Construction, Engineering, & Architecture

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Location: CalTrans - Fontana, CA
Hosted by: SBCROP and CalTrans
Facilitator: Michael Jorgensen
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In Meeting Advisors:

Joseph McNicoll, CalTrans, Resident Engineer Landscape Associate
Krysten Allbeck, Assistant Professor of Architecture, California Baptist University
Timothy Aumon, Lead Organizer, IBEW 477

Post Meeting Advisors:

Ryan Birk, Facilities Manager, Colton-Redlands-Yucaipa ROP

K12 Educational Participants:

Andrew Espinoza, Building and Construction Pathway Lead, San Bernardino City Unified
Antoinette Gutierrez, Program Manager, Colton-Redlands-Yucaipa ROP
Autumn Wassink, Outreach Coordinator, California Baptist University
Charles Morehead, Teacher, Riverside Unified
Chelsea Ramirez, Coordinator- Workforce Development, San Bernardino City Unified
Cynthia Clarke, Project and Activities Technician, San Bernardino ROP
Daniel Maldonado, ROP Teacher, San Bernardino County ROP
Dr. Beth Higbee, Coach, Association of California School Administrators
Emily Jeffries, Program Specialist/ College and Career, San Bernardino City Unified
James Hattar, Curriculum Developer/TOA, Colton-Redlands-Yucaipa ROP
Joe Daniels, Custodial Technician Instructor, San Bernardino County ROP
Michael Richards, Coordinator, Alliance for Education SBCSS
Myrna Molina, Teacher, Colton-Redlands-Yucaipa ROP
Steven De La Portilla, CTE Teacher, San Bernardino City Unified

Panelist Introductions:

Krysten Allbeck:
I am an Assistant Professor of Architecture at California Baptist University. I earned my bachelor's degree in Spanish and Japanese from UC Riverside, followed by a master's degree in Architecture from UCLA. After graduating, I worked for Walt Disney Imagineering in Orlando, Florida for four years before returning to my hometown of Riverside to teach at CBU. I'm happy to be here.

Timothy Auman:
I'm the Lead Organizer for IBEW Local 477, the International Brotherhood of Electrical Workers. I've been an electrician for 25 years and completed our apprenticeship program, becoming a certified electrician in 2009. I'm a long-time resident of Hesperia and originally grew up in San Bernardino.

Joseph McNicoll:
I'm a licensed Landscape Architect and have been practicing for about 20 years. For the past three years, I've been with Caltrans after spending most of my career in the private sector. I earned my degree from Cal Poly Pomona and became licensed in 2009. It's been an interesting transition into public sector work, and I'm excited to share more about the profession.

Minutes:

A panel of four industry professionals representing a wide range of positions within the Construction, Engineering and Architecture industry sector participated by answering the following questions.

Question 1: What emerging trends and technologies do you believe will drive the most change in this industry over the next 3-5 years, and what should teachers and students focus on to stay ahead?

Joseph McNicoll: The most significant emerging trend is the shift from traditional 2D drafting to 3D modeling, particularly with the adoption of Building Information Modeling (BIM). At Caltrans, we are beginning to use 3D modeling for construction plans and expect a future where printed plans are obsolete—replaced entirely by tablets and digital drawings. Even in public sector agencies like ours, which are typically slow to adopt new technologies, BIM is becoming standard. Educators should begin introducing students to 3D modeling as early as possible, even using beginner-friendly tools like SketchUp. Training students to visualize projects in three dimensions will prepare them for this digital shift, especially as collaborative, cloud-based platforms replace traditional drafting methods.

Timothy Auman: Building Information Modeling (BIM) is rapidly transforming construction work. What used to be limited to foremen and superintendents is now being used by every crew member. On job sites, workers walk around with iPads showing full 3D models of the site—including future installations like HVAC ducts that haven't even arrived yet. This foresight prevents costly mistakes and redesigns. In addition to BIM, Programmable Logic Controllers (PLCs) and Building Management Systems (BMS) are advancing energy-efficient construction. Workers are installing lighting systems that adjust based on daylight and occupancy, as required by California Title 24 codes. To keep pace, students need to be comfortable with technology—basic email, Microsoft Office, and navigating digital tools. Teachers should integrate digital literacy and system integration concepts into their CTE curriculum, focusing not only on software use but also how it applies on-site.

Krysten Allbeck: The rise of sustainable design and energy-efficient systems—such as LEED standards and automated controls—is driving change across the architecture and construction sectors. In our architecture program, students who have prior experience with design software like SketchUp or Revit tend to excel. Our curriculum begins with hand drawing to teach core concepts in representation and scale, and later progresses to software like Revit for BIM and Rhino for advanced parametric modeling. Educators should consider scaffolding learning from analog to digital—starting with drafting by hand to teach precision, then moving into digital modeling and fabrication. Students also benefit from hands-on experience using 3D printers, laser cutters, and woodshops. Robotics and 3D-printed housing are on the horizon, and AI is beginning to emerge as a tool for ideation and rapid prototyping. Teachers should frame AI as a tool to enhance creativity, not replace it. Encourage students to use AI for early iteration, then apply critical thinking and design principles to refine ideas.

Ryan Birk: Highlighted the increasing use of Computerized Maintenance Management Systems (CMMS) and the integration of GPS/geospatial data in facilities and construction work. While the core tasks remain the same, there's a stronger focus on data collection and analysis. He recommends that students gain a basic understanding of these technologies and their terminology.

Michael Jorgensen (Facilitator Follow-up Question): In light of the growing use of technology, how important is it that students still learn paper-based design and blueprint reading skills?

Krysten Allbeck: Understanding how to read and interpret physical drawings is critical. My first role was in project management, where I was out in the field using blueprints to verify progress. Without knowing how to interpret plan, section, and elevation views—or how to scale and measure—you can't communicate with construction teams or confirm field accuracy. At CBU, we emphasize iterative thinking: students move between digital models, hand sketches, and physical prototypes to fully understand form and structure. This process builds not only technical knowledge but also problem-solving and spatial reasoning skills.

Timothy Auman:
Knowing how to read and redline blueprints is essential, especially on design-build projects where construction begins before final plans are complete. Workers must produce "as-builts" by hand—redlining changes and additions directly onto original drawings. These become part of the permanent project records. Without blueprint literacy, workers can't document changes accurately or resolve real-time issues on job sites.

