

**SILICON VALLEY**  
WORKFORCE  
INVESTMENT  
NETWORK



**GODBE RESEARCH**  
Gain Insight

PREPARING FOR THE NEXT GENERATION  
OF PUBLIC SECTOR EMPLOYEES:

RETAIN, RETRAIN AND RECRUIT

Conducted for the Silicon Valley Workforce Investment  
Network

April 2006

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## INTRODUCTION

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Godbe Research is pleased to present the results of this labor market study conducted for the Silicon Valley Workforce Investment Network. This particular report examines the current and future workforce needs of employers in the public sector within Santa Clara, San Mateo, and San Benito counties. This sector includes employers from the federal, state, and local levels.

For organizational purposes, the public sector has been delineated into four different sectors, including two sub-sectors for the municipal sector:

- **Education Sector** – Covering all public sector educational institutions, including community colleges, universities, and k-12 schools. This sector also includes educational administrative offices and supporting facilities.
- **Municipal Sector**
  - **Services Sub-Sector** – Covering executive offices at the city, county, state, and federal government levels.
  - **Public Works Sub-Sector** – Covering any offices or departments concerned with infrastructure construction as well as services run by the government for public use, such as transportation, waste removal services, water services, and utility services.
- **Criminal Justice Sector** – Covering entities that deal with disputes or actions involving criminal penalties.
- **Public Safety Sector** – Covering entities that prevent or protect the general public from injury, damage, or harm.

The major components of this study entailed researching existing sources of information relevant to the public sector in Santa Clara, San Mateo, and San Benito counties, and gathering qualitative feedback from public sector employers and education and training providers in the Tri-County area.

With a thorough search of existing research and information on the public sector, Godbe Research compiled a summary of the sector and provided insight into its future direction. By conducting focus groups and executive interviews with public sector employers, we were able to gather information about current and potential occupational gaps and opportunities for the Silicon Valley Workforce Investment Network (SVWIN).

The report is organized into the following sections:

- The *Executive Summary* includes a summary of the *Key Findings* from the survey, a short description of the project methodology, and the Conclusions and Recommendations for the Public sector based on our research.
- The *Summary of Findings* section offers an industry and occupational analysis based on the research findings. The discussion is organized into the following sections:
  - Industry Analysis
    - Public Sector Workforce Issues and Challenges
    - Public Sector Workforce Opportunities
  - Occupational Assessment

- *Appendix A* provides a list of the focus group and executive interview participants.
- *Appendix B* provides additional industry tables and data.
- *Appendix C* provides additional occupational tables and data.
- *Appendix D* provides occupational profiles for 16 key occupations in the public sector.
- *Appendix E* provides a comprehensive table of the education and training providers in the Tri-County area and the programs that are offered at each institution.
- *Appendix F* provides the focus group discussion guide that was used for this study.
- *Appendix G* provides a general outline for a Public Sector Workshop.



## EXECUTIVE SUMMARY

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### Introduction

In November 2005, the Silicon Valley Workforce Investment Network (SVWIN) hired Godbe Research to conduct a workforce demand study of the Public sector within Santa Clara, San Mateo, and San Benito counties (the Tri-County area).

The primary research objectives of the study were as follows:

- To identify the workforce needs of the public sector by employer type and occupation, with a focus on identifying where labor market gaps are the greatest;
- To evaluate existing and future public sector workforce challenges and opportunities; and
- Ultimately, to determine whether the public sector should become one of the industry clusters of importance for SVWIN in planning for the development of Silicon Valley's regional workforce.

### Key Findings

Research findings indicate that public sector employers in the Tri-County area already face challenges maintaining both the quality and quantity of its workforce, and these obstacles will only grow in the future. The most substantial workforce challenges for public sector employers include:

- The **age composition of the public sector workforce** and the impact that **retirement** will have in the next three to seven years on the make-up of employees;
- The **difficulty in recruiting** new and/or young qualified applicants into the public sector; and
- The **diminishing budget for training and employee development practices** in a sector that has been largely dependent on internal training to develop its workforce.

The growing magnitude of these workforce issues all point to the need for SVWIN to designate the public sector as an industry cluster that should be a focus for workforce development planning.

### Tri-County Public Sector Industry Analysis

Public sector employees currently make up approximately 13 percent of the total workforce in the Tri-County area and account for over 150,000 employees. Over 85 percent of public sector employees in the Tri-County area are employed in education or through local government, with federal and state government making up a relatively small portion of the total public sector employment in the Tri-County area.

- Employment levels in the public sector peaked at around 158,000 in 2002.
- Overall demand for state and local government employees, as well as those working in education, will increase by almost 10,000 by 2014 in the Tri-County area.
- Employment in educational services and state government is projected to grow at a faster rate than in local government between 2004 and 2014, while federal government employment is expected to diminish by approximately 10 percent in that same time period.

### Replacing an Aging Workforce

Retirement in the public sector will only becoming a greater threat to the stability and maintenance of the public sector workforce. Currently the problem is most apparent among higher-level managers that are expected to retire over the next five years, often with little or no qualified applicant pool.

- Municipal services and public works employers in the Tri-County area have the highest proportion of employees over 50 years of age, when compared to the other public sector segments.
- Criminal justice and municipal services organizations are likely to be the most affected by retirements over the next three to five years.
- Only a handful of organizations have set up any formal plans to deal with potential workforce shortages.

### Recruiting Qualified Applicants

Public sector employers in the region indicated that a more immediate problem than replacing retired workers is improving the quality and quantity of potential applicants. The challenge in recruiting quality applicants to the public sector has been attributed to the following factors:

- Students and young people have indicated low awareness or negative perceptions regarding public sector employment opportunities;
- Lengthy application processes and challenging recruitment standards have created barriers to public sector recruitment, particularly in the criminal justice and public safety sectors;
- Current applicants and even some current public sector employees were found to be deficient in people skills, the ability to multi-task, and written and verbal communication skills.

### **Tri-County Public Sector Education and Training Providers**

Like most industry employers, the public sector places considerable value on the role external education and training providers play in developing their workforce. However, unlike their counterparts in private industry, many public sector employers place as much or more value on internal training programs to complete the educational process for entry-level and non entry-level employees.

Employers indicated they were generally satisfied with the external training and education programs in the region. An assessment of the relevant education and training programs in the community reveals that the public sector is generally well-served by the colleges and universities in the region for most generalized two and four year degree programs that would be needed by the sector. Employers were much more likely to indicate that a lack of resources allocated to their internal education and training programs was creating real difficulties in preparing their current and future workforce.

## Conclusions and Recommendations

Based on the findings of the secondary and primary research, Godbe offers the following conclusions and recommendations to the Silicon Valley Workforce Investment Network.

*By 2011, the first of the 78 million United States baby boomers will reach 65, and many of those working in the public sector will already have retired.*

The region's public sector faces significant challenges in the near future as the composition of its workforce changes substantially. By 2011, the first of the 78 million United States baby boomers will reach 65, and many of those working in the public sector will already have retired. The problem is particularly relevant to the public sector, where employees are typically older than their private sector counterparts, and where a much smaller portion of the workforce is under the age of 35. In 2001, according to the Aging Government Workforce, only 27 percent of the nation's government workforce is under the age of 35, compared to 43 percent for the private sector. This workforce dilemma is not unique to the region. Other cities, counties, states, and even other countries face the demographic reality of the retiring baby boomer generation, who will take with them the knowledge, training, and expertise that can only be acquired after many years of service to the public sector. However, the Tri-County area does face somewhat distinct challenges that help explain the need to develop and implement area-specific strategies to overcome this human capital challenge. These region-specific obstacles to public sector workforce development include:

- **Elevated housing prices**, which have made recruiting and retaining younger public sector employees difficult. Entry-level public sector employees will often begin their employment in the region and, once they have gathered a few years' experience, will often look for work in another region or even outside of the state where they can afford a single family home. A housing cost calculator shows that you only need to make \$40,161 in Phoenix, Arizona, to have the same house-buying power of a \$70,000 annual salary in San Jose, and San Jose is relatively inexpensive compared to many of the areas within Santa Clara and San Mateo counties.
- **The knowledge-intensive nature of the regional economy**, which often is too strong a competitor for those public sector occupations that require at least a bachelor's degree and advanced training of some kind. Public sector employers are frequently unable to provide competitive salaries against knowledge-driven private sector employers in the region, such as Google, Hewlett Packard, and Applied Biosystems.
- **The unstable budget environment within California**, which is largely responsible for cutting funding of staff training and development programs, implementing early retirement programs that lower immediate budget obligations, and providing inadequate resources to managers and supervisors to engage in sustained workforce planning. The general uncertainty surrounding state and local municipal budgets seems to have focused public administrators on more short-term priorities, while spending less time considering longer-term strategic planning. This is usually detrimental to workforce planning as short-term solutions to human capital shortages are usually costly in the longer term.

These obstacles, combined with the demographic composition of the public sector workforce, provide a strong catalyst for both the immediate attention from public sector agencies as well as a commitment to meet and overcome the workforce challenges with long-term solutions. As is often the case with workforce planning and development, no single simple answer will solve the workforce dilemma faced by public agencies in the Tri-County area. Public agencies need to recognize that the costs of this workforce transition can be minimized with a willingness to review and implement, when appropriate, long-term strategies that will increase the duration and productivity of today's workforce and improve the quality and quantity of tomorrow's public sector employees.

### **Retain, Retrain, and Develop Today's Public Sector Employees**

*For the Tri-County area, managers, supervisors, and those responsible for human resource planning, indicated that approximately 50% of their senior staff and management will be able to retire or leave for work outside of the public sector in the next five years.*

While the overall quantity of public sector employees is generally on the rise, the more immediate challenge to this sector's workforce lies in the ability to maintain the human capital that will be lost to retirement, drawn to employment in other industries, or lost to public sector employment outside of the region. For the Tri-County area, managers, supervisors, and those responsible for human resource planning that we spoke with expect that approximately 50 percent of their senior staff and management will be able to retire or will leave for work outside of the public sector in the next five years. The most immediate challenge for many of the public agencies we spoke with is to maintain the level of competence among middle- and senior-level staff and management positions. This was particularly true for the municipal services and criminal justice sectors, but was also a concern for representatives from education, public safety and public works. The following strategies are offered as a way to overcome this loss of human capital expected in the public sector in the next five to ten years.

#### Implement Career Ladder and Mentorship Programs for Succession Planning

Career ladders and mentorship programs provide municipal agencies critical tools in overcoming the challenges associated with succession planning. For the public sector, these career ladders should focus on career paths in specific public sector segments, such as municipal services or education, and are also affected by the size of the municipal agency.

This report presents segment specific career ladders from page 30 through 34, detailing the benefits associated with implementing and developing career ladder programs for public sector employees.

Develop Cooperative Relationships among Municipal Agencies in the Region for Staff Training and Development

*The City of Palo Alto's Management Academy provides a clear example of how municipal agencies can support one another through collaborative workforce development strategies.*

“More funding” was one of the most popular responses among the region’s senior managers and human resource administrators when asked what should be done to improve staff training and development. However, in the current budgetary environment that is not always possible and municipal agencies have already begun to develop creative cost-effective solutions for staff training and development. The City of Palo Alto’s Management Academy provides a clear example of how municipal agencies can support one another through collaborative workforce development strategies. The Management Academy provides municipal services employees throughout the region the opportunity to develop the skills needed for leadership positions in the public sector. As new training and staff development needs are identified, other municipal agencies could develop and implement training academies that would be open to all municipal agency employees in the region.

**Lifelong Learning Accounts (LiLA's)** provide a flexible alternative to local governments who are unable to just increase funding for internal staff training and development programs. These portable individual accounts finance the education and training that current and future employees’ need for career advancement in the public sector. Similar to private and public retirement accounts (like a 401k for training and education), individuals, employers and public sources contribute to these accounts which provide individuals with the ability to develop new skills and progress through current or alternative career paths.

**Case Study:** In late 2002, a basic LiLA demonstration model was started for the public sector in Northeast Indiana with five municipalities including the City of Fort Wayne. This demonstration project is being administered by CAEL (The Council for Adult and Experiential Learning) and includes the following components:

1. Employers agree to provide LiLA's to employees by matching employee account funds.
2. The employee contributes a minimum of \$120 per year.
3. The employee maps out a learning plan with an education and career advisor.
4. Third party sources match the combined employer and employee accounts.
5. Once funds are sufficient for an educational activity, the employee submits an application for course fees from an account that is under the administrative oversight of CAEL.

While the LiLA demonstration model for the public sector has not been completed there has been some valuable feedback. Employee demand for the program has been strong with consistent support from local elected officials. Current employees in the public sector have gone back to get training and education, funded by their LiLA, and have moved on to higher positions within their organization.

### Commit to Integrated Workforce Planning

As public agencies find that they have a dwindling pool of qualified applicants to choose from for middle- and senior-level positions, the need for comprehensive workforce planning becomes more apparent. Effective workforce planning should be an integral part of any municipal agency's short-term and long-term planning process as well as the agency's allocation of limited resources.

Public sector workforce experts offer an array of options for implementing a successful workforce planning model. Some of the key activities include:

- Assessing the current status of an agency's workforce;
- Considering how the workforce needs of an agency will change in the future;
- Identifying the skills and competencies that will be required in this future environment; and
- Developing and implementing workforce plans to meet the human resource needs of the agency in the future.

Effectively implementing this type of planning process is a challenge. It requires a strong commitment from senior managers, employees who must be willing to provide the honest feedback required to determine the current status of the workforce as well as what will be needed in the future, and, lastly, both managers and employees need to understand how this type of planning will fit into their work schedule.

**SVWIN Opportunity:** According to case studies, the agencies that have been more successful implementing workforce planning models are generally larger with more employees. The City of Anaheim with 4,000 employees for example, has been one of the best case examples of developing and implementing a comprehensive workforce planning model. While there are examples of smaller agencies that have effectively implemented an integral workforce planning model, smaller agencies usually indicate that they do not have the time or resources to do it effectively. SVWIN could determine the workforce planning model that is most appropriate for smaller agencies and assist these agencies in implementing an effective workforce planning process.

## Effective Recruiting: Expand the Quality and Quantity of Applicants to the Public Sector

### Focus on High School and Middle School Students to Improve Awareness of Career Opportunities in the Public Sector

High school students present a natural audience for communicating the career opportunities that exist in the public sector. This audience should be presented with the diversity of work that is available in the public sector, from police officers to transportation planners, to city managers, and given leadership advice for preparing for their occupation of choice at an early age.

The City of San Jose under the direction of the art and practice of leadership program has recently developed a recommendation to create a Youth in Public Service (YIPS) program. This program would communicate to regional high school and college students the opportunities and benefits that exist with careers in the public sector. Given the low proportion of current public sector employees under the age of 35 in Santa Clara and the Tri-County region, as well as the large proportion of retirements expected in the next three years in both the criminal justice segment (37%) and the municipal services segment (23%), a program like this should be implemented relatively quickly.

**Awareness and Perception of Public Sector Employment** is a critical consideration when developing plans to increase the quantity and quality of current and future applicants. Individuals who have been working with students and young people in the region to encourage public sector employment often find most young people are not aware of public sector employment and if they are it is generally equated to police work and firefighting. Some internship opportunities at public agencies in the region and San Jose's job shadow day provide opportunities to increase overall awareness and the positive perception of public sector employment. Experience from these recruitment and awareness efforts have exposed the need for a more comprehensive strategy aimed at students to provide different types of internships based on the interests of the students as well as greater collaboration between agencies to communicate the myriad of benefits and options that exist in public sector employment.

Representatives from the criminal justice system also indicated a need to communicate to students that are younger than high school students, which would require expanding the scope of the program's original intent. This was important to the criminal justice recruiters because high school students are more likely to engage in illicit activities that may disqualify them from working in the criminal justice sector later in life.

**SVWIN Opportunity:** SVWIN could collaborate with a high school in the region to create a high school academy for the public sector. To expedite implementation, the academy could start as part of a regular high school with elective courses that would expose students to the training and career opportunities available in the public sector. As the program grows and becomes more popular, it could eventually be developed into a full-time charter program. An Academy of Public Service already exists in Dorchester, Massachusetts, which could serve as a valuable resource in getting a similar program implemented in the Silicon Valley region.

**Case Study:** In September, 1991, the Academy of Public Service in Dorchester Massachusetts was established. Originally the academy began as a wing of a high school with less than 100 students. In 2003, the high school academy became an independent high school with an enrollment of just under 300 ninth through twelfth grade high school students from the Boston region. The academy serves a diverse student population both ethnically and socio-economically. Students are exposed to a multitude of public sector employment opportunities and the education emphasizes the development of critical thinking, public speaking, and the ability to solve local and regional community problems. The academy offers advanced placement courses as well as giving current students the opportunity to take courses at the University of Massachusetts in Boston. The academy has developed partnerships with regional universities (Harvard and University of Massachusetts in Boston), public sector employers, and non-profit agencies. Through these partnerships the academy offers its students internships, mentorship and job shadowing programs, as well as a courses tailored towards public sector employment. The academy also works closely with a Private Industry Council that provides funding assistance as well as serving in an advisory capacity.



### Communicate the True Benefits of Public Sector Employment

Qualitative research findings both nationally and locally agree that fewer and fewer young people are considering careers in the public sector. One of the most significant reasons cited by young people for avoiding careers in the public sector is the perception of low pay for many public sector occupations. Part of this is a perception issue, but this can also be overcome by including the value of non-compensation related benefits that are derived from employment in the public sector in any discussions of comparative pay among occupations. While some of these benefits have direct financial value (healthcare coverage, retirement and pension plans, as well as life insurance) others can be communicated as quality-of-life benefits (flexible working schedules, set hours, and comfortable working environments). This discussion about the complete benefits of public sector employment can also extend into the available career promotion opportunities that exist within a career ladder framework. Career advancement opportunities are a central consideration for younger employees and jobseekers and an established career ladder program is an important benefit that should be communicated to both potential and current employees.

**SVWIN Opportunity:** SVWIN could collaborate with local public sector employers to develop visual vignettes that show individuals who have progressed upon career pathways in the public sector. These vignettes would communicate with employees and jobseekers the opportunities for advancement that exist within the public sector while also revealing the complete set of benefits associated with these pathways.

## Project Methodology

There are two major research components to this study:

- Secondary research – synthesis and trend analysis of existing sources of information relevant to public sector employment in the Tri-County Area, including a review of current literature on the industry and research into the characteristics of the industry and the more prominent occupations.
- Primary research – focus groups and executive interviews were conducted with representatives from public sector employers and education and training providers in the Tri-County Area in order to gain insight into current and emerging workforce demands in the sector.

# INDUSTRY ANALYSIS

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The public sector is defined as that portion of the economy composed of all levels of government, excluding businesses and households. Examples of public sector activity range from urban planning to national defense.

The diverse nature of the public sector requires that we first clarify the structure of its workforce. Figure 1 shows this breakdown, along with a more detailed breakdown of the sectors into smaller sub-sectors, which are defined as:

**Education Sector:** Any community colleges, universities, and k-12 schools. Also includes any administrative offices or supporting facilities.

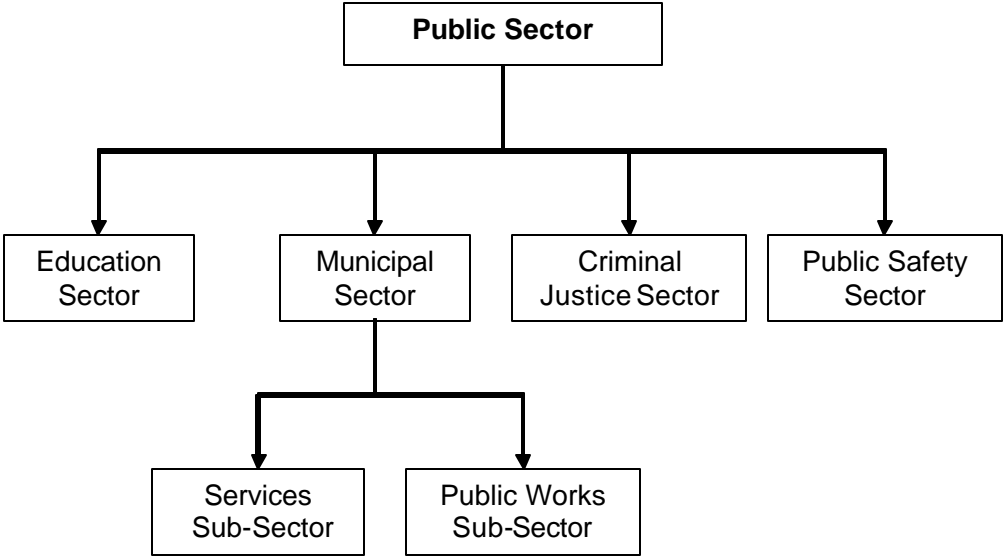
**Municipal Services Sub-Sector:** Executive offices for city, county, state, or federal governments.

**Public Works Sub-Sector:** Any offices or departments concerned with infrastructure constructed or services run by the government for public use, such as transportation, waste removal services, water services, and utility services.

**Criminal Justice Sector:** Entities that deal with disputes or actions involving criminal penalties.

**Public Safety Sector:** Entities that prevent or protect the general public from injury, damage, or harm.

Figure 1 Public Sectors and Sub-Sectors



## Public Sector Employment

In 2004, 11 percent of workers in the Tri-County were employed by the government, while a further three percent worked in educational services. Table 1 indicates that the majority of government jobs in the Tri-County area (82%) are in local government entities.

Table 1 Public Sector Employment in the Tri-County Area

Industry	2004 Employment	% of Total Employment
Educational Services	32,660	2.7%
All Government	126,800	10.6%
Federal Government	14,600	1.2%
State Government	8,100	0.7%
Local Government	104,200	8.7%

As shown in Table 2, 14 percent of the total workforce in the state of California in 2004 was employed in the public sector. This proportion is higher than each of the three counties in the Tri-County area - Santa Clara (11%), San Mateo (9%), and San Benito (12%). In addition, comparing the Tri-County area to other counties in California reveals that its ratio is lower than in some of the larger counties, including Sacramento and San Francisco.

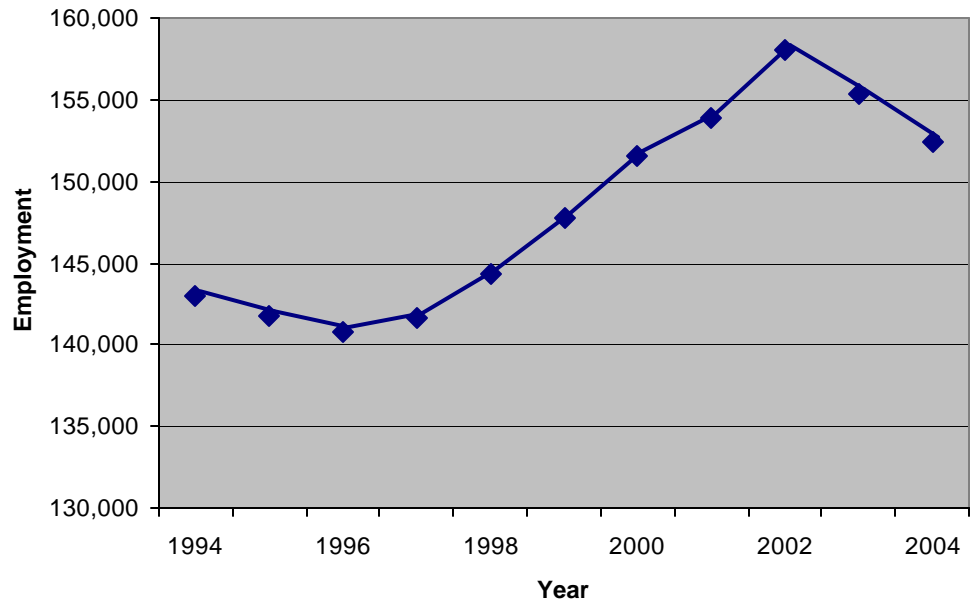
Table 2 Government Employment to Workforce Ratios, 2004

	Government Employment 2004	Total Workforce 2004	Ratio
<b>Sacramento</b>	155,800	665,000	23.4%
<b>San Francisco</b>	81,600	426,000	19.2%
<b>California</b>	2,390,300	17,552,300	13.6%
<b>San Benito</b>	3,000	25,400	11.8%
<b>Santa Clara</b>	91,700	828,800	11.1%
<b>Tri-County Area</b>	126,800	1,217,600	10.4%
<b>San Mateo</b>	32,100	363,400	8.8%

Employment Trends

The late 1990s showed a rise in public sector employment<sup>i</sup> in the Tri-County area. Employment in the sector peaked in 2002 at around 158,000 and declined to around 152,400 by 2004 (see Figure 2).

Figure 2 Public Sector Employment in the Tri-County Area, 1994-2004



In the Tri-County area, employment in the public sector increased by 9,453 between 1994 and 2004, an overall increase of seven percent. By comparison, public sector employment in California grew at a faster rate, increasing by 17 percent between 1994 and 2004. Within the Tri-County area, overall employment in the sector increased the most in Santa Clara County, rising by almost 7,500 between 1994 and 2004, while San Benito County experienced the largest percentage increase in employment overall, at 36 percent.

Figure 3 Public Sector Employment Growth in California and the Tri-County Area, 1994-2004

	1994 Employment	2004 Employment	1994-2004 (#)	1994-2004 (%)
<b>Santa Clara</b>	106,175	113,652	7,477	7.0
<b>San Mateo</b>	34,530	35,706	1,176	3.4
<b>San Benito</b>	2,247	3,047	800	35.6
<b>Tri-County Area</b>	142,952	152,405	9,453	6.6
<b>California</b>	2,232,830	2,601,614	368,784	16.5

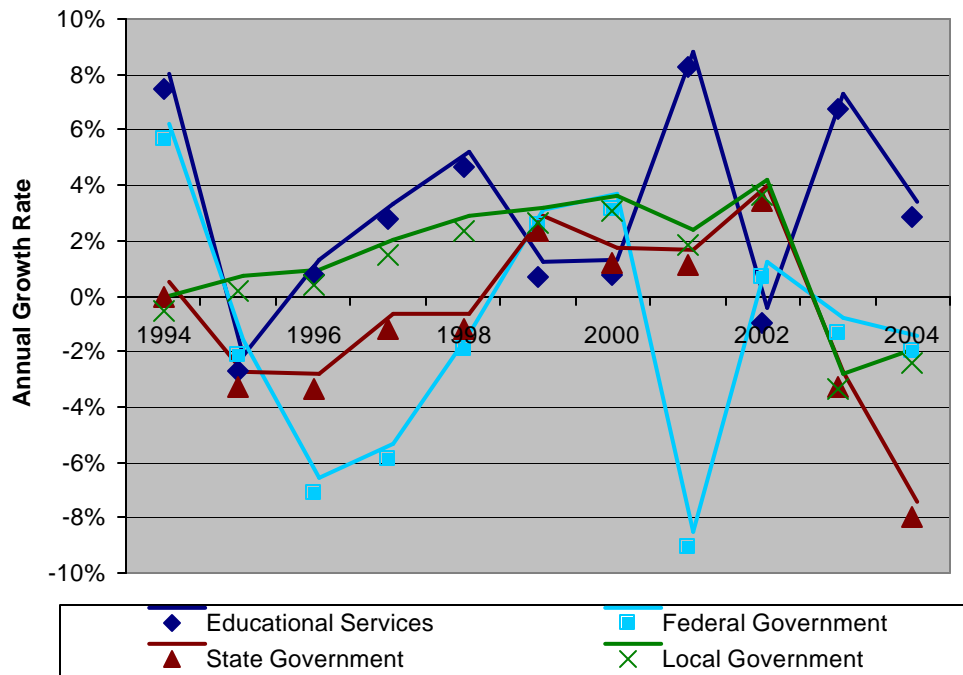
<sup>i</sup> Including government and public sector educational services employment.

As shown in Table 3, educational services experienced particularly strong growth in employment between 1994 and 2004 in the Tri-County area. The table also indicates that, while both federal and state government employment fell during 1994 and 2004, employment in local government entities increased by 10 percent.

Table 3 Tri-County Industry Employment Growth, 1994-2004

Industry	Employment Growth 1994-2004 (#)	Employment Growth 1994-2004 (%)
Educational Services	6,700	25.8
All Government	4,200	3.4
Federal Government	-4,000	-21.5
State Government	-1,100	-12.0
Local Government	9,500	10.0
Health Care & Social Assistance	14,600	18.8
Leisure & Hospitality	13,600	15.7
Manufacturing	-45,100	-18.4
Retail Trade	9,800	9.1
All Industries	81,200	7.3

Figure 4 Tri-County Public Sector Employment Growth Rates, 1994-2004



Employment Growth Indicators

A good predictor of growth in public sector employment is gross state product. This figure shows the growth rates for employment in California and the California gross state domestic product. From the graph it appears the two do indeed trend together fairly well. The correlation coefficient between the two series is 0.55.

Figure 5 Employment and Gross State Product Growth, 1996-2004

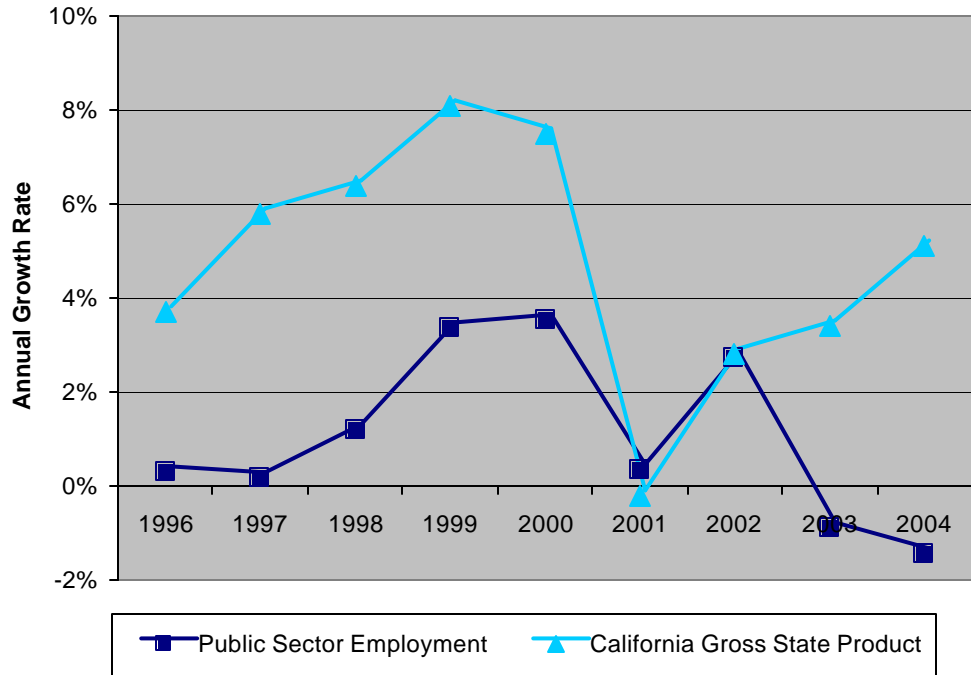


Table 4 shows the correlation between growth rates for public sector employment in California and the Tri-County area and several key economic variables. In the Tri-County area, income has the highest correlation with public sector employment, followed by CPI and population. All economic variables provided in the table show positive correlation with public sector employment, meaning that positive growth in these variables coincides with positive growth in public sector employment.

At the state level, CPI shows a strong correlation with public sector employment, while Gross State Product and total employment also have correlations above 0.2.

Table 4 Correlations between Public Sector Employment and Economic Variables, 1997-2004

	Population	Total Employment	Income	CPI	Gross State Product
Tri-County Area	0.26	0.132	0.549	0.331	N/A
California	0.045	0.219	0.066	0.739	0.241

Industry Employment Projections

As shown in Table 5, federal government employment in the Tri-County area is projected to decline by 10 percent between 2004 and 2014, while state government employment is projected to increase by eight percent, and local government employment is projected to increase by three percent. Employment in educational services is expected to grow at a higher rate of 11 percent. By comparison, the total population in the Tri-County area is projected to grow by around eight percent between 2004 and 2014. This indicates that the ratio of public sector jobs to total population is projected to decline between 2004 and 2014 in the Tri-County area.

Table 5 Tri-County Industry Employment Growth Projections, 2004-2014

Industry	Employment Growth 2004-2014 (#)	Employment Growth 2004-2014 (%)
Educational Services	3,878	11.0
All Government	3,560	2.3
Federal Government	-1,990	-10.3
State Government	1,734	8.3
Local Government	3,905	3.4
Health Care & Social Assistance	17,450	17.3
Leisure & Hospitality	15,629	13.1
Manufacturing	-25,493	-11.6
Retail Trade	7,559	5.9
All Industries	84,448	6.3

**PUBLIC SECTOR WORKFORCE ISSUES AND CHALLENGES**

In order to supplement the findings from the focus group research, Godbe Research carried out focused executive interviews with a number of public sector employers in the Tri-County area. Interviews were conducted with representatives from a total of 82 public sector organizations, which collectively employed over 13,000 public sector employees in the Tri-County area.

During the executive interviews, public sector employers in the Tri-County area were asked to indicate the level of difficulty which their organization is currently facing with regard to a number of different workforce issues, including recruitment, retirement, retention, and employee development issues. Table 6 below indicates the proportion of employers currently facing either “Some difficulty” or “Great difficulty” with each issue. The table indicates that 63 percent of the employers interviewed faced difficulties “Recruiting non entry-level employees with adequate skills and experience,” while around half had difficulty “Replacing retired workers with qualified candidates from outside the organization” and “Recruiting employees with reasonable salary requirements.”

