November 2022

Labor Market Analysis

Police Science

POWERED BY

California Community Colleges

Prepared by the Central Valley/Mother Lode Center of Excellence

Table of Contents

COVID-19 Statement: This report includes employment projection data by Lightcast. Lightcast's projections are modeled on recorded (historical) employment figures and incorporate several underlying assumptions, including the assumption that the economy during the projection period will be at approximately full employment or potential output. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, they may impact the projections. At this time, it is not possible to quantify the impact of COVID-19 on projections of industry and occupational employment. Other measures such as unemployment rates and monthly industry employment estimates will reflect the most recent information on employment and jobs in the state and, in combination with input from local employers, may help validate current and future employment needs as depicted here.

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Summary

This study conducted by the Central Valley/Mother Lode Center of Excellence examines labor market demand, wages, skills, and postsecondary supply for Police Science. This report is intended to help determine whether there is demand in the local labor market that is not being met by the supply from community college programs that align with the relevant occupations. Three occupations related to Police Science were identified for Porterville College:

- 33-3011, Bailiffs
- 33-3021, Detectives and Criminal Investigators
- 33-3051, Police and Sheriff's Patrol Officers

Key findings:

- **Occupational demand —** There were 5,466 workers employed in jobs related to Police Science in 2021 in the South Central Valley/Southern Mother Lode (SCV/SML) subregion. The largest occupation is police and sheriff's patrol officers with 4,706 workers, a projected growth rate of 5% over the next five years, and 411 annual openings.

- **Wages —** Detectives and criminal investigators earn the highest entry-level wage, $35.76/hour in the subregion.

- **Employers —** Employers with the most job postings in the subregion are US Customs and Border Protection, United States Secret Service, and Kern Community College District.

- **Occupational titles —** The most common occupational title in job postings in the subregion is Police Patrol Officers. The most common job title is Border Patrol Agent.

- **Skills and certifications —** The top baseline skill is writing, the top specialized skill is vaccination, and the top software skill is public administration. The most in-demand certification is a police officer.

- **Education —** A high school diploma or equivalent is typically required for police and sheriff's patrol officers, detectives and criminal investigators, and bailiffs.

- **Supply —** Analysis of postsecondary completions shows that on average 247 awards were conferred in the Central Valley/Mother Lode region each year.

Recommendation:
Based on a comparison of occupational demand and supply, there is an undersupply of 352 trained workers in the subregion and 453 workers in the region. The Center of Excellence recommends that Porterville College work with the regional directors, the college's advisory board, and local industry in the development of programs to address the shortage of Police Science workers in the region.

Introduction

The Central Valley/Mother Lode Center of Excellence was asked by Porterville College to provide labor market information for Police Science. The geographical focus for this report is the South Central Valley/Southern Mother Lode (SCV/SML) subregion, but regional demand and supply data has been included for broader applicability and use. The average living wage for a single adult in the SCV/SML subregion is $11.91/hour.[1] Analysis of the program and occupational data related to Police Science resulted in the identification of applicable occupations. The Standard Occupational Classification (SOC) System codes and titles used in this report are:

- 33-3011, Bailiffs
- 33-3021, Detectives and Criminal Investigators
- 33-3051, Police and Sheriff's Patrol Officers

The occupational titles, job descriptions, sample job titles, and knowledge and skills from the Bureau of Labor Statistics and O*NET OnLine are shown below.

Bailiffs
Job Description: Maintain order in courts of law.
Knowledge: Public Safety and Security, Law and Government, English Language, Customer and Personal Service, Psychology
Skills: Social Perceptiveness, Monitoring, Speaking, Active Listening, Judgment and Decision Making

Detectives and Criminal Investigators
Job Description: Conduct investigations related to suspected violations of federal, state, or local laws to prevent or solve crimes.
Knowledge: Law and Government, Public Safety and Security, English Language, Customer and Personal Service, Psychology
Skills: Active Listening, Speaking, Critical Thinking, Complex Problem Solving, Reading Comprehension

Police and Sheriff's Patrol Officers
Job Description: Maintain order and protect life and property by enforcing local, tribal, state, or federal laws and ordinances. Perform a combination of the following duties: patrol a specific area; direct traffic; issue traffic summonses; investigate accidents; apprehend and arrest suspects, or serve legal processes of courts. Includes police officers working at educational institutions.
Knowledge: Law and Government, Public Safety and Security, English Language, Customer and Personal Service, Psychology
Skills: Active Listening, Social Perceptiveness, Speaking, Active Learning, Critical Thinking

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[1] The term "living wage" in Center of Excellence reports is calculated by averaging the self-sufficiency wages from the Insight Center's California Family Needs Calculator for each county in the subregion: https://insightcced.org/tools-metrics/self-sufficiency-standard-tool-for-california/.