Joseph McNicoll: Graphic communication—being able to sketch, explain, and iterate—is fundamental. Sometimes the best way to convey an idea is to sketch it on a napkin at a coffee shop. Quick sketching helps refine ideas early, without becoming overly invested in a digital model. Drawing helps students think visually and get ideas out of their head. At Fullerton College, I saw students who had some drawing experience move much faster and more confidently through design tasks. Those without it often struggled to get started. Repetition improves skill, and sketching is no exception—students need to get comfortable with failure and iteration to grow.

Question 2: How should our Career Technical Education (CTE) pathways adapt to ensure students are well-equipped to meet future demands and changes in this industry?

Timothy Auman: Prefabrication (prefab) is a major trend in construction, with more work being completed off-site in controlled environments. Students should understand the value of repetitive work, teamwork, and precision—building the same assemblies over and over to exact specifications. Exposure to hand tools, basic construction techniques, and patience in craftsmanship are key. Educators should prepare students for both on-site and prefab environments by reinforcing the importance of consistent, high-quality work and collaboration.

Krysten Allbeck: Students increasingly struggle with the emotional resilience needed for rigorous programs like architecture. Many focus solely on getting an A rather than developing curiosity and problem-solving skills. CTE pathways should nurture curiosity, critical thinking, and a growth mindset. Students should be encouraged to tackle problems independently, seek resources, and come to class with ideas rather than waiting for direction. Incorporating teamwork into projects, with clearly defined roles, mirrors real-world industry dynamics where architects collaborate with engineers, designers, and contractors. Educators should embed communication and collaboration skills into assignments and prepare students for the reality that adulthood and professional life require initiative, resilience, and independent thought.

Ryan Birk: Emphasized the need to develop personal drive and perseverance, calling it the single most important skill for career retention. This includes staying committed even after failure or interpersonal conflict. He also noted the importance of understanding data systems, emerging AI tools for tasks like report writing and contract summarization, and networking skills to support career adaptability.

Audience Question: Are there continuing education requirements for architecture licensure?

Krysten Allbeck: Once an individual is licensed in California, there is no required continuing education to maintain architectural licensure, though there are renewal fees. However, specialty certifications like LEED (Leadership in Energy and Environmental Design) often require continuing education units (CEUs) to stay active.

Joseph McNicoll: Most other states outside California do require continuing education for architects. LEED credentials, in particular, require ongoing education to maintain. LEED certifications evaluate a building's environmental performance and are increasingly valued by clients seeking sustainable design.

Timothy Auman: In trades like electrical work, continuing education is common and often required by different governing bodies (e.g., the Department of Industrial Relations). Although architecture licensure requirements are different, in construction fields, staying current through ongoing training is often mandatory.

Michael Jorgensen (Facilitator Follow-up Question): How else should education pathways adapt to better prepare students?

Timothy Auman: Students need clearer guidance about career pathways. Understanding the costs, certifications, salaries, apprenticeship requirements, and potential career outcomes should be integrated into CTE programs. Students often make costly decisions without fully understanding where a path leads. Educators should offer clear, realistic previews of each career, outlining benefits, timelines, and demands before students commit.

Krysten Allbeck: Representation matters. Programs should expose students to diverse role models in architecture and construction. If students can "see it," they believe they can "be it." She described several CBU outreach programs:

- **Architects of Tomorrow:** Free mentorship program for elementary through high school students.
- **CBU Architecture Summer Camp:** A one-week paid summer camp featuring projects, field trips, and student presentations.
- **SoCal NOMA (National Organization of Minority Architects) Project Pipeline:** Free summer program supporting diverse youth interested in architecture. Encouraging early exposure builds confidence and creates clearer visions for students' futures.

Audience Contribution: Information about additional CBU camps, including LEGO summer camps for younger students and construction management camps for high school students, was shared. Educators can find these programs through CBU's website or by searching for "CBU Academic Camps."

Michael Jorgensen (Facilitator Follow-up Question): What other ways can students engage directly with your industries?

Timothy Auman: IBEW Local 477 offers "Rodeo Days"—six hands-on events per year where students visit the training center. Students rotate through four classes (including math relevance, interview prep, and a hands-on project). A critical takeaway is preparing students for the apprenticeship interview process, where communication skills and career commitment heavily influence selection.

Joseph McNicoll: Recommended asla.org (American Society of Landscape Architects) as a resource for exposing students to landscape architecture careers. He emphasized that many students aren't aware of landscape architecture until late in college, even though it's a highly versatile field. Professional organizations like ASLA offer events and outreach programs that could introduce students to new career possibilities early.

Question 3: What essential skills, educational qualifications, and certifications are currently required to gain employment in your industry, and how might these requirements change in the near future?

Timothy Auman: Essential skills include strong math proficiency, particularly applied math. We use real-world scenarios in our rodeo events to show relevance—like calculating voltage drop in extension cords to avoid electrical fires, or understanding paycheck deductions. These types of examples help students realize why math matters in the trades. A valid driver's license is also crucial. In the electrical trade, you need to get to job sites early and reliably. If you can't show up on time every day, you affect not only your own employment but the productivity of your entire crew. Reliability and accountability are non-negotiable. Safety is another major skill—being aware of your surroundings, using tools properly, and practicing safe habits when climbing ladders or using power tools. These are things we embed in apprenticeship training, but students should begin developing them in high school.

Joseph McNicoll: In Caltrans, most positions are for civil engineers, so a degree in civil engineering is typically required. Licensure is necessary for higher-level or management roles, but entry-level positions do exist that do not require licensure. For landscape architecture, the same applies—a degree is required, but licensure is only needed for more senior roles. The certification requirements are not likely to change in the near future; these standards have been in place for some time. However, students should be aware of professional distinctions: you can work in the field without being licensed, but you must use a different title (e.g., "designer" instead of "landscape architect").

Krysten Allbeck: In architecture, a strong portfolio is just as important—if not more important—than grades or test scores. When applying to undergraduate or graduate programs, and even when seeking employment, students will need to showcase their creative thinking, design process, and communication through a portfolio. It doesn't need to be all architectural work; we like to see evidence of creativity—artwork, photography, sewing, sculpture, even design projects using software or models built with Legos or Minecraft. Both digital and printed portfolios are acceptable, and presentation quality matters—clear images, proper lighting, and well-documented work show students care about communicating their ideas effectively.