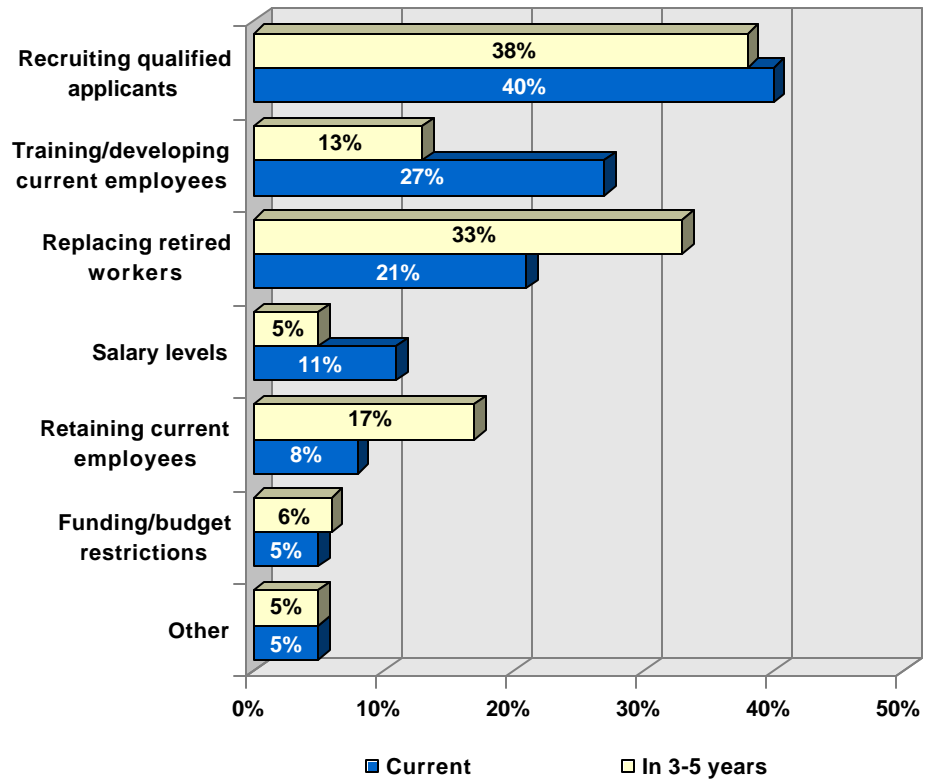
Table 6 Workforce Issues of Importance in the Tri-County Area

<b>Workforce Issue</b>	<b>% Facing Difficulty</b>
Recruiting non entry-level employees with adequate skills and experience	63%
Replacing retired workers with qualified candidates from outside the organization	51%
Recruiting employees with reasonable salary requirements	48%
Replacing retired workers with qualified candidates from within the organization	45%
Developing strategies to retain valuable and productive employees	44%
Recruiting entry-level employees with adequate training and education	41%
Developing current workers so they are trained and prepared to fill positions that are available above them	38%
Keeping current workers properly educated and trained on new technologies and policies	35%



Public sector employers in the Tri-County area were also asked to indicate the biggest current workforce challenges faced in maintaining a skilled and able workforce, as well as the biggest challenges which they expect to face in the next three to five years. Figure 6 below shows that “Recruiting qualified applicants,” “Training and developing current employees,” and “Replacing retired workers,” were felt to be the biggest workforce challenges currently faced by public sector employers. Over the next three to five years, employers expect to face increasing challenges when “Replacing retired workers” and “Retaining current employees.”

Figure 6 Current and Future Workforce Challenges



## Replacing an Aging Workforce

*“At all levels, the government-sector workforce is older than its private-sector counterpart. It also has proportionately fewer young workers, a fact that increases the seriousness of the challenge ahead.”*

**The Center for Organizational Research, 2003**

The public sector faces several challenges for its workforce in the near future, but the biggest may be the replacement of an aging workforce. There are several key factors that have led to the development of an older workforce in the public sector compared to other industry sectors. These factors range from the expansion of the public workforce in the 60s and 70s, a reduction in hiring during the 80s and 90s, and the declining appeal of the public sector as a career choice among recent college graduates.<sup>ii</sup>

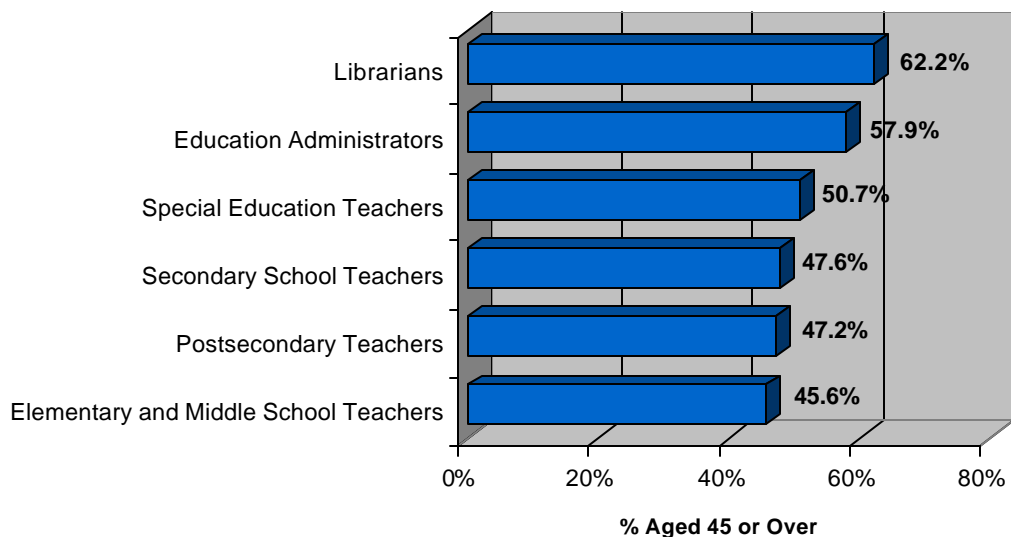
At the national level, research has shown that:

- Close to 50 percent of government workers are aged 45 years or older, compared to approximately 30 percent in the private sector;
- Around 27 percent of the public sector workforce is under 35 years of age, compared to over 40 percent of the private sector workforce.

At the state level, the California State Controller's Office reported in 2000 that the average age of a state civil service worker was 43, while the average age of management employees was 51. With the opportunity for public sector employees to retire sooner than the norm, there will soon be a large amount of vacancies to fill in the public sector. Given the average age of non-management employees, there may be difficulty in finding current employees to be promoted into vacant management positions.

All sectors seem to exhibit this problem to a certain degree. In the education sector, for example, a greater-than-average number of workers are over the age of 45 in almost all the occupational groups that make up the industry (see Figure 7).

Figure 7 Proportion of Workers Aged 45 or Over in the Education Sector, 2004



*“Exacerbating the approaching retirement wave is the fact that many states are also faced with shrinking budgets.”*

**The Center for Organizational Research, 2003**

<sup>ii</sup> From the final report of the National Commission on the Public Service, 2003

High Proportion of Older Employees in Tri-County Public Sector Organizations

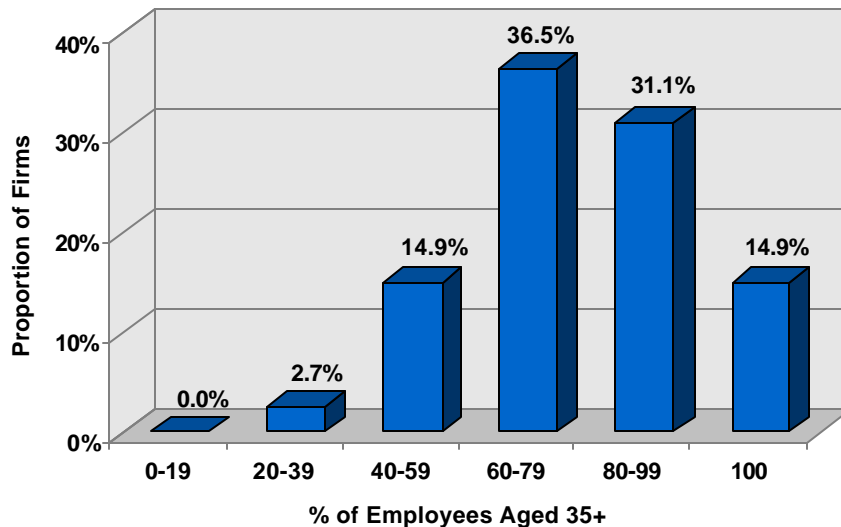
*“There will be a complete transformation of the upper management level within my department over the next one and a half years.”*

**Tri-County Public Sector Employer**

In order to determine the approximate age groups of public sector employees within the Tri-County area, public sector organizations were asked to provide the total number of current employees as well as the proportion falling into the following three age group categories: less than 35 years of age; 35 to 50 years of age; and over 50 years of age. The findings of this research indicated that, in around 15 percent of Tri-County public sector organizations, at least half of the current employees were over 50 years of age, while the average proportion of employees in this age group across all organizations was 22 percent. By sector, municipal services and public works departments typically had the highest proportion of employees over 50 years of age, which indicates that these organizations potentially face the greatest employee and skill shortage gaps due to retiring employees over the next few years.

In almost all of the organizations interviewed (96%), at least 50 percent of employees were aged 35 or over, while the average proportion of employees in this age group was 76 percent. Figure 8 below indicates that in 15 percent of organizations, all employees (100%) are aged 35 years or over. These employers will potentially face critical employee shortages due to retiring employees over the coming years. By comparison, only three percent of employers reported having less than 40 percent of employees in this age group. These figures are consistent with national research that shows that the public sector, along with manufacturing, has the oldest workforce when compared to other large-scale industry employers.

Figure 8 Proportion of Tri-County Public Sector Organizations with Employees Aged 35 Years and Over



*“Younger workers don’t have the same organizational loyalty as the baby boomers. This presents a challenge to the public sector.”*

**Tri-County Public Sector Employer**

A comparison of responses by public sector segment found that criminal justice and municipal services organizations are likely to be affected the most strongly by retirements over the next three to five years. By comparison, the proportions of expected retirements in the public safety and municipal public works segments were typically lower. Over the next ten years, employer responses indicated that, in addition to a high level of expected retirements in the criminal justice and municipal services sectors, expected retirements in the education sector are also likely to reach critical proportions.

High Level of Expected Managerial Retirements

*“All of our command staff are due to retire in the next six years.”*

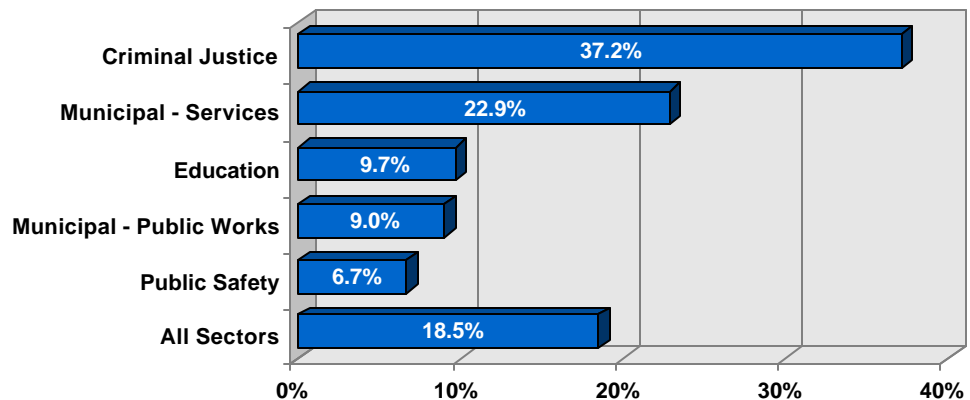
**Tri-County Fire Department**

The high level of forthcoming retirements among managerial-level employees was one of the universal and prominent themes raised within each of the focus groups. Participants felt this issue would present great difficulties to their organization in the near future, usually within the next five years. Retirements are also expected to be high among mid-level management employees, further reducing the pool of potential replacements for the high-level management positions.

In the criminal justice and public safety sectors, there was great concern about the expected ‘mass exodus’ of command staff over the next few years, due to the level of experience and institutional knowledge which their organizations would lose upon their retirement. In particular, a high proportion of police chiefs are expected to retire over the next few years, a finding which is supported by a recent California Police Chief’s Association survey, which showed that the median age of police chiefs in the state was 51 in 2004. Participants also highlighted that one of the main difficulties they faced in finding replacements at this level was that fewer candidates are looking to advance into these positions when compared with the past. Some organizations reported that they had made offers to potential retirees in an attempt to retain them for longer, or had hired back retired employees to fill vacant positions.

Figure 9 shows that thirty-seven percent of all employees within responding organizations from the criminal justice sector are expected to retire in the next three years. This percentage was particularly high because one of the larger police departments reported the expected retirement of 50 percent of its employees over the next three years. The percentages in the figure should be treated with some caution as the data is based on responses from a comparatively small number of organizations within each sector.

Figure 9 Total Expected Retirements over the Next Three Years by Sector



Within the municipal public works sub-sector, several of the focus group participants indicated that the issue of retirement was already having an impact within their organization, including one department which reported losing 20 percent of its maintenance supervisors over the last year. While most agencies recognized that there was a problem, few had set up any formal plans to deal with the potential future shortages posed by the high level of retirements. The most common practice currently utilized by government agencies to fill higher-level management positions involved informal internal mentorship to prepare those individuals identified as possible candidates for promotion.

*“We expect to lose a quarter of our cops over the next five years.”*

**Tri-County Police Department**

## Recruitment and Retention Issues

### Funding Issues

*“When you have a hiring freeze you are creating a lot of holes in your organization. Ultimately there will be a need to infuse the workforce with a lot of new people at all levels.”*

**Tri-County Public Sector Employer**

The majority of focus group participants, particularly those working in municipal services and public works sectors, reported that their organizations had imposed hiring limitations or outright hiring freezes on recruitment during the last few years. A smaller proportion of organizations had also been forced to cut some positions due to severe budget constraints and deficits. These practices are likely to further enhance the difficulties faced when preparing for forthcoming retirements by limiting the ability to build up a pipeline of talent within these organizations.

In addition to the hiring freezes, budget concerns were also raised with regard to a number of other staff recruitment and retention issues. For example, a number of employers stated a desire for increased funding to be used for more competitive salaries and/or subsidized housing schemes for both new recruits and current employees in order to improve recruitment and retention at their organization. In the education sector, it was felt that subsidized housing schemes, help with student loan repayments, and higher salaries, especially in high-risk schools and schools which need the most improvement, would be particularly beneficial in helping with the recruitment and retention of teachers.

One fire department reported that it had rearranged its working schedules to allow for longer commutes in order to overcome the issue of losing staff to areas with lower housing costs.

*“Housing assistance would be especially helpful in improving the retention of police, fire fighters and teachers.”*

**Tri-County Public Sector Employer**

### Qualified Applicants are Difficult to Find

Where employers were looking to take on new employees, they reported difficulties finding qualified applicants. In particular, the public safety and criminal justice segments highlighted that the highly challenging recruitment requirements and standards and lengthy recruitment process for some occupations in these sectors meant that less than five percent of applicants typically qualified for employment. It was noted that a trimmed down application process may also be beneficial when hiring new employees. A number of police departments had trimmed down their application process, while another police department had set up a recruitment incentive program where current police officers were encouraged to find suitable new recruits in return for additional compensation or paid vacation time.

In the education sector, employers reported having to widen their recruitment search to the national level in order to find sufficient applicants when recruiting teachers, while public works' employers often hired temporary employees and encouraged the best workers to apply for permanent positions. Also, some organizations felt it was harder to find suitable applicants for higher-level management positions due to the higher salary levels offered by private sector companies in the Silicon Valley region, particularly within IT and finance.

*“Background checks are one of the biggest barriers to recruitment in the public sector.”*

**Tri-County Public Sector Employer**

Across all job levels, participants reported that candidates were frequently recruited from public sector departments in neighboring towns, cities, and counties. In the public safety and criminal justice sectors, this practice has been exacerbated by the movement away from recruiting only at the entry-level towards lateral hiring practices.

*“There has been some movement out of the area due to the high cost of housing.”*

**Tri-County Public Sector Employer**

A need for enhanced training programs to prepare potential new recruits for public sector employment was also highlighted in order to increase the quality of applicants in each of the sectors. In particular, people skills, the ability to multi-task, and written and verbal communication skills were found to be deficient amongst applicants in all of the public sector segments.

Rate of Turnover Remains Low

Overall, however, turnover in the public sector remains comparatively low when compared to the private sector. In the municipal services sector, for example, focus group participants reported that job stability, set hours, attractive benefits packages, and increasing competition for jobs outside the sector had helped to discourage employees from seeking alternative employment options. In the public safety and criminal justice sectors, staff turnover was typically higher and usually occurred when individuals left their positions in order to relocate to regions with more affordable housing, or to take up positions in neighboring cities or counties offering higher salaries. By occupation, it was highlighted that the turnover rate for dispatchers was unusually high for the sector, while some organizations reported a higher rate among planners, police and maintenance workers.

### Employee Development Issues

*“In general, the City tries to hire everybody at entry-level.”*

**Tri-County Public Sector Employer**

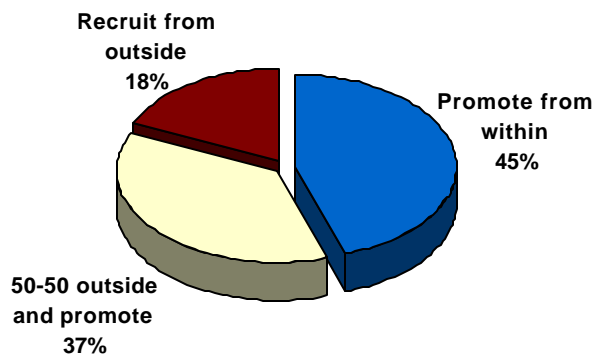
The executive interviews indicated that the most frequently used employee development practice among public sector organizations in the Tri-County area was informal on-the-job training, followed by formal on-the-job training, while the least frequently used method was succession or mentorship programs. Table 7 ranks the frequency of use for six employee development practices in the Tri-County area from highest (Rank 1) to lowest (Rank 6).

Table 7 Use of Employee Development Practices

Employee Development Practice	Rank
Informal on-the-job training	1
Formal on-the-job training	2
Employer-paid outside training	3
Tuition assistance at a college or university	4
Career development programs and/or career ladders	5
Succession or mentorship programs	6

Informal and formal on-the-job training are particularly important employee development practices for public sector employers in the Tri-County area, due in part to the importance placed on using internal promotions to fill non entry-level job openings within the sector, as illustrated by Figure 10 below. Among the organizations interviewed, fewer than one in five said they typically recruited from outside the organization to fill non entry-level positions, while almost half the organizations typically filled available positions by promoting current employees. In the municipal sector in particular, employers typically ‘hire for attitude, and train for skill.’

Figure 10 Hiring Practice for Non Entry-Level Positions



*Training is particularly important as far as preparing employees for advancement into leadership and supervisory roles.”*

**Tri-County City Employer**

### Budget Restrictions Limit Training Opportunities

*Training is the first item to get cut during budget constraints.”*

#### **Tri-County City Employer**

In addition to on-the-job training, employers in the municipal sector also utilized training courses offered by other cities and agencies or local area colleges to help develop their employees. In particular, many organizations reported making use of the training workshops offered by the City of Palo Alto. Although most participants from the municipal sector reported having training budget for employees, some employers expressed concern about the impact of recent budget restrictions on their ability to train and develop staff internally in order to prepare them for promotion, or to keep them updated on the latest developments within their field. Others highlighted difficulties finding supervisors willing or able to spend time training employees.

### Lack of Available Training in the Education Sector

Employees working in the education sector reported that they did not typically receive substantial further training following their recruitment. In particular, some of the smaller schools and districts expressed concern over the lack of available resources for teacher development. A common practice in this sector is for employees to receive training on new curriculum and other related issues for a couple days to a week before each school year. Participants from this sector highlighted a need for additional time and funding to be allocated to teacher training through the extension of their training period during the summer months.

### Emphasis on Soft Skill Development

When developing employee skill sets, employers emphasized that employees' soft skills, written and verbal communication, were more in more need of enhancement when compared with technical competency levels, as these were the skills that both potential applicants and current employees were found to be lacking in the most. The ability to work in teams was another skill that was found to be lacking among employees in several of the agencies which participated in the focus groups, particularly within the public safety and education sectors. In addition, employers highlighted a need to train more supervisory-level employees with management skills, such as how to perform an evaluation, or how to deal with discipline and other personnel issues. Some organizations had recently created executive leadership or supervisor academies where these management skills could be learned.

*“There’s a lot of training out there that’s relatively inexpensive for government agencies.”*

#### **Tri-County Public Works Employer**

The changing landscape of the global workforce has been increasingly in need of technologically skilled workers. This is also the case in the public sector. The aging workforce in the sector does not necessarily possess the skills that are needed to keep pace with the technological advancement. Instead, these workers may show an excess supply of skills at the middle-management level. There may be an opportunity for training of new employees or retraining of current employees in order to gain the necessary technological skills.

In addition, the municipal sector also pointed to the development of rotation programs as a solution to keeping employee interest up by helping with staff morale and breaking up routines, while more sharing of lesson plans and curriculum ideas were suggested as ways of improving communication within the education sector. These types of program also help to serve as a way for departments and divisions to better share ideas.



## PUBLIC SECTOR WORKFORCE OPPORTUNITIES

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*“There have been department head meetings about succession planning but no information about these has been communicated down the ladder.”*

**Tri-County City Employer**

One of the main focus areas of this research project was to research possible solutions to the many current and forthcoming workforce issues faced by public sector organizations within the Tri-County area, in order to provide examples of the types of opportunities which exist for workforce development within this sector in the years ahead.

### Development of Formal Succession Plans

There exists an opportunity for SVWIN to help with the development of formal succession plans relevant to each sector, which would be beneficial in dealing with the expected high rate of retirement of high ranking management and middle managers. These should be communicated across all levels within an organization.

Many public sector employers in the region have expressed concern about the expected high level of retirements over the next few years, particularly at the senior- and mid-management levels. However, the research shows that only a handful of organizations have put in place any formal succession planning model to help overcome the problems anticipated, despite widespread recognition among employers of the benefits such planning would bring to their organization. Another problem highlighted was that, in departments where succession plans had been developed or discussed, the information not disseminated widely within the organization, leaving many of those employees responsible for recruitment and retention in the dark about their organization’s workforce planning strategies.

In particular, setting up programs to formally train those individuals identified as having the ability to be good leaders and the potential to be promoted to higher positions would be very beneficial in the public safety and criminal justice sectors. A number of police departments have reported benefits from identifying potential leaders at an earlier stage in their career. For example, employees who show the greatest leadership potential are being promoted into sergeant positions earlier – after five years rather than ten years. Also, command staff are being recruited at a younger age in order to extend the length of time spent in these positions.

### Career Ladder Development

There exists an opportunity for SVWIN to help with the development of formal career ladder development programs, particularly within the municipal sector, to help with staff retention and skill development.

There are a number of potential advantages for public sector employers in developing career ladders. According to the California EDD, career ladders can be used to:

- Address changes in workforce characteristics
- Resolve shortages of both skilled and unskilled workers
- Replace retiring baby boomers
- Enhance career growth for wage self-sufficiency
- Expand training and education capacity

The focus on career ladders and pathways within the public sector has intensified as the need for skilled and experienced workers within the sector, particularly within technical and senior management positions, has increased. By advancing staff through career ladders, employers are able to develop the human capital in their own organizations, which both builds employee loyalty and saves them the expense of recruiting workers from the external labor market.

In particular, the development of career ladders within public sector organizations may be beneficial in helping organizations to address employee retention issues by providing employees with an incentive to remain with the organization as the opportunities to advance are clearly defined and structured. The opportunity for advancement into higher-level positions may also help to motivate employees to improve their performance and to learn or acquire new knowledge. In addition, they may be used as a tool to outline the prospects for advancement to potential recruits during the job interview process.

While a number of employers had informal employee counseling about potential career ladder progression, most employers identified a need to create formal career ladder development programs. Although most new applicants lacked awareness of their upward movement potential within the organization, it was felt that the development of career ladder programs would be particularly beneficial in helping to retain those employees who had worked in the organization for two to three years. The development of formal career ladders would also help raise awareness among public sector employees about the potential lateral movement opportunities available to them within their organization.

Outside of police and fire departments, few organizations reported having structured career ladder programs linked to training, although some employers had recently created additional mid-management level positions in order to give a sense of progression possibilities. The need to improve or develop career ladders was perceived to be the strongest within municipal services organizations.

#### Example of a Career Ladder Program in Education

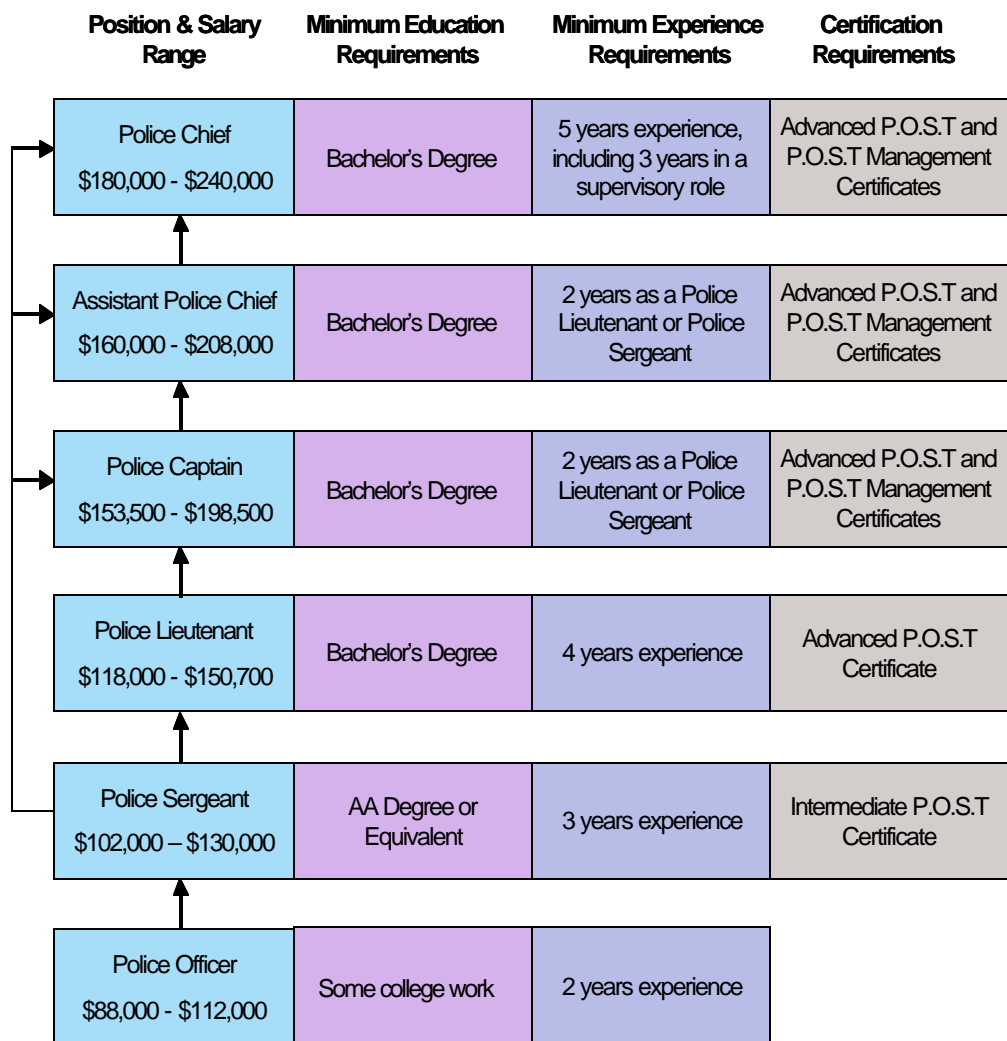
In the state of Florida, school district boards have been required to implement a salary career ladder for classroom teachers since the start of the 2004-2005 academic year. The Florida Teaching Salary Career Ladder Program – Better Educated Students and Teachers (BEST), requires that four categories of classroom teacher are covered by the salary career ladder. These are:

- Associate teacher – classroom teachers who have not yet received professional certification, or low-performing teachers who have professional certification.
- Professional teacher – classroom teachers who have received professional certification.
- Lead teacher – classroom teachers responsible for leading others in the school department. To qualify, teachers must demonstrate outstanding performance and have been a professional teacher for at least one year.
- Mentor teacher – Classroom teachers who serve as regular mentors to other teachers who are either not performing satisfactorily or who strive to become more proficient. To qualify, teachers must demonstrate outstanding performance and have been a lead teacher for at least two years.

Criminal Justice and Public Safety Career Ladders

Within the public sector, police and fire departments have well-established career ladders, which typically follow a similar structure to those developed by military organizations, and bear little resemblance to career paths in most other levels of local government organizations. Police and fire department career ladders usually have a single entry point at the bottom, and lateral recruitment tends to be minimal within these structures, although such practices may have been introduced in recent years in order to help offset the issue of forthcoming retirements in the sector. The figure below provides an example of a typical police department career ladder, and shows the type of information, in addition to job titles, which can enhance the basic career ladder model, including salary ranges, and minimum education, certification and experience requirements.

Figure 11 Career Ladder Example - Police Department



Municipal Services Career Ladders

The municipal sector offers many opportunities for individuals to move up career ladders to higher skilled jobs paying better wages. Moving up the career ladder frequently requires additional education and training. Figure 11 below demonstrates that, in order for account clerks to progress to the accountant level and higher, they must first obtain a bachelor's degree or equivalent. The ladder also highlights two different career path options for accountants, and the relative salary ranges within each pathway.

Figure 12 Career Ladder Example – Accounting & Finance Department

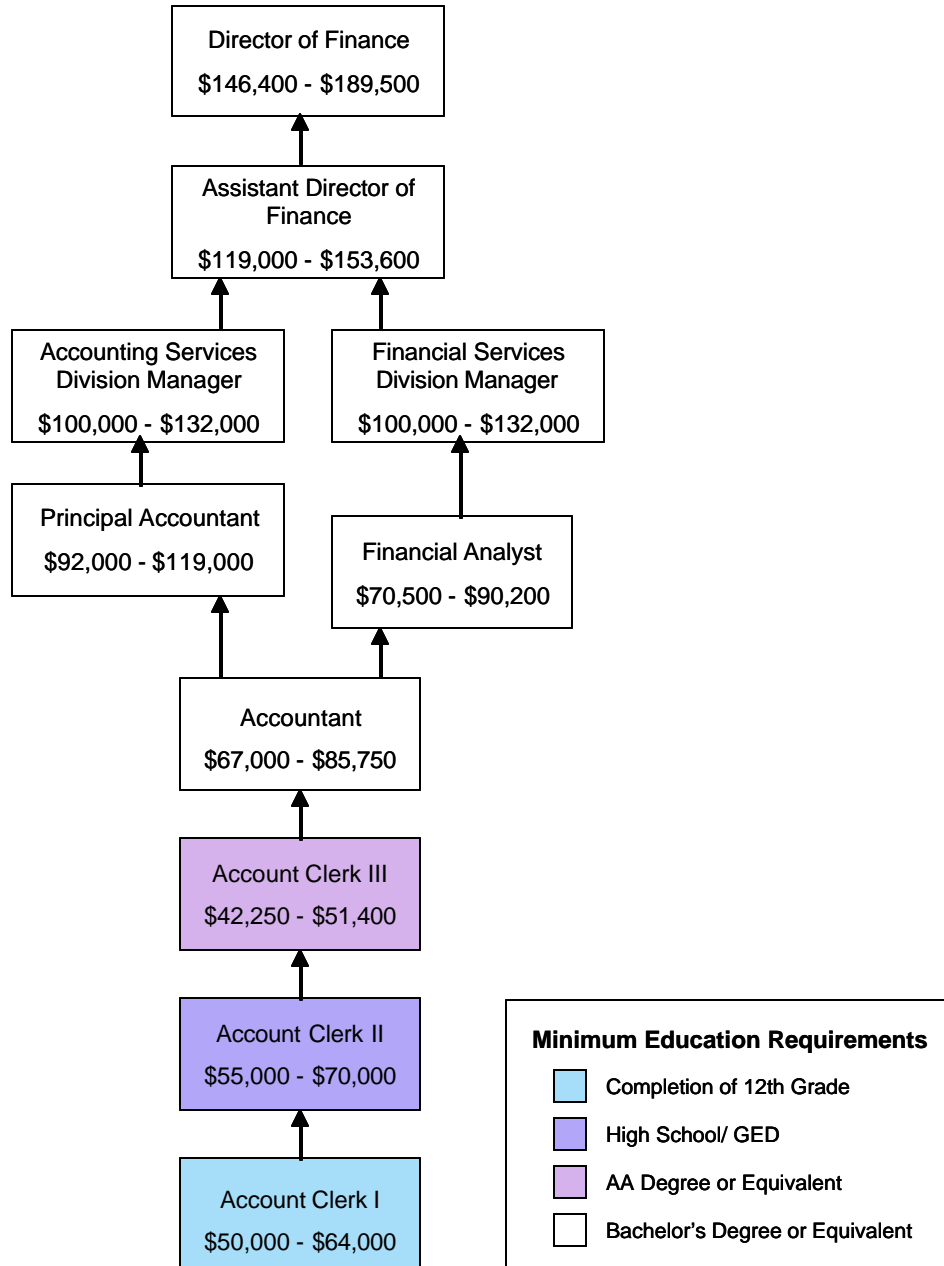
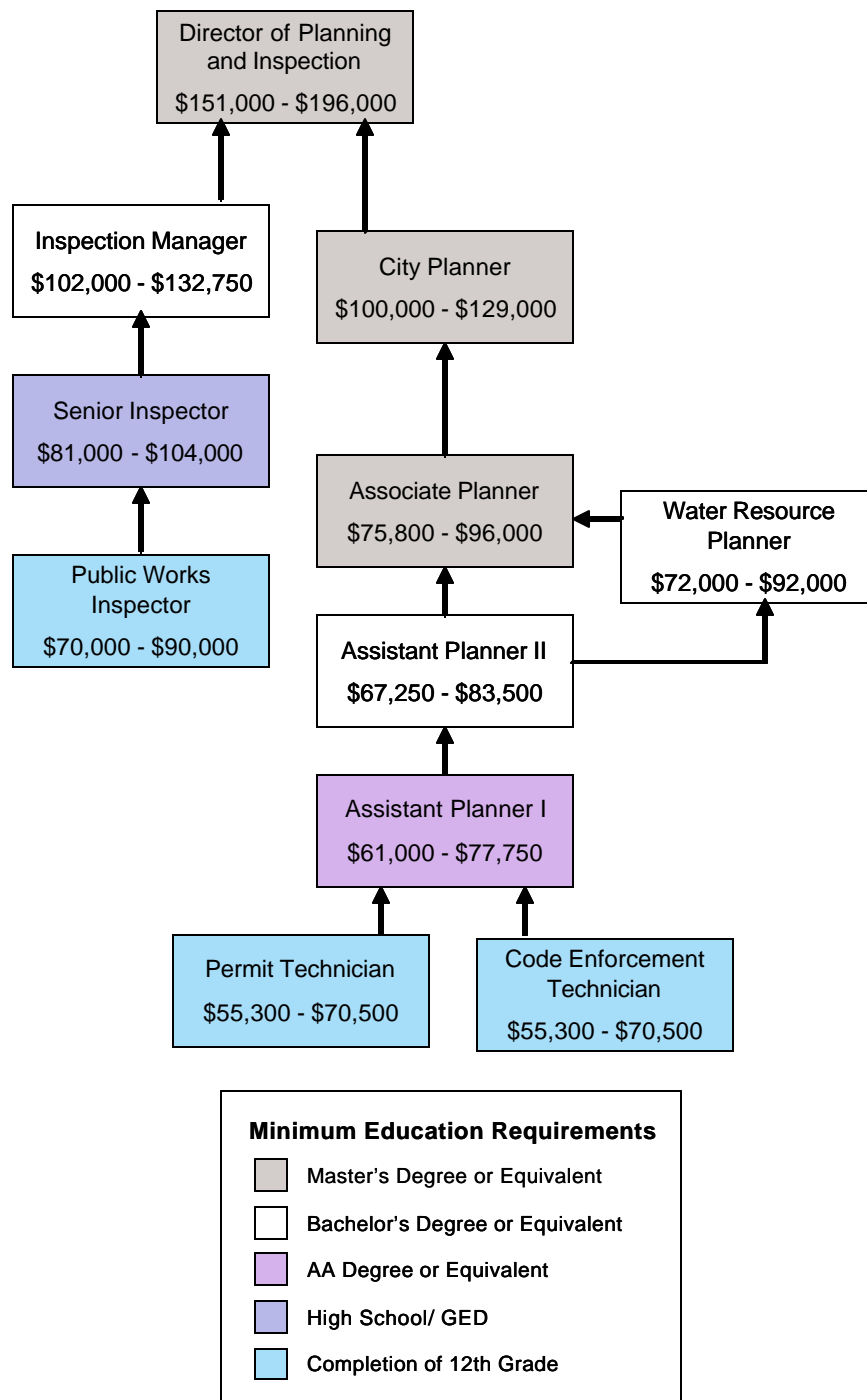


Figure 13 Career Ladder Example - Planning & Inspection Department



Increase Awareness of the Public Sector as a Career Choice

*“There is a lack of awareness about what public sector jobs are available, and therefore a need to educate the public and reach out to kids in schools.”*

**Tri-County City Employer**

There exists an opportunity for SVWIN to increase the quality and the quantity of applicants. In particular, there exists a need for enhancing awareness of the public sector as a career choice among potential qualified candidate groups.