Occupational Demand

The SCV/SML subregion employed 5,466 workers in Police Science occupations in 2021 (Exhibit 1). The largest occupation is police and sheriff's patrol officers with 4,706 workers in 2021. This occupation is projected to grow by 5% over the next five years and has the greatest number of projected annual openings, 411.

Exhibit 1. Police Science employment and occupational projections in the SCV/SML subregion

| Occupation	2021 Jobs	2026 Jobs	5-Year Change	5-Year % Change	Annual Openings
Police and Sheriff's Patrol Officers	4,706	4,927	221	5%	411
Detectives and Criminal Investigators	663	693	30	5%	55
Bailiffs	98	101	3	3%	10
TOTAL	**5,466**	**5,721**	**254**	**5%**	**476**

Wages

Exhibit 2a shows the hourly wages of the Police Science occupations. Detectives and criminal investigators earn the highest entry-level wage, $35.76/hour in the subregion.[2] Please note 10th and 25th percentiles are considered entry-level wages while 75th and 90th are considered experienced wages, either by gained by long term employment, received extra training, etc.

Exhibit 2a. Police Science hourly wages in the SCV/SML subregion

Occupation	Pct. 25 Hourly Earnings	Median Hourly Earnings	Pct. 75 Hourly Earnings
Detectives and Criminal Investigators	$35.76	$46.16	$51.22
Police and Sheriff's Patrol Officers	$33.05	$36.97	$47.33
Bailiffs	$26.15	$26.16	$56.24

Exhibit 2b shows the average hourly wages for Police Science occupations; the average entry-level wage exceeds the average living wage for the South Central Valley/Southern Mother Lode SCV/SML subregion.

Exhibit 2b. Police Science average hourly wages in the SCV/SML subregion

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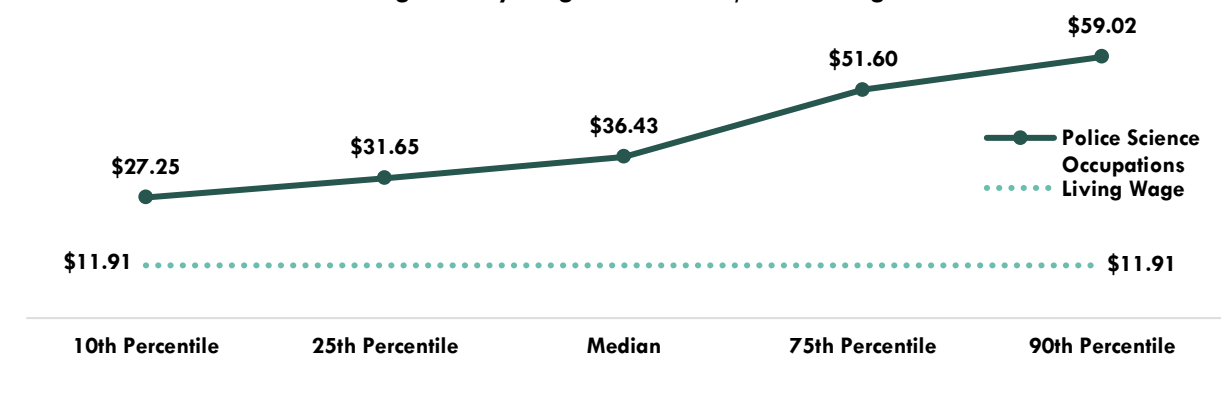
[2] Entry-level wages are derived from the 25th percentile.

Job Postings

There were 290 job postings for the three occupations in the SCV/SML subregion from May 2022 to October 2022.[3] The employers with the most job postings are listed in Exhibit 3.

Exhibit 3. Top employers of Police Science by number of job postings

Employer	Job Postings	% Job Postings
US Customs and Border Protection	103	38%
United States Secret Service	13	5%
Kern Community College District	10	4%
Kern County	9	3%
City Fresno	6	2%
City Bakersfield	5	2%
City Coalinga	5	2%
County Kern	5	2%
Commander	4	1%
Constellis	4	1%

Exhibit 4 shows how job postings for the targeted occupations in the SCV/SML subregion are distributed across eight O*NET OnLine occupations. The occupational title Police Patrol Officers is listed in 111 job postings. Note how this occupational title dominates the job posting results. Common job titles in postings include Border Patrol Agent in 53 job postings, Marine Interdiction Agent in 44 job postings, and Police Officer in 15 job postings.