Ryan Birk: Most construction and facilities roles typically require a Bachelor's degree, but there's a shift toward accepting equivalent experience instead. Certifications such as CPR, Forklift, Food Handling, and OSHA 10 are beneficial but not always required. Ryan reiterated that personal motivation and the ability to consistently commute to varied job sites are more crucial to hiring managers than formal qualifications.

Audience Member: Do you expect both digital and physical portfolios?

Krysten Allbeck: Yes. A hybrid approach is common. In my own portfolio, I included academic projects as well as artistic pieces like paintings and sewing work to show creative range. A well-rounded, visually clean portfolio that reflects the student's thinking process and attention to detail is essential.

Michael Jorgensen (Facilitator): We're hearing this across all sectors—soft skills matter. Communication, punctuality, and professionalism are critical. So are practicalities like having a driver's license. Educators should reinforce the full range of skills—not just technical ones—that contribute to career success.

Audience Question: Are there smaller certifications that students can pursue in high school that would be helpful before major exams or licenses?

Timothy Auman: Yes, OSHA 10 and OSHA 30 certifications are great starting points. They show a foundational awareness of safety and are recognizable across the construction industry. While not required for school admission, they're highly respected and useful. We used to work with Healthy Start on certifying students, and I'm not sure if they're still active, but those kinds of partnerships are worth exploring.

Krysten Allbeck: High school programs that expose students to software like SketchUp, Revit, or AutoCAD—along with traditional drafting skills—are very helpful. Even self-initiated projects can strengthen a portfolio. Documenting their work professionally (good lighting, high-res scans) is just as important. If students are aiming for elite programs like USC, Stanford, or MIT, then early exposure to architectural software and strong design samples in a portfolio will give them a competitive edge.

Joseph McNicoll: Students should include anything that reflects their creativity and problem-solving. Even art projects, Lego builds, or stop-motion animations can demonstrate design thinking. At some schools like Cal Poly Pomona, a strong portfolio can even allow students to skip the first year of a design program. Students don't always realize how much of what they're already doing could apply—CTE teachers should help them recognize and collect these artifacts early.

Krysten Allbeck: We've even had students submit screenshots of buildings they designed in Minecraft. It might sound simple, but it shows spatial awareness, modular thinking, and architectural intent. We're not looking for perfection—we're looking for potential.

Question 4: What are a few occupations within the industry that do not require advanced degrees yet offer a living wage? Additionally, what advice would you give to a recent high school graduate that would help them gain employment in your industry?

Joseph McNicoll: There are multiple career paths—both within landscape architecture and at Caltrans—that offer good wages without requiring advanced degrees. At Caltrans, roles such as Associate Governmental Program Analyst or Staff Services Analyst are administrative but pay well and don't necessarily relate directly to landscape work. For students currently enrolled in college, positions like Transportation Engineer Technician can be a good entry point. On the landscape side, Landscape Technicians can earn a solid income, though there are safety risks for those working roadside. Still, someone could start with basic highway maintenance work—even something like weeding on the side of the road—and, through consistent effort, work their way up to the Maintenance Division Manager. A college degree isn't required to progress through these ranks—a strong work ethic and reliability go a long way.

Timothy Auman: In construction, we don't typically require advanced degrees. That's why many of us pursue this industry—we chose a path through apprenticeship programs, which provide formal training and lead to state licensure as a journeyperson. From there, individuals can move into supervisory roles like Foreman, Superintendent, or Project Manager. For those who decide later in life to pursue a degree, field experience is highly valued. Companies prefer to hire estimators, planners, or engineers who have been on job sites and know firsthand how long tasks really take. Advanced education can open more doors at the executive level, but it's not a requirement for entry-level positions. The trades provide real opportunities for advancement,

especially for those who are dependable, safety-conscious, and eager to continue learning on the job.

Krysten Allbeck: To be a licensed architect, you do need to meet all requirements, including passing your exams and logging 3,500 internship hours under a licensed architect. With a license, you're allowed to stamp and sign off on construction documents—meaning you hold legal responsibility for the building design. However, there are entry-level roles in architecture that don't require licensure or an advanced degree. For example, someone with a Community College certificate in drafting can work as a draftsperson in an architectural office. In that role, you may be responsible for creating as-built drawings or supporting senior staff in developing construction documents. While it's not as creatively involved, it's a great entry point for students interested in the field. Over time, those who show talent and dedication often grow into larger roles—especially if they're working under a supportive principal who values their contributions.

Ryan Birk: Listed multiple careers that offer a living wage without requiring a four-year degree, such as heavy equipment operators, technicians, and hands-on trades like plumbing, HVAC, framing, and landscaping. He emphasized that experience, recommendations, and work ethic matter more than credentials. Many companies struggle to find candidates with soft skills like adaptability and professionalism, even among those with degrees. Starting wages may not always meet full living standards, but growth opportunities and learning on the job are key to long-term career success.

Key Takeaways and Action Items by Panelist

These key takeaways and action item lists highlight each respondent's insights, concerns, and suggested actions to address industry trends and to prepare students for the evolving landscape within their respective industries.

Joseph McNicoll, Resident Engineer Landscape Associate, Caltrans

Key Takeaways

- The shift from 2D drafting to 3D modeling (BIM) is becoming a major trend even within public sector agencies like Caltrans.
- Early exposure to 3D modeling tools like SketchUp can help students adapt to industry changes.
- Traditional drawing skills (sketching by hand) remain crucial for communicating ideas quickly and iteratively.
- Landscape architecture is a versatile field with career opportunities that students often discover late in college.

Action Items

- Integrate 3D modeling software like SketchUp into early CTE coursework to build spatial visualization skills.
- Emphasize the value of quick sketching and graphic communication in design and technical courses.
- Expose students to landscape architecture and related fields through organizations like ASLA.
- Encourage students to document creative projects (e.g., Lego models, stop-motion videos) to build early portfolios.

Timothy Auman, Lead Organizer, IBEW Local 477

Key Takeaways

- Building Information Modeling (BIM) and energy management systems are increasingly used at the field level in construction.
- Applied math, digital literacy, and safety awareness are essential foundational skills for construction careers.
- Prefabrication is growing, emphasizing the need for precision, teamwork, and patience with repetitive tasks.
- Soft skills like reliability, interview skills, and having a valid driver’s license are critical to career success.

Action Items

- Strengthen students’ applied math skills using real-world scenarios from construction and energy management.
- Provide students hands-on exposure to teamwork-based, repetitive assembly projects to simulate prefab work.
- Offer structured interview preparation activities to help students succeed in apprenticeship selection processes.