Potential solutions to overcoming employee shortages resulting from a high volume of anticipated retirements over the next few years suggested by municipal sector participants included increasing awareness with younger people about the public sector as a career choice. There is a need for more community education and partnerships with schools and other educational organizations to harness the new talent of young people who are driven to help their communities in order to increase the awareness of the public sector as a career choice. In most sectors this can be accomplished at the high school level through an academy program. However, in the public safety sector, there needs to be more awareness at a younger age. Efforts need to be made to market potential career options in the public safety sector at the junior high level.

*“Today’s youth are engaged in a lot of community activities but they don’t know there’s a place that can be utilized in the public sector.”*

**Tri-County Public Sector Employer**

As well as high-school academy programs, some of the other schemes suggested included:

- Shadowing day schemes – where local high school students interact with City department employees by shadowing them for a half-day. This scheme has been informative and helped raise awareness among young people by giving them insight into how a public sector organization operates.
- Youth employment program partnerships with local universities – where students are brought into organizations as interns in order to raise the exposure of public sector employment and to encourage them to consider the public sector as a long-term career possibility.

## OCCUPATIONAL ASSESSMENT

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The California Employment Development Department, Labor Market Information Division, provided Godbe Research with a breakdown of employment data for all occupations by four-digit NAICS industry code at the state level for 2002, as well as projected employment data for 2012. To provide an overview of the current levels of public sector employment by occupation at the state level, an analysis of the occupational data relevant to this public sector study within four of the four-digit NAICS industry groups was carried out. The NAICS industry groups from which data were initially drawn are provided in the table below.

Table 8 NAICS Industries Relevant to the Public Sector

<b>Industry</b>	<b>NAICS Code</b>
Educational Services	6110
Federal Government	9991
State Government	9992
Local Government	9993

It should be noted that, while employment calculations derived from these NAICS industry groups are useful and provide a good indication of overall employment levels, they do not provide a perfect fit for the public sector. The educational services group data, for example, covers both public sector and private sector employees, although, according to the U.S. Bureau of Labor Statistics' Occupational Outlook Handbook, around 90 percent of teachers are typically employed in the public sector. In addition, those public sector employees who are contained within industry groups other than the four listed in the table above will not be included in the employment data calculations.

Potential Occupational Shortages

There is no single equation that can determine the probability that an occupation will be undersupplied in the future. However, a comprehensive evaluation of both the quantitative and qualitative indicators of supply and demand for each of the occupations in question, combined with a thorough evaluation of the industry as a whole, allow at least an estimate of those occupations that potentially are most likely to be undersupplied in the future.

The tables below categorize each of the occupations into one of three levels of potential shortage:

- **Red:** Occupations that provide the strongest indication that they will be undersupplied in the future.
- **Yellow:** Occupations that provide some indication that they may be undersupplied in the future.
- **Green:** Occupations that provide little to no indication that they will be undersupplied in the future.

Table 9 Potential Occupation Shortages – Education Sector

Occupation	Potential Shortage Indicator
Postsecondary Teachers	Red
Special Education Teachers	Red
Elementary School Teachers, Except Special Education	Yellow
Middle School Teachers, Except Special and Vocational Education	Yellow
Secondary School Teachers, Except Special and Vocational Education	Yellow
Teacher Assistants	Yellow
Executive Secretaries and Administrative Assistants	Green
General Office Clerks	Green



Table 10 Potential Occupational Shortages - Municipal Sector

Occupation	Potential Shortage Indicator
Urban and Regional Planners	Red
Social Workers	Red
Department Heads and Senior Managers	Red
Management Analysts	Yellow
Computer Systems Analysts	Yellow
Engineers	Yellow
Maintenance Supervisors	Yellow
Librarians	Yellow
Civil Engineering Technicians	Yellow
General Maintenance Workers	Green
Executive Secretaries and Administrative Assistants	Green
General Office Clerks	Green

Table 11 Potential Occupation Shortages - Criminal Justice and Public Safety Sectors

Occupation	Potential Shortage Indicator
First-Line Supervisors/Managers of Police and Detectives	Red
First-Line Supervisors/Managers of Fire Fighting and Prevention Workers	Red
Police and Sheriff Patrol Officers	Red
Police, Fire, and Ambulance Dispatchers	Red
Legal Secretaries	Yellow
Paralegals and Legal Assistants	Yellow
Fire Fighters	Green

## PUBLIC SECTOR EDUCATION AND TRAINING PROVIDERS

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For a more comprehensive presentation of education and training providers within the Try-County area, please see Appendix E.

### Canada College

- Accounting
- Administrative Support
- Community Health
- Human Resource Management
- IT
- Legal Assistant/ Paralegal

### De Anza College

- Accounting/ Bookkeeping
- IT
- Law Enforcement
- Management
- Office Administration

### Evergreen Valley College

- Accounting/ Bookkeeping
- Administration of Justice
- Business
- Civil Engineering Technology/ Surveying
- IT
- Law Enforcement
- Legal
- Office Administration

### Foothill College

- Accounting
- Business Administration
- IT
- Law and Society
- Leadership and Community Services

Gavilan College

- Accounting
- Business
- IT
- Justice Administration

Mission College

- Accounting
- Business
- Clerical/ Office Administration
- Community Health
- IT
- Management
- Teacher Permits

San Jose City College

- Accounting
- Administration of Justice
- Business Administration/ Management
- IT

San Jose State University

- Accounting
- Business Administration
- Civil Engineering
- Computer Science
- Criminal Justice
- Education Administration
- Public Administration
- Public Health.
- Recreation
- Teaching
- Transportation Management

San Mateo College

- Accounting
- Administration of Justice
- Business Administration/ Management
- Community Services
- Human Resource Management
- IT
- Law Enforcement

Skyline College

- Accounting
- Administration of Justice
- Automotive Technology
- Emergency Medical Technician
- IT
- Legal
- Office Administration

West Valley College

- Accounting
- Administration of Justice
- Business
- IT
- Legal
- Office Administration
- Park Management

## APPENDIX A: FOCUS GROUP AND EXECUTIVE INTERVIEW PARTICIPANTS

Organization	Department	Organization	Department
Argonaut Elementary School, Saratoga		City of Saratoga	Police Department
Bagby Elementary School, San Jose		City of South San Francisco	Human Resources
Baker Elementary School, San Jose	Human Resources	City of South San Francisco	Police Department
Baldwin Elementary School, San Jose		City of Sunnyvale	Finance
Briones Elementary School, Palo Alto		Clyde Arbuckle Elementary School, San Jose	
Calaveras Hill Continuation High School, Milpitas		Cupertino High School	
Cassell Elementary School, San Jose		Daly City	Community Service Center
Charter School of Morgan Hill		Daly City	Human Resources
Cherrywood District School	Human Resources	Daly City	Public Works
Christopher Elementary School, San Jose		Daves Avenue School District	Human Resources
City of Belmont	City Manager	Eaton Elementary School	
City of Belmont	Human Resources	Escondido Elementary School	
City of Brisbane	Police Department	Foster City	Police Department
City of Burlingame	City Hall Administration	Foundry County Community Day School, San Jose	
City of East Palo Alto	Environmental Protection Agency	Fremont High School	
City of Gilroy	Fire Department	Genesis High School, San Jose	Registration
City of Half Moon Bay	Human Resources	Jefferson Union High School District	Human Resources
City of Hollister	Fire Department	Moffett High School, Mountain View	
City of Hollister	Police Department	Morgan Hill Unified School District	Human Resources
City of Los Altos	City Hall	Mountain View High School	Personnel
City of Los Altos	Fire Department	North Coast County Water Department	
City of Los Altos	Public Works	Redwood City	Human Resources
City of Los Altos	Recreation	San Benito County Courthouse	Administration
City of Los Gatos	Parks and Public Works	San Benito Water District	Human Resources
City of Millbrae	Fire Department	San Francisco Unified School District	Personnel
City of Millbrae	Police Department	San Jose Community Middle School	
City of Milpitas	Fire Administration	San Jose Plus High School	
City of Milpitas	Police Department	San Jose State University	Human Resources
City of Milpitas	Public Works	San Mateo County	Emergency Medical Services
City of Morgan Hill	Police Department	San Mateo County	Probation Department
City of Mountain View	Employee Services	Santa Clara County	Construction Operations
City of Mountain View	Library	Santa Clara County	Environmental Health
City of Mountain View	Police and Fire Administration	Santa Clara County	Human Resources
City of Palo Alto	Fire Department	Santa Clara County	Library
City of Palo Alto	Library	Santa Clara County	Office of Pretrial Services
City of Palo Alto	Recruiting	Santa Clara County	Road Operations and Engineering
City of San Bruno	Police Department	Santa Clara County	Roads Maintenance
City of San Bruno	Utilities	Santa Clara County	Sheriff Office Headquarters
City of San Jose	Administration	Santa Clara County Office of Education	
City of San Jose	Employee Services	Santa Clara County Traffic Courthouse	
City of San Jose	Employment Services	Santa Clara Valley Transportation Authority	Recruitment and Selection Unit
City of San Jose	Police Department	Santa Clara Valley Transportation Authority	Human Resources
City of San Jose	Transportation	South County Fire Authority	
City of San Juan Bautista	Payroll	Town of Colma	Fire Department
City of San Mateo	Fire Department Administration Office	Town of Hillsborough	Police Department
City of San Mateo	Human Resources	Town of Woodside	California Highway Patrol
City of San Mateo	Police Department	Willow Glen Middle School, San Jose	
City of Santa Clara	Human Resources	Wilson Alternative School, Santa Clara	Administration

APPENDIX B: ADDITIONAL INDUSTRY DATA

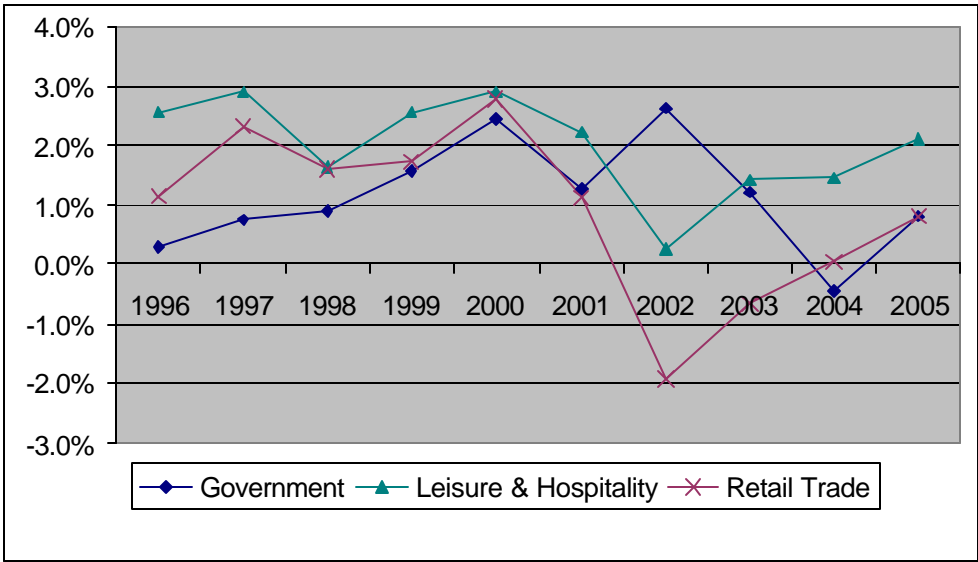
The sectors shown in Table 12 and Table 14 are classified by the NAICS definition. While they do not perfectly correlate to our definition of the public sector definition in this report, they do offer a good comparison of industries.

As shown in Table 12, the leisure and hospitality industry has shown the strongest growth over the past several years. Retail trade has shown smaller growth rates or negative growth rates in the past few years. The government sector falls in between these two in terms of employment growth.

Table 12 National Industry Employment Growth Rates,<sup>iii</sup> 1996-2005

Year	Leisure and Hospitality	Retail Trade	Government
1996	2.6%	1.2%	0.3%
1997	2.9%	2.3%	0.7%
1998	1.6%	1.6%	0.9%
1999	2.6%	1.7%	1.6%
2000	2.9%	2.8%	2.4%
2001	2.2%	1.1%	1.3%
2002	0.3%	-1.9%	2.6%
2003	1.4%	-0.7%	1.2%
2004	1.4%	0.0%	-0.5%
2005	2.1%	0.8%	0.8%
<b>Average</b>	2.0%	0.9%	1.1%

Figure 14 National Industry Employment Growth Rates, 1996-2005



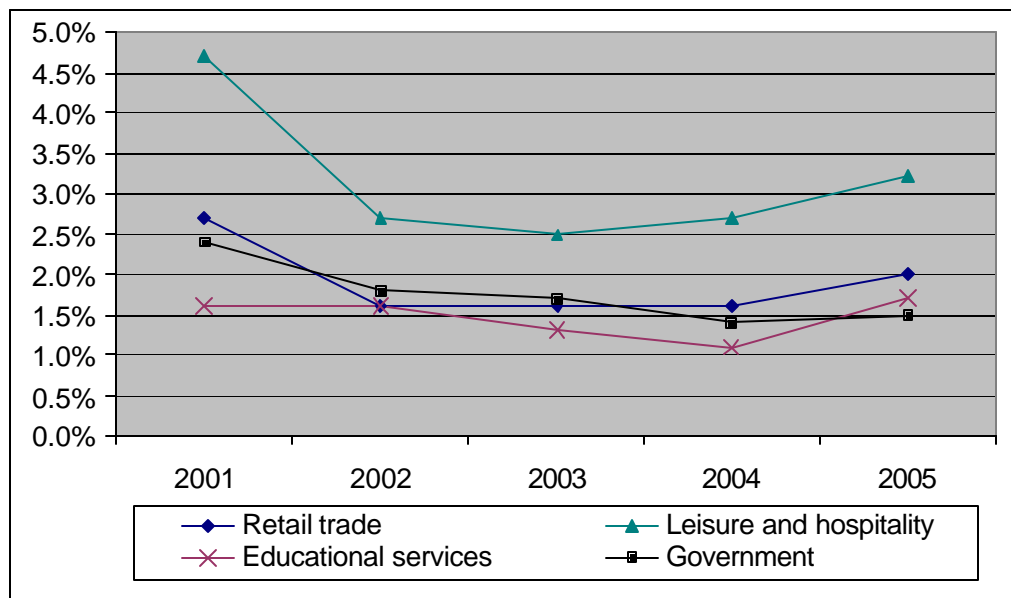
<sup>iii</sup> Data from St. Louis Federal Reserve Economic Data: <http://research.stlouisfed.org/fred2/>

Table 13 shows that leisure and hospitality has shown the largest job openings rate, defined as job openings divided by employment plus job openings, since 2005. By comparison, the government sector has shown a similar job openings rate as retail trade and educational services.

Table 13 National Job Openings Rates,<sup>iv</sup> 2001-2005

Year	Retail trade	Leisure and hospitality	Educational services	Government
2001	2.7%	4.7%	1.6%	2.4%
2002	1.6%	2.7%	1.6%	1.8%
2003	1.6%	2.5%	1.3%	1.7%
2004	1.6%	2.7%	1.1%	1.4%
2005	2.0%	3.2%	1.7%	1.5%

Figure 15 National Job Openings Rates, 2001-2005



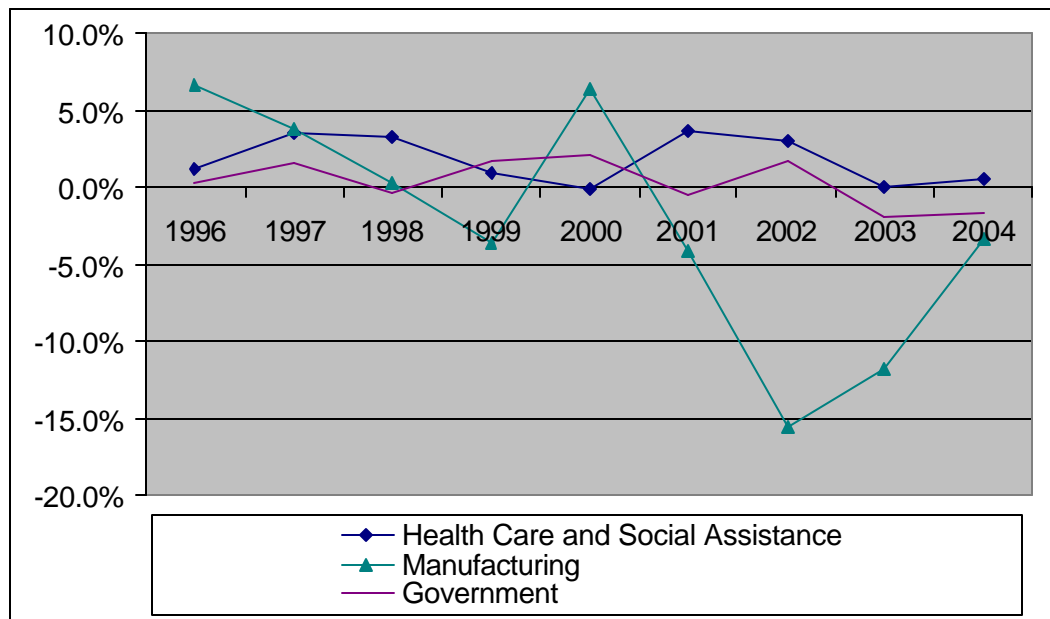
<sup>iv</sup> Data from the Bureau of Labor Statistics Job Openings and Labor Turnover Survey: <http://www.bls.gov/jlt/home.htm#data>

Table 14 shows that the manufacturing and retail trade industries have been consistently scaling back employment since 2001. By comparison, the health care industry has shown only one year with negative growth in employment since 1996. In the government industry, employment fell in the Tri-County area in 2003 and 2004, although the rate of decline in employment was lower than in both the manufacturing and retail trade industry sectors in these years.

Table 14 Tri-County Area Industry Employment Growth Rates<sup>y</sup>

Year	Health Care and Social Assistance	Manufacturing	Retail Trade	Wholesale Trade	Government
1996	1.1%	6.6%	4.9%	6.7%	0.2%
1997	3.4%	3.6%	3.8%	4.0%	1.5%
1998	3.2%	0.2%	2.1%	0.5%	-0.4%
1999	0.9%	-3.7%	3.1%	-2.0%	1.7%
2000	-0.1%	6.3%	4.4%	-1.5%	2.1%
2001	3.5%	-4.2%	-1.4%	-3.3%	-0.5%
2002	2.9%	-15.6%	-5.2%	-10.6%	1.6%
2003	0.0%	-11.8%	-2.7%	-7.0%	-2.0%
2004	0.5%	-3.4%	-1.8%	-0.6%	-1.7%
Average	1.5%	-2.2%	0.7%	-1.4%	0.3%

Figure 16 Tri-County Area Industry Employment Growth Rates



<sup>y</sup> Data from California EED, LMID: <http://www.labormarketinfo.edd.ca.gov/>



Figure 17 Public Sector Employment in the Tri-County Area 1995-2004<sup>v</sup>

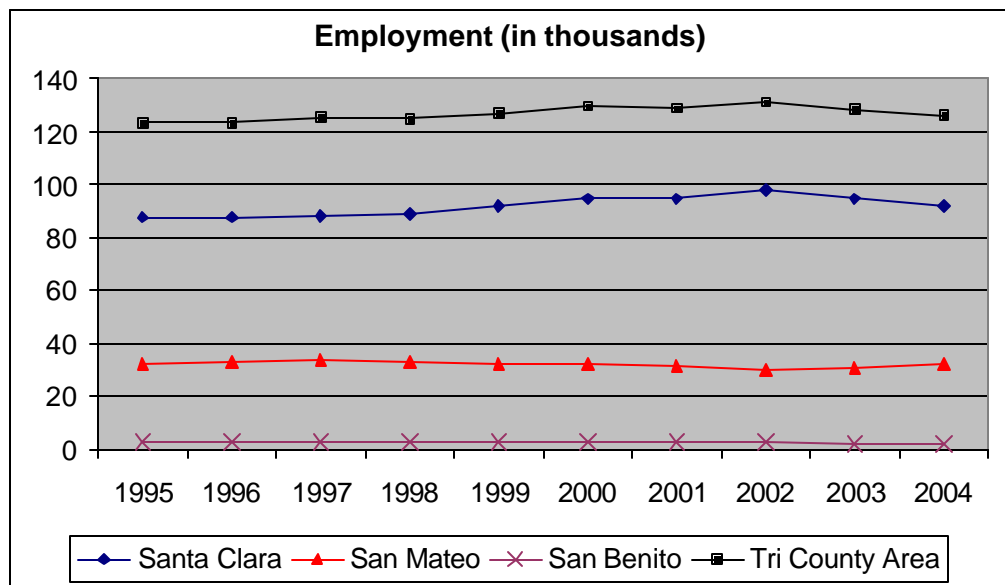


Figure 18 Proportion of Total Employment by Industry in California and the Tri-County Area, 2004

Industry	Employment Growth 2004-2014 (#)	Employment Growth 2004-2014 (%)
Educational Services	3,878	11.0
All Government	3,560	2.3
Federal Government	-1,990	-10.3
State Government	1,734	8.3
Local Government	3,905	3.4
Health Care & Social Assistance	17,450	17.3
Leisure & Hospitality	15,629	13.1
Manufacturing	-25,493	-11.6
Retail Trade	7,559	5.9
All Industries	84,448	6.3

<sup>v</sup> Data from California EED, LMID: <http://www.labormarketinfo.edd.ca.gov/>

A comparison of public sector annual employment growth rates with those across all industries in the Tri-County area between 1994 and 2004 showed that public sector employment levels typically fell during those years where employment across all industries increased and vice versa (see Figure 19).

Figure 19 Annual Public Sector and All Industry Employment Growth Rates in the Tri-County Area, 1994-2004

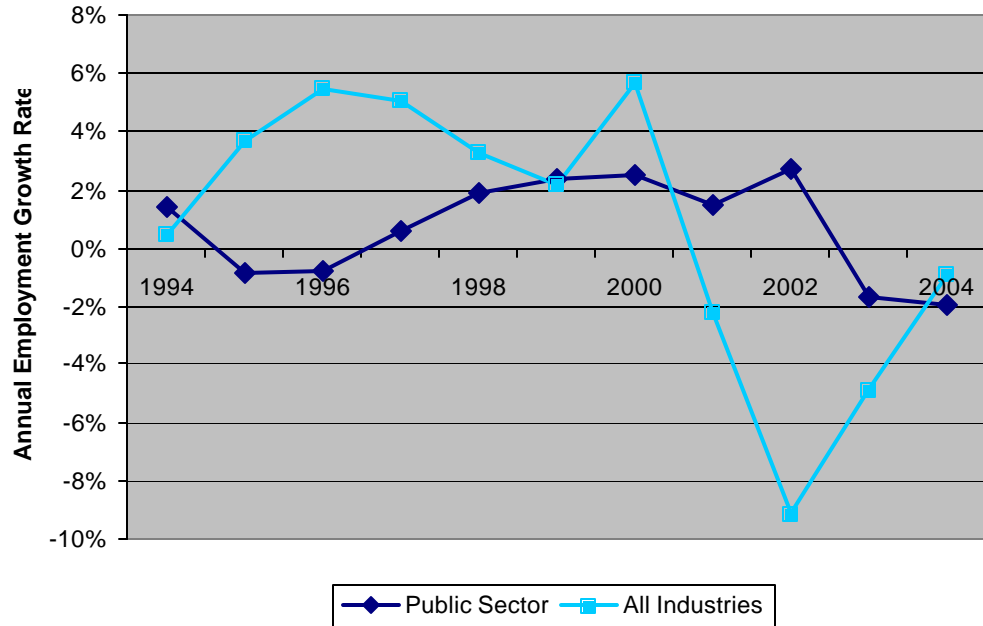
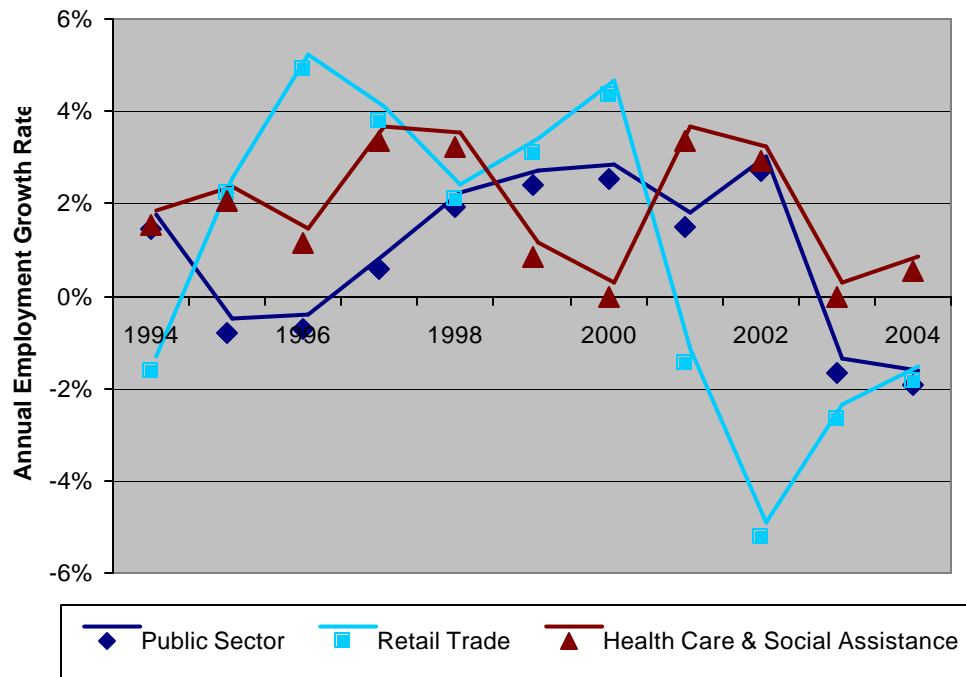


Figure 20 Tri-County Industry Employment Growth Rates, 1994-2004



## APPENDIX C: ADDITIONAL OCCUPATIONAL DATA

### High Employment Occupations in California

#### Educational Services

The table below lists the occupations with the highest level of employment within the educational services sector in California, as well as the corresponding employment growth rates between 2005 and 2010. The table shows that employment in educational services is expected to grow by around 11 percent over the next five years. In particular, employment in teaching occupations is expected to grow substantially over the next few years. By comparison, employment growth in administrative and office positions within educational services is projected to be lower between 2005 and 2010. Overall, the occupations listed in the table make up around two-thirds of the total employment in educational services.

Table 15 Educational Services Occupations with the Greatest Employment in California

Occupation	2005 Employment	2010 Employment	2005-2010 Employment Change	Experience/Education	Mean Annual Salary 2004 (Q3)
Elementary School Teachers, Except Special Education	178,600	193,600	8.4%	Bachelor's Degree	\$52,104
Postsecondary Teachers	173,460	205,060	18.2%	Doctoral Degree	n/a
Teacher Assistants	169,260	188,860	11.6%	Associate Degree	\$25,269
Secondary School Teachers, Except Special and Vocational Education	125,840	138,240	9.9%	Bachelor's Degree	\$57,743
All Other Teachers, Primary, Secondary, and Adult	82,080	98,880	20.5%	Bachelor's Degree	\$48,578
Office Clerks, General	61,220	63,420	3.6%	Short-Term on-the-job training	\$26,355
Middle School Teachers, Except Special and Vocational Education	53,900	56,900	5.6%	Bachelor's Degree	\$54,399
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	42,870	46,820	9.2%	Short-Term on-the-job training	\$22,812
Secretaries, Except Legal, Medical and Executive	28,540	28,440	-0.4%	Post-Secondary Vocational Ed.	\$32,071
Executive Secretaries and Administrative Assistants	25,480	27,280	7.1%	Post-Secondary Vocational Ed.	\$41,891
Education Administrators, Elementary and Secondary School	22,430	24,980	11.4%	Bachelor's Degree or Higher	\$93,602
Vocational Education Teachers, Postsecondary	17,940	21,340	19.0%	Work Experience	\$54,668
Educational, Vocational, and School Counselors	17,640	19,040	7.9%	Master's Degree	\$54,506
Special Education Teachers, Preschool, Kindergarten, and Elementary School	16,530	19,080	15.4%	Bachelor's Degree	\$55,424
Kindergarten Teachers, Except Special Education	16,440	18,840	14.6%	Bachelor's Degree	\$52,974
<b>All Educational Services</b>	<b>1,414,240</b>	<b>1,567,640</b>	<b>10.8%</b>		

Source: Godbe Research, 2006, using data derived from California EDD, LMID Data Sources

### Federal Government

The table below lists the occupations with the highest level of employment within the federal government sector in California, as well as the corresponding employment growth rates between 2005 and 2010. The table shows that federal government employment is expected to grow by around two percent over the next five years. In particular, employment in law enforcement occupations is expected to grow substantially over the next few years. By comparison, employment levels are expected to fall for postal service mail sorters and all other financial, information, and record clerks between 2005 and 2010. Overall, the occupations listed in the table make up around 57 percent of the total employment in federal government occupations.

Table 16 Federal Government Occupations with the Greatest Employment in California

Occupation	2005 Employment	2010 Employment	2005-2010 Employment Change	Experience/ Education	Mean Annual Salary 2004 (Q3)
Postal Service Mail Carriers	39,540	39,940	1.0%	Short-Term on-the-job training	\$46,362
Postal Service Mail Sorters, Processors, and Processing Machine Operators	24,600	23,600	-4.1%	Short-Term on-the-job training	\$38,704
Business Operations Specialists, All Other	11,410	12,260	7.4%	Bachelor's Degree or Higher	\$58,881
All Other Financial, Information, and Record Clerks	10,050	9,800	-2.5%	Short-Term on-the-job training	\$36,314
Postal Service Clerks	8,730	8,780	0.6%	Short-Term on-the-job training	\$41,397
Protective Service Workers, All Other	6,760	6,860	1.5%	Short-Term on-the-job training	\$27,612
Compliance Officers, Except Agriculture, Construction, Health-Safety, and Transportation	6,090	6,240	2.5%	Work Experience	\$56,728
Managers, All Other	5,160	5,260	1.9%	Work Experience	\$88,839
Tax Examiners, Collectors, and Revenue Agents	5,060	5,160	2.0%	Bachelor's Degree	\$55,405
Forest and Conservation Technicians	4,860	4,960	2.1%	Associate Degree	\$34,555
All Other Legal and Related Workers	4,260	4,360	2.3%	Associate Degree	\$47,317
Registered Nurses	4,120	4,320	4.9%	Associate Degree	\$66,941
Computer Systems Analysts	3,980	4,280	7.5%	Bachelor's Degree	\$73,295
Police and Sheriff Patrol Officers	3,720	4,420	18.8%	Long-Term on-the-job Training	\$62,170
Electronics Engineers, Except Computer	3,690	3,840	4.1%	Bachelor's Degree	\$84,650
Detectives and Criminal Investigators	3,090	3,740	21.0%	Work Experience	\$69,641
<b>All Federal Government</b>	<b>254,260</b>	<b>258,360</b>	<b>1.6%</b>		

Source: Godbe Research, 2006, using data derived from California EDD, LMID Data Sources

### State Government

The table below lists the occupations with the highest level of employment within the state government sector in California, as well as the corresponding employment growth rates between 2005 and 2010. The table shows that government employment at the state level is expected to grow by around two percent over the next five years. In particular, comparatively high employment growth is anticipated in criminal justice occupations over the next few years. By comparison, employment levels are expected to decrease in office and administration-related occupations between 2005 and 2010. Overall, the occupations listed in the table make up around 60 percent of the total employment in state government occupations.

Table 17 State Government Occupations with the Greatest Employment in California

Occupation	2005 Employment	2010 Employment	2005-2010 Employment Change	Experience/Education	Mean Annual Salary 2004 (Q3)
Business Operations Specialists, All Other	25,630	27,180	6.0%	Bachelor's Degree or Higher	\$58,881
Correctional Officers and Jailers	24,940	27,340	9.6%	Long-Term on-the-job Training	\$51,880
Office Clerks, General	20,060	19,660	-2.0%	Short-Term on-the-job Training	\$26,355
First-Line Supervisors/Managers of Office and Administrative Support Workers	9,090	8,740	-3.9%	Moderate-Term on-the-job Training	\$48,599
Civil Engineers	8,530	8,580	0.6%	Bachelor's Degree	\$74,745
Police and Sheriff Patrol Officers	8,200	8,700	6.1%	Long-Term on-the-job Training	\$62,170
Probation Officers and Correctional Treatment Specialists	4,720	4,920	4.2%	Bachelor's Degree	\$59,802
First-Line Supervisors/Managers of Correctional Officers	4,450	4,700	5.6%	Work Experience	\$66,245
Compliance Officers, Except Agriculture, Construction, Health-Safety, and Transportation	4,370	4,320	-1.1%	Work Experience	\$56,728
Computer Systems Analysts	4,280	4,580	7.0%	Bachelor's Degree	\$73,295
Bookkeeping, Accounting, and Auditing Clerks	3,880	3,680	-5.2%	Moderate-Term on-the-job Training	\$34,053
Interviewers, Except Eligibility and Loan	3,640	3,540	-2.7%	Short-Term on-the-job Training	\$29,906
Protective Service Workers, All Other	3,500	3,500	0.0%	Short-Term on-the-job Training	\$27,612
Lawyers	3,400	3,900	14.7%	First Professional Degree	\$132,065
Tax Examiners, Collectors, and Revenue Agents	3,400	3,400	0.0%	Bachelor's Degree	\$55,405
<b>All State Government</b>	<b>223,590</b>	<b>227,740</b>	<b>1.9%</b>		

Source: Godbe Research, 2006, using data derived from California EDD, LMID Data Sources

### Local Government

The table below lists the occupations with the highest level of employment within the local government sector in California, as well as the corresponding employment growth rates between 2005 and 2010. The table shows that local government employment is expected to grow by around 10 percent over the next five years. In particular, comparatively high employment growth is anticipated in the criminal justice and public safety sector occupations, as well as for business operations specialists, all other, over the next few years. By comparison, employment growth is projected to be lower in some office-based occupations, while overall employment levels are expected to fall for eligibility interviewers, government programs, between 2005 and 2010. Overall, the occupations listed in the table make up around 45 percent of the total employment in local government occupations.