Exhibit 4. Top occupational titles in job postings for Police Science

Occupational Title	Job Postings	% of Job Postings
Police Patrol Officers	111	38%
Immigration and Customs Inspectors	109	38%
Sheriffs and Deputy Sheriffs	32	11%
Criminal Investigators and Special Agents	21	7%
Intelligence Analysts	7	2%
Bailiffs	4	1%
Police Detectives	3	1%
Police Identification and Records Officers	3	1%

Salaries

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[3] Other than occupation titles and job titles, the categories below can be counted one or multiple times per job posting, and across several areas in a single posting. For example, a skill can be counted in two different skill types, and an employer can indicate more than one education level.

Exhibit 5 shows the "Market Salaries" for Police Science occupations. These are calculated by Burning Glass using a machine learning model built off of millions of job postings every year. This accounts for adjustments based on locations, industry, skills, experience, education requirements, among other variables.

Exhibit 5. Salaries for Police Science occupations

Market Salary Percentile	Salary Amount
10th Percentile	$41,141
25th Percentile	$46,691
50th Percentile	$54,625
75th Percentile	$61,583
90th Percentile	$71,312

Education

Of the 290 job postings, 165 listed an education level preferred for the positions being filled. Among those, 68% requested a bachelor's degree, 56% requested a high school or vocational training, and 36% requested a master's degree (Exhibit 6). A job posting can indicate more than one education level. Hence, the percentages shown in the chart below may total more than 100%.

Exhibit 6. Education levels requested in job postings for Police Science

Education Level	Job Postings	% of Job Postings
High school or vocational training	52	100%
Associate degree	6	12%

Baseline and Specialized Skills

Exhibit 7 depicts the top baseline and specialized skills for the targeted occupations. The three most important baseline skills are writing, 45% of job postings, Spanish, 32%, and physical abilities, 21%. The top three specialized skills are vaccination, 52% of job postings, surveillance, 50%, and law enforcement or criminal justice experience, 49%.
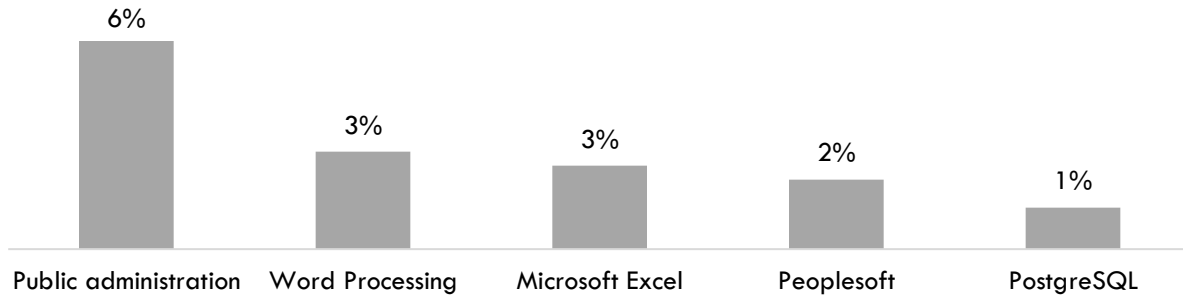
Exhibit 7. In-demand Police Science baseline and specialized skills
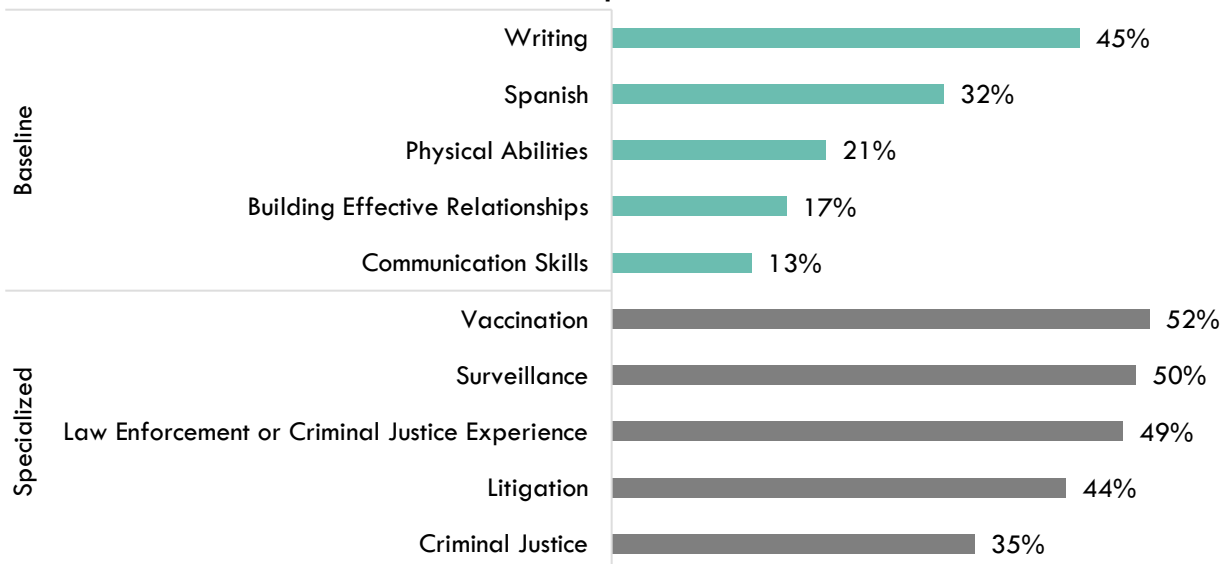
Software Skills

