680	11.9	1,080	Post-sec voc educ (7)	5,670	\$13.77	\$20.18	\$41,970
49-3042	Mobile Heavy Equipt Mechanics, Except Engines	2,100	2,440	340	16.2	410	Post-sec voc educ (7)	(4)	\$9.81	\$14.30	\$29,745
49-3052	Motorcycle Mechanics	240	240	0	0.0	40	12 mos OJT (9)	230	\$9.83	\$15.28	\$31,797
49-3053	Outdoor Power Equipt & Other Small Eng Mechanics	230	230	0	0.0	40	1-12 mos OJT (10)	250	\$12.67	\$15.92	\$33,110
49-3091	Bicycle Repairers	440	490	50	11.4	130	1-12 mos OJT (10)	440	\$7.74	\$10.91	\$22,707
49-3092	Recreational Vehicle Service Technicians	120	130	10	8.3	30	12 mos OJT (9)	100	\$9.49	\$13.84	\$28,778
49-3093	Tire Repairers & Changers	1,460	1,460	0	0.0	400	30-days OJT (11)	(4)	\$7.97	\$11.28	\$23,464
49-9012	Control & Valve Installers & Repairers, Ex Mechanics	1,070	1,100	30	2.8	250	1-12 mos OJT (10)				
49-9021	Heating, Air Conditioning, & Refrigeration Mechanics	2,570	3,010	440	17.1	200	12 mos OJT (9)	2,640	\$13.50	\$20.58	\$42,817
49-9031	Home Appliance Repairers	1,190	1,380	190	16.0	180	12 mos OJT (9)	1,200	\$9.96	\$15.00	\$31,201
49-9041	Industrial Machinery Mechanics	3,350	3,580	230	6.9	650	12 mos OJT (9)	3,290	\$14.80	\$20.82	\$43,303
49-9042	Maintenance & Repair Workers, General	36,430	37,530	1,100	3.0	3,290	12 mos OJT (9)	36,030	\$8.50	\$15.41	\$32,044
49-9043	Maintenance Workers, Machinery	1,650	1,660	10	0.6	310	12 mos OJT (9)	1,580	\$9.91	\$16.99	\$35,345
49-9044	Millwrights	900	910	10	1.1	190	12 mos OJT (9)	910	\$9.35	\$18.39	\$38,258
49-9051	Electrical Power-Line Installers & Repairers	400	420	20	5.0	90	12 mos OJT (9)				

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
49-9052	Telecommunications Line Installers & Repairers	4,470	5,080	610	13.6	620	12 mos OJT (9)	4,240	\$12.91	\$20.60	\$42,857
49-9061	Camera & Photographic Equipment Repairers	390	370	-20	-5.1	70	1-12 mos OJT (10)	(4)	\$18.45	\$21.45	\$44,613
49-9062	Medical Equipment Repairers	1,080	1,240	160	14.8	200	1-12 mos OJT (10)	1,110	\$11.54	\$15.55	\$32,340
49-9063	Musical Instrument Repairers & Tuners	460	480	20	4.3	80	12 mos OJT (9)	(4)	\$13.35	\$14.84	\$30,882
49-9064	Watch Repairers	170	190	20	11.8	30	12 mos OJT (9)	170	\$10.71	\$14.53	\$30,216
49-9069	Precision Instrument & Equipmt Repairers, All Other	220	230	10	4.5	40	12 mos OJT (9)	210	\$13.68	\$20.07	\$41,737
49-9091	Coin, Vend, & Amusement Mach Servicers & Repairers	230	250	20	8.7	40	1-12 mos OJT (10)	230	\$8.96	\$13.16	\$27,390
								50	\$12.29	\$27.71	\$57,647
								30	\$7.11	\$8.41	\$17,490
49-9094	Locksmiths & Safe Repairers	430	450	20	4.7	100	1-12 mos OJT (10)	(4)	\$10.52	\$16.43	\$34,174
49-9096	Riggers	310	350	40	12.9	50	30-days OJT (11)	300	\$9.43	\$15.33	\$31,888
49-9098	Helpers--Installation, Maint, & Repair Workers	4,450	4,920	470	10.6	1,680	30-days OJT (11)	4,470	\$7.04	\$12.61	\$26,233
49-9099	Installation, Maint, & Repair Workers, All Other	6,890	7,810	920	13.4	1,260	12 mos OJT (9)	4,710	\$9.48	\$18.39	\$38,262
<b>51-0000</b>	<b>Production Occupations</b>	<b>425,760</b>	<b>425,740</b>	<b>-20</b>	<b>-0.0</b>	<b>64,050</b>		<b>403,120</b>	<b>\$7.02</b>	<b>\$11.74</b>	<b>\$24,416</b>
51-1011	First-Line Sups/Mgrs of Prod & Operating Wrks	25,290	24,570	-720	-2.8	4,570	Work Exper (8)	24,090	\$12.63	\$21.69	\$45,109
51-2011	Aircraft Struct, Surfaces, Rigging, & Systems Assemblers	3,690	3,220	-470	-12.7	630	12 mos OJT (9)				
51-2021	Coil Winders, Tapers, & Finishers	1,710	1,590	-120	-7.0	290	30-days OJT (11)	1,590	\$6.75*	\$8.32	\$17,320
51-2022	Electrical & Electronic Equipment Assemblers	9,810	8,260	-1,550	-15.8	1,610	30-days OJT (11)	9,750	\$7.00	\$10.14	\$21,080
51-2023	Electromechanical Equipment Assemblers	2,260	2,120	-140	-6.2	390	30-days OJT (11)	2,190	\$7.53	\$11.74	\$24,434
51-2031	Engine & Other Machine Assemblers	650	610	-40	-6.2	90	30-days OJT (11)	600	\$10.21	\$13.77	\$28,638
51-2041	Structural Metal Fabricators & Fitters	2,080	2,230	150	7.2	230	1-12 mos OJT (10)	1,940	\$9.48	\$13.97	\$29,065
51-2091	Fiberglass Laminators & Fabricators	1,020	990	-30	-2.9	120	1-12 mos OJT (10)	880	\$7.83	\$11.07	\$23,027
51-2092	Team Assemblers	37,610	37,480	-130	-0.3	4,540	1-12 mos OJT (10)	36,400	\$7.09	\$10.16	\$21,132
51-2093	Timing Device Assemblers, Adjusters, & Calibrators	170	160	-10	-5.9	20	1-12 mos OJT (10)				
51-2099	Assemblers & Fabricators, All Other	9,880	10,930	1,050	10.6	1,260	1-12 mos OJT (10)	9,810	\$6.75*	\$8.85	\$18,416
51-3011	Bakers	4,270	4,780	510	11.9	490	12 mos OJT (9)	4,260	\$7.57	\$12.09	\$25,158
51-3021	Butchers & Meat Cutters	3,420	3,320	-100	-2.9	580	12 mos OJT (9)	3,460	\$7.31	\$13.35	\$27,774
51-3022	Meat, Poultry, & Fish Cutters & Trimmers	4,220	4,670	450	10.7	760	30-days OJT (11)	4,260	\$6.75*	\$8.82	\$18,356
51-3023	Slaughterers & Meat Packers	670	720	50	7.5	120	1-12 mos OJT (10)	670	\$6.75*	\$10.31	\$21,438