Table 18 Local Government Occupations with the Greatest Employment in California

Occupation	2005 Employment	2010 Employment	2005-2010 Employment Change	Experience/Education	Mean Annual Salary 2004 (Q3)
Police and Sheriff Patrol Officers	70,720	82,420	16.5%	Long-Term on-the-job Training	\$62,170
Office Clerks, General	38,900	41,900	7.7%	Short-Term on-the-job Training	\$26,355
Fire Fighters	25,150	28,900	14.9%	Long-Term on-the-job Training	\$54,615
Recreation Workers	23,610	25,960	10.0%	Moderate-Term on-the-job Training	\$23,064
Bus Drivers, Transit and Intercity	22,990	24,640	7.2%	Moderate-Term on-the-job Training	\$36,970
Eligibility Interviewers, Government Programs	16,250	16,000	-1.5%	Moderate-Term on-the-job Training	\$38,325
Business Operations Specialists, All Other	12,270	14,220	15.9%	Bachelor's Degree or Higher	\$58,881
Executive Secretaries and Administrative Assistants	11,760	12,360	5.1%	Post-Secondary Vocational Ed.	\$41,891
Bookkeeping, Accounting, and Auditing Clerks	11,400	11,900	4.4%	Moderate-Term on-the-job Training	\$34,053
Child, Family, and School Social Workers	11,390	12,540	10.1%	Bachelor's Degree	\$43,927
Maintenance and Repair Workers, General	10,430	11,480	10.1%	Long-Term on-the-job Training	\$34,586
Correctional Officers and Jailers	10,230	11,280	10.3%	Long-Term on-the-job Training	\$51,880
Protective Service Workers, All Other	9,900	10,900	10.1%	Short-Term on-the-job Training	\$27,612
Landscaping and Groundskeeping Workers	9,860	10,960	11.2%	Short-Term on-the-job Training	\$23,998
Lawyers	9,840	12,240	24.4%	First Professional Degree	\$132,065
<b>All Local Government</b>	<b>683,110</b>	<b>752,460</b>	<b>10.2%</b>		

Source: Godbe Research, 2006, using data derived from California EDD, LMID Data Sources

## High Growth Occupations in California

Education Sector

The table below lists the occupations within the education sector with the highest numeric employment growth projections across the state of California between 2005 and 2010. Data for the education sector includes both private and public sector employees. The table shows that the greatest growth in employment is anticipated in teaching assistant jobs, followed by all other teachers, primary, secondary, and adult.

Table 19 High Growth Occupations in California – Education Sector

Occupation	2005 Employment	2010 Employment	2005-2010 Employment Change	Experience/Education	Mean Annual Salary 2004 (Q3)
Postsecondary Teachers	173,460	205,060	9,950	Doctoral Degree	n/a
Teacher Assistants	169,260	188,860	19,600	Associate Degree	\$25,269
All Other Teachers, Primary, Secondary, and Adult	82,080	98,880	16,800	Bachelor's Degree	\$48,578
Elementary School Teachers, Except Special Education	178,600	193,600	15,000	Bachelor's Degree	\$52,104
Secondary School Teachers, Except Special and Vocational Education	125,840	138,240	12,400	Bachelor's Degree	\$57,743
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	42,870	46,820	3,950	Short-Term on-the-job Training	\$22,812
Self-Enrichment Education Teachers	14,860	18,460	3,600	Work Experience	\$36,720
Vocational Education Teachers, Postsecondary	17,940	21,340	3,400	Work Experience	\$54,668
Middle School Teachers, Except Special and Vocational Education	53,900	56,900	3,000	Bachelor's Degree	\$54,399
Education Administrators, Elementary and Secondary School	22,430	24,980	2,550	Bachelor's Degree or Higher	\$93,602
Special Education Teachers, Preschool, Kindergarten, and Elementary School	16,530	19,080	2,550	Bachelor's Degree	\$55,424
Kindergarten Teachers, Except Special Education	16,440	18,840	2,400	Bachelor's Degree	\$52,974
Office Clerks, General	61,220	63,420	2,200	Short-Term on-the-job Training	\$26,355
Library, Museum, Training, and Other Education Workers	14,040	15,940	1,900	Associate Degree	\$32,685
Executive Secretaries and Administrative Assistants	25,480	27,280	1,800	Post-Secondary Vocational Ed.	\$41,891
Preschool Teachers, Except Special Education	12,650	14,400	1,750	Bachelor's Degree	\$25,679

Source: Godbe Research, 2006, using data derived from California EDD, LMID Data Sources

### Municipal Sector

The table below lists the occupations within the municipal sector, including both the municipal services and public works sub-sectors, with the highest numeric employment growth projections across the state of California between 2005 and 2010. Data for the municipal sector includes all employment at the federal, state, and local government levels. The table shows that the greatest growth in employment is anticipated in business operations specialists, all other, followed by office clerks, general.

Table 20 High Growth Occupations in California – Municipal Sector

<b>Occupation</b>	<b>2005 Employment</b>	<b>2010 Employment</b>	<b>2005-2010 Employment Change</b>	<b>Experience/ Education</b>	<b>Mean Annual Salary 2004 (Q3)</b>
Business Operations Specialists, All Other	49,310	53,660	4,350	Bachelor's Degree or Higher	\$58,881
Office Clerks, General	61,500	64,000	2,500	Short-Term on-the-job Training	\$26,355
Recreation Workers	23,910	26,260	2,350	Moderate-Term on-the-job Training	\$23,064
Bus Drivers, Transit and Intercity	22,900	24,640	1,650	Moderate-Term on-the-job Training	\$36,970
Computer Systems Analysts	12,350	13,600	1,250	Bachelor's Degree	\$73,295
Maintenance and Repair Workers, General	13,230	14,280	1,050	Long-Term on-the-job Training	\$34,586
Landscaping and Groundskeeping Workers	12,800	13,800	1,000	Short-Term on-the-job Training	\$23,998
Management Analysts	10,000	11,000	1,000	Master's Degree	\$85,552
Library Assistants, Clerical	6,070	7,020	950	Short-Term on-the-job Training	\$28,622
Civil Engineers	18,170	19,120	950	Bachelor's Degree	\$74,745

Source: Godbe Research, 2006, using data derived from California EDD, LMID Data Sources



Criminal Justice Sector

The table below lists the occupations within the criminal justice sector with the highest numeric employment growth projections across the state of California between 2005 and 2010. Data for the criminal justice sector includes all employment at the federal, state, and local government levels, and also includes employees in the education services sector, where relevant. The table shows that the greatest growth in employment is anticipated in police and sheriff patrol officer jobs.

Table 21 High Growth Occupations in California – Criminal Justice Sector

Occupation	2005 Employment	2010 Employment	2005-2010 Employment Change	Experience/ Education	Mean Annual Salary 2004 (Q3)
Police and Sheriff Patrol Officers	83,170	96,120	12,950	Long-Term on-the-job Training	\$62,170
Correctional Officers and Jailers	36,460	40,060	3,600	Long-Term on-the-job Training	\$51,880
Lawyers	15,130	18,180	3,050	First Professional Degree	\$132,065
Detectives and Criminal Investigators	10,070	11,520	1,450	Work Experience	\$69,641
Probation Officers and Correctional Treatment Specialists	14,320	15,520	1,200	Bachelor's Degree	\$59,802
First-Line Supervisors/Managers of Police and Detectives	7,280	8,080	800	Work Experience	\$89,812
Paralegals and Legal Assistants	3,270	3,720	450	Associate Degree	\$51,475

Source: Godbe Research, 2006, using data derived from California EDD, LMID Data Sources

Public Safety Sector

The table below lists the occupations within the public safety sector with the highest numeric employment growth projections across the state of California between 2005 and 2010. Data for the public safety sector includes all employment at the federal, state, and local government levels, and also includes employees in the education services sector, where relevant. The table shows that the greatest growth in employment is anticipated in fire fighter jobs.

Table 22 High Growth Occupations in California – Public Safety Sector

Occupation	2005 Employment	2010 Employment	2005-2010 Employment Change	Experience/ Education	Mean Annual Salary 2004 (Q3)
Fire Fighters	28,970	32,920	3,950	Long-Term on-the-job Training	\$54,615
Protective Service Workers, All Other	29,890	32,040	2,150	Short-Term on-the-job Training	\$27,612
First-Line Supervisors/Managers of Fire Fighting and Prevention Workers	8,600	9,600	1,000	Work Experience	\$79,674
Police, Fire, and Ambulance Dispatchers	5,660	6,260	600	Moderate-Term on-the-job Training	\$44,662

Source: Godbe Research, 2006, using data derived from California EDD, LMID Data Sources

## High Employment Occupations in the Tri-County Area

Education Sector

The table below lists the occupations with the highest level of employment within the educational services sector in the Tri-County area, as well as the corresponding employment growth rates between 2005 and 2010. The table shows that overall employment in educational services in Santa Clara county is expected to grow by around 8.5 percent over the next five years. Within the Tri-County area, employment in other postsecondary teaching occupations is expected to increase the most, rising by 11 percent over the next few years. By comparison, employment is expected to fall slightly in middle school teaching occupations between 2005 and 2010.

Table 23 Educational Services Occupations with the Greatest Employment in the Tri-County Area

Occupation	2005 Employment	2010 Employment	2005-2010 Employment Change	Experience/Education	Mean Annual Salary 2004
Postsecondary Teachers, All Other	12,640	13,837	9.5%	Doctoral Degree	\$71,164
Elementary School Teachers, Except Special Education	10,430	10,680	2.4%	Bachelor's Degree	\$54,765
Teacher Assistants	9,315	9,761	4.8%	Associate Degree	\$29,173
Secondary School Teachers, Except Special and Vocational Education	8,782	9,075	3.3%	Bachelor's Degree	\$67,188
All Other Teachers, Primary, Secondary, and Adult	5,140	5,420	5.4%	Bachelor's Degree	\$47,771
Office Clerks, General	4,646	4,758	2.4%	Short-Term on-the-job Training	\$28,471
Middle School Teachers, Except Special and Vocational Education	4,628	4,618	-0.2%	Bachelor's Degree	\$51,204
Executive Secretaries and Administrative Assistants	2,807	2,849	1.5%	Post-Secondary Vocational Ed.	\$49,605
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	2,313	2,380	2.9%	Short-Term on-the-job Training	\$34,472
Secretaries, Except Legal, Medical and Executive	2,069	1,989	-3.9%	Post-Secondary Vocational Ed.	\$35,123
<b>Santa Clara County Educational Services</b>	<b>26,040</b>	<b>28,260</b>	<b>8.5%</b>		

Source: Godbe Research, 2006, using data derived from California EDD, LMID Data Sources

### Municipal Sector

The table below lists the occupations with the highest level of employment within the municipal services sector, including both the municipal services and public works sub-sectors, in the Tri-County area, as well as the corresponding employment growth rates between 2005 and 2010. The table shows that all other business operations specialists had the highest number of employees in municipal services in 2005, followed by general office clerks. It should be noted that the figures in the table include all employees within these occupations at the federal, state, and local government levels. A proportion of these may therefore be employed in other government sectors, including education, criminal justice, and public safety.

Table 24 Municipal Services Occupations with the Greatest Employment in the Tri-County Area

Occupation	2005 Employment	2010 Employment	2005-2010 Employment Change	Experience/Education	Mean Annual Salary 2004
Business Operations Specialists, All Other	5,840	6,189	6.0%	Bachelor's Degree or Higher	\$49,706
Office Clerks, General	4,668	4,780	2.4%	Short-Term on-the-job Training	\$34,032
Recreation Workers	2,281	2,356	3.3%	Moderate-Term on-the-job Training	\$29,432
Management Analysts	1,935	2,139	10.5%	Master's Degree	\$75,316
Computer Systems Analysts	1,750	1,945	11.2%	Bachelor's Degree	\$82,684
Accountants and Auditors	1,254	1,321	5.3%	Bachelor's Degree	\$72,234
Bookkeeping, Accounting, and Auditing Clerks	1,242	1,228	-1.1%	Moderate-Term on-the-job Training	\$46,831
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	1,178	1,212	2.9%	Short-Term on-the-job Training	\$39,062
Maintenance and Repair Workers, General	1,163	1,200	3.2%	Long-Term on-the-job Training	\$48,947
First-Line Supervisors/Managers of Office and Administrative Workers	1,612	1,593	-1.2%	Moderate-Term on-the-job Training	\$67,394

Source: Godbe Research, 2006, using data derived from California EDD, LMID Data Sources

Criminal Justice Sector

The table below lists the occupations with the highest level of employment within the criminal justice sector in the Tri-County area, as well as the corresponding employment growth rates between 2005 and 2010. The table shows that police and sheriff patrol officers had the highest number of employees in municipal services in 2005, followed by lawyers. It should be noted that the figures in the table include all employees within these occupations at the federal, state, and local government levels. A proportion of these may therefore be employed in other government sectors, including municipal services.

Table 25 Criminal Justice Occupations with the Greatest Employment in the Tri-County Area

Occupation	2005 Employment	2010 Employment	2005-2010 Employment Change	Experience/Education	Mean Annual Salary 2004
Police and Sheriff Patrol Officers	5,549	5,761	3.8%	Long-Term on-the-job Training	\$72,716
Lawyers	577	610	5.8%	First Professional Degree	\$126,932
Paralegals and Assistants	411	460	11.9%	Associate Degree	\$69,164
First-Line Supervisors/Managers of Police and Detectives	326	333	2.1%	Work Experience	\$114,682
Parking Enforcement Workers	321	327	1.9%	Short-Term on-the-job Training	\$46,457
Correctional Officers and Jailers	319	354	11.0%	Long-Term on-the-job Training	\$56,227
Detectives and Criminal Investigators	295	300	1.7%	Work Experience	\$67,605
Probation Officers and Correctional Treatment Specialists	236	243	3.0%	Bachelor's Degree	\$76,270
Legal Secretaries	213	230	8.0%	Post-Secondary Vocational Ed.	\$57,295

Source: Godbe Research, 2006, using data derived from California EDD, LMID Data Sources

Public Safety Sector

The table below lists the occupations with the highest level of employment within the public safety sector in the Tri-County area, as well as the corresponding employment growth rates between 2005 and 2010. The table shows that fire fighters had the highest number of employees in the public safety sector in 2005, followed by first-line supervisors/managers of fire fighting and prevention workers. It should be noted that the figures in the table include all employees within these occupations at the federal, state, and local government levels. A proportion of these may therefore be employed in other government sectors.

Table 26 Public Safety Occupations with the Greatest Employment in the Tri-County Area

Occupation	2005 Employment	2010 Employment	2005-2010 Employment Change	Experience/Education	Mean Annual Salary 2004
Fire Fighters	2,659	2,674	0.6%	Long-Term on-the-job Training	\$73,982
First-Line Supervisors/Managers of Fire Fighting and Prevention Workers	733	738	0.7%	Work Experience	\$100,358
Protective Service Workers, All Other	644	666	3.4%	Short-Term on-the-job Training	\$36,826
Police, Fire, and Ambulance Dispatchers	523	538	2.9%	Moderate-Term on-the-job Training	\$63,025
Emergency Medical Technicians and Paramedics	208	229	10.1%	Post-Secondary Vocational Ed.	\$65,502

Source: Godbe Research, 2006, using data derived from California EDD, LMID Data Sources

## High Growth Occupations in the Tri-County Area

The table below lists the public sector occupations with the highest numeric employment growth projections across the Tri-County area between 2005 and 2010. The figures include all employment within the educational services, federal, state, and local government sectors in the Tri-County area. The table shows that the highest growth in employment levels is expected in a number of teaching and business-related occupations.

Table 27 High Growth Occupations in the Tri-County Area

Occupation	2005 Employment	2010 Employment	2005-2010 Employment Change	Experience/Education	Mean Annual Salary 2004
Teacher Assistants	9,315	9,761	446	Associate Degree	\$29,173
Business Operations Specialists, All Others	5,840	6,189	350	Bachelor's Degree or Higher	\$49,974
Secondary School Teachers, Except Special and Vocational	8,782	9,075	293	Bachelor's Degree	\$67,188
Postsecondary Teachers, All Other	2,606	2,889	283	Doctoral Degree	\$71,164
All Other Teachers, Primary, Secondary, and Adult	5,140	5,420	280	Bachelor's Degree	\$47,771
Computer System Analysts	2,257	2,509	252	Bachelor's Degree	\$82,684
Elementary School Teachers, Except Special Education	10,430	10,680	250	Bachelor's Degree	\$54,765
Office Clerks, General	9,314	9,539	225	Short-Term on-the-job Training	\$31,258
Police and Sheriff Patrol Officers	5,549	5,761	212	Long-Term on-the-job Training	\$72,716
Management Analysts	1,935	2,139	204	Master's Degree	\$75,316

Source: Godbe Research, 2006, using data derived from California EDD, LMID Data Sources

As highlighted earlier in the report, the primary concern currently facing public sector employers in the Tri-County area is the high level of anticipated retirements among its senior-level employees over the next few years. In addition to looking at projected employment growth over the next few years, an assessment of projected total job openings among occupations in the Tri-County public sector over the next few years was also carried out in order to gain a more in-depth understanding of where occupational gaps may arise in the future. Projected total job openings within an occupation are calculated by adding employment growth job openings to those arising from replacements or separations.

The California EDD Labor Market Information Division website describes job replacements as "Openings resulting from people leaving an occupation" and job separations as "Job openings created due to workers permanently leaving one occupation to take a job in a different occupation, stay home, attend school, move out of the area, retire or die."

The table below provides an overview of the public sector occupations which are projected to have the highest number of total job openings over the next five years, including those due to growth as well as separations and/or replacements, in the Tri-County area. The table illustrates that the level of projected job openings arising from separations and/or replacements is particularly high in a number of the teaching occupations, as well as in certain office-based occupations.

Table 28 Occupations with a High Level of Projected Total Job Openings in the Tri-County Area

Occupation	Openings Due to Growth 2005-2010	Openings Due to Separations/ Replacements 2005-2010	Total Job Openings 2005-2010	Experience/ Education	Mean Annual Salary 2004
Secondary School Teachers, Except Special and Vocational	293	1,163	1,456	Bachelor's Degree	\$67,188
Elementary School Teachers, Except Special Education	250	1,113	1,363	Bachelor's Degree	\$54,765
Teacher Assistants	446	852	1,298	Associate Degree	\$29,173
Office Clerks, General	225	986	1,211	Short-Term on-the job Training	\$31,258
Business Operations Specialists, All Other	349	543	892	Bachelor's Degree or Higher	\$49,974
Police and Sheriff Patrol Officers	212	670	882	Long-Term on-the job Training	\$72,716
Protective Service Workers, All Other	22	745	767	Short-Term on-the job Training	\$36,826
Fire Fighters	15	712	727	Long-Term on-the job Training	\$73,982
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	162	522	684	Short-Term on-the job Training	\$36,021
All Other Teachers, Primary, Secondary, and Adult	280	292	572	Bachelor's Degree	\$47,771
Postsecondary Teachers, All Other	283	269	552	Doctoral Degree	\$71,164
Middle School Teachers, Except Special and Vocational Education	-10	510	500	Bachelor's Degree	\$51,204
Executive Secretaries and Administrative Assistants	63	396	459	Post-Secondary Vocational Ed.	\$49,605
Bus Drivers, Transit and Intercity	115	265	380	Moderate-Term on the-job Training	\$42,544
Computer Systems Analysts	252	109	361	Bachelor's Degree	\$82,684

Source: Godbe Research, 2006, using data derived from California EDD, LMID Data Sources

## APPENDIX D: OCCUPATIONAL PROFILES

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### Teacher Assistants

#### Occupation Description

Teacher assistants perform duties that are instructional in nature or deliver direct services to students or parents. They may also serve in a position for which a teacher or another professional has ultimate responsibility for the design and implementation of educational programs and services.

#### Secondary Titles

Other job titles include paraprofessional, instructional assistant, special education teaching assistant, special education paraprofessional, teacher aide, paraeducator, teaching assistant, special education aide, and special education instructional assistant.

#### Job level

Entry-level

#### Assessment of Need

Yellow:

- Higher than average projected job growth in the Tri-County area, 2005-2010
- High total level of projected replacements and/or separations, 2005-2010
- Lower than average ratio of replacements and/or separations to employment
- Lower than average wage growth in the Tri-County area, 2001-2005
- Mean wage higher in the Tri-County area than in California
- Workers with experience in helping special education students, or who can speak a foreign language, will be especially in demand

#### Current Employment and Projected Growth

There were 9,315 teacher assistants employed in the Tri-County education sector in 2005. Nine thousand seven hundred and sixty-one (9,761) are projected to be employed within the Tri-County area by 2010, an average annual growth rate of one percent. By comparison, the annual average growth rate in California between 2005 and 2010 is expected to be higher at 2.3 percent.

Table 29 Teacher Assistants – Employment Forecasts

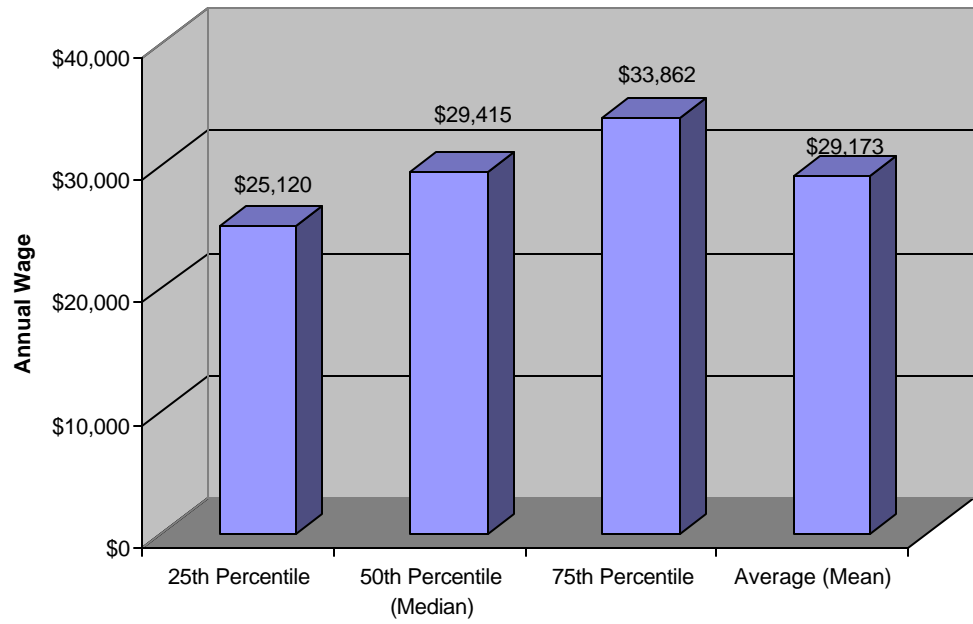
	Employment		Increase 2005-2010	
	2005	2010	Numeric	Percentage
Santa Clara	6,586	6,953	367	5.6%
San Mateo	2,454	2,466	12	0.5%
San Benito	275	342	67	24.4%
Tri-County	9,315	9,761	446	4.8%
California	169,260	188,860	19,600	11.6%



Wages

The median annual wage for teacher assistants in the Tri-County area in 2004 was \$29,415.<sup>vii</sup> The 25<sup>th</sup> percentile wage<sup>viii</sup> in the Tri-County area was \$25,120, while the 75<sup>th</sup> percentile wage was \$33,862.

Figure 21 Teacher Assistants – 2004 Wage Levels in the Tri-County Area



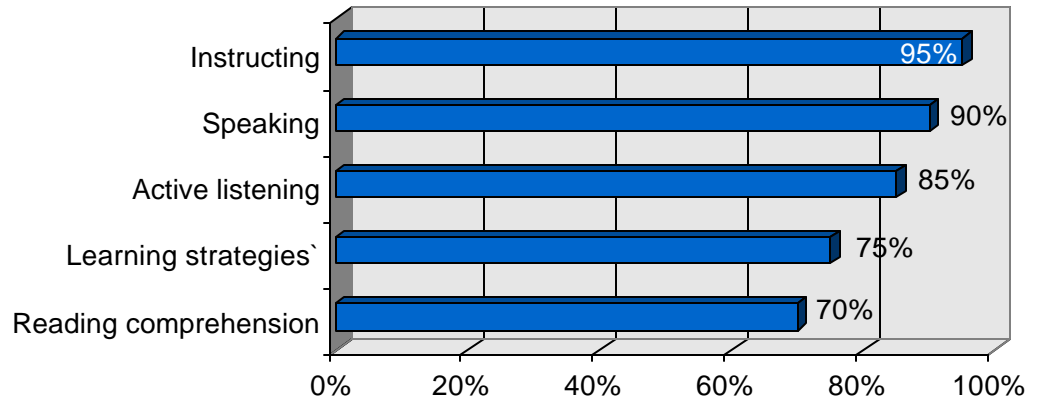
<sup>vii</sup> The median is the middle number in a series of data. If there is an even number of data points, the average of the two middle values is taken as the median.

<sup>viii</sup> A percentile orders data in a way that easily demonstrates what percentage of the data falls above or below a certain point. For example, if the 75<sup>th</sup> percentile wage were \$100,000, then 75 percent of employees in the occupation would make less than \$100,000 and ten percent would make more than \$100,000.

### Skill Assessment

For teacher assistants, instructing was ranked as the most important skill.

Figure 22 Teacher Assistants – Skill Importance



For teacher assistants, the most important three skills are:

**Instructing** – Teaching others how to do something.

**Speaking** – Talking to others to convey information effectively.

**Active listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

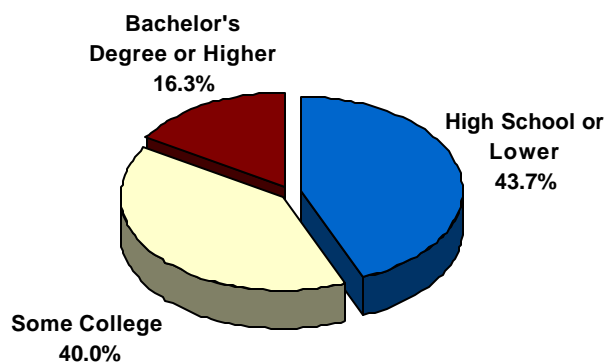
### Education and Training

Educational requirements for teacher assistants vary by school district and range from a high school diploma to some college training, although employers increasingly prefer applicants with some college training, especially if they will work in special education programs. Following state law requirements, all schools require applicants to pass a test in reading, language, and math.

Teacher assistants with instructional responsibilities usually require more training than do those who do not perform teaching tasks. Federal regulations require teacher assistants with instructional responsibilities in Title I schools, those with a large proportion of students from low-income households, to meet one of three requirements: hold a two-year or higher degree, have a minimum of two years of college, or pass a rigorous state or local assessment. Many schools also require previous experience in working with children and a valid driver's license. Some schools may require the applicant to pass a background check.

Teacher assistants generally get their training for classroom work on the job. However, some community colleges offer associate degree programs that prepare graduates to work directly in the classroom as teacher assistants.

Figure 23 Distribution of Educational Attainment – Teacher Assistants



### Career Advancement Opportunities

Advancement for teacher assistants, usually in the form of higher earnings or increased responsibility, comes primarily with experience or additional education. Some school districts provide time away from the job or tuition reimbursement so that teacher assistants can earn their bachelor's degrees and pursue licensed teaching positions. In return for tuition reimbursement, assistants are often required to teach a certain length of time for the school district.

## Elementary School Teachers, Except Special Education

### Occupation Description

Elementary school teachers, except special education, with the help of instructional aides and parent volunteers, teach pupils in public schools at the elementary level basic academic, social, and other formative skills.

### Secondary Titles

Other job titles include teacher, elementary teacher, classroom teacher, art teacher, educator, elementary education teacher, primary teacher, title one reading teacher, reading recovery teacher

### Job level

Professional

### Assessment of Need

Yellow:

- Lower than average projected job growth in the Tri-County area, 2005-2010
- High total level of projected replacements and/or separations, 2005-2010
- Average ratio of replacements and/or separations to employment
- Higher than average wage growth, 2001-2005
- Recruitment and retention difficulties in the Tri-County area due to the high cost of local housing

### Current Employment and Projected Growth

There were 10,430 elementary school teachers, except special education, employed in the Tri-County education sector in 2005. Ten thousand six hundred and eighty (10,680) are projected to be employed within the Tri-County area by 2010, an average annual growth rate of 0.5 percent. By comparison, the annual average growth rate in California between 2005 and 2010 is expected to be higher at 1.7 percent.

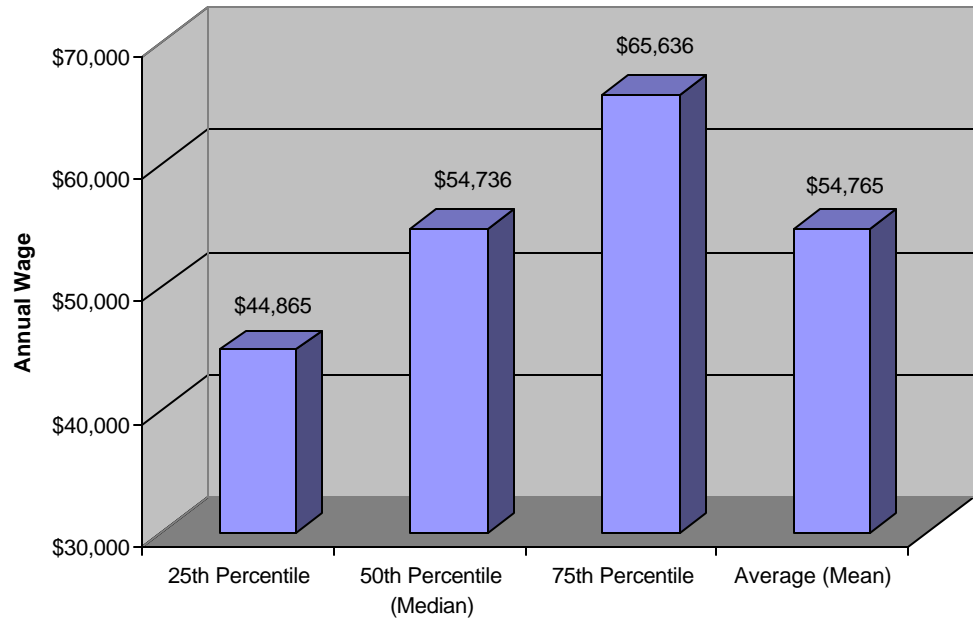
Table 30 Elementary School Teachers, Except Special Education – Employment Forecasts

	Employment		Increase 2005-2010	
	2005	2010	Numeric	Percentage
Santa Clara	8,339	8,554	215	2.6%
San Mateo	1,702	1,702	0	0.0%
San Benito	389	424	35	9.0%
Tri-County	10,430	10,680	250	2.4%
California	178,600	193,600	15,000	8.4%

Wages

The median annual wage for elementary school teachers, except special education, in the Tri-County area in 2004 was \$54,736.<sup>ix</sup> The 25<sup>th</sup> percentile wage<sup>x</sup> in the Tri-County area was \$44,865, while the 75<sup>th</sup> percentile wage was \$65,636.

Figure 24 Elementary School Teachers, Except Special Education – 2004 Wage Levels in the Tri-County Area



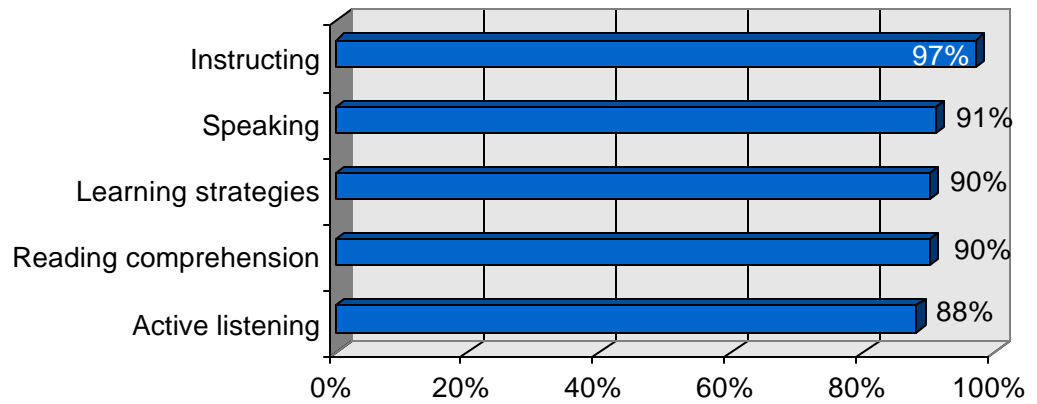
<sup>ix</sup> The median is the middle number in a series of data. If there is an even number of data points, the average of the two middle values is taken as the median.

<sup>x</sup> A percentile orders data in a way that easily demonstrates what percentage of the data falls above or below a certain point. For example, if the 75<sup>th</sup> percentile wage were \$100,000, then 75 percent of employees in the occupation would make less than \$100,000 and ten percent would make more than \$100,000.

### Skill Assessment

For elementary school teachers, except special education, instructing was ranked as the most important skill.

Figure 25 Elementary School Teachers, Except Special Education – Skill Importance



For elementary school teachers, except special education, the most important three skills are:

**Instructing** – Teaching others how to do something.

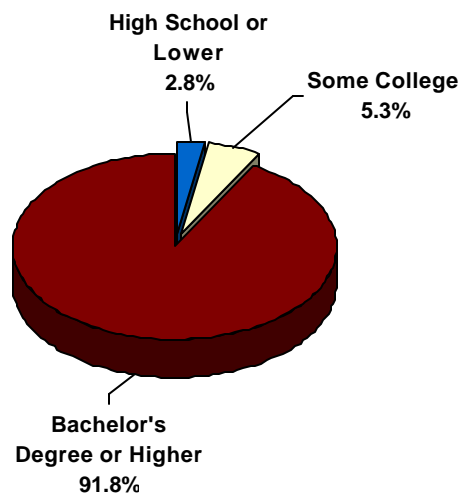
**Speaking** – Talking to others to convey information effectively.

**Learning strategies** – Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.

### Education and Training

Elementary school teachers must obtain a Multiple Subject Teaching Credential in order to teach several subjects in one classroom such as those found in elementary schools. The California Commission on Teacher Credentialing establishes requirements for a Preliminary and Professional Clear Credential to teach in California's public classrooms. Credentials are renewed every five years. During that time, teachers must take 150 hours of continuing education and staff development, and teach at least one half of one year.

Figure 26 Distribution of Educational Attainment – Elementary School Teachers, Except Special Vocational Education



### Career Advancement Opportunities

Promotion for most teachers consists of regular salary increases. With additional preparation, teachers may move into positions as school librarians, reading specialists, instructional coordinators, or guidance counselors. Teachers may become administrators or supervisors, although the number of these positions is limited and competition can be intense. In some systems, highly qualified, experienced teachers can become senior or mentor teachers, with higher pay and additional responsibilities. They guide and assist less experienced teachers while keeping most of their own teaching responsibilities. Administrative positions require teaching experience, advanced study, and additional credentials.

