

April 2021

# Labor Market Analysis

## Construction Management and Inspection

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Prepared by the Central Valley/Mother Lode Center of Excellence

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# Table of Contents

Summary .....	2
Introduction.....	3
Occupational Demand .....	4
Wages.....	4
Job Postings .....	5
Education.....	6
Baseline and Specialized Skills.....	6
Software Skills.....	7
Certifications.....	7
Education, Work Experience & Training .....	7
Supply .....	8
Student Outcomes .....	9
Conclusion .....	9
Recommendation .....	9
Appendix A: Methodology & Data Sources .....	10

**COVID-19 Statement:** This report includes employment projection data by Emsi. Emsi'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.

*If for any reason this document is not accessible or if you have specific needs for readability, please contact us and we will do our utmost to accommodate you with a modified version. To make a request, contact Nora Seronello by phone at (209) 575-6894 or by email [seronellon@mjc.edu](mailto:seronellon@mjc.edu).*

# Summary

Please note the COVID-19 statement on page 2 when considering this report's findings.

This study conducted by the Central Valley/Mother Lode Center of Excellence examines labor market demand, wages, skills, and postsecondary supply for construction management and inspection. Three occupations related to construction management/inspection were identified for Modesto Junior College:

- 47-1011, First-Line Supervisors of Construction Trades and Extraction Workers
- 11-9021, Construction Managers
- 47-4011, Construction and Building Inspectors

## Key findings:

- **Occupational demand** — More than 4,000 workers were employed in jobs related to construction management/inspection in 2019 in the North Central Valley/Northern Mother Lode (NCV/NML) subregion. The largest occupation is first-line supervisors of construction trades and extraction workers with 2,118 workers in 2019, a projected decline in employment of 1% over the next five years, and 207 annual openings.
- **Wages** — Construction and building inspectors earn the highest entry-level wage, \$26.38/hour in the subregion and \$27.35/hour in the region.
- **Employers** — Employers with the most job postings in the subregion are American Home Builders, Haggerty, and Dry Creek Construction.
- **Occupational titles** — The most common occupational title in job postings in the subregion is construction managers. The most common job title is construction superintendent.
- **Skills and certifications** — The top baseline skill is communication, the top specialized skill is scheduling, and the top software skill is Microsoft Excel. The most in-demand certification is a driver's license.
- **Education** — A high school education is typically required for first-line supervisors of construction trades and extraction workers, and construction and building inspectors. A bachelor's degree is typically required for construction managers.
- **Supply** — Analysis of postsecondary completions in the region shows that on average 26 awards were conferred in the Central Valley/Mother Lode region each year.

Based on a comparison of occupational demand and supply, there is an undersupply of 375 trained workers in the subregion and 1,019 workers in the region. The Center of Excellence recommends that Modesto Junior College work with the Energy, Construction and Utilities Regional Director, the college's advisory board, and local industry in the development of programs to address the shortage of construction management/inspection workers in the region.

# Introduction

The Central Valley/Mother Lode Center of Excellence was asked by Modesto Junior College to provide labor market information for construction management/inspection. The geographical focus for this report is the North Central Valley/Northern Mother Lode (NCV/NML) 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 NCV/NML subregion is \$10.30/hour.<sup>1</sup> Analysis of the program and occupational data related to construction management and inspection resulted in the identification of applicable occupations. The Standard Occupational Classification (SOC) System codes and titles used in this report are:

- 47-1011, First-Line Supervisors of Construction Trades and Extraction Workers
- 11-9021, Construction Managers
- 47-4011, Construction and Building Inspectors

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.

## **First-Line Supervisors of Construction Trades and Extraction Workers**

**Job Description:** Directly supervise and coordinate activities of construction or extraction workers.

**Knowledge:** Administration and Management, Building and Construction, Mechanical, Customer and Personal Service, English Language

**Skills:** Coordination, Active Listening, Speaking, Critical Thinking, Management and Personnel Resources

## **Construction Managers**

**Job Description:** Plan, direct, or coordinate, usually through subordinate supervisory personnel, activities concerned with the construction and maintenance of structures, facilities, and systems. Participate in the conceptual development of a construction project and oversee its organization, scheduling, budgeting, and implementation. Includes managers in specialized construction fields, such as carpentry or plumbing.