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
51-3091	Food & Tobac Roast, Bake, & Dry Mach Ops & Tenders	880	880	0	0.0	150	30-days OJT (11)	880	\$8.66	\$15.35	\$31,943
51-3092	Food Batchmakers	2,320	2,500	180	7.8	410	30-days OJT (11)	2,390	\$6.75*	\$9.97	\$20,744
51-3093	Food Cooking Machine Operators & Tenders	1,300	1,420	120	9.2	160	30-days OJT (11)				
51-3099	Food Processing Workers, All Other	2,570	2,530	-40	-1.6	430	30-days OJT (11)	2,670	\$6.75*	\$8.51	\$17,707
51-4011	Comp-Controlled Mach Tool Ops, Metal & Plastic	4,400	4,400	0	0.0	1,100	12 mos OJT (9)	4,030	\$8.30	\$13.94	\$28,987
51-4012	Numerical Tool & Process Control Programmers	540	540	0	0.0	130	12 mos OJT (9)	470	\$13.86	\$21.06	\$43,793
51-4021	Extrud & Draw Mach Setters, Ops, & Tends, Metl	3,040	3,090	50	1.6	470	1-12 mos OJT (10)	2,940	\$6.75*	\$9.87	\$20,529
51-4022	Forging Mach Setters, Ops, & Tends, Metal & Plastic	730	690	-40	-5.5	160	1-12 mos OJT (10)	680	\$7.92	\$13.23	\$27,516
51-4023	Rolling Mach Setters, Ops, & Tends, Metal & Plastic	1,290	1,310	20	1.6	300	1-12 mos OJT (10)	1,240	\$6.96	\$10.27	\$21,373
51-4031	Cutting, Punching, & Press Machine Setters, Ops	9,150	8,120	-1,030	-11.3	1,170	1-12 mos OJT (10)	8,500	\$7.61	\$11.55	\$24,010
51-4032	Drill & Bore Mach Tool Set, Ops, & Tend, Metal	1,980	1,730	-250	-12.6	420	1-12 mos OJT (10)	1,800	\$7.59	\$11.56	\$24,044
51-4033	Grind, Lap, Polish, & Buff Mach Tool Set, Ops,	6,130	5,870	-260	-4.2	1,030	1-12 mos OJT (10)	5,590	\$7.50	\$10.96	\$22,785
51-4034	Lathe & Turn Mach Tool Set, Ops, & Tend, Metl & Plastic	2,570	2,220	-350	-13.6	660	1-12 mos OJT (10)	2,380	\$8.89	\$13.65	\$28,397
51-4035	Mill & Plan Mach Set, Ops, & Tend, Metal & Plastic	1,130	990	-140	-12.4	240	1-12 mos OJT (10)	1,040	\$8.18	\$12.93	\$26,895
51-4041	Machinists	13,890	13,460	-430	-3.1	1,950	12 mos OJT (9)	12,730	\$9.77	\$15.72	\$32,700
51-4051	Metal-Refining Furnace Operators & Tenders	320	310	-10	-3.1	60	1-12 mos OJT (10)	310	\$9.22	\$12.45	\$25,883
51-4052	Pourers & Casters, Metal	310	290	-20	-6.5	60	1-12 mos OJT (10)	290	\$7.51	\$10.43	\$21,685
51-4061	Model Makers, Metal & Plastic	420	360	-60	-14.3	70	1-12 mos OJT (10)	370	\$9.95	\$17.06	\$35,486
51-4062	Patternmakers, Metal & Plastic	510	420	-90	-17.6	90	1-12 mos OJT (10)	450	\$8.61	\$14.64	\$30,457
51-4071	Foundry Mold & Coremakers	1,320	1,050	-270	-20.5	170	1-12 mos OJT (10)	1,210	\$7.25	\$10.03	\$20,878
51-4072	Mold, Core, & Cast Mach, Set, Ops & Tend, Metl	5,360	5,250	-110	-2.1	750	1-12 mos OJT (10)	5,180	\$6.75*	\$9.29	\$19,324
51-4081	Mult MachTool Set, Ops, & Tend,Metal & Plastic	2,490	2,480	-10	-0.4	260	1-12 mos OJT (10)	2,360	\$7.80	\$12.05	\$25,059
51-4111	Tool & Die Makers	2,380	2,260	-120	-5.0	400	12 mos OJT (9)	2,170	\$11.06	\$19.35	\$40,253
51-4121	Welders, Cutters, Solderers, & Brazers	9,810	10,730	920	9.4	2,010	Post-sec voc educ (7)	9,420	\$8.48	\$13.62	\$28,329

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
51-4122	Weld, Solder, & Braze Mach Setters, Ops, & Tenders	1,300	1,350	50	3.8	260	1-12 mos OJT (10)	1,230	\$7.57	\$11.58	\$24,084
51-4191	Heat Treat Equip Set, Ops, & Tend, Metal & Plastic Lay-Out Workers, Metal & Plastic	1,310	1,340	30	2.3	190	1-12 mos OJT (10)	1,260	\$8.49	\$12.87	\$26,780
51-4192	Plate & Coat Mach Set, Ops, & Tend, Metal & Plastic Tool Grinders, Filers, & Sharpeners	360	320	-40	-11.1	60	1-12 mos OJT (10)	340	\$9.27	\$14.81	\$30,813
51-4193	Metal Workers & Plastic Workers, All Other	2,130	2,090	-40	-1.9	300	1-12 mos OJT (10)	1,930	\$7.70	\$10.67	\$22,190
51-4194	Bindery Workers	1,040	900	-140	-13.5	180	1-12 mos OJT (10)	950	\$7.60	\$11.84	\$24,608
51-4199	Bookbinders	2,860	3,000	140	4.9	390	1-12 mos OJT (10)	2,780	\$6.90	\$9.87	\$20,548
51-5011	Job Printers	3,070	3,280	210	6.8	580	1-12 mos OJT (10)	2,950	\$7.11	\$10.62	\$22,081
51-5012	Prepress Technicians & Workers	420	450	30	7.1	80	1-12 mos OJT (10)	400	\$7.76	\$11.33	\$23,572
51-5021	Printing Machine Operators	2,150	2,290	140	6.5	390	12 mos OJT (9)	2,040	\$11.60	\$18.12	\$37,673
51-5022	Printing Workers, All Other	3,460	3,130	-330	-9.5	560	12 mos OJT (9)	3,270	\$9.68	\$17.53	\$36,454
51-5023	Laundry & Dry-Cleaning Workers	7,100	7,510	410	5.8	1,280	1-12 mos OJT (10)	6,710	\$8.18	\$13.78	\$28,675
51-5099	Pressers, Textile, Garment, & Related Materials	840	920	80	9.5	160	1-12 mos OJT (10)	820	\$6.83	\$10.04	\$20,874
51-6011	Sewing Machine Operators	5,960	6,610	650	10.9	1,170	1-12 mos OJT (10)	5,850	\$6.75*	\$8.10	\$16,837
51-6021	Shoe & Leather Workers & Repairers	5,440	5,810	370	6.8	540	30-days OJT (11)	5,080	\$6.92	\$9.09	\$18,899
51-6031	Shoe Machine Operators & Tenders	52,370	48,970	-3,400	-6.5	3,700	1-12 mos OJT (10)	45,490	\$6.75*	\$7.75	\$16,126
51-6041	Sewers, Hand Tailors, Dressmakers, & Custom Sewers	620	580	-40	-6.5	170	12 mos OJT (9)	580	\$6.78	\$8.49	\$17,653
51-6042	Textile Bleaching & Dyeing	110	90	-20	-18.2	10	1-12 mos OJT (10)	90	\$6.98	\$8.07	\$16,788
51-6051	Mach Ops & Tenders	5,290	5,760	470	8.9	850	30-days OJT (11)	4,990	\$7.54	\$9.42	\$19,589
51-6052	Textile Cutting Machine Setters, Ops, & Tenders	1,460	1,500	40	2.7	230	Work Exper (8)	1,490	\$8.04	\$13.11	\$27,284
51-6061	Textile Knit & Weave Mach Setters, Ops & Tenders	3,190	3,400	210	6.6	450	1-12 mos OJT (10)	2,860	\$6.75*	\$7.54	\$15,676
51-6062	Textile Wind, Twist, & Draw Out Mach Set, Ops & Tenders	3,320	3,150	-170	-5.1	390	1-12 mos OJT (10)	2,960	\$6.75*	\$9.11	\$18,940
51-6063	Extrude & Form Mach Setters, Ops, & Tenders	2,810	3,000	190	6.8	320	12 mos OJT (9)	2,510	\$6.75*	\$7.90	\$16,433
51-6064	Fabric & Apparel Patternmakers	1,010	1,060	50	5.0	160	1-12 mos OJT (10)	890	\$6.83	\$9.41	\$19,559
51-6091	Upholsterers	470	500	30	6.4	90	1-12 mos OJT (10)	430	\$7.32	\$8.98	\$18,679
51-6092	Textile, Apparel, & Furnishings Workers, All Other	2,700	2,730	30	1.1	600	12 mos OJT (9)	2,490	\$10.42	\$19.45	\$40,455
51-6093		2,770	2,650	-120	-4.3	620	12 mos OJT (9)	2,670	\$7.15	\$10.83	\$22,532
51-6099		5,760	6,710	950	16.5	880	1-12 mos OJT (10)	5,720	\$7.35	\$9.21	\$19,150