## Middle School Teachers, Except Special and Vocational Education

### Occupation Description

Middle school teachers, except special and vocational education, teach students in public schools in one or more subjects at the middle, intermediate, or junior high level, which falls between elementary and senior high school as defined by applicable State laws and regulations. Additional responsibilities of middle school teachers may include career guidance and job placement, as well as follow-ups with students after graduation.

### Secondary Titles

Other job titles include teacher, mathematics teacher, science teacher, language arts teacher, social studies teacher, English teacher, reading teacher, middle school teacher, physical education teacher, and art teacher.

### Job Level

Professional

### Assessment of Need

Yellow:

- Job levels projected to fall slightly in the Tri-County area, 2005-2010
- High total level of projected replacements and/or separations, 2005-2010
- Average ratio of replacements and/or separations, 2005-2010
- Higher than average wage growth, 2001-2005
- Recruitment and retention difficulties in the Tri-County area due to the high cost of local housing

### Current Employment and Projected Growth

There were 4,628 middle school teachers, except special and vocational education, employed in the Tri-County education sector in 2005. Four thousand six hundred and eighteen (4,618) are projected to be employed within the Tri-County area by 2010. The annual average growth rate in California between 2005 and 2010 is expected to be 1.1 percent.

Table 31 Middle School Teachers, Except Special and Vocational Education – Employment Forecasts

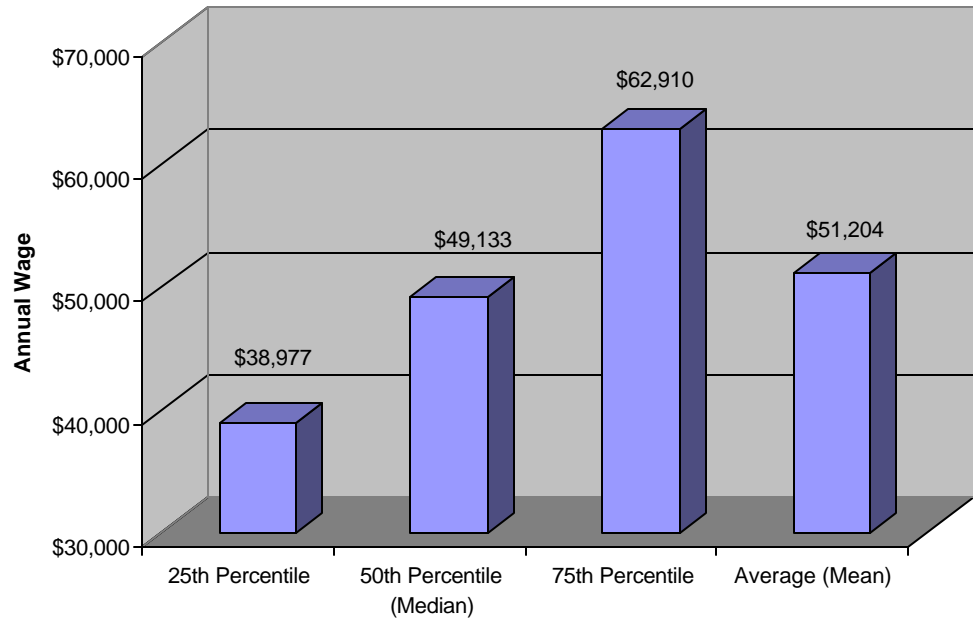
	Employment		Increase 2005-2010	
	2005	2010	Numeric	Percentage
Santa Clara	3,384	3,374	-10	-0.3%
San Mateo	1,184	1,184	0	0.0%
San Benito	60	60	0	0.0%
Tri-County	4,628	4,618	-10	-0.2%
California	53,900	56,900	3,000	5.6%



Wages

The median annual wage for middle school teachers, except special and vocational education, in the Tri-County area in 2004 was \$49,133.<sup>xi</sup> The 25<sup>th</sup> percentile wage<sup>xii</sup> in the Tri-County area was \$38,977, while the 75<sup>th</sup> percentile wage was \$62,910.

Figure 27 Middle School Teachers, Except Special and Vocational Education – 2004 Wage Levels in the Tri-County Area



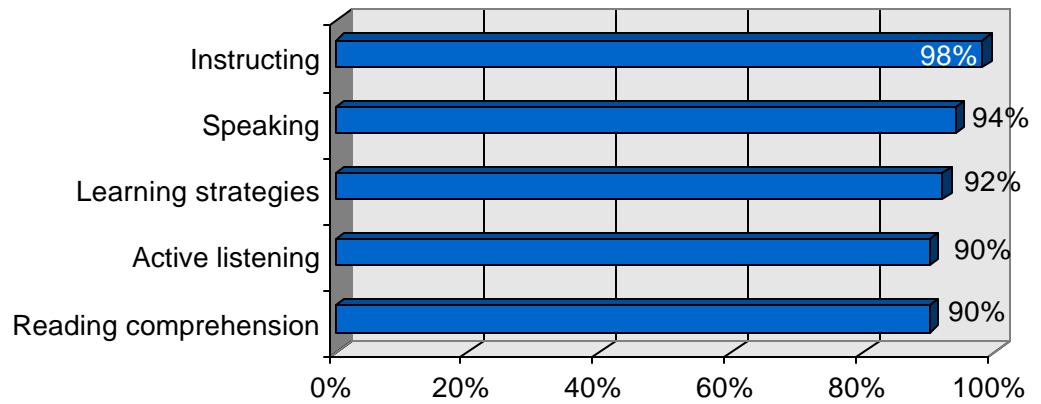
<sup>xi</sup> The median is the middle number in a series of data. If there is an even number of data points, the average of the two middle values is taken as the median.

<sup>xii</sup> A percentile orders data in a way that easily demonstrates what percentage of the data falls above or below a certain point. For example, if the 75<sup>th</sup> percentile wage were \$100,000, then 75 percent of employees in the occupation would make less than \$100,000 and ten percent would make more than \$100,000.

### Skill Assessment

For middle school teachers, except special and vocational education, instructing was ranked as the most important skill.

Figure 28 Middle School Teachers, Except Special and Vocational Education – Skill Importance



For middle school teachers, except special and vocational education, the most important three skills are:

**Instructing** – Teaching others how to do something.

**Speaking** – Talking to others to convey information effectively.

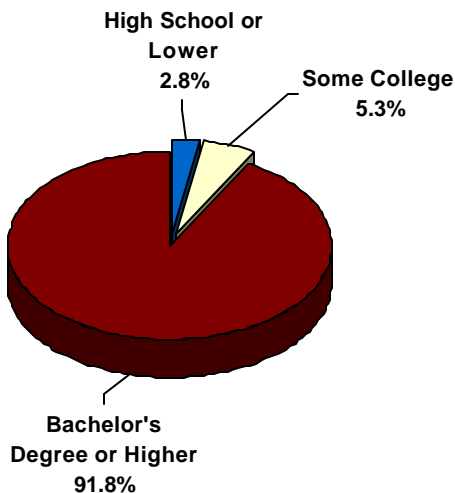
**Learning strategies** – Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.

Education and Training

All 50 states require public school teachers to be licensed. Usually licensure is granted by the State Board of Education or a licensure advisory committee. All states require general education teachers to have a bachelor’s degree and to have completed an approved teacher training program with a prescribed number of subject and education credits, as well as supervised practice teaching. Some states also require technology training and the attainment of a minimum grade point average. A number of states require that teachers obtain a master’s degree in education within a specified period after they begin teaching.

Almost all states require applicants for a teacher’s license to be tested for competency in basic skills, such as reading and writing, and in teaching. Almost all also require the teacher to exhibit proficiency in his or her subject. Many school systems are presently moving toward implementing performance-based systems for licensure, which usually require a teacher to demonstrate satisfactory teaching performance over an extended period in order to obtain a provisional license, in addition to passing an examination in their subject. Most states require continuing education for renewal of the teacher’s license. Many states have reciprocity agreements that make it easier for teachers licensed in one state to become licensed in another.

Figure 29 Distribution of Educational Attainment – Middle School Teachers, Except Special and Vocational Education



Career Advancement Opportunities

With additional preparation, teachers may move into positions as school librarians, reading specialists, instructional coordinators, or guidance counselors. Teachers may become administrators or supervisors, although the number of these positions is limited and competition can be intense. In some systems, highly qualified, experienced teachers can become senior or mentor teachers, with higher pay and additional responsibilities. They guide and assist less experienced teachers while keeping most of their own teaching responsibilities.

## Secondary School Teachers, Except Special and Vocational Education

### Occupation Description

Secondary school teachers, except special and vocational education, instruct students in secondary public schools in one or more subjects at the secondary level, such as English, mathematics, or social studies. They may also be designated according to subject matter specialty, such as typing instructors, commercial teachers, or English teachers.

### Secondary Titles

Other job titles include teacher, English teacher, mathematics teacher, social studies teacher, science teacher, Spanish teacher, secondary teacher, art teacher, classroom teacher, and biology teacher.

### Job Level

Professional

### Assessment of Need

Yellow:

- Lower than average projected job growth in the Tri-County area, 2005-2010
- High total level of projected replacements and/or separations, 2005-2010
- Higher than average ratio of replacements and/or separations to employment
- Average wage growth, 2001-2005
- Recruitment and retention difficulties in the Tri-County area due to the high cost of local housing

### Current Employment and Projected Growth

There were 8,782 secondary school teachers, except special and vocational education, employed in the Tri-County education sector in 2005. Nine thousand and seventy-five (9,075) are projected to be employed within the Tri-County area by 2010, an average annual growth rate of 0.7 percent. By comparison, the annual average growth rate in California between 2005 and 2010 is expected to be higher at two percent.

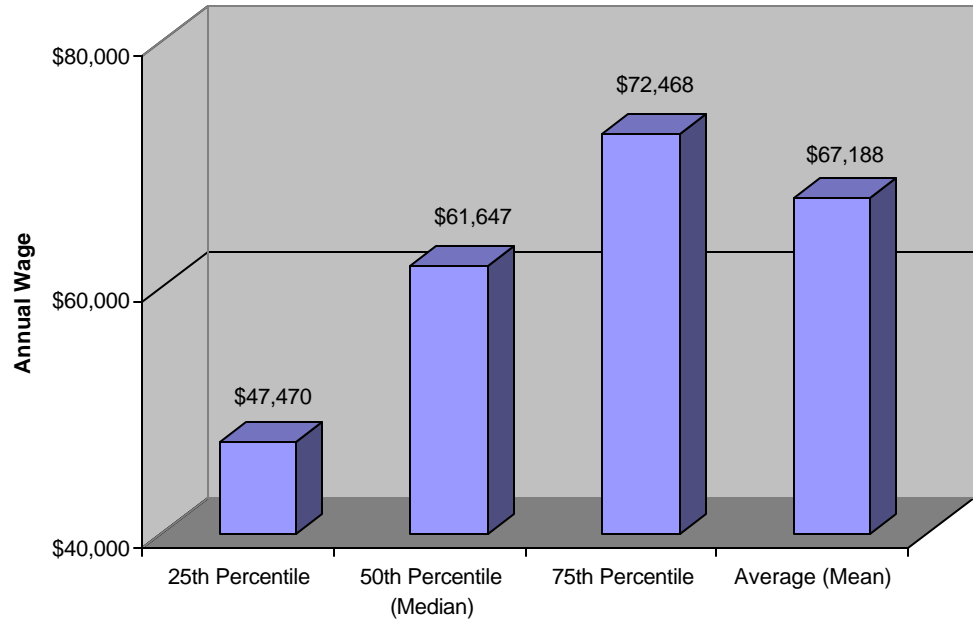
Table 32 Secondary School Teachers, Except Special and Vocational Education – Employment Forecasts

	Employment		Increase 2005-2010	
	2005	2010	Numeric	Percentage
Santa Clara	6,739	7,004	265	3.9%
San Mateo	1,830	1,830	0	0.0%
San Benito	213	241	28	13.1%
Tri-County	8,782	9,075	293	3.3%
California	125,840	138,240	12,400	9.9%

Wages

The median annual wage for secondary school teachers, except special and vocational education, in the Tri-County area in 2004 was \$61,647.<sup>xiii</sup> The 25<sup>th</sup> percentile wage<sup>xiv</sup> in the Tri-County area was \$47,470, while the 75<sup>th</sup> percentile wage was \$72,468.

Figure 30 Secondary School Teachers, Except Special and Vocational Education – 2004 Wage Levels in the Tri-County Area



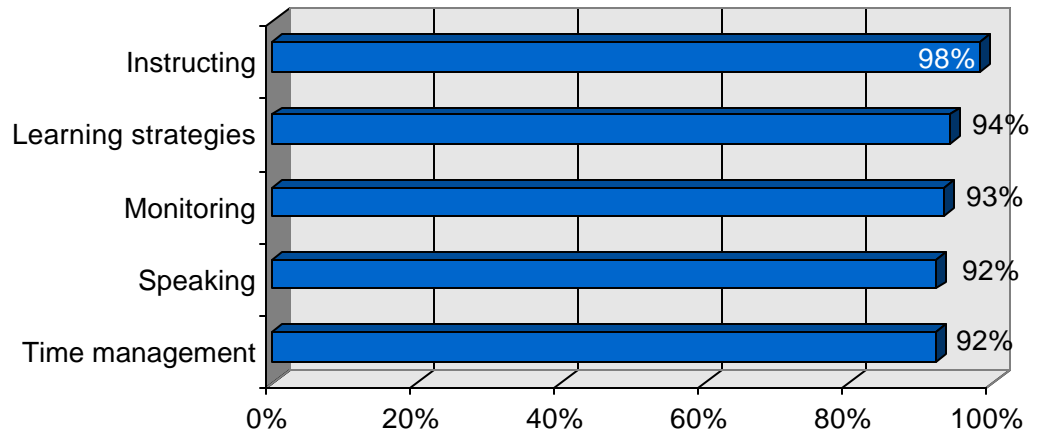
<sup>xiii</sup> The median is the middle number in a series of data. If there is an even number of data points, the average of the two middle values is taken as the median.

<sup>xiv</sup> A percentile orders data in a way that easily demonstrates what percentage of the data falls above or below a certain point. For example, if the 75<sup>th</sup> percentile wage were \$100,000, then 75 percent of employees in the occupation would make less than \$100,000 and ten percent would make more than \$100,000.

### Skill Assessment

For secondary school teachers, except special and vocational education, instructing was ranked as the most important skill.

Figure 31 Secondary School Teachers, Except Special and Vocational Education – Skill Importance



For secondary school teachers, except special and vocational education, the most important three skills are:

**Instructing** – Teaching others how to do something.

**Learning strategies** – Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.

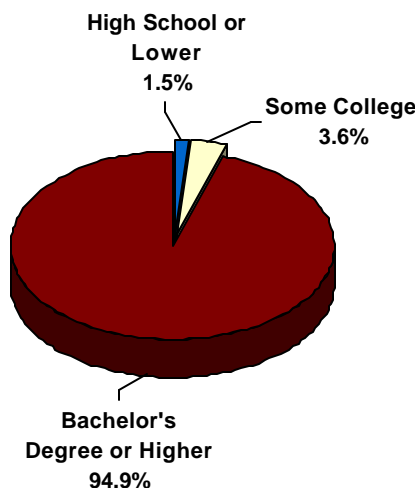
**Monitoring** – Monitoring/assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

### Education and Training

All 50 states require public school teachers to be licensed. Usually licensure is granted by the State Board of Education or a licensure advisory committee. All states require general education teachers to have a bachelor's degree and to have completed an approved teacher training program with a prescribed number of subject and education credits, as well as supervised practice teaching. Some states also require technology training and the attainment of a minimum grade point average. A number of states require that teachers obtain a master's degree in education within a specified period after they begin teaching.

Almost all states require applicants for a teacher's license to be tested for competency in basic skills, such as reading and writing, and in teaching. Almost all also require the teacher to exhibit proficiency in his or her subject. Many school systems are presently moving toward implementing performance-based systems for licensure, which usually require a teacher to demonstrate satisfactory teaching performance over an extended period in order to obtain a provisional license, in addition to passing an examination in their subject. Most states require continuing education for renewal of the teacher's license. Many states have reciprocity agreements that make it easier for teachers licensed in one state to become licensed in another.

Figure 32 Distribution of Educational Attainment – Secondary School Teachers, Except Special and Vocational Education



### Career Advancement Opportunities

With additional preparation, teachers may move into positions as school librarians, reading specialists, instructional coordinators, or guidance counselors. Teachers may become administrators or supervisors, although the number of these positions is limited and competition can be intense. In some systems, highly qualified, experienced teachers can become senior or mentor teachers, with higher pay and additional responsibilities. They guide and assist less experienced teachers while keeping most of their own teaching responsibilities.

## Postsecondary Teachers

### Occupation Description

Postsecondary teachers instruct students in a wide variety of academic and vocational subjects beyond the high school level that may lead to a degree or to improvement in one's knowledge or career skills.

### Secondary Titles

Other job titles include professor, instructor, and faculty member.

### Job Level

Professional

### Assessment of Need

Red:

- Higher than average projected job growth in the Tri-County area, 2005-2010
- High total level of projected replacements and/or separations, 2005-2010
- Average ratio of replacements and/or separations to employment
- Recruitment and retention difficulties in the Tri-County area due to the high cost of local housing

### Current Employment and Projected Growth

There were 12,640 postsecondary teachers employed in the Tri-County education sector in 2005. Thirteen thousand eight hundred and thirty-seven (13,837) are projected to be employed within the Tri-County area by 2010, an average annual growth rate of 1.9 percent. By comparison, the annual average growth rate in California between 2005 and 2010 is expected to be higher at 3.6 percent. It should be noted that, while employment levels in postsecondary teaching are forecast to grow over the next few years, a significant proportion of the new jobs will be part-time positions.

Table 33 Postsecondary Teachers – Employment Forecasts

	Employment		Increase 2005-2010	
	2005	2010	Numeric	Percentage
Santa Clara	9,279	10,444	1,165	12.6%
San Mateo	3,361	3,393	32	1.0%
San Benito	n/a	n/a	n/a	n/a
Tri-County	12,640	13,837	1,197	9.5%
California	173,460	205,060	31,600	18.2%



In Santa Clara county, the highest proportion of postsecondary teachers are classified as “postsecondary teachers, all other,” followed by “vocational education teachers, postsecondary.” The table below shows current and projected employment for a number of high-employment postsecondary teaching posts in Santa Clara county and California.

Table 34 Postsecondary Teaching Occupations – Employment Forecasts

Occupation	Region	Employment		Increase 2005-2010	
		2005	2010	Numeric	Percentage
Postsecondary Teachers, All Other	Santa Clara	2,113	2,368	255	12.1%
	California	55,400	65,400	10,000	18.1%
Vocational Education Teachers, Postsecondary	Santa Clara	906	1,016	110	12.1%
	California	19,660	23,260	3,600	18.3%
Health Specialties Teachers, Postsecondary	Santa Clara	780	880	100	12.8%
	California	5,760	6,860	1,100	19.1%
Law Teachers, Postsecondary	Santa Clara	743	848	105	14.1%
	California	1,810	2,160	350	19.3%
Communications Teachers, Postsecondary	Santa Clara	598	678	80	13.4%
	California	3,130	3,680	550	17.6%
Art, Drama, and Music Teachers, Postsecondary	Santa Clara	535	610	75	14.0%
	California	6,910	8,260	1,350	19.5%
Business Teachers, Postsecondary	Santa Clara	456	516	60	13.2%
	California	5,530	6,580	1,050	19.0%
English Language and Literature Teachers, Postsecondary	Santa Clara	420	470	50	11.9%
	Santa Clara	5,960	7,060	1,100	18.5%
Engineering Teachers, Postsecondary	California	281	316	35	12.5%
	Santa Clara	2,240	2,640	400	17.9%

Wages

Wage levels for postsecondary teachers in the Tri-County area vary between the different teaching occupations. The table below provides details of the wage levels for a number of different postsecondary teaching occupations within Santa Clara County. Postsecondary economics teachers earned the highest median wage level in 2004, at \$89,529, while postsecondary education teachers had the lowest median wage level overall, at \$59,327.

Table 35 Postsecondary Teachers – 2004 Wage Levels in Santa Clara County

<b>Postsecondary Teaching Occupation</b>	<b>25th Percentile</b>	<b>50th Percentile (Median)</b>	<b>75th Percentile</b>	<b>Average (Mean)</b>
Economics	\$75,989	\$89,529	\$108,963	\$93,784
Home Economics	\$57,234	\$85,097	\$97,919	\$79,326
History	\$69,689	\$83,280	\$93,155	\$81,915
Business	\$68,897	\$78,896	\$92,473	\$63,906
Chemistry	\$66,551	\$78,125	\$91,387	\$88,245
Mathematical Science	\$68,310	\$77,936	\$92,829	\$80,948
Geography	\$54,332	\$74,931	\$96,568	\$74,406
Recreation and Fitness Studies	\$63,685	\$74,805	\$90,302	\$85,769
English Language and Literature	\$61,978	\$74,402	\$93,103	\$79,746
Engineering	\$65,438	\$72,334	\$79,249	\$73,025
Computer Science	\$58,061	\$72,164	\$93,428	\$77,155
Political Science	\$64,537	\$70,448	\$76,534	\$68,346
Art, Drama, and Music	\$46,378	\$70,239	\$104,377	\$74,416
Psychology	\$46,302	\$68,866	\$88,075	\$69,658
Foreign Language and Literature	\$55,260	\$68,688	\$79,685	\$68,672
Nursing	\$53,317	\$66,766	\$84,278	\$71,115
Health Specialties	\$55,736	\$63,932	\$82,504	\$68,729
Library Science	\$56,607	\$63,687	\$75,176	\$70,215
Communications	\$45,785	\$60,339	\$81,914	\$65,291
Vocational Education	\$44,188	\$59,327	\$80,482	\$63,300

### Skill Assessment

For postsecondary teachers, some of the most important skills include:

**Active learning** – Understanding the implications of new information for both current and future problem-solving and decision-making.

**Active listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

**Critical thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems

**Instructing** – Teaching others how to do something.

**Learning strategies** – Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.

**Monitoring** – Monitoring/assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

**Reading comprehension** – Understanding written sentences and paragraphs in work related documents.

**Speaking** – Talking to others to convey information effectively.

**Writing** – Communicating effectively in writing as appropriate for the needs of the audience.

### Education and Training

The education and training required of postsecondary teachers varies widely, depending on the subject taught and educational institution employing them. Educational requirements for teachers are generally the highest at four-year research universities while experience and expertise in a related occupation is the principal qualification at career and technical institutes.

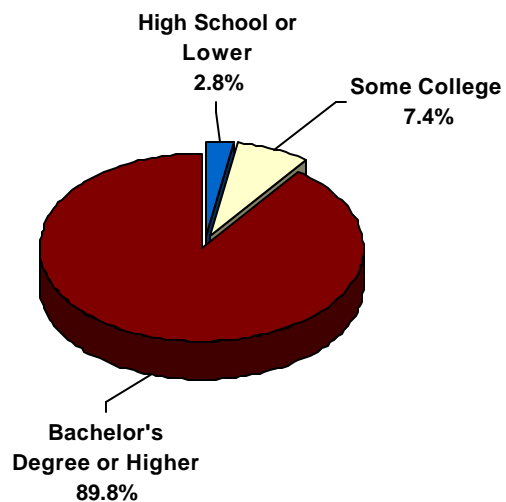
Training requirements for postsecondary career and technical education teachers vary by State and by subject. In general, teachers need a bachelor's or higher degree, plus at least three years of work experience in their field. In some fields, a license or certificate that demonstrates one's qualifications may be all that is required. Teachers update their skills through continuing education, in order to maintain certification. They must also maintain ongoing dialogue with businesses to determine the most current skills needed in the workplace.

Four-year colleges and universities usually consider doctoral degree holders for full-time, tenure-track positions, but may hire master's degree holders or doctoral candidates for certain disciplines, such as the arts, or for part-time and temporary jobs. Most college and university faculty are in four academic ranks – professor, associate professor, assistant professor, and instructor. These positions usually are considered to be tenure-track positions. Most faculty members are hired as instructors or assistant professors. A smaller number of additional faculty members, called lecturers, are usually employed on contracts for a single academic term and are not on the tenure track.

In two-year colleges, master's degree holders fill most full-time positions. However, in certain fields where there may be more applicants than available jobs, institutions can be more selective in their hiring practices. In these fields, Master's degree holders may be passed over in favor of candidates holding PhDs. Many two-year institutions increasingly prefer job applicants to have some teaching experience or experience with distance learning. Preference also may be given to those holding dual master's degrees, especially at smaller institutions, because they can teach more subjects.

Schools and programs that provide education and training for working adults generally hire people who are experienced in the field to teach part time. A master's degree is also usually required.

Figure 33 Distribution of Educational Attainment – Postsecondary Teachers



#### Career Advancement Opportunities

For most postsecondary teachers, advancement involves a move into administrative and managerial positions, such as departmental chairperson, dean, and president. At four-year institutions, such advancement requires a doctoral degree. At two-year colleges, a doctorate is helpful but not usually required, except for advancement to some top administrative positions.

## First-Line Supervisors/Managers of Police and Detectives

### Occupation Description

First-line supervisors/managers of police and detectives supervise and coordinate activities of members of the police force.

### Secondary Titles

Other job titles include sergeant, police sergeant, patrol sergeant, police lieutenant, chief of police, lieutenant, shift supervisor, line sergeant, and patrol captain.

### Job Level

Managerial

### Assessment of Need

Red:

- Lower than average projected job growth in the Tri-County area, 2005-2010
- Higher than average ratio of replacements and/or separations to employment
- Higher than average wage growth, 2001-2005
- Mean wage much higher in the Tri-County area than in California
- Very high proportion of retirements expected in the Tri-County area during the next five years
- Small pool of qualified candidates willing or interested to move up into this position

### Current Employment and Projected Growth

There were 326 first-line supervisors/managers of police and detectives in the Tri-County area in 2005. Three hundred and thirty-three (333) are projected to be employed within the Tri-County area by 2010, an average annual growth rate of 0.4 percent. By comparison, the annual average growth rate in California between 2005 and 2010 is expected to be higher at 2.2 percent.

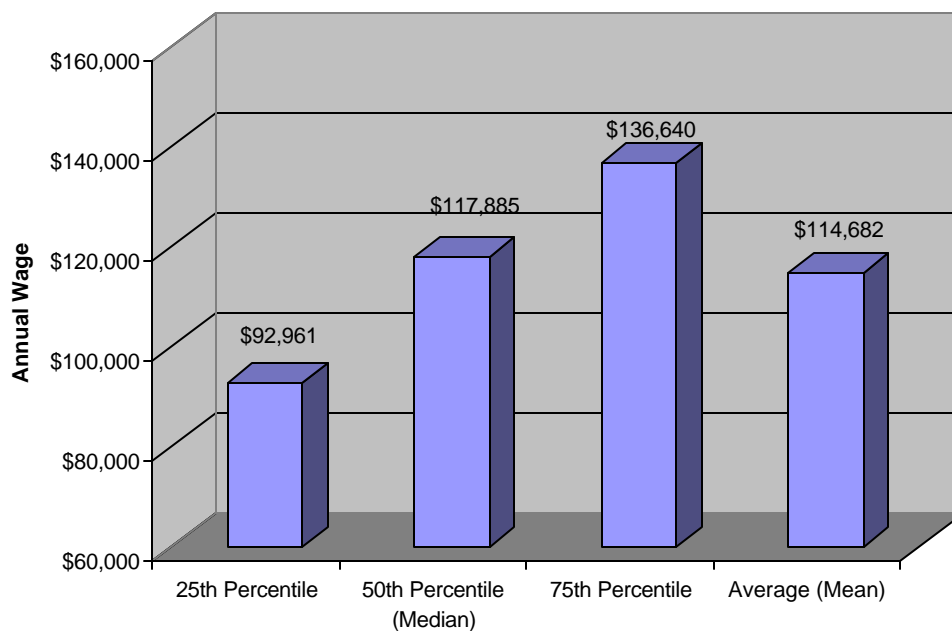
Table 36 First-Line Supervisors/Managers of Police and Detectives – Employment Forecasts

	Employment		Increase 2005-2010	
	2005	2010	Numeric	Percentage
Santa Clara	170	170	0	0.0%
San Mateo	146	153	7	4.8%
San Benito	10	10	0	0.0%
Tri-County	326	333	7	2.1%
California	7,280	8,080	800	11.0%

Wages

The median annual wage for first-line supervisors/managers of police and detectives in the Tri-County area in 2004 was \$117,885.<sup>xv</sup> The median wage level was driven up by comparatively high wage levels in the local government sector within Santa Clara county. The 25<sup>th</sup> percentile wage<sup>xvi</sup> in the Tri-County area was \$92,961, while the 75<sup>th</sup> percentile wage was \$136,640.

Figure 34 First-Line Supervisors/Managers of Police and Detectives – 2004 Wage Levels in the Tri-County Area



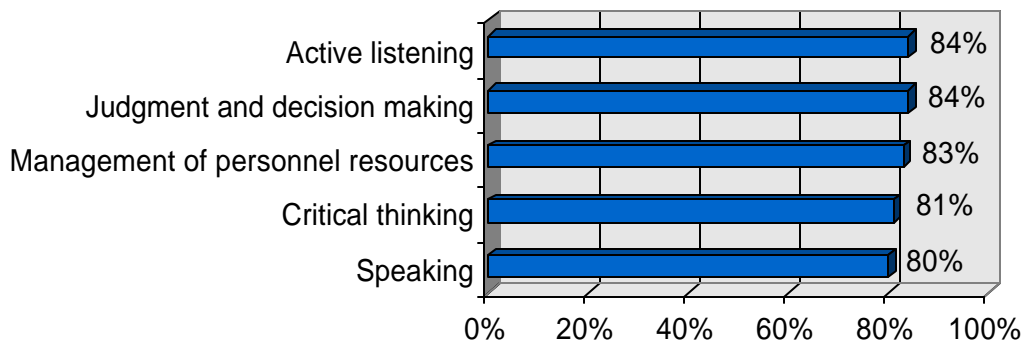
<sup>xv</sup> The median is the middle number in a series of data. If there is an even number of data points, the average of the two middle values is taken as the median.

<sup>xvi</sup> A percentile orders data in a way that easily demonstrates what percentage of the data falls above or below a certain point. For example, if the 75<sup>th</sup> percentile wage were \$100,000, then 75 percent of employees in the occupation would make less than \$100,000 and ten percent would make more than \$100,000.

Skill Assessment

For first-line supervisors/managers of police and detectives, active listening was ranked as the most important skill (see Figure 42).

Figure 35 First-Line Supervisors/Managers of Police and Detectives – Skill Importance



For first-line supervisors/managers of police and detectives, the most important three skills are:

**Active listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

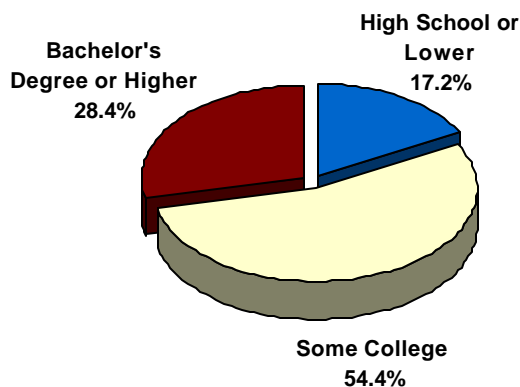
**Judgment and decision making** – Considering the relative costs and benefits of potential actions to choose the most appropriate one.

**Management of personnel resources** – Motivating, developing, and directing people as they work, identifying the best people for the job.

Education and Training

The most common educational/training level for first-line supervisors/managers of police and detectives is work experience in a related occupation. Over half of employees aged 25 to 44 years in this occupation have at least some college education.

Figure 36 Distribution of Educational Attainment – First-Line Supervisors/Managers of Police and Detectives



## Police and Sheriff Patrol Officers

### Occupation Description

Police and sheriff patrol officers maintain order, enforce laws and ordinances, and protect life and property in an assigned patrol district. They may also perform a combination of the following duties: patrol a specific area on foot or in a vehicle; direct traffic; issue traffic summonses; investigate accidents; apprehend and arrest suspects, or serve legal processes of courts.

### Secondary Titles

Secondary titles include police officer, patrolman, patrol officer, state trooper, police patrol officer, public safety officer, police sergeant, law enforcement officer, alcohol law enforcement agent, and officer.

### Job Type

Entry-level

### Assessment of Need

Red:

- Average projected job growth in the Tri-County area, 2005-2010
- Average ratio of replacements and/or separations to employment
- Higher than average wage growth, 2001-2005
- Tri-County police departments facing difficulties finding suitably qualified applicants for these positions

### Current Employment and Projected Growth

There were 5,549 police and sheriff patrol officers in the Tri-County area in 2005. Five thousand seven hundred and sixty-one (5,761) are projected to be employed in the Tri-County area by 2010, an average annual growth rate of 0.8 percent. By comparison, the annual average growth rate in California between 2005 and 2010 is expected to be higher at 3.1 percent.

Table 37 Police and Sheriff Patrol Officers – Employment Forecasts

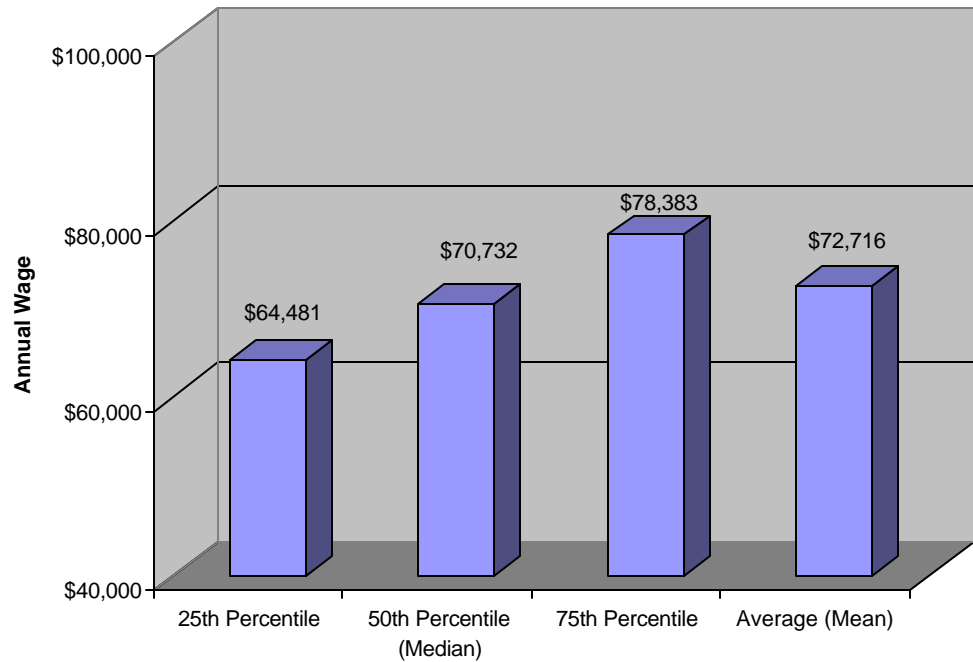
	Employment		Increase 2005-2010	
	2005	2010	Numeric	Percentage
Santa Clara	4,103	4,158	55	1.3%
San Mateo	1,400	1,550	150	10.7%
San Benito	46	53	7	15.2%
Tri-County	5,549	5,761	212	3.8%
California	83,170	96,120	12,950	15.6%



Wages

The median annual wage for police and sheriff patrol officers in the Tri-County area in 2004 was \$70,732.<sup>xvii</sup> The median wage level was driven up by comparatively high wage levels in the local government sectors within Santa Clara and San Mateo counties. The 25<sup>th</sup> percentile wage<sup>xviii</sup> in the Tri-County area was \$64,481, while the 75<sup>th</sup> percentile wage was \$78,383.