Analysis also included the software skills most in demand by employers. Public administration and word processing were the top two software skills identified in job postings (Exhibit 8).
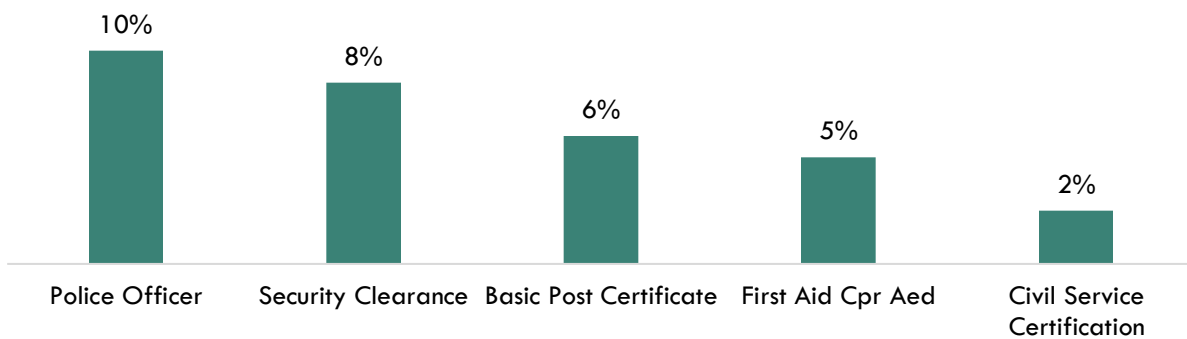
Exhibit 8. In-demand Police Science software skills

Certifications

Of the 290 job postings, 203 contained certification data. Among those, 10% indicated a need for a ploice officer. The next top certifications are security clearance and basic post certificate (Exhibit 9).

Exhibit 9. Top Police Science certifications requested in job postings

Education, Work Experience & Training

A high school diploma or equivalent is typically required for police and sheriff's patrol officers, detectives and criminal investigators, and bailiffs (Exhibit 10).

Exhibit 10. Education, work experience, training, and Current Population Survey results for Police Science occupations[4]

Occupation	Typical Entry-level Education	Work Experience Required	Typical On-The-Job Training	CPS
Police and Sheriff's Patrol Officers	High school diploma or equivalent	None	Moderate-term	46.4%
Detectives and Criminal Investigators	High school diploma or equivalent	Less than 5 years	Moderate-term	32.0%
Bailiffs	High school diploma or equivalent	None	Moderate-term	38.7%

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[4] "Labor Force Statistics from the Current Population Survey," Bureau of Labor Statistics, https://www.bls.gov/cps/.

Supply

Analysis of program data from the Integrated Postsecondary Education Data System (IPEDS) included the TOP and CIP codes and titles: 210550 - Police Academy and 43.0107 - Criminal Justice/Police Science. Analysis of the last three years of data shows that, on average, 247 awards were conferred in the Central Valley/Mother Lode region each year (Exhibit 11).

Exhibit 11. Postsecondary supply for Police Science occupations in the region

TOP/ CIP Code- Title	College	Associate Degree	Certificate 16 < 30 semester units	Certificate 18 < 30 semester units	Certificate 30 < 60 semester units	Subtotal
210550 - Police Academy	Fresno City		0	28		28
	San Joaquin Delta	7	14	58		79
	Sequoias				96	96
43.0107 - Criminal Justice/Police Science	Institute of Technology	44				44
TOTAL		**51**	**14**	**86**	**96**	**247**

There is an undersupply of 352 Police Science workers in the SCV/SML subregion and 453 workers in the region (Exhibit 12).