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages					
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage		
	Cabinetmakers & Bench												
51-7011	Carpenters	6,480	6,640	160	2.5	1,470	12 mos OJT (9)	6,260	\$7.43	\$10.48	\$21,803		
51-7021	Furniture Finishers	1,480	1,610	130	8.8	430	12 mos OJT (9)	1,420	\$7.25	\$10.16	\$21,121		
51-7031	Model Makers, Wood	150	170	20	13.3	50	12 mos OJT (9)	(4)	\$9.81	\$14.26	\$29,664		
51-7032	Patternmakers, Wood	100	110	10	10.0	30	12 mos OJT (9)	90	\$8.22	\$13.06	\$27,175		
51-7041	Sawing Mach Setters, Ops, & Tenders, Wood	550	580	30	5.5	160	1-12 mos OJT (10)	510	\$7.73	\$10.69	\$22,235		
51-7042	Woodwork Mach Setters, Ops, & Tenders, Ex Sawing	2,660	2,640	-20	-0.8	760	1-12 mos OJT (10)	2,510	\$7.10	\$9.47	\$19,682		
51-7099	Woodworkers, All Other	1,010	1,120	110	10.9	310	1-12 mos OJT (10)	960	\$6.75*	\$8.40	\$17,458		
51-8012	Power Distributors & Dispatchers	150	150	0	0.0	30	12 mos OJT (9)						
51-8013	Power Plant Operators	840	890	50	6.0	180	12 mos OJT (9)	890	\$21.26	\$27.00	\$56,162		
51-8021	Stationary Engineers & Boiler Operators	1,460	1,460	0	0.0	280	12 mos OJT (9)	1,500	\$13.74	\$20.97	\$43,609		
51-8031	Water & Liquid Waste Treat Plant & System Ops	1,310	1,420	110	8.4	300	12 mos OJT (9)	1,390	\$18.54	\$24.01	\$49,939		
51-8091	Chemical Plant & System Operators	610	660	50	8.2	140	12 mos OJT (9)	640	\$17.18	\$21.08	\$43,846		
51-8092	Gas Plant Operators	280	280	0	0.0	60	12 mos OJT (9)						
51-8093	Petrol Pump System Ops, Refinery Ops, & Gaugers	2,170	1,930	-240	-11.1	430	12 mos OJT (9)	1,420	\$21.81	\$26.57	\$55,255		
51-8099	Plant & System Operators, All Other	440	460	20	4.5	100	12 mos OJT (9)	440	\$9.54	\$18.73	\$38,948		
51-9011	Chemical Equipment Operators & Tenders	1,120	1,250	130	11.6	190	1-12 mos OJT (10)	1,080	\$7.88	\$12.06	\$25,083		
51-9012	Separate, Filter, Clarify, Precipitate, & Still	1,140	1,330	190	16.7	200	1-12 mos OJT (10)	1,220	\$11.07	\$16.02	\$33,319		
51-9021	Crushing, Grinding, & Polishing Mach Setters, Ops & Tenders	810	880	70	8.6	130	1-12 mos OJT (10)	820	\$8.69	\$13.02	\$27,073		
51-9022	Grinding & Polishing Workers, Hand	2,290	2,370	80	3.5	350	1-12 mos OJT (10)	2,130	\$7.32	\$9.65	\$20,065		
51-9023	Mix & Blend Mach Setters, Ops, & Tenders	2,900	3,180	280	9.7	460	1-12 mos OJT (10)	3,020	\$8.07	\$12.75	\$26,519		
51-9031	Cutters & Trimmers, Hand	2,560	2,530	-30	-1.2	320	30-days OJT (11)	2,410	\$6.75*	\$9.06	\$18,839		
51-9032	Cutting & Slicing Mach Setters, Ops, & Tenders	2,280	2,300	20	0.9	280	1-12 mos OJT (10)	2,200	\$7.22	\$11.02	\$22,926		
51-9041	Extrude, Form, Press, & Compact Mach Set, Ops, Tenders	2,050	2,110	60	2.9	330	1-12 mos OJT (10)	2,020	\$7.31	\$11.78	\$24,503		
51-9051	Furnace, Kiln, Oven, Drier, & Kettle Ops & Tenders	520	530	10	1.9	100	1-12 mos OJT (10)	510	\$6.94	\$11.86	\$24,686		
51-9061	Inspectors, Testers, Sorters, Samplers, & Weighers	23,380	22,060	-1,320	-5.6	3,490	1-12 mos OJT (10)	22,100	\$6.81	\$12.33	\$25,638		
51-9071	Jewelers & Precious Stone & Metal Workers	1,900	2,210	310	16.3	370	Post-sec voc educ (7)	1,750	\$6.75*	\$10.44	\$21,726		
51-9081	Dental Laboratory Technicians	610	580	-30	-4.9	110	12 mos OJT (9)	(4)	\$9.16	\$14.61	\$30,379		
51-9082	Medical Appliance Technicians	570	660	90	15.8	120	12 mos OJT (9)	610	\$9.11	\$16.50	\$34,315		