Figure 37 Police and Sheriff Patrol Officers – 2004 Wage Levels in the Tri-County Area



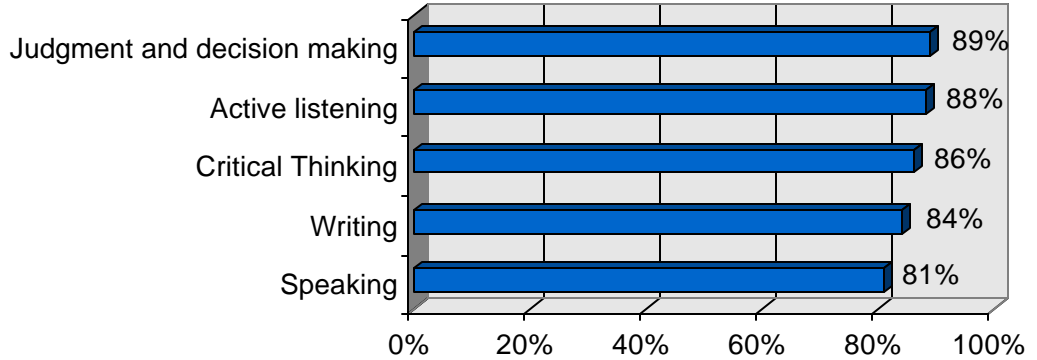
<sup>xvii</sup> The median is the middle number in a series of data. If there is an even number of data points, the average of the two middle values is taken as the median.

<sup>xviii</sup> A percentile orders data in a way that easily demonstrates what percentage of the data falls above or below a certain point. For example, if the 75<sup>th</sup> percentile wage were \$100,000, then 75 percent of employees in the occupation would make less than \$100,000 and ten percent would make more than \$100,000.

Skill Assessment

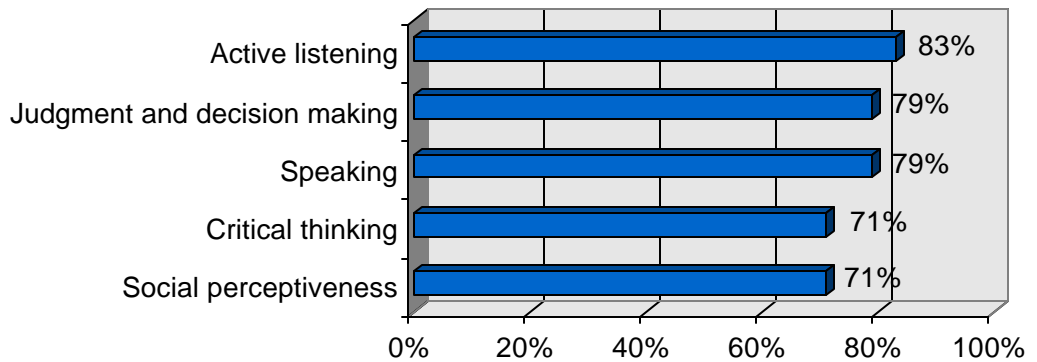
For police patrol officers, judgment and decision making was ranked as the most important skill.

Figure 38 Police Patrol Officers – Skill Importance



For sheriffs and deputy sheriffs, active listening was ranked as the most important skill.

Figure 39 Sheriffs and Deputy Sheriffs – Skill Importance



For police and sheriff patrol officers, the most important skills are:

**Judgment and decision making** – Considering the relative costs and benefits of potential actions to choose the most appropriate one.

**Active listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

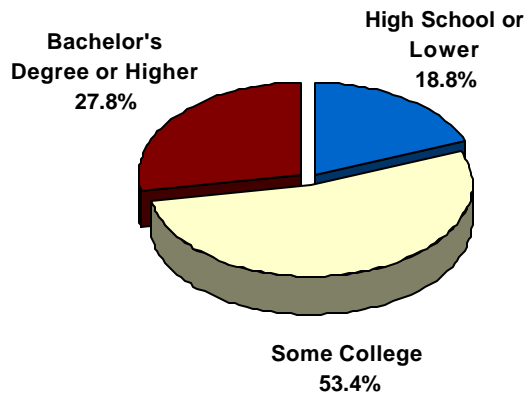
**Speaking** – Talking to others to convey information effectively.

**Critical thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

### Education and Training

Applicants with college training in police science, military police experience, or both should have the best opportunities. The most common educational/training level is for police and sheriff patrol officers is long-term on-the-job training. Over half of employees aged 25 to 44 years in this occupation have at least some college education.

Figure 40 Distribution of Educational Attainment – Police and Sheriff Patrol Officers



### Career Advancement Opportunities

Special agents and officers can promote to higher ranking and administrative positions through oral and written examinations. In addition, they can transfer into special investigative task force units or become field training officers. Law enforcement officers are encouraged to obtain college or advanced degrees for additional pay and for better advancement opportunities.

## Paralegals and Legal Assistants

### Occupation Description

Paralegals and legal assistants assist lawyers by researching legal precedent, investigating facts, or preparing legal documents. They may also conduct research to support a legal proceeding, to formulate a defense, or to initiate legal action.

### Secondary Titles

Secondary titles include legal assistant, paralegal, judicial assistant, probate paralegal, and real estate paralegal.

### Job Type

Entry-level

### Assessment of Need

Yellow:

- Projected job growth much higher than average in the Tri-County area, 2005-2010
- Lower than average ratio of replacements and/or separations to employment
- Higher than average wage growth, 2001-2005
- High number of training courses available for these positions in the Tri-County area

### Current Employment and Projected Growth

There were 411 paralegals and assistants working in the public sector in the Tri-County area in 2005. Four hundred and sixty (460) are projected to be employed within the Tri-County area by 2010, an average annual growth rate of 2.4 percent. By comparison, the annual average growth rate in California between 2005 and 2010 is expected to be slightly higher at 2.8 percent (see Table 38).

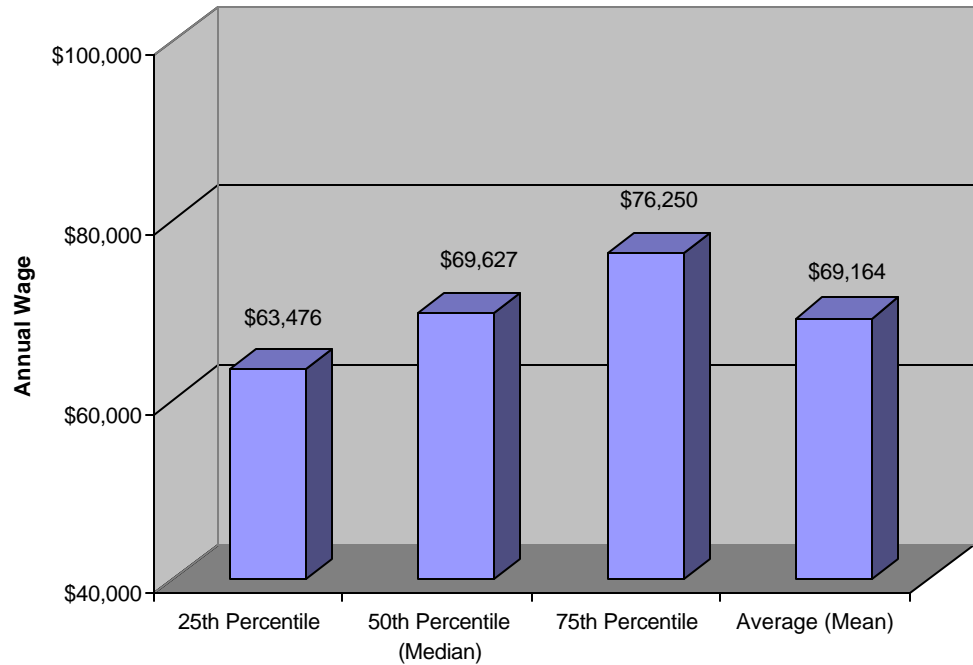
Table 38 Paralegals and Assistants – Employment Forecasts

	Employment		Increase 2005-2010	
	2005	2010	Numeric	Percentage
Santa Clara	342	385	43	12.6%
San Mateo	68	74	6	8.8%
San Benito	1	1	0	0.0%
Tri-County	411	460	49	11.9%
California	3,270	3,720	450	13.8%

Wages

The median annual wage for paralegals and assistants working in the public sector in the Tri-County area in 2004 was \$69,627 in 2004.<sup>xix</sup> The 25<sup>th</sup> percentile wage<sup>xx</sup> in the Tri-County area was \$63,476, while the 75<sup>th</sup> percentile wage was \$76,250.

Figure 41 Paralegals and Assistants – 2004 Wage Levels in the Tri-County Area



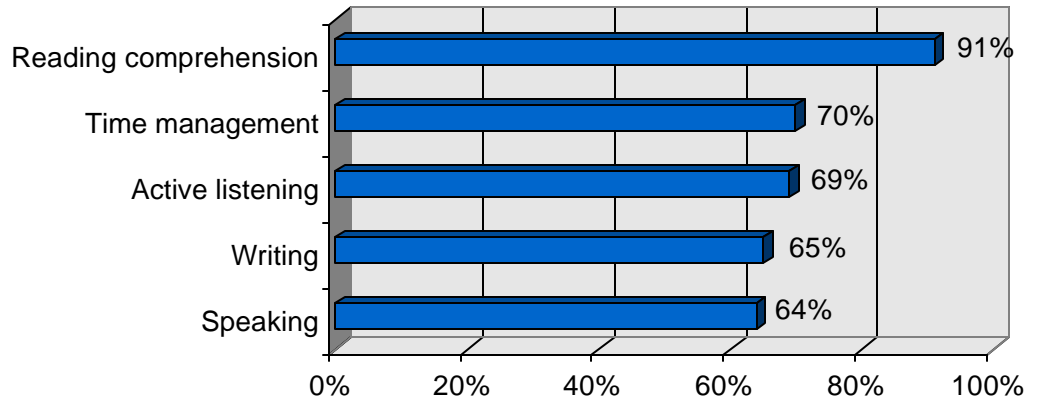
<sup>xix</sup> The median is the middle number in a series of data. If there is an even number of data points, the average of the two middle values is taken as the median.

<sup>xx</sup> A percentile orders data in a way that easily demonstrates what percentage of the data falls above or below a certain point. For example, if the 75<sup>th</sup> percentile wage were \$100,000, then 75 percent of employees in the occupation would make less than \$100,000 and ten percent would make more than \$100,000.

### Skill Assessment

For paralegals and legal assistants, reading comprehension was ranked as the most important skill (see Figure 42).

Figure 42 Paralegals and Legal Assistants – Skill Importance



For paralegals and legal assistants, the most important three skills are:

**Reading comprehension** – Understanding written sentences and paragraphs in work related documents.

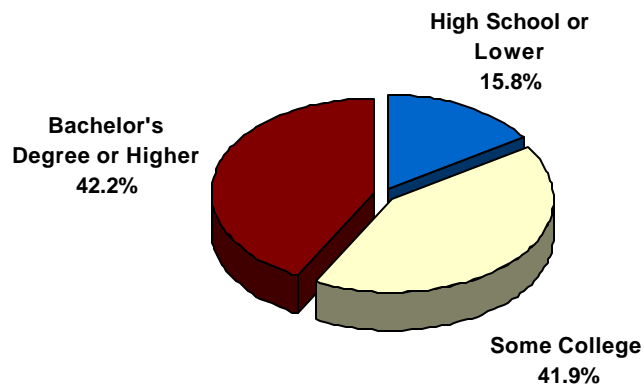
**Time management** – Managing one's own time and the time of others.

**Active listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

### Education and Training

There are several ways to become a paralegal. The most common is through a community college paralegal program that leads to an associate's degree. The other common method of entry, mainly for those who already have a college degree, is through a program that leads to a certification in paralegal studies. A small number of schools also offer bachelors' and master's degrees in paralegal studies. Some employers train paralegals on the job, hiring college graduates with no legal experience or promoting experienced legal secretaries. Other entrants have experience in a technical field, such as a background in criminal justice, nursing, or health administration. Although most employers do not require certification, earning a voluntary certificate from a professional society may offer advantages in the labor market.

Figure 43 Distribution of Educational Attainment – Paralegals and Legal Assistants



### Career Advancement Opportunities

Paralegals usually are given more responsibilities and require less supervision as they gain work experience. Experienced paralegals who work in government agencies may supervise and delegate assignments to other paralegals and clerical staff. Advancement opportunities also include promotion to managerial and other law-related positions within the agency.

## Legal Secretaries

### Occupation Description

Legal secretaries do specialized clerical and administrative tasks utilizing legal terminology, procedures, and documents to help lawyers and staff to carry out their work and ensure efficient operation of the government agency or public utility company. They may also prepare legal papers and correspondence, such as summonses, complaints, motions, and subpoenas, and may also assist with legal research.

### Secondary Titles

Secretary.

### Job Level

Entry-level

### Assessment of Need

Yellow:

- Higher than average projected job growth in the Tri-County area, 2005-2010
- Lower than average ratio of replacements and/or separations to employment
- Higher than average wage growth, 2001-2005
- Mean wage higher in the Tri County area than in California

### Current Employment and Projected Growth

There were 213 legal secretaries in the Tri-County area in 2005. Two hundred and thirty (230) are projected to be employed within the Tri-County area by 2010, an average annual growth rate of 1.6 percent. By comparison, the annual average growth rate in California between 2005 and 2010 is expected to be slightly lower at 1.5 percent.

Table 39 Legal Secretaries – Employment Forecasts

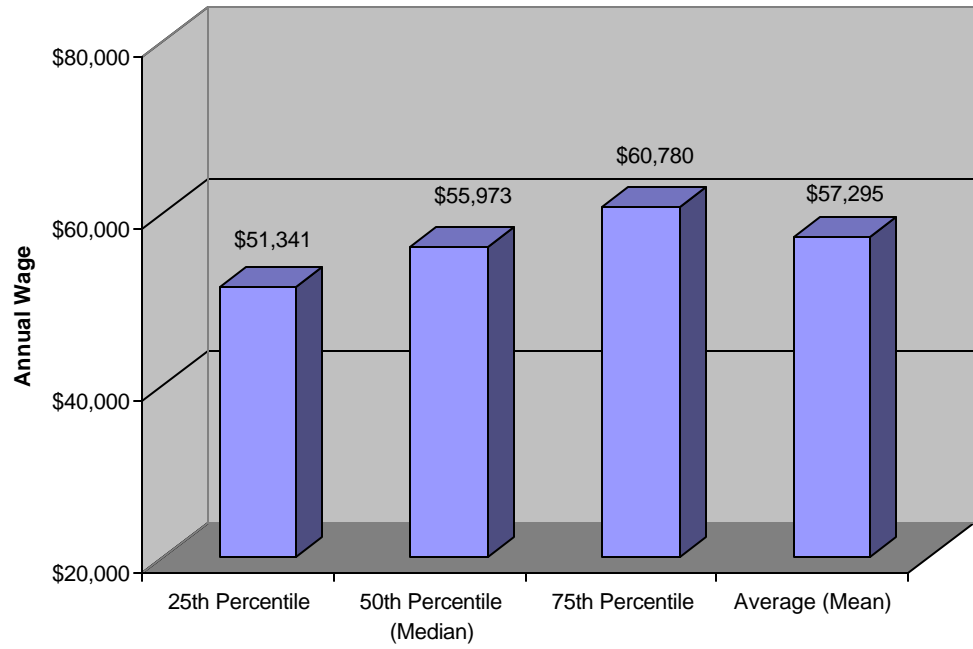
	Employment		Increase 2005-2010	
	2005	2010	Numeric	Percentage
Santa Clara	154	167	13	8.4%
San Mateo	58	62	7	6.9%
San Benito	1	1	0	0.0%
Tri-County	213	230	20	8.0%
California	3,880	4,180	300	7.7%



Wages

The median annual wage for legal secretaries working in the public sector in the Tri-County area was \$55,973 in 2004.<sup>xxi</sup> The 25<sup>th</sup> percentile wage<sup>xxii</sup> in the Tri-County area was \$51,341, while the 75<sup>th</sup> percentile wage was \$60,780.

Figure 44 Legal Secretaries – 2004 Wage Levels in the Tri-County Area



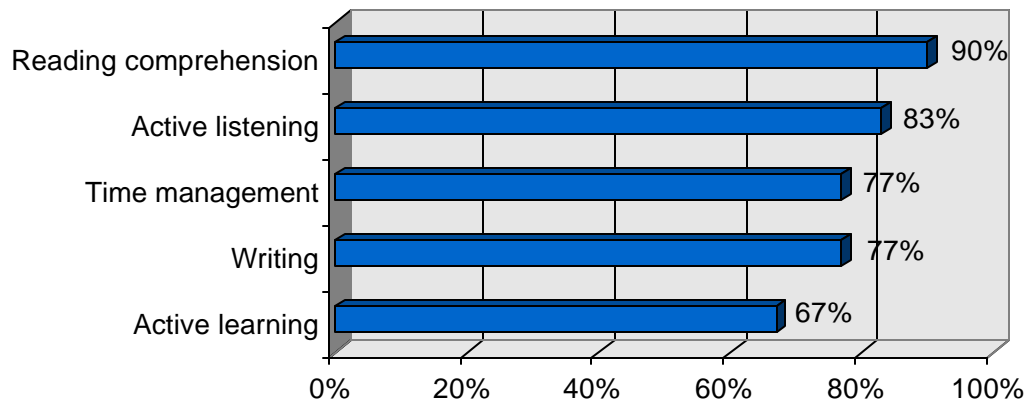
<sup>xxi</sup> The median is the middle number in a series of data. If there is an even number of data points, the average of the two middle values is taken as the median.

<sup>xxii</sup> A percentile orders data in a way that easily demonstrates what percentage of the data falls above or below a certain point. For example, if the 75<sup>th</sup> percentile wage were \$100,000, then 75 percent of employees in the occupation would make less than \$100,000 and ten percent would make more than \$100,000.

### Skill Assessment

For legal secretaries, reading comprehension was ranked as the most important skill (see Figure 42). In addition, they should be able to type 50 to 90 words per minute and transcribe dictation at 80 to 120 words per minute.

Figure 45 Legal Secretaries – Skill Importance



For legal secretaries, the most important skills are:

**Reading comprehension** – Understanding written sentences and paragraphs in work related documents.

**Active listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

**Time management** – Managing one's own time and the time of others.

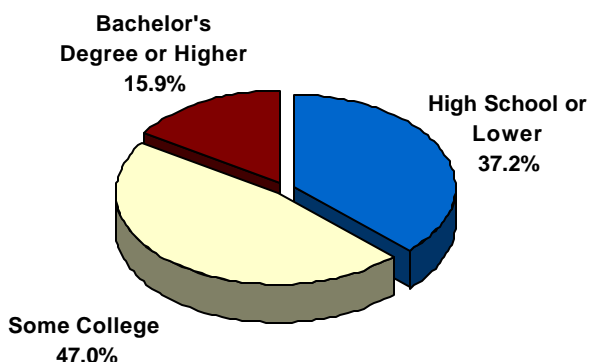
**Writing** – Communicating effectively in writing as appropriate for the needs of the audience.

### Education and Training

Prospective legal secretaries should have a high school diploma with a concentration of business and computer classes. Community colleges, business schools, adult education centers, and professional associations offer legal secretary training. Some employers will hire and train workers with good office skills obtained through several years of general secretarial experience, although most prefer workers with several years of law office experience.

Many legal secretaries obtain certification for purposes of career advancement and higher salaries. In California, Legal Secretaries Incorporated (LSI) offers certification through the California Certified Legal Secretary (CLSS) program. Those with one year of experience in the legal field, or who have concluded an approved training course and who want to be certified as a legal support professional, can acquire the Accredited Legal Secretary (ALS) designation through a testing process administered by the National Association for Legal Secretaries (NALS). Those with at least three years' experience in the legal field can acquire the Professional Legal Secretary (PLS) certification offered by the NALS. A legal secretary can also become a Certified Professional Secretary (CPS) through the International Association of Administrative Professionals (IAAP). A minimum of two years' work experience is required to take the exam.

Figure 46 Distribution of Educational Attainment – Legal Secretaries



### Career Advancement Opportunities

Certified and experienced legal secretaries can advance to supervisory or lead positions. A legal secretary with a minimum of a two-year degree and a paralegal training certificate can advance to a paralegal position. In addition, some go to law school to become an attorney.

## Fire Fighters

### Occupation Description

Municipal fire fighters control and extinguish municipal fires, protect life and property and conduct rescue efforts. Forest fire fighters control and suppress fires in forests or vacant public land.

### Secondary Titles

Secondary titles for municipal fire fighters include fire fighter/emergency medical technician, fire fighter/ paramedic, fire engineer, fireman, master fire fighter, apparatus operator, driver engineer, fire captain, and fire chief. Secondary titles for forest fire fighters include forestry technician (fire), forest ranger technician, wildland firefighter, hot shot, engine boss, fire technician, handcrew foreman, and forestry crew chief.

### Job Type

Entry-level

### Assessment of Need

Green:

- Higher than average projected job growth in the Tri-County area, 2005-2010
- High total level of projected replacements and/or separations, 2005-2010
- Higher than average ratio of replacements and/or separations to employment
- Mean wage higher in the Tri-County area than in California
- Supply of suitable candidates exceeds demand

### Current Employment and Projected Growth

There were 2,659 fire fighters in the Tri-County area in 2005. Two thousand six hundred and seventy-four (2,674) are projected to be employed within the Tri-County area by 2010, an average annual growth rate of 0.1 percent. By comparison, the annual average growth rate in California between 2005 and 2010 is expected to be higher at 2.7 percent (see Table 40).

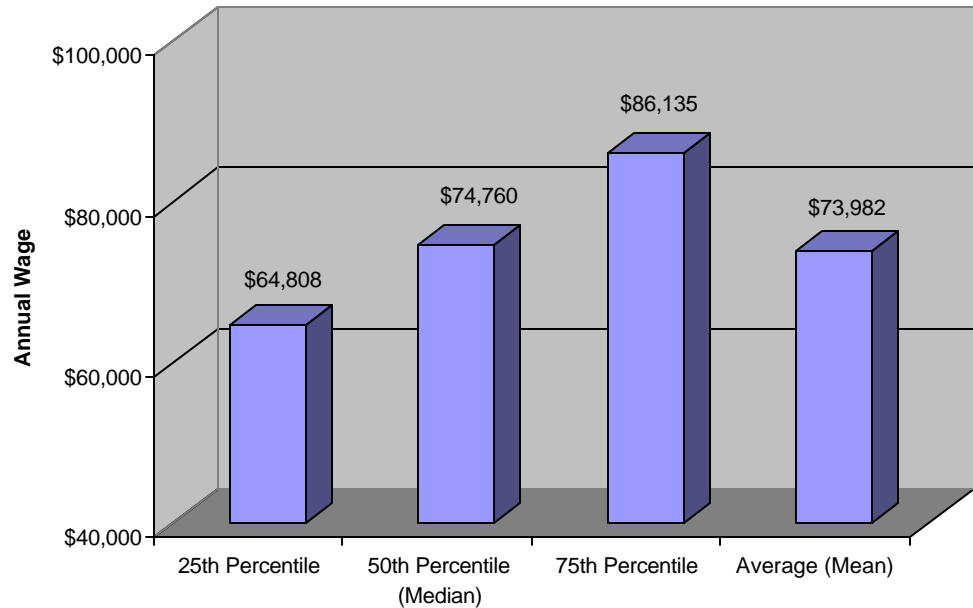
Table 40 Fire Fighters – Employment Forecasts

	Employment		Increase 2005-2010	
	2005	2010	Numeric	Percentage
Santa Clara	1,539	1,554	15	1.0%
San Mateo	1,100	1,100	0	0.0%
San Benito	20	20	0	0.0%
Tri-County	2,659	2,674	15	0.6%
California	28,970	32,920	3,950	13.6%

Wages

The median annual wage for fire fighters in the Tri-County area in 2004 was \$74,760.<sup>xxiii</sup> The median wage level was driven up by comparatively high wage levels in the local government sector within Santa Clara county. The 25<sup>th</sup> percentile wage<sup>xxiv</sup> in the Tri-County area was \$64,808, while the 75<sup>th</sup> percentile wage was \$86,135.

Figure 47 Fire Fighters – 2004 Wage Levels in the Tri-County Area



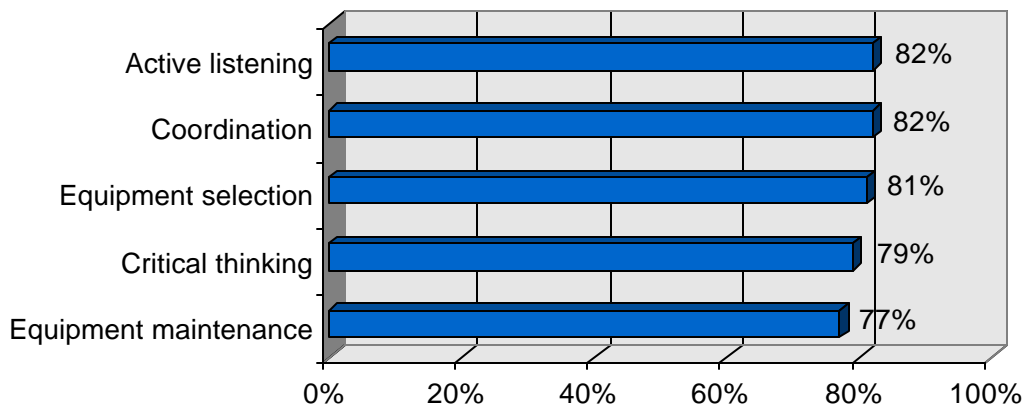
<sup>xxiii</sup> The median is the middle number in a series of data. If there is an even number of data points, the average of the two middle values is taken as the median.

<sup>xxiv</sup> A percentile orders data in a way that easily demonstrates what percentage of the data falls above or below a certain point. For example, if the 75<sup>th</sup> percentile wage were \$100,000, then 75 percent of employees in the occupation would make less than \$100,000 and ten percent would make more than \$100,000.

Skill Assessment

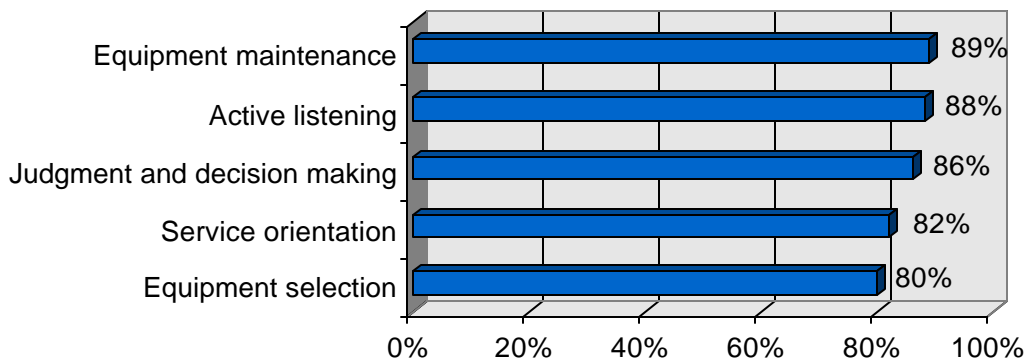
For municipal fire fighters, active listening was ranked as the most important skill (see Figure 48).

Figure 48 Municipal Fire Fighters – Skill Importance



For forest fire fighters, equipment maintenance was ranked as the most important skill (see Figure 49).

Figure 49 Forest Fire Fighters – Skill Importance



For fire fighters, the most important skills are:

**Active listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

**Equipment maintenance** – Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.

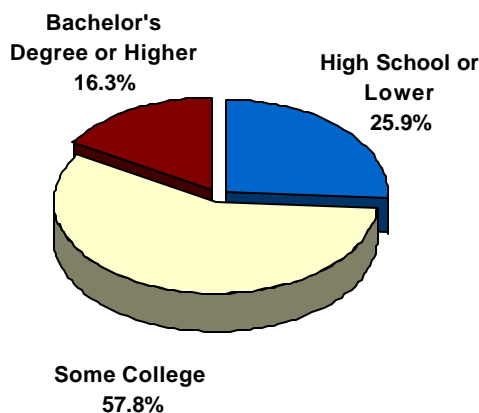
**Equipment selection** – Determining the kind of tools and equipment needed to do a job.

**Coordination** – Adjusting actions in relation to others' actions.

Education and Training

A number of fire departments have accredited apprenticeship programs lasting up to four years. These programs combine formal, technical instruction with on-the-job training under the supervision of experienced fire fighters. In addition to participating in advanced training programs conducted by local fire departments, some fire fighters attend training sessions sponsored by the U.S. National Fire Academy. Also, a number of colleges and universities offer courses leading to two- or four-year degrees in fire engineering or fire science. Many fire departments offer fire fighters incentives such as tuition reimbursement or higher pay for completing advanced training.

Figure 50 Distribution of Educational Attainment – Fire Fighters



Career Advancement Opportunities

Most experienced fire fighters continue studying to improve their job performance and prepare for promotion examinations. To progress to higher level positions, they acquire expertise in advanced fire fighting equipment and techniques, building construction, emergency medical technology, writing, public speaking, management and budgeting procedures, and public relations. Opportunities for promotion depend upon the results of written examinations, as well as job performance, interviews, and seniority. Increasingly, fire departments are using assessment centers, which simulate a variety of actual job performance tasks, to screen for the best candidates for promotion. The line of promotion usually is to engineer, lieutenant, captain, battalion chief, assistant chief, deputy chief, and, finally, chief. For promotion to positions higher than battalion chief, many fire departments now require a bachelor's degree, preferably in fire science, public administration, or a related field. An associate's degree is required for executive fire officer certification from the National Fire Academy.

## Management Analysts

### Occupation Description

Management analysts conduct organizational studies and evaluations, design systems and procedures, conduct work simplifications and measurement studies, and prepare operations and procedures manuals to assist management in operating more efficiently and effectively.

### Secondary Titles

A secondary title for management analysts is program analyst.

### Job Type

Managerial

### Assessment of Need

Yellow:

- Higher than average projected job growth in the Tri-County area, 2005-2010
- High total level of projected replacements and/or separations, 2005-2010
- Lower than average ratio of replacements and/or separations to employment
- Average wage growth in the Tri-County area, 2001-2005
- Some Tri-County organizations reported difficulties finding suitable candidates for these positions

### Current Employment and Projected Growth

There were 1,935 management analysts employed in the public sector in the Tri-County area in 2005. Two thousand one hundred and thirty-nine (2,139) are projected to be employed within the Tri-County area by 2010, an average annual growth rate of 2.1 percent. By comparison, the annual average growth rate in California between 2005 and 2010 is expected to be slightly lower at two percent.

Table 41 Management Analysts – Employment Forecasts

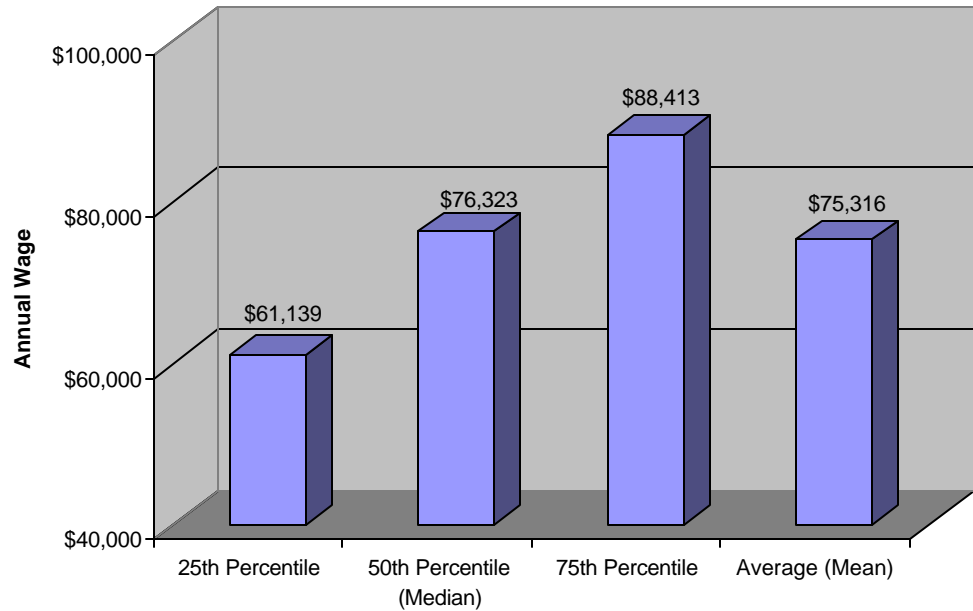
	Employment		Increase 2005-2010	
	2005	2010	Numeric	Percentage
Santa Clara	1,568	1,731	163	10.4%
San Mateo	365	407	42	11.5%
San Benito	2	2	0	0.0%
Tri-County	1,935	2,139	204	10.5%
California	10,000	11,000	1,000	10.0%



Wages

The median annual wage in the Tri-County area for management analysts employed in the public sector in 2004 was \$76,323.<sup>xxv</sup> The 25<sup>th</sup> percentile wage<sup>xxvi</sup> in the Tri-County area was \$61,139, while the 75<sup>th</sup> percentile wage is \$88,413.

Figure 51 Management Analysts – 2004 Wage Levels in the Tri-County Area



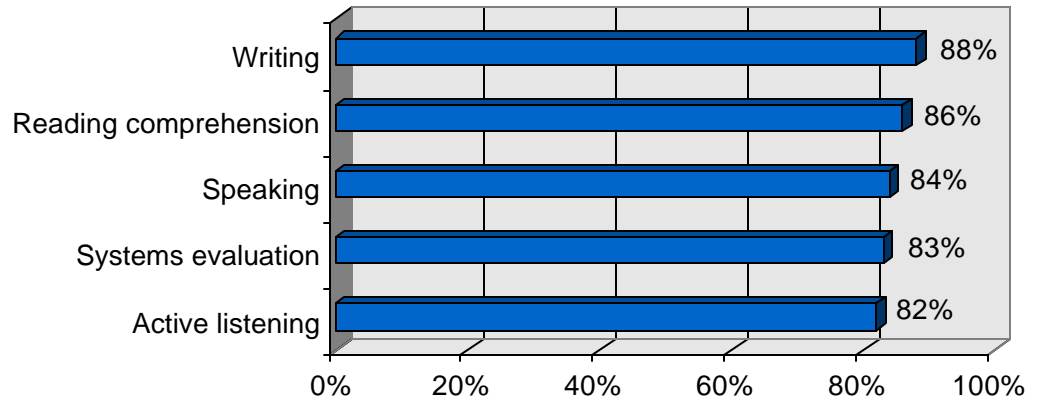
<sup>xxv</sup> The median is the middle number in a series of data. If there is an even number of data points, the average of the two middle values is taken as the median.