- Stress the importance of basic logistics, such as obtaining a driver's license and consistently demonstrating reliability.

Krysten Allbeck, Assistant Professor of Architecture, California Baptist University

Key Takeaways

- Students who scaffold from hand drawing to digital modeling (e.g., SketchUp, Revit, Rhino) develop stronger design and problem-solving skills.
- Emotional resilience, curiosity, and independent thinking are more critical to long-term success than GPA alone.
- Portfolios showcasing creativity, iteration, and design thinking are often more important than grades in architecture.
- Early exposure to architecture through mentorship programs and camps builds confidence and future readiness.

Action Items

- Scaffold CTE programs from hand-drafting skills to digital modeling, reinforcing both analog and digital design.
- Incorporate project-based learning that rewards curiosity, persistence, and independent problem-solving.
- Help students start building creative portfolios early, documenting work with high-quality photos and professional formatting.
- Connect students to mentorship and summer camp opportunities (e.g., CBU's Architects of Tomorrow, SoCal NOMA Project Pipeline).

Ryan Birk, Facilities Manager, Colton-Redlands-Yucaipa ROP

Key Takeaways

- The growing use of Computerized Maintenance Management Systems (CMMS) and integration of GPS/geospatial data is reshaping facilities work, emphasizing the importance of basic technical literacy.
- Personal drive, perseverance, and the ability to work through challenges are viewed as more critical to career success than technical skills alone.
- Networking skills and the ability to forge professional relationships are increasingly vital for career growth and adaptability.
- Many high-paying trades and facilities careers do not require a four-year degree; experience, recommendations, and motivation are often more valuable to employers than formal education.

Action Items

- Introduce students to basic CMMS concepts and industry-specific data systems to build foundational technical awareness.
- Embed persistence, adaptability, and workplace resilience training into the CTE curriculum through project-based challenges and reflection.
- Teach networking skills explicitly, including professional communication, relationship-building, and leveraging networks for career opportunities.

- Promote awareness of non-degree career pathways in construction, facilities, and technical trades, emphasizing experience and growth potential over formal academic credentials.

Audience Questions:

Question 1: What free or low-cost software or apps would you recommend for students to explore construction, architecture, or landscape design and begin developing a portfolio?

Summary of Responses:

- SketchUp and most Autodesk products are free for students and educators (AutoCAD, Revit, etc.).
- Adobe Creative Suite offers student versions (Photoshop, InDesign, Illustrator), useful for building professional portfolios.
- Bluebeam is used in construction for takeoffs and estimating—considered better than Adobe for these purposes.
- Rhino is helpful for advanced modeling and used in high-end firms.
- Unreal Engine (a video game engine) is used for rendering and walk-throughs. Free unless the user earns over $1M.
- Enscape and Twinmotion are also popular for rendering and presentation.

Key Takeaways:

- There are several industry-relevant tools available free to students that support early exposure and portfolio development.
- Video game software like Unreal Engine can engage students creatively while applying architectural concepts.

- Visualization tools improve communication with clients who may not interpret blueprints intuitively.

Action Items:

- Provide students with access and tutorials for tools like SketchUp, Autodesk, Rhino, and Unreal Engine.
- Include software-based portfolio building in project-based CTE coursework.
- Encourage video walkthroughs as a method of client-ready presentation.

Question 2: Is earning a drone pilot certification beneficial for students seeking careers in construction, architecture, or related fields?

Summary of Responses:

- Construction and trades unions (e.g., IBEW) do not typically use drones at the journeyman level; drone operation is often handled by specialists.
- Caltrans uses drones for site analysis and estimating, but usually by existing staff trained for this role.
- Architecture firms mostly outsource drone work for marketing or site documentation.
- Drone usage is increasing in construction and planning, but drone pilot roles are typically third-party consultants, not entry-level hires.

Key Takeaway:

- Drone certifications can provide a niche skill, but are currently more relevant to marketing, surveying, and consulting, not entry-level trade work.

Action Items:
- Offer drone literacy as an exploratory elective or club rather than a core CTE certification.
- Explore partnerships with third-party drone consultants for demonstrations and fieldwork exposure.

Question 3: Are point clouds being used in the field, and how are they applied in education and construction?

Summary of Responses:
- Point clouds are created using photogrammetry and are used for 3D modeling and documentation, especially in renovations or historical preservation.

- Not widely used in field-level CTE contexts yet but are emerging tools in advanced architectural workflows.
- The CBU professor is using point clouds for historical documentation (Alhambra) and creating 3D-printed models from scans.

Key Takeaway:
- Point cloud technology is promising, especially in renovation and preservation, but currently limited to higher education or specialized projects.

Action Item:
- Introduce photogrammetry and 3D scanning concepts during architecture or drafting units for awareness and enrichment.

Question 4: Can colleges come to campuses or offer field trip options to introduce students to programs like architecture and engineering?

Summary of Responses:
- CBU welcomes field trips and offers immersive experiences like aviation demos and tours of Polytech spaces.
- CBU also visits K–12 campuses, participates in community events, and has dual activities with local school districts (e.g., RUSD).
- Events like I Make Mobile Innovation Center and community makerspaces also provide access to CNC machines, 3D printers, and more.

Key Takeaway:
- Field trips and college visits create pivotal "see it to be it" moments that can inspire career interest.

Action Items:

- Coordinate college visits and invite guest speakers from local institutions.
- Partner with mobile innovation labs or community makerspaces for hands-on student experiences.

Question 5: Are there any workshops, job shadows, or student training opportunities offered by Caltrans or unions? What are the barriers to getting students on job sites?

Summary of Responses:

- Job shadowing on active construction sites is limited due to insurance and liability.
- Caltrans might allow tours of controlled sites (e.g., SRL) but not public right-of-way areas.
- IBEW and other unions offer pre-apprenticeship programs, some targeted at reentry and second-chance populations.

Key Takeaway:

- Liability issues limit on-site job shadowing, but off-site experiences and controlled simulations are viable alternatives.

Action Items:

- Organize visits to union training centers or simulators.
- Explore off-site partnerships like SRL or county workshops that can safely host students.

Labor Market Information

The following labor market information was sourced from https://www.onetonline.org/ on April 29, 2025.