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
51-9083	Ophthalmic Laboratory Technicians	370	410	40	10.8	70	1-12 mos OJT (10)	(4)	\$7.94	\$12.95	\$26,941
51-9111	Packaging & Filling Machine Operators & Tenders	12,210	13,530	1,320	10.8	1,990	30-days OJT (11)	12,460	\$7.10	\$10.43	\$21,676
51-9121	Coat, Paint, & Spray Mach Set, Opes & Tenders	2,650	2,690	40	1.5	410	1-12 mos OJT (10)	2,500	\$7.40	\$10.48	\$21,797
51-9122	Painters, Transportation Equipment	860	890	30	3.5	140	1-12 mos OJT (10)	790	\$8.78	\$17.26	\$35,902
51-9123	Painting, Coating, & Decorating Workers	2,090	2,190	100	4.8	330	30-days OJT (11)	1,930	\$6.75*	\$9.70	\$20,185
51-9131	Photographic Process Workers	720	700	-20	-2.8	130	1-12 mos OJT (10)	690	\$8.34	\$16.10	\$33,480
51-9132	Photographic Processing Machine Operators	1,650	1,800	150	9.1	310	30-days OJT (11)	1,600	\$9.94	\$16.91	\$35,172
51-9141	Semiconductor Processors	2,440	2,250	-190	-7.8	280	AA Degree (6)	(4)	\$7.15	\$11.28	\$23,463
51-9191	Cementing & Gluing Machine Operators & Tenders	1,260	1,220	-40	-3.2	200	1-12 mos OJT (10)	1,190	\$7.22	\$9.10	\$18,934
51-9192	Clean, Wash, & Metal Pickling Equipt Ops & Tenders	710	630	-80	-11.3	110	1-12 mos OJT (10)	650	\$7.45	\$10.47	\$21,777
51-9194	Etchers & Engravers	190	200	10	5.3	30	12 mos OJT (9)	80	\$10.43	\$14.96	\$31,108
51-9195	Molders, Shapers, & Casters, Except Metal & Plastic	620	640	20	3.2	120	1-12 mos OJT (10)	170	\$8.58	\$15.88	\$33,032
51-9196	Paper Goods Machine Setters, Ops, & Tenders	3,770	3,530	-240	-6.4	490	1-12 mos OJT (10)	3,560	\$8.10	\$14.11	\$29,342
51-9198	Helpers--Production Workers	19,460	20,270	810	4.2	3,500	30-days OJT (11)	19,100	\$6.75*	\$9.03	\$18,784
51-9199	Production Workers, All Other	14,030	15,030	1,000	7.1	1,800	1-12 mos OJT (10)	13,750	\$6.75*	\$9.68	\$20,118
<b>53-0000</b>	<b>Transportation &amp; Material Moving Occupations</b>	<b>335,240</b>	<b>370,250</b>	<b>35,010</b>	<b>10.4</b>	<b>61,100</b>		<b>329,410</b>	<b>\$7.17</b>	<b>\$12.51</b>	<b>\$26,030</b>
53-1011	Aircraft Cargo Handling Supervisors	370	400	30	8.1	60	Work Exper (8)	330	\$12.34	\$18.51	\$38,500
53-1021	First-Line Sups/Mgrs of Help, Labor, & Mat Movers	4,710	5,250	540	11.5	730	Work Exper (8)	4,640	\$12.92	\$19.97	\$41,540
53-1031	First-Line Sups/Mgrs of Trans & Mat-Moving Machine	7,030	8,210	1,180	16.8	1,120	Work Exper (8)	6,850	\$13.21	\$23.91	\$49,738
53-2011	Airline Pilots, Copilots, & Flight Engineers	3,460	3,410	-50	-1.4	540	BA/BS Degree (5)	3,160	(2)	(2)	\$118,686
53-2012	Commercial Pilots	680	800	120	17.6	120	Post-sec voc educ (7)	650	(2)	(2)	\$86,884
53-2021	Air Traffic Controllers	650	690	40	6.2	200	12 mos OJT (9)	620	\$31.17	\$44.25	\$92,046
53-2022	Airfield Operations Specialists	200	220	20	10.0	60	30-days OJT (11)	190	\$15.29	\$22.72	\$47,265
53-2099	Air Transportation Workers, All Other	510	590	80	15.7	170	1-12 mos OJT (10)	470	\$7.28	\$12.50	\$25,996



SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
53-3011	Ambulance Drivers & Attendants, Ex EMTs	310	360	50	16.1	20	1-12 mos OJT (10)	290	\$8.09	\$13.56	\$28,206
53-3021	Bus Drivers, Transit & Intercity	8,470	9,460	990	11.7	1,590	1-12 mos OJT (10)				
53-3022	Bus Drivers, School	7,000	7,740	740	10.6	1,310	30-days OJT (11)	7,080	\$9.73	\$13.32	\$27,697
53-3031	Driver/Sales Workers	16,650	18,120	1,470	8.8	1,650	30-days OJT (11)	16,610	\$7.48	\$11.03	\$22,945
53-3032	Truck Drivers, Heavy & Tractor-Trailer	28,750	33,320	4,570	15.9	2,940	1-12 mos OJT (10)	28,690	\$12.93	\$16.97	\$35,289
53-3033	Truck Drivers, Light or Delivery Services	37,620	42,420	4,800	12.8	3,790	30-days OJT (11)	36,720	\$7.61	\$12.07	\$25,100
53-3041	Taxi Drivers & Chauffeurs	4,210	4,850	640	15.2	250	30-days OJT (11)	3,880	\$6.75*	\$10.47	\$21,770
53-3099	Motor Vehicle Operators, All Other	4,110	4,500	390	9.5	510	30-days OJT (11)	4,200	\$7.53	\$12.14	\$25,246
53-4011	Locomotive Engineers	1,020	1,380	360	35.3	180	Work Exper (8)				
53-4013	Rail Yard Engineers, Dinkey Operators, & Hostlers	220	230	10	4.5	70	Work Exper (8)	120	\$15.54	\$17.65	\$36,715
53-4021	Railroad Brake, Signal, & Switch Operators	360	250	-110	-30.6	100	Work Exper (8)				
53-4031	Railroad Conductors & Yardmasters	1,140	1,310	170	14.9	380	Work Exper (8)				
53-5011	Sailors & Marine Oilers	560	650	90	16.1	150	30-days OJT (11)	630	\$12.13	\$20.22	\$42,065
53-5021	Captains, Mates, & Pilots of Water Vessels	440	510	70	15.9	110	Work Exper (8)	450	\$16.83	\$25.92	\$53,918
53-5022	Motorboat Operators	140	160	20	14.3	40	30-days OJT (11)	130	\$11.07	\$20.31	\$42,245
53-5031	Ship Engineers	510	640	130	25.5	140	Post-sec voc educ (7)				
53-5099	Water Transportation Workers, All Other	110	130	20	18.2	30	30-days OJT (11)				
53-6021	Parking Lot Attendants	9,800	10,800	1,000	10.2	1,210	30-days OJT (11)	10,140	\$6.75*	\$7.56	\$15,722
53-6031	Service Station Attendants	1,830	1,840	10	0.5	680	30-days OJT (11)	1,860	\$6.90	\$10.48	\$21,796
53-6051	Transportation Inspectors	600	650	50	8.3	110	Work Exper (8)	30	\$17.69	\$22.55	\$46,894
53-6099	Transportation Workers, All Other	3,710	4,500	790	21.3	1,120	30-days OJT (11)	580	\$18.56	\$27.46	\$57,130
53-7011	Conveyor Operators & Tenders	4,340	4,750	410	9.4	900	30-days OJT (11)	4,200	\$7.28	\$10.51	\$21,854
53-7021	Crane & Tower Operators	1,350	1,640	290	21.5	310	1-12 mos OJT (10)	(4)	\$22.31	\$27.58	\$57,367
53-7032	Excavating & Loading Machine & Dragline Operators	340	400	60	17.6	80	1-12 mos OJT (10)	360	\$15.65	\$22.31	\$46,418
53-7041	Hoist & Winch Operators	310	390	80	25.8	50	1-12 mos OJT (10)	310	\$15.30	\$29.07	\$60,462
53-7051	Industrial Truck & Tractor Operators	22,440	24,080	1,640	7.3	2,230	30-days OJT (11)	22,030	\$8.30	\$13.98	\$29,079
53-7061	Cleaners of Vehicles & Equipment	12,680	13,680	1,000	7.9	3,520	30-days OJT (11)	12,540	\$6.75*	\$9.02	\$18,751
53-7062	Laborers & Freight, Stock, & Material Movers, Hand	77,780	85,150	7,370	9.5	19,600	30-days OJT (11)	77,570	\$6.97	\$9.81	\$20,401
53-7063	Machine Feeders & Offbearers	19,900	20,180	280	1.4	4,930	30-days OJT (11)	19,370	\$7.64	\$10.10	\$21,018
53-7064	Packers & Packagers, Hand	43,780	48,520	4,740	10.8	8,220	30-days OJT (11)	43,710	\$6.75*	\$8.04	\$16,704