Exhibit 12. Police Science workforce demand (annual job openings), postsecondary supply of students (awards), and additional students needed to fill gap in the SCV/SML subregion and region

Region	Demand (Annual Openings)	Supply (Total Annual Average Supply)	Supply Gap or Oversupply
SCV/SML	476	124	352
CVML	700	247	453

Student Outcomes

Exhibit 13 summarizes employment and wage outcomes from the California Community College Chancellor's Cal-PASS Plus LaunchBoard for the TOP code related to Police Science. Of note, 48 students received a degree or certificate or attained apprenticeship journey status; 36 students transferred; 83% of students obtained a job closely related to their field of study; 30% had a median change in earnings; and 92% of students attained a living wage.

Exhibit 13. Subregional metrics for the TOP code related to Police Science

Metric	Police Academy 210550
Students Who Got a Degree or Certificate or Attained Apprenticeship Journey Status	48
Number of Students Who Transferred	36
Job Closely Related to Field of Study	83%
Median Change in Earnings	30%
Attained a Living Wage	92%
* denotes data not available.	

Conclusion

The entry-level wages of the three occupations exceed the SCV/SML subregion's average living wage. There were 290 job postings in the past six months for occupations related to Police Science in the subregion. Analysis of skills and certification requirements in job postings indicates:

- The top baseline skill is writing, and the top specialized skill is vaccination.
- The top software skill is public administration.
- The top certification is a police officer.

There is an undersupply of trained workers, a shortage of 352 in the SCV/SML subregion and 453 in the region.

Recommendation

Based on these findings, it is recommended that Porterville College work with the regional director, the college's advisory board, and local industry in the development of programs to address the shortage of Police Science in the region.

Appendix A: Methodology
& Data Sources

Data Sources

Labor market and educational supply data compiled in this report derive from a variety of sources. Data were drawn from external sources, including the Economic Modeling Specialists, Inc., the California Community Colleges Chancellor's Office Management Information Systems Data Mart and the National Center for Educational Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS). Below is the summary of the data sources found in this study.

Data Type	Source
Labor Market Information/Population Estimates and Projections/Educational Attainment	Economic Modeling Specialists, Intl. (Lightcast). Lightcast occupational employment data are based on final LIGHTCAST industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level Lightcast earnings by industry: economicmodeling.com.
Typical Education Level and On-the-job Training	Bureau of Labor Statistics (BLS) uses a system to assign categories for entry-level education and typical on-the-job training to each occupation for which BLS publishes projections data: https://www.bls.gov/emp/tables/educational-attainment.htm.
Labor Force, Employment and Unemployment Estimates	California Employment Development Department, Labor Market Information Division: labormarketinfo.edd.ca.gov.
Job Posting and Skills Data	Burning Glass: burning-glass.com/.
Additional Education Requirements/ Employer Preferences	The O*NET Job Zone database includes over 900 occupations as well as information on skills, abilities, knowledge, work activities and interests associated with specific occupations: onetonline.org.

Key Terms and Concepts

Annual Job Openings: Annual openings are calculated by dividing the number of years in the projection period by total job openings.

Education Attainment Level: The highest education attainment level of workers age 25 years or older.

Employment Estimate: The total number of workers currently employed.

Employment Projections: Projections of employment are calculated by a proprietary Economic Modeling Specialists, Intl. (Lightcast) formula that includes historical employment and economic indicators along with national, state and local trends.

Living Wage: The cost of living in a specific community or region for one adult and no children. The cost increases with the addition of children.

Occupation: An occupation is a grouping of job titles that have a similar set of activities or tasks that employees perform.

Percent Change: Rate of growth or decline in the occupation for the projected period; this does not factor in replacement openings.

Replacements: Estimate of job openings resulting from workers retiring or otherwise permanently leaving an occupation. Workers entering an occupation often need training. These replacement needs, added to job openings due to growth, may be used to assess the minimum number of workers who will need to be trained for an occupation.

Total Job Openings (New + Replacements): Sum of projected growth (new jobs) and replacement needs. When an occupation is expected to lose jobs, or retain the current employment level, number of openings will equal replacements.

Typical Education Requirement: represents the typical education level most workers need to enter an occupation.

Typical On-The-Job Training: indicates the typical on-the-job training needed to attain competency in the skills needed in the occupation.