**Knowledge:** Building and Construction, Administration and Management, Engineering and Technology, English Language, Customer and Personal Service

**Skills:** Coordination, Management of Personnel Resources, Active Listening, Monitoring, Speaking

## **Construction and Building Inspectors**

**Job Description:** Inspect structures using engineering skills to determine structural soundness and compliance with specifications, building codes, and other regulations. Inspections may be general in nature or may be limited to a specific area, such as electrical systems or plumbing.

**Knowledge:** Building and Construction, Customer and Personal Service, Mathematics, Engineering and Technology, Design

**Skills:** Active Listening, Reading Comprehension, Speaking, Critical Thinking, Complex Problem Solving

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<sup>1</sup> 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 North Central Valley/Northern Mother Lode subregion employed 4,011 workers in construction management and inspection occupations in 2019 (Exhibit 1). The largest occupation is first-line supervisors of construction trades and extraction workers with 2,118 workers in 2019. This occupation is projected to decline by 1% over the next five years but has the greatest number of projected annual openings, 207.

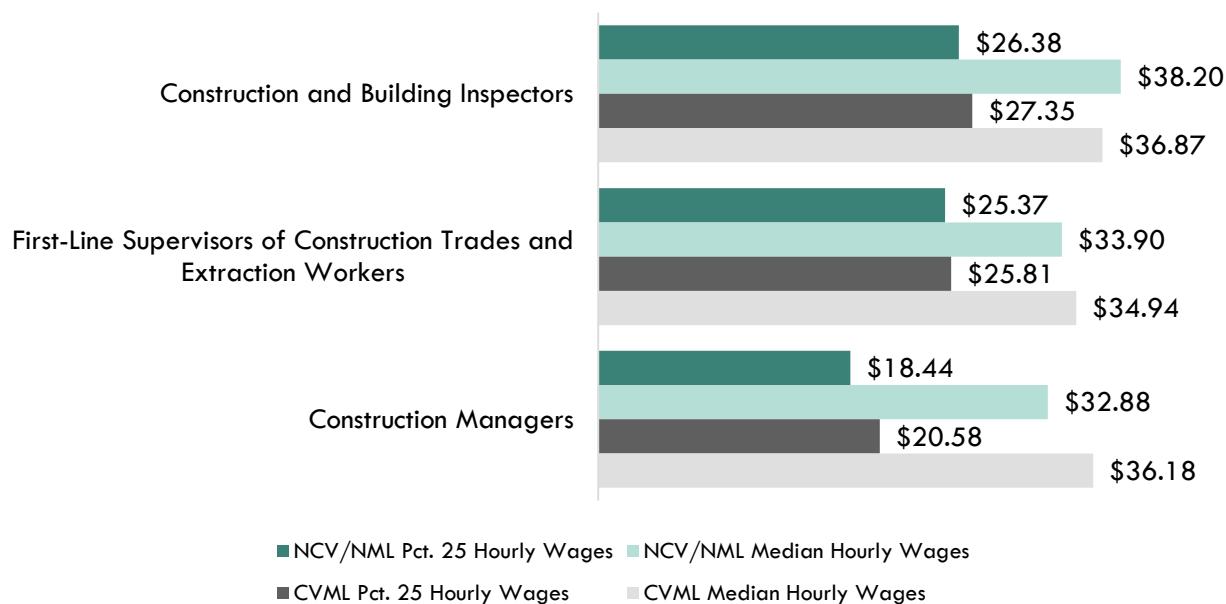
**Exhibit 1. Construction management/inspection employment and occupational projections in the NCV/NML subregion**

Occupation	2019 Jobs	2024 Jobs	5-Year Change	5-Year % Change	Annual Openings
First-Line Supervisors of Construction Trades and Extraction Workers	2,118	2,089	(29)	(1%)	207
Construction Managers	1,622	1,755	132	8%	135
Construction and Building Inspectors	271	280	9	3%	33
<b>TOTAL</b>	<b>4,011</b>	<b>4,123</b>	<b>112</b>	<b>3%</b>	<b>375</b>

## Wages

Exhibit 2 compares the entry-level and experienced wages of the construction management and inspection occupations. Construction and building inspectors earn the highest entry-level wage, \$26.38/hour in the subregion and \$27.35/hour in the region.