<sup>xxvi</sup> A percentile orders data in a way that easily demonstrates what percentage of the data falls above or below a certain point. For example, if the 75<sup>th</sup> percentile wage were \$100,000, then 75 percent of employees in the occupation would make less than \$100,000 and ten percent would make more than \$100,000.

### Skill Assessment

For management analysts, writing was ranked as the most important skill (see Figure 52).

Figure 52 Management Analysts – Skill Importance



For management analysts, the most important three skills are:

**Writing** – Communicating effectively in writing as appropriate for the needs of the audience.

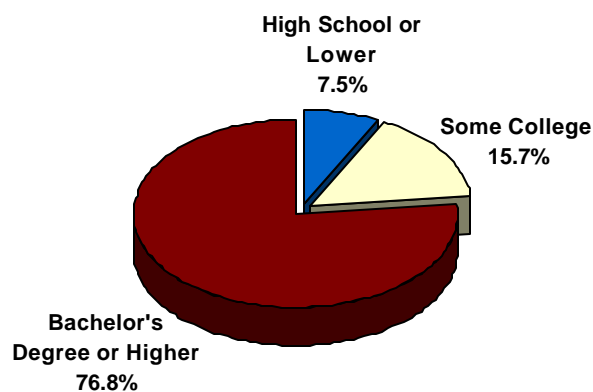
**Reading comprehension** – Understanding written sentences and paragraphs in work related documents.

**Speaking** – Talking to others to convey information effectively.

### Education and Training

Most government agencies hire management analysts with a bachelor's degree and no pertinent work experience for entry-level management analyst positions. Few universities or colleges offer formal programs of study in management consulting; however, many fields of study provide a suitable educational background for this occupation because of the wide range of areas addressed by management analysts. Common educational backgrounds include most academic programs in business and management, such as accounting and marketing, as well as economics, computer and information sciences, and engineering. In addition to the appropriate formal education, most entrants to this occupation have years of experience in management, human resources, information technology, or other specialties. Analysts also routinely attend conferences to keep abreast of current developments in their field.

Figure 53 Distribution of Educational Attainment – Management Analysts



## Computer System Analysts

### Occupation Description

Computer systems analysts analyze science, engineering, business, and all other data processing problems for application to electronic data processing systems. They may analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations. They may also analyze or recommend commercially available software, and may supervise computer programmers.

### Secondary Titles

Secondary titles for computer systems analysts include systems analyst, programmer analyst, computer systems consultant, business systems analyst, systems engineer, program manager, information technology specialist, information technology consultant, data processing systems analyst, computer systems analyst

### Job Type

Professional

### Assessment of Need

Yellow:

- Higher than average projected job growth in the Tri-County area, 2005-2010
- High total level of projected replacements and/or separations, 2005-2010
- Average wage growth in the Tri-County area, 2001-2005

### Current Employment and Projected Growth

There were 1,750 computer systems analysts employed in the public sector, excluding education, in the Tri-County area in 2005. One thousand nine hundred and forty-five (1,945) are projected to be employed within the Tri-County area by 2010, an average annual growth rate of 2.2 percent. By comparison, the annual average growth rate in California between 2005 and 2010 is expected to be slightly lower at two percent.

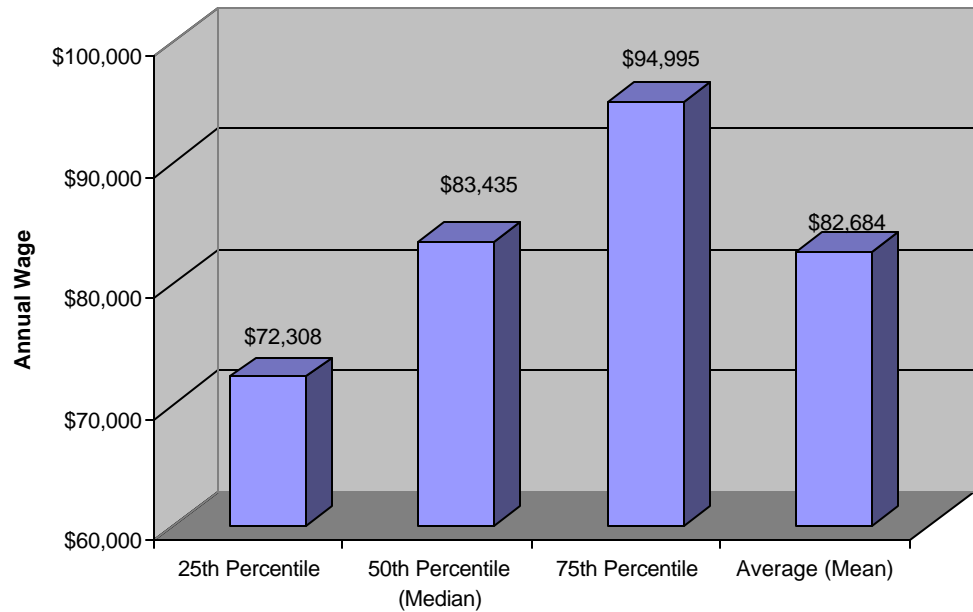
Table 42 Computer System Analysts – Employment Forecasts

	Employment		Increase 2005-2010	
	2005	2010	Numeric	Percentage
Santa Clara	1,110	1,202	92	8.3%
San Mateo	635	739	104	16.4%
San Benito	5	5	0	0.0%
Tri-County	1,750	1,945	195	11.1%
California	12,350	13,600	1,250	10.1%

Wages

The median annual wage in the Tri-County area for computer systems analysts employed in the public sector, excluding the education sector, in 2004 was \$83,435.<sup>xxvii</sup> The 25<sup>th</sup> percentile wage<sup>xxviii</sup> in the Tri-County area was \$72,308, while the 75<sup>th</sup> percentile wage is \$94,995.

Figure 54 Computer System Analysts – 2004 Wage Levels in the Tri-County Area



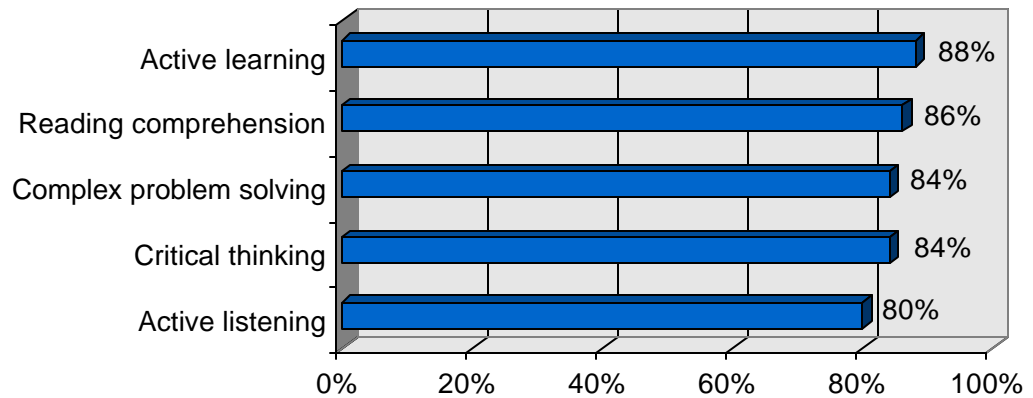
<sup>xxvii</sup> The median is the middle number in a series of data. If there is an even number of data points, the average of the two middle values is taken as the median.

<sup>xxviii</sup> A percentile orders data in a way that easily demonstrates what percentage of the data falls above or below a certain point. For example, if the 75<sup>th</sup> percentile wage were \$100,000, then 75 percent of employees in the occupation would make less than \$100,000 and ten percent would make more than \$100,000.

### Skill Assessment

For computer systems analysts, active learning was ranked as the most important skill (see Figure 55).

Figure 55 Computer Systems Analysts – Skill Importance



For computer systems analysts, the most important three skills are:

**Active learning** – Understanding the implications of new information for both current and future problem-solving and decision-making.

**Reading comprehension** – Understanding written sentences and paragraphs in work related documents.

**Complex problem solving** – Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

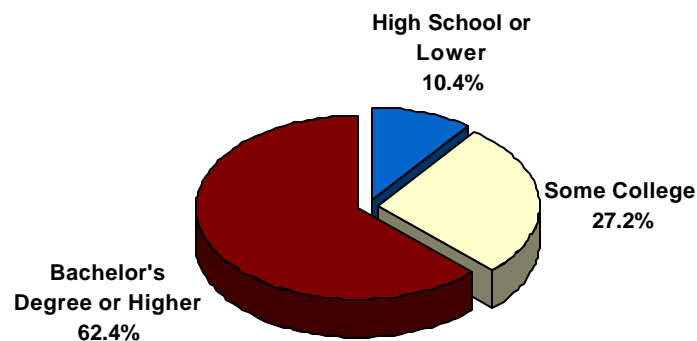
### Education and Training

Rapidly changing technology requires an increasing level of skill and education on the part of employees. Employers increasingly look for professionals with a broad background and range of skills, including not only technical knowledge, but also communication and other interpersonal skills. This shift from requiring workers to possess solely sound technical knowledge emphasizes workers who can handle various responsibilities. While there is no universally accepted way to prepare for a job as a systems analyst, most employers place a premium on some formal college education. Relevant work experience also is very important. For more technically complex jobs, persons with graduate degrees are preferred.

Many employers seek applicants who have at least a bachelor's degree in computer science, information science, or management information systems (MIS). MIS programs usually are part of the business school or college and differ considerably from computer science programs, emphasizing business and management-oriented course work and business computing courses. Employers are increasingly seeking individuals with a master's degree in business administration (MBA), with a concentration in information systems, as more firms move their business to the Internet.

Technological advances come so rapidly in the computer field that continuous study is necessary to keep one's skills up to date. Employers, hardware and software vendors, colleges and universities, and private training institutions offer continuing education. Additional training may come from professional development seminars offered by professional computing societies.

Figure 56 Distribution of Educational Attainment – Computer Systems Analysts



### Career Advancement Opportunities

Computer systems analysts may be promoted to senior or lead systems analyst. Those who show leadership ability also can become project managers or advance into management positions such as manager of information systems or chief information officer.

## Executive Secretaries and Administrative Assistants

### Occupation Description

Executive secretaries and administrative assistants provide high-level administrative support by conducting research, preparing statistical reports, handling information requests, and performing clerical functions such as preparing correspondence, receiving visitors, arranging conference calls, and scheduling meetings. They may also train and supervise lower-level clerical staff.

### Secondary Titles

Secondary titles for executive secretaries and administrative assistants include executive assistant, administrative secretary, office manager, administrative coordinator, administrative associate, executive administrative assistant, administrative aide, and administrative services assistant

### Job Type

Entry-level

### Assessment of Need

Green:

- Lower than average projected job growth in the Tri-County area, 2005-2010
- Lower than average ratio of replacements and/or separations to employment
- Average wage growth in the Tri-County area, 2001-2005
- Supply of suitable candidates exceeds demand

### Current Employment and Projected Growth

There were 4,321 executive secretaries and administrative assistants employed in the public sector, including education, in the Tri-County area in 2005. Four thousand three hundred and eighty-five (4,385) are projected to be employed within the Tri-County area by 2010, an average annual growth rate of 0.3 percent. By comparison, the annual average growth rate in California between 2005 and 2010 is expected to be higher at 1.2 percent.

Table 43 Executive Secretaries and Administrative Assistants – Employment Forecasts

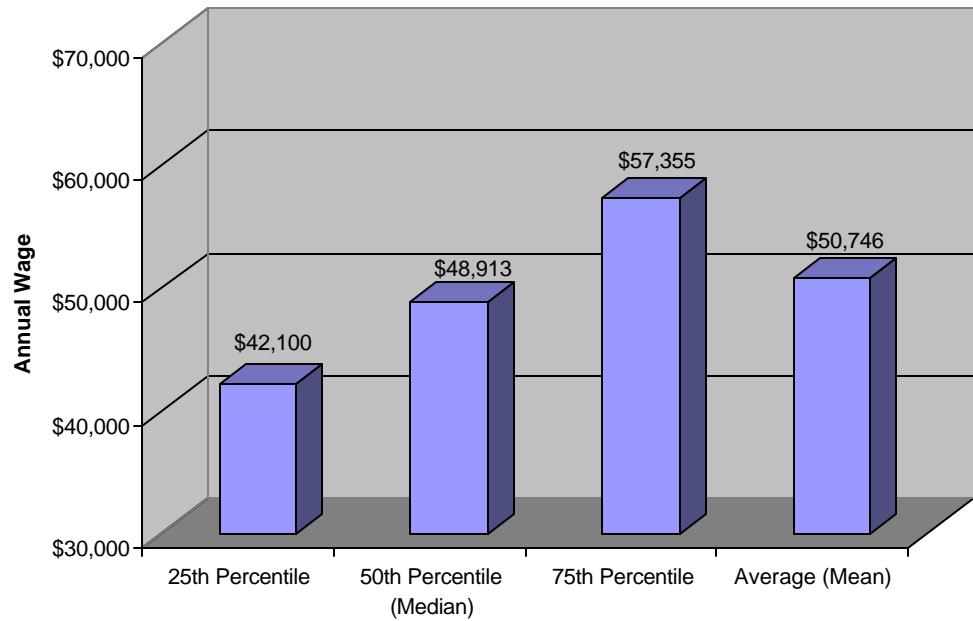
	Employment		Increase 2005-2010	
	2005	2010	Numeric	Percentage
Santa Clara	3,014	3,020	6	0.2%
San Mateo	1,288	1,345	57	4.4%
San Benito	19	20	1	5.3%
Tri-County	4,321	4,385	64	1.5%
California	39,280	41,580	2,300	5.9%



Wages

The median annual wage in the Tri-County area for executive secretaries and administrative assistants employed in the public sector, including the education sector, in 2004 was \$48,913.<sup>xxix</sup> The 25<sup>th</sup> percentile wage<sup>xxx</sup> in the Tri-County area was \$42,100, while the 75<sup>th</sup> percentile wage is \$50,746.

Figure 57 Executive Secretaries and Administrative Assistants – 2004 Wage Levels in the Tri-County Area



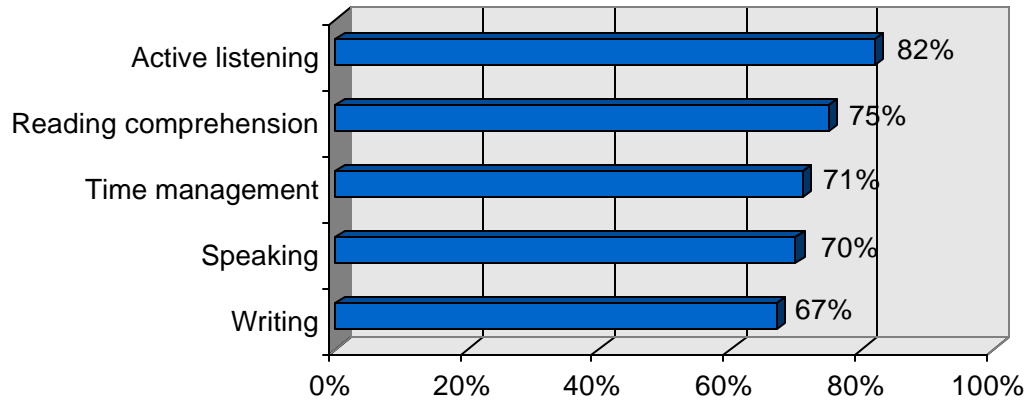
<sup>xxix</sup> The median is the middle number in a series of data. If there is an even number of data points, the average of the two middle values is taken as the median.

<sup>xxx</sup> A percentile orders data in a way that easily demonstrates what percentage of the data falls above or below a certain point. For example, if the 75<sup>th</sup> percentile wage were \$100,000, then 75 percent of employees in the occupation would make less than \$100,000 and ten percent would make more than \$100,000.

### Skill Assessment

For executive secretaries and administrative assistants, active listening was ranked as the most important skill (see Figure 52).

Figure 58 Administrative Assistants and Executive Secretaries – Skill Importance



For executive secretaries and administrative assistants, the most important three skills are:

**Active listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

**Reading comprehension** – Understanding written sentences and paragraphs in work related documents.

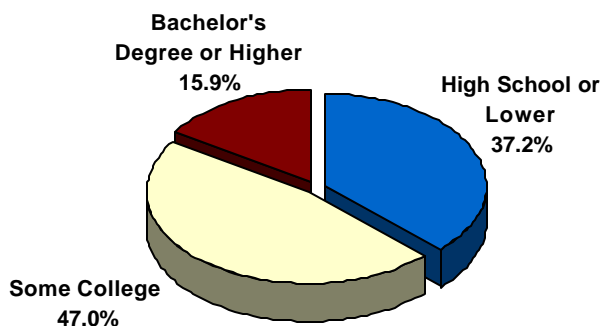
**Time management** – Managing one's own time and the time of others.

### Education and Training

High school graduates who have basic office skills may qualify for entry-level executive secretarial or administrative assistant positions. However, employers increasingly require extensive knowledge of software applications, such as word processing, spreadsheets, and database management. As office automation continues to evolve, retraining and continuing education will remain integral parts of the job. Changes in the office environment have increased the demand for executive secretaries and administrative assistants who are adaptable and versatile.

Executive secretaries and administrative assistants acquire skills in various ways. Training ranges from high school vocational education programs that teach office skills and keyboarding to one- and two-year programs in office administration offered by business schools, vocational-technical institutes, and community colleges. Many temporary placement agencies also provide formal training in computer and office skills. However, many skills tend to be acquired through on-the-job instruction by other employees or by equipment and software vendors.

Figure 59 Distribution of Educational Attainment – Executive Secretaries and Administrative Assistants



### Career Advancement Opportunities

Executive secretaries and administrative assistants generally advance by being promoted to other administrative positions with more responsibilities. Qualified administrative assistants who broaden their knowledge of an agency's operations and enhance their skills may be promoted to senior or executive secretary or administrative assistant, clerical supervisor, or office manager. Executive secretaries with word processing or data entry experience can advance to jobs as word processing or data entry trainers, supervisors, or managers.

## Office Clerks, General

### Occupation Description

General office clerks perform duties too varied and diverse to be classified in any specific office clerical occupation, requiring limited knowledge of office management systems and procedures. Clerical duties may be assigned in accordance with the office procedures of individual establishments and may include a combination of answering telephones, bookkeeping, typing or word processing, stenography, office machine operation, and filing.

### Secondary Titles

Secondary titles for general office clerks include administrative assistant, office manager, receptionist, clerk, secretary, office assistant, office clerk, customer service representative, office coordinator, and court clerk.

### Job Type

Entry-level

### Assessment of Need

Green:

- Lower than average projected job growth in the Tri-County area, 2005-2010
- Average ratio of replacements and/or separations to employment
- Average wage growth in the Tri-County area, 2001-2005
- Supply of suitable candidates exceeds demand

### Current Employment and Projected Growth

There were 9,314 general office clerks employed in the public sector, including education, in the Tri-County area in 2005. Nine thousand seven hundred and fifteen (9,539) are projected to be employed within the Tri-County area by 2010, an average annual growth rate of 0.5 percent. By comparison, the annual average growth rate in California between 2005 and 2010 is expected to be slightly higher at 0.8 percent.

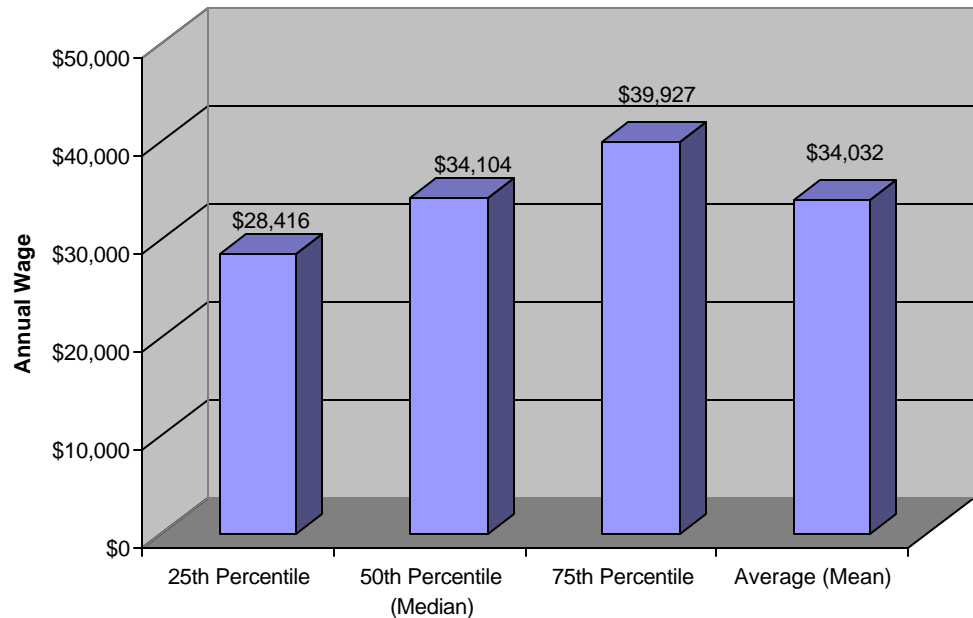
Table 44 General Office Clerks – Employment Forecasts

	Employment		Increase 2005-2010	
	2005	2010	Numeric	Percentage
Santa Clara	6,834	6,954	120	1.8%
San Mateo	2,378	2,476	98	4.1%
San Benito	102	109	7	6.9%
Tri-County	9,314	9,539	225	2.4%
California	122,720	127,420	4,700	3.8%

Wages

The median annual wage in the Tri-County area for general office clerks employed in the public sector, excluding the education sector, in 2004 was \$34,104.<sup>xxxii</sup> The 25<sup>th</sup> percentile wage<sup>xxxii</sup> in the Tri-County area was \$28,416, while the 75<sup>th</sup> percentile wage is \$39,927.

Figure 60 General Office Clerks – 2004 Wage Levels in the Tri-County Area



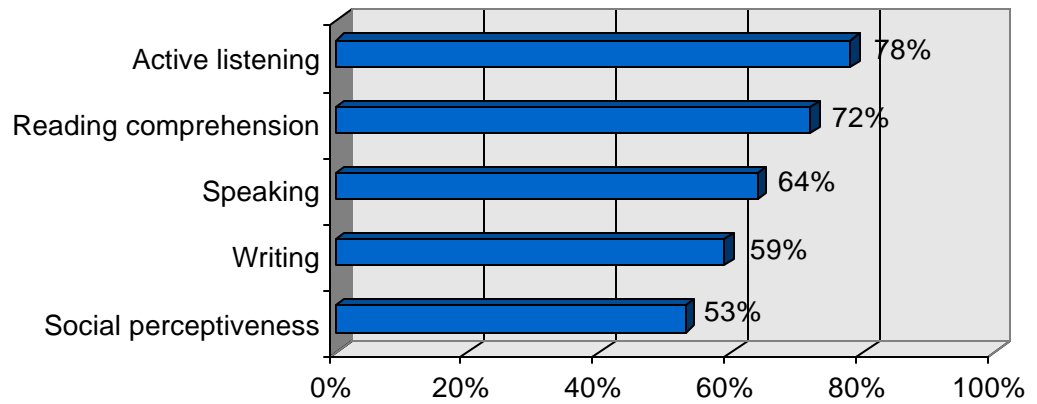
<sup>xxxii</sup> The median is the middle number in a series of data. If there is an even number of data points, the average of the two middle values is taken as the median.

<sup>xxxii</sup> A percentile orders data in a way that easily demonstrates what percentage of the data falls above or below a certain point. For example, if the 75<sup>th</sup> percentile wage were \$100,000, then 75 percent of employees in the occupation would make less than \$100,000 and ten percent would make more than \$100,000.

### Skill Assessment

For general office clerks, active listening was ranked as the most important skill (see Figure 52).

Figure 61 General Office Clerks – Skill Importance



For general office clerks, the most important three skills are:

**Active listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

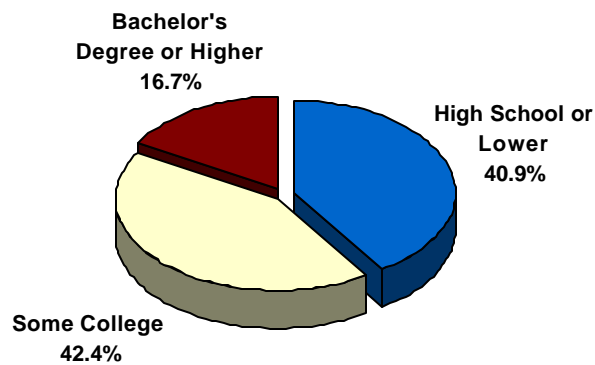
**Reading comprehension** – Understanding written sentences and paragraphs in work related documents.

**Speaking** – Talking to others to convey information effectively.

### Education and Training

Although most office clerk jobs are entry-level administrative support positions, employers may prefer or require previous office or business experience. Employers usually require a high school diploma or equivalent, and some require basic computer skills, including familiarity with word processing software, as well as other general office skills. Training for this occupation is available through business education programs offered in high schools, community and junior colleges, and postsecondary vocational schools. Courses in office practices, word processing, and other computer applications are particularly helpful.

Figure 62 Distribution of Educational Attainment – General Office Clerks



### Career Advancement Opportunities

General office clerks who exhibit strong communication, interpersonal, and analytical skills may be promoted to supervisory positions. Others may move into different, more senior administrative jobs, such as receptionist, secretary, or administrative assistant. After gaining some work experience or specialized skills, many workers transfer to jobs with higher pay or greater advancement potential. Advancement to professional occupations within an organization normally requires additional formal education, such as a college degree.

## Urban and Regional Planners

### Occupation Description

Urban and regional planners develop comprehensive plans and programs for use of land and physical facilities of local jurisdictions, such as towns, cities, counties, and metropolitan areas.

### Secondary Titles

Secondary titles for urban and regional planners include planner, neighborhood planner, community development planner, transportation planner, city planner, director of building, planning, and zoning, housing development specialist, housing grant analyst, and planning director.

### Job Type

Professional

### Assessment of Need

Red:

- Lower than average projected job growth in the Tri-County area, 2005-2010
- Ratio of replacements and/or separations to employment is much higher than average
- Higher than average wage growth in the Tri-County area, 2001-2005
- Many Tri-County organizations reported difficulties finding suitable candidates for these positions

### Current Employment and Projected Growth

There were 392 urban and regional planners in the Tri-County area in 2005. Four hundred and two (402) are projected to be employed within the Tri-County area by 2010, an average annual growth rate of 0.5 percent. By comparison, the annual average growth rate in California between 2005 and 2010 is expected to be higher at 1.7 percent.

Table 45 Urban and Regional Planners – Employment Forecasts

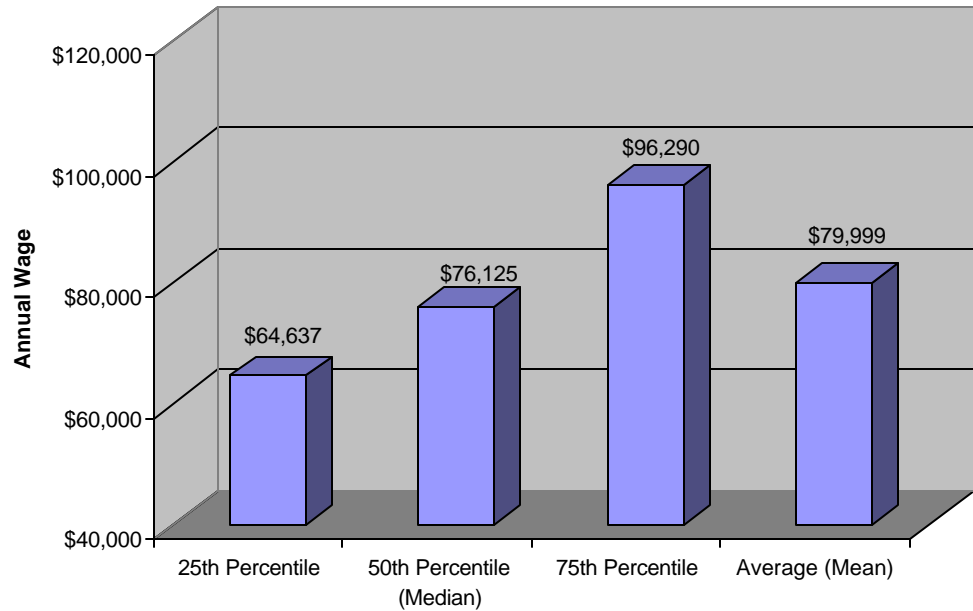
	Employment		Increase 2005-2010	
	2005	2010	Numeric	Percentage
Santa Clara	309	319	10	3.2%
San Mateo	83	83	0	0.0%
San Benito	n/a	n/a	n/a	n/a
Tri-County	392	402	10	2.6%
California	4,640	5,040	400	8.6%



Wages

The median annual wage in for urban and regional planners employed in the public sector in the Tri-County area in 2004 was \$76,125.<sup>xxxiii</sup> The 25<sup>th</sup> percentile wage<sup>xxxiv</sup> in the Tri-County area was \$64,637, while the 75<sup>th</sup> percentile wage was \$79,999.

Figure 63 Civil Engineering Technicians – 2004 Wage Levels in the Tri-County Area



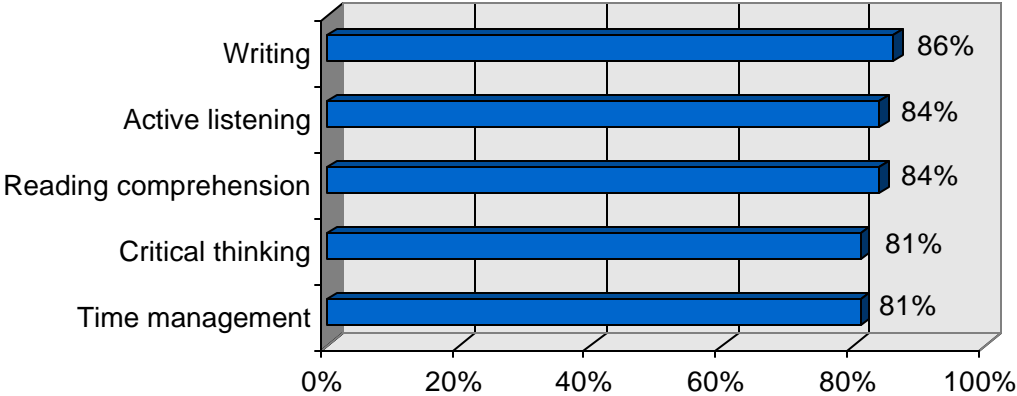
<sup>xxxiii</sup> The median is the middle number in a series of data. If there is an even number of data points, the average of the two middle values is taken as the median.

<sup>xxxiv</sup> A percentile orders data in a way that easily demonstrates what percentage of the data falls above or below a certain point. For example, if the 75<sup>th</sup> percentile wage were \$100,000, then 75 percent of employees in the occupation would make less than \$100,000 and ten percent would make more than \$100,000.

Skill Assessment

For urban and regional planners, writing was ranked as the most important skill (see Figure 67).

Figure 64 Urban and Regional Planners – Skill Importance



For urban and regional planners, the most important three skills are:

**Writing** – Communicating effectively in writing as appropriate for the needs of the audience.

**Active listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

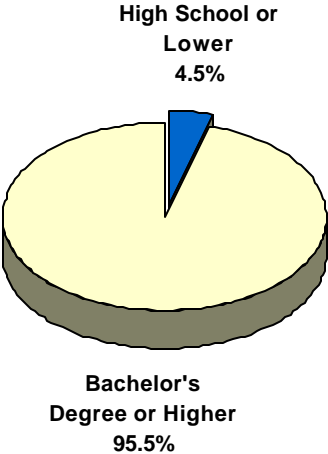
**Reading comprehension** – Understanding written sentences and paragraphs in work related documents.

Education and Training

For jobs as urban and regional planners, employers prefer workers who have advanced training. Most entry-level jobs in federal, state, and local government agencies require a master's degree from an accredited program in urban or regional planning or a master's degree in a related field, such as urban design or geography. A bachelor's degree from an accredited planning program, coupled with a master's degree in architecture, landscape architecture, or civil engineering, is good preparation for entry-level planning jobs in various areas, including urban design, transportation, and the environment. A master's degree from an accredited planning program provides the best training for a wide range of planning fields. Although graduates from one of the limited number of accredited bachelor's degree programs qualify for some entry-level positions, their advancement opportunities often are limited, unless they acquire an advanced degree.

Local government planning offices frequently offer students internships, providing experience that proves invaluable in obtaining a full-time planning position after graduation. The American Institute of Certified Planners, a professional institute within the American Planning Association, grants certification to individuals who have the appropriate combination of education and professional experience and who pass an examination. Certification may be helpful for promotion.

Figure 65 Distribution of Educational Attainment – Urban and Regional Planners



Career Advancement Opportunities

Planners in government agencies normally progress through a series of increasingly more responsible and better paying positions on the basis of merit and experience. Some public-sector planners are promoted to division heads community planning director. Further advancement occurs through a transfer to a larger jurisdiction with more complex problems and greater responsibilities or into related occupations, such as director of community or economic development. Transfer to larger public organizations is another way that planners may advance their careers. Some experienced planners go into university teaching, which is often combined with consulting and research.

## Civil Engineering Technicians

### Occupation Description

Civil engineering technicians apply theory and principles of civil engineering in planning, designing, and overseeing construction and maintenance of structures and facilities under the direction of engineering staff or physical scientists.

### Secondary Titles

Secondary titles for civil engineering technicians include engineering technician, civil engineering designer, civil engineering technician, civil engineering assistant, design technician, and field technician.

### Job Type

Technician

### Assessment of Need

Yellow:

- Higher than average projected job growth in the Tri-County area, 2005-2010
- Average ratio of replacements and/or separations to employment
- Higher than average wage growth in the Tri-County area, 2001-2005

### Current Employment and Projected Growth

There were 339 civil engineering technicians in the Tri-County area in 2005. Three hundred and sixty (360) are projected to be employed within the Tri-County area by 2010, an average annual growth rate of 1.2 percent. By comparison, the annual average growth rate in California between 2005 and 2010 is expected to be slightly higher at 1.5 percent.