SOC Code	Occupation	Annual Average Employment		Employment Change		Openings Due to Separations	Education/ Experience (BLS Training Level)	2002 Wages			
		2001 (2)	2008	Number	Percent			2001 Employment Estimates	Entry-Level Hourly Wage (1)	Mean Hourly Wage	Mean Annual Wage
53-7072	Pump Operators, Except Wellhead Pumpers	270	270	0	0.0	50	1-12 mos OJT (10)	280 (4)	\$10.56	\$17.49	\$36,380
53-7081	Refuse & Recyclable Material Collectors	1,990	2,010	20	1.0	640	30-days OJT (11)	2,040	\$10.15	\$14.91	\$31,029
53-7121	Tank Car, Truck, & Ship Loaders	1,680	2,050	370	22.0	370	1-12 mos OJT (10)	1,630	\$11.94	\$18.64	\$38,752
53-7199	Material Moving Workers, All Other	3,210	3,740	530	16.5	820	30-days OJT (11)	(4)	\$8.43	\$15.80	\$32,854
99-9999	Occupation Unknown	240	260	20	8.3	10					

**NOTES:**  
(1) Employment and projections contained in these tables are considered estimates. See introduction for an explanation of data limitations.  
(2) March 2001 benchmark.

(\*) These occupations are summary occupations. There are no separations currently available for these SOC codes. It is anticipated that in the future, these categories will be broken out into more detailed occupations.

Subtotals may not add to the County totals due to the rounding and the suppression of data.

Some data are suppressed because of confidentiality and/or other issues.

Source: California Employment Development Department  
Labor Market Information Division  
(916) 262-2162

**Data Footnotes:**

- (1) The mean of the first third of the wage distribution is provided as a proxy for entry-level wage
- (2) For some occupations, workers may not work full-time all year-round. For these occupations it is not feasible to calculate an hourly wage.
- (3) For occupations where a substantial portion of workers earn more than \$70.00 per hour (the top step in the 2001 OES survey), the mean hourly and annual wages cannot be reliably calculated. This may occasionally apply to the entry-level wage as well.
- (4) An estimate of employment could not be provided.

**REVISION:** These data are revisions of the 2002 wages originally released in December 2002

An error was discovered in the estimating program which increased all wages by 3% to 4% above the correct estimate. 2001 Employment estimates did not change.

Source: California Employment Development Department  
Labor Market Information Division  
(916) 262-2162

**Appendix IV: Magnet Programs of the Los  
Angeles Unified School District**



## Integration Programs: Magnets and PWT

The Los Angeles Unified School District (LAUSD) offers exciting educational choices through its voluntary integration programs to students in kindergarten through 12th grade (K-12) living within the District.

The LAUSD's integration programs were established by court order to address the five harms of racial isolation:

- Low Academic Achievement
- Low Self-Esteem
- Overcrowded Conditions
- Lack of Access to Post-Secondary Opportunities
- Interracial Hostility and Intolerance

The District currently offers two integration choices: the Magnet Program and Permits With Transportation (PWT) Program. Both are open to all District students, K-12.

All participating students take the required course work necessary for promotion and graduation, and have the opportunity to meet all requirements for entrance to the University of California and the California State Universities.

### Magnet Programs

There are 155 magnet programs in all geographic areas of the District. Some magnet programs occupy entire school sites (full magnet schools.) Others are magnet centers located on regular school campuses with access to activities and experiences shared by the host school and the center.

These programs are open to all students in the District including English Language Learners, Special Education and Gifted/Talented youngsters.

Only gifted/high ability and highly gifted magnets require that applicants meet specific criteria for selection. No other screening, including grades, placement tests or auditions may be used as criteria for admitting or eliminating a student from a magnet program.

As part of the selection process, a priority point system for magnets has been created based upon the court-ordered reduction for the harms of racial isolation. Once information on the application is verified, the District's Information Technology Division automatically assigns priority points to each applicant through a computer process. "Priority points" are awarded on the basis of: matriculation (12), waiting list (4-12), Predominantly Hispanic, Black, Asian and Other Non-Anglo (PHBAO) resident schools (4), overcrowded resident schools (4) and a sibling enrolled at the desired magnet school (3).

District transportation is available and provided to students who participate Magnet programs who live outside a two-mile radius or outside the magnet school attendance boundary.



Magnet schools and centers have instructional specialties. Some of these are:



- Architecture • Business • Centers for Enriched Studies
- Communications • Visual/Fine/Performing Arts
- Gifted/High Ability • Highly Gifted • Medical Careers
- Humanities • Law/Government/Police Studies/Public Administration
- Math/Science/Technology • Foreign Language/International Studies



### PWT Program

The Permits With Transportation (PWT) Program provides students with integrated experiences by placing Hispanic, Black, Asian and Other Non-Anglo students in integrated settings while providing opportunities for Other White (OW) students to attend Predominantly Hispanic, Black, Asian and Other Non-Anglo (PHBAO) schools. School assignments for PWT applicants are the responsibility of the District.

Students participating in the PWT program may continue to go to schools within the same feeder pattern of the school they are enrolled in from elementary through high school. PWT students enrolled in the regular school program may take part in all programs and activities available to resident students. Parents are also encouraged to participate in these activities.

The LAUSD provides transportation to and from school for all students enrolled in the PWT program regardless of where they live within the District.

The Office of Student Integration Services administers both the Magnet and PWT programs.