**Exhibit 2. Entry-level and experienced wage comparison in the NCV/NML subregion and region**



Median salary data from Emsi shows that construction and building inspectors earn the highest median salary, more than \$79,461 annually, followed by first-line supervisors or construction trades and extraction workers, more than \$70,506 annually.

**Exhibit 3. Median salaries for construction management/inspection occupations**

Occupation	Median Salary
Construction and Building Inspectors	\$79,461.45
First-Line Supervisors of Construction	\$70,506.60
Trades and Extraction Workers	
Construction Managers	\$68,386.53

## Job Postings

There were 419 job postings for the three occupations in the NCV/NML subregion from October 2020 to March 2021.<sup>2</sup> The employers with the most job postings are listed in Exhibit 4.

**Exhibit 4. Top employers of construction management/inspection by number of job postings**

Employer	Job Postings	% Job Postings
American Home Builders	11	3%
Haggerty	9	3%
Dry Creek Construction	8	2%
MDC Holdings	7	2%
Sunrun	7	2%
City Lodi	6	2%
Diede Construction Incorporated	6	2%
Semper Solaris	6	2%
Pacific Gas and Electric Company	5	2%
Partners Property Management	5	2%

Exhibit 4 shows how job postings for the targeted occupations in the NCV/NML subregion are distributed across four O\*NET OnLine occupations. The occupational title construction managers is listed in 256 job postings. Note how this occupational title dominates the job posting results. Common job titles in postings include construction superintendent in 21 job postings, superintendent in 13 job postings, and construction manager in 12 job postings.

**Exhibit 5. Top occupational titles in job postings for construction management/inspection**

Occupational Title	Job Postings	% of Job Postings
Construction Managers	256	61%
First-Line Supervisors of Construction Trades and Extraction Workers	120	29%
Construction and Building Inspectors	39	9%
Solar Energy Installation Managers	4	1%

<sup>2</sup> 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.

## **Education**

Of the 419 job postings, 211 listed an education level preferred for the positions being filled. Among those, 55% requested a bachelor's degree, 55% requested high school or vocational training, and 10% requested an associate degree (Exhibit 6). A job posting can indicate more than one education level. Hence, the percentages shown in the table below may total more than 100%.

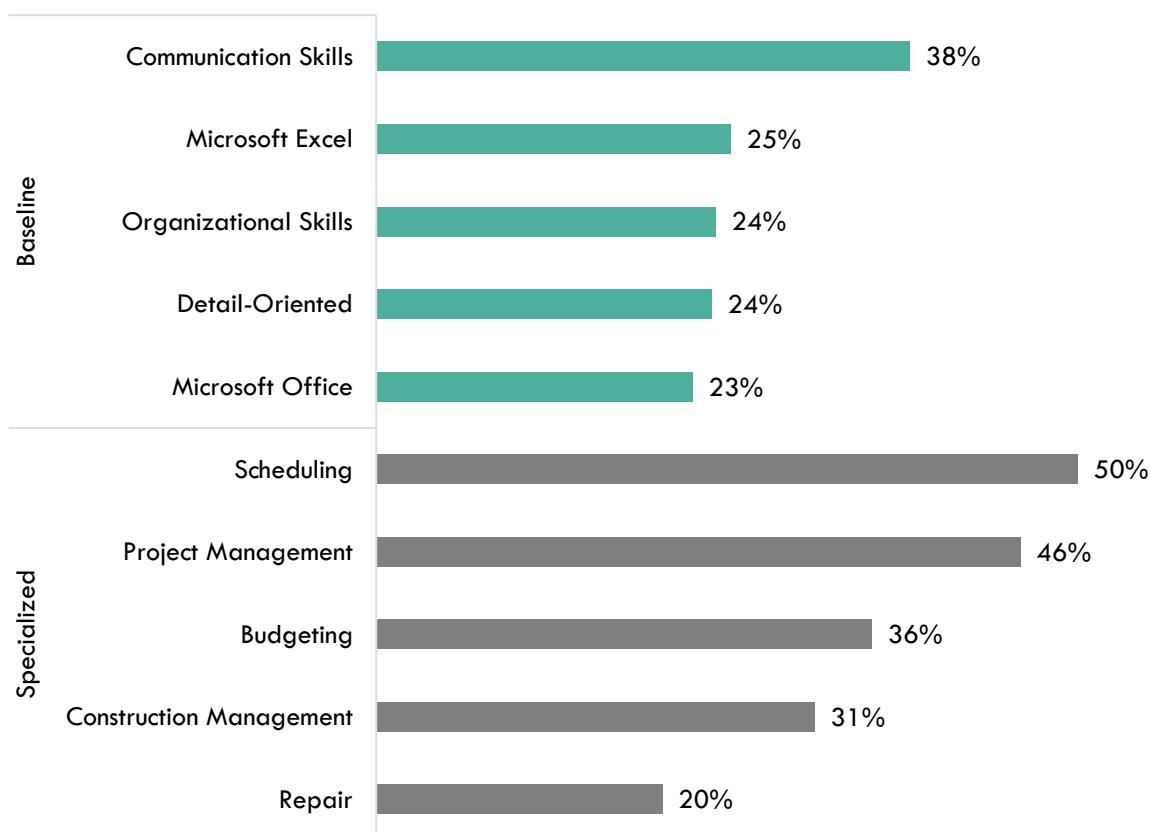
**Exhibit 6. Education levels requested in job postings for construction management/inspection**