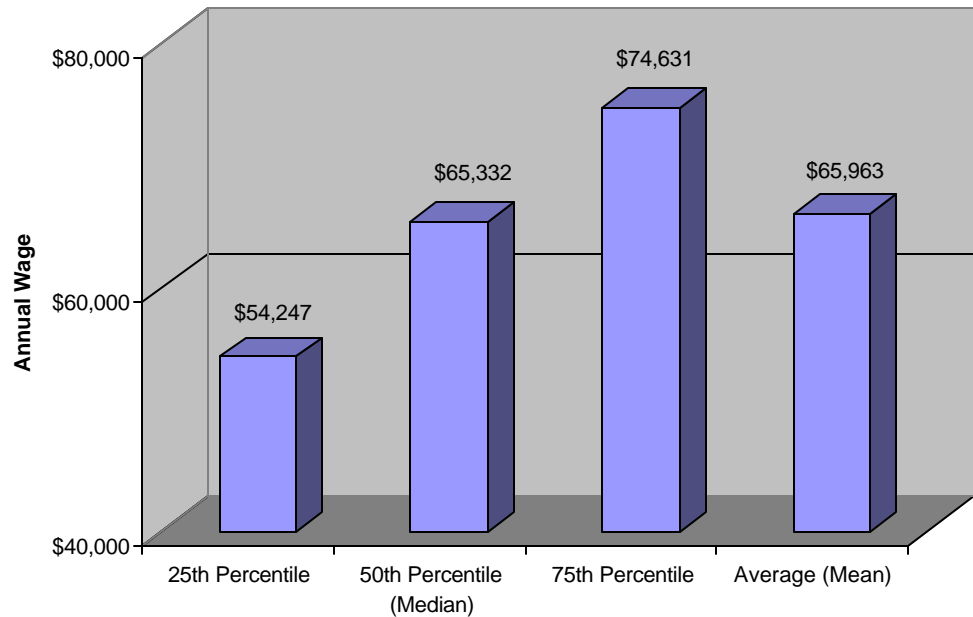
Table 46 Civil Engineering Technicians – Employment Forecasts

	Employment		Increase 2005-2010	
	2005	2010	Numeric	Percentage
Santa Clara	282	303	21	7.4%
San Mateo	41	41	0	0.0%
San Benito	16	16	0	0.0%
Tri-County	339	360	21	6.2%
California	4,710	5,060	350	7.4%

Wages

The median annual wage in for civil engineering technicians employed in the public sector in the Tri-County area in 2004 was \$65,332.<sup>xxxv</sup> The 25<sup>th</sup> percentile wage<sup>xxxvi</sup> in the Tri-County area was \$54,247, while the 75<sup>th</sup> percentile wage was \$74,631.

Figure 66 Civil Engineering Technicians – 2004 Wage Levels in the Tri-County Area



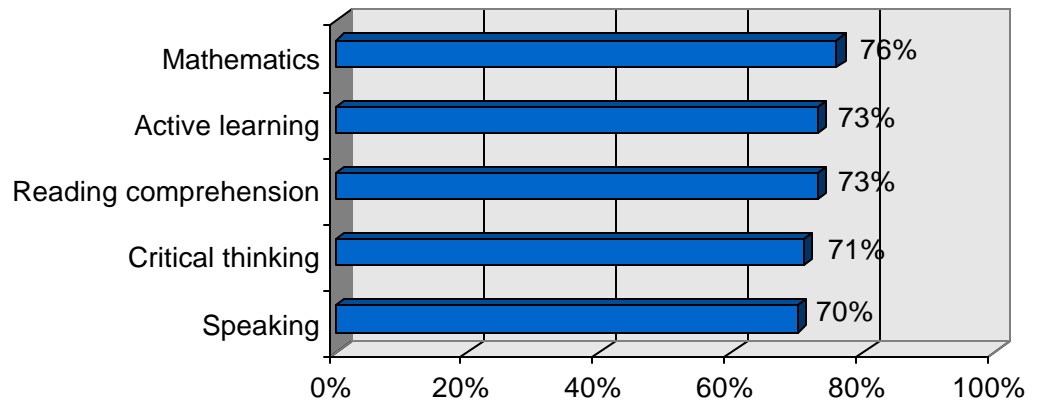
<sup>xxxv</sup> The median is the middle number in a series of data. If there is an even number of data points, the average of the two middle values is taken as the median.

<sup>xxxvi</sup> A percentile orders data in a way that easily demonstrates what percentage of the data falls above or below a certain point. For example, if the 75<sup>th</sup> percentile wage were \$100,000, then 75 percent of employees in the occupation would make less than \$100,000 and ten percent would make more than \$100,000.

### Skill Assessment

For civil engineering technicians, mathematics was ranked as the most important skill (see Figure 67).

Figure 67 Civil Engineering Technicians – Skill Importance



For civil engineering technicians, the most important three skills are:

**Mathematics** – Using mathematics to solve problems.

**Active learning** – Understanding the implications of new information for both current and future problem-solving and decision-making.

**Reading comprehension** – Understanding written sentences and paragraphs in work related documents.

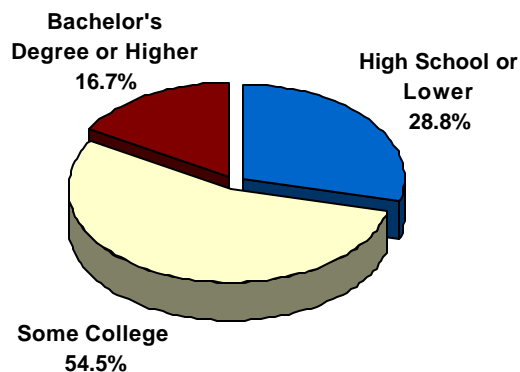
### Education and Training

Most employers look for applicants with at least a two-year associate degree in engineering technology. Training is available at technical institutes, community colleges, extension divisions of colleges and universities, public and private vocational-technical schools, and in the Armed Forces. Persons with college courses in science, engineering, and mathematics may qualify for some positions but may need additional specialized training and experience. Although employers usually do not require engineering technicians to be certified, such certification may provide jobseekers a competitive advantage. The National Institute for Certification in Engineering Technologies has established a voluntary certification program for engineering technicians.

Technical institutes offer intensive technical training through application and practice, but they provide less theory and general education than do community colleges. Many technical institutes offer two-year associate degree programs and are similar to or part of a community college or State university system. Other technical institutes are run by private, often for-profit organizations, sometimes called proprietary schools. Their programs vary considerably in length and types of courses offered, although some are two-year associate degree programs.

Community colleges offer curriculums that are similar to those in technical institutes but include more theory and liberal arts. There may be little or no difference between programs at technical institutes and community colleges, as both offer associate degrees. After completing the two-year program, some graduates get jobs as engineering technicians, whereas others continue their education at four-year colleges.

Figure 68 Distribution of Educational Attainment – Civil Engineering Technicians



## APPENDIX E: TRI-COUNTY EDUCATION AND TRAINING PROGRAMS

The following tables outline the public sector-related courses available in the Tri-County area provided by the local community colleges and San Jose State University. These courses are available in addition to the internal training programs conducted within public sector organizations.

Table 47 Tri-County Education and Training Programs - Education Sector

EDUCATION	DeAnza College, Cupertino	Gavilan College, Gilroy	Foothill College, Los Altos Hills	Canada College, Redwood City	Skyline College, San Bruno	Evergreen Valley College, San Jose	San Jose City College, San Jose	The College of San Mateo, San Mateo	Mission College, Santa Clara	West Valley College, Saratoga	San Jose State University
K-12 School Counseling Specialization											CR
K-12 School Counseling Specialization Internship											CR
Art Education											MA MI
Art Studio Practice - Preparation for Teaching											BA
Biological Sciences - Preparation for Teaching											BA MI
Chemistry - Preparation for Teaching											BA
Child and Adolescent Development											MA BA MI
Child and Adolescent Development - Preparation for Teaching											BA
Child Development		AA							CC		
Child Development Permit - Teacher									CP		
Child Development Permit - Associate Teacher									CP		
Child Development Permit - Master Teacher									CP		
Child Development Permit - Site Supervisor									CP		
Child Development Permit - Program Director									CP		
CLAD											C
Communication Studies - Preparation for Teaching											BA
Counselor Education											MA
Creative Arts - Preparation for Teaching											BA
Deaf Education											MI
Earth Science - Preparation for Teaching											BA
Education - Administration and Supervision											MA
Education - Counseling and Student Personnel											MA
Education - Curriculum and Instruction											MA
Education - Higher Education											MA
Education - Instructional Technology											MA
Elementary Instructional Aide/ School-Age Child Care									C		

<b>Key:</b> AA – Associate of Arts AS – Associate of Science BA – Bachelor of Arts BS – Bachelor of Science C – Certificate CA – Certificate of Achievement CAR – Career Certificate	CC – Certificate of Completion CP – Certificate of Proficiency CR – Credential CS – Certificate of Specialization CS-I – Certificate of Specialization I CS-II – Certificate of Specialization II CTY – Certificate of Competency	MA – Master of Arts MBA – Master of Business Administration MI – Minor MLIS – Master of Library and Information Science MPA – Master of Public Administration MPH – Master in Public Health MS – Master of Science	MSW – Master of Social Work MUP – Master of Urban Planning PDC – Post Degree Certificate ROP – Regional Occupation Program Certificate SC – Short Certificate
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Appendix E: Tri-County Education and Training Programs

EDUCATION	DeAnza College, Cupertino	Gavilan College, Gilroy	Foothill College, Los Altos Hills	Canada College, Redwood City	Skyline College, San Bruno	Evergreen Valley College, San Jose	San Jose City College, San Jose	The College of San Mateo, San Mateo	Mission College, Santa Clara	West Valley College, Saratoga	San Jose State University
English - Preparation for Teaching											BA
Environmental Studies - Preparation for Teaching											BA
French - Preparation for Teaching											BA
History Education											MA
Kinesiology - Preparation for Teaching											BS
Liberal Studies - Preparation for Teaching											BA
Linguistics - Preparation for Teaching											BA
Mathematics - Preparation for Teaching											BA
Mathematics Education											MA
Meteorology - Preparation for Teaching											BA
Music - Preparation for Teaching											BA
Multiple Subject CLAD											CR
Multiple Subject BCLAD											CR
Natural Science - Preparation for Teaching											BA
Physics - Preparation for Teaching											BA
Preliminary Administrative Services/ Education Tier I											CR
Professional Administrative Services/ Education Tier II											CR
Professional Instructional Technology											C
Pupil Personnel Services											CR
School Child Welfare Attendance Specialization											CR
School Nurse											CR
Secondary Education - Single Subject											CR
Social Science - Preparation for Teaching (Single/ Multiple Subjects)											BA
Spanish - Preparation for Teaching											BA
Special Education			AA CR								MA MI
Teaching English to Speakers of Other Languages (TESOL)											MA
TESOL - Graduate/ Undergraduate											C

<b>Key:</b>	AA – Associate of Arts	CC – Certificate of Completion	MA – Master of Arts	MSW – Master of Social Work
AS – Associate of Science	CP – Certificate of Proficiency	MBA – Master of Business Administration	MUP – Master of Urban Planning	MUP – Master of Urban Planning
BA – Bachelor of Arts	CR – Credential	MI – Minor	PDC – Post Degree Certificate	PDC – Post Degree Certificate
BS – Bachelor of Science	CS – Certificate of Specialization	MLIS – Master of Library and Information Science	ROP – Regional Occupation Program Certificate	ROP – Regional Occupation Program Certificate
C – Certificate	CS-I – Certificate of Specialization I	MPA – Master of Public Administration	SC – Short Certificate	SC – Short Certificate
CA – Certificate of Achievement	CS-II – Certificate of Specialization II	MPH – Master in Public Health		
CAR – Career Certificate	CTY – Certificate of Competency	MS – Master of Science		

Table 48 Tri-County Education and Training Programs - Municipal Services Sector

MUNICIPAL - SERVICES	DeAnza College, Cupertino	Gavilan College, Gilroy	Foothill College, Los Altos Hills	Canada College, Redwood City	Skyline College, San Bruno	Evergreen Valley College, San Jose	San Jose City College, San Jose	The College of San Mateo, San Mateo	Mission College, Santa Clara	West Valley College, Saratoga	San Jose State University
<b>ACCOUNTING &amp; FINANCE PROGRAMS</b>											
Accountancy											MS
Accounting	AA CA CP		AA CR CP	AS CP	AS C	AS CS-I CS-II	AA	AA CA	AS C CP		
Accounting Assistant I / II								CC			
Accounting Clerk										CP	
Accounting Computer Specialist					C						
Accounting Specialist						CS-I					
Bookkeeping	CA CC										
Bookkeeping Assistant						CS-I					
Business Administration - Accounting											BS
Business Administration - Accounting Information Systems											BS
Business Administration - Finance											BS
Computerized Accounting		CA ROP									
Entry-Level Bookkeeper				CC							
General Office Accounting		ROP									
Payroll Accounting		ROP									
<b>ADMINISTRATION, BUSINESS, LIBRARY, &amp; OFFICE PROGRAMS</b>											
Administrative Assistant				AS CP	AS C	CS-I					
Administrative Assistant/ Office Technology	AA CA CC CP										
Administrative Coordination										CP	
Administrative Management (online)										CP	
Administrative Support Assistant				AS CP							
Business		AA AS CC				AA	AA AS		AA AS CC	C	MI
Business Computer Applications		AS CC									
Business Computing									C		
Business Communications									C		
Business Administration	AA CA CC		AA CA CAR	CP	AS C			AA		AA SC	MBA
Business Administration - Human Resources Management											
Business Administration - Management											
Business Administration - Management Information Systems											
Business Information Systems						AS CA					

<b>Key:</b> AA – Associate of Arts AS – Associate of Science BA – Bachelor of Arts BS – Bachelor of Science C – Certificate CA – Certificate of Achievement CAR – Career Certificate	CC – Certificate of Completion CP – Certificate of Proficiency CR – Credential CS – Certificate of Specialization CS-I – Certificate of Specialization I CS-II – Certificate of Specialization II CTY – Certificate of Competency	MA – Master of Arts MBA – Master of Business Administration MI – Minor MLIS – Master of Library and Information Science MPA – Master of Public Administration MPH – Master in Public Health MS – Master of Science	MSW – Master of Social Work MUP – Master of Urban Planning PDC – Post Degree Certificate ROP – Regional Occupation Program Certificate SC – Short Certificate
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Appendix E: Tri-County Education and Training Programs

MUNICIPAL - SERVICES	DeAnza College, Cupertino	Gavilan College, Gilroy	Foothill College, Los Altos Hills	Canada College, Redwood City	Skyline College, San Bruno	Evergreen Valley College, San Jose	San Jose City College, San Jose	The College of San Mateo, San Mateo	Mission College, Santa Clara	West Valley College, Saratoga	San Jose State University
<b>ADMINISTRATION, BUSINESS, LIBRARY, &amp; OFFICE PROGRAMS</b>											
Business Management							CA CS CTY	AA			
Business Systems Assistant						CS-I					
Business Technology: Office Administration			AS CC								
California Library Media Teacher Services											CR
Clerical Assistant									CC		
File Clerk	CC										
General Business Administration							CTY				
General Business Assistant						CS-I					
General Office				CC							
Human Resource Management/ Supervision				CC				CC			
Labor Studies							AA AS				
Library and Information Science											MLIS
Office Administration								AS CA			
Office Assistant	CC				AS C			CC			
Office Information Systems					AS C			AS CP			
Professional Office Skills										CP	
Public Administration											MPA
Public Administration and Public Policy											MI
Receptionist									CC		
Work Processing Clerk	CC										
<b>COMMUNITY SERVICES PROGRAMS</b>											
Basic Human Services									CC		
Community Service Learning											MI
Leadership and Community Services			CC								
Community Health Worker				CC				CC	AS CP		
Family Development								CC			
Family Services									CC		
Health Science - Community Health Education											BS
Human Services				AS CP				AA CA			
Peer Support Services								CC			
Social Work											BA MI MSW
Sociology - Community Change											BA

<b>Key:</b> AA – Associate of Arts AS – Associate of Science BA – Bachelor of Arts BS – Bachelor of Science C – Certificate CA – Certificate of Achievement CAR – Career Certificate CC – Certificate of Completion CP – Certificate of Proficiency CR – Credential CS – Certificate of Specialization CS-I – Certificate of Specialization I CS-II – Certificate of Specialization II CTY – Certificate of Competency MA – Master of Arts MBA – Master of Business Administration MI – Minor MLIS – Master of Library and Information Science MPA – Master of Public Administration MPH – Master in Public Health MS – Master of Science MSW – Master of Social Work MUP – Master of Urban Planning PDC – Post Degree Certificate ROP – Regional Occupation Program Certificate SC – Short Certificate
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MUNICIPAL - SERVICES	DeAnza College, Cupertino	Gavilan College, Gilroy	Foothill College, Los Altos Hills	Canada College, Redwood City	Skyline College, San Bruno	Evergreen Valley College, San Jose	San Jose City College, San Jose	The College of San Mateo, San Mateo	Mission College, Santa Clara	West Valley College, Saratoga	San Jose State University
<b>IT &amp; LIBRARY PROGRAMS</b>											
Applied Networking		ROP									
Computer Applications							AS CA CS CTY		CC	AS CP	
Computer Concepts and Applications											C
Computer Engineering											BS MS
Computer and Information Science				AS				AS CA			
Computer and Information Systems (Business Applications)										AS CP	
Computer and Information Systems (Computer Systems)										AS CP	
Computer Information Specialist					AS C						
Computer Information Systems									AS CP		
Computer Information Systems Web Site Administration							AS CA CS CTY				
Computer Information Technology						AS CS-I					
Computer Networking/ Networking Technology		AS CA CC							AS CP		
Computer Office Applications		ROP									
Computer Science							AA			AS	BS MI MS
Computer Science and Information Systems		AS									
Computer Systems Assistant						CS-I					
Computer Technology							CS				
Data Entry Clerk	CC								CC		
Database Management			AS CAR								
Help Desk Specialist									CC		
Help Desk/ Tech Support			AS CAR								
Information Processing Specialist						CS-I					
Internet Application									CC		
Internet Literacy and Research	CC										
Internet Programming	CC			CC							
Internet Technology			AS CAR SC								
Microcomputer Business Applications	AA CA CC CP										
Microcomputer/ Database and Spreadsheet								CA			
Microcomputer - Office Assistant								CA			
Microsoft Office									CC		
Network Administration	AA CA CP										

<b>Key:</b>			
AA – Associate of Arts	CC – Certificate of Completion	MA – Master of Arts	MSW – Master of Social Work
AS – Associate of Science	CP – Certificate of Proficiency	MBA – Master of Business Administration	MUP – Master of Urban Planning
BA – Bachelor of Arts	CR – Credential	MI – Minor	PDC – Post Degree Certificate
BS – Bachelor of Science	CS – Certificate of Specialization	MJIS – Master of Library and Information Science	ROP – Regional Occupation Program Certificate
C – Certificate	CS-I – Certificate of Specialization I	MPA – Master of Public Administration	SC – Short Certificate
CA – Certificate of Achievement	CS-II – Certificate of Specialization II	MPH – Master in Public Health	
CAR – Career Certificate	CTY – Certificate of Competency	MS – Master of Science	

Appendix E: Tri-County Education and Training Programs

MUNICIPAL - SERVICES	DeAnza College, Cupertino	Gavilan College, Gilroy	Foothill College, Los Altos Hills	Canada College, Redwood City	Skyline College, San Bruno	Evergreen Valley College, San Jose	San Jose City College, San Jose	The College of San Mateo, San Mateo	Mission College, Santa Clara	West Valley College, Saratoga	San Jose State University
<b>IT &amp; LIBRARY PROGRAMS</b>											
Networking Essentials		ROP									
PC Systems Administration								CC			
Web Developer					AS C						
Web Page Production Specialist		CA									
Webmaster								CP			
<b>GENERAL SUPERVISORY &amp; MANAGEMENT PROGRAMS</b>											
General Supervision					C						
Management	CC										
Management and Supervision								AS CC			
Supervisory Management	CC										
<b>PARKS &amp; RECREATION PROGRAMS</b>											
Park Management										AS CP	
Park Management - Geographic Information Science (G.I.S.)										CP	
Park Ranger and Administration											MI
Recreation											BS MI MS
<b>URBAN PLANNING PROGRAMS</b>											
Urban Planning											MUP
Urban Planning Management											C
Urban Studies											MI

Table 49 Tri-County Education and Training Programs - Municipal Public Works Sector

MUNICIPAL - PUBLIC WORKS	DeAnza College, Cupertino	Gavilan College, Gilroy	Foothill College, Los Altos Hills	Canada College, Redwood City	Skyline College, San Bruno	Evergreen Valley College, San Jose	San Jose City College, San Jose	The College of San Mateo, San Mateo	Mission College, Santa Clara	West Valley College, Saratoga	San Jose State University
Automotive Technology					AS C						
Automotive Technician					AS C						
Building Inspection Technology								AS CA			
Civil Engineering											BS MS
Civil Engineering Technology/ Surveying						CS-II					
Construction Technology							AA AS				
Energy and the Environment											MI
Environmental Studies - Energy											BS
Transportation Management											MS
Transportation Planning Management											C

<b>Key:</b>	AA – Associate of Arts AS – Associate of Science BA – Bachelor of Arts BS – Bachelor of Science C – Certificate CA – Certificate of Achievement CAR – Career Certificate	CC – Certificate of Completion CP – Certificate of Proficiency CR – Credential CS – Certificate of Specialization CS-I – Certificate of Specialization I CS-II – Certificate of Specialization II CTY – Certificate of Competency	MA – Master of Arts MBA – Master of Business Administration MI – Minor MLIS – Master of Library and Information Science MPA – Master of Public Administration MPH – Master in Public Health MS – Master of Science	MSW – Master of Social Work MUP – Master of Urban Planning PDC – Post Degree Certificate ROP – Regional Occupation Program Certificate SC – Short Certificate
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Table 50 Education and Training Programs - Criminal Justice Sector

CRIMINAL JUSTICE	DeAnza College, Cupertino	Gavilan College, Gilroy	Foothill College, Los Altos Hills	Canada College, Redwood City	Skyline College, San Bruno	Evergreen Valley College, San Jose	San Jose City College, San Jose	The College of San Mateo, San Mateo	Mission College, Santa Clara	West Valley College, Saratoga	San Jose State University
Administration of Justice		AA CC			AS C	AA AS	AA AS	AS CA		AS	
Basic Police Academy								CA			
Corrections/ Probation	AA										
Court Reporting										AS CP	
Criminal Justice Administration											BS MI MS
Criminal Justice Administration - Biological Forensic Sciences											BS
Criminal Justice Administration - Chemical Forensic Sciences											BS
Law Enforcement	AA										
Law and Society Major			AA								
Legal Office Assistant						CS-I					
Legal Reception	CC										
Legal Secretarial Studies										CP	
Legal Secretary					AS C						
Legal Studies											MI
Legal Transcription Technologist										AS CP	
Note Reading and Scoping Technologist										CP	
Office Assistant/ Transcription Technologist										CP	
Legal Assistant/ Paralegal	PDC			AS CP	AA C	AA AS CS				AS	
Paralegal Studies	AA PDC									Y	
Police Academy - Law Enforcement						C					
POST Certification								CA			
Realtime Steno Interpreter										AS CP	
Sociology - Criminology											BA MA

<b>Key:</b>			
AA – Associate of Arts	CC – Certificate of Completion	MA – Master of Arts	MSW – Master of Social Work
AS – Associate of Science	CP – Certificate of Proficiency	MBA – Master of Business Administration	MUP – Master of Urban Planning
BA – Bachelor of Arts	CR – Credential	MI – Minor	PDC – Post Degree Certificate
BS – Bachelor of Science	CS – Certificate of Specialization	MLIS – Master of Library and Information Science	ROP – Regional Occupation Program Certificate
C – Certificate	CS-I – Certificate of Specialization I	MPA – Master of Public Administration	SC – Short Certificate
CA – Certificate of Achievement	CS-II – Certificate of Specialization II	MPH – Master in Public Health	
CAR – Career Certificate	CTY – Certificate of Competency	MS – Master of Science	

Table 51 Tri County Education & Training Provider Programs - Public Safety Sector

PUBLIC SAFETY	DeAnza College, Cupertino	Gavilan College, Gilroy	Foothill College, Los Altos Hills	Canada College, Redwood City	Skyline College, San Bruno	Evergreen Valley College, San Jose	San Jose City College, San Jose	The College of San Mateo, San Mateo	Mission College, Santa Clara	West Valley College, Saratoga	San Jose State University
Emergency Medical Technician					C				CC		
Environmental Studies											BA MI BS MS
Environmental Studies - Environmental Impact Assessment											BS
Fire Fighter - Certificate of Completion									CC		
Fire Technology - AS								AS CA	AS		
General Engineering - Environmental Health and Safety											BS
Paramedic			AS CAR								
Public Health											MPH

<b>Key:</b> AA – Associate of Arts AS – Associate of Science BA – Bachelor of Arts BS – Bachelor of Science C – Certificate CA – Certificate of Achievement CAR – Career Certificate	CC – Certificate of Completion CP – Certificate of Proficiency CR – Credential CS – Certificate of Specialization CS-I – Certificate of Specialization I CS-II – Certificate of Specialization II CTY – Certificate of Competency	MA – Master of Arts MBA – Master of Business Administration MI – Minor MLIS – Master of Library and Information Science MPA – Master of Public Administration MPH – Master in Public Health MS – Master of Science	MSW – Master of Social Work MUP – Master of Urban Planning PDC – Post Degree Certificate ROP – Regional Occupation Program Certificate SC – Short Certificate
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## APPENDIX F: FOCUS GROUP DISCUSSION GUIDE

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### **I. Introduction to the Focus Group Format**

#### **A. Introduction of moderator (2 minutes)**

Thank you for taking the time and being here this evening

Why we are here today? The Silicon Valley Workforce Investment Network is interested in hearing your opinions on the needs of future workforce in the public employment sector. The results of this research will help decide whether the public sector will become one of the industry clusters that is targeted by the Silicon Valley Workforce Investment Network [IDENTIFY THE SPECIFIC SUB-GROUP YOU ARE SPEAKING TO – POLICE AND FIRE / MUNICIPAL SERVICES & PUBLIC WORKS / EDUCATION /

#### **B. ‘Ground Rules’ for the Focus Groups (3 minutes)**

Before we begin I want to provide some basic ground rules for tonight’s discussion:

We are interested in the opinion of each individual. Be candid. Do not worry about offending anyone who is watching the group. We would rather have an honest opinion than a false compliment. All information stays in this room. There are no right or wrong answers. So, please respect others’ opinions. We expect that you may agree/ disagree with each other.

Also please speak one at a time. We are taping our discussion tonight. And, it is hard to understand what people are saying if more than one person is talking at once. The purpose of the video taping is so that we can write a better report from the information that we gather from our discussion. You won’t see yourself on TV endorsing any product or service.

Someone may come in from the other room with a note for me, don’t be alarmed. They’re simply alerting me that we’re either ahead of or behind schedule – or perhaps giving me additional questions to ask of you.

You will notice that I have a discussion guide in front of me that includes some topics that I would like to get through tonight. Therefore, in order to get through all the topics and not keep you here longer than an hour and a half, there may be times when I will need to move on to a new topic or I may need to interrupt you from time to time.



### **C. Introduction and Background of participants (10 minutes)**

1. Name and Title
2. City or Municipal Agency
3. Length of Time with the Agency
4. And any other professional experience with other public agencies particularly as it pertains to hiring and evaluating staff.
5. Approximate number of employees you manage, hire, or evaluate annually?

### **II. Assessment of Workforce Demand (30 Minutes)**

#### **A. Current and Expected Workforce needs**

1. How many employees do you currently have working in your department and in your organization?

2. Is your agency generally growing, staying the same, or getting smaller in terms of the number of people employed, is the same true for your department? Why [PROBE ON DRIVERS OF NET GROWTH/LOSS]

[PROBE ON]

- a. Are there any departments that you are aware of with stronger growth expectations in terms of total employment?
- b. Are there any departments that you are aware of that are shrinking or disappearing altogether, in terms of total employment?
- c. Are there any occupations that you are aware of with stronger growth expectations?
- d. Are there any occupations that you are aware of that are shrinking or disappearing altogether?

[Probe on some specific occupations—Be specific to the focus group type]

3. Generally, how much difficulty does your organization have finding qualified applicants? (Great difficulty / Some Difficulty / Little Difficulty / No Difficulty)? Why do you think this is the case?

- A. What occupations do you have the most difficulty finding qualified applicants
- B. What occupations do you have the least difficulty finding qualified applicants
- C. [PROBE ON SPECIFIC OCCUPATIONS AND OCCUPATION TYPES SPECIFIC FOR EACH GROUP]

4. What percentage of your employees are do you expect will retire in the next year/ 3 years / 5 years / 8 years / and 10 years?

- A. Is your agency concerned about retirement from your current workforce?
- B. Do you expect to be able to find replacements for retirees internally?
- C. Is there a fear that retirees will take a significant amount of institutional knowledge that can not be replaced?
- D. Are there specific occupations or occupation types (e.g. Upper Management, Engineering) that are more susceptible to be negatively impacted by retirements?

5. Do you have any gaps in your needs for employees and the availability of qualified potential employees?

- o Is there more difficulty in finding qualified potential employees or in finding the number of potential employees needed?
- o Which occupations do you have the most difficulty in finding potential employees?

## **B. Current and Expected Workforce retention**

1. How would you rate staff turnover at your organization (Very high, somewhat high, average, somewhat low, very low)? How would you rate your department? Why?

[PROBE ON]

- a. Are there any departments that you are aware of with higher turnover than the organization average? – WHY?
- b. Are there any departments that you are aware of that are lower than the organization average? – WHY?
- c. Are there any occupations that you are aware of with particularly high turnover? - WHY
- d. Are there any occupations that you are aware of with particularly low turnover? - WHY
- e. [PROBE ON TURNOVER FOR OCCUPATIONS SPECIFIC TO THE GROUP]]

2. What do you see as the fundamental reasons for staff turnover in your organization. Should there be an effort made to lower staff turnover, if so what should be done?

## **C. Staff Development Programs Services**

1. What programs or services does your organization offer to develop and improve your staff?

PROBE ON –

- Mentor programs
- Tuition reimbursement
- Internal training programs (formal – with a curriculum)
- Internal training programs (informal – following a more experienced indiv.)

2. Has your organization identified or implemented any type of career ladder or career development program for current employee advancement?

A. What would/have the difficulties be/been in implementing a career ladder program?

### **III. Current Recruitment Strategies (10 Minutes)**

1. Where and how do you currently recruit potential employees?

PROBE ON –

Organization Website

Job Search Services – Internet (Name specific sites)

Newspapers (Name Specific Periodicals)

Job Fairs

Relationships with education providers

Relationships with training providers

FOLLOW UP – What has been effective and what has not been effective.

A. How often do you recruit outside your city? County? [ASSESS OVERALL AND THAN ASK ABOUT OCCUPATION SPECIFIC RECRUITING]

2. Are potential applicants generally aware of public sector careers and the opportunities for advancement or applicants generally focused on the position they are applying for?

### **IV. Strengths and Weaknesses of Current Employees and Applicants (20 Minutes)**

1. In general, are there any skills sets or character traits that you look for when hiring new applicants.

[Allow open-ended response and than use these skills sets if they need direction]

- Communication skills – written
- Communication skills - spoken?
- Problem Solving Skills?
- Following Directions?
- Work Ethic?
- Ability to Work Independently?
- Technical Skills?
- Ability to work in a team?

2. Which skills sets or character traits are most important for hiring in the following occupations and why? .

[Probe on some specific occupations–Be specific to the focus group type]

3. In what areas/skill sets are your current employees most deficient?

4. In what areas/skill sets are current applicants most deficient
5. After thinking about the strengths and weaknesses of current applicants, could you generally describe an ideal applicant for your organization.

#### **V. Potential Solutions (15 Minutes)**

SUMMARIZE WHAT YOU SEE ARE THE BIGGEST CHALLENGES FOR THE PUBLIC SECTOR WORKFORCE BASED ON THE DISCUSSION THIS EVENING AND GIVE PARTICIPANTS THE OPPORTUNITY TO PROVIDE THEIR SOLUTIONS BEFORE PROBING ON YOUR POTENTIAL SOLUTIONS.

[FOR EACH OF THE POTENTIAL SOLUTIONS PROBE ON STRENGTHS AND WEAKNESSES AS WELL AS CHALLENGES IMPLEMENTING]

1. Implement an integrated career ladder and career development program which helps get current entry-level employees the training and education to move up a career ladder while working for the public employer? ALSO PROBE ON CAREER LATTICES THAT ALLOW INDIVIDUALS TO MOVE INTO A MID LEVEL POSITION
2. Develop Public Sector high school academies in the Tri-County area that increase awareness of public sector careers and begin providing occupation specific training and education? [PROBE ON WHETHER THEY SHOULD BE SEGMENT SPECIFIC – POLICE, FIRE, MUNICIPAL, EDUCATION]
3. Discuss potential marketing solutions to increase the quantity and quality of applicants to public sector positions.
4. Discuss potential solutions for improving employee retention and development.

## APPENDIX G: OUTLINE FOR PUBLIC SECTOR WORKSHOP

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### **I. Introduction to the Public Sector**

- a. Who are public sector employers and what do they do
  - i. Identify each segment and examples of employers and different occupations
- b. What are the benefits of Public Sector employment
  - i. Serving your community
  - ii. Education and training opportunities
  - iii. Career advancement
  - iv. The \$ value of good benefits
- [OPTIONAL – Given by Executive Managers or H.R. Directors of Public Agencies in the Region]
- c. Introduction to Public Sector Employers – Director/Manager discusses their agencies;
  - i. Workplace environment and culture
  - ii. Type of work and different career opportunities that exist
  - iii. Internal education and training opportunities
- d. What are the skills and education you need to work in the public sector
  - i. Emphasize the importance of a good attitude and a willingness to work hard and learn new skills “Hire for attitude, Train for skill”
  - ii. Discuss soft skills that current applicants and some employees are most deficient in according to employers
    - 1. People skills
    - 2. Ability to multi-task
    - 3. Written and verbal communication skills

### **II. Public Sector Opportunities**

- a. Occupations in Education
  - i. Describe occupations in Education
  - ii. Discuss occupational profile for middle school teachers, emphasize need for special education and bilingual teachers in all facets of public education (k-12)
- b. Occupations in Criminal Justice and Public Safety
  - i. Describe occupations in criminal justice and public safety
  - ii. Discuss occupational profile for police and sheriff patrol officers, emphasize need for dispatchers
- c. Occupations in Municipal Services
  - i. Describe occupations in municipal services
  - ii. Discuss occupational profile for management analysts
- d. Occupations in Public Works
  - i. Describe occupations in public works
  - ii. Discuss occupational profile for urban and regional planners

### **III. Career Ladders in the Public Sector**

- a. Introduce some of the career ladders in the public sector
  - i. Municipal Services – Accounting and Finance
  - ii. Police Department
  - iii. Municipal Services – Planning and Inspection
- b. Provide personal examples of individuals who have progressed up public sector career paths

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