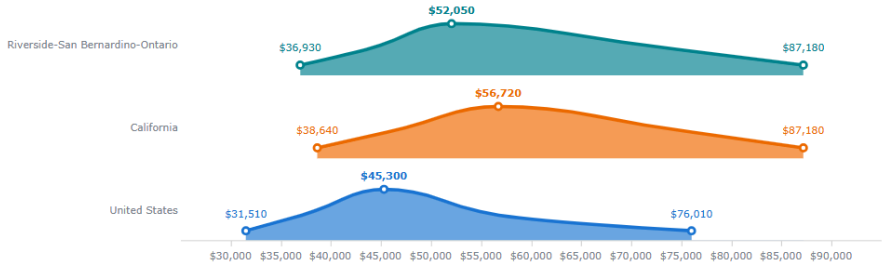
Local Wages

47-2061.00 - Construction Laborers Bright Outlook

Wages for state: California Go

Wages near ZIP Code: 92408 Go

Annual Wages | Hourly Wages



In Riverside-San Bernardino-Ontario, CA:

- Workers on average earn **$52,050**.
- 10% of workers earn **$36,930 or less**.
- 10% of workers earn **$87,180 or more**.

In California:

- Workers on average earn **$56,720**.
- 10% of workers earn **$38,640 or less**.
- 10% of workers earn **$87,180 or more**.

In the United States:

- Workers on average earn **$45,300**.
- 10% of workers earn **$31,510 or less**.
- 10% of workers earn **$76,010 or more**.

Source: Bureau of Labor Statistics 2023 wage data.

California Employment Trends

47-2061.00 - Construction Laborers Bright Outlook

View trends for state: California Go

In California:

Employment (2020)	133,600 employees
Projected employment (2030)	155,900 employees
Projected growth (2020-2030)	17%
Projected annual job openings (2020-2030)	16,290

In the United States:

Employment (2023)	1,401,200 employees
Projected employment (2033)	1,516,600 employees
Projected growth (2023-2033)	8% Faster than average
Projected annual job openings (2023-2033)	133,100

California source: Projections Central 2020-2030 long-term projections. United States source: Bureau of Labor Statistics 2023-2033 employment projections. "Projected growth" represents the estimated change in total employment over the projections period. "Projected annual job openings" represent openings due to growth and replacement.

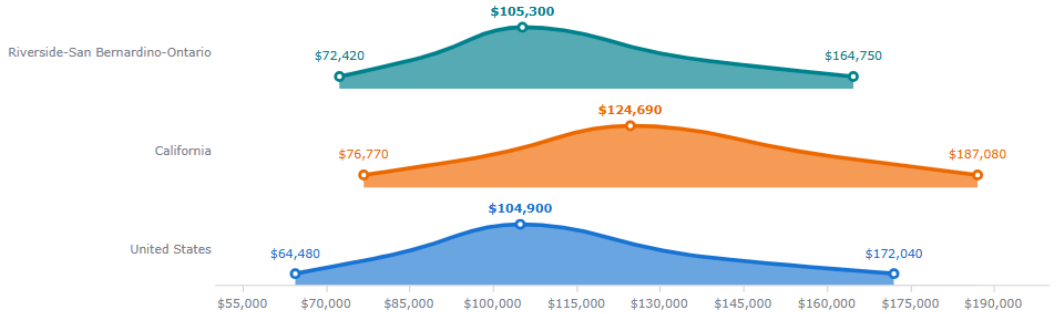
Local Wages

11-9021.00 - Construction Managers Bright Outlook

Wages for state: California Go

Wages near ZIP Code: 92408 Go

Annual Wages | Hourly Wages



In Riverside-San Bernardino-Ontario, CA:

- Workers on average earn **$105,300**.
- 10% of workers earn **$72,420 or less**.
- 10% of workers earn **$164,750 or more**.

In California:

- Workers on average earn **$124,690**.
- 10% of workers earn **$76,770 or less**.
- 10% of workers earn **$187,080 or more**.

In the United States:

- Workers on average earn **$104,900**.
- 10% of workers earn **$64,480 or less**.
- 10% of workers earn **$172,040 or more**.

Source: Bureau of Labor Statistics 2023 wage data.

California Employment Trends

11-9021.00 - Construction Managers Bright Outlook

View trends for state: California Go

In California:

Employment (2020)	53,300 employees
Projected employment (2030)	63,300 employees
Projected growth (2020-2030)	19%
Projected annual job openings (2020-2030)	5,150

In the United States:

Employment (2023)	520,900 employees
Projected employment (2033)	568,500 employees
Projected growth (2023-2033)	■■■■ 9% Much faster than average
Projected annual job openings (2023-2033)	45,800

California source: Projections Central 2020-2030 long-term projections. United States source: Bureau of Labor Statistics 2023-2033 employment projections. "Projected growth" represents the estimated change in total employment over the projections period. "Projected annual job openings" represent openings due to growth and replacement.

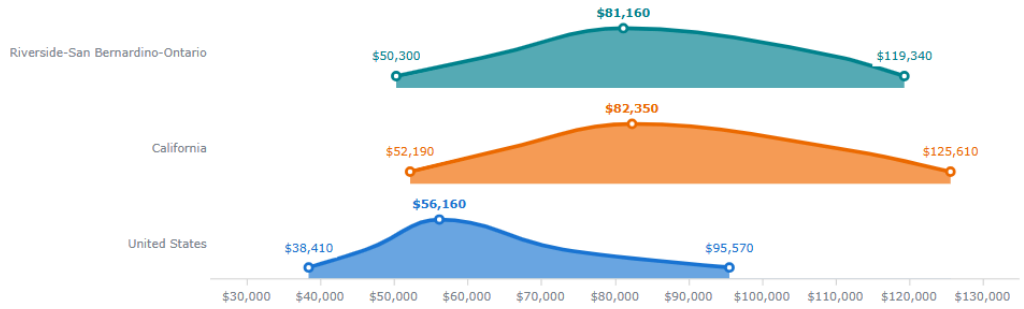
Local Wages

47-2073.00 - Operating Engineers and Other Construction Equipment Operators

Wages for state: California Go

Wages near ZIP Code: 92408 Go

Annual Wages | Hourly Wages



In Riverside-San Bernardino-Ontario, CA:

- Workers on average earn **$81,160**.
- 10% of workers earn **$50,300 or less**.
- 10% of workers earn **$119,340 or more**.