<b>Education Level</b>	<b>Job Postings</b>	<b>% of Job Postings</b>
Bachelor's degree	117	55%
High school or vocational training	115	55%
Associate degree	21	10%
Doctoral degree	7	3%
Master's degree	4	2%

## **Baseline and Specialized Skills**

Exhibit 7 depicts the top baseline and specialized skills for the targeted occupations. The three most important baseline skills are communication, 38% of job postings, Microsoft Excel, 25%, and organizational skills, 24%. The top three specialized skills are scheduling, 50% of job postings, project management, 46%, and budgeting, 36%.

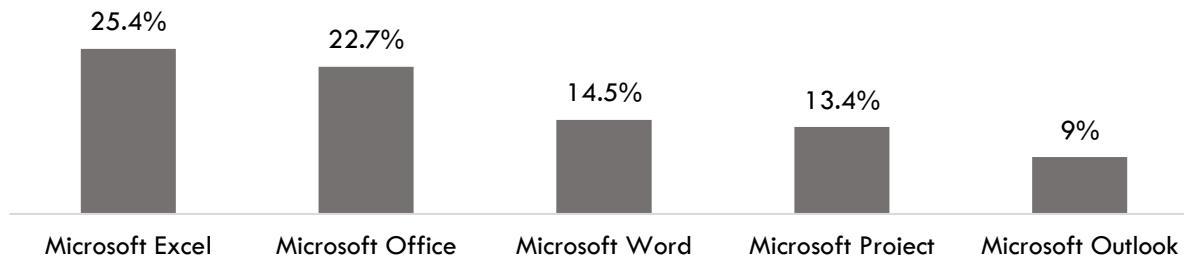
**Exhibit 7. In-demand construction management/inspection baseline and specialized skills**



## **Software Skills**

Analysis also included the software skills most in demand by employers. Microsoft Excel and Office were the top two software skills identified in job postings (Exhibit 8).

**Exhibit 8. In-demand construction management/inspection software skills**



## **Certifications**

Of the 419 job postings, 165 contained certification data. Among those, 82% indicated a need for a driver's license. The next top certifications are Occupational Safety and Health Administration Certification and Project Management Certification (Exhibit 9). (Due to the low number of job postings with certifications listed, the chart below may not be representative of the full sample.)

**Exhibit 9. Top construction management/inspection certifications requested in job postings**



# **Education, Work Experience & Training**

A high school education is typically required for first-line supervisors of construction trades and extraction workers, and construction and building inspectors (Exhibit 10). A bachelor's degree is typically required for construction managers.

**Exhibit 10. Education, work experience, training, and Current Population Survey results for construction management/inspection occupations<sup>3</sup>**

Occupation	Typical Entry-level Education	Work Experience Required	Typical On-The-Job Training	CPS
First-Line Supervisors of Construction Trades and Extraction Workers	High school diploma or equivalent	5 years or more	None	32.0%
Construction Managers	Bachelor's degree	None	Moderate-term	32.0%
Construction and Building Inspectors	High school diploma or equivalent	5 years or more	Moderate-term	44.7%

<sup>3</sup> "Labor Force Statistics from the Current Population Survey," Bureau of Labor Statistics, <https://www.bls.gov/cps/>.