## LAUSD Magnet Schools in Math and Science

Code	Name	Grade	Address	Telephone
5858	107TH ST MATH/SCI MG	3-5	<a href="#">147 E 107TH ST</a>	(323)756-8137
8061	BETHUNE MS MATH/SCI	6-8	<a href="#">155 W 69TH ST</a>	(323)971-3646
7123	<a href="#">BRADLEY ENV/HUMAN MG</a>	1-5	<a href="#">3875 DUBLIN AVE</a>	(323)292-8195
2507	<a href="#">BRENTWOOD SCI MAG</a>	1-5	<a href="#">740 GRETNA GREEN WAY</a>	(310)826-5631
3830	BROADOUS MTH/SCI MAG	3-5	<a href="#">12561 FILMORE ST</a>	(818)896-5236
2590	BRYSON EL M/S/T	1-5	<a href="#">4470 Missouri Ave</a>	(323)569-7141
2604	BUCHANAN MTH/SCI MAG	2-5	<a href="#">5024 BUCHANAN ST</a>	(323)255-7118
8081	BYRD MATH/SCI MAG	6-8	<a href="#">9171 TELFAIR AVE</a>	(818)767-9550
8572	CANOGA PK ENV/SCI MG	9-12	<a href="#">6850 TOPANGA CYN BLVD</a>	(818)340-3221
3289	CRESCENT HEIGHTS EL M/S/T	1-5	<a href="#">1661 S. Crescent Hts Blvd</a>	(323)931-2761
8105	CURTISS MATH/SCI MAG	6-8	<a href="#">1254 E HELMICK ST</a>	(310)537-3551
8601	DORSEY MATH/SCI MAG	9-12	<a href="#">3537 FARMDALE AVE</a>	(323)296-7120
8119	<a href="#">EL SERENO MATH/SC MG</a>	6-8	<a href="#">2839 N EASTERN AVE</a>	(323)223-2441
8128	FLEMING MS MATH/SCI	6-8	<a href="#">25425 WALNUT ST</a>	(310)326-4242
5783	FLOURNOY MATH/SC MAG	2-5	<a href="#">1630 E 111TH ST</a>	(323)564-2545
8644	FRANKLIN MATH/SCI MG	9-12	<a href="#">820 N AVE 54</a>	(323)254-7104
8651	FREMONT MATH/SCI MAG	9-12	<a href="#">7676 S SAN PEDRO ST</a>	(323)758-4141
8138	FROST MS COMP/M/S MG	6-8	<a href="#">12314 BRADFORD PL</a>	(818)360-2146
8680	GARFIELD COMP SCI MG	9-12	<a href="#">5101 E SIXTH ST</a>	(323)268-9361
4132	GLEDHILL MATH/SCI MG	1-5	<a href="#">16030 GLEDHILL ST</a>	(818)894-1151
8678	<a href="#">GRANADA HLS/CSUN MAG</a>	9-12	<a href="#">10535 ZELZAH AVE</a>	(818)360-2361
8167	GRIFFITH MATH/SCI MG	6-8	<a href="#">4765 E FOURTH ST</a>	(323)266-6106
4453	HASKELL MATH/SCI MAG	1-5	<a href="#">15850 TULSA ST</a>	(818)366-6431
8175	HENRY MS COMP/M/S MG	6-8	<a href="#">17340 SAN JOSE ST</a>	(818)363-7401
8180	HOLLENBECK MS MTH MG	6-8	<a href="#">2510 E SIXTH ST</a>	(323)268-0176
2374	HUGHES MATH/SCI MAG	1-5	<a href="#">4242 CLARA ST</a>	(323)560-4422
4617	<a href="#">HUMPHREYS MTH/SC MAG</a>	1-5	<a href="#">500 S HUMPHREYS AVE</a>	(323)263-6958
6881	INDEPENDENCE EL M/S/T	1-5	<a href="#">8435 Victoria Ave</a>	(323)249-9385
8722	JORDAN MATH/SCI MAG	9-12	<a href="#">2265 E 103RD ST</a>	(323)567-0531
8739	LA MATH/SCI MAG	9-12	<a href="#">4650 W OLYMPIC BLVD</a>	(323)937-3210
8745	<a href="#">LAUSD/USC MTH/SC MAG</a>	9-12	<a href="#">822 W 32ND ST</a>	(213)749-7179
8732	LINCOLN HS MTH/SC MG	9-11	<a href="#">3501 N BROADWAY</a>	(323)223-4021
4932	<a href="#">LOMITA MATH/SCI MAG</a>	1-5	<a href="#">2211 W 247TH ST</a>	(310)326-1655
4974	LORNE MATH/SCI MAG	3-5	<a href="#">17440 LORNE ST</a>	(818)342-3123
5316	<a href="#">MILES MTH/SCI BIL MG</a>	1-5	<a href="#">6720 MILES AVE</a>	(323)588-8296
5343	MONLUX MATH/SCI MAG	3-5	<a href="#">6051 BELLAIRE AVE</a>	(818)763-4693
6882	MONTARA EL M/S/T	1-5	<a href="#">10018 Montara Ave</a>	(323)567-1451
8256	MUIR MATH/SCI MAG	6-8	<a href="#">5929 S VERMONT AVE</a>	(323)971-4361
5427	MULTNOMAH ENV SC MAG	1-5	<a href="#">2101 N INDIANA AVE</a>	(323)225-6005
8787	<a href="#">NHHS/LA ZOO BIOL MAG</a>	9-12	<a href="#">5231 COLFAX AVE</a>	(818)769-8510
8273	<a href="#">NOBEL MATH/SCI MAG</a>	6-8	<a href="#">9950 TAMPA AVE</a>	(818)349-4200
8323	PACOIMA COMP/MTH MAG	6-8	<a href="#">9919 LAUREL CANYON BLVD</a>	(818)899-5291
8799	PALISADES MTH/SCI MG	9-12	<a href="#">15777 BOWDOIN ST</a>	(310)454-0611

6052	PASEO DEL REY NAT SC	1-5	<a href="#">7751 PASEO DEL REY</a>	(310)823-2356
8351	<a href="#">PEARY MATH/SCI MAG</a>	6-8	<a href="#">1415 W GARDENA BLVD</a>	(310)324-6606
6080	PLASENCIA MTH/SC MAG	K-5	<a href="#">1321 CORTEZ ST</a>	(213)250-7450
8809	<a href="#">POLY MATH/SCI MAG</a>	9-12	<a href="#">12431 ROSCOE BLVD</a>	(818)767-4860
8815	<a href="#">RESEDA ENV/PHY SC MG</a>	9-12	<a href="#">18230 KITTRIDGE ST</a>	(818)342-6186
8357	REVERE MATH/SCI MAG	6-8	<a href="#">1450 ALLENFORD AVE</a>	(310)451-5789
8833	ROOSEVELT MTH/SC MAG	9-12	<a href="#">456 S MATHEWS ST</a>	(323)268-7241
4644	<a href="#">SAN ANTONIO M/SC MAG</a>	2-5	<a href="#">6222 STATE ST</a>	(323)582-1250
8844	SAN FERNANDO M/SC MG	9-12	<a href="#">11133 O'MELVENY AVE</a>	(818)365-1121
6876	<a href="#">SAN MIGUEL MTH/SC MG</a>	2-5	<a href="#">9801 SAN MIGUEL AVE</a>	(323)567-0511
8851	<a href="#">SAN PEDRO MAR/M/S MG</a>	9-12	<a href="#">1001 W 15TH ST</a>	(310)547-2491
8879	<a href="#">SYLMAR MATH/SCI MAG</a>	9-12	<a href="#">13050 BORDEN AVE</a>	(818)367-1971
8435	VAN NUYS M/SC MS MAG	6-8	<a href="#">5435 VESPER AVE</a>	(818)785-5475
8892	<a href="#">VAN NUYS M/SC SH MAG</a>	9-12	<a href="#">6535 CEDROS AVE</a>	(818)781-2371
7562	<a href="#">VINTAGE MATH/SCI MAG</a>	1-5	<a href="#">15848 STARE ST</a>	(818)892-8661
8927	WASHINGTON M/SC MAG	9-12	<a href="#">10860 S DENKER AVE</a>	(323)757-9281
7697	WESTMNSTR COMP SC MG	1-5	<a href="#">1010 ABBOT KINNEY BLVD</a>	(310)392-3041
7822	<a href="#">WINDSOR M/S AERO MAG</a>	1-5	<a href="#">5215 OVERDALE DR</a>	(323)293-6251
8494	WRIGHT M/S AERO MAG	6-8	<a href="#">6550 W 80TH ST</a>	(310)670-5666
8944	WSTCHSTR M/S AER MAG	9-12	<a href="#">7400 W MANCHESTER AVE</a>	(310)670-4003