In California:

- Workers on average earn **$82,350**.
- 10% of workers earn **$52,190 or less**.
- 10% of workers earn **$125,610 or more**.

In the United States:

- Workers on average earn **$56,160**.
- 10% of workers earn **$38,410 or less**.
- 10% of workers earn **$95,570 or more**.

Source: Bureau of Labor Statistics 2023 wage data.

California Employment Trends

47-2073.00 - Operating Engineers and Other Construction Equipment Operators

View trends for state: California Go

In California:

Employment (2020)	28,700 employees
Projected employment (2030)	31,900 employees
Projected growth (2020-2030)	11%
Projected annual job openings (2020-2030)	3,480

In the United States:

Employment (2023)	468,000 employees
Projected employment (2033)	487,600 employees
Projected growth (2023-2033)	4% Average
Projected annual job openings (2023-2033)	41,500

California source: Projections Central 2020-2030 long-term projections. United States source: Bureau of Labor Statistics 2023-2033 employment projections. "Projected growth" represents the estimated change in total employment over the projections period. "Projected annual job openings" represent openings due to growth and replacement.

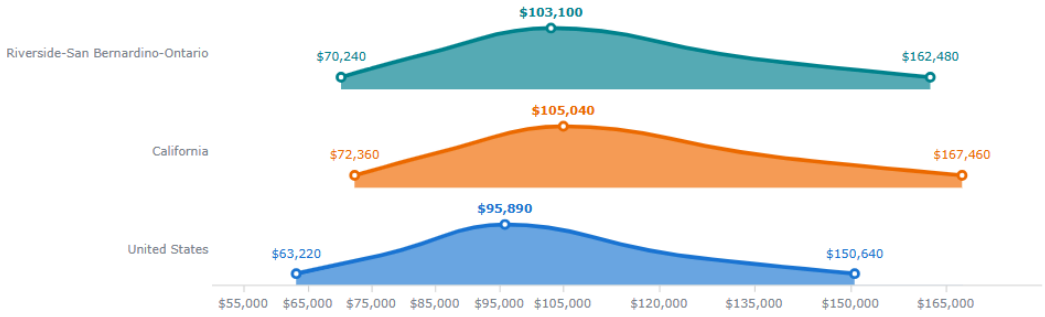
Local Wages

17-2051.00 - Civil Engineers Bright Outlook

Wages for state: California Go

Wages near ZIP Code: 92408 Go

Annual Wages | Hourly Wages



In Riverside-San Bernardino-Ontario, CA:

- Workers on average earn **$103,100**.
- 10% of workers earn **$70,240 or less**.
- 10% of workers earn **$162,480 or more**.

In California:

- Workers on average earn **$105,040**.
- 10% of workers earn **$72,360 or less**.
- 10% of workers earn **$167,460 or more**.

In the United States:

- Workers on average earn **$95,890**.
- 10% of workers earn **$63,220 or less**.
- 10% of workers earn **$150,640 or more**.

Source: Bureau of Labor Statistics 2023 wage data.

California Employment Trends

17-2051.00 - Civil Engineers Bright Outlook

View trends for state: California Go

In California:

Employment (2020)	46,700 employees
Projected employment (2030)	54,600 employees
Projected growth (2020-2030)	17%
Projected annual job openings (2020-2030)	4,320

In the United States:

Employment (2023)	341,800 employees
Projected employment (2033)	363,900 employees
Projected growth (2023-2033)	7% Faster than average
Projected annual job openings (2023-2033)	22,900

California source: Projections Central 2020-2030 long-term projections. United States source: Bureau of Labor Statistics 2023-2033 employment projections. "Projected growth" represents the estimated change in total employment over the projections period. "Projected annual job openings" represent openings due to growth and replacement.

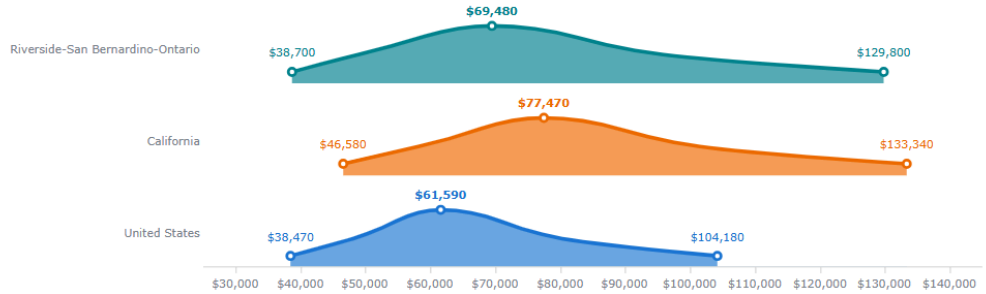
Local Wages

47-2111.00 - Electricians Bright Outlook

Wages for state: California Go

Wages near ZIP Code: 92408 Go

Annual Wages | Hourly Wages



In Riverside-San Bernardino-Ontario, CA:

- Workers on average earn **$69,480**.
- 10% of workers earn **$38,700 or less**.
- 10% of workers earn **$129,800 or more**.

In California:

- Workers on average earn **$77,470**.
- 10% of workers earn **$46,580 or less**.
- 10% of workers earn **$133,340 or more**.

In the United States:

- Workers on average earn **$61,590**.
- 10% of workers earn **$38,470 or less**.
- 10% of workers earn **$104,180 or more**.

Source: Bureau of Labor Statistics 2023 wage data.

California Employment Trends

47-2111.00 - Electricians Bright Outlook

View trends for state: California Go

In California:

Employment (2020)	70,300 employees
Projected employment (2030)	83,100 employees
Projected growth (2020-2030)	18%
Projected annual job openings (2020-2030)	9,140

In the United States:

Employment (2023)	779,800 employees
Projected employment (2033)	864,100 employees
Projected growth (2023-2033)	■■■■ 11% Much faster than average
Projected annual job openings (2023-2033)	80,200

California source: Projections Central 2020-2030 long-term projections. United States source: Bureau of Labor Statistics 2023-2033 employment projections. "Projected growth" represents the estimated change in total employment over the projections period. "Projected annual job openings" represent openings due to growth and replacement.