# Supply

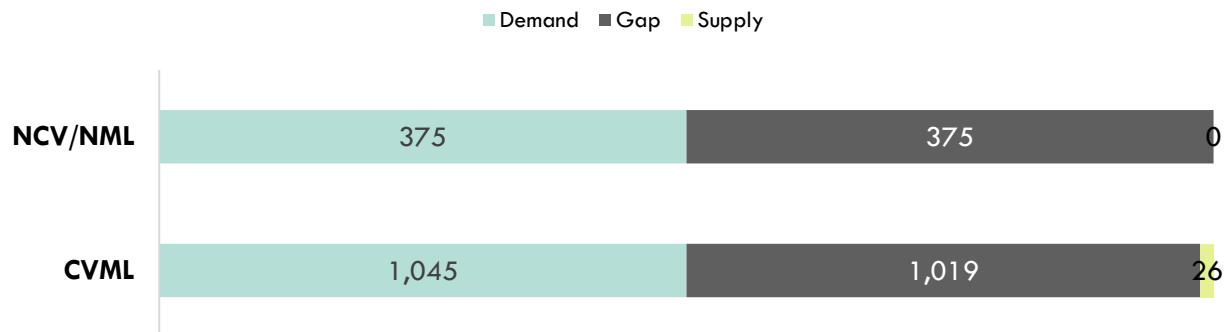
Analysis of program data from the California Community Colleges Chancellor's Office Data Mart included the TOP and CIP codes and titles: 095700 - Civil and Construction Management Technology and 52.2001 - Construction Management. Analysis of the last three years of data shows that, on average, 26 awards were conferred in the Central Valley/Mother Lode region each year (Exhibit 11).

**Exhibit 11. Postsecondary supply for construction management/inspection occupations in the region**

TOP Code - Title	Colleges	Associate Degree	Certificate 30 < 60 Semester Units	Subtotal
095700 - Civil and Construction Management Technology	San Joaquin Delta		0	0
52.2001 - Construction Management	San Joaquin Valley College-Visalia	26		26
<b>TOTAL</b>		<b>26</b>	<b>0</b>	<b>26</b>

There is an undersupply of 375 construction management/inspection workers in the NCV/NML subregion and 1,019 workers in the region (Exhibit 12).

**Exhibit 12. Construction management/inspection workforce annual demand and supply in the NCV/NML subregion and region**



## Student Outcomes

Data was not available from the California Community College Chancellor's Cal-PASS Plus LaunchBoard for 095700 - Civil and Construction Management Technology.

## Conclusion

The entry-level wages of the three occupations exceed the NCV/NML subregion's average living wage. There were 419 job postings in the past six months for occupations related to construction management/inspection in the subregion. Analysis of skills and certification requirements in job postings indicates:

- The top baseline skill is communication, and the top specialized skill is scheduling.
- The top software skill is Microsoft Excel.
- The top certification is a driver's license.

There is an undersupply of trained workers, a shortage of 375 in the NCV/NML subregion and 1,019 in the region.

## Recommendation

Based on these findings, it is recommended that Modesto Junior College work with the Energy, Construction and Utilities Regional Director, the college's advisory board, and local industry in development of programs to address the shortage of construction management/inspection workers 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. (EMSI). EMSI occupational employment data are based on final EMSI industry data and final EMSI 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 EMSI earnings by industry: <a href="http://economicmodeling.com">economicmodeling.com</a> .
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: <a href="https://www.bls.gov/emp/tables/educational-attainment.htm">https://www.bls.gov/emp/tables/educational-attainment.htm</a> .
Labor Force, Employment and Unemployment Estimates	California Employment Development Department, Labor Market Information Division: <a href="http://labormarketinfo.edd.ca.gov">labormarketinfo.edd.ca.gov</a> .
Job Posting and Skills Data	Burning Glass: <a href="http://burning-glass.com/">burning-glass.com/</a> .
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: <a href="http://onetonline.org">onetonline.org</a> .

## 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 aged 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. (EMSI) 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.