# Haskell Math/Science Center



15850 Tulsa Street  
Granada Hills, California 91344  
(818) 366-2096



# Our Vision

The elementary years are “a time of uninhibited wonder, enthusiasm for learning, and breathtakingly rapid growth. The social, emotional, physical and intellectual identities children construct for themselves during this period go far toward determining the subsequent trajectories of their lives.” (*It's Elementary, California Department of Education, 1992*).

Traditional educational programs, too frequently, viewed children as passive recipients of knowledge, vessels into which facts were poured. Teachers delivered information. Parents helped students memorize it. Assessment required youngsters to regurgitate facts. Math and science were viewed as isolated areas, unrelated to other school subjects and irrelevant to out-of-school life.

Real learning is student centered. Children participate in experiences that establish patterns for growth. They work with materials and engage in activities that enable them to construct their own knowledge base. The role of teachers is, not as the ‘sage of the stage’ but rather as guide and facilitator. Parents, teaming with educational staff, forge vital home-school linkages. Just as knowledge is acquired by participation and interaction with real life materials, so to, students are evaluated with authentic methods, with group experiences and projects.

At Haskell we offer a highly motivating curriculum where children become responsible for their learning. Much of classroom work is hands-on, group exploration, with youngsters interacting with materials, making observations, testing hypotheses, and drawing and recording their own conclusions. Math and science are presented as integrated experiences, permeating language arts, social studies and the arts. Writing is a vehicle for encouraging students as they develop thinking skills and expressing their feelings and understanding. Connections will be vitalized both in school and at home, with parents becoming partners in supporting learning. All subjects will be enthusiastically explored and linkages forged with conceptual bases. Technology will be infused into instruction, serving as student centered information sources, tools for organizing data and telecommunications links.

All this will require the energy and enthusiasm of a caring, energetic community of parents and staff, with parents participating in classroom activities and instructors encouraging at home support.



# Goals

## Students will

- develop a strong interest in math and science.
- improve their math and science skills:
- identify the connections between these subjects and other areas of curriculum, to bridge bridges between paper-and-pencil, in school work and life experiences.
  - analyze and interpret data.
  - use technology to extend skills beyond superficial levels, to promote in-depth understanding
  - identify the role math and science play in careers



## Teachers will

- translate the Science and Math Frameworks into clear, easy to follow curriculum.
- articulate with staff at the secondary math/science magnets. This will enable our site to provide the foundations needed by these schools and enable them to build on work we have begun.
- create a supportive, stimulating learning environment.

## Parents will

- develop interest and understanding of the new integrated approaches to these subjects so that they can support their youngsters' progress.
- will participate in workshops and support classroom activities, both by volunteering time and by helping students at home.



# Haskell Math/Science Magnet

A very special place.

- ☞ A highly motivating academic program.
- ☞ Hands-on math, fostering real-world connections to promote in depth understanding.
- ☞ Integrated life, earth and physical science program so that children learn to understand and appreciate the relevance of this vital area to their lives.
- ☞ The latest in technology, with computers, VCRs, laser disks and stimulating software to support instruction.
- ☞ An instructional team who will plan and work together to maximize your child's achievement.
- ☞ A commitment to support families and encourage their involvement with our school program.



Haskell offers many programs to promote learning, including our PTA, networking with neighborhood businesses, volunteer art docents and special programs for both the gifted and those with special needs. In addition, we are one of the few North Valley schools that is air conditioned!

The magnet center shares the campus of Nobel Middle School. Magnet students make up about forty-three percent of the total school population of 6th, 7th, and 8th graders.



[Magnet Coordinator - Ted Pearce](#)

**Magnet Center Goals**

The Math Science Technology Magnet Center was established to provide instruction in all academic areas; to promote and enrich learning in the fields of math, science, and technology which are basic to future learning in all areas; and to promote standards of personal and classroom discipline and good citizenship.

<p><b><u>Faculty/Personnel</u></b></p> <ul style="list-style-type: none"> <li>• Full time coordinator</li> <li>• Award winning faculty</li> <li>• Gifted Program Coordinator</li> <li>• Mentor Teachers</li> </ul> <p><b><u>Parent Involvement</u></b></p> <ul style="list-style-type: none"> <li>• PTSA</li> <li>• School Leadership Counsel</li> <li>• School Improvement Program Site Council</li> <li>• Magnet Advisory Committee</li> <li>• Bilingual Advisory Committee</li> <li>• Technology Committee</li> <li>• Volunteer Opportunities</li> <li>• Back-to-Back School and Family Night</li> <li>• Open House</li> <li>• Career Day</li> </ul> <p><b><u>Program Enrichment</u></b></p> <ul style="list-style-type: none"> <li>• Field Trips</li> <li>• Guest speakers</li> <li>• Assemblies</li> <li>• Concerts</li> <li>• Health Fair</li> <li>• Science Fair</li> <li>• PSAT</li> <li>• CTY Johns Hopkins</li> <li>• Youth Motivation Task Force</li> <li>• Career Day</li> </ul>	<p><b><u>Curriculum</u></b></p> <ul style="list-style-type: none"> <li>• Sixth grade teamed with maximum of four teachers</li> <li>• Honors classes available for gifted and high achieving students within the Magnet</li> <li>• Algebra 1 and Geometry available for advanced students</li> <li>• Math Lab</li> <li>• Computer Labs (2)</li> <li>• Mobile Mini-Labs (2)</li> <li>• Science electives</li> <li>• Instrumental Music (Beginning &amp; Advanced)</li> <li>• Art/Ceramics/Crafts</li> <li>• Yearbook/Journalism</li> <li>• Leadership</li> </ul> <p><b><u>Extracurricular Activities</u></b></p> <ul style="list-style-type: none"> <li>• Weekly Noontime Activities</li> <li>• Dances</li> <li>• 10K Run</li> <li>• Holiday Parade</li> <li>• Turkey Bowl</li> <li>• Noon Leagues</li> <li>• Fashion Show</li> <li>• Magazine Fundraising Drive</li> <li>• Student Incentive Programs- Attendance and Homework</li> <li>• Youth Services Program</li> <li>• After school clubs and tutoring</li> </ul>
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**Student Self-Help Programs**

- Peer tutoring
- Impact groups
- TUPE groups
- Peer Mediation

If you would like more detailed information, call the Magnet Office at (818)-349-4200, ext. 230. Tour dates are available by reservation during the fall when the CHOICES brochure is out. Call the above number to confirm dates and time.