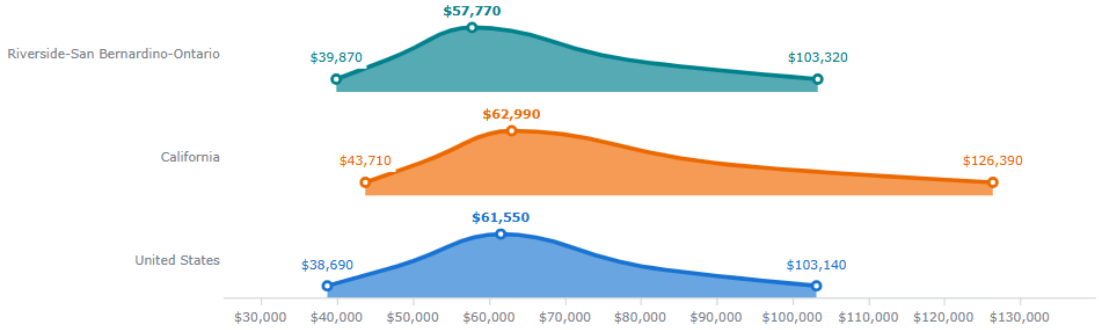
Local Wages

47-2152.00 - Plumbers, Pipefitters, and Steamfitters Bright Outlook

Wages for state: California Go

Wages near ZIP Code: 92408 Go

Annual Wages | Hourly Wages



In Riverside-San Bernardino-Ontario, CA:

- Workers on average earn **$57,770**.
- 10% of workers earn **$39,870 or less**.
- 10% of workers earn **$103,320 or more**.

In California:

- Workers on average earn **$62,990**.
- 10% of workers earn **$43,710 or less**.
- 10% of workers earn **$126,390 or more**.

In the United States:

- Workers on average earn **$61,550**.
- 10% of workers earn **$38,690 or less**.
- 10% of workers earn **$103,140 or more**.

Source: Bureau of Labor Statistics 2023 wage data.

California Employment Trends

47-2152.00 - Plumbers, Pipefitters, and Steamfitters Bright Outlook

View trends for state: California Go

In California:

Employment (2020)	44,000 employees
Projected employment (2030)	49,900 employees
Projected growth (2020-2030)	13%
Projected annual job openings (2020-2030)	5,340

In the United States:

Employment (2023)	473,400 employees
Projected employment (2033)	499,700 employees
Projected growth (2023-2033)	6% Faster than average
Projected annual job openings (2023-2033)	43,300

California source: Projections Central 2020-2030 long-term projections. United States source: Bureau of Labor Statistics 2023-2033 employment projections. "Projected growth" represents the estimated change in total employment over the projections period. "Projected annual job openings" represent openings due to growth and replacement.

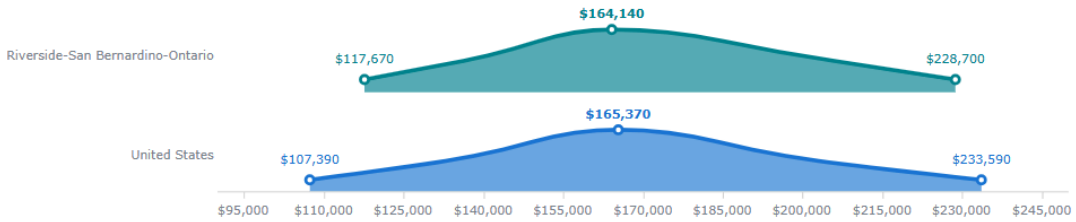
Local Wages

11-9041.00 - Architectural and Engineering Managers Bright Outlook

Wages for state: California Go

Wages near ZIP Code: 92408 Go

Annual Wages | Hourly Wages



In Riverside-San Bernardino-Ontario, CA:

- Workers on average earn **$164,140**.
- 10% of workers earn **$117,670 or less**.
- 10% of workers earn **$228,700 or more**.

In California:

- Workers on average earn **$197,420**.
- 10% of workers earn **$126,150 or less**.
- 10% of workers earn **$239,200+ or more**.

In the United States:

- Workers on average earn **$165,370**.
- 10% of workers earn **$107,390 or less**.
- 10% of workers earn **$233,590 or more**.

Source: Bureau of Labor Statistics 2023 wage data.

California Employment Trends

11-9041.00 - Architectural and Engineering Managers Bright Outlook

View trends for state: California Go

In California:

Employment (2020)	34,500 employees
Projected employment (2030)	39,000 employees
Projected growth (2020-2030)	13%
Projected annual job openings (2020-2030)	2,980

In the United States:

Employment (2023)	210,200 employees
Projected employment (2033)	221,800 employees
Projected growth (2023-2033)	6% Faster than average
Projected annual job openings (2023-2033)	15,000

California source: Projections Central 2020-2030 long-term projections. United States source: Bureau of Labor Statistics 2023-2033 employment projections. "Projected growth" represents the estimated change in total employment over the projections period. "Projected annual job openings" represent openings due to growth and replacement.

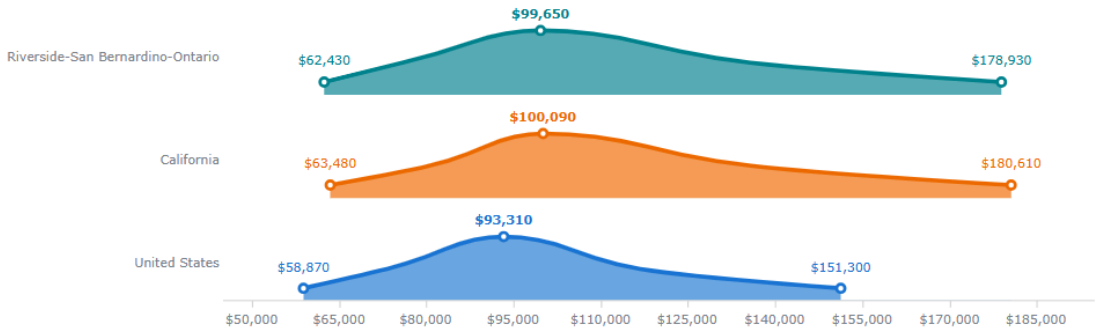
Local Wages

17-1011.00 - Architects, Except Landscape and Naval Bright Outlook

Wages for state: California Go

Wages near ZIP Code: 92408 Go

Annual Wages | Hourly Wages



In Riverside-San Bernardino-Ontario, CA:

- Workers on average earn **$99,650**.
- 10% of workers earn **$62,430 or less**.
- 10% of workers earn **$178,930 or more**.

In California:

- Workers on average earn **$100,090**.
- 10% of workers earn **$63,480 or less**.
- 10% of workers earn **$180,610 or more**.

In the United States:

- Workers on average earn **$93,310**.
- 10% of workers earn **$58,870 or less**.
- 10% of workers earn **$151,300 or more**.

Source: Bureau of Labor Statistics 2023 wage data.

California Employment Trends

17-1011.00 - Architects, Except Landscape and Naval Bright Outlook

View trends for state: California Go

In California:

Employment (2020)	18,000 employees
Projected employment (2030)	21,100 employees
Projected growth (2020-2030)	17%
Projected annual job openings (2020-2030)	1,680

In the United States:

Employment (2023)	127,300 employees
Projected employment (2033)	137,200 employees
Projected growth (2023-2033)	8% Faster than average
Projected annual job openings (2023-2033)	8,500

California source: Projections Central 2020-2030 long-term projections. United States source: Bureau of Labor Statistics 2023-2033 employment projections. "Projected growth" represents the estimated change in total employment over the projections period. "Projected annual job openings" represent openings due to growth and replacement.

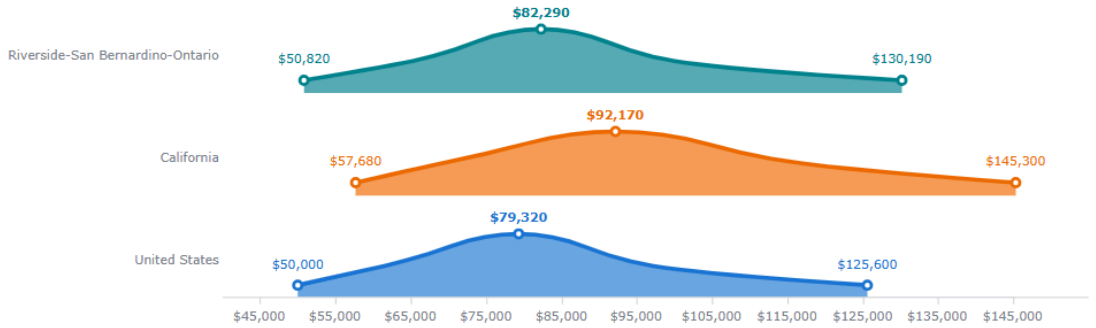
Local Wages

17-1012.00 - Landscape Architects

Wages for state: California Go

Wages near ZIP Code: 92408 Go

Annual Wages | Hourly Wages



In Riverside-San Bernardino-Ontario, CA:

- Workers on average earn **$82,290**.
- 10% of workers earn **$50,820 or less**.
- 10% of workers earn **$130,190 or more**.

In California:

- Workers on average earn **$92,170**.
- 10% of workers earn **$57,680 or less**.
- 10% of workers earn **$145,300 or more**.

In the United States:

- Workers on average earn **$79,320**.
- 10% of workers earn **$50,000 or less**.
- 10% of workers earn **$125,600 or more**.

Source: Bureau of Labor Statistics 2023 wage data.

California Employment Trends

17-1012.00 - Landscape Architects

View trends for state: California Go

In California:

Employment (2020)	3,300 employees
Projected employment (2030)	3,700 employees
Projected growth (2020-2030)	12%
Projected annual job openings (2020-2030)	280

In the United States:

Employment (2023)	24,700 employees
Projected employment (2033)	25,800 employees
Projected growth (2023-2033)	5% Average
Projected annual job openings (2023-2033)	2,100

California source: Projections Central 2020-2030 long-term projections. United States source: Bureau of Labor Statistics 2023-2033 employment projections. "Projected growth" represents the estimated change in total employment over the projections period. "Projected annual job openings" represent openings due to growth and replacement.

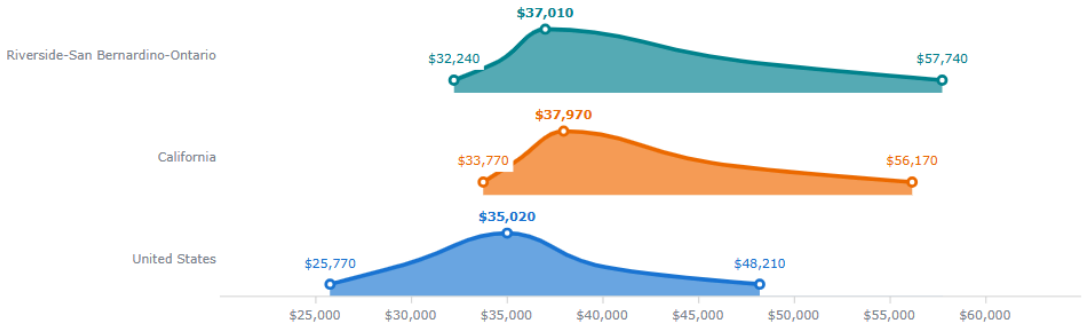
Local Wages

37-2011.00 - Janitors and Cleaners, Except Maids and Housekeeping Cleaners Bright Outlook

Wages for state: California Go

Wages near ZIP Code: 92408 Go

Annual Wages | Hourly Wages



In Riverside-San Bernardino-Ontario, CA:

- Workers on average earn **$37,010**.
- 10% of workers earn **$32,240 or less**.
- 10% of workers earn **$57,740 or more**.

In California:

- Workers on average earn **$37,970**.
- 10% of workers earn **$33,770 or less**.
- 10% of workers earn **$56,170 or more**.

In the United States:

- Workers on average earn **$35,020**.
- 10% of workers earn **$25,770 or less**.
- 10% of workers earn **$48,210 or more**.

Source: Bureau of Labor Statistics 2023 wage data.

California Employment Trends

37-2011.00 - Janitors and Cleaners, Except Maids and Housekeeping Cleaners Bright Outlook

View trends for state: California Go

In California:

Employment (2020)	231,800 employees
Projected employment (2030)	265,800 employees
Projected growth (2020-2030)	15%
Projected annual job openings (2020-2030)	36,370

In the United States:

Employment (2023)	2,431,600 employees
Projected employment (2033)	2,507,300 employees
Projected growth (2023-2033)	3% Average
Projected annual job openings (2023-2033)	350,300

California source: Projections Central 2020-2030 long-term projections. United States source: Bureau of Labor Statistics 2023-2033 employment projections. "Projected growth" represents the estimated change in total employment over the projections period. "Projected annual job openings" represent openings due to growth and replacement.