**Nobel Middle School 2002-2003 Curriculum**

**6th Grade**

Math & Science - One Teacher  
English & Social Studies -One Teacher  
Physical Education  
Elective

**7th & 8th Grade**

Math  
Science  
English  
Social Studies  
Physical Education  
Elective

**Science**

- 6th Science or Honors Science
- 7th Health/Science 7 or Honors Health/Science 7
- 8th Science 8 or Honors Science 8

**Math**

- 6th Math or Honors Math
- 7th Math or Honors Math or Algebra
- 8th Math or Algebra or Geometry

**Technology**

- Computer Labs (2)
- Mobile Mini-Labs (2)
- Classroom Computers
- Graphing Calculators (class sets)
- Scientific Equipment

**Electives**

- 6th Marine Biology - 10 weeks
- 6th Environment Studies
- 8th Marine Science

**Field Trips**

- Museum of Tolerance
- Marine Mammal Center
- Challenger Space Mission
- Gene Autry Museum
- Griffith Park Observatory
- Skirball Museum
- Cabrillo Beach
- L.A. Times
- Catalina
- Sea World
- L.A. Science Center

## 2002-2003 Electives

### 6th Grade

Beginning Winds - Full Year  
Beginning Strings - Full Year

### Exploratory 10 week courses:

General Art  
Folk Art  
Crafts  
Horticulture  
Environmental Studies  
Introduction to Computers  
Introduction to Spanish  
People Skills  
Marine Biology

### 7th & 8th grade

Orchestra-Full Year  
Band-Full Year  
Spanish I Full Year  
Marine Science-8th Full year  
Leadership

### Semester Courses

General Art  
Cartooning  
Ceramics  
Crafts  
Landscape Design  
Introduction to Computers  
Yearbook  
Peer Mediation  
Journalism

## Nobel Middle School Math Science Technology Magnet Center

9950 Tampa Avenue  
Northridge, California 91324  
818-349-4200 fax 818-701-9480

## Abraham Lincoln High School Math/Science Magnet Program

### **Overview:**

The Lincoln High School Math/Science Magnet offers 45 incoming ninth grade students the opportunity to participate in a brand new, rigorous, college-preparatory program which puts strong emphasis on the physical and biological sciences and on mathematics. Students will be expected to participate in summer field courses, and will take a heavy load of science and math core classes and electives during their four years with us. Students who are highly motivated to learn, and who have a strong interest in science and technology, are encouraged to apply!

### **Our Purpose:**

The fields of science and technology are probably the fastest-changing, most exciting areas of human endeavor today, offering expanding lab opportunities and a hope for a better future for us all. Intense training in the different math and science areas, hands-on learning experiences, and interaction with industry professionals will, therefore, prepare students for the demands of our complex society, to be ready to take advantage of emerging job markets, and to be able to assess for themselves what the modern world is all about.

### **Our Program:**

Students will have the opportunity to participate in the regular enriched magnet program or in the accelerated program, which will put strong emphasis on Advanced Placement courses.

Each summer, students will take part in a special magnet field study course. (For example, a course looking at the biology and geology of the Eastern Sierras is in the planning stages for this summer.) During the regular school year, students will be programmed into special magnet math, science, and English classes.

**MATH:** Students will be strongly encouraged to cover the math sequence of classes all the way through Calculus.

Those showing ability will have the opportunity to take Advanced Placement Calculus AB and BC, AP Statistics, Computer Programming, and AP Computer Programming.

**SCIENCE:** Incoming 9th graders will take a special magnet Science issues course, giving them an overview of the various science fields that exist, as well as an introduction to scientific methods and practices. In 10th grade, students will take either magnet Biology or AP Biology. In 11th grade, students will take either magnet Chemistry or AP Chemistry. In 12th grade, students will take either Physics, AP Physics, or AP Environmental Science.

### **Our Teaching Staff:**

The team of teachers selected to work in the magnet program has been chosen specifically for their teaching ability, their high level of motivation, and their willingness to be flexible and creative. This team (initially one math, one science, and one English teacher) will work closely together to integrate important concepts and to coordinate major projects.

**Lincoln Senior High School  
3501 N. Broadway  
Los Angeles, CA 90031  
(323) 223-4021**

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**Appendix V: James Irvine Foundation Grant  
Program: Youth**

## James Irvine Foundation: Youth

***The goal of the Youth program is to enhance the academic preparation of low-income youth, aged 14 to 24, for successful transition to post-secondary opportunities, the workplace, and citizenship.***

### ***California's future***

The future of California is invariably tied to the prospects of its youth. Investments in the lives and minds of young Californians pay rich dividends by ensuring the continued vitality and health of this state. Yet far too many of California's young people—particularly low-income, minority, and immigrant youth—reach adulthood without the education, experiences and credentials to participate successfully in the workplace and in the civic life of their communities.

Recognizing that demographic forces in the state promise to exacerbate this trend in the decades ahead, we have recommitted ourselves to helping California youth successfully navigate the path into productive, healthy adulthood. To advance this goal, the Youth program is dedicated to addressing the needs of youth aged 14-24 who must steer a course through significant life transitions and developmental tasks, too often with diminishing levels of guidance.

We believe our capacity to close achievement gaps in secondary and post-secondary education, career preparedness and civic involvement is strengthened by the adoption of a multiple pathways approach which ensures equal access and opportunity for all youth while expanding the spectrum of substantive life options available to them. We focus our funding on three factors which are essential for positive change for youth: promoting engagement, increasing retention and enhancing achievement.

### ***Multiple paths to success***

As a society, wisdom and experience have taught us to view education as the great equalizer. To succeed as individuals and as a nation in a changing and more complex and technical economy, all youth should aspire to and obtain a college degree. However, a "one size fits all" approach to success is resulting in far too many youth falling between the cracks—and the majority of them are low-income youth of color.

Enhancing the academic preparation of low-income youth depends on identifying models and methods that engage their interest and imaginations and provide the supports that keep them connected. In essence, it rests on our ability to make education and learning relevant once again. Positive youth development theorists speak eloquently about the value of offering youth a voice. The Foundation believes that it is equally important to offer them choice. For youth who have access to fewer resources, fewer engaged adults in their lives, and less confidence in their capacity to positively influence their environment, the introduction of choice can have a powerful and positive impact on both engagement and retention.

In addition, the chances of increasing retention and achievement among high school and college students are significantly improved by individual relationships with caring adults, high standards, a sense of membership and positive peer culture, and a chance to develop skills. Success also depends on attention to the time youth are not in school and recognition of the important role that community-based organizations play in creating a sense of connectedness for them and their families by offering structure for, and interest in, their academic success. Accordingly, Irvine supports strategies that ensure equal access to post-secondary achievement and that increase the number of low-income youth entering and persisting in college. In addition,



we support the creation of alternative learning environments that offer early exposure to the world of work, that combine academic rigor and career-centered approaches, and those that bridge secondary and post-secondary educational systems. By expanding the landscape of substantive and rewarding options available to California's low-income youth, they will be better equipped with the skills and experience to make informed choices about their future.

For more information go to: [http://www.irvine.org/grants\\_program/youth/youth.shtml](http://www.irvine.org/grants_program/youth/youth.